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IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN-7561W-MROR.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] LM-79-08
[TESTLAB] Orb Optronix, Inc.
[ISSUEDATE] 07-18-2019
[MANUFAC] Justice Design
[LUMINAIRE] FSN-7561W-MROR
[TOTALLUMINAIRELUMENS] 288
[ABSOLUTELUMENS] 288.010196618072

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	240
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	19
Total Luminaire Watts	12.96
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)	0.29 ft
Luminous Width (90-270)	0.54 ft
Luminous Height	0.54 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1375	1096	651
55	1511	1160	656
65	1602	1208	656
75	1690	1258	657
85	1796	1334	692

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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	10.729	10.729	10.729	10.729	10.729	10.729	10.729	10.729	10.729	10.729
2.5	11.612	11.545	11.495	11.445	11.046	10.579	10.454	10.612	10.529	10.487
5.0	12.978	12.837	12.612	12.153	11.345	10.729	10.537	10.504	10.462	10.413
7.5	14.619	14.353	13.878	12.487	11.570	10.954	10.546	10.496	10.329	10.329
10.0	16.327	16.069	15.302	13.170	11.829	11.096	10.562	10.313	10.179	10.221
12.5	18.184	17.818	16.668	13.986	12.054	11.246	10.587	10.163	10.063	10.079
15.0	19.967	19.576	18.126	14.852	12.128	11.279	10.521	10.021	9.821	9.888
17.5	21.900	21.483	19.567	15.627	12.387	11.337	10.363	9.696	9.563	9.538
20.0	23.724	23.291	21.142	16.527	12.570	11.370	10.271	9.305	9.196	9.238
22.5	25.581	25.198	22.699	17.376	12.753	11.504	10.129	8.780	8.755	8.755
25.0	27.481	27.056	24.182	18.268	12.870	11.620	9.846	8.222	8.297	8.313
27.5	29.188	28.805	25.631	19.092	13.011	11.637	9.654	7.839	7.930	7.872
30.0	30.863	30.454	26.914	19.809	13.086	11.670	9.338	7.397	7.464	7.564
32.5	32.429	32.054	28.097	20.483	13.086	11.587	9.030	6.814	6.731	7.031
35.0	34.028	33.537	29.322	21.117	13.086	11.470	8.838	6.289	6.081	6.481
37.5	35.694	35.203	30.504	21.675	13.161	11.462	8.547	5.798	5.514	6.048
40.0	37.335	36.869	31.754	22.341	13.203	11.520	8.363	5.456	5.140	5.731
42.5	38.968	38.518	33.020	23.049	13.311	11.462	8.172	5.165	4.765	5.473
45.0	40.525	40.109	34.111	23.757	13.411	11.462	8.072	4.898	4.390	5.231
47.5	41.942	41.442	35.103	24.315	13.370	11.337	7.822	4.640	4.065	4.973
50.0	43.424	42.875	36.052	24.773	13.320	11.320	7.530	4.340	3.690	4.631
52.5	44.832	44.249	36.902	25.107	13.336	11.137	7.339	4.048	3.349	4.340
55.0	46.173	45.632	37.702	25.590	13.311	11.029	7.081	3.823	3.049	4.082
57.5	47.323	46.831	38.501	25.965	13.228	10.912	6.781	3.490	2.724	3.782
60.0	48.264	47.773	39.126	26.198	13.136	10.746	6.489	3.265	2.349	3.557
62.5	48.880	48.314	39.559	26.314	12.920	10.479	6.198	3.074	2.191	3.449
65.0	49.214	48.672	39.709	26.248	12.695	10.121	5.931	2.999	2.041	3.299
67.5	49.813	49.172	39.976	26.206	12.470	9.846	5.698	2.999	1.824	3.224
70.0	50.197	49.555	40.176	26.198	12.320	9.604	5.564	2.999	1.783	3.182
72.5	50.388	49.830	40.376	26.314	12.095	9.380	5.489	2.924	1.633	3.074
75.0	50.646	50.080	40.567	26.281	11.720	9.230	5.598	2.932	1.524	3.007
77.5	50.905	50.297	40.817	26.314	11.545	9.113	5.631	2.891	1.408	2.949
80.0	50.930	50.355	40.967	26.314	11.395	9.063	5.606	2.741	1.191	2.832
82.5	50.888	50.438	40.934	26.281	11.162	9.005	5.514	2.474	0.816	2.674
85.0	50.796	50.255	40.867	26.206	10.921	8.930	5.248	2.332	0.558	2.374
87.5	50.563	49.947	40.717	25.948	10.654	8.780	5.131	2.332	0.558	2.332
90.0	50.280	49.738	40.584	25.756	10.504	8.647	5.148	2.407	0.441	2.341
92.5	49.905	49.397	40.392	25.723	10.646	8.655	5.106	2.374	0.558	2.424
95.0	49.572	49.030	40.209	25.606	10.737	8.697	5.115	2.374	0.666	2.474
97.5	49.014	48.481	39.892	25.465	10.721	8.655	5.215	2.266	0.591	2.407
100.0	48.489	47.964	39.817	25.390	10.721	8.530	5.198	2.374	0.558	2.399
102.5	48.106	47.748	39.751	25.348	10.904	8.497	5.081	2.407	0.666	2.407
105.0	47.689	47.398	39.568	25.315	10.954	8.530	4.831	2.407	0.741	2.407
107.5	47.148	46.873	39.318	25.198	11.079	8.680	4.748	2.257	0.816	2.399
110.0	46.348	46.165	38.776	25.015	11.171	8.855	4.706	2.033	0.808	2.216
112.5	45.515	45.299	38.401	24.715	11.171	8.905	4.715	2.107	0.633	2.066
115.0	44.590	44.349	37.926	24.449	11.229	8.930	4.698	2.074	0.708	2.049
117.5	43.558	43.408	37.360	24.299	11.229	8.921	4.840	1.958	0.666	1.983
120.0	42.708	42.733	36.869	25.132	11.379	8.946	5.098	1.933	0.708	1.966
122.5	41.917	41.967	37.335	26.173	11.904	8.996	5.531	2.049	0.741	1.974
125.0	40.967	41.200	38.901	26.398	12.045	8.930	5.781	2.166	0.858	2.016
127.5	40.009	40.401	42.308	25.407	12.112	8.921	5.848	2.466	1.008	2.199
130.0	39.326	41.017	44.191	24.299	11.929	8.830	5.964	2.857	1.200	2.441
132.5	40.267	43.024	42.608	23.457	11.570	8.738	6.039	3.132	1.508	2.891

