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**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : CLD-8655.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] LM-79-08  
[TESTLAB] Orb Optronix, Inc.  
[ISSUE DATE] 07-22-2019  
[MANUFAC] Justice Design  
[LUMINAIRE] CLD-8655

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	730
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	22
Total Luminaire Watts	33.78
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.21 ft
Luminous Width (90-270)	2.38 ft
Luminous Height	0.38 ft

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1283	1214	812
55	1447	1380	1054
65	1610	1554	1416
75	1783	1754	2054
85	1989	1996	3606

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**CANDELA TABULATION**

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
<b>0.0</b>	7.582	7.582	7.582	7.582	7.582	7.582	7.582	7.582	7.582	7.582
<b>2.5</b>	6.702	7.694	7.610	7.413	8.106	8.050	11.878	9.491	9.613	10.380
<b>5.0</b>	12.159	13.553	12.730	11.129	10.961	11.897	14.031	14.452	14.564	13.872
<b>7.5</b>	20.236	20.489	18.186	15.304	13.338	13.778	13.235	13.946	14.330	13.581
<b>10.0</b>	26.629	28.267	24.299	18.327	13.731	12.954	13.404	13.525	13.170	13.141
<b>12.5</b>	40.332	41.296	34.173	23.934	15.744	13.226	13.787	13.113	12.318	12.570
<b>15.0</b>	49.767	50.076	42.644	29.718	17.943	13.974	14.358	12.795	12.009	12.187
<b>17.5</b>	57.620	57.349	48.606	34.286	19.871	14.676	14.480	12.711	12.421	12.074
<b>20.0</b>	65.202	64.790	54.588	38.133	21.537	15.369	14.527	12.945	12.926	12.290
<b>22.5</b>	72.737	71.099	59.726	41.465	22.866	16.305	14.452	13.179	13.703	12.945
<b>25.0</b>	79.129	77.164	64.462	44.582	24.186	16.820	14.452	13.731	14.892	13.609
<b>27.5</b>	85.045	82.593	69.339	47.736	25.319	16.998	14.227	14.340	16.221	14.124
<b>30.0</b>	90.427	87.909	73.897	50.975	26.274	17.129	13.956	15.060	17.353	14.761
<b>32.5</b>	95.378	91.962	77.548	53.783	27.116	17.438	13.506	15.781	18.261	15.060
<b>35.0</b>	100.686	96.623	80.852	56.020	27.752	17.821	13.038	16.268	19.151	15.313
<b>37.5</b>	105.777	101.359	84.905	58.509	28.539	17.943	12.814	16.633	20.143	15.697
<b>40.0</b>	110.064	105.468	88.808	60.952	29.372	18.261	12.561	16.932	21.041	15.996
<b>42.5</b>	114.136	109.325	92.271	63.554	30.195	18.636	12.421	17.410	21.921	16.249
<b>45.0</b>	118.423	113.247	95.435	65.932	30.963	18.898	12.308	17.765	22.614	16.633
<b>47.5</b>	122.990	117.524	98.785	68.066	31.852	19.076	12.224	18.018	23.381	16.876
<b>50.0</b>	128.054	122.082	102.352	70.406	32.854	19.338	12.131	18.271	24.139	17.026
<b>52.5</b>	133.408	126.950	106.161	72.699	33.733	19.534	11.906	18.523	24.776	17.269
<b>55.0</b>	138.238	131.414	109.952	75.086	34.492	19.824	11.906	18.767	25.160	17.578
