



IES INDOOR REPORT

PHOTOMETRIC FILENAME : OSA8R-L16-835-AC-XX-XXX-XX-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TESTLAB] GEN from Intertek report
 [ISSUE DATE] 18 Oct2021
 [MANUFAC] WILLIAMS OUTDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] OSA8R-L16-835-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	1597
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	88
Total Luminaire Watts	18.1
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	12432	11833	9943
55	20800	19855	17184
65	32226	33070	31044
75	19096	21688	29058
85	20850	21177	21614

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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	4.679	3.587	1.560	0.000	10.293	12.009	4.523	0.000	4.523
7.5	68.465	67.529	64.254	61.135	67.373	77.043	79.070	87.804	87.960	87.804
10.0	87.492	92.794	90.611	99.812	106.519	111.353	140.517	163.911	170.305	163.911
12.5	101.996	104.959	104.647	107.766	107.610	116.656	136.618	171.085	179.818	171.085
15.0	106.519	110.262	109.794	113.069	111.353	109.482	129.912	136.150	138.490	136.150
17.5	117.124	118.371	113.693	113.849	113.849	117.592	124.142	124.142	120.087	124.142
20.0	128.509	131.472	121.646	121.335	118.839	120.711	128.976	127.261	123.362	127.261
22.5	148.471	148.939	136.618	131.160	124.142	119.307	126.637	126.481	121.646	126.481
25.0	174.204	172.800	158.452	151.902	138.490	127.417	127.261	124.142	119.463	124.142
27.5	194.478	193.699	181.222	175.140	161.727	149.719	142.701	135.371	130.224	135.371
30.0	198.377	201.185	194.634	190.891	181.846	173.736	169.057	162.195	155.489	162.195
32.5	186.213	188.708	186.681	186.681	186.369	182.938	184.029	181.222	175.608	181.222
35.0	174.672	176.543	175.608	174.516	175.764	175.140	180.130	180.130	173.892	180.130
37.5	179.351	178.571	174.672	170.617	168.122	165.626	167.966	168.901	163.287	168.901
40.0	206.643	202.276	192.295	181.066	171.397	162.663	159.388	157.984	152.994	157.984
42.5	252.338	246.880	232.064	212.569	191.827	173.268	162.351	155.333	149.875	155.333
45.0	288.209	284.933	274.328	257.953	230.504	202.744	180.130	167.654	159.700	167.654
47.5	305.676	309.419	296.786	289.612	264.347	238.458	212.569	198.689	187.616	198.689
50.0	324.235	326.886	311.914	306.300	280.879	262.164	237.523	231.284	220.367	231.284
52.5	359.949	357.609	341.234	327.978	297.098	277.915	250.623	254.366	245.320	254.366
55.0	391.140	391.140	373.361	354.334	323.143	300.529	264.815	274.484	267.934	274.484
