



# The Perfect Lighting Choice.™

visit us at [www.JDG.com](http://www.JDG.com)

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] 18097-A

[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) 2-Light Bath Bar

[LUMINAIRE] Justice Design Group - Wall mount bathroom luminaire. Product ID: FSN OPAL 2-Light

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

[MORE] 20 LEDs mounted in two circular arrays with white plastic dome lenses.

[MORE] No driver.

[MORE] Operating at 120 VAC and 60 Hz.

[MORE] Simulated data from test of one and six lamp fixtures.

[ISSUE DATE] April 20, 2018

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1103
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	74
Total Luminaire Watts	14.98
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.56
Spacing Criterion (90-270)	1.74
Spacing Criterion (Diagonal)	1.54
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.08 m
Luminous Width (90-270)	0.33 m
Luminous Height	0.14 m

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2951	3158	6306
55	2488	2476	4345
65	2226	2133	3479
75	2066	1918	3313
85	1989	1805	3371

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**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>	172.826	172.826	172.826	172.826	172.826	172.826	172.826	172.826	172.826
<b>0.5</b>	171.153	171.651	172.308	172.388	172.945	173.643	174.180	174.220	174.240
<b>1.0</b>	171.591	172.169	172.447	172.567	173.165	174.280	175.137	175.475	175.734
<b>1.5</b>	172.965	173.304	173.304	173.005	173.742	175.196	176.451	177.248	177.567
<b>2.0</b>	174.499	174.639	174.539	173.682	174.420	176.192	177.985	179.220	179.619
<b>2.5</b>	176.372	176.491	175.973	174.698	175.276	177.388	179.718	181.392	181.850
<b>3.0</b>	178.603	178.224	177.567	175.894	176.153	178.623	181.670	183.543	184.160
<b>3.5</b>	180.854	180.316	179.340	177.109	177.168	179.898	183.483	185.794	186.770
<b>4.0</b>	183.184	182.627	180.993	178.463	178.184	181.392	185.495	188.085	189.041
<b>4.5</b>	185.535	184.718	182.905	179.738	179.280	182.886	187.447	190.475	191.591
<b>5.0</b>	187.746	187.109	184.758	181.113	180.316	184.360	189.280	192.666	194.001
<b>5.5</b>	189.977	189.200	186.611	182.646	181.451	185.834	191.292	195.096	196.391
<b>6.0</b>	192.547	191.511	188.503	184.121	182.587	187.427	193.403	197.507	199.180
<b>6.5</b>	194.857	193.742	190.535	185.555	183.642	188.941	195.375	199.837	201.391
<b>7.0</b>	197.168	195.893	192.447	187.089	184.858	190.475	197.487	202.268	203.941
<b>7.5</b>	199.459	198.304	194.399	188.603	186.053	192.069	199.598	204.638	206.411
<b>8.0</b>	201.630	200.515	196.411	190.057	187.248	193.642	201.590	206.949	208.782
<b>8.5</b>	203.861	202.806	198.343	191.591	188.344	195.236	203.682	209.260	211.152
<b>9.0</b>	206.371	204.937	200.316	193.124	189.618	196.810	205.833	211.491	213.522
<b>9.5</b>	208.722	207.148	202.327	194.618	190.913	198.423	207.686	213.662	215.893
<b>10.0</b>	210.973	209.459	204.240	196.172	192.029	199.917	209.678	216.072	218.224
<b>10.5</b>	213.204	211.889	206.252	197.786	193.224	201.531	211.750	218.283	220.574
<b>11.0</b>	215.754	213.981	208.184	199.320	194.419	203.124	213.662	220.494	222.905
<b>11.5</b>	218.144	216.212	210.076	200.993	195.634	204.718	215.674	222.626	225.076
<b>12.0</b>	220.355	218.502	212.088	202.527	196.849	206.311	217.626	224.917	227.327
<b>12.5</b>	222.168	220.554	214.180	204.021	198.025	207.965	219.538	226.909	229.538
<b>13.0</b>	223.443	222.566	216.032	205.574	199.160	209.499	221.471	229.100	231.510
<b>13.5</b>	224.239	224.160	218.084	207.088	200.395	211.112	223.343	231.112	233.164
<b>14.0</b>	224.498	225.176	219.917	208.483	201.590	212.606	225.176	232.944	234.259
<b>14.5</b>	225.116	226.012	221.849	210.056	202.646	214.140	226.988	234.438	234.857
<b>15.0</b>	225.574	226.550	223.662	211.570	203.961	215.654	228.901	235.514	235.116
<b>15.5</b>	226.032	226.968	225.395	213.104	205.156	217.088	230.634	235.932	235.036
<b>16.0</b>	226.192	227.506	226.869	214.618	206.172	218.622	232.367	236.191	234.917
<b>16.5</b>	226.391	227.566	228.204	216.032	207.268	220.096	234.140	236.152	234.638
<b>17.0</b>	226.411	227.706	229.359	217.467	208.562	221.471	235.713	235.952	234.219
<b>17.5</b>	226.670	228.004	230.275	218.961	209.598	222.845	237.068	235.733	234.060
<b>18.0</b>	226.530	227.964	230.853	220.335	210.694	224.319	238.283	235.355	233.522
<b>18.5</b>	226.670	227.945	231.351	221.730	211.849	225.654	239.040	234.996	232.984
<b>19.0</b>	226.630	228.044	231.570	223.124	212.965	227.068	239.458	234.598	232.466
<b>19.5</b>	226.331	227.745	231.729	224.538	214.080	228.363	239.618	234.160	231.869
<b>20.0</b>	225.953	227.666	231.789	225.793	215.136	229.777	239.538	233.562	231.391
<b>20.5</b>	225.634	227.486	231.769	227.188	216.311	231.052	239.319	233.044	230.694
<b>21.0</b>	224.897	226.988	231.690	228.443	217.387	232.387	239.000	232.446	230.036
<b>21.5</b>	224.498	226.490	231.530	229.757	218.502	233.701	238.582	231.709	229.379
<b>22.0</b>	224.100	226.112	231.271	230.952	219.618	234.897	238.144	231.032	228.522
<b>22.5</b>	223.443	225.455	231.012	232.088	220.753	236.172	237.705	230.196	227.506
<b>23.0</b>	222.805	224.678	230.733	233.084	221.809	237.287	237.088	229.319	226.670
<b>23.5</b>	221.889	223.761	230.176	233.781	222.745	238.462	236.391	228.482	225.534
<b>24.0</b>	221.012	222.805	229.678	234.379	223.861	239.558	235.713	227.347	224.379
<b>24.5</b>	220.255	222.028	229.100	234.897	224.837	240.634	234.956	226.092	223.343
<b>25.0</b>	219.339	220.973	228.303	235.315	225.833	241.570	234.100	225.036	222.168
<b>25.5</b>	218.323	219.977	227.546	235.634	226.829	242.287	233.283	223.761	220.833
<b>26.0</b>	217.208	218.841	226.610	235.713	227.686	242.924	232.207	222.387	219.558
<b>26.5</b>	216.152	217.666	225.634	235.952	228.602	243.323	231.231	221.072	218.044

