



IES INDOOR REPORT

PHOTOMETRIC FILENAME : OSA8R-L10-835-AC-XX-XXX-XX-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TESTLAB] GEN from Intertek report
 [ISSUEDATE] 18 Oct 2021
 [MANUFAC] WILLIAMS OUTDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] OSA8R-L10-835-AC-xx-xxx-xx-DIM-UNV
 [LUMINAIRE] 8 INCH ALUMINUM BOLLARD WITH FLAT TOP
 [LAMP] LED 835cct

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1029
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	94
Total Luminaire Watts	11
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.02
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	0.02
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.00 ft
Luminous Width (90-270)	0.67 ft (Diameter)
Luminous Height	0.00 ft



LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8010	7625	6407
55	13402	12793	11072
65	20764	21308	20003
75	12304	13974	18723
85	13434	13645	13926

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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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5.0	0.000	3.015	2.311	1.005	0.000	6.632	7.738	2.914	0.000	2.914
7.5	44.114	43.511	41.401	39.391	43.411	49.641	50.948	56.575	56.675	56.575
10.0	56.374	59.791	58.384	64.313	68.634	71.749	90.540	105.613	109.733	105.613
12.5	65.719	67.629	67.428	69.437	69.337	75.165	88.028	110.236	115.863	110.236
15.0	68.634	71.045	70.744	72.854	71.749	70.543	83.707	87.726	89.234	87.726
17.5	75.467	76.271	73.256	73.356	73.356	75.768	79.989	79.989	77.376	79.989
20.0	82.802	84.712	78.381	78.180	76.572	77.778	83.104	81.998	79.486	81.998
22.5	95.665	95.966	88.028	84.511	79.989	76.874	81.597	81.496	78.381	81.496
25.0	112.245	111.341	102.096	97.876	89.234	82.099	81.998	79.989	76.974	79.989
27.5	125.309	124.806	116.767	112.848	104.206	96.469	91.947	87.224	83.908	87.224
30.0	127.821	129.630	125.409	122.998	117.169	111.944	108.929	104.508	100.187	104.508
32.5	119.983	121.591	120.285	120.285	120.084	117.873	118.576	116.767	113.150	116.767
35.0	112.547	113.753	113.150	112.446	113.250	112.848	116.064	116.064	112.044	116.064
37.5	115.562	115.059	112.547	109.934	108.326	106.719	108.226	108.829	105.211	108.829
40.0	133.147	130.333	123.902	116.667	110.437	104.809	102.699	101.795	98.579	101.795
42.5	162.590	159.073	149.527	136.966	123.601	111.643	104.608	100.086	96.569	100.086
45.0	185.702	183.592	176.759	166.208	148.522	130.635	116.064	108.025	102.900	108.025
47.5	196.957	199.369	191.229	186.607	170.328	153.647	136.966	128.022	120.887	128.022
50.0	208.915	210.623	200.977	197.359	180.979	168.921	153.044	149.024	141.990	149.024
52.5	231.927	230.420	219.868	211.327	191.430	179.070	161.485	163.896	158.068	163.896
55.0	252.025	252.025	240.569	228.309	208.212	193.641	170.629	176.859	172.639	176.859
57.5	272.323	272.524	260.164	244.890	225.596	211.829	187.411	196.756	191.933	196.756
60.0	297.646	298.852	281.669	265.189	245.292	231.023	207.408	217.356	212.734	217.356
62.5	309.705	314.026	298.752	285.286	266.495	249.211	228.611	235.143	229.515	235.143
65.0	287.698	296.340	295.235	294.129	277.147	262.073	248.407	246.900	241.674	246.900
67.5	241.775	251.924	260.064	274.434	269.811	265.892	268.203	255.642	251.221	255.642
70.0	195.048	202.685	213.035	232.932	244.890	248.407	281.870	259.159	254.336	259.159
72.5	143.598	150.933	161.786	184.898	201.580	214.141	261.973	243.584	241.875	243.584
75.0	104.407	110.638	118.576	137.568	158.872	173.945	222.079	206.001	204.996	206.001
77.5	74.361	77.878	85.817	99.986	117.471	130.233	181.381	167.313	166.811	167.313
80.0	56.072	57.379	61.197	69.538	80.391	92.550	132.444	124.103	123.601	124.103
82.5	46.627	47.129	48.234	50.445	56.173	60.695	88.631	83.305	84.712	83.305
85.0	38.387	38.588	38.989	39.391	39.793	40.296	57.278	51.450	52.656	51.450
87.5	27.534	28.036	28.438	28.740	28.036	26.931	30.046	30.046	30.146	30.046
90.0	17.485	17.887	18.289	18.389	17.686	16.782	17.686	17.987	17.887	17.987
92.5	12.059	12.260	12.461	12.762	13.264	13.566	13.968	14.068	14.068	14.068
95.0	13.365	13.566	13.968	14.470	15.073	15.274	15.676	15.777	15.877	15.777
97.5	15.777	15.978	16.380	16.782	17.184	17.485	17.887	17.987	18.088	17.987
100.0	18.289	18.389	18.791	19.093	19.394	19.796	20.198	20.500	20.600	20.500
102.5	20.600	20.801	21.203	21.304	21.605	21.806	22.308	22.811	22.911	22.811
105.0	22.107	22.208	22.208	22.107	22.107	22.007	22.107	22.409	22.409	22.409
107.5	23.414	23.414	23.112	22.610	22.610	22.308	22.007	21.906	21.906	21.906
110.0	24.318	24.218	23.715	23.313	22.911	22.710	22.409	22.007	22.007	22.007
112.5	23.012	22.610	22.308	22.308	22.007	21.906	21.906	21.605	21.504	21.605
115.0	21.203	21.304	21.404	21.404	21.203	21.002	20.902	20.801	20.701	20.801
117.5	21.002	21.002	21.103	21.203	21.103	20.801	20.600	20.500	20.500	20.500
120.0	20.600	20.701	20.701	20.600	20.399	20.198	19.997	19.696	19.495	19.696
122.5	20.098	20.098	20.098	19.997	19.897	19.696	19.495	19.193	18.992	19.193
125.0	19.495	19.495	19.495	19.394	19.193	19.093	18.791	18.490	18.389	18.490
127.5	18.691	18.791	18.791	18.590	18.389	18.188	17.786	17.585	17.485	17.585
130.0	17.887	17.887	17.887	17.686	17.485	17.184	16.882	16.480	16.380	16.480
132.5	16.882	16.882	16.882	16.581	16.380	16.179	15.777	15.475	15.375	15.475