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CANDELA TABULATION - (Cont.)

135.0	43.449	47.181	40.201	23.107	11.295	8.688	6.114	3.232	2.033	3.299
137.5	47.314	48.131	38.310	22.808	11.221	8.713	6.156	3.399	2.349	3.465
140.0	46.448	45.498	38.560	22.141	11.270	8.747	6.148	3.540	2.532	3.615
142.5	43.141	41.983	38.984	21.000	11.112	8.613	6.189	3.765	2.757	3.682
145.0	39.634	39.767	33.262	19.759	10.846	8.530	6.156	3.932	2.791	3.832
147.5	38.260	39.726	23.032	18.076	10.413	8.372	5.973	3.973	3.024	3.998
150.0	38.735	37.277	20.159	16.044	9.938	8.113	5.898	3.823	2.791	3.724
152.5	32.570	25.740	18.643	14.186	9.363	7.980	5.748	4.107	3.199	4.048
155.0	20.417	19.625	17.118	12.853	8.513	7.705	5.706	4.307	3.349	4.190
157.5	17.676	17.843	15.552	11.870	7.839	7.497	5.564	4.298	3.599	4.257
160.0	15.844	16.010	13.928	10.754	7.564	7.322	4.748	3.465	3.532	3.865
162.5	13.345	13.503	11.854	9.629	6.881	6.289	4.040	2.257	1.549	2.416
165.0	11.329	11.270	10.396	8.538	5.898	5.648	3.365	1.458	0.825	1.374
167.5	10.812	10.954	9.596	7.530	5.065	4.790	2.216	0.700	0.450	0.800
170.0	9.654	9.130	7.755	6.006	4.132	3.465	1.283	0.292	0.225	0.483
172.5	8.013	6.956	5.489	4.298	2.849	2.141	0.400	0.308	0.258	0.350
175.0	5.689	4.465	3.149	2.682	1.758	1.241	0.300	0.350	0.333	0.350
177.5	2.474	0.816	1.133	1.424	0.475	0.342	0.292	0.317	0.333	0.433
180.0	0.357	0.357	0.357	0.357	0.357	0.357	0.357	0.357	0.357	0.357

