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IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN-8655-WEVE.IES

DESCRIPTION INFORMATION (From Photometric File)

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

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	809
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	24
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	1420	1343	899
55	1601	1528	1166
65	1782	1720	1567
75	1973	1941	2274
85	2201	2210	3992

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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	8.392	8.392	8.392	8.392	8.392	8.392	8.392	8.392	8.392	8.392
2.5	7.418	8.516	8.423	8.205	8.972	8.910	13.147	10.505	10.640	11.489
5.0	13.458	15.001	14.090	12.318	12.132	13.168	15.530	15.996	16.120	15.354
7.5	22.398	22.678	20.129	16.939	14.763	15.250	14.649	15.436	15.861	15.032
10.0	29.474	31.287	26.895	20.285	15.198	14.338	14.836	14.970	14.577	14.545
12.5	44.641	45.708	37.824	26.491	17.426	14.639	15.260	14.514	13.634	13.913
15.0	55.084	55.426	47.200	32.893	19.860	15.467	15.892	14.162	13.292	13.489
17.5	63.776	63.476	53.799	37.949	21.994	16.244	16.027	14.069	13.748	13.364
20.0	72.168	71.712	60.420	42.207	23.838	17.011	16.079	14.328	14.307	13.603
22.5	80.508	78.695	66.107	45.895	25.309	18.047	15.996	14.587	15.167	14.328
25.0	87.583	85.408	71.349	49.345	26.770	18.617	15.996	15.198	16.483	15.063
27.5	94.131	91.417	76.747	52.836	28.024	18.814	15.747	15.872	17.954	15.633
30.0	100.088	97.301	81.792	56.421	29.081	18.959	15.447	16.669	19.207	16.338
32.5	105.568	101.787	85.833	59.529	30.013	19.301	14.949	17.467	20.212	16.669
35.0	111.443	106.946	89.490	62.005	30.717	19.725	14.431	18.006	21.197	16.949
37.5	117.078	112.188	93.976	64.760	31.588	19.860	14.183	18.410	22.295	17.374
40.0	121.823	116.736	98.296	67.464	32.510	20.212	13.903	18.741	23.289	17.705
42.5	126.330	121.005	102.129	70.344	33.421	20.627	13.748	19.270	24.263	17.985
45.0	131.075	125.346	105.631	72.976	34.271	20.917	13.623	19.663	25.030	18.410
47.5	136.130	130.080	109.339	75.338	35.255	21.114	13.530	19.943	25.879	18.679
50.0	141.735	135.125	113.287	77.928	36.364	21.404	13.427	20.223	26.718	18.845
52.5	147.661	140.513	117.503	80.466	37.337	21.621	13.178	20.502	27.423	19.114
55.0	153.007	145.454	121.699	83.108	38.177	21.942	13.178	20.772	27.848	19.456
57.5	157.980	149.920	125.408	85.553	38.881	22.170	12.960	20.824	28.480	19.487
60.0	162.414	153.970	128.547	87.708	39.731	22.450	12.867	20.896	29.039	19.674
62.5	166.672	157.886	131.696	89.749	40.497	22.647	12.618	21.114	29.588	19.819
65.0	170.816	161.626	134.690	91.479	41.326	23.072	12.691	21.445	30.148	20.243
67.5	174.121	164.496	137.021	92.971	41.823	23.072	12.712	21.652	30.852	20.430
70.0	177.104	167.511	139.425	94.576	42.455	23.372	12.805	21.808	31.339	20.534
72.5	180.741	170.930	142.388	96.348	43.077	23.921	12.991	22.056	32.043	20.865
75.0	184.045	173.727	144.708	98.037	43.647	24.377	13.054	22.326	32.665	21.197
77.5	186.708	175.219	146.863	99.383	44.351	24.781	13.333	22.523	33.017	21.383
80.0	189.205	177.798	148.645	100.565	44.848	25.237	13.478	22.699	33.722	21.528
82.5	191.587	179.974	150.386	101.621	45.335	25.465	13.561	22.782	34.064	21.683
85.0	193.338	181.663	151.401	102.409	45.677	25.734	13.654	22.782	34.343	21.590
87.5	194.333	182.802	152.012	102.719	45.895	25.859	13.686	22.709	34.551	21.590
90.0	194.892	183.123	152.137	102.626	45.978	25.786	13.654	22.523	34.551	21.497
92.5	194.530	182.792	151.660	102.678	45.957	25.703	13.572	22.326	34.551	21.114
95.0	193.628	182.067	151.059	102.295	45.978	25.434	13.654	22.108	34.271	20.917
97.5	192.437	181.072	150.199	101.746	45.833	25.268	13.572	22.005	34.188	20.627
100.0	191.028	179.725	148.966	100.969	45.615	24.926	13.603	21.942	34.188	20.668
102.5	188.915	177.767	147.195	99.870	45.128	24.667	13.209	21.331	33.401	19.850
105.0	186.532	175.467	145.506	98.855	44.848	23.901	12.805	20.772	33.079	19.539
107.5	184.025	173.209	143.672	97.591	44.724	23.465	12.681	20.523	32.561	19.270
110.0	181.269	170.722	141.321	96.317	44.444	22.823	12.380	20.181	31.867	19.031
112.5	177.829	167.594	138.524	94.535	43.875	22.243	12.069	19.881	31.246	18.534
115.0	173.913	164.009	135.612	92.722	43.388	22.212	11.759	19.518	30.686	18.254
117.5	170.287	160.518	132.732	90.982	42.756	22.108	11.821	19.125	30.054	17.850
120.0	166.278	156.913	129.427	88.951	41.989	21.974	12.132	18.752	29.215	17.560
122.5	162.030	152.934	126.081	86.817	41.357	21.621	12.505	18.741	28.521	17.498
125.0	158.094	149.070	122.528	84.579	40.715	21.331	12.743	18.658	27.806	17.405
127.5	153.069	144.470	118.467	82.196	39.741	21.083	12.836	18.679	26.656	17.042
130.0	148.117	139.808	116.415	83.388	39.119	20.803	13.054	18.596	25.631	16.452
132.5	144.408	136.679	115.742	80.300	38.332	20.554	12.950	18.161	24.512	16.545