<b>57.5</b>	142.731	135.449	113.303	77.295	35.128	20.030	11.709	18.814	25.731	17.606
<b>60.0</b>	146.737	139.108	116.139	79.242	35.896	20.283	11.625	18.879	26.236	17.775
<b>62.5</b>	150.584	142.646	118.984	81.086	36.588	20.461	11.400	19.076	26.732	17.906
<b>65.0</b>	154.328	146.025	121.689	82.649	37.337	20.845	11.466	19.375	27.238	18.289
<b>67.5</b>	157.314	148.618	123.795	83.997	37.786	20.845	11.485	19.562	27.874	18.458
<b>70.0</b>	160.009	151.342	125.967	85.447	38.357	21.116	11.569	19.703	28.314	18.552
<b>72.5</b>	163.295	154.431	128.644	87.048	38.919	21.612	11.737	19.927	28.950	18.851
<b>75.0</b>	166.280	156.958	130.740	88.574	39.434	22.024	11.794	20.171	29.512	19.151
<b>77.5</b>	168.686	158.306	132.687	89.790	40.070	22.389	12.046	20.349	29.830	19.319
<b>80.0</b>	170.942	160.636	134.297	90.858	40.519	22.801	12.177	20.508	30.467	19.450
<b>82.5</b>	173.094	162.602	135.870	91.812	40.959	23.007	12.252	20.583	30.776	19.590
<b>85.0</b>	174.676	164.128	136.787	92.524	41.268	23.250	12.336	20.583	31.028	19.506
<b>87.5</b>	175.575	165.157	137.339	92.804	41.465	23.363	12.365	20.517	31.216	19.506
<b>90.0</b>	176.080	165.447	137.452	92.720	41.540	23.297	12.336	20.349	31.216	19.422
<b>92.5</b>	175.753	165.148	137.021	92.767	41.521	23.222	12.262	20.171	31.216	19.076
<b>95.0</b>	174.938	164.493	136.478	92.421	41.540	22.979	12.336	19.974	30.963	18.898
<b>97.5</b>	173.862	163.594	135.701	91.925	41.409	22.829	12.262	19.881	30.888	18.636
<b>100.0</b>	172.589	162.377	134.587	91.223	41.212	22.520	12.290	19.824	30.888	18.673
<b>102.5</b>	170.680	160.608	132.987	90.230	40.772	22.286	11.934	19.272	30.177	17.934
<b>105.0</b>	168.527	158.530	131.461	89.313	40.519	21.594	11.569	18.767	29.886	17.653
<b>107.5</b>	166.262	156.490	129.804	88.171	40.407	21.200	11.457	18.542	29.418	17.410
<b>110.0</b>	163.772	154.243	127.680	87.020	40.154	20.620	11.185	18.233	28.791	17.194
<b>112.5</b>	160.664	151.417	125.153	85.410	39.640	20.096	10.904	17.962	28.230	16.745
<b>115.0</b>	157.126	148.178	122.522	83.772	39.200	20.068	10.624	17.634	27.724	16.492
<b>117.5</b>	153.850	145.024	119.920	82.200	38.629	19.974	10.680	17.279	27.153	16.127
<b>120.0</b>	150.228	141.767	116.934	80.365	37.936	19.853	10.961	16.942	26.395	15.865
<b>122.5</b>	146.390	138.172	113.911	78.437	37.365	19.534	11.298	16.932	25.768	15.809
<b>125.0</b>	142.834	134.681	110.701	76.415	36.785	19.272	11.513	16.857	25.122	15.725
<b>127.5</b>	138.294	130.525	107.032	74.262	35.905	19.048	11.597	16.876	24.083	15.397
<b>130.0</b>	133.820	126.313	105.178	75.339	35.343	18.795	11.794	16.801	23.157	14.864
<b>132.5</b>	130.469	123.486	104.570	72.549	34.632	18.570	11.700	16.408	22.146	14.948

