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IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN-7565W-WEVE.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] LM-79-08
[TESTLAB] Orb Optronix, Inc.
[ISSUE DATE] 07-19-2019
[MANUFACTURER] Justice Design
[LUMINAIRE] FSN-7565W-WEVE

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	530
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	22
Total Luminaire Watts	23.93
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	2.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	945	776	600
55	990	805	622
65	1016	822	632
75	1043	841	642
85	1092	873	665

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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	7.565	7.565	7.565	7.565	7.565	7.565	7.565	7.565	7.565	7.565
2.5	10.175	10.651	10.098	8.914	8.041	7.377	7.543	6.857	6.946	6.758
5.0	13.515	14.057	13.117	10.972	9.102	8.041	8.063	7.089	6.879	6.802
7.5	17.309	17.961	16.479	13.250	10.153	8.892	8.395	7.200	6.802	6.890
10.0	21.589	22.032	19.908	15.694	11.480	9.843	8.903	7.300	6.736	7.101
12.5	25.659	26.091	23.558	18.249	12.807	10.850	9.423	7.366	6.636	7.123
15.0	29.729	30.216	27.053	20.804	14.157	11.878	9.987	7.410	6.481	7.277
17.5	34.120	34.485	30.691	23.370	15.528	12.973	10.374	7.410	6.359	7.300
20.0	38.467	38.865	34.529	26.035	16.966	14.013	10.949	7.432	6.083	7.289
22.5	42.725	43.245	38.268	28.712	18.337	15.108	11.580	7.532	5.950	7.266
25.0	46.894	47.414	41.984	31.433	19.665	16.192	11.923	7.642	5.685	7.322
27.5	50.964	51.451	45.534	33.821	21.025	17.209	12.376	7.742	5.530	7.399
30.0	54.869	55.366	48.708	36.299	22.275	18.205	12.896	7.808	5.154	7.465
32.5	58.452	59.160	52.070	38.566	23.392	19.078	13.117	7.819	4.900	7.366
35.0	62.058	62.843	55.090	40.778	24.520	19.941	13.460	7.864	4.645	7.410
37.5	65.785	66.725	58.253	42.957	25.703	20.848	13.803	7.864	4.402	7.399
40.0	69.523	70.618	61.449	45.379	26.776	21.689	14.090	7.875	3.982	7.477
42.5	73.228	74.611	64.679	47.547	27.949	22.618	14.234	7.919	3.760	7.410
45.0	76.823	78.449	67.864	49.792	29.077	23.502	14.654	7.941	3.473	7.399
47.5	80.240	82.087	70.718	51.783	30.083	24.321	14.997	8.041	3.318	7.432
50.0	83.415	85.472	73.438	53.696	31.045	24.985	15.340	8.041	3.030	7.410
52.5	86.710	89.110	76.115	55.455	31.963	25.759	15.672	8.207	2.798	7.465
55.0	89.741	92.583	78.725	57.180	32.693	26.489	15.960	8.218	2.610	7.432
57.5	92.417	95.669	81.081	58.729	33.479	27.042	16.291	8.240	2.345	7.465
60.0	94.817	98.390	83.127	60.000	34.009	27.528	16.524	8.207	2.135	7.477
62.5	96.819	100.679	84.786	61.140	34.430	27.849	16.634	8.262	2.035	7.465
65.0	98.699	102.681	86.390	61.958	34.762	28.070	16.811	8.284	1.980	7.565
67.5	100.358	104.583	87.584	62.677	34.950	28.258	16.933	8.406	1.935	7.521
70.0	101.995	106.552	88.945	63.540	35.160	28.391	17.099	8.494	1.803	7.642
72.5	103.533	107.791	90.360	64.292	35.602	28.668	17.375	8.627	1.770	7.698
75.0	105.125	107.415	91.831	65.066	35.879	28.988	17.718	8.771	1.781	7.742
77.5	106.762	108.377	93.026	65.873	36.133	29.397	17.995	8.881	1.692	7.864
80.0	108.366	109.560	94.342	66.471	36.432	29.574	18.116	8.815	1.582	7.919
82.5	109.726	110.633	95.238	66.847	36.564	29.774	18.161	8.771	1.371	7.808
85.0	110.644	111.341	96.045	67.267	36.564	29.939	18.161	8.649	1.106	7.753
87.5	111.197	111.783	96.598	67.322	36.520	29.829	18.116	8.682	1.084	7.698
90.0	111.319	111.529	96.554	67.123	36.310	29.729	17.995	8.660	1.084	7.753
92.5	111.153	111.230	96.255	66.891	36.299	29.674	17.818	8.549	1.106	7.753
95.0	110.688	110.401	95.868	66.592	36.188	29.530	17.884	8.671	1.250	7.908
97.5	109.837	109.737	95.171	66.072	35.989	29.276	17.641	8.549	1.206	7.709
100.0	108.808	108.698	94.552	65.619	35.735	28.988	17.475	8.372	1.128	7.543
102.5	107.724	107.791	93.756	65.143	35.414	28.679	17.132	8.207	0.962	7.432
105.0	106.596	106.452	92.716	64.624	35.104	28.380	16.889	7.974	0.951	7.244
107.5	105.158	105.291	91.521	63.838	34.751	28.037	16.568	7.974	0.984	7.134
110.0	103.389	103.853	90.039	63.097	34.408	27.639	16.269	8.052	1.029	6.968
112.5	101.343	102.194	88.635	62.312	33.855	27.241	15.871	7.919	1.006	6.791
115.0	99.020	100.392	87.916	61.372	33.335	26.798	15.495	7.631	0.940	6.691
117.5	96.731	98.445	87.286	60.377	32.815	26.279	15.075	7.477	0.918	6.514
120.0	94.375	96.753	86.412	59.459	32.306	25.714	14.854	7.277	0.984	6.348
122.5	92.793	95.791	85.184	58.364	31.720	25.206	14.278	7.089	1.006	6.238
125.0	91.411	94.663	82.751	56.970	31.278	24.531	13.880	6.857	1.117	6.050
127.5	89.343	92.915	79.599	55.167	30.658	23.845	13.427	6.625	1.051	5.939
130.0	86.600	90.338	76.192	52.922	29.829	23.115	12.951	6.282	1.128	5.773
132.5	83.304	87.109	72.941	50.445	28.756	22.253	12.520	6.083	1.128	5.596

