

**Table 2.13(I)** Design 97.5 percentile of beam and diffuse irradiance on vertical and horizontal surfaces: Plymouth (Camborne) (May 2002– April 2012)

Month	Orientation	Daily mean irradiance (W·m <sup>-2</sup> ) and mean hourly irradiance (W·m <sup>-2</sup> ) for the 21st day of the given month																				
		Mean	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	
January Sunrise: 0807 Sunset: 1657	Normal	to beam	436	0	0	0	0	0	0	0	288	540	641	572	558	656	672	0	0	0	0	
	N	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	18	0	0	0	0	0	0	0	0	10	36	56	71	75	71	59	39	22	0	0
	NE	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	18	0	0	0	0	0	0	10	36	56	71	75	71	59	39	26	0	0	0	0
	E	Beam	26	0	0	0	0	0	0	0	193	259	163	6	0	0	0	0	0	0	0	0
		Diffuse	25	0	0	0	0	0	0	10	99	118	101	69	71	59	39	24	0	0	0	0
	SE	Beam	91	0	0	0	0	0	0	0	284	504	529	385	270	179	36	0	0	0	0	0
		Diffuse	40	0	0	0	0	0	0	10	126	181	191	164	133	95	42	19	0	0	0	0
	S	Beam	139	0	0	0	0	0	0	0	208	453	586	538	512	556	493	0	0	0	0	0
		Diffuse	52	0	0	0	0	0	0	10	103	168	205	203	194	188	155	22	0	0	0	0
	SW	Beam	106	0	0	0	0	0	0	0	10	137	299	376	454	607	661	0	0	0	0	0
		Diffuse	43	0	0	0	0	0	0	10	42	87	135	162	180	200	197	26	0	0	0	0
	W	Beam	36	0	0	0	0	0	0	0	0	0	0	0	130	302	442	0	0	0	0	0
		Diffuse	27	0	0	0	0	0	0	10	36	56	71	75	97	125	143	24	0	0	0	0
	NW	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diffuse		18	0	0	0	0	0	0	10	36	56	71	75	71	59	39	19	0	0	0	0	
Horiz.	Beam	45	0	0	0	0	0	1	46	138	204	195	180	173	114	35	0	0	0	0	0	
	Diffuse	29	0	0	0	0	0	16	69	93	110	121	115	92	59	23	2	0	0	0	0	
	Global	74	0	0	0	0	0	17	115	231	314	316	295	265	174	58	2	0	0	0	0	
February Sunrise: 0720 Sunset: 1749	Normal	to beam	494	0	0	0	0	0	269	494	629	696	703	688	668	649	643	0	0	0	0	
	N	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	31	0	0	0	0	0	8	36	64	87	109	121	109	92	69	41	14	0	0	0
	NE	Beam	4	0	0	0	0	0	0	72	24	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	32	0	0	0	0	0	8	61	66	87	109	121	109	92	69	41	15	0	0	0
	E	Beam	46	0	0	0	0	0	0	232	350	321	191	15	0	0	0	0	0	0	0	0
		Diffuse	42	0	0	0	0	0	8	111	153	154	142	104	109	92	69	41	15	0	0	0
	SE	Beam	114	0	0	0	0	0	0	256	472	567	550	445	301	145	0	0	0	0	0	0
		Diffuse	58	0	0	0	0	0	8	119	185	215	236	225	169	115	69	41	14	0	0	0
	S	Beam	166	0	0	0	0	0	0	130	317	481	587	614	586	521	431	328	0	0	0	0
		Diffuse	70	0	0	0	0	0	8	79	144	194	246	272	242	208	166	116	14	0	0	0
	SW	Beam	132	0	0	0	0	0	0	0	0	113	280	423	528	592	617	614	0	0	0	0
		Diffuse	61	0	0	0	0	0	8	36	64	103	165	219	227	226	211	186	15	0	0	0
	W	Beam	61	0	0	0	0	0	0	0	0	0	0	0	161	316	441	540	0	0	0	0
		Diffuse	44	0	0	0	0	0	8	36	64	87	109	121	133	157	168	168	15	0	0	0
