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IES INDOOR REPORT
PHOTOMETRIC FILENAME : FSN-7564W-MROR.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] LM-79-08
[TESTLAB] Orb Optronix, Inc.
[ISSUEDATE] 07-19-2019
[MANUFAC] Justice Design
[LUMINAIRE] FSN-7564W-MROR
[TOTALLUMINAIRELUMENS] 416.4
[ABSOLUTELUMENS] 416.402358891872

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	347
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	18
Total Luminaire Watts	19.58
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	1.50 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	792	652	490
55	839	684	516
65	869	704	532
75	900	726	549
85	950	759	576

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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	4.956	4.956	4.956	4.956	4.956	4.956	4.956	4.956	4.956	4.956
2.5	6.664	6.972	6.614	5.839	5.265	4.831	4.940	4.490	4.548	4.423
5.0	8.855	9.205	8.588	7.189	5.964	5.265	5.281	4.640	4.507	4.457
7.5	11.337	11.762	10.796	8.680	6.647	5.823	5.498	4.715	4.457	4.515
10.0	14.136	14.428	13.036	10.279	7.522	6.447	5.831	4.781	4.415	4.648
12.5	16.802	17.085	15.427	11.954	8.388	7.105	6.173	4.823	4.348	4.665
15.0	19.467	19.792	17.718	13.628	9.271	7.780	6.539	4.856	4.248	4.765
17.5	22.349	22.583	20.100	15.302	10.171	8.497	6.797	4.856	4.165	4.781
20.0	25.190	25.456	22.616	17.052	11.112	9.180	7.172	4.865	3.982	4.773
22.5	27.980	28.322	25.065	18.801	12.012	9.896	7.580	4.931	3.898	4.756
25.0	30.713	31.054	27.497	20.583	12.878	10.604	7.805	5.006	3.724	4.798
27.5	33.378	33.695	29.821	22.149	13.769	11.270	8.105	5.073	3.624	4.848
30.0	35.936	36.260	31.904	23.774	14.586	11.920	8.447	5.115	3.374	4.890
32.5	38.285	38.743	34.103	25.257	15.319	12.495	8.588	5.123	3.207	4.823
35.0	40.642	41.159	36.077	26.706	16.060	13.061	8.813	5.148	3.040	4.856
37.5	43.083	43.699	38.151	28.130	16.835	13.653	9.038	5.148	2.882	4.848
40.0	45.532	46.248	40.242	29.721	17.535	14.203	9.230	5.156	2.607	4.898
42.5	47.956	48.864	42.358	31.138	18.301	14.811	9.321	5.190	2.466	4.856
45.0	50.313	51.379	44.449	32.612	19.042	15.394	9.596	5.198	2.274	4.848
47.5	52.554	53.762	46.315	33.911	19.700	15.927	9.821	5.265	2.174	4.865
50.0	54.628	55.978	48.097	35.169	20.334	16.360	10.046	5.265	1.983	4.856
52.5	56.786	58.360	49.847	36.319	20.933	16.868	10.263	5.373	1.833	4.890
55.0	58.776	60.634	51.563	37.452	21.408	17.351	10.454	5.381	1.708	4.865
57.5	60.526	62.658	53.104	38.460	21.925	17.710	10.671	5.398	1.533	4.890
60.0	62.100	64.441	54.445	39.293	22.274	18.026	10.821	5.373	1.399	4.898
62.5	63.408	65.940	55.528	40.042	22.549	18.243	10.896	5.415	1.333	4.890
65.0	64.641	67.248	56.577	40.575	22.766	18.384	11.012	5.423	1.299	4.956
67.5	65.724	68.498	57.360	41.050	22.891	18.509	11.087	5.506	1.266	4.923
70.0	66.798	69.780	58.252	41.617	23.024	18.593	11.196	5.564	1.183	5.006
72.5	67.806	70.597	59.176	42.108	23.316	18.776	11.379	5.648	1.158	5.040
75.0	68.847	70.347	60.143	42.616	23.499	18.984	11.604	5.748	1.166	5.073
77.5	69.922	70.980	60.926	43.141	23.666	19.251	11.787	5.814	1.108	5.148
80.0	70.972	71.755	61.784	43.533	23.857	19.367	11.862	5.773	1.033	5.190
82.5	71.863	72.454	62.375	43.782	23.949	19.501	11.895	5.748	0.900	5.115
85.0	72.463	72.921	62.900	44.057	23.949	19.609	11.895	5.664	0.725	5.081
87.5	72.829	73.212	63.266	44.091	23.915	19.534	11.862	5.689	0.708	5.040
90.0	72.904	73.046	63.233	43.957	23.782	19.467	11.787	5.673	0.708	5.081
92.5	72.796	72.846	63.041	43.807	23.774	19.434	11.670	5.598	0.725	5.081
95.0	72.496	72.304	62.783	43.616	23.699	19.342	11.712	5.681	0.816	5.181
97.5	71.938	71.871	62.333	43.274	23.574	19.176	11.554	5.598	0.791	5.048
100.0	71.263	71.188	61.925	42.974	23.407	18.984	11.445	5.481	0.741	4.940
102.5	70.555	70.597	61.400	42.666	23.191	18.784	11.221	5.373	0.633	4.865
105.0	69.814	69.722	60.726	42.325	22.991	18.584	11.062	5.223	0.625	4.748
107.5	68.872	68.956	59.943	41.808	22.758	18.359	10.854	5.223	0.641	4.673
110.0	67.715	68.014	58.968	41.325	22.533	18.101	10.654	5.273	0.675	4.565
112.5	66.373	66.932	58.052	40.809	22.174	17.843	10.396	5.190	0.658	4.448
115.0	64.849	65.749	57.577	40.192	21.833	17.551	10.146	4.998	0.616	4.382
117.5	63.350	64.474	57.169	39.543	21.491	17.210	9.871	4.898	0.600	4.265
120.0	61.809	63.366	56.594	38.943	21.158	16.843	9.729	4.765	0.641	4.157
122.5	60.776	62.733	55.786	38.226	20.775	16.510	9.355	4.640	0.658	4.082
125.0	59.868	62.000	54.195	37.310	20.483	16.069	9.088	4.490	0.733	3.965
127.5	58.510	60.851	52.129	36.127	20.075	15.619	8.796	4.340	0.691	3.890
130.0	56.719	59.168	49.897	34.661	19.534	15.136	8.480	4.115	0.741	3.782
132.5	54.562	57.052	47.773	33.037	18.834	14.578	8.197	3.982	0.741	3.665