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**CANDELA TABULATION - (Cont.)**

27.0	214.698	216.371	224.538	235.873	229.439	243.502	230.136	219.538	216.610
27.5	213.702	215.275	223.403	235.713	230.255	243.542	228.841	218.124	215.136
28.0	212.228	213.941	222.068	235.335	231.012	243.383	227.546	216.550	213.542
28.5	210.813	212.387	220.714	234.917	231.869	242.904	226.132	214.937	211.829
29.0	209.459	210.913	219.379	234.160	232.705	242.287	224.598	213.204	210.116
29.5	207.965	209.519	217.865	233.383	233.462	241.450	223.044	211.471	208.363
30.0	206.471	207.985	216.252	232.427	234.080	240.395	221.371	209.698	206.431
30.5	204.598	206.391	214.598	231.251	234.877	239.259	219.498	207.786	204.419
31.0	203.124	204.917	212.865	230.215	235.494	237.984	217.686	205.833	202.527
31.5	201.531	203.224	211.192	228.980	236.191	236.590	215.773	203.921	200.395
32.0	199.638	201.451	209.519	227.546	236.869	234.976	213.821	201.909	198.403
32.5	197.925	199.778	207.546	226.152	237.267	233.203	211.770	199.758	196.053
33.0	196.073	197.905	205.714	224.498	237.765	231.271	209.778	197.567	193.881
33.5	193.941	196.192	203.861	222.745	238.144	229.379	207.706	195.316	191.292
34.0	192.208	194.220	201.810	221.092	238.024	227.108	205.475	193.144	189.101
34.5	190.356	192.308	199.897	219.040	237.725	224.937	203.304	190.834	186.690
35.0	188.164	190.296	197.826	216.989	236.729	222.666	200.933	188.483	184.121
35.5	186.212	188.443	195.834	214.877	235.375	220.315	198.702	186.113	181.591
36.0	184.140	186.272	193.682	212.666	233.622	217.825	196.371	183.543	179.180
36.5	181.949	184.240	191.670	210.276	231.550	215.455	194.001	181.192	176.531
37.0	180.017	182.208	189.519	207.825	228.941	212.785	191.571	178.722	174.001
37.5	177.945	180.077	187.248	205.335	225.674	210.176	189.101	176.093	171.312
38.0	175.754	177.886	185.176	202.845	222.068	207.546	186.670	173.503	168.663
38.5	173.643	175.714	182.905	200.176	218.323	204.778	184.021	170.774	166.093
39.0	171.511	173.643	180.734	197.527	214.459	202.128	181.511	168.185	163.483
39.5	169.479	171.412	178.483	194.778	210.594	199.339	178.902	165.456	160.734
40.0	167.726	169.280	176.172	192.049	206.710	196.590	176.332	162.786	158.165
40.5	165.695	167.109	173.862	189.360	203.025	193.762	173.603	160.097	155.496
41.0	163.643	165.017	171.611	186.531	199.339	190.993	170.953	157.408	152.926
41.5	162.109	162.966	169.200	183.901	195.774	188.164	168.204	154.679	150.456
42.0	160.436	160.914	166.850	181.133	192.467	185.336	165.495	152.010	147.966
42.5	159.041	158.882	164.440	178.344	189.061	182.447	162.667	149.380	145.575
43.0	157.846	156.990	162.089	175.595	185.854	179.619	159.838	146.810	143.085
43.5	156.810	155.356	159.659	172.706	182.846	176.651	157.069	144.340	141.014
44.0	155.954	153.703	157.308	169.878	179.838	173.663	154.121	141.731	139.002
44.5	154.679	152.428	154.938	167.208	176.929	170.734	151.272	139.440	137.109
45.0	153.623	151.193	152.508	164.201	174.021	167.627	148.384	137.229	135.576
45.5	152.627	150.018	150.276	161.432	171.312	164.679	145.655	135.217	134.062
46.0	151.531	149.041	147.946	158.603	168.444	161.531	142.826	133.344	132.627
46.5	150.376	147.926	145.675	155.774	165.754	158.384	140.018	131.711	131.113
47.0	149.201	146.751	143.563	152.786	162.866	155.256	137.109	130.197	129.580
47.5	148.165	145.715	141.372	149.918	159.938	152.029	134.460	128.683	128.046
48.0	147.109	144.659	139.500	147.049	157.009	148.822	131.811	127.249	126.452
48.5	145.954	143.444	137.667	144.022	153.982	145.516	129.161	125.735	125.118
49.0	145.018	142.368	136.093	141.193	150.894	142.368	126.731	124.281	123.683
49.5	143.942	141.253	134.480	138.205	147.727	139.081	124.380	122.787	122.189
50.0	142.886	140.197	133.066	135.317	144.500	135.954	122.309	121.412	120.855
50.5	141.830	139.062	131.611	132.548	141.113	132.707	120.357	119.918	119.460
51.0	140.874	138.046	130.376	129.839	137.727	129.440	118.584	118.564	117.986
51.5	139.998	136.890	129.261	126.811	134.321	126.273	117.010	117.110	116.731
52.0	138.842	135.954	128.265	124.161	130.715	123.126	115.516	115.855	115.436
52.5	138.046	134.918	127.149	121.492	127.030	120.018	114.241	114.480	114.122
53.0	137.050	133.842	126.094	118.743	123.544	116.950	112.807	113.066	112.827
53.5	136.213	132.866	124.998	116.373	119.938	114.042	111.472	112.030	111.512
54.0	135.356	131.990	123.982	113.922	116.412	111.154	110.197	110.596	110.337
54.5	134.221	130.954	122.906	111.691	113.066	108.504	108.903	109.381	109.261

