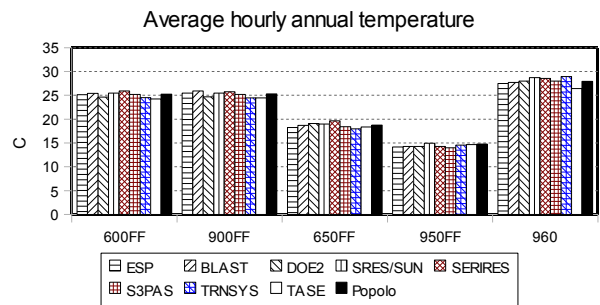
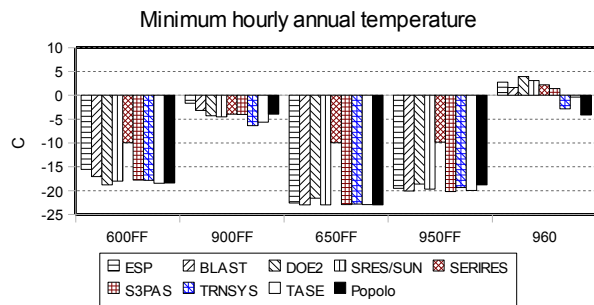
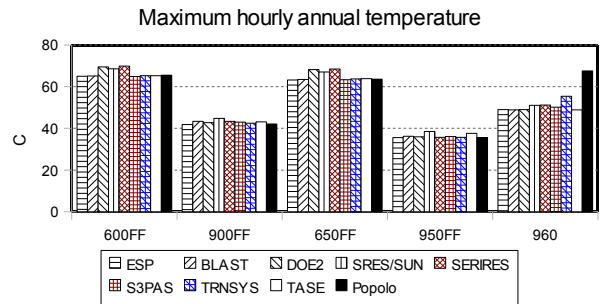
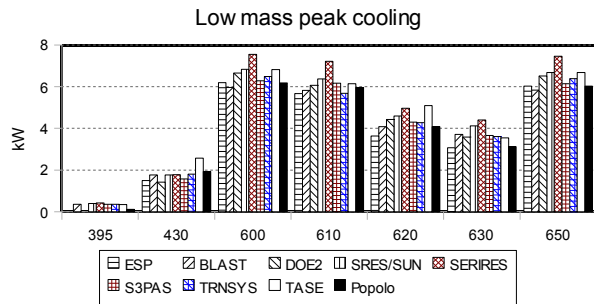
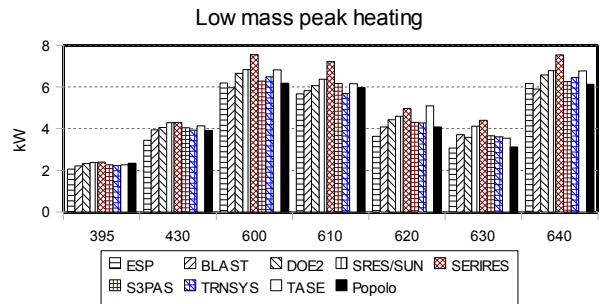
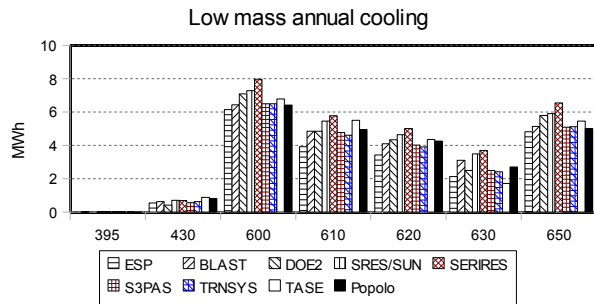