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CANDELA TABULATION - (Cont.)

135.0	51.979	54.412	45.732	31.479	18.109	13.953	7.855	3.898	0.766	3.557
137.5	49.397	51.879	43.474	29.946	17.326	13.353	7.480	3.749	0.875	3.449
140.0	46.698	49.430	42.258	28.330	16.510	12.762	7.164	3.574	0.950	3.374
142.5	44.091	46.873	39.817	26.689	15.660	12.128	6.822	3.482	0.958	3.224
145.0	41.317	43.982	37.643	24.832	14.794	11.495	6.497	3.315	0.991	3.115
147.5	38.285	40.834	35.294	22.941	13.886	10.721	6.023	2.999	1.075	3.032
150.0	35.178	37.777	32.787	21.025	12.895	9.904	5.448	2.766	0.866	2.774
152.5	32.004	34.653	30.105	19.067	11.562	8.938	5.156	2.482	0.866	2.474
155.0	28.064	29.322	27.222	16.802	10.687	8.263	4.532	2.116	0.750	2.182
157.5	25.865	28.055	23.582	15.119	9.704	7.330	4.065	1.891	0.541	1.883
160.0	22.624	24.557	21.825	12.961	8.380	6.289	3.474	1.491	0.408	1.658
162.5	19.342	21.050	18.734	10.696	6.972	5.365	2.982	1.183	0.333	1.349
165.0	16.169	17.710	15.560	8.338	5.781	4.465	2.266	0.875	0.325	0.875
167.5	12.878	14.169	12.562	6.239	4.623	3.357	1.533	0.541	0.367	0.658
170.0	10.129	11.121	9.538	4.248	3.274	2.349	0.800	0.400	0.308	0.541
172.5	6.331	7.189	4.823	2.524	1.866	1.200	0.417	0.333	0.275	0.408
175.0	2.724	3.232	2.416	1.216	0.783	0.508	0.250	0.383	0.367	0.450
177.5	0.500	0.925	0.833	0.433	0.267	0.292	0.358	0.375	0.367	0.375
180.0	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412