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**CANDELA TABULATION - (Cont.)**

55.0	133.325	130.157	121.871	109.680	109.660	105.815	107.628	108.106	107.986
55.5	132.727	129.261	120.815	108.006	106.452	103.305	106.353	106.950	106.931
56.0	131.910	128.345	119.839	106.293	103.225	101.194	105.078	105.775	105.735
56.5	131.094	127.428	118.743	104.919	100.218	99.182	103.843	104.640	104.580
57.0	130.396	126.691	117.767	103.445	97.409	97.648	102.688	103.464	103.504
57.5	129.560	125.695	116.791	102.050	94.620	96.433	101.492	102.329	102.429
58.0	128.902	124.898	115.755	101.034	92.030	95.437	100.218	101.253	101.333
58.5	127.986	124.161	114.879	100.257	89.760	94.381	99.082	100.138	100.178
59.0	127.368	123.325	113.962	99.321	87.827	93.405	97.967	99.002	99.162
59.5	126.592	122.528	113.006	98.504	86.234	92.449	96.771	98.026	98.245
60.0	125.755	121.791	112.130	97.648	85.038	91.453	95.736	96.951	97.090
60.5	125.018	121.034	111.273	96.771	84.042	90.397	94.620	95.835	96.194
61.0	124.361	120.257	110.377	95.855	83.226	89.361	93.485	94.859	95.038
61.5	123.823	119.580	109.361	95.038	82.489	88.385	92.489	93.823	94.182
62.0	123.026	118.783	108.604	94.022	81.792	87.429	91.393	92.827	93.086
62.5	122.289	118.026	107.747	93.206	80.975	86.393	90.417	91.851	92.050
63.0	121.651	117.289	106.851	92.309	80.198	85.397	89.421	90.736	91.194
63.5	120.815	116.552	106.054	91.433	79.401	84.401	88.405	89.879	90.138
64.0	120.157	115.914	105.317	90.596	78.584	83.505	87.349	88.923	89.242
64.5	119.679	115.197	104.441	89.660	77.748	82.489	86.433	88.007	88.266
65.0	119.002	114.480	103.783	88.823	76.951	81.572	85.457	87.011	87.349
65.5	118.245	113.783	102.887	88.026	76.114	80.517	84.381	86.194	86.413
66.0	117.588	113.166	102.170	87.150	75.298	79.620	83.485	85.238	85.517
66.5	117.010	112.409	101.373	86.234	74.501	78.704	82.489	84.301	84.680
67.0	116.393	111.831	100.596	85.556	73.545	77.708	81.473	83.365	83.744
67.5	115.656	111.134	99.799	84.720	72.808	76.732	80.656	82.489	82.827
68.0	115.018	110.417	99.102	83.764	72.031	75.955	79.760	81.572	82.011
68.5	114.460	109.759	98.385	83.027	71.154	74.919	78.823	80.776	81.234
69.0	113.883	109.182	97.608	82.210	70.298	74.122	78.007	79.879	80.198
69.5	113.245	108.504	96.911	81.333	69.501	73.266	77.090	79.023	79.401
70.0	112.687	107.927	96.134	80.616	68.644	72.290	76.274	78.186	78.644
70.5	111.950	107.249	95.357	79.839	67.808	71.433	75.397	77.389	77.608
71.0	111.313	106.612	94.799	78.943	66.991	70.577	74.521	76.473	76.911
71.5	110.815	106.114	94.102	78.246	66.194	69.720	73.664	75.696	76.094
72.0	110.237	105.456	93.365	77.429	65.417	68.804	72.867	74.839	75.298
72.5	109.699	104.839	92.748	76.592	64.601	68.007	72.031	74.082	74.461
73.0	109.042	104.241	92.070	75.935	63.804	67.150	71.254	73.226	73.684
73.5	108.425	103.684	91.373	75.118	63.007	66.294	70.397	72.489	72.867
74.0	108.006	103.026	90.736	74.322	62.250	65.477	69.640	71.692	72.130
74.5	107.548	102.409	90.018	73.664	61.393	64.640	68.844	70.915	71.314
75.0	106.891	101.911	89.401	72.967	60.696	63.903	68.106	70.198	70.497
75.5	106.233	101.293	88.843	72.170	59.939	63.146	67.310	69.342	69.760
76.0	105.696	100.735	88.226	71.493	59.123	62.290	66.513	68.604	68.963
76.5	105.058	100.178	87.528	70.816	58.346	61.593	65.756	67.848	68.266
77.0	104.421	99.580	87.030	70.098	57.668	60.836	64.959	67.150	67.549
77.5	104.102	99.102	86.373	69.361	56.872	59.999	64.242	66.354	66.891
78.0	103.504	98.504	85.676	68.724	56.214	59.322	63.525	65.616	66.095
78.5	102.827	97.907	85.178	67.927	55.437	58.585	62.808	64.899	65.397
79.0	102.468	97.349	84.580	67.350	54.720	57.788	62.051	64.202	64.541
79.5	101.771	96.811	83.903	66.752	54.003	57.051	61.334	63.445	63.883
80.0	101.453	96.253	83.405	65.975	53.326	56.334	60.617	62.748	63.186
80.5	100.875	95.775	82.768	65.377	52.688	55.637	59.860	62.111	62.569
81.0	100.297	95.257	82.190	64.740	51.991	54.919	59.262	61.374	61.752
81.5	99.919	94.640	81.672	64.103	51.414	54.322	58.585	60.716	61.095
82.0	99.261	94.122	81.054	63.545	50.756	53.605	57.828	60.119	60.477
82.5	98.823	93.704	80.437	62.967	50.079	52.868	57.190	59.441	59.820

