Special TIP and Gamma Scan Comparisons From Hatch-1

Comparisons of Simulated Process Computer Thermal Neutron TIP and Gamma TIP Calculations With Gamma Scan Measurements at Edwin I. Hatch Nuclear Plant Unit 1 at End of Cycle 1

NP-561
Research Project 130-3

Final Report, September 1979
Work Completed, November 1978

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FOREWORD

Power distributions in operating boiling water reactors (BWR's) are calculated by the process computer using signals obtained from traversing in-core probes (TIP's). The current TIP system design consists of ionization chambers sensitive to thermal neutron fissions. These detectors indicate power asymmetries for core locations where the actual power distributions are expected to be nearly symmetric. The indicated asymmetries of the thermal neutron detectors can be attributed to sensitivity of the detector response to water gap variations and detector positioning. These indicated asymmetries can result in conservative thermal-hydraulic limits which tend to reduce reactor operating flexibility.

With the encouragement and cooperation of Georgia Power Company and Southern Company Services, a cooperative research effort was developed by General Electric Company and EPRI as an extension of RP130, "Nuclear Reactor Core Benchmark Data," to carry out a series of measurements at the Hatch 1 Nuclear Power Plant. The measurements included two classes of data taken prior to the end of Cycle 1 and during the refueling outage: (1) Signals from three different types of traversing in-core probes (TIP's), and (2) Gamma scans to benchmark both fuel rod and bundle power distributions at end of Cycle 1. In the measurements with the various TIP's, signal distributions were obtained with gamma, fast neutron, and the standard thermal neutron sensitive detectors. One of the primary objectives of these measurements was to determine the apparent TIP asymmetry differences between the three TIP detector types relative to the gamma scan benchmark data.

The direct comparisons of the special gamma and thermal neutron sensitive TIP's to the benchmark gamma scan data are reported herein. A second report (EPRI NP-540) contains the special gamma, thermal neutron, and fast neutron sensitive TIP measurement data. A third report (EPRI NP-511) contains the results from the fuel rod and bundle gamma scans. Finally, a fourth report (EPRI NP-562) documents the core design and operating data for Hatch 1 during Cycle 1. This last report is intended for use by those who wish to model the Hatch 1 operating history to qualify BWR nuclear analysis methods.

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1. INTRODUCTION

Special process computer axial signal distributions using thermal neutron, fast neutron, and gamma sensitive TIP's (traversing in-core probes) were obtained during the 60 days prior to the end of Cycle 1 at the Hatch Nuclear Power Station Unit 1. Benchmark gamma scan measurements were performed during the refueling outage following end of Cycle 1 to obtain a nodal Ba-140 distribution for 106 bundles, representing more than an octant of the core. Ba-140 distributions were calculated from the TIP data for direct comparisons with the gamma scan benchmark data. The special TIP measurements and benchmark gamma scan measurements are described in References 1 and 2, respectively.

This report documents comparisons made between the thermal neutron and gamma sensitive TIP process computer predictions and the gamma scan benchmark data. Comparisons using the fast neutron axial signal distributions were not made because of the poor quality of the data. The presence of high asymmetries and high void fraction sensitivity would have made the signal-to-power correlation uncertainty very large. Signal distributions used in the process computer predictions were obtained by two methods. Data sets for both the thermal neutron and gamma sensitive TIP's were recorded by using an XY plotter and later hand digitizing the plots. Data sets for the thermal neutron TIP were also obtained by using the OD-1 function of the process computer. For convenience in future discussions the calculated Ba-140 distributions for the three sets are defined as follows:

XY thermal: Ba-140 distribution calculated using data from the thermal neutron TIP which were recorded on the XY plotter

XY gamma: Ba-140 distribution calculated using data from the gamma sensitive TIP which were recorded on the XY plotter

OD-1 thermal: Ba-140 distribution calculated using data from the thermal neutron TIP which were recorded by the OD-1 function of the process computer.

Note that XY thermal, XY gamma and OD-1 thermal do not mean TIP signal but instead refer to calculated Ba-140.

The major objectives of these comparisons were the following:

1. Determine the reduction in apparent asymmetries resulting from the use of the gamma TIP.

2. Determine the increase in margin from thermal limits resulting from use of the gamma TIP. This was accomplished by looking at peak bundle and peak nodal powers.

3. Determine the standard deviations of differences between gamma scan and process computer nodal and bundle average power distributions in order to evaluate the thermal limit allowance for uncertainties.

4. Determine the accuracy of process computer correlations which are used to interpret nodal powers from TIP signals.

To accomplish the first two objectives comparisons of XY thermal and XY gamma distributions were made. Results of these comparisons are presented in Section 4. The remaining objectives were reached by comparing the OD-1 thermal distribution to the gamma scan with results appearing in Section 5. Methods used in calculating the Ba-140 distributions and the gamma TIP signal-to-power correlation are discussed in Section 3. Results and conclusions are summarized in Section 2.

The gamma scanned bundles comprise a full octant of the core, 75 bundles, plus several additional four bundle sets surrounding TIP locations, for a total of 106 bundles. The extra four bundle sets were scanned to permit evaluation of TIP asymmetries. Most of the measurements were made at 12 evenly spaced axial locations with additional nodes measured for those bundles adjacent to partially inserted control blades. The presence of a significant number of partially inserted control blades permitted a detailed evaluation of process computer power distribution accuracy in the vicinity of control blades.

Predicted Ba-140 distributions are derived from process computer power distributions near the end of Cycle 1. These power distributions were calculated off-line with a much coarser time mesh than that used by the on-line process computer. Reactor state variables were derived from selected plant operating data, but they do not always represent averages over the simulated time intervals. Exposure accumulation is, however, normalized to the on-line determination. Comparisons of off-line and on-line calculated power distributions near the end of cycle show very small differences, indicating that the off-line simulation is a reasonable approximation of the on-line calculations. A more detailed discussion of the simulation is presented in Subsection 3.2.

Comparisons in this report are based on either the 75 bundle set representing an octant of the core or the entire 106 bundle set. The 75 bundle set was chosen when it was appropriate to preserve center bundles to edge bundles and controlled bundles to uncontrolled bundles ratios. When it was more important to maximize the number of data points, the 106 bundle set was used.

For comparison purposes, each of the Ba-140 distributions was normalized such that the average over 75 bundles with 12 odd numbered nodes per bundle is 1.0. These normalized values are contained in the appendices of the report and were used in making the majority of comparisons. In some instances, as noted in the report, it was more convenient to use a normalization over either the entire 106 bundle set or some subset of the 106 bundles.

Comparisons in this report are always made between Ba-140 values. However, all conclusions reached apply directly to power since relative Ba-140 values are not very different from the relative power values for the steady state power distribution near end of cycle.

2. SUMMARY AND CONCLUSIONS

Detailed comparisons of measured and process computer derived Ba-140 distributions were made to quantify the process computer accuracy and determine the improvement in margin from thermal limits resulting from use of the gamma TIP. Table 2-1 summarizes the key results and comparisons.

Peak bundle power is a key thermal performance parameter because it determines the margin from the licensed MCPR* limit. Since the MCPR varies inversely with the peak bundle power, a decrease in the computed value results in a proportional increase in the MCPR.

Peak nodal power is related to the licensed MAPLHGR** and peak linear heat generation rate limits, but the limits are affected by the local power distribution. However, since the limits ordinarily occur in one of the highest powered nodes, reductions in computed peak nodal power usually result in corresponding margin increases for MAPLHGR and peak linear heat generation rate.

Table 2-1 indicates that, for the end of Cycle 1 conditions for Hatch 1, gamma TIPS were more accurate and increased the margin to thermal limits by 3.0% relative to XY thermal TIPs. Since the integral asymmetry of the Hatch 1 thermal TIPs was fairly representative of most operating BWR's, the 3% margin improvement is representative of the expected gains for other BWR's when converting to gamma TIP's.

The standard deviations (σ) of the computed whole core nodal and bundle Ba-140 distributions are essentially the same for the XY thermal, XY gamma and OD-1 thermal TIP inputs. However, the uncertainty in the interior bundle power is used in the determination of the Safety Limit MCPR. The reduction in the uncertainty of the interior bundle power resulting from using the gamma TIP's could reduce (improve) the Safety Limit MCPR by 1.0 – 1.5%.

Process computer derived 106 bundle average axial power distributions are slightly biased in the axial direction for both XY gamma and thermal TIP's. The computed relative Ba-140 values, when compared to the gamma scan, are too low by ~6% at the bottom of the core and too high by ~6% at the top. This systematic bias increases the standard deviation of computed nodal Ba-140 activities and indicates that improvements might be possible in the correlation used to convert from the TIP signal to the power of the nearby fuel rods.

The nodal Ba-140 comparisons show that the process computer underestimates the power of controlled nodes relative to adjacent uncontrolled nodes by about 5%. Improving the correlation used to account for control rod effects on the power allocation to the four nodes surrounding the TIP is indicated, and such improvements would increase thermal margins by 0–3% depending upon reactor conditions.

Nodal comparisons also indicate that the uncertainty of the relative powers of the four nodes surrounding a TIP would be 5–8% with optimized control rod power allocation factors. This indicates that further improvements to the four node power allocation factors, especially the method used to correct for the effects of gross gradients in the nodal (radial) power distribution, could result in additional thermal margin improvements.

Radial comparisons show that the process computer underestimates the integrated Ba-140 activity of the edge bundles by 7.7% for the XY thermal and 9.3% for the XY gamma TIP. As a result of this bias the calculated power of the central bundles and the peak bundle are too high by about 1%. Although the thermal margins for the EOC-1 Hatch 1 state could be improved by about 1% by altering the correlations used to compute edge nodal powers from interior TIP readings, further work is needed to develop generally applicable improved correlations.

Comparisons of gamma scan measured bundle integrated Ba-140 values for symmetric bundle pairs showed little asymmetry (<1%). The standard deviation of the integral ratios for symmetric bundles (relative to the gamma scan ratios) was only 1.6% for the gamma TIP derived values compared to 6.6% for the thermal TIP derived values. This substantial reduction in TIP asymmetry when using gamma TIP signals causes the reduction in computed bundle and nodal peaking factors. Axial comparisons for symmetric four bundle sets also show that the gamma TIP consistently matches the measured nodal asymmetries better than the thermal TIP.

*Minimum Critical Power Ratio
**Maximum Average Planar Linear Heat Generation Rate

Table 2-1
COMPARISONS OF MEASURED AND PROCESS COMPUTER CORE THERMAL PERFORMANCE PARAMETERS (HATCH 1 EOC 1 GAMMA SCAN)

Parameter	Measured	Process Computer XY Thermal	Process Computer XY Gamma	Process Computer OD-1 Thermal
Maximum Bundle Power	1.255	1.369	1.332	1.371
Error in Maximum Bundle Power	--	+9.1%	+6.1%	+9.2%
σ_1* (Octant Bundles)	--	6.8%	6.6%	7.1%
σ_2* (Interior Bundles)	--	4.5%	3.4%	4.9%
Maximum Nodal Power	1.908	2.066	2.008	2.030
Error in Maximum Nodal Power	--	+8.3%	+5.2%	+6.4%
σ_3* (Octant Nodes)	--	9.7%	10.0%	8.4%
σ_4* (Interior Nodes)	--	8.8%	9.0%	6.6%

*σ_1 is the standard deviation of the differences between measured and calculated bundle integrated powers for all bundles in the measured octant.

σ_2 is the standard deviation of the differences between measured and calculated bundle integrated powers for all non-edge bundles in the measured octant.

σ_3 is the standard deviation of the differences between measured and calculated nodal powers for all bundles (12 nodes per bundle) in the measured octant.

σ_4 is the standard deviation of the differences between measured and calculated nodal powers for all non-edge bundles (12 nodes per bundle) in the measured octant.

where the standard deviation (σ) for a set of differences $d_1, d_2, \ldots d_n$ is defined as

$$\sigma = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n} (d_i - \bar{d})^2}$$

where

$$\bar{d} = \frac{1}{n}\sum_{i=1}^{n} d_i$$

3. PREDICTION OF Ba-140 DISTRIBUTIONS USING TIP DATA

3.1 INTRODUCTION

For direct comparisons of the TIP results with the gamma scan Ba-140 benchmark data, Ba-140 distributions are calculated from the thermal neutron and gamma TIP signals obtained during the 100 day period prior to the end of Cycle 1. The Ba-140 calculations first require conversion of the thermal neutron and gamma TIP signals to power distributions followed by calculation of the Ba-140 yield which is then integrated over all time prior to the end of Cycle 1.

Similar calculational methods were used for both detector types with the exception that a special signal-to-power correlation was used to interpret the gamma TIP data. Nodal power distributions were calculated at operating states corresponding to the TIP data sets using the off-line process computer simulator (BUCLE). The model used by the off-line simulator is the same as that used in the process computer at the site. The nodal power distribution is then converted by a separate calculation to a Ba-140 distribution as described in Chapter 6 of Reference 2 and summarized in Section 3.4 of this report. The Ba-140 distributions are referred to as the XY gamma, XY thermal, or OD-1 thermal distribution depending on the source of the signal distributions.

3.2 CALCULATION OF PROCESS COMPUTER POWER DISTRIBUTIONS

Each set of axial signal distributions consists of detector readings at 24 equally spaced locations over the active fuel length for each of the 31 in core instrument guide tubes. Locations of the instrument tubes and their assigned numbers are illustrated in Figure 3-1. The process computer uses TIP data, operating state information, and nodal exposures to perform a power distribution calculation. Descriptive information of the plant and fuel as well as necessary correlation constants are contained within the plant and cycle specific data bank.

The first step in the calculation of the bundle power distribution from thermal TIP signal data is to calculate the average power in the four fuel rods immediately surrounding the TIP position (see Figure 3-2). The relationship used is derived from detailed nuclear four-bundle cell calculations, resulting in a correlation dependent upon the adjacent four-bundle average exposure and void fraction, but independent of adjacent control rod positions. The data have been curve-fitted with the following correlation.

$$\begin{aligned} PAR(L,K) = [&CAR_1 + CAR_2 \cdot E + CAR_3 \cdot E^2 + CAR_5 \cdot EV + CAR_6 \cdot E^2 V + CAR_7 \cdot EV^2 \\ &+ CAR_8 \cdot V + CAR_9 \cdot V^2 + CAR_{10} \cdot V^3] \cdot ER(L,K) \end{aligned}$$

where

$PAR(L,K)$	=	Four adjacent rod average power at radial position L and axial position K
$ER(L,K)$	=	TIP effective reading at position L,K
E	=	Average exposure of four adjacent fuel segments, GWd/t
V	=	Average void fraction in four adjacent fuel segments, fraction
CAR_1-CAR_{10}	=	Correlation constants, dependent upon fuel configuration type
L	=	Identification of the detector radial location.
K	=	Identification of the detector axial location.

The next step in the power distribution calculation is to calculate the average power of the four-bundle fuel segments surrounding the given TIP string at each specified elevation, given the four rod average power at that position. The curve-fitted correlation derived from the nuclear cell calculations involves a coupled void fraction-control pattern and a separable exposure-dependent factor, as follows:

$$P4B(L,K) = \frac{PAR(L,K)}{FL(I) \cdot [1 - FV(I) \cdot V] \cdot [1 + FE_1 \cdot E + FE_2 \cdot E^2 + FE_3 \cdot E^3]}$$

where

$P4B(L,K)$ = Four-bundle average power at position L,K
$PAR(L,K)$ = Four adjacent rod power at position L,K
E = Four-segment average exposure, GWd/t
V = Four-segment average void fraction, fraction
$FE_1 - FE_3$ = Correlation constants, dependent upon fuel configuration type
$FL(I)$ = Control rod pattern and configuration type dependent factor
$FV(I)$ = Control rod pattern and configuration type dependent void multiplier (same dependency as FL(I) above)

Finally, the power in an individual fuel bundle segment located adjacent to an interior TIP string is given by,

$$P(L,J,K) = P4B(L,K) \cdot PAL(L,J,K)$$

where

$P(L,J,K)$ = Fuel segment power at position L,J,K
J = Identification of one of the four bundles surrounding detector L

The "power allocation factor" PAL(L,J,K) is separated into the following factors,

$$\begin{aligned} PAL(L,J,K) = {} & RPM(M(L,J,K)) \cdot [1 + CVM(M) \cdot (VF(L,J,K) - V4B(L,K))] \\ & \cdot [1 + CEM \cdot (EXF(L,J,K) - E4B(L,K))] \\ & \cdot CTM(ITYP,IT) \cdot GR(L,J,K) \end{aligned}$$

where

$M(L,J,K)$ = Control rod pattern and orientation with respect to segment L,J,K
$RPM(M)$ = Control rod pattern dependent power mismatch factor
$V4B(L,K)$ = Average four-bundle void fraction at position L,K
$VF(L,J,K)$ = Void fraction in segment L,J,K
$CVM(M)$ = Rod pattern dependent void fraction mismatch factor
$E4B(L,K)$ = Average four-bundle fuel exposure (MWd/t) at L,K
$EXF(L,J,K)$ = Fuel exposure (MWd/t) of segment L,J,K
CEM = Constant coefficient in exposure mismatch factor
$ITYP$ = Type of fuel bundle in position L,J
IT = Configuration type
$CTM(ITYP,IT)$ = Bundle and configuration type dependent power mismatch factor
$GR(L,J,K)$ = Gross gradient dependent power mismatch factor

The gross gradient-dependent power mismatch correction, GR(L,J,K), for each fuel bundle is a weighting factor obtained by fitting a polynomial to the three effective readings in a diagonal line intersecting the given bundle, interpolating to the position of the bundle, and normalizing with respect to the central reading.

The segment powers are then normalized so that their sum is equal to the core thermal power determined from the heat balance.

The signal to power correlation used to interpret the gamma TIP data is the same as that described above except the TIP signal is first correlated to sixteen instead of four adjacent fuel rods and then to the four bundle average power. Different values for $CAR_1 - CAR_{10}$ are used in this correlation. Their derivation will be explained in Section 3.3. Additional information concerning the calculational methods used by the process computer is contained in Reference 3.

Thermal TIP axial signal distributions were also collected throughout Cycle 1 using the OD-1 function of the process computer; these are documented in Reference 4 along with the reactor design and operating history. Times during the last 100 days of Cycle 1 at which the OD-1 function was run are indicated by "OD-1" on Figures 3-3 through 3-6. These data were used in BUCLE to simulate power and exposure distributions existing within the reactor throughout the entire cycle.

During the last 60 days of Cycle 1 operation three axial signal distribution data sets were collected with both the thermal neutron and gamma sensitive detectors and recorded on an XY-plotter. These data are reported in Reference 1. Measurement periods during the last 60 days are indicated on Figures 3-4 through 3-6 by "XY Plots."

Nodal exposure distributions corresponding to the XY-plotter data sheets were obtained from process computer drum dumps performed at the site. Power distribution calculations were completed using BUCLE.

For thermal limits evaluations the on-site process computer used OD-1 thermal axial signal distributions. Since BUCLE is used in the process of calculating XY gamma and XY thermal distributions, it is important to verify the equivalence of the on-site process computer and BUCLE calculations. Comparisons were made between BUCLE power and exposure distributions based on OD-1 data and corresponding distributions obtained from process computer drum dumps. The standard deviation of nodal exposure differences near end of cycle was 2.2%. The standard deviation of the differences of the nodal powers was only 0.5% with the largest difference occurring in end nodes.

3.3 GAMMA TIP SIGNAL TO POWER CORRELATIONS

As discussed in Section 3.2, BUCLE power distributions were calculated at operating states corresponding to the full-core thermal neutron and gamma TIP data sets. Power distributions determined with the gamma TIP data were calculated with BUCLE using a modified databank to properly interpret the gamma TIP signal. This section contains a description of the preliminary gamma TIP to power correlations and a brief summary of the analytical methods used to generate the BUCLE databank constants for the gamma TIP system.

The calculation of bundle power distributions through BUCLE with gamma TIP data is analogous to the calculational procedures described in Section 3.2 and Reference 3 for the thermal neutron TIP. In brief, the calculation of BUCLE bundle power distributions with gamma TIP data consists of evaluating three correlations. Figure 3-7 is a flow diagram of the bundle power calculation with the gamma TIP system. The first step in the calculation of the power distribution is to calculate a weighted-average power for the 16 fuel rods surrounding the TIP position, as shown in Figure 3-8 from the recorded gamma TIP data. This relationship was derived from detailed photon Monte Carlo gamma TIP cell calculations and is expressed in a correlation dependent upon the adjacent four-bundle average exposure and void fraction. The calculational procedures used in deriving the constants for this preliminary correlation form are discussed later in this section. The next step in the power distribution calculation is to calculate the average power of the four-bundle fuel segments surrounding the TIP string at each specified fuel elevation, given the 16-rod weighted average power at that position. This relationship is analogous, in form, to the correlation for the thermal neutron TIP system which relates the average four-bundle power to the average four corner rod power. The correlation constants derived for both detector systems are generated from the standard BWR lattice calculations. The third correlation, which allocates the power from the four-bundle average segment to the individual fuel bundle segments adjacent to the TIP string remains, unchanged with the gamma TIP system. The remainder of this section describes the analytical procedures used to generate the databank constants for the preliminary correlation relating local rod power to adjacent gamma TIP reading.

To determine the relationship between the 16 adjacent fuel rods and the gamma TIP signal, as represented by the first correlation, preliminary photon radiation transport calculations were made using a photon Monte Carlo code. These photon Monte Carlo calculations were coupled to standard BWR lattice calculations through an auxiliary code which generated the appropriate gamma ray source distributions. These photon source distributions were generated with isotopic gamma spectral data and three group neutron reaction rates from the BWR lattice calculations. The library of gamma spectral data for each lattice material consists of photons produced from neutron radiative captures and neutron-induced fissions in a multi-group gamma energy structure. Figure 3-9 is a flow diagram of the gamma TIP response calculation used to derive the correlation constants relating local rod power to gamma TIP signal.

The auxiliary code generates region-averaged gamma spectra per neutron absorbed as a function of neutron and gamma energy group by weighting each material photon spectrum of a region with the three group neutron microscopic capture and fission cross sections and number densities. The region-averaged gamma spectra were then multiplied by the three group neutron macroscopic absorption cross sections and fluxes to generate the distributed photon sources for the Monte Carlo calculations.

The geometry for the Monte Carlo calculations was modeled after the standard GE 7x7D lattice design for Hatch 1 initial fuel. A 0.700 inch (outside diameter) instrument tube containing two LPRM cables, coolant, and TIP assembly was represented in the narrow-narrow water gap region of the Monte Carlo code geometry (see Figure 3-10). For these calculations, the gamma-sensitive ionization chamber response was assumed to be proportional to the photon energy deposited within the active sensor region. (Refer to Figure 3 of Reference 1 for schematic drawing of the gamma TIP chamber.)

Monte Carlo gamma TIP cell calculations were made with a symmetric four-bundle fuel configuration type from the Hatch 1 core representative of the central region of the cycle 1 core at mid-core elevation. The cell geometry (see Figure 3-10) consisted of a gamma chamber and four fuel rods in a 2x2 fuel rod array with reflective boundary conditions. To achieve a target correlation accuracy of 2% to 3%, the results of two independent Monte Carlo calculations with 200,000 source photons each (100 batches of 2000 source gammas per batch) were combined. In total, eight Monte Carlo gamma TIP cell calculations were performed; two for each of the four cases defined below.

Case	Bundle-Average Void Fraction	Bundle-Average Exposure
1	0%	5 GWd/t
2	0%	10 GWd/t
3	40%	5 GWd/t
4	40%	10 GWd/t

Assuming a correlation form analogous to that relating the average adjacent four corner rod power to the U-235 thermal neutron TIP signal as presented in Reference 3, and ignoring second and higher order terms, the weighted-average power of the 16 fuel rods to gamma TIP signal preliminary correlation is written:

$$\frac{\overline{P16}}{ER} = CAR_1 + CAR_2 \cdot E + CAR_5 \cdot EV + CAR_8 \cdot V$$

where:

$\overline{P16}$ = 16 rod weighted-average power	CAR_1 = 1.03471
ER = Gamma TIP reading	CAR_2 = –0.00694215
E = Average four-bundle exposure	CAR_5 = 0.0132231
V = Average four-bundle void fraction	CAR_8 = –0.185950

The correlation constants (CAR's) were determined by fitting the above expression with the results of the four pairs of coupled neutron-gamma calculations at the aforementioned void and exposure states. The gamma TIP readings (ER's) were assumed to be proportional to the photon energy deposition in the active sensor region of the four different Monte Carlo photon calculations. The 16 rod weighted-average powers ($\overline{P16}$'s) were determined with the fuel rod power peaking factors for the symmetric four-bundle standard BWR lattice calculations and the associated fuel rod gamma geometric and attenuation weighting (W_{ij}'s) factors (which were determined independently of this research program). The 16 rod weighted-average power is expressed:

$$\overline{P16} = \sum_{j=1}^{4} \sum_{i=1}^{4} W_{i,j} \cdot P_{i,j}$$

where:

$\overline{P16}$ = 16 rod weighted-average power
$W_{i,j}$ = Fuel rod gamma weighting factors
$P_{i,j}$ = Fuel Rod peaking factors
i = Fuel rod index
j = Fuel bundle index

The calculated gamma TIP correlation constants (CAR's) relating the 16 rod weighted-average power to the gamma TIP signal were incorporated into the Hatch-1 BUCLE gamma TIP databank assuming the constants are independent of fuel configuration. The BUCLE databank for the gamma TIP was also modified by implementing the correlation constants which were derived from the standard BWR lattice calculations relating the average four-bundle power to the 16 rod weighted-average power. The BUCLE power allocation databank constants relating the individual bundle power to the average four-bundle power remained unchanged for the gamma TIP system. The actual correlation forms used in the BUCLE power distribution calculations with the three full-core gamma TIP data sets remained unchanged.

3.4 CONVERSION OF END OF CYCLE POWER DISTRIBUTIONS TO Ba-140 DISTRIBUTIONS

The gamma scanning technique used at Hatch 1 at end of Cycle 1 measures the 1596 keV gamma which accompanies the beta decay of La-140. The half-life of La-140 is 40.23 hours. Accumulation of La-140 in exposed fuel is governed by the beta decay of the fission product Ba-140, which has a half-life of 12.79 days. Thus, the Ba-140 distribution is characteristic of the integrated power history of the core during the last 2 to 3 months before a shutdown. Following a period of approximately 10 days after reactor shutdown, the La-140 activity is decaying at a rate determined by the half-life of Ba-140 and is proportional to the Ba-140 atom density (see Figure 3-11).

In general, proper utilization of the measured La-140 intensities for benchmarking power distribution methods requires the predicted end-of-cycle Ba-140 distribution to be calculated. By far the most sensitive input to this calculation is the power distribution history. Figure 3-12 gives a flow chart of the process; this material is taken directly from Reference 2.

The relationship between the fission rate (F) at time t, at a point $\vec{r}$, and the power (P) at that point, is given by

$$F = \frac{KP}{\langle E \rangle} \text{ fissions/sec-cm}^3,$$

where K is a proportionality constant with the value

$$K = 6.2383 \times 10^{18} \; \frac{\text{MeV/sec,}}{\text{MW}}$$

$$P = \text{power density at } \vec{r}, \text{ MW/cm}^3,$$

and

$$\langle E \rangle = \frac{\sum_k (\Sigma_{fk} \phi) E_k}{\sum_k (\Sigma_{fk} \phi)} \equiv \sum_k f_k E_k = \text{the average energy per fission,}$$

ϕ = neutron flux at position $\vec{r}$,

Σ_{fk} = macroscopic fission cross-section for fissile nuclide k at position $\vec{r}$, cm^{-1},

E_k = energy per fission of the k^{th} fission cross-section, MeV,

f_k = fission fraction of nuclide k at $\vec{r}$.

Then the relationship between the production rate of Ba-140 (S_B) and power, at a time t, is given as

$$S_B = \left\{ \sum_k X_{Bk} f_k \right\} F = \left\{ \sum_k X_{Bk} f_k \right\} \frac{KP}{\langle E \rangle} \; \frac{\text{Barium atoms,}}{\text{cm}^3 \text{ sec}}$$

where

X_{Bk} = cumulative fission yield of Ba-140 from fissile nuclide k.

To determine the total accumulation of Ba-140, then, requires solving the equation

$$N_B(t) = \int_{t_0}^{t_f} [S_B(t) - \lambda N_B(t)] \, dt,$$

where

N_B = Ba-140 atom density, atoms/cm^3,

λ = Ba-140 decay constant = 0.05419 day^{-1}, and the interval of integration is the entire irradiation period. Neutron absorption by Ba-140 is negligible relative to decay. Since Ba-140 may not be one of the fission products normally followed by the core simulator it may be necessary to determine it by independent calculation. Some simplifying assumptions can generally be made to assist in the solution of this problem. In the case of most fuel under consideration, the number of fissile nuclides, k, which contributes significantly to the fission rate, is small. Table 3-1 shows the 4 largest contributors and their respective yields for a 2.34% enriched UO_2 bundle at a 40% voided condition. Similar calculations of effective yields at 0% and 70% voids show less than 1% difference from the above case. An additional assumption that can be made is to assume that P and <E> are stepwise constant over the interval $\Delta t = t_n - t_{n-1}$, therefore replacing the time integral with successive substitution, as;

$$N_B(t_n) = \frac{S_B(t_n)}{\lambda} + \left[N_B(t_{n-1}) - \frac{S_B(t_n)}{\lambda}\right] e^{-\lambda \Delta T},$$

where

$n = 1,2,\ldots m,$

$N_B(t_m)$ = end of cycle Ba-140 atom density.

The production term, S_B, can be further simplified. $\langle E \rangle$ can be approximated as constant. To determine the *relative* distribution of Ba-140 rather than absolute atom densities, power and effective yield are the only inputs, K and $\langle E \rangle$ being eliminated by normalization. This consideration is very useful in gamma scan and power comparisons, since only relative Ba-140 distributions are measured. The resulting formulation, using $S_B(t_n) = Y_eP(t_n)$, is

$$N_B(t_n)_d = \frac{Y_eP(t_n)}{\lambda} + \left[N_B(t_{n-1}) - \frac{Y_eP(t_n)}{\lambda}\right] e^{-\lambda \Delta t},$$

where

Y_e = effective yield $= \sum_{i=1}^{4} Y_iF_i$,

Y_i = cumulative yield for fissile nuclide i,

F_i = fraction of fissions for fissile nuclide i., and

i = 1,4 corresponds to the fissile nuclides U-235, U-238, Pu-239, and Pu-241.

The term $P(t_n)$ is the power distribution (one, two, or three dimensional), taken from the core simulator or process computer. Thus, in this mode of calculation, the gamma scan can serve as a benchmark for computer programs which calculate power distributions. The power distribution should be calculated for as many power levels and control configurations as is necessary to adequately represent the operating history of the reactor. Each distribution is then input in turn as $P(t_n)$. Minor control rod changes late in the cycle, which have little effect on the total power history of the core, can significantly affect the Ba-140 distribution for specific bundles. Therefore, it is desirable that the power level and control configuration remain constant near shutdown, such that the Ba-140 distribution of every bundle is allowed to equilibrate with a single power distribution.

The uncertainty in determining the barium distribution from the bundle powers, assuming the powers to be correct, is dependent upon the power and $\langle E \rangle$ remaining constant over the period Δ T, and the accuracy of determining Y_e, the effective yield for Ba-140 for that period. Naturally, finer Δ T steps will improve the accuracy of the calculation. The minor uncertainties in the calculation of Ba-140 from process computer power calculations or core simulators, combined with the consideration of measurement uncertainty and methods biases indicate that benchmarking of power distribution methods within 4% is reasonably achievable from the data resulting from this program. In specific comparisons, such as comparing bundle integrated values, even more accurate benchmarking is possible.

Each of the Ba-140 distributions was calculated using the available power distributions for the last 100 days of Cycle 1. For the XY thermal and XY gamma distributions there were only three power distributions, whereas there were five OD-1 thermal power distributions during this interval. Using the above equations the relative contribution of each interval to the total Ba-140 for the core at end of cycle was calculated. These values are given in Tables 3-2 and 3-3. The integrations were then performed on a nodal basis with the average power for each interval adjusted to give the correct relative contribution.

In order to determine how much the two additional power distributions changed the integrated OD-1 thermal Ba-140 distribution, an extra integration was performed using only the three OD-1 thermal power distributions which were closest in time when the XY plotter data was gathered. The standard deviation of the differences between these two distributions is only 1.2%, indicating that the two additional power distributions provide a very small increase in the accuracy of the simulation.

The three integrated Ba-140 distributions are based only on steady state, high power, high flow power distributions. However, a portion of the gamma scan measured Ba-140 was generated in operational states with reduced power and/or flow. Some of this Ba-140 buildup occurred with non-equilibrium xenon or rod patterns other than those used in calculating the power distributions. As a result, systematic errors exist in the calculated Ba-140 distributions which are not caused by inaccuracies in either the axial signal distributions or the process computer power calculations. Since one of the purposes of these measurements was to determine the overall accuracy of thermal limits calculated with the process computer system, it is necessary to evaluate the impact of these "simulation" errors.

An exact calculation of the simulation errors was not possible because of the limited number of process computer readouts available for low power conditions. However, using BUCLE, process computer power distributions were calculated for two representative states with reduced flow and power. Estimates of the magnitude of errors were made by computing nodal differences between the steady state power distributions and the power distributions with reduced flow and power, and then summing the differences such that they are weighted by their estimated relative contributions to the total amount of Ba-140 at the end of cycle.

Only the highest power bundles and the highest power nodes are of interest when evaluating thermal limits. The systematic errors in the simulation combine in a consistent direction to produce biases in the Ba-140 values for these locations. The simulations performed using the available power distributions underpredicted Ba-140 values for the 10 highest bundles by approximately 0.5% and overpredicted the 25 highest nodes by approximately 1.3%. Although these biases have not been rigorously computed, the estimated values given above will be used when evaluating the accuracy of the process computer in Section 5.

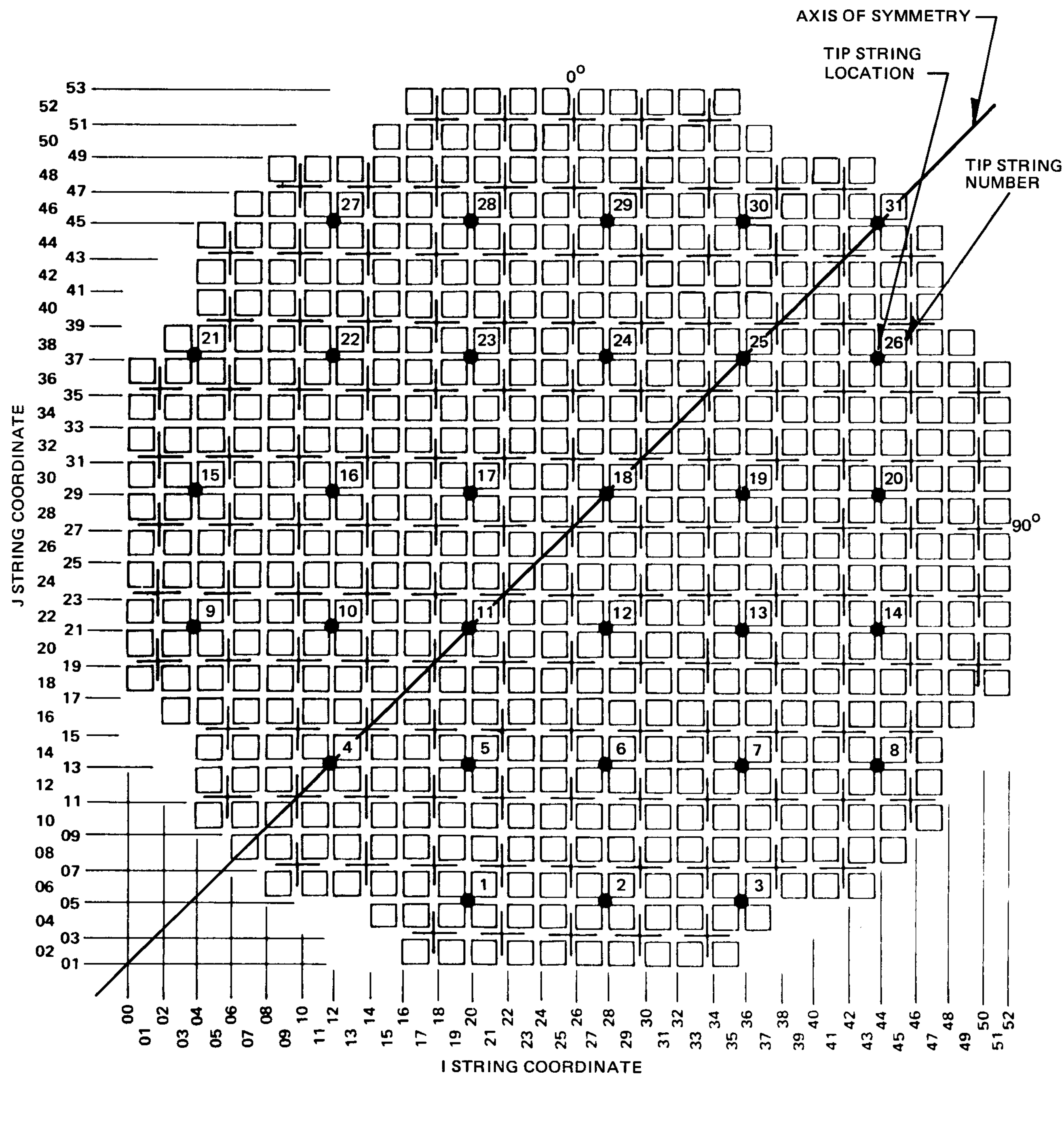


Figure 3-1. Traversing In-Core Probe (TIP) Locations for Hatch 1 Core

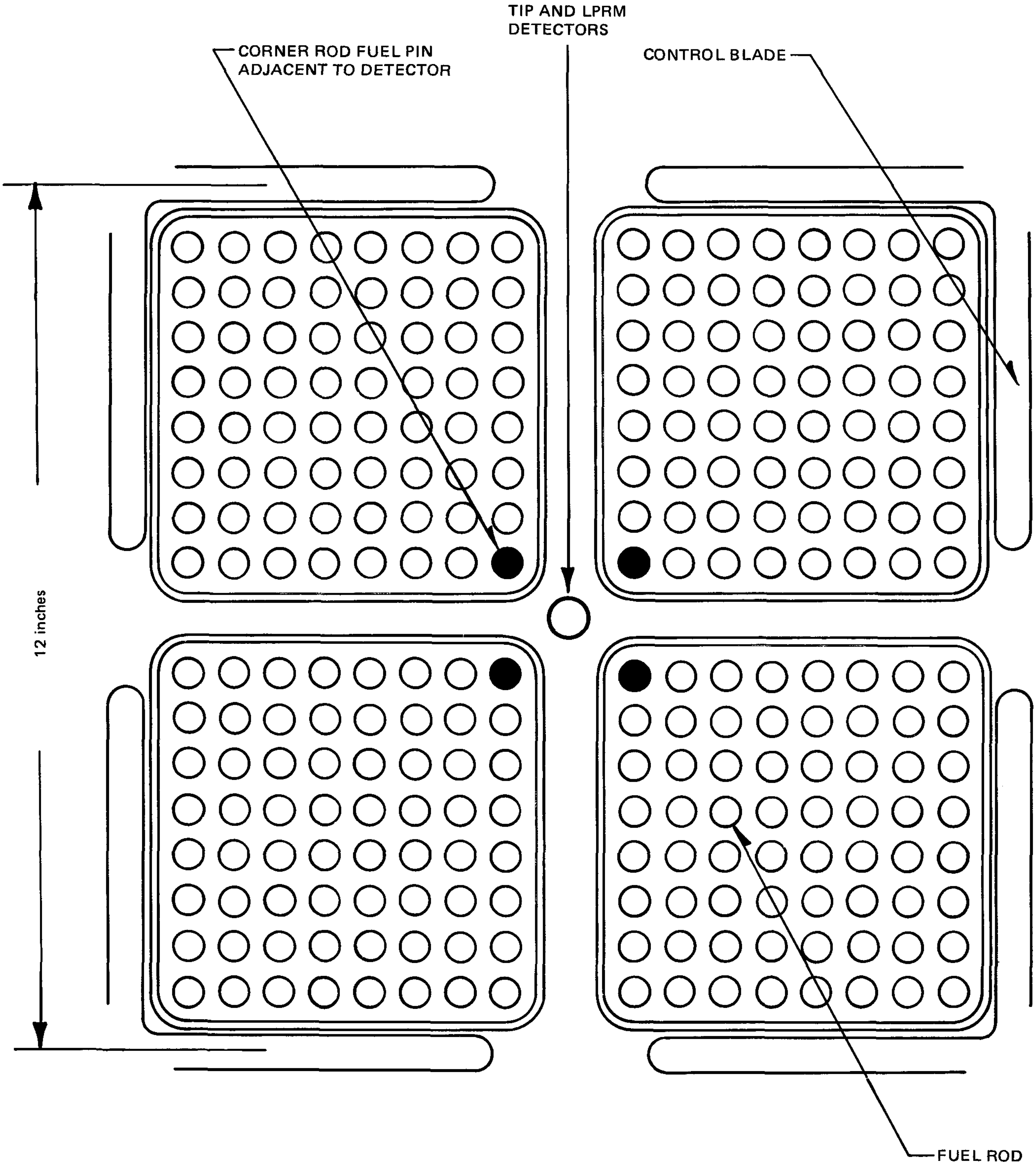


Figure 3-2. Four-Bundle Cell Showing the Four Adjacent Rods Which are Correlated to the Thermal TIP Signal

