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IES INDOOR REPORT
PHOTOMETRIC FILENAME : ALR-8655.IES

DESCRIPTION INFORMATION (From Photometric File)

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

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	640
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	19
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	1124	1063	712
55	1267	1209	923
65	1410	1362	1241
75	1562	1537	1800
85	1742	1749	3159

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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>
0.0	6.642	6.642	6.642	6.642	6.642	6.642	6.642	6.642	6.642	6.642
2.5	5.871	6.740	6.667	6.494	7.101	7.052	10.406	8.315	8.421	9.094
5.0	10.652	11.874	11.152	9.750	9.602	10.422	12.292	12.661	12.759	12.152
7.5	17.728	17.950	15.933	13.407	11.685	12.070	11.595	12.218	12.554	11.898
10.0	23.329	24.764	21.287	16.056	12.029	11.349	11.742	11.849	11.537	11.513
12.5	35.334	36.178	29.938	20.967	13.792	11.587	12.079	11.488	10.791	11.013
15.0	43.599	43.870	37.359	26.035	15.719	12.243	12.579	11.209	10.521	10.676
17.5	50.479	50.241	42.583	30.037	17.409	12.858	12.685	11.136	10.881	10.578
20.0	57.121	56.760	47.822	33.407	18.868	13.464	12.726	11.341	11.324	10.767
22.5	63.722	62.287	52.324	36.326	20.033	14.284	12.661	11.546	12.005	11.341
25.0	69.323	67.601	56.473	39.057	21.189	14.735	12.661	12.029	13.046	11.923
27.5	74.505	72.357	60.746	41.820	22.181	14.891	12.464	12.562	14.211	12.374
30.0	79.220	77.014	64.739	44.657	23.017	15.006	12.226	13.194	15.203	12.931
32.5	83.558	80.565	67.937	47.117	23.755	15.277	11.833	13.825	15.998	13.194
35.0	88.207	84.649	70.832	49.077	24.313	15.613	11.423	14.252	16.777	13.415
37.5	92.668	88.798	74.382	51.258	25.002	15.719	11.226	14.571	17.646	13.751
40.0	96.424	92.398	77.802	53.398	25.732	15.998	11.004	14.834	18.434	14.014
42.5	99.991	95.776	80.836	55.678	26.453	16.326	10.881	15.252	19.204	14.235
45.0	103.746	99.212	83.607	57.761	27.126	16.556	10.783	15.564	19.811	14.571
47.5	107.748	102.959	86.543	59.630	27.905	16.712	10.709	15.785	20.484	14.785
50.0	112.184	106.953	89.667	61.680	28.782	16.941	10.627	16.006	21.148	14.916
52.5	116.875	111.217	93.004	63.689	29.553	17.113	10.430	16.228	21.705	15.129
55.0	121.106	115.128	96.325	65.780	30.217	17.368	10.430	16.441	22.042	15.400
57.5	125.042	118.662	99.261	67.716	30.775	17.548	10.258	16.482	22.542	15.424
60.0	128.551	121.868	101.746	69.421	31.447	17.769	10.184	16.539	22.985	15.572
62.5	131.922	124.968	104.238	71.037	32.054	17.925	9.988	16.712	23.419	15.687
65.0	135.202	127.928	106.608	72.406	32.710	18.261	10.045	16.974	23.862	16.023
67.5	137.817	130.200	108.453	73.587	33.103	18.261	10.061	17.138	24.420	16.170
70.0	140.179	132.586	110.356	74.858	33.604	18.499	10.135	17.261	24.805	16.252
72.5	143.057	135.292	112.701	76.260	34.096	18.934	10.283	17.458	25.363	16.515
75.0	145.673	137.506	114.538	77.597	34.547	19.295	10.332	17.671	25.855	16.777
77.5	147.780	138.687	116.243	78.663	35.104	19.614	10.553	17.827	26.133	16.925
80.0	149.757	140.728	117.654	79.597	35.498	19.975	10.668	17.966	26.691	17.040
82.5	151.643	142.450	119.031	80.434	35.883	20.156	10.734	18.032	26.962	17.163
85.0	153.028	143.787	119.835	81.057	36.154	20.369	10.808	18.032	27.183	17.089
87.5	153.816	144.689	120.319	81.303	36.326	20.467	10.832	17.974	27.347	17.089
90.0	154.258	144.943	120.417	81.229	36.392	20.410	10.808	17.827	27.347	17.015
92.5	153.971	144.681	120.040	81.270	36.375	20.344	10.742	17.671	27.347	16.712
95.0	153.258	144.107	119.564	80.967	36.392	20.131	10.808	17.499	27.126	16.556
97.5	152.315	143.320	118.884	80.532	36.277	20.000	10.742	17.417	27.060	16.326
100.0	151.200	142.254	117.908	79.917	36.105	19.729	10.767	17.368	27.060	16.359
102.5	149.527	140.704	116.506	79.048	35.719	19.524	10.455	16.884	26.437	15.711
105.0	147.641	138.883	115.169	78.244	35.498	18.917	10.135	16.441	26.183	15.465
107.5	145.657	137.096	113.718	77.244	35.399	18.573	10.037	16.244	25.773	15.252
110.0	143.475	135.128	111.856	76.235	35.178	18.065	9.799	15.974	25.223	15.063
112.5	140.753	132.651	109.642	74.825	34.727	17.605	9.553	15.736	24.731	14.670
115.0	137.653	129.814	107.338	73.390	34.342	17.581	9.307	15.449	24.288	14.448
117.5	134.783	127.051	105.058	72.012	33.841	17.499	9.356	15.137	23.788	14.129
120.0	131.610	124.197	102.443	70.405	33.235	17.392	9.602	14.842	23.124	13.899
122.5	128.248	121.048	99.794	68.716	32.734	17.113	9.897	14.834	22.575	13.850
125.0	125.132	117.990	96.981	66.945	32.226	16.884	10.086	14.768	22.009	13.776
127.5	121.155	114.349	93.767	65.059	31.455	16.687	10.160	14.785	21.099	13.489
130.0	117.235	110.659	92.143	66.002	30.963	16.466	10.332	14.719	20.287	13.022
132.5	114.300	108.183	91.610	63.558	30.340	16.269	10.250	14.375	19.401	13.095

