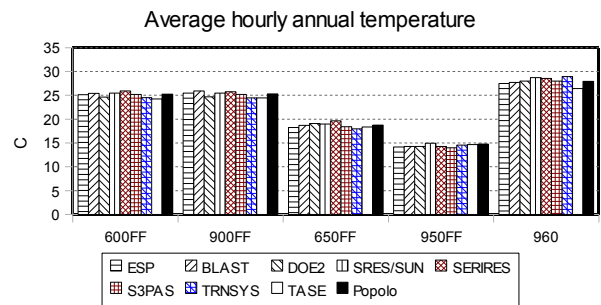
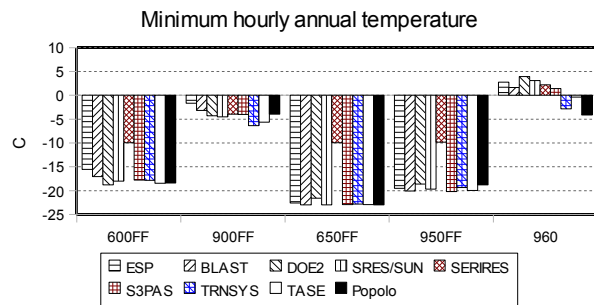
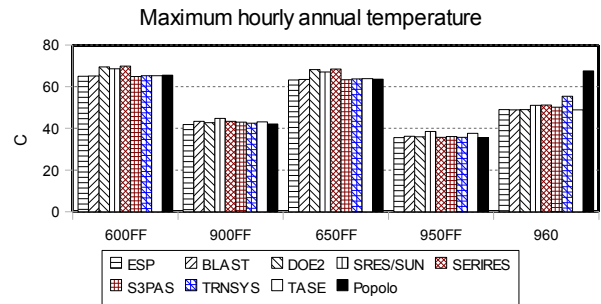
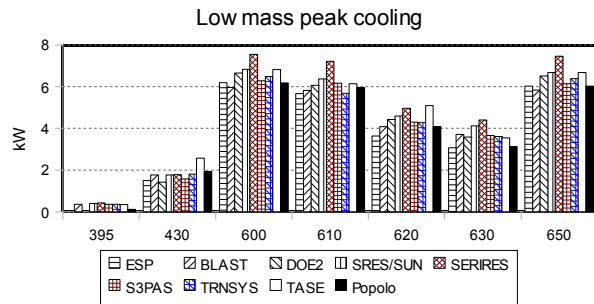
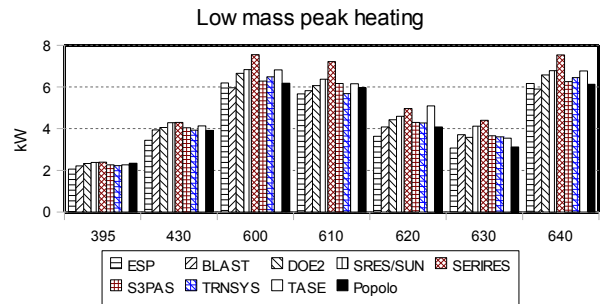
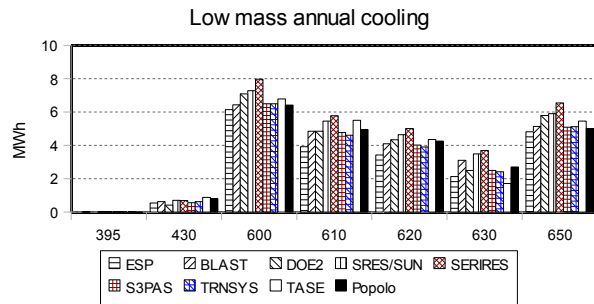
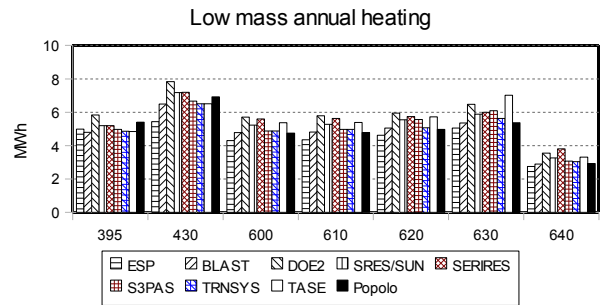
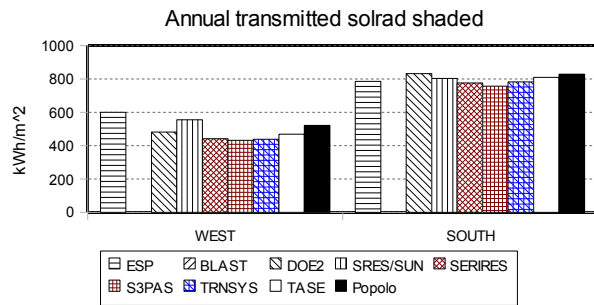
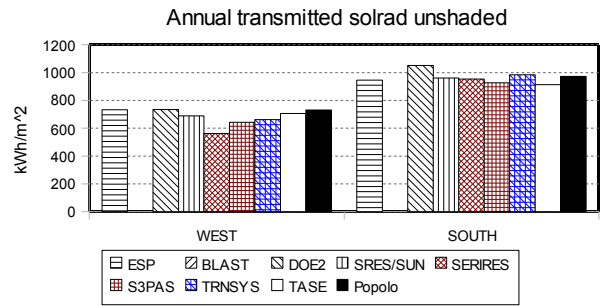
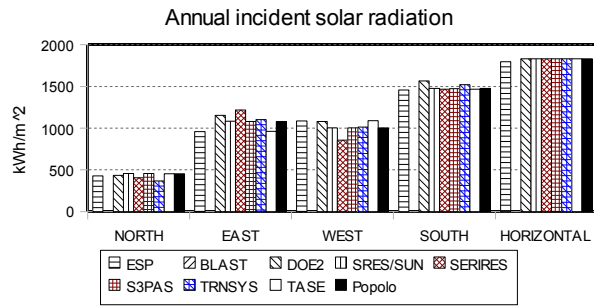


BESTEST Result



System	Annual Heating (MWh/kW)	Annual Cooling (MWh/kW)	Peak Heating (MWh/kW)	Peak Cooling (MWh/kW)
ESP	2.2	1.0	2.5	2.5
BLAST	3.5	1.8	3.2	3.0
DOE2	3.0	1.4	3.0	2.8
SRES/SUN	3.8	1.4	3.5	3.5
SERIRES	4.3	0.7	3.6	3.6
S3PAS	4.3	0.7	1.9	1.9
TRNSYS	3.8	1.4	2.8	2.8
TASE	3.8	1.4	2.8	2.8
Popolo	3.8	0.7	0.7	2.2

Figure 10: Monthly electricity production (MWh) for various power plants in the Silesia region. The chart displays production levels for different power plants (ESP, BLAST, DOE2, SRES/SUN, SERIES, S3PAS, TRNSYS, TASE, and Popolo) across the years 1995 to 2040. The Y-axis represents MWh, ranging from 0 to 14. The X-axis represents the year. The legend indicates the color and pattern for each power plant.

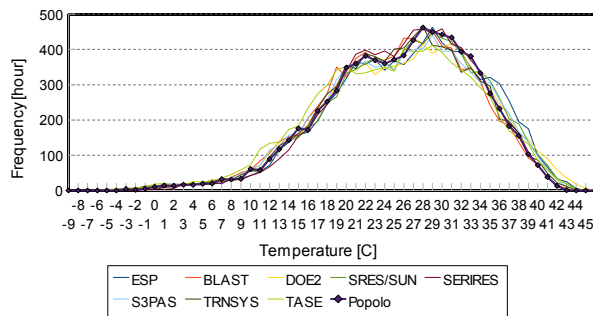
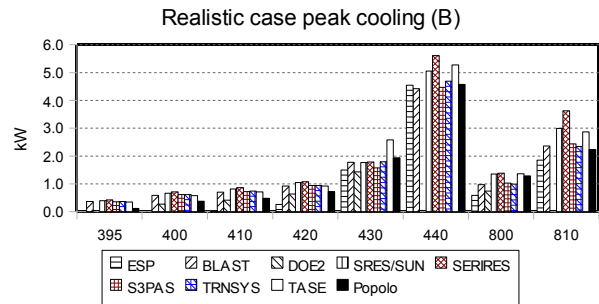
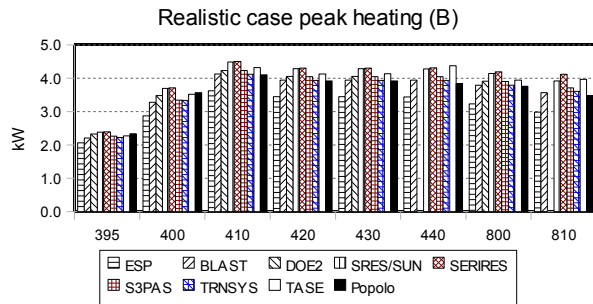
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Bar chart showing kW consumption for different simulation methods across various scenarios. The Y-axis is kW (0.0 to 4.0). The X-axis shows scenarios 250, 270, 280, 290, 300, 310, and 320. The legend includes ESP, BLAST, DOE2, SRES/SUN, SERIES, S3PAS, TRNSYS, TASE, and Popolo.

Scenario	ESP	BLAST	DOE2	SRES/SUN	SERIES	S3PAS	TRNSYS	TASE	Popolo
250	2.9	3.3	3.7	3.8	3.7	3.7	3.2	3.5	3.5
270	2.9	3.3	3.7	3.8	3.7	3.7	3.2	3.5	3.5
280	2.9	3.3	3.7	3.8	3.7	3.7	3.2	3.5	3.5
290	2.9	3.3	3.7	3.8	3.7	3.7	3.2	3.5	3.5
300	2.9	3.3	3.7	3.8	3.7	3.7	3.2	3.5	3.5
310	2.9	3.3	3.7	3.8	3.7	3.7	3.2	3.5	3.5
320	2.9	3.3	3.7	3.8	3.7	3.7	3.2	3.5	3.5

[illegible]

Bar chart showing the monthly electricity production (MWh) for various power plants in the SRES/SUN scenario. The x-axis represents months from 395 to 810. The y-axis represents MWh from 0.0 to 6.0. The legend includes ESP (white), BLAST (diagonal lines), DOE2 (cross-hatch), SRES/SUN (vertical lines), SERIRES (red cross-hatch), S3PAS (red vertical lines), TRNSYS (blue cross-hatch), TASE (white), and Popolo (black).



