



INDEPENDENT TESTING LABORATORIES, INC.  
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

REPORT NUMBER: ITL64596

DATE: 04/23/10

PREPARED FOR: PURE LIGHTING LLC

CATALOG NUMBER: SH1-SP1-WW

LUMINAIRE: FABRICATED SEMI-DIFFUSE METAL HOUSING, FORMED MULTI-FACETED SPECULAR METAL REFLECTOR, FABRICATED WHITE PAINTED METAL LED DRIVER HOUSING, TWELVE CIRCUIT BOARDS EACH WITH ONE LED, MOLDED WHITE PLASTIC LOUVER WITH ONE APERTURE PER LED, OPEN BOTTOM AND ENDS.

LAMPS: TWELVE 1-WATT WHITE LIGHT EMITTING DIODES (LEDs) EACH WITH CLEAR HEMISPHERICAL INTEGRAL LENS, LEDs AIMED AT THE HORIZON.

TOTAL REFLECTANCE OF PAINT= 77.9%

MOUNTING: SURFACE

LED DRIVER: PURE LIGHTING PROPRIETARY PDS4

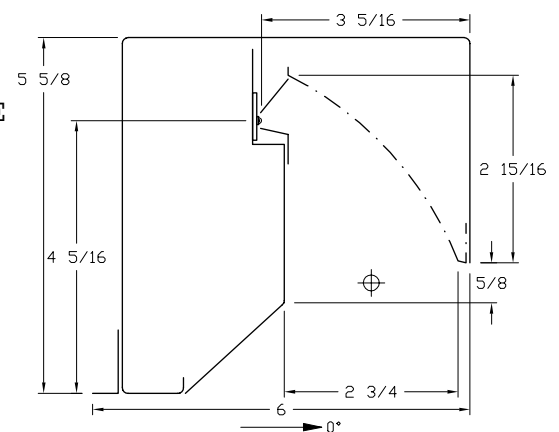
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LED DRIVER.

LAMP AND LED DRIVER INFORMATION PROVIDED BY CLIENT. UPPER HEMISPHERE NOT MEASURED AT CLIENT'S REQUEST.

TOTAL INPUT WATTS = 13.0 AT 120.0 VOLTS

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 25.25 FEET



#### CANDELA DISTRIBUTION

	0.0	45.0	90.0	135.0	180.0
0	3862	3862	3862	3862	3862
5	1006	1196	2784	3426	2732
15	246	329	1744	468	214
25	120	161	986	78	23
35	84	112	269	17	12
45	74	88	163	9	6
55	11	64	102	6	2
65	8	19	61	2	0
75	6	12	30	1	0
85	3	7	7	0	0
90	2	5	0	0	0

#### FLUX

181
185
115
62
50
34
21
12
6

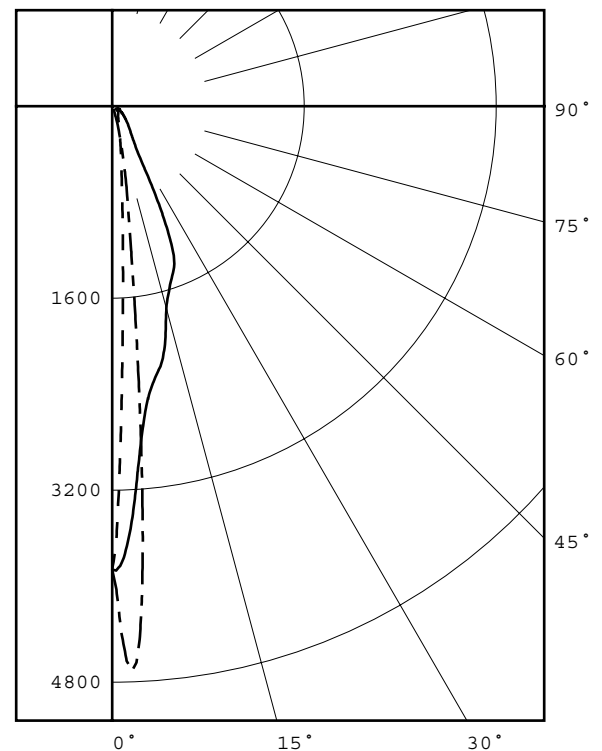
#### ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	482	72.0
0- 40	545	81.3
0- 60	630	94.0
0- 90	670	100.0
90-180	0	0.0
0-180	670	100.0

EFFICACY = 51.5 Lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG 180-DEG  
SPACING CRITERIA : 0.1 0.4 0.2  
BEAM ANGLE (50%) : 7.4 X 16.2 DEGREES  
FIELD ANGLE (10%) : 21.0 X 57.9 DEGREES

