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IES INDOOR REPORT PHOTOMETRIC FILENAME : FAL-8605.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] LM-79-08
[TESTLAB] Orb Optronix, Inc.
[ISSUE DATE] 07-18-2019
[MANUFACTURER] Justice Design
[LUMINAIRE] FAL-8605

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	705
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	23
Total Luminaire Watts	30.02
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	1208	1150	788
55	1398	1375	1093
65	1549	1582	1510
75	1701	1786	2278
85	1883	2033	3998

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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	1.109	1.109	1.109	1.109	1.109	1.109	1.109	1.109	1.109	1.109
2.5	6.367	5.712	2.285	3.360	2.092	1.252	1.151	0.680	0.664	0.806
5.0	12.037	11.424	6.905	5.846	3.721	2.604	2.192	1.033	0.588	0.924
7.5	17.850	17.464	12.029	8.887	5.426	3.956	3.074	1.386	0.630	1.134
10.0	24.142	23.789	17.262	12.676	7.123	5.452	4.183	1.814	0.571	1.386
12.5	30.299	30.022	22.588	16.481	8.786	6.821	5.174	2.209	0.689	1.621
15.0	36.464	36.322	27.720	20.210	10.492	8.249	6.166	2.680	0.538	1.722
17.5	42.790	42.739	32.962	23.890	12.289	9.736	7.098	3.032	0.512	2.108
20.0	49.291	49.325	38.405	27.812	14.028	11.164	8.140	3.486	0.655	2.327
22.5	55.742	55.852	43.756	31.592	15.826	12.667	9.080	3.898	0.638	2.495
25.0	62.185	62.370	49.249	35.263	17.472	14.297	10.130	4.368	0.630	2.772
27.5	68.544	68.662	54.558	38.909	19.118	15.700	11.004	4.721	0.588	2.990
30.0	74.592	74.642	59.758	42.227	20.689	17.119	11.936	5.057	0.571	3.226
32.5	80.632	80.590	64.781	45.536	22.243	18.404	12.760	5.527	0.588	3.427
35.0	86.629	86.461	69.728	48.619	23.629	19.698	13.633	5.830	0.638	3.671
37.5	92.887	92.383	74.752	51.836	25.175	21.151	14.507	6.166	0.689	3.805
40.0	99.137	98.482	79.884	55.104	26.846	22.588	15.380	6.653	0.638	4.116
42.5	105.437	104.630	85.260	58.321	28.493	24.049	16.313	6.980	0.638	4.234
45.0	111.493	110.510	90.392	61.681	30.038	25.360	17.254	7.384	0.588	4.486
47.5	117.440	116.012	95.416	64.663	31.483	26.687	18.178	7.812	0.689	4.746
50.0	123.060	121.254	100.195	67.662	32.911	28.115	18.992	8.140	0.588	4.906
52.5	128.428	126.420	105.034	70.434	34.339	29.266	19.883	8.534	0.806	5.124
55.0	133.552	131.334	109.528	73.324	35.784	30.610	20.689	8.862	0.806	5.401
57.5	138.197	135.811	113.896	75.911	36.952	31.735	21.445	9.257	0.756	5.552
60.0	142.296	139.490	117.734	78.170	38.052	32.458	22.193	9.517	0.874	5.762
62.5	145.606	142.649	121.044	80.161	38.884	33.398	22.781	9.820	0.874	5.930
65.0	148.529	145.438	123.841	81.883	39.824	34.087	23.360	9.962	0.924	6.090
67.5	151.150	148.151	126.277	83.504	40.597	34.742	23.881	10.298	0.983	6.182
70.0	153.670	150.587	128.612	85.092	41.462	35.431	24.478	10.458	0.983	6.208
72.5	156.332	153.056	130.939	86.654	42.874	35.902	25.057	10.811	1.100	6.367
75.0	158.684	155.476	133.106	88.343	43.730	36.490	25.712	10.937	1.109	6.510
77.5	160.961	157.878	134.954	89.888	44.335	37.136	26.208	11.214	1.100	6.636
80.0	162.842	160.112	136.752	91.333	44.965	37.666	26.611	11.399	1.394	6.787
82.5	164.480	161.658	138.197	92.786	45.528	38.136	27.082	11.500	1.277	6.938
85.0	165.371	162.725	139.314	93.895	45.746	38.430	27.342	11.735	1.512	7.031
87.5	165.690	163.237	139.936	94.601	45.914	38.489	27.460	11.726	1.512	7.098
90.0	165.354	163.237	139.734	94.903	45.797	38.556	27.485	11.760	1.571	7.148
92.5	164.346	162.506	139.003	94.928	45.528	38.270	27.434	11.634	1.571	7.258
95.0	162.893	161.356	137.920	94.508	45.108	38.153	27.241	11.609	1.512	7.216
97.5	161.364	159.978	136.576	94.105	44.688	37.750	27.065	11.424	1.394	7.123
100.0	159.659	158.474	135.316	93.568	44.176	37.514	26.636	11.239	1.336	6.980
102.5	157.920	157.097	133.686	92.786	43.554	36.985	26.065	10.836	1.159	6.955
105.0	155.837	155.341	131.972	91.862	42.882	36.464	25.864	10.576	0.983	6.577
107.5	153.460	153.384	129.982	90.686	42.218	35.944	25.360	10.408	0.924	6.418
110.0	150.646	150.797	127.789	89.351	41.488	35.423	24.864	10.231	0.991	6.367
112.5	147.445	147.790	125.244	87.738	40.622	34.717	24.209	9.904	0.865	6.182
115.0	144.152	144.581	122.455	85.739	39.606	34.020	23.503	9.702	0.756	6.014
117.5	140.549	141.229	119.414	83.740	38.581	33.197	22.831	9.500	0.756	5.855
120.0	136.819	137.726	116.239	81.497	37.548	32.323	22.218	9.190	0.806	5.779
122.5	133.031	133.661	112.879	79.061	36.372	31.450	21.420	8.820	0.689	5.645
125.0	128.831	129.410	109.351	76.541	35.221	30.450	20.614	8.602	0.638	5.426
127.5	124.001	124.480	105.689	73.609	34.012	29.408	19.858	8.232	0.706	5.267
130.0	118.709	119.120	101.514	70.526	32.575	28.182	18.917	7.871	0.630	5.099
132.5	113.232	113.702	97.062	67.066	31.105	27.006	18.035	7.543	0.638	4.914

