System/Prescription Data

File : \\10.1.1.42\user\worku\Eigene Dateien\Zemax\Samples\Sequential\Objectives\Double Gauss 28 degree field.zmx
Title: DOUBLE GAUSS
Date : 27.10.2013

LENS NOTES:

Notes...

GENERAL LENS DATA:

```
Surfaces               :              12
Stop                   :               6
System Aperture        : Entrance Pupil Diameter = 33.33
Glass Catalogs         : SCHOTT
Ray Aiming             : Off
Apodization            : Uniform, factor =   0.00000E+000
Temperature (C)        :    2.00000E+001
Pressure (ATM)         :    1.00000E+000
Adjust Index Data To Environment  : Off
Effective Focal Length  :        99.50068 (in air at system temperature and pressure)
Effective Focal Length  :        99.50068 (in image space)
Back Focal Length       :        57.49797
Total Track             :        132.9884
Image Space F/#         :        2.985319
Paraxial Working F/#    :        2.985319
Working F/#             :        2.978283
Image Space NA          :       0.1651855
Object Space NA         :     1.6665e-009
Stop Radius             :        9.996598
Paraxial Image Height   :        24.80831
Paraxial Magnification  :               0
Entrance Pupil Diameter :           33.33
Entrance Pupil Position :        58.93976
Exit Pupil Diameter     :        36.25844
Exit Pupil Position     :       -108.0596
Field Type              : Angle in degrees
Maximum Radial Field    :              14
Primary Wavelength      :          0.5876 µm
Lens Units              :   Millimeters
Angular Magnification   :       0.9192343

Fields          : 3
Field Type              : Angle in degrees
 #        X-Value        Y-Value         Weight
 1       0.000000       0.000000       1.000000
 2       0.000000      10.000000       1.000000
 3       0.000000      14.000000       1.000000

Vignetting Factors
 #       VDX       VDY       VCX       VCY       VAN
 1  0.000000  0.000000  0.000000  0.000000  0.000000
 2  0.000000  0.000000  0.000000  0.000000  0.000000
 3  0.000000  0.000000  0.000000  0.000000  0.000000

Wavelengths     : 3
Units: µm
 #          Value         Weight
 1       0.486100       1.000000
 2       0.587600       1.000000
 3       0.656300       1.000000
```

SURFACE DATA SUMMARY:

Surf	Type	Radius	Thickness	Glass	Diameter	Conic	Comment
OBJ	STANDARD	Infinity	Infinity		0	0	
1	STANDARD	54.15325	8.746658	SK2	58.4506	0	
2	STANDARD	152.5219	0.5		56.28191	0	
3	STANDARD	35.95062	14	SK16	48.59162	0	
4	STANDARD	Infinity	3.776966	F5	42.59438	0	
5	STANDARD	22.26992	14.25306		29.83871	0	
STO	STANDARD	Infinity	12.42813		20.45767	0	
7	STANDARD	-25.68503	3.776966	F5	26.37552	0	
8	STANDARD	Infinity	10.83393	SK16	32.93624	0	
9	STANDARD	-36.98022	0.5		37.85914	0	
10	STANDARD	196.4173	6.858175	SK16	42.62153	0	
11	STANDARD	-67.14755	57.31454		43.29252	0	
IMA	STANDARD	Infinity			49.14107	0	

SURFACE DATA DETAIL:

Surface OBJ STANDARD

Surface   1 STANDARD
Coating   : AR

Surface   2 STANDARD
Coating   : AR

Surface   3 STANDARD
Coating   : AR

Surface   4 STANDARD

Surface   5 STANDARD
Coating   : AR

Surface STO STANDARD

Surface   7 STANDARD
Coating   : AR

Surface   8 STANDARD

Surface   9 STANDARD
Coating   : AR

Surface 10 STANDARD
Coating   : AR

Surface 11 STANDARD
Coating   : AR

Surface IMA STANDARD

COATING DEFINITIONS:

EDGE THICKNESS DATA:

Surf	Edge
1	2.802041
2	7.333764
3	4.547694
4	9.513214
5	8.516811
STO	8.784057
7	7.421038
8	5.621745
9	6.871687
10	2.113948
11	60.899261
IMA	0.000000

SOLVE AND VARIABLE DATA:

 Curvature of   1   : Variable
 Curvature of   2   : Variable
 Curvature of   3   : Variable
 Curvature of   5   : Variable
 Curvature of   7   : Variable
 Curvature of   9   : Variable
 Curvature of 10   : Variable
 Curvature of 11   : Variable
 Thickness of 11   : Variable

INDEX OF REFRACTION DATA:

System Temperature: 20.0000 Celsius
System Pressure   :   1.0000 Atmospheres
Absolute air index: 1.000272 at wavelength 0.587600 µm
Index data is relative to air at the system temperature and pressure.
Wavelengths are measured in air at the system temperature and pressure.

