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## IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN OPAL 6 LIGHT.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] LLI-18097-2

[TESTLAB] LightLab International ([www.LightLabInternational.com](http://www.LightLabInternational.com))

[MANUFAC] Justice Design Group, Los Angeles, CA 90071

[LUMCAT] Artisan Glass (FSN) - Opal Glass (OPAL) 6-Light Bath Bar

[LUMINAIRE] Justice Design Group - Wall mount bathroom luminaire. Product ID: FSN OPAL 6-Light

[MORE] Steel formed housing and six frosted clear glass lenses with white interior.

[MORE] 60 LEDs mounted in six circular arrays with white plastic dome lenses.

[MORE] No driver.

[MORE] Operating at 120 VAC and 60 Hz.

[OTHER] Absolute test - lamp lumens value set to -1

[MORE] NA conventions used for C0 plane alignment and C-plane rotation direction.

[MORE] The sample was tested at a distance of 8m.

[MORE] This IES file created by LightLab/LSA Report program version 3.820a.

[DATE] This file created: Thursday, April 19, 2018 8:36:38 AM

[ISSUE DATE] Thursday, April 19, 2018 8:36:38 AM

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3303
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	73
Total Luminaire Watts	45
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.54
Spacing Criterion (90-270)	1.72
Spacing Criterion (Diagonal)	1.54
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.08 m
Luminous Width (90-270)	0.99 m
Luminous Height	0.14 m

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**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2936	3429	7898
55	2467	2679	5321
65	2211	2341	3889
75	2076	2181	3119
85	2016	2144	2387

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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>
<b>0.0</b>	540.93	540.93	540.93	540.93	540.93	540.93	540.93	540.93	540.93
<b>0.5</b>	541.21	536.18	537.06	540.60	541.43	542.43	545.81	545.08	544.98
<b>1.0</b>	540.34	535.46	536.32	540.27	542.00	544.29	549.19	549.56	549.65
<b>1.5</b>	541.11	535.89	536.51	540.61	542.91	546.65	553.24	554.75	555.26
<b>2.0</b>	543.23	537.86	537.62	541.25	544.20	549.31	557.74	560.53	561.42
<b>2.5</b>	546.68	540.63	539.53	542.60	545.86	552.70	562.74	566.74	568.03
<b>3.0</b>	550.90	544.44	542.39	544.08	547.70	555.96	568.09	573.16	575.03
<b>3.5</b>	555.91	549.02	545.95	546.44	549.79	559.78	573.57	579.85	582.18
<b>4.0</b>	561.52	554.27	549.80	549.02	552.15	563.63	579.20	586.70	589.35
<b>4.5</b>	567.69	559.64	554.21	552.13	554.79	567.68	584.97	593.61	596.52
<b>5.0</b>	573.97	565.63	559.01	555.27	557.59	572.02	590.78	600.24	603.89
<b>5.5</b>	580.70	572.07	564.09	558.87	560.47	576.38	596.77	607.41	611.05
<b>6.0</b>	587.50	578.26	569.43	562.62	563.56	580.79	603.02	614.51	618.49
<b>6.5</b>	594.31	584.65	574.98	566.56	566.81	585.32	608.99	621.71	625.96
<b>7.0</b>	601.47	591.35	580.53	570.82	570.15	590.08	615.29	628.75	633.35
<b>7.5</b>	608.47	598.03	586.20	574.90	573.60	594.65	621.47	635.86	640.67
<b>8.0</b>	615.17	604.65	592.12	579.32	577.05	599.64	627.80	643.03	647.93
<b>8.5</b>	622.47	611.17	597.90	583.63	580.53	604.36	634.01	649.83	655.16
<b>9.0</b>	629.32	618.01	603.79	588.19	584.06	609.01	640.22	656.79	662.54
<b>9.5</b>	636.32	624.47	609.53	592.61	587.57	613.81	646.25	663.56	669.37
<b>10.0</b>	643.51	631.41	615.58	597.21	591.19	618.76	652.50	670.44	676.29
<b>10.5</b>	650.42	638.03	621.35	601.99	594.80	623.48	658.40	677.21	683.31
<b>11.0</b>	657.60	644.80	627.17	606.50	598.59	628.28	664.42	683.76	689.60
<b>11.5</b>	664.55	651.52	633.23	611.27	602.12	633.28	670.42	690.02	696.05
<b>12.0</b>	670.76	658.06	639.16	615.96	605.75	638.14	676.33	696.03	702.04
<b>12.5</b>	676.62	664.42	645.13	620.67	609.46	642.96	682.28	702.04	707.70
<b>13.0</b>	681.24	670.24	650.90	625.42	613.20	647.53	688.24	707.56	713.29
<b>13.5</b>	685.41	675.47	656.88	630.28	616.77	652.40	693.85	712.98	718.19
<b>14.0</b>	688.67	679.67	662.50	634.72	620.28	657.10	699.21	718.07	722.05
<b>14.5</b>	691.39	683.56	668.39	639.50	624.07	661.69	704.56	722.43	725.13
<b>15.0</b>	694.12	686.63	674.00	644.31	627.75	666.43	709.82	726.13	726.93
<b>15.5</b>	696.05	689.21	679.41	648.74	631.32	670.88	714.70	728.85	727.60
<b>16.0</b>	697.27	691.28	684.47	653.42	635.12	675.46	719.57	730.41	727.55
<b>16.5</b>	698.04	693.16	689.04	657.96	638.64	679.89	724.23	731.04	726.90
<b>17.0</b>	698.64	694.30	693.05	662.67	642.43	684.41	728.38	731.23	725.87
<b>17.5</b>	698.98	695.12	696.29	667.09	645.98	688.77	732.22	730.52	724.55
<b>18.0</b>	698.98	695.60	699.16	671.75	649.76	693.00	735.58	729.68	723.02
<b>18.5</b>	698.64	695.72	701.40	675.92	653.33	697.15	738.36	728.34	721.44
<b>19.0</b>	698.07	695.62	703.29	680.47	657.00	701.52	740.59	726.84	719.53
<b>19.5</b>	697.22	695.13	704.70	684.76	660.54	705.41	741.96	725.08	717.75
<b>20.0</b>	695.93	694.52	705.69	688.86	664.09	709.45	742.84	723.22	715.83
<b>20.5</b>	694.42	693.39	706.64	693.20	667.89	713.66	742.70	721.15	713.56
<b>21.0</b>	692.75	692.12	706.71	697.34	671.11	717.50	742.44	718.91	711.45
<b>21.5</b>	690.77	690.56	706.61	701.38	674.75	721.24	741.57	716.73	709.00
<b>22.0</b>	688.64	688.74	706.01	705.49	678.05	724.89	740.17	714.26	706.45
<b>22.5</b>	686.41	686.51	705.16	709.19	681.56	728.18	738.39	711.59	704.09
<b>23.0</b>	683.69	684.15	704.26	712.86	684.79	731.17	736.63	709.10	701.52
<b>23.5</b>	680.99	681.59	702.84	716.30	688.10	734.15	734.24	706.06	698.48
<b>24.0</b>	678.27	678.74	700.99	719.27	691.22	736.66	731.79	702.86	695.30
<b>24.5</b>	674.80	675.50	699.25	721.55	694.23	738.81	729.05	699.81	692.33
<b>25.0</b>	671.53	672.18	696.70	723.74	697.31	740.72	725.98	696.23	688.97
<b>25.5</b>	668.14	668.57	694.19	724.91	700.23	741.93	722.76	692.93	685.57
<b>26.0</b>	664.45	664.83	691.25	725.78	703.26	743.06	719.36	689.00	681.68
<b>26.5</b>	660.72	660.80	688.02	726.00	705.95	743.86	715.74	685.04	677.75