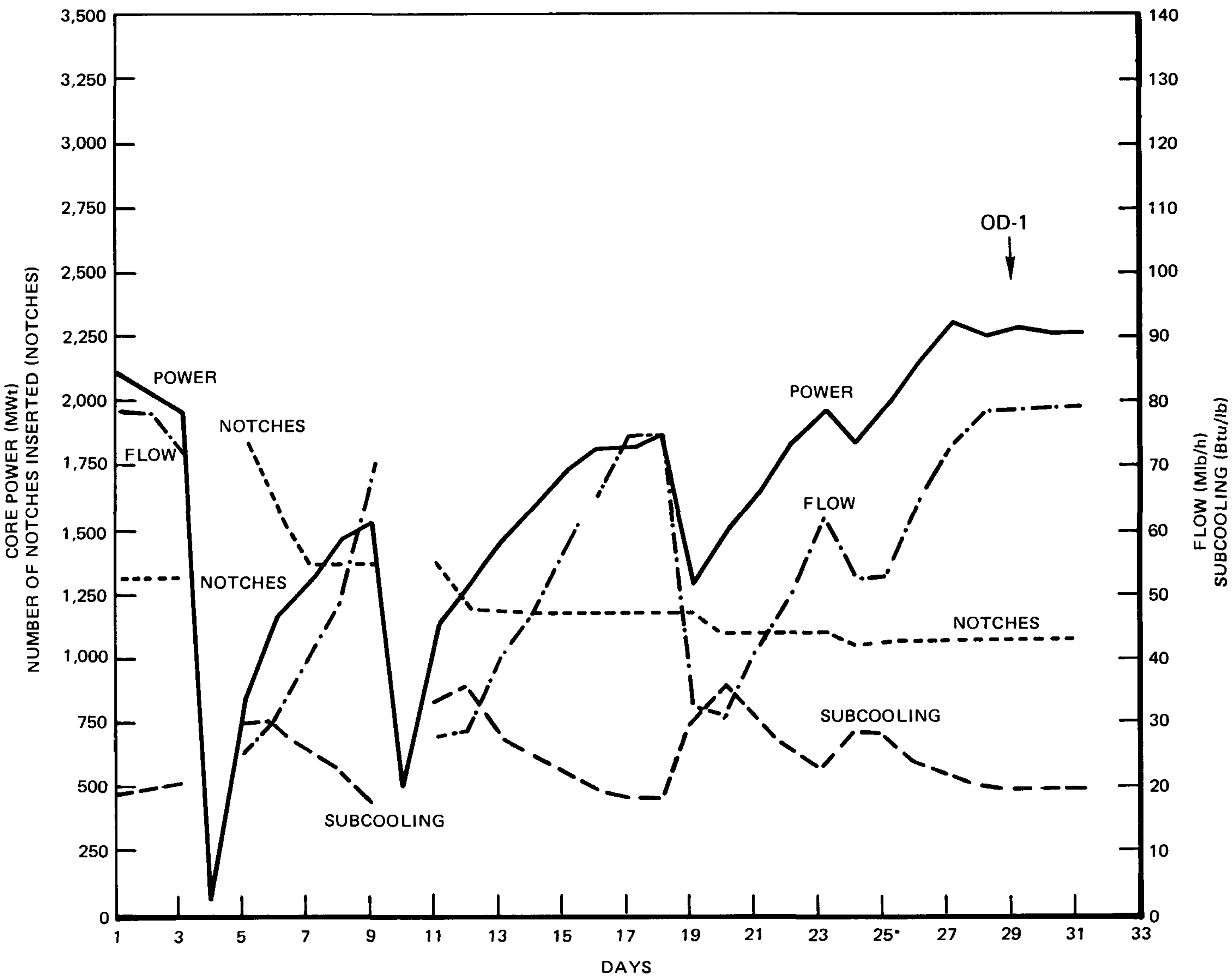


Figure 3-3. Data Summaries, December 1976

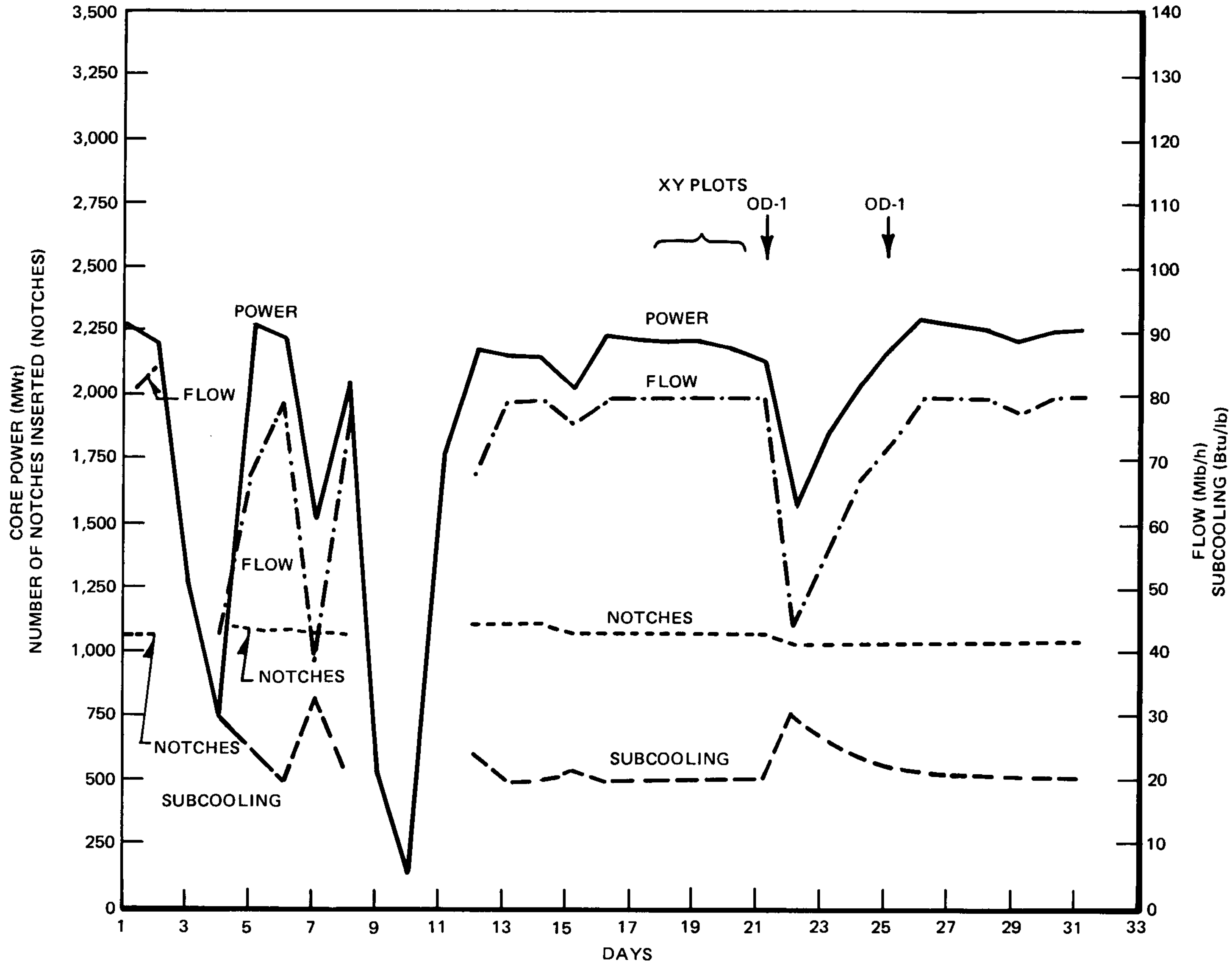


Figure 3-4. Data Summaries, January 1977

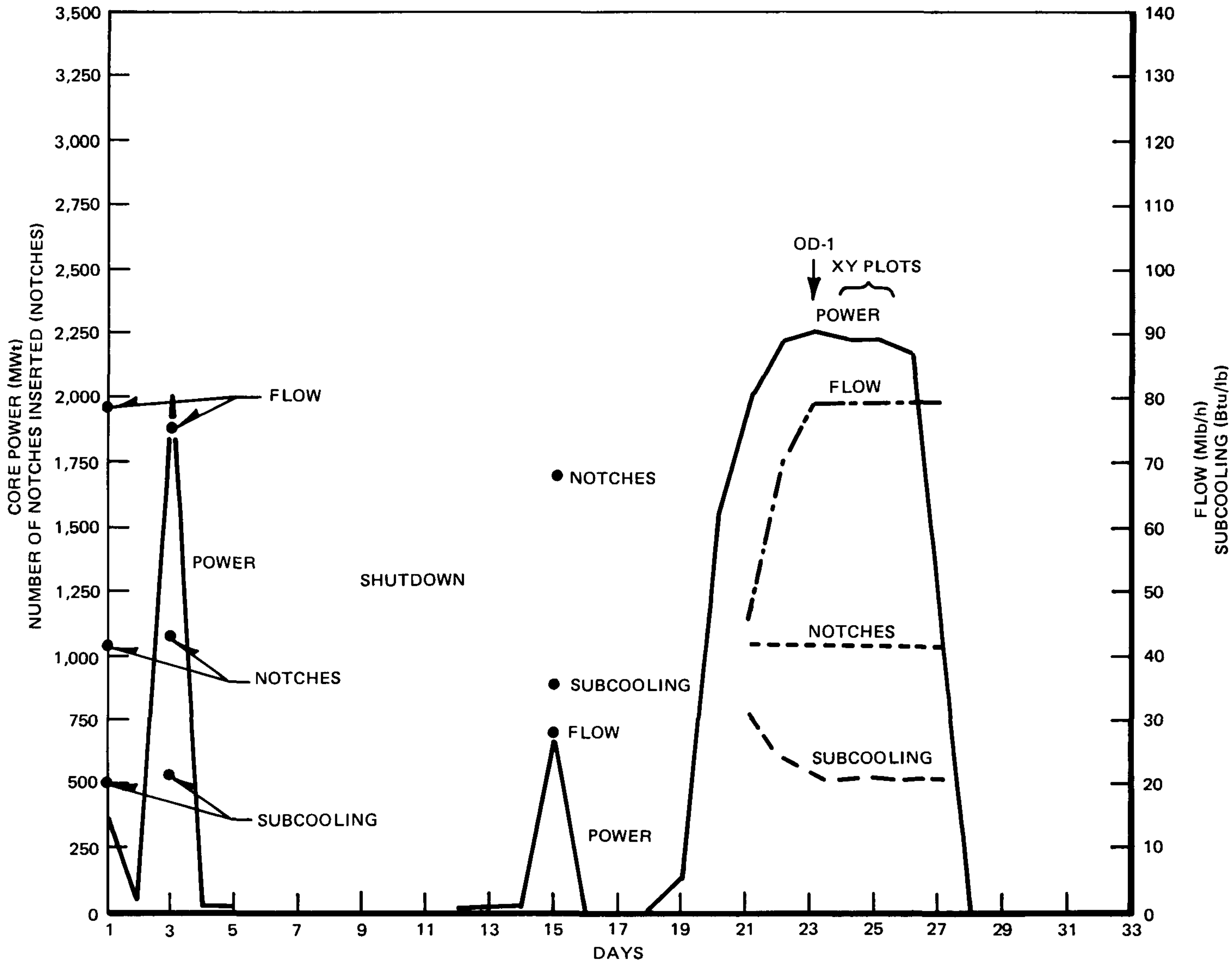


Figure 3-5. Data Summaries, February, 1977

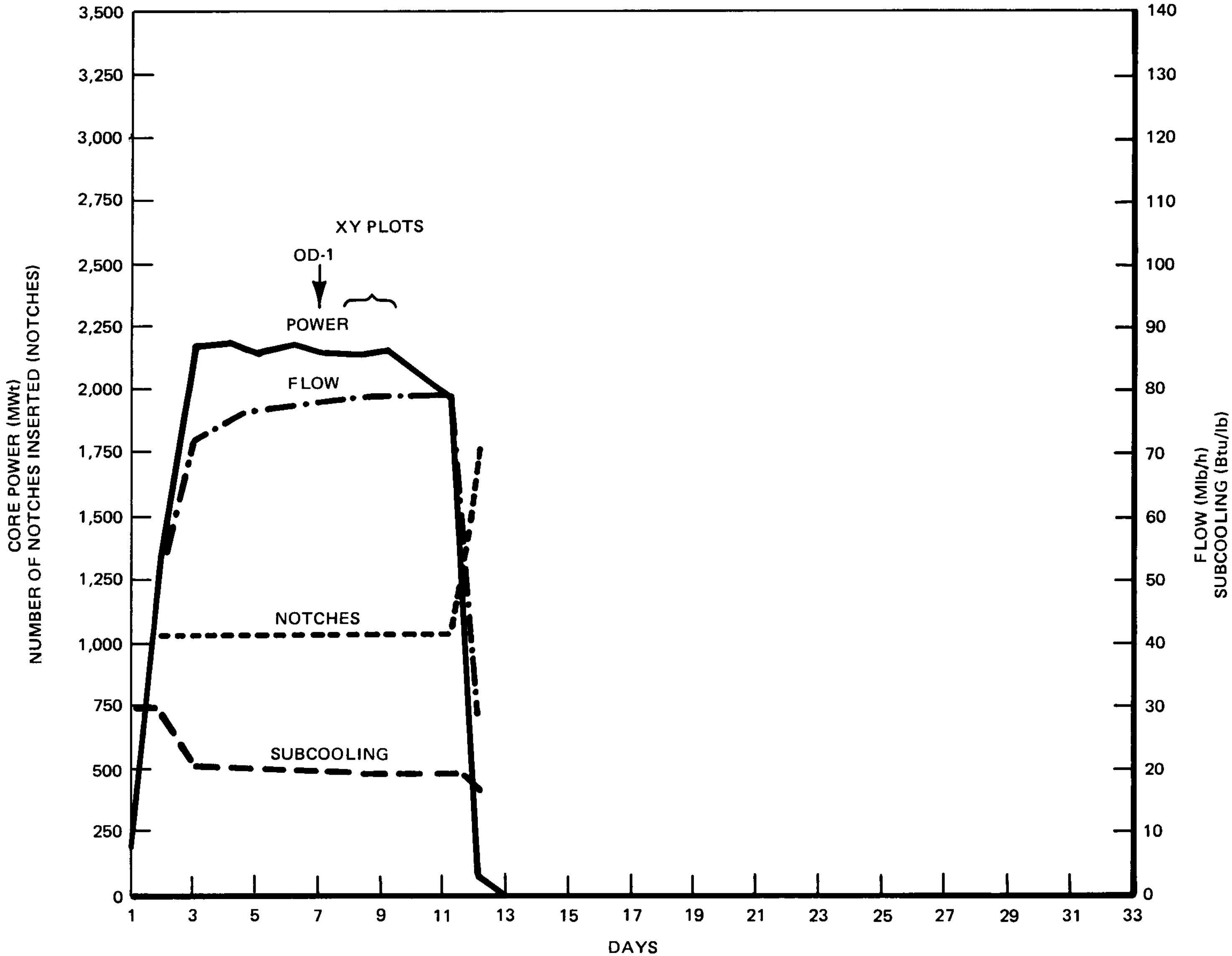


Figure 3-6. Data Summaries, March 1977

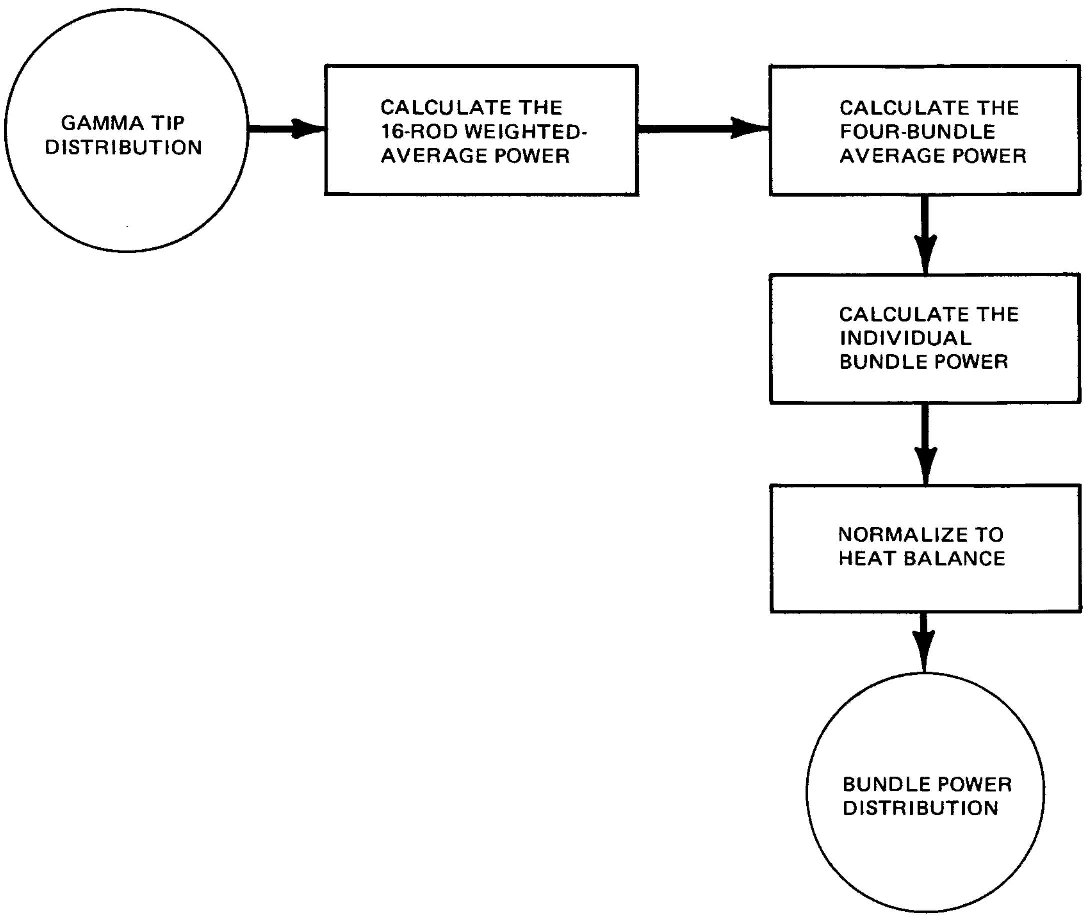


Figure 3-7. Flow Diagram of Bundle Power Calculation with Gamma TIP System

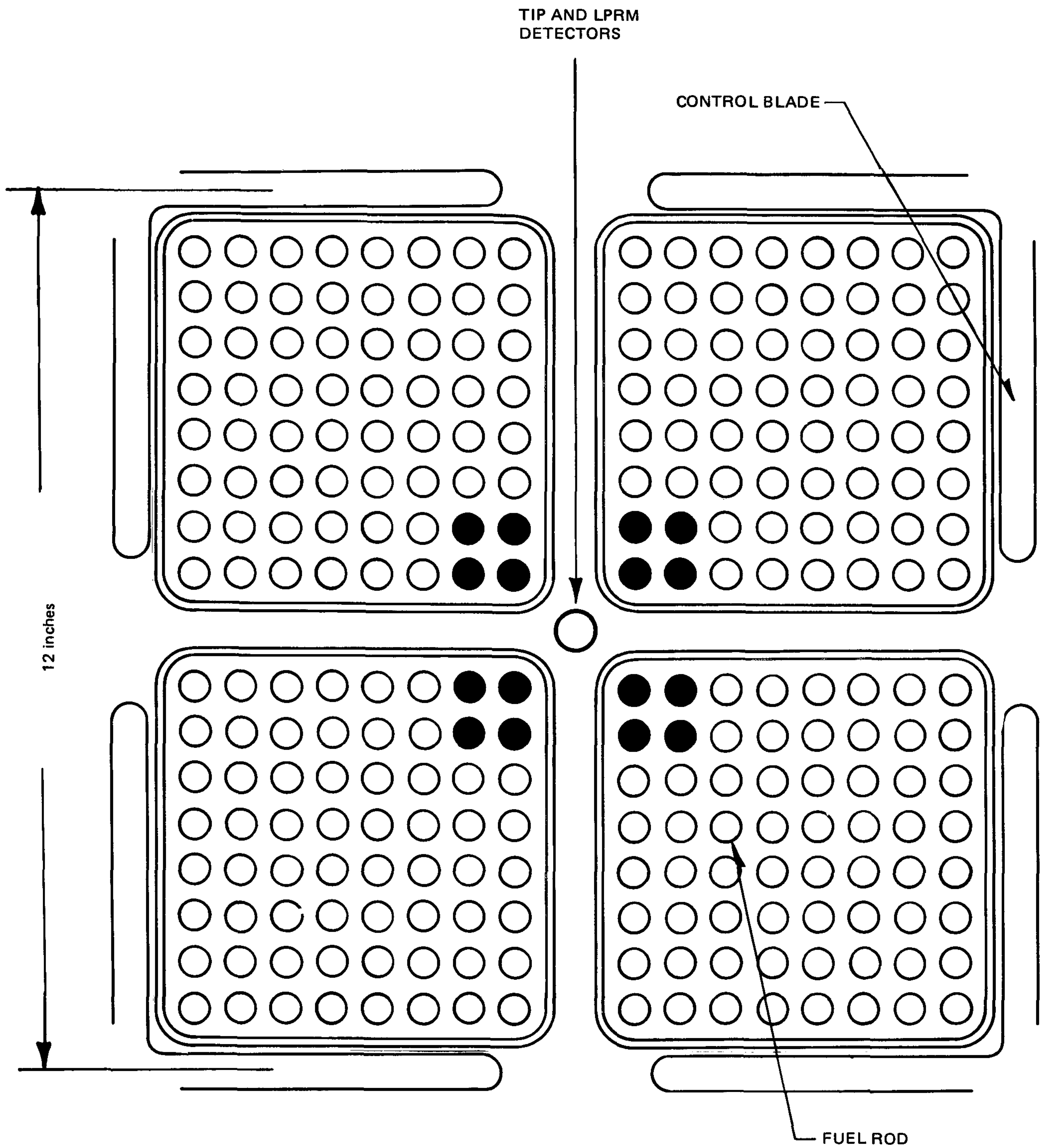


Figure 3-8. Four-Bundle Cell Showing the Sixteen Adjacent Rods Which Are Correlated to the Gamma TIP Signal

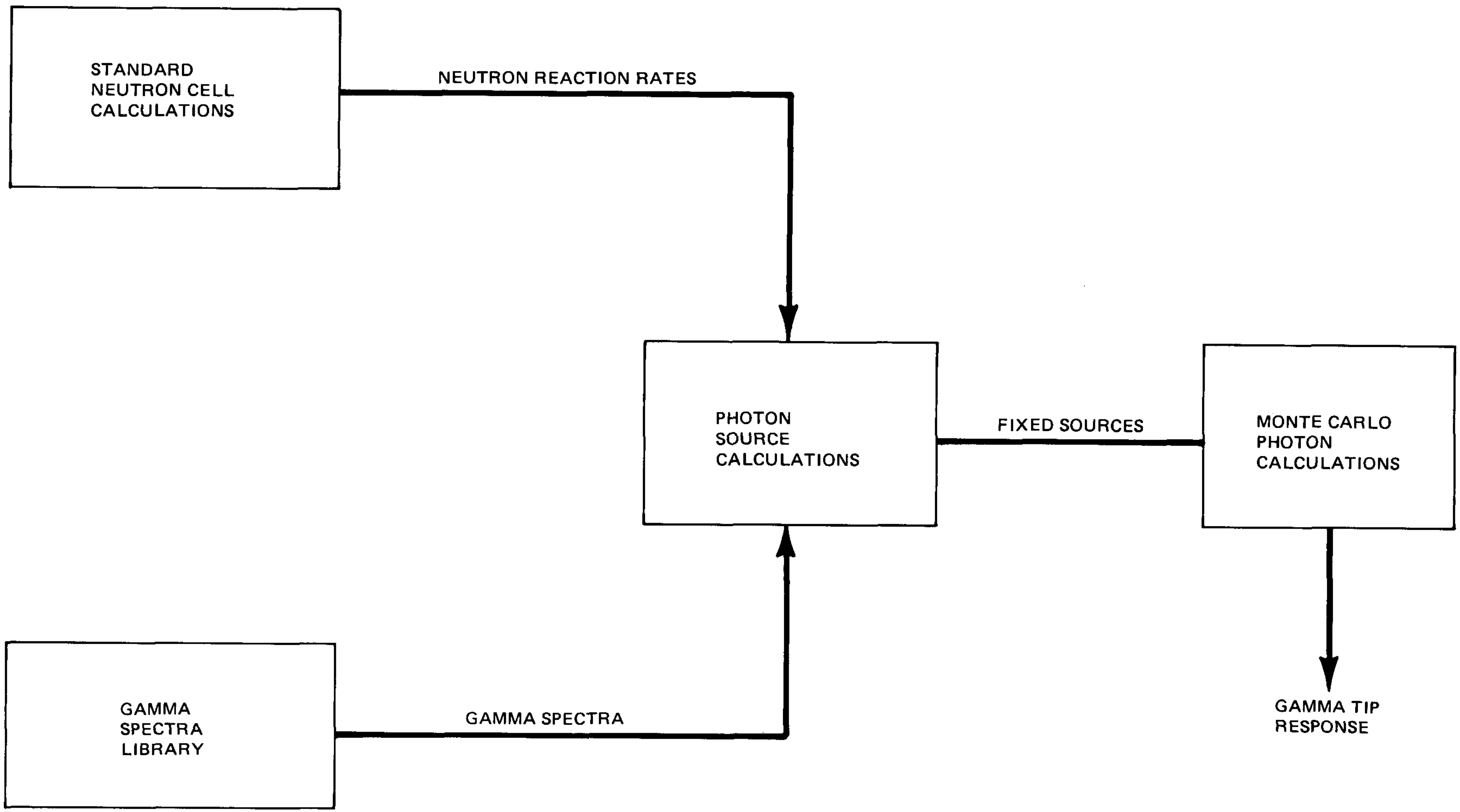


Figure 3-9. Flow Diagram of Gamma Tip Response Calculation

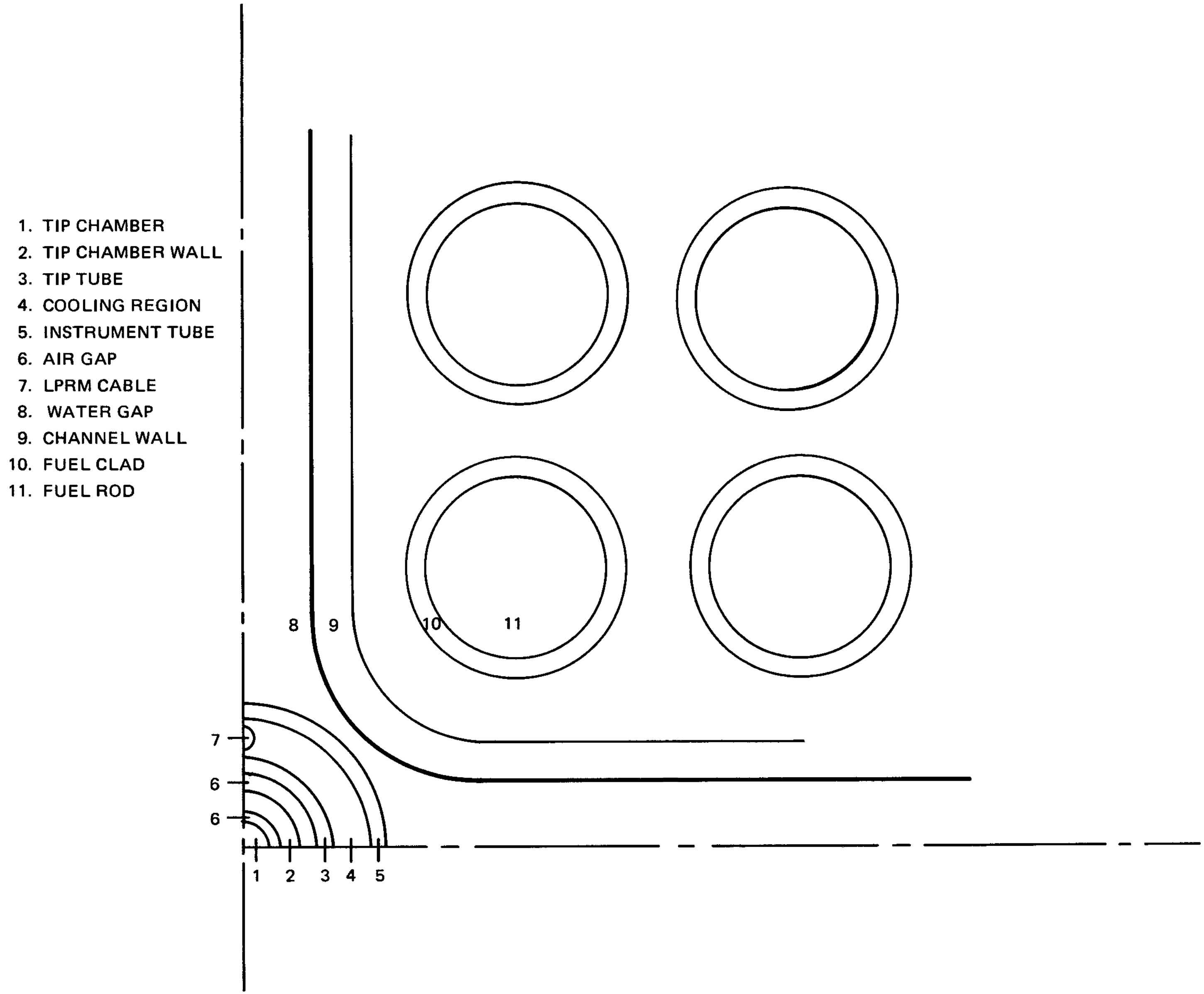


Figure 3-10. Geometry for Monte Carlo Calculations

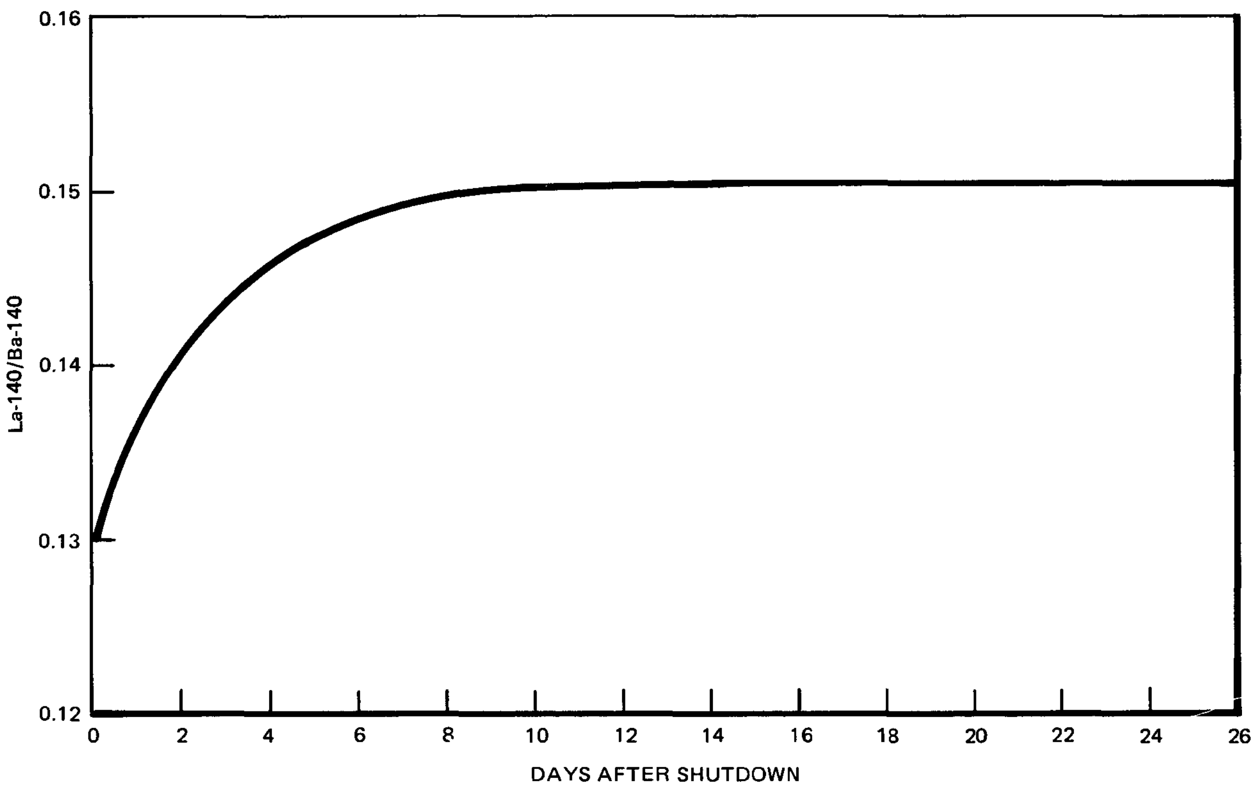


Figure 3-11. Ratio of La-140 Atom Density to Ba-140 Atom Density After Shutdown, Following Long Irradiation

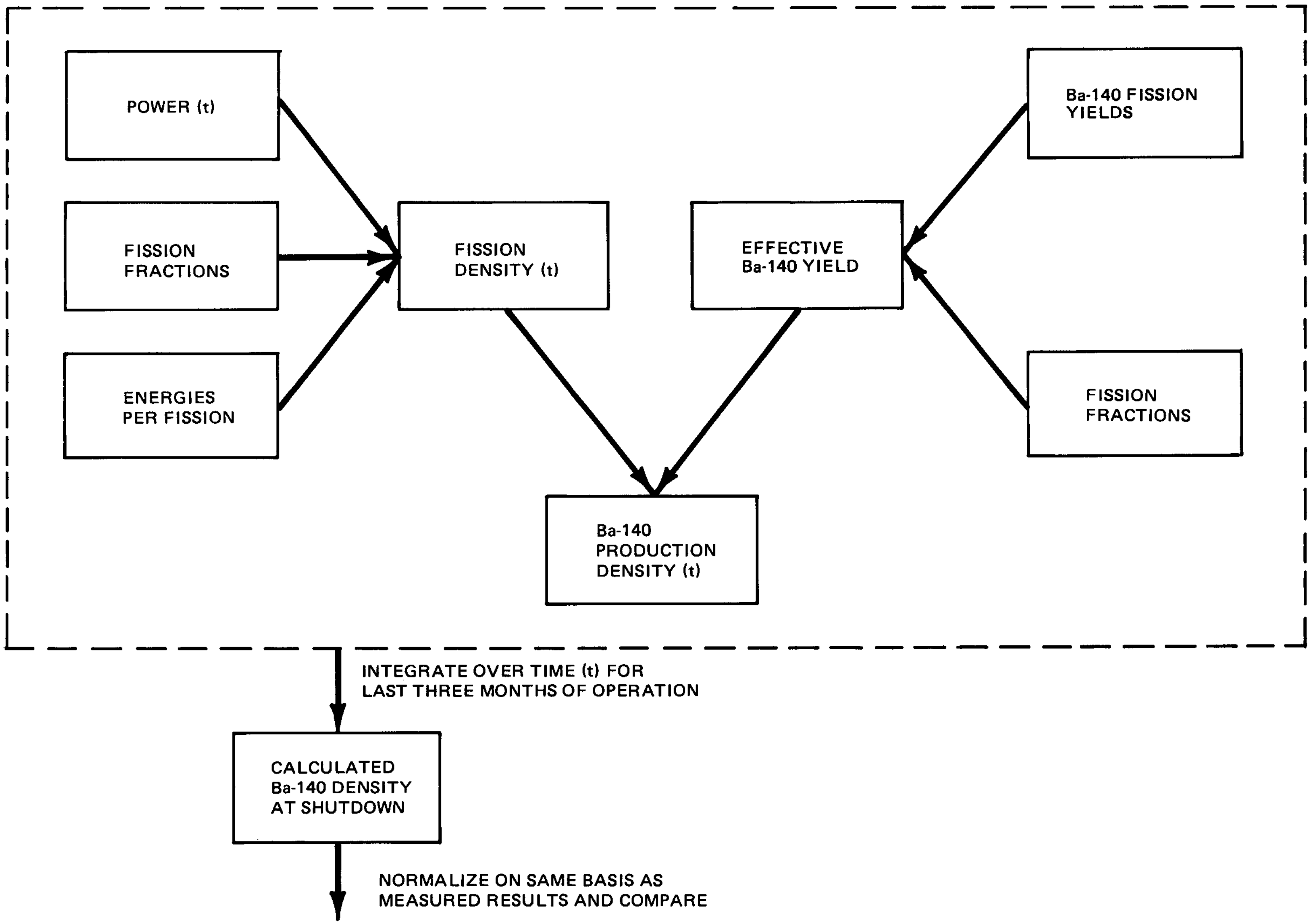


Figure 3-12. Flow Chart of Ba-140 Calculation

Table 3-1
EFFECTIVE YIELD (Y_e) %
2.34% Enriched UO_2, 40% Voids

Fission Fractions

Exposure (GWd/t)	**F(U-235)**	**F(Pu-239)**	**F(Pu-241)**	**F(U-238)**	**Total**	**Y_e†**
0.0	0.92349	0.0	0.0	0.07651	1.0000	6.25
1.0	0.85374	0.06863	0.00019	0.07740	0.99996	6.20
5.0	0.67514	0.23457	0.01024	0.07974	0.99969	6.08
10.0	0.53431	0.34639	0.03708	0.08155	0.99933	5.99
20.0	0.34626	0.46581	0.09992	0.08655	0.99854	5.90
40.0	0.10734	0.58688	0.19996	0.10290	0.99708	5.80

Individual Ba-140 Yields

Y(U-235) = 6.28
Y(Pu-239) = 5.55
Y(Pu-241) = 6.27
Y(U-238) = 5.94

†Calculated from $Y_e = \Sigma_i F_i Y_i$ = effective yield, i = U-235, U-238, Pu-239, Pu-241

Table 3-2
RELATIVE CONTRIBUTION OF EACH TIME INTERVAL TO
XY THERMAL AND XY GAMMA BA-140 DISTRIBUTIONS

Interval	Dates of XY Plots	Relative Contribution to Total Ba-140
Prior to 1-22-77	1-18-77 to 1-20-77	8.8%
1-22-77 to 3-1-77	2-24-77, 2-25-77	32.8%
3-1-77 to EOC	3-8-77	58.4%

Table 3-3
RELATIVE CONTRIBUTION OF EACH TIME INTERVAL
TO OD-1 THERMAL Ba-140 DISTRIBUTION

Interval	Date of OD-1	Relative Contribution to Total Ba-140
Prior to 1-10-77	12-29-77	4.3%
1-10-77 to 1-22-77	1-21-77	4.5%
1-22-77 to 2-23-77	1-25-77	18.1%
2-23-77 to 3-1-77	2-23-77	14.7%
3-1-77 to EOC	3-7-77	58.4%

4. SPECIAL GAMMA AND THERMAL TIPs AND GAMMA SCAN COMPARISONS

4.1 INTRODUCTION

The special TIP tests provided three full-core TIP traverses for each of the three test detectors, namely, a thermal neutron TIP (standard GE production TIP), a gamma sensitive TIP, and a fast neutron sensitive TIP. The major difference between the three test detectors is the coating plated on the inside surface of the titanium cathode (see Figure 3 of Reference 1). For the thermal neutron sensitive detector this coating consisted of uranium-235. for the fast neutron sensitive TIP a uranium-238 coating with a gadolinium shield between the cathode and the stainless steel instrument wall was used. For the gamma sensitive detector, no coating was applied. The standard coaxial cable was used with the thermal and fast neutron test detectors, and a triaxial cable was used with the gamma test detector. The same core axial alignment procedure was used with each of the detector systems. This procedure consists of manually hand-cranking the TIP detector to the instrument tube top and recording the position indicator, which relates cable position to indexer.

The output signals from the thermal neutron test detector and the gamma test TIP were measured by conventional d-c electronics. The output signal from the fast neutron test TIP contained both a d-c and an a-c component. A MSV (mean-square-voltage) technique was used to discriminate against the d-c signal generated by continuous small ionization pulses produced by photons within the detector and to enhance the a-c signal which is directly proportional to the more random fast fission events occurring within the detector. The test data for the fast neutron test TIP were extremely noisy; it was not possible to strip the noise away from the signal with adequate accuracy. This difficulty, combined with the complex response characteristics of the detector, is believed to account for the fact that the fast neutron sensitive detector yielded results contrary to the gamma scan measurements. A more detailed description of the design, ionization mechanism, and output signal of each detector is presented in Reference 1.

Full-core TIP traces were recorded on the test XY-plotter and were digitized by hand. Small axial position "correction factors" were applied to each XY-traverse determined from known fuel channel spacer and LPRM locations. The fuel channel spacers and LPRMs depress the thermal neutron flux and cause "dips" in the thermal TIP traces. The "correction factors" listed in Table 4-1 were applied to both the XY thermal and the XY gamma TIP sets reported in Reference 1; these shift the test TIP traces slightly towards core bottom. Note that the "correction factor" for instrument string 26 (reactor coordinates I=44, J=37) is 6.0 inches due, apparently, to a blocked TIP tube. Figure 3-1 identifies locations for the TIP instrument string numbers.

A comparison of thermal neutron TIP traverses recorded on the XY-plotter with the OD-1 thermal TIP data indicates an axial shift between the two recording mechanisms. Subsequent tests have shown that a filter in the signal path to the process computer introduces a time delay between the position indicator signal and the TIP signal. This filter was bypassed when the signal was routed to the XY-plotter. The filter would have caused a shift of about two inches between the XY-thermal and OD-1 thermal axial signal distributions. However the "correction factors" discussed in the previous paragraph were applied only to the XY-plotter data and partially compensated for the filter, leaving a net axial shift between XY-plotter axial signal distributions and OD-1 axial signal distributions of approximately one inch. As a consequence, comparisons between the XY-plotter Ba-140 distributions and the OD-1 thermal Ba-140 distribution are affected by this axial bias. The comparisons of XY thermal and XY gamma distributions with the gamma scan are contained in this section, while the OD-1 thermal distribution is separately compared to the gamma scan in Section 5. The only exception is a brief discussion of axial differences in Section 4.2 which includes some OD-1 thermal information.

Comparisons are made with the Ba-140 distribution from gamma scan measurements (Reference 2) and the BUCLE calculated Ba-140 distributions normalized to the 75 octant bundles scanned over the 12 odd-numbered axial nodes. The normalized Ba-140 nodal distribution from the gamma scan is presented in Appendix A. The gamma scan measurements are accurate to approximately 3% on a nodal basis. This estimate includes both systematic errors and measurement uncertainties. Accuracy of the gamma scan measurements is discussed in detail in Reference 2. The normalized Ba-140 nodal distributions from the XY-plotter thermal neutron and gamma test data are presented in Appendices B and C, respectively. The differences between gamma scan and XY thermal neutron TIP Ba-140 nodal distributions, and those between gamma scan and XY gamma TIP Ba-140 nodal distributions, are tabulated in Appendices D and E, respectively. The OD-1 thermal TIP Ba-140 distribution, normalized over the 75 octant bundles scanned over 12 odd axial nodes, is presented in Appendix F. The relative differences between the OD-1 thermal TIP Ba-140 distribution and the gamma scan data are tabulated in Appendix G.

The 106 gamma scanned bundles are outlined on the Hatch-1 core map presented in Figure 4-1 with both reactor and I, J coordinates. Figure 4-2 shows the control rod pattern for the last seven weeks of Cycle 1. Over 85% of the total end-of-cycle Ba-140 concentration was accumulated while operating in this pattern. All comparisons evaluating control blade effects are based on this control rod pattern.

The remaining paragraphs in Section 4 contain discussions of axial, radial and nodal power distributions, TIP asymmetries, and control blade effects as indicated by the various sets of Ba-140 distributions.

4.2 AXIAL POWER DISTRIBUTION

The axial Ba-140 values averaged over the 106 scanned bundle are presented in Figure 4-3 for the gamma scan, XY thermal, and XY gamma distributions. The standard deviation of the differences in axial values between the gamma scan and XY thermal, and XY gamma are 6.2% and 6.7% respectively. The peak node in the axial Ba-140 distribution is slightly lower with the XY gamma data than with the XY thermal data. Both overpredict the peak in the gamma scan axial distribution; the thermal neutron TIP by 3.5% and the gamma TIP by 2.9%. Planar average Ba-140 values and percent differences for XY thermal and XY gamma distributions relative to gamma scan measurements are presented in Table 4-2.

The planar average differences are larger for the XY thermal and XY gamma distributions than for the OD-1 thermal. This is a result of the axial shift discussed in the previous section. Shown in Figure 4-4 are plots of axial differences for XY thermal and XY gamma distributions relative to gamma scan as well as straight line fits of these differences for XY thermal, XY gamma, and OD-1 thermal. These plots indicate a core top to core bottom variation in nodal mean differences of about 12% for distributions determined with the XY-plotter data, whereas the distribution generated with the standard process computer OD-1 thermal TIP data shows only a 4% variation. This anomaly was found to have essentially no effect on the location and magnitude of peak nodal and integrated bundle power as shown by Table 4-4 compared to Table 5-3, and Table 4-6 compared to Table 5-5. Thus, it should have no effect on thermal limits evaluations.

The mean of the peak node to peak node differences for the XY thermal distribution relative to the gamma scan distribution for the 106 bundles is 0.033 with a standard deviation of 0.043; for the gamma TIP distribution, the mean of peak differences is 0.061 with a standard deviation of 0.039. The larger mean differences with the gamma TIP may be due to the limitations of the preliminary correlations based on a four point data base.

The largest differences in the axial peaking of the XY thermal or XY gamma distributions relative to the gamma scan distribution occur in partially controlled bundles. The mean of the differences in the axial peaks of the XY thermal distribution relative to gamma scan is 0.057 for partially controlled bundles and 0.024 for uncontrolled bundles. The corresponding differences for the XY gamma distribution are 0.087 for partially controlled bundles and 0.051 for uncontrolled bundles.

Figure 4-5 is a region map of fuel bundle types for the Hatch 1 core Cycle 1. A comparison of the mean of the peak node to peak node differences of Ba-140 distributions between the gamma scan and XY thermal distributions was made to investigate variations with fuel bundle type. Results obtained for the mean differences are 0.039 for the interior bundles (type 1 and type 2) and 0.011 for the peripheral bundle (type 3). A similar comparison with the XY gamma distribution indicates larger mean differences of 0.062 for bundle type 1, 0.067 for bundle type 2, and 0.049 for bundle type 3.

4.3 RADIAL POWER DISTRIBUTION

Figures 4-6 and 4-7 present bundle integrated Ba-140 values for the XY thermal and XY gamma distributions, respectively, compared to the gamma scan distribution. The integration was performed over the twelve odd numbered nodes which were scanned for all 106 bundles. Figure 4-8 is a Hatch 1 region map indicating the radial fuel rings as edited by the process computer. The average radial power shapes for the 75 bundle set, based on these fuel rings, are shown in Figure 4-9 for the three distributions. The Ba-140 values in the outer two rings of bundles were underpredicted by an average of 3.3% in the XY thermal distribution and 2.8% in the XY gamma distribution. For the five interior rings the average overpredictions in the XY thermal and XY gamma distributions were 2.9% and 2.5% respectively. For the edge bundles alone the under predictions were 7.7% for the XY thermal and 9.3% for the XY gamma.

The power of the highest power bundle is overpredicted by 9.1% in the XY thermal distribution and by 6.1% in the XY gamma distribution. A comparison of Ba-140 values for the ten highest measured bundles is given in Table 4-3. This shows that the 10 highest power bundles average 6.3% higher than gamma scan for the XY thermal and 4.5% higher for XY gamma.

As an indication of how actual and predicted thermal margin would compare, the ten highest XY thermal and the ten highest XY gamma bundle average values were compared by rank to the ten highest measured bundles. This comparison, presented in Table 4-4, gives results similar to those in Table 4-3. The average percentage differences relative to gamma scan are 6.5% and 4.8%, respectively, for XY thermal and XY gamma.

This demonstrates that use of the gamma TIP caused a significant reduction in predicted radial peaking for Hatch 1 at end of Cycle 1. This might have resulted in an increase in thermal margin if the process computer had been operating with gamma TIP signals.

The standard deviation of the differences between the bundle integrated values for XY thermal and XY gamma as compared to gamma scan are 6.8% and 6.6% respectively, as expected.

For controlled bundles, the standard deviations of the differences are 4.3% and 3.4%, respectively, for XY thermal and XY gamma. For uncontrolled bundles exclusive of edge bundles, they are 4.6 and 3.3%, respectively.

Standard deviations of this same differences for fuel bundle types 1, 2, and 3 were 4.3%, 4.7%, and 9.6%, respectively, for the thermal TIP and 2.8%, 3.8%, and 9.2%, respectively, for the gamma TIP (Type 3 bundles are peripheral bundles).

4.4 NODAL POWER DISTRIBUTION

Table 4-5 presents relative Ba-140 for the twenty-five highest gamma scanned nodes compared to XY thermal and XY gamma at the same location. This shows that the XY thermal distribution overpredicts the peak location by 5.5% and the XY gamma overpredicts by 2.1%. On the average over the twenty-five highest nodes, the XY thermal is high by 3.8% and the XY gamma is high by 4.3%.

In order to look at nodal peaking as it relates to actual peak heat flux versus that predicted by the process computer, Table 4-6 presents relative Ba-140 for the twenty-five highest gamma scanned nodes compared by rank to the twenty-five highest XY thermal and XY gamma nodes. In this comparison the XY gamma shows consistently less of an overprediction. The peak node is high by 8.3% for the XY thermal and 5.2% for the XY gamma. Average overpredictions for the twenty-five nodes are 7.2% for XY thermal and 5.7% for XY gamma. Thus, a significant nodal thermal limits improvement would result from the 3% reduction in overprediction if the peak node was indeed the limiting fuel segment.

Table 4-7 presents the standard deviation of the nodal differences for each odd numbered plane as determined with XY thermal and XY gamma distributions relative to the gamma scan. For all the odd numbered nodes in the 106-bundle set, the standard deviations of nodal differences are 9.6% for both XY thermal and XY gamma. The standard deviations of the differences between gamma scan, and XY thermal and XY gamma nodal Ba-140 values for the 75 bundle set are 9.7% and 10.0%, respectively, with only the odd numbered nodes considered. The standard deviations of of the nodal differences for the 75 bundle set are nearly the same for the XY thermal and XY gamma distributions for uncontrolled fuel bundles excluding peripheral bundles: 7.9% for the XY thermal and 8.1% for the XY gamma. For the partially controlled bundles, comparisons for the XY gamma data and the XY thermal data lead to the same standard deviation of 10.1%. For the ten bundles with the maximum controlled condition (14 notches withdrawn), the standard deviations of the nodal differences are 9.6% for the XY thermal and 9.2% for the XY gamma.

Nodal Ba-140 differences between gamma scan data and the XY thermal distribution have standard deviations of 8.3%, 9.3%, and 10.5% for fuel types 1, 2, and 3, respectively. Similar values for gamma scan relative to XY gamma are 8.9%, 9.1%, and 10.6% for fuel types 1, 2, and 3, respectively. These results, based on a preliminary gamma TIP signal to local rod average power correlation generated for fuel type 1, indicate that no significant errors are introduced by assuming that this correlation is independent of fuel type.

Figure 4-10 presents the gamma scan, XY thermal, and XY gamma axial Ba-140 distributions for the fuel bundle with the highest nodal peaking as determined by the gamma scan. The large differences near the blade tip shown for this bundle are common to most controlled bundles. The controlled condition will be discussed further in Section 4.6.

Large nodal differences were also seen in some uncontrolled bundles. Figure 4-11 presents axial Ba-140 profiles for an uncontrolled bundle with relatively large nodal differences (I=16, J=5). These profiles are influenced by the four closely located control blades (see Figure 4-2). Other bundles show good to excellent agreement between the gamma scan and both the XY thermal and XY gamma distributions. This is illustrated by Figure 4-12.

Figure 4-13 shows a comparison of axial profiles for the highest power bundle. Comparing the XY gamma and the XY thermal distributions with the gamma scan indicates significant differences between nodes 9 through 19. These differences, which are about the same for both thermal and gamma TIPs, may result from inaccuracies in either the signal to four bundle power correlation or the four bundle to single bundle power allocation.

4.5 TIP ASYMMETRY

The TIPs are located either on, or in symmetric pairs about, a diagonal of the core. Figure 4-14 illustrates the TIP number associated with each bundle. Numbers 1 through 31 represent real TIP locations, while readings for the other locations are found by reflecting or extrapolating real TIP data.

Table 4-8 presents ratios of bundle integrated Ba-140 values for symmetric pairs of bundles associated with symmetric TIPs. Also included are differences between the gamma scan ratios and those for the XY thermal and XY gamma distributions. The standard deviations of these differences are 0.066 for the XY thermal and 0.016 for the XY gamma. It is this substantial reduction in TIP asymmetry which is primarily responsible for the lower radial and local peaking associated with the XY gamma distributions.

Axial profiles showing nodal differences in four bundle average Ba-140 values for the four pairs of symmetric TIP locations are presented in Figures 4-15 through 4-18. These confirm that the XY gamma distribution is consistently a better match with the gamma scan data than the XY thermal. This is true on a nodal as well as a bundle average basis.

The small asymmetries observed in the gamma scan measurements are thought to be the result of exposure asymmetries accumulated during operation in asymmetric B sequence control rod patterns. This conclusion is supported by comparing the four bundles around real TIP location 24 with the four bundles surrounding pseudo TIP location 55 (Figure 4-14). These four bundle sets are symmetric with respect to fuel loading and control since quarter core mirror symmetric control rod patterns were used throughout the cycle. The gamma scan measurements for these symmetric sets of bundles show very good symmetry with nodal measurements typically being within 2% of one another.

4.6 CONTROL BLADE EFFECTS

The Hatch 1 reactor was operated to the end of Cycle 1 with a large number of control blades partially inserted in the core. This provided a rare opportunity to obtain gamma scan data on power distributions around control blades. Composite axial Ba-140 profiles for the 35 measured bundles were calculated for the six different notch positions (see Figure 4-19). These are presented in Figures 4-20 through 4-25. Ba-140 distributions shown in these figures indicate that the response of the gamma TIP is similar to the thermal TIP with respect to control.

The ratio of Ba-140 from ten inches above to two inches below the top of the control blade tip was calculated for the XY thermal and XY gamma distributions as well as the gamma scan. This ratio was about 20% high for both XY thermal and XY gamma relative to gamma scan. This indicates that the process computer predicts a sharper rise in power adjacent to the blade tip than was observed.

A comparison of controlled versus uncontrolled nodal power allocation was performed for axial planes 3, 5, 7, 9, 11 and 15 for all control blade locations in the gamma scanned octant. Ratios of the average Ba-140 in the four nodes surrounding a control blade to the average in the eight adjacent uncontrolled nodes (see Figure 4-26) were calculated using the XY thermal, XY gamma, and gamma scan distributions. The average controlled/uncontrolled ratios for the XY thermal and XY gamma distributions are both 5.4% less than for the gamma scan, indicating that not enough power is being allocated to controlled nodes.