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CANDELA TABULATION - (Cont.)

135.0	111.422	105.280	85.952	60.057	29.561	15.900	10.283	14.211	18.696	12.456
137.5	108.265	102.344	82.992	57.835	28.848	15.810	10.184	14.153	17.532	11.619
140.0	104.140	98.703	79.524	55.817	27.765	15.113	9.914	12.751	15.539	10.283
142.5	99.146	94.193	77.137	51.931	26.404	14.744	9.414	10.931	14.227	9.258
145.0	87.437	86.830	71.594	51.045	25.937	14.276	8.626	9.799	12.858	8.175
147.5	88.675	85.305	70.553	47.626	24.444	13.136	7.831	8.856	10.857	6.904
150.0	82.656	79.310	65.182	43.739	22.894	11.997	6.667	7.183	8.462	4.830
152.5	77.252	73.636	60.155	40.565	21.500	10.742	4.904	5.232	5.863	3.387
155.0	72.890	69.159	56.309	38.261	19.467	8.733	4.002	3.682	3.706	2.394
157.5	68.093	65.133	52.816	34.957	16.736	5.847	3.321	2.829	2.353	1.861
160.0	61.057	59.327	47.978	30.291	13.341	4.198	2.788	2.329	1.788	1.378
162.5	54.587	52.767	42.214	23.952	9.094	3.247	1.886	1.550	1.312	1.099
165.0	45.420	44.764	32.300	15.080	6.790	2.271	1.361	1.050	0.779	0.902
167.5	29.889	28.692	20.869	11.209	4.510	1.583	0.968	0.771	0.631	0.795
170.0	19.327	19.278	14.522	6.626	2.501	1.041	0.771	0.656	0.623	0.722
172.5	11.341	11.595	7.733	3.157	1.681	0.869	0.582	0.607	0.492	0.746
175.0	4.149	4.797	3.510	1.164	0.607	0.541	0.467	0.443	0.558	0.746
177.5	0.558	1.181	0.672	0.492	0.656	0.582	0.558	0.656	0.623	0.804
180.0	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693