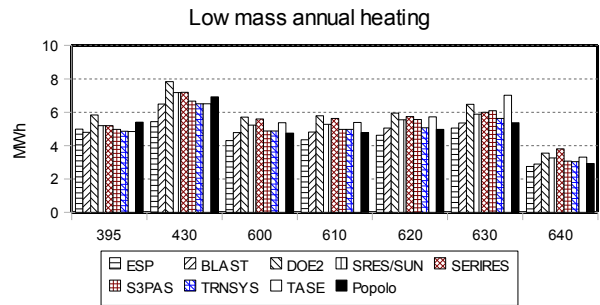
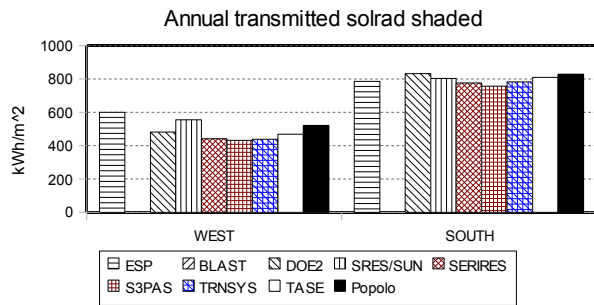
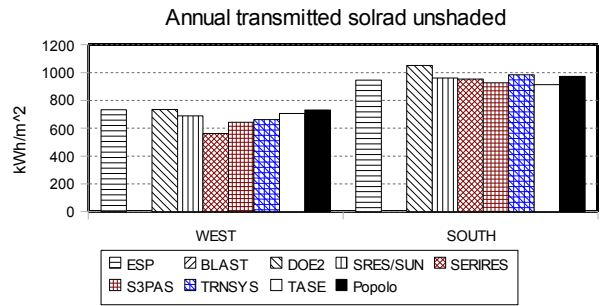
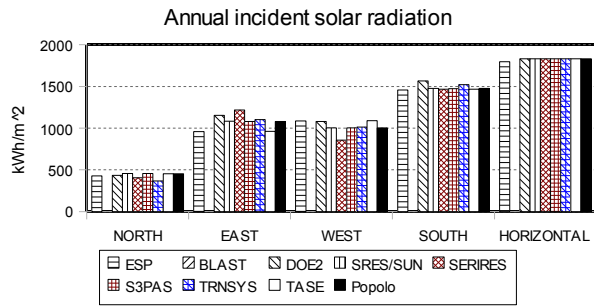
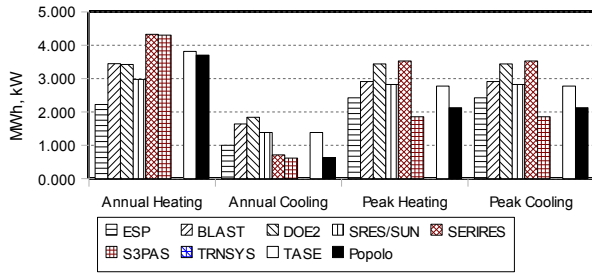