Result

	Absolute	Sensitivity	All
Pass	151	127	278
Fail	4	30	34

ANNUAL INCIDENT SOLAR RADIATION

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)					
NORTH	427.0		434.0	456.0	407.0	457.0	367.0	453.0	455.1	367.000	457.000	428.714	o	-
EAST	959		1155	1083	1217	1082	1101	962	1080.3	959.000	1217.000	1079.857	o	-
WEST	1086		1079	1003	857	1002	1012	1090	1004.2	857.000	1090.000	1018.429	o	-
SOUTH	1456		1566	1476	1468	1474	1522	1468	1477.7	1456.000	1566.000	1490.000	o	-
HORIZONTAL	1797		1831	1832	1832	1832	1832	1832	1832.6	1797.000	1832.000	1826.857	x	1.8%

ANNUAL TRANSMITTED SOLRAD UNSHADED

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)					
WEST	732.0		735.0	689.0	563.0	642.0	662.0	706.0	730.9	563.000	735.000	675.571	o	-
SOUTH	946		1051	962	954	926	984	914	973.5	914.000	1051.000	962.429	o	-

ANNUAL TRANSMITTED SOLRAD SHADED

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)					
WEST	599.0		481.0	554.0	441.0	431.0	438.0	469.0	521.0	431.000	599.000	487.571	o	-
SOUTH	785		831	803	775	757	782	809	828.9	757.000	831.000	791.714	o	-

ANNUAL TRANSMISSIVITY COEFFICIENT OF WINDOWS (UNSHADED TRANSMITTED)/(INCIDENT SOLRAD)

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX	
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)			
NORTH	0.674		0.681	0.687	0.657	0.641	0.654	0.648	0.728	0.641	0.687	0.663
EAST	0.650		0.671	0.652	0.650	0.628	0.647	0.623	0.659	0.623	0.671	0.646

ANNUAL OVERHANG AND FIN SHADING COEFFICIENTS (1-(SHADED)/(UNSHADED)) TRANSMITTED SOLRAD

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX	
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)			
NORTH	0.182		0.346	0.196	0.217	0.329	0.338	0.336	0.287	0.182	0.346	0.278
EAST	0.170		0.209	0.165	0.188	0.183	0.205	0.115	0.149	0.115	0.209	0.176

ANNUAL LOADS

ANNUAL HEATING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASE	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
600	4.296	4.773	5.709	5.226	5.596	4.882	4.872	5.362	4.740	4.296	5.709	5.090	o	-
610	4.355	4.806	5.786	5.280	5.620	4.971	4.970	5.383	4.775	4.355	5.786	5.146	o	-
620	4.613	5.049	5.944	5.554	5.734	5.564	5.073	5.728	4.965	4.613	5.944	5.407	o	-
630	5.050	5.359	6.469	5.883	6.001	6.095	5.624	7.018	5.367	5.050	6.469	5.937	o	-
640	2.751	2.888	3.543	3.255	3.803	3.065	3.043	3.309	2.928	2.751	3.803	3.207	o	-
650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
900	1.170	1.610	1.872	1.897	1.988	1.730	1.655	2.041	1.545	1.170	2.041	1.745	o	-
910	1.575	1.862	2.254	2.174	2.282	2.063	2.097	2.220	1.769	1.575	2.282	2.066	o	-
920	3.313	3.752	4.255	4.093	4.058	4.235	3.776	4.300	3.573	3.313	4.300	3.973	o	-
930	4.143	4.347	5.335	4.755	4.728	5.168	4.740	6.306	4.373	4.143	5.335	4.940	o	-
940	0.793	1.021	1.239	1.231	1.411	1.179	1.080	1.323	1.026	0.793	1.411	1.160	o	-
950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
960	2.311	2.664	2.928	2.884	2.851	2.943	3.373	2.816	2.590	2.311	3.373	2.846	o	-
990	2.222	3.448	3.425	2.972	4.324	4.301		3.813	3.701	2.222	4.324	3.501	o	-
195	4.167	4.895	5.871	5.324	4.968	4.973	4.871	4.921	4.966	4.167	5.871	4.999	o	-
200	5.252	6.559			6.683	6.636	6.395	6.882	6.747	5.252	6.882	6.401	o	-
210	6.456	6.559			6.794	6.735	6.554	6.967	7.640	6.456	6.967	6.678	x	131.6%
215	5.547	7.215			7.943	7.281	7.130	7.319	7.484	5.547	7.943	7.073	o	-
220	6.944	7.215	8.787	8.102	8.127	7.422	7.297	7.437	8.502	6.944	8.787	7.666	o	-
230	10.376	10.740	12.243	11.633	11.649	11.037	10.840	10.964	10.951	10.376	12.243	11.185	o	-
240	5.649	6.009	7.448	6.769	6.786	6.194	6.076	6.234	7.184	5.649	7.448	6.396	o	-
250	4.751	5.739	7.024	6.608	6.653	5.974	5.764	5.738	6.746	4.751	7.024	6.031	o	-
270	4.510	4.930		5.482	5.920	5.072	5.047	5.489	5.423	4.510	5.920	5.207	o	-
280	4.675	5.125		5.937	6.148	5.363	5.279	5.841	5.742	4.675	6.148	5.481	o	-
290	4.577	4.959		5.539	5.942	5.160	5.132	5.509	5.463	4.577	5.942	5.260	o	-
300	4.761	5.077		5.689	5.964	5.662	5.124	5.786	5.585	4.761	5.964	5.438	o	-
310	5.221	5.327		5.937	6.165	6.154	5.610	7.135	5.967	5.221	7.135	5.936	o	-
320	3.859	4.209		4.764	5.141	4.343	4.348	4.840	4.655	3.859	5.141	4.501	o	-
395	4.984	4.799	5.835	5.199	5.201	4.967	4.855	4.839	5.401	4.799	5.835	5.085	o	-
400	6.900	7.075	8.770	7.966	7.973	7.287	7.166	7.326	8.381	6.900	8.770	7.558	o	-
410	8.596	8.873	10.506	9.726	9.734	9.019	8.936	9.085	9.599	8.596	10.506	9.309	o	-
420	7.298	7.610	9.151	8.365	8.373	7.774	7.697	7.863	8.266	7.298	9.151	8.016	o	-
430	5.429	6.488	7.827	7.178	7.186	6.662	6.500	6.510	6.923	5.429	7.827	6.723	o	-
440	4.449	4.987		5.652	5.811	5.152	5.098	5.642	5.012	4.449	5.811	5.256	o	-
800	4.868	5.953	7.228	6.611	6.600	6.161	5.940	5.861	6.365	4.868	7.228	6.153	o	-
810	1.839	2.446		3.004	2.828	2.722	2.567	2.962	2.390	1.839	3.004	2.624	o	-

ANNUAL COOLING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASE#	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
600	6.137	6.433	7.079	7.278	7.964	6.492	6.492	6.778	6.411	6.137	7.964	6.832	o	-
610	3.915	4.851	4.852	5.448	5.778	4.764	4.601	5.506	4.934	3.915	5.778	4.964	o	-
620	3.417	4.092	4.334	4.633	5.004	4.011	3.901	4.351	4.257	3.417	5.004	4.218	o	-
630	2.129	3.108	2.489	3.493	3.701	2.489	2.416	1.721	2.703	2.129	3.701	2.693	o	-
640	5.952	6.183	6.759	7.026	7.811	6.247	6.246	6.508	6.126	5.952	7.811	6.592	o	-
650	4.816	5.140	5.795	5.894	6.545	5.088	5.119	5.456	4.987	4.816	6.545	5.482	o	-
900	2.132	2.600	2.455	3.165	3.415	2.572	2.485	2.599	2.431	2.132	3.415	2.678	o	-
910	0.821	1.533	0.976	1.872	1.854	1.428	1.326	1.767	1.425	0.821	1.872	1.447	o	-
920	1.840	2.616	2.440	2.943	3.092	2.457	2.418	2.613	2.634	1.840	3.092	2.552	o	-
930	1.039	1.934	1.266	2.173	2.238	1.439	1.416	0.894	1.560	1.039	2.238	1.550	o	-
940	2.079	2.536	2.340	3.036	3.241	2.489	2.383	2.516	2.332	2.079	3.241	2.578	o	-
950	0.387	0.526	0.538	0.921	0.589	0.551	0.561	0.771	0.522	0.387	0.921	0.605	o	-
960	0.488	0.666	0.428	0.803	0.718	0.643	0.411	0.786	0.530	0.411	0.803	0.618	o	-
990	1.001	1.640	1.841	1.387	0.714	0.616		1.388	0.636	0.616	1.841	1.227	o	-
195	0.414	0.421	0.264	0.510	0.488	0.474	0.474	0.443	0.442	0.264	0.510	0.436	o	-
200	0.570	0.613			0.699	0.677	0.716	0.633	0.668	0.570	0.716	0.651	o	-
210	0.162	0.613			0.681	0.661	0.668	0.641	0.432	0.162	0.681	0.571	o	-
215	0.639	0.701			0.853	0.749	0.765	0.671	0.747	0.639	0.853	0.730	o	-
220	0.186	0.701	0.399	0.827	0.835	0.734	0.737	0.683	0.468	0.186	0.835	0.638	o	-
230	0.454	0.976	0.692	1.131	1.139	1.020	1.040	0.985	0.673	0.454	1.139	0.930	o	-
240	0.415	1.072	0.660	1.239	1.246	1.108	1.114	1.045	0.752	0.415	1.246	0.987	o	-
250	3.213	2.545	2.177	2.924	2.931	2.486	2.684	3.380	3.132	2.177	3.380	2.793	o	-
270	7.528	8.670		9.631	10.350	8.795	8.764	8.714	8.544	7.528	10.350	8.922	o	-
280	4.873	5.895		6.511	7.114	5.805	5.761	6.257	5.643	4.873	7.114	6.031	o	-
290	5.204	7.011		7.721	8.089	6.903	6.699	7.431	6.945	5.204	8.089	7.008	o	-
300	4.302	5.836		6.525	7.100	5.849	5.721	5.781	5.664	4.302	7.100	5.873	o	-
310	2.732	4.570		5.136	5.471	3.875	3.727	2.471	3.799	2.471	5.471	3.997	o	-
320	5.061	5.906		6.576	7.304	5.914	5.956	5.663	5.748	5.061	7.304	6.054	o	-
395	0.000	0.011	0.000	0.016	0.014	0.010	0.010	0.011	0.000	0.000	0.016	0.009	o	-
400	0.000	0.040	0.002	0.061	0.058	0.042	0.045	0.044	0.004	0.000	0.061	0.036	o	-
410	0.000	0.059	0.010	0.084	0.084	0.063	0.067	0.065	0.011	0.000	0.084	0.054	o	-
420	0.011	0.147	0.051	0.189	0.188	0.154	0.158	0.143	0.055	0.011	0.189	0.130	o	-
430	0.542	0.617	0.422	0.704	0.684	0.563	0.617	0.875	0.801	0.422	0.875	0.628	o	-
440	3.967	4.172		4.674	5.204	3.992	3.975	4.684	4.109	3.967	5.204	4.381	o	-
800	0.113	0.224	0.055	0.272	0.222	0.195	0.207	0.325	0.270	0.055	0.325	0.202	o	-
810	1.052	1.405		1.711	1.708	1.307	1.191	1.624	1.165	1.052	1.711	1.428	o	-