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CANDELA TABULATION - (Cont.)

135.0	140.772	133.012	108.594	75.877	37.348	20.088	12.991	17.954	23.621	15.737
137.5	136.783	129.303	104.854	73.069	36.446	19.974	12.867	17.881	22.150	14.680
140.0	131.572	124.703	100.471	70.521	35.079	19.093	12.525	16.110	19.632	12.991
142.5	125.263	119.005	97.457	65.610	33.359	18.627	11.893	13.810	17.975	11.696
145.0	110.469	109.702	90.453	64.491	32.769	18.037	10.899	12.380	16.244	10.329
147.5	112.033	107.775	89.137	60.171	30.883	16.597	9.894	11.189	13.717	8.723
150.0	104.429	100.202	82.352	55.260	28.925	15.157	8.423	9.075	10.692	6.102
152.5	97.602	93.033	76.001	51.251	27.164	13.572	6.195	6.610	7.407	4.279
155.0	92.090	87.376	71.142	48.340	24.595	11.033	5.056	4.652	4.683	3.025
157.5	86.029	82.289	66.729	44.165	21.145	7.387	4.196	3.574	2.973	2.352
160.0	77.141	74.955	60.616	38.270	16.856	5.304	3.522	2.942	2.258	1.740
162.5	68.967	66.667	53.333	30.262	11.489	4.103	2.383	1.958	1.658	1.388
165.0	57.384	56.555	40.808	19.052	8.578	2.870	1.720	1.326	0.984	1.140
167.5	37.762	36.250	26.366	14.162	5.698	1.999	1.222	0.974	0.798	1.005
170.0	24.419	24.356	18.348	8.371	3.160	1.316	0.974	0.829	0.787	0.912
172.5	14.328	14.649	9.769	3.989	2.124	1.098	0.736	0.767	0.622	0.943
175.0	5.242	6.061	4.434	1.471	0.767	0.684	0.591	0.559	0.704	0.943
177.5	0.704	1.492	0.850	0.622	0.829	0.736	0.704	0.829	0.787	1.015
180.0	0.875	0.875	0.875	0.875	0.875	0.875	0.875	0.875	0.875	0.875