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	6.642	6.642	6.642	6.642	6.642	6.642	6.642
2.5	8.200	7.782	7.446	5.945	5.330	5.773	5.305
5.0	11.669	10.931	10.070	9.241	9.651	10.980	11.439
7.5	11.595	11.521	11.898	13.022	14.785	17.573	18.475
10.0	11.595	11.587	12.964	15.826	19.393	23.788	24.715
12.5	11.857	12.144	14.793	20.418	27.085	34.292	36.687
15.0	12.374	12.685	16.047	24.559	33.530	41.508	44.592
17.5	12.505	12.997	17.163	27.929	38.401	47.429	51.061
20.0	12.407	13.522	18.032	30.725	43.378	53.726	57.949
22.5	12.464	14.022	18.885	33.103	47.642	59.311	64.304
25.0	12.415	14.571	19.688	35.383	51.578	64.378	69.872
27.5	12.415	14.957	20.311	37.851	55.703	68.839	74.882
30.0	12.316	15.400	20.738	40.196	59.286	73.177	79.696
32.5	12.292	15.785	21.197	42.410	62.558	77.351	83.902
35.0	12.029	16.228	21.820	44.452	65.977	81.647	88.576
37.5	12.021	16.507	22.386	46.486	69.536	85.731	92.922
40.0	11.906	17.064	22.919	48.487	72.578	89.331	96.703
42.5	11.857	17.556	23.477	50.479	75.571	92.717	100.401
45.0	11.808	17.778	24.034	52.398	78.613	96.621	104.255
47.5	11.792	18.278	24.666	54.243	81.926	100.573	108.412
50.0	11.742	18.794	25.215	56.285	85.182	104.788	112.922
52.5	11.693	19.221	25.805	58.368	88.667	109.109	117.572
55.0	11.685	19.713	26.404	60.254	91.938	113.185	121.836
57.5	11.587	20.156	26.765	62.099	94.882	116.645	125.690
60.0	11.472	20.541	27.183	63.673	97.424	119.835	129.109
62.5	11.365	20.869	27.691	65.272	100.024	123.057	132.479
65.0	11.365	21.238	28.134	66.576	102.402	126.018	135.800
67.5	11.349	21.295	28.446	67.642	104.353	128.437	138.285
70.0	11.414	21.582	28.708	68.642	106.124	130.577	140.589
72.5	11.464	21.927	29.077	69.954	108.166	133.160	143.377
75.0	11.464	22.361	29.315	70.930	110.101	135.513	145.919
77.5	11.521	22.640	29.709	71.939	111.651	137.383	148.035
80.0	11.636	23.132	30.061	72.767	113.086	139.203	150.011

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CANDELA TABULATION - (Cont.)

82.5	11.636	23.345	30.209	73.570	114.570	140.917	151.782
85.0	11.742	23.682	30.332	74.095	115.399	141.967	153.020
87.5	11.742	23.788	30.406	74.464	116.063	142.688	153.791
90.0	11.685	23.928	30.479	74.604	116.432	142.910	153.996
92.5	11.521	23.829	30.430	74.653	116.317	142.590	153.627
95.0	11.365	23.739	30.356	74.292	115.686	141.745	152.897
97.5	11.136	23.641	30.209	73.874	115.030	140.819	151.839
100.0	11.029	23.444	30.037	73.390	114.185	139.638	150.626
102.5	10.578	23.149	29.758	72.529	112.947	138.006	148.896
105.0	10.307	22.722	29.454	71.643	111.463	136.095	146.960
107.5	9.971	22.452	29.200	70.750	109.855	134.259	144.968
110.0	9.815	22.042	29.331	69.667	108.117	132.045	142.721
112.5	9.528	21.632	29.102	68.519	106.059	129.355	139.908
115.0	9.364	21.730	28.831	67.240	103.894	126.567	136.965
117.5	9.315	21.746	28.487	66.076	101.688	123.886	133.947
120.0	9.537	21.648	28.224	64.714	99.343	120.827	130.741
122.5	9.873	21.459	27.806	63.386	96.965	117.883	127.543
125.0	10.086	21.172	27.527	61.787	94.349	114.734	124.312
127.5	10.094	20.713	27.134	60.237	91.512	110.971	120.310
130.0	10.176	20.344	26.740	60.377	89.298	107.699	116.538
132.5	10.176	19.647	26.207	58.310	88.068	105.181	113.865
135.0	10.545	19.229	25.600	55.522	84.919	102.008	110.880
137.5	10.258	18.483	25.002	53.628	80.934	98.925	107.756
140.0	8.979	18.425	24.100	51.545	77.547	94.849	103.566
142.5	8.225	17.089	23.829	49.241	73.177	88.494	98.539
145.0	7.495	15.777	22.591	46.527	70.192	83.943	89.618
147.5	6.617	14.129	21.049	44.173	65.206	80.032	88.084
150.0	5.305	12.193	19.426	41.771	60.885	74.554	81.828
152.5	4.395	9.897	17.212	39.311	57.154	70.044	76.457
155.0	3.583	7.126	14.383	36.736	53.702	66.240	72.045
157.5	3.149	4.797	11.923	33.144	48.880	61.131	67.060
160.0	2.419	3.936	9.537	29.118	43.206	54.489	57.925
162.5	1.714	3.100	7.134	22.312	37.023	47.626	47.888
165.0	1.353	2.394	5.674	15.523	27.396	37.999	39.737
167.5	1.140	1.796	3.731	12.587	18.425	23.739	26.970
170.0	0.927	1.402	2.280	8.003	12.005	15.588	17.359
172.5	0.894	1.279	1.714	4.412	6.183	8.143	9.701
175.0	0.968	0.976	1.115	2.575	2.886	3.682	3.936
177.5	0.927	1.050	1.156	1.099	0.894	0.648	0.681
180.0	0.693	0.693	0.693	0.693	0.693	0.693	0.693

