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IES INDOOR REPORT
PHOTOMETRIC FILENAME : FSN-8601-WEVE.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-8601-WEVE

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	559
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	29
Total Luminaire Watts	19.3
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)	1.45 ft
Luminous Height	0.38 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1571	1452	942
55	1818	1729	1271
65	2016	1981	1689
75	2214	2226	2391
85	2450	2522	3677

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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	0.881	0.881	0.881	0.881	0.881	0.881	0.881	0.881	0.881	0.881
2.5	5.045	4.527	1.813	2.663	1.658	0.995	0.912	0.539	0.528	0.642
5.0	9.542	9.055	5.470	4.631	2.953	2.062	1.740	0.818	0.466	0.736
7.5	14.152	13.841	9.531	7.045	4.299	3.139	2.435	1.098	0.497	0.901
10.0	19.135	18.855	13.686	10.049	5.646	4.320	3.315	1.440	0.456	1.098
12.5	24.014	23.797	17.902	13.064	6.962	5.408	4.103	1.751	0.549	1.285
15.0	28.904	28.790	21.974	16.017	8.319	6.537	4.890	2.124	0.425	1.368
17.5	33.919	33.877	26.128	18.938	9.738	7.718	5.625	2.404	0.404	1.668
20.0	39.068	39.099	30.438	22.046	11.116	8.847	6.454	2.766	0.518	1.844
22.5	44.185	44.268	34.685	25.040	12.546	10.039	7.200	3.087	0.508	1.979
25.0	49.293	49.438	39.036	27.951	13.851	11.334	8.029	3.460	0.497	2.196
27.5	54.328	54.421	43.243	30.842	15.157	12.442	8.723	3.740	0.466	2.372
30.0	59.125	59.166	47.366	33.473	16.400	13.572	9.459	4.009	0.456	2.559
32.5	63.911	63.880	51.344	36.094	17.633	14.587	10.111	4.382	0.466	2.714
35.0	68.666	68.531	55.271	38.539	18.731	15.613	10.805	4.621	0.508	2.911
37.5	73.629	73.224	59.249	41.088	19.953	16.762	11.500	4.890	0.549	3.015
40.0	78.581	78.063	63.320	43.678	21.279	17.902	12.194	5.273	0.508	3.263
42.5	83.574	82.932	67.578	46.226	22.585	19.062	12.929	5.532	0.508	3.357
45.0	88.371	87.594	71.650	48.889	23.807	20.098	13.675	5.853	0.466	3.553
47.5	93.085	91.955	75.628	51.251	24.957	21.155	14.411	6.195	0.549	3.761
50.0	97.539	96.110	79.420	53.634	26.086	22.284	15.053	6.454	0.466	3.885
52.5	101.797	100.202	83.253	55.830	27.216	23.196	15.758	6.765	0.642	4.061
55.0	105.858	104.097	86.817	58.120	28.366	24.263	16.400	7.024	0.642	4.279
57.5	109.536	107.651	90.277	60.171	29.288	25.154	17.001	7.335	0.601	4.403
60.0	112.789	110.562	93.323	61.963	30.158	25.724	17.591	7.542	0.694	4.569
62.5	115.410	113.069	95.944	63.538	30.821	26.470	18.057	7.780	0.694	4.703
65.0	117.731	115.276	98.161	64.905	31.567	27.019	18.513	7.894	0.736	4.828
67.5	119.803	117.431	100.088	66.190	32.178	27.537	18.928	8.164	0.777	4.900
70.0	121.803	119.358	101.942	67.444	32.862	28.086	19.404	8.288	0.777	4.921
72.5	123.916	121.316	103.786	68.687	33.981	28.459	19.860	8.568	0.870	5.045
75.0	125.781	123.232	105.506	70.023	34.665	28.925	20.378	8.671	0.881	5.159
77.5	127.583	125.138	106.967	71.246	35.141	29.433	20.772	8.889	0.870	5.263
80.0	129.075	126.910	108.397	72.396	35.638	29.858	21.093	9.034	1.109	5.377
82.5	130.370	128.132	109.536	73.546	36.084	30.230	21.466	9.117	1.015	5.501
85.0	131.075	128.982	110.427	74.426	36.260	30.458	21.673	9.303	1.202	5.574
87.5	131.334	129.386	110.914	74.986	36.395	30.510	21.766	9.293	1.202	5.625
90.0	131.064	129.386	110.759	75.224	36.301	30.562	21.787	9.324	1.243	5.667
92.5	130.267	128.806	110.179	75.245	36.084	30.334	21.746	9.220	1.243	5.750
95.0	129.117	127.894	109.319	74.913	35.752	30.241	21.590	9.200	1.202	5.719
97.5	127.905	126.806	108.252	74.592	35.421	29.920	21.456	9.055	1.109	5.646
100.0	126.547	125.615	107.257	74.167	35.017	29.733	21.114	8.910	1.057	5.532
102.5	125.170	124.517	105.962	73.546	34.520	29.319	20.658	8.588	0.922	5.512
105.0	123.522	123.129	104.605	72.810	33.991	28.904	20.502	8.381	0.777	5.211
107.5	121.637	121.575	103.030	71.878	33.463	28.490	20.098	8.247	0.736	5.087
110.0	119.409	119.523	101.290	70.821	32.883	28.076	19.705	8.112	0.787	5.045
112.5	116.871	117.141	99.270	69.547	32.199	27.516	19.187	7.853	0.684	4.900
115.0	114.260	114.602	97.063	67.962	31.391	26.967	18.627	7.687	0.601	4.766
117.5	111.401	111.940	94.649	66.377	30.583	26.314	18.099	7.532	0.601	4.641
120.0	108.448	109.163	92.131	64.595	29.764	25.620	17.612	7.283	0.642	4.579
122.5	105.444	105.941	89.469	62.668	28.832	24.926	16.980	6.993	0.549	4.476
125.0	102.119	102.574	86.672	60.668	27.920	24.139	16.338	6.817	0.508	4.299
127.5	98.285	98.669	83.771	58.348	26.957	23.310	15.737	6.527	0.559	4.175
130.0	94.090	94.421	80.466	55.903	25.817	22.336	14.991	6.237	0.497	4.040
132.5	89.749	90.122	76.933	53.157	24.657	21.404	14.297	5.978	0.508	3.895