	NW	Beam	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7	150	0	0	0	0
Diffuse		32	0	0	0	0	0	8	36	64	87	109	121	109	92	61	72	14	0	0	0	
Horiz.	Beam	84	0	0	0	0	0	1	43	144	248	321	342	322	273	203	119	6	0	0	0	
	Diffuse	49	0	0	0	0	0	13	69	108	135	170	190	168	142	107	63	22	0	0	0	
	Global	134	0	0	0	0	0	14	112	252	384	490	532	490	416	310	182	28	0	0	0	
March Sunrise: 0621 Sunset: 1836	Normal	to beam	596	0	0	0	0	34	434	668	788	927	962	974	961	906	744	344	0	0	0	
	N	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	40	0	0	0	0	0	35	73	95	110	116	119	115	103	85	64	38	4	0	0
	NE	Beam	10	0	0	0	0	0	18	146	75	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	42	0	0	0	0	0	35	113	97	110	116	119	115	103	85	64	38	4	0	0
	E	Beam	63	0	0	0	0	0	33	374	470	390	234	0	0	0	0	0	0	0	0	0
		Diffuse	51	0	0	0	0	0	35	179	185	162	127	119	115	103	85	64	38	4	0	0
	SE	Beam	135	0	0	0	0	0	28	383	590	647	652	517	326	105	0	0	0	0	0	0
		Diffuse	59	0	0	0	0	0	35	182	212	210	190	167	136	96	85	64	38	4	0	0
	S	Beam	195	0	0	0	0	0	7	168	364	525	687	737	719	635	486	280	66	0	0	0
		Diffuse	66	0	0	0	0	0	35	120	162	187	195	199	191	171	143	109	60	4	0	0
	SW	Beam	173	0	0	0	0	0	0	0	0	95	320	525	691	792	800	655	281	0	0	0
		Diffuse	63	0	0	0	0	0	35	73	95	107	140	168	187	194	192	184	127	4	0	0
	W	Beam	99	0	0	0	0	0	0	0	0	0	0	6	258	486	645	647	332	0	0	0
		Diffuse	54	0	0	0	0	0	35	73	95	110	116	94	126	150	168	182	142	4	0	0
	NW	Beam	23	0	0	0	0	0	0	0	0	0	0	0	0	0	112	259	189	0	0	0
Diffuse		44	0	0	0	0	0	35	73	95	110	116	119	115	103	85	105	98	4	0	0	
Horiz.	Beam	164	0	0	0	0	0	6	141	306	440	576	618	604	534	411	238	57	0	0	0	
	Diffuse	51	0	0	0	0	0	68	129	140	144	129	126	120	109	97	88	71	7	0	0	
	Global	215	0	0	0	0	0	74	271	446	584	705	745	724	643	508	327	128	7	0	0	

Table continues

**Table 2.13(1)** Design 97.5 percentile of beam and diffuse irradiance on vertical and horizontal surfaces: Plymouth (Camborne) (May 2002– April 2012)  
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Month	Orientation		Daily mean irradiance ( $\text{W}\cdot\text{m}^{-2}$ ) and mean hourly irradiance ( $\text{W}\cdot\text{m}^{-2}$ ) for the 21st day of the given month																				
			Mean	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	
April	Normal to beam		628	0	0	0	0	215	422	607	765	837	888	904	893	884	861	807	727	612	0	0	
	N	Beam	5	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	101	0	0	
		Diffuse	56	0	0	0	7	53	76	102	120	134	142	144	140	127	109	85	58	48	5	0	
	NE	Beam	33	0	0	0	0	164	250	237	129	0	0	0	0	0	0	0	0	0	0	0	
		Diffuse	62	0	0	0	7	101	147	146	122	134	142	144	140	127	109	85	58	27	5	0	
	E	Beam	91	0	0	0	0	210	394	502	506	379	188	0	0	0	0	0	0	0	0	0	