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	7.71	N.A.	1.20
0-30	22.71	N.A.	3.50
0-40	47.56	N.A.	7.40
0-60	129.70	N.A.	20.30
0-80	251.08	N.A.	39.20
0-90	320.79	N.A.	50.10
10-90	319.60	N.A.	49.90
20-40	39.86	N.A.	6.20
20-50	75.30	N.A.	11.80
40-70	138.84	N.A.	21.70
60-80	121.38	N.A.	19.00
70-80	64.67	N.A.	10.10
80-90	69.71	N.A.	10.90
90-110	134.79	N.A.	21.10
90-120	191.94	N.A.	30.00
90-130	239.36	N.A.	37.40
90-150	301.02	N.A.	47.00
90-180	319.17	N.A.	49.90
110-180	184.38	N.A.	28.80
0-180	639.95	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1.18
10-20	6.52
20-30	15.00
30-40	24.86
40-50	35.44
50-60	46.69
60-70	56.71
70-80	64.67
80-90	69.71
90-100	69.72
100-110	65.07
110-120	57.16
120-130	47.42
130-140	36.88
140-150	24.77
150-160	13.41
160-170	4.41
170-180	0.33

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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	73	61	52	44	67	56	48	41	46	39	34	36	31	27	28	24	20	16
4	66	53	44	36	60	49	40	33	40	33	27	31	26	22	24	20	16	12
5	60	47	37	30	55	43	34	27	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