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	8.392	8.392	8.392	8.392	8.392	8.392	8.392
2.5	10.360	9.832	9.407	7.511	6.734	7.293	6.703
5.0	14.742	13.810	12.722	11.676	12.194	13.872	14.452
7.5	14.649	14.556	15.032	16.452	18.679	22.201	23.341
10.0	14.649	14.639	16.379	19.995	24.501	30.054	31.225
12.5	14.981	15.343	18.689	25.796	34.219	43.326	46.351
15.0	15.633	16.027	20.275	31.028	42.362	52.442	56.338
17.5	15.799	16.421	21.683	35.286	48.516	59.922	64.512
20.0	15.675	17.084	22.782	38.819	54.804	67.879	73.214
22.5	15.747	17.716	23.859	41.823	60.192	74.934	81.243
25.0	15.685	18.410	24.874	44.703	65.164	81.336	88.278
27.5	15.685	18.897	25.662	47.822	70.375	86.972	94.608
30.0	15.561	19.456	26.200	50.785	74.903	92.453	100.689
32.5	15.530	19.943	26.781	53.582	79.036	97.726	106.004
35.0	15.198	20.502	27.568	56.162	83.357	103.155	111.909
37.5	15.188	20.855	28.283	58.731	87.853	108.314	117.400
40.0	15.043	21.559	28.956	61.259	91.696	112.862	122.175
42.5	14.981	22.181	29.661	63.776	95.478	117.141	126.848
45.0	14.918	22.460	30.365	66.200	99.321	122.072	131.717
47.5	14.898	23.092	31.163	68.531	103.507	127.065	136.970
50.0	14.836	23.745	31.857	71.111	107.620	132.390	142.668
52.5	14.773	24.284	32.603	73.742	112.023	137.850	148.542
55.0	14.763	24.905	33.359	76.125	116.156	142.999	153.929
57.5	14.639	25.465	33.815	78.456	119.876	147.371	158.798
60.0	14.494	25.952	34.343	80.445	123.087	151.401	163.118
62.5	14.359	26.366	34.986	82.466	126.371	155.473	167.376
65.0	14.359	26.832	35.545	84.113	129.376	159.212	171.572
67.5	14.338	26.905	35.939	85.460	131.841	162.269	174.711
70.0	14.421	27.268	36.270	86.724	134.079	164.973	177.622
72.5	14.483	27.703	36.737	88.381	136.659	168.236	181.145
75.0	14.483	28.252	37.037	89.614	139.104	171.209	184.356
77.5	14.556	28.604	37.534	90.888	141.062	173.571	187.029
80.0	14.701	29.226	37.980	91.935	142.875	175.871	189.526

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82.5	14.701	29.495	38.166	92.950	144.750	178.037	191.764
85.0	14.836	29.920	38.322	93.613	145.796	179.363	193.328
87.5	14.836	30.054	38.415	94.079	146.635	180.274	194.302
90.0	14.763	30.230	38.508	94.255	147.102	180.554	194.561
92.5	14.556	30.106	38.446	94.317	146.957	180.150	194.095
95.0	14.359	29.992	38.353	93.862	146.159	179.083	193.173
97.5	14.069	29.868	38.166	93.333	145.330	177.912	191.836
100.0	13.934	29.619	37.949	92.722	144.263	176.420	190.303
102.5	13.364	29.246	37.596	91.634	142.699	174.359	188.117
105.0	13.023	28.708	37.213	90.515	140.823	171.945	185.672
107.5	12.598	28.366	36.892	89.386	138.793	169.624	183.154
110.0	12.401	27.848	37.058	88.019	136.597	166.827	180.316
112.5	12.038	27.330	36.768	86.568	133.996	163.429	176.762
115.0	11.831	27.454	36.426	84.952	131.261	159.907	173.043
117.5	11.769	27.475	35.991	83.481	128.474	156.519	169.231
120.0	12.049	27.350	35.659	81.761	125.511	152.655	165.180
122.5	12.473	27.112	35.131	80.083	122.507	148.935	161.139
125.0	12.743	26.750	34.779	78.063	119.202	144.957	157.058
127.5	12.753	26.169	34.281	76.105	115.618	140.202	152.002
130.0	12.857	25.703	33.784	76.281	112.820	136.068	147.236
132.5	12.857	24.823	33.111	73.670	111.266	132.888	143.859
135.0	13.323	24.294	32.344	70.148	107.288	128.878	140.088
137.5	12.960	23.351	31.588	67.754	102.253	124.983	136.141
140.0	11.344	23.279	30.448	65.123	97.975	119.834	130.847
142.5	10.391	21.590	30.106	62.212	92.453	111.805	124.496
145.0	9.469	19.933	28.542	58.783	88.682	106.055	113.224
147.5	8.361	17.850	26.594	55.809	82.383	101.114	111.287
150.0	6.703	15.405	24.543	52.774	76.923	94.193	103.382
152.5	5.553	12.505	21.746	49.666	72.209	88.495	96.597
155.0	4.527	9.003	18.171	46.413	67.848	83.688	91.023
157.5	3.978	6.061	15.063	41.875	61.756	77.234	84.724
160.0	3.056	4.973	12.049	36.788	54.587	68.842	73.183
162.5	2.165	3.916	9.013	28.190	46.775	60.171	60.502
165.0	1.709	3.025	7.169	19.611	34.613	48.008	50.205
167.5	1.440	2.269	4.714	15.903	23.279	29.992	34.074
170.0	1.171	1.772	2.880	10.111	15.167	19.694	21.932
172.5	1.129	1.616	2.165	5.574	7.811	10.287	12.256
175.0	1.222	1.233	1.409	3.253	3.647	4.652	4.973
177.5	1.171	1.326	1.461	1.388	1.129	0.818	0.860
180.0	0.875	0.875	0.875	0.875	0.875	0.875	0.875