Table 4-1
POSITION CORRECTIONS APPLIED TO SPECIAL XY-PLOTTER TIP DATA

Tip String Number	Inches Shifted Downward	Tip String Number	Inches Shifted Downward	Tip String Number	Inches Shifted Downward
1	0.5	11	1.5	21	2.0
2	0.5	12	1.0	22	1.0
3	1.5	13	1.0	23	1.0
4	1.0	14	0.5	24	1.0
5	1.0	15	1.0	25	1.0
6	0.5	16	1.0	*26	6.0
7	1.0	17	1.0	27	1.0
8	1.5	18	1.0	28	0.5
9	1.0	19	1.0	29	0.5
10	1.0	20	1.0	30	1.0
				31	1.0

*Blocked TIP Tube

Table 4-2
AXIAL Ba-140 DISTRIBUTION
GAMMA SCAN VS. XY THERMAL AND XY GAMMA
(106 Bundle Average)

Plane (Axial Node)	Gamma Scan (A)	XY Thermal (B)	Percent Difference (B/A-1) 100	XY Gamma (C)	Percent Difference (C/A-1) 100
1	0.254	0.223	−12.2	0.216	−15.0
3	0.522	0.475	− 9.0	0.452	−13.4
5	0.631	0.606	− 4.0	0.585	− 7.3
7	0.743	0.731	− 1.6	0.727	− 2.2
9	0.992	0.953	− 3.9	0.963	− 2.9
11	1.192	1.157	− 2.9	1.171	− 1.8
13	1.291	1.287	− 0.3	1.296	0.5
15	1.435	1.414	− 1.5	1.468	2.3
17	1.492	1.493	0.1	1.528	2.4
19	1.506	1.558	3.5	1.550	2.9
21	1.174	1.255	6.4	1.240	5.6
23	0.768	0.847	10.3	0.802	4.4

I COORDINATE

REACTOR COORDINATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	J COORDINATE
52									HXO 509	HXO 463	HXO 550	HXO 495	HXO 496	HXO 486	HXO 467	HXO 482	HXO 512	HXO 476									1
50								HXO 474	HXO 493	HXO 475	HXO 284	HXO 192	HXO 290	HXO 178	HXO 306	HXO 176	HXO 453	HXO 459	HXO 487								2
48					HXO 554	HXO 503	HXO 504	HXO 455	HXO 202	HXO 421	HXO 019	HXO 417	HXO 084	HXO 251	HXO 222	HXO 292	HXO 074	HXO 375	HXO 545	HXO 477	HXO 460	HXO 446					3
46				HXO 539	HXO 478	HXO 470	HXO 262	HXO 201	HXO 424	HXO 027	HXO 413	HXO 022	HXO 254	HXO 049	HXO 278	HXO 181	HXO 376	HXO 172	HXO 314	HXO 180	HXO 543	HXO 491	HXO 514				4
44			HXO 510	HXO 516	HXO 040	HXO 377	HXO 014	HXO 415	HXO 175	HXO 378	HXO 111	HXO 326	HXO 140	HXO 321	HXO 109	HXO 277	HXO 149	HXO 274	HXO 089	HXO 298	HXO 135	HXO 341	HXO 507	HXO 524			5
42			HXO 481	HXO 518	HXO 313	HXO 079	HXO 414	HXO 016	HXO 382	HXO 110	HXO 273	HXO 060	HXO 322	HXO 023	HXO 257	HXO 138	HXO 279	HXO 179	HXO 361	HXO 194	HXO 339	HXO 122	HXO 508	HXO 468			6
40			HXO 547	HXO 296	HXO 219	HXO 358	HXO 092	HXO 328	HXO 119	HXO 266	HXO 003	HXO 346	HXO 054	HXO 233	HXO 213	HXO 359	HXO 218	HXO 330	HXO 066	HXO 332	HXO 030	HXO 315	HXO 177	HXO 505			7
38		HXO 542	HXO 533	HXO 221	HXO 362	HXO 144	HXO 329	HXO 097	HXO 433	HXO 188	HXO 351	HXO 209	HXO 396	HXO 169	HXO 373	HXO 220	HXO 420	HXO 211	HXO 333	HXO 197	HXO 407	HXO 007	HXO 310	HXO 559	HXO 450		8
36	HXO 526	HXO 457	HXO 203	HXO 232	HXO 024	HXO 355	HXO 001	HXO 239	HXO 002	HXO 429	HXO 087	HXO 431	HXO 018	HXO 393	HXO 141	HXO 388	HXO 165	HXO 438	HXO 053	HXO 250	HXO 037	HXO 256	HXO 190	HXO 291	HXO 501	HXO 462	9
34	HXO 497	HXO 471	HXO 297	HXO 182	HXO 353	HXO 033	HXO 370	HXO 214	HXO 434	HXO 113	HXO 436	HXO 136	HXO 389	HXO 086	HXO 391	HXO 156	HXO 422	HXO 161	HXO 319	HXO 045	HXO 260	HXO 091	HXO 311	HXO 200	HXO 544	HXO 525	10
32	HXO 464	HXO 240	HXO 013	HXO 288	HXO 011	HXO 225	HXO 021	HXO 344	HXO 070	HXO 401	HXO 098	HXO 383	HXO 083	HXO 405	HXO 137	HXO 402	HXO 145	HXO 337	HXO 077	HXO 441	HXO 112	HXO 327	HXO 028	HXO 430	HXO 008	HXO 556	11
30	HXO 466	HXO 187	HXO 228	HXO 057	HXO 231	HXO 115	HXO 268	HXO 146	HXO 395	HXO 055	HXO 394	HXO 096	HXO 336	HXO 170	HXO 404	HXO 076	HXO 271	HXO 143	HXO 323	HXO 072	HXO 363	HXO 126	HXO 425	HXO 147	HXO 224	HXO 555	12
28	HXO 511	HXO 307	HXO 056	HXO 281	HXO 158	HXO 275	HXO 210	HXO 267	HXO 058	HXO 444	HXO 006	HXO 338	HXO 085	HXO 397	HXO 104	HXO 398	HXO 160	HXO 387	HXO 029	HXO 334	HXO 005	HXO 304	HXO 035	HXO 238	HXO 042	HXO 500	13
26	HXO 490	HXO 026	HXO 249	HXO 051	HXO 255	HXO 039	HXO 263	HXO 020	HXO 443	HXO 059	HXO 368	HXO 009	HXO 385	HXO 094	HXO 400	HXO 102	HXO 390	HXO 108	HXO 365	HXO 212	HXO 305	HXO 067	HXO 229	HXO 095	HXO 223	HXO 557	14
24	HXO 531	HXO 302	HXO 204	HXO 410	HXO 185	HXO 325	HXO 198	HXO 356	HXO 171	HXO 442	HXO 090	HXO 419	HXO 151	HXO 403	HXO 174	HXO 384	HXO 114	HXO 440	HXO 116	HXO 428	HXO 093	HXO 265	HXO 173	HXO 309	HXO 123	HXO 502	15
22	HXO 479	HXO 186	HXO 408	HXO 017	HXO 320	HXO 032	HXO 343	HXO 157	HXO 381	HXO 133	HXO 411	HXO 065	HXO 399	HXO 128	HXO 369	HXO 063	HXO 432	HXO 163	HXO 244	HXO 031	HXO 227	HXO 048	HXO 243	HXO 088	HXO 312	HXO 489	16
20	HXO 537	HXO 522	HXO 208	HXO 286	HXO 047	HXO 412	HXO 118	HXO 357	HXO 117	HXO 439	HXO 134	HXO 372	HXO 099	HXO 236	HXO 215	HXO 380	HXO 124	HXO 248	HXO 193	HXO 437	HXO 043	HXO 352	HXO 191	HXO 426	HXO 465	HXO 469	17
18	HXO 553	HXO 549	HXO 293	HXO 082	HXO 409	HXO 012	HXO 354	HXO 075	HXO 435	HXO 127	HXO 371	HXO 121	HXO 235	HXO 107	HXO 379	HXO 164	HXO 423	HXO 120	HXO 364	HXO 162	HXO 246	HXO 036	HXO 427	HXO 189	HXO 536	HXO 529	18
16		HXO 506	HXO 456	HXO 270	HXO 041	HXO 261	HXO 195	HXO 348	HXO 150	HXO 374	HXO 217	HXO 242	HXO 216	HXO 230	HXO 103	HXO 340	HXO 196	HXO 247	HXO 142	HXO 360	HXO 078	HXO 349	HXO 131	HXO 515	HXO 540		19
14			HXO 552	HXO 206	HXO 347	HXO 062	HXO 366	HXO 015	HXO 272	HXO 148	HXO 241	HXO 139	HXO 226	HXO 052	HXO 342	HXO 207	HXO 245	HXO 046	HXO 318	HXO 071	HXO 350	HXO 073	HXO 289	HXO 499			20
12			HXO 548	HXO 485	HXO 061	HXO 345	HXO 101	HXO 386	HXO 155	HXO 324	HXO 025	HXO 234	HXO 129	HXO 294	HXO 183	HXO 287	HXO 068	HXO 300	HXO 010	HXO 335	HXO 168	HXO 276	HXO 560	HXO 541			21
10			HXO 558	HXO 473	HXO 282	HXO 166	HXO 392	HXO 100	HXO 308	HXO 152	HXO 253	HXO 153	HXO 331	HXO 154	HXO 367	HXO 184	HXO 299	HXO 038	HXO 418	HXO 064	HXO 252	HXO 050	HXO 458	HXO 448			22
8				HXO 528	HXO 454	HXO 521	HXO 132	HXO 317	HXO 199	HXO 416	HXO 106	HXO 295	HXO 167	HXO 269	HXO 105	HXO 283	HXO 125	HXO 316	HXO 205	HXO 258	HXO 534	HXO 527	HXO 492				23
6					HXO 449	HXO 452	HXO 520	HXO 523	HXO 406	HXO 044	HXO 259	HXO 004	HXO 237	HXO 159	HXO 264	HXO 080	HXO 301	HXO 130	HXO 546	HXO 494	HXO 535	HXO 532					24
4								HXO 513	HXO 519	HXO 451	HXO 069	HXO 303	HXO 081	HXO 280	HXO 034	HXO 265	HXO 530	HXO 472	HXO 551								25
2									HXO 445	HXO 483	HXO 447	HXO 538	HXO 517	HXO 488	HXO 498	HXO 461	HXO 484	HXO 480									26
REACTOR COORDINATE	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	

Figure 4-1. Hatch 1 Cycle 1 Bundle Identification

CONTROL ROD CONFIGURATION
IN NOTCHES WITHDRAWN

I COORDINATE*

REACTOR COORDINATE	1	3	5	7	9	11	13	15	17	19	21	23	25	J COORDINATE*
51														1
47						20		20						3
43					28		32		28					5
39				18		14		14		18				7
35			28				34				28			9
31		20		14		14		14		14		20		11
27			32		34				34		32			13
23		20		14		14		14		14		20		15
19			28				34				28			17
15				18		14		14		18				19
11					28		32		28					21
7						20		20						23
3														25
	2	6	10	14	18	22	26	30	34	38	42	46	50	

REACTOR COORDINATE

*THE I,J COORDINATES ASSIGNED TO A CONTROL BLADE ARE THOSE OF THE BUNDLE LOCATED AT THE UPPER LEFT OF THE BLADE

Figure 4-2. Final Operating Control Rod Pattern for Cycle 1

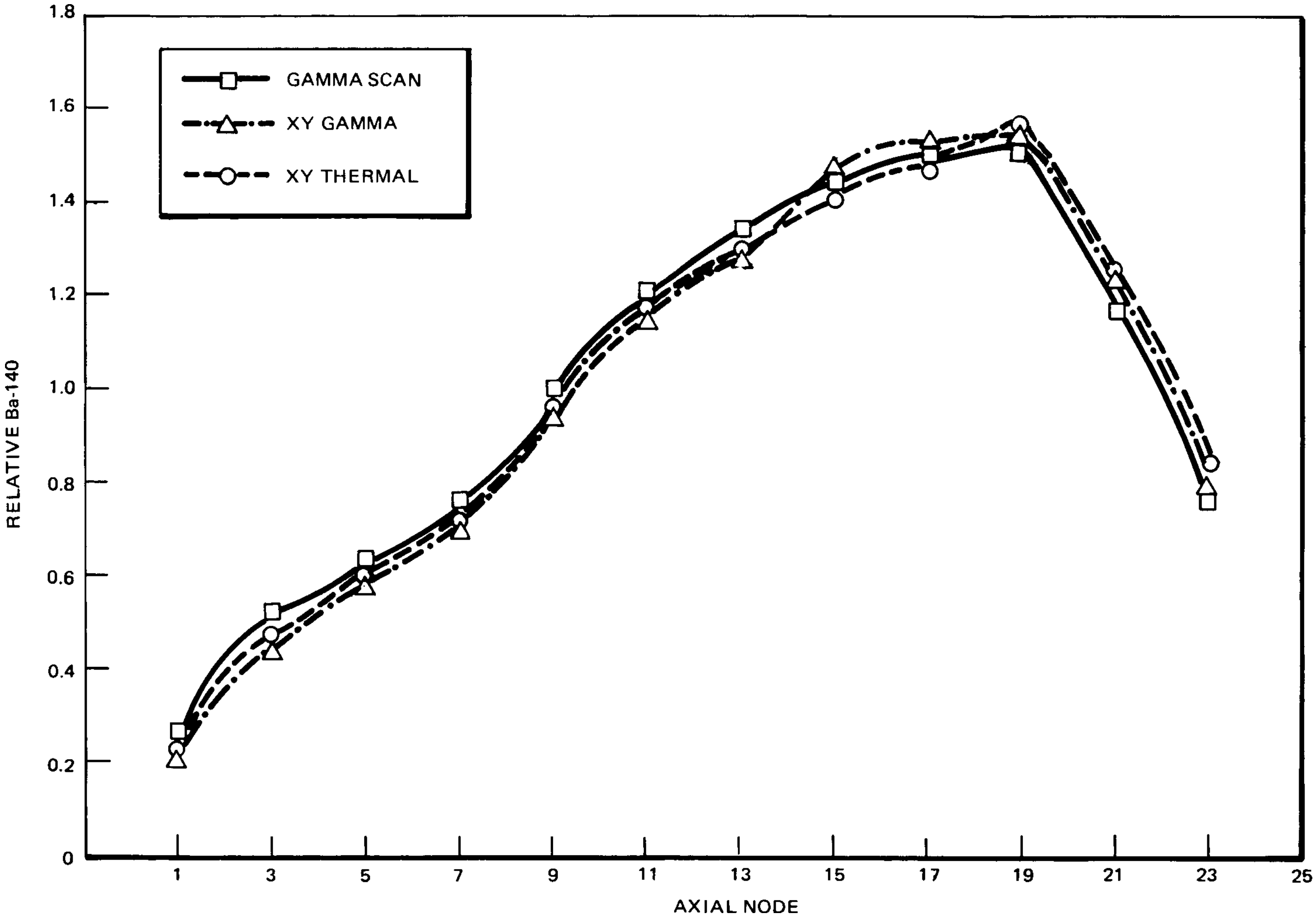


Figure 4-3. Average Axial Ba-140 Distributions for the 106 Gamma Scanned Bundles

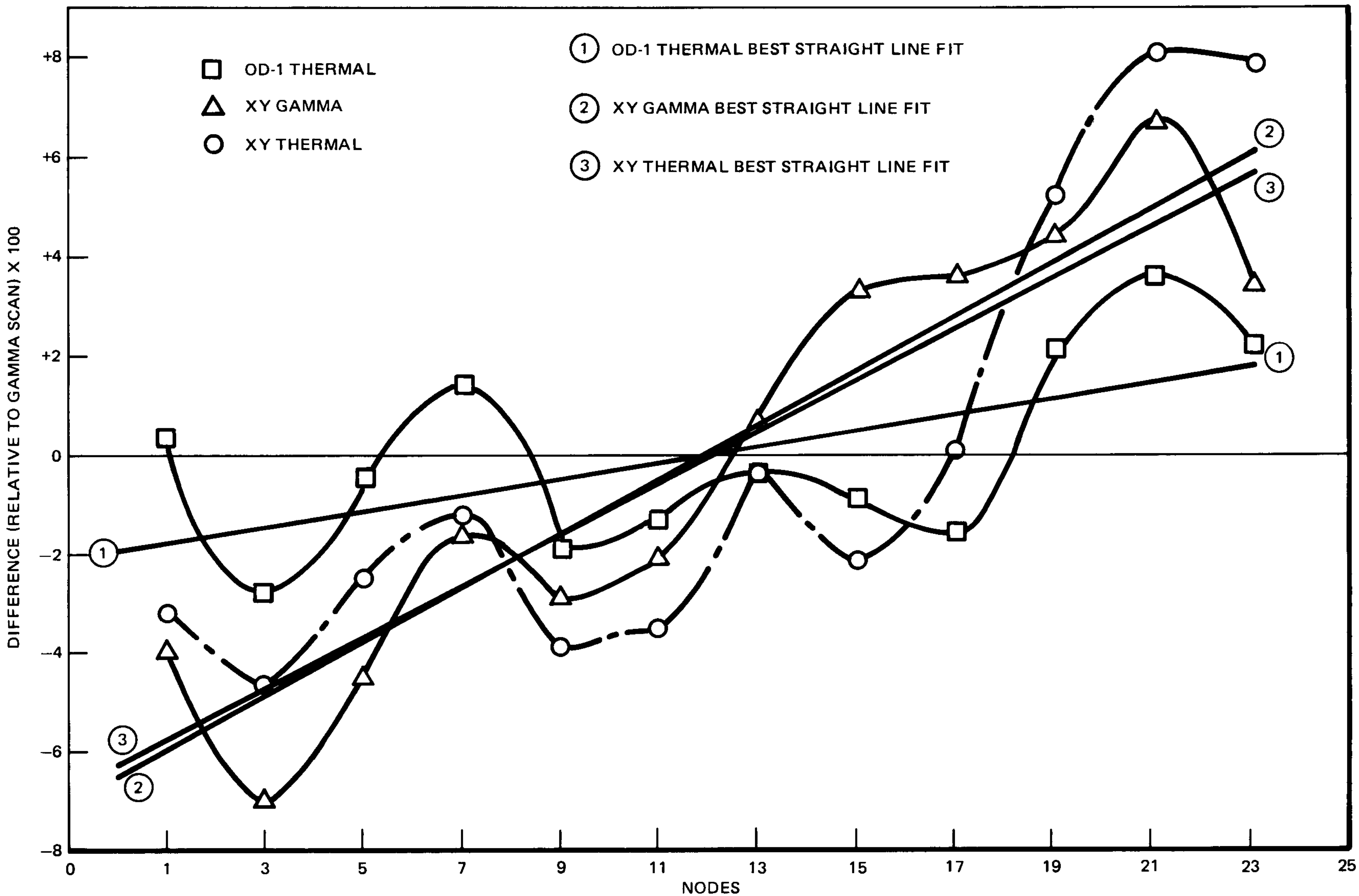


Figure 4-4. Nodal Mean Difference for the 106 Bundles

J/I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1									3	3	3	3	3	3	3	3	3	3								
2								3	3	3	2	1	2	1	2	1	3	3	3							
3					3	3	3	3	1	2	1	2	1	2	1	2	1	2	3	3	3	3				
4				3	3	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3	3	3			
5			3	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3	3		
6			3	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3	3		
7			3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3		
8		3	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3	3	
9	3	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3	3
10	3	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3	3
11	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3
12	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
13	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3
14	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
15	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3
16	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
17	3	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3	3
18	3	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3	3
19		3	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3		
20			3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3		
21			3	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3	3		
22			3	3	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	3	3		
23				3	3	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3	3				
24					3	3	3	3	2	1	2	1	2	1	2	1	2	1	3	3	3	3				
25								3	3	3	1	2	1	2	1	2	3	3	3	3						
26									3	3	3	3	3	3	3	3	3	3								

TYPE	DESCRIPTION
1	2.34 WT PERCENT U-235, 4 RODS WITH 4.0 WT PERCENT Gd_2O_3
2	2.34 WT PERCENT U-235, 4 RODS WITH 4.0 WT PERCENT Gd_2O_3
3	2.34 WT PERCENT U-235, 2 RODS WITH 2.5 WT PERCENT Gd_2O_3

Figure 4-5. Hatch 1 Cycle 1 Fuel Bundles Types

J/I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
									0.	0.	0.	0.	0.	0.6990	0.6819	0.6627	0.6160	0.5727								
1									0.	0.	0.	0.	0.	0.6156	0.6108	0.5832	0.5505	0.4353								
									0.	0.	0.	0.	0.	0.8808	0.8957	0.8800	0.8937	0.7601								
								0.	0.	0.	0.	0.	0.	0.9044	0.8807	0.8430	0.8464	0.7900	0.6852							
2								0.	0.	0.	0.	0.	0.	0.8711	0.8583	0.8338	0.8565	0.7698	0.6481							
								0.	0.	0.	0.	0.	0.	0.9632	0.9746	0.9891	1.0119	0.9745	0.9459							
					0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0383	0.9138	0.8928	0.9705	0.9656	0.8995	0.7950	0.6905	0.5903				
3					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9919	0.8608	0.8506	0.9300	0.9189	0.8732	0.6511	0.5907	0.4703				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9553	0.9486	0.9527	0.9583	0.9516	0.9708	0.8190	0.8554	0.7967				
				0.	0.	0.	0.	0.	0.	1.0584	0.9699	0.	0.	1.0722	0.9566	0.9633	1.0629	1.0394	1.0157	0.9588	0.9039	0.7756	0.5942			
4				0.	0.	0.	0.	0.	0.	1.1063	1.0247	0.	0.	1.0747	0.9555	1.0150	1.1144	1.0080	0.9730	0.9629	0.9268	0.8056	0.6475			
				0.	0.	0.	0.	0.	0.	1.0452	1.0566	0.	0.	1.0024	0.9988	1.0537	1.0485	0.9698	0.9580	1.0043	1.0254	1.0387	1.0897			
			0.	0.	0.	0.	0.	0.	0.	1.0744	1.1174	0.	0.	1.1096	1.1236	1.1217	1.0543	1.0403	1.0932	1.0695	1.0186	0.9384	0.7695	0.		
5			0.	0.	0.	0.	0.	0.	0.	1.1414	1.2018	0.	0.	1.1317	1.1209	1.2107	1.1312	1.0239	1.0458	1.0678	1.0123	0.9065	0.8100	0.		
			0.	0.	0.	0.	0.	0.	0.	1.0624	1.0755	0.	0.	1.0199	0.9976	1.0794	1.0729	0.9842	0.9566	0.9983	0.9938	0.9660	1.0525	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1279	1.1247	1.1484	1.0997	1.0754	1.1176	1.0959	1.0818	0.	0.	0.		
6			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2151	1.2335	1.1290	1.1037	1.0617	1.0701	1.1131	1.1144	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0773	1.0967	0.9831	1.0036	0.9873	0.9576	1.0157	1.0301	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1297	0.9323	0.9719	1.1843	1.1665	0.9991	0.9838	1.1018	0.	0.	0.		
7			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2103	0.9759	0.9226	1.1436	1.1352	0.9203	0.9656	1.1095	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0714	1.0468	0.9494	0.9656	0.9731	0.9211	0.9815	1.0070	0.	0.	0.		
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1340	0.9414	0.9698	1.2212	1.1865	1.0475	1.0061	0.	1.0808	1.0078	0.	0.	
8		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1338	0.9154	1.0121	1.2833	1.2229	1.0088	0.9769	0.	1.0496	0.9786	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9998	0.9724	1.0437	1.0509	1.0307	0.9630	0.9710	0.	0.9711	0.9710	0.	0.	
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1135	1.1829	1.2019	1.2377	1.2289	1.1911	0.	0.	1.0356	1.0249	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1453	1.1510	1.3075	1.3339	1.3063	1.2358	0.	0.	1.0305	1.0193	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0286	0.9731	1.0879	1.0778	1.0630	1.0375	0.	0.	0.9951	0.9945	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1389	1.1932	1.2313	1.2550	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2057	1.2508	1.2884	1.3691	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0586	1.0482	1.0463	1.0909	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2057	0.9750	1.0091	1.2145	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2414	0.9759	1.0257	1.2988	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0296	1.0009	1.0165	1.0694	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1974	0.9929	1.0004	0.	1.1647	0.9549	0.	0.	1.1069	0.9513	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2651	0.9990	0.9504	0.	1.2343	0.9844	0.	0.	1.2014	1.0224	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0566	1.0062	0.9500	0.	1.0598	1.0309	0.	0.	1.0853	1.0748	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2470	1.2001	0.	0.	1.1151	1.1454	0.	0.	1.0939	1.0905	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3333	1.2570	0.	0.	1.2170	1.2143	0.	0.	1.1965	1.1565	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0692	1.0474	0.	0.	1.0913	1.0602	0.	0.	1.0938	1.0605	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0858	0.9384	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0580	0.9013	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9743	0.9605	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0423	1.0431	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0210	0.9969	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9795	0.9557	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1668	1.1348	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1508	1.1454	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9847	1.0093	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9277	1.1428	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
19		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9154	1.1339	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9868	0.9922	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
20			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
21			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
22			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
23				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
24					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
25								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								
26									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								
									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								

GAMMA SCAN
XY THERMAL
XY THERMAL/GAMMA SCAN

Figure 4-6. Bundle Average Ba-140 XY Thermal and Gamma Scan

J/I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1									0.	0.	0.	0.	0.	0.6990	0.6819	0.6627	0.6160	0.5727								
									0.	0.	0.	0.	0.	0.5961	0.5893	0.5694	0.5362	0.4241								
									0.	0.	0.	0.	0.	0.8528	0.8641	0.8592	0.8705	0.7405								
2								0.	0.	0.	0.	0.	0.	0.9044	0.8807	0.8430	0.8464	0.7900	0.6852							
								0.	0.	0.	0.	0.	0.	0.8853	0.8654	0.8325	0.8565	0.7585	0.6450							
								0.	0.	0.	0.	0.	0.	0.9789	0.9826	0.9876	1.0119	0.9602	0.9414							
3					0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0383	0.9138	0.8928	0.9705	0.9656	0.8995	0.7950	0.6905	0.5903				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0075	0.8714	0.8620	0.9451	0.9019	0.8676	0.6594	0.5891	0.4644				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9704	0.9536	0.9655	0.9738	0.9340	0.9646	0.8295	0.8531	0.7867				
4				0.	0.	0.	0.	0.	0.	1.0584	0.9699	0.	0.	1.0722	0.9566	0.9633	1.0629	1.0394	1.0157	0.9588	0.9039	0.7756	0.5942			
				0.	0.	0.	0.	0.	0.	1.0697	0.9850	0.	0.	1.1082	0.9845	0.9762	1.0775	1.0655	1.0372	0.9746	0.9355	0.7735	0.6159			
				0.	0.	0.	0.	0.	0.	1.0106	1.0156	0.	0.	1.0336	1.0291	1.0134	1.0137	1.0252	1.0211	1.0165	1.0351	0.9974	1.0364			
5			0.	0.	0.	0.	0.	0.	0.	1.0744	1.1174	0.	0.	1.1096	1.1236	1.1217	1.0543	1.0403	1.0932	1.0695	1.0186	0.9384	0.7695	0.		
			0.	0.	0.	0.	0.	0.	0.	1.1090	1.1588	0.	0.	1.1617	1.1551	1.1675	1.0999	1.0796	1.1049	1.0820	1.0189	0.8696	0.7729	0.		
			0.	0.	0.	0.	0.	0.	0.	1.0322	1.0371	0.	0.	1.0469	1.0281	1.0409	1.0432	1.0378	1.0107	1.0117	1.0003	0.9267	1.0044	0.		
6			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1279	1.1247	1.1484	1.0997	1.0754	1.1176	1.0959	1.0818	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1841	1.1869	1.1398	1.1195	1.0982	1.1149	1.1176	1.1093	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0499	1.0553	0.9925	1.0180	1.0211	0.9976	1.0198	1.0254	0.	0.	0.		
7			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1297	0.9323	0.9719	1.1843	1.1665	0.9991	0.9838	1.1018	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1834	0.9469	0.9271	1.1544	1.1743	0.9543	0.9648	1.1095	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0475	1.0157	0.9539	0.9748	1.0067	0.9552	0.9807	1.0070	0.	0.	0.		
8		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1340	0.9414	0.9698	1.2212	1.1865	1.0475	1.0061	0.	1.0808	1.0078	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1643	0.9411	0.9822	1.2574	1.2316	1.0151	0.9716	0.	1.0900	1.0215	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0267	0.9997	1.0128	1.0296	1.0380	0.9690	0.9657	0.	1.0084	1.0135	0.	0.	
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1135	1.1829	1.2019	1.2377	1.2289	1.1911	0.	0.	1.0356	1.0249	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1825	1.1870	1.2719	1.3125	1.3093	1.2355	0.	0.	1.0653	1.0535	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0619	1.0035	1.0583	1.0605	1.0655	1.0373	0.	0.	1.0287	1.0279	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1389	1.1932	1.2313	1.2550	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1930	1.2294	1.2567	1.3317	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0475	1.0303	1.0206	1.0611	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2057	0.9750	1.0091	1.2145	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2254	0.9617	0.9901	1.2561	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0163	0.9863	0.9812	1.0342	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1974	0.9929	1.0004	0.	1.1647	0.9549	0.	0.	1.1069	0.9513	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2531	0.9865	0.9592	0.	1.2121	0.9594	0.	0.	1.1663	0.9873	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0465	0.9935	0.9589	0.	1.0407	1.0048	0.	0.	1.0536	1.0379	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2470	1.2001	0.	0.	1.1151	1.1454	0.	0.	1.0939	1.0905	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3276	1.2508	0.	0.	1.2050	1.2000	0.	0.	1.1694	1.1240	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0646	1.0422	0.	0.	1.0806	1.0477	0.	0.	1.0690	1.0307	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0858	0.9384	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1086	0.9407	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0209	1.0025	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0423	1.0431	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0669	1.0341	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0236	0.9914	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1688	1.1348	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1868	1.1825	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0154	1.0420	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9277	1.1428	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9411	1.1644	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0145	1.0189	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
20			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
21			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
22			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
23				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
24					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
25								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
26									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								
									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								
									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								

GAMMA SCAN
XY GAMMA
XY GAMMA/GAMMA SCAN

Figure 4-7. Bundle Average Ba-140, XY Gamma and Gamma Scan

J/I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1									0	0	0	0	0	7	7	7	7	7								
2								0	0	0	0	0	0	7	7	7	7	7	7							
3					0	0	0	0	0	0	0	0	0	6	6	6	6	7	7	7	7	7				
4				0	0	0	0	0	0	0	0	0	0	6	6	6	6	6	6	7	7	7	7			
5			0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	6	6	6	6	7	0	0		
6			0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5	6	6	6	0	0	0		
7			0	0	0	0	0	0	0	0	0	0	0	4	4	4	5	5	5	5	0	0	0	0		
8		0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	5	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	4	4	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	4	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
22			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
23				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
24					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
25								0	0	0	0	0	0	0	0	0	0	0	0							
26									0	0	0	0	0	0	0	0	0	0								

Figure 4-8. Region Map of Radial Fuel Rings (75 Bundle Set)

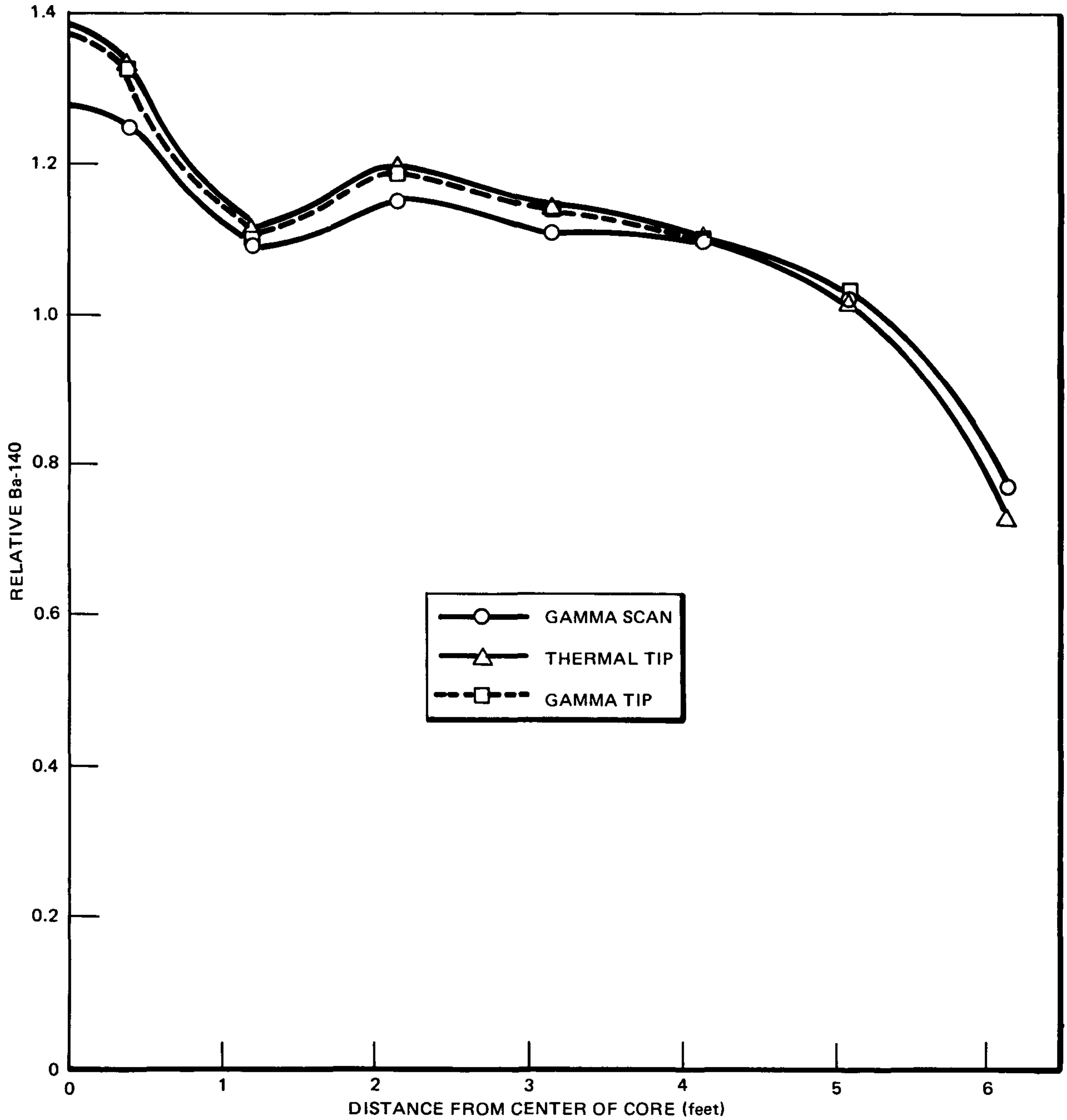


Figure 4-9. Radial Ba-140 Distribution (Normalized to 75 Bundles)

Table 4-3
RELATIVE Ba-140 FOR THE TEN HIGHEST GAMMA SCANNED BUNDLES COMPARED TO XY THERMAL AND XY GAMMA AT THE SAME LOCATION

Rank	Location (I,J)	Gamma Scan (B)	XY Thermal (A)	Percent Difference 100 (A/B-1)	XY Gamma (C)	Percent Difference 100 (C/B-1)
1	17, 10	1.255	1.369	9.1	1.332	6.1
2	14, 13	1.247	1.333	6.9	1.328	6.5
3	17, 9	1.238	1.334	7.8	1.313	6.1
4	16, 10	1.231	1.288	4.6	1.257	2.1
5	18, 9	1.229	1.306	6.3	1.309	6.5
6	17, 8	1.221	1.283	5.1	1.257	2.9
7	17, 11	1.215	1.299	6.9	1.256	3.4
8	14, 11	1.205	1.241	3.0	1.225	1.7
9	16, 9	1.202	1.308	8.8	1.272	5.8
10	15, 13	1.200	1.257	4.8	1.251	4.3
	Average Percent Difference			6.3		4.5

Table 4-4
RELATIVE Ba-140 FOR THE TEN HIGHEST GAMMA SCANNED BUNDLES COMPARED BY RANK TO THE TEN HIGHEST XY THERMAL AND XY GAMMA BUNDLES

	Gamma Scan		XY Thermal			XY Gamma		
Rank	Location (I,J)	Relative Ba-40 (B)	Location (I,J)	Relative Ba-140 (A)	Percent Difference 100 (A/B-1)	Location (I,J)	Relative Ba-140 (C)	Percent Difference 100 (C/B-1)
1	17, 10	1.255	17, 10	1.369	9.1	17, 10	1.332	6.1
2	14, 13	1.247	17, 9	1.334	7.0	14, 13	1.328	6.5
3	17, 9	1.238	14, 13	1.333	7.7	17, 9	1.313	6.1
4	16, 10	1.231	16, 9	1.308	6.3	18, 9	1.309	6.3
5	18, 9	1.229	18, 9	1.306	6.3	16, 9	1.272	3.5
6	17, 8	1.221	17, 11	1.299	6.4	17, 8	1.257	2.9
7	17, 11	1.215	16, 10	1.288	6.0	16, 10	1.257	3.5
8	14, 11	1.205	17, 8	1.283	6.5	17, 11	1.256	4.2
9	16, 9	1.202	14, 12	1.265	5.2	14, 12	1.253	4.2
10	15, 13	1.200	15, 13	1.257	4.8	15, 13	1.251	4.3
	Average Percent Difference				6.5			4.8

Table 4-5
RELATIVE Ba-140 FOR THE TWENTY FIVE HIGHEST GAMMA SCANNED NODES COMPARED TO XY THERMAL AND XY GAMMA AT THE SAME LOCATIONS
(Only Odd Numbered Nodes are Considered)

Rank	Location (I,J,K)	Gamma Scan Relative Ba-140 (B)	XY Thermal Relative Ba-140 (A)	XY Thermal Percent Difference 100 (A/B-1)	XY Gamma Relative Ba-40 (C)	XY Gamma Percent Difference 100 (C/B-1)
1	11, 4,17	1.908	2.012	5.5	1.948	2.1
2	16, 4,17	1.899	1.982	4.4	1.920	1.1
3	16,12,19	1.889	1.857	−1.7	1.888	−0.1
4	15,12,19	1.876	1.865	−0.6	1.860	−0.9
5	16, 8,19	1.875	2.054	9.5	1.993	6.3
6	16, 7,19	1.873	1.927	2.9	1.930	3.0
7	15, 4,17	1.859	1.875	0.9	1.931	3.9
8	14, 5,17	1.849	1,894	2.4	1.939	4.9
9	16,11,19	1.842	1.954	6.1	1.893	2.8
10	15,11,19	1.836	1.930	5.1	1.912	4.1
11	15, 8,19	1.835	1.875	2.2	1.931	5.2
12	19, 8,17	1.834	1.870	2.0	1.942	5.9
13	10, 5,17	1.825	1.979	8.4	1.933	5.9
14	19, 7,17	1.823	1.771	−2.9	1.894	3.9
15	10, 5,15	1.822	1.912	4.9	1.900	4.3
16	17, 6,17	1.820	1.865	2.5	1.919	5.4
17	11, 5,17	1.819	2.006	10.3	1.949	7.1
18	15, 5,17	1.819	1.838	1.0	1.887	3.7
19	11, 5,15	1.818	1.935	6.4	1.905	4.8
20	20, 8,19	1.816	1.868	2.9	1.826	0.6
21	20, 8,17	1.814	1.906	5.1	1.926	6.2
22	12,19,19	1.812	1.875	3.5	1.931	6.6
23	16, 5,17	1.809	2.035	12.5	1.977	9.3
24	15, 5,17	1.807	1.838	1.7	1.887	4.4
25	14, 5,15	1.805	1.785	−1.1	1.915	6.1
	Average Percent Difference			3.8		4.3

Table 4-6

RELATIVE Ba-140 FOR THE TWENTY FIVE HIGHEST GAMMA SCANNED NODES COMPARED BY RANK TO THE TWENTY FIVE HIGHEST XY THERMAL AND XY GAMMA NODES

(Only Odd Numbered Nodes are Considered)

	Gamma Scan		XY Thermal			XY Gamma		
Rank	Location (I,J,K)	Relative Ba-140 (B)	Location (I,J,K)	Relative Ba-140 (A)	Percent Difference 100 (A/B-1)	Location (I,J,K)	Relative Ba-140 (C)	Percent Difference 100 (C/B-1)
1	11, 4,17	1.908	15, 7,19	2.066	8.3	14, 6,17	2.008	5.2
2	16, 4,17	1.899	16, 8,19	2.054	8.2	15, 7,19	2.004	5.5
3	16,12,19	1.889	16, 5,17	2.035	7.7	15, 4,15	1.994	5.6
4	15,12,19	1.876	14, 6,17	2.026	8.0	16, 8,19	1.993	6.2
5	16, 8,19	1.875	11, 4,17	2.012	7.3	16, 5,17	1.977	5.4
6	16, 7,19	1.873	11, 5,17	2.006	7.1	11, 4,15	1.977	5.6
7	15, 4,17	1.859	11, 4,15	2.003	7.7	16, 4,15	1.963	5.6
8	14, 5,17	1.849	16, 4,15	1.988	7.5	11, 5,17	1.949	5.4
9	16,11,19	1.842	16, 4,17	1.982	7.6	11, 4,17	1.948	5.8
10	15,11,19	1.836	10, 5,17	1.979	7.8	19, 8,17	1.942	5.8
11	15, 8,19	1.835	15, 6,19	1.971	7.4	14, 5,17	1.939	5.7
12	19, 8,17	1.834	19,12,19	1.970	7.4	10, 5,17	1.933	5.4
13	10, 5,17	1.825	11, 5,19	1.955	7.1	15, 4,17	1.931	5.8
14	19, 7,17	1.823	16,11,19	1.954	7.2	15, 8,19	1.931	5.9
15	10, 5,15	1.822	16, 5,19	1.952	7.1	12,19,19	1.931	6.0
16	17, 6,17	1.820	17, 5,17	1.948	7.0	16, 7,19	1.930	6.0
17	11, 5,17	1.819	16, 5,15	1.947	7.0	20, 8,17	1.926	5.9
18	15, 5,17	1.819	16, 9,19	1.943	6.8	23,12,15	1.923	5.7
19	11, 5,15	1.818	14, 6,19	1.939	6.7	14, 6,15	1.922	5.7
20	20, 8,19	1.816	15, 6,17	1.939	6.8	16, 4,17	1.920	5.7
21	20, 8,17	1.814	11, 5,15	1.935	6.7	17, 6,17	1.919	5.8
22	12,19,19	1.812	15,11,19	1.928	6.4	16, 5,15	1.917	5.8
23	16, 5,17	1.809	16, 7,19	1.927	6.5	14, 5,15	1.915	5.9
24	15, 5,17	1.807	14, 7,19	1.919	6.2	15,11,19	1.912	5.8
25	14, 5,15	1.805	14, 6,15	1.918	6.3	19,12,19	1.908	5.7
	Average Percent Difference				7.2			5.7

Table 4-7
STANDARD DEVIATION OF NODAL Ba-140 DIFFERENCES
BY AXIAL PLANE*

Plane	Standard Deviation (%)** XY Thermal	XY Gamma
1	7.6	7.7
3	6.5	6.2
5	6.6	6.2
7	6.7	6.0
9	6.8	6.3
11	6.4	6.3
13	6.6	6.1
15	7.9	7.5
17	7.6	7.4
19	8.3	7.5
21	9.5	8.8
23	9.8	8.3
All Nodes	9.6	9.6

*106 Bundle Data Set Normalized to 106 Bundles
**See page 4; differences are relative to gamma scan.

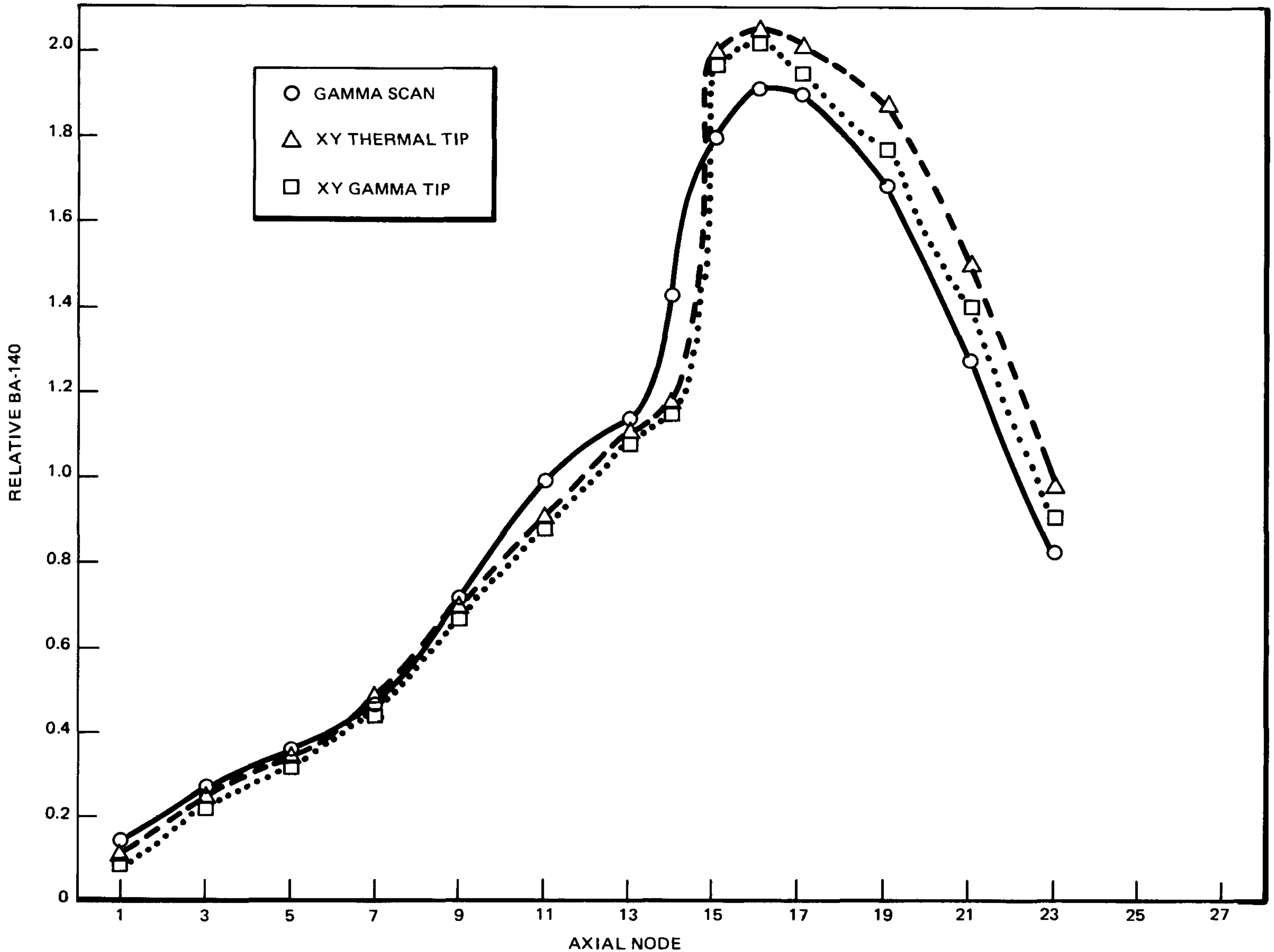


Figure 4-10. Axial Ba-140 Distribution for Bundle with Peak Node (I = 11, J = 4)

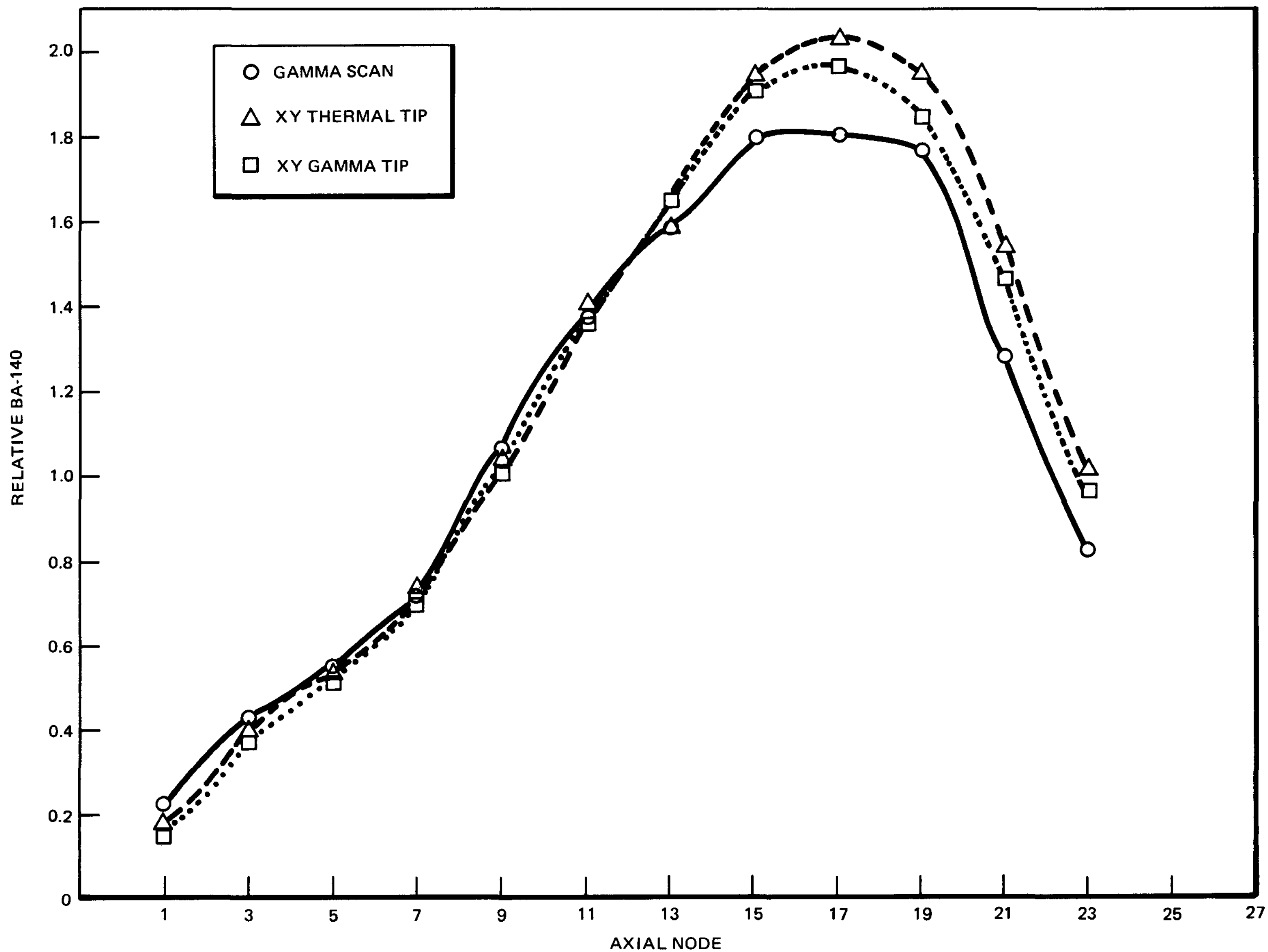


Figure 4-11. Axial Ba-140 Distribution for Uncontrolled Bundle (I = 16, J = 5)

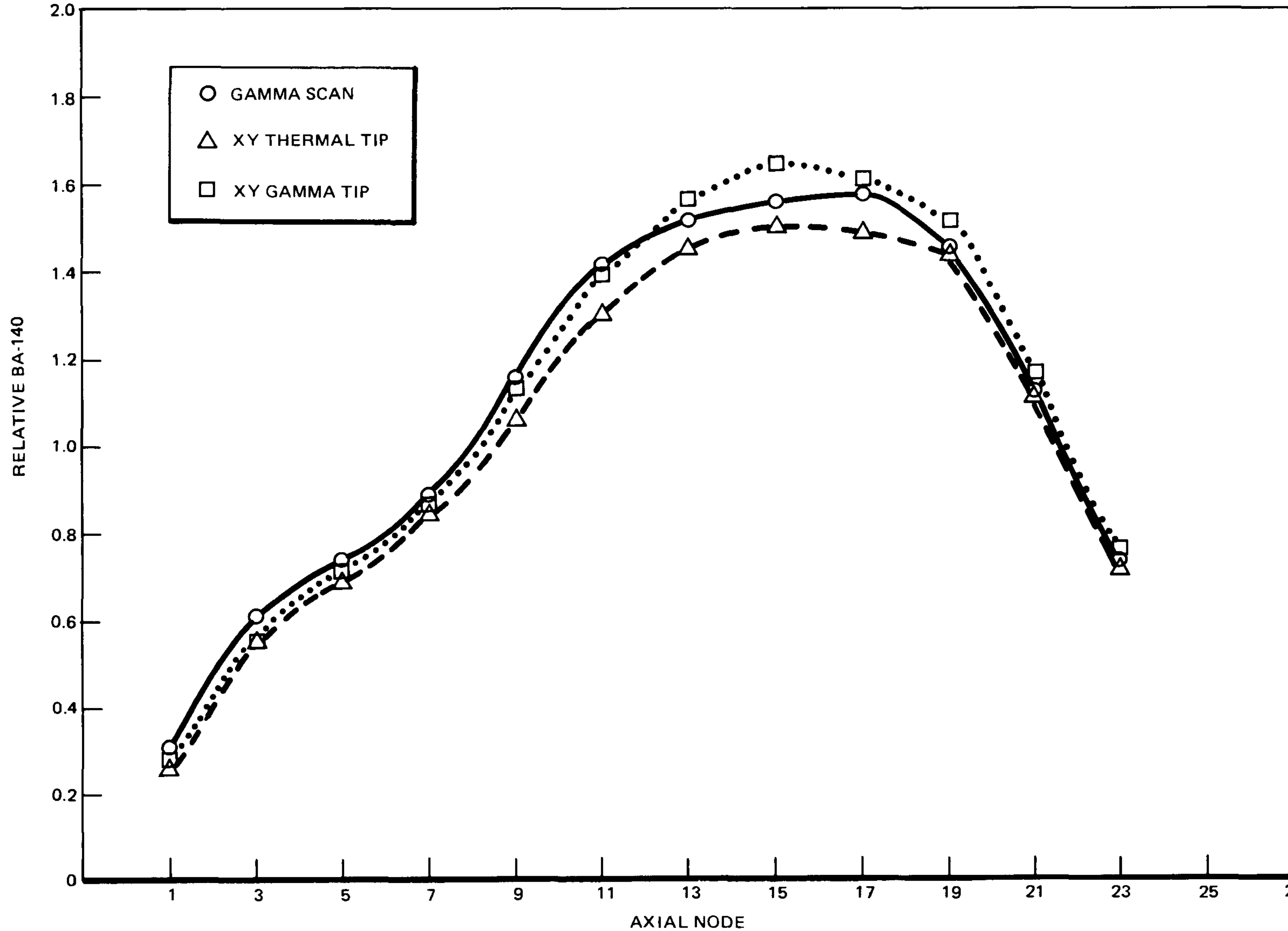


Figure 4-12. Axial Ba-140 Distribution for Bundle (I = 19, J = 5)

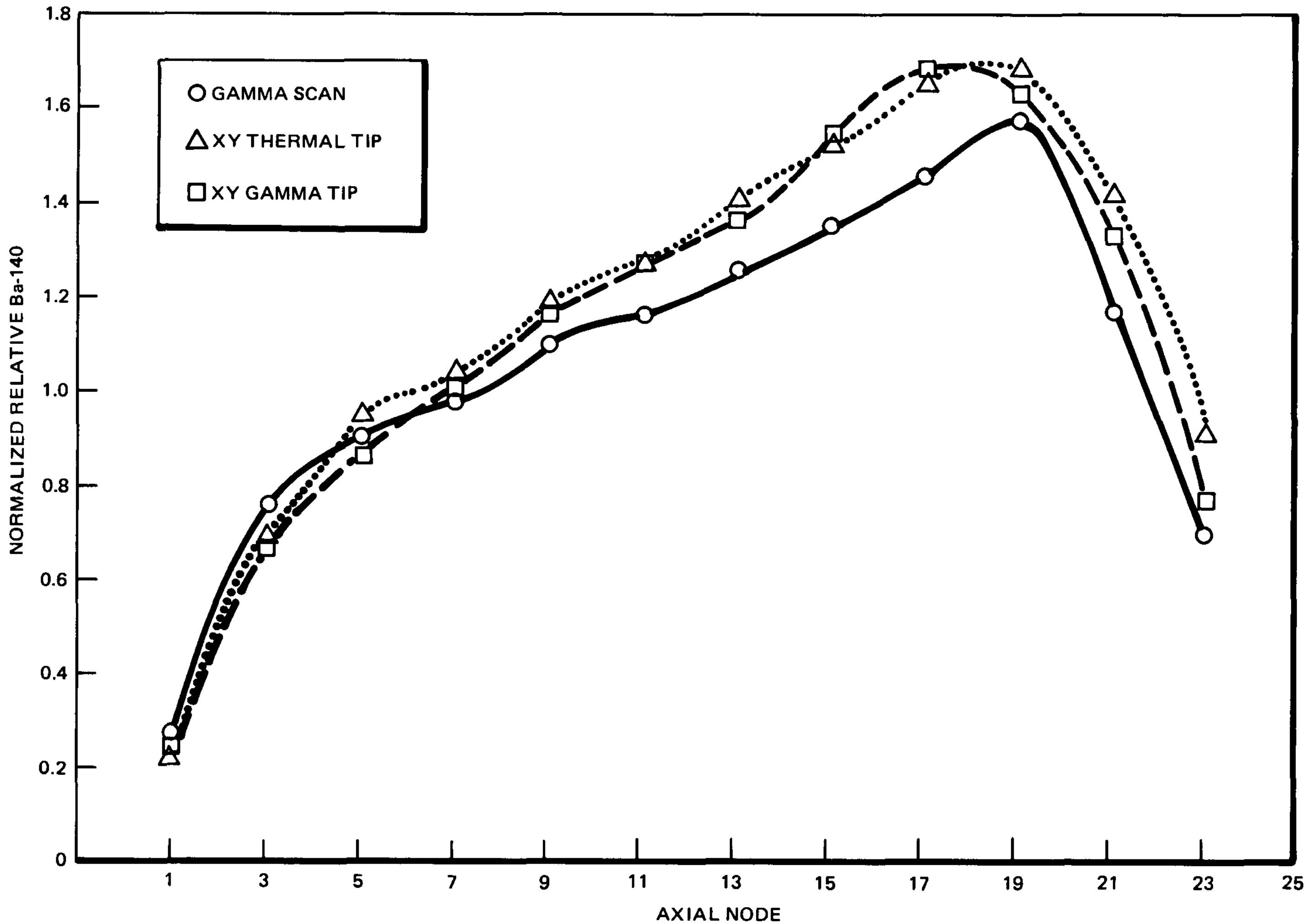


Figure 4-13. Axial Ba-140 Distribution for Highest Power Bundle (I = 17, J = 10)