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27.0	656.87	656.68	684.47	726.01	708.68	744.11	711.83	680.82	673.51
27.5	652.91	652.76	680.88	725.39	711.25	744.06	707.93	676.86	669.27
28.0	648.60	648.49	676.87	724.25	713.96	743.35	703.41	672.21	664.53
28.5	644.11	643.98	672.47	722.67	716.37	742.18	698.98	667.50	659.43
29.0	639.74	639.43	667.97	720.74	718.83	740.35	694.32	662.66	654.35
29.5	634.80	634.77	663.15	718.09	721.25	737.91	689.49	657.50	649.00
30.0	629.86	629.98	658.23	714.98	723.29	734.84	684.42	652.20	643.48
30.5	624.84	625.01	652.95	711.30	725.26	731.08	679.10	646.75	637.70
31.0	619.58	619.98	647.60	707.45	726.80	726.80	673.84	640.94	631.80
31.5	614.20	614.71	641.99	702.95	727.70	721.99	668.01	635.06	625.66
32.0	608.72	609.52	636.25	698.27	728.05	717.22	662.40	629.13	619.37
32.5	602.68	603.96	630.55	693.07	727.97	711.66	656.41	622.72	612.57
33.0	596.66	598.25	624.51	687.46	727.05	705.82	650.24	616.22	605.99
33.5	590.85	592.43	618.60	681.68	725.49	699.57	644.06	609.86	599.15
34.0	584.50	586.52	612.45	675.40	723.30	693.27	637.62	602.86	592.18
34.5	578.23	580.50	606.23	668.99	720.33	686.48	631.00	596.00	585.26
35.0	571.76	574.10	599.90	662.16	716.16	679.42	624.10	589.02	578.13
35.5	565.26	567.85	593.53	655.27	710.65	672.57	617.40	581.88	570.90
36.0	558.65	561.28	586.95	647.77	703.88	665.13	610.17	574.46	563.50
36.5	552.32	554.98	580.58	640.67	696.75	657.92	603.12	567.46	556.39
37.0	545.69	548.37	573.73	632.80	688.82	650.31	595.72	559.86	548.65
37.5	538.62	541.60	567.12	625.00	680.15	642.60	588.26	552.22	541.29
38.0	532.01	534.85	560.17	617.06	671.07	634.98	580.65	544.78	533.91
38.5	525.42	528.11	553.21	608.88	661.93	626.90	572.89	536.97	526.34
39.0	519.12	521.31	546.18	600.79	652.12	618.97	564.89	529.20	518.94
39.5	512.51	514.41	539.04	592.40	641.89	610.77	556.99	521.77	511.80
40.0	505.98	507.76	531.87	584.02	631.57	602.56	549.07	514.13	504.56
40.5	500.00	501.15	524.64	575.54	620.75	594.15	540.72	506.56	497.64
41.0	494.26	494.70	517.51	567.21	610.46	585.84	532.66	499.09	491.05
41.5	488.79	488.14	509.90	558.43	599.38	577.10	524.30	491.73	484.09
42.0	483.62	481.87	502.43	549.61	588.79	568.33	515.77	484.59	477.55
42.5	478.65	475.88	495.09	541.02	577.81	559.67	507.33	477.48	471.17
43.0	474.30	469.99	487.50	532.14	566.83	550.53	498.97	470.49	464.69
43.5	470.36	464.76	479.95	523.20	556.27	541.64	490.41	463.93	458.93
44.0	466.38	459.70	472.38	514.22	545.49	532.40	481.97	457.38	453.63
44.5	462.64	455.14	464.91	505.18	535.04	523.29	473.59	451.06	448.96
45.0	458.95	451.05	457.45	496.02	524.47	513.77	465.22	445.11	444.29
45.5	455.41	447.13	450.08	487.20	514.44	504.75	457.04	439.82	439.84
46.0	451.73	443.55	442.79	478.06	503.82	495.13	448.80	434.71	435.74
46.5	448.33	439.79	435.65	468.75	493.32	485.43	440.84	430.02	431.35
47.0	444.95	436.01	428.91	459.59	482.83	475.84	433.19	425.55	427.31
47.5	441.45	432.63	422.10	450.20	472.12	465.96	425.62	421.37	422.97
48.0	437.90	429.13	415.99	440.97	461.38	456.18	418.58	417.17	418.98
48.5	434.82	425.91	410.07	431.52	450.45	446.45	411.75	413.15	414.74
49.0	431.61	422.56	404.73	422.35	439.22	436.76	405.49	408.97	410.85
49.5	428.15	419.36	399.83	413.11	428.04	426.80	399.47	404.96	406.66
50.0	425.02	416.27	395.42	404.15	416.77	417.30	394.15	400.82	402.94
50.5	421.86	413.00	391.30	394.99	405.29	407.59	388.93	396.88	398.86
51.0	418.91	409.83	387.40	385.92	393.54	398.17	384.13	393.02	395.36
51.5	415.90	406.86	383.58	377.17	381.96	388.45	379.76	389.13	391.54
52.0	413.02	403.99	379.71	368.31	370.22	379.18	375.68	385.54	387.68
52.5	410.09	400.87	376.23	359.95	358.35	370.43	371.67	381.58	384.16
53.0	407.41	398.13	372.78	351.56	346.84	361.57	367.83	378.01	380.39
53.5	404.85	395.25	369.44	343.65	335.24	353.20	363.96	374.21	376.95
54.0	402.11	392.47	366.06	336.25	323.72	345.15	360.12	370.48	373.26
54.5	399.65	390.06	363.02	329.62	312.94	337.86	356.58	367.21	369.73