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CANDELA TABULATION - (Cont.)

135.0	107.730	108.091	92.476	63.655	29.602	25.738	17.119	7.258	0.588	4.662
137.5	101.984	102.329	87.990	60.203	28.022	24.755	16.380	6.913	0.680	4.494
140.0	96.130	96.382	83.244	56.742	26.586	22.974	15.330	6.468	0.588	4.259
142.5	89.830	90.082	78.590	53.029	24.990	21.748	14.272	6.040	0.571	3.973
145.0	82.816	82.866	73.298	49.207	23.302	20.286	13.230	5.594	0.588	3.788
147.5	75.860	75.911	67.444	45.016	21.412	18.640	12.146	5.174	0.630	3.461
150.0	69.233	69.258	61.824	40.950	19.580	17.069	11.189	4.838	0.588	3.335
152.5	62.530	62.605	56.473	37.212	17.724	15.557	10.181	4.393	0.512	2.940
155.0	55.994	55.835	50.870	33.289	16.027	14.154	9.164	3.898	0.655	2.848
157.5	49.115	49.064	45.368	29.450	14.221	12.583	8.156	3.520	0.571	2.579
160.0	42.428	42.244	39.640	25.477	12.407	11.122	7.048	2.839	0.630	2.167
162.5	35.658	35.708	33.944	21.487	10.668	9.542	5.972	2.260	0.538	1.831
165.0	30.332	30.164	28.535	17.556	8.879	8.173	4.612	1.621	0.613	1.478
167.5	24.889	23.251	22.991	13.709	7.400	6.930	3.200	1.042	0.521	1.126
170.0	19.564	15.422	16.195	9.332	5.527	5.074	1.781	0.605	0.638	0.874
172.5	11.315	7.266	9.114	5.174	3.452	2.990	0.655	0.538	0.571	0.806
175.0	3.436	0.966	2.990	2.041	1.319	1.277	0.496	0.445	0.605	0.756
177.5	0.563	0.638	0.538	0.496	0.403	0.395	0.445	0.546	0.538	0.689
180.0	0.716	0.716	0.716	0.716	0.716	0.716	0.716	0.716	0.716	0.716