57.5	422.643	422.955	403.773	380.067	350.123	328.757	290.860	305.364	297.878	305.364
60.0	461.945	463.816	437.147	411.571	380.691	358.545	321.895	337.335	330.161	337.335
62.5	480.659	487.366	463.660	442.762	413.598	386.773	354.802	364.939	356.206	364.939
65.0	446.505	459.917	458.202	456.486	430.129	406.736	385.526	383.186	375.077	383.186
67.5	375.233	390.984	403.617	425.919	418.745	412.662	416.249	396.755	389.892	396.755
70.0	302.713	314.565	330.629	361.508	380.067	385.526	437.459	402.213	394.727	402.213
72.5	222.863	234.247	251.091	286.961	312.850	332.344	406.580	378.040	375.388	378.040
75.0	162.039	171.709	184.029	213.505	246.568	269.962	344.665	319.712	318.152	319.712
77.5	115.408	120.867	133.187	155.177	182.314	202.120	281.502	259.668	258.889	259.668
80.0	87.024	89.051	94.978	107.922	124.766	143.636	205.551	192.607	191.827	192.607
82.5	72.364	73.144	74.859	78.290	87.180	94.198	137.554	129.288	131.472	129.288
85.0	59.576	59.887	60.511	61.135	61.759	62.539	88.895	79.850	81.721	79.850
87.5	42.732	43.512	44.136	44.604	43.512	41.796	46.631	46.631	46.787	46.631
90.0	27.137	27.760	28.384	28.540	27.448	26.045	27.448	27.916	27.760	27.916
92.5	18.715	19.027	19.339	19.807	20.586	21.054	21.678	21.834	21.834	21.834
95.0	20.742	21.054	21.678	22.458	23.394	23.705	24.329	24.485	24.641	24.485
97.5	24.485	24.797	25.421	26.045	26.669	27.137	27.760	27.916	28.072	27.916
100.0	28.384	28.540	29.164	29.632	30.100	30.724	31.347	31.815	31.971	31.815
102.5	31.971	32.283	32.907	33.063	33.531	33.843	34.622	35.402	35.558	35.402
105.0	34.311	34.466	34.466	34.311	34.311	34.155	34.311	34.778	34.778	34.778
107.5	36.338	36.338	35.870	35.090	35.090	34.622	34.155	33.999	33.999	33.999
110.0	37.742	37.586	36.806	36.182	35.558	35.246	34.778	34.155	34.155	34.155
112.5	35.714	35.090	34.622	34.622	34.155	33.999	33.999	33.531	33.375	33.531
115.0	32.907	33.063	33.219	33.219	32.907	32.595	32.439	32.283	32.127	32.283
117.5	32.595	32.595	32.751	32.907	32.751	32.283	31.971	31.815	31.815	31.815
120.0	31.971	32.127	32.127	31.971	31.659	31.347	31.035	30.568	30.256	30.568
122.5	31.191	31.191	31.191	31.035	30.879	30.568	30.256	29.788	29.476	29.788
125.0	30.256	30.256	30.256	30.100	29.788	29.632	29.164	28.696	28.540	28.696
127.5	29.008	29.164	29.164	28.852	28.540	28.228	27.604	27.292	27.137	27.292
130.0	27.760	27.760	27.760	27.448	27.137	26.669	26.201	25.577	25.421	25.577
132.5	26.201	26.201	26.201	25.733	25.421	25.109	24.485	24.017	23.861	24.017