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UGR TABLE - CORRECTED

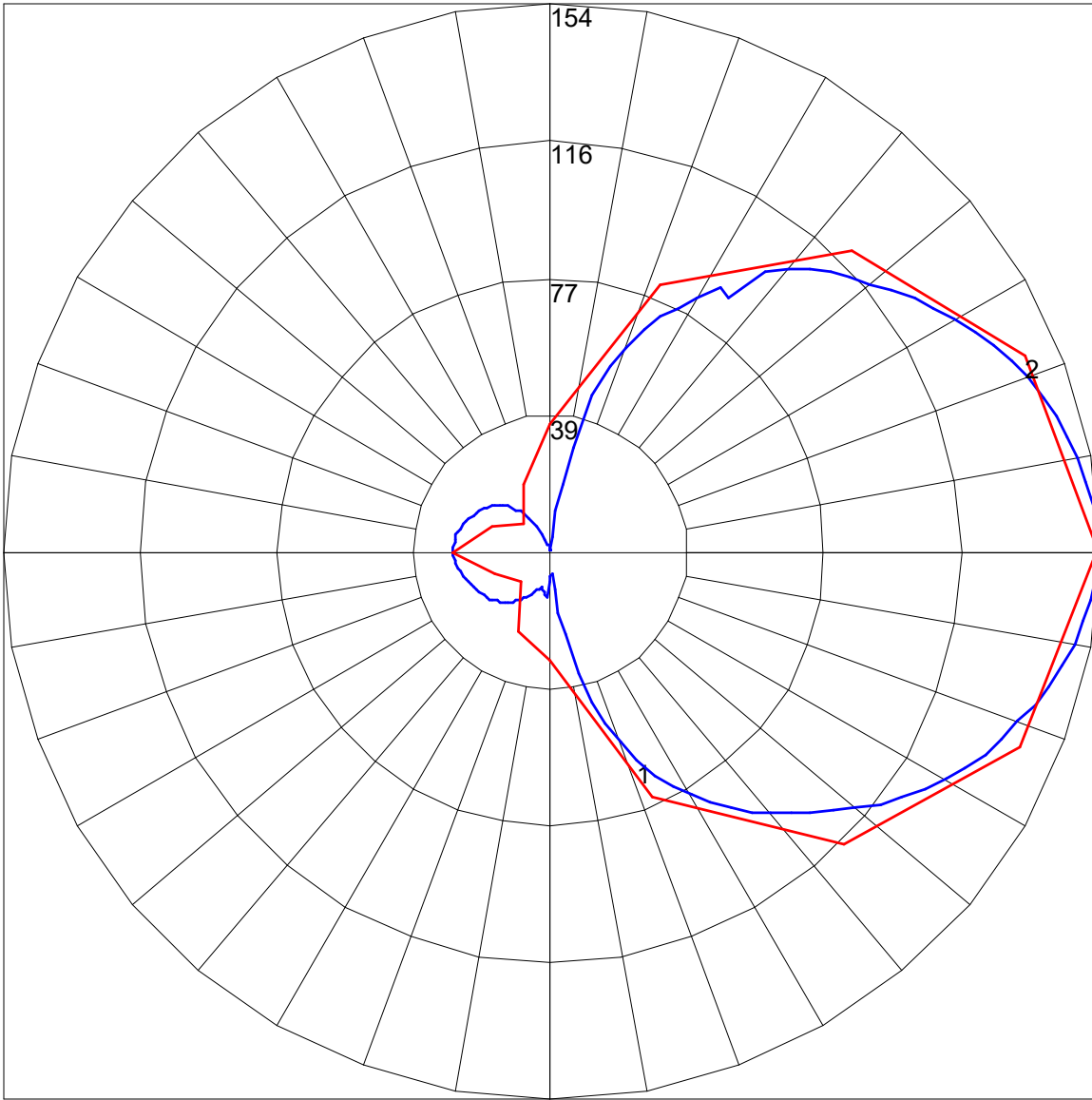
Reflectances

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	13.8	14.8	14.7	15.8	17.1	5.1	6.2	6.0	7.1	8.4
	3H	17.7	18.7	18.7	19.7	20.9	7.5	8.5	8.5	9.5	10.7
	4H	19.8	20.7	20.7	21.7	22.9	8.7	9.6	9.7	10.6	11.9
	6H	21.9	22.8	22.9	23.7	25.0	9.9	10.7	10.8	11.7	13.0
	8H	23.0	23.8	24.0	24.8	26.1	10.4	11.2	11.4	12.2	13.5
	12H	24.1	24.9	25.1	25.9	27.3	10.9	11.7	11.9	12.7	14.0
4H	2H	14.1	15.1	15.1	16.0	17.3	7.7	8.6	8.6	9.5	10.8
	3H	18.3	19.1	19.2	20.1	21.4	10.2	11.0	11.1	12.0	13.3
	4H	20.4	21.2	21.4	22.2	23.5	11.4	12.1	12.3	13.1	14.4
	6H	22.8	23.4	23.7	24.4	25.8	12.5	13.2	13.5	14.2	15.5
	8H	24.0	24.6	24.9	25.6	26.9	13.1	13.7	14.0	14.7	16.0
	12H	25.2	25.8	26.2	26.8	28.2	13.6	14.1	14.6	15.2	16.5
8H	4H	20.6	21.3	21.6	22.3	23.6	13.1	13.8	14.1	14.8	16.1
	6H	23.1	23.7	24.1	24.7	26.0	14.5	15.1	15.5	16.1	17.4
	8H	24.5	24.9	25.5	26.0	27.3	15.2	15.7	16.2	16.7	18.0
	12H	25.9	26.3	26.9	27.4	28.8	15.8	16.2	16.8	17.2	18.6
12H	4H	20.6	21.2	21.6	22.3	23.6	13.7	14.3	14.7	15.3	16.6
	6H	23.2	23.7	24.2	24.7	26.1	15.2	15.7	16.2	16.7	18.1
	8H	24.5	25.0	25.6	26.0	27.4	16.0	16.4	17.0	17.5	18.8

Maximum UGR = 28.8

POLAR GRAPH



Maximum Candela = 154.258 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.)