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135.0	85.387	85.677	73.297	50.453	23.465	20.399	13.572	5.750	0.466	3.699
137.5	80.839	81.108	69.744	47.718	22.212	19.622	12.981	5.480	0.539	3.564
140.0	76.198	76.395	65.983	44.973	21.072	18.213	12.152	5.128	0.466	3.377
142.5	71.204	71.401	62.295	42.031	19.808	17.239	11.313	4.786	0.456	3.149
145.0	65.641	65.682	58.099	39.005	18.472	16.079	10.484	4.434	0.466	3.004
147.5	60.129	60.171	53.458	35.680	16.970	14.773	9.624	4.103	0.497	2.745
150.0	54.877	54.898	49.003	32.458	15.519	13.530	8.868	3.833	0.466	2.642
152.5	49.562	49.624	44.766	29.495	14.048	12.328	8.070	3.481	0.404	2.331
155.0	44.382	44.258	40.321	26.387	12.701	11.220	7.262	3.087	0.518	2.258
157.5	38.933	38.891	35.960	23.341	11.272	9.977	6.465	2.787	0.456	2.041
160.0	33.629	33.484	31.422	20.192	9.832	8.816	5.584	2.248	0.497	1.720
162.5	28.262	28.304	26.905	17.032	8.454	7.563	4.735	1.792	0.425	1.450
165.0	24.046	23.911	22.616	13.913	7.034	6.475	3.657	1.285	0.487	1.171
167.5	19.725	18.430	18.223	10.868	5.864	5.491	2.538	0.829	0.414	0.891
170.0	15.509	12.225	12.836	7.397	4.382	4.020	1.409	0.477	0.508	0.694
172.5	8.972	5.760	7.221	4.103	2.735	2.372	0.518	0.425	0.456	0.642
175.0	2.725	0.767	2.372	1.616	1.046	1.015	0.394	0.352	0.477	0.601
177.5	0.445	0.508	0.425	0.394	0.321	0.311	0.352	0.435	0.425	0.549
180.0	0.508	0.456	0.435	0.332	0.321	0.363	0.445	0.508	0.456	0.549