J/I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1									159	160	160	161	161	162	162	163	163	164								
2								119	119	120	120	121	121	122	122	123	123	124	124							
3					155	156	156	119	119	120	120	121	121	122	122	123	123	124	124	157	157	158				
4				114	114	27	27	115	115	28	28	116	116	29	29	117	117	30	30	118	118	31	31			
5			153	114	114	27	27	115	115	28	28	116	116	29	29	117	117	30	30	118	118	31	31	154		
6			151	104	104	105	105	106	106	107	107	108	108	109	109	110	110	111	111	112	112	113	113	152		
7			151	104	104	105	105	106	106	107	107	108	108	109	109	110	110	111	111	112	112	113	113	152		
8		21	21	98	98	22	22	99	99	23	23	100	100	24	24	101	101	25	25	102	102	26	26	103	103	
9	149	21	21	98	98	22	22	99	99	23	23	100	100	24	24	101	101	25	25	102	102	26	26	103	103	150
10	147	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93	94	94	95	95	96	96	97	97	148
11	147	86	86	87	87	88	88	89	89	90	90	91	91	92	92	93	93	94	94	95	95	96	96	97	97	148
12	145	15	15	80	80	16	16	81	81	17	17	82	82	18	18	83	83	19	19	84	84	20	20	85	85	146
13	145	15	15	80	80	16	16	81	81	17	17	82	82	18	18	83	83	19	19	84	84	20	20	85	85	146
14	143	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	144
15	143	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	144
16	141	9	9	62	62	10	10	63	63	11	11	64	64	12	12	65	65	13	13	66	66	14	14	67	67	142
17	141	9	9	62	62	10	10	63	63	11	11	64	64	12	12	65	65	13	13	66	66	14	14	67	67	142
18	139	50	50	51	51	52	52	53	53	54	54	55	55	56	56	57	57	58	58	59	59	60	60	61	61	140
19		50	50	51	51	52	52	53	53	54	54	55	55	56	56	57	57	58	58	59	59	60	60	61	61	
20			137	45	45	4	4	46	46	5	5	47	47	6	6	48	48	7	7	49	49	8	8	138		
21			137	45	45	4	4	46	46	5	5	47	47	6	6	48	48	7	7	49	49	8	8	138		
22			135	35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44	136		
23				35	35	36	36	37	37	38	38	39	39	40	40	41	41	42	42	43	43	44	44			
24					131	132	132	32	32	1	1	33	33	2	2	34	34	3	3	133	133	134				
25								32	32	1	1	33	33	2	2	34	34	3	3							
26									125	126	126	127	127	128	128	129	129	130								

Figure 4-14. TIP Locations Associated with Each Bundle

Table 4-8
SYMMETRIC BUNDLE POWER RATIO COMPARISON

Bundle Ratio ID	Gamma Scan Ratio (A)	XY Thermal Power Ratio (B)	XY Gamma Power Ratio (C)	A-B	A-C
22,8/19,5	0.989	1.004	0.986	–0.015	0.003
23,8/19,4	0.992	1.006	0.985	–0.014	0.007
23,9/18,4	0.986	1.011	0.989	–0.025	–0.003
22,9/18,5	0.995	1.007	0.987	–0.012	0.008
18,12/15,9	0.985	1.072	1.021	–0.087	–0.036
19,12/15,8	1.014	1.075	1.020	–0.061	–0.006
19,13/14,8	1.010	1.071	1.031	–0.061	–0.021
18,13/14,9	1.001	1.063	1.019	–0.062	–0.018
22,12/15,5	0.985	1.072	1.010	–0.087	–0.025
23,12/15,4	0.994	1.070	1.003	–0.076	–0.009
23,13/14,4	1.017	1.076	1.014	–0.059	0.003
22,13/14,5	0.986	1.057	1.007	–0.071	–0.021
22,16/11,5	0.972	0.880	0.957	0.092	0.015
23,16/11,4	0.968	0.880	0.955	0.088	0.013
23,17/10,4	0.986	0.901	0.967	0.085	0.019
22,17/10,5	0.970	0.894	0.962	0.076	0.008
		Standard Deviation of Differences		0.066	0.016

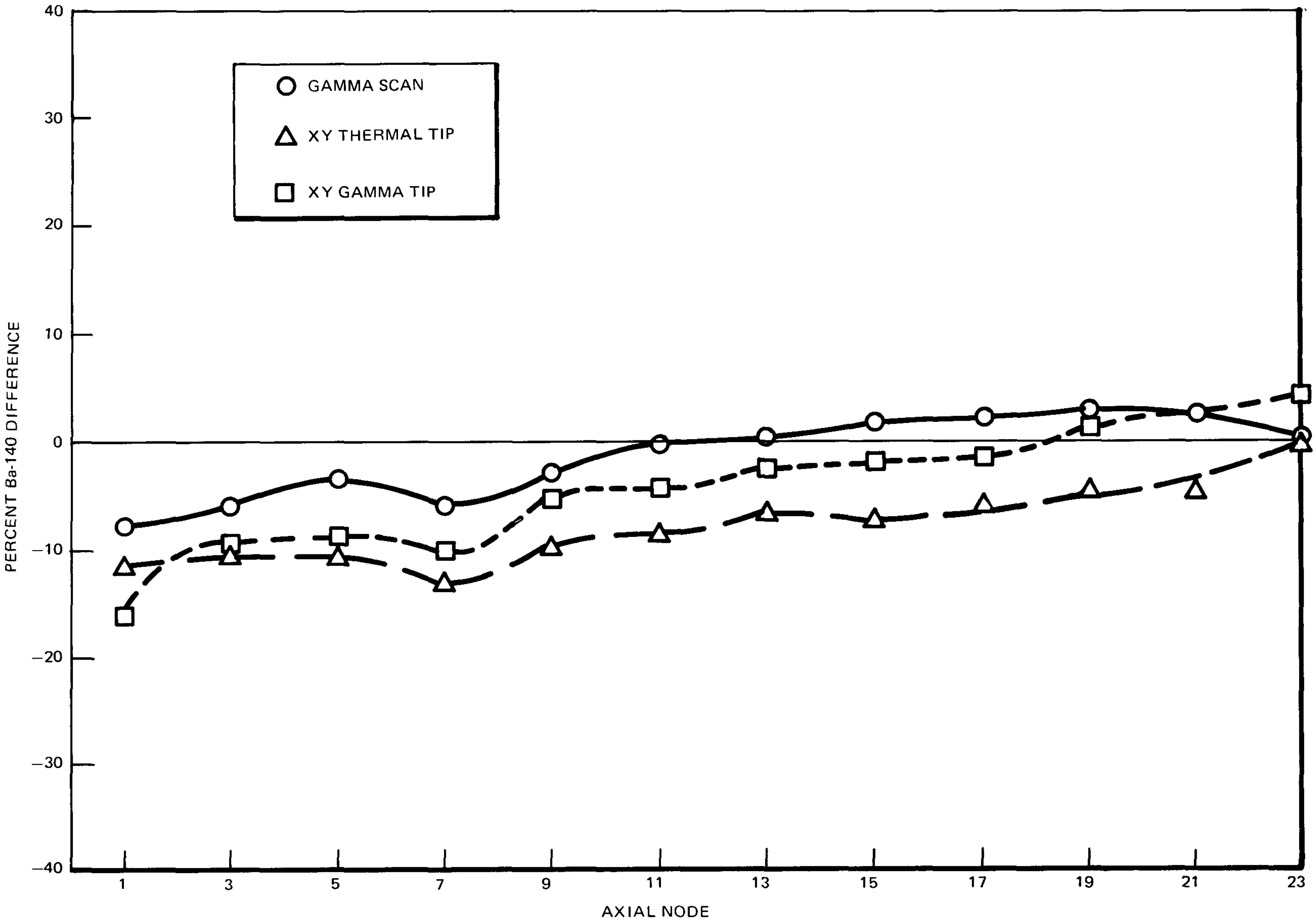


Figure 4-15. Ba-140 Four-Bundle Average Asymmetry for TIP Strings 24 and 19

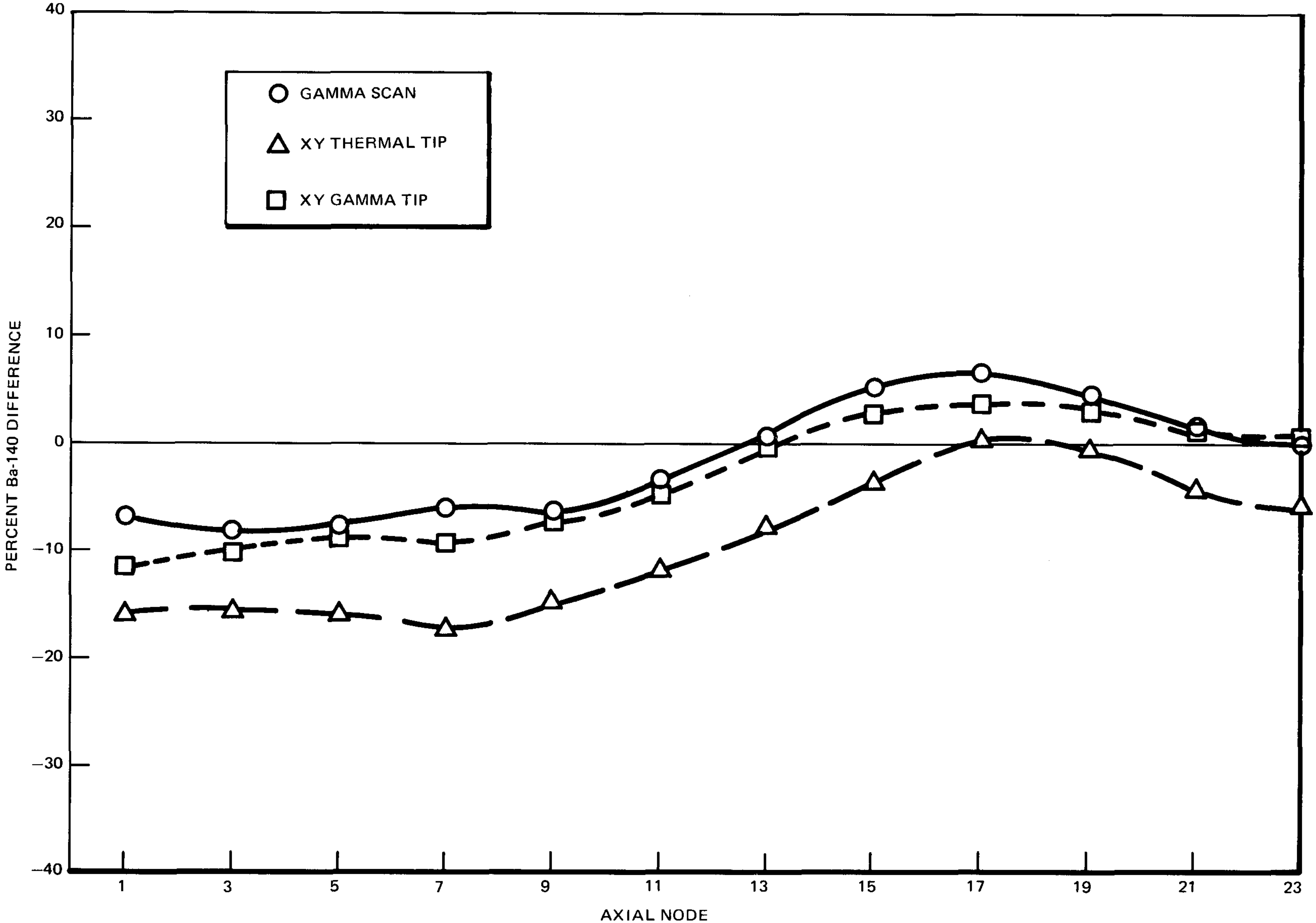


Figure 4-16. Ba-140 Four-Bundle Average Asymmetry for TIP Strings 29 and 20

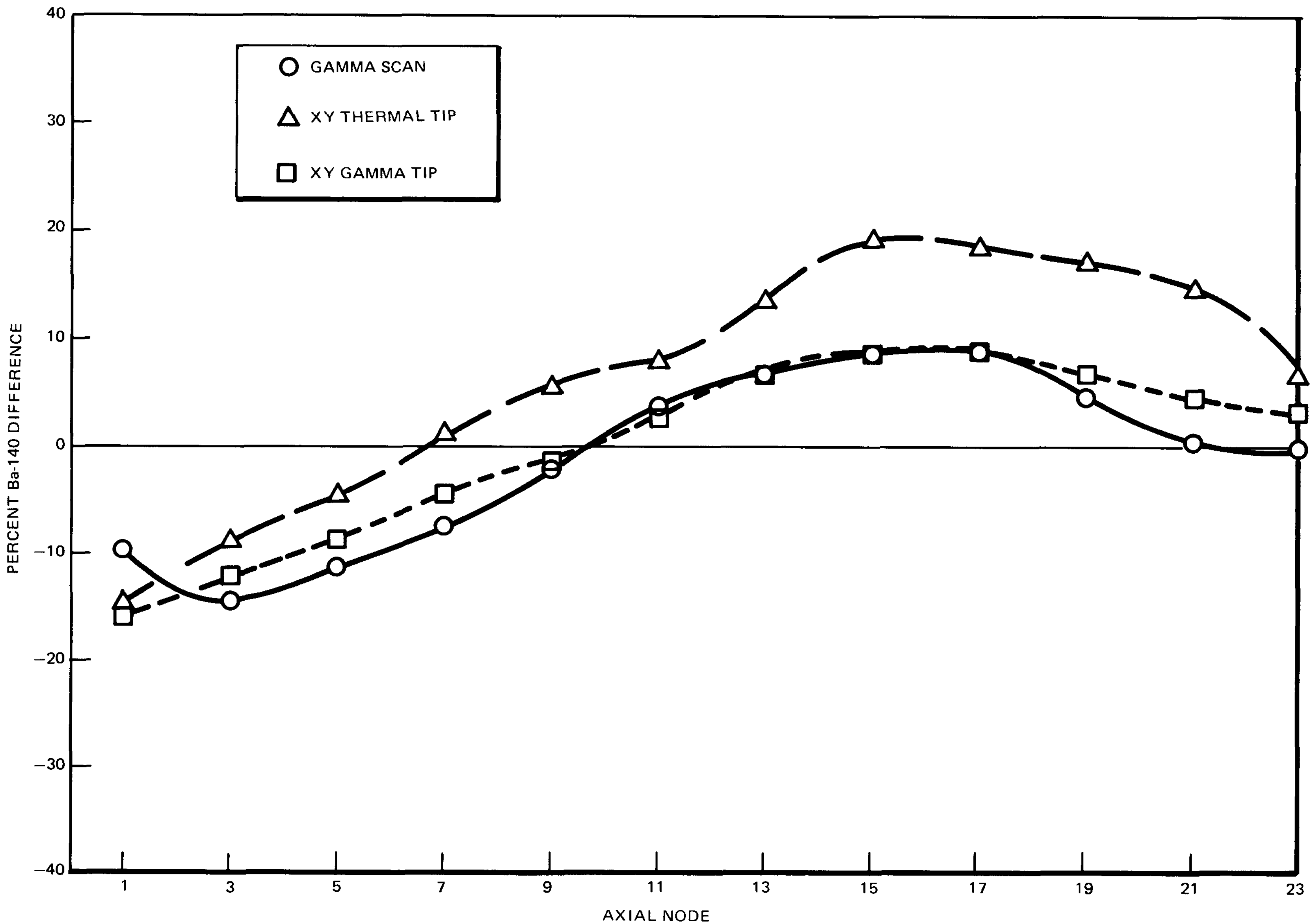


Figure 4-17. Ba-140 Four-Bundle Average Asymmetry for TIP Strings 28 and 14

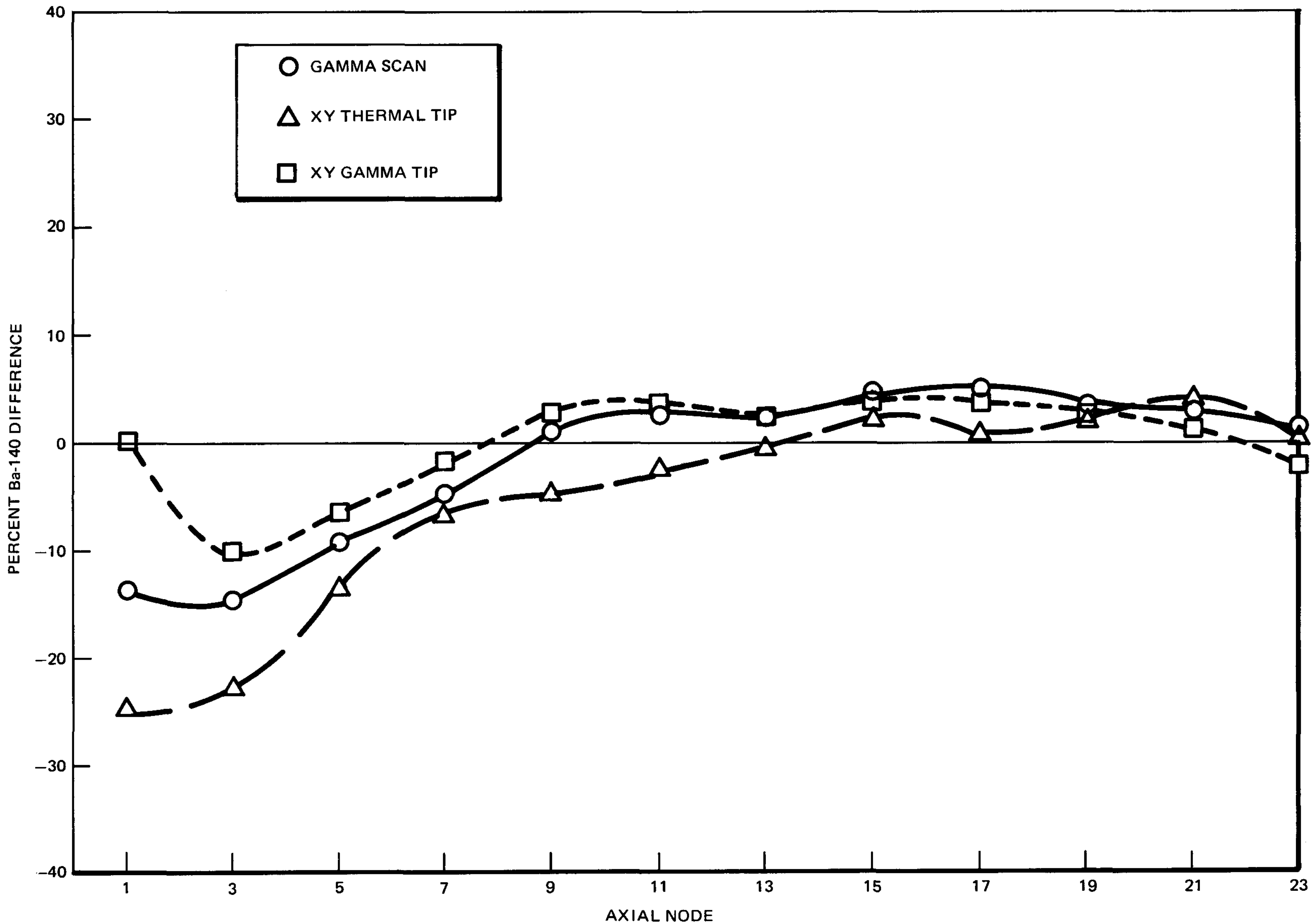


Figure 4-18. Ba-140 Four-Bundle Average Asymmetry for TIP Strings 30 and 26

J/I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1									0	0	0	0	0	7	7	7	7	7								
2								0	0	0	0	0	0	7	7	7	7	7	7							
3					0	0	0	0	0	0	0	0	0	7	3	3	7	7	7	7	7	7				
4				0	0	0	0	0	0	7	3	0	0	7	3	3	7	7	7	7	7	7	7			
5			0	0	0	0	0	0	0	4	7	0	0	5	7	7	4	4	7	7	7	7	7	0		
6			0	0	0	0	0	0	0	0	0	0	0	5	7	7	4	4	7	7	7	0	0	0		
7			0	0	0	0	0	0	0	0	0	0	0	7	1	1	7	7	2	2	7	0	0	0		
8		0	0	0	0	0	0	0	0	0	0	0	0	7	1	1	7	7	2	2	0	7	7	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7	7	7	7	7	0	0	4	7	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7	7	7	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1	7	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1	0	7	1	0	0	7	3	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	0	0	6	7	0	0	5	7	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	3	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	7	6	0	0	0	0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	
20			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
21			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
22			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
23				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
24					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
25								0	0	0	0	0	0	0	0	0	0	0	0							
26									0	0	0	0	0	0	0	0	0	0								

REGION NUMBER	NOTCHES WITHDRAWN
1	14
2	18
3	20
4	28
5	32
6	36
7	48 (UNCONTROLLED)

Figure 4-19. Region Map of Control Rod Pattern

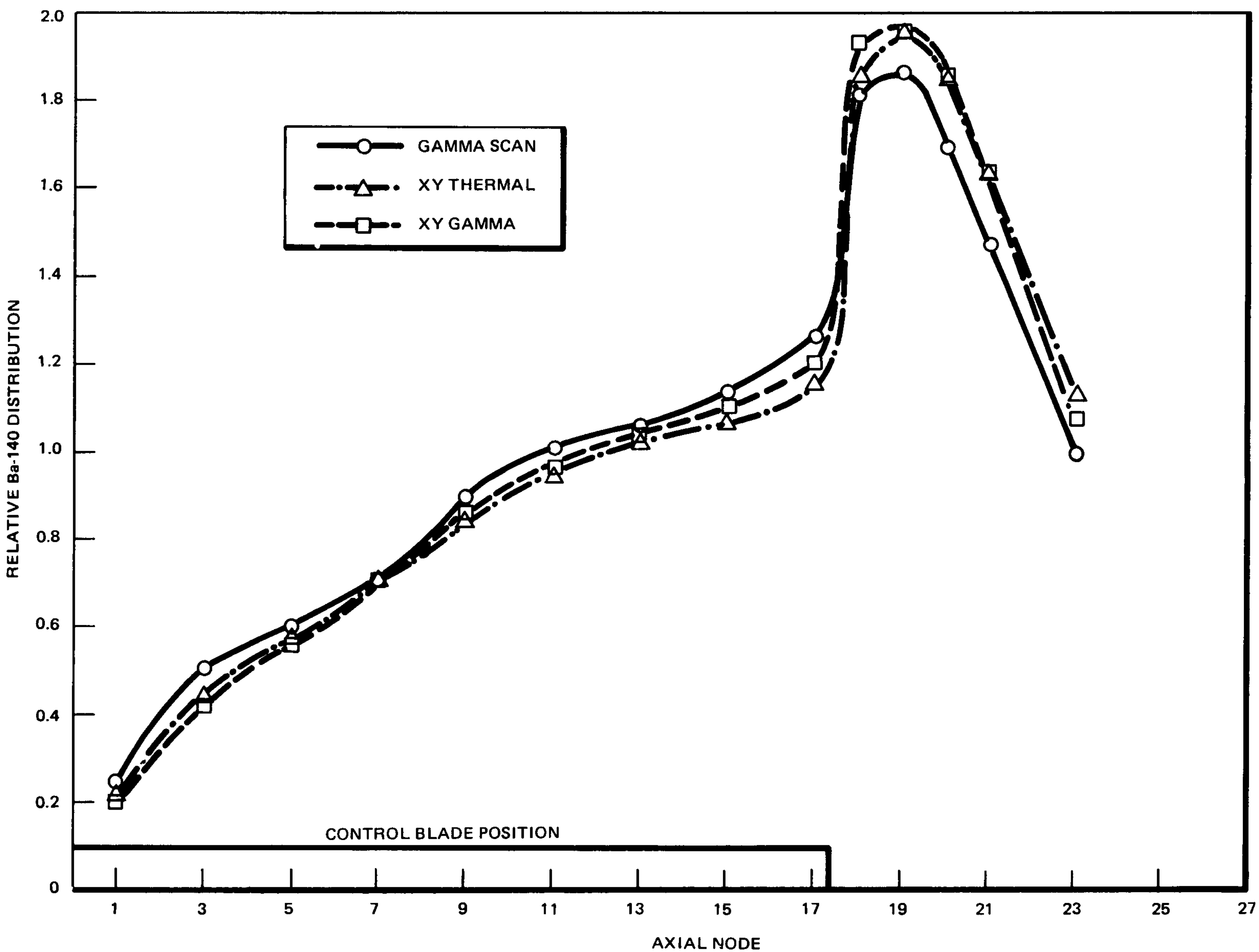


Figure 4-20. Composite Axial Distributions of 10 Bundles Adjacent to Control Blades with Notch Position 14. (Distributions Normalized to 1.0)

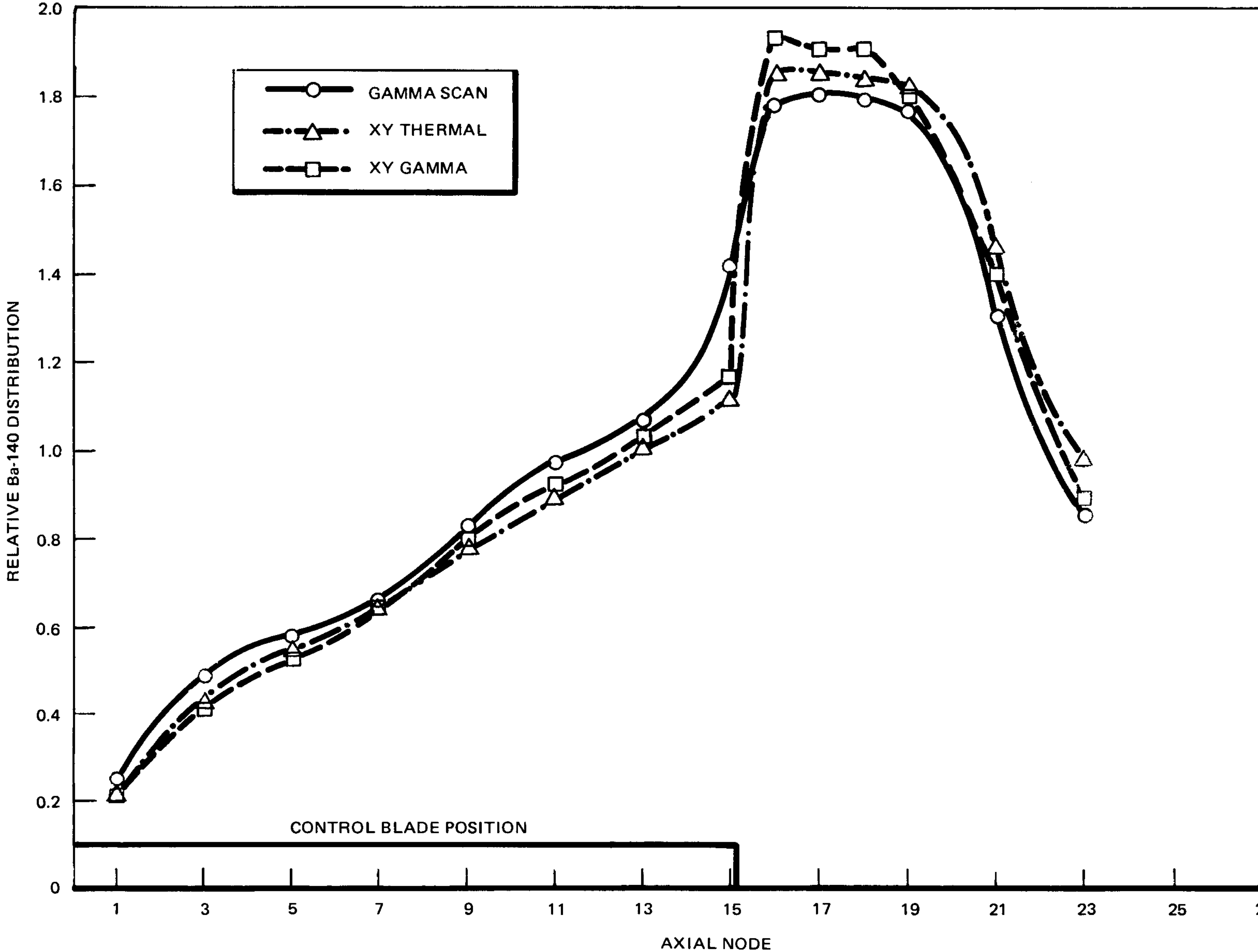


Figure 4-21. Composite Axial Distributions of 4 Bundles Adjacent to Control Blades with Notch Position 18. (Distributions Normalized to 1.0)

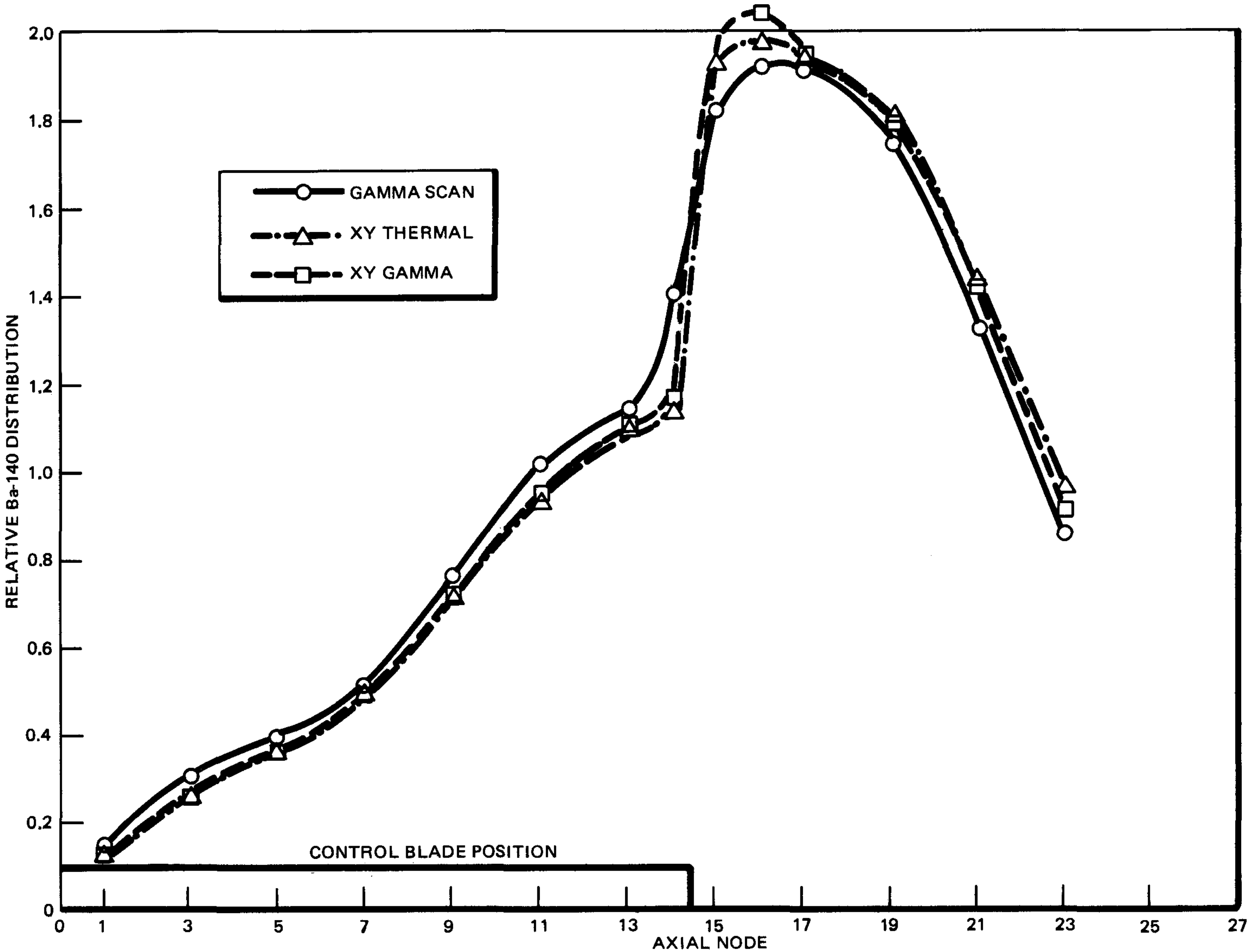


Figure 4-22. Composite Axial Distributions of 7 Bundles Adjacent to Control Blades with Notch Position 20. (Distributions Normalized to 1.0)

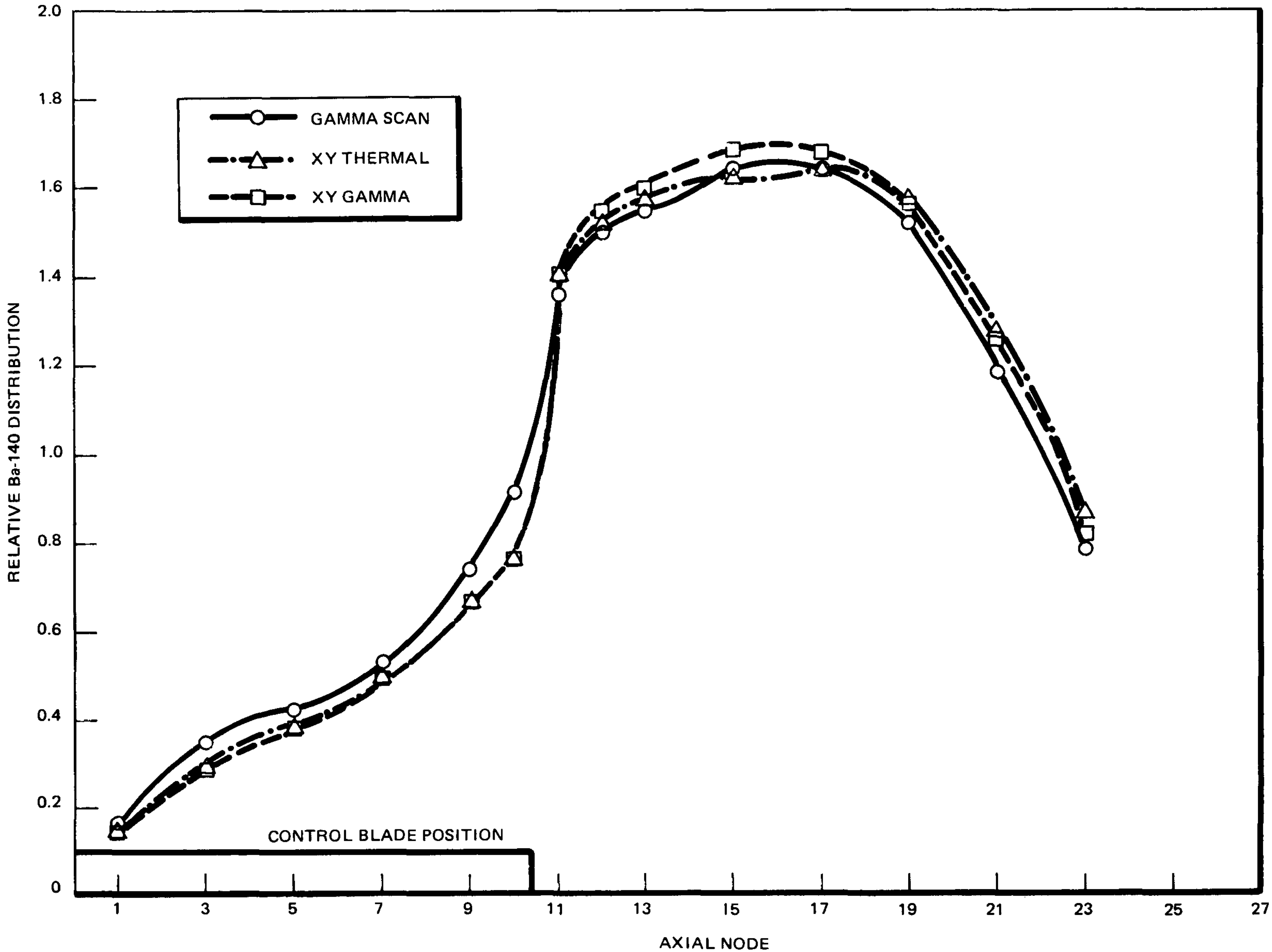


Figure 4-23. Composite Axial Distributions of 7 Bundles Adjacent to Control Blades with Notch Position 28. (Distributions Normalized to 1.0)

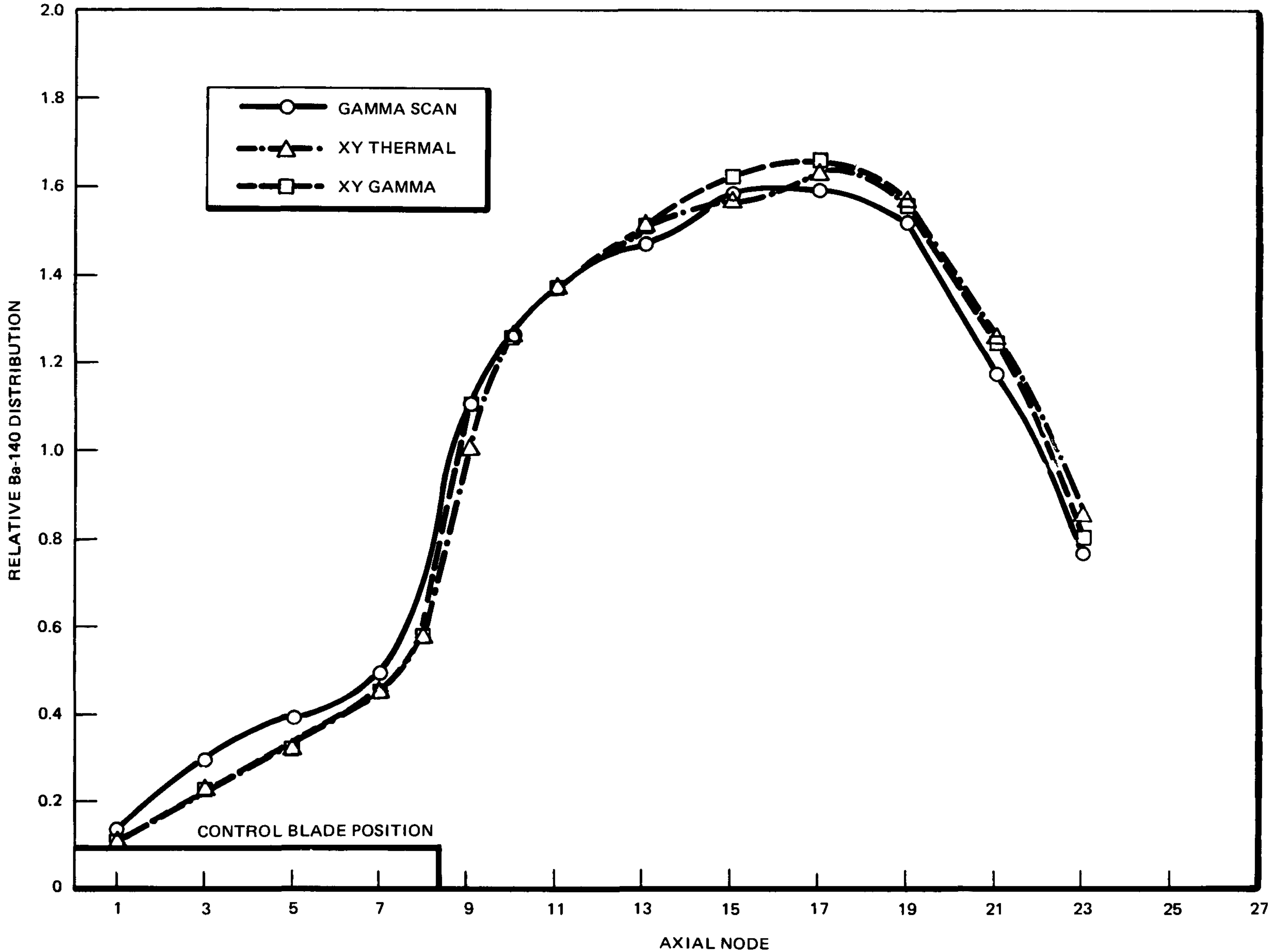


Figure 4-24. Composite Axial Distributions of 3 Bundles Adjacent to Control Blades with Notch Position 32. (Distributions Normalized to 1.0)

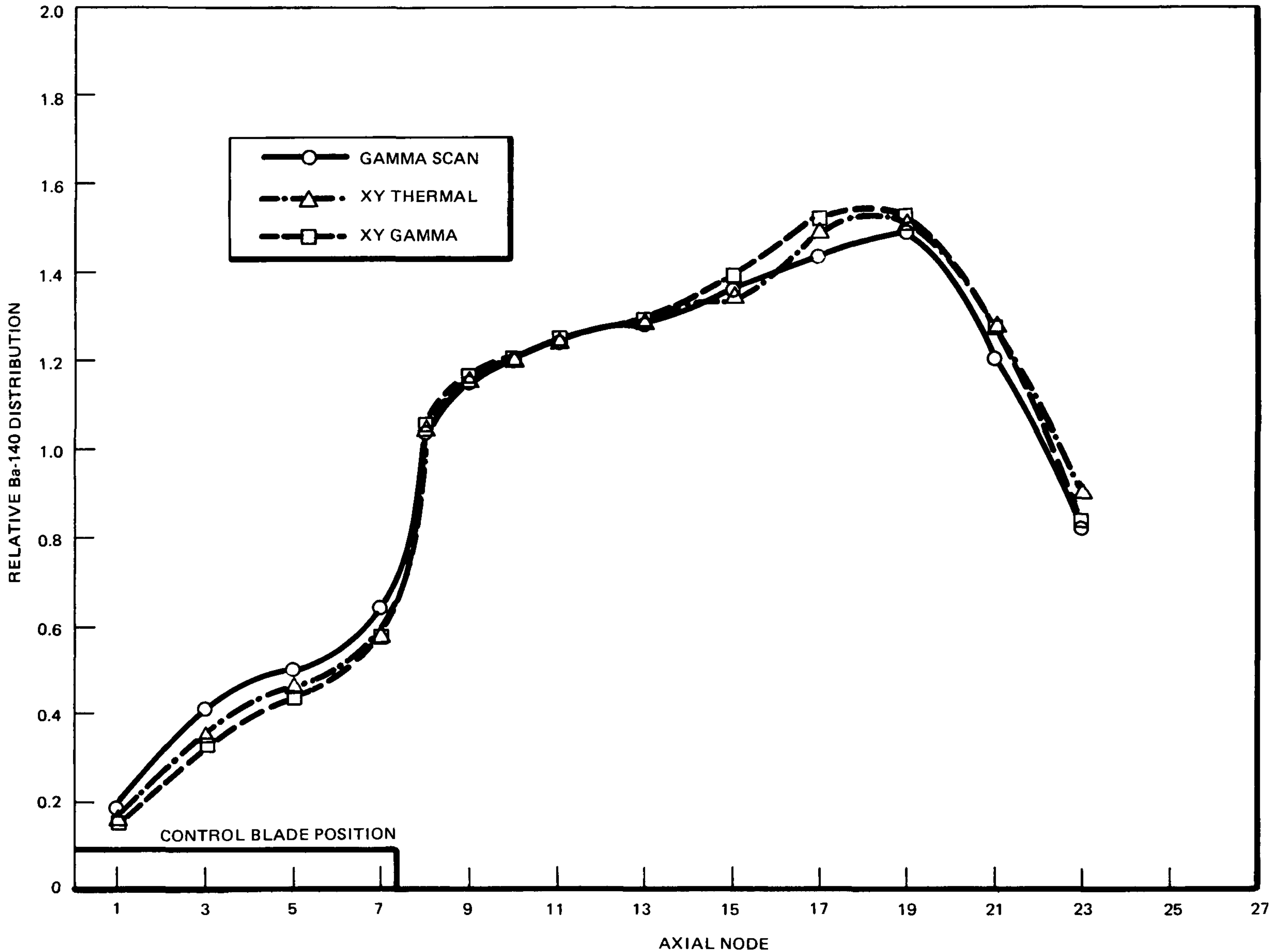
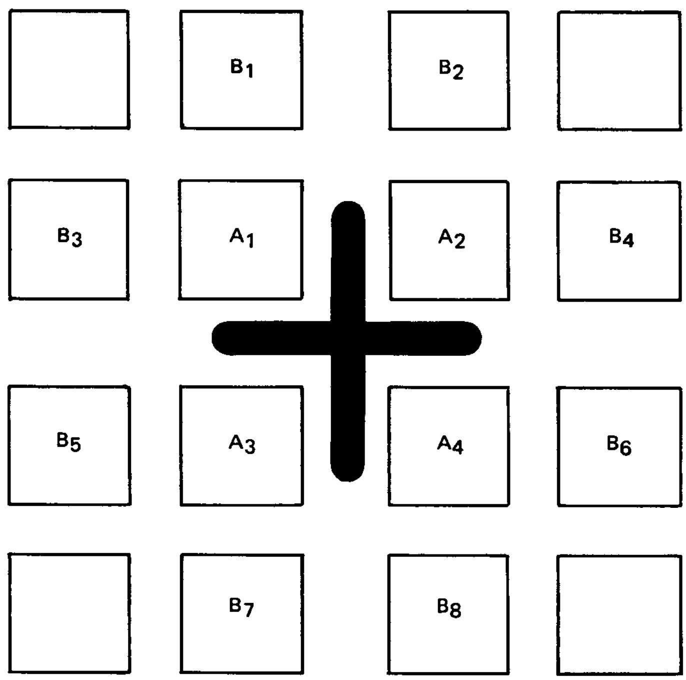


Figure 4-25. Composite Axial Distributions of 4 Bundles Adjacent to Control Blades with Notch Position 34. (Distributions Normalized to 1.0)



$$\text{RATIO} = \frac{1/4 \sum_{i=1}^{4} A_i}{1/8 \sum_{i=1}^{8} B_i}$$

RATIOS WERE CALCULATED IN PLANES 3, 5, 7, 9, 11, 13, AND 15 AT ALL LOCATIONS WHERE A CONTROL BLADE PENETRATED THE PLANE

Figure 4-26. Calculation of Controlled/Uncontrolled Power Ratios

5. OD-1 THERMAL TIP AND GAMMA SCAN COMPARISONS

5.1 INTRODUCTION

The OD-1 thermal Ba-140 distribution is presented in Appendix F, and differences relative to the gamma scan data are tabulated in Appendix G. Comparisons between this and the measured distribution are discussed in this section. Organization is the same as Section 4 with individual discussions of the axial, radial, and nodal distributions as well as TIP asymmetry and control blade effects. While it is tempting to make comparisons of the OD-1 thermal and XY thermal distributions, differences between these distributions are due to systematic differences in measurement techniques as discussed in Section 4.

5.2 AXIAL POWER DISTRIBUTION

The gamma scan and OD-1 thermal axial Ba-140 distributions, averaged over the 106 bundle set, are presented in Figure 5-1. The standard deviation of their differences is 2.5%, and the process computer overpredicts the value at the axial peak location by 1.6%. Planar average relative Ba-140 values for the gamma scan and the process computer are presented in Table 5-1, along with percent differences.

As a measure of how well the process computer calculates axial peaking for individual bundles, the difference of peak node for OD-1 thermal and peak node for gamma scan was computed for each of the 106 bundles. The average of these differences was found to be 0.018 with a standard deviation of 0.041. For this calculation, peaks of the distribution were compared without regard to axial location. Similar calculations were performed with the bundles grouped by bundle type and control state. The results show that large axial peaking differences occur predominantly in controlled bundles where the OD-1 thermal is high by an average of 0.044. The OD-1 thermal exceeds the gamma scan by only 0.007 for the uncontrolled bundles.

Comparisons by bundle type do not show any design dependence on axial peaking differences. Of the three bundle types in the Hatch reactor for cycle 1, the two interior bundle types showed similar peaking differences: 0.020 for type 1 and 0.021 for type 2. Type 3 bundles (peripheral ones) were all uncontrolled, and had a peaking difference of only 0.007.

5.3 RADIAL POWER DISTRIBUTION

The OD-1 thermal Ba-140 value of the highest gamma scanned bundle (I = 17, J = 10) was overpredicted by 9.2%. A comparison of OD-1 thermal and gamma scan Ba-140 for the ten highest bundles is presented in Table 5-2. OD-1 thermal is high by an average of 6.4% for these bundles. In order to determine the ability of the process computer to calculate thermal margin, a comparison by rank of the ten highest OD-1 thermal bundles with the ten highest gamma scan bundles is made in Table 5-3. This shows that the process computer does a good job of determining which locations are most limiting, but introduces a positive bias of 6.5%. This bias increases to 7.0% when account is taken for the systematic errors introduced into the OD-1 thermal distribution during the simulation of power history prior to the gamma scan (see Section 3.4).

A plot of the radial power shape for the 75 bundle set is presented in Figure 5-2. Averages over the regions shown in Figure 4-8 were used to make this plot. Ba-140 values in the outer two regions were underpredicted in the OD-1 thermal distribution by 3.7%, and the five central regions were high by 3.2%. The edge bundles alone were underpredicted by an average of 8.3%.

The radial Ba-140 distribution for individual bundles is presented in Figure 5-3. The standard deviation of the differences between bundle average values for the 75 bundle set is 7.1%. Controlled and uncontrolled bundles have almost the same standard deviations, 4.7% and 4.9% respectively, with the edge bundles excluded.