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135.0	79.367	83.083	69.822	48.067	27.650	21.302	11.989	5.950	1.172	5.430
137.5	75.418	79.212	66.382	45.722	26.456	20.384	11.425	5.729	1.338	5.265
140.0	71.304	75.473	64.524	43.256	25.206	19.488	10.938	5.453	1.449	5.154
142.5	67.322	71.569	60.797	40.756	23.912	18.514	10.419	5.320	1.460	4.922
145.0	63.086	67.156	57.479	37.914	22.585	17.552	9.921	5.065	1.515	4.756
147.5	58.452	62.345	53.895	35.027	21.202	16.369	9.191	4.579	1.637	4.634
150.0	53.707	57.678	50.058	32.107	19.687	15.119	8.317	4.225	1.327	4.236
152.5	48.863	52.911	45.965	29.110	17.652	13.648	7.875	3.794	1.327	3.783
155.0	42.846	44.771	41.563	25.659	16.313	12.619	6.924	3.230	1.139	3.329
157.5	39.495	42.835	36.011	23.082	14.820	11.193	6.205	2.887	0.829	2.876
160.0	34.540	37.493	33.324	19.786	12.796	9.600	5.309	2.278	0.619	2.533
162.5	29.530	32.140	28.601	16.336	10.651	8.195	4.557	1.803	0.509	2.057
165.0	24.686	27.042	23.757	12.730	8.826	6.813	3.462	1.338	0.498	1.338
167.5	19.665	21.633	19.178	9.523	7.056	5.121	2.345	0.829	0.564	1.006
170.0	15.462	16.977	14.566	6.481	4.999	3.583	1.217	0.608	0.476	0.829
172.5	9.666	10.972	7.366	3.849	2.853	1.836	0.630	0.509	0.420	0.619
175.0	4.159	4.933	3.694	1.858	1.194	0.774	0.376	0.586	0.564	0.686
177.5	0.763	1.416	1.272	0.664	0.409	0.442	0.542	0.575	0.564	0.575
180.0	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630