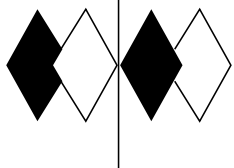


#### LEGEND:

0-deg: - - - - -  
90-deg: \_\_\_\_\_  
180-deg: - - - - -

Checked M.KLOPF

Approved R.BEATTIE



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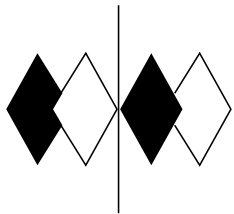
REPORT NUMBER: ITL64596

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CANDELA DISTRIBUTION  
LATERAL ANGLE

	0.0	22.5	45.0	67.5	80.0	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862
0.5	3666	3680	3740	3807	3844	3847	3851	3850	3854	3855	3860	3863	3865	3868
1.0	3194	3245	3387	3602	3728	3734	3747	3759	3770	3780	3789	3802	3814	3821
1.5	2740	2817	3035	3363	3578	3601	3618	3634	3651	3671	3687	3701	3723	3740
2.0	2331	2426	2672	3113	3405	3428	3452	3475	3503	3533	3556	3582	3604	3623
2.5	1983	2071	2342	2860	3219	3249	3276	3309	3340	3374	3398	3430	3463	3494
3.0	1715	1782	2039	2583	3009	3047	3071	3113	3154	3190	3225	3259	3298	3339
3.5	1479	1547	1779	2340	2800	2842	2881	2919	2961	3006	3049	3089	3129	3171
4.0	1288	1343	1551	2098	2593	2645	2684	2732	2775	2827	2867	2915	2960	3004
4.5	1135	1180	1361	1887	2415	2464	2511	2559	2606	2658	2711	2760	2806	2859
5.0	1006	1048	1196	1699	2247	2301	2348	2405	2454	2516	2564	2621	2669	2733
5.5	897	938	1067	1530	2109	2161	2212	2271	2328	2392	2445	2504	2560	2622
6.0	804	840	962	1398	1981	2039	2095	2154	2218	2281	2340	2405	2466	2528
6.5	726	762	871	1276	1873	1932	1992	2055	2118	2188	2253	2322	2383	2453
7.0	661	691	798	1177	1777	1839	1900	1969	2037	2109	2175	2246	2314	2388
7.5	606	634	736	1091	1692	1756	1819	1892	1960	2038	2111	2185	2256	2334
8.0	558	584	680	1018	1611	1677	1748	1819	1895	1973	2051	2129	2205	2287
8.5	520	540	635	959	1543	1611	1682	1756	1835	1920	2000	2080	2162	2246
9.0	485	505	596	906	1480	1550	1623	1700	1782	1867	1951	2035	2119	2210
9.5	454	472	563	863	1425	1495	1571	1647	1731	1821	1907	1994	2083	2175
10.0	424	442	532	827	1374	1445	1520	1601	1684	1776	1864	1955	2047	2144
10.5	399	416	508	797	1329	1401	1477	1556	1643	1735	1828	1921	2015	2114
11.0	373	390	484	768	1285	1355	1431	1511	1599	1692	1785	1880	1976	2078
11.5	352	367	462	746	1241	1311	1385	1465	1551	1646	1739	1834	1934	2035
12.0	332	347	442	721	1196	1263	1338	1416	1500	1594	1691	1786	1884	1987
12.5	315	330	423	702	1152	1216	1289	1367	1451	1543	1637	1734	1833	1936
13.0	299	312	404	680	1104	1167	1235	1308	1391	1481	1578	1674	1771	1875
13.5	283	296	385	659	1056	1116	1181	1254	1333	1421	1514	1609	1710	1814
14.0	270	281	365	637	1007	1062	1127	1194	1272	1360	1452	1549	1646	1752
14.5	258	269	347	615	959	1013	1073	1141	1216	1304	1395	1489	1590	1694
15.0	246	257	329	590	916	965	1022	1088	1162	1248	1341	1435	1536	1646
15.5	236	247	314	568	874	921	977	1041	1113	1200	1291	1390	1490	1601
16.0	226	237	298	546	833	880	934	994	1069	1155	1249	1345	1452	1566
16.5	217	228	285	525	797	842	893	955	1029	1114	1208	1308	1417	1535
17.0	209	219	273	505	763	805	855	918	989	1075	1170	1271	1382	1501
17.5	201	211	261	484	730	773	823	882	952	1038	1133	1235	1349	1474
18.0	193	203	251	463	698	738	787	847	915	1001	1096	1201	1316	1442
18.5	186	196	241	443	668	709	755	813	881	968	1065	1170	1287	1418
19.0	179	189	232	420	638	677	723	779	848	934	1033	1141	1262	1393
19.5	173	183	224	398	619	649	694	751	818	904	1004	1114	1236	1373
20.0	167	175	215	375	583	621	665	720	787	873	974	1084	1208	1347
22.5	140	149	183	290	471	504	543	592	653	732	825	933	1058	1200
25.0	120	129	161	244	378	400	428	461	505	559	627	721	795	896
27.5	107	114	145	212	303	317	332	352	375	404	439	476	514	550
30.0	96	103	131	187	257	266	276	287	300	315	332	349	365	382
32.5	90	96	131	170	228	235	244	251	261	271	280	290	300	310
35.0	84	90	112	159	206	213	219	225	232	238	246	253	260	266
37.5	79	85	105	147	188	193	197	202	207	213	218	224	229	234
40.0	78	81	99	137	171	175	178	182	186	190	194	198	203	207
42.5	78	80	94	128	156	159	162	165	168	171	173	177	180	183
45.0	74	77	88	119	143	145	147	150	152	154	156	158	160	162
47.5	67	71	83	110	131	133	135	136	138	139	141	142	143	145
50.0	53	63	78	101	120	128	132	128	135	126	127	128	129	129
52.5	23	48	71	93	109	111	112	113	114	114	115	116	115	116
55.0	11	24	64	84	99	101	102	102	103	104	104	104	103	103
57.5	9	18	54	76	90	91	92	92	93	94	93	93	92	92
60.0	8	25	41	66	81	82	83	83	84	84	84	83	82	81
62.5	8	30	21	58	71	72	73	74	74	74	74	74	73	71
65.0	8	30	19	48	63	64	64	65	66	66	65	65	64	62
67.5	8	30	17	40	55	55	56	57	57	57	57	57	56	54
70.0	7	30	15	31	46	47	48	48	49	49	49	49	48	46
72.5	7	29	14	23	38	40	40	40	41	41	41	41	40	38
75.0	6	28	12	15	31	32	33	33	33	33	34	34	33	31
77.5	5	28	11	13	24	25	25	26	26	26	27	26	26	25
80.0	5	28	10	10	18	19	19	20	20	20	20	20	19	18