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**CANDELA TABULATION - (Cont.)**

55.0	396.97	387.47	359.87	323.24	301.79	331.13	352.96	363.43	366.40
55.5	394.47	385.08	356.64	317.79	290.94	325.17	349.22	359.82	362.71
56.0	392.06	382.54	353.50	312.61	280.92	319.35	345.73	356.42	359.34
56.5	389.83	380.20	350.55	307.88	270.68	314.33	342.18	352.85	355.86
57.0	387.42	377.98	347.50	303.71	261.23	309.64	338.76	349.42	352.43
57.5	385.24	375.53	344.60	299.74	252.63	305.12	335.19	346.07	348.86
58.0	382.92	373.67	341.62	296.13	244.43	300.93	331.74	342.78	345.71
58.5	380.52	371.43	338.89	292.53	236.98	297.34	328.42	339.18	342.24
59.0	378.79	369.42	336.32	289.54	230.54	293.76	324.92	335.84	339.12
59.5	376.53	367.44	333.41	286.48	224.53	290.40	321.71	332.58	335.77
60.0	374.35	365.39	330.84	283.30	218.93	287.01	318.27	329.23	332.47
60.5	372.28	363.49	328.32	280.16	213.86	283.90	315.02	325.95	329.10
61.0	370.50	361.63	325.66	277.01	209.11	280.75	311.77	322.60	325.71
61.5	368.33	359.83	323.24	273.87	204.65	277.73	308.35	319.23	322.46
62.0	366.26	357.99	320.69	270.68	200.31	274.57	305.19	315.97	319.21
62.5	364.38	356.18	318.36	267.54	196.13	271.55	301.83	312.79	316.02
63.0	362.61	354.47	315.95	264.51	192.02	268.59	298.59	309.49	312.82
63.5	360.64	352.72	313.71	261.65	188.11	265.69	295.46	306.38	309.77
64.0	358.89	351.18	311.56	258.65	184.12	262.96	292.07	303.09	306.29
64.5	356.84	349.45	309.23	255.72	180.20	260.07	288.90	299.87	303.25
65.0	355.06	347.97	307.09	252.82	176.24	257.30	285.54	296.62	300.10
65.5	353.40	346.38	305.10	249.71	172.16	254.48	282.26	293.53	296.94
66.0	351.36	344.65	302.84	247.03	168.27	251.78	279.05	290.38	293.95
66.5	349.81	343.14	300.86	244.12	164.27	249.08	275.78	287.30	290.79
67.0	347.90	341.70	298.83	241.50	160.41	246.46	272.58	284.06	287.48
67.5	346.41	340.02	296.84	238.69	156.29	243.82	269.23	280.98	284.56
68.0	344.84	338.60	294.88	236.02	152.52	241.20	266.03	277.91	281.45
68.5	343.04	337.25	293.08	233.53	148.74	238.39	262.66	274.79	278.30
69.0	341.31	335.77	291.04	230.76	144.72	235.68	259.50	271.62	275.17
69.5	339.63	334.32	289.20	228.19	140.91	232.85	256.19	268.54	272.18
70.0	338.08	333.02	287.39	225.59	137.00	230.17	253.13	265.53	269.00
70.5	336.46	331.62	285.58	223.10	133.30	227.29	249.61	262.38	266.01
71.0	334.78	330.11	283.78	220.59	129.65	224.49	246.61	259.24	263.03
71.5	333.05	328.89	282.04	218.14	126.07	221.58	243.33	256.17	259.79
72.0	331.52	327.57	280.43	215.59	122.31	218.76	240.25	253.06	256.66
72.5	330.10	326.26	278.59	213.12	118.90	216.02	236.94	250.13	253.61
73.0	328.38	325.00	276.97	210.67	115.24	213.02	233.63	247.14	250.65
73.5	326.95	323.72	275.24	208.37	111.69	210.30	230.56	243.89	247.33
74.0	325.30	322.51	273.66	206.01	108.36	207.07	227.42	240.87	244.37
74.5	324.10	321.13	272.08	203.79	104.80	204.02	224.16	237.65	241.17
75.0	322.55	319.94	270.49	201.67	101.46	201.01	221.02	234.63	238.07
75.5	320.88	318.73	268.83	199.51	98.10	197.76	217.85	231.47	235.11
76.0	319.34	317.61	267.33	197.45	94.89	194.47	214.65	228.48	231.92
76.5	317.83	316.29	265.86	195.43	91.46	191.36	211.45	225.35	228.68
77.0	316.46	315.19	264.39	193.35	88.60	188.08	208.29	222.29	225.96
77.5	314.76	313.95	262.85	191.46	85.34	184.73	205.25	219.26	222.78
78.0	313.40	312.84	261.41	189.43	82.25	181.27	202.01	216.02	219.56
78.5	311.95	311.79	259.95	187.47	79.31	177.79	198.95	213.01	216.46
79.0	310.37	310.57	258.44	185.60	76.31	174.57	195.67	209.88	213.30
79.5	309.04	309.49	257.11	183.84	73.46	170.91	192.53	206.83	210.31
80.0	307.45	308.33	255.64	181.89	70.49	167.45	189.25	203.70	207.20
80.5	306.23	307.20	254.18	180.18	67.71	164.05	186.15	200.49	204.06
81.0	304.58	306.11	252.87	178.24	64.99	160.37	182.83	197.43	200.92
81.5	303.11	304.94	251.42	176.63	62.37	157.16	179.87	194.44	197.84
82.0	301.76	303.73	250.25	174.90	59.50	153.44	176.59	191.22	194.68
82.5	300.47	302.75	248.86	173.07	56.92	149.95	173.36	188.07	191.56