Table 5-1

AXIAL Ba-140 DISTRIBUTION GAMMA SCAN VS. OD-1 THERMAL 106 BUNDLE AVERAGE

Plane (Axial Node)	Gamma Scan (A)	OD-1 Thermal (B)	Percent Difference (B/A-1)100
1	0.254	0.257	1.2
3	0.522	0.493	–5.6
5	0.631	0.625	–0.8
7	0.743	0.758	2.0
9	0.992	0.970	–2.2
11	1.192	1.179	–1.2
13	1.291	1.287	–0.2
15	1.435	1.422	–0.8
17	1.492	1.475	–1.1
19	1.506	1.530	1.6
21	1.174	1.212	3.2
23	0.768	0.790	3.0

Table 5-2

RELATIVE Ba-140 FOR THE TEN HIGHEST GAMMA SCANNED BUNDLES COMPARED TO OD-1 THERMAL AT THE SAME LOCATION

Rank	Location I	Location J	Gamma Scan (B)	OD-1 Thermal (A)	Percent Difference 100(A/B-1)
1	17	10	1.255	1.371	9.2
2	14	13	1.247	1.328	6.5
3	17	9	1.238	1.335	7.8
4	16	10	1.231	1.292	5.0
5	18	9	1.229	1.310	6.6
6	17	8	1.221	1.283	5.1
7	17	11	1.215	1.301	7.1
8	14	11	1.205	1.242	3.1
9	16	9	1.202	1.306	8.7
10	15	13	1.200	1.253	4.4
				Average Percent Difference	6.4

Table 5-3

RELATIVE Ba-140 FOR THE TEN HIGHEST GAMMA SCANNED BUNDLES COMPARED BY RANK TO THE TEN HIGHEST OD-1 THERMAL BUNDLES

	Gamma Scan			OD-1 Thermal			
Rank	I	J	Relative Ba-140 (B)	I	J	Relative Ba-14(A)	Percent Difference 100(A/B-1)
1	17	10	1.255	17	10	1.371	9.2
2	14	13	1.247	17	9	1.335	7.1
3	17	9	1.238	14	13	1.328	7.3
4	16	10	1.231	18	9	1.310	6.4
5	18	9	1.229	16	9	1.306	6.3
6	17	8	1.221	17	11	1.301	6.6
7	17	11	1.215	16	10	1.292	6.3
8	14	11	1.205	17	8	1.283	6.5
9	16	9	1.202	14	12	1.263	5.1
10	15	13	1.200	15	13	1.253	4.4
					Average Percent Difference		6.5

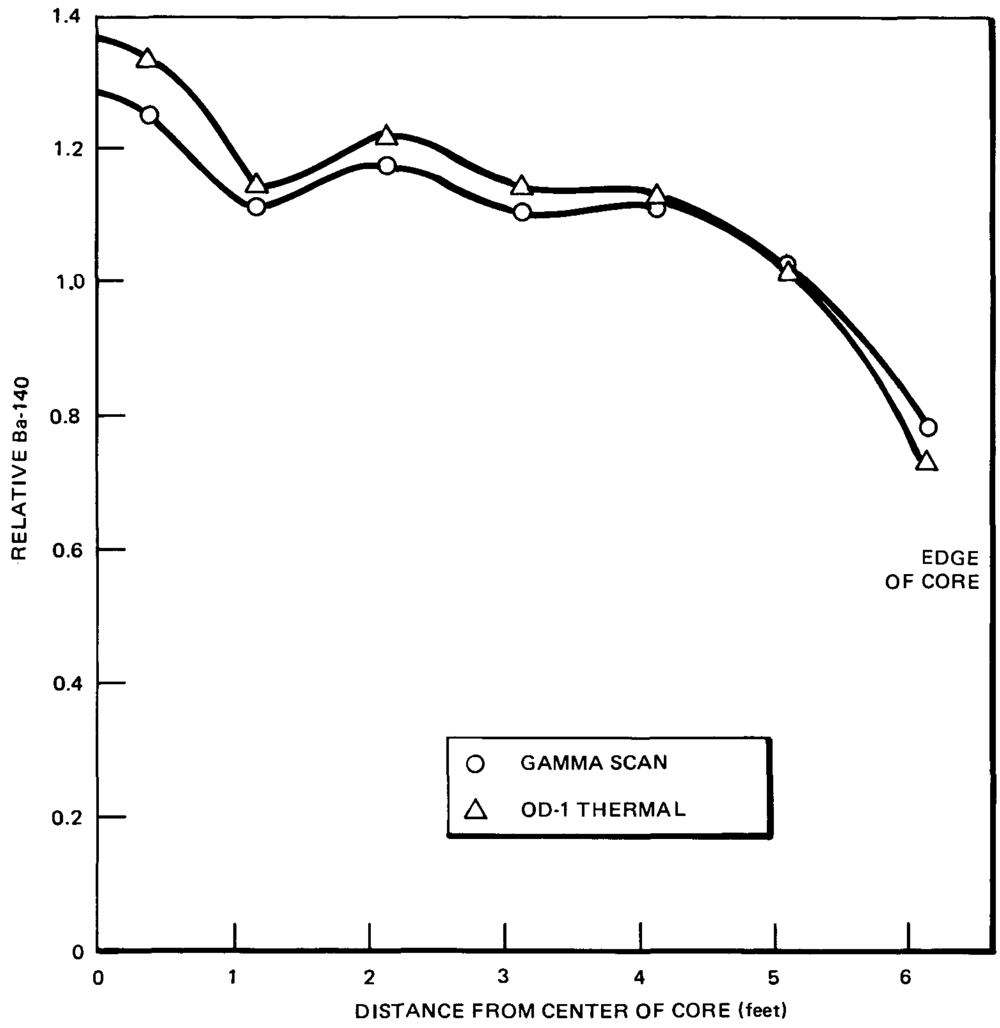


Figure 5-2. Radial Ba-140 Distribution (Normalized to 75 Bundles)

J/I	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
									0.	0.	0.	0.	0.	0.6990	0.6819	0.6627	0.6160	0.5727								
1									0.	0.	0.	0.	0.	0.6077	0.6035	0.5761	0.5449	0.4309								
									0.	0.	0.	0.	0.	0.8694	0.8849	0.8693	0.8847	0.7524								
								0.	0.	0.	0.	0.	0.	0.904[illegible]	0.8807	0.8430	0.8464	0.7900	0.6852							
2								0.	0.	0.	0.	0.	0.	0.8635	0.8490	0.8261	0.8482	0.7661	0.6452							
								0.	0.	0.	0.	0.	0.	0.9549	0.9640	0.9799	1.0021	0.9698	0.9417							
					0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0383	0.9138	0.8928	0.9705	0.9656	0.8995	0.7950	0.6905	0.5903				
3					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9851	0.8578	0.8415	0.9231	0.9171	0.8705	0.6486	0.5886	0.4692				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9488	0.9387	0.9425	0.9511	0.9498	0.9678	0.8159	0.8523	0.7948				
				0.	0.	0.	0.	0.	0.	1.0584	0.9699	0.	0.	1.0722	0.9566	0.9633	1.0629	1.0394	1.0157	0.9588	0.9039	0.7756	0.5942			
4				0.	0.	0.	0.	0.	0.	1.1174	1.0272	0.	0.	1.0857	0.9599	1.0197	1.1240	1.0059	0.9702	0.9626	0.9251	0.8022	0.6455			
				0.	0.	0.	0.	0.	0.	1.0557	1.0591	0.	0.	1.0126	1.0034	1.0585	1.0575	0.9678	0.9553	1.0040	1.0235	1.0343	1.0864			
			0.	0.	0.	0.	0.	0.	0.	1.0744	1.1174	0.	0.	1.1096	1.1236	1.1217	1.0543	1.0403	1.0932	1.0695	1.0186	0.9384	0.7695	0.		
5			0.	0.	0.	0.	0.	0.	0.	1.1491	1.2154	0.	0.	1.1432	1.1365	1.2225	1.1415	1.0185	1.0449	1.0673	1.0107	0.9031	0.8069	0.		
			0.	0.	0.	0.	0.	0.	0.	1.0695	1.0878	0.	0.	1.0302	1.0115	1.0899	1.0827	0.9790	0.9558	0.9979	0.9922	0.9623	1.0485	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1279	1.1247	1.1484	1.0997	1.0754	1.1176	1.0959	1.0818	0.	0.	0.		
6			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2263	1.2440	1.1397	1.1073	1.0637	1.0703	1.1151	1.1150	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0873	1.1061	0.9924	1.0069	0.9891	0.9577	1.0176	1.0306	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1297	0.9323	0.9719	1.1843	1.1665	0.9991	0.9838	1.1018	0.	0.	0.		
7			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2186	0.9782	0.9235	1.1524	1.1361	0.9173	0.9589	1.1113	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0787	1.0493	0.9502	0.9731	0.9739	0.9181	0.9747	1.0086	0.	0.	0.		
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1340	0.9414	0.9698	1.2212	1.1865	1.0475	1.0061	0.	1.0808	1.0078	0.	0.	
8		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1412	0.9146	1.0082	1.2828	1.2284	1.0042	0.9695	0.	1.0283	0.9560	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0064	0.9715	1.0397	1.0504	1.0353	0.9587	0.9636	0.	0.9514	0.9486	0.	0.	
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1135	1.1829	1.2019	1.2377	1.2289	1.1911	0.	0.	1.0356	1.0249	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1483	1.1589	1.3061	1.3348	1.3102	1.2377	0.	0.	1.0123	0.9970	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0313	0.9797	1.0867	1.0785	1.0662	1.0391	0.	0.	0.9776	0.9727	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1389	1.1932	1.2313	1.2550	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2081	1.2516	1.2915	1.3709	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0607	1.0489	1.0489	1.0923	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2057	0.9750	1.0091	1.2145	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2424	0.9743	1.0224	1.3006	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0305	0.9993	1.0132	1.0709	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1974	0.9929	1.0004	0.	1.1647	0.9549	0.	0.	1.1069	0.9513	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2628	0.9913	0.9489	0.	1.2355	0.9771	0.	0.	1.2058	1.0185	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0547	0.9984	0.9486	0.	1.0608	1.0232	0.	0.	1.0894	1.0707	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2470	1.2001	0.	0.	1.1151	1.1454	0.	0.	1.0939	1.0905	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3284	1.2531	0.	0.	1.2136	1.2143	0.	0.	1.1985	1.1603	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0653	1.0441	0.	0.	1.0883	1.0602	0.	0.	1.0956	1.0640	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0858	0.9384	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0530	0.8881	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9698	0.9464	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0423	1.0431	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0101	0.9921	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9691	0.9511	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1688	1.1348	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1583	1.1484	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9911	1.0120	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9277	1.1428	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
19		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9146	1.1414	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9859	0.9988	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
20			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
21			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
22			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
23				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
				0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
24					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
					0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.				
								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
25								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
								0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.							
									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								
26									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								
									0.	0.	0.	0.	0.	0.	0.	0.	0.	0.								

GAMMA SCAN
OD-1 THERMAL
OD-1 THERMAL/GAMMA SCAN

Figure 5-3. Bundle Average Ba-140, OD-1 Thermal and Gamma Scan

Table 5-4

RELATIVE Ba-140 FOR THE TWENTY-FIVE HIGHEST GAMMA SCANNED NODES COMPARED TO OD-1 THERMAL AT THE SAME LOCATIONS
(Only Odd Numbered Nodes are Considered)

Rank	Location I	Location J	Location K	Gamma Scan (B)	OD-1 Thermal (A)	Percent Difference 100(A/B-1)
1	11	4	17	1.908	1.967	3.1
2	16	4	17	1.899	1.944	2.4
3	16	12	19	1.889	1.838	–2.7
4	15	12	19	1.876	1.843	–1.8
5	16	8	19	1.875	2.014	7.4
6	16	7	19	1.873	1.914	2.2
7	15	4	17	1.859	1.842	–0.9
8	14	5	17	1.849	1.866	0.9
9	16	11	19	1.842	1.953	6.0
10	15	11	19	1.836	1.906	3.8
11	15	8	19	1.835	1.852	0.9
12	19	8	17	1.834	1.839	0.3
13	10	5	17	1.825	1.947	6.7
14	19	7	17	1.823	1.757	–3.6
15	10	5	15	1.822	1.940	6.5
16	17	6	17	1.820	1.856	2.0
17	11	5	17	1.819	1.977	8.7
18	15	5	17	1.819	1.820	0.1
19	11	5	15	1.818	1.973	8.5
20	20	8	19	1.816	1.835	1.0
21	20	8	17	1.814	1.865	2.8
22	12	19	19	1.812	1.852	2.2
23	16	5	17	1.809	2.000	10.6
24	16	5	17	1.807	1.769	–2.1
25	14	5	15	1.805	1.804	–0.1
					Average Percent Difference	2.6

Table 5-5

RELATIVE Ba-140 FOR THE TWENTY-FIVE HIGHEST GAMMA SCANNED NODES COMPARED BY RANK TO THE TWENTY-FIVE HIGHEST OD-1 THERMAL NODES
(Only Odd Numbered Nodes are Considered)

	Gamma Scan				OD-1 Thermal				
	Location			Relative				Relative	Percent Difference
Rank	I	J	K	Ba-140 (B)	I	J	K	Ba-140 (A)	100(A/B-1)
1	11	4	17	1.908	11	4	15	2.030	6.4
2	16	4	17	1.899	15	7	19	2.023	6.5
3	16	12	19	1.889	16	4	15	2.021	7.0
4	15	12	19	1.876	14	6	17	2.016	7.5
5	16	8	19	1.875	16	8	19	2.014	7.4
6	16	7	19	1.873	16	5	17	2.000	6.8
7	15	4	17	1.859	16	5	15	1.981	6.6
8	14	5	17	1.849	11	5	17	1.977	6.9
9	16	11	19	1.842	11	5	15	1.973	7.1
10	15	11	19	1.836	11	4	17	1.967	7.1
11	15	8	19	1.835	16	11	19	1.953	6.4
12	19	8	17	1.834	14	6	15	1.947	6.2
13	10	5	17	1.825	10	5	17	1.947	6.7
14	19	7	17	1.823	16	4	17	1.944	6.6
15	10	5	15	1.822	10	5	15	1.940	6.5
16	17	6	17	1.820	17	5	15	1.931	6.1
17	11	5	17	1.819	23	12	15	1.927	5.9
18	15	5	17	1.819	15	6	19	1.926	5.9
19	11	5	15	1.818	19	12	19	1.925	5.9
20	20	8	19	1.816	17	5	17	1.923	5.9
21	20	8	17	1.814	15	6	17	1.920	5.8
22	12	19	19	1.812	16	7	19	1.914	5.6
23	16	5	17	1.809	16	9	19	1.913	5.7
24	15	5	17	1.807	11	5	19	1.912	5.8
25	14	5	15	1.805	16	5	19	1.911	5.9
								Average Percent Difference	6.4

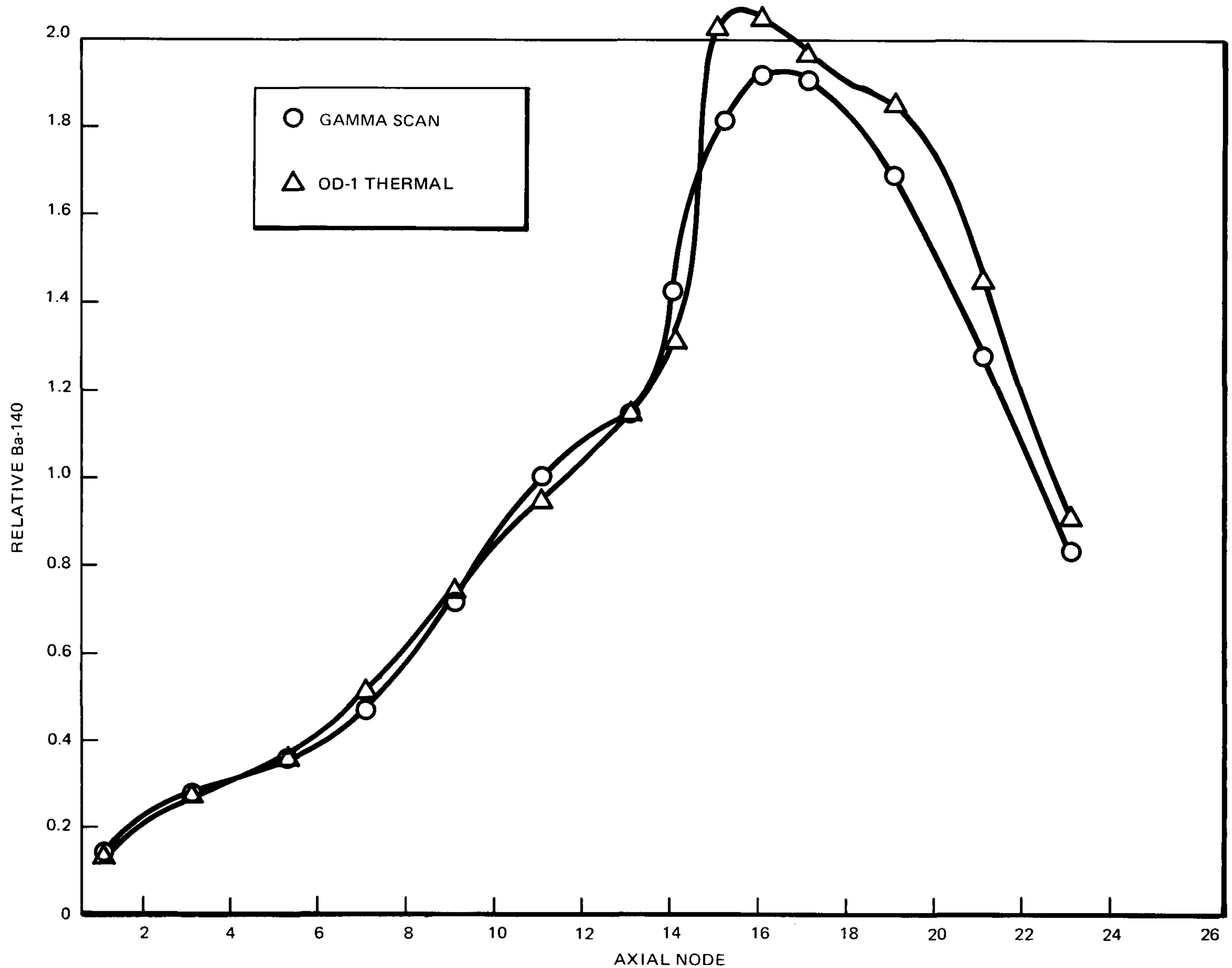


Figure 5-4. Ba-140 Profiles for the Bundle with Highest Nodal Peaking (I = 11, J = 4)

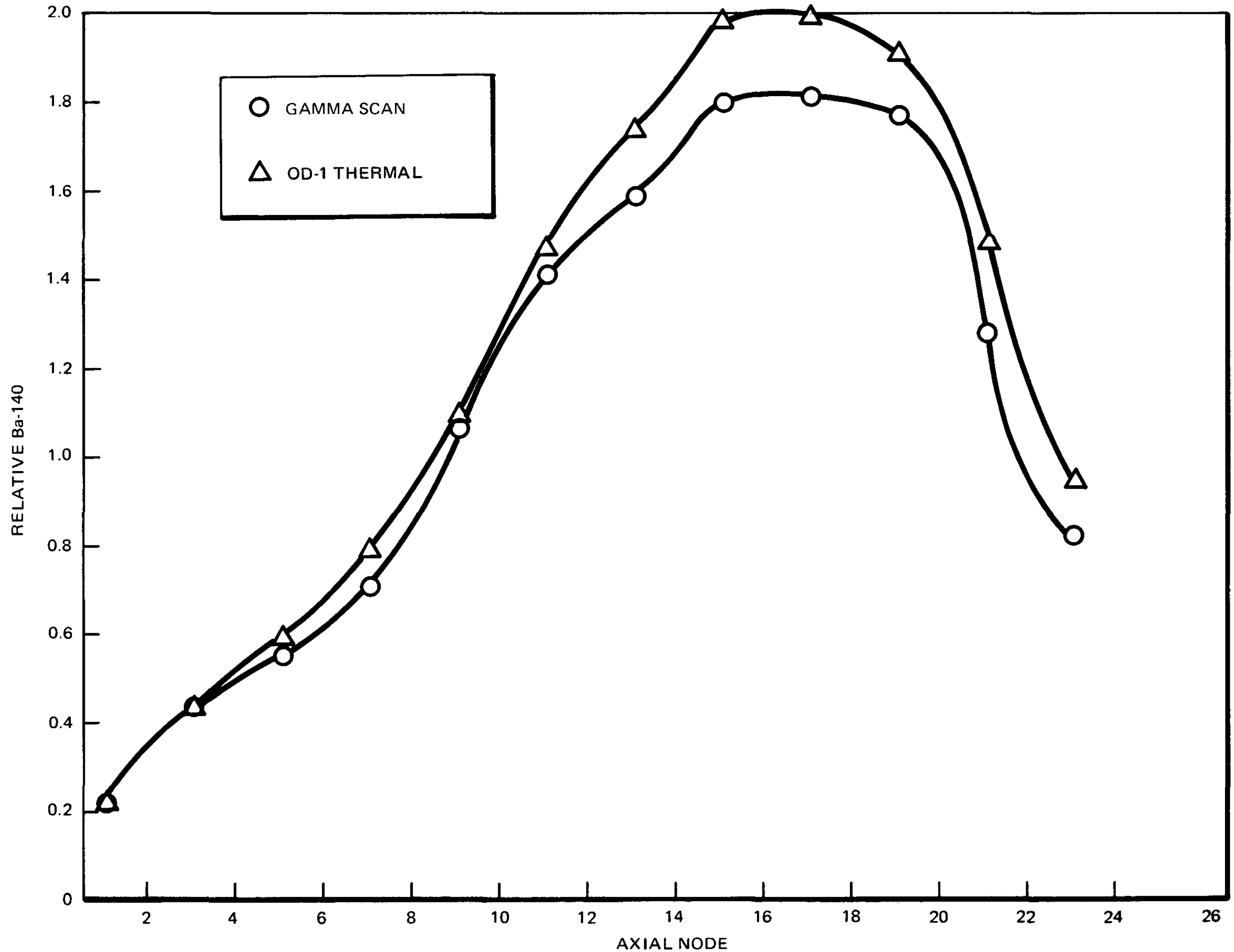


Figure 5-5. Ba-140 Profiles for an Uncontrolled Bundle with High Nodal Peaking (I = 16, J = 5)

Table 5-6

STANDARD DEVIATION OF NODAL Ba-140 DIFFERENCES BY AXIAL PLANE*

Plane	Standard Deviation (%)**
1	14.6
3	7.1
5	6.7
7	7.0
9	6.9
11	7.0
13	6.9
15	8.2
17	7.9
19	8.4
21	9.5
23	11.2
All Nodes	9.0

*106 Bundles Data Set normalized to 106 Bundles
**See page 4; differences are relative to gamma scan.

Table 5-7

FOUR BUNDLE AVERAGED Ba-140 ASYMMETRIES FOR SYMMETRIC TIP LOCATIONS

TIP Locations		Percent Asymmetry 200(A-B)/(A – B)	
A	B	Gamma Scan	OD-1 Thermal
28	14	2.7	13.4
24	19	–0.2	–6.2
29	20	0.5	–5.8

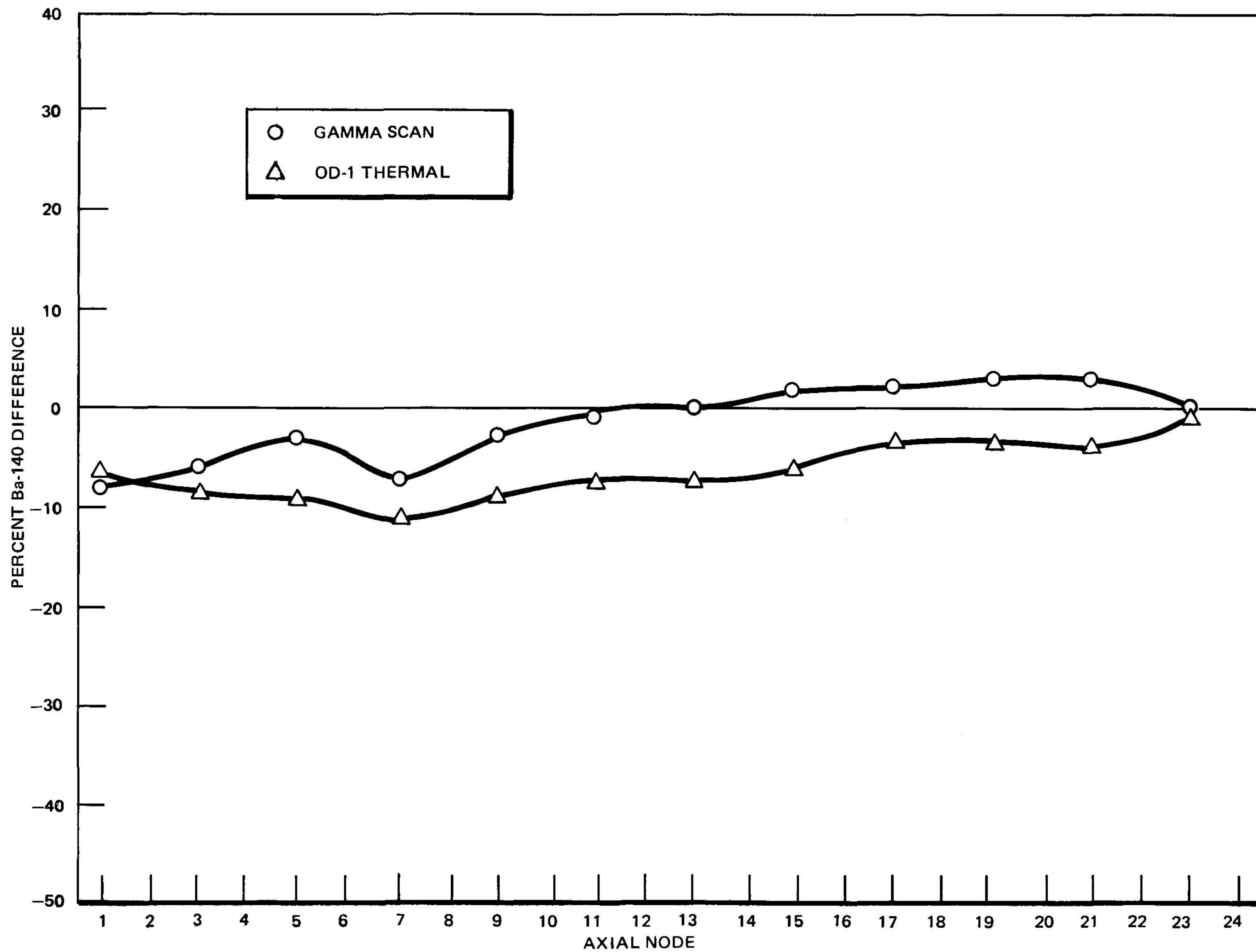


Figure 5-6. Asymmetry of Four Bundle Average Ba-140 for TIP Locations 24 and 19

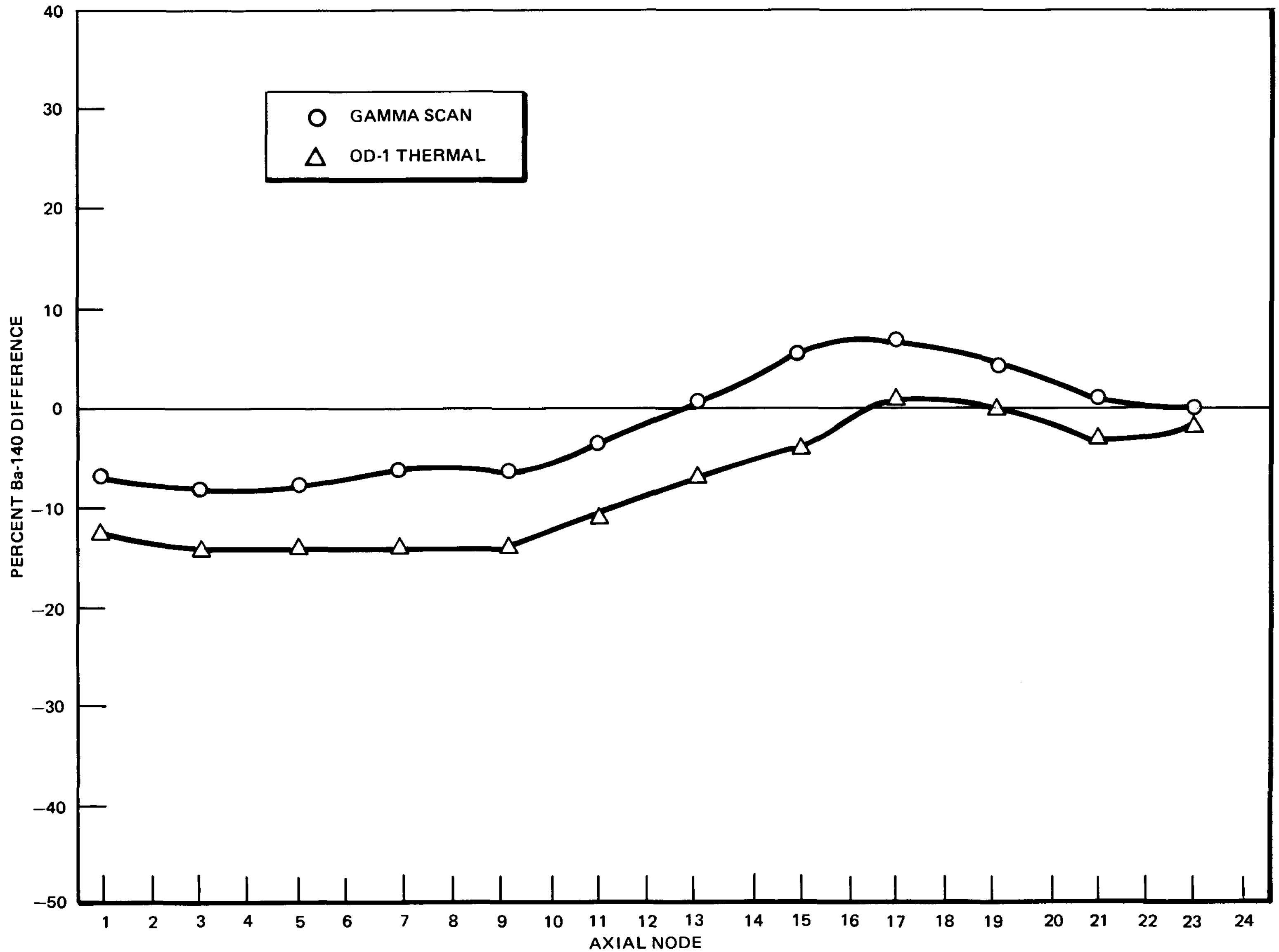


Figure 5-7. Asymmetry of Four Bundle Average Ba-140 for TIP Locations 29 and 20

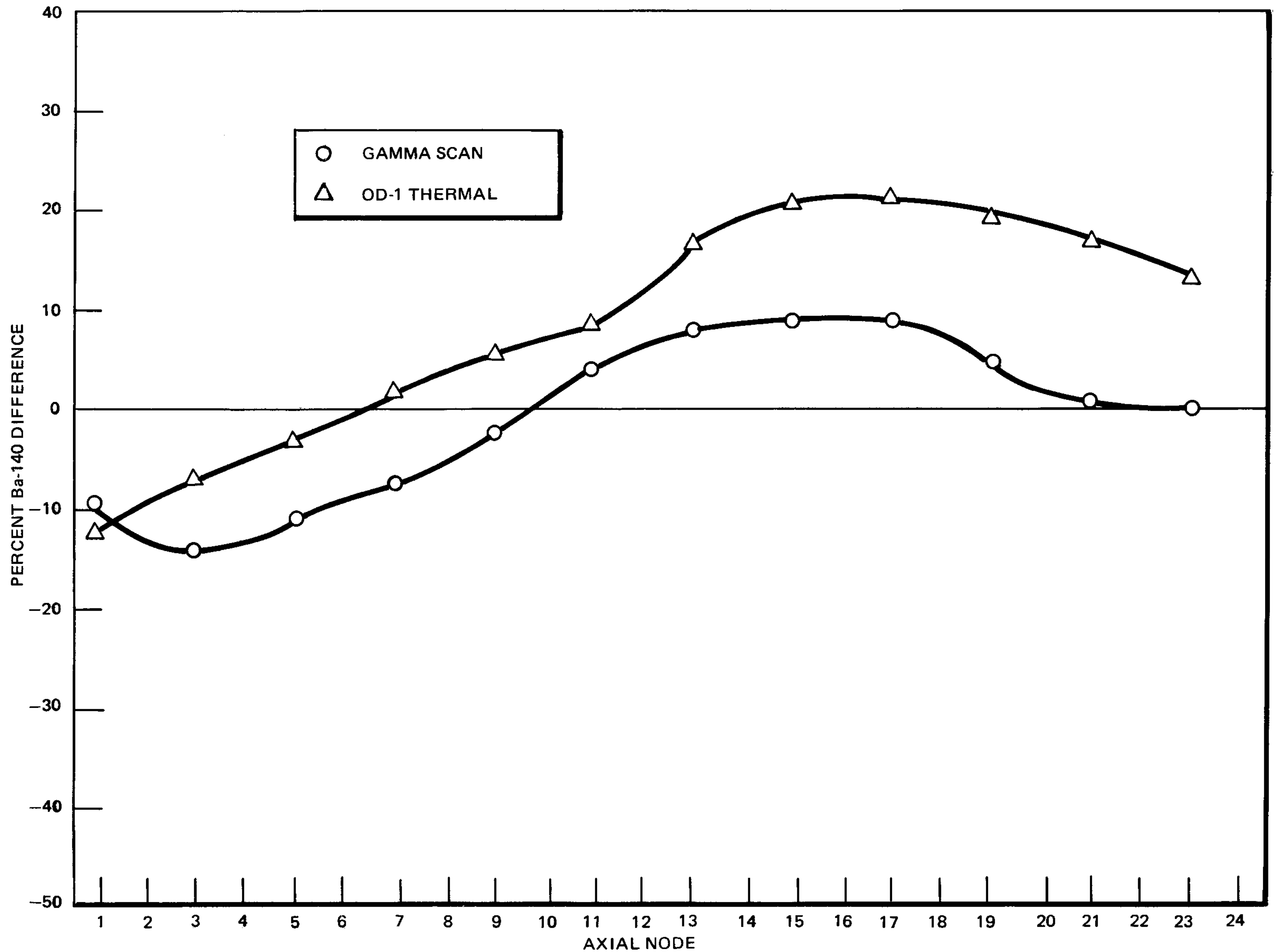


Figure 5-8. Asymmetry of Four Bundle Average Ba-140 for TIP Locations 28 and 14

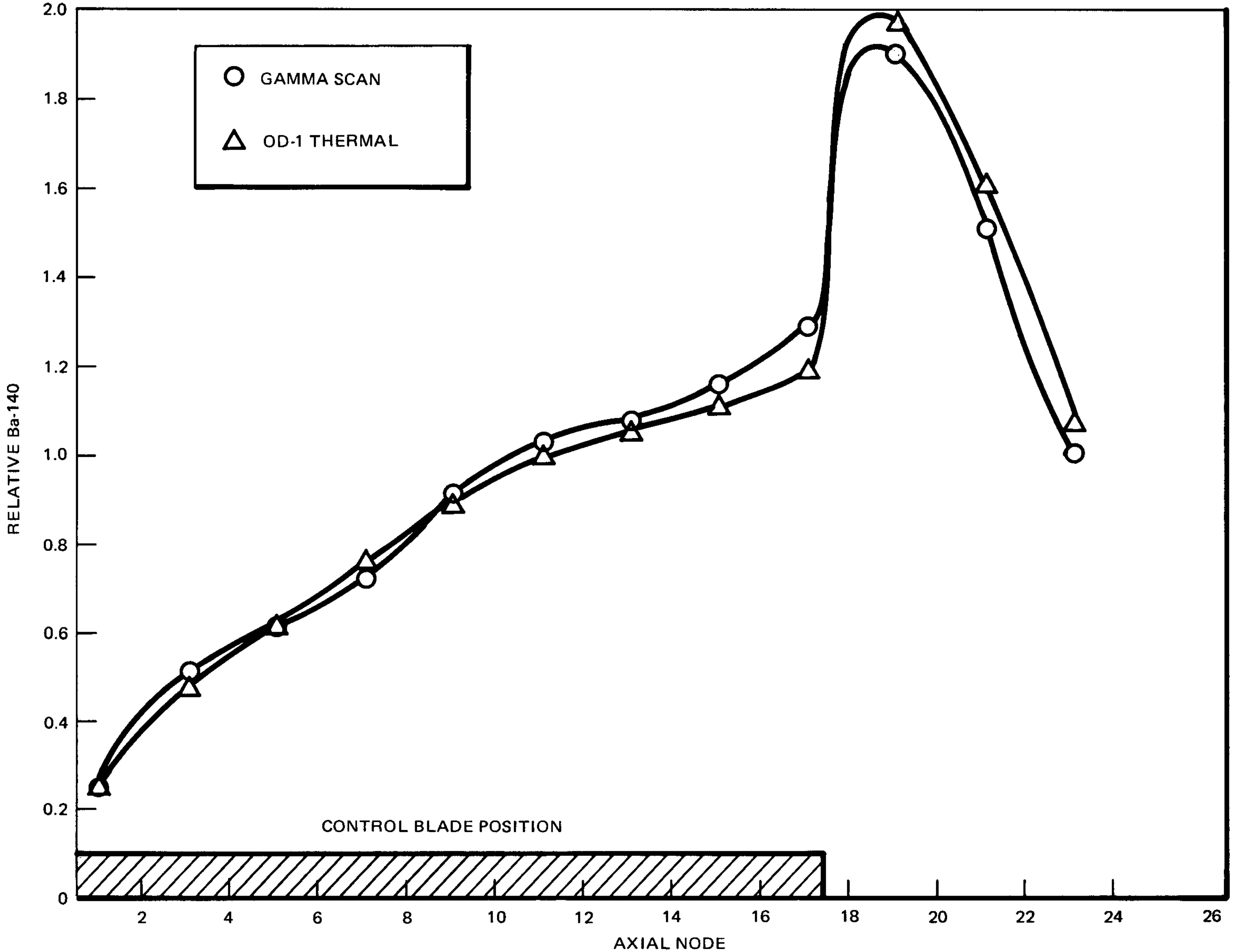


Figure 5-9. Composite Axial Distributions of Ten Bundles Adjacent to Control Blades at Notch Position 14 (Distributions Normalized to 1.0)

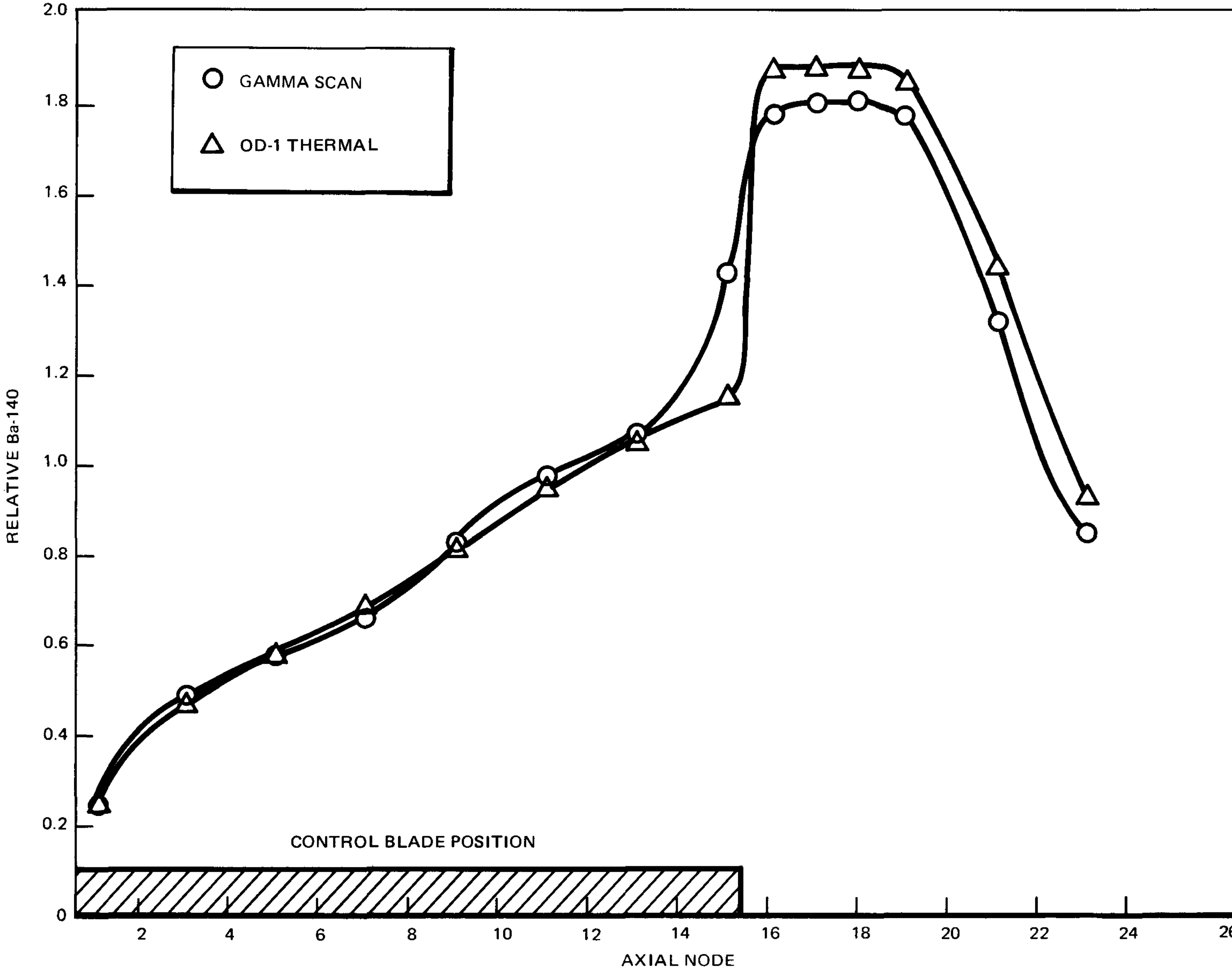


Figure 5-10. Composite Axial Distributions of Four Bundles Adjacent to Control Blade at Notch Position 18 (Distributions Normalized to 1.0)

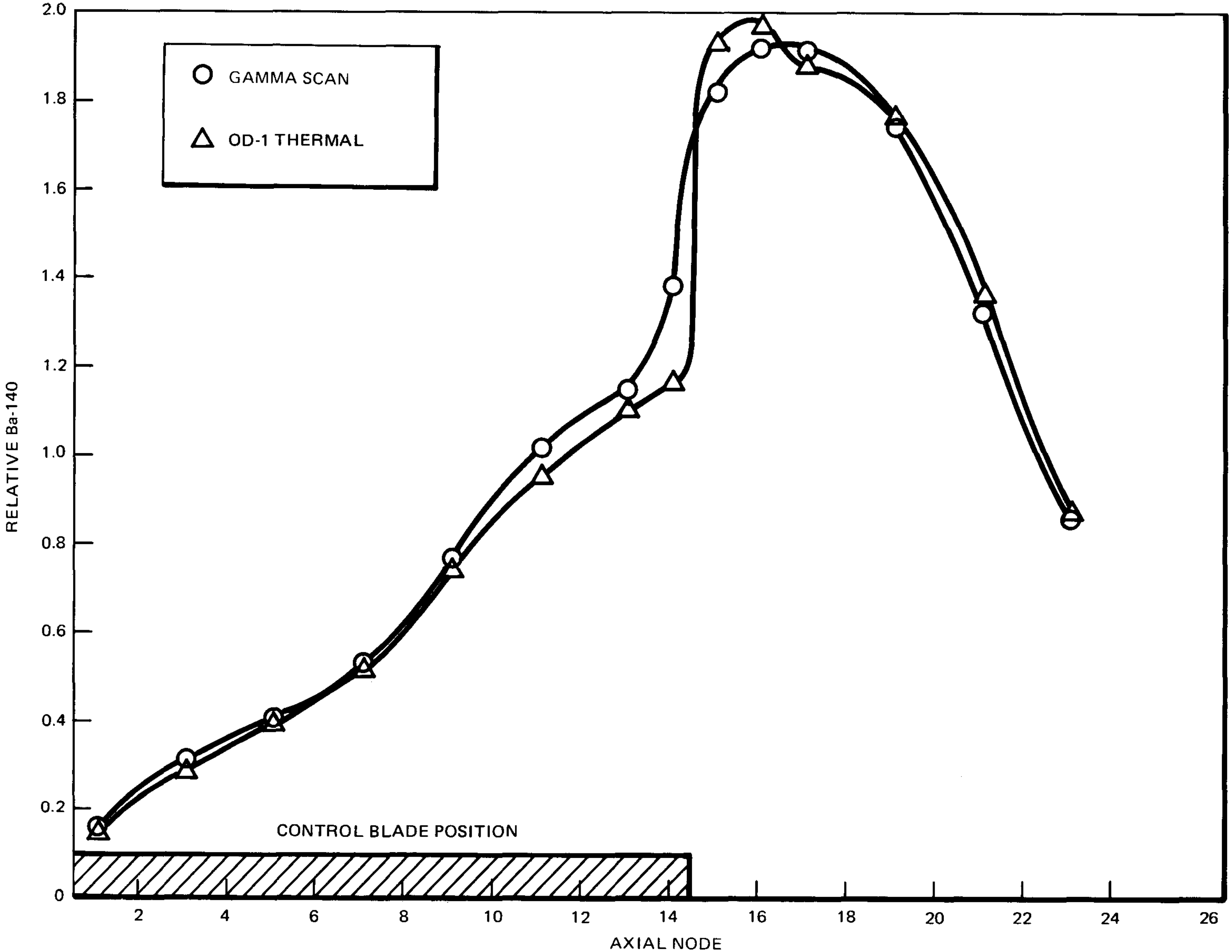


Figure 5-11. Composite Axial Distributions of Seven Bundles Adjacent to Control Blades at Notch Position 20 (Distributions Normalized to 1.0)

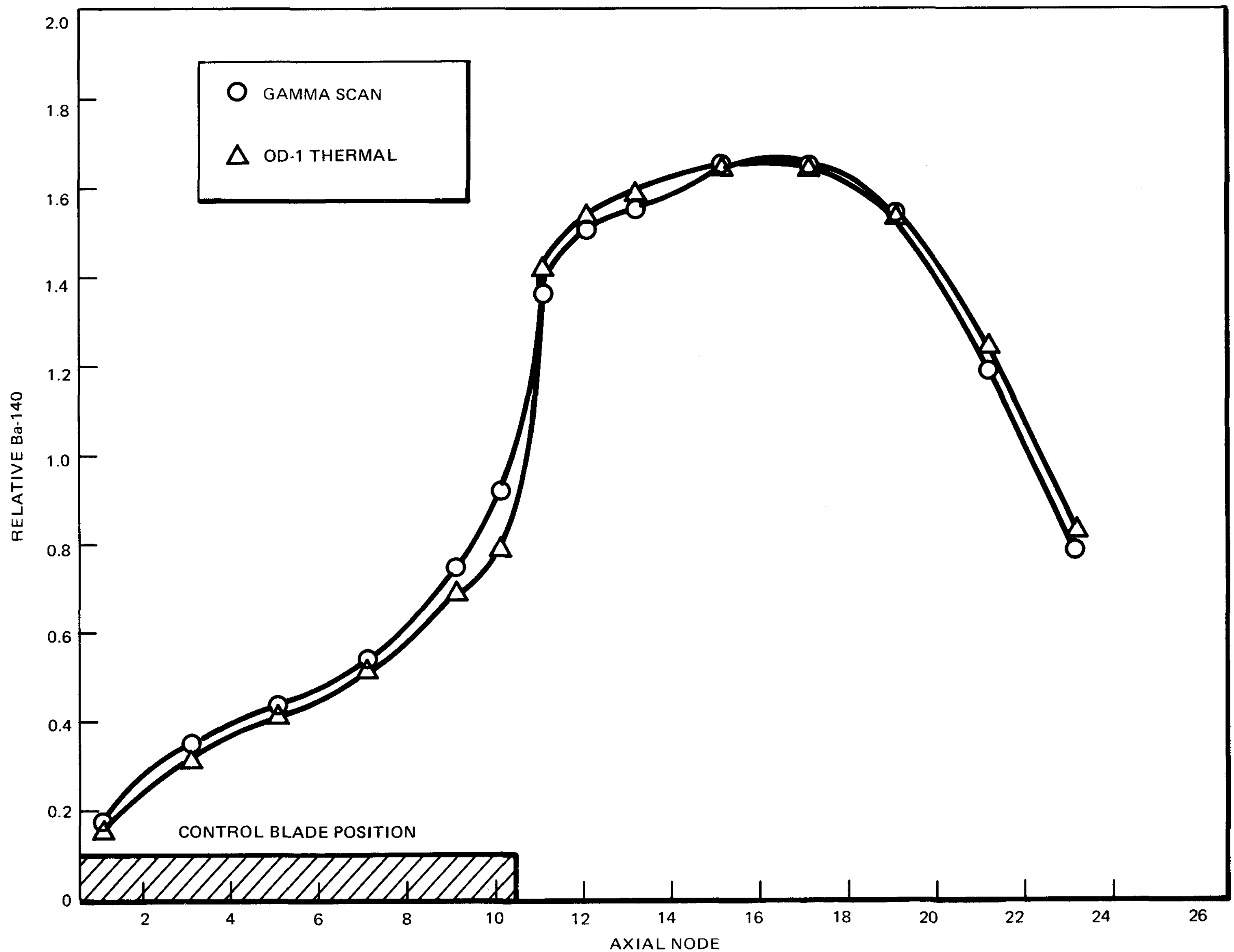


Figure 5-12. Composite Axial Distributions of Seven Bundles Adjacent to Control Blades at Notch Position 28 (Distributions Normalized to 1.0)

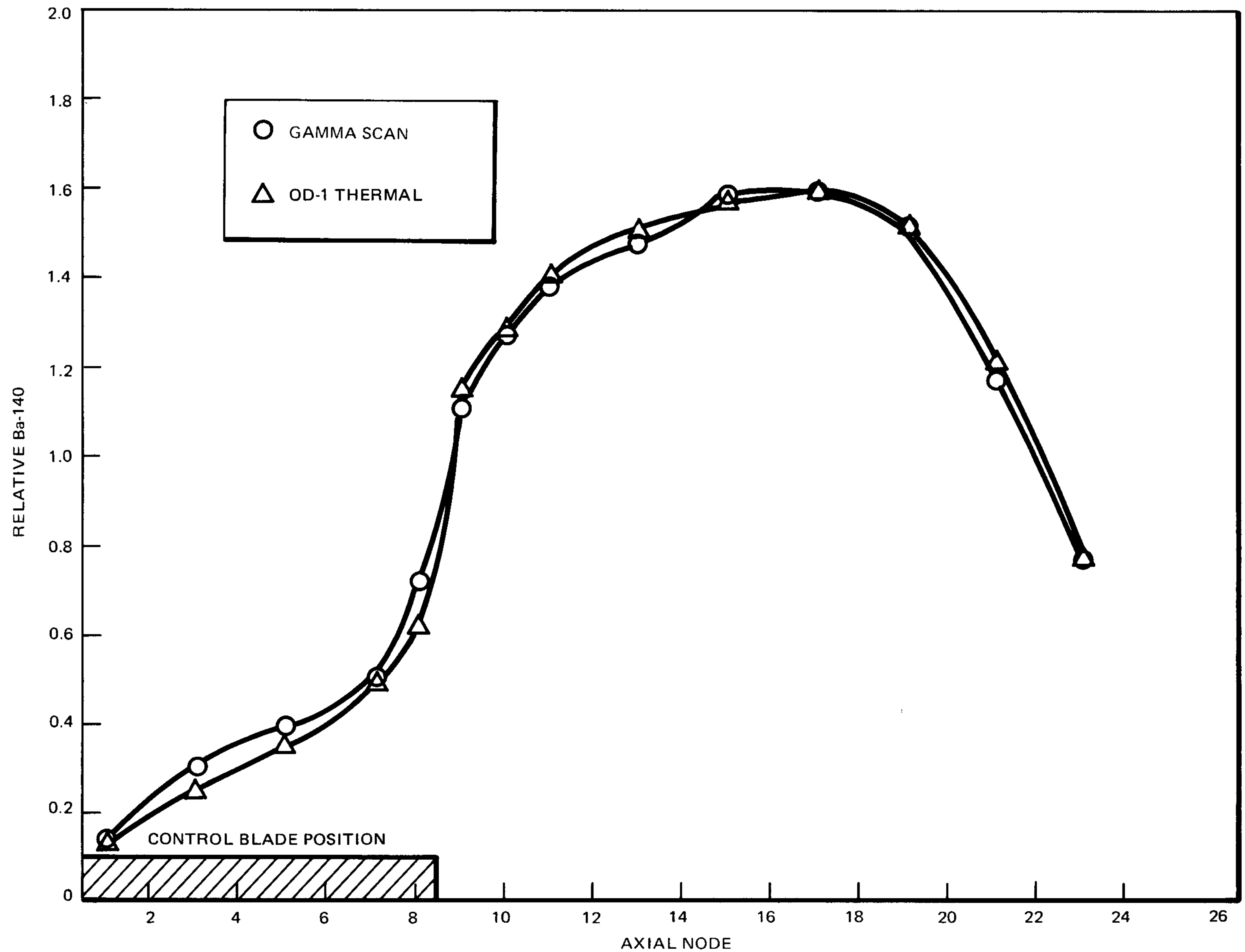


Figure 5-13. Composite Axial Distributions of Three Bundles Adjacent to Control Blades at Notch Position 32 (Distributions Normalized to 1.0)

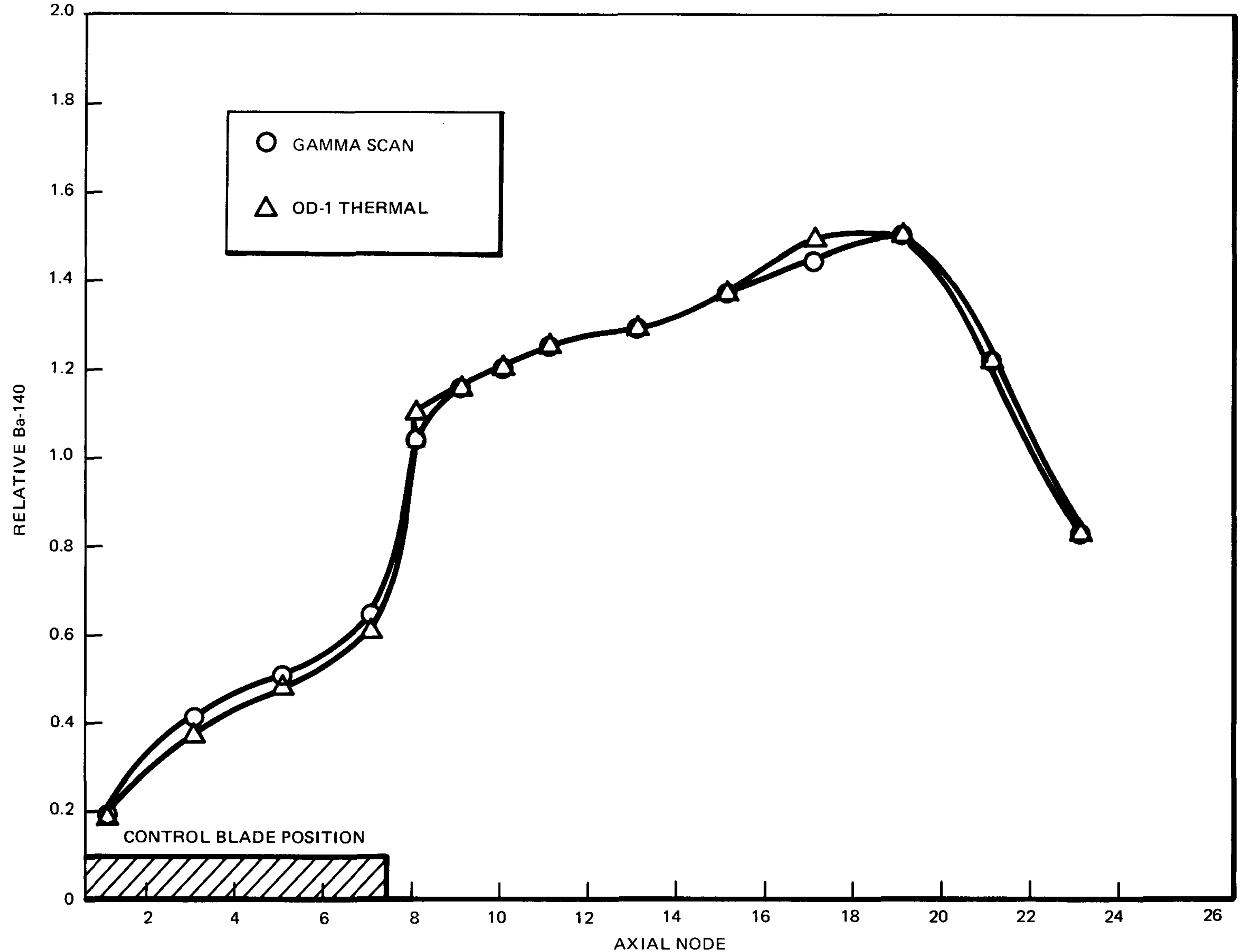


Figure 5-14. Composite Axial Distributions of Four Bundles Adjacent to Control Blades at Notch Position 34 (Distributions Normalized to 1.0)

6. REFERENCES

1. Special Tip Detector Measurements at Edwin I. Hatch Nuclear Plant Unit 1 Prior to End of Cycle 1, K.W. Burke, December 1977 (EPRI NP-540).

