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IES INDOOR REPORT
PHOTOMETRIC FILENAME : FSN-7565W-OPAL.IES

DESCRIPTION INFORMATION (From Photometric File)

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

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	511
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	21
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	913	749	580
55	957	778	601
65	981	794	610
75	1008	812	620
85	1055	843	642

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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	7.307	7.307	7.307	7.307	7.307	7.307	7.307	7.307	7.307	7.307
2.5	9.828	10.288	9.754	8.610	7.767	7.126	7.286	6.623	6.709	6.527
5.0	13.055	13.578	12.670	10.598	8.792	7.767	7.788	6.848	6.645	6.570
7.5	16.719	17.349	15.918	12.798	9.807	8.589	8.108	6.955	6.570	6.656
10.0	20.853	21.281	19.229	15.159	11.089	9.508	8.600	7.051	6.506	6.858
12.5	24.785	25.201	22.755	17.627	12.371	10.480	9.102	7.115	6.410	6.880
15.0	28.716	29.186	26.131	20.095	13.674	11.474	9.647	7.158	6.260	7.029
17.5	32.957	33.310	29.645	22.573	14.999	12.531	10.021	7.158	6.143	7.051
20.0	37.155	37.540	33.352	25.148	16.388	13.535	10.576	7.179	5.876	7.040
22.5	41.268	41.771	36.963	27.733	17.712	14.593	11.185	7.275	5.747	7.019
25.0	45.296	45.798	40.553	30.361	18.994	15.640	11.516	7.382	5.491	7.072
27.5	49.227	49.697	43.982	32.669	20.308	16.623	11.954	7.478	5.342	7.147
30.0	52.998	53.479	47.048	35.062	21.516	17.584	12.456	7.542	4.978	7.211
32.5	56.460	57.143	50.296	37.252	22.595	18.428	12.670	7.553	4.733	7.115
35.0	59.942	60.701	53.212	39.388	23.684	19.261	13.001	7.596	4.487	7.158
37.5	63.542	64.451	56.267	41.493	24.827	20.137	13.332	7.596	4.252	7.147
40.0	67.153	68.211	59.355	43.832	25.864	20.949	13.610	7.606	3.846	7.222
42.5	70.732	72.068	62.474	45.926	26.996	21.847	13.749	7.649	3.632	7.158
45.0	74.204	75.775	65.551	48.095	28.086	22.701	14.155	7.670	3.354	7.147
47.5	77.505	79.289	68.307	50.018	29.058	23.492	14.486	7.767	3.205	7.179
50.0	80.571	82.558	70.935	51.866	29.987	24.133	14.817	7.767	2.927	7.158
52.5	83.755	86.073	73.520	53.565	30.874	24.881	15.138	7.927	2.703	7.211
55.0	86.682	89.427	76.042	55.231	31.579	25.586	15.416	7.937	2.521	7.179
57.5	89.267	92.408	78.317	56.727	32.337	26.120	15.736	7.959	2.265	7.211
60.0	91.585	95.036	80.293	57.955	32.850	26.590	15.960	7.927	2.062	7.222
62.5	93.519	97.247	81.896	59.056	33.256	26.900	16.067	7.980	1.966	7.211
65.0	95.335	99.181	83.445	59.846	33.577	27.113	16.238	8.002	1.912	7.307
67.5	96.938	101.018	84.599	60.541	33.758	27.295	16.356	8.119	1.870	7.264
70.0	98.519	102.920	85.913	61.374	33.961	27.423	16.516	8.205	1.741	7.382
72.5	100.004	104.117	87.280	62.100	34.389	27.690	16.783	8.333	1.709	7.435
75.0	101.542	103.753	88.701	62.848	34.656	28.000	17.114	8.472	1.720	7.478
77.5	103.123	104.683	89.855	63.628	34.901	28.395	17.381	8.578	1.634	7.596
80.0	104.672	105.826	91.126	64.205	35.190	28.566	17.499	8.514	1.528	7.649
82.5	105.986	106.862	91.991	64.568	35.318	28.759	17.541	8.472	1.325	7.542
85.0	106.873	107.546	92.771	64.974	35.318	28.919	17.541	8.354	1.068	7.489
87.5	107.407	107.973	93.305	65.027	35.275	28.812	17.499	8.386	1.047	7.435
90.0	107.524	107.727	93.263	64.835	35.072	28.716	17.381	8.365	1.047	7.489
92.5	107.364	107.439	92.974	64.611	35.062	28.662	17.210	8.258	1.068	7.489
95.0	106.915	106.638	92.600	64.322	34.955	28.524	17.274	8.375	1.207	7.638
97.5	106.093	105.997	91.927	63.820	34.762	28.278	17.039	8.258	1.164	7.446
100.0	105.099	104.993	91.329	63.382	34.517	28.000	16.879	8.087	1.090	7.286
102.5	104.052	104.117	90.560	62.923	34.207	27.701	16.548	7.927	0.929	7.179
105.0	102.963	102.824	89.556	62.421	33.908	27.413	16.313	7.702	0.919	6.997
107.5	101.574	101.702	88.402	61.662	33.566	27.081	16.003	7.702	0.951	6.891
110.0	99.865	100.313	86.970	60.947	33.235	26.697	15.715	7.777	0.994	6.730
112.5	97.888	98.711	85.614	60.188	32.701	26.312	15.330	7.649	0.972	6.559
115.0	95.645	96.970	84.919	59.280	32.199	25.885	14.967	7.371	0.908	6.463
117.5	93.434	95.089	84.310	58.318	31.696	25.383	14.561	7.222	0.887	6.292
120.0	91.158	93.455	83.466	57.432	31.205	24.838	14.347	7.029	0.951	6.132
122.5	89.630	92.525	82.280	56.374	30.639	24.347	13.792	6.848	0.972	6.025
125.0	88.295	91.436	79.930	55.028	30.212	23.695	13.407	6.623	1.079	5.844
127.5	86.297	89.748	76.886	53.287	29.613	23.033	12.969	6.399	1.015	5.737
130.0	83.648	87.259	73.595	51.118	28.812	22.327	12.510	6.068	1.090	5.577
132.5	80.464	84.139	70.454	48.725	27.776	21.494	12.093	5.876	1.090	5.406