ANNUAL HOURLY INTEGRATED PEAK HEATING LOADS

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW			
600	3.437	3.940	4.045	4.258	4.307	4.037	3.931	4.354	3.831	3.437	4.354	4.039	o	-
610	3.437	3.941	4.034	4.258	4.306	4.037	3.922	4.354	3.831	3.437	4.354	4.036	o	-
620	3.591	3.941	4.046	4.277	4.306	4.277	3.922	4.379	3.837	3.591	4.379	4.092	o	-
630	3.592	3.941	4.025	4.280	4.306	4.278	3.922	4.379	3.837	3.592	4.278	4.090	o	-
640	5.232	5.486	5.943	6.530	8.078	6.347	5.722	6.954	5.915	5.232	6.954	6.287	o	-
650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
900	2.850	3.453	3.557	3.760	4.081	3.608	3.517	3.797	3.384	2.850	3.797	3.578	o	-
910	2.858	3.456	3.564	3.764	4.083	3.618	3.536	3.801	3.385	2.858	3.801	3.585	o	-
920	3.308	3.703	3.805	4.013	4.156	4.029	3.708	4.061	3.590	3.308	4.061	3.848	o	-
930	3.355	3.732	3.832	4.042	4.165	4.064	3.744	4.188	3.617	3.355	4.064	3.890	o	-
940	3.980	5.028	5.665	6.116	9.923	6.117	5.122	6.428	5.708	3.980	6.428	6.047	o	-
950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
960	2.410	2.751	2.727	2.863	2.896	2.852	2.522	2.779	2.643	2.410	2.896	2.725	o	-
990	2.769	3.734	3.427	3.681	3.738	3.799		4.296	3.103	2.769	4.296	3.635	o	-
195	2.004	2.186	2.320	2.385	2.235	2.221	2.186	2.263	2.209	2.004	2.385	2.225	o	-
200	2.651	2.973			3.047	2.999	2.969	3.382	3.035	2.651	3.382	3.004	o	-
210	2.701	2.973			3.077	3.020	2.981	3.325	3.212	2.701	3.325	3.013	o	-
215	2.787	3.280			3.650	3.307	3.294	3.458	3.373	2.787	3.650	3.296	o	-
220	2.867	3.280	3.465	3.695	3.709	3.348	3.336	3.520	3.562	2.867	3.709	3.403	o	-
230	4.386	4.984	4.994	5.279	5.293	5.159	4.892	5.107	4.643	4.386	5.293	5.012	o	-
240	2.685	3.100	3.282	3.495	3.509	3.159	3.153	3.333	3.379	2.685	3.509	3.214	o	-
250	2.866	3.279	3.465	3.695	3.709	3.341	3.336	3.525	3.561	2.866	3.709	3.402	o	-
270	2.863	3.277		3.670	3.714	3.340	3.336	3.738	3.476	2.863	3.738	3.420	o	-
280	2.864	3.278		3.685	3.714	3.341	3.336	3.759	3.478	2.864	3.759	3.425	o	-
290	2.863	3.277		3.670	3.714	3.340	3.328	3.738	3.476	2.863	3.738	3.419	o	-
300	3.014	3.276		3.685	3.714	3.599	3.328	3.770	3.479	3.014	3.770	3.484	o	-
310	3.015	3.277		3.672	3.714	3.599	3.328	3.771	3.480	3.015	3.771	3.482	o	-
320	2.861	3.275		3.661	3.714	3.340	3.336	3.735	3.472	2.861	3.735	3.417	o	-
395	2.062	2.209	2.328	2.385	2.391	2.263	2.221	2.270	2.337	2.062	2.391	2.266	o	-
400	2.867	3.280	3.476	3.695	3.709	3.342	3.336	3.520	3.562	2.867	3.709	3.403	o	-
410	3.625	4.124	4.233	4.487	4.501	4.227	4.114	4.314	4.103	3.625	4.501	4.203	o	-
420	3.443	3.944	4.050	4.287	4.301	4.044	3.931	4.126	3.920	3.443	4.301	4.016	o	-
430	3.442	3.944	4.050	4.287	4.301	4.044	3.931	4.137	3.920	3.442	4.301	4.017	o	-
440	3.439	3.942		4.277	4.306	4.041	3.931	4.376	3.836	3.439	4.376	4.045	o	-
800	3.227	3.793	3.909	4.138	4.188	3.902	3.786	3.939	3.758	3.227	4.188	3.860	o	-
810	2.979	3.566		3.915	4.115	3.709	3.606	3.963	3.476	2.979	4.115	3.693	o	-

ANNUAL HOURLY INTEGRATED PEAK COOLING LOADS

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW			
600	6.194	5.965	6.656	6.827	7.551	6.286	6.486	6.812	6.184	5.965	6.812	6.597	o	-
610	5.669	5.824	6.064	6.371	7.215	6.170	5.675	6.146	5.957	5.669	6.146	6.142	o	-
620	3.634	4.075	4.430	4.593	4.959	4.297	4.275	5.096	4.075	3.634	5.096	4.420	o	-
630	3.072	3.704	3.588	4.116	4.400	3.665	3.608	3.546	3.121	3.072	3.704	3.712	o	-
640	6.161	5.892	6.576	6.776	7.537	6.250	6.442	6.771	6.125	5.892	7.537	6.551	o	-
650	6.031	5.831	6.516	6.671	7.458	6.143	6.378	6.679	6.019	5.831	6.679	6.463	o	-
900	2.888	3.155	3.458	3.871	4.901	3.334	3.567	3.457	3.298	2.888	3.567	3.579	o	-
910	1.896	2.500	2.336	3.277	3.973	2.786	2.792	3.147	2.757	1.896	3.147	2.838	o	-
920	2.385	2.933	3.109	3.487	3.777	3.071	3.050	3.505	3.006	2.385	3.505	3.165	o	-
930	1.873	2.546	2.388	3.080	3.203	2.486	2.498	2.304	2.246	1.873	2.546	2.547	o	-
940	2.888	3.155	3.458	3.871	4.901	3.334	3.567	3.457	3.298	2.888	4.901	3.579	o	-
950	2.033	2.621	2.664	3.170	3.848	2.677	2.686	2.867	2.422	2.033	2.867	2.821	o	-
960	0.953	1.144	1.057	1.370	1.306	1.179	1.378	1.403	1.064	0.953	1.403	1.224	o	-
990	2.422	2.912	3.436	2.819	3.525	1.859		2.779	2.124	1.859	3.525	2.822	o	-
195	0.651	0.728	0.616	0.853	0.806	0.799	0.791	0.790	0.758	0.616	0.853	0.754	o	-
200	0.863	1.017			1.111	1.105	1.101	1.126	1.093	0.863	1.126	1.054	o	-
210	0.476	1.017			1.101	1.097	1.068	1.142	0.949	0.476	1.142	0.983	o	-
215	1.007	1.166			1.347	1.216	1.184	1.192	1.221	1.007	1.347	1.185	o	-
220	0.560	1.166	0.937	1.340	1.342	1.215	1.179	1.213	1.048	0.560	1.342	1.119	o	-
230	1.059	1.646	1.455	1.875	1.878	1.700	1.708	1.749	1.411	1.059	1.878	1.634	o	-
240	0.739	1.347	1.119	1.540	1.542	1.398	1.361	1.397	1.231	0.739	1.542	1.305	o	-
250	3.360	3.036	2.605	2.590	2.582	2.258	3.228	4.912	3.014	2.258	4.912	3.071	o	-
270	6.356	6.641		7.163	7.967	6.819	6.764	6.867	6.559	6.356	7.967	6.940	o	-
280	4.444	4.631		5.220	5.759	4.630	4.786	5.236	4.679	4.444	5.759	4.958	o	-
290	6.269	6.555		6.910	7.793	6.700	6.203	6.621	6.476	6.203	7.793	6.722	o	-
300	3.404	4.093		4.642	5.072	4.336	4.278	4.929	4.051	3.404	5.072	4.393	o	-
310	2.848	3.749		4.186	4.666	3.669	3.589	3.425	3.095	2.848	4.666	3.733	o	-
320	5.701	5.946		6.484	7.332	6.183	6.178	6.141	5.936	5.701	7.332	6.281	o	-
395	0.000	0.362	0.000	0.394	0.421	0.356	0.363	0.345	0.117	0.000	0.421	0.280	o	-
400	0.000	0.581	0.265	0.666	0.712	0.612	0.613	0.572	0.375	0.000	0.712	0.503	o	-
410	0.035	0.699	0.413	0.814	0.863	0.724	0.743	0.710	0.484	0.035	0.863	0.625	o	-
420	0.258	0.923	0.631	1.047	1.078	0.938	0.938	0.921	0.718	0.258	1.078	0.842	o	-
430	1.493	1.772	1.427	1.762	1.779	1.575	1.798	2.578	1.933	1.427	2.578	1.773	o	-
440	4.546	4.424		5.053	5.615	4.465	4.686	5.278	4.579	4.424	5.615	4.867	o	-
800	0.585	0.967	0.743	1.352	1.382	1.028	0.983	1.358	1.284	0.585	1.382	1.050	o	-
810	1.852	2.357		2.991	3.624	2.432	2.344	2.862	2.231	1.852	3.624	2.637	o	-