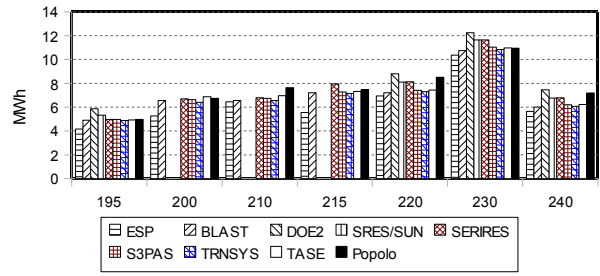
BESTEST Result



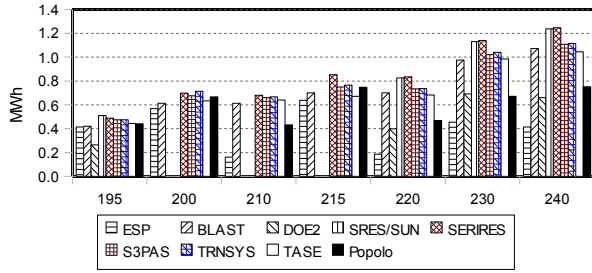
Ground coupling annual and peak heating and cooling



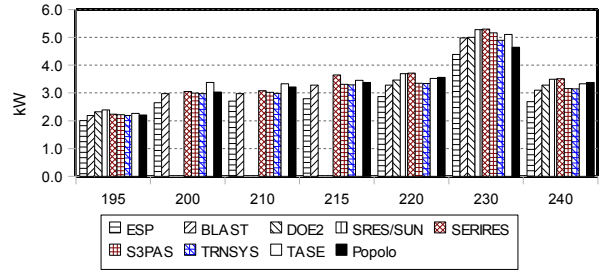
Low mass annual heating (A)



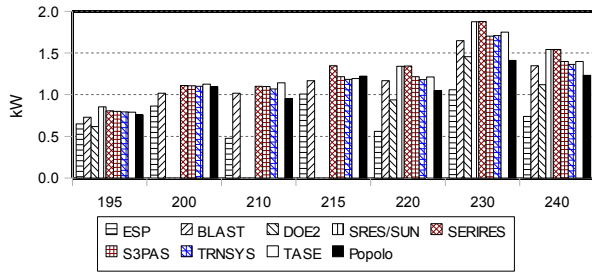
Low mass annual cooling (A)



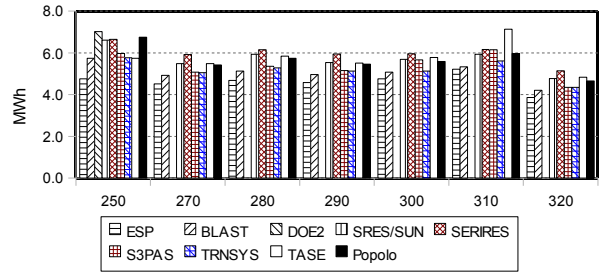
Low mass peak heating (A)



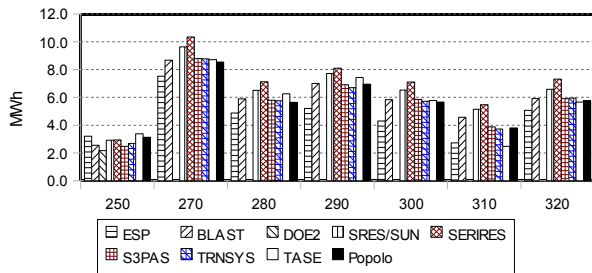
Low mass peak cooling (A)



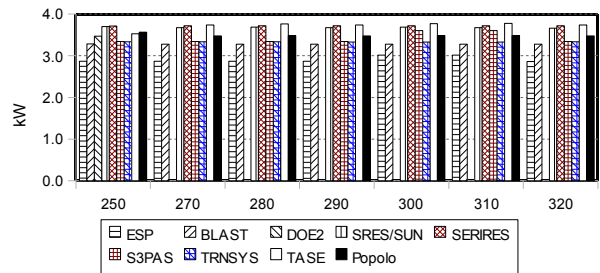
Low mass annual heating (A)



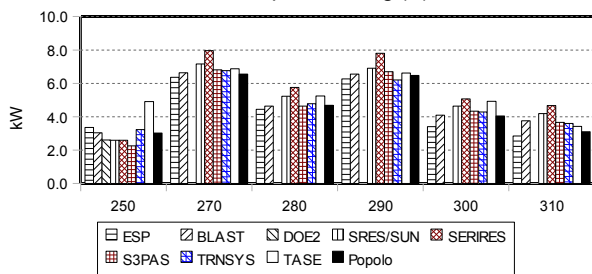
Low mass annual cooling (A)



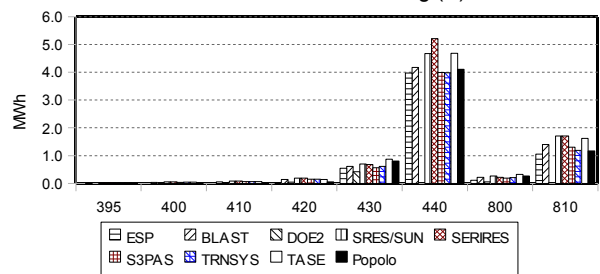
Low mass peak heating (A)