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CANDELA TABULATION - (Cont.)

135.0	15.877	15.877	15.877	15.576	15.174	15.073	14.772	14.470	14.370	14.470
137.5	14.872	14.872	14.772	14.470	13.968	13.767	13.566	13.264	13.164	13.264
140.0	13.666	13.566	13.566	13.264	12.863	12.561	12.360	12.159	12.059	12.159
142.5	12.360	12.360	12.260	12.059	11.556	11.355	11.255	10.953	10.953	10.953
145.0	10.953	10.953	10.953	10.652	10.350	10.149	10.049	9.747	9.747	9.747
147.5	9.647	9.546	9.546	9.345	9.044	9.044	8.943	8.742	8.642	8.742
150.0	8.240	8.240	8.240	8.039	7.838	7.838	7.838	7.637	7.537	7.637
152.5	7.034	7.034	7.034	6.833	6.632	6.632	6.632	6.431	6.431	6.431
155.0	5.728	5.828	5.828	5.728	5.426	5.426	5.527	5.326	5.326	5.326
157.5	4.522	4.522	4.522	4.522	4.321	4.321	4.421	4.321	4.221	4.321
160.0	3.216	3.216	3.316	3.316	3.216	3.316	3.316	3.216	3.115	3.216
162.5	2.110	2.110	2.110	2.110	2.110	2.211	2.311	2.211	2.110	2.211
165.0	1.005	1.005	1.105	1.105	1.005	1.105	1.206	1.105	1.105	1.105
167.5	0.000	0.000	0.000	0.000	0.000	0.100	0.100	0.100	0.000	0.100
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5.0	7.738	6.632	0.000	1.005	2.311	3.015	0.000
7.5	50.948	49.641	43.411	39.391	41.401	43.511	44.114
10.0	90.540	71.749	68.634	64.313	58.384	59.791	56.374
12.5	88.028	75.165	69.337	69.437	67.428	67.629	65.719
15.0	83.707	70.543	71.749	72.854	70.744	71.045	68.634
17.5	79.989	75.768	73.356	73.356	73.256	76.271	75.467
20.0	83.104	77.778	76.572	78.180	78.381	84.712	82.802
22.5	81.597	76.874	79.989	84.511	88.028	95.966	95.665
25.0	81.998	82.099	89.234	97.876	102.096	111.341	112.245
27.5	91.947	96.469	104.206	112.848	116.767	124.806	125.309
30.0	108.929	111.944	117.169	122.998	125.409	129.630	127.821
32.5	118.576	117.873	120.084	120.285	120.285	121.591	119.983
35.0	116.064	112.848	113.250	112.446	113.150	113.753	112.547
37.5	108.226	106.719	108.326	109.934	112.547	115.059	115.562
40.0	102.699	104.809	110.437	116.667	123.902	130.333	133.147
42.5	104.608	111.643	123.601	136.966	149.527	159.073	162.590
45.0	116.064	130.635	148.522	166.208	176.759	183.592	185.702
47.5	136.966	153.647	170.328	186.607	191.229	199.369	196.957
50.0	153.044	168.921	180.979	197.359	200.977	210.623	208.915
52.5	161.485	179.070	191.430	211.327	219.868	230.420	231.927
55.0	170.629	193.641	208.212	228.309	240.569	252.025	252.025
57.5	187.411	211.829	225.596	244.890	260.164	272.524	272.323
60.0	207.408	231.023	245.292	265.189	281.669	298.852	297.646
62.5	228.611	249.211	266.495	285.286	298.752	314.026	309.705
65.0	248.407	262.073	277.147	294.129	295.235	296.340	287.698
67.5	268.203	265.892	269.811	274.434	260.064	251.924	241.775
70.0	281.870	248.407	244.890	232.932	213.035	202.685	195.048
72.5	261.973	214.141	201.580	184.898	161.786	150.933	143.598
75.0	222.079	173.945	158.872	137.568	118.576	110.638	104.407
77.5	181.381	130.233	117.471	99.986	85.817	77.878	74.361
80.0	132.444	92.550	80.391	69.538	61.197	57.379	56.072