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CANDELA TABULATION - (Cont.)

135.0	76.661	80.251	67.442	46.428	26.708	20.575	11.580	5.747	1.132	5.245
137.5	72.847	76.512	64.119	44.164	25.554	19.689	11.036	5.534	1.293	5.085
140.0	68.873	72.901	62.325	41.781	24.347	18.823	10.565	5.267	1.399	4.978
142.5	65.027	69.130	58.724	39.367	23.097	17.883	10.063	5.139	1.410	4.754
145.0	60.936	64.867	55.520	36.621	21.815	16.954	9.583	4.893	1.464	4.594
147.5	56.460	60.220	52.058	33.833	20.479	15.811	8.878	4.423	1.581	4.476
150.0	51.877	55.712	48.351	31.013	19.016	14.604	8.034	4.081	1.282	4.092
152.5	47.197	51.107	44.399	28.118	17.050	13.183	7.606	3.664	1.282	3.654
155.0	41.386	43.245	40.147	24.785	15.757	12.189	6.688	3.119	1.100	3.216
157.5	38.149	41.375	34.784	22.295	14.315	10.811	5.993	2.788	0.801	2.778
160.0	33.363	36.215	32.188	19.112	12.360	9.273	5.128	2.201	0.598	2.446
162.5	28.524	31.045	27.626	15.779	10.288	7.916	4.401	1.741	0.491	1.987
165.0	23.844	26.120	22.947	12.296	8.525	6.581	3.344	1.293	0.481	1.293
167.5	18.994	20.896	18.524	9.198	6.816	4.946	2.265	0.801	0.545	0.972
170.0	14.935	16.398	14.070	6.260	4.829	3.461	1.175	0.588	0.459	0.801
172.5	9.337	10.598	7.115	3.718	2.756	1.773	0.609	0.491	0.406	0.598
175.0	4.017	4.765	3.568	1.795	1.154	0.748	0.363	0.566	0.545	0.662
177.5	0.737	1.367	1.229	0.641	0.395	0.427	0.523	0.556	0.545	0.556
180.0	0.545	0.491	0.556	0.470	0.353	0.459	0.556	0.513	0.598	0.673