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CANDELA TABULATION - (Cont.)

135.0	24.641	24.641	24.641	24.173	23.550	23.394	22.926	22.458	22.302	22.458
137.5	23.082	23.082	22.926	22.458	21.678	21.366	21.054	20.586	20.430	20.586
140.0	21.210	21.054	21.054	20.586	19.962	19.495	19.183	18.871	18.715	18.871
142.5	19.183	19.183	19.027	18.715	17.935	17.623	17.467	16.999	16.999	16.999
145.0	16.999	16.999	16.999	16.531	16.064	15.752	15.596	15.128	15.128	15.128
147.5	14.972	14.816	14.816	14.504	14.036	14.036	13.880	13.568	13.412	13.568
150.0	12.788	12.788	12.788	12.477	12.165	12.165	12.165	11.853	11.697	11.853
152.5	10.917	10.917	10.917	10.605	10.293	10.293	10.293	9.981	9.981	9.981
155.0	8.890	9.046	9.046	8.890	8.422	8.422	8.578	8.266	8.266	8.266
157.5	7.018	7.018	7.018	7.018	6.706	6.706	6.862	6.706	6.550	6.706
160.0	4.991	4.991	5.147	5.147	4.991	5.147	5.147	4.991	4.835	4.991
162.5	3.275	3.275	3.275	3.275	3.275	3.431	3.587	3.431	3.275	3.431
165.0	1.560	1.560	1.716	1.716	1.560	1.716	1.871	1.716	1.716	1.716
167.5	0.000	0.000	0.000	0.000	0.000	0.156	0.156	0.156	0.000	0.156
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	12.009	10.293	0.000	1.560	3.587	4.679	0.000
7.5	79.070	77.043	67.373	61.135	64.254	67.529	68.465
10.0	140.517	111.353	106.519	99.812	90.611	92.794	87.492
12.5	136.618	116.656	107.610	107.766	104.647	104.959	101.996
15.0	129.912	109.482	111.353	113.069	109.794	110.262	106.519
17.5	124.142	117.592	113.849	113.849	113.693	118.371	117.124
20.0	128.976	120.711	118.839	121.335	121.646	131.472	128.509
22.5	126.637	119.307	124.142	131.160	136.618	148.939	148.471
25.0	127.261	127.417	138.490	151.902	158.452	172.800	174.204
27.5	142.701	149.719	161.727	175.140	181.222	193.699	194.478
30.0	169.057	173.736	181.846	190.891	194.634	201.185	198.377
32.5	184.029	182.938	186.369	186.681	186.681	188.708	186.213
35.0	180.130	175.140	175.764	174.516	175.608	176.543	174.672
37.5	167.966	165.626	168.122	170.617	174.672	178.571	179.351
40.0	159.388	162.663	171.397	181.066	192.295	202.276	206.643
42.5	162.351	173.268	191.827	212.569	232.064	246.880	252.338
45.0	180.130	202.744	230.504	257.953	274.328	284.933	288.209
47.5	212.569	238.458	264.347	289.612	296.786	309.419	305.676
50.0	237.523	262.164	280.879	306.300	311.914	326.886	324.235
52.5	250.623	277.915	297.098	327.978	341.234	357.609	359.949
55.0	264.815	300.529	323.143	354.334	373.361	391.140	391.140
57.5	290.860	328.757	350.123	380.067	403.773	422.955	422.643
60.0	321.895	358.545	380.691	411.571	437.147	463.816	461.945
62.5	354.802	386.773	413.598	442.762	463.660	487.366	480.659
65.0	385.526	406.736	430.129	456.486	458.202	459.917	446.505
67.5	416.249	412.662	418.745	425.919	403.617	390.984	375.233
70.0	437.459	385.526	380.067	361.508	330.629	314.565	302.713
72.5	406.580	332.344	312.850	286.961	251.091	234.247	222.863
75.0	344.665	269.962	246.568	213.505	184.029	171.709	162.039
77.5	281.502	202.120	182.314	155.177	133.187	120.867	115.408
80.0	205.551	143.636	124.766	107.922	94.978	89.051	87.024

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CANDELA TABULATION - (Cont.)