FREE-FLOAT TEMPERATURE OUTPUT

MAXIMUM ANNUAL HOURLY ZONE TEMPERATURE (C)

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)					
600FF	64.9	65.1	69.5	68.6	69.8	64.9	65.3	65.3	65.5	64.900	69.810	66.669	○	-
900FF	41.8	43.4	42.7	44.8	43.4	43.0	42.5	43.2	42.2	41.812	44.800	43.103	○	-
650FF	63.2	63.5	68.2	67.0	68.5	63.3	63.7	63.8	63.6	63.236	68.490	65.155	○	-
950FF	35.5	36.2	35.9	38.5	35.7	36.1	35.7	37.6	35.6	35.540	38.500	36.396	○	-
960	48.9	48.9	49.0	51.0	51.2	50.2	55.3	48.9	67.6	48.880	55.340	50.437	×	189.1%

MINIMUM ANNUAL HOURLY ZONE TEMPERATURE (C)

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)					
600FF	-15.6	-17.1	-18.8	-18.0	-10.0	-17.8	-17.8	-18.5	-18.4	-18.800	-9.960	-16.682	○	-
900FF	-1.6	-3.2	-4.3	-4.5	-3.9	-4.0	-6.4	-5.6	-3.9	-6.380	-1.647	-4.195	○	-
650FF	-22.6	-23.0	-21.6	-23.0	-10.0	-22.9	-22.8	-22.9	-23.0	-23.000	-9.970	-21.092	×	0.0%
950FF	-19.5	-20.0	-18.6	-19.7	-9.8	-20.2	-19.3	-20.0	-18.8	-20.200	-9.830	-18.394	○	-
960	2.7	1.6	3.9	3.1	2.2	1.4	-2.8	-0.4	-4.1	-2.820	3.900	1.471	×	-19.3%

AVERAGE ANNUAL HOURLY ZONE TEMPERATURE (C)

CODENAM	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
COUNTRY	UK-DMU	USA/ITALY	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
CASE#	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)	TMP (C)					
600FF	25.1	25.4	24.6	25.5	25.9	25.2	24.5	24.2	25.2	24.220	25.930	25.060	○	-
900FF	25.5	25.9	24.7	25.5	25.7	25.2	24.5	24.5	25.3	24.450	25.930	25.177	○	-
650FF	18.2	18.7	19.1	19.0	19.6	18.4	18.0	18.4	18.7	17.990	19.620	18.669	○	-
950FF	14.1	14.3	14.3	15.0	14.3	14.0	14.5	14.6	14.7	14.000	14.970	14.391	○	-
960	27.5	27.7	28.0	28.7	28.5	28.0	29.0	26.4	27.9	26.430	28.960	27.979	○	-

HOURLY INCIDENT SOLAR RADIATION CLOUDY DAY, MARCH 5

CASE 600 OR 900

SOUTH SURFACE

(USE COLUMN B ONLY)

CODENAM	BLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/UK	FINLAND		MIN	MAX	
HOURL	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2			
1		0	0	0	0	0	0	0	0.00	0	0	0.000
2		0	0	0	0	0	0	0	0.00	0	0	0.000
3		0	0	0	0	0	0	0	0.00	0	0	0.000
4		0	0	0	0	0	0	0	0.00	0	0	0.000
5		0	0	0	0	0	0	0	0.00	0	0	0.000
6		0	0	0	0	0	0	0	0.00	0	0	0.000
7		1.5	3.0	3.02	1.60	3	3.05	3	3.05	1.5	3.05	2.602
8		12.59	20.6	20.59	13.80	21	20.69	20.68	20.62	12.59	21	18.571
9		30.01	38.9	38.83	31.60	39	38.94	38.94	38.86	30.01	39	36.601
10		46.23	54.6	54.53	48.30	55	54.67	54.56	54.54	46.23	55	52.551
11		59.31	66.0	54.77	61.60	66	66.08	65.99	65.95	54.77	66.08	62.818
12		65.05	71.8	59.65	69.30	72	71.92	71.74	71.77	59.65	72	68.778
13		66.98	72.3	60.10	71.70	72	72.42	72.3	72.28	60.1	72.42	69.683
14		63.11	66.4	55.24	68.10	66	66.53	66.38	66.41	55.24	68.1	64.538
15		51.79	54.9	45.68	58.90	55	55	54.8	54.91	45.68	58.9	53.724
16		37.13	38.9	32.37	44.40	39	38.94	38.84	38.90	32.37	44.4	38.509
17		19.14	20.5	17.06	26.90	20	20.52	20.46	20.49	17.06	26.9	20.651
18		4.62	3.0	2.54	8.70	3	3.05	0	3.06	0	8.7	3.565
19		0	0	0	0	0	0	0	0.00	0	0	0.000
20		0	0	0	0	0	0	0	0.00	0	0	0.000
21		0	0	0	0	0	0	0	0.00	0	0	0.000
22		0	0	0	0	0	0	0	0.00	0	0	0.000
23		0	0	0	0	0	0	0	0.00	0	0	0.000
24		0	0	0	0	0	0	0	0.00	0	0	0.000

HOURLY INCIDENT SOLAR RADIATION CLOUDY DAY, MARCH 5
CASE 600 OR 900
WEST SURFACE
(USE COLUMN B ONLY)

CODENAMBLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/U	FINLAND	MIN	MAX	
HOURL	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2			
1		0	0	0	0	0	0	0	0.00	0	0.000
2		0	0	0	0	0	0	0	0.00	0	0.000
3		0	0	0	0	0	0	0	0.00	0	0.000
4		0	0	0	0	0	0	0	0.00	0	0.000
5		0	0	0	0	0	0	0	0.00	0	0.000
6		0	0	0	0	0	0	0	0.00	0	0.000
7		1.8	3.0	3	1.60	3	2.99	3	2.99	1.6	2.627
8		13.92	20.2	20.24	13.50	20	20.17	20.15	20.21	13.5	18.309
9		31.75	38.0	38.01	31	38	37.92	37.9	37.98	31	36.076
10		45.24	53.2	53.27	47.10	53	53.17	53.15	53.27	45.24	51.168
11		56.63	64.5	64.5	59.70	64	64.39	64.4	64.48	53.37	60.994
12		61.58	70.0	70.0	67.40	70	69.89	69.95	69.99	57.91	66.673
13		63.7	70.8	70.8	67.10	71	70.75	71.16	70.67	58.3	67.974
14		61.46	65.7	65.7	67.30	66	65.69	66.02	65.52	54.15	63.755
15		51.67	54.9	54.9	58.90	55	55.03	55.16	54.80	45.38	53.723
16		37.2	39.5	39.5	44.90	40	39.61	39.73	39.39	32.7	39.090
17		16.72	21.3	21.3	27.60	21	21.42	21.6	21.24	16.72	21.047
18		2.52	3.3	3.3	9	3	3.28	0	3.24	0	3.400
19		0	0	0	0	0	0	0	0.00	0	0.000
20		0	0	0	0	0	0	0	0.00	0	0.000
21		0	0	0	0	0	0	0	0.00	0	0.000
22		0	0	0	0	0	0	0	0.00	0	0.000
23		0	0	0	0	0	0	0	0.00	0	0.000
24		0	0	0	0	0	0	0	0.00	0	0.000

HOURLY INCIDENT SOLAR RADIATION, CLEAR DAY, JULY 27
CASE 600
SOUTH SURFACE
(USE COLUMN B ONLY)

CODENAMBLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/U	FINLAND	MIN	MAX	
HOURL	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2			
1		0	0	0	0	0	0	0	0.00	0	0.000
2		0	0	0	0	0	0	0	0.00	0	0.000
3		0	0	0	0	0	0	0	0.00	0	0.000
4		0	0	0	0	0	0	0	0.00	0	0.000
5		0	0.2	0.14	0.50	0	0.17	0.2	0.17	0	0.168
6		20.11	27.8	29.94	17.90	28	27.01	25.7	26.16	17.9	25.213
7		70.22	77.3	89.20	58.60	80	63	62.1	81.04	58.6	71.489
8		108.13	100.0	112.85	100.40	104	71.22	107.47	106.96	71.22	100.580
9		219.58	211.0	164.86	205.90	217	187.72	232.33	210.67	164.86	205.485
10		343.67	331.0	291.84	326	336	314.17	349.16	331.55	291.84	327.407
11		435.54	418.2	389.26	415.10	423	404.44	430.22	419.90	389.26	416.533
12		475.37	455.0	437.20	454.80	459	443.61	459.85	458.03	437.2	454.975
13		488.49	464.6	455.75	455.60	469	452.50	462.28	469.06	452.5	464.027
14		443.66	413.6	413.67	408.60	418	400.56	404.57	419.41	400.56	414.671
15		367.07	334.3	341.53	321.20	340	316.94	319.26	341.29	316.94	334.326
16		246.71	211.9	223.71	200.60	218	188.89	193.61	219.37	188.89	211.923
17		119.19	111.7	105.72	102.30	115	86.03	132.3	108.82	86.03	110.326
18		68.86	73.1	68.47	78.80	74	69.78	76.6	72.58	68.47	72.798
19		19.75	17.7	14.35	37.10	18	17.61	18.05	17.65	14.35	20.366
20		0	0	0	1.10	0	0	0	0.00	0	0.157
21		0	0	0	0	0	0	0	0.00	0	0.000
22		0	0	0	0	0	0	0	0.00	0	0.000
23		0	0	0	0	0	0	0	0.00	0	0.000
24		0	0	0	0	0	0	0	0.00	0	0.000

HOURLY INCIDENT SOLAR RADIATION, CLEAR DAY, JULY 27
CASE 600
WEST SURFACE
(USE COLUMN B ONLY)