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	9.73	N.A.	1.20
0-30	28.69	N.A.	3.50
0-40	60.09	N.A.	7.40
0-60	163.86	N.A.	20.30
0-80	317.22	N.A.	39.20
0-90	405.29	N.A.	50.10
10-90	403.79	N.A.	49.90
20-40	50.36	N.A.	6.20
20-50	95.14	N.A.	11.80
40-70	175.42	N.A.	21.70
60-80	153.36	N.A.	19.00
70-80	81.71	N.A.	10.10
80-90	88.07	N.A.	10.90
90-110	170.29	N.A.	21.10
90-120	242.51	N.A.	30.00
90-130	302.41	N.A.	37.40
90-150	380.31	N.A.	47.00
90-180	403.24	N.A.	49.90
110-180	232.95	N.A.	28.80
0-180	808.53	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1.50
10-20	8.24
20-30	18.96
30-40	31.40
40-50	44.78
50-60	58.99
60-70	71.65
70-80	81.71
80-90	88.07
90-100	88.08
100-110	82.21
110-120	72.22
120-130	59.91
130-140	46.59
140-150	31.30
150-160	16.94
160-170	5.58
170-180	0.41

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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	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	36	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	67	56	48	41	46	39	34	36	31	27	28	24	20	16
4	66	53	44	36	60	48	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	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

X=2H	Y=2H	14.7	15.7	15.6	16.7	17.9	6.0	7.0	6.9	8.0	9.3
	3H	18.6	19.6	19.6	20.6	21.8	8.4	9.4	9.4	10.4	11.6
	4H	20.7	21.6	21.6	22.6	23.8	9.6	10.5	10.5	11.5	12.8
	6H	22.8	23.7	23.7	24.6	25.9	10.7	11.6	11.7	12.6	13.9
	8H	23.9	24.7	24.8	25.7	27.0	11.3	12.1	12.2	13.1	14.4
	12H	25.0	25.8	26.0	26.8	28.1	11.8	12.6	12.8	13.6	14.9