**IES INDOOR REPORT**  
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**CANDELA TABULATION - (Cont.)**

<b>83.0</b>	298.81	301.42	247.62	171.42	54.55	146.48	170.06	185.04	188.67
<b>83.5</b>	297.50	300.28	246.22	169.81	51.79	142.88	166.85	181.99	185.42
<b>84.0</b>	295.94	299.15	244.90	168.18	49.28	139.45	163.67	178.92	182.36
<b>84.5</b>	294.75	298.02	243.66	166.45	47.12	135.71	160.49	175.80	179.32
<b>85.0</b>	293.24	296.92	242.55	165.07	44.76	132.09	157.16	172.83	176.40
<b>85.5</b>	291.74	295.78	241.37	163.57	42.40	128.63	154.09	169.73	173.32
<b>86.0</b>	290.52	294.79	240.21	162.41	40.35	125.07	150.90	166.88	170.32
<b>86.5</b>	289.09	293.72	239.03	160.98	38.28	121.43	147.77	163.93	167.35
<b>87.0</b>	287.71	292.80	237.92	159.61	36.12	117.68	144.67	161.14	164.44
<b>87.5</b>	286.34	291.50	236.79	158.41	34.13	114.30	141.60	158.40	161.86
<b>88.0</b>	285.29	290.53	235.79	157.20	32.17	110.83	138.65	155.81	159.20
<b>88.5</b>	283.74	289.64	234.78	156.18	30.16	107.49	135.78	153.33	156.48
<b>89.0</b>	282.77	288.87	234.30	155.37	28.60	104.48	133.10	151.09	153.88
<b>89.5</b>	282.26	288.78	233.89	155.19	27.39	101.97	130.81	149.67	151.84
<b>90.0</b>	282.31	289.77	234.14	155.14	27.11	99.89	128.99	148.90	150.13
<b>90.5</b>	282.70	291.83	234.73	155.40	27.01	97.74	127.01	148.79	148.43
<b>91.0</b>	283.26	294.63	235.62	156.37	27.51	95.74	125.18	148.47	146.71
<b>91.5</b>	284.14	296.55	236.59	157.68	27.59	93.63	123.34	146.31	145.17
<b>92.0</b>	285.21	297.36	237.81	159.38	27.87	91.32	121.52	143.09	143.57
<b>92.5</b>	286.69	296.88	239.29	161.20	28.18	88.99	119.66	139.91	141.88
<b>93.0</b>	287.86	296.72	240.71	162.84	28.62	86.62	117.88	137.34	140.05
<b>93.5</b>	289.48	296.93	242.26	164.36	28.99	83.93	115.92	135.22	138.48
<b>94.0</b>	290.99	298.12	243.80	165.78	29.48	81.30	114.11	133.30	136.72
<b>94.5</b>	292.31	299.17	245.27	167.20	30.00	78.84	112.28	131.29	134.96
<b>95.0</b>	293.61	300.40	246.69	168.42	30.59	76.54	110.35	129.54	133.40
<b>95.5</b>	295.30	301.62	248.19	169.75	31.18	74.22	108.25	127.64	131.55
<b>96.0</b>	296.39	302.85	249.62	171.21	32.10	71.84	106.31	125.85	129.69
<b>96.5</b>	297.83	303.93	250.88	172.80	32.92	69.53	104.29	123.86	127.86
<b>97.0</b>	299.34	305.17	252.35	174.56	34.20	67.25	102.20	121.99	125.96
<b>97.5</b>	300.77	306.07	253.76	176.13	35.33	64.90	100.24	120.03	123.96
<b>98.0</b>	301.90	307.10	254.90	178.03	36.51	62.75	98.07	117.83	122.25
<b>98.5</b>	303.27	308.03	256.28	179.52	37.83	60.56	96.02	115.93	120.03
<b>99.0</b>	304.32	308.97	257.60	181.32	39.10	58.40	93.96	113.75	118.23
<b>99.5</b>	305.64	309.89	258.67	183.11	40.08	56.54	91.98	111.82	116.03
<b>100.0</b>	306.90	310.71	260.04	184.92	40.62	54.62	90.02	109.72	114.04
<b>100.5</b>	307.94	311.74	261.56	186.56	41.39	52.66	87.94	107.53	111.82
<b>101.0</b>	309.15	312.54	263.00	188.07	41.91	51.06	85.97	105.51	109.72
<b>101.5</b>	310.27	313.28	264.47	189.55	42.43	49.84	83.82	103.43	107.59
<b>102.0</b>	311.53	314.18	266.04	191.16	43.25	48.66	81.81	101.27	105.51
<b>102.5</b>	312.67	314.98	267.42	192.64	44.23	47.67	79.91	99.19	103.23
<b>103.0</b>	313.77	315.84	268.84	193.94	45.13	46.86	77.94	97.16	100.99
<b>103.5</b>	314.82	316.55	270.31	195.10	46.27	46.18	76.09	95.19	98.91
<b>104.0</b>	315.84	317.41	271.82	196.32	47.41	46.03	74.26	93.10	96.90
<b>104.5</b>	316.77	318.26	273.15	197.16	48.66	45.55	72.35	91.11	94.54
<b>105.0</b>	318.03	319.02	274.38	197.99	49.83	45.34	70.51	89.06	92.48
<b>105.5</b>	318.99	319.78	275.77	198.50	50.99	45.29	68.68	86.94	90.26
<b>106.0</b>	319.98	320.44	277.13	199.02	52.20	45.36	66.81	85.03	88.28
<b>106.5</b>	320.92	321.27	278.23	199.40	53.47	45.74	65.31	82.68	86.20
<b>107.0</b>	321.89	321.93	279.55	199.85	54.77	46.35	63.72	80.77	84.03
<b>107.5</b>	322.87	322.78	280.52	199.86	55.98	46.95	62.20	78.70	82.13
<b>108.0</b>	323.68	323.57	281.67	199.92	57.31	47.72	60.76	76.62	79.97
<b>108.5</b>	324.69	324.17	282.64	199.94	58.78	48.49	59.59	74.79	77.86
<b>109.0</b>	325.75	324.87	283.51	199.90	59.99	49.40	58.43	72.85	75.77
<b>109.5</b>	326.59	325.64	284.35	199.74	61.28	50.42	57.11	70.76	73.71
<b>110.0</b>	327.52	326.21	285.22	199.59	62.61	51.44	55.97	68.86	71.88
<b>110.5</b>	328.45	326.94	286.06	199.42	63.86	52.58	54.95	66.93	69.91