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	1.109	1.109	1.109	1.109	1.109	1.109	1.109
2.5	1.084	1.436	1.646	1.932	5.124	5.830	6.367
5.0	1.756	2.537	2.957	4.822	10.013	11.500	12.037
7.5	2.495	3.763	4.418	8.114	15.112	17.564	17.850
10.0	3.368	4.990	5.947	11.726	20.412	23.713	24.142
12.5	4.183	6.392	7.518	15.296	25.771	29.828	30.299
15.0	5.057	7.669	9.030	18.917	31.046	35.843	36.464
17.5	5.930	8.954	10.584	22.470	36.397	42.025	42.790
20.0	6.770	10.298	12.180	26.183	41.891	48.208	49.291
22.5	7.636	11.634	13.776	29.896	47.258	54.398	55.742
25.0	8.442	13.045	15.380	33.482	52.584	60.396	62.185
27.5	9.332	14.263	17.002	37.019	57.943	66.343	68.544
30.0	10.198	15.658	18.505	40.480	62.933	72.122	74.592
32.5	10.962	17.002	20.009	43.848	67.897	77.717	80.632
35.0	11.794	18.287	21.655	47.183	72.946	83.261	86.629
37.5	12.466	19.513	23.276	50.375	74.231	88.931	92.887
40.0	13.289	20.798	24.898	53.500	77.700	94.895	99.137
42.5	14.062	22.092	26.452	56.750	82.673	100.783	105.437
45.0	14.826	23.369	28.022	60.060	87.688	106.554	111.493
47.5	15.532	24.536	29.543	63.008	92.484	112.157	117.440
50.0	16.237	25.696	31.080	65.839	97.180	117.684	123.060
52.5	16.876	26.746	32.533	68.552	101.724	123.203	128.428
55.0	17.564	27.905	33.894	71.047	106.285	128.419	133.552
57.5	18.169	28.837	35.120	73.483	110.552	133.241	138.197
60.0	18.623	29.644	36.372	75.726	114.316	137.668	142.296
62.5	19.043	30.332	37.279	77.582	117.768	141.498	145.606
65.0	19.530	30.979	38.287	79.086	120.876	145.160	148.529
67.5	19.866	31.618	39.077	80.556	123.740	148.470	151.150
70.0	20.286	32.138	39.774	81.992	126.311	151.721	153.670
72.5	20.572	32.659	40.606	83.194	128.873	154.921	156.332
75.0	20.975	33.239	41.286	84.580	131.275	158.088	158.684
77.5	21.269	33.718	41.958	85.806	133.669	160.986	160.961
80.0	21.672	34.180	42.521	87.142	136.063	163.758	162.842

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82.5	22.033	34.751	43.000	88.368	138.046	166.018	164.480
85.0	22.210	34.978	43.344	89.208	139.566	167.563	165.371
87.5	22.445	35.146	43.378	89.846	140.154	168.370	165.690
90.0	22.562	35.255	43.436	89.972	140.272	168.479	165.354
92.5	22.562	35.078	43.184	89.897	139.868	167.840	164.346
95.0	22.403	34.978	42.806	89.536	139.045	166.597	162.893
97.5	22.218	34.574	42.311	88.973	137.693	164.909	161.364
100.0	22.050	34.272	41.723	88.250	136.164	163.170	159.659
102.5	21.647	33.642	41.236	87.452	134.190	160.600	157.920
105.0	21.344	33.398	40.622	86.554	132.191	156.164	155.837
107.5	20.992	32.886	39.942	85.495	129.864	154.543	153.460
110.0	20.706	32.256	39.253	84.235	127.571	152.216	150.646
112.5	20.353	31.710	38.371	82.790	124.522	149.562	147.445
115.0	19.942	31.080	37.397	81.178	121.372	146.429	144.152
117.5	19.538	30.324	36.439	79.220	117.919	143.212	140.549
120.0	19.018	29.627	35.490	77.246	114.416	139.524	136.819
122.5	18.547	28.846	34.440	75.155	110.964	135.786	133.031
125.0	18.026	27.922	33.474	72.962	107.268	131.830	128.831
127.5	17.438	27.014	32.189	70.543	103.177	127.201	124.001
130.0	16.674	25.956	30.845	67.628	98.717	122.144	118.709
132.5	16.036	24.864	29.576	64.604	94.038	116.533	113.232
135.0	15.448	23.722	28.157	61.354	89.376	110.914	107.730
137.5	14.456	22.571	26.863	58.304	84.815	105.059	101.984
140.0	13.700	21.302	25.385	54.936	80.060	99.187	96.130
142.5	12.818	19.883	23.999	51.509	74.785	93.038	89.830
145.0	11.995	18.480	22.235	47.771	69.493	86.083	82.816
147.5	11.189	17.119	20.521	43.940	64.277	79.296	75.860
150.0	10.315	15.649	18.883	40.127	58.834	72.400	69.233
152.5	9.551	14.364	17.304	36.397	53.735	65.722	62.530
155.0	8.786	12.978	15.607	32.726	48.476	59.170	55.994
157.5	7.988	11.617	13.969	28.888	43.084	52.416	49.115
160.0	7.081	10.223	12.340	25.015	37.615	45.746	42.428
162.5	6.166	8.719	10.601	21.176	32.424	39.043	35.658
165.0	5.267	7.636	9.282	17.380	27.182	32.987	30.332
167.5	4.024	5.989	7.619	13.583	21.487	27.157	24.889
170.0	2.696	3.973	5.855	9.568	14.927	19.320	19.564
172.5	1.663	2.066	3.427	5.695	7.921	10.861	11.315
175.0	1.016	1.042	1.411	2.537	2.638	3.335	3.436
177.5	0.991	1.075	1.084	1.109	0.958	0.798	0.563
180.0	0.716	0.716	0.716	0.716	0.716	0.716	0.716