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	7.565	7.565	7.565	7.565	7.565	7.565	7.565
2.5	7.089	7.410	8.162	8.671	9.677	9.069	9.534
5.0	7.277	8.317	9.213	10.562	12.642	12.066	12.774
7.5	7.687	9.213	10.264	12.664	15.904	15.694	16.568
10.0	8.129	9.843	11.591	15.086	19.355	19.698	20.527
12.5	8.538	10.618	12.918	17.353	23.049	23.923	24.686
15.0	9.047	11.536	14.312	19.786	26.456	28.137	28.811
17.5	9.434	12.619	15.628	22.253	29.995	32.450	32.959
20.0	9.899	13.582	17.099	24.597	33.777	36.874	37.173
22.5	10.452	14.588	18.415	27.020	37.139	41.243	41.475
25.0	10.916	15.539	19.753	29.453	40.668	45.501	45.600
27.5	11.314	16.524	21.058	31.786	44.107	49.704	49.615
30.0	11.768	17.497	22.385	34.109	47.392	53.741	53.508
32.5	12.221	18.481	23.668	36.387	50.633	57.457	57.047
35.0	12.686	19.410	24.863	38.588	53.741	61.173	60.874
37.5	12.962	20.096	26.146	40.811	56.749	64.922	64.413
40.0	13.537	21.114	27.373	43.023	59.846	68.672	68.152
42.5	13.814	22.032	28.579	45.423	63.175	72.498	71.901
45.0	14.212	22.927	29.829	47.735	66.227	76.248	75.628
47.5	14.721	23.901	30.846	49.969	69.213	79.754	79.035
50.0	15.008	24.686	31.875	52.170	71.990	83.127	82.275
52.5	15.407	25.471	32.870	54.183	74.655	86.356	85.472
55.0	15.749	26.234	33.722	56.163	77.265	89.564	88.557
57.5	15.960	26.953	34.518	58.065	79.621	92.572	91.477
60.0	16.192	27.595	35.104	59.724	81.667	95.138	94.032
62.5	16.358	28.115	35.624	61.084	83.415	97.273	96.233
65.0	16.535	28.513	36.045	62.412	84.996	99.286	98.135
67.5	16.590	28.889	36.321	63.440	86.467	100.978	99.850
70.0	16.756	29.254	36.719	64.358	87.827	102.736	101.431
72.5	16.988	29.585	37.117	65.376	89.199	104.307	103.289
75.0	17.220	29.928	37.571	66.227	90.493	105.922	104.948
77.5	17.442	30.327	38.345	67.245	91.853	107.592	106.652
80.0	17.729	30.813	39.009	67.997	93.346	109.361	108.200

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82.5	17.840	31.200	39.506	68.627	94.430	110.810	109.527
85.0	17.950	31.455	39.761	69.037	95.204	111.938	110.677
87.5	17.829	31.576	39.827	69.103	95.658	112.679	111.385
90.0	17.995	31.521	39.849	68.937	95.934	112.978	111.695
92.5	17.884	31.377	39.694	68.539	95.647	112.878	111.507
95.0	17.773	31.211	39.694	67.975	95.216	112.447	110.810
97.5	17.641	31.001	39.418	67.245	94.552	111.739	109.981
100.0	17.464	30.625	38.986	66.393	93.800	110.910	109.029
102.5	17.154	30.183	38.511	65.431	92.672	109.914	108.078
105.0	16.723	29.674	38.102	64.347	91.632	108.631	106.895
107.5	16.457	29.088	37.460	63.263	90.471	107.249	105.302
110.0	16.148	28.734	36.940	62.135	88.956	105.490	103.466
112.5	15.860	28.159	36.144	60.775	87.175	103.411	101.442
115.0	15.418	27.550	35.469	59.636	85.991	101.254	99.230
117.5	15.075	26.787	34.673	58.264	85.162	99.053	96.852
120.0	14.677	26.179	33.888	57.081	84.100	96.941	94.452
122.5	14.345	25.549	33.036	55.842	82.817	95.481	92.594
125.0	13.991	24.874	32.395	54.459	80.384	93.711	91.079
127.5	13.648	24.111	31.654	52.568	77.343	91.466	89.000
130.0	13.228	23.182	30.658	50.423	74.025	88.613	86.578
132.5	12.796	22.396	29.608	48.244	70.906	84.885	83.492
135.0	12.232	21.589	28.468	46.098	67.831	80.749	79.566
137.5	11.823	20.671	27.152	43.930	64.613	76.679	75.484
140.0	11.414	19.786	25.980	41.718	60.775	72.764	71.569
142.5	10.927	18.791	24.664	41.010	57.070	68.793	67.599
145.0	10.407	17.751	23.425	38.975	53.508	64.380	63.683
147.5	9.567	16.866	22.120	36.122	49.582	59.702	58.983
150.0	9.091	15.407	20.793	33.224	45.589	55.112	54.371
152.5	8.328	14.511	18.857	30.603	41.895	50.002	49.847
155.0	7.454	13.150	17.641	27.097	36.509	44.859	43.687
157.5	6.636	11.713	15.971	24.940	33.545	40.690	40.347
160.0	5.818	10.186	14.024	21.843	29.198	35.934	35.348
162.5	5.099	8.760	12.111	18.514	24.863	31.056	30.526
165.0	4.037	7.465	10.120	15.086	20.627	25.803	25.692
167.5	3.108	6.105	7.952	11.779	16.502	21.114	20.594
170.0	1.935	4.524	6.371	8.881	11.336	16.778	16.446
172.5	1.073	2.710	4.336	6.293	6.238	10.618	10.673
175.0	0.907	1.250	2.201	3.971	3.019	5.165	5.154
177.5	0.863	0.874	0.984	2.002	1.360	1.714	1.073
180.0	0.630	0.630	0.630	0.630	0.630	0.630	0.630