2. Gamma Scan Measurements at Edwin I. Hatch Nuclear Plant Unit 1 Following Cycle 1, L. M. Shiraishi and G. R. Parkos, August 1978 (EPRI NP-511).

3. Process Computer Performance Evaluation Accuracy, J. F. Carew, June 1974 (NEDO-20340).

4. Core Design and Operating Data for Cycle 1 of Hatch 1, N. H. Larsen and J. L. Goudey, July 1978 (EPRI NP-562).

APPENDIX A
MEASURED GAMMA SCAN Ba-140 NODAL DISTRIBUTION
(See Figure 4-1 for explanation of I,J coordinate system)

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 1

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 1

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.4780	0.4672	0.4441	0.4184	0.4030	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.7897	0.7614	0.7475	0.6940	0.6650	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.0598	1.0423	1.0395	0.8973	0.8516	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.0929	1.0671	1.0368	0.9512	0.8933	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.0782	1.0579	1.0303	0.9632	0.8848	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.9540	0.9310	0.9007	0.8705	0.8110	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.8377	0.8238	0.8157	0.7625	0.7098	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.6859	0.6715	0.6573	0.6257	0.5635	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.5152	0.5010	0.4680	0.4475	0.4033	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.4249	0.4090	0.3771	0.3574	0.3221	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3287	0.3091	0.2974	0.2769	0.2510	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1430	0.1419	0.1382	0.1274	0.1140	0.	0.	0.	0.	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 2

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 2

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.5889	0.5900	0.5696	0.5587	0.5035	0.4752	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.9567	0.9530	0.9135	0.9147	0.8292	0.7653	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.3072	1.3247	1.2345	1.1931	1.0993	0.9622	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.4047	1.4001	1.3652	1.3247	1.1876	1.0202	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.4139	1.4112	1.3486	1.3091	1.2051	1.0046	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.2649	1.2051	1.1959	1.2115	1.1453	0.9494	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.1150	1.0947	1.0607	1.0920	1.0386	0.8503	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.9254	0.8726	0.8331	0.8693	0.8199	0.7132	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6888	0.6324	0.5909	0.6136	0.5946	0.5288	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5566	0.5035	0.4696	0.4906	0.4779	0.4302	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4352	0.3933	0.3626	0.3860	0.3841	0.3460	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1954	0.1873	0.1718	0.1936	0.1945	0.1767	0.	0.	0.	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 3

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.7255	0.7421	0.7152	0.6620	0.6428	0.5765	0.5284	0.4417	0.3821	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.1591	1.1803	1.1518	1.0644	1.0027	0.9310	0.8418	0.7067	0.6185	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.5804	1.6421	1.6117	1.4130	1.3275	1.2088	1.0616	0.9000	0.7786	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.6513	1.7681	1.6862	1.5280	1.4360	1.2953	1.1140	0.9383	0.8296	0.	0.	0.	0.
16	0.	1.7727	1.7258	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.6467	1.6963	1.6237	1.5436	1.4489	1.3376	1.1306	0.9622	0.8326	0.	0.	0.	0.
14	0.	1.2732	1.2548	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4075	1.0349	1.0386	1.3716	1.3836	1.2640	1.0745	0.9236	0.7927	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.2410	0.8878	0.9110	1.2327	1.2750	1.1757	0.9935	0.8598	0.7199	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.0073	0.6965	0.6944	0.9816	1.0193	0.9797	0.8497	0.7644	0.6330	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7445	0.4849	0.4716	0.6692	0.7267	0.7177	0.6632	0.6079	0.5046	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6074	0.3845	0.3740	0.5382	0.5389	0.5851	0.5693	0.5300	0.4486	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4749	0.2996	0.2867	0.4271	0.4828	0.4704	0.4682	0.4366	0.3702	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2138	0.1482	0.1487	0.2147	0.2533	0.2519	0.2446	0.2154	0.1734	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT, 12NODES

J = 4

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7682	0.8389	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1803	1.2815	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5363	1.6871	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7230	1.9079	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9171	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7157	1.8003	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4277	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5381	1.1407	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3707	1.0046	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0036	0.7196	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6881	0.4735	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5348	0.3616	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4267	0.2786	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2154	0.1442	0.	0.

J = 4

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.5242	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.7810	0.8414	0.8142	0.7809	0.7016	0.6554	0.5876	0.5300	0.4582	0.3683	0.	0.	0.
22	0.	1.0883	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.2088	1.2870	1.2796	1.1931	1.1021	1.0331	0.9291	0.8586	0.7299	0.5896	0.	0.	0.
20	0.	1.5252	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.6310	1.6494	1.6697	1.5593	1.4443	1.3339	1.1941	1.0993	0.9365	0.7337	0.	0.	0.
18	0.	1.7920	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7442	1.8592	1.8987	1.7295	1.5703	1.4572	1.3045	1.1968	1.0193	0.7947	0.	0.	0.
16	0.	1.8546	1.8960	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.7313	1.7525	1.7856	1.7258	1.5740	1.4664	1.3201	1.2272	1.0469	0.8018	0.	0.	0.
14	0.	1.2732	1.3173	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4848	1.0947	1.1251	1.5363	1.5252	1.4286	1.3118	1.2051	1.0386	0.7751	0.	0.	0.
12	0.	1.0257	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3146	0.9705	0.9806	1.3633	1.3735	1.3265	1.2419	1.1628	0.9935	0.7277	0.	0.	0.
10	0.	0.8393	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.0579	0.7424	0.7259	0.9871	1.0515	1.1012	1.0883	1.0257	0.8763	0.6527	0.	0.	0.
8	0.	0.6114	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7072	0.4841	0.4758	0.6806	0.7509	0.8277	0.8653	0.8460	0.7192	0.5492	0.	0.	0.
6	0.	0.4268	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5668	0.3709	0.3672	0.5433	0.6143	0.6972	0.7393	0.7404	0.6486	0.5031	0.	0.	0.
4	0.	0.3299	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4395	0.2888	0.2950	0.4345	0.5065	0.5641	0.6121	0.6262	0.5496	0.4313	0.	0.	0.
2	0.	0.2323	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1995	0.1390	0.1426	0.2212	0.2585	0.2970	0.3112	0.3282	0.2902	0.2033	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 5

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8576	0.8255	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2953	1.2861	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6688	1.6660	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8251	1.8187	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8215	1.8178	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7341	1.6126	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6504	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4986	1.4415	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0368	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7781	1.0653	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5235	0.6978	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4076	0.5429	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3182	0.4220	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1648	0.2121	0.	0.

J = 5

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.8567	0.8503	0.8230	0.8214	0.8022	0.7387	0.6823	0.6133	0.5510	0.4628	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.2943	1.2815	1.2787	1.2677	1.2180	1.1324	1.0542	0.9622	0.8612	0.7192	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.6835	1.6945	1.7681	1.6439	1.5593	1.4599	1.3661	1.2548	1.1729	0.9392	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8491	1.8187	1.8086	1.7837	1.7019	1.5804	1.4507	1.3357	1.2060	1.0018	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.8049	1.8067	1.7994	1.7874	1.7101	1.5630	1.4590	1.3624	1.2401	1.0395	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.6458	1.5777	1.5869	1.6614	1.6366	1.5197	1.4038	1.3302	1.2299	1.0092	0.	0.	0.
12	0.	0.	0.	1.6099	1.6117	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5308	1.4415	1.4130	1.4507	1.4378	1.4231	1.3459	1.2686	1.1665	0.9834	0.	0.	0.
10	1.3974	0.	0.	0.9687	0.9668	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2014	1.1288	1.0671	0.7813	0.7953	1.1610	1.1913	1.1315	1.0542	0.8605	0.	0.	0.
8	0.7723	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.5469	0.7144	0.7060	0.5308	0.5842	0.8826	0.9714	0.9696	0.8886	0.7188	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.4252	0.5417	0.5526	0.4228	0.4613	0.7432	0.8404	0.8776	0.8072	0.6573	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3248	0.4242	0.4362	0.3356	0.3806	0.6108	0.7049	0.7382	0.7119	0.5567	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1523	0.2033	0.2206	0.1654	0.1969	0.3038	0.3644	0.3788	0.3717	0.2860	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 6

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 6

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.5890	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.8779	0.8835	0.8487	0.8987	0.8472	0.8131	0.7550	0.6964	0.	0.	0.	0.	0.
22	0.	0.	0.	1.1600	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3578	1.3210	1.3357	1.3587	1.2907	1.2483	1.1554	1.0828	0.	0.	0.	0.	0.
20	0.	0.	0.	1.5832	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7865	1.7285	1.8031	1.7175	1.6660	1.5915	1.4765	1.3624	0.	0.	0.	0.	0.
18	0.	0.	0.	1.8086	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7819	1.7203	1.7745	1.8196	1.7865	1.6816	1.6034	1.4783	0.	0.	0.	0.	0.
16	0.	0.	0.	1.8242	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.7681	1.7009	1.7239	1.7874	1.7644	1.6329	1.5133	1.4774	0.	0.	0.	0.	0.
14	0.	0.	0.	1.7313	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.6494	1.5584	1.5970	1.6798	1.6559	1.4654	1.3873	1.3983	0.	0.	0.	0.	0.
12	0.	0.	0.	1.6191	1.5850	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5363	1.4342	1.4452	1.4645	1.4443	1.3514	1.3127	1.2907	0.	0.	0.	0.	0.
10	1.4222	0.	0.	0.9641	0.8988	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2401	1.1435	1.1076	0.8204	0.7852	1.1122	1.1462	1.1389	0.	0.	0.	0.	0.
8	0.8077	0.	0.	0.7120	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.5733	0.7468	0.7837	0.5932	0.5923	0.8612	0.9346	0.9806	0.	0.	0.	0.	0.
6	0.	0.	0.	0.5485	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.4529	0.5893	0.6251	0.4797	0.4819	0.7452	0.8181	0.8983	0.	0.	0.	0.	0.
4	0.	0.	0.	0.4360	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3525	0.4556	0.4930	0.3832	0.3929	0.6020	0.6967	0.7818	0.	0.	0.	0.	0.
2	0.	0.	0.	0.3131	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1576	0.2143	0.2433	0.1886	0.1980	0.3057	0.3512	0.3963	0.	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 7

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 7

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9448	0.9494	0.9604	0.9127	0.8864	0.8473	0.8341	0.7543	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4084	1.4378	1.4590	1.4047	1.3486	1.3137	1.2989	1.1665	0.	0.	0.	0.	0.
20	0.	1.6458	1.6844	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.6963	1.7874	1.8730	1.7939	1.7304	1.7948	1.7525	1.4820	0.	0.	0.	0.	0.
18	0.	1.7994	1.8445	0.	0.	1.8067	1.7442	0.	0.	0.	0.	0.	0.
17	1.6706	1.3091	1.3238	1.7525	1.7552	1.8233	1.7810	1.5979	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	1.7819	1.7267	0.	0.	0.	0.	0.	0.
15	1.5832	1.1766	1.2437	1.6577	1.6632	1.4572	1.3753	1.5363	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4673	1.0910	1.1582	1.5151	1.4811	1.0855	1.0184	1.3698	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3771	1.0239	1.0331	1.3569	1.3256	0.9825	0.9429	1.2713	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.1895	0.8450	0.8462	1.1398	1.1104	0.8128	0.8169	1.1113	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.8057	0.5740	0.6248	0.9218	0.9208	0.6402	0.6546	0.9411	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6591	0.4590	0.5131	0.7881	0.7976	0.5421	0.5747	0.8507	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.5124	0.3639	0.4209	0.6551	0.6631	0.4566	0.4933	0.7684	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2418	0.1702	0.2062	0.3132	0.3158	0.2332	0.2629	0.3718	0.	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 8

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 8

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.6490	0.6658	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9420	0.9852	0.9512	0.9282	0.8753	0.9126	0.8458	0.	0.7361	0.6428	0.	0.	0.
22	1.2134	1.2999	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3882	1.4958	1.4636	1.4057	1.3330	1.3707	1.3311	0.	1.1094	0.9898	0.	0.	0.
20	1.6025	1.6890	1.6835	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7055	1.8353	1.8748	1.7745	1.6807	1.7644	1.8159	0.	1.4222	1.2916	0.	0.	0.
18	1.7433	1.8251	1.8067	0.	0.	1.8408	1.8233	0.	0.	0.	0.	0.	0.
17	1.6191	1.2336	1.2088	1.6826	1.7129	1.8343	1.8141	0.	1.5501	1.3587	0.	0.	0.
16	1.5814	1.1692	0.	0.	0.	1.7727	1.7865	0.	0.	0.	0.	0.	0.
15	1.5372	1.1150	1.1306	1.5777	1.5970	1.4627	1.4388	0.	1.5271	1.3928	0.	0.	0.
14	1.4526	1.0874	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4213	1.0294	1.0322	1.4406	1.4001	1.1076	1.0984	0.	1.5022	1.3836	0.	0.	0.
12	1.3799	1.0156	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3514	0.9963	0.9770	1.3367	1.2879	1.0266	0.9852	0.	1.3422	1.3063	0.	0.	0.
10	1.2962	0.9218	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2180	0.8452	0.8854	1.2226	1.1867	0.9013	0.8182	0.	1.0791	1.0910	0.	0.	0.
8	1.0975	0.7661	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.8649	0.6241	0.7136	1.0782	1.0423	0.7385	0.6397	0.	0.8786	0.8740	0.	0.	0.
6	0.8025	0.5799	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.7175	0.5199	0.6212	0.9825	0.9420	0.6497	0.5578	0.	0.7787	0.7624	0.	0.	0.
4	0.6461	0.4707	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.5778	0.4199	0.5220	0.8290	0.7973	0.5359	0.4851	0.	0.6991	0.6562	0.	0.	0.
2	0.4602	0.3387	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2655	0.1969	0.2568	0.3961	0.3831	0.2659	0.2434	0.	0.3452	0.3448	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 9

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 9

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.6641	0.6315	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9420	0.9310	0.9291	0.8857	0.8902	0.8668	0.	0.	0.7936	0.6926	0.	0.	0.
22	1.2143	1.2005	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3753	1.3919	1.3735	1.3486	1.3403	1.3192	0.	0.	1.1968	1.0524	0.	0.	0.
20	1.5869	1.6366	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7074	1.7543	1.7543	1.7074	1.6917	1.7055	0.	0.	1.5335	1.3477	0.	0.	0.
18	1.7423	1.7929	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.6476	1.6421	1.6329	1.6605	1.6789	1.7276	0.	0.	1.6347	1.4351	0.	0.	0.
16	1.6402	1.6218	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5666	1.5501	1.5188	1.5924	1.5942	1.6182	0.	0.	1.6467	1.4470	0.	0.	0.
14	1.4894	1.4756	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4811	1.4618	1.4038	1.4406	1.4599	1.4682	0.	0.	1.6080	1.4673	0.	0.	0.
12	1.4535	1.4470	0.	0.	0.	0.	0.	0.	1.5565	0.	0.	0.	0.
11	1.4360	1.3965	1.3560	1.3523	1.3440	1.3293	0.	0.	1.4176	1.3495	0.	0.	0.
10	1.3716	1.3422	0.	0.	0.	0.	0.	0.	0.9613	0.	0.	0.	0.
9	1.3017	1.2805	1.2502	1.2759	1.2575	1.1959	0.	0.	0.8007	1.0910	0.	0.	0.
8	1.1554	1.1812	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6827	0.9714	1.0671	1.1490	1.1251	1.0036	0.	0.	0.6104	0.8343	0.	0.	0.
6	0.6157	0.8938	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5552	0.8197	0.9549	1.0754	1.0349	0.9128	0.	0.	0.5148	0.6992	0.	0.	0.
4	0.5156	0.7535	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4530	0.6808	0.7991	0.9264	0.8963	0.7688	0.	0.	0.4458	0.5868	0.	0.	0.
2	0.3678	0.5539	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2132	0.3144	0.3827	0.4383	0.4337	0.3774	0.	0.	0.2241	0.2958	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 10

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 10

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9282	0.9383	0.9310	0.8954	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3790	1.3909	1.4103	1.3643	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7065	1.7331	1.7469	1.7727	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.6614	1.6191	1.6513	1.6504	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5528	1.5142	1.5344	1.5501	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4710	1.4185	1.4424	1.4572	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.4029	1.3781	1.3753	1.3569	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	1.3799	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.3357	1.2934	1.2971	1.2999	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	1.2364	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7822	1.0331	1.1113	1.1812	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6554	0.8941	1.0082	1.1048	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.5405	0.7460	0.8608	0.9567	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2518	0.3600	0.4071	0.4706	0.	0.	0.	0.	0.	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 11

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9448	0.9558	0.9650	0.9254	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4121	1.4452	1.4535	1.3919	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	1.6485	1.6605	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7515	1.8362	1.8417	1.6734	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	1.7515	1.7534	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.5915	1.2115	1.2897	1.6007	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.4756	1.0956	1.1196	1.4802	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.3551	1.0202	1.0515	1.3891	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3219	0.9908	1.0046	1.2934	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.3219	0.9218	0.9356	1.2870	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.0938	0.7474	0.8033	1.1582	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.9770	0.6532	0.7182	1.0579	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.8390	0.5566	0.6216	0.9076	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.3843	0.2659	0.3047	0.4093	0.	0.	0.	0.	0.	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 12

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 12

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9245	0.9944	0.9954	0.	0.9236	0.9926	0.	0.	0.8240	0.8515	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3661	1.4765	1.4645	0.	1.3569	1.4498	0.	0.	1.2695	1.2667	0.	0.	0.
20	0.	1.7000	1.6816	0.	0.	1.6540	0.	0.	0.	0.	0.	0.	0.
19	1.6789	1.8757	1.8886	0.	1.6577	1.7994	0.	0.	1.6062	1.6172	0.	0.	0.
18	0.	1.7975	1.7837	0.	0.	1.7883	0.	0.	0.	0.	0.	0.	0.
17	1.5271	1.2244	1.2824	0.	1.5722	1.2309	0.	0.	1.6973	1.7644	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7819	0.	0.	0.
15	1.4011	1.0404	1.0818	0.	1.4838	1.1315	0.	0.	1.6623	1.6651	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3219	0.	0.	0.
13	1.2713	0.9696	1.0156	0.	1.3845	1.0588	0.	0.	1.5105	1.0745	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.2483	0.9567	0.9952	0.	1.3275	1.0211	0.	0.	1.4286	1.0000	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2741	0.9065	0.9310	0.	1.2870	0.8859	0.	0.	1.1747	0.7827	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.1674	0.8025	0.7918	0.	1.0331	0.6663	0.	0.	0.7686	0.5131	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.0920	0.7263	0.6877	0.	0.8716	0.5466	0.	0.	0.6271	0.4090	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.9613	0.6320	0.5873	0.	0.7341	0.4552	0.	0.	0.4916	0.3187	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.4567	0.3099	0.2932	0.	0.3442	0.2207	0.	0.	0.2222	0.1525	0.	0.	0.

J = 13

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 13

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9365	0.9245	0.	0.	0.9457	0.9282	0.	0.	0.8544	0.7969	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3597	1.3670	0.	0.	1.3486	1.3495	0.	0.	1.2677	1.2079	0.	0.	0.
20	1.5795	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.6494	1.6485	0.	0.	1.6642	1.6798	0.	0.	1.6117	1.5446	0.	0.	0.
18	1.6614	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.5556	1.5446	0.	0.	1.6090	1.6053	0.	0.	1.7055	1.6540	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.4397	1.4231	0.	0.	1.5326	1.5216	0.	0.	1.7175	1.6899	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.3403	1.3265	0.	0.	1.4673	1.4728	0.	0.	1.6264	1.5565	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3091	1.2925	0.	0.	1.4314	1.4231	0.	0.	1.5740	1.4452	0.	0.	0.
10	0.	0.	0.	0.	1.3679	0.	0.	0.	1.4553	0.	0.	0.	0.
9	1.3127	1.2631	0.	0.	1.3321	1.2796	0.	0.	1.2594	1.1931	0.	0.	0.
8	0.	0.	0.	0.	1.1904	0.	0.	0.	0.8485	0.	0.	0.	0.
7	1.2529	1.1453	0.	0.	0.7683	0.9075	0.	0.	0.5703	0.7541	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.2125	1.0809	0.	0.	0.5770	0.7048	0.	0.	0.4389	0.5850	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1.0763	0.9374	0.	0.	0.4772	0.5969	0.	0.	0.3420	0.4495	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.5196	0.4482	0.	0.	0.2285	0.2752	0.	0.	0.1591	0.2094	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 16

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 16

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.8381	0.8434	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.2824	1.2787	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.5952	1.6062	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.6504	1.7414	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7304	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.6412	1.6550	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2529	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.4866	1.0616	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.3919	0.9521	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	1.0653	0.7278	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.7471	0.5124	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.6094	0.4045	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.4899	0.3201	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.2329	0.1575	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 17

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 17

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.8505	0.7625	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.2870	1.1674	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.5887	1.4884	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.6936	1.5804	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.7037	1.5666	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.6053	1.4737	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	1.5648	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.4259	1.3468	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	1.0441	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.8002	1.0487	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.5608	0.7463	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.4478	0.6022	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.3672	0.4897	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.1770	0.2443	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 18

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9227	0.9576
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3955	1.4176
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7460	1.7543
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6255	1.6715
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5335	1.6053
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4277	1.4967
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3679	1.4498
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3946
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2704	1.3293
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1849
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9613	0.7083
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7990	0.5587
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6563	0.4527
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3191	0.2160

J = 18

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

GAMMA SCAN BA-140 NORMALIZED OVER OCTANT,12NODES

J = 19

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9825	0.9448
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4562	1.4057
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6835	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8123	1.7387
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7764	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1711	1.6310
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0901	1.5216
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0101	1.4323
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9834	1.3431
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8559	1.2364
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6352	0.8970
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5115	0.7261
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4202	0.5740
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2034	0.2627

J = 19

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX B
XY THERMAL NEUTRON TIP Ba-140 NODAL DISTRIBUTIONS

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 1

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 1

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.4577	0.4432	0.4241	0.3871	0.2981	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.6973	0.6882	0.6509	0.6003	0.4732	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.9337	0.9299	0.8696	0.7985	0.6423	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.0086	0.9964	0.9373	0.8525	0.6814	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.9990	0.9958	0.9369	0.8604	0.6924	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.8492	0.8504	0.8198	0.7853	0.6165	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.7417	0.7454	0.7207	0.6969	0.5481	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.5755	0.5708	0.5547	0.5388	0.4219	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.4267	0.4199	0.4091	0.4016	0.3170	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3341	0.3269	0.3204	0.3194	0.2500	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2520	0.2462	0.2429	0.2459	0.1890	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1123	0.1166	0.1122	0.1193	0.0940	0.	0.	0.	0.	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 2

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 2

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.6550	0.6817	0.6204	0.5951	0.5456	0.4372	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.9820	1.0209	0.9759	0.9411	0.8386	0.6767	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.2978	1.3066	1.3376	1.2635	1.0974	0.8870	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.3600	1.4008	1.3603	1.3200	1.1684	0.9371	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.3140	1.3554	1.3437	1.3112	1.1878	0.9482	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.2131	1.1589	1.1510	1.2360	1.1414	0.9211	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.0750	1.0140	1.0088	1.0926	0.9994	0.8260	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.8579	0.7975	0.7600	0.8390	0.7632	0.6686	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6439	0.5922	0.5462	0.6290	0.5501	0.5194	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5050	0.4629	0.4187	0.4879	0.4313	0.4317	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3799	0.3482	0.3169	0.3744	0.3477	0.3531	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1701	0.1603	0.1660	0.1883	0.1671	0.1708	0.	0.	0.	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 3

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.8042	0.7951	0.7763	0.6865	0.6769	0.6059	0.3988	0.3442	0.2632	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.1908	1.1977	1.1994	1.0806	1.0347	0.9302	0.6408	0.5575	0.4224	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.5125	1.5788	1.5622	1.4399	1.3398	1.1965	0.8275	0.7190	0.5474	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.6232	1.6738	1.6411	1.4776	1.4146	1.2613	0.8973	0.7804	0.5802	0.	0.	0.	0.
16	0.	1.7327	1.6971	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5536	1.6828	1.6525	1.4575	1.4167	1.2776	0.9462	0.8266	0.6125	0.	0.	0.	0.
14	0.	0.9686	0.9607	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.3280	0.9338	0.9076	1.2840	1.3375	1.2484	0.9554	0.8503	0.6353	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.1618	0.8072	0.7979	1.1189	1.1342	1.1103	0.8670	0.7852	0.6054	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.9211	0.6047	0.5845	0.8626	0.8767	0.8936	0.7142	0.6690	0.5585	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6873	0.4338	0.4136	0.6449	0.6523	0.6930	0.5616	0.5439	0.4818	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5404	0.3353	0.3166	0.5054	0.5178	0.5674	0.4583	0.4603	0.4262	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4011	0.2490	0.2311	0.3960	0.4173	0.4670	0.3674	0.3729	0.3463	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1789	0.1092	0.1242	0.2064	0.2085	0.2276	0.1785	0.1788	0.1642	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 4

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8942	0.9853	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3765	1.4973	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7641	1.8828	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8409	2.0123	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0494	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7996	2.0033	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1802	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5779	1.1190	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2947	0.9088	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9472	0.7027	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6924	0.4781	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5279	0.3505	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3905	0.2502	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1693	0.1067	0.	0.

J = 4

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.5718	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.8854	0.9269	0.9500	0.9270	0.6856	0.6486	0.6069	0.5573	0.4769	0.3622	0.	0.	0.
22	0.	1.2197	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3088	1.3656	1.4563	1.4146	1.0942	1.0329	0.9543	0.8757	0.7720	0.5980	0.	0.	0.
20	0.	1.6201	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.6926	1.7295	1.8844	1.7619	1.4159	1.2865	1.2426	1.1140	0.9980	0.7814	0.	0.	0.
18	0.	1.7895	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7818	1.8748	1.9824	1.8671	1.4860	1.3863	1.2603	1.1637	1.0599	0.8342	0.	0.	0.
16	0.	1.9064	2.0284	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.7099	1.8536	1.9883	1.8113	1.5307	1.4223	1.3040	1.2215	1.0788	0.8578	0.	0.	0.
14	0.	1.0834	1.1751	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4930	1.0385	1.1208	1.5742	1.4643	1.3729	1.3191	1.2612	1.0844	0.8620	0.	0.	0.
12	0.	0.9736	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.2897	0.8790	0.9086	1.2937	1.2946	1.2075	1.2294	1.1790	1.0192	0.8094	0.	0.	0.
10	0.	0.7700	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.0033	0.6503	0.7024	0.9464	1.0183	1.0533	1.0805	1.0759	0.8948	0.7242	0.	0.	0.
8	0.	0.5666	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6890	0.4574	0.4781	0.6919	0.7729	0.8181	0.8881	0.9163	0.7646	0.6322	0.	0.	0.
6	0.	0.3903	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5165	0.3380	0.3506	0.5276	0.6124	0.6633	0.7461	0.7931	0.6841	0.5835	0.	0.	0.
4	0.	0.2859	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3701	0.2430	0.2532	0.3857	0.4810	0.5205	0.6072	0.6500	0.5763	0.5050	0.	0.	0.
2	0.	0.1900	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1567	0.1092	0.1053	0.1716	0.2395	0.2642	0.3159	0.3139	0.2578	0.2204	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 5

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9957	0.9838	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5168	1.5017	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8851	1.9549	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9786	2.0060	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9121	1.9346	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8325	1.6960	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7382	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5568	1.4108	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8431	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7199	1.0465	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5096	0.7471	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3823	0.5615	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2809	0.4070	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1266	0.1712	0.	0.

J = 5

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9828	0.9334	1.0202	0.9601	0.8115	0.7254	0.7192	0.6397	0.5826	0.4884	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4378	1.3718	1.5444	1.4749	1.2582	1.1357	1.1134	0.9990	0.9173	0.7800	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8058	1.7876	1.9522	1.8858	1.5616	1.4474	1.3799	1.2843	1.1785	1.0039	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8939	1.8378	2.0347	1.9475	1.6506	1.5003	1.4219	1.3044	1.2337	1.0634	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.7846	1.7488	1.9471	1.8965	1.6783	1.5126	1.4365	1.3478	1.2256	1.0844	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.7158	1.5558	1.6919	1.8331	1.6355	1.4606	1.4180	1.3651	1.2002	1.0881	0.	0.	0.
12	0.	0.	0.	1.7374	1.5941	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5121	1.3504	1.4095	1.5559	1.4676	1.3094	1.3320	1.2569	1.0814	1.0173	0.	0.	0.
10	1.3781	0.	0.	0.8426	0.8173	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2071	1.0438	1.0456	0.7195	0.7330	1.0745	1.1739	1.1206	0.9520	0.8931	0.	0.	0.
8	0.6254	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.4990	0.7168	0.7466	0.5094	0.5524	0.8475	0.9768	0.9588	0.8222	0.7665	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3652	0.5415	0.5611	0.3822	0.4317	0.7020	0.8306	0.8315	0.7474	0.6914	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2622	0.3922	0.4020	0.2847	0.3375	0.5608	0.6557	0.6891	0.6388	0.5848	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1137	0.1713	0.1737	0.1250	0.1695	0.2733	0.3553	0.3503	0.2987	0.2583	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 6

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 6

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.5926	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0242	1.0569	0.9732	0.9720	0.8797	0.8592	0.8533	0.8413	0.	0.	0.	0.	0.
22	0.	0.	0.	1.2766	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5286	1.5804	1.4194	1.4336	1.3527	1.3028	1.2766	1.2383	0.	0.	0.	0.	0.
20	0.	0.	0.	1.6792	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.9388	1.9707	1.8057	1.7459	1.7041	1.5915	1.6117	1.5121	0.	0.	0.	0.	0.
18	0.	0.	0.	1.7543	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	2.0259	1.9386	1.7502	1.8654	1.7172	1.6352	1.6048	1.5294	0.	0.	0.	0.	0.
16	0.	0.	0.	1.8629	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.9182	1.8284	1.6709	1.8032	1.7586	1.5293	1.4973	1.5325	0.	0.	0.	0.	0.
14	0.	0.	0.	1.6973	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.8031	1.6851	1.5464	1.7007	1.6151	1.3838	1.3887	1.4230	0.	0.	0.	0.	0.
12	0.	0.	0.	1.6589	1.5812	0.	0.	0.	0.	0.	0.	0.	0.
11	1.6622	1.5145	1.3495	1.5162	1.4564	1.2440	1.2673	1.2788	0.	0.	0.	0.	0.
10	1.5267	0.	0.	0.8219	0.8151	0.	0.	0.	0.	0.	0.	0.	0.
9	1.3435	1.1902	1.0148	0.7230	0.7194	0.9867	1.1221	1.1352	0.	0.	0.	0.	0.
8	0.7044	0.	0.	0.6410	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.5484	0.8052	0.7571	0.5505	0.5599	0.8014	0.9338	0.9624	0.	0.	0.	0.	0.
6	0.	0.	0.	0.4890	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3863	0.5963	0.5965	0.4332	0.4500	0.6832	0.8257	0.8705	0.	0.	0.	0.	0.
4	0.	0.	0.	0.3809	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2776	0.4347	0.4512	0.3346	0.3509	0.5404	0.6593	0.7072	0.	0.	0.	0.	0.
2	0.	0.	0.	0.2733	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1238	0.2005	0.2125	0.1660	0.1770	0.2841	0.3164	0.3424	0.	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT, 12NODES

J = 7

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 7

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0882	1.0874	1.0901	0.9743	0.9476	0.9115	0.9683	0.8719	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5904	1.6397	1.5728	1.4457	1.4385	1.3806	1.4277	1.2715	0.	0.	0.	0.	0.
20	0.	1.8967	1.8534	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.9190	2.0662	1.9273	1.8020	1.7492	1.7499	1.7716	1.6005	0.	0.	0.	0.	0.
18	0.	1.9634	1.8620	0.	0.	1.7746	1.7736	0.	0.	0.	0.	0.	0.
17	1.8223	1.2402	1.1848	1.7054	1.7491	1.7708	1.8017	1.5855	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	1.7916	1.7971	0.	0.	0.	0.	0.	0.
15	1.6810	1.1639	1.1124	1.6047	1.5987	1.0589	1.0716	1.4798	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5739	1.1089	1.0367	1.4829	1.4204	0.9664	0.9939	1.3814	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.4472	1.0051	0.8991	1.2978	1.2508	0.8492	0.8829	1.2324	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2119	0.8210	0.7538	1.0238	1.0132	0.7261	0.7860	1.0982	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.8392	0.6149	0.5595	0.8389	0.8449	0.5797	0.6561	0.9323	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6458	0.4601	0.4381	0.7121	0.7323	0.4807	0.5673	0.8464	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4817	0.3453	0.3353	0.5633	0.5813	0.3792	0.4432	0.6921	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2234	0.1585	0.1617	0.2719	0.2965	0.1906	0.2163	0.3217	0.	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 8

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 8

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.6537	0.7085	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0549	1.1385	1.0667	1.0500	0.9149	0.9583	1.0223	0.	0.8182	0.7491	0.	0.	0.
22	1.3250	1.4178	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4630	1.5642	1.6508	1.5941	1.4225	1.4778	1.4762	0.	1.1338	1.0284	0.	0.	0.
20	1.6868	1.8236	1.8967	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7793	1.8751	2.0540	1.8917	1.8100	1.8532	1.8682	0.	1.4131	1.2453	0.	0.	0.
18	1.6855	1.7736	1.9350	0.	0.	1.8660	1.8758	0.	0.	0.	0.	0.	0.
17	1.6109	1.1091	1.2089	1.7883	1.7404	1.8698	1.9056	0.	1.4439	1.3144	0.	0.	0.
16	1.5500	1.0670	0.	0.	0.	1.8836	1.8811	0.	0.	0.	0.	0.	0.
15	1.4716	1.0222	1.1294	1.6526	1.6213	1.1197	1.1324	0.	1.4653	1.3636	0.	0.	0.
14	1.3954	0.9756	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4197	0.9923	1.0702	1.5289	1.4708	1.0278	1.0305	0.	1.4508	1.3560	0.	0.	0.
12	1.3996	0.9710	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3304	0.9068	0.9934	1.3800	1.3307	0.9246	0.8777	0.	1.2564	1.1601	0.	0.	0.
10	1.2680	0.8409	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.1855	0.7843	0.8968	1.2703	1.2110	0.8249	0.7445	0.	1.0590	1.0507	0.	0.	0.
8	1.0405	0.6834	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.8634	0.6089	0.7483	1.1115	1.0663	0.7124	0.5935	0.	0.8690	0.8511	0.	0.	0.
6	0.7671	0.5315	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6824	0.4676	0.6279	0.9814	0.9511	0.6195	0.4984	0.	0.7767	0.7504	0.	0.	0.
4	0.5911	0.4046	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.5173	0.3559	0.4790	0.7798	0.7644	0.4813	0.3958	0.	0.6406	0.6118	0.	0.	0.
2	0.4050	0.2784	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2276	0.1596	0.2203	0.3711	0.3715	0.2361	0.1782	0.	0.2679	0.2624	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 9

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 9

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.6823	0.6580	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0975	1.0665	1.0720	1.0255	0.9788	0.9216	0.	0.	0.9114	0.7884	0.	0.	0.
22	1.3723	1.3315	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5148	1.4739	1.6236	1.5464	1.4909	1.4184	0.	0.	1.2525	1.0888	0.	0.	0.
20	1.7372	1.7191	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7794	1.7938	1.9434	1.8759	1.8236	1.8262	0.	0.	1.5220	1.3610	0.	0.	0.
18	1.7168	1.6784	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7472	1.5887	1.7924	1.8340	1.7632	1.7539	0.	0.	1.5788	1.4041	0.	0.	0.
16	1.6653	1.5173	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5714	1.4408	1.6423	1.6881	1.7578	1.6386	0.	0.	1.6165	1.4521	0.	0.	0.
14	1.4943	1.3667	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5153	1.3860	1.5337	1.5812	1.5926	1.5091	0.	0.	1.6364	1.4661	0.	0.	0.
12	1.4969	1.3670	0.	0.	0.	0.	0.	0.	1.6020	0.	0.	0.	0.
11	1.4345	1.2944	1.4008	1.4439	1.4283	1.3694	0.	0.	1.4480	1.2724	0.	0.	0.
10	1.3876	1.2319	0.	0.	0.	0.	0.	0.	0.8179	0.	0.	0.	0.
9	1.3380	1.1851	1.3231	1.3661	1.3140	1.2270	0.	0.	0.7493	1.0504	0.	0.	0.
8	1.2157	1.0738	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6489	0.9252	1.1557	1.2326	1.1746	1.0684	0.	0.	0.5893	0.8324	0.	0.	0.
6	0.5770	0.8464	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5187	0.7763	1.0111	1.1064	1.0624	0.9580	0.	0.	0.4958	0.7145	0.	0.	0.
4	0.4514	0.6901	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3968	0.6099	0.8059	0.8910	0.8614	0.7696	0.	0.	0.3976	0.5685	0.	0.	0.
2	0.3145	0.4778	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1817	0.2720	0.3861	0.4163	0.4277	0.3693	0.	0.	0.1689	0.2329	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 10

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 10

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0258	1.0542	1.1087	1.1219	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5430	1.5904	1.5916	1.6275	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8769	1.8997	1.9128	1.8954	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8194	1.7495	1.6949	1.8684	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.6430	1.5757	1.5748	1.7346	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5686	1.4760	1.4932	1.6149	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5111	1.3759	1.3885	1.4781	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	1.4693	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.4268	1.2831	1.3146	1.3969	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	1.3603	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7539	1.0740	1.1517	1.2463	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6044	0.8760	1.0317	1.1203	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4661	0.6992	0.8213	0.8985	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2291	0.3557	0.3769	0.4263	0.	0.	0.	0.	0.	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 11

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0603	1.0665	1.2041	1.1052	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5888	1.6124	1.7286	1.5966	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	1.8287	1.9729	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8572	1.9297	1.9543	1.8994	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	1.8477	1.8831	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.6919	1.1366	1.1488	1.6944	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5068	1.0288	1.0614	1.5747	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4171	0.9818	1.0129	1.4856	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3388	0.9350	0.9504	1.3866	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2914	0.8711	0.9086	1.3513	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.0989	0.7915	0.8063	1.1925	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.9197	0.6307	0.7175	1.0619	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.7452	0.4863	0.5577	0.8473	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.3804	0.2405	0.2581	0.3896	0.	0.	0.	0.	0.	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 12

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 12

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0369	1.1372	1.0983	0.	1.0653	1.1398	0.	0.	0.9929	0.9960	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5272	1.6414	1.5539	0.	1.5530	1.6522	0.	0.	1.4359	1.4387	0.	0.	0.
20	0.	1.8585	1.7804	0.	0.	1.8978	0.	0.	0.	0.	0.	0.	0.
19	1.8073	1.8654	1.8568	0.	1.8709	1.9703	0.	0.	1.7904	1.7602	0.	0.	0.
18	0.	1.7879	1.7538	0.	0.	1.8702	0.	0.	0.	0.	0.	0.	0.
17	1.5808	1.0944	1.0957	0.	1.6923	1.1777	0.	0.	1.8357	1.8778	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9379	0.	0.	0.
15	1.4194	0.9906	1.0007	0.	1.5511	1.0963	0.	0.	1.8103	1.9086	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1566	0.	0.	0.
13	1.3721	0.9618	0.9661	0.	1.4742	1.0635	0.	0.	1.6722	1.1248	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3149	0.9149	0.9129	0.	1.3971	0.9969	0.	0.	1.5199	0.9930	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.3388	0.9040	0.8405	0.	1.3189	0.8752	0.	0.	1.2040	0.7784	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.2406	0.8300	0.7543	0.	1.0539	0.7174	0.	0.	0.8430	0.5659	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.1523	0.7617	0.6191	0.	0.8589	0.5380	0.	0.	0.6423	0.4068	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.9436	0.6042	0.4838	0.	0.6730	0.4029	0.	0.	0.4688	0.2905	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.4478	0.2830	0.2228	0.	0.3034	0.1827	0.	0.	0.2010	0.1283	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 13

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 13

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0714	1.0447	0.	0.	1.0951	1.0429	0.	0.	1.0294	0.9342	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5408	1.4971	0.	0.	1.5775	1.5159	0.	0.	1.4803	1.3624	0.	0.	0.
20	1.7344	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7791	1.7953	0.	0.	1.8498	1.8682	0.	0.	1.8033	1.7075	0.	0.	0.
18	1.6869	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7045	1.5785	0.	0.	1.8464	1.7078	0.	0.	1.8693	1.7790	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5200	1.4248	0.	0.	1.6889	1.5898	0.	0.	1.8433	1.8075	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4680	1.3854	0.	0.	1.6101	1.5272	0.	0.	1.8345	1.6372	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3825	1.3198	0.	0.	1.5535	1.4616	0.	0.	1.6866	1.4669	0.	0.	0.
10	0.	0.	0.	0.	1.5073	0.	0.	0.	1.5502	0.	0.	0.	0.
9	1.4052	1.3147	0.	0.	1.4545	1.2980	0.	0.	1.3721	1.1737	0.	0.	0.
8	0.	0.	0.	0.	1.3509	0.	0.	0.	0.7272	0.	0.	0.	0.
7	1.3229	1.2138	0.	0.	0.7255	0.9758	0.	0.	0.5847	0.8106	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.2561	1.1397	0.	0.	0.5698	0.7506	0.	0.	0.4211	0.5946	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1.0451	0.9340	0.	0.	0.4344	0.5769	0.	0.	0.3009	0.4218	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.5042	0.4362	0.	0.	0.1986	0.2572	0.	0.	0.1331	0.1829	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 16

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 16

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.9195	0.9109	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.3004	1.2910	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.6206	1.5812	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.6370	1.6609	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7100	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.5723	1.6518	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9891	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.4449	0.9711	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.2890	0.8391	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.9740	0.6658	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.7249	0.4748	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.5783	0.3666	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.4386	0.2751	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.1962	0.1276	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 17

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 17

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.9491	0.8364	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.3310	1.1954	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.6171	1.4952	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.6735	1.5363	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.5988	1.4885	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.6220	1.3947	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	1.5705	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.4398	1.2106	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.7848	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.6779	0.9140	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.4981	0.7019	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.3957	0.5633	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.3075	0.4292	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.1413	0.1969	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 18

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0665	1.0975
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4715	1.5150
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7938	1.7795
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5887	1.7472
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4409	1.5714
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3860	1.5153
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2944	1.4345
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3876
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1851	1.3380
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2157
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9252	0.6489
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7763	0.5187
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6099	0.3967
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2720	0.1817

J = 18

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

XY THERMAL TIP NORMALIZED OVER OCTANT,12NODES

J = 19

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1384	1.0549
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5644	1.4637
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8236	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8751	1.7793
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7736	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1091	1.6109
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0222	1.4717
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9924	1.4197
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9068	1.3304
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7843	1.1855
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6089	0.8634
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4676	0.6824
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3559	0.5173
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1596	0.2276

J = 19

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX C
XY GAMMA TIP Ba-140 NODAL DISTRIBUTIONS

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 1

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 1

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.4226	0.4227	0.3927	0.3535	0.2963	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.6803	0.6734	0.6358	0.5770	0.4692	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.9153	0.9031	0.8519	0.7684	0.6239	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.9973	0.9861	0.9274	0.8334	0.6826	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.0008	0.9892	0.9450	0.8649	0.6958	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.8141	0.8131	0.7978	0.7675	0.6040	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.7010	0.6996	0.6937	0.6789	0.5250	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.5597	0.5517	0.5490	0.5420	0.4111	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.4125	0.4035	0.4025	0.4015	0.3034	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3137	0.3037	0.3044	0.3046	0.2281	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2305	0.2236	0.2248	0.2286	0.1702	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1049	0.1016	0.1079	0.1146	0.0791	0.	0.	0.	0.	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 2

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 2

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.6044	0.6309	0.6177	0.6040	0.4782	0.3828	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.9794	1.0107	0.9698	0.9385	0.7883	0.6384	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.3204	1.3164	1.3146	1.2423	1.0458	0.8521	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.4135	1.4447	1.4025	1.3652	1.1304	0.9169	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.4078	1.4361	1.3939	1.3583	1.2076	0.9797	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.2503	1.1862	1.1641	1.2562	1.1397	0.9331	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.0874	1.0181	0.9910	1.0772	1.0117	0.8469	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.8833	0.8129	0.7616	0.8424	0.7973	0.7082	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6511	0.5925	0.5416	0.6244	0.5720	0.5443	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.4961	0.4504	0.4006	0.4667	0.4279	0.4295	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3623	0.3293	0.2971	0.3502	0.3334	0.3382	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1680	0.1563	0.1357	0.1524	0.1702	0.1698	0.	0.	0.	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 3

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.7466	0.7419	0.7733	0.6998	0.6123	0.5525	0.4173	0.3523	0.2822	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.1856	1.1815	1.2019	1.0902	0.9794	0.8884	0.6582	0.5575	0.4310	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.5307	1.5785	1.5538	1.4406	1.2811	1.1587	0.8532	0.7243	0.5552	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.6766	1.7099	1.6990	1.5416	1.3732	1.2442	0.9265	0.7909	0.6014	0.	0.	0.	0.
16	0.	1.8010	1.7750	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.6577	1.7655	1.7319	1.5315	1.4296	1.3108	0.9820	0.8496	0.6300	0.	0.	0.	0.
14	0.	1.0157	1.0057	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.3640	0.9501	0.9287	1.3234	1.3271	1.2569	0.9644	0.8481	0.6307	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.1827	0.8131	0.8014	1.1287	1.1434	1.1364	0.8724	0.7857	0.5969	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.9486	0.6130	0.5954	0.8802	0.9015	0.9328	0.7170	0.6687	0.5468	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6958	0.4319	0.4178	0.6523	0.6652	0.7129	0.5584	0.5370	0.4603	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5330	0.3258	0.3097	0.4947	0.5067	0.5568	0.4464	0.4407	0.3894	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3870	0.2372	0.2220	0.3791	0.3968	0.4431	0.3486	0.3482	0.3120	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1823	0.1087	0.1087	0.1787	0.2064	0.2180	0.1686	0.1660	0.1369	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT, 12NODES

J = 4

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8248	0.9163	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2848	1.4046	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6585	1.7727	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7837	1.9483	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0216	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7809	1.9768	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1565	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5527	1.0947	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2917	0.8947	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9375	0.6799	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6769	0.4586	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5072	0.3337	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3698	0.2351	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1677	0.1044	0.	0.

J = 4

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.5471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.8134	0.8547	0.8838	0.8550	0.7304	0.6941	0.6269	0.5829	0.4574	0.3463	0.	0.	0.
22	0.	1.1366	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3020	1.3621	1.3668	1.3200	1.1497	1.0875	0.9643	0.8842	0.7222	0.5524	0.	0.	0.
20	0.	1.6015	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7105	1.7467	1.7747	1.6570	1.4956	1.3722	1.2652	1.1332	0.9414	0.7262	0.	0.	0.
18	0.	1.8766	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8319	1.9308	1.9202	1.8089	1.5989	1.5055	1.3357	1.2359	1.0122	0.7830	0.	0.	0.
16	0.	2.0292	2.0022	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.8467	1.9942	1.9634	1.7922	1.6582	1.5619	1.3750	1.2815	1.0738	0.8417	0.	0.	0.
14	0.	1.1638	1.1522	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5515	1.0821	1.0975	1.5489	1.5643	1.4842	1.3477	1.2837	1.0493	0.8225	0.	0.	0.
12	0.	1.0161	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3648	0.9336	0.8949	1.2914	1.3688	1.2968	1.2508	1.1959	0.9928	0.7806	0.	0.	0.
10	0.	0.8173	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.0687	0.7054	0.6800	0.9373	1.0680	1.1146	1.0979	1.0902	0.8775	0.7057	0.	0.	0.
8	0.	0.6124	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7242	0.4874	0.4587	0.6767	0.8051	0.8580	0.8815	0.9077	0.7430	0.6128	0.	0.	0.
6	0.	0.4070	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5305	0.3479	0.3338	0.5070	0.6323	0.6859	0.7167	0.7614	0.6368	0.5454	0.	0.	0.
4	0.	0.2963	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3747	0.2466	0.2380	0.3652	0.4805	0.5222	0.5727	0.6122	0.5280	0.4605	0.	0.	0.
2	0.	0.1976	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1798	0.1229	0.1030	0.1701	0.2348	0.2632	0.2602	0.2578	0.2480	0.2131	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 5

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9343	0.9327	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4322	1.4231	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7884	1.8475	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9333	1.9491	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8995	1.9052	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8079	1.6592	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7273	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5566	1.3864	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8399	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7081	1.0119	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4939	0.7165	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3661	0.5312	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2649	0.3797	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1234	0.1633	0.	0.