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	5.40	N.A.	0.80
0-30	18.31	N.A.	2.60
0-40	42.48	N.A.	6.00
0-60	132.65	N.A.	18.80
0-80	272.24	N.A.	38.60
0-90	353.14	N.A.	50.10
10-90	352.49	N.A.	50.00
20-40	37.08	N.A.	5.30
20-50	74.88	N.A.	10.60
40-70	155.12	N.A.	22.00
60-80	139.59	N.A.	19.80
70-80	74.64	N.A.	10.60
80-90	80.90	N.A.	11.50
90-110	155.17	N.A.	22.00
90-120	220.15	N.A.	31.20
90-130	272.60	N.A.	38.70
90-150	334.83	N.A.	47.50
90-180	351.77	N.A.	49.90
110-180	196.59	N.A.	27.90
0-180	704.91	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	0.65
10-20	4.75
20-30	12.92
30-40	24.17
40-50	37.79
50-60	52.38
60-70	64.95
70-80	74.64
80-90	80.90
90-100	80.54
100-110	74.64
110-120	64.98
120-130	52.45
130-140	38.13
140-150	24.11
150-160	12.31
160-170	4.24
170-180	0.39

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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	85	79	73	84	78	72	68	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	60	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

X=2H	Y=2H	14.4	15.4	15.3	16.4	17.7	6.0	7.1	6.9	8.0	9.3
	3H	18.3	19.2	19.2	20.2	21.5	8.6	9.5	9.5	10.5	11.8
	4H	20.3	21.2	21.2	22.2	23.4	9.8	10.7	10.8	11.7	13.0
	6H	22.4	23.2	23.3	24.2	25.5	11.0	11.9	12.0	12.9	14.2
	8H	23.4	24.3	24.4	25.3	26.5	11.6	12.4	12.6	13.4	14.7
	12H	24.5	25.3	25.5	26.3	27.7	12.2	13.0	13.1	14.0	15.3