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	6.02	N.A.	1.10
0-30	17.59	N.A.	3.30
0-40	37.64	N.A.	7.10
0-60	107.21	N.A.	20.20
0-80	209.32	N.A.	39.50
0-90	267.34	N.A.	50.50
10-90	266.29	N.A.	50.30
20-40	31.62	N.A.	6.00
20-50	61.43	N.A.	11.60
40-70	117.58	N.A.	22.20
60-80	102.12	N.A.	19.30
70-80	54.11	N.A.	10.20
80-90	58.02	N.A.	11.00
90-110	111.73	N.A.	21.10
90-120	159.21	N.A.	30.10
90-130	198.84	N.A.	37.60
90-150	247.95	N.A.	46.80
90-180	262.17	N.A.	49.50
110-180	150.44	N.A.	28.40
0-180	529.51	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1.05
10-20	4.97
20-30	11.58
30-40	20.04
40-50	29.81
50-60	39.76
60-70	48.01
70-80	54.11
80-90	58.02
90-100	57.80
100-110	53.93
110-120	47.48
120-130	39.63
130-140	29.63
140-150	19.48
150-160	10.25
160-170	3.60
170-180	0.37

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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	84	84	84	69	69	69	57	57	57	50
1	92	86	79	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	46	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

X=2H	Y=2H	11.6	12.6	12.5	13.6	14.8	5.2	6.2	6.1	7.2	8.4
	3H	14.8	15.7	15.7	16.7	18.0	7.7	8.6	8.6	9.6	10.9
	4H	16.3	17.3	17.3	18.2	19.5	8.9	9.8	9.8	10.8	12.0
	6H	17.9	18.8	18.8	19.7	21.0	10.0	10.9	11.0	11.9	13.2
	8H	18.6	19.5	19.6	20.5	21.8	10.6	11.4	11.5	12.4	13.7
	12H	19.4	20.2	20.4	21.2	22.5	11.1	11.9	12.1	12.9	14.2