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**CANDELA TABULATION - (Cont.)**

83.0	98.166	93.086	79.959	62.310	49.422	52.270	56.553	58.764	59.123
83.5	97.688	92.648	79.421	61.712	48.824	51.653	55.876	58.067	58.425
84.0	97.269	92.170	78.823	61.214	48.206	50.975	55.278	57.489	57.768
84.5	96.751	91.592	78.385	60.577	47.629	50.338	54.601	56.772	57.091
85.0	96.333	91.074	77.867	60.059	47.091	49.700	54.023	56.194	56.613
85.5	95.875	90.596	77.290	59.521	46.453	49.023	53.465	55.557	55.915
86.0	95.397	90.098	76.792	58.943	45.936	48.485	52.748	54.800	55.417
86.5	94.899	89.700	76.393	58.445	45.358	47.868	52.151	54.242	54.601
87.0	94.361	89.202	75.816	58.067	44.840	47.290	51.613	53.724	54.043
87.5	93.923	88.684	75.397	57.469	44.442	46.752	51.015	53.067	53.525
88.0	93.504	88.385	74.979	57.091	43.844	46.214	50.497	52.529	52.868
88.5	93.046	87.927	74.521	56.672	43.485	45.677	49.939	51.991	52.290
89.0	92.967	87.668	74.182	56.214	43.067	45.298	49.402	51.374	51.633
89.5	93.006	87.648	74.182	56.174	42.768	44.900	48.904	50.876	51.135
90.0	92.827	87.768	74.322	56.254	42.928	44.800	48.704	50.577	50.796
90.5	93.126	87.887	74.341	56.314	42.928	44.840	48.585	50.418	50.696
91.0	93.385	87.967	74.461	56.433	42.888	44.840	48.485	50.338	50.597
91.5	93.465	88.206	74.561	56.553	43.027	44.860	48.465	50.298	50.418
92.0	93.624	88.186	74.760	56.513	43.047	44.860	48.366	50.139	50.358
92.5	93.744	88.345	74.839	56.672	43.167	44.800	48.286	49.979	50.218
93.0	93.903	88.485	74.839	56.812	43.127	44.681	48.286	49.920	50.139
93.5	94.142	88.584	75.118	56.872	43.326	44.700	48.286	49.840	49.999
94.0	94.242	88.783	75.198	57.031	43.286	44.661	48.107	49.760	49.840
94.5	94.381	88.843	75.318	57.071	43.386	44.561	48.167	49.621	49.601
95.0	94.680	88.983	75.397	57.170	43.386	44.561	48.027	49.342	49.461
95.5	94.640	89.202	75.497	57.290	43.446	44.541	47.928	49.262	49.402
96.0	94.879	89.301	75.636	57.370	43.485	44.501	47.828	49.163	49.143
96.5	94.998	89.401	75.875	57.429	43.605	44.442	47.708	48.943	49.023
97.0	95.138	89.540	75.835	57.569	43.585	44.402	47.649	48.804	48.764
97.5	95.238	89.660	75.955	57.728	43.605	44.302	47.589	48.764	48.665
98.0	95.457	89.680	76.094	57.708	43.764	44.342	47.410	48.565	48.505
98.5	95.477	89.859	76.194	57.888	43.784	44.222	47.350	48.426	48.306
99.0	95.596	89.979	76.194	58.047	43.844	44.103	47.310	48.266	48.147
99.5	95.736	90.018	76.333	57.987	43.884	44.103	47.091	48.107	47.868
100.0	95.775	90.118	76.393	58.107	43.983	44.023	47.051	47.967	47.748
100.5	95.935	90.138	76.413	58.206	44.003	43.963	46.991	47.768	47.549
101.0	95.915	90.198	76.493	58.326	44.103	43.884	46.872	47.549	47.350
101.5	96.134	90.238	76.572	58.366	44.143	43.744	46.732	47.430	47.071
102.0	96.054	90.297	76.553	58.465	44.302	43.704	46.593	47.210	46.991
102.5	96.114	90.297	76.572	58.485	44.302	43.645	46.414	47.011	46.792
103.0	96.134	90.357	76.612	58.565	44.422	43.485	46.254	46.852	46.613
103.5	96.134	90.377	76.572	58.684	44.382	43.426	46.135	46.732	46.254
104.0	96.293	90.397	76.493	58.565	44.422	43.326	45.955	46.533	46.175
104.5	96.333	90.477	76.513	58.684	44.461	43.206	45.716	46.294	45.856
105.0	96.154	90.497	76.473	58.744	44.581	43.087	45.497	46.155	45.637
105.5	96.253	90.377	76.453	58.625	44.621	42.987	45.278	45.896	45.378
106.0	96.333	90.397	76.513	58.664	44.561	42.908	45.059	45.617	45.218
106.5	96.293	90.437	76.473	58.664	44.621	42.808	44.860	45.418	44.959
107.0	96.353	90.437	76.413	58.644	44.561	42.728	44.621	45.119	44.760
107.5	96.293	90.377	76.393	58.625	44.561	42.609	44.422	44.880	44.422
108.0	96.293	90.357	76.353	58.724	44.621	42.370	44.202	44.481	44.083
108.5	96.333	90.337	76.393	58.625	44.541	42.330	44.003	44.242	43.724
109.0	96.154	90.317	76.294	58.625	44.581	42.111	43.784	43.904	43.505
109.5	96.214	90.178	76.194	58.545	44.481	42.051	43.565	43.645	43.007
110.0	96.114	90.198	76.134	58.545	44.541	41.952	43.346	43.246	42.848
110.5	96.134	90.038	76.134	58.525	44.461	41.832	43.067	43.047	42.350