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	4.956	4.956	4.956	4.956	4.956	4.956	4.956
2.5	4.640	4.856	5.348	5.681	6.339	5.939	6.248
5.0	4.765	5.448	6.031	6.914	8.280	7.905	8.363
7.5	5.031	6.031	6.722	8.297	10.413	10.279	10.854
10.0	5.323	6.447	7.589	9.879	12.678	12.903	13.445
12.5	5.589	6.956	8.463	11.362	15.094	15.669	16.169
15.0	5.923	7.555	9.371	12.961	17.326	18.426	18.867
17.5	6.181	8.263	10.238	14.578	19.642	21.250	21.583
20.0	6.481	8.896	11.196	16.110	22.124	24.149	24.349
22.5	6.847	9.555	12.062	17.693	24.324	27.014	27.164
25.0	7.147	10.179	12.936	19.292	26.631	29.796	29.863
27.5	7.414	10.821	13.794	20.817	28.888	32.554	32.495
30.0	7.705	11.462	14.661	22.341	31.038	35.194	35.044
32.5	8.005	12.103	15.502	23.832	33.162	37.627	37.360
35.0	8.305	12.712	16.285	25.273	35.194	40.067	39.867
37.5	8.488	13.161	17.126	26.731	37.168	42.516	42.183
40.0	8.863	13.828	17.926	28.180	39.193	44.974	44.632
42.5	9.046	14.428	18.718	29.746	41.375	47.481	47.089
45.0	9.305	15.019	19.534	31.262	43.374	49.938	49.530
47.5	9.638	15.652	20.200	32.729	45.332	52.229	51.763
50.0	9.829	16.169	20.875	34.170	47.148	54.445	53.887
52.5	10.088	16.685	21.525	35.486	48.897	56.561	55.978
55.0	10.313	17.185	22.083	36.785	50.605	58.660	58.002
57.5	10.454	17.651	22.608	38.026	52.146	60.626	59.909
60.0	10.604	18.076	22.991	39.118	53.487	62.308	61.584
62.5	10.712	18.409	23.332	40.009	54.628	63.708	63.025
65.0	10.829	18.676	23.607	40.875	55.669	65.024	64.274
67.5	10.862	18.917	23.790	41.550	56.627	66.132	65.391
70.0	10.971	19.159	24.049	42.150	57.519	67.281	66.432
72.5	11.129	19.376	24.307	42.816	58.418	68.314	67.648
75.0	11.279	19.600	24.607	43.374	59.268	69.372	68.731
77.5	11.420	19.859	25.115	44.041	60.159	70.463	69.847
80.0	11.612	20.184	25.548	44.532	61.134	71.621	70.863

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82.5	11.687	20.433	25.873	44.949	61.842	72.571	71.730
85.0	11.754	20.600	26.040	45.215	62.350	73.312	72.488
87.5	11.679	20.683	26.081	45.257	62.650	73.795	72.946
90.0	11.787	20.642	26.098	45.149	62.833	73.995	73.154
92.5	11.712	20.550	25.998	44.890	62.642	73.929	73.029
95.0	11.637	20.442	25.998	44.516	62.358	73.646	72.571
97.5	11.554	20.300	25.815	44.041	61.925	73.179	72.030
100.0	11.437	20.059	25.531	43.483	61.434	72.638	71.405
102.5	11.237	19.767	25.223	42.850	60.692	71.988	70.780
105.0	10.954	19.434	24.957	42.141	60.009	71.147	70.005
107.5	10.779	19.051	24.532	41.433	59.251	70.239	68.964
110.0	10.579	18.817	24.190	40.692	58.260	69.089	67.765
112.5	10.388	18.443	23.674	39.801	57.094	67.723	66.440
115.0	10.096	18.043	23.232	39.059	56.319	66.315	64.991
117.5	9.871	17.543	22.708	38.160	55.778	64.874	63.433
120.0	9.613	17.143	22.191	37.385	55.078	63.491	61.859
122.5	9.396	16.735	21.633	36.569	54.237	62.533	60.642
125.0	9.163	16.293	21.217	35.669	52.646	61.375	59.651
127.5	8.938	15.794	20.733	34.428	50.655	59.901	58.285
130.0	8.663	15.186	20.075	33.020	48.481	58.035	56.702
132.5	8.380	14.669	19.392	31.596	46.440	55.594	54.678
135.0	8.013	14.136	18.643	30.188	44.424	52.887	52.112
137.5	7.747	13.536	17.785	28.772	42.316	50.222	49.439
140.0	7.472	12.961	17.018	27.322	39.801	47.656	46.873
142.5	7.155	12.303	16.152	26.856	37.377	45.057	44.274
145.0	6.814	11.629	15.344	25.523	35.044	42.166	41.708
147.5	6.264	11.046	14.486	23.657	32.470	39.101	38.626
150.0	5.956	10.088	13.620	21.758	29.855	36.094	35.611
152.5	5.456	9.505	12.353	20.042	27.439	32.745	32.645
155.0	4.881	8.613	11.554	17.743	23.907	29.380	28.614
157.5	4.348	7.672	10.462	16.335	21.966	26.648	26.423
160.0	3.807	6.672	9.188	14.303	19.126	23.532	23.149
162.5	3.340	5.739	7.930	12.128	16.285	20.342	19.992
165.0	2.641	4.890	6.631	9.879	13.511	16.902	16.827
167.5	2.033	3.998	5.206	7.714	10.804	13.828	13.486
170.0	1.266	2.965	4.173	5.814	7.422	10.987	10.771
172.5	0.700	1.774	2.841	4.123	4.082	6.956	6.989
175.0	0.591	0.816	1.441	2.599	1.974	3.382	3.374
177.5	0.566	0.575	0.641	1.308	0.891	1.125	0.700
180.0	0.412	0.412	0.412	0.412	0.412	0.412	0.412