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**CANDELA TABULATION - (Cont.)**

135.0	127.184	120.173	98.112	68.553	33.743	18.149	11.737	16.221	21.341	14.218
137.5	123.580	116.822	94.733	66.016	32.928	18.046	11.625	16.155	20.012	13.263
140.0	118.872	112.666	90.773	63.714	31.693	17.250	11.316	14.555	17.737	11.737
142.5	113.172	107.518	88.050	59.277	30.139	16.829	10.745	12.477	16.240	10.567
145.0	99.806	99.113	81.722	58.266	29.606	16.296	9.847	11.185	14.676	9.332
147.5	101.219	97.372	80.533	54.363	27.902	14.995	8.939	10.109	12.393	7.881
150.0	94.349	90.530	74.403	49.926	26.133	13.694	7.610	8.199	9.660	5.513
152.5	88.181	84.053	68.665	46.304	24.542	12.262	5.597	5.972	6.692	3.866
155.0	83.201	78.942	64.275	43.674	22.221	9.968	4.568	4.203	4.231	2.733
157.5	77.725	74.346	60.288	39.902	19.104	6.674	3.791	3.229	2.686	2.125
160.0	69.695	67.720	54.765	34.576	15.229	4.792	3.182	2.658	2.040	1.572
162.5	62.310	60.232	48.185	27.341	10.380	3.707	2.153	1.769	1.498	1.254
165.0	51.845	51.096	36.869	17.213	7.750	2.593	1.554	1.198	0.889	1.030
167.5	34.117	32.751	23.821	12.795	5.148	1.806	1.104	0.880	0.721	0.908
170.0	22.062	22.005	16.577	7.563	2.855	1.189	0.880	0.749	0.711	0.824
172.5	12.945	13.235	8.826	3.604	1.919	0.992	0.665	0.693	0.562	0.852
175.0	4.736	5.476	4.006	1.329	0.693	0.618	0.534	0.505	0.636	0.852
177.5	0.636	1.348	0.768	0.562	0.749	0.665	0.636	0.749	0.711	0.917
180.0	0.791	0.791	0.791	0.791	0.791	0.791	0.791	0.791	0.791	0.791

**Vert. Angles**      **Horizontal Angles**

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	7.582	7.582	7.582	7.582	7.582	7.582	7.582
2.5	9.360	8.883	8.499	6.786	6.084	6.589	6.056
5.0	13.319	12.477	11.494	10.549	11.017	12.533	13.057
7.5	13.235	13.151	13.581	14.864	16.876	20.058	21.088
10.0	13.235	13.226	14.798	18.065	22.136	27.153	28.211
12.5	13.535	13.862	16.885	23.306	30.916	39.144	41.877
15.0	14.124	14.480	18.318	28.033	38.273	47.380	50.900
17.5	14.274	14.836	19.590	31.880	43.833	54.138	58.285
20.0	14.162	15.435	20.583	35.072	49.514	61.327	66.147
22.5	14.227	16.006	21.556	37.786	54.382	67.701	73.401
25.0	14.171	16.633	22.473	40.388	58.874	73.485	79.757
27.5	14.171	17.073	23.185	43.206	63.582	78.577	85.476
30.0	14.059	17.578	23.671	45.883	67.673	83.529	90.970
32.5	14.031	18.018	24.196	48.410	71.407	88.293	95.772
35.0	13.731	18.523	24.907	50.741	75.311	93.198	101.107
37.5	13.722	18.842	25.553	53.062	79.373	97.859	106.068
40.0	13.591	19.478	26.161	55.346	82.845	101.968	110.382
42.5	13.535	20.040	26.798	57.620	86.262	105.834	114.604
45.0	13.478	20.292	27.434	59.810	89.734	110.289	119.003
47.5	13.460	20.863	28.155	61.916	93.516	114.800	123.749
50.0	13.404	21.453	28.782	64.247	97.232	119.611	128.897
52.5	13.347	21.940	29.456	66.624	101.210	124.544	134.204
55.0	13.338	22.501	30.139	68.777	104.944	129.196	139.071
57.5	13.226	23.007	30.551	70.883	108.305	133.146	143.470
60.0	13.095	23.447	31.028	72.680	111.206	136.787	147.373
62.5	12.973	23.821	31.609	74.506	114.173	140.466	151.220
65.0	12.973	24.242	32.114	75.994	116.888	143.844	155.011
67.5	12.954	24.308	32.470	77.211	119.115	146.606	157.847
70.0	13.029	24.636	32.769	78.353	121.137	149.049	160.477
72.5	13.085	25.029	33.191	79.850	123.468	151.997	163.660
75.0	13.085	25.525	33.462	80.964	125.677	154.683	166.561
77.5	13.151	25.843	33.911	82.115	127.446	156.817	168.976
80.0	13.282	26.405	34.314	83.061	129.084	158.895	171.232

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**CANDELA TABULATION - (Cont.)**