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**CANDELA TABULATION - (Cont.)**

111.0	329.59	327.39	286.75	199.27	65.13	53.70	53.79	65.10	67.76
111.5	330.40	327.99	287.40	198.84	66.24	54.94	53.00	63.42	65.97
112.0	331.14	328.53	288.00	198.31	67.47	56.16	52.12	61.76	64.09
112.5	332.02	328.96	288.36	197.76	68.61	57.58	51.40	60.25	61.90
113.0	332.80	329.57	288.84	197.11	69.92	58.90	50.79	58.85	60.30
113.5	333.51	330.02	288.99	196.45	71.17	60.45	50.09	57.59	58.58
114.0	334.03	330.30	289.30	195.61	72.40	61.77	49.60	56.39	56.77
114.5	334.58	330.59	289.47	194.78	73.63	63.15	49.03	55.21	55.32
115.0	335.14	330.89	289.62	193.90	74.84	64.64	48.60	54.01	53.94
115.5	335.47	331.11	289.55	192.98	76.11	66.09	48.33	53.19	52.82
116.0	335.67	331.23	289.45	192.17	77.37	67.65	48.11	52.01	51.88
116.5	336.29	331.31	289.25	191.11	78.65	68.85	47.98	51.44	50.86
117.0	336.43	331.46	289.11	190.28	79.88	70.33	48.10	50.55	49.98
117.5	336.68	331.36	288.76	189.44	80.99	71.78	48.01	49.77	49.06
118.0	336.68	331.27	288.55	188.57	82.36	73.20	48.08	49.23	48.44
118.5	336.99	331.18	287.98	187.48	83.55	74.76	48.31	48.55	47.65
119.0	337.12	330.90	287.41	186.45	84.71	76.16	48.50	48.12	47.12
119.5	337.11	330.62	286.89	185.67	86.02	77.67	48.85	47.56	46.59
120.0	337.17	330.20	286.33	184.55	87.35	79.16	49.06	47.20	45.87
120.5	337.46	329.87	285.57	183.49	88.33	80.62	49.62	46.92	45.69
121.0	337.42	329.41	284.76	182.47	89.74	82.20	50.01	46.63	44.88
121.5	337.52	328.89	283.96	181.27	90.89	83.79	50.73	46.40	44.73
122.0	337.41	328.10	283.00	180.25	91.98	85.27	51.30	46.48	44.29
122.5	337.52	327.56	282.05	179.14	93.17	86.81	52.03	46.14	43.92
123.0	337.22	326.84	280.96	178.02	94.38	88.33	52.68	46.14	43.37
123.5	336.96	326.01	279.93	176.84	95.44	89.88	53.63	45.93	43.39
124.0	336.15	325.23	278.72	175.67	96.44	91.53	54.41	46.03	43.10
124.5	335.33	324.24	277.66	174.57	97.56	93.18	55.30	46.02	42.90
125.0	334.64	323.36	276.31	173.30	98.67	94.92	56.51	45.98	42.78
125.5	333.77	322.25	275.11	172.18	99.68	96.50	57.55	46.18	42.82
126.0	332.70	321.28	273.51	170.98	100.79	98.20	58.69	46.44	42.74
126.5	331.74	320.08	272.20	170.00	101.75	99.82	59.90	46.62	42.72
127.0	330.87	318.99	270.75	168.90	102.82	101.56	61.10	46.94	43.01
127.5	329.82	317.62	269.02	167.62	103.60	103.18	62.36	47.35	43.27
128.0	328.64	316.30	267.59	166.68	104.66	104.80	63.57	47.81	43.42
128.5	327.56	314.62	265.91	165.65	105.44	106.37	64.73	48.09	43.80
129.0	326.41	313.14	264.25	164.56	106.26	107.86	66.03	48.67	43.80
129.5	325.01	311.19	262.33	163.66	107.12	109.71	67.42	49.29	44.49
130.0	323.67	309.37	260.48	162.61	107.95	111.07	68.56	49.88	44.89
130.5	322.39	307.47	258.44	161.53	108.66	112.72	69.88	50.48	45.46
131.0	320.87	305.53	256.58	160.60	109.21	114.29	70.98	51.37	45.93
131.5	319.30	303.46	254.61	159.61	110.05	115.81	72.29	52.00	46.51
132.0	317.78	301.47	252.61	158.53	110.67	117.62	73.63	52.94	47.23
132.5	315.86	299.34	250.41	157.62	111.37	119.26	74.86	53.86	47.98
133.0	314.07	297.28	248.31	156.31	111.83	120.80	76.16	54.85	48.76
133.5	312.41	295.28	246.17	155.39	112.36	122.28	77.49	55.85	49.53
134.0	310.24	293.02	243.84	154.37	112.67	123.89	78.90	56.92	50.41
134.5	308.34	290.80	241.44	153.30	113.11	125.12	80.08	57.94	51.40
135.0	306.16	288.35	239.04	152.36	113.61	126.52	81.55	59.24	52.36
135.5	304.22	286.03	236.65	151.35	113.97	127.52	82.78	60.40	53.43
136.0	301.85	283.56	234.17	150.34	114.26	128.55	84.12	61.66	54.67
136.5	299.63	281.09	231.57	149.25	114.50	129.39	85.39	63.01	55.86
137.0	297.15	278.49	229.14	148.21	114.55	130.08	86.81	64.34	57.10
137.5	294.60	275.86	226.50	147.24	114.63	130.69	88.16	65.48	58.53
138.0	292.02	273.31	224.01	146.23	114.84	130.99	89.64	66.62	59.86
138.5	289.27	270.63	221.45	145.30	114.90	131.23	90.98	68.04	61.40