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	3.94	N.A.	1.10
0-30	11.52	N.A.	3.30
0-40	24.65	N.A.	7.10
0-60	70.21	N.A.	20.20
0-80	137.09	N.A.	39.50
0-90	175.09	N.A.	50.50
10-90	174.40	N.A.	50.30
20-40	20.71	N.A.	6.00
20-50	40.23	N.A.	11.60
40-70	77.01	N.A.	22.20
60-80	66.88	N.A.	19.30
70-80	35.44	N.A.	10.20
80-90	38.00	N.A.	11.00
90-110	73.18	N.A.	21.10
90-120	104.27	N.A.	30.10
90-130	130.23	N.A.	37.60
90-150	162.39	N.A.	46.80
90-180	171.70	N.A.	49.50
110-180	98.53	N.A.	28.40
0-180	346.79	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	0.69
10-20	3.25
20-30	7.58
30-40	13.13
40-50	19.53
50-60	26.04
60-70	31.44
70-80	35.44
80-90	38.00
90-100	37.86
100-110	35.32
110-120	31.10
120-130	25.95
130-140	19.40
140-150	12.76
150-160	6.72
160-170	2.35
170-180	0.25

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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	84	84	84	69	69	69	57	57	57	50
1	92	86	80	74	84	78	73	68	65	61	57	53	49	47	41	39	37	31
2	82	72	63	56	74	65	58	52	54	48	43	43	39	35	33	30	27	22
3	73	61	52	44	66	56	47	41	46	39	34	36	31	27	28	24	20	16
4	66	53	43	36	60	48	40	33	40	33	27	31	26	22	24	20	16	12
5	60	47	37	30	55	42	34	27	35	28	22	27	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	21	46	34	25	20	28	21	16	22	17	13	17	12	9	6
8	47	33	24	18	43	30	22	17	25	18	14	20	15	11	15	11	8	5
9	44	30	22	16	40	27	20	15	23	16	12	18	13	9	14	10	7	5
10	41	27	19	14	37	25	18	13	21	15	11	17	12	8	13	9	6	4