Surf	Glass	Temp	Pres	0.486100	0.587600	0.656300	
0		20.00	1.00	1.00000000	1.00000000	1.00000000	
1	SK2	20.00	1.00	1.61486027	1.60737886	1.60413433	
2		20.00	1.00	1.00000000	1.00000000	1.00000000	
3	SK16	20.00	1.00	1.62755940	1.62040793	1.61727058	
4	F5	20.00	1.00	1.61461718	1.60341718	1.59874369	lead containing glass type
5		20.00	1.00	1.00000000	1.00000000	1.00000000	
6		20.00	1.00	1.00000000	1.00000000	1.00000000	
7	F5	20.00	1.00	1.61461718	1.60341718	1.59874369	lead containing glass type
8	SK16	20.00	1.00	1.62755940	1.62040793	1.61727058	
9		20.00	1.00	1.00000000	1.00000000	1.00000000	
10	SK16	20.00	1.00	1.62755940	1.62040793	1.61727058	
11		20.00	1.00	1.00000000	1.00000000	1.00000000	
12		20.00	1.00	1.00000000	1.00000000	1.00000000	

THERMAL COEFFICIENT OF EXPANSION DATA:

Surf	Glass	TCE *10E-6	
0		0.00000000	
1	SK2	6.00000000	
2		0.00000000	
3	SK16	6.30000000	
4	F5	8.00000000	lead containing glass type
5		0.00000000	
6		0.00000000	
7	F5	8.00000000	lead containing glass type
8	SK16	6.30000000	
9		0.00000000	
10	SK16	6.30000000	
11		0.00000000	
12		0.00000000	

GLOBAL VERTEX COORDINATES, ORIENTATIONS, AND ROTATION/OFFSET MATRICES:

Reference Surface: 1

Surf	R11	R12	R13	X
	R21	R22	R23	Y
	R31	R32	R33	Z
1	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	0.000000000E+000
2	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	8.746657850E+000
3	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	9.246657850E+000
4	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	2.324665785E+001
5	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	2.702362374E+001
6	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	4.127668304E+001
7	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	5.370481214E+001
8	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	5.748177803E+001
9	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	6.831570653E+001
10	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	6.881570653E+001
11	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	7.567388144E+001
12	1.0000000000	0.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	1.0000000000	0.0000000000	0.000000000E+000
	0.0000000000	0.0000000000	1.0000000000	1.329884193E+002

GLOBAL Surface CENTER OF CURVATURE POINTS:

Reference Surface: 1

Surf	X	Y	Z
1	0.0000000000	0.0000000000	54.1532461657
2	0.0000000000	0.0000000000	161.2685787901
3	0.0000000000	0.0000000000	45.1972823005
4	-	-	-
5	0.0000000000	0.0000000000	49.2935483580
6	-	-	-
7	0.0000000000	0.0000000000	28.0197791095
8	-	-	-
9	0.0000000000	0.0000000000	31.3354858014
10	0.0000000000	0.0000000000	265.2330406265
11	0.0000000000	0.0000000000	8.5263314163
12	-	-	-

ELEMENT VOLUME DATA:

For centered elements with plane or spherical circular faces, exact volumes are computed by assuming edges are squared up to the larger of the front and back radial aperture.

For all other elements, approximate volumes are numerically integrated to 0.1% accuracy. Zero volume means the volume cannot be accurately computed.

Single elements that are duplicated in the Lens Data Editor for ray tracing purposes may be listed more than once yielding incorrect total mass estimates.

		Volume cc	Density g/cc	Mass g
Element surf	1 to 2	16.069494	3.550000	57.046705
Element surf	3 to 4	17.639984	3.580000	63.151142
Element surf	4 to 5	11.451250	3.470000	39.735839
Element surf	7 to 8	5.301847	3.470000	18.397410
Element surf	8 to 9	9.336400	3.580000	33.424312
Element surf	10 to 11	6.602287	3.580000	23.636188
Total Mass:				235.391597

F/# DATA:

F/# calculations consider vignetting factors and ignore surface apertures.