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	0.881	0.881	0.881	0.881	0.881	0.881	0.881
2.5	0.860	1.140	1.305	1.533	4.061	4.621	5.045
5.0	1.388	2.010	2.341	3.823	7.936	9.117	9.542
7.5	1.979	2.984	3.502	6.434	11.976	13.924	14.152
10.0	2.673	3.958	4.714	9.293	16.182	18.793	19.135
12.5	3.315	5.066	5.957	12.121	20.430	23.642	24.014
15.0	4.009	6.081	7.159	14.991	24.605	28.407	28.904
17.5	4.703	7.097	8.392	17.809	28.853	33.307	33.919
20.0	5.366	8.164	9.656	20.751	33.204	38.208	39.068
22.5	6.050	9.220	10.919	23.693	37.462	43.118	44.185
25.0	6.693	10.339	12.194	26.542	41.678	47.874	49.293
27.5	7.397	11.303	13.478	29.340	45.926	52.587	54.328
30.0	8.081	12.411	14.670	32.085	49.883	57.166	59.125
32.5	8.692	13.478	15.861	34.758	53.820	61.601	63.911
35.0	9.345	14.494	17.167	37.400	57.819	65.993	68.666
37.5	9.883	15.467	18.451	39.927	58.834	70.489	73.629
40.0	10.536	16.483	19.736	42.403	61.590	75.214	78.581
42.5	11.147	17.508	20.969	44.983	65.527	79.886	83.574
45.0	11.748	18.524	22.212	47.604	69.505	84.455	88.371
47.5	12.308	19.446	23.414	49.946	73.307	88.899	93.085
50.0	12.867	20.368	24.636	52.183	77.027	93.281	97.539
52.5	13.375	21.197	25.786	54.338	80.632	97.653	101.797
55.0	13.924	22.119	26.863	56.317	84.248	101.787	105.858
57.5	14.400	22.854	27.837	58.244	87.625	105.610	109.536
60.0	14.763	23.496	28.832	60.026	90.609	109.122	112.789
62.5	15.095	24.046	29.547	61.497	93.344	112.157	115.410
65.0	15.478	24.553	30.344	62.688	95.809	115.058	117.731
67.5	15.747	25.061	30.976	63.849	98.078	117.679	119.803
70.0	16.079	25.475	31.525	64.988	100.119	120.259	121.803
72.5	16.307	25.890	32.189	65.941	102.150	122.797	123.916
75.0	16.628	26.345	32.727	67.040	104.056	125.304	125.781
77.5	16.856	26.729	33.256	68.013	105.952	127.604	127.583
80.0	17.177	27.091	33.701	69.070	107.848	129.800	129.075

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82.5	17.467	27.547	34.084	70.044	109.422	131.593	130.370
85.0	17.602	27.723	34.354	70.707	110.624	132.815	131.075
87.5	17.788	27.858	34.385	71.215	111.090	133.458	131.334
90.0	17.881	27.941	34.426	71.318	111.184	133.540	131.064
92.5	17.881	27.806	34.229	71.256	110.862	133.033	130.267
95.0	17.757	27.723	33.929	70.966	110.210	132.049	129.117
97.5	17.612	27.402	33.535	70.521	109.143	130.712	127.905
100.0	17.477	27.164	33.069	69.951	107.930	129.334	126.547
102.5	17.156	26.667	32.686	69.319	106.366	127.293	125.170
105.0	16.918	26.470	32.199	68.604	104.781	123.781	123.522
107.5	16.638	26.066	31.660	67.765	102.937	122.497	121.637
110.0	16.410	25.568	31.111	66.770	101.114	120.653	119.409
112.5	16.131	25.133	30.417	65.620	98.700	118.549	116.871
115.0	15.809	24.636	29.640	64.346	96.203	116.063	114.260
117.5	15.488	24.035	28.884	62.792	93.468	113.515	111.401
120.0	15.074	23.486	28.127	61.228	90.691	110.593	108.448
122.5	14.701	22.865	27.299	59.570	87.956	107.630	105.444
125.0	14.286	22.129	26.532	57.830	85.025	104.491	102.119
127.5	13.820	21.414	25.517	55.913	81.782	100.824	98.285
130.0	13.219	20.575	24.450	53.603	78.249	96.814	94.090
132.5	12.712	19.705	23.445	51.209	74.540	92.370	89.749
135.0	12.246	18.803	22.315	48.630	70.842	87.915	85.387
137.5	11.458	17.892	21.290	46.216	67.226	83.274	80.839
140.0	10.857	16.887	20.119	43.543	63.455	78.622	76.198
142.5	10.163	15.758	19.021	40.829	59.280	73.742	71.204
145.0	9.510	14.649	17.622	37.866	55.084	68.231	65.641
147.5	8.868	13.572	16.265	34.830	50.950	62.854	60.129
150.0	8.174	12.401	14.970	31.805	46.630	57.384	54.877
152.5	7.573	11.386	13.717	28.853	42.590	52.090	49.562
155.0	6.962	10.287	12.370	25.941	38.425	46.900	44.382
157.5	6.330	9.210	11.075	22.896	34.147	41.544	38.933
160.0	5.615	8.102	9.780	19.829	29.816	36.260	33.629
162.5	4.890	6.910	8.402	16.783	25.703	30.945	28.262
165.0	4.175	6.050	7.356	13.779	21.549	26.149	24.046
167.5	3.191	4.745	6.040	10.764	17.032	21.528	19.725
170.0	2.134	3.149	4.641	7.584	11.831	15.312	15.509
172.5	1.316	1.637	2.714	4.517	6.278	8.609	8.972
175.0	0.808	0.829	1.119	2.010	2.093	2.642	2.725
177.5	0.787	0.850	0.860	0.881	0.756	0.632	0.445
180.0	0.787	0.912	0.798	0.829	0.787	0.673	0.508