		Diffuse	72	0	0	0	7	116	189	209	194	171	142	144	140	127	109	85	58	27	5	0	
	SE	Beam	131	0	0	0	0	134	307	472	587	585	512	369	184	0	0	0	0	0	0	0	
		Diffuse	75	0	0	0	7	91	164	201	209	206	192	170	139	127	109	85	58	27	5	0	
	S	Beam	148	0	0	0	0	0	40	166	324	449	535	560	523	444	324	174	22	0	0	0	
		Diffuse	70	0	0	0	7	41	86	129	159	183	196	199	191	170	139	100	52	27	5	0	
	SW	Beam	169	0	0	0	0	0	0	0	0	50	245	423	556	643	669	618	507	352	0	0	
		Diffuse	76	0	0	0	7	41	76	102	120	115	151	178	196	202	195	179	150	107	5	0	
	W	Beam	141	0	0	0	0	0	0	0	0	0	0	38	263	464	621	701	694	598	0	0	
		Diffuse	75	0	0	0	7	41	76	102	120	134	142	119	151	174	187	193	188	165	5	0	
	NW	Beam	65	0	0	0	0	0	0	0	0	0	0	0	14	210	372	475	495	0	0	0	
		Diffuse	65	0	0	0	7	41	76	102	120	134	142	144	140	103	120	135	144	141	5	0	
	Horiz.	Beam	224	0	0	0	0	39	146	300	474	596	683	708	674	606	501	361	214	81	3	0	
Diffuse		71	0	0	1	12	82	135	158	159	164	162	161	158	146	128	108	80	42	8	0		
Global		295	0	0	1	12	121	281	458	633	760	845	869	833	752	629	469	294	123	11	0		
May	Normal to beam		493	0	0	0	10	104	371	569	712	796	854	880	889	885	854	752	535	174	0	0	
	N	Beam	4	0	0	0	4	19	0	0	0	0	0	0	0	0	0	0	38	45	0	0	
		Diffuse	74	0	0	0	17	86	104	130	149	164	174	177	172	158	136	111	89	78	18	0	
	NE	Beam	30	0	0	0	9	83	233	247	157	2	0	0	0	0	0	0	0	0	0	0	
		Diffuse	78	0	0	0	17	108	180	180	157	130	174	177	172	158	136	111	86	54	18	0	
	E	Beam	77	0	0	0	9	98	331	448	447	339	166	0	0	0	0	0	0	0	0	0	
		Diffuse	87	0	0	0	17	114	211	234	223	200	167	177	172	158	136	111	86	54	18	0	
	SE	Beam	101	0	0	0	4	56	235	386	475	477	411	280	110	0	0	0	0	0	0	0	
		Diffuse	87	0	0	0	17	99	180	218	229	228	215	190	152	158	136	111	86	54	18	0	
	Sunrise: 0425 Sunset: 2010	S	Beam	107	0	0	0	0	0	1	98	225	336	414	440	413	340	223	80	0	0	0	0
			Diffuse	81	0	0	0	17	66	105	141	173	199	216	221	211	186	149	107	86	54	18	0
	SW	Beam	127	0	0	0	0	0	0	0	0	175	342	475	560	579	501	320	83	0	0	0	
		Diffuse	89	0	0	0	17	66	104	130	149	164	169	202	222	228	219	198	166	92	18	0	
	W	Beam	110	0	0	0	0	0	0	0	0	0	44	258	453	596	629	491	163	0	0	0	
		Diffuse	89	0	0	0	17	66	104	130	149	164	174	144	181	208	222	225	214	120	18	0	
	NW	Beam	52	0	0	0	0	0	0	0	0	0	0	0	0	80	264	388	374	147	0	0	
		Diffuse	81	0	0	0	17	66	104	130	149	164	174	177	172	136	157	173	181	114	18	0	
	Horiz.	Beam	242	0	0	0	1	31	167	337	506	637	728	761	743	680	570	404	209	41	1	0	
Diffuse		103	0	0	1	34	137	192	210	215	220	222	222	214	197	174	155	144	110	30	0		
Global		346	0	0	1	35	168	359	547	721	857	950	983	957	877	743	559	352	150	31	0		
June	Normal to beam		553	0	0	0	75	342	479	534	588	761	846	785	814	823	826	780	699	524	524	0	
	N	Beam	24	0	0	0	31	80	25	0	0	0	0	0	0	0	0	0	65	144	239	0	