<b>82.5</b>	13.282	26.648	34.482	83.978	130.778	160.852	173.254
<b>85.0</b>	13.404	27.032	34.623	84.577	131.723	162.050	174.667
<b>87.5</b>	13.404	27.153	34.707	84.998	132.481	162.873	175.547
<b>90.0</b>	13.338	27.312	34.791	85.157	132.903	163.126	175.781
<b>92.5</b>	13.151	27.200	34.735	85.213	132.772	162.761	175.360
<b>95.0</b>	12.973	27.097	34.651	84.802	132.051	161.797	174.527
<b>97.5</b>	12.711	26.985	34.482	84.324	131.302	160.739	173.319
<b>100.0</b>	12.589	26.760	34.286	83.772	130.338	159.391	171.934
<b>102.5</b>	12.074	26.423	33.967	82.789	128.925	157.529	169.959
<b>105.0</b>	11.766	25.937	33.621	81.778	127.230	155.348	167.750
<b>107.5</b>	11.382	25.628	33.331	80.758	125.396	153.251	165.475
<b>110.0</b>	11.204	25.160	33.481	79.523	123.412	150.724	162.911
<b>112.5</b>	10.876	24.692	33.219	78.212	121.062	147.654	159.700
<b>115.0</b>	10.689	24.804	32.910	76.752	118.591	144.472	156.340
<b>117.5</b>	10.633	24.823	32.517	75.423	116.073	141.411	152.896
<b>120.0</b>	10.886	24.710	32.217	73.869	113.396	137.920	149.236
<b>122.5</b>	11.269	24.495	31.740	72.353	110.682	134.559	145.585
<b>125.0</b>	11.513	24.168	31.422	70.528	107.696	130.965	141.898
<b>127.5</b>	11.522	23.643	30.972	68.759	104.458	126.669	137.330
<b>130.0</b>	11.616	23.222	30.523	68.918	101.930	122.934	133.024
<b>132.5</b>	11.616	22.427	29.915	66.559	100.526	120.061	129.973
<b>135.0</b>	12.037	21.949	29.222	63.377	96.932	116.438	126.566
<b>137.5</b>	11.709	21.097	28.539	61.214	92.383	112.919	123.000
<b>140.0</b>	10.249	21.032	27.509	58.837	88.518	108.267	118.217
<b>142.5</b>	9.388	19.506	27.200	56.207	83.529	101.013	112.479
<b>145.0</b>	8.555	18.009	25.787	53.109	80.122	95.818	102.295
<b>147.5</b>	7.554	16.127	24.027	50.422	74.431	91.354	100.545
<b>150.0</b>	6.056	13.918	22.174	47.680	69.498	85.101	93.403
<b>152.5</b>	5.017	11.298	19.647	44.872	65.239	79.953	87.273
<b>155.0</b>	4.090	8.134	16.417	41.933	61.299	75.610	82.237
<b>157.5</b>	3.594	5.476	13.609	37.833	55.795	69.779	76.546
<b>160.0</b>	2.761	4.493	10.886	33.237	49.318	62.197	66.119
<b>162.5</b>	1.956	3.538	8.143	25.469	42.260	54.363	54.662
<b>165.0</b>	1.544	2.733	6.477	17.718	31.272	43.374	45.359
<b>167.5</b>	1.301	2.050	4.259	14.368	21.032	27.097	30.785
<b>170.0</b>	1.058	1.601	2.602	9.135	13.703	17.793	19.815
<b>172.5</b>	1.020	1.460	1.956	5.036	7.057	9.294	11.073
<b>175.0</b>	1.104	1.114	1.273	2.939	3.295	4.203	4.493
<b>177.5</b>	1.058	1.198	1.320	1.254	1.020	0.739	0.777
<b>180.0</b>	0.791	0.791	0.791	0.791	0.791	0.791	0.791