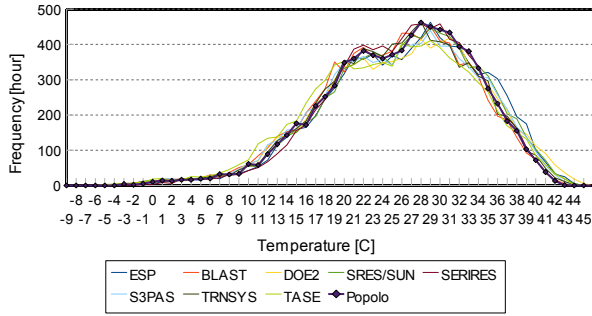
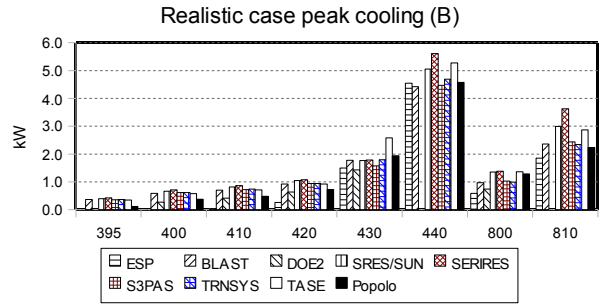
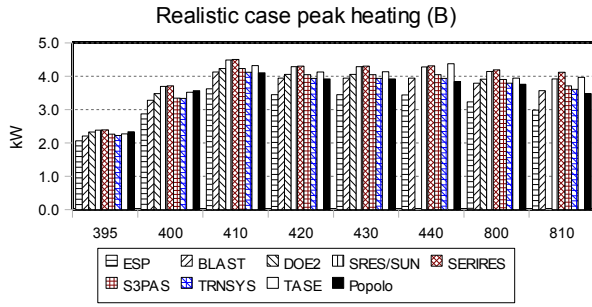


Low mass peak cooling (A)



Realistic case annual cooling (B)





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]

CASE	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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]

CASE#	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	o	-
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	o	-
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	o	-
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	x	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	o	-
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	o	-
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	x	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	o	-
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	x	-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	o	-
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	o	-
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	o	-
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	o	-
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	o	-

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		
HOURLY	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	0.00	0	0	0.000
2		0	0	0	0	0	0	0	0	0.00	0	0	0.000
3		0	0	0	0	0	0	0	0	0.00	0	0	0.000
4		0	0	0	0	0	0	0	0	0.00	0	0	0.000
5		0	0	0	0	0	0	0	0	0.00	0	0	0.000
6		0	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	3.05	1.5	3.05	2.602
8		12.59	20.6	20.59	13.80	21	20.69	20.68	20.62	20.62	12.59	21	18.571
9		30.01	38.9	38.83	31.60	39	38.94	38.94	38.86	38.86	30.01	39	36.601
10		46.23	54.6	54.53	48.30	55	54.67	54.56	54.54	54.54	46.23	55	52.551
11		59.31	66.0	66.0	54.77	61.60	66	66.08	65.99	65.95	54.77	66.08	62.818
12		65.05	71.8	71.8	59.65	69.30	72	71.92	71.74	71.77	59.65	72	68.778
13		66.98	72.3	72.3	60.10	71.70	72	72.42	72.3	72.28	60.1	72.42	69.683
14		63.11	66.4	66.4	55.24	68.10	66	66.53	66.38	66.41	55.24	68.1	64.538
15		51.79	54.9	54.9	45.68	58.90	55	55	54.8	54.91	45.68	58.9	53.724
16		37.13	38.9	38.9	32.37	44.40	39	38.94	38.84	38.90	32.37	44.4	38.509
17		19.14	20.5	20.5	17.06	26.90	20	20.52	20.46	20.49	17.06	26.9	20.651
18		4.62	3.0	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	0.00	0	0	0.000
20		0	0	0	0	0	0	0	0	0.00	0	0	0.000
21		0	0	0	0	0	0	0	0	0.00	0	0	0.000
22		0	0	0	0	0	0	0	0	0.00	0	0	0.000
23		0	0	0	0	0	0	0	0	0.00	0	0	0.000
24		0	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)