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82.5	88.631	60.695	56.173	50.445	48.234	47.129	46.627
85.0	57.278	40.296	39.793	39.391	38.989	38.588	38.387
87.5	30.046	26.931	28.036	28.740	28.438	28.036	27.534
90.0	17.686	16.782	17.686	18.389	18.289	17.887	17.485
92.5	13.968	13.566	13.264	12.762	12.461	12.260	12.059
95.0	15.676	15.274	15.073	14.470	13.968	13.566	13.365
97.5	17.887	17.485	17.184	16.782	16.380	15.978	15.777
100.0	20.198	19.796	19.394	19.093	18.791	18.389	18.289
102.5	22.308	21.806	21.605	21.304	21.203	20.801	20.600
105.0	22.107	22.007	22.107	22.107	22.208	22.208	22.107
107.5	22.007	22.308	22.610	22.610	23.112	23.414	23.414
110.0	22.409	22.710	22.911	23.313	23.715	24.218	24.318
112.5	21.906	21.906	22.007	22.308	22.308	22.610	23.012
115.0	20.902	21.002	21.203	21.404	21.404	21.304	21.203
117.5	20.600	20.801	21.103	21.203	21.103	21.002	21.002
120.0	19.997	20.198	20.399	20.600	20.701	20.701	20.600
122.5	19.495	19.696	19.897	19.997	20.098	20.098	20.098
125.0	18.791	19.093	19.193	19.394	19.495	19.495	19.495
127.5	17.786	18.188	18.389	18.590	18.791	18.791	18.691
130.0	16.882	17.184	17.485	17.686	17.887	17.887	17.887
132.5	15.777	16.179	16.380	16.581	16.882	16.882	16.882
135.0	14.772	15.073	15.174	15.576	15.877	15.877	15.877
137.5	13.566	13.767	13.968	14.470	14.772	14.872	14.872
140.0	12.360	12.561	12.863	13.264	13.566	13.566	13.666
142.5	11.255	11.355	11.556	12.059	12.260	12.360	12.360
145.0	10.049	10.149	10.350	10.652	10.953	10.953	10.953
147.5	8.943	9.044	9.044	9.345	9.546	9.546	9.647
150.0	7.838	7.838	7.838	8.039	8.240	8.240	8.240
152.5	6.632	6.632	6.632	6.833	7.034	7.034	7.034
155.0	5.527	5.426	5.426	5.728	5.828	5.828	5.728
157.5	4.421	4.321	4.321	4.522	4.522	4.522	4.522
160.0	3.316	3.316	3.216	3.316	3.316	3.216	3.216
162.5	2.311	2.211	2.110	2.110	2.110	2.110	2.110
165.0	1.206	1.105	1.005	1.105	1.105	1.005	1.005
167.5	0.100	0.100	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	25.25	N.A.	2.50
0-30	69.77	N.A.	6.80
0-40	141.55	N.A.	13.80
0-60	446.54	N.A.	43.40
0-80	877.12	N.A.	85.30
0-90	928.36	N.A.	90.20
10-90	925.05	N.A.	89.90
20-40	116.30	N.A.	11.30
20-50	230.45	N.A.	22.40
40-70	564.84	N.A.	54.90
60-80	430.58	N.A.	41.90
70-80	170.73	N.A.	16.60
80-90	51.24	N.A.	5.00
90-110	40.55	N.A.	3.90
90-120	61.86	N.A.	6.00
90-130	78.92	N.A.	7.70
90-150	97.33	N.A.	9.50
90-180	100.38	N.A.	9.80
110-180	59.83	N.A.	5.80
0-180	1028.74	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	3.32
10-20	21.93
20-30	44.52
30-40	71.78
40-50	114.15
50-60	190.84
60-70	259.85
70-80	170.73
80-90	51.24
90-100	17.36
100-110	23.19
110-120	21.31
120-130	17.06
130-140	11.80
140-150	6.61
150-160	2.65
160-170	0.40
170-180	0.00