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	10.729	10.729	10.729	10.729	10.729	10.729	10.729
2.5	10.721	10.554	10.996	11.121	12.170	11.654	11.612
5.0	10.837	10.804	11.221	11.729	13.253	12.903	12.978
7.5	10.871	11.054	11.470	12.353	14.586	14.536	14.619
10.0	10.979	11.295	11.762	13.153	16.027	16.202	16.327
12.5	11.012	11.420	12.062	14.003	17.485	18.034	18.184
15.0	10.946	11.537	12.328	14.811	18.867	19.825	19.967
17.5	10.821	11.645	12.553	15.519	20.342	21.733	21.900
20.0	10.612	11.670	12.703	16.302	21.716	23.624	23.724
22.5	10.279	11.754	12.853	17.052	23.132	25.490	25.581
25.0	9.946	11.770	12.970	17.710	24.532	27.422	27.481
27.5	9.530	11.854	13.153	18.409	25.790	29.188	29.188
30.0	9.113	11.829	13.261	19.134	27.023	30.896	30.863
32.5	8.771	11.854	13.453	19.784	28.214	32.495	32.429
35.0	8.455	11.745	13.420	20.433	29.230	33.936	34.028
37.5	8.122	11.712	13.486	20.975	30.146	35.486	35.694
40.0	7.822	11.637	13.528	21.625	30.888	37.060	37.335
42.5	7.572	11.587	13.678	22.258	32.229	38.685	38.968
45.0	7.280	11.554	13.786	23.032	33.495	40.151	40.525
47.5	7.105	11.437	13.819	23.616	34.669	41.350	41.942
50.0	6.797	11.387	13.894	24.149	35.677	42.641	43.424
52.5	6.547	11.212	13.861	24.698	36.727	43.791	44.832
55.0	6.206	11.062	13.903	25.098	37.627	44.949	46.173
57.5	5.923	10.804	13.828	25.556	38.510	45.965	47.323
60.0	5.714	10.671	13.753	25.831	39.234	46.806	48.264
62.5	5.390	10.396	13.636	26.065	39.751	47.223	48.880
65.0	5.123	10.154	13.561	26.073	39.984	47.531	49.214
67.5	4.981	9.771	13.303	26.148	40.409	48.006	49.813
70.0	4.923	9.521	13.078	26.181	40.667	48.347	50.197
72.5	4.906	9.221	12.895	26.140	40.834	48.547	50.388
75.0	4.890	9.096	12.745	26.123	40.900	48.722	50.646
77.5	4.965	9.113	12.595	26.148	41.134	49.022	50.905
80.0	4.990	9.146	12.487	26.264	41.242	49.255	50.930

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82.5	4.906	9.155	12.337	26.156	41.242	49.405	50.888
85.0	4.748	9.021	12.187	26.056	41.067	49.339	50.796
87.5	4.656	8.863	11.995	25.881	40.742	49.230	50.563
90.0	4.690	8.788	11.862	25.556	40.450	49.080	50.280
92.5	4.723	8.863	11.862	25.348	40.201	48.889	49.905
95.0	4.798	8.888	11.937	25.173	39.959	48.672	49.572
97.5	4.773	8.830	11.929	24.990	39.493	48.306	49.014
100.0	4.765	8.605	11.962	24.707	39.068	47.931	48.489
102.5	4.673	8.563	11.904	24.449	38.593	47.664	48.106
105.0	4.473	8.455	11.895	24.140	38.201	47.898	47.689
107.5	4.332	8.488	11.895	23.857	37.685	47.781	47.148
110.0	4.240	8.697	11.895	23.516	37.135	47.040	46.348
112.5	4.223	8.896	11.820	23.132	36.560	46.148	45.515
115.0	4.123	8.855	11.779	22.716	35.869	45.140	44.590
117.5	4.257	8.888	11.737	22.249	35.253	43.991	43.558
120.0	4.423	8.930	11.679	22.233	34.794	43.066	42.708
122.5	4.715	9.005	12.087	22.483	35.477	42.208	41.917
125.0	5.165	9.005	12.278	22.949	37.443	41.242	40.967
127.5	5.415	8.971	12.428	22.716	40.442	40.201	40.009
130.0	5.423	8.896	12.412	22.041	40.492	40.117	39.326
132.5	5.481	8.788	12.328	21.183	38.401	41.533	40.267
135.0	5.556	8.638	12.220	20.292	36.602	44.990	43.449
137.5	5.489	8.563	12.020	19.326	35.378	46.981	47.314
140.0	5.581	8.413	11.787	18.393	35.919	44.740	46.448
142.5	5.556	8.263	11.462	17.518	36.535	41.383	43.141
145.0	5.606	8.155	11.212	16.527	28.505	38.635	39.634
147.5	5.456	7.855	10.804	15.477	21.441	38.576	38.260
150.0	5.348	7.822	10.246	14.153	19.592	37.943	38.735
152.5	5.265	7.672	10.004	12.853	18.126	29.430	32.570
155.0	5.340	7.447	9.388	11.729	16.693	19.925	20.417
157.5	5.290	7.355	8.530	10.729	15.161	18.093	17.676
160.0	4.956	6.431	8.038	9.646	13.511	16.202	15.844
162.5	3.857	5.156	7.081	8.497	11.204	13.953	13.345
165.0	3.124	4.781	6.206	7.630	10.171	11.637	11.329
167.5	2.249	3.149	5.281	6.347	9.105	10.946	10.812
170.0	1.433	2.291	3.948	4.965	7.264	9.455	9.654
172.5	0.608	1.058	2.466	3.407	5.206	7.789	8.013
175.0	0.375	0.516	1.266	1.899	2.624	5.473	5.689
177.5	0.516	0.483	0.525	0.733	1.100	2.316	2.474
180.0	0.357	0.357	0.357	0.357	0.357	0.357	0.357