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	Wh/m2	MIN	MAX	
HOUR	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		1.8	3.0	3	1.60	3	2.99	3	2.99	1.6	3	2.627
8		13.92	20.2	20.24	13.50	20	20.17	20.15	20.21	13.5	20.24	18.309
9		31.75	38.0	38.01	31	38	37.92	37.9	37.98	31	38.01	36.076
10		45.24	53.2	53.27	47.10	53	53.17	53.15	53.27	45.24	53.27	51.168
11		56.63	64.5	64.5	53.37	59.70	64	64.39	64.4	53.37	64.47	60.994
12		61.58	70.0	70.0	57.91	67.40	70	69.89	69.95	57.91	70	66.673
13		63.7	70.8	70.8	58.30	70.10	71	70.75	71.16	58.3	71.16	67.974
14		61.46	65.7	65.7	54.15	67.30	66	65.69	66.02	54.15	67.3	63.755
15		51.67	54.9	54.9	45.38	58.90	55	55.03	55.16	45.38	58.9	53.723
16		37.2	39.5	39.5	32.70	44.90	40	39.61	39.73	32.7	44.9	39.090
17		16.72	21.3	21.3	17.70	27.60	21	21.42	21.6	16.72	27.6	21.047
18		2.52	3.3	3.3	2.73	9	3	3.28	0	3.24	9	3.400
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, CLEAR DAY, JULY 27
CASE 600
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	Wh/m2	MIN	MAX	
HOUR	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	0.50	0	0.17	0.2	0.17	0	0.5	0.168
6		20.11	27.8	29.94	17.90	28	27.01	25.7	26.16	17.9	29.94	25.213
7		70.22	77.3	89.20	58.60	80	63	62.1	81.04	58.6	89.2	71.489
8		108.13	100.0	112.85	100.40	104	71.22	107.47	106.96	71.22	112.85	100.580
9		219.58	211.0	164.86	205.90	217	187.72	232.33	210.67	164.86	232.33	205.485
10		343.67	331.0	291.84	326	336	314.17	349.16	331.55	291.84	349.16	327.407
11		435.54	418.2	389.26	415.10	423	404.44	430.22	419.90	389.26	435.54	416.533
12		475.37	455.0	437.20	454.80	459	443.61	459.85	458.03	437.2	475.37	454.975
13		488.49	464.6	455.75	455.60	469	452.50	462.28	469.06	452.5	488.49	464.027
14		443.66	413.6	413.67	408.60	418	400.56	404.57	419.41	400.56	443.66	414.671
15		367.07	334.3	341.53	321.20	340	316.94	319.26	341.29	316.94	367.07	334.326
16		246.71	211.9	223.71	200.60	218	188.89	193.61	219.37	188.89	246.71	211.923
17		119.19	111.7	105.72	102.30	115	86.03	132.3	108.82	86.03	132.3	110.326
18		68.86	73.1	68.47	78.80	74	69.78	76.6	72.58	68.47	78.8	72.798
19		19.75	17.7	14.35	37.10	18	17.61	18.05	17.65	14.35	37.1	20.366
20		0	0	0	1.10	0	0	0	0.00	0	1.1	0.157
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, 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/UK	FINLAND	Wh/m2	MIN	MAX	
HOURLY	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/UK	FINLAND	TEMP (C)	MIN	MAX	
HOURLY	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	-17.79	-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/UF	FINLAND	MIN	MAX		
HOURLY	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)				
1	-0.2	-0.9	-1.31	-0.65	1.61	-0.7	-3.46	-2.68	-0.68	-3.46	1.61	-1.032
2	-0.8	-1.6	-1.97	-1.26	0.93	-1.4	-3.99	-3.33	-1.33	-3.99	0.93	-1.676
3	-1.1	-2	-2.37	-1.74	0.49	-1.8	-4.40	-3.72	-1.86	-4.4	0.49	-2.078
4	-1.7	-2.5	-2.81	-2.21	0.07	-2.3	-4.80	-4.1	-2.32	-4.8	0.07	-2.541
5	-2.0	-2.9	-3.25	-2.69	-0.41	-2.7	-5.22	-4.51	-2.79	-5.22	-0.41	-2.965
6	-2.4	-3.4	-3.68	-3.15	-0.87	-3.2	-5.60	-4.93	-3.25	-5.6	-0.87	-3.408
7	-3.0	-3.9	-4.1	-3.60	-1.27	-3.6	-5.98	-5.34	-3.70	-5.98	-1.27	-3.846
8	-3.2	-4.3	-4.4	-3.94	-1.64	-4	-6.08	-5.64	-3.94	-6.08	-1.64	-4.144
9	-2.4	-3.3	-3.45	-3.30	-1.54	-3.2	-4.72	-4.59	-3.04	-4.72	-1.54	-3.311
10	-1.1	-1.6	-1.6	-1.84	-0.40	-1.7	-2.98	-2.64	-1.53	-2.98	-0.4	-1.731
11	1.6	1.2	1.66	0.84	1.59	0.9	0.25	0.75	1.43	0.25	1.66	1.098
12	3.6	3.5	4.4	3.39	4.40	3.1	2.54	3.26	3.86	2.54	4.4	3.527
13	5.6	5.5	6.56	5.48	6.72	5.1	4.38	4.99	5.81	4.38	6.72	5.544
14	7.3	7.2	8.39	7.27	8.66	6.8	5.85	6.51	7.38	5.85	8.66	7.251
15	8.3	8	9.04	8.26	10.02	7.6	6.61	7.11	8.24	6.61	10.02	8.114
16	8.2	7.9	8.58	8.33	10.40	7.4	6.33	6.68	8.07	6.33	10.4	7.972
17	6.5	6.2	6.44	6.90	9.41	5.8	4.20	4.24	6.26	4.2	9.41	6.216
18	5.3	4.7	4.43	5.40	7.66	4.4	2.87	2.45	4.84	2.45	7.66	4.645
19	4.5	3.8	3.37	4.50	6.74	3.6	2.11	1.71	3.88	1.71	6.74	3.793
20	3.9	3.2	2.73	3.86	6	3	1.58	1.32	3.21	1.32	6	3.197
21	3.2	2.7	2.11	3.23	5.41	2.4	1.05	0.82	2.65	0.82	5.41	2.617
22	2.8	2.2	1.66	2.69	4.74	1.9	0.55	0.42	2.11	0.42	4.74	2.126
23	2.5	1.7	1.26	2.19	4.20	1.5	0.15	0.05	1.63	0.05	4.2	1.691
24	1.9	1.2	0.83	1.69	3.66	1	-0.24	-0.34	1.13	-0.34	3.66	1.213