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	8.80	N.A.	1.20
0-30	25.92	N.A.	3.50
0-40	54.29	N.A.	7.40
0-60	148.04	N.A.	20.30
0-80	286.60	N.A.	39.20
0-90	366.17	N.A.	50.10
10-90	364.81	N.A.	49.90
20-40	45.50	N.A.	6.20
20-50	85.96	N.A.	11.80
40-70	158.48	N.A.	21.70
60-80	138.55	N.A.	19.00
70-80	73.82	N.A.	10.10
80-90	79.57	N.A.	10.90
90-110	153.85	N.A.	21.10
90-120	219.10	N.A.	30.00
90-130	273.22	N.A.	37.40
90-150	343.60	N.A.	47.00
90-180	364.32	N.A.	49.90
110-180	210.47	N.A.	28.80
0-180	730.48	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	1.35
10-20	7.44
20-30	17.13
30-40	28.37
40-50	40.46
50-60	53.29
60-70	64.73
70-80	73.82
80-90	79.57
90-100	79.58
100-110	74.27
110-120	65.25
120-130	54.13
130-140	42.10
140-150	28.28
150-160	15.31
160-170	5.04
170-180	0.37

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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	
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	92	86	80	74	84	78	73	68	65	61	57	52	49	46	41	39	37	31
2	82	72	63	56	74	66	58	52	54	48	43	43	39	35	33	30	27	22
3	74	61	52	45	67	56	48	41	46	39	34	36	31	27	28	24	21	16
4	66	53	44	36	60	49	40	33	40	33	27	31	26	22	24	20	16	12
5	61	47	37	30	55	43	34	28	35	28	23	28	22	18	21	17	13	10
6	55	41	32	25	50	38	29	23	31	24	19	24	19	15	18	14	11	8
7	51	37	28	22	46	34	26	20	28	21	16	22	17	13	17	13	9	7
8	47	33	25	19	43	30	23	17	25	19	14	20	15	11	15	11	8	5
9	44	30	22	16	40	28	20	15	23	17	12	18	13	10	14	10	7	5
10	41	27	20	14	37	25	18	13	21	15	11	17	12	8	13	9	6	4