Wavelength:		0.486100		0.587600		0.656300	
#	Field	Tan	Sag	Tan	Sag	Tan	Sag
1	0.00 (deg):	2.9804	2.9804	2.9783	2.9783	2.9792	2.9792
2	10.00 (deg):	3.0469	3.0150	3.0454	3.0127	3.0465	3.0136
3	14.00 (deg):	3.0972	3.0472	3.0971	3.0450	3.0986	3.0459

CARDINAL POINTS:

Object space positions are measured with respect to surface 1.
Image space positions are measured with respect to the image surface.
The index in both the object space and image space is considered.

	Object Space	Image Space
W = 0.486100		
Focal Length :	-99.571104	99.571104
Focal Planes :	-32.267304	0.208631
Principal Planes :	67.303799	-99.362473
Anti-Principal Planes :	-131.838408	99.779734
Nodal Planes :	67.303799	-99.362473
Anti-Nodal Planes :	-131.838408	99.779734
W = 0.587600(Primary)		
Focal Length :	-99.500679	99.500679
Focal Planes :	-32.524673	0.183431
Principal Planes :	66.976006	-99.317248
Anti-Principal Planes :	-132.025352	99.684110
Nodal Planes :	66.976006	-99.317248
Anti-Nodal Planes :	-132.025352	99.684110
W = 0.656300		
Focal Length :	-99.527014	99.527014
Focal Planes :	-32.696637	0.240283
Principal Planes :	66.830377	-99.286732
Anti-Principal Planes :	-132.223651	99.767297
Nodal Planes :	66.830377	-99.286732
Anti-Nodal Planes :	-132.223651	99.767297

PHYSICAL OPTICS PROPAGATION SETTINGS SUMMARY:

OBJ STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff
Output Pilot Radius : Best Fit
1 STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff
Output Pilot Radius : Best Fit
2 STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff
Output Pilot Radius : Best Fit
3 STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff
Output Pilot Radius : Best Fit
4 STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff
Output Pilot Radius : Best Fit
5 STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff
Output Pilot Radius : Best Fit
STO STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff
Output Pilot Radius : Best Fit
7 STANDARD
Use Rays To Propagate To Next Surface : Off
Recompute Pilot Beam : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator : Off
Use X-Axis ReferenceOff

```
Output Pilot Radius                    : Best Fit
   8 STANDARD
Use Rays To Propagate To Next Surface  : Off
Recompute Pilot Beam                   : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator        : Off
Use X-Axis ReferenceOff
Output Pilot Radius                    : Best Fit
   9 STANDARD
Use Rays To Propagate To Next Surface  : Off
Recompute Pilot Beam                   : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator        : Off
Use X-Axis ReferenceOff
Output Pilot Radius                    : Best Fit
  10 STANDARD
Use Rays To Propagate To Next Surface  : Off
Recompute Pilot Beam                   : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator        : Off
Use X-Axis ReferenceOff
Output Pilot Radius                    : Best Fit
  11 STANDARD
Use Rays To Propagate To Next Surface  : Off
Recompute Pilot Beam                   : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator        : Off
Use X-Axis ReferenceOff
Output Pilot Radius                    : Best Fit
 IMA STANDARD
Use Rays To Propagate To Next Surface  : Off
Recompute Pilot Beam                   : Off
Do Not Rescale Beam Size Using Ray Data: Off
Use Angular Spectrum Propagator        : Off
Use X-Axis ReferenceOff
Output Pilot Radius                    : Best Fit

FILES USED:

Zemax File
  \\10.1.1.42\user\worku\Eigene Dateien\Zemax\Samples\Sequential\Objectives\Double Gauss 28 degree field.zmx
Session File
  \\10.1.1.42\user\worku\Eigene Dateien\Zemax\Samples\Sequential\Objectives\Double Gauss 28 degree field.SES
Glass Catalogs
  \\10.1.1.42\user\worku\Eigene Dateien\Zemax\GLASSCAT\SCHOTT.AGF
Coating Data
  \\10.1.1.42\user\worku\Eigene Dateien\Zemax\COATINGS\COATING.DAT
ABg Data
  \\ppnas1\user\worku\Eigene Dateien\Zemax\ABG_DATA\ABG_DATA.DAT
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