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	7.307	7.307	7.307	7.307	7.307	7.307	7.307
2.5	6.848	7.158	7.884	8.375	9.348	8.760	9.209
5.0	7.029	8.034	8.899	10.202	12.211	11.655	12.339
7.5	7.425	8.899	9.914	12.232	15.362	15.159	16.003
10.0	7.852	9.508	11.196	14.572	18.695	19.026	19.828
12.5	8.247	10.256	12.478	16.762	22.263	23.107	23.844
15.0	8.739	11.142	13.824	19.112	25.554	27.178	27.829
17.5	9.113	12.189	15.095	21.494	28.972	31.344	31.835
20.0	9.561	13.119	16.516	23.759	32.626	35.617	35.906
22.5	10.095	14.091	17.787	26.099	35.874	39.837	40.061
25.0	10.544	15.010	19.080	28.449	39.281	43.950	44.046
27.5	10.929	15.960	20.340	30.703	42.604	48.009	47.924
30.0	11.367	16.901	21.622	32.946	45.777	51.909	51.684
32.5	11.805	17.851	22.862	35.147	48.907	55.498	55.103
35.0	12.253	18.749	24.015	37.273	51.909	59.088	58.799
37.5	12.520	19.411	25.255	39.420	54.814	62.709	62.218
40.0	13.076	20.394	26.440	41.557	57.806	66.331	65.829
42.5	13.343	21.281	27.605	43.875	61.021	70.027	69.450
45.0	13.728	22.146	28.812	46.108	63.970	73.649	73.050
47.5	14.219	23.086	29.795	48.266	66.854	77.035	76.341
50.0	14.497	23.844	30.788	50.392	69.536	80.293	79.471
52.5	14.881	24.603	31.750	52.336	72.110	83.413	82.558
55.0	15.213	25.340	32.572	54.248	74.631	86.511	85.539
57.5	15.416	26.034	33.342	56.086	76.907	89.417	88.359
60.0	15.640	26.654	33.908	57.688	78.883	91.895	90.827
62.5	15.800	27.156	34.410	59.002	80.571	93.957	92.953
65.0	15.971	27.541	34.816	60.284	82.099	95.901	94.790
67.5	16.025	27.904	35.083	61.278	83.520	97.536	96.446
70.0	16.185	28.257	35.468	62.164	84.834	99.234	97.974
72.5	16.409	28.577	35.852	63.147	86.158	100.751	99.769
75.0	16.633	28.908	36.290	63.970	87.408	102.311	101.371
77.5	16.847	29.293	37.038	64.953	88.722	103.924	103.016
80.0	17.125	29.763	37.679	65.679	90.165	105.634	104.512

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82.5	17.232	30.137	38.160	66.288	91.211	107.033	105.794
85.0	17.339	30.382	38.405	66.683	91.959	108.123	106.905
87.5	17.221	30.500	38.469	66.747	92.397	108.838	107.588
90.0	17.381	30.447	38.491	66.587	92.664	109.127	107.888
92.5	17.274	30.308	38.341	66.203	92.387	109.031	107.706
95.0	17.168	30.147	38.341	65.658	91.970	108.614	107.033
97.5	17.039	29.944	38.074	64.953	91.329	107.930	106.232
100.0	16.868	29.581	37.658	64.130	90.603	107.129	105.313
102.5	16.569	29.154	37.198	63.201	89.513	106.168	104.394
105.0	16.153	28.662	36.803	62.154	88.509	104.928	103.251
107.5	15.896	28.096	36.183	61.107	87.387	103.593	101.713
110.0	15.597	27.754	35.681	60.017	85.923	101.894	99.939
112.5	15.319	27.199	34.912	58.703	84.203	99.886	97.984
115.0	14.892	26.611	34.260	57.603	83.060	97.803	95.848
117.5	14.561	25.874	33.491	56.278	82.259	95.677	93.551
120.0	14.176	25.287	32.733	55.135	81.234	93.636	91.233
122.5	13.856	24.678	31.910	53.938	79.994	92.226	89.438
125.0	13.514	24.026	31.291	52.603	77.644	90.517	87.975
127.5	13.183	23.289	30.575	50.776	74.706	88.348	85.966
130.0	12.777	22.392	29.613	48.704	71.501	85.592	83.627
132.5	12.360	21.633	28.598	46.599	68.489	81.992	80.646
135.0	11.815	20.853	27.498	44.527	65.519	77.997	76.854
137.5	11.420	19.967	26.227	42.433	62.410	74.065	72.911
140.0	11.025	19.112	25.094	40.296	58.703	70.283	69.130
142.5	10.555	18.150	23.823	39.613	55.124	66.448	65.294
145.0	10.053	17.146	22.627	37.647	51.684	62.186	61.513
147.5	9.241	16.292	21.366	34.891	47.892	57.667	56.972
150.0	8.781	14.881	20.084	32.092	44.035	53.233	52.518
152.5	8.044	14.016	18.215	29.560	40.467	48.298	48.148
155.0	7.200	12.702	17.039	26.173	35.265	43.330	42.198
157.5	6.410	11.313	15.426	24.090	32.402	39.303	38.972
160.0	5.619	9.839	13.546	21.099	28.203	34.709	34.143
162.5	4.925	8.461	11.698	17.883	24.015	29.998	29.485
165.0	3.899	7.211	9.775	14.572	19.924	24.923	24.817
167.5	3.002	5.897	7.681	11.377	15.939	20.394	19.892
170.0	1.870	4.369	6.153	8.578	10.950	16.206	15.886
172.5	1.036	2.617	4.188	6.079	6.025	10.256	10.309
175.0	0.876	1.207	2.126	3.835	2.916	4.989	4.978
177.5	0.833	0.844	0.951	1.934	1.314	1.656	1.036
180.0	0.737	0.758	0.823	0.887	0.737	0.652	0.545