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	55	55	55	55	53	53	53	53	49	49	49	46	46	46	43	43	43	42
1	47	44	41	39	46	43	40	38	40	38	36	37	35	34	35	33	32	31
2	41	36	32	28	40	35	31	28	32	29	26	30	27	25	28	26	24	22
3	37	30	25	21	35	29	24	21	27	23	20	25	21	19	23	20	18	16
4	33	25	20	16	31	24	20	16	23	18	15	21	17	14	19	16	14	12
5	29	22	17	13	28	21	16	13	19	15	12	18	14	11	17	13	11	10
6	27	19	14	11	25	18	14	10	17	13	10	16	12	9	15	11	9	8
7	24	17	12	9	23	16	12	9	15	11	8	14	10	8	13	10	7	6
8	22	15	11	7	21	15	10	7	14	10	7	13	9	7	12	9	6	5
9	21	14	9	6	20	13	9	6	12	9	6	11	8	6	11	8	5	4
10	19	12	8	6	19	12	8	5	11	8	5	10	7	5	10	7	5	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	24.4	26.2	24.9	26.7	27.2	23.2	24.9	23.7	25.5	26.0
	3H	27.2	28.8	27.7	29.3	29.9	27.4	29.0	27.9	29.5	30.1
	4H	27.7	29.3	28.3	29.8	30.4	28.4	29.9	28.9	30.4	31.0
	6H	28.0	29.5	28.6	30.0	30.6	28.9	30.4	29.5	30.9	31.5
	8H	28.1	29.5	28.7	30.1	30.7	29.1	30.5	29.6	31.0	31.7
	12H	28.3	29.6	28.8	30.2	30.8	29.2	30.5	29.8	31.1	31.8