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	4.28	N.A.	0.80
0-30	14.52	N.A.	2.60
0-40	33.67	N.A.	6.00
0-60	105.14	N.A.	18.80
0-80	215.79	N.A.	38.60
0-90	279.91	N.A.	50.10
10-90	279.39	N.A.	50.00
20-40	29.39	N.A.	5.30
20-50	59.35	N.A.	10.60
40-70	122.95	N.A.	22.00
60-80	110.65	N.A.	19.80
70-80	59.16	N.A.	10.60
80-90	64.12	N.A.	11.50
90-110	122.99	N.A.	22.00
90-120	174.50	N.A.	31.20
90-130	216.07	N.A.	38.70
90-150	265.40	N.A.	47.50
90-180	278.82	N.A.	49.90
110-180	155.83	N.A.	27.90
0-180	558.73	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	0.52
10-20	3.76
20-30	10.24
30-40	19.16
40-50	29.95
50-60	41.52
60-70	51.48
70-80	59.16
80-90	64.12
90-100	63.84
100-110	59.16
110-120	51.50
120-130	41.57
130-140	30.22
140-150	19.11
150-160	9.75
160-170	3.36
170-180	0.31

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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	85	79	73	84	78	72	67	64	60	56	52	49	46	40	38	36	30
2	81	71	63	55	74	65	57	51	53	47	42	42	38	34	32	29	26	21
3	73	61	51	43	66	55	47	40	45	38	33	36	30	26	27	23	19	15
4	66	52	43	35	59	48	39	32	39	32	26	31	25	21	23	19	15	11
5	60	46	36	29	54	42	33	27	34	27	22	27	21	17	20	16	12	9
6	55	41	31	24	49	37	28	22	30	23	18	24	18	14	18	13	10	7
7	50	36	27	21	46	33	25	19	27	20	15	21	16	12	16	12	9	6
8	46	33	24	18	42	30	22	16	24	18	13	19	14	10	14	10	7	5
9	43	29	21	15	39	27	19	14	22	16	11	17	12	9	13	9	6	4
10	40	27	19	14	36	25	17	12	20	14	10	16	11	8	12	8	5	3