CODENAM	BLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/U	FINLAND		MIN	MAX	
HOURL	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2	Wh/m2			
1		0	0	0	0	0	0	0	0.00	0	0	0.000
2		0	0	0	0	0	0	0	0.00	0	0	0.000
3		0	0	0	0	0	0	0	0.00	0	0	0.000
4		0	0	0	0	0	0	0	0.00	0	0	0.000
5		0	0.2	0.14	0.40	0	0.17	0.2	0.17	0	0.4	0.154
6		19.96	27.8	29.94	17.90	28	27.01	25.7	26.16	17.9	29.94	25.191
7		65.86	77.3	89.20	58.50	80	63	62.1	81.04	58.5	89.2	70.852
8		97.11	100.0	112.85	91.80	104	71.22	72	106.96	71.22	112.85	92.710
9		116.89	120.1	121.41	113.70	125	85.58	92.6	127.13	85.58	125	110.747
10		128.97	135.0	123.51	131.20	140	98.03	112.8	141.15	98.03	140	124.210
11		138.05	149.6	125.06	145.70	154	109.14	136.75	153.98	109.14	154	136.898
12		141.34	153.1	121.07	153.80	157	113.06	150.9	155.43	113.06	157	141.472
13		243.51	266.4	117.94	267.70	270	235.17	382.5	245.86	117.94	382.5	254.753
14		462.83	461.3	333.68	464.80	463	453.89	576.81	440.65	333.68	576.81	459.470
15		664.62	635.5	525.35	635.10	635	652.50	744.52	616.06	525.35	744.52	641.800
16		786.35	719.3	634.59	738.30	715	762.78	807.29	703.76	634.59	807.29	737.662
17		649.05	502.8	478.44	623.90	497	568.33	541.68	496.09	478.44	649.05	551.598
18		243.11	141.2	140.30	296.90	139	158	145.25	140.57	139	296.9	180.543
19		43.19	25.2	21.96	68.80	24	26.60	24.9	25.22	21.96	68.8	33.528
20		0	0	0	1.60	0	0	0	0.00	0	1.6	0.229
21		0	0	0	0	0	0	0	0.00	0	0	0.000
22		0	0	0	0	0	0	0	0.00	0	0	0.000
23		0	0	0	0	0	0	0	0.00	0	0	0.000
24		0	0	0	0	0	0	0	0.00	0	0	0.000

HOURLY FREE FLOAT TEMPERATURE DATA
CASE 600FF JAN 4
(USE COLUMN B ONLY)

CODENAM	BLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/U	FINLAND		MIN	MAX	
HOURL	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)			
1	-12.0	-12.3	-12.21	-11.97	-8.88	-12.1	-12.02	-13.04	-11.86	-13.04	-8.88	-11.820
2	-13.5	-14.1	-13.8	-13.59	-10.48	-13.7	-13.50	-14.59	-13.54	-14.59	-10.48	-13.410
3	-14.4	-15.4	-14.9	-14.85	-11.76	-14.7	-14.70	-15.65	-14.91	-15.65	-11.76	-14.545
4	-15.3	-16.3	-15.79	-15.83	-12.75	-15.6	-15.65	-16.46	-15.96	-16.46	-12.75	-15.455
5	-16.0	-17.1	-16.55	-16.65	-13.69	-16.4	-16.47	-17.16	-16.89	-17.16	-13.69	-16.252
6	-16.4	-17.9	-17.2	-17.33	-14.49	-17	-17.14	-17.79	-17.70	-17.9	-14.49	-16.906
7	-17.0	-18.5	-17.74	-17.90	-15.15	-17.6	-17.70	-18.32	-18.39	-18.5	-15.15	-17.490
8	-17.1	-18.8	-17.85	-18.09	-15.63	-17.8	-17.59	-18.47	-18.38	-18.8	-15.63	-17.660
9	-13.7	-14.7	-14.88	-15.46	-14.63	-14.6	-13.46	-15.47	-14.80	-15.47	-13.46	-14.617
10	-8.0	-7.8	-9.07	-9.56	-10.03	-8.9	-7.10	-9.56	-8.89	-10.03	-7.1	-8.752
11	2.6	3.2	1.01	0.68	-2.20	1	3.66	0.49	1.69	-2.2	3.66	1.305
12	12.2	13.4	11.21	12.04	8.84	10.7	13.49	10.39	11.60	8.84	13.49	11.536
13	20.9	22.3	20.03	21.88	18.96	19.2	21.77	18.75	20.06	18.75	22.3	20.469
14	27.5	29.5	27.27	29.82	27.19	26.1	28.26	25.48	26.79	25.48	29.82	27.644
15	31.3	33.8	31.34	34.69	33.22	29.8	32.09	29.21	30.73	29.21	34.69	31.935
16	31.1	33.5	31.47	35.46	35.51	29.7	32.16	28.97	30.77	28.97	35.51	32.229
17	24.3	27	25.96	30.33	31.46	23.9	25.71	22.58	24.82	22.58	31.46	26.403
18	17.5	19.7	18.96	22.66	23.99	17.6	18.84	15.59	18.47	15.59	23.99	19.350
19	12.1	13.7	13.04	15.86	18.08	12.2	13.10	10.2	12.99	10.2	18.08	13.529
20	7.6	8.7	8.31	10.34	13.02	7.8	8.41	6.02	8.47	6.02	13.02	8.771
21	3.6	4.4	4.27	5.73	8.87	4	4.39	2.39	4.70	2.39	8.87	4.706
22	0.5	1	0.99	1.92	5.12	0.9	0.97	-0.59	1.44	-0.59	5.12	1.353
23	-1.9	-1.9	-1.66	-1.15	2.03	-1.7	-1.78	-3.04	-1.28	-3.04	2.03	-1.392
24	-4.1	-4.4	-3.92	-3.69	-1.03	-3.9	-4.03	-5.14	-3.67	-5.14	-1.03	-3.773

HOURLY FREE FLOAT TEMPERATURE DATA
CASE 900FF JAN 4
(USE COLUMN B ONLY)

CODENAMBLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/UK	FINLAND	MIN	MAX	

HOURLY FREE FLOAT TEMPERATURE DATA
CASE 650FFV JULY 27
(USE COLUMN B ONLY)

CODENAMBLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average	
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/UK	FINLAND		MIN	MAX	

HOURLY FREE FLOAT TEMPERATURE DATA
CASE 950FFV JULY 27
(USE COLUMN B ONLY)

CODENAMBLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average	
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/UK	FINLAND		MIN	MAX	

HOURLY HEATING & COOLING LOAD DATA
CASE 600 JAN 4
[USE (-) FOR COOLING]

CODENAMBLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average	
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/UK	FINLAND		MIN	MAX	
HOURLY	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh			
1	3.802	3.926	4.13	4.19	3.25	3.93	3.767	4.225	3.66	3.25	4.23	3.902
2	3.911	4.035	4.26	4.31	3.41	4.04	3.867	4.354	3.79	3.41	4.35	4.022
3	3.866	4.013	4.23	4.25	3.39	4	3.903	4.321	3.83	3.39	4.32	3.998
4	3.920	4.041	4.22	4.23	3.38	4	3.894	4.308	3.81	3.38	4.31	3.999
5	3.940	4.045	4.22	4.23	3.42	4	3.917	4.303	3.81	3.42	4.3	4.009
6	3.926	4.036	4.22	4.23	3.43	4	3.931	4.307	3.82	3.43	4.31	4.010
7	3.937	4.045	4.22	4.23	3.42	4	3.931	4.307	3.82	3.42	4.31	4.011
8	3.702	3.857	4.09	4.04	3.34	3.9	3.753	4.167	3.63	3.34	4.17	3.856
9	2.675	2.559	2.9	2.36	2.77	2.71	2.423	2.912	2.41	2.36	2.91	2.663
10	1.383	0.843	1.28	0.33	1.50	1.15	0.797	1.466	0.94	0.33	1.5	1.092
11	0.000	0.000	0	-0.15	0.15	0	-0.035	0.000	0.00	-0.15	0.15	-0.004
12	-1.224	-1.552	-1.07	-2.99	-0.77	-1.04	-1.435	-0.424	-1.35	-2.99	-0.42	-1.312
13	-2.487	-2.854	-2.59	-4.12	-2.66	-2.5	-2.720	-2.364	-2.62	-4.12	-2.36	-2.787
14	-2.958	-3.398	-3.23	-4.25	-3.58	-3.09	-3.156	-2.759	-3.09	-4.25	-2.76	-3.301
15	-2.631	-3.116	-2.83	-3.31	-3.53	-2.64	-2.844	-2.431	-2.76	-3.53	-2.43	-2.915
16	-1.349	-1.820	-1.55	-1.44	-2.44	-1.35	-1.716	-1.140	-1.56	-2.44	-1.14	-1.600
17	0.000	0.000	0	0	-0.36	0	0.000	0.000	0.00	-0.36	0	-0.045
18	0.950	0.775	0.8	1.76	0.24	0.88	0.773	1.292	0.61	0.24	1.76	0.934
19	2.378	2.232	2.34	3.38	1.53	2.33	2.301	2.445	2.10	1.53	3.38	2.367
20	2.866	2.933	2.99	3.68	2.32	2.95	2.967	2.941	2.74	2.32	3.68	2.955
21	3.213	3.323	3.37	3.82	2.64	3.31	3.278	3.405	3.05	2.64	3.82	3.294
22	3.285	3.487	3.53	3.82	2.90	3.35	3.461	3.594	3.23	2.9	3.82	3.429
23	3.331	3.514	3.61	3.79	3.02	3.49	3.500	3.696	3.31	3.02	3.79	3.493
24	3.388	3.561	3.66	3.78	3.01	3.53	3.472	3.769	3.36	3.01	3.78	3.521

HOURLY HEATING & COOLING LOAD DATA

CASE 900 JAN 4

[USE (-) FOR COOLING]

