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IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN OPAL 18 BOWL.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] LLI-18210-3

[TESTLAB] LightLab International (www.LightLabInternational.com)

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

[LUMCAT] Artisan Glass (FSN) - Opal Glass (OPAL) 18" Bowl

[LUMINAIRE] Justice Design Group - Pendant mount luminaire. Product ID: FSN OPAL 18" Bowl

[MORE] Extruded base plate with frosted glass bowl lens.

[MORE] 63 LEDs with 21 in each of three arrays with white plastic 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.

[ISSUEDATE] August, 2018

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2173
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	56
Total Luminaire Watts	39
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	Circular w/ Sides
Luminous Length (0-180)	0.53 m (Diameter)
Luminous Width (90-270)	0.53 m (Diameter)
Luminous Height	0.13 m

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1113	1113	1113
55	1012	1012	1012
65	908	908	908
75	806	806	806
85	730	730	730

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CANDELA TABULATION

	<u>0</u>
0.0	338.599
0.5	338.583
1.0	338.551
1.5	338.471
2.0	338.358
2.5	338.198
3.0	338.054
3.5	337.862
4.0	337.621
4.5	337.397
5.0	337.109
5.5	336.820
6.0	336.436
6.5	336.084
7.0	335.667
7.5	335.235
8.0	334.770
8.5	334.273
9.0	333.745
9.5	333.216
10.0	332.639
10.5	332.079
11.0	331.454
11.5	330.765
12.0	330.092
12.5	329.387
13.0	328.634
13.5	327.865
14.0	327.080
14.5	326.247
15.0	325.398
15.5	324.517
16.0	323.572
16.5	322.627
17.0	321.666
17.5	320.672
18.0	319.615
18.5	318.606
19.0	317.484
19.5	316.379
20.0	315.258
20.5	314.088
21.0	312.903
21.5	311.669
22.0	310.436
22.5	309.154
23.0	307.888
23.5	306.543
24.0	305.181
24.5	303.835
25.0	302.474
25.5	301.032
26.0	299.574
26.5	298.148

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CANDELA TABULATION - (Cont.)

27.0	296.626
27.5	295.168
28.0	293.631
28.5	292.077
29.0	290.523
29.5	288.937
30.0	287.335
30.5	285.669
31.0	284.035
31.5	282.336
32.0	280.702
32.5	278.972
33.0	277.226
33.5	275.496
34.0	273.734
34.5	271.939
35.0	270.113
35.5	268.303
36.0	266.477
36.5	264.634
37.0	262.776
37.5	260.886
38.0	259.011
38.5	257.073
39.0	255.167
39.5	253.228
40.0	251.258
40.5	249.271
41.0	247.349
41.5	245.314
42.0	243.280
42.5	241.277
43.0	239.243
43.5	237.208
44.0	235.126
44.5	233.075
45.0	231.008
45.5	228.958
46.0	226.891
46.5	224.761
47.0	222.662
47.5	220.515
48.0	218.433
48.5	216.254
49.0	214.139
49.5	211.961
50.0	209.910
50.5	207.715
51.0	205.521
51.5	203.374
52.0	201.147
52.5	199.000
53.0	196.774
53.5	194.595
54.0	192.368
54.5	190.221

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CANDELA TABULATION - (Cont.)

55.0	187.995
55.5	185.784
56.0	183.573
56.5	181.330
57.0	179.104
57.5	176.877
58.0	174.650
58.5	172.407
59.0	170.277
59.5	168.018
60.0	165.775
60.5	163.580
61.0	161.321
61.5	159.079
62.0	156.836
62.5	154.641
63.0	152.382
63.5	150.236
64.0	147.993
64.5	145.798
65.0	143.603
65.5	141.360
66.0	139.214
66.5	137.035
67.0	134.840
67.5	132.662
68.0	130.563
68.5	128.384
69.0	126.254
69.5	124.139
70.0	121.992
70.5	119.894
71.0	117.763
71.5	115.664
72.0	113.566
72.5	111.563
73.0	109.465
73.5	107.446
74.0	105.428
74.5	103.377
75.0	101.423
75.5	99.420
76.0	97.450
76.5	95.479
77.0	93.589
77.5	91.650
78.0	89.728
78.5	87.870
79.0	85.995
79.5	84.153
80.0	82.327
80.5	80.533
81.0	78.738
81.5	77.008
82.0	75.246
82.5	73.548

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CANDELA TABULATION - (Cont.)