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**CANDELA TABULATION - (Cont.)**

<b>139.0</b>	286.42	267.88	218.98	144.33	115.04	131.49	92.24	69.36	62.73
<b>139.5</b>	283.62	265.16	216.24	143.37	115.03	131.74	93.65	70.42	63.96
<b>140.0</b>	280.99	262.34	213.81	142.54	115.15	131.85	95.12	71.84	65.53
<b>140.5</b>	277.80	259.41	211.04	141.62	115.47	131.53	96.54	73.02	66.96
<b>141.0</b>	274.83	256.53	208.46	140.55	115.32	131.34	97.92	74.35	68.06
<b>141.5</b>	271.79	253.65	205.80	139.77	115.15	130.50	99.40	75.49	69.61
<b>142.0</b>	268.76	250.66	203.16	138.88	115.18	129.56	100.84	76.65	71.21
<b>142.5</b>	265.51	247.85	200.54	138.07	115.05	128.50	102.22	78.03	72.45
<b>143.0</b>	262.53	244.73	197.79	137.24	114.70	127.18	103.73	79.32	74.12
<b>143.5</b>	259.32	241.61	195.19	136.40	114.38	126.01	105.07	80.57	75.29
<b>144.0</b>	255.89	238.36	192.54	135.58	114.23	124.53	106.42	81.95	76.77
<b>144.5</b>	252.72	235.31	189.87	134.91	113.81	123.21	108.02	82.91	78.32
<b>145.0</b>	249.36	232.29	187.27	134.11	113.44	121.54	109.39	84.41	79.49
<b>145.5</b>	245.99	228.95	184.59	133.29	112.57	119.79	110.99	85.72	81.02
<b>146.0</b>	242.70	225.81	181.94	132.45	111.79	117.92	112.32	87.09	82.67
<b>146.5</b>	239.26	222.69	179.40	131.69	110.82	115.92	113.68	88.30	84.06
<b>147.0</b>	235.76	219.26	176.81	130.77	109.69	113.80	114.90	89.64	85.32
<b>147.5</b>	232.27	216.05	174.26	130.04	108.64	111.67	116.33	91.02	87.20
<b>148.0</b>	228.67	212.86	171.77	129.21	107.31	109.37	117.41	92.42	88.42
<b>148.5</b>	225.15	209.65	169.35	128.50	105.82	107.20	118.43	93.84	89.97
<b>149.0</b>	221.77	206.28	166.85	127.62	104.52	105.27	119.57	95.12	91.50
<b>149.5</b>	218.26	202.98	164.48	126.86	103.02	103.39	120.35	96.59	92.97
<b>150.0</b>	214.69	199.72	162.15	125.77	101.72	101.73	121.12	97.94	94.56
<b>150.5</b>	211.13	196.47	159.82	124.69	100.63	100.12	121.78	99.51	96.51
<b>151.0</b>	207.36	193.15	157.51	123.75	99.37	98.19	122.21	101.12	97.84
<b>151.5</b>	203.80	189.79	155.34	122.60	98.18	96.71	122.35	102.34	99.47
<b>152.0</b>	200.26	186.57	153.16	121.38	96.83	95.28	122.28	103.89	101.44
<b>152.5</b>	196.58	183.23	151.08	120.29	96.02	94.13	121.78	105.44	103.35
<b>153.0</b>	192.91	179.99	149.04	119.11	95.03	92.97	121.65	106.71	104.68
<b>153.5</b>	189.44	176.87	147.08	117.98	94.15	91.95	121.04	108.14	106.77
<b>154.0</b>	185.82	173.71	145.08	116.89	93.11	90.50	120.33	109.35	108.36
<b>154.5</b>	182.24	170.60	143.14	115.37	91.80	89.20	119.64	110.53	109.82
<b>155.0</b>	178.82	167.41	141.36	113.83	90.70	87.86	118.75	111.67	111.79
<b>155.5</b>	175.23	164.26	139.33	112.29	89.79	85.97	117.69	112.56	113.30
<b>156.0</b>	171.76	161.44	137.78	110.58	88.78	84.51	116.05	113.64	114.75
<b>156.5</b>	168.37	158.26	136.02	108.96	87.99	83.02	114.10	114.42	116.34
<b>157.0</b>	164.91	155.40	134.38	107.25	87.38	81.76	111.92	114.88	117.46
<b>157.5</b>	161.82	152.49	132.59	105.51	86.72	80.59	109.20	115.43	118.56
<b>158.0</b>	158.83	149.94	131.05	104.04	86.32	79.81	106.83	115.85	119.61
<b>158.5</b>	155.99	147.30	129.51	102.60	86.35	79.17	104.55	116.15	120.53
<b>159.0</b>	152.85	144.78	127.96	101.18	86.29	78.90	102.44	116.07	121.12
<b>159.5</b>	150.16	142.26	126.40	99.74	85.85	78.89	100.04	115.74	121.94
<b>160.0</b>	147.29	139.90	125.11	98.57	85.05	78.71	97.66	115.28	122.39
<b>160.5</b>	144.58	137.50	123.56	97.21	84.25	78.23	95.01	114.97	122.67
<b>161.0</b>	141.94	135.33	121.95	95.96	83.03	77.62	92.26	114.32	122.84
<b>161.5</b>	139.35	133.02	120.57	94.88	82.05	76.74	89.25	113.70	122.71
<b>162.0</b>	137.10	131.10	119.10	93.56	81.62	76.11	86.15	112.83	121.88
<b>162.5</b>	134.70	129.08	117.75	92.47	81.53	75.55	83.26	111.98	120.68
<b>163.0</b>	132.49	127.00	116.39	91.25	81.76	75.14	80.55	110.89	119.23
<b>163.5</b>	130.32	125.20	114.93	90.04	81.75	75.28	78.23	109.60	117.67
<b>164.0</b>	128.37	123.24	113.21	88.75	81.58	75.55	76.48	107.98	115.78
<b>164.5</b>	126.19	121.33	111.63	87.31	80.86	75.81	74.55	105.88	113.69
<b>165.0</b>	123.97	119.73	109.82	85.83	79.99	75.75	72.76	103.63	111.43
<b>165.5</b>	121.89	117.91	108.00	84.30	79.21	74.90	71.41	100.95	108.99
<b>166.0</b>	119.58	115.50	106.26	82.86	78.45	73.60	69.91	98.25	106.63
<b>166.5</b>	117.68	112.73	104.27	81.43	77.58	72.72	68.68	95.42	103.89