UGR Viewed Endwise

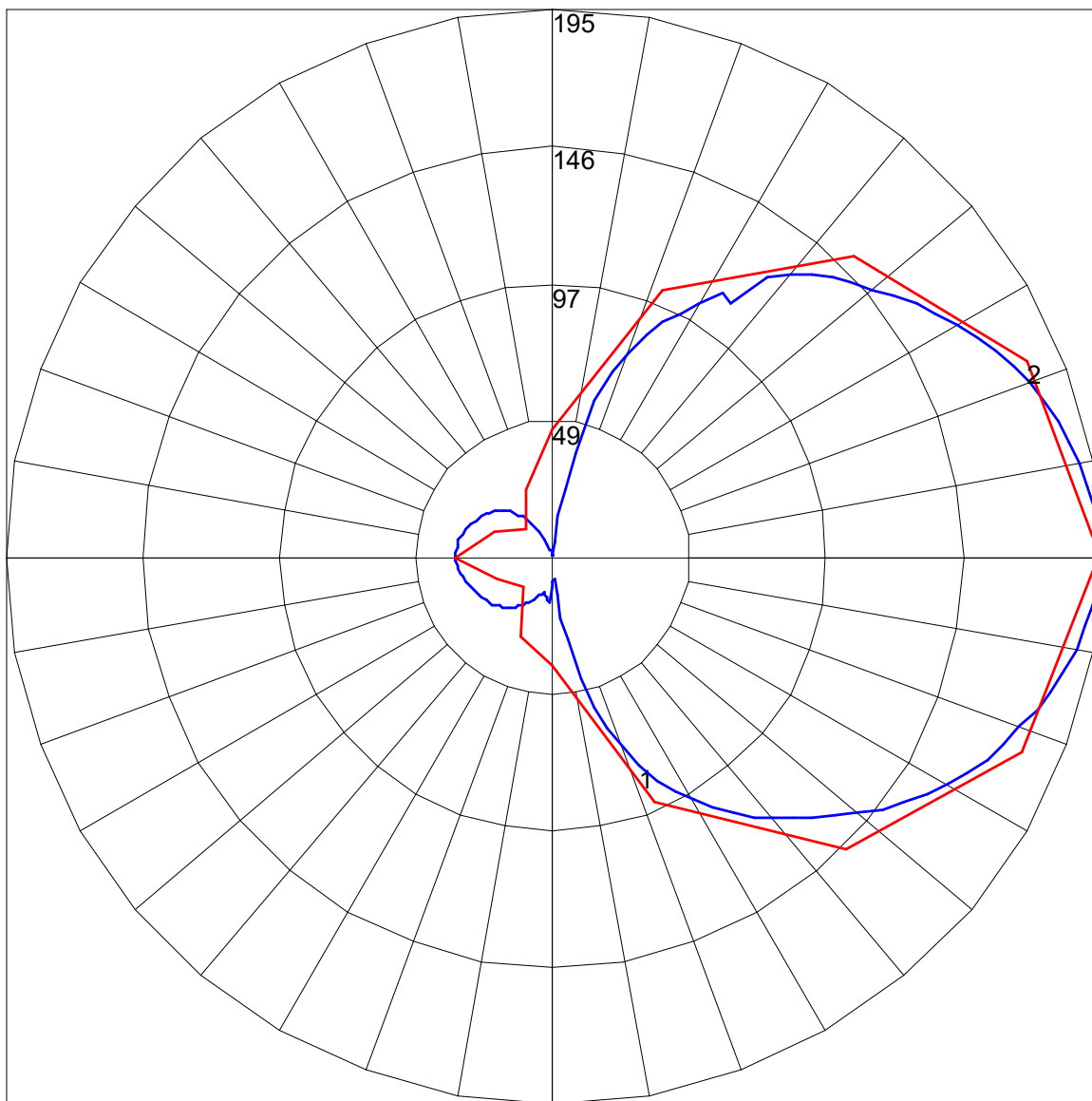
4H	2H	15.0	15.9	16.0	16.9	18.2	8.5	9.5	9.5	10.4	11.7
	3H	19.2	20.0	20.1	21.0	22.3	11.1	11.9	12.0	12.9	14.2
	4H	21.3	22.1	22.3	23.1	24.4	12.3	13.0	13.2	14.0	15.3
	6H	23.7	24.3	24.6	25.3	26.6	13.4	14.1	14.4	15.1	16.4
	8H	24.8	25.5	25.8	26.5	27.8	14.0	14.6	14.9	15.6	16.9
	12H	26.1	26.7	27.1	27.7	29.1	14.5	15.0	15.5	16.1	17.4

8H	4H	21.5	22.2	22.5	23.2	24.5	14.0	14.7	15.0	15.7	17.0
	6H	24.0	24.6	25.0	25.6	26.9	15.4	15.9	16.4	17.0	18.3
	8H	25.3	25.8	26.3	26.9	28.2	16.1	16.5	17.1	17.6	18.9
	12H	26.8	27.2	27.8	28.3	29.6	16.7	17.1	17.7	18.1	19.5

12H	4H	21.5	22.1	22.5	23.1	24.5	14.6	15.2	15.6	16.2	17.5
	6H	24.1	24.5	25.1	25.6	27.0	16.1	16.6	17.1	17.6	19.0
	8H	25.4	25.9	26.5	26.9	28.3	16.9	17.3	17.9	18.4	19.7

Maximum UGR = 29.6

POLAR GRAPH



Maximum Candela = 194.892 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.)