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	5.81	N.A.	1.10
0-30	16.99	N.A.	3.30
0-40	36.35	N.A.	7.10
0-60	103.55	N.A.	20.20
0-80	202.19	N.A.	39.50
0-90	258.23	N.A.	50.50
10-90	257.21	N.A.	50.30
20-40	30.54	N.A.	6.00
20-50	59.34	N.A.	11.60
40-70	113.57	N.A.	22.20
60-80	98.63	N.A.	19.30
70-80	52.26	N.A.	10.20
80-90	56.04	N.A.	11.00
90-110	107.92	N.A.	21.10
90-120	153.79	N.A.	30.10
90-130	192.07	N.A.	37.60
90-150	239.50	N.A.	46.80
90-180	253.23	N.A.	49.50
110-180	145.31	N.A.	28.40
0-180	511.46	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1.01
10-20	4.80
20-30	11.18
30-40	19.36
40-50	28.80
50-60	38.40
60-70	46.37
70-80	52.26
80-90	56.04
90-100	55.83
100-110	52.09
110-120	45.86
120-130	38.28
130-140	28.62
140-150	18.81
150-160	9.90
160-170	3.47
170-180	0.36

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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	70	70	70	57	57	57	51
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	66	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	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	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	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

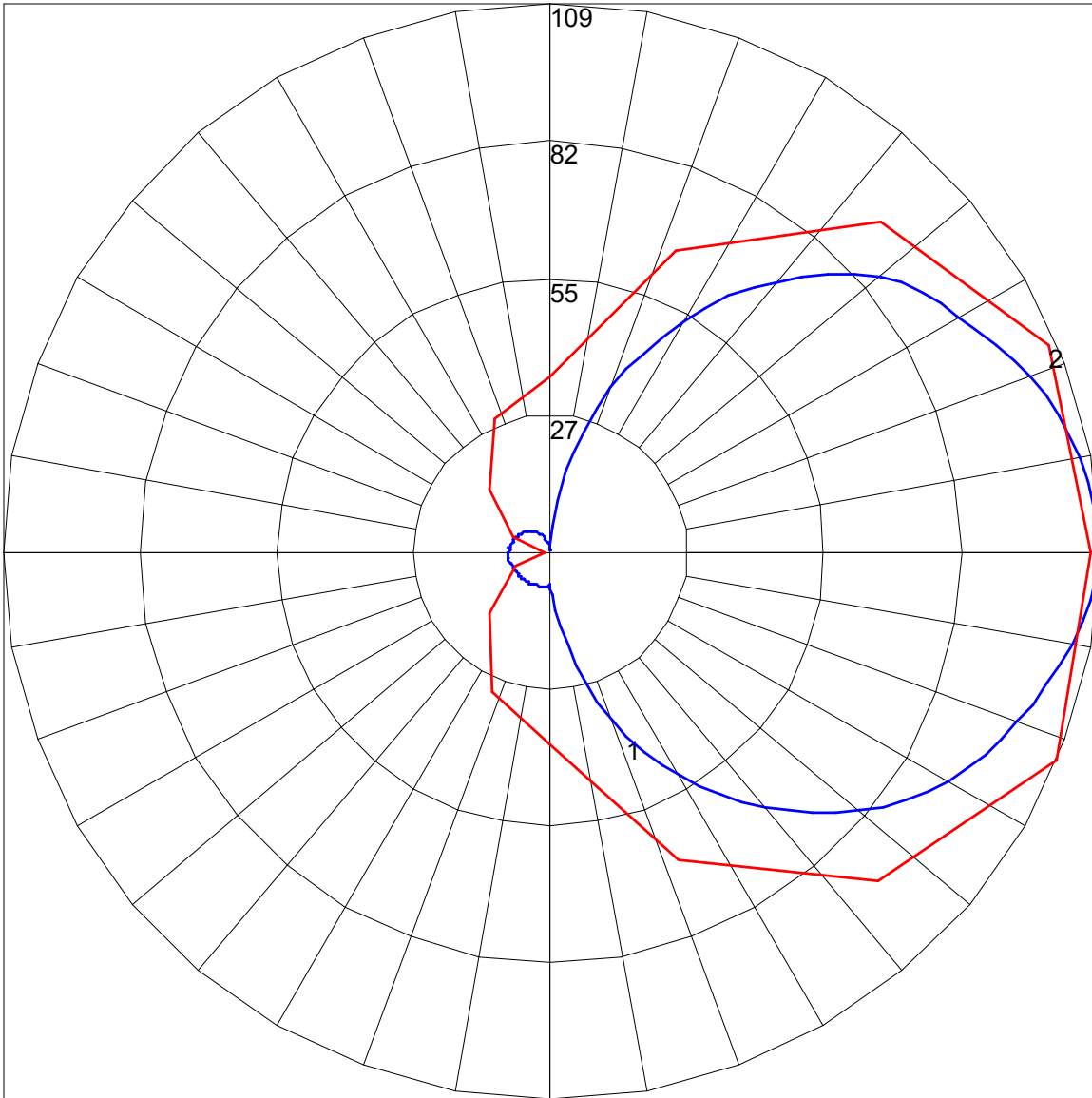