83.0	71.898
83.5	70.184
84.0	68.582
84.5	66.932
85.0	65.362
85.5	63.792
86.0	62.302
86.5	60.764
87.0	59.290
87.5	57.848
88.0	56.390
88.5	55.045
89.0	53.667
89.5	52.369
90.0	51.280
90.5	50.415
91.0	49.710
91.5	49.101
92.0	48.605
92.5	48.076
93.0	47.643
93.5	47.243
94.0	46.875
94.5	46.618
95.0	46.666
95.5	47.147
96.0	48.172
96.5	49.710
97.0	51.632
97.5	53.907
98.0	56.118
98.5	58.249
99.0	60.492
99.5	62.574
100.0	64.721
100.5	67.060
101.0	69.463
101.5	72.026
102.0	74.541
102.5	77.136
103.0	79.587
103.5	82.086
104.0	84.489
104.5	86.941
105.0	89.392
105.5	91.811
106.0	94.262
106.5	96.681
107.0	99.132
107.5	101.487
108.0	103.938
108.5	106.261
109.0	108.632
109.5	110.955
110.0	113.309
110.5	115.712

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CANDELA TABULATION - (Cont.)

111.0	118.180
111.5	120.711
112.0	123.210
112.5	125.869
113.0	128.448
113.5	131.188
114.0	134.023
114.5	136.875
115.0	139.807
115.5	142.738
116.0	145.750
116.5	148.762
117.0	151.950
117.5	155.026
118.0	158.197
118.5	161.466
119.0	164.734
119.5	168.018
120.0	171.286
120.5	174.634
121.0	177.934
121.5	181.314
122.0	184.598
122.5	187.979
123.0	191.311
123.5	194.563
124.0	197.863
124.5	201.115
125.0	204.335
125.5	207.459
126.0	210.551
126.5	213.483
127.0	216.414
127.5	219.314
128.0	222.117
128.5	224.809
129.0	227.516
129.5	230.111
130.0	232.626
130.5	235.061
131.0	237.352
131.5	239.691
132.0	241.918
132.5	244.017
133.0	246.083
133.5	248.038
134.0	249.960
134.5	251.786
135.0	253.500
135.5	255.167
136.0	256.737
136.5	258.290
137.0	259.732
137.5	261.110
138.0	262.424
138.5	263.721

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CANDELA TABULATION - (Cont.)

139.0	264.891
139.5	265.980
140.0	267.085
140.5	268.047
141.0	269.008
141.5	269.889
142.0	270.706
142.5	271.523
143.0	272.244
143.5	272.933
144.0	273.638
144.5	274.214
145.0	274.823
145.5	275.320
146.0	275.880
146.5	276.361
147.0	276.826
147.5	277.242
148.0	277.643
148.5	278.043
149.0	278.476
149.5	278.876
150.0	279.261
150.5	279.645
151.0	280.062
151.5	280.430
152.0	280.831
152.5	281.231
153.0	281.600
153.5	281.936
154.0	282.288
154.5	282.625
155.0	282.929
155.5	283.282
156.0	283.618
156.5	283.954
157.0	284.291
157.5	284.579
158.0	284.948
158.5	285.268
159.0	285.605
159.5	285.973
160.0	286.325
160.5	286.694
161.0	287.030
161.5	287.367
162.0	287.703
162.5	288.104
163.0	288.456
163.5	288.889
164.0	289.337
164.5	289.561
165.0	289.513
165.5	289.241
166.0	288.536
166.5	287.335

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CANDELA TABULATION - (Cont.)