J = 5

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9143	0.8627	0.9671	0.9011	0.8390	0.7462	0.7332	0.6481	0.5434	0.4543	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4353	1.3707	1.4633	1.3933	1.3106	1.1754	1.1238	0.9979	0.8542	0.7204	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8159	1.8028	1.8456	1.7895	1.6371	1.5225	1.4093	1.3012	1.1105	0.9385	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.9389	1.8870	1.9770	1.9037	1.7636	1.6103	1.5095	1.3760	1.1803	1.0075	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.9147	1.8802	1.9173	1.8855	1.8122	1.6501	1.5167	1.4080	1.2179	1.0688	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.7769	1.6189	1.6547	1.8103	1.7384	1.5671	1.4452	1.3793	1.1552	1.0446	0.	0.	0.
12	0.	0.	0.	1.7273	1.7022	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5883	1.4308	1.3859	1.5566	1.5533	1.4044	1.3582	1.2728	1.0562	0.9868	0.	0.	0.
10	1.4365	0.	0.	0.8398	0.8643	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2717	1.1150	1.0116	0.7081	0.7709	1.1367	1.1924	1.1338	0.9352	0.8733	0.	0.	0.
8	0.6564	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.5217	0.7512	0.7162	0.4938	0.5775	0.8865	0.9706	0.9509	0.8012	0.7450	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3714	0.5537	0.5309	0.3661	0.4452	0.7198	0.8017	0.8028	0.6993	0.6435	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2627	0.3954	0.3751	0.2684	0.3374	0.5622	0.6217	0.6542	0.5890	0.5368	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1281	0.1931	0.1656	0.1218	0.1703	0.2780	0.3023	0.3020	0.2932	0.2551	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT, 12NODES

J = 6

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 6

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.5685	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9940	1.0386	0.8998	0.9169	0.8493	0.8209	0.7623	0.7324	0.	0.	0.	0.	0.
22	0.	0.	0.	1.2171	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5118	1.5504	1.4191	1.4405	1.3586	1.3145	1.2084	1.1522	0.	0.	0.	0.	0.
20	0.	0.	0.	1.6373	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8834	1.8950	1.8094	1.7565	1.7500	1.6529	1.5756	1.4602	0.	0.	0.	0.	0.
18	0.	0.	0.	1.8295	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	2.0075	1.9030	1.7884	1.9191	1.8224	1.7614	1.6406	1.5471	0.	0.	0.	0.	0.
16	0.	0.	0.	1.9225	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.9218	1.8005	1.7381	1.8777	1.9067	1.6925	1.5856	1.6138	0.	0.	0.	0.	0.
14	0.	0.	0.	1.7913	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.7616	1.6279	1.5878	1.7539	1.6930	1.4750	1.4240	1.4501	0.	0.	0.	0.	0.
12	0.	0.	0.	1.7139	1.6652	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5959	1.4389	1.3806	1.5553	1.5417	1.3352	1.3202	1.3261	0.	0.	0.	0.	0.
10	1.4613	0.	0.	0.8513	0.8484	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2787	1.1149	1.0543	0.7495	0.7467	1.0416	1.1659	1.1739	0.	0.	0.	0.	0.
8	0.6614	0.	0.	0.6480	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.5239	0.7598	0.7647	0.5543	0.5669	0.8204	0.9537	0.9792	0.	0.	0.	0.	0.
6	0.	0.	0.	0.4866	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3635	0.5513	0.5894	0.4273	0.4409	0.6748	0.8055	0.8406	0.	0.	0.	0.	0.
4	0.	0.	0.	0.3732	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2549	0.3899	0.4320	0.3188	0.3314	0.5141	0.6477	0.6885	0.	0.	0.	0.	0.
2	0.	0.	0.	0.2623	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1126	0.1730	0.2135	0.1636	0.1702	0.2752	0.3213	0.3477	0.	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT, 12NODES

J = 7

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 7

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0667	1.0818	1.0119	0.9187	0.9140	0.8556	0.8662	0.7625	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5887	1.6264	1.5810	1.4554	1.4516	1.3871	1.3631	1.2010	0.	0.	0.	0.	0.
20	0.	1.8662	1.8038	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8779	2.0041	1.9303	1.8081	1.8026	1.8094	1.7378	1.5646	0.	0.	0.	0.	0.
18	0.	1.9397	1.9377	0.	0.	1.9089	1.8438	0.	0.	0.	0.	0.	0.
17	1.8218	1.2330	1.2145	1.7573	1.8678	1.8943	1.8528	1.6243	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	1.9255	1.8844	0.	0.	0.	0.	0.	0.
15	1.6872	1.1561	1.1534	1.6672	1.7511	1.1695	1.1364	1.5694	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5410	1.0818	1.0608	1.5207	1.5038	1.0285	1.0153	1.4117	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3944	0.9610	0.9175	1.3260	1.3343	0.9130	0.9186	1.2829	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.1617	0.7752	0.7817	1.0583	1.0590	0.7685	0.8132	1.1327	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.8128	0.5774	0.5643	0.8419	0.8574	0.5962	0.6676	0.9467	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6113	0.4241	0.4304	0.6991	0.7166	0.4765	0.5525	0.8167	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4398	0.3089	0.3192	0.5346	0.5476	0.3620	0.4344	0.6741	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1971	0.1330	0.1596	0.2653	0.2861	0.1911	0.2195	0.3278	0.	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 8

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 8

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.6527	0.6837	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0127	1.0670	1.0881	1.0493	0.9054	0.9450	0.8675	0.	0.7718	0.7097	0.	0.	0.
22	1.3049	1.3826	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5183	1.6187	1.6289	1.5769	1.4385	1.4866	1.4007	0.	1.1718	1.0724	0.	0.	0.
20	1.7156	1.8394	1.8590	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8279	1.9306	1.9926	1.8600	1.8064	1.8438	1.8264	0.	1.4924	1.3292	0.	0.	0.
18	1.7878	1.8963	1.9193	0.	0.	1.9380	1.9248	0.	0.	0.	0.	0.	0.
17	1.6996	1.1754	1.2149	1.8233	1.8118	1.9421	1.9262	0.	1.5729	1.4448	0.	0.	0.
16	1.6542	1.1463	0.	0.	0.	1.9604	1.9631	0.	0.	0.	0.	0.	0.
15	1.5725	1.0968	1.1219	1.6707	1.6968	1.1764	1.2009	0.	1.6011	1.4952	0.	0.	0.
14	1.4779	1.0393	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4605	1.0257	1.0453	1.5069	1.4717	1.0259	1.0562	0.	1.5347	1.4425	0.	0.	0.
12	1.4385	1.0048	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3704	0.9450	0.9584	1.3668	1.3397	0.9305	0.9174	0.	1.3371	1.2385	0.	0.	0.
10	1.3095	0.8793	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2251	0.8218	0.8545	1.2323	1.2164	0.8263	0.7809	0.	1.0842	1.0776	0.	0.	0.
8	1.0697	0.7134	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.8898	0.6366	0.7020	1.0624	1.0563	0.7046	0.6046	0.	0.8830	0.8685	0.	0.	0.
6	0.7710	0.5397	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6759	0.4667	0.5703	0.9114	0.9295	0.6020	0.4940	0.	0.7499	0.7289	0.	0.	0.
4	0.5868	0.4055	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4966	0.3451	0.4304	0.7128	0.7425	0.4662	0.3830	0.	0.6092	0.5823	0.	0.	0.
2	0.3885	0.2743	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2220	0.1635	0.1787	0.3154	0.3642	0.2312	0.2012	0.	0.2715	0.2678	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 9

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 9

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.6797	0.6271	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0502	0.9891	1.0883	1.0234	0.9557	0.9007	0.	0.	0.8574	0.7422	0.	0.	0.
22	1.3452	1.2852	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5661	1.5112	1.6075	1.5350	1.4980	1.4247	0.	0.	1.2944	1.1284	0.	0.	0.
20	1.7660	1.7247	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8324	1.8477	1.8993	1.8569	1.8166	1.8174	0.	0.	1.5985	1.4383	0.	0.	0.
18	1.8291	1.7988	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8532	1.6924	1.8074	1.8790	1.8356	1.8188	0.	0.	1.7040	1.5233	0.	0.	0.
16	1.7836	1.6381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.6867	1.5536	1.6319	1.7132	1.8346	1.7137	0.	0.	1.7506	1.5779	0.	0.	0.
14	1.5850	1.4590	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5656	1.4356	1.4961	1.5661	1.5791	1.4883	0.	0.	1.7018	1.5329	0.	0.	0.
12	1.5469	1.4207	0.	0.	0.	0.	0.	0.	1.6693	0.	0.	0.	0.
11	1.4954	1.3629	1.3646	1.4331	1.4319	1.3638	0.	0.	1.5103	1.3313	0.	0.	0.
10	1.4460	1.2952	0.	0.	0.	0.	0.	0.	0.8525	0.	0.	0.	0.
9	1.3987	1.2492	1.2790	1.3377	1.3099	1.2151	0.	0.	0.7553	1.0632	0.	0.	0.
8	1.2567	1.1209	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6689	0.9619	1.0956	1.1857	1.1577	1.0484	0.	0.	0.5907	0.8400	0.	0.	0.
6	0.5785	0.8526	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5139	0.7692	0.9381	1.0353	1.0330	0.9278	0.	0.	0.4755	0.6906	0.	0.	0.
4	0.4477	0.6870	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.3819	0.5917	0.7369	0.8234	0.8357	0.7440	0.	0.	0.3754	0.5384	0.	0.	0.
2	0.3016	0.4712	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1763	0.2794	0.3181	0.3617	0.4241	0.3637	0.	0.	0.1701	0.2357	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 10

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 10

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0313	1.0707	0.9521	0.9697	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5410	1.5859	1.5107	1.5331	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8632	1.8797	1.8629	1.8361	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8362	1.7567	1.7226	1.8902	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.6566	1.5754	1.5905	1.7444	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5517	1.4545	1.4522	1.5633	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.4882	1.3576	1.3858	1.4679	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	1.4557	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.4258	1.2776	1.2995	1.3744	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	1.3131	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7236	1.0281	1.1272	1.2163	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5758	0.8331	0.9824	1.0562	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4307	0.6431	0.7961	0.8689	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1920	0.2905	0.3978	0.4501	0.	0.	0.	0.	0.	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 11

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0617	1.0732	1.0346	0.9427	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5820	1.6053	1.6248	1.4918	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	1.8172	1.8178	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8452	1.9124	1.8931	1.8266	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	1.8704	1.9133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7105	1.1435	1.1631	1.7015	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5217	1.0333	1.0674	1.5735	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4004	0.9720	0.9834	1.4345	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3260	0.9187	0.9467	1.3721	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2939	0.8720	0.8947	1.3250	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.0563	0.7583	0.7847	1.1620	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.8803	0.5965	0.6785	1.0088	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.6968	0.4498	0.5382	0.8201	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.3295	0.2048	0.2725	0.4141	0.	0.	0.	0.	0.	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 12

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 12

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9961	1.0628	1.0499	0.	0.9598	1.0290	0.	0.	0.8618	0.8548	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5141	1.6146	1.5857	0.	1.4825	1.5804	0.	0.	1.3661	1.3514	0.	0.	0.
20	0.	1.8014	1.7953	0.	0.	1.7944	0.	0.	0.	0.	0.	0.	0.
19	1.8080	1.8595	1.8878	0.	1.8094	1.9083	0.	0.	1.7465	1.6990	0.	0.	0.
18	0.	1.8806	1.8631	0.	0.	1.8871	0.	0.	0.	0.	0.	0.	0.
17	1.6510	1.1417	1.1332	0.	1.6928	1.1742	0.	0.	1.8244	1.8549	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9360	0.	0.	0.
15	1.4776	1.0301	1.0392	0.	1.5764	1.1138	0.	0.	1.8244	1.9231	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1400	0.	0.	0.
13	1.3598	0.9517	0.9754	0.	1.4563	1.0466	0.	0.	1.6085	1.0787	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3105	0.9136	0.9262	0.	1.3927	0.9878	0.	0.	1.4933	0.9721	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.3144	0.8883	0.8689	0.	1.3190	0.8668	0.	0.	1.1838	0.7657	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.1879	0.7991	0.7570	0.	1.0592	0.7151	0.	0.	0.8144	0.5451	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.0852	0.7170	0.6033	0.	0.8351	0.5187	0.	0.	0.6090	0.3870	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.8993	0.5767	0.4633	0.	0.6421	0.3815	0.	0.	0.4447	0.2770	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.4336	0.2827	0.2206	0.	0.3195	0.1911	0.	0.	0.2183	0.1392	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 13

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 13

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0271	0.9838	0.	0.	1.0028	0.9551	0.	0.	0.9012	0.8091	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5363	1.4876	0.	0.	1.5232	1.4635	0.	0.	1.4126	1.2830	0.	0.	0.
20	1.7078	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7903	1.8028	0.	0.	1.8038	1.8257	0.	0.	1.7691	1.6542	0.	0.	0.
18	1.7928	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7961	1.6576	0.	0.	1.8553	1.7136	0.	0.	1.8662	1.7623	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5997	1.4948	0.	0.	1.7234	1.6203	0.	0.	1.8584	1.8203	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4627	1.3779	0.	0.	1.6072	1.5221	0.	0.	1.7841	1.5843	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3852	1.3211	0.	0.	1.5600	1.4618	0.	0.	1.6743	1.4470	0.	0.	0.
10	0.	0.	0.	0.	1.5003	0.	0.	0.	1.5256	0.	0.	0.	0.
9	1.3847	1.2983	0.	0.	1.4671	1.2994	0.	0.	1.3615	1.1634	0.	0.	0.
8	0.	0.	0.	0.	1.3585	0.	0.	0.	0.7163	0.	0.	0.	0.
7	1.2719	1.1740	0.	0.	0.7342	0.9839	0.	0.	0.5692	0.7905	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.1835	1.0776	0.	0.	0.5585	0.7339	0.	0.	0.4024	0.5706	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.9974	0.8960	0.	0.	0.4170	0.5517	0.	0.	0.2890	0.4056	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.4960	0.4382	0.	0.	0.2080	0.2686	0.	0.	0.1446	0.1980	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT, 12NODES

J = 16

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 16

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.8981	0.8891	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.3559	1.3353	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.7109	1.6509	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.7652	1.7742	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8419	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.7372	1.8093	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0679	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.5265	1.0185	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.3517	0.8714	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	1.0220	0.7000	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.7381	0.4844	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.5753	0.3641	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.4273	0.2672	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.1946	0.1243	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 17

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 17

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.9096	0.8012	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.3738	1.2242	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.6889	1.5508	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.7913	1.6342	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.7639	1.6307	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.7036	1.4563	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	1.6598	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.5087	1.2588	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.8272	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.7147	0.9608	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.5099	0.7166	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.3940	0.5603	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.2991	0.4164	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.1454	0.1987	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 18

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9891	1.0502
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5090	1.5665
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8477	1.8324
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6924	1.8532
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5536	1.6867
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4356	1.5656
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3629	1.4954
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4460
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2492	1.3987
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2567
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9619	0.6689
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7692	0.5139
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5917	0.3819
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2794	0.1763

J = 18

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

XY GAMMA TIP NORMALIZED OVER OCTANT,12NODES

J = 19

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0669	1.0127
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6190	1.5193
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8393	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9305	1.8279
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8963	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1754	1.6996
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0968	1.5725
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0257	1.4605
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9450	1.3704
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8218	1.2251
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6366	0.8898
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4667	0.6759
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3451	0.4966
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1635	0.2220

J = 19

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX D
RELATIVE DIFFERENCES BETWEEN XY THERMAL NEUTRON TIP AND MEASURED GAMMA SCAN Ba-140 NODAL DISTRIBUTIONS

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 1

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 1

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	-0.0424	-0.0515	-0.0452	-0.0747	-0.2603	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	-0.1170	-0.0962	-0.1293	-0.1351	-0.2884	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.1190	-0.1078	-0.1635	-0.1101	-0.2458	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.0771	-0.0662	-0.0960	-0.1038	-0.2372	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0734	-0.0587	-0.0907	-0.1067	-0.2175	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.1098	-0.0866	-0.0898	-0.0979	-0.2398	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.1146	-0.0951	-0.1165	-0.0861	-0.2278	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.1610	-0.1500	-0.1561	-0.1389	-0.2513	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.1717	-0.1619	-0.1258	-0.1025	-0.2140	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.2138	-0.2008	-0.1502	-0.1062	-0.2237	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.2333	-0.2035	-0.1834	-0.1120	-0.2470	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.2145	-0.1784	-0.1880	-0.0634	-0.1751	0.	0.	0.	0.	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 2

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 2

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1122	0.1556	0.0891	0.0653	0.0837	-0.0799	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0264	0.0712	0.0684	0.0289	0.0113	-0.1157	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.0072	-0.0137	0.0835	0.0590	-0.0018	-0.0782	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.0318	0.0005	-0.0035	-0.0036	-0.0162	-0.0815	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0706	-0.0395	-0.0037	0.0017	-0.0144	-0.0561	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0410	-0.0384	-0.0375	0.0202	-0.0034	-0.0298	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0359	-0.0737	-0.0489	0.0006	-0.0377	-0.0286	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0730	-0.0860	-0.0878	-0.0349	-0.0692	-0.0626	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0652	-0.0635	-0.0756	0.0251	-0.0747	-0.0177	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0927	-0.0807	-0.1085	-0.0056	-0.0975	0.0036	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1271	-0.1157	-0.1261	-0.0302	-0.0946	0.0205	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1297	-0.1441	-0.0333	-0.0274	-0.1405	-0.0337	0.	0.	0.	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 3

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1084	0.0715	0.0853	0.0370	0.0531	0.0510	-0.2453	-0.2206	-0.3113	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0273	0.0148	0.0414	0.0153	0.0319	-0.0008	-0.2387	-0.2111	-0.3171	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.0430	-0.0385	-0.0307	0.0190	0.0093	-0.0101	-0.2205	-0.2011	-0.2969	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.0170	-0.0533	-0.0268	-0.0330	-0.0149	-0.0262	-0.1946	-0.1683	-0.3006	0.	0.	0.	0.
16	0.	-0.0226	-0.0166	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0565	-0.0080	0.0178	-0.0558	-0.0222	-0.0449	-0.1631	-0.1410	-0.2643	0.	0.	0.	0.
14	0.	-0.2392	-0.2344	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0565	-0.0978	-0.1261	-0.0639	-0.0333	-0.0123	-0.1108	-0.0794	-0.1985	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0638	-0.0908	-0.1241	-0.0923	-0.1104	-0.0556	-0.1274	-0.0867	-0.1591	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0856	-0.1318	-0.1582	-0.1212	-0.1399	-0.0879	-0.1595	-0.1248	-0.1177	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0769	-0.1053	-0.1228	-0.0364	-0.1023	-0.0345	-0.1532	-0.1052	-0.0451	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1103	-0.1281	-0.1533	-0.0608	-0.1208	-0.0302	-0.1948	-0.1314	-0.0501	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1554	-0.1689	-0.1940	-0.0730	-0.1357	-0.0072	-0.2153	-0.1460	-0.0644	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1632	-0.2633	-0.1649	-0.0386	-0.1766	-0.0963	-0.2703	-0.1698	-0.0529	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 4

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1639	0.1745	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1663	0.1684	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1483	0.1159	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0684	0.0547	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0690	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0489	0.1128	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1733	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0259	-0.0191	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0555	-0.0953	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0562	-0.0234	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0062	0.0098	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0129	-0.0309	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0847	-0.1017	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.2144	-0.2605	0.	0.

J = 4

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.0909	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1337	0.1017	0.1668	0.1871	-0.0228	-0.0103	0.0329	0.0515	0.0408	-0.0166	0.	0.	0.
22	0.	0.1208	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0828	0.0611	0.1381	0.1856	-0.0072	-0.0002	0.0271	0.0199	0.0578	0.0142	0.	0.	0.
20	0.	0.0622	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0378	0.0485	0.1286	0.1300	-0.0197	-0.0355	0.0407	0.0133	0.0657	0.0649	0.	0.	0.
18	0.	-0.0014	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0216	0.0084	0.0441	0.0796	-0.0537	-0.0487	-0.0339	-0.0277	0.0399	0.0497	0.	0.	0.
16	0.	0.0279	0.0699	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0124	0.0577	0.1136	0.0495	-0.0275	-0.0300	-0.0122	-0.0046	0.0305	0.0698	0.	0.	0.
14	0.	-0.1490	-0.1080	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0056	-0.0513	-0.0038	0.0247	-0.0399	-0.0390	0.0055	0.0466	0.0441	0.1121	0.	0.	0.
12	0.	-0.0508	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0189	-0.0943	-0.0734	-0.0511	-0.0574	-0.0898	-0.0101	0.0140	0.0259	0.1123	0.	0.	0.
10	0.	-0.0826	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0517	-0.1240	-0.0324	-0.0412	-0.0315	-0.0435	-0.0071	0.0489	0.0211	0.1096	0.	0.	0.
8	0.	-0.0732	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0258	-0.0550	0.0049	0.0166	0.0293	-0.0115	0.0264	0.0831	0.0631	0.1512	0.	0.	0.
6	0.	-0.0855	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0887	-0.0887	-0.0454	-0.0288	-0.0031	-0.0486	0.0093	0.0713	0.0547	0.1598	0.	0.	0.
4	0.	-0.1334	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1577	-0.1586	-0.1417	-0.1122	-0.0503	-0.0773	-0.0080	0.0380	0.0486	0.1711	0.	0.	0.
2	0.	-0.1818	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.2147	-0.2145	-0.2617	-0.2242	-0.0736	-0.1107	0.0151	-0.0437	-0.1116	0.0840	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 5

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1611	0.1917	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1711	0.1677	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1296	0.1734	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0841	0.1030	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0498	0.0643	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0568	0.0517	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0532	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0389	-0.0213	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1867	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0748	-0.0177	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0267	0.0707	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0621	0.0342	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1171	-0.0355	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.2318	-0.1932	0.	0.

J = 5

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1471	0.0978	0.2397	0.1688	0.0116	-0.0180	0.0541	0.0431	0.0573	0.0552	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1108	0.0705	0.2078	0.1634	0.0330	0.0029	0.0562	0.0382	0.0651	0.0845	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0727	0.0550	0.1041	0.1471	0.0015	-0.0086	0.0101	0.0235	0.0048	0.0688	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0243	0.0105	0.1251	0.0918	-0.0301	-0.0507	-0.0199	-0.0235	0.0229	0.0615	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0112	-0.0321	0.0821	0.0610	-0.0186	-0.0322	-0.0154	-0.0107	-0.0116	0.0432	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0426	-0.0139	0.0662	0.1034	-0.0007	-0.0389	0.0101	0.0262	-0.0242	0.0783	0.	0.	0.
12	0.	0.	0.	0.0792	-0.0109	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0122	-0.0632	-0.0025	0.0725	0.0207	-0.0799	-0.0103	-0.0092	-0.0729	0.0345	0.	0.	0.
10	-0.0138	0.	0.	-0.1301	-0.1546	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0047	-0.0752	-0.0201	-0.0791	-0.0784	-0.0745	-0.0146	-0.0097	-0.0969	0.0378	0.	0.	0.
8	-0.1902	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0875	0.0033	0.0575	-0.0404	-0.0544	-0.0398	0.0056	-0.0112	-0.0747	0.0663	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1410	-0.0004	0.0154	-0.0960	-0.0642	-0.0554	-0.0117	-0.0525	-0.0741	0.0519	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1929	-0.0753	-0.0785	-0.1517	-0.1132	-0.0819	-0.0698	-0.0665	-0.1027	0.0504	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.2536	-0.1576	-0.2127	-0.2445	-0.1392	-0.1002	-0.0250	-0.0754	-0.1962	-0.0967	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 6

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 6

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.0061	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1666	0.1963	0.1467	0.0816	0.0384	0.0567	0.1302	0.2082	0.	0.	0.	0.	0.
22	0.	0.	0.	0.1005	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1258	0.1964	0.0626	0.0551	0.0481	0.0436	0.1048	0.1437	0.	0.	0.	0.	0.
20	0.	0.	0.	0.0606	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0853	0.1401	0.0015	0.0165	0.0229	-0.0000	0.0916	0.1099	0.	0.	0.	0.	0.
18	0.	0.	0.	-0.0300	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.1369	0.1269	-0.0137	0.0252	-0.0388	-0.0276	0.0009	0.0345	0.	0.	0.	0.	0.
16	0.	0.	0.	0.0212	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0849	0.0749	-0.0308	0.0088	-0.0033	-0.0634	-0.0106	0.0373	0.	0.	0.	0.	0.
14	0.	0.	0.	-0.0196	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0932	0.0813	-0.0317	0.0124	-0.0246	-0.0557	0.0010	0.0177	0.	0.	0.	0.	0.
12	0.	0.	0.	0.0246	-0.0024	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0820	0.0560	-0.0662	0.0353	0.0084	-0.0794	-0.0346	-0.0092	0.	0.	0.	0.	0.
10	0.0735	0.	0.	-0.1475	-0.0931	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0834	0.0409	-0.0838	-0.1187	-0.0838	-0.1128	-0.0211	-0.0032	0.	0.	0.	0.	0.
8	-0.1279	0.	0.	-0.0997	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0434	0.0782	-0.0340	-0.0797	-0.0548	-0.0695	-0.0010	-0.0186	0.	0.	0.	0.	0.
6	0.	0.	0.	-0.1085	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1470	0.0118	-0.0458	-0.0970	-0.0661	-0.0832	0.0093	-0.0310	0.	0.	0.	0.	0.
4	0.	0.	0.	-0.1263	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.2124	-0.0459	-0.0848	-0.1267	-0.1070	-0.1023	-0.0536	-0.0953	0.	0.	0.	0.	0.
2	0.	0.	0.	-0.1272	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.2147	-0.0646	-0.1265	-0.1196	-0.1060	-0.0708	-0.0991	-0.1360	0.	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 7

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 7

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1519	0.1454	0.1351	0.0676	0.0690	0.0758	0.1609	0.1558	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1292	0.1404	0.0780	0.0292	0.0666	0.0510	0.0992	0.0900	0.	0.	0.	0.	0.
20	0.	0.1525	0.1004	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.1313	0.1560	0.0290	0.0045	0.0109	-0.0250	0.0109	0.0800	0.	0.	0.	0.	0.
18	0.	0.0912	0.0095	0.	0.	-0.0178	0.0169	0.	0.	0.	0.	0.	0.
17	0.0908	-0.0526	-0.1050	-0.0269	-0.0035	-0.0288	0.0116	-0.0077	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.0054	0.0408	0.	0.	0.	0.	0.	0.
15	0.0618	-0.0108	-0.1056	-0.0320	-0.0388	-0.2733	-0.2208	-0.0368	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0727	0.0164	-0.1049	-0.0213	-0.0410	-0.1097	-0.0240	0.0085	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0509	-0.0184	-0.1297	-0.0436	-0.0565	-0.1357	-0.0636	-0.0306	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0188	-0.0283	-0.1092	-0.1018	-0.0875	-0.1067	-0.0378	-0.0118	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0417	0.0712	-0.1046	-0.0899	-0.0825	-0.0945	0.0023	-0.0093	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0203	0.0024	-0.1461	-0.0965	-0.0819	-0.1132	-0.0128	-0.0051	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0598	-0.0511	-0.2033	-0.1401	-0.1234	-0.1695	-0.1016	-0.0993	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0763	-0.0686	-0.2156	-0.1319	-0.0611	-0.1825	-0.1775	-0.1348	0.	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 8

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 8

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.0072	0.0641	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1198	0.1555	0.1215	0.1312	0.0452	0.0501	0.2088	0.	0.1115	0.1653	0.	0.	0.
22	0.0920	0.0907	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0539	0.0457	0.1279	0.1341	0.0672	0.0781	0.1089	0.	0.0220	0.0389	0.	0.	0.
20	0.0526	0.0797	0.1267	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0432	0.0217	0.0956	0.0660	0.0770	0.0503	0.0288	0.	-0.0064	-0.0358	0.	0.	0.
18	-0.0331	-0.0282	0.0710	0.	0.	0.0137	0.0288	0.	0.	0.	0.	0.	0.
17	-0.0051	-0.1009	0.0001	0.0629	0.0161	0.0193	0.0504	0.	-0.0685	-0.0326	0.	0.	0.
16	-0.0198	-0.0874	0.	0.	0.	0.0625	0.0529	0.	0.	0.	0.	0.	0.
15	-0.0426	-0.0832	-0.0010	0.0475	0.0152	-0.2345	-0.2129	0.	-0.0404	-0.0210	0.	0.	0.
14	-0.0394	-0.1027	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0011	-0.0360	0.0368	0.0613	0.0505	-0.0721	-0.0618	0.	-0.0342	-0.0199	0.	0.	0.
12	0.0143	-0.0439	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0155	-0.0898	0.0168	0.0325	0.0332	-0.0994	-0.1092	0.	-0.0639	-0.1120	0.	0.	0.
10	-0.0217	-0.0877	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0267	-0.0721	0.0128	0.0391	0.0205	-0.0848	-0.0900	0.	-0.0186	-0.0370	0.	0.	0.
8	-0.0519	-0.1079	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0017	-0.0243	0.0487	0.0310	0.0231	-0.0354	-0.0722	0.	-0.0110	-0.0262	0.	0.	0.
6	-0.0442	-0.0836	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0488	-0.1006	0.0107	-0.0011	0.0097	-0.0465	-0.1064	0.	-0.0027	-0.0157	0.	0.	0.
4	-0.0850	-0.1405	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1047	-0.1526	-0.0823	-0.0594	-0.0413	-0.1017	-0.1841	0.	-0.0837	-0.0676	0.	0.	0.
2	-0.1200	-0.1780	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1427	-0.1892	-0.1424	-0.0630	-0.0303	-0.1117	-0.2679	0.	-0.2239	-0.2391	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 9

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 9

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.0275	0.0420	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1650	0.1456	0.1537	0.1578	0.0995	0.0632	0.	0.	0.1483	0.1383	0.	0.	0.
22	0.1301	0.1091	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1015	0.0589	0.1821	0.1466	0.1124	0.0752	0.	0.	0.0465	0.0346	0.	0.	0.
20	0.0947	0.0505	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0422	0.0225	0.1078	0.0987	0.0779	0.0708	0.	0.	-0.0075	0.0099	0.	0.	0.
18	-0.0146	-0.0639	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0604	-0.0325	0.0977	0.1045	0.0503	0.0152	0.	0.	-0.0342	-0.0216	0.	0.	0.
16	0.0153	-0.0644	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0030	-0.0705	0.0813	0.0601	0.1026	0.0126	0.	0.	-0.0183	0.0035	0.	0.	0.
14	0.0033	-0.0738	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0231	-0.0519	0.0925	0.0976	0.0909	0.0279	0.	0.	0.0176	-0.0008	0.	0.	0.
12	0.0298	-0.0553	0.	0.	0.	0.	0.	0.	0.0292	0.	0.	0.	0.
11	-0.0011	-0.0731	0.0331	0.0678	0.0627	0.0302	0.	0.	0.0215	-0.0572	0.	0.	0.
10	0.0116	-0.0822	0.	0.	0.	0.	0.	0.	-0.1492	0.	0.	0.	0.
9	0.0279	-0.0746	0.0583	0.0706	0.0449	0.0260	0.	0.	-0.0642	-0.0373	0.	0.	0.
8	0.0522	-0.0909	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0495	-0.0476	0.0830	0.0727	0.0440	0.0646	0.	0.	-0.0345	-0.0023	0.	0.	0.
6	-0.0629	-0.0531	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0657	-0.0531	0.0589	0.0288	0.0266	0.0494	0.	0.	-0.0369	0.0218	0.	0.	0.
4	-0.1245	-0.0842	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1241	-0.1042	0.0084	-0.0382	-0.0389	0.0011	0.	0.	-0.1082	-0.0312	0.	0.	0.
2	-0.1449	-0.1373	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1479	-0.1349	0.0090	-0.0502	-0.0137	-0.0215	0.	0.	-0.2465	-0.2124	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 10

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 10

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1051	0.1235	0.1909	0.2530	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1189	0.1434	0.1286	0.1930	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0999	0.0961	0.0949	0.0692	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0951	0.0805	0.0264	0.1321	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0581	0.0406	0.0263	0.1190	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0664	0.0405	0.0352	0.1082	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0771	-0.0016	0.0096	0.0893	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.0648	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0682	-0.0080	0.0135	0.0747	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.1003	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0363	0.0396	0.0364	0.0552	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0778	-0.0202	0.0233	0.0140	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1376	-0.0627	-0.0459	-0.0609	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0900	-0.0119	-0.0742	-0.0942	0.	0.	0.	0.	0.	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 11

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1223	0.1159	0.2477	0.1942	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1251	0.1157	0.1893	0.1471	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.1093	0.1881	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0603	0.0509	0.0611	0.1351	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.0549	0.0740	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0631	-0.0619	-0.1093	0.0586	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0212	-0.0610	-0.0519	0.0639	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0458	-0.0377	-0.0367	0.0695	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0127	-0.0563	-0.0539	0.0720	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0231	-0.0550	-0.0288	0.0500	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0047	0.0591	0.0037	0.0296	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0586	-0.0345	-0.0010	0.0038	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1118	-0.1263	-0.1028	-0.0665	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0101	-0.0955	-0.1527	-0.0480	0.	0.	0.	0.	0.	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 12

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 12

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1216	0.1435	0.1034	0.	0.1534	0.1483	0.	0.	0.2050	0.1698	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1179	0.1117	0.0610	0.	0.1445	0.1396	0.	0.	0.1311	0.1357	0.	0.	0.
20	0.	0.0932	0.0587	0.	0.	0.1474	0.	0.	0.	0.	0.	0.	0.
19	0.0765	-0.0055	-0.0169	0.	0.1286	0.0950	0.	0.	0.1147	0.0884	0.	0.	0.
18	0.	-0.0053	-0.0168	0.	0.	0.0458	0.	0.	0.	0.	0.	0.	0.
17	0.0352	-0.1062	-0.1456	0.	0.0764	-0.0432	0.	0.	0.0815	0.0643	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0876	0.	0.	0.
15	0.0131	-0.0479	-0.0750	0.	0.0453	-0.0311	0.	0.	0.0891	0.1462	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1250	0.	0.	0.
13	0.0793	-0.0081	-0.0487	0.	0.0648	0.0044	0.	0.	0.1071	0.0468	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0534	-0.0438	-0.0735	0.	0.0525	-0.0237	0.	0.	0.0638	-0.0069	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0507	-0.0027	-0.0971	0.	0.0248	-0.0121	0.	0.	0.0249	-0.0055	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0627	0.0343	-0.0474	0.	0.0201	0.0767	0.	0.	0.0969	0.1029	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.0553	0.0487	-0.0999	0.	-0.0146	-0.0158	0.	0.	0.0241	-0.0054	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0184	-0.0440	-0.1763	0.	-0.0832	-0.1149	0.	0.	-0.0464	-0.0884	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0194	-0.0870	-0.2401	0.	-0.1185	-0.1721	0.	0.	-0.0953	-0.1590	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 13

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 13

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1440	0.1300	0.	0.	0.1580	0.1236	0.	0.	0.2048	0.1722	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1333	0.0951	0.	0.	0.1697	0.1233	0.	0.	0.1677	0.1279	0.	0.	0.
20	0.0981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0786	0.0890	0.	0.	0.1116	0.1122	0.	0.	0.1189	0.1055	0.	0.	0.
18	0.0154	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0957	0.0220	0.	0.	0.1476	0.0639	0.	0.	0.0960	0.0756	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0558	0.0012	0.	0.	0.1020	0.0448	0.	0.	0.0732	0.0696	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0953	0.0443	0.	0.	0.0973	0.0369	0.	0.	0.1279	0.0518	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0561	0.0211	0.	0.	0.0853	0.0270	0.	0.	0.0715	0.0150	0.	0.	0.
10	0.	0.	0.	0.	0.1019	0.	0.	0.	0.0652	0.	0.	0.	0.
9	0.0705	0.0409	0.	0.	0.0919	0.0143	0.	0.	0.0895	-0.0163	0.	0.	0.
8	0.	0.	0.	0.	0.1348	0.	0.	0.	-0.1429	0.	0.	0.	0.
7	0.0558	0.0598	0.	0.	-0.0557	0.0753	0.	0.	0.0253	0.0750	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.0360	0.0544	0.	0.	-0.0124	0.0651	0.	0.	-0.0406	0.0165	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0290	-0.0037	0.	0.	-0.0896	-0.0336	0.	0.	-0.1201	-0.0616	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0295	-0.0267	0.	0.	-0.1310	-0.0654	0.	0.	-0.1637	-0.1264	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 16

K\I		2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 16

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.0970	0.0801	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.0140	0.0096	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.0160	-0.0155	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	-0.0081	-0.0463	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0118	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	-0.0420	-0.0019	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.2106	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	-0.0280	-0.0852	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	-0.0739	-0.1187	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	-0.0857	-0.0852	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	-0.0297	-0.0734	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	-0.0510	-0.0936	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	-0.1045	-0.1406	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	-0.1578	-0.1900	0.	0.	0.

J = 17

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 17

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.1160	0.0969	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.0342	0.0240	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.0179	0.0046	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	-0.0118	-0.0279	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	-0.0616	-0.0499	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.0104	-0.0536	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.0036	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.0098	-0.1011	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	-0.2484	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	-0.1529	-0.1285	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	-0.1118	-0.0595	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	-0.1165	-0.0646	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	-0.1628	-0.1235	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	-0.2015	-0.1942	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 18

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1559	0.1460
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0545	0.0687
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0273	0.0144
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0227	0.0453
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0604	-0.0211
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0293	0.0124
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0538	-0.0106
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0051
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0672	0.0066
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0260
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0376	-0.0838
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0284	-0.0715
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0707	-0.1238
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1476	-0.1588

J = 18

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

(THERMAL-GAMMA SCAN)/GAMMA SCAN

J = 19

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1587	0.1166
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0742	0.0413
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0832	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0347	0.0234
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0016	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0529	-0.0124
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0623	-0.0327
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0175	-0.0088
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0779	-0.0094
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0837	-0.0412
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0414	-0.0374
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0858	-0.0601
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1531	-0.0988
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.2153	-0.1337

J = 19

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX E
RELATIVE DIFFERENCES BETWEEN XY GAMMA TIP AND MEASURED GAMMA SCAN Ba-140 NODAL DISTRIBUTIONS

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 1

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 1

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	-0.1159	-0.0953	-0.1158	-0.1551	-0.2649	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	-0.1386	-0.1157	-0.1494	-0.1685	-0.2944	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.1363	-0.1335	-0.1805	-0.1437	-0.2673	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.0874	-0.0759	-0.1055	-0.1239	-0.2359	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0717	-0.0649	-0.0828	-0.1020	-0.2136	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.1466	-0.1266	-0.1143	-0.1184	-0.2552	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.1632	-0.1508	-0.1496	-0.1097	-0.2603	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.1839	-0.1784	-0.1647	-0.1338	-0.2704	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.1993	-0.1946	-0.1399	-0.1027	-0.2478	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.2618	-0.2575	-0.1928	-0.1478	-0.2919	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.2989	-0.2768	-0.2443	-0.1746	-0.3219	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.2660	-0.2841	-0.2189	-0.1003	-0.3059	0.	0.	0.	0.	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 2

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 2

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0263	0.0695	0.0845	0.0812	-0.0502	-0.1945	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0237	0.0605	0.0617	0.0261	-0.0494	-0.1657	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0101	-0.0063	0.0649	0.0412	-0.0486	-0.1145	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0063	0.0319	0.0274	0.0306	-0.0482	-0.1012	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0043	0.0177	0.0336	0.0376	0.0021	-0.0247	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0116	-0.0157	-0.0266	0.0369	-0.0049	-0.0171	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0248	-0.0700	-0.0657	-0.0136	-0.0259	-0.0040	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0455	-0.0684	-0.0858	-0.0310	-0.0276	-0.0071	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0547	-0.0630	-0.0833	0.0177	-0.0379	0.0294	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1087	-0.1054	-0.1470	-0.0487	-0.1046	-0.0015	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1676	-0.1639	-0.1808	-0.0928	-0.1320	-0.0226	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1400	-0.1653	-0.2097	-0.2128	-0.1246	-0.0389	0.	0.	0.	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 3

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0290	-0.0003	0.0811	0.0571	-0.0473	-0.0416	-0.2103	-0.2024	-0.2616	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0228	0.0010	0.0435	0.0242	-0.0232	-0.0457	-0.2182	-0.2111	-0.3031	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.0315	-0.0387	-0.0360	0.0196	-0.0349	-0.0415	-0.1963	-0.1952	-0.2869	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0153	-0.0329	0.0076	0.0089	-0.0437	-0.0394	-0.1683	-0.1571	-0.2750	0.	0.	0.	0.
16	0.	0.0160	0.0285	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0067	0.0408	0.0667	-0.0079	-0.0133	-0.0200	-0.1314	-0.1171	-0.2433	0.	0.	0.	0.
14	0.	-0.2022	-0.1985	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0309	-0.0819	-0.1058	-0.0351	-0.0408	-0.0056	-0.1024	-0.0818	-0.2043	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0470	-0.0842	-0.1203	-0.0844	-0.1033	-0.0334	-0.1219	-0.0862	-0.1708	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0583	-0.1198	-0.1425	-0.1033	-0.1155	-0.0479	-0.1562	-0.1252	-0.1361	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0655	-0.1093	-0.1140	-0.0254	-0.0846	-0.0068	-0.1579	-0.1166	-0.0877	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1225	-0.1528	-0.1719	-0.0807	-0.1396	-0.0483	-0.2158	-0.1684	-0.1321	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1851	-0.2085	-0.2260	-0.1125	-0.1781	-0.0579	-0.2556	-0.2025	-0.1572	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1471	-0.2664	-0.2686	-0.1675	-0.1848	-0.1347	-0.3106	-0.2290	-0.2103	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 4

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0736	0.0923	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0886	0.0961	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0795	0.0507	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0352	0.0211	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0545	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0380	0.0980	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1900	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0095	-0.0404	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0576	-0.1094	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0659	-0.0552	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0163	-0.0314	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0517	-0.0773	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1333	-0.1562	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.2214	-0.2761	0.	0.

J = 4

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.0438	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0414	0.0158	0.0855	0.0949	0.0410	0.0591	0.0670	0.0999	-0.0018	-0.0599	0.	0.	0.
22	0.	0.0444	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0771	0.0584	0.0681	0.1063	0.0432	0.0526	0.0379	0.0299	-0.0106	-0.0630	0.	0.	0.
20	0.	0.0500	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0487	0.0590	0.0629	0.0627	0.0356	0.0287	0.0596	0.0308	0.0053	-0.0103	0.	0.	0.
18	0.	0.0472	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0503	0.0386	0.0113	0.0459	0.0182	0.0331	0.0240	0.0326	-0.0069	-0.0148	0.	0.	0.
16	0.	0.0941	0.0560	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0667	0.1379	0.0996	0.0385	0.0535	0.0651	0.0416	0.0443	0.0257	0.0497	0.	0.	0.
14	0.	-0.0859	-0.1254	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0449	-0.0116	-0.0245	0.0082	0.0256	0.0389	0.0274	0.0652	0.0103	0.0611	0.	0.	0.
12	0.	-0.0093	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0382	-0.0380	-0.0874	-0.0528	-0.0034	-0.0224	0.0072	0.0285	-0.0007	0.0727	0.	0.	0.
10	0.	-0.0263	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0102	-0.0499	-0.0633	-0.0504	0.0158	0.0122	0.0088	0.0628	0.0013	0.0812	0.	0.	0.
8	0.	0.0017	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0239	0.0069	-0.0359	-0.0057	0.0721	0.0367	0.0187	0.0730	0.0331	0.1159	0.	0.	0.
6	0.	-0.0465	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0639	-0.0621	-0.0911	-0.0668	0.0293	-0.0163	-0.0306	0.0284	-0.0182	0.0841	0.	0.	0.
4	0.	-0.1019	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1474	-0.1462	-0.1934	-0.1595	-0.0513	-0.0742	-0.0643	-0.0223	-0.0392	0.0678	0.	0.	0.
2	0.	-0.1491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0987	-0.1156	-0.2775	-0.2307	-0.0919	-0.1141	-0.1640	-0.2147	-0.1457	0.0484	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 5

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0895	0.1298	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1057	0.1066	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0717	0.1090	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0592	0.0717	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0429	0.0481	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0426	0.0289	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0466	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0387	-0.0382	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1899	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0900	-0.0501	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0566	0.0268	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1019	-0.0216	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1676	-0.1002	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.2509	-0.2300	0.	0.

J = 5

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0672	0.0146	0.1752	0.0970	0.0459	0.0101	0.0745	0.0566	-0.0138	-0.0184	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1089	0.0697	0.1444	0.0991	0.0760	0.0379	0.0659	0.0371	-0.0082	0.0016	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0787	0.0639	0.0438	0.0886	0.0499	0.0428	0.0316	0.0370	-0.0532	-0.0008	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0486	0.0376	0.0931	0.0673	0.0363	0.0189	0.0405	0.0302	-0.0214	0.0057	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0609	0.0407	0.0656	0.0549	0.0597	0.0557	0.0395	0.0335	-0.0179	0.0282	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0797	0.0261	0.0427	0.0896	0.0622	0.0312	0.0295	0.0369	-0.0608	0.0352	0.	0.	0.
12	0.	0.	0.	0.0729	0.0561	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0376	-0.0074	-0.0192	0.0730	0.0803	-0.0131	0.0092	0.0033	-0.0945	0.0035	0.	0.	0.
10	0.0280	0.	0.	-0.1331	-0.1061	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0585	-0.0122	-0.0520	-0.0937	-0.0307	-0.0209	0.0009	0.0020	-0.1129	0.0149	0.	0.	0.
8	-0.1501	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0460	0.0515	0.0143	-0.0697	-0.0113	0.0044	-0.0008	-0.0193	-0.0983	0.0364	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1265	0.0221	-0.0392	-0.1341	-0.0350	-0.0315	-0.0461	-0.0853	-0.1338	-0.0209	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1914	-0.0679	-0.1402	-0.2003	-0.1135	-0.0796	-0.1180	-0.1138	-0.1726	-0.0358	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1589	-0.0500	-0.2491	-0.2634	-0.1347	-0.0849	-0.1705	-0.2029	-0.2112	-0.1082	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 6

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 6

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	-0.0348	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1323	0.1756	0.0602	0.0203	0.0025	0.0096	0.0097	0.0517	0.	0.	0.	0.	0.
22	0.	0.	0.	0.0492	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1134	0.1736	0.0624	0.0602	0.0527	0.0530	0.0458	0.0641	0.	0.	0.	0.	0.
20	0.	0.	0.	0.0342	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0543	0.0963	0.0035	0.0227	0.0504	0.0386	0.0671	0.0718	0.	0.	0.	0.	0.
18	0.	0.	0.	0.0116	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.1266	0.1062	0.0078	0.0547	0.0201	0.0474	0.0232	0.0465	0.	0.	0.	0.	0.
16	0.	0.	0.	0.0539	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0870	0.0585	0.0082	0.0505	0.0807	0.0365	0.0478	0.0923	0.	0.	0.	0.	0.
14	0.	0.	0.	0.0347	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0680	0.0446	-0.0058	0.0441	0.0224	0.0065	0.0265	0.0371	0.	0.	0.	0.	0.
12	0.	0.	0.	0.0586	0.0506	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0388	0.0033	-0.0447	0.0620	0.0674	-0.0120	0.0057	0.0275	0.	0.	0.	0.	0.
10	0.0275	0.	0.	-0.1170	-0.0560	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0312	-0.0250	-0.0481	-0.0864	-0.0490	-0.0634	0.0171	0.0307	0.	0.	0.	0.	0.
8	-0.1812	0.	0.	-0.0900	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0861	0.0174	-0.0243	-0.0734	-0.0429	-0.0474	0.0204	-0.0014	0.	0.	0.	0.	0.
6	0.	0.	0.	-0.1128	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1974	-0.0644	-0.0570	-0.1093	-0.0850	-0.0946	-0.0154	-0.0642	0.	0.	0.	0.	0.
4	0.	0.	0.	-0.1440	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.2770	-0.1443	-0.1237	-0.1680	-0.1566	-0.1460	-0.0704	-0.1193	0.	0.	0.	0.	0.
2	0.	0.	0.	-0.1625	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.2853	-0.1927	-0.1224	-0.1323	-0.1401	-0.0999	-0.0853	-0.1227	0.	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 7

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 7

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1291	0.1394	0.0537	0.0066	0.0311	0.0098	0.0385	0.0108	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1280	0.1311	0.0836	0.0361	0.0764	0.0559	0.0494	0.0296	0.	0.	0.	0.	0.
20	0.	0.1340	0.0709	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.1070	0.1212	0.0306	0.0079	0.0417	0.0082	-0.0084	0.0557	0.	0.	0.	0.	0.
18	0.	0.0780	0.0505	0.	0.	0.0566	0.0571	0.	0.	0.	0.	0.	0.
17	0.0905	-0.0581	-0.0826	0.0028	0.0642	0.0390	0.0403	0.0165	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.0806	0.0913	0.	0.	0.	0.	0.	0.
15	0.0657	-0.0174	-0.0727	0.0057	0.0528	-0.1974	-0.1737	0.0215	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0502	-0.0085	-0.0840	0.0037	0.0153	-0.0525	-0.0030	0.0306	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0126	-0.0614	-0.1119	-0.0228	0.0066	-0.0707	-0.0258	0.0091	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0234	-0.0826	-0.0762	-0.0715	-0.0462	-0.0546	-0.0045	0.0192	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0088	0.0059	-0.0968	-0.0867	-0.0689	-0.0686	0.0198	0.0060	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0725	-0.0761	-0.1612	-0.1130	-0.1016	-0.1210	-0.0385	-0.0399	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1417	-0.1513	-0.2416	-0.1839	-0.1741	-0.2071	-0.1193	-0.1228	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1848	-0.2183	-0.2256	-0.1532	-0.0942	-0.1803	-0.1653	-0.1185	0.	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 8

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 8

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.0056	0.0268	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0751	0.0830	0.1439	0.1305	0.0344	0.0356	0.0257	0.	0.0484	0.1039	0.	0.	0.
22	0.0754	0.0637	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0937	0.0821	0.1129	0.1218	0.0792	0.0846	0.0523	0.	0.0562	0.0835	0.	0.	0.
20	0.0706	0.0891	0.1043	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0718	0.0520	0.0628	0.0482	0.0748	0.0450	0.0058	0.	0.0494	0.0291	0.	0.	0.
18	0.0256	0.0390	0.0623	0.	0.	0.0528	0.0557	0.	0.	0.	0.	0.	0.
17	0.0497	-0.0472	0.0050	0.0837	0.0577	0.0587	0.0618	0.	0.0147	0.0634	0.	0.	0.
16	0.0461	-0.0196	0.	0.	0.	0.1059	0.0988	0.	0.	0.	0.	0.	0.
15	0.0229	-0.0163	-0.0077	0.0590	0.0625	-0.1957	-0.1653	0.	0.0485	0.0736	0.	0.	0.
14	0.0175	-0.0442	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0276	-0.0036	0.0128	0.0460	0.0511	-0.0737	-0.0384	0.	0.0216	0.0426	0.	0.	0.
12	0.0425	-0.0106	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0141	-0.0515	-0.0190	0.0226	0.0402	-0.0936	-0.0688	0.	-0.0038	-0.0519	0.	0.	0.
10	0.0103	-0.0461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0058	-0.0277	-0.0349	0.0079	0.0250	-0.0832	-0.0456	0.	0.0047	-0.0124	0.	0.	0.
8	-0.0253	-0.0689	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0288	0.0201	-0.0163	-0.0146	0.0135	-0.0460	-0.0548	0.	0.0050	-0.0063	0.	0.	0.
6	-0.0393	-0.0693	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0580	-0.1022	-0.0819	-0.0723	-0.0133	-0.0733	-0.1143	0.	-0.0370	-0.0440	0.	0.	0.
4	-0.0917	-0.1386	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1405	-0.1783	-0.1754	-0.1403	-0.0688	-0.1300	-0.2105	0.	-0.1286	-0.1125	0.	0.	0.
2	-0.1559	-0.1903	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1640	-0.1693	-0.3041	-0.2038	-0.0493	-0.1305	-0.1732	0.	-0.2135	-0.2234	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 9

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 9

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.0234	-0.0069	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1149	0.0625	0.1713	0.1555	0.0736	0.0391	0.	0.	0.0804	0.0716	0.	0.	0.
22	0.1078	0.0705	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1387	0.0857	0.1704	0.1382	0.1177	0.0800	0.	0.	0.0815	0.0722	0.	0.	0.
20	0.1129	0.0539	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0732	0.0533	0.0827	0.0876	0.0738	0.0656	0.	0.	0.0424	0.0673	0.	0.	0.
18	0.0498	0.0033	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.1248	0.0306	0.1069	0.1316	0.0934	0.0528	0.	0.	0.0424	0.0614	0.	0.	0.
16	0.0874	0.0100	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0766	0.0022	0.0745	0.0759	0.1508	0.0590	0.	0.	0.0631	0.0904	0.	0.	0.
14	0.0642	-0.0112	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0570	-0.0179	0.0658	0.0871	0.0816	0.0137	0.	0.	0.0583	0.0447	0.	0.	0.
12	0.0642	-0.0182	0.	0.	0.	0.	0.	0.	0.0724	0.	0.	0.	0.
11	0.0414	-0.0240	0.0064	0.0598	0.0654	0.0260	0.	0.	0.0654	-0.0135	0.	0.	0.
10	0.0543	-0.0350	0.	0.	0.	0.	0.	0.	-0.1132	0.	0.	0.	0.
9	0.0745	-0.0245	0.0230	0.0484	0.0416	0.0160	0.	0.	-0.0567	-0.0255	0.	0.	0.
8	0.0876	-0.0511	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0202	-0.0098	0.0266	0.0319	0.0290	0.0446	0.	0.	-0.0322	0.0068	0.	0.	0.
6	-0.0604	-0.0461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0743	-0.0617	-0.0176	-0.0372	-0.0018	0.0164	0.	0.	-0.0763	-0.0124	0.	0.	0.
4	-0.1317	-0.0883	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1569	-0.1309	-0.0779	-0.1112	-0.0676	-0.0323	0.	0.	-0.1579	-0.0825	0.	0.	0.
2	-0.1800	-0.1493	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1730	-0.1115	-0.1688	-0.1747	-0.0220	-0.0365	0.	0.	-0.2408	-0.2032	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 10

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 10

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1111	0.1411	0.0227	0.0830	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1175	0.1401	0.0712	0.1237	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0919	0.0846	0.0664	0.0358	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.1052	0.0850	0.0432	0.1454	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0668	0.0404	0.0365	0.1254	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0549	0.0254	0.0068	0.0728	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0608	-0.0148	0.0077	0.0818	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.0550	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0674	-0.0122	0.0019	0.0574	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.0621	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0750	-0.0048	0.0143	0.0297	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1213	-0.0682	-0.0256	-0.0349	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.2031	-0.1378	-0.0752	-0.0918	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.2373	-0.1931	-0.0228	-0.0436	0.	0.	0.	0.	0.	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 11

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.1238	0.1229	0.0722	0.0187	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1203	0.1108	0.1178	0.0718	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.1023	0.0948	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0535	0.0415	0.0279	0.0916	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.0679	0.0912	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0748	-0.0562	-0.0982	0.0630	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0312	-0.0569	-0.0465	0.0630	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0335	-0.0472	-0.0647	0.0327	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0031	-0.0727	-0.0576	0.0608	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0212	-0.0540	-0.0437	0.0295	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0342	0.0146	-0.0232	0.0033	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0989	-0.0868	-0.0553	-0.0464	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1695	-0.1918	-0.1341	-0.0964	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.1426	-0.2295	-0.1057	0.0118	0.	0.	0.	0.	0.	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 12

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 12

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0774	0.0688	0.0548	0.	0.0392	0.0367	0.	0.	0.0459	0.0039	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1083	0.0935	0.0827	0.	0.0926	0.0901	0.	0.	0.0761	0.0668	0.	0.	0.
20	0.	0.0596	0.0676	0.	0.	0.0849	0.	0.	0.	0.	0.	0.	0.
19	0.0769	-0.0086	-0.0004	0.	0.0915	0.0606	0.	0.	0.0874	0.0506	0.	0.	0.
18	0.	0.0462	0.0445	0.	0.	0.0552	0.	0.	0.	0.	0.	0.	0.
17	0.0811	-0.0676	-0.1164	0.	0.0767	-0.0461	0.	0.	0.0749	0.0513	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0865	0.	0.	0.
15	0.0547	-0.0099	-0.0394	0.	0.0624	-0.0157	0.	0.	0.0975	0.1550	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1377	0.	0.	0.
13	0.0696	-0.0184	-0.0396	0.	0.0519	-0.0115	0.	0.	0.0648	0.0039	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0498	-0.0451	-0.0599	0.	0.0492	-0.0326	0.	0.	0.0453	-0.0278	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0316	-0.0201	-0.0667	0.	0.0249	-0.0215	0.	0.	0.0077	-0.0217	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0175	-0.0042	-0.0440	0.	0.0253	0.0732	0.	0.	0.0596	0.0623	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0062	-0.0128	-0.1227	0.	-0.0419	-0.0510	0.	0.	-0.0288	-0.0538	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0645	-0.0874	-0.2111	0.	-0.1253	-0.1619	0.	0.	-0.0954	-0.1309	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0505	-0.0880	-0.2477	0.	-0.0719	-0.1339	0.	0.	-0.0176	-0.0871	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 13

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 13

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0968	0.0641	0.	0.	0.0604	0.0290	0.	0.	0.0547	0.0153	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.1299	0.0882	0.	0.	0.1294	0.0845	0.	0.	0.1144	0.0622	0.	0.	0.
20	0.0812	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0854	0.0936	0.	0.	0.0839	0.0869	0.	0.	0.0977	0.0710	0.	0.	0.
18	0.0791	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.1546	0.0732	0.	0.	0.1531	0.0675	0.	0.	0.0942	0.0655	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.1111	0.0504	0.	0.	0.1245	0.0649	0.	0.	0.0821	0.0772	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0913	0.0387	0.	0.	0.0953	0.0334	0.	0.	0.0969	0.0178	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0582	0.0221	0.	0.	0.0898	0.0272	0.	0.	0.0637	0.0013	0.	0.	0.
10	0.	0.	0.	0.	0.0968	0.	0.	0.	0.0483	0.	0.	0.	0.
9	0.0548	0.0279	0.	0.	0.1014	0.0155	0.	0.	0.0811	-0.0250	0.	0.	0.
8	0.	0.	0.	0.	0.1412	0.	0.	0.	-0.1558	0.	0.	0.	0.
7	0.0151	0.0250	0.	0.	-0.0445	0.0842	0.	0.	-0.0018	0.0483	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0239	-0.0031	0.	0.	-0.0320	0.0413	0.	0.	-0.0832	-0.0245	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0733	-0.0442	0.	0.	-0.1261	-0.0757	0.	0.	-0.1551	-0.0976	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0453	-0.0223	0.	0.	-0.0895	-0.0243	0.	0.	-0.0912	-0.0541	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 16

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 16

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.0715	0.0542	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.0573	0.0443	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.0726	0.0278	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.0696	0.0188	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0645	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.0585	0.0933	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1476	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.0268	-0.0406	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	-0.0288	-0.0848	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	-0.0406	-0.0382	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	-0.0121	-0.0546	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	-0.0558	-0.0999	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	-0.1277	-0.1655	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	-0.1643	-0.2106	0.	0.	0.