82.5	137.554	94.198	87.180	78.290	74.859	73.144	72.364
85.0	88.895	62.539	61.759	61.135	60.511	59.887	59.576
87.5	46.631	41.796	43.512	44.604	44.136	43.512	42.732
90.0	27.448	26.045	27.448	28.540	28.384	27.760	27.137
92.5	21.678	21.054	20.586	19.807	19.339	19.027	18.715
95.0	24.329	23.705	23.394	22.458	21.678	21.054	20.742
97.5	27.760	27.137	26.669	26.045	25.421	24.797	24.485
100.0	31.347	30.724	30.100	29.632	29.164	28.540	28.384
102.5	34.622	33.843	33.531	33.063	32.907	32.283	31.971
105.0	34.311	34.155	34.311	34.311	34.466	34.466	34.311
107.5	34.155	34.622	35.090	35.090	35.870	36.338	36.338
110.0	34.778	35.246	35.558	36.182	36.806	37.586	37.742
112.5	33.999	33.999	34.155	34.622	34.622	35.090	35.714
115.0	32.439	32.595	32.907	33.219	33.219	33.063	32.907
117.5	31.971	32.283	32.751	32.907	32.751	32.595	32.595
120.0	31.035	31.347	31.659	31.971	32.127	32.127	31.971
122.5	30.256	30.568	30.879	31.035	31.191	31.191	31.191
125.0	29.164	29.632	29.788	30.100	30.256	30.256	30.256
127.5	27.604	28.228	28.540	28.852	29.164	29.164	29.008
130.0	26.201	26.669	27.137	27.448	27.760	27.760	27.760
132.5	24.485	25.109	25.421	25.733	26.201	26.201	26.201
135.0	22.926	23.394	23.550	24.173	24.641	24.641	24.641
137.5	21.054	21.366	21.678	22.458	22.926	23.082	23.082
140.0	19.183	19.495	19.962	20.586	21.054	21.054	21.210
142.5	17.467	17.623	17.935	18.715	19.027	19.183	19.183
145.0	15.596	15.752	16.064	16.531	16.999	16.999	16.999
147.5	13.880	14.036	14.036	14.504	14.816	14.816	14.972
150.0	12.165	12.165	12.165	12.477	12.788	12.788	12.788
152.5	10.293	10.293	10.293	10.605	10.917	10.917	10.917
155.0	8.578	8.422	8.422	8.890	9.046	9.046	8.890
157.5	6.862	6.706	6.706	7.018	7.018	7.018	7.018
160.0	5.147	5.147	4.991	5.147	5.147	4.991	4.991
162.5	3.587	3.431	3.275	3.275	3.275	3.275	3.275
165.0	1.871	1.716	1.560	1.716	1.716	1.560	1.560
167.5	0.156	0.156	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	39.19	N.A.	2.50
0-30	108.28	N.A.	6.80
0-40	219.68	N.A.	13.80
0-60	693.03	N.A.	43.40
0-80	1361.28	N.A.	85.30
0-90	1440.81	N.A.	90.20
10-90	1435.66	N.A.	89.90
20-40	180.50	N.A.	11.30
20-50	357.66	N.A.	22.40
40-70	876.63	N.A.	54.90
60-80	668.26	N.A.	41.90
70-80	264.97	N.A.	16.60
80-90	79.53	N.A.	5.00
90-110	62.93	N.A.	3.90
90-120	96.00	N.A.	6.00
90-130	122.48	N.A.	7.70
90-150	151.05	N.A.	9.50
90-180	155.78	N.A.	9.80
110-180	92.85	N.A.	5.80
0-180	1596.59	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	5.15
10-20	34.04
20-30	69.09
30-40	111.41
40-50	177.16
50-60	296.19
60-70	403.28
70-80	264.97
80-90	79.53
90-100	26.95
100-110	35.98
110-120	33.07
120-130	26.48
130-140	18.32
140-150	10.25
150-160	4.11
160-170	0.62
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	85	85	85	85	82	82	82	82	77	77	77	72	72	72	67	67	67	65
1	74	69	64	60	71	66	62	59	62	59	56	58	55	53	54	52	50	47
2	64	56	49	44	61	54	48	43	50	45	41	47	42	39	43	40	37	34
3	57	47	39	33	54	45	38	32	42	35	30	38	33	29	36	31	28	25
4	51	40	31	25	48	38	30	25	35	29	24	32	27	22	30	25	21	19
5	46	34	26	20	43	33	25	20	30	24	19	28	22	18	26	21	17	15
6	41	30	22	16	39	29	21	16	26	20	15	24	19	14	23	18	14	12
7	38	26	19	14	36	25	18	13	23	17	13	22	16	12	20	15	11	10
8	35	24	16	11	33	23	16	11	21	15	11	20	14	10	18	13	10	8
9	32	21	14	10	31	20	14	10	19	13	9	18	12	9	16	12	8	7
10	30	19	13	9	29	19	13	8	17	12	8	16	11	8	15	11	7	6

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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