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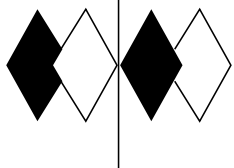
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PREPARED FOR: PURE LIGHTING LLC

CANDELA DISTRIBUTION  
LATERAL ANGLE

	0.0	22.5	45.0	67.5	80.0	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
82.5	5	28	8	8	12	13	14	15	15	15	14	14	13	13
85.0	3	27	7	6	7	8	8	9	9	9	9	9	8	7
87.5	2	27	6	5	5	5	5	5	5	5	5	5	4	3
90.0	2	26	5	4	3	3	3	3	3	2	2	2	2	1



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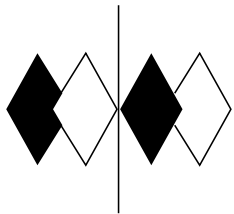
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	90.0	91.0	92.0	93.0	94.0	95.0	96.0	97.0	98.0	99.0	100.0	112.5	115.0	135.0
0.0	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862
0.5	3870	3874	3879	3872	3875	3879	3878	3882	3886	3888	3890	3927	3936	3975
1.0	3831	3841	3852	3861	3869	3881	3893	3898	3909	3921	3925	4048	4073	4239
1.5	3761	3773	3792	3808	3826	3843	3858	3877	3896	3909	3929	4132	4166	4418
2.0	3649	3676	3699	3722	3749	3773	3802	3822	3847	3869	3890	4161	4206	4512
2.5	3526	3550	3591	3616	3648	3675	3705	3735	3768	3792	3824	4147	4202	4516
3.0	3373	3401	3446	3480	3519	3549	3585	3620	3658	3689	3721	4084	4142	4424
3.5	3214	3246	3293	3331	3374	3412	3447	3492	3532	3566	3603	3983	4037	4258
4.0	3050	3094	3141	3183	3235	3280	3321	3357	3398	3437	3480	3858	3908	4031
4.5	2911	2954	3013	3056	3105	3148	3192	3240	3281	3322	3367	3723	3766	3753
5.0	2784	2832	2892	2939	2993	3040	3087	3133	3180	3219	3263	3589	3612	3426
5.5	2678	2734	2792	2844	2898	2948	2996	3051	3097	3138	3180	3469	3480	3106
6.0	2589	2646	2708	2763	2822	2875	2928	2978	3026	3071	3113	3348	3339	2778
6.5	2515	2576	2646	2703	2761	2817	2871	2924	2972	3014	3057	3232	3201	2474
7.0	2453	2520	2591	2652	2716	2771	2828	2880	2929	2973	3012	3120	3068	2190
7.5	2403	2475	2550	2613	2678	2739	2798	2851	2898	2943	2979	3015	2930	1932
8.0	2360	2436	2512	2581	2648	2710	2770	2824	2872	2914	2952	2905	2798	1705
8.5	2324	2402	2482	2552	2624	2686	2748	2804	2850	2892	2926	2794	2664	1505
9.0	2290	2373	2455	2531	2601	2667	2728	2783	2830	2869	2903	2678	2532	1317
9.5	2260	2347	2434	2510	2586	2652	2714	2769	2818	2849	2878	2562	2396	1174
10.0	2231	2320	2411	2492	2566	2633	2695	2748	2790	2822	2847	2437	2253	1043
10.5	2205	2296	2388	2468	2545	2612	2672	2723	2761	2790	2810	2309	2110	944
11.0	2170	2261	2355	2437	2510	2579	2636	2684	2720	2745	2760	2174	1962	859
11.5	2128	2222	2316	2396	2474	2538	2595	2642	2673	2692	2700	2028	1820	786