J = 17

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 17

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.0695	0.0507	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.0675	0.0487	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.0631	0.0419	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.0577	0.0340	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.0353	0.0409	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.0612	-0.0118	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.0607	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.0580	-0.0653	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	-0.2078	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	-0.1069	-0.0838	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	-0.0907	-0.0399	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	-0.1202	-0.0695	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	-0.1856	-0.1497	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	-0.1783	-0.1866	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 18

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0720	0.0967
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0813	0.1050
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0582	0.0445
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0411	0.1087
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0131	0.0507
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0055	0.0460
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0037	0.0315
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0369
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0167	0.0522
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0606
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0006	-0.0556
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0373	-0.0801
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0983	-0.1564
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1246	-0.1836

J = 18

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

(GAMMA TIP-GAMMA SCAN)/GAMMA SCAN

J = 19

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0860	0.0719
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1117	0.0808
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0926	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0653	0.0513
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0675	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0037	0.0420
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0061	0.0335
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0155	0.0197
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0390	0.0203
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0399	-0.0091
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0023	-0.0080
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0875	-0.0692
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1788	-0.1349
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1960	-0.1552

J = 19

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX F
OD-1 THERMAL NEUTRON TIP Ba-140 NODAL DISTRIBUTIONS

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 1

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 1

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.3988	0.3917	0.3753	0.3489	0.2710	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.6569	0.6517	0.6187	0.5771	0.4537	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.8871	0.8830	0.8300	0.7667	0.6126	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.9620	0.9601	0.9006	0.8292	0.6669	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.0049	0.9959	0.9384	0.8594	0.6872	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.8472	0.8494	0.8157	0.7785	0.6138	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.7485	0.7519	0.7259	0.7007	0.5503	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.5905	0.5881	0.5675	0.5496	0.4331	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.4454	0.4378	0.4254	0.4158	0.3282	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3494	0.3381	0.3318	0.3264	0.2543	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2641	0.2563	0.2525	0.2532	0.1946	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1369	0.1376	0.1317	0.1338	0.1051	0.	0.	0.	0.	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT, 12NODES

J = 2

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 2

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.5722	0.5957	0.5625	0.5408	0.5028	0.4039	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.9279	0.9636	0.9333	0.8989	0.8169	0.6612	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.2405	1.2508	1.2754	1.2049	1.0670	0.8651	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.2981	1.3359	1.3279	1.2915	1.1480	0.9245	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.3306	1.3695	1.3364	1.3015	1.1869	0.9479	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.2125	1.1588	1.1531	1.2345	1.1300	0.9069	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.0887	1.0284	1.0185	1.0987	1.0090	0.8302	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.8770	0.8164	0.7859	0.8621	0.7785	0.6766	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6729	0.6193	0.5705	0.6509	0.5718	0.5355	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5316	0.4864	0.4293	0.4967	0.4404	0.4391	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4008	0.3653	0.3287	0.3851	0.3581	0.3641	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2111	0.1975	0.1914	0.2130	0.1838	0.1878	0.	0.	0.	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 3

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.7155	0.7100	0.7135	0.6330	0.6270	0.5614	0.3796	0.3301	0.2440	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.1290	1.1403	1.1510	1.0394	1.0049	0.9045	0.6231	0.5423	0.4046	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.4569	1.5235	1.5046	1.3865	1.3086	1.1697	0.8148	0.7067	0.5355	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.5540	1.6113	1.6093	1.4462	1.3918	1.2413	0.8729	0.7584	0.5644	0.	0.	0.	0.
16	0.	1.7308	1.6949	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5677	1.7018	1.6443	1.4466	1.4215	1.2769	0.9339	0.8171	0.6094	0.	0.	0.	0.
14	0.	1.0001	0.9810	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.3257	0.9415	0.9100	1.2810	1.3317	1.2300	0.9365	0.8307	0.6192	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.1840	0.8261	0.8115	1.1320	1.1504	1.1208	0.8762	0.7902	0.6078	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.9444	0.6274	0.6077	0.8844	0.8947	0.9049	0.7159	0.6680	0.5569	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7222	0.4567	0.4340	0.6674	0.6761	0.7149	0.5765	0.5564	0.4930	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5720	0.3539	0.3265	0.5173	0.5325	0.5817	0.4706	0.4721	0.4390	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4255	0.2640	0.2407	0.4065	0.4311	0.4831	0.3775	0.3838	0.3599	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2249	0.1367	0.1446	0.2368	0.2353	0.2571	0.2057	0.2069	0.1963	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 4

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8348	0.9116	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3304	1.4422	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7335	1.8485	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8107	1.9670	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0552	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8324	2.0301	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2146	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6242	1.1476	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3489	0.9472	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9874	0.7435	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7238	0.5102	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5575	0.3739	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4156	0.2675	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2093	0.1366	0.	0.

J = 4

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.6047	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.8310	0.8750	0.8801	0.8645	0.6525	0.6186	0.5599	0.5128	0.4497	0.3529	0.	0.	0.
22	0.	1.1778	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.2710	1.3289	1.4060	1.3645	1.0648	1.0042	0.9181	0.8384	0.7363	0.5758	0.	0.	0.
20	0.	1.5546	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.6619	1.7066	1.8494	1.7325	1.3940	1.2709	1.2199	1.0941	0.9696	0.7596	0.	0.	0.
18	0.	1.7925	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7438	1.8415	1.9439	1.8317	1.4506	1.3460	1.2351	1.1368	1.0237	0.8064	0.	0.	0.
16	0.	1.9155	2.0404	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.7264	1.8588	2.0209	1.8404	1.5134	1.4008	1.3030	1.2180	1.0673	0.8468	0.	0.	0.
14	0.	1.1039	1.2131	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5076	1.0475	1.1537	1.6163	1.4540	1.3529	1.2909	1.2294	1.0649	0.8484	0.	0.	0.
12	0.	0.9896	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3416	0.9180	0.9472	1.3488	1.3164	1.2294	1.2428	1.1868	1.0269	0.8113	0.	0.	0.
10	0.	0.8060	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.0463	0.6881	0.7434	0.9875	1.0298	1.0585	1.0851	1.0742	0.8960	0.7246	0.	0.	0.
8	0.	0.6146	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7401	0.4945	0.5100	0.7239	0.7962	0.8404	0.9163	0.9398	0.7805	0.6431	0.	0.	0.
6	0.	0.4145	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5521	0.3594	0.3738	0.5576	0.6306	0.6805	0.7740	0.8199	0.7016	0.5956	0.	0.	0.
4	0.	0.3083	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4033	0.2627	0.2723	0.4083	0.4928	0.5336	0.6326	0.6773	0.5934	0.5210	0.	0.	0.
2	0.	0.2167	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2030	0.1380	0.1352	0.2116	0.2759	0.3071	0.3742	0.3735	0.3115	0.2609	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 5

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9334	0.9161	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4606	1.4480	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8534	1.9119	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9465	1.9773	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9404	1.9730	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8742	1.7483	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7998	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6257	1.4704	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8866	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7554	1.0969	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.5404	0.7896	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4039	0.5960	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2991	0.4388	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1557	0.2186	0.	0.

J = 5

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9221	0.8790	0.9490	0.9009	0.7614	0.6791	0.6666	0.5934	0.5450	0.4764	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.3989	1.3352	1.4857	1.4235	1.2163	1.0985	1.0648	0.9554	0.8750	0.7555	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7818	1.7648	1.9109	1.8541	1.5450	1.4312	1.3543	1.2599	1.1469	0.9785	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8658	1.8202	1.9997	1.9226	1.6119	1.4657	1.3984	1.2750	1.1982	1.0335	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.8035	1.7688	1.9807	1.9312	1.6604	1.5006	1.4351	1.3411	1.2181	1.0714	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.7316	1.5780	1.7390	1.8823	1.6157	1.4465	1.3911	1.3356	1.1854	1.0724	0.	0.	0.
12	0.	0.	0.	1.7999	1.5980	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5763	1.4105	1.4704	1.6257	1.4997	1.3374	1.3468	1.2685	1.0916	1.0196	0.	0.	0.
10	1.4338	0.	0.	0.8866	0.8451	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2708	1.0953	1.0970	0.7553	0.7447	1.0821	1.1825	1.1240	0.9530	0.8934	0.	0.	0.
8	0.6776	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.5432	0.7661	0.7698	0.5403	0.5731	0.8718	1.0085	0.9844	0.8385	0.7801	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.3921	0.5768	0.5963	0.4038	0.4472	0.7199	0.8599	0.8599	0.7622	0.7039	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2852	0.4263	0.4307	0.3046	0.3490	0.5825	0.6824	0.7169	0.6647	0.5998	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1466	0.2173	0.2208	0.1541	0.1980	0.3236	0.4176	0.4143	0.3582	0.2981	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 6

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 6

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.5829	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9414	0.9735	0.8845	0.8863	0.8337	0.8109	0.7281	0.7324	0.	0.	0.	0.	0.
22	0.	0.	0.	1.2103	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4851	1.5231	1.3656	1.3770	1.2960	1.2474	1.1900	1.1635	0.	0.	0.	0.	0.
20	0.	0.	0.	1.6015	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8999	1.9256	1.7924	1.7404	1.6680	1.5601	1.5775	1.4813	0.	0.	0.	0.	0.
18	0.	0.	0.	1.7728	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	2.0161	1.9201	1.7498	1.8561	1.7076	1.6200	1.5738	1.5005	0.	0.	0.	0.	0.
16	0.	0.	0.	1.8749	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.9471	1.8514	1.6918	1.8163	1.7733	1.5317	1.5181	1.5487	0.	0.	0.	0.	0.
14	0.	0.	0.	1.7414	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.8219	1.7027	1.5631	1.7085	1.6307	1.3828	1.3925	1.4242	0.	0.	0.	0.	0.
12	0.	0.	0.	1.6797	1.6099	0.	0.	0.	0.	0.	0.	0.	0.
11	1.7086	1.5610	1.3949	1.5641	1.4995	1.2725	1.3238	1.3272	0.	0.	0.	0.	0.
10	1.5711	0.	0.	0.8727	0.8363	0.	0.	0.	0.	0.	0.	0.	0.
9	1.4231	1.2585	1.0637	0.7562	0.7400	1.0070	1.1408	1.1482	0.	0.	0.	0.	0.
8	0.7679	0.	0.	0.6707	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6034	0.8724	0.7988	0.5791	0.5843	0.8315	0.9704	0.9951	0.	0.	0.	0.	0.
6	0.	0.	0.	0.5165	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.4164	0.6328	0.6331	0.4578	0.4649	0.7005	0.8498	0.8893	0.	0.	0.	0.	0.
4	0.	0.	0.	0.4060	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.2983	0.4605	0.4801	0.3522	0.3661	0.5594	0.7101	0.7456	0.	0.	0.	0.	0.
2	0.	0.	0.	0.3011	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1549	0.2467	0.2536	0.1939	0.2004	0.3199	0.4067	0.4238	0.	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 7

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 7

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9943	0.9997	0.9866	0.8882	0.8945	0.8590	0.8526	0.7957	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5306	1.5776	1.5038	1.3879	1.3727	1.3254	1.3479	1.2277	0.	0.	0.	0.	0.
20	0.	1.8326	1.7602	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8854	2.0225	1.9143	1.7919	1.7143	1.7150	1.7374	1.5744	0.	0.	0.	0.	0.
18	0.	1.9806	1.8880	0.	0.	1.7542	1.7840	0.	0.	0.	0.	0.	0.
17	1.8128	1.2376	1.1839	1.7072	1.7388	1.7571	1.7717	1.5768	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	1.7944	1.8179	0.	0.	0.	0.	0.	0.
15	1.6992	1.1801	1.1233	1.6280	1.6074	1.0641	1.0855	1.5036	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5770	1.1167	1.0454	1.5002	1.4292	0.9723	0.9940	1.3911	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.4789	1.0329	0.9266	1.3325	1.2827	0.8688	0.9190	1.2664	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2670	0.8608	0.7866	1.0617	1.0363	0.7413	0.7958	1.1029	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.9069	0.6658	0.5970	0.8735	0.8729	0.6039	0.6820	0.9599	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6846	0.4882	0.4661	0.7439	0.7495	0.4939	0.5853	0.8546	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.5107	0.3642	0.3552	0.5945	0.6013	0.3932	0.4694	0.7127	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2759	0.1926	0.1931	0.3194	0.3336	0.2137	0.2658	0.3693	0.	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 8

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 8

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.6697	0.7299	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9562	1.0316	0.9974	0.9791	0.8679	0.8978	0.9401	0.	0.9499	0.9134	0.	0.	0.
22	1.2636	1.3487	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4055	1.4968	1.5701	1.5111	1.3746	1.4202	1.4326	0.	1.2478	1.1649	0.	0.	0.
20	1.6124	1.7337	1.8256	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7533	1.8518	2.0136	1.8592	1.7773	1.8110	1.8354	0.	1.4121	1.2548	0.	0.	0.
18	1.7071	1.7947	1.9437	0.	0.	1.8629	1.8403	0.	0.	0.	0.	0.	0.
17	1.6138	1.1080	1.2076	1.7806	1.7251	1.8388	1.8645	0.	1.4742	1.3499	0.	0.	0.
16	1.5812	1.0843	0.	0.	0.	1.8931	1.8911	0.	0.	0.	0.	0.	0.
15	1.4926	1.0308	1.1398	1.6632	1.6448	1.1310	1.1351	0.	1.4295	1.3221	0.	0.	0.
14	1.4108	0.9827	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4169	0.9889	1.0666	1.5220	1.4677	1.0173	1.0308	0.	1.4024	1.3067	0.	0.	0.
12	1.4130	0.9827	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3532	0.9274	1.0178	1.4114	1.3512	0.9433	0.8891	0.	1.1622	1.0585	0.	0.	0.
10	1.2796	0.8564	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2035	0.7982	0.9107	1.2853	1.2165	0.8277	0.7566	0.	0.9913	0.9778	0.	0.	0.
8	1.0926	0.7203	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.9243	0.6598	0.7663	1.1329	1.0951	0.7331	0.6165	0.	0.8389	0.8151	0.	0.	0.
6	0.8094	0.5651	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.7221	0.4979	0.6500	1.0084	0.9771	0.6392	0.5138	0.	0.7268	0.6893	0.	0.	0.
4	0.6400	0.4382	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.5587	0.3807	0.4989	0.8050	0.8042	0.5081	0.4145	0.	0.5543	0.5088	0.	0.	0.
2	0.4655	0.3163	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2949	0.2026	0.2597	0.4350	0.4394	0.2832	0.2051	0.	0.1502	0.1109	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 9

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 9

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.7120	0.6980	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0023	0.9796	0.9981	0.9510	0.9363	0.8741	0.	0.	1.0361	0.9276	0.	0.	0.
22	1.3071	1.2754	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4548	1.4197	1.5410	1.4666	1.4414	1.3679	0.	0.	1.3559	1.2069	0.	0.	0.
20	1.6654	1.6509	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7633	1.7776	1.9128	1.8461	1.7912	1.7795	0.	0.	1.5082	1.3548	0.	0.	0.
18	1.7396	1.7028	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7550	1.5980	1.7867	1.8304	1.7437	1.7312	0.	0.	1.5945	1.4345	0.	0.	0.
16	1.7004	1.5517	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5969	1.4633	1.6566	1.7063	1.7744	1.6557	0.	0.	1.5636	1.4129	0.	0.	0.
14	1.5071	1.3838	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5099	1.3909	1.5229	1.5737	1.5839	1.5000	0.	0.	1.5709	1.4167	0.	0.	0.
12	1.5144	1.3849	0.	0.	0.	0.	0.	0.	1.4827	0.	0.	0.	0.
11	1.4638	1.3215	1.4326	1.4753	1.4502	1.3921	0.	0.	1.3451	1.1686	0.	0.	0.
10	1.3952	1.2441	0.	0.	0.	0.	0.	0.	0.7789	0.	0.	0.	0.
9	1.3504	1.1936	1.3315	1.3695	1.3153	1.2313	0.	0.	0.7073	0.9860	0.	0.	0.
8	1.2656	1.1134	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.6893	0.9763	1.1728	1.2493	1.2044	1.0975	0.	0.	0.5652	0.8028	0.	0.	0.
6	0.6033	0.8767	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.5463	0.8073	1.0374	1.1357	1.0901	0.9813	0.	0.	0.4624	0.6627	0.	0.	0.
4	0.4845	0.7295	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4224	0.6463	0.8299	0.9240	0.8976	0.8062	0.	0.	0.3455	0.4826	0.	0.	0.
2	0.3531	0.5324	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2257	0.3323	0.4508	0.4901	0.4942	0.4358	0.	0.	0.0934	0.1074	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 10

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 10

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9726	0.9994	1.0675	1.0832	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4919	1.5285	1.5494	1.5759	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8565	1.8752	1.9087	1.8885	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.8273	1.7466	1.6955	1.8585	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.6742	1.5964	1.5805	1.7360	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.5626	1.4650	1.5018	1.6205	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.5310	1.3966	1.4062	1.4975	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	1.4669	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.4341	1.2920	1.3171	1.3997	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	1.3797	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.7738	1.0945	1.1747	1.2713	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.6248	0.9006	1.0522	1.1457	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.4882	0.7224	0.8398	0.9162	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.2599	0.4022	0.4047	0.4574	0.	0.	0.	0.	0.	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 11

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	1.0049	1.0146	1.1582	1.0663	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.5303	1.5560	1.6704	1.5485	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	1.7789	1.9104	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.8354	1.9056	1.9525	1.8848	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	1.8711	1.8858	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.6931	1.1383	1.1472	1.6937	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5279	1.0434	1.0603	1.5781	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4074	0.9768	1.0160	1.4992	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3535	0.9463	0.9615	1.4028	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.2977	0.8769	0.9102	1.3541	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.1205	0.8056	0.8199	1.2140	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.9429	0.6509	0.7313	1.0834	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.7707	0.5062	0.5671	0.8662	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.4248	0.2712	0.2738	0.4164	0.	0.	0.	0.	0.	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 12

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 12

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9755	1.0713	1.0160	0.	0.9896	1.0496	0.	0.	0.8973	0.8920	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4669	1.5689	1.4954	0.	1.4883	1.5763	0.	0.	1.3889	1.3894	0.	0.	0.
20	0.	1.7908	1.7171	0.	0.	1.8101	0.	0.	0.	0.	0.	0.	0.
19	1.7815	1.8427	1.8377	0.	1.8339	1.9247	0.	0.	1.7463	1.7225	0.	0.	0.
18	0.	1.8018	1.7854	0.	0.	1.8819	0.	0.	0.	0.	0.	0.	0.
17	1.5858	1.0935	1.0987	0.	1.6858	1.1624	0.	0.	1.7997	1.8359	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9422	0.	0.	0.
15	1.4313	0.9932	1.0085	0.	1.5590	1.0922	0.	0.	1.8308	1.9266	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1561	0.	0.	0.
13	1.3647	0.9551	0.9631	0.	1.4920	1.0656	0.	0.	1.6771	1.1251	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3242	0.9227	0.9259	0.	1.4114	1.0110	0.	0.	1.5706	1.0232	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	1.3293	0.8996	0.8532	0.	1.3238	0.8843	0.	0.	1.2574	0.8120	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1.2556	0.8413	0.7727	0.	1.0980	0.7562	0.	0.	0.8781	0.5962	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.1669	0.7730	0.6442	0.	0.8860	0.5627	0.	0.	0.6726	0.4292	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.9740	0.6211	0.5063	0.	0.7001	0.4211	0.	0.	0.5024	0.3113	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.4984	0.3137	0.2654	0.	0.3576	0.2190	0.	0.	0.2486	0.1590	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 13

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 13

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.9984	0.9768	0.	0.	1.0070	0.9589	0.	0.	0.9299	0.8393	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.4739	1.4317	0.	0.	1.5073	1.4527	0.	0.	1.4325	1.3199	0.	0.	0.
20	1.6780	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	1.7498	1.7621	0.	0.	1.8222	1.8290	0.	0.	1.7671	1.6689	0.	0.	0.
18	1.7020	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	1.7049	1.5823	0.	0.	1.8357	1.6921	0.	0.	1.8315	1.7392	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	1.5273	1.4329	0.	0.	1.6943	1.5887	0.	0.	1.8590	1.8305	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	1.4555	1.3801	0.	0.	1.6234	1.5399	0.	0.	1.8402	1.6486	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.3925	1.3295	0.	0.	1.5702	1.4788	0.	0.	1.7453	1.5116	0.	0.	0.
10	0.	0.	0.	0.	1.5088	0.	0.	0.	1.5964	0.	0.	0.	0.
9	1.3917	1.3070	0.	0.	1.4606	1.3099	0.	0.	1.4352	1.2232	0.	0.	0.
8	0.	0.	0.	0.	1.3876	0.	0.	0.	0.7670	0.	0.	0.	0.
7	1.3377	1.2283	0.	0.	0.7574	1.0234	0.	0.	0.6115	0.8415	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1.2701	1.1521	0.	0.	0.5905	0.7766	0.	0.	0.4442	0.6223	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1.0746	0.9627	0.	0.	0.4550	0.6070	0.	0.	0.3223	0.4531	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.5648	0.4915	0.	0.	0.2397	0.3146	0.	0.	0.1637	0.2254	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 16

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 16

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.8073	0.7966	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.2228	1.2086	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.5645	1.5284	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.5818	1.5967	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6824	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.5854	1.6529	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9964	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.4419	0.9664	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.3368	0.8682	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	1.0230	0.7072	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.7583	0.5021	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.6068	0.3853	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.4631	0.2879	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.2444	0.1562	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 17

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 17

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.8335	0.7367	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.2519	1.1262	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	1.5685	1.4458	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	1.6108	1.4842	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	1.6093	1.5005	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	1.6078	1.3939	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	1.5947	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.4907	1.2516	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.8276	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.7121	0.9566	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.5254	0.7319	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.4143	0.5883	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.3232	0.4504	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.1739	0.2384	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 18

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9797	1.0023
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4133	1.4554
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7776	1.7633
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5980	1.7550
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4633	1.5969
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3909	1.5099
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3215	1.4637
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3952
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1936	1.3504
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2656
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9763	0.6893
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.8073	0.5463
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6463	0.4224
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3323	0.2257

J = 18

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

PC-BUCLE BA-140 NORMALIZED OVER OCTANT,12NODES

J = 19

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0315	0.9562
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4974	1.4078
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7337	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8518	1.7533
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7947	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1080	1.6137
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0308	1.4926
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9889	1.4169
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.9274	1.3532
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.7982	1.2035
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.6598	0.9243
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.4979	0.7221
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.3807	0.5587
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.2026	0.2949

J = 19

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX G
RELATIVE DIFFERENCES BETWEEN OD-1 THERMAL NEUTRON TIP AND MEASURED GAMMA SCAN Ba-140 NODAL DISTRIBUTIONS

J = 1

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 1

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	-0.1657	-0.1618	-0.1551	-0.1660	-0.3277	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	-0.1682	-0.1442	-0.1724	-0.1685	-0.3178	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.1629	-0.1528	-0.2015	-0.1455	-0.2807	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.1198	-0.1003	-0.1313	-0.1282	-0.2534	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0679	-0.0587	-0.0892	-0.1077	-0.2233	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.1119	-0.0876	-0.0944	-0.1057	-0.2432	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.1064	-0.0873	-0.1101	-0.0811	-0.2247	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.1390	-0.1242	-0.1366	-0.1216	-0.2314	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.1354	-0.1262	-0.0909	-0.0708	-0.1861	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.1776	-0.1734	-0.1202	-0.0866	-0.2105	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1965	-0.1709	-0.1511	-0.0857	-0.2250	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0425	-0.0307	-0.0472	0.0499	-0.0777	0.	0.	0.	0.	0.	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 2

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 2

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	-0.0285	0.0097	-0.0125	-0.0320	-0.0013	-0.1501	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	-0.0301	0.0111	0.0216	-0.0173	-0.0149	-0.1360	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.0510	-0.0558	0.0331	0.0099	-0.0294	-0.1009	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.0759	-0.0459	-0.0273	-0.0250	-0.0333	-0.0938	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0589	-0.0295	-0.0091	-0.0058	-0.0151	-0.0564	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0415	-0.0384	-0.0358	0.0139	-0.0133	-0.0447	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0235	-0.0605	-0.0398	0.0062	-0.0285	-0.0236	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0524	-0.0644	-0.0566	-0.0083	-0.0506	-0.0514	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0231	-0.0207	-0.0344	0.0609	-0.0383	0.0127	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0451	-0.0339	-0.0858	0.0124	-0.0785	0.0208	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0791	-0.0724	-0.0935	-0.0023	-0.0677	0.0524	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.0801	0.0544	0.1141	0.0998	-0.0548	0.0629	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 3

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	-0.0139	-0.0432	-0.0025	-0.0438	-0.0245	-0.0262	-0.2816	-0.2525	-0.3614	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	-0.0259	-0.0339	-0.0006	-0.0235	0.0022	-0.0284	-0.2598	-0.2326	-0.3458	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	-0.0782	-0.0722	-0.0665	-0.0187	-0.0142	-0.0323	-0.2325	-0.2147	-0.3123	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.0589	-0.0687	-0.0456	-0.0535	-0.0308	-0.0417	-0.2165	-0.1918	-0.3196	0.	0.	0.	0.
16	0.	-0.0236	-0.0179	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0479	0.0032	0.0127	-0.0629	-0.0189	-0.0454	-0.1740	-0.1509	-0.2681	0.	0.	0.	0.
14	0.	-0.2145	-0.2182	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0581	-0.0903	-0.1238	-0.0661	-0.0375	-0.0269	-0.1284	-0.1005	-0.2189	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	-0.0459	-0.0695	-0.1092	-0.0817	-0.0977	-0.0467	-0.1181	-0.0809	-0.1557	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0625	-0.0991	-0.1243	-0.0990	-0.1223	-0.0764	-0.1575	-0.1260	-0.1203	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0299	-0.0582	-0.0797	-0.0027	-0.0696	-0.0040	-0.1307	-0.0847	-0.0230	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0584	-0.0797	-0.1268	-0.0388	-0.0959	-0.0058	-0.1732	-0.1093	-0.0215	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1039	-0.1188	-0.1606	-0.0482	-0.1071	0.0271	-0.1938	-0.1209	-0.0278	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.0521	-0.0777	-0.0272	0.1028	-0.0710	0.0207	-0.1590	-0.0391	0.1319	0.	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 4

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0866	0.0867	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1272	0.1254	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1283	0.0956	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0509	0.0310	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0720	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0681	0.1277	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1493	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0560	0.0061	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0159	-0.0571	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0162	0.0333	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0519	0.0776	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0423	0.0339	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0260	-0.0396	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0283	-0.0531	0.	0.

J = 4

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.1537	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0641	0.0399	0.0809	0.1070	-0.0701	-0.0561	-0.0471	-0.0325	-0.0185	-0.0420	0.	0.	0.
22	0.	0.0822	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0515	0.0326	0.0988	0.1436	-0.0338	-0.0279	-0.0119	-0.0235	0.0088	-0.0234	0.	0.	0.
20	0.	0.0192	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0189	0.0347	0.1077	0.1111	-0.0348	-0.0472	0.0216	-0.0048	0.0354	0.0352	0.	0.	0.
18	0.	0.0003	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	-0.0002	-0.0095	0.0238	0.0591	-0.0762	-0.0763	-0.0532	-0.0502	0.0043	0.0147	0.	0.	0.
16	0.	0.0328	0.0762	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0028	0.0607	0.1318	0.0664	-0.0385	-0.0447	-0.0130	-0.0075	0.0195	0.0561	0.	0.	0.
14	0.	-0.1330	-0.0792	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0154	-0.0431	0.0254	0.0521	-0.0467	-0.0531	-0.0159	0.0202	0.0253	0.0946	0.	0.	0.
12	0.	-0.0352	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0206	-0.0541	-0.0341	-0.0106	-0.0416	-0.0732	0.0007	0.0207	0.0336	0.1150	0.	0.	0.
10	0.	-0.0397	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0110	-0.0731	0.0241	0.0005	-0.0206	-0.0388	-0.0029	0.0472	0.0224	0.1102	0.	0.	0.
8	0.	0.0052	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0465	0.0215	0.0720	0.0637	0.0602	0.0154	0.0589	0.1109	0.0852	0.1710	0.	0.	0.
6	0.	-0.0290	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0260	-0.0311	0.0178	0.0263	0.0266	-0.0240	0.0469	0.1074	0.0816	0.1838	0.	0.	0.
4	0.	-0.0653	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0822	-0.0902	-0.0772	-0.0602	-0.0272	-0.0541	0.0334	0.0816	0.0888	0.2081	0.	0.	0.
2	0.	-0.0672	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.0174	-0.0073	-0.0520	-0.0434	0.0672	0.0340	0.2023	0.1378	0.0731	0.2833	0.	0.	0.

J = 5

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0884	0.1097	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1276	0.1259	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.1107	0.1476	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0665	0.0872	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0653	0.0854	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0808	0.0841	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0905	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0848	0.0201	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1448	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0292	0.0297	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0322	0.1317	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0091	0.0977	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0601	0.0399	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0551	0.0304	0.	0.

J = 5

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0763	0.0337	0.1532	0.0968	-0.0508	-0.0807	-0.0230	-0.0325	-0.0109	0.0293	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0808	0.0419	0.1619	0.1229	-0.0014	-0.0300	0.0100	-0.0071	0.0159	0.0504	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0584	0.0415	0.0808	0.1278	-0.0092	-0.0196	-0.0087	0.0041	-0.0222	0.0418	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0091	0.0008	0.1057	0.0778	-0.0528	-0.0726	-0.0361	-0.0455	-0.0065	0.0316	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	-0.0008	-0.0210	0.1008	0.0805	-0.0291	-0.0399	-0.0164	-0.0157	-0.0177	0.0307	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0522	0.0002	0.0958	0.1330	-0.0128	-0.0482	-0.0090	0.0040	-0.0362	0.0626	0.	0.	0.
12	0.	0.	0.	0.1180	-0.0085	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0297	-0.0215	0.0406	0.1206	0.0430	-0.0603	0.0007	-0.0000	-0.0641	0.0368	0.	0.	0.
10	0.0260	0.	0.	-0.0847	-0.1259	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0578	-0.0297	0.0280	-0.0333	-0.0636	-0.0679	-0.0074	-0.0066	-0.0961	0.0382	0.	0.	0.
8	-0.1226	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0067	0.0724	0.1187	0.0179	-0.0190	-0.0123	0.0382	0.0153	-0.0564	0.0852	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0779	0.0647	0.0790	-0.0449	-0.0306	-0.0314	0.0231	-0.0202	-0.0558	0.0709	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1219	0.0051	-0.0126	-0.0923	-0.0829	-0.0464	-0.0320	-0.0288	-0.0663	0.0773	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0375	0.0688	0.0009	-0.0685	0.0057	0.0654	0.1460	0.0936	-0.0362	0.0422	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 6

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 6

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	-0.0104	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0723	0.1018	0.0422	-0.0137	-0.0159	-0.0027	-0.0356	0.0517	0.	0.	0.	0.	0.
22	0.	0.	0.	0.0434	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0938	0.1530	0.0224	0.0134	0.0041	-0.0007	0.0300	0.0746	0.	0.	0.	0.	0.
20	0.	0.	0.	0.0116	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0635	0.1140	-0.0059	0.0133	0.0012	-0.0197	0.0684	0.0873	0.	0.	0.	0.	0.
18	0.	0.	0.	-0.0198	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.1314	0.1162	-0.0139	0.0200	-0.0442	-0.0367	-0.0135	0.0150	0.	0.	0.	0.	0.
16	0.	0.	0.	0.0278	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.1012	0.0885	-0.0186	0.0161	0.0051	-0.0619	0.0032	0.0483	0.	0.	0.	0.	0.
14	0.	0.	0.	0.0058	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.1046	0.0926	-0.0181	0.0171	-0.0152	-0.0564	0.0038	0.0185	0.	0.	0.	0.	0.
12	0.	0.	0.	0.0374	0.0157	0.	0.	0.	0.	0.	0.	0.	0.
11	0.1122	0.0884	-0.0348	0.0680	0.0382	-0.0584	0.0084	0.0283	0.	0.	0.	0.	0.
10	0.1047	0.	0.	-0.0948	-0.0695	0.	0.	0.	0.	0.	0.	0.	0.
9	0.1476	0.1006	-0.0396	-0.0783	-0.0575	-0.0946	-0.0047	0.0082	0.	0.	0.	0.	0.
8	-0.0492	0.	0.	-0.0580	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0525	0.1631	0.0193	-0.0320	-0.0136	-0.0345	0.0383	0.0147	0.	0.	0.	0.	0.
6	0.	0.	0.	-0.0583	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0806	0.0737	0.0127	-0.0458	-0.0352	-0.0600	0.0388	-0.0100	0.	0.	0.	0.	0.
4	0.	0.	0.	-0.0686	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.1538	0.0107	-0.0262	-0.0809	-0.0681	-0.0708	0.0194	-0.0462	0.	0.	0.	0.	0.
2	0.	0.	0.	-0.0385	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	-0.0172	0.1511	0.0421	0.0280	0.0123	0.0465	0.1580	0.0694	0.	0.	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 7

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 7

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0524	0.0530	0.0273	-0.0268	0.0090	0.0138	0.0221	0.0548	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0868	0.0972	0.0307	-0.0120	0.0178	0.0089	0.0377	0.0525	0.	0.	0.	0.	0.
20	0.	0.1136	0.0450	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.1115	0.1315	0.0220	-0.0011	-0.0093	-0.0445	-0.0086	0.0623	0.	0.	0.	0.	0.
18	0.	0.1007	0.0236	0.	0.	-0.0291	0.0228	0.	0.	0.	0.	0.	0.
17	0.0852	-0.0546	-0.1057	-0.0258	-0.0094	-0.0363	-0.0052	-0.0132	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.0070	0.0528	0.	0.	0.	0.	0.	0.
15	0.0733	0.0030	-0.0968	-0.0179	-0.0336	-0.2697	-0.2107	-0.0213	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0748	0.0235	-0.0974	-0.0099	-0.0350	-0.1043	-0.0240	0.0156	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0739	0.0088	-0.1030	-0.0179	-0.0324	-0.1157	-0.0254	-0.0039	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0652	0.0187	-0.0703	-0.0665	-0.0667	-0.0880	-0.0259	-0.0075	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.1257	0.1599	-0.0446	-0.0524	-0.0521	-0.0566	0.0418	0.0200	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.0387	0.0636	-0.0916	-0.0561	-0.0602	-0.0890	0.0185	0.0046	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0032	0.0008	-0.1561	-0.0925	-0.0932	-0.1389	-0.0483	-0.0726	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1407	0.1315	-0.0635	0.0197	0.0562	-0.0838	0.0111	-0.0067	0.	0.	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 8

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 8

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.0319	0.0963	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0150	0.0471	0.0485	0.0548	-0.0084	-0.0162	0.1115	0.	0.2905	0.4208	0.	0.	0.
22	0.0414	0.0376	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0125	0.0006	0.0728	0.0750	0.0312	0.0361	0.0763	0.	0.1247	0.1769	0.	0.	0.
20	0.0062	0.0264	0.0844	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0280	0.0090	0.0741	0.0477	0.0575	0.0264	0.0107	0.	-0.0071	-0.0285	0.	0.	0.
18	-0.0207	-0.0167	0.0758	0.	0.	0.0120	0.0093	0.	0.	0.	0.	0.	0.
17	-0.0033	-0.1018	-0.0010	0.0583	0.0071	0.0024	0.0278	0.	-0.0490	-0.0065	0.	0.	0.
16	-0.0001	-0.0726	0.	0.	0.	0.0679	0.0586	0.	0.	0.	0.	0.	0.
15	-0.0290	-0.0754	0.0081	0.0542	0.0299	-0.2267	-0.2111	0.	-0.0639	-0.0507	0.	0.	0.
14	-0.0287	-0.0962	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	-0.0031	-0.0393	0.0334	0.0565	0.0483	-0.0815	-0.0615	0.	-0.0665	-0.0555	0.	0.	0.
12	0.0240	-0.0324	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0013	-0.0691	0.0418	0.0560	0.0492	-0.0812	-0.0975	0.	-0.1341	-0.1897	0.	0.	0.
10	-0.0128	-0.0709	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0119	-0.0557	0.0286	0.0513	0.0251	-0.0816	-0.0753	0.	-0.0813	-0.1038	0.	0.	0.
8	-0.0045	-0.0598	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0687	0.0572	0.0739	0.0507	0.0506	-0.0074	-0.0363	0.	-0.0452	-0.0675	0.	0.	0.
6	0.0086	-0.0255	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.0065	-0.0423	0.0464	0.0264	0.0372	-0.0161	-0.0789	0.	-0.0666	-0.0959	0.	0.	0.
4	-0.0094	-0.0691	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0331	-0.0935	-0.0442	-0.0290	0.0087	-0.0517	-0.1456	0.	-0.2072	-0.2245	0.	0.	0.
2	0.0115	-0.0662	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1107	0.0292	0.0111	0.0981	0.1471	0.0653	-0.1573	0.	-0.5647	-0.6785	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 9

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 9

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.0721	0.1052	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0640	0.0522	0.0742	0.0738	0.0517	0.0083	0.	0.	0.3055	0.3393	0.	0.	0.
22	0.0764	0.0624	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0578	0.0200	0.1220	0.0875	0.0754	0.0370	0.	0.	0.1329	0.1468	0.	0.	0.
20	0.0495	0.0088	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0327	0.0133	0.0904	0.0812	0.0588	0.0433	0.	0.	-0.0165	0.0052	0.	0.	0.
18	-0.0016	-0.0503	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0652	-0.0269	0.0942	0.1024	0.0386	0.0021	0.	0.	-0.0246	-0.0004	0.	0.	0.
16	0.0367	-0.0432	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0193	-0.0560	0.0907	0.0715	0.1130	0.0232	0.	0.	-0.0504	-0.0236	0.	0.	0.
14	0.0119	-0.0622	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0195	-0.0485	0.0848	0.0924	0.0849	0.0216	0.	0.	-0.0231	-0.0345	0.	0.	0.
12	0.0419	-0.0429	0.	0.	0.	0.	0.	0.	-0.0474	0.	0.	0.	0.
11	0.0194	-0.0537	0.0565	0.0909	0.0790	0.0473	0.	0.	-0.0511	-0.1340	0.	0.	0.
10	0.0172	-0.0731	0.	0.	0.	0.	0.	0.	-0.1898	0.	0.	0.	0.
9	0.0374	-0.0679	0.0651	0.0734	0.0459	0.0296	0.	0.	-0.1166	-0.0963	0.	0.	0.
8	0.0954	-0.0574	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0098	0.0050	0.0990	0.0873	0.0705	0.0935	0.	0.	-0.0740	-0.0377	0.	0.	0.
6	-0.0201	-0.0192	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0159	-0.0152	0.0864	0.0560	0.0534	0.0750	0.	0.	-0.1018	-0.0522	0.	0.	0.
4	-0.0603	-0.0318	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0675	-0.0507	0.0385	-0.0025	0.0014	0.0487	0.	0.	-0.2249	-0.1776	0.	0.	0.
2	-0.0400	-0.0389	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.0586	0.0567	0.1781	0.1184	0.1395	0.1545	0.	0.	-0.5834	-0.6367	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 10

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 10

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0478	0.0651	0.1467	0.2098	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0819	0.0989	0.0987	0.1551	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0879	0.0819	0.0926	0.0653	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0999	0.0788	0.0268	0.1261	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0781	0.0543	0.0300	0.1199	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0623	0.0328	0.0411	0.1121	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0913	0.0134	0.0225	0.1036	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.0631	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0736	-0.0011	0.0154	0.0768	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.1159	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	-0.0108	0.0594	0.0570	0.0763	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0466	0.0073	0.0435	0.0370	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0966	-0.0316	-0.0244	-0.0424	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.0322	0.1173	-0.0058	-0.0282	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 11

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0637	0.0615	0.2002	0.1522	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0837	0.0766	0.1493	0.1126	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.0791	0.1505	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0479	0.0378	0.0602	0.1264	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.0683	0.0755	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0639	-0.0605	-0.1105	0.0581	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0355	-0.0477	-0.0529	0.0661	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0386	-0.0426	-0.0338	0.0793	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0238	-0.0449	-0.0429	0.0846	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	-0.0184	-0.0487	-0.0271	0.0521	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0244	0.0780	0.0207	0.0482	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	-0.0349	-0.0035	0.0183	0.0241	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0813	-0.0904	-0.0876	-0.0456	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.1056	0.0199	-0.1015	0.0174	0.	0.	0.	0.	0.	0.	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 12

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 12

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0551	0.0773	0.0207	0.	0.0715	0.0575	0.	0.	0.0890	0.0475	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0738	0.0626	0.0211	0.	0.0969	0.0872	0.	0.	0.0941	0.0969	0.	0.	0.
20	0.	0.0534	0.0211	0.	0.	0.0944	0.	0.	0.	0.	0.	0.	0.
19	0.0611	-0.0176	-0.0270	0.	0.1063	0.0696	0.	0.	0.0872	0.0651	0.	0.	0.
18	0.	0.0024	0.0009	0.	0.	0.0523	0.	0.	0.	0.	0.	0.	0.
17	0.0385	-0.1070	-0.1432	0.	0.0723	-0.0556	0.	0.	0.0603	0.0405	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0900	0.	0.	0.
15	0.0216	-0.0454	-0.0678	0.	0.0506	-0.0348	0.	0.	0.1014	0.1571	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.1255	0.	0.	0.
13	0.0734	-0.0150	-0.0517	0.	0.0777	0.0064	0.	0.	0.1103	0.0471	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0608	-0.0356	-0.0602	0.	0.0633	-0.0099	0.	0.	0.0994	0.0232	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.0433	-0.0076	-0.0836	0.	0.0286	-0.0018	0.	0.	0.0703	0.0374	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.0755	0.0484	-0.0242	0.	0.0628	0.1349	0.	0.	0.1424	0.1618	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.0687	0.0643	-0.0633	0.	0.0165	0.0294	0.	0.	0.0725	0.0495	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.0131	-0.0172	-0.1378	0.	-0.0463	-0.0749	0.	0.	0.0220	-0.0233	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.0914	0.0121	-0.0947	0.	0.0388	-0.0077	0.	0.	0.1192	0.0424	0.	0.	0.

J = 13

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 13

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.0661	0.0565	0.	0.	0.0649	0.0330	0.	0.	0.0884	0.0531	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.0840	0.0474	0.	0.	0.1177	0.0765	0.	0.	0.1301	0.0927	0.	0.	0.
20	0.0623	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.0609	0.0689	0.	0.	0.0950	0.0888	0.	0.	0.0964	0.0805	0.	0.	0.
18	0.0244	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.0960	0.0244	0.	0.	0.1409	0.0541	0.	0.	0.0739	0.0515	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.0609	0.0068	0.	0.	0.1055	0.0441	0.	0.	0.0824	0.0832	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.0859	0.0404	0.	0.	0.1064	0.0455	0.	0.	0.1314	0.0592	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.0638	0.0287	0.	0.	0.0970	0.0391	0.	0.	0.1088	0.0460	0.	0.	0.
10	0.	0.	0.	0.	0.1030	0.	0.	0.	0.0969	0.	0.	0.	0.
9	0.0602	0.0348	0.	0.	0.0965	0.0237	0.	0.	0.1396	0.0252	0.	0.	0.
8	0.	0.	0.	0.	0.1657	0.	0.	0.	-0.0960	0.	0.	0.	0.
7	0.0676	0.0725	0.	0.	-0.0142	0.1277	0.	0.	0.0722	0.1159	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.0476	0.0659	0.	0.	0.0235	0.1019	0.	0.	0.0121	0.0638	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	-0.0016	0.0270	0.	0.	-0.0465	0.0169	0.	0.	-0.0577	0.0080	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.0871	0.0965	0.	0.	0.0490	0.1429	0.	0.	0.0287	0.0767	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 16

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 16

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	-0.0368	-0.0555	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	-0.0465	-0.0548	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	-0.0192	-0.0484	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	-0.0415	-0.0831	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0277	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	-0.0340	-0.0012	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.2048	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	-0.0301	-0.0897	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	-0.0396	-0.0881	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	-0.0397	-0.0282	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.0150	-0.0201	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	-0.0042	-0.0474	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	-0.0546	-0.1006	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.0493	-0.0083	0.	0.	0.

J = 17

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

J = 17

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	-0.0200	-0.0339	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	-0.0272	-0.0353	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	-0.0127	-0.0280	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	-0.0489	-0.0609	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	-0.0554	-0.0422	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.0016	-0.0542	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.0191	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.0455	-0.0706	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	-0.2073	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	-0.1102	-0.0879	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	-0.0631	-0.0194	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	-0.0749	-0.0230	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	-0.1199	-0.0801	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	-0.0177	-0.0243	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 18

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0618	0.0466
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0127	0.0266
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0181	0.0051
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0169	0.0499
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0458	-0.0052
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0258	0.0088
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0339	0.0096
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0004
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0605	0.0159
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0681
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0155	-0.0267
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0105	-0.0221
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0152	-0.0669
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0412	0.0450

J = 18

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

(PROCESS COMPUTER-GAMMA SCAN)/GAMMA SCAN

J = 19

K\I	1	2	3	4	5	6	7	8	9	10	11	12	13
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0499	0.0121
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0282	0.0015
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0298	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0218	0.0084
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0103	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0538	-0.0107
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0544	-0.0190
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0209	-0.0108
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0569	0.0075
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0674	-0.0266
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0387	0.0304
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0266	-0.0055
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0941	-0.0267
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	-0.0039	0.1223

J = 19

K\I	14	15	16	17	18	19	20	21	22	23	24	25	26
24	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
22	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
20	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
18	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
16	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
12	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.