		Diffuse	83	0	0	8	55	103	106	135	158	168	178	182	176	163	143	119	90	98	94	7	
	NE	Beam	46	0	0	0	69	278	315	251	154	37	0	0	0	0	0	0	0	0	0	0	
		Diffuse	87	0	0	8	68	167	191	191	178	142	178	182	176	163	143	119	91	63	30	7	
	E	Beam	87	0	0	0	67	314	421	416	370	331	178	0	0	0	0	0	0	0	0	0	
		Diffuse	96	0	0	8	68	179	221	236	234	205	173	182	176	163	143	119	91	63	30	8	
	SE	Beam	97	0	0	0	25	165	280	338	369	431	385	235	90	0	0	0	0	0	0	0	
		Diffuse	93	0	0	8	53	130	180	215	234	226	213	193	156	163	143	119	91	63	30	9	
	Sunrise: 0408 Sunset: 2037	S	Beam	87	0	0	0	0	0	62	152	279	365	353	342	284	189	62	0	0	0	0	
			Diffuse	83	0	0	8	36	75	106	139	177	194	209	217	207	184	150	107	91	63	30	7
	SW	Beam	128	0	0	0	0	0	0	0	0	0	132	265	394	482	524	490	396	238	156	0	
		Diffuse	94	0	0	8	36	75	106	135	158	168	163	199	217	223	216	196	166	124	71	7	
	W	Beam	141	0	0	0	0	0	0	0	0	0	21	215	397	552	631	624	481	460	0	0	
		Diffuse	101	0	0	8	36	75	106	135	158	168	178	148	181	207	222	226	218	191	155	8	
	NW	Beam	90	0	0	0	0	0	0	0	0	0	0	0	0	80	256	402	487	442	495	0	
		Diffuse	94	0	0	8	36	75	106	135	158	168	178	182	176	143	163	178	187	180	165	9	
	Horiz.	Beam	255	0	0	1	13	111	227	328	431	626	742	701	706	663	585	456	308	151	72	12	
Diffuse		112	0	0	13	76	139	182	224	252	231	227	244	231	212	186	161	133	106	50	8		
Global		367	0	0	14	89	250	410	551	682	857	969	945	937	875	771	616	441	257	122	20		

Table continues

**Table 2.13(1)** Design 97.5 percentile of beam and diffuse irradiance on vertical and horizontal surfaces: Plymouth (Camborne) (May 2002– April 2012)  
— continued

Month	Orientation		Daily mean irradiance ( $\text{W}\cdot\text{m}^{-2}$ ) and mean hourly irradiance ( $\text{W}\cdot\text{m}^{-2}$ ) for the 21st day of the given month																				
			Mean	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	
July	Normal to beam		478	0	0	0	0	217	338	390	763	700	710	778	785	806	795	608	629	599	0	0	
	N	Beam	9	0	0	0	0	47	10	0	0	0	0	0	0	0	0	0	28	138	0	0	
		Diffuse	76	0	0	3	39	88	106	132	143	164	176	177	172	159	140	121	83	84	32	9	
	NE	Beam	34	0	0	0	0	177	223	183	197	28	0	0	0	0	0	0	0	0	0	0	
		Diffuse	82	0	0	4	42	133	175	188	156	142	176	177	172	159	140	121	89	56	31	9	
	E	Beam	75	0	0	0	0	203	305	315	501	322	166	0	0	0	0	0	0	0	0	0	
		Diffuse	91	0	0	3	42	143	202	229	220	209	182	177	172	159	140	121	89	56	38	9	
	SE	Beam	94	0	0	0	0	110	208	262	510	427	355	268	121	0	0	0	0	0	0	0	
		Diffuse	91	0	0	3	38	110	170	213	222	233	224	197	162	159	140	121	89	56	39	9	
	Sunrise: 0431 Sunset: 2023	S	Beam	95	0	0	0	0	0	0	55	221	282	336	386	369	320	223	79	0	0	0	0
			Diffuse	84	0	0	3	39	64	100	148	161	200	220	222	213	190	156	124	89	56	32	9