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/UF	FINLAND	MIN	MAX		
HOURLY	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)				
1	22.2	21.8	22.37	22.25	22.58	22.4	22.69	22.26	23.03	21.8	22.69	22.322
2	21.2	20.8	21.19	20.97	21.15	21.2	21.33	21.11	21.49	20.8	21.33	21.113
3	20.3	19.9	20.33	20.09	20.23	20.4	20.41	20.28	20.48	19.9	20.41	20.243
4	19.5	19.1	19.54	19.35	19.45	19.5	19.61	19.49	19.63	19.1	19.61	19.445
5	19.3	18.8	19.21	18.99	18.95	19.2	19.16	19.14	19.06	18.8	19.21	19.093
6	19.9	19.5	19.86	19.57	19.24	19.9	19.60	19.81	19.35	19.24	19.9	19.674
7	22.5	22.2	22.51	22.09	21.16	22.5	21.68	22.49	21.31	21.16	22.51	22.145
8	25.0	24	24.89	24.56	23.56	24.7	23.47	24.81	24.01	23.47	24.89	24.377
9	28.3	27.3	28.29	27.70	25.67	27.9	26.38	28.04	27.16	25.67	28.29	27.452
10	31.8	31.5	32.42	31.41	28.91	31.7	30.35	32.11	31.17	28.91	32.42	31.279
11	35.8	36.2	37.12	35.85	32.80	36.2	34.82	36.54	35.62	32.8	37.12	35.669
12	40.2	41.1	42.08	40.82	37.49	40.8	39.38	41.15	40.08	37.49	42.08	40.377
13	43.9	45.4	46.46	45.56	41.94	45	43.48	45.03	44.14	41.94	46.46	44.597
14	46.3	48.4	49.69	49.28	45.43	48.1	46.14	47.65	47.08	45.43	49.69	47.630
15	47.6	50.1	51.3	51.45	47.41	49.6	47.40	49.04	48.68	47.4	51.45	49.242
16	47.6	50.1	51.28	51.73	47.84	49.7	47.33	49.28	48.78	47.33	51.73	49.358
17	47.3	49.1	50.46	50.74	47.01	49.1	46.71	48.73	48.23	46.71	50.74	48.649
18	45.4	46.8	48.37	48.81	45.53	47.2	45.28	46.58	46.68	45.28	48.81	46.746
19	33.7	34	35.39	37.60	37.37	35.1	33.10	34.91	35.24	33.1	37.6	35.147
20	30.9	30.9	31.63	32.09	31.57	31.6	30.49	30.69	31.94	30.49	32.09	31.230
21	28.7	28.5	29.12	29.03	29.05	29.2	28.55	28.81	29.65	28.5	29.2	28.869
22	26.5	26.3	26.83	26.62	26.92	26.9	26.66	26.66	27.56	26.3	26.92	26.673
23	25.7	25.4	25.87	25.44	25.52	25.9	25.55	25.69	26.05	25.4	25.9	25.632
24	24.1	23.7	24.19	23.96	23.84	24.2	24.26	24.1	24.76	23.7	24.26	24.038