12.0	2082	2175	2272	2354	2426	2491	2543	2586	2614	2629	2633	1883	1675	723
12.5	2032	2126	2222	2304	2375	2438	2488	2527	2552	2560	2554	1739	1531	673
13.0	1972	2068	2161	2246	2316	2376	2424	2456	2474	2476	2463	1586	1391	627
13.5	1910	2007	2100	2185	2254	2312	2355	2384	2395	2390	2369	1446	1261	584
14.0	1850	1948	2043	2123	2192	2245	2286	2309	2314	2303	2277	1307	1136	544
14.5	1792	1892	1990	2069	2139	2192	2230	2247	2248	2228	2195	1192	1027	505
15.0	1744	1844	1944	2025	2094	2145	2181	2195	2189	2167	2126	1084	936	468
15.5	1704	1807	1910	1992	2061	2112	2144	2156	2144	2116	2070	999	861	432
16.0	1672	1779	1883	1968	2037	2086	2116	2122	2107	2071	2021	924	798	399
16.5	1644	1753	1861	1946	2018	2066	2093	2095	2075	2034	1976	860	745	366
17.0	1616	1730	1841	1929	2001	2050	2074	2072	2047	2001	1936	805	699	337
17.5	1590	1707	1822	1912	1985	2032	2055	2051	2021	1971	1898	759	661	309
18.0	1564	1685	1803	1898	1969	2016	2037	2028	1992	1935	1859	718	627	284
18.5	1540	1664	1788	1882	1955	2001	2018	2006	1966	1901	1817	683	598	260
19.0	1519	1647	1770	1867	1940	1984	1998	1981	1934	1864	1774	648	569	238
19.5	1499	1627	1756	1850	1924	1965	1976	1952	1900	1822	1728	619	544	218
20.0	1479	1611	1738	1835	1906	1943	1949	1921	1865	1783	1682	589	519	199
22.5	1336	1473	1601	1692	1752	1774	1754	1700	1617	1509	1393	465	407	127
25.0	986	1067	1138	1172	1185	1173	1140	1081	1008	927	846	333	294	78
27.5	581	599	609	601	589	563	532	493	457	422	390	216	193	47
30.0	392	397	393	383	370	353	333	314	295	279	263	152	134	31
32.5	317	319	315	306	295	282	267	254	241	229	219	117	100	23
35.0	269	269	264	257	248	237	225	213	203	192	183	91	73	17
37.5	237	236	232	225	215	204	192	181	171	162	154	69	52	13
40.0	209	208	203	195	186	175	164	154	145	136	135	51	38	11
42.5	184	183	177	170	161	150	140	133	123	119	109	38	27	10
45.0	163	161	156	149	140	130	121	112	105	99	93	28	20	9
47.5	145	143	138	131	122	123	104	97	90	84	79	21	16	8
50.0	129	127	122	115	106	98	91	84	78	72	67	16	13	8
52.5	115	112	108	101	93	85	78	72	66	62	57	13	11	7
55.0	102	100	95	89	81	74	68	62	57	52	48	11	10	6
57.5	91	88	84	78	71	64	58	53	48	44	40	9	8	5
60.0	80	78	73	67	60	55	50	45	40	36	33	8	8	4
62.5	70	67	64	58	52	46	42	38	33	30	26	7	7	3
65.0	61	58	55	50	44	39	35	31	27	24	21	6	6	2
67.5	52	50	47	41	37	32	28	25	22	19	17	5	5	2
70.0	44	43	39	35	30	26	23	20	17	14	12	4	4	1
72.5	36	35	32	28	24	21	18	15	13	11	9	3	3	1
75.0	30	28	25	22	19	16	14	12	10	8	7	3	3	1
77.5	23	22	20	17	14	12	10	8	7	7	5	2	2	0
80.0	17	16	15	12	10	8	7	6	5	4	4	2	2	0