		SW	Beam	122	0	0	0	0	0	0	0	0	120	278	401	498	534	407	384	299	0	0	0
			Diffuse	93	0	0	4	42	64	100	132	143	164	172	199	220	226	220	208	171	126	31	9
		W	Beam	115	0	0	0	0	0	0	0	0	0	0	7	198	384	532	497	571	561	0	0
			Diffuse	94	0	0	3	42	64	100	132	143	164	176	142	178	203	220	230	217	193	38	9
		NW	Beam	62	0	0	0	0	0	0	0	0	0	0	0	0	46	219	295	424	494	0	0
			Diffuse	85	0	0	3	38	64	100	132	143	164	176	177	172	135	155	179	181	176	39	9
		Horiz.	Beam	229	0	0	1	30	60	145	224	532	554	603	675	665	633	547	343	263	157	73	0
Horiz.		Diffuse	110	0	0	5	55	127	186	239	196	239	254	240	232	211	187	189	137	89	33	15	
Horiz.		Global	339	0	0	6	85	187	332	463	728	793	857	915	897	844	734	532	400	246	106	15	
August	Normal to beam		512	0	0	0	0	118	343	511	579	616	709	735	747	744	723	668	585	596	0	0	
	N	Beam	4	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	90	0	0	
		Diffuse	63	0	0	0	4	53	79	109	135	154	162	164	158	145	124	98	67	51	6	0	
	NE	Beam	26	0	0	0	0	91	209	209	109	0	0	0	0	0	0	0	0	0	0	0	
		Diffuse	69	0	0	0	4	80	150	160	147	154	162	164	158	145	124	98	67	32	6	0	
	E	Beam	71	0	0	0	0	115	322	427	390	288	163	0	0	0	0	0	0	0	0	0	
		Diffuse	79	0	0	0	4	88	186	221	222	206	170	164	158	145	124	98	67	32	7	0	
	SE	Beam	103	0	0	0	0	72	246	394	443	432	414	308	164	0	0	0	0	0	0	0	
		Diffuse	83	0	0	0	4	73	162	212	236	242	227	201	164	145	124	98	67	32	7	0	
	Sunrise: 0516 Sunset: 1933	S	Beam	119	0	0	0	0	0	26	131	236	323	422	453	438	378	278	151	25	0	0	0
			Diffuse	81	0	0	0	4	40	90	137	181	215	229	234	224	200	164	118	66	32	6	0
		SW	Beam	140	0	0	0	0	0	0	0	0	24	183	332	455	535	558	513	411	348	0	0
			Diffuse	86	0	0	0	4	40	79	109	135	139	175	207	227	234	226	205	167	118	6	0
		W	Beam	118	0	0	0	0	0	0	0	0	0	17	206	379	512	574	556	582	0	0	0
			Diffuse	84	0	0	0	4	40	79	109	135	154	162	137	173	200	216	219	205	179	7	0
		NW	Beam	55	0	0	0	0	0	0	0	0	0	0	0	0	1	165	299	375	476	0	0
			Diffuse	72	0	0	0	4	40	79	109	135	154	162	164	158	117	138	154	158	151	7	0
		Horiz.	Beam	183	0	0	0	0	21	116	249	356	438	546	578	569	518	429	308	180	87	9	0
Horiz.		Diffuse	94	0	0	0	7	83	148	185	217	241	235	233	222	203	178	147	108	50	8	0	
Horiz.		Global	278	0	0	0	7	104	264	434	573	679	780	811	791	721	606	455	288	137	17	0	
September	Normal to beam		526	0	0	0	0	0	399	490	563	627	653	710	764	792	859	980	0	0	0	0	
	N	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Diffuse	46	0	0	0	0	17	49	80	105	121	131	130	120	104	81	53	97	25	0	0	
	NE	Beam	16	0	0	0	0	0	199	142	35	0	0	0	0	0	0	0	0	0	0	0	
		Diffuse	50	0	0	0	0	19	108	114	103	121	131	130	120	104	81	53	97	25	0	0	
	E	Beam	65	0	0	0	0	0	377	407	370	276	126	0	0	0	0	0	0	0	0	0	
		Diffuse	61	0	0	0	0	21	160	186	187	169	140	130	120	104	81	53	97	25	0	0	