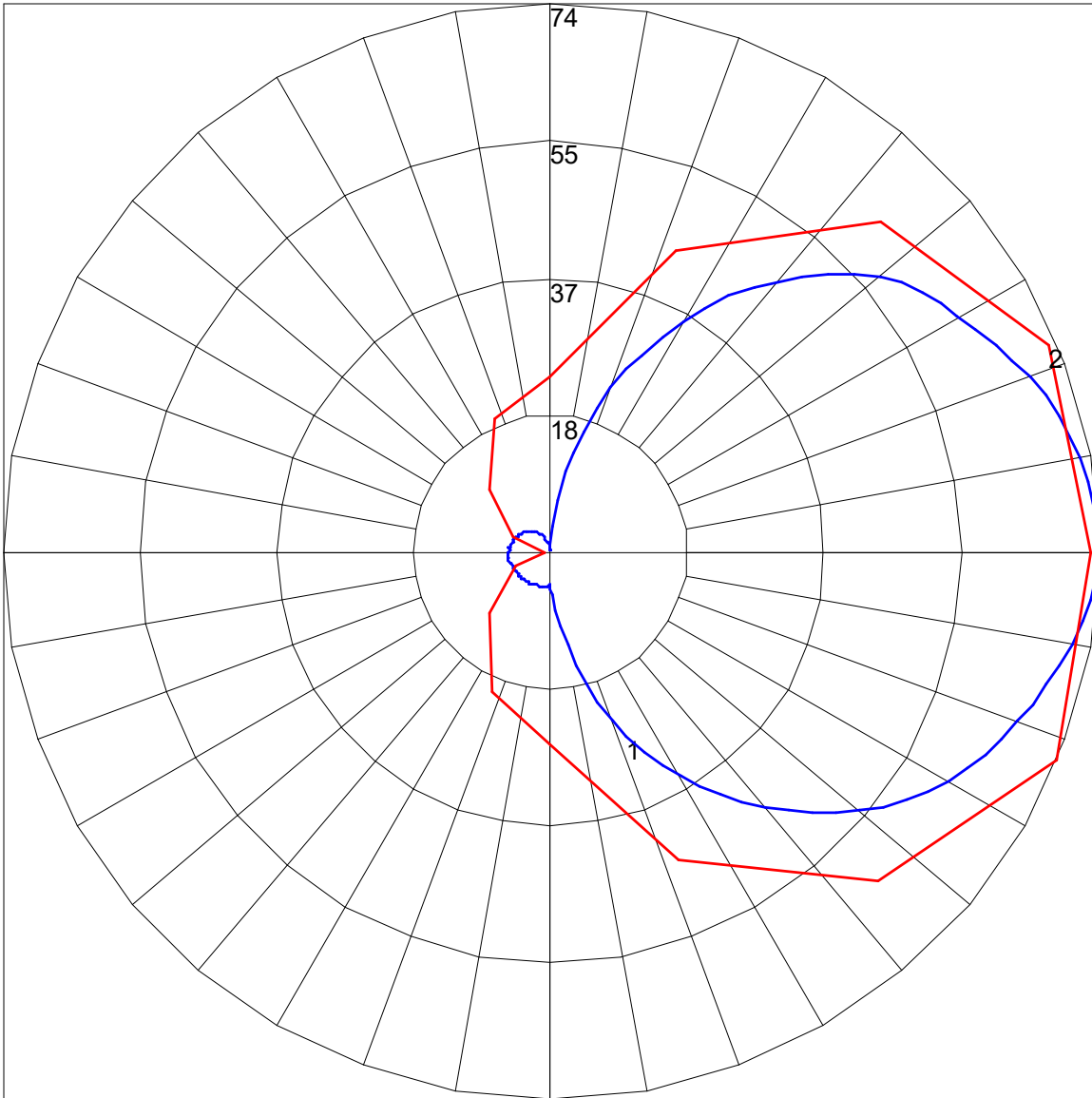
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UGR TABLE - CORRECTED

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	10.9	12.0	11.8	12.9	14.2	4.6	5.7	5.5	6.6	7.9
	3H	14.2	15.1	15.1	16.1	17.4	7.1	8.1	8.0	9.0	10.3
	4H	15.7	16.7	16.7	17.6	18.9	8.3	9.2	9.2	10.2	11.5
	6H	17.3	18.2	18.3	19.2	20.4	9.5	10.3	10.4	11.3	12.6
	8H	18.1	18.9	19.0	19.9	21.2	10.0	10.9	11.0	11.9	13.1
	12H	18.8	19.6	19.8	20.6	21.9	10.6	11.4	11.5	12.4	13.7
4H	2H	11.4	12.3	12.3	13.3	14.6	6.3	7.2	7.2	8.2	9.5
	3H	14.9	15.7	15.8	16.7	18.0	8.9	9.8	9.9	10.7	12.0
	4H	16.6	17.4	17.6	18.4	19.7	10.2	11.0	11.2	12.0	13.3
	6H	18.4	19.1	19.4	20.1	21.4	11.5	12.2	12.5	13.2	14.5
	8H	19.3	20.0	20.3	21.0	22.3	12.1	12.7	13.1	13.7	15.1
	12H	20.2	20.8	21.2	21.8	23.1	12.7	13.3	13.7	14.3	15.6
8H	4H	16.9	17.6	17.9	18.6	19.9	11.4	12.1	12.4	13.1	14.4
	6H	19.0	19.5	20.0	20.6	21.9	12.9	13.5	13.9	14.5	15.8
	8H	20.0	20.5	21.0	21.6	22.9	13.6	14.1	14.6	15.2	16.5
	12H	21.1	21.6	22.1	22.6	24.0	14.3	14.8	15.3	15.8	17.2
12H	4H	17.0	17.6	18.0	18.6	19.9	11.7	12.3	12.7	13.4	14.7
	6H	19.1	19.6	20.1	20.6	22.0	13.4	13.9	14.4	14.9	16.3
	8H	20.2	20.6	21.2	21.7	23.0	14.2	14.7	15.2	15.7	17.1

Maximum UGR = 24.0

POLAR GRAPH



Maximum Candela = 73.995 Located At Horizontal Angle = 337.5, Vertical Angle = 90
1 - Vertical Plane Through Horizontal Angles (337.5 - 157.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (90) (Through Max. Cd.)