UGR Viewed Endwise

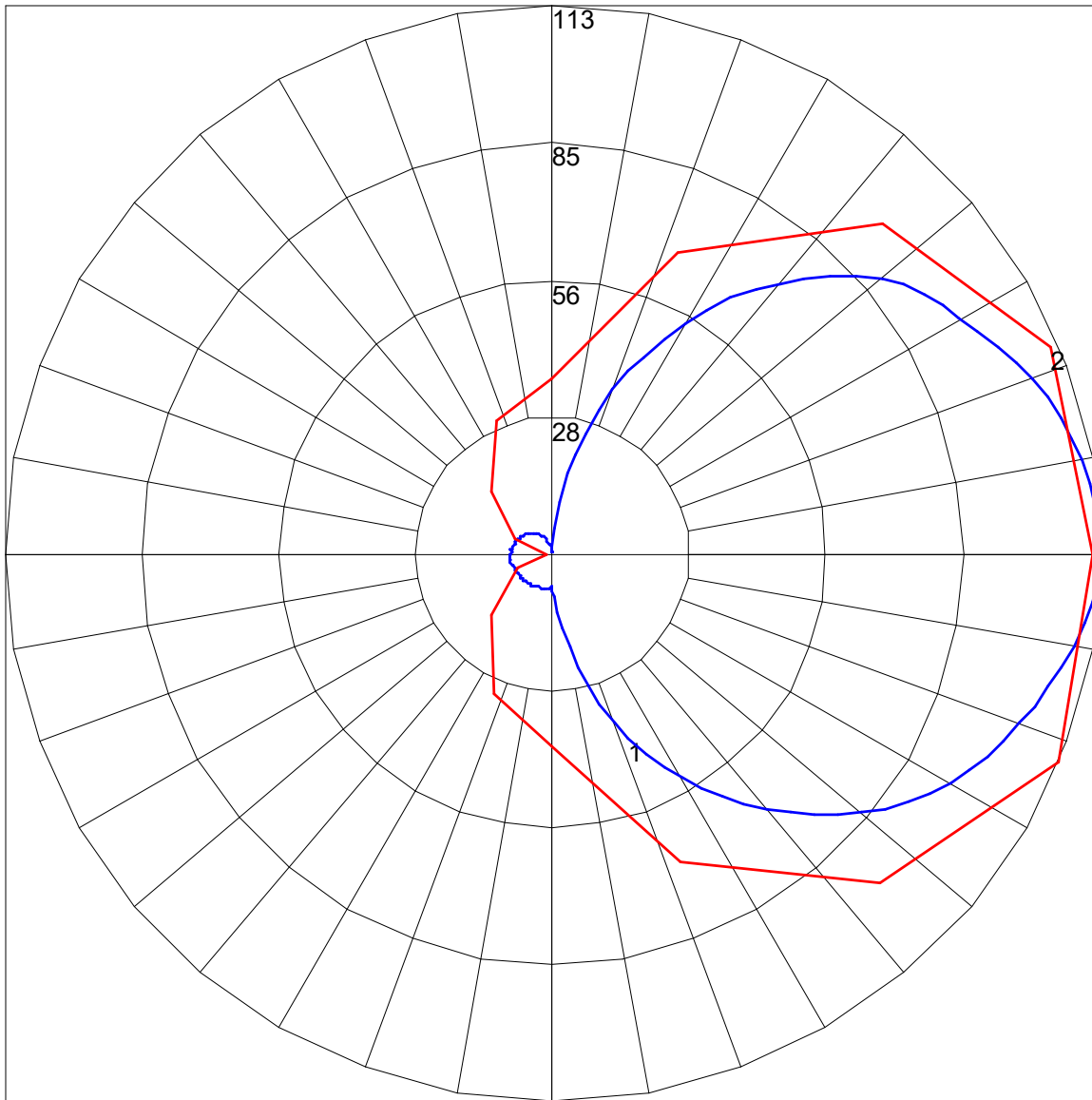
4H	2H	12.0	12.9	12.9	13.9	15.2	6.9	7.8	7.8	8.8	10.0
	3H	15.5	16.3	16.4	17.3	18.6	9.5	10.3	10.5	11.3	12.6
	4H	17.2	18.0	18.2	19.0	20.3	10.8	11.6	11.8	12.6	13.9
	6H	19.0	19.7	20.0	20.7	22.0	12.1	12.7	13.0	13.7	15.0
	8H	19.9	20.5	20.8	21.5	22.8	12.6	13.3	13.6	14.3	15.6
	12H	20.7	21.3	21.7	22.4	23.7	13.2	13.8	14.2	14.8	16.1

8H	4H	17.5	18.2	18.5	19.2	20.5	12.0	12.6	12.9	13.6	14.9
	6H	19.5	20.1	20.5	21.1	22.4	13.5	14.0	14.4	15.1	16.4
	8H	20.6	21.1	21.6	22.1	23.4	14.2	14.7	15.2	15.7	17.0
	12H	21.6	22.1	22.7	23.1	24.5	14.9	15.3	15.9	16.4	17.7

12H	4H	17.6	18.1	18.5	19.2	20.5	12.3	12.9	13.3	13.9	15.2
	6H	19.6	20.1	20.6	21.2	22.5	13.9	14.4	14.9	15.4	16.8
	8H	20.7	21.2	21.7	22.2	23.6	14.7	15.2	15.7	16.2	17.6

Maximum UGR = 24.5

POLAR GRAPH



Maximum Candela = 112.978 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.)