UGR Viewed Endwise

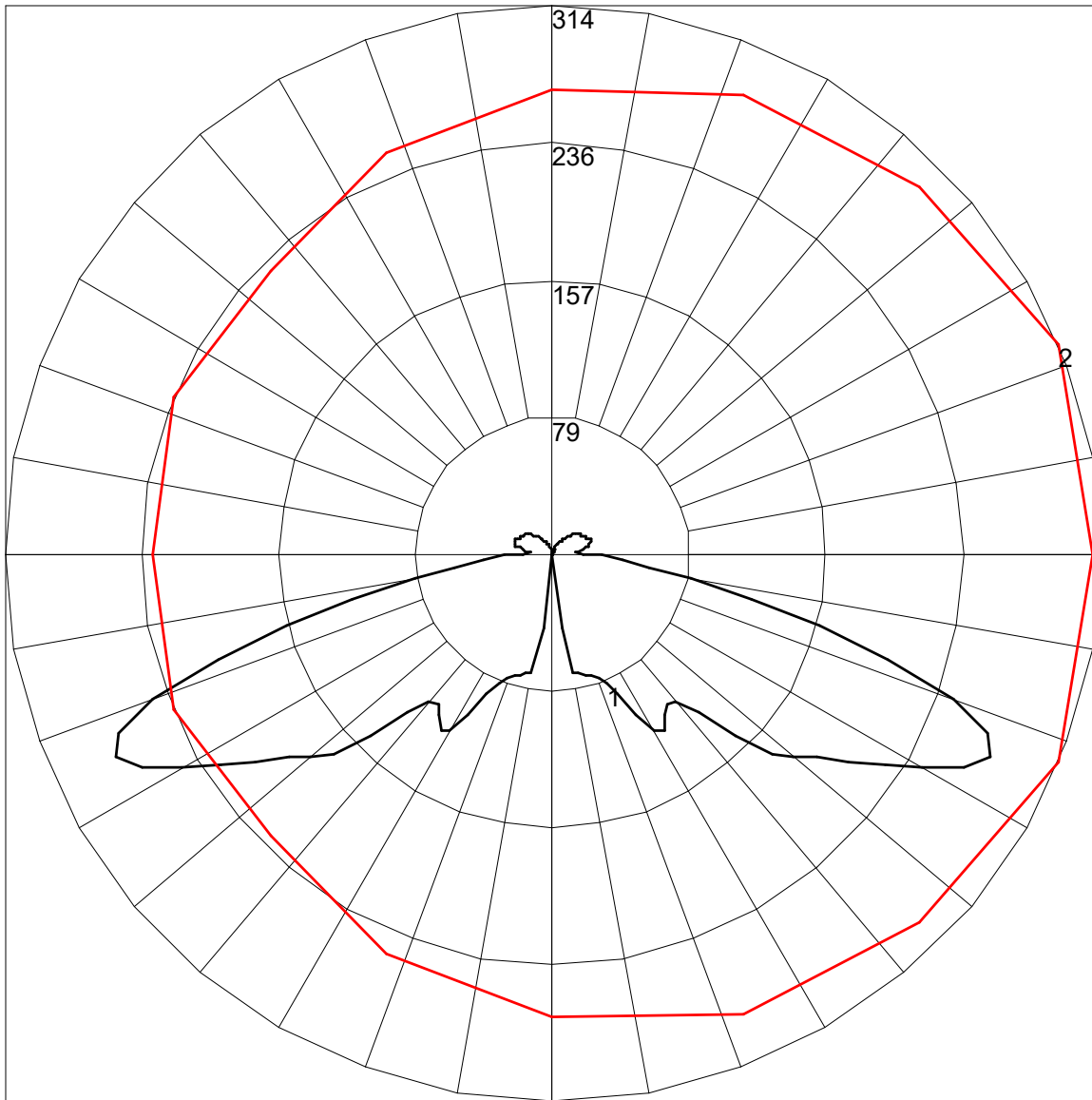
4H	2H	25.8	27.3	26.3	27.8	28.4	24.8	26.3	25.3	26.8	27.4
	3H	28.4	29.7	28.9	30.3	30.9	28.6	30.0	29.2	30.5	31.2
	4H	28.9	30.2	29.5	30.7	31.4	29.7	30.9	30.3	31.5	32.2
	6H	29.3	30.4	29.9	31.0	31.6	30.3	31.4	30.9	32.0	32.7
	8H	29.5	30.5	30.0	31.1	31.8	30.5	31.6	31.1	32.2	32.8
	12H	29.6	30.6	30.3	31.2	31.9	30.7	31.6	31.3	32.3	33.0

8H	4H	29.3	30.3	29.8	30.9	31.6	30.2	31.2	30.8	31.8	32.5
	6H	29.7	30.6	30.3	31.2	31.9	31.0	31.8	31.6	32.5	33.2
	8H	29.9	30.7	30.6	31.4	32.1	31.2	32.0	31.9	32.6	33.3
	12H	30.2	30.9	30.9	31.6	32.3	31.5	32.2	32.1	32.8	33.6

12H	4H	29.3	30.2	29.9	30.9	31.5	30.3	31.2	30.9	31.8	32.5
	6H	29.8	30.6	30.4	31.2	31.9	31.1	31.9	31.7	32.5	33.2
	8H	30.1	30.7	30.7	31.4	32.1	31.4	32.1	32.0	32.7	33.5

Maximum UGR = 33.6

POLAR GRAPH



Maximum Candela = 314.026 Located At Horizontal Angle = 22.5, Vertical Angle = 62.5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (62.5) (Through Max. Cd.)