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LATERAL ANGLE

	90.0	91.0	92.0	93.0	94.0	95.0	96.0	97.0	98.0	99.0	100.0	112.5	115.0	135.0
82.5	12	11	10	8	7	5	4	3	3	2	2	1	1	1
85.0	7	6	5	4	3	3	2	1	1	1	1	0	0	0
87.5	3	2	2	2	1	1	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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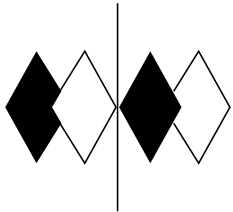
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CANDELA DISTRIBUTION  
LATERAL ANGLE

	157.5	180.0
0.0	3862	3862
0.5	4023	4030
1.0	4355	4386
1.5	4578	4623
2.0	4674	4709
2.5	4630	4640
3.0	4462	4425
3.5	4172	4080
4.0	3804	3659
4.5	3374	3195
5.0	2930	2732
5.5	2528	2309
6.0	2144	1947
6.5	1827	1641
7.0	1538	1383
7.5	1317	1213
8.0	1143	1057
8.5	1003	937
9.0	887	843
9.5	801	757
10.0	723	685
10.5	660	620
11.0	600	553
11.5	543	495
12.0	490	442
12.5	442	392
13.0	396	350
13.5	357	312
14.0	319	276
14.5	286	243
15.0	254	214
15.5	226	191
16.0	202	167
16.5	182	147
17.0	162	128
17.5	144	113
18.0	129	98
18.5	111	87
19.0	98	75
19.5	87	66
20.0	77	57
22.5	42	34
25.0	27	23
27.5	20	18
30.0	16	15
32.5	13	13
35.0	12	12
37.5	11	10
40.0	10	9
42.5	8	8
45.0	8	6
47.5	7	5
50.0	5	4
52.5	5	3
55.0	3	2
57.5	2	0
60.0	1	0
62.5	1	0
65.0	0	0
67.5	0	0
70.0	0	0
72.5	0	0
75.0	0	0
77.5	0	0
80.0	0	0



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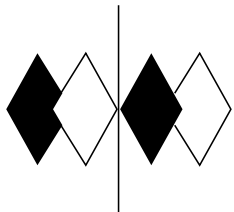
REPORT NUMBER: ITL64596

DATE: 04/23/10

PREPARED FOR: PURE LIGHTING LLC

CANDELA DISTRIBUTION  
LATERAL ANGLE

	157.5	180.0
82.5	0	0
85.0	0	0
87.5	0	0
90.0	0	0



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92
2	107	102	98	94	105	100	97	93	97	94	91	94	92	89	91	89	87	86
3	102	96	91	86	100	94	90	86	92	88	84	89	86	83	87	84	82	80
4	97	90	84	80	96	89	84	80	87	82	79	85	81	78	83	80	77	75
5	93	85	79	75	92	84	79	75	82	78	74	81	77	73	79	76	73	71
6	89	81	75	71	88	80	75	71	78	74	70	77	73	70	76	72	69	68
7	86	77	71	67	84	76	71	67	75	70	67	74	70	66	73	69	66	65
8	82	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	63	62
9	79	71	65	62	78	70	65	61	69	65	61	68	64	61	68	64	61	60
10	77	68	63	59	76	68	62	59	67	62	59	66	62	59	65	61	59	57

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

NOTE: THE ZONAL CAVITY CALCULATION TECHNIQUE IS ACCURATE WHEN LUMINAIRES WITH SYMMETRIC CANDELA DISTRIBUTIONS ARE EMPLOYED AND WHEN THE LUMINAIRES ARE LOCATED SYMMETRICALLY THROUGHOUT THE ROOM. THIS UNIT HAS SPECIAL CHARACTERISTICS AND THEREFORE THESE COEFFICIENTS SHOULD BE USED WITH CAUTION.