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**CANDELA TABULATION - (Cont.)**

<b>167.0</b>	115.63	110.70	102.55	80.14	77.23	72.07	67.57	92.52	101.48
<b>167.5</b>	113.79	108.48	100.63	78.74	76.71	71.55	66.57	89.44	98.27
<b>168.0</b>	111.79	106.52	98.75	77.60	76.66	70.91	65.78	86.15	94.91
<b>168.5</b>	109.85	104.63	96.71	76.69	76.32	70.79	65.18	83.04	92.02
<b>169.0</b>	107.92	102.57	94.81	75.53	76.20	70.67	64.46	79.83	89.05
<b>169.5</b>	106.28	100.52	92.27	74.44	75.87	70.30	63.78	76.53	85.94
<b>170.0</b>	104.34	98.61	89.75	73.06	75.34	70.33	63.45	73.18	82.59
<b>170.5</b>	102.28	96.83	87.11	72.09	74.45	70.68	62.72	69.67	79.66
<b>171.0</b>	100.35	94.99	84.44	71.02	73.25	71.15	61.77	66.60	76.68
<b>171.5</b>	98.26	93.52	82.18	70.26	72.02	71.62	61.15	63.75	74.06
<b>172.0</b>	96.52	91.70	80.22	69.36	70.95	71.74	60.29	61.02	71.39
<b>172.5</b>	94.77	90.02	78.21	68.47	70.04	71.42	59.68	59.01	68.68
<b>173.0</b>	92.92	88.33	75.98	67.75	69.50	70.72	59.22	57.33	66.31
<b>173.5</b>	91.01	86.37	74.02	66.95	69.03	70.12	58.78	55.72	63.65
<b>174.0</b>	89.35	84.55	71.95	66.37	68.99	69.87	58.42	54.49	61.37
<b>174.5</b>	87.56	82.73	69.73	65.64	69.20	69.76	58.50	53.35	58.83
<b>175.0</b>	85.70	81.01	67.34	65.10	69.27	69.67	58.86	52.37	56.36
<b>175.5</b>	84.25	79.38	64.96	64.42	69.21	69.44	59.32	51.25	53.78
<b>176.0</b>	82.64	77.82	62.85	64.03	69.13	69.22	59.88	50.09	51.42
<b>176.5</b>	81.18	76.37	61.12	63.83	68.89	69.17	60.83	48.88	49.61
<b>177.0</b>	79.26	75.08	59.82	63.70	68.70	69.24	61.83	47.51	48.18
<b>177.5</b>	77.07	73.79	58.53	63.71	68.57	69.40	62.47	46.74	46.77
<b>178.0</b>	75.17	72.48	57.47	63.59	68.75	69.47	62.91	45.62	45.48
<b>178.5</b>	73.16	71.01	56.57	63.22	68.98	69.57	62.97	45.03	44.44
<b>179.0</b>	71.46	69.84	55.38	62.95	69.15	69.85	63.13	44.68	43.48
<b>179.5</b>	69.85	68.43	54.32	62.34	69.10	69.88	63.06	44.62	42.81
<b>180.0</b>	60.34	60.34	60.34	60.34	60.34	60.34	60.34	60.34	60.34

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 6 LIGHT.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	249.31	N.A.	7.50
0-30	572.95	N.A.	17.30
0-40	963.02	N.A.	29.20
0-60	1647.12	N.A.	49.90
0-80	2168.47	N.A.	65.60
0-90	2366.33	N.A.	71.60
10-90	2309.73	N.A.	69.90
20-40	713.71	N.A.	21.60
20-50	1081.71	N.A.	32.70
40-70	963.41	N.A.	29.20
60-80	521.35	N.A.	15.80
70-80	242.04	N.A.	7.30
80-90	197.86	N.A.	6.00
90-110	340.00	N.A.	10.30
90-120	495.30	N.A.	15.00
90-130	636.28	N.A.	19.30
90-150	845.96	N.A.	25.60
90-180	936.79	N.A.	28.40
110-180	596.79	N.A.	18.10
0-180	3303.12	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	56.60
10-20	192.71
20-30	323.64
30-40	390.07
40-50	368.00
50-60	316.10
60-70	279.31
70-80	242.04
80-90	197.86
90-100	174.39
100-110	165.61
110-120	155.31
120-130	140.97
130-140	119.74
140-150	89.95
150-160	56.66
160-170	27.39
170-180	6.78

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 6 LIGHT.IES**

**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	112	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76	72
1	100	95	90	85	85	95	90	85	81	80	77	74	72	69	66	64	62	60	56
2	91	82	75	68	68	85	78	71	65	69	64	60	62	58	54	55	52	49	45
3	82	72	63	56	56	77	68	60	54	61	55	50	54	49	45	48	44	41	38
4	75	63	54	47	47	71	60	52	46	54	47	42	48	43	38	43	39	35	32
5	69	56	47	41	41	65	53	45	39	48	41	36	43	38	33	39	34	30	27
6	64	50	42	35	35	60	48	40	34	43	37	31	39	33	29	35	30	27	24
7	59	46	37	31	31	55	43	35	30	39	33	28	35	30	26	32	27	24	21
8	55	41	33	27	27	52	40	32	26	36	29	25	32	27	23	29	25	21	19
9	51	38	30	24	24	48	36	29	24	33	27	22	30	24	20	27	22	19	17
10	48	35	27	22	22	45	33	26	21	30	24	20	28	22	18	25	20	17	15