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : CLD-8655.IES**

**UGR TABLE - CORRECTED**

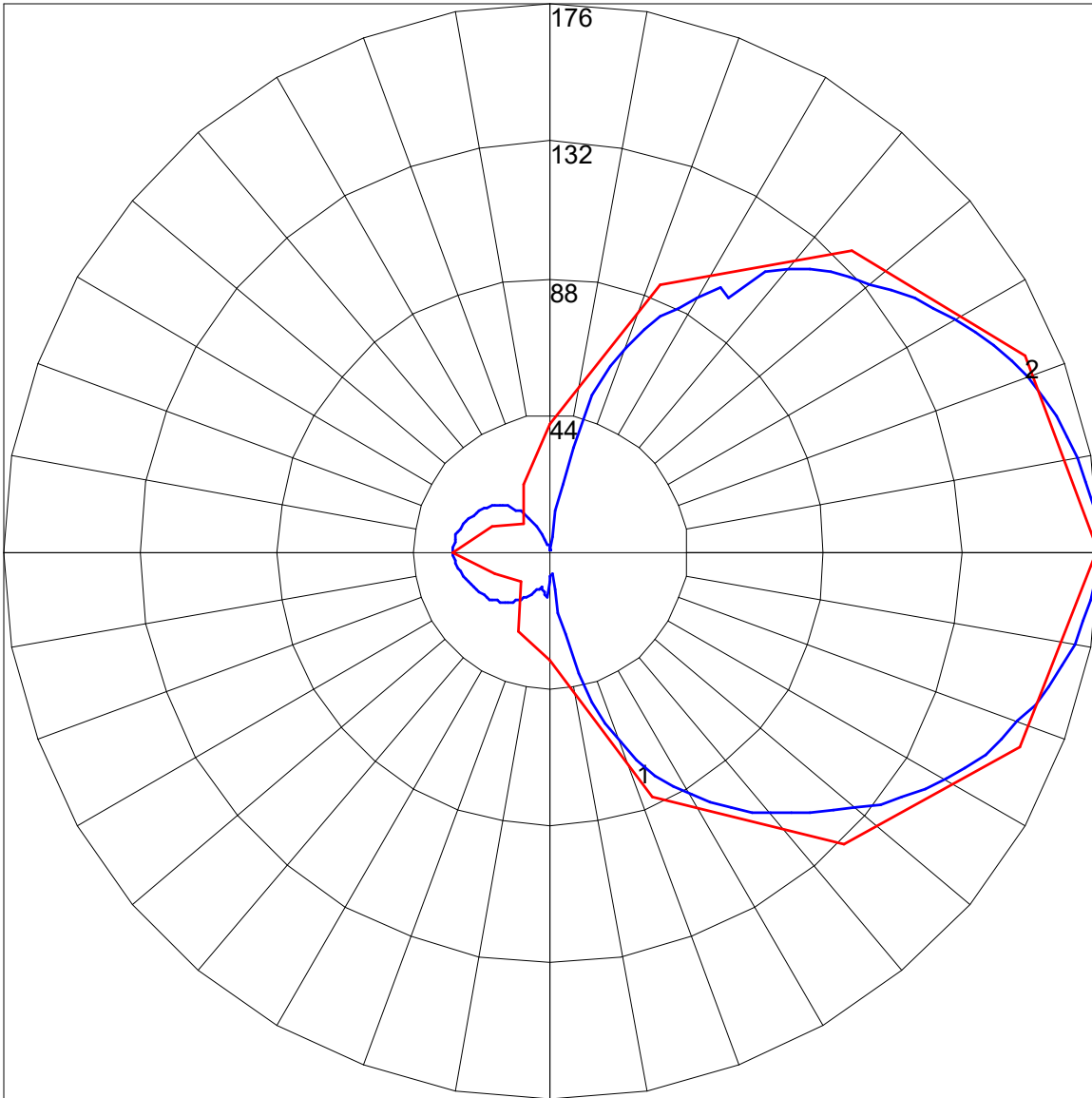
Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	14.3	15.3	15.2	16.3	17.5	5.6	6.6	6.5	7.6	8.9
	3H	18.2	19.2	19.2	20.2	21.4	8.0	9.0	9.0	10.0	11.2
	4H	20.3	21.2	21.2	22.2	23.4	9.2	10.1	10.1	11.1	12.4
	6H	22.4	23.3	23.3	24.2	25.5	10.3	11.2	11.3	12.2	13.5
	8H	23.5	24.3	24.4	25.3	26.6	10.9	11.7	11.8	12.7	14.0
	12H	24.6	25.4	25.6	26.4	27.7	11.4	12.2	12.4	13.2	14.5
4H	2H	14.6	15.5	15.6	16.5	17.8	8.1	9.1	9.1	10.0	11.3
	3H	18.8	19.6	19.7	20.6	21.9	10.7	11.5	11.6	12.5	13.8
	4H	20.9	21.7	21.9	22.7	24.0	11.9	12.6	12.8	13.6	14.9
	6H	23.3	23.9	24.2	24.9	26.2	13.0	13.7	14.0	14.7	16.0
	8H	24.4	25.1	25.4	26.1	27.4	13.6	14.2	14.5	15.2	16.5
	12H	25.7	26.3	26.7	27.3	28.7	14.1	14.6	15.1	15.7	17.0
8H	4H	21.1	21.8	22.1	22.8	24.1	13.6	14.3	14.6	15.3	16.6
	6H	23.6	24.2	24.6	25.2	26.5	15.0	15.5	16.0	16.6	17.9
	8H	24.9	25.4	26.0	26.5	27.8	15.7	16.1	16.7	17.2	18.5
	12H	26.4	26.8	27.4	27.9	29.2	16.3	16.7	17.3	17.7	19.1
12H	4H	21.1	21.7	22.1	22.7	24.1	14.2	14.8	15.2	15.8	17.1
	6H	23.7	24.1	24.7	25.2	26.6	15.7	16.2	16.7	17.2	18.6
	8H	25.0	25.5	26.1	26.5	27.9	16.5	16.9	17.5	18.0	19.3

Maximum UGR = 29.2

POLAR GRAPH



Maximum Candela = 176.08 Located At Horizontal Angle = 0, Vertical Angle = 90  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (90) (Through Max. Cd.)