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/UF	FINLAND	MIN	MAX		
HOURLY	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)	TEMP (C)				
1	24.6	24.2	24.52	25.51	24.36	24.6	25.28	24.53	24.94	24.2	25.51	24.695
2	23.9	23.5	23.81	24.74	23.46	23.9	24.47	23.8	24.00	23.46	24.74	23.947
3	23.3	22.9	23.22	24.07	22.86	23.3	23.87	23.23	23.38	22.86	24.07	23.345
4	22.7	22.3	22.6	23.39	22.27	22.7	23.26	22.6	22.79	22.27	23.39	22.725
5	22.5	22	22.32	22.96	21.86	22.4	22.87	22.27	22.35	21.86	22.96	22.392
6	22.8	22.5	22.77	23.08	22.01	22.8	23.06	22.67	22.45	22.01	23.08	22.713
7	24.7	24.3	24.73	24.37	23.32	24.6	24.38	24.55	23.66	23.32	24.73	24.365
8	27.4	26.5	27.59	25.85	25.62	27.1	27.21	27.57	26.55	25.62	27.59	26.850
9	28.3	27.5	29.09	26.81	27.59	28.2	27.98	29.42	27.66	26.81	29.42	28.114
10	29.2	28.6	30.5	27.79	28.82	29.3	29.11	30.68	28.84	27.79	30.68	29.251
11	30.2	29.8	31.98	28.96	29.84	30.5	30.31	31.91	30.06	28.96	31.98	30.436
12	31.3	31.1	33.56	30.31	30.98	31.7	31.53	33.27	31.27	30.31	33.56	31.723
13	32.2	32.2	34.79	31.54	32.08	32.8	32.55	34.27	32.38	31.54	34.79	32.802
14	32.8	33	35.65	32.52	32.85	33.6	33.15	34.9	33.13	32.52	35.65	33.564
15	33.1	33.4	35.96	33.08	33.33	34	33.37	35.19	33.55	33.08	35.96	33.931
16	33.2	33.5	35.82	33.22	33.55	34.1	33.38	35.28	33.61	33.22	35.82	34.012
17	33.4	33.5	35.61	33.18	33.44	34.1	33.37	35.3	33.62	33.18	35.61	33.982
18	33.0	33.1	34.93	32.94	33.23	33.7	33.16	34.71	33.36	32.94	34.93	33.596
19	30.2	30	30.96	30.93	30.92	30.6	30.43	30.74	30.80	30	30.96	30.598
20	29.4	29.1	29.79	29.97	29.17	29.6	29.61	29.38	29.75	29.1	29.97	29.497
21	28.5	28.2	28.83	29.17	28.31	28.7	28.89	27.64	28.93	27.64	29.17	28.535
22	27.4	27.1	27.59	28.15	27.27	27.5	27.93	27.46	27.93	27.1	28.15	27.547
23	27.2	26.8	27.28	27.72	26.62	27.3	27.42	27.1	27.21	26.62	27.72	27.177
24	26.0	25.7	26.1	26.74	25.54	26.1	26.59	26.02	26.50	25.54	26.74	26.096