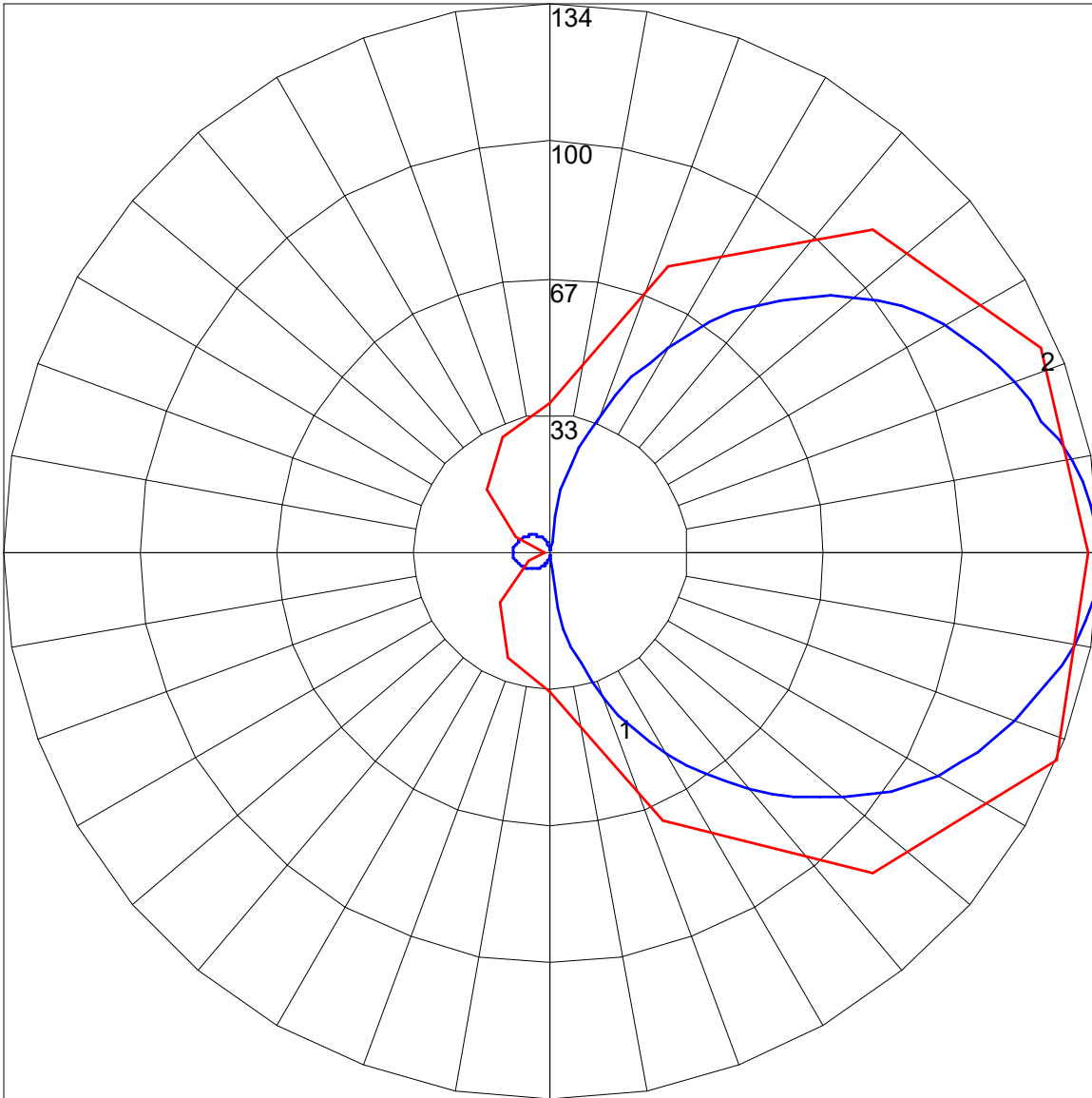
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UGR TABLE - CORRECTED

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	15.1	16.1	16.0	17.1	18.3	6.9	7.9	7.8	8.9	10.2
	3H	18.9	19.8	19.8	20.8	22.1	9.5	10.4	10.4	11.4	12.7
	4H	20.8	21.7	21.7	22.7	24.0	10.7	11.6	11.6	12.6	13.9
	6H	22.8	23.7	23.7	24.6	25.9	11.9	12.8	12.9	13.8	15.1
	8H	23.8	24.6	24.7	25.6	26.9	12.5	13.3	13.5	14.3	15.6
	12H	24.8	25.6	25.8	26.6	27.9	13.1	13.9	14.0	14.9	16.2
4H	2H	15.5	16.4	16.4	17.4	18.7	9.4	10.3	10.3	11.3	12.5
	3H	19.5	20.3	20.4	21.3	22.6	12.0	12.8	12.9	13.8	15.1
	4H	21.6	22.3	22.5	23.3	24.6	13.2	14.0	14.2	15.0	16.3
	6H	23.8	24.4	24.7	25.4	26.8	14.5	15.1	15.4	16.1	17.5
	8H	24.9	25.5	25.8	26.5	27.8	15.0	15.7	16.0	16.7	18.0
	12H	26.0	26.6	27.0	27.6	29.0	15.6	16.2	16.6	17.2	18.5
8H	4H	21.8	22.4	22.8	23.5	24.8	14.8	15.5	15.8	16.5	17.8
	6H	24.2	24.7	25.2	25.8	27.1	16.3	16.9	17.3	17.9	19.2
	8H	25.4	25.9	26.4	27.0	28.3	17.0	17.5	18.0	18.5	19.9
	12H	26.8	27.2	27.8	28.3	29.6	17.6	18.1	18.7	19.1	20.5
12H	4H	21.8	22.4	22.8	23.4	24.8	15.3	15.9	16.3	17.0	18.3
	6H	24.2	24.7	25.3	25.8	27.1	16.9	17.4	18.0	18.5	19.8
	8H	25.6	26.0	26.6	27.1	28.4	17.8	18.2	18.8	19.2	20.6

Maximum UGR = 29.6

POLAR GRAPH



Maximum Candela = 133.54 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.)