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	5.15	N.A.	2.10
0-30	12.71	N.A.	5.30
0-40	24.02	N.A.	10.00
0-60	58.09	N.A.	24.20
0-80	102.18	N.A.	42.60
0-90	125.41	N.A.	52.30
10-90	124.27	N.A.	51.80
20-40	18.87	N.A.	7.90
20-50	34.10	N.A.	14.20
40-70	55.39	N.A.	23.10
60-80	44.09	N.A.	18.40
70-80	22.77	N.A.	9.50
80-90	23.24	N.A.	9.70
90-110	44.17	N.A.	18.40
90-120	63.39	N.A.	26.40
90-130	80.63	N.A.	33.60
90-150	106.83	N.A.	44.50
90-180	114.46	N.A.	47.70
110-180	70.29	N.A.	29.30
0-180	239.88	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1.14
10-20	4.01
20-30	7.55
30-40	11.32
40-50	15.23
50-60	18.83
60-70	21.32
70-80	22.77
80-90	23.24
90-100	22.71
100-110	21.45
110-120	19.22
120-130	17.23
130-140	15.24
140-150	10.97
150-160	5.42
160-170	1.94
170-180	0.27

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	93	87	81	76	86	80	75	70	67	63	59	55	52	49	44	42	39	34
2	83	73	65	58	76	67	60	54	56	50	45	45	41	37	36	33	30	25
3	75	63	54	46	68	58	49	43	48	41	36	39	34	29	30	26	23	19
4	68	55	45	38	62	50	42	35	41	35	29	34	28	24	26	22	19	15
5	62	48	39	32	56	44	36	29	37	30	25	30	24	20	23	19	15	12
6	56	43	33	27	51	39	31	25	33	26	21	26	21	17	21	16	13	10
7	52	38	29	23	47	35	27	21	29	23	18	24	18	14	19	14	11	8
8	48	34	26	20	44	32	24	18	26	20	15	21	16	13	17	13	10	7
9	45	31	23	17	41	29	21	16	24	18	14	20	15	11	15	11	9	6
10	42	28	21	15	38	26	19	14	22	16	12	18	13	10	14	10	8	5

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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

X=2H	Y=2H	13.2	14.2	14.1	15.2	16.4	6.0	7.0	6.9	8.0	9.2
	3H	16.4	17.3	17.3	18.3	19.5	8.1	9.1	9.1	10.1	11.3
	4H	18.0	18.9	18.9	19.8	21.1	9.1	10.0	10.1	11.0	12.3
	6H	19.5	20.4	20.5	21.4	22.6	10.1	10.9	11.0	11.9	13.2
	8H	20.3	21.1	21.2	22.1	23.4	10.5	11.3	11.5	12.3	13.6
	12H	21.1	21.8	22.0	22.8	24.1	10.9	11.7	11.9	12.7	14.0