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**CANDELA TABULATION - (Cont.)**

111.0	96.014	90.058	76.055	58.585	44.481	41.712	42.888	42.708	41.991
111.5	95.955	89.999	76.055	58.505	44.382	41.613	42.569	42.430	41.812
112.0	95.716	89.959	75.975	58.485	44.362	41.414	42.370	42.071	41.374
112.5	95.775	89.879	75.816	58.425	44.402	41.354	42.191	41.792	40.975
113.0	95.736	89.760	75.816	58.366	44.382	41.175	41.971	41.493	40.617
113.5	95.616	89.660	75.716	58.286	44.322	41.095	41.653	41.075	40.338
114.0	95.457	89.600	75.576	58.286	44.302	40.995	41.454	40.856	40.019
114.5	95.496	89.481	75.517	58.186	44.282	40.796	41.254	40.398	39.621
115.0	95.257	89.341	75.337	58.107	44.183	40.677	40.836	39.960	39.163
115.5	95.178	89.361	75.258	58.047	44.202	40.517	40.736	39.561	38.804
116.0	94.979	89.082	75.098	57.907	44.043	40.497	40.398	39.023	38.386
116.5	94.998	89.003	74.999	57.888	44.103	40.258	40.059	38.605	37.968
117.0	94.740	88.863	74.839	57.788	44.003	40.179	39.920	38.226	37.250
117.5	94.520	88.664	74.780	57.688	43.904	40.039	39.701	37.689	36.872
118.0	94.401	88.524	74.541	57.529	43.824	39.860	39.382	37.290	36.234
118.5	94.222	88.445	74.421	57.449	43.704	39.720	39.103	36.852	35.776
119.0	93.983	88.186	74.282	57.409	43.645	39.601	38.944	36.394	35.219
119.5	93.783	88.066	74.142	57.310	43.645	39.481	38.585	35.876	34.621
120.0	93.604	87.947	74.023	57.150	43.505	39.342	38.426	35.338	34.083
120.5	93.465	87.628	73.863	56.951	43.406	39.143	38.127	34.860	33.565
121.0	93.265	87.489	73.624	56.951	43.246	39.003	37.808	34.422	33.027
121.5	92.907	87.349	73.425	56.852	43.246	38.804	37.669	33.984	32.470
122.0	92.748	87.050	73.286	56.613	43.187	38.645	37.390	33.486	31.892
122.5	92.469	86.851	73.146	56.473	43.027	38.585	37.131	33.067	31.414
123.0	92.250	86.672	72.887	56.413	42.928	38.346	36.912	32.609	30.876
123.5	91.951	86.293	72.668	56.154	42.848	38.226	36.693	32.211	30.219
124.0	91.911	86.015	72.529	56.075	42.808	38.107	36.334	31.733	29.780
124.5	91.413	85.815	72.310	55.935	42.649	37.908	36.155	31.334	29.302
125.0	91.074	85.497	72.110	55.776	42.509	37.868	35.976	30.896	28.804
125.5	90.736	85.238	71.812	55.557	42.410	37.689	35.756	30.517	28.426
126.0	90.337	84.879	71.592	55.437	42.370	37.609	35.617	30.179	28.008
126.5	90.178	84.540	71.334	55.238	42.270	37.509	35.358	29.780	27.589
127.0	89.580	84.282	71.114	55.139	42.210	37.410	35.059	29.462	27.171
127.5	89.182	83.883	70.816	54.959	42.131	37.250	34.900	29.183	26.852
128.0	88.903	83.525	70.557	54.740	41.991	37.211	34.721	28.745	26.494
128.5	88.465	83.126	70.278	54.621	41.991	37.171	34.462	28.386	26.155
129.0	88.026	82.907	70.039	54.402	41.812	36.991	34.262	27.988	25.816
129.5	87.728	82.469	69.700	54.262	41.732	36.872	34.123	27.649	25.597
130.0	87.150	82.190	69.421	53.983	41.653	36.653	33.764	27.330	25.278
130.5	86.811	81.792	69.102	53.844	41.653	36.593	33.625	27.031	24.860
131.0	86.413	81.393	68.804	53.724	41.454	36.474	33.426	26.753	24.681
131.5	86.074	81.054	68.545	53.465	41.374	36.394	33.187	26.374	24.502
132.0	85.497	80.656	68.166	53.406	41.314	36.314	32.988	26.095	24.163
132.5	84.979	80.138	67.887	53.107	41.195	36.195	32.848	25.796	23.864
133.0	84.620	79.760	67.569	52.868	41.015	36.075	32.609	25.537	23.804
133.5	84.082	79.361	67.230	52.708	40.995	35.976	32.430	25.338	23.506
134.0	83.644	78.883	66.911	52.469	40.816	35.936	32.211	25.059	23.406
134.5	83.226	78.445	66.573	52.210	40.796	35.816	32.071	24.761	23.147
135.0	82.728	78.027	66.154	51.971	40.637	35.657	31.872	24.581	22.948
135.5	82.250	77.489	65.895	51.772	40.517	35.677	31.673	24.362	22.749
136.0	81.712	77.210	65.497	51.533	40.378	35.458	31.434	24.004	22.490
136.5	81.214	76.752	65.158	51.374	40.278	35.358	31.215	23.844	22.231
137.0	80.656	76.214	64.800	51.075	40.179	35.238	31.135	23.605	21.952
137.5	80.098	75.756	64.441	50.856	39.979	35.139	30.836	23.326	21.852
138.0	79.501	75.278	64.063	50.657	39.940	34.960	30.737	23.207	21.792
138.5	79.043	74.760	63.744	50.398	39.820	34.960	30.657	23.008	21.534