UGR Viewed Endwise

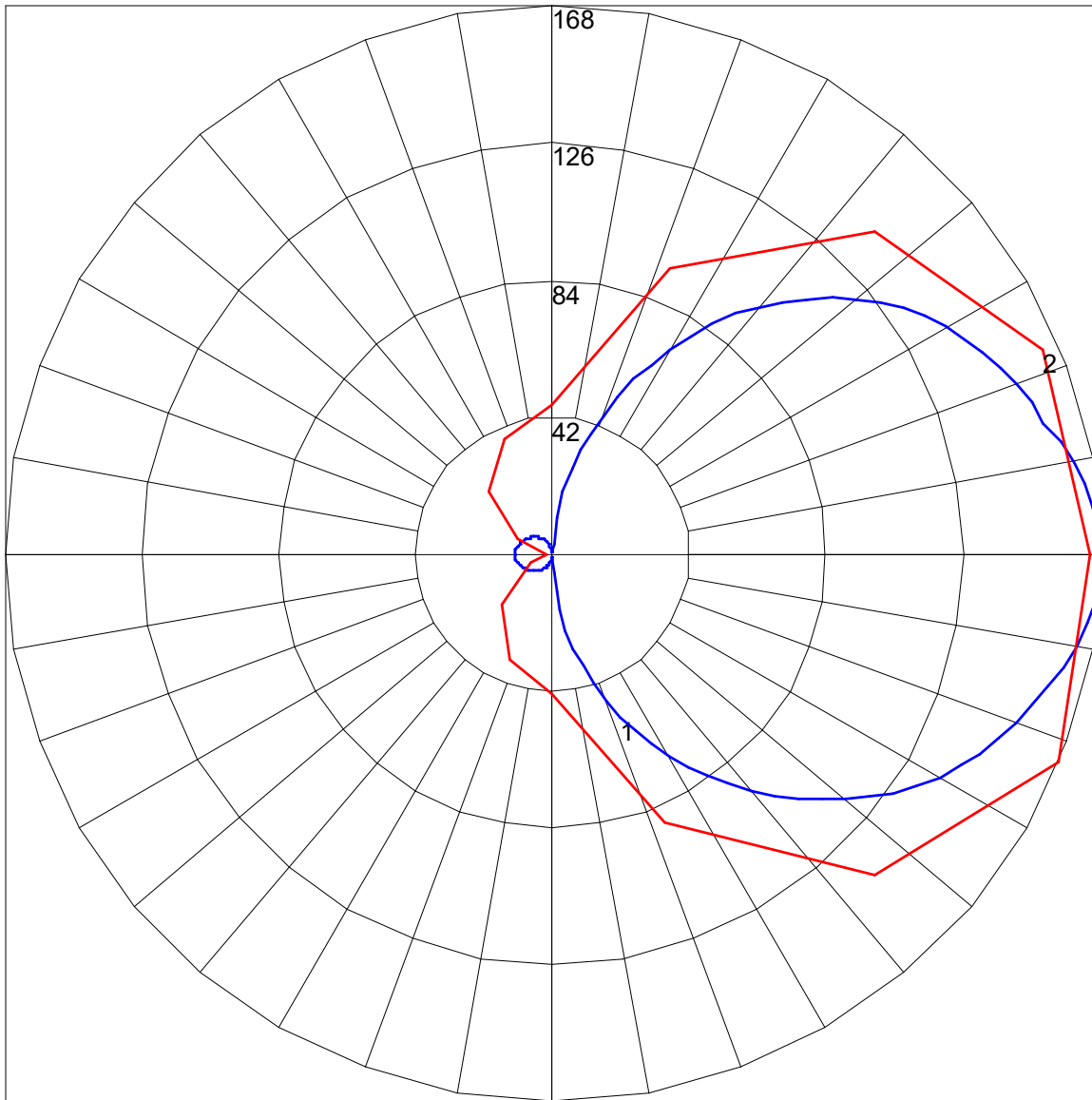
4H	2H	14.8	15.7	15.7	16.7	18.0	8.5	9.4	9.5	10.4	11.7
	3H	18.8	19.7	19.8	20.7	22.0	11.1	11.9	12.1	12.9	14.2
	4H	21.0	21.8	22.0	22.8	24.1	12.4	13.1	13.3	14.1	15.4
	6H	23.3	23.9	24.2	25.0	26.3	13.6	14.3	14.6	15.3	16.6
	8H	24.4	25.1	25.4	26.1	27.4	14.2	14.8	15.1	15.8	17.1
	12H	25.7	26.3	26.7	27.3	28.6	14.7	15.3	15.7	16.3	17.7

8H	4H	21.2	21.9	22.2	22.9	24.2	14.0	14.7	15.0	15.7	17.0
	6H	23.7	24.2	24.7	25.3	26.6	15.5	16.0	16.5	17.1	18.4
	8H	25.0	25.5	26.0	26.5	27.9	16.2	16.7	17.2	17.7	19.0
	12H	26.4	26.8	27.4	27.9	29.2	16.8	17.3	17.8	18.3	19.7

12H	4H	21.2	21.8	22.2	22.8	24.2	14.5	15.1	15.5	16.2	17.5
	6H	23.7	24.2	24.7	25.3	26.6	16.1	16.6	17.1	17.7	19.0
	8H	25.1	25.5	26.1	26.6	28.0	16.9	17.4	17.9	18.4	19.8

Maximum UGR = 29.2

POLAR GRAPH



Maximum Candela = 168.479 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.)