	SE	Beam	116	0	0	0	0	0	334	433	489	497	433	347	214	41	0	0	0	0	0	0	
		Diffuse	70	0	0	0	0	19	148	193	217	221	209	180	139	92	81	53	97	25	0	0	
	Sunrise: 0602 Sunset: 1826	S	Beam	161	0	0	0	0	0	95	205	321	427	487	539	549	499	427	324	0	0	0	0
			Diffuse	74	0	0	0	0	17	77	131	175	204	221	220	203	176	135	86	97	25	0	0
		SW	Beam	151	0	0	0	0	0	0	0	0	107	255	415	563	665	760	852	0	0	0	0
			Diffuse	68	0	0	0	0	19	49	80	105	130	169	194	206	207	190	158	97	25	0	0
		W	Beam	94	0	0	0	0	0	0	0	0	0	48	247	441	647	880	0	0	0	0	0
			Diffuse	58	0	0	0	0	21	49	80	105	121	131	118	145	165	171	162	97	25	0	0
		NW	Beam	23	0	0	0	0	0	0	0	0	0	0	0	0	0	155	393	0	0	0	0
			Diffuse	49	0	0	0	0	19	49	80	105	121	131	130	120	104	90	95	97	25	0	0
		Horiz.	Beam	140	0	0	0	0	27	87	180	277	366	417	460	470	428	369	285	0	0	0	0
Horiz.		Diffuse	69	0	0	0	2	22	88	136	168	185	195	183	160	135	96	54	193	42	1	0	
Horiz.		Global	210	0	0	0	2	48	175	316	446	552	612	644	630	563	466	339	193	42	1	0	

Table continues

**Table 2.13(1)** Design 97.5 percentile of beam and diffuse irradiance on vertical and horizontal surfaces: Plymouth (Camborne) (May 2002– April 2012)  
— *continued*

Month	Orientation		Daily mean irradiance ( $\text{W}\cdot\text{m}^{-2}$ ) and mean hourly irradiance ( $\text{W}\cdot\text{m}^{-2}$ ) for the 21st day of the given month																				
			Mean	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	
October Sunrise: 0649 Sunset: 1722	Normal to beam		467	0	0	0	0	0	0	281	567	699	795	852	864	813	733	0	0	0	0	0	
	N	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	28	0	0	0	0	0	15	53	75	89	94	93	85	72	51	34	1	0	0	0	0
	NE	Beam	2	0	0	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	29	0	0	0	0	0	15	72	75	89	94	93	85	72	51	40	2	0	0	0	0
	E	Beam	41	0	0	0	0	0	0	224	350	280	122	0	0	0	0	0	0	0	0	0	0
		Diffuse	37	0	0	0	0	0	15	129	156	135	99	93	85	72	51	40	2	0	0	0	0
	SE	Beam	117	0	0	0	0	0	0	270	530	597	573	462	288	87	0	0	0	0	0	0	0
		Diffuse	49	0	0	0	0	0	15	144	202	203	183	153	116	74	51	33	2	0	0	0	0
	S	Beam	179	0	0	0	0	0	0	158	399	565	687	741	712	593	436	0	0	0	0	0	0
		Diffuse	59	0	0	0	0	0	15	108	169	196	205	201	187	165	131	34	1	0	0	0	0
	SW	Beam	141	0	0	0	0	0	0	0	35	202	400	586	718	751	704	0	0	0	0	0	0
		Diffuse	50	0	0	0	0	0	15	53	76	118	151	174	188	194	186	40	2	0	0	0	0
	W	Beam	59	0	0	0	0	0	0	0	0	0	0	88	304	469	560	0	0	0	0	0	0
		Diffuse	36	0	0	0	0	0	15	53	75	89	94	89	119	143	157	40	2	0	0	0	0
	NW	Beam	4	0	0	0	0	0	0	0	0	0	0	0	0	88	0	0	0	0	0	0	0
		Diffuse	28	0	0	0	0	0	15	53	75	89	94	93	85	72	60	33	2	0	0	0	0
Horiz.	Beam	96	0	0	0	0	0	0	64	197	303	381	412	384	297	185	71	6	0	0	0	0	
	Diffuse	38	0	0	0	0	0	24	102	122	128	123	114	103	92	71	37	1	0	0	0	0	