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**CANDELA TABULATION - (Cont.)**

139.0	78.445	74.341	63.326	50.099	39.601	34.900	30.378	22.729	21.374
139.5	77.927	73.804	62.927	49.860	39.501	34.760	30.239	22.569	21.175
140.0	77.529	73.326	62.389	49.661	39.442	34.721	30.099	22.350	20.976
140.5	76.971	72.748	62.111	49.282	39.203	34.541	29.840	22.191	20.796
141.0	76.413	72.369	61.672	49.143	39.123	34.402	29.760	21.912	20.557
141.5	75.935	71.732	61.314	48.824	38.964	34.382	29.561	21.713	20.358
142.0	75.357	71.254	60.856	48.505	38.764	34.262	29.402	21.474	20.119
142.5	74.660	70.756	60.477	48.266	38.645	34.123	29.302	21.374	19.880
143.0	74.102	70.178	60.039	47.947	38.505	34.083	29.163	21.055	19.820
143.5	73.505	69.600	59.561	47.629	38.346	33.904	28.924	20.876	19.641
144.0	72.947	69.063	59.142	47.390	38.127	33.764	28.884	20.717	19.522
144.5	72.349	68.505	58.724	47.131	37.987	33.804	28.844	20.597	19.382
145.0	71.712	68.027	58.346	46.732	37.808	33.645	28.625	20.338	19.283
145.5	71.134	67.469	57.907	46.513	37.689	33.505	28.486	20.239	19.263
146.0	70.477	66.871	57.429	46.214	37.489	33.346	28.426	20.099	19.382
146.5	69.899	66.254	56.931	45.896	37.270	33.286	28.247	19.800	19.362
147.0	69.322	65.716	56.553	45.577	37.071	33.167	28.266	19.661	19.302
147.5	68.724	65.039	56.095	45.258	37.011	33.067	28.087	19.542	19.362
148.0	68.007	64.481	55.597	44.959	36.752	32.928	27.968	19.382	19.402
148.5	67.330	63.943	55.178	44.621	36.653	32.808	27.868	19.203	19.442
149.0	66.612	63.405	54.680	44.342	36.414	32.729	27.828	19.024	19.542
149.5	66.114	62.788	54.202	43.944	36.195	32.669	27.709	18.944	19.641
150.0	65.437	62.111	53.724	43.665	35.956	32.470	27.609	18.804	19.621
150.5	64.780	61.593	53.226	43.346	35.836	32.430	27.549	18.725	19.741
151.0	64.142	60.876	52.788	42.948	35.617	32.270	27.430	18.705	19.880
151.5	63.565	60.298	52.330	42.669	35.418	32.191	27.330	18.546	19.800
152.0	62.728	59.760	51.792	42.390	35.238	32.031	27.251	18.366	19.761
152.5	62.051	59.063	51.354	41.971	34.999	31.952	27.091	18.346	19.840
153.0	61.533	58.405	50.756	41.553	34.840	31.852	27.111	18.267	19.820
153.5	60.736	57.828	50.338	41.234	34.601	31.693	27.071	18.247	19.900
154.0	60.059	57.190	49.800	40.916	34.402	31.553	26.912	18.207	19.840
154.5	59.322	56.513	49.242	40.517	34.223	31.414	26.912	18.207	19.800
155.0	58.585	55.816	48.764	40.139	34.043	31.254	26.792	18.187	19.800
155.5	57.927	55.139	48.266	39.740	33.804	31.135	26.633	18.227	19.920
156.0	57.290	54.541	47.728	39.462	33.565	31.055	26.633	18.247	19.920
156.5	56.413	53.884	47.151	39.023	33.426	30.876	26.633	18.167	20.040
157.0	55.876	53.266	46.692	38.605	33.107	30.756	26.514	18.008	20.000
157.5	55.099	52.589	46.115	38.226	32.848	30.557	26.474	17.928	19.900
158.0	54.402	51.852	45.657	37.908	32.669	30.458	26.454	17.789	19.900
158.5	53.784	51.274	45.179	37.470	32.370	30.298	26.354	17.530	19.880
159.0	53.007	50.637	44.561	37.071	32.131	30.079	26.314	17.430	19.900
159.5	52.290	49.920	44.043	36.732	31.892	30.019	26.274	17.191	19.920
160.0	51.553	49.202	43.485	36.234	31.633	29.800	26.135	17.171	19.900
160.5	50.896	48.545	42.967	35.856	31.414	29.721	26.016	17.071	19.880
161.0	50.119	47.828	42.370	35.497	31.195	29.521	25.896	17.032	20.040
161.5	49.282	47.151	41.872	34.980	30.896	29.362	25.717	16.793	20.119
162.0	48.505	46.473	41.195	34.541	30.657	29.163	25.537	16.633	20.219
162.5	47.768	45.776	40.677	34.203	30.517	29.023	25.259	16.454	20.219
163.0	47.031	45.039	40.119	33.744	30.139	28.824	24.641	16.334	20.259
163.5	46.234	44.382	39.501	33.346	29.980	28.625	23.984	16.036	20.378
164.0	45.577	43.645	38.964	32.968	29.741	28.565	23.167	15.538	20.318
164.5	44.760	42.888	38.386	32.430	29.442	28.326	22.151	15.099	19.940
165.0	43.983	42.131	37.808	32.011	29.163	27.948	21.215	14.880	19.342
165.5	43.147	41.454	37.211	31.533	28.904	27.510	20.219	14.781	18.546
166.0	42.430	40.716	36.593	31.155	28.565	26.812	19.024	14.701	17.629
166.5	41.573	39.940	35.896	30.737	28.187	25.856	18.028	14.502	16.334