167.0	285.813
167.5	283.602
168.0	280.975
168.5	278.107
169.0	274.679
169.5	270.946
170.0	266.893
170.5	262.552
171.0	257.890
171.5	253.260
172.0	248.374
172.5	243.424
173.0	238.410
173.5	232.947
174.0	226.987
174.5	220.291
175.0	213.194
175.5	205.328
176.0	196.998
176.5	187.578
177.0	177.005
177.5	165.919
178.0	153.007
178.5	138.941
179.0	124.812
179.5	111.884
180.0	101.134

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	123.87	N.A.	5.70
0-30	263.28	N.A.	12.10
0-40	432.33	N.A.	19.90
0-60	778.86	N.A.	35.80
0-80	1028.57	N.A.	47.30
0-90	1100.33	N.A.	50.60
10-90	1068.3	N.A.	49.20
20-40	308.46	N.A.	14.20
20-50	486.79	N.A.	22.40
40-70	488.86	N.A.	22.50
60-80	249.71	N.A.	11.50
70-80	107.38	N.A.	4.90
80-90	71.76	N.A.	3.30
90-110	150.21	N.A.	6.90
90-120	289.43	N.A.	13.30
90-130	471.41	N.A.	21.70
90-150	838.52	N.A.	38.60
90-180	1072.23	N.A.	49.40
110-180	922.02	N.A.	42.40
0-180	2172.56	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	32.04
10-20	91.83
20-30	139.41
30-40	169.05
40-50	178.33
50-60	168.20
60-70	142.33
70-80	107.38
80-90	71.76
90-100	56.00
100-110	94.21
110-120	139.22
120-130	181.98
130-140	194.98
140-150	172.13
150-160	130.84
160-170	80.99
170-180	21.88

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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	84	84	84	70	70	70	57	57	57	51	0
1	97	92	87	83	89	85	81	77	71	69	66	59	57	55	48	47	45	40	0
2	87	79	73	67	80	73	67	62	62	57	54	51	48	45	42	39	37	32	0
3	79	69	61	55	73	64	57	52	54	49	44	45	41	38	36	34	31	27	0
4	72	61	53	46	66	56	49	43	48	42	38	40	35	32	32	29	26	23	0
5	66	54	46	39	61	50	43	37	43	37	32	36	31	27	29	26	23	20	0
6	61	49	40	34	56	45	37	32	38	32	28	32	27	24	26	23	20	17	0
7	56	44	36	30	52	41	33	28	35	29	24	29	24	21	24	20	18	15	0
8	52	40	32	26	48	37	30	25	32	26	22	27	22	19	22	18	16	13	0
9	49	36	28	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12	0
10	45	33	26	21	42	31	24	20	27	21	17	23	18	15	19	15	13	11	0