CODENAM	BLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/UK	FINLAND		MIN	MAX	
HOURL	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh			
1	3.104	3.1	3.39	3.74	2.44	3.21	3.081	3.400	2.94	2.44	3.74	3.183
2	3.199	3.24	3.54	3.90	2.61	3.35	3.203	3.547	3.09	2.61	3.9	3.322
3	3.204	3.28	3.56	3.91	2.62	3.38	3.278	3.573	3.17	2.62	3.91	3.351
4	3.306	3.38	3.61	3.97	2.67	3.45	3.331	3.629	3.22	2.67	3.97	3.417
5	3.367	3.45	3.67	4.01	2.74	3.51	3.417	3.687	3.28	2.74	4.01	3.480
6	3.399	3.5	3.72	4.05	2.80	3.56	3.469	3.747	3.34	2.8	4.05	3.530
7	3.453	3.56	3.76	4.08	2.83	3.61	3.517	3.797	3.38	2.83	4.08	3.575
8	3.376	3.52	3.75	4.02	2.84	3.61	3.464	3.794	3.34	2.84	4.02	3.545
9	2.898	2.97	3.17	3.09	2.64	3.08	2.833	3.168	2.80	2.64	3.17	2.982
10	2.346	2.2	2.32	1.81	2.12	2.35	2.056	2.449	2.10	1.81	2.45	2.206
11	1.398	1.03	0.95	0.11	1.50	1.12	0.793	1.293	0.84	0.11	1.5	1.024
12	0.377	0.23	0.1	0	0.68	0.3	0.037	0.619	0.00	0	0.68	0.293
13	0.000	0	0	0	0.07	0	0.000	0.136	0.00	0	0.14	0.026
14	0.000	0	0	0	0	0	0.000	0.000	0.00	0	0	0.000
15	0.000	0	0	0	0	0	0.000	0.000	0.00	0	0	0.000
16	0.000	0	0	0	0	0	0.000	0.088	0.00	0	0.09	0.011
17	0.124	0	0.28	0	0.03	0.14	0.135	1.198	0.00	0	1.2	0.238
18	0.767	0.74	1.22	0	0.41	0.91	0.764	1.602	0.69	0	1.6	0.801
19	1.306	1.14	1.61	0.26	0.80	1.28	1.199	1.805	1.13	0.26	1.81	1.175
20	1.613	1.43	1.82	1.00	1.07	1.54	1.459	1.943	1.41	1	1.94	1.483
21	1.926	1.7	2.04	1.57	1.27	1.81	1.701	2.121	1.63	1.27	2.12	1.767
22	2.136	1.89	2.17	1.96	1.50	2	1.934	2.227	1.83	1.5	2.23	1.978
23	2.221	2.03	2.29	2.27	1.66	2.15	2.092	2.338	1.99	1.66	2.34	2.132
24	2.311	2.19	2.42	2.55	1.75	2.31	2.227	2.458	2.14	1.75	2.55	2.277

CODENAM	BLAST	DOE2.1D	SUNCODE	SERI-RES	ESP	S3PAS	VUB/BRE	TASE	Popolo	RANGE	RANGE	Average
COUNTRY	US/ITALY	USA	USA	UK	UK-DMU	SPAIN	Belgium/U	FINLAND		MIN	MAX	
TEMP (C)	# HOURS	# HOURS	# HOURS	# HOURS	# HOURS	# HOURS	# HOURS	# HOURS	# HOURS			
-10	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
-8	0	0	0	0	0	0	0	0	0	0	0	0
-7	0	0	0	0	0	0	0	1	0	0	1	0.13
-6	0	0	0	0	0	0	0	3	2	0	3	0.63
-5	0	1	2	0	0	0	0	3	4	0	4	1.25
-4	1	3	3	4	0	4	6	5	4	0	6	3.25
-3	3	7	5	2	0	3	6	7	2	0	7	4.13
-2	5	5	7	7	3	8	12	10	5	3	12	7.13
-1	6	10	7	5	3	5	13	18	10	3	18	8.38
0	10	18	19	18	8	18	12	20	14	8	20	15.38
1	17	17	19	10	6	20	12	12	13	6	20	14.13
2	14	18	13	20	18	14	20	16	16	13	20	16.63
3	19	19	15	15	18	19	18	25	16	15	25	18.5
4	14	20	23	20	17	21	20	24	19	17	24	19.88
5	25	30	28	24	18	27	26	27	20	18	30	25.63
6	19	25	29	27	22	30	34	35	32	22	35	27.63
7	33	37	28	28	31	33	29	45	31	28	45	33
8	34	51	46	33	30	46	44	59	33	30	59	42.88
9	42	59	62	57	42	61	55	73	61	42	73	56.38
10	54	84	69	53	51	71	57	118	58	51	118	69.63
11	72	107	111	89	67	116	95	134	89	67	134	98.88
12	115	139	137	112	90	127	127	138	117	90	139	123.13
13	137	153	141	142	115	157	143	173	143	115	173	145.13
14	159	158	154	151	156	160	162	183	176	151	183	160.38
15	165	206	188	178	172	207	183	234	172	172	234	191.63
16	198	239	232	195	215	224	234	274	226	195	274	226.38
17	245	274	253	248	244	255	273	298	252	244	298	261.25
18	277	350	301	266	293	315	296	342	283	266	350	305
19	317	322	336	332	338	347	356	352	348	322	356	337.5
20	365	375	342	344	387	352	346	331	360	331	387	355.25
21	358	392	362	361	398	366	388	334	382	334	398	369.88
22	372	364	329	376	385	349	380	343	370	329	385	362.25
23	341	370	348	366	396	357	366	349	360	348	396	361.63
24	368	381	352	341	380	341	401	338	371	338	401	362.75
25	357	432	361	397	417	392	404	404	383	361	432	395.5
26	389	431	373	426	455	399	436	393	426	373	455	412.75
27	420	415	415	418	459	403	465	396	462	396	465	423.88
28	463	452	390	446	445	440	412	411	450	390	452	432.38
29	419	410	405	432	459	396	408	391	442	391	459	415
30	396	404	418	422	415	395	398	362	434	362	422	401.25
31	393	342	401	389	406	360	335	342	394	335	406	371
32	348	349	341	334	369	337	348	322	381	322	369	343.5
33	315	309	330	338	339	306	310	291	333	291	339	317.25
34	321	242	285	311	277	306	297	266	275	242	311	288.13
35	303	197	246	262	230	256	202	210	232	197	262	238.25
36	254	185	213	203	191	217	197	169	183	169	217	203.63
37	195	136	156	189	164	166	161	151	155	136	189	164.75
38	175	92	146	137	108	138	97	132	103	92	146	128.13
39	99	74	112	103	71	97	86	85	72	71	112	90.88
40	66	35	90	71	37	57	48	59	38	35	90	57.88
41	32	16	58	35	15	31	22	32	13	15	58	30.13
42	25	5	36	18	0	10	11	20	1	0	36	15.63
43	5	0	18	5	0	1	2	1	0	0	18	4
44	0	0	5	0	0	0	0	0	0	0	5	0.63
45	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0

LOW MASS QUALIFICATION TESTS

ANNUAL HEATING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
610-600	0.059	0.033	0.077	0.054	0.024	0.089	0.098	0.021	0.035	0.021	0.098	0.057	o	-
620-600	0.317	0.276	0.235	0.328	0.138	0.682	0.201	0.366	0.225	0.138	0.682	0.318	o	-
630-620	0.437	0.310	0.525	0.329	0.267	0.531	0.551	1.290	0.403	0.267	0.551	0.530	o	-
640-600	-1.545	-1.885	-2.166	-1.971	-1.793	-1.817	-1.829	-2.053	-1.812	-2.166	-1.545	-1.882	o	-

ANNUAL COOLING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
610-600	-2.222	-1.582	-2.227	-1.830	-2.186	-1.728	-1.891	-1.272	-1.478	-2.227	-1.272	-1.867	o	-
620-600	-2.720	-2.341	-2.745	-2.645	-2.960	-2.481	-2.591	-2.427	-2.155	-2.960	-2.341	-2.614	x	30.1%
630-620	-1.288	-0.984	-1.845	-1.140	-1.303	-1.522	-1.485	-2.630	-1.553	-1.845	-0.984	-1.525	o	-
640-600	-0.185	-0.250	-0.320	-0.252	-0.153	-0.245	-0.246	-0.270	-0.286	-0.320	-0.153	-0.240	o	-
650-600	-1.321	-1.293	-1.284	-1.384	-1.419	-1.404	-1.373	-1.322	-1.424	-1.419	-1.284	-1.350	x	-4.0%

PEAK HEATING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
610-600	0.000	0.001	-0.011	0.000	-0.001	0.000	-0.008	0.000	0.000	-0.011	0.000	-0.002	x	0.3%
620-600	0.154	0.001	0.001	0.019	-0.001	0.240	-0.008	0.025	0.006	-0.008	0.240	0.054	o	-
630-620	0.001	0.000	-0.021	0.003	0.000	0.001	0.000	0.000	0.001	-0.021	0.003	-0.002	o	-
640-600	1.795	1.546	1.898	2.272	3.771	2.310	1.792	2.600	2.084	1.546	2.600	2.248	o	-

PEAK COOLING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
610-600	-0.525	-0.141	-0.592	-0.456	-0.336	-0.116	-0.811	-0.666	-0.227	-0.811	-0.116	-0.455	o	-
620-600	-2.560	-1.890	-2.226	-2.234	-2.592	-1.989	-2.211	-1.716	-2.109	-2.560	-1.716	-2.177	o	-
630-620	-0.562	-0.371	-0.842	-0.477	-0.559	-0.632	-0.667	-1.550	-0.954	-0.842	-0.371	-0.707	x	-23.8%
640-600	-0.033	-0.073	-0.080	-0.051	-0.014	-0.036	-0.044	-0.041	-0.059	-0.080	-0.014	-0.047	o	-
650-600	-0.163	-0.134	-0.140	-0.156	-0.093	-0.143	-0.108	-0.133	-0.165	-0.163	-0.108	-0.134	x	-2.8%

HIGH MASS QUALIFICATION TESTS

ANNUAL HEATING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
900-600	-3.126	-3.163	-3.837	-3.329	-3.608	-3.152	-3.217	-3.321	-3.195	-3.837	-3.126	-3.344	o	-
910-900	0.405	0.252	0.382	0.277	0.294	0.333	0.442	0.179	0.224	0.179	0.442	0.321	o	-
920-900	2.143	2.142	2.383	2.196	2.070	2.505	2.121	2.259	2.028	2.070	2.505	2.227	x	-9.7%
930-920	0.830	0.595	1.080	0.662	0.670	0.933	0.964	2.006	0.800	0.595	1.080	0.968	o	-
940-900	-0.377	-0.589	-0.633	-0.666	-0.577	-0.551	-0.575	-0.718	-0.519	-0.718	-0.377	-0.586	o	-
960-900	1.141	1.054	1.056	0.987	0.863	1.213	1.718	0.775	1.045	0.775	1.718	1.101	o	-
990-900	1.052	1.838	1.553	1.075	2.336	2.571		1.772	2.156	1.052	2.571	1.742	o	-