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**CANDELA TABULATION - (Cont.)**

167.0	40.697	39.203	35.338	30.338	27.589	24.840	17.231	14.402	14.801
167.5	39.920	38.466	34.760	29.840	26.733	23.625	16.434	13.984	13.466
168.0	39.023	37.589	33.964	29.462	25.537	22.310	15.936	13.705	11.872
168.5	38.207	36.812	33.366	28.984	24.482	21.075	15.617	13.366	10.398
169.0	37.370	36.095	32.808	28.266	23.047	19.761	15.259	12.709	8.645
169.5	36.493	35.338	32.071	27.390	21.773	18.486	15.119	11.992	6.773
170.0	35.577	34.521	31.334	26.215	20.338	17.510	14.840	10.956	5.040
170.5	34.701	33.486	30.557	25.000	19.123	16.872	14.442	9.681	3.645
171.0	33.804	32.529	29.422	23.725	18.107	16.235	14.123	8.566	2.231
171.5	32.988	31.713	28.446	22.390	17.410	15.876	13.566	7.609	1.474
172.0	32.031	30.796	27.490	21.115	16.793	15.617	12.609	6.474	1.315
172.5	31.215	29.541	26.155	20.179	16.255	15.159	11.494	5.358	1.295
173.0	29.780	28.406	24.880	19.302	15.797	14.641	10.358	4.283	1.235
173.5	28.067	27.111	23.446	18.267	15.219	13.585	8.864	3.625	1.056
174.0	27.151	25.438	21.792	17.430	14.741	12.052	7.331	3.347	0.916
174.5	25.657	23.824	20.298	16.474	13.844	10.518	5.856	3.008	0.777
175.0	23.864	22.091	18.864	15.279	12.550	8.765	4.681	2.749	0.598
175.5	21.534	20.079	17.171	14.064	10.956	6.852	4.004	2.271	0.438
176.0	19.203	17.848	15.498	12.609	9.263	5.199	3.546	1.892	0.578
176.5	16.693	15.338	13.526	10.558	7.291	4.004	3.028	1.335	0.458
177.0	13.765	12.789	11.315	8.466	5.518	3.366	2.550	0.876	0.378
177.5	10.737	9.920	9.223	6.594	4.064	2.968	2.151	0.578	0.378
178.0	7.510	6.952	7.032	4.482	2.988	2.470	1.693	0.478	0.637
178.5	4.781	4.442	4.641	2.849	2.410	2.032	1.275	0.518	0.438
179.0	2.809	2.669	2.490	1.773	1.872	1.614	0.996	0.478	0.498
179.5	0.996	1.514	0.956	0.956	1.295	1.295	0.618	0.498	0.697
180.0	0.717	0.717	0.717	0.717	0.717	0.717	0.717	0.717	0.717



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	81.20	N.A.	7.40
0-30	186.47	N.A.	16.90
0-40	313.76	N.A.	28.50
0-60	536.89	N.A.	48.70
0-80	710.31	N.A.	64.40
0-90	780.39	N.A.	70.80
10-90	761.99	N.A.	69.10
20-40	232.56	N.A.	21.10
20-50	352.55	N.A.	32.00
40-70	315.07	N.A.	28.60
60-80	173.42	N.A.	15.70
70-80	81.47	N.A.	7.40
80-90	70.08	N.A.	6.40
90-110	128.12	N.A.	11.60
90-120	184.60	N.A.	16.70
90-130	231.81	N.A.	21.00
90-150	295.50	N.A.	26.80
90-180	322.46	N.A.	29.20
110-180	194.34	N.A.	17.60
0-180	1102.85	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	18.40
10-20	62.80
20-30	105.27
30-40	127.30
40-50	119.99
50-60	103.14
60-70	91.95
70-80	81.47
80-90	70.08
90-100	65.30
100-110	62.82
110-120	56.48
120-130	47.21
130-140	37.00
140-150	26.70
150-160	17.09
160-170	8.40
170-180	1.46

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 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	75	75	75	71
1	100	94	89	85	85	94	89	85	81	80	76	73	71	68	66	63	60	59	54
2	90	81	74	68	68	85	77	70	65	69	63	59	61	57	53	54	51	48	44
3	82	71	63	56	56	77	67	60	54	60	54	49	54	49	44	47	43	40	37
4	75	63	54	47	47	70	59	51	45	53	47	41	48	42	38	42	38	34	31
5	69	56	47	40	40	65	53	45	39	48	41	36	43	37	33	38	33	30	27
6	63	50	41	35	35	60	48	40	34	43	36	31	38	33	28	34	30	26	23
7	59	45	37	31	31	55	43	35	29	39	32	27	35	29	25	31	27	23	21
8	54	41	33	27	27	51	39	31	26	36	29	24	32	26	22	29	24	21	18
9	51	38	30	24	24	48	36	28	23	33	26	22	29	24	20	27	22	19	16
10	47	35	27	22	22	45	33	26	21	30	24	20	27	22	18	25	20	17	15