UGR Viewed Endwise

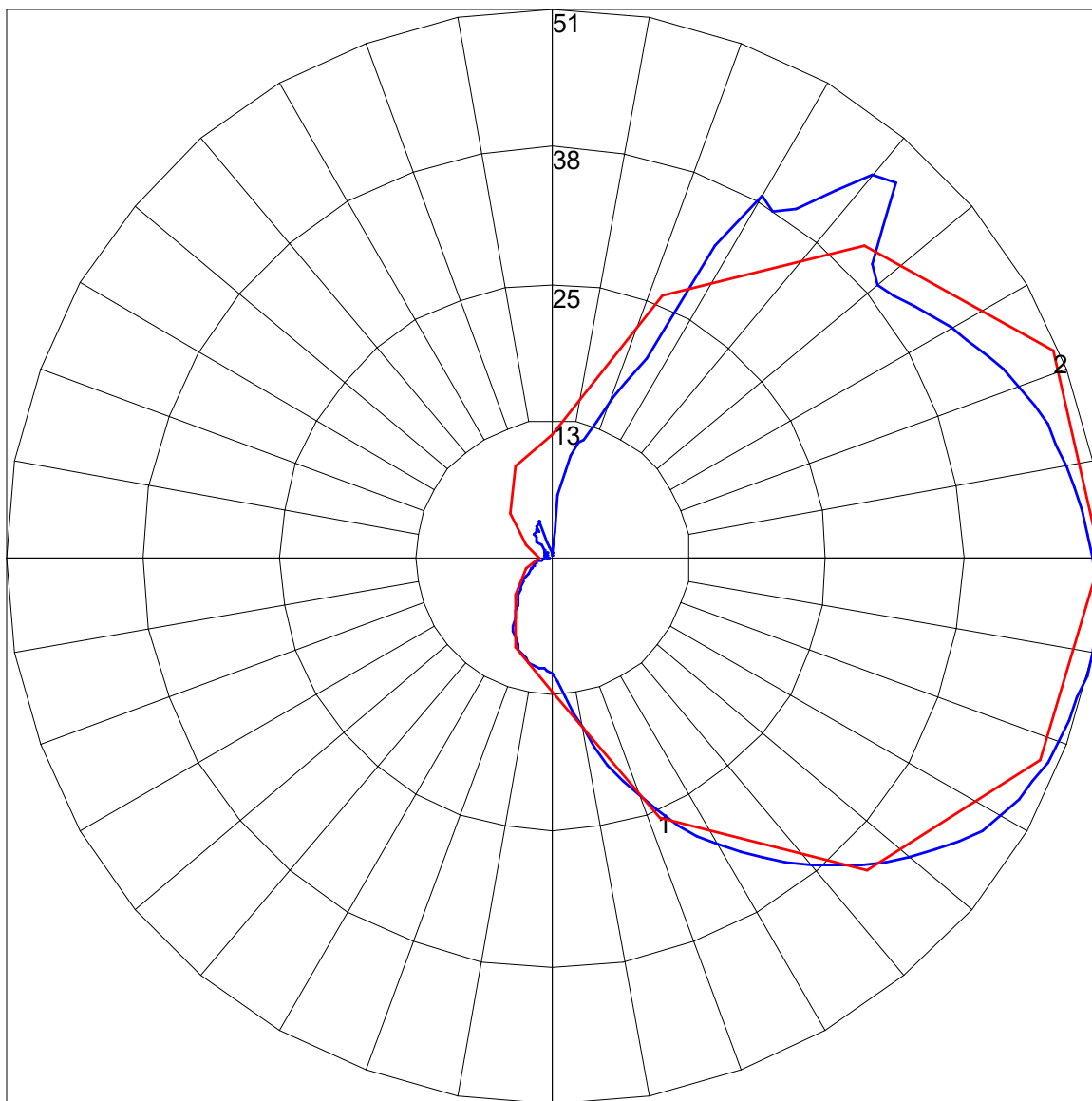
4H	2H	13.6	14.5	14.5	15.5	16.7	7.9	8.8	8.9	9.8	11.1
	3H	17.1	17.9	18.0	18.8	20.1	10.3	11.1	11.2	12.1	13.3
	4H	18.8	19.6	19.8	20.6	21.9	11.4	12.1	12.3	13.1	14.4
	6H	20.6	21.3	21.6	22.3	23.6	12.4	13.1	13.4	14.1	15.4
	8H	21.5	22.1	22.5	23.1	24.5	12.9	13.5	13.9	14.5	15.8
	12H	22.4	23.0	23.4	24.0	25.3	13.3	13.9	14.3	14.9	16.2

8H	4H	19.1	19.7	20.1	20.7	22.0	12.8	13.4	13.8	14.4	15.7
	6H	21.1	21.7	22.1	22.7	24.0	14.1	14.6	15.1	15.7	17.0
	8H	22.2	22.7	23.2	23.7	25.0	14.7	15.2	15.7	16.2	17.5
	12H	23.3	23.7	24.3	24.7	26.1	15.3	15.7	16.3	16.7	18.1

12H	4H	19.1	19.7	20.1	20.7	22.0	13.2	13.8	14.2	14.8	16.1
	6H	21.2	21.7	22.2	22.7	24.1	14.7	15.1	15.7	16.2	17.5
	8H	22.3	22.8	23.3	23.8	25.2	15.4	15.8	16.4	16.9	18.2

Maximum UGR = 26.1

POLAR GRAPH



Maximum Candela = 50.93 Located At Horizontal Angle = 0, Vertical Angle = 80

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (80) (Through Max. Cd.)