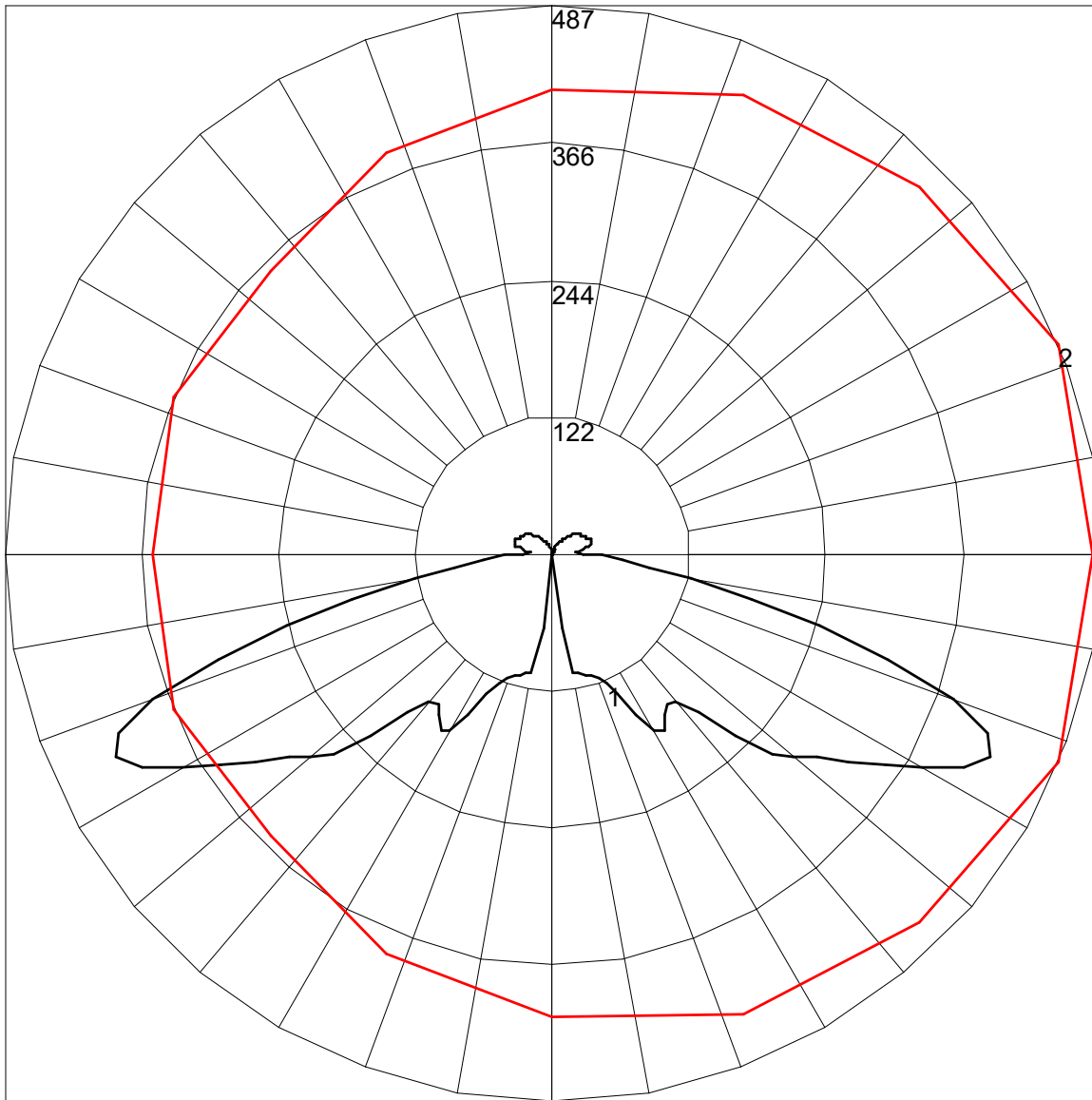
X=2H	Y=2H	24.4	26.2	24.9	26.7	27.2	23.2	24.9	23.7	25.5	26.0
	3H	27.2	28.8	27.7	29.3	29.9	27.4	29.0	27.9	29.5	30.1
	4H	27.7	29.3	28.3	29.8	30.4	28.4	29.9	28.9	30.4	31.0
	6H	28.0	29.5	28.6	30.0	30.6	28.9	30.4	29.5	30.9	31.5
	8H	28.1	29.5	28.7	30.1	30.7	29.1	30.5	29.6	31.0	31.7
	12H	28.3	29.6	28.8	30.2	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 = 487.366 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.)