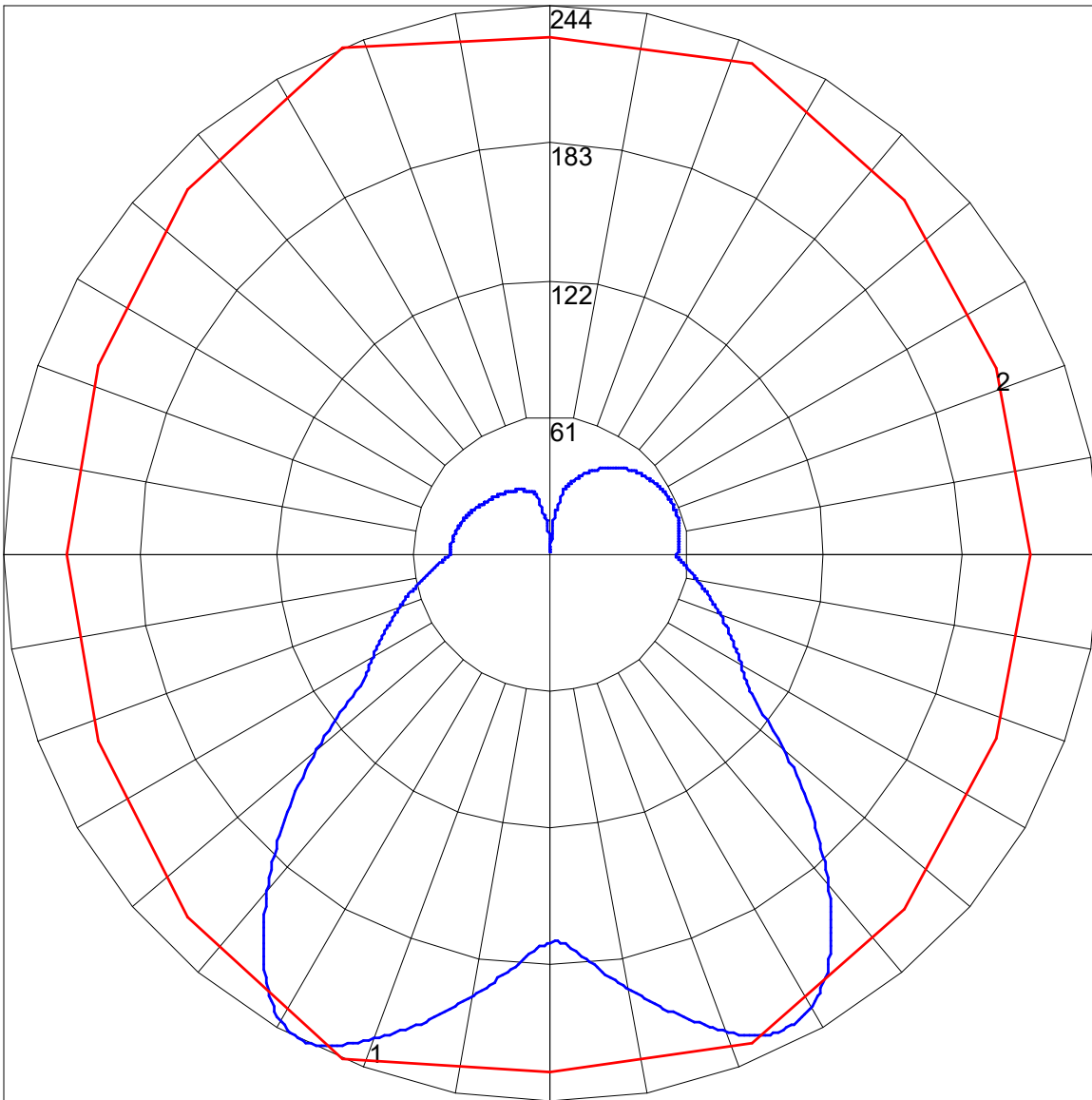
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FSN OPAL 2 LIGHT.IES**

**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	12.8	14.0	13.6	14.8	15.7	11.1	12.2	11.8	13.0	13.9
	3H	15.1	16.2	15.9	17.0	17.9	12.9	14.0	13.7	14.7	15.7
	4H	16.3	17.3	17.0	18.0	19.0	13.7	14.7	14.5	15.5	16.5
	6H	17.3	18.3	18.1	19.1	20.1	14.4	15.4	15.2	16.2	17.2
	8H	17.9	18.8	18.7	19.6	20.6	14.8	15.7	15.6	16.5	17.5
	12H	18.4	19.2	19.2	20.0	21.0	15.1	15.9	15.9	16.8	17.8
4H	2H	13.5	14.5	14.2	15.2	16.2	12.0	13.0	12.8	13.8	14.8
	3H	16.0	16.9	16.8	17.7	18.7	14.1	14.9	14.8	15.7	16.7
	4H	17.3	18.1	18.1	18.9	19.9	15.0	15.8	15.8	16.6	17.6
	6H	18.6	19.3	19.4	20.1	21.1	15.9	16.6	16.7	17.4	18.4
	8H	19.2	19.8	20.0	20.7	21.7	16.3	16.9	17.1	17.8	18.8
	12H	19.8	20.4	20.6	21.3	22.3	16.7	17.3	17.5	18.1	19.2
8H	4H	17.7	18.4	18.5	19.2	20.2	15.7	16.3	16.5	17.2	18.2
	6H	19.2	19.8	20.0	20.6	21.7	16.8	17.3	17.6	18.2	19.2
	8H	20.0	20.5	20.8	21.3	22.4	17.3	17.8	18.1	18.7	19.7
	12H	20.7	21.2	21.6	22.1	23.2	17.8	18.3	18.7	19.1	20.2
12H	4H	17.8	18.4	18.6	19.2	20.3	15.8	16.4	16.7	17.3	18.4
	6H	19.3	19.8	20.2	20.7	21.8	17.0	17.5	17.9	18.4	19.5
	8H	20.2	20.6	21.0	21.5	22.6	17.6	18.1	18.5	19.0	20.1

Maximum UGR = 23.2

POLAR GRAPH



Maximum Candela = 243.542 Located At Horizontal Angle = 112.5, Vertical Angle = 27.5  
# 1 - Vertical Plane Through Horizontal Angles (112.5 - 292.5) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (27.5) (Through Max. Cd.)