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UGR TABLE - CORRECTED

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	11.5	12.5	12.4	13.5	14.7	5.1	6.1	6.0	7.1	8.3
	3H	14.7	15.6	15.6	16.6	17.9	7.6	8.5	8.5	9.5	10.8
	4H	16.2	17.2	17.2	18.1	19.4	8.8	9.7	9.7	10.7	11.9
	6H	17.8	18.7	18.7	19.6	20.9	9.9	10.8	10.9	11.8	13.1
	8H	18.5	19.4	19.5	20.4	21.7	10.5	11.3	11.4	12.3	13.6
	12H	19.3	20.1	20.3	21.1	22.4	11.0	11.8	12.0	12.8	14.1
4H	2H	11.9	12.8	12.8	13.8	15.1	6.8	7.7	7.7	8.7	9.9
	3H	15.4	16.2	16.3	17.2	18.5	9.4	10.2	10.4	11.2	12.5
	4H	17.1	17.9	18.1	18.9	20.2	10.7	11.5	11.7	12.5	13.8
	6H	18.9	19.6	19.9	20.6	21.9	12.0	12.6	12.9	13.6	14.9
	8H	19.8	20.4	20.7	21.4	22.7	12.5	13.2	13.5	14.2	15.5
	12H	20.6	21.2	21.6	22.3	23.6	13.1	13.7	14.1	14.7	16.0
8H	4H	17.4	18.1	18.4	19.1	20.4	11.9	12.5	12.8	13.5	14.8
	6H	19.4	20.0	20.4	21.0	22.3	13.4	13.9	14.3	15.0	16.3
	8H	20.5	21.0	21.5	22.0	23.3	14.1	14.6	15.1	15.6	16.9
	12H	21.5	22.0	22.6	23.0	24.4	14.8	15.2	15.8	16.3	17.6
12H	4H	17.5	18.0	18.4	19.1	20.4	12.2	12.8	13.2	13.8	15.1
	6H	19.5	20.0	20.5	21.1	22.4	13.8	14.3	14.8	15.3	16.7
	8H	20.6	21.1	21.6	22.1	23.5	14.6	15.1	15.6	16.1	17.5

Maximum UGR = 24.4

POLAR GRAPH



Maximum Candela = 109.127 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.)