ANNUAL COOLING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
900-600	-4.005	-3.833	-4.624	-4.113	-4.549	-3.920	-4.007	-4.179	-3.981	-4.624	-3.833	-4.154	o	-
910-900	-1.311	-1.067	-1.479	-1.293	-1.561	-1.144	-1.159	-0.832	-1.006	-1.561	-0.832	-1.231	o	-
920-900	-0.292	0.016	-0.015	-0.222	-0.323	-0.115	-0.067	0.014	0.204	-0.323	0.016	-0.126	x	55.4%
930-920	-0.801	-0.682	-1.174	-0.770	-0.854	-1.018	-1.002	-1.719	-1.075	-1.174	-0.682	-1.003	o	-
940-900	-0.053	-0.064	-0.115	-0.129	-0.174	-0.083	-0.102	-0.083	-0.098	-0.174	-0.053	-0.100	o	-
950-900	-1.745	-2.074	-1.917	-2.244	-2.826	-2.021	-1.924	-1.828	-1.909	-2.826	-1.745	-2.072	o	-
960-900	-1.644	-1.934	-2.027	-2.362	-2.697	-1.929	-2.074	-1.813	-1.900	-2.697	-1.644	-2.060	o	-
990-900	-1.131	-0.960	-0.614	-1.778	-2.701	-1.956		-1.211	-1.795	-2.701	-0.614	-1.479	o	-

PEAK HEATING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
900-600	-0.587	-0.487	-0.488	-0.498	-0.226	-0.429	-0.414	-0.557	-0.447	-0.587	-0.414	-0.461	o	-
910-900	0.008	0.003	0.007	0.004	0.002	0.010	0.019	0.004	0.001	0.003	0.019	0.007	x	-12.5%
920-900	0.458	0.250	0.248	0.253	0.075	0.421	0.192	0.264	0.205	0.192	0.458	0.270	o	-
930-920	0.047	0.029	0.027	0.029	0.009	0.035	0.036	0.127	0.027	0.027	0.127	0.042	x	-0.1%
940-900	1.130	1.575	2.108	2.356	5.842	2.509	1.606	2.631	2.324	1.130	2.631	2.470	o	-
960-900	-0.440	-0.702	-0.830	-0.897	-1.185	-0.756	-0.995	-1.018	-0.741	-1.018	-0.440	-0.853	o	-
990-900	-0.081	0.281	-0.130	-0.079	-0.343	0.191		0.499	-0.282	-0.343	0.499	0.048	o	-

PEAK COOLING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
900-600	-3.306	-2.810	-3.198	-2.956	-2.650	-2.952	-2.919	-3.355	-2.886	-3.355	-2.810	-3.018	o	-
910-900	-0.992	-0.655	-1.122	-0.594	-0.928	-0.548	-0.775	-0.310	-0.541	-1.122	-0.310	-0.741	o	-
920-900	-0.503	-0.222	-0.349	-0.384	-1.124	-0.263	-0.517	0.048	-0.292	-0.517	0.048	-0.414	o	-
930-920	-0.512	-0.387	-0.721	-0.407	-0.574	-0.585	-0.552	-1.201	-0.760	-0.721	-0.387	-0.617	x	-11.5%
940-900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
950-900	-0.855	-0.534	-0.794	-0.701	-1.053	-0.657	-0.881	-0.590	-0.876	-0.881	-0.534	-0.758	o	-
960-900	-1.935	-2.011	-2.401	-2.501	-3.595	-2.155	-2.189	-2.054	-2.234	-2.401	-1.935	-2.355	o	-
990-900	-0.466	-0.243	-0.022	-1.052	-1.376	-1.475		-0.678	-1.173	-1.475	-0.022	-0.759	o	-

LOW MASS PRIMITIVE DIAGNOSTIC TESTS

ANNUAL HEATING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
200-195	1.085	1.664			1.715	1.663	1.524	1.961	1.781	1.085	1.961	1.602	o	-
210-200	1.204	0.000			0.111	0.099	0.159	0.085	0.893	0.000	1.204	0.276	o	-
220-215	1.397	0.000			0.184	0.141	0.167	0.118	1.018	0.000	1.397	0.335	o	-
215-200	0.295	0.656			1.260	0.645	0.735	0.437	0.737	0.295	1.260	0.671	o	-
220-210	0.488	0.656			1.333	0.687	0.743	0.470	0.863	0.470	1.333	0.730	o	-
230-220	3.432	3.525	3.456	3.531	3.522	3.615	3.543	3.527	2.448	3.432	3.615	3.519	x	-537.5%
240-220	-1.295	-1.206	-1.339	-1.333	-1.341	-1.228	-1.221	-1.203	-1.319	-1.341	-1.203	-1.271	o	-
250-220	-2.193	-1.476	-1.763	-1.494	-1.474	-1.448	-1.533	-1.699	-1.757	-2.193	-1.448	-1.635	o	-
270-220	-2.434	-2.285		-2.620	-2.207	-2.350	-2.250	-1.948	-3.079	-2.620	-1.948	-2.299	x	-68.3%
280-270	0.165	0.195		0.455	0.228	0.291	0.232	0.352	0.319	0.165	0.455	0.274	o	-
320-270	-0.651	-0.721		-0.718	-0.779	-0.729	-0.699	-0.649	-0.769	-0.779	-0.649	-0.707	o	-
290-270	0.067	0.029		0.057	0.022	0.088	0.085	0.020	0.039	0.020	0.088	0.053	o	-
300-270	0.251	0.147		0.207	0.044	0.590	0.077	0.297	0.162	0.044	0.590	0.230	o	-
310-300	0.460	0.250		0.248	0.201	0.492	0.486	1.349	0.382	0.201	1.349	0.498	o	-

ANNUAL COOLING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
200-195	0.156	0.192			0.211	0.203	0.241	0.190	0.226	0.156	0.241	0.199	o	-
210-200	-0.408	0.000			-0.018	-0.016	-0.048	0.008	-0.235	-0.408	0.008	-0.080	o	-
220-215	-0.453	0.000			-0.018	-0.015	-0.028	0.012	-0.279	-0.453	0.012	-0.084	o	-
215-200	0.069	0.088			0.154	0.072	0.050	0.038	0.079	0.038	0.154	0.078	o	-
220-210	0.024	0.088			0.154	0.073	0.069	0.042	0.036	0.024	0.154	0.075	o	-
230-220	0.268	0.275	0.293	0.304	0.304	0.286	0.303	0.302	0.205	0.268	0.304	0.292	x	-176.3%
240-220	0.229	0.371	0.261	0.412	0.411	0.374	0.377	0.362	0.284	0.229	0.412	0.350	o	-
250-220	3.027	1.844	1.778	2.096	2.096	1.752	1.947	2.697	2.664	1.752	3.027	2.155	o	-
270-220	7.342	7.969		8.804	9.515	8.061	8.027	8.031	8.076	7.342	9.515	8.250	o	-
280-270	-2.655	-2.775		-3.120	-3.236	-2.990	-3.003	-2.457	-2.901	-3.236	-2.457	-2.891	o	-
320-270	-2.467	-2.764		-3.055	-3.046	-2.881	-2.808	-3.051	-2.795	-3.055	-2.467	-2.867	o	-
290-270	-2.324	-1.659		-1.910	-2.261	-1.892	-2.065	-1.283	-1.599	-2.324	-1.283	-1.913	o	-
300-270	-3.226	-2.834		-3.106	-3.250	-2.946	-3.043	-2.933	-2.879	-3.250	-2.834	-3.048	o	-
310-300	-1.570	-1.266		-1.389	-1.629	-1.974	-1.994	-3.310	-1.865	-3.310	-1.266	-1.876	o	-

PEAK HEATING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
200-195	0.647	0.787			0.812	0.778	0.784	1.119	0.825	0.647	1.119	0.821	o	-
210-200	0.050	0.000			0.030	0.021	0.011	-0.057	0.178	-0.057	0.050	0.009	x	119.2%
220-215	0.080	0.000			0.059	0.041	0.042	0.062	0.189	0.000	0.080	0.047	x	135.8%
215-200	0.136	0.307			0.603	0.308	0.325	0.076	0.339	0.076	0.603	0.293	o	-
220-210	0.166	0.307			0.632	0.328	0.356	0.195	0.350	0.166	0.632	0.331	o	-
230-220	1.519	1.704	1.529	1.584	1.584	1.811	1.556	1.587	1.082	1.519	1.811	1.609	x	-149.8%
240-220	-0.182	-0.180	-0.183	-0.200	-0.200	-0.189	-0.183	-0.187	-0.183	-0.200	-0.180	-0.188	o	-
250-220	-0.001	-0.001	0.000	0.000	0.000	-0.007	0.000	0.005	0.000	-0.007	0.005	-0.001	o	-
270-220	-0.004	-0.003		-0.025	0.005	-0.008	0.000	0.218	-0.086	-0.025	0.218	0.026	x	-25.3%
280-270	0.001	0.001		0.015	0.000	0.001	0.000	0.021	0.002	0.000	0.021	0.006	o	-
320-270	-0.002	-0.002		-0.009	0.000	0.000	0.000	-0.003	-0.004	-0.009	0.000	-0.002	o	-
290-270	0.000	0.000		0.000	0.000	0.000	-0.008	0.000	0.000	-0.008	0.000	-0.001	x	0.1%
300-270	0.151	-0.001		0.015	0.000	0.259	-0.008	0.032	0.003	-0.008	0.259	0.064	o	-
310-300	0.001	0.001		-0.013	0.000	0.000	0.000	0.001	0.001	-0.013	0.001	-0.001	o	-