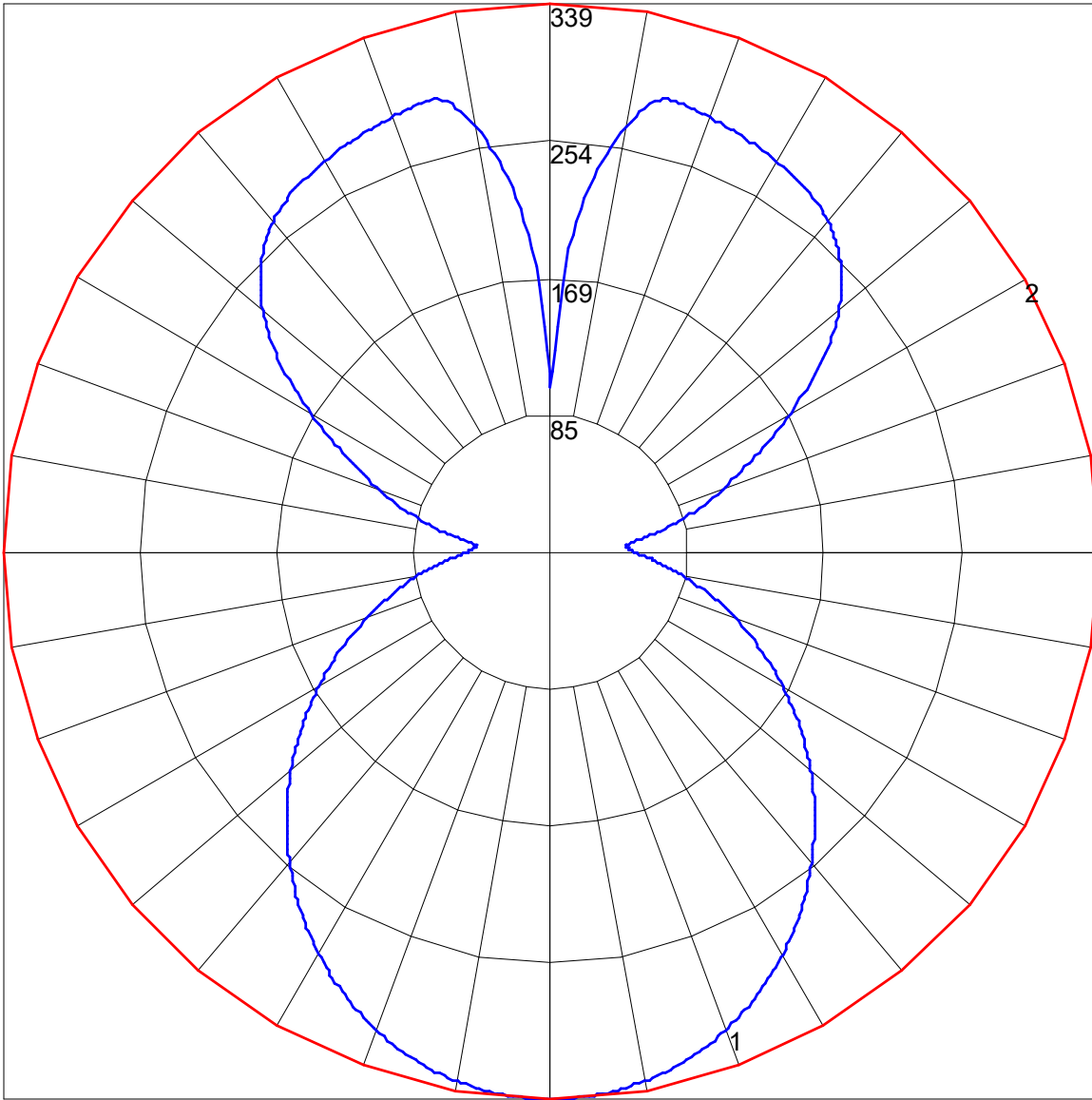
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UGR TABLE - CORRECTED

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	7.4	8.3	8.4	9.3	10.6	7.4	8.3	8.4	9.3	10.6
	3H	9.4	10.3	10.4	11.2	12.5	9.4	10.3	10.4	11.2	12.5
	4H	10.3	11.1	11.3	12.1	13.3	10.3	11.1	11.3	12.1	13.3
	6H	11.1	11.8	12.1	12.8	14.1	11.1	11.8	12.1	12.8	14.1
	8H	11.4	12.1	12.4	13.1	14.4	11.4	12.1	12.4	13.1	14.4
	12H	11.8	12.4	12.8	13.4	14.7	11.8	12.4	12.8	13.4	14.7
4H	2H	8.0	8.8	9.0	9.8	11.0	8.0	8.8	9.0	9.8	11.0
	3H	10.2	10.9	11.2	11.9	13.2	10.2	10.9	11.2	11.9	13.2
	4H	11.2	11.8	12.2	12.8	14.2	11.2	11.8	12.2	12.8	14.2
	6H	12.2	12.7	13.2	13.7	15.0	12.2	12.7	13.2	13.7	15.0
	8H	12.6	13.1	13.6	14.1	15.5	12.6	13.1	13.6	14.1	15.5
	12H	13.0	13.5	14.0	14.5	15.8	13.0	13.5	14.0	14.5	15.8
8H	4H	11.6	12.1	12.6	13.1	14.4	11.6	12.1	12.6	13.1	14.4
	6H	12.7	13.1	13.7	14.2	15.5	12.7	13.1	13.7	14.2	15.5
	8H	13.3	13.6	14.3	14.7	16.0	13.3	13.6	14.3	14.7	16.0
	12H	13.8	14.1	14.8	15.2	16.6	13.8	14.1	14.8	15.2	16.6
12H	4H	11.6	12.1	12.6	13.1	14.4	11.6	12.1	12.6	13.1	14.4
	6H	12.8	13.2	13.8	14.2	15.6	12.8	13.2	13.8	14.2	15.6
	8H	13.4	13.7	14.4	14.8	16.2	13.4	13.7	14.4	14.8	16.2

Maximum UGR = 16.6

POLAR GRAPH



Maximum Candela = 338.599 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)