Horiz.	Global	134	0	0	0	0	0	25	166	318	431	504	526	487	389	257	107	7	0	0	0	0	
November Sunrise: 0740 Sunset: 1633	Normal to beam		350	0	0	0	0	0	0	484	537	575	617	635	649	0	0	0	0	0	0	0	
	N	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	20	0	0	0	0	0	3	29	45	63	72	74	66	50	48	22	0	0	0	0	0
	NE	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	20	0	0	0	0	0	3	27	45	63	72	74	66	50	56	22	0	0	0	0	0
	E	Beam	24	0	0	0	0	0	0	288	208	87	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	26	0	0	0	0	0	3	31	120	111	87	74	66	50	49	22	0	0	0	0	0
	SE	Beam	89	0	0	0	0	0	0	469	480	440	368	252	117	0	0	0	0	0	0	0	0
		Diffuse	40	0	0	0	0	0	3	33	168	181	176	156	120	72	42	22	0	0	0	0	0
	S	Beam	127	0	0	0	0	0	0	376	471	536	578	567	522	0	0	0	0	0	0	0	0
		Diffuse	50	0	0	0	0	0	3	29	143	179	200	208	197	172	48	22	0	0	0	0	0
	SW	Beam	91	0	0	0	0	0	0	62	186	317	450	550	621	0	0	0	0	0	0	0	0
		Diffuse	41	0	0	0	0	0	3	27	59	105	145	176	193	196	56	22	0	0	0	0	0
	W	Beam	26	0	0	0	0	0	0	0	0	0	0	58	211	356	0	0	0	0	0	0	0
		Diffuse	25	0	0	0	0	0	3	31	45	63	72	79	110	131	49	22	0	0	0	0	0
	NW	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	20	0	0	0	0	0	3	33	45	63	72	74	66	50	42	22	0	0	0	0	0
Horiz.	Beam	46	0	0	0	0	0	0	41	99	154	191	208	191	147	84	0	0	0	0	0	0	
	Diffuse	30	0	0	0	0	0	5	35	77	104	117	117	104	78	48	36	0	0	0	0	0	
Horiz.	Global	77	0	0	0	0	0	5	75	176	258	308	325	295	225	132	36	0	0	0	0	0	
December Sunrise: 0815 Sunset: 1622	Normal to beam		355	0	0	0	0	0	0	232	454	590	596	702	623	0	0	0	0	0	0	0	
	N	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	14	0	0	0	0	0	0	6	29	48	59	62	60	42	30	1	0	0	0	0	0
	NE	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	14	0	0	0	0	0	0	6	29	48	59	62	60	42	34	1	0	0	0	0	0
	E	Beam	19	0	0	0	0	0	0	143	191	116	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	19	0	0	0	0	0	0	6	78	99	81	62	60	42	30	1	0	0	0	0	0
	SE	Beam	83	0	0	0	0	0	0	228	418	475	387	322	156	0	0	0	0	0	0	0	0
		Diffuse	35	0	0	0	0	0	0	6	105	161	171	151	135	75	27	1	0	0	0	0	0
	S	Beam	120	0	0	0	0	0	0	180	400	556	572	650	529	0	0	0	0	0	0	0	0
		Diffuse	44	0	0	0	0	0	0	6	90	156	191	197	220	167	30	1	0	0	0	0	0
	SW	Beam	87	0	0	0	0	0	0	26	147	311	422	597	592	0	0	0	0	0	0	0	0
		Diffuse	35	0	0	0	0	0	0	6	41	87	130	160	206	182	34	1	0	0	0	0	0
	W	Beam	22	0	0	0	0	0	0	0	0	0	0	25	195	308	0	0	0	0	0	0	0
		Diffuse	19	0	0	0	0	0	0	6	29	48	59	61	101	113	30	1	0	0	0	0	0
	NW	Beam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Diffuse	14	0	0	0	0	0	0	6	29	48	59	62	60	42	27	1	0	0	0	0	0
Horiz.	Beam	33	0	0	0	0	0	0	30	98	158	167	178	118	48	0	0	0	0	0	0	0	
	Diffuse	22	0	0	0	0	0	0	10	57	84	94	99	93	66	33	2	0	0	0	0	0	
Horiz.	Global	56	0	0	0	0	0	0	10	87	181	252	266	272	183	81	2	0	0	0	0	0	