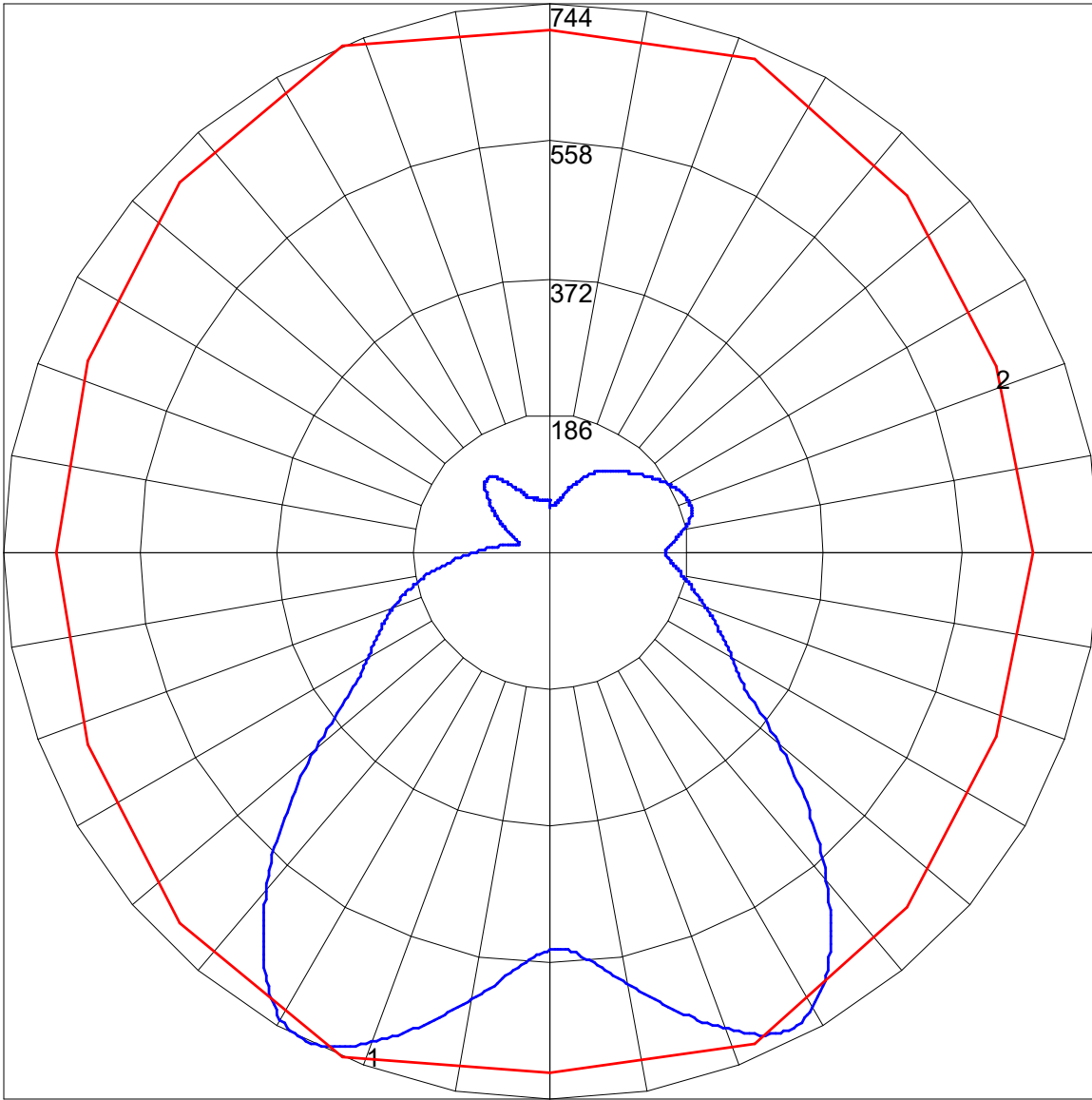
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 6 LIGHT.IES**

**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	13.0	14.1	13.7	14.9	15.8	11.2	12.4	11.9	13.1	14.0
	3H	15.3	16.4	16.1	17.2	18.1	12.6	13.7	13.3	14.4	15.4
	4H	16.4	17.5	17.2	18.2	19.2	13.1	14.1	13.8	14.9	15.8
	6H	17.6	18.5	18.3	19.3	20.2	13.4	14.3	14.2	15.1	16.1
	8H	18.1	19.0	18.9	19.8	20.7	13.5	14.4	14.3	15.2	16.2
	12H	18.6	19.4	19.4	20.2	21.2	13.5	14.4	14.3	15.2	16.2
4H	2H	13.6	14.6	14.4	15.4	16.4	12.3	13.3	13.0	14.1	15.0
	3H	16.3	17.1	17.0	17.9	18.9	14.0	14.9	14.8	15.7	16.7
	4H	17.6	18.4	18.4	19.2	20.2	14.8	15.6	15.6	16.4	17.4
	6H	18.9	19.6	19.7	20.4	21.4	15.3	16.0	16.1	16.8	17.8
	8H	19.5	20.2	20.3	21.0	22.0	15.5	16.1	16.3	17.0	18.0
	12H	20.1	20.7	20.9	21.6	22.6	15.6	16.2	16.4	17.0	18.1
8H	4H	18.0	18.7	18.8	19.5	20.5	15.7	16.3	16.5	17.2	18.2
	6H	19.6	20.1	20.4	21.0	22.0	16.5	17.1	17.3	17.9	19.0
	8H	20.4	20.9	21.2	21.7	22.8	16.8	17.3	17.7	18.2	19.2
	12H	21.1	21.6	22.0	22.5	23.6	17.1	17.5	17.9	18.4	19.5
12H	4H	18.1	18.7	18.9	19.5	20.6	15.9	16.5	16.8	17.4	18.4
	6H	19.7	20.2	20.6	21.1	22.1	16.9	17.4	17.7	18.3	19.3
	8H	20.6	21.0	21.4	21.9	23.0	17.3	17.8	18.2	18.7	19.7

Maximum UGR = 23.6

POLAR GRAPH



Maximum Candela = 744.11 Located At Horizontal Angle = 112.5, Vertical Angle = 27  
# 1 - Vertical Plane Through Horizontal Angles (112.5 - 292.5) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (27) (Through Max. Cd.)