PEAK COOLING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
200-195	0.212	0.289			0.305	0.306	0.309	0.336	0.335	0.212	0.336	0.293	o	-
210-200	-0.387	0.000			-0.010	-0.008	-0.033	0.016	-0.144	-0.387	0.016	-0.070	o	-
220-215	-0.447	0.000			-0.005	-0.001	-0.005	0.021	-0.173	-0.447	0.021	-0.073	o	-
215-200	0.144	0.149			0.236	0.111	0.083	0.066	0.127	0.066	0.236	0.132	o	-
220-210	0.084	0.149			0.241	0.118	0.111	0.071	0.099	0.071	0.241	0.129	o	-
230-220	0.499	0.480	0.518	0.535	0.536	0.485	0.529	0.536	0.363	0.480	0.536	0.515	x	-209.4%
240-220	0.179	0.181	0.182	0.200	0.200	0.183	0.183	0.184	0.183	0.179	0.200	0.186	o	-
250-220	2.800	1.870	1.668	1.250	1.240	1.043	2.049	3.699	1.966	1.043	3.699	1.952	o	-
270-220	5.796	5.475		5.823	6.625	5.604	5.585	5.654	5.511	5.475	6.625	5.795	o	-
280-270	-1.912	-2.010		-1.943	-2.208	-2.189	-1.978	-1.631	-1.880	-2.208	-1.631	-1.982	o	-
320-270	-0.655	-0.695		-0.679	-0.635	-0.636	-0.586	-0.726	-0.623	-0.726	-0.586	-0.659	o	-
290-270	-0.087	-0.086		-0.253	-0.174	-0.119	-0.561	-0.246	-0.084	-0.561	-0.086	-0.218	x	0.5%
300-270	-2.952	-2.548		-2.521	-2.895	-2.483	-2.486	-1.938	-2.509	-2.952	-1.938	-2.546	o	-
310-300	-0.556	-0.344		-0.456	-0.406	-0.667	-0.689	-1.504	-0.956	-1.504	-0.344	-0.660	o	-

LOW MASS REALISTIC DIAGNOSTIC TESTS

ANNUAL HEATING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
400-395	1.916	2.276	2.935	2.767	2.772	2.320	2.311	2.487	2.980	1.916	2.935	2.473	×	4.4%
410-400	1.696	1.798	1.736	1.760	1.761	1.732	1.770	1.759	1.218	1.696	1.798	1.752	×	-468.3%
420-410	-1.298	-1.263	-1.355	-1.361	-1.361	-1.245	-1.239	-1.222	-1.333	-1.361	-1.222	-1.293	○	-
430-420	-1.869	-1.122	-1.324	-1.187	-1.187	-1.112	-1.197	-1.353	-1.343	-1.869	-1.112	-1.294	○	-
600-430	-1.133	-1.715	-2.118	-1.952	-1.590	-1.780	-1.628	-1.148	-2.183	-2.118	-1.133	-1.633	×	-6.6%
440-600	0.153	0.214		0.426	0.215	0.270	0.226	0.280	0.272	0.153	0.426	0.255	○	-

ANNUAL COOLING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
400-395	0.000	0.029	0.002	0.045	0.044	0.032	0.034	0.033	0.004	0.000	0.045	0.027	○	-
410-400	0.000	0.019	0.008	0.023	0.026	0.021	0.022	0.021	0.007	0.000	0.026	0.018	○	-
420-410	0.011	0.088	0.041	0.105	0.104	0.091	0.090	0.078	0.044	0.011	0.105	0.076	○	-
430-420	0.531	0.470	0.371	0.515	0.496	0.409	0.460	0.732	0.746	0.371	0.732	0.498	×	4.0%
600-430	5.595	5.816	6.657	6.574	7.280	5.929	5.875	5.903	5.610	5.595	7.280	6.204	○	-
440-600	-2.170	-2.261		-2.604	-2.760	-2.500	-2.517	-2.094	-2.302	-2.760	-2.094	-2.415	○	-

PEAK HEATING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
400-395	0.805	1.071	1.148	1.310	1.318	1.079	1.115	1.250	1.225	0.805	1.318	1.137	○	-
410-400	0.758	0.844	0.757	0.792	0.792	0.885	0.778	0.794	0.541	0.757	0.885	0.800	×	-168.9%
420-410	-0.182	-0.180	-0.183	-0.200	-0.200	-0.183	-0.183	-0.188	-0.183	-0.200	-0.180	-0.187	○	-
430-420	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	-0.001	0.011	0.001	○	-
600-430	-0.005	-0.004	-0.005	-0.029	0.006	-0.007	0.000	0.217	-0.089	-0.029	0.217	0.022	×	-24.3%
440-600	0.002	0.002		0.019	-0.001	0.004	0.000	0.022	0.005	-0.001	0.022	0.007	○	-

PEAK COOLING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
400-395	0.000	0.219	0.265	0.272	0.291	0.256	0.251	0.227	0.258	0.000	0.291	0.223	○	-
410-400	0.035	0.118	0.148	0.148	0.151	0.112	0.130	0.138	0.109	0.035	0.151	0.122	○	-
420-410	0.223	0.224	0.218	0.233	0.215	0.214	0.195	0.211	0.234	0.195	0.233	0.217	×	2.3%
430-420	1.235	0.849	0.796	0.715	0.701	0.637	0.861	1.657	1.216	0.637	1.657	0.931	○	-
600-430	4.701	4.193	5.229	5.065	5.772	4.711	4.688	4.234	4.250	4.193	5.772	4.824	○	-
440-600	-1.648	-1.541		-1.774	-1.936	-1.821	-1.800	-1.534	-1.605	-1.936	-1.534	-1.722	○	-

HIGH MASS DIAGNOSTIC TESTS

ANNUAL HEATING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
800-430	-0.561	-0.535	-0.599	-0.567	-0.586	-0.501	-0.560	-0.649	-0.558	-0.649	-0.501	-0.570	○	-
900-800	-3.698	-4.343	-5.356	-4.714	-4.612	-4.431	-4.285	-3.820	-4.820	-5.356	-3.698	-4.407	○	-
900-810	-0.669	-0.836		-1.107	-0.840	-0.992	-0.912	-0.921	-0.844	-1.107	-0.669	-0.897	○	-
910-610	-2.780	-2.944	-3.532	-3.106	-3.338	-2.908	-2.873	-3.163	-3.006	-3.532	-2.780	-3.081	○	-
920-620	-1.300	-1.297	-1.689	-1.461	-1.676	-1.329	-1.297	-1.428	-1.391	-1.689	-1.297	-1.435	○	-
930-630	-0.907	-1.012	-1.134	-1.128	-1.273	-0.927	-0.884	-0.712	-0.994	-1.273	-0.712	-0.997	○	-
940-640	-1.958	-1.867	-2.304	-2.024	-2.392	-1.886	-1.963	-1.986	-1.901	-2.392	-1.867	-2.048	○	-

ANNUAL COOLING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
800-430	-0.429	-0.393	-0.367	-0.432	-0.462	-0.368	-0.410	-0.550	-0.531	-0.550	-0.367	-0.426	○	-
900-800	2.019	2.376	2.400	2.893	3.193	2.377	2.278	2.274	2.161	2.019	3.193	2.476	○	-
900-810	1.080	1.195		1.454	1.707	1.265	1.294	0.975	1.266	0.975	1.707	1.281	○	-
910-610	-3.094	-3.318	-3.876	-3.576	-3.924	-3.336	-3.275	-3.739	-3.509	-3.924	-3.094	-3.517	○	-
920-620	-1.577	-1.476	-1.894	-1.690	-1.912	-1.554	-1.483	-1.738	-1.622	-1.912	-1.476	-1.666	○	-
930-630	-1.090	-1.174	-1.223	-1.320	-1.463	-1.050	-1.000	-0.827	-1.144	-1.463	-0.827	-1.143	○	-
940-640	-3.873	-3.647	-4.419	-3.990	-4.570	-3.758	-3.863	-3.992	-3.793	-4.570	-3.647	-4.014	○	-
950-650	-4.429	-4.614	-5.257	-4.973	-5.956	-4.537	-4.558	-4.685	-4.465	-5.956	-4.429	-4.876	○	-

PEAK HEATING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
800-430	-0.215	-0.151	-0.141	-0.149	-0.113	-0.142	-0.144	-0.198	-0.162	-0.215	-0.113	-0.157	○	-
900-800	-0.377	-0.340	-0.352	-0.378	-0.107	-0.294	-0.269	-0.142	-0.373	-0.378	-0.107	-0.282	○	-
900-810	-0.129	-0.113		-0.155	-0.034	-0.101	-0.089	-0.166	-0.091	-0.166	-0.034	-0.112	○	-
910-610	-0.579	-0.485	-0.470	-0.494	-0.223	-0.419	-0.386	-0.553	-0.446	-0.579	-0.223	-0.451	○	-
920-620	-0.283	-0.238	-0.241	-0.264	-0.150	-0.248	-0.214	-0.318	-0.247	-0.318	-0.150	-0.244	○	-
930-630	-0.237	-0.209	-0.193	-0.238	-0.141	-0.214	-0.178	-0.191	-0.221	-0.238	-0.141	-0.200	○	-
940-640	-1.252	-0.458	-0.278	-0.414	1.845	-0.230	-0.600	-0.526	-0.207	-1.252	1.845	-0.239	○	-

PEAK COOLING [KW]

	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
CASES	UK-DMU	US/IT	USA	USA	UK-BRE	SPAIN	BEL/UK	FINLAND		MIN	MAX			
800-430	-0.908	-0.805	-0.684	-0.410	-0.397	-0.547	-0.816	-1.220	-0.650	-1.220	-0.397	-0.723	○	-
900-800	2.303	2.188	2.715	2.519	3.519	2.306	2.584	2.099	2.014	2.099	3.519	2.529	×	-6.0%
900-810	1.036	0.798	3.458	0.880	1.277	0.902	1.223	0.595	1.067	0.595	3.458	1.271	○	-
910-610	-3.773	-3.324	-3.728	-3.094	-3.242	-3.384	-2.883	-2.999	-3.200	-3.773	-2.883	-3.303	○	-
920-620	-1.249	-1.142	-1.321	-1.106	-1.182	-1.226	-1.225	-1.591	-1.069	-1.591	-1.106	-1.255	×	7.6%
930-630	-1.199	-1.158	-1.200	-1.036	-1.197	-1.179	-1.110	-1.242	-0.874	-1.242	-1.036	-1.165	×	78.4%
940-640	-3.273	-2.737	-3.118	-2.905	-2.636	-2.916	-2.875	-3.314	-2.827	-3.314	-2.636	-2.972	○	-
950-650	-3.998	-3.210	-3.852	-3.501	-3.610	-3.466	-3.692	-3.812	-3.597	-3.998	-3.210	-3.643	○	-