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/UF	FINLAND	MIN	MAX		
HOURLY	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	
HOUR	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

LOW MASS QUALIFICATION TESTS

ANNUAL HEATING [MWH]

	ESP	BLAST	DOE2	SRES/SUN	SERIRES	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	SERIRES	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	SERIRES	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	SERIRES	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	SERIRES	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	SERIRES	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	SERIRES	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	SERIRES	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]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	-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	0.319	0.165	0.455	0.274	o	-
320-270	-0.651	-0.721			-0.718	-0.779	-0.729	-0.699	-0.769	-0.779	-0.649	-0.707	o	-
290-270	0.067	0.029			0.057	0.022	0.088	0.085	0.039	0.020	0.088	0.053	o	-
300-270	0.251	0.147			0.207	0.044	0.590	0.077	0.162	0.044	0.590	0.230	o	-
310-300	0.460	0.250			0.248	0.201	0.492	0.486	0.382	0.201	1.349	0.498	o	-

ANNUAL COOLING [MWH]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate	
	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	2.097	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	-1.865	-3.310	-1.266	-1.876	o	-	

PEAK HEATING [KW]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate	
	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]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIRES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate	
	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	-0.623	-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]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	x	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	x	-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	o	-
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	o	-
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	x	-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	o	-

ANNUAL COOLING [MWH]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	o	-
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	o	-
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	x	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	o	-
440-600	-2.170	-2.261		-2.604	-2.760	-2.500	-2.517	-2.094	-2.302	-2.760	-2.094	-2.415	o	-

PEAK HEATING [KW]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	x	-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	o	-
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	o	-
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	x	-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	o	-

PEAK COOLING [KW]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	o	-
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	x	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	o	-
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	o	-
440-600	-1.648	-1.541		-1.774	-1.936	-1.821	-1.800	-1.534	-1.605	-1.936	-1.534	-1.722	o	-

HIGH MASS DIAGNOSTIC TESTS

ANNUAL HEATING [MWH]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	o	-
900-810	-0.669	-0.836		-1.107	-0.840	-0.992	-0.912	-0.921	-0.844	-1.107	-0.669	-0.897	o	-
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	o	-
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	o	-
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	o	-
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	o	-

ANNUAL COOLING [MWH]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	o	-
900-810	1.080	1.195		1.454	1.707	1.265	1.294	0.975	1.266	0.975	1.707	1.281	o	-
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	o	-
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	o	-
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	o	-
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	o	-
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	o	-

PEAK HEATING [KW]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	o	-
900-810	-0.129	-0.113		-0.155	-0.034	-0.101	-0.089	-0.166	-0.091	-0.166	-0.034	-0.112	o	-
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	o	-
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	o	-
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	o	-
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	o	-

PEAK COOLING [KW]

CASES	ESP	BLAST	DOE2	SRES/SUN	SERIERES	S3PAS	TRNSYS	TASE	Popolo	RANGE	RANGE	Average	Pass	Error Rate
	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	o	-
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	x	-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	o	-
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	o	-
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	x	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	x	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	o	-
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	o	-