

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

IF03SMx xx PC 835030 DLSPGC MW  
Nom 3" Square Infinium recessed downlight

### **Test Number**

SP-00764\_M-30L

### **Test Date**

The results contained in this report pertain only to this IES file.

### Summary of Results

#### Power

Input Watts	20.4 W
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#### Lumen Output

Output Lumens	1353
Efficacy	66.34 lm/W

#### Luminous Dimensions

0° - 180° Size	0.16
90° - 270° Size	0.16
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	0.4
Two luminaires, plane 90°	0.41
Four luminaires	0.44

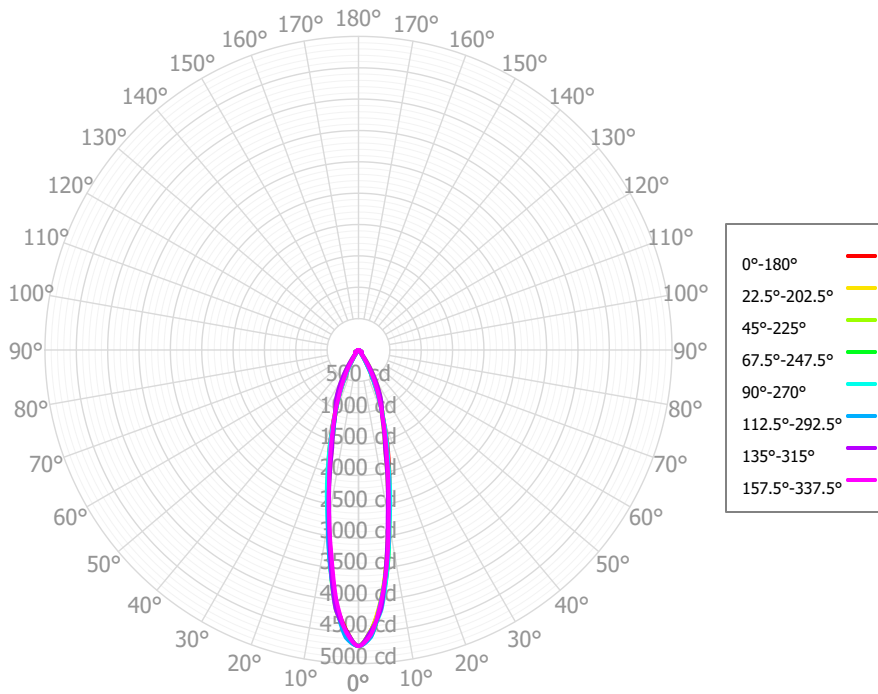
#### Full Beam Angle

0° - 180°	24°
90° - 270°	25°

### IES File Header Contents

Keyword	Value
TEST	SP-00764_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	2/17/2021
LUMCAT	IF03SMx xx PC 835030 DLSPGC MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 24 degrees
OTHER	Spot optic, Clear glass lens
OTHER	Aluminum bezel contains lens
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multiplier: 27K x 0.96, 30K x 0.98, 40K x 1.04
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 20L
_CRI	80
_LAMPMULT	N/A, 30L only
_CCTMULT	27K x 0.96, 30K x 0.98, 40K x 1.04
_CCTMULTA	27HK x 0.87, 30HK x 0.81

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	347.28	25.66%	90.00° - 100.00°	0.11	0.01%
10.00° - 20.00°	488.03	36.06%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	315.39	23.30%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	93.31	6.89%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	24.99	1.85%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	45.93	3.39%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	27.27	2.01%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	7.91	0.58%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	3.16	0.23%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1353.27	99.99%	0.00° - 180.00°	1353.38	100.00%

### Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94	4719.94
2.50°	4485.06	4490.14	4478.32	4569.10	4510.13	4593.09	4488.14	4506.51	4473.88	4525.47	4504.41	4560.21	4496.33	4581.56	4489.88	4544.26	4485.06
5.00°	4063.50	4023.58	4113.80	4099.61	4165.36	4096.61	4151.97	4017.53	4073.46	4102.53	4155.81	4070.32	4145.80	4040.94	4144.97	4058.98	4063.50
7.50°	3429.52	3420.10	3400.03	3534.23	3520.01	3475.82	3416.05	3305.45	3354.29	3380.57	3449.58	3403.61	3455.84	3462.58	3399.19	3463.21	3429.52
10.00°	2737.50	2740.84	2719.41	2835.32	2840.81	2824.57	2683.10	2703.46	2728.01	2740.48	2702.63	2796.49	2816.74	2807.37	2685.44	2761.94	2737.50
12.50°	2280.41	2221.63	2138.68	2242.84	2329.09	2166.52	2143.11	2164.61	2265.73	2181.20	2162.08	2211.53	2331.67	2229.66	2140.96	2200.04	2280.41
15.00°	1869.17	1773.79	1640.45	1772.43	1826.18	1722.96	1625.55	1748.03	1840.63	1732.55	1633.40	1756.59	1869.80	1780.00	1647.75	1747.94	1869.17
17.50°	1498.52	1427.61	1334.22	1410.15	1481.68	1311.71	1343.21	1388.12	1469.96	1374.04	1347.27	1339.00	1463.08	1401.28	1351.07	1399.53	1498.52
20.00°	1132.98	1116.60	1089.71	1148.84	1141.58	1086.45	1082.28	1102.74	1133.22	1092.30	1069.99	1070.84	1101.33	1118.59	1097.86	1117.23	1132.98
22.50°	873.73	887.99	962.49	923.61	874.67	878.06	958.64	844.28	836.75	861.22	947.35	833.67	825.40	871.64	971.81	893.92	873.73
25.00°	622.18	681.18	825.36	726.57	614.72	696.01	828.07	645.34	591.96	665.56	820.57	638.88	578.12	663.99	832.97	701.21	622.18
27.50°	438.76	511.01	673.12	537.41	419.41	515.21	667.19	463.29	397.10	488.94	653.17	450.09	374.67	472.00	665.13	531.07	438.76
30.00°	259.56	347.91	519.73	353.24	238.68	350.82	507.93	314.16	247.93	338.11	488.60	296.02	218.63	294.24	500.38	370.31	259.56
32.50°	165.56	225.53	364.91	218.17	146.48	192.20	353.98	171.77	135.71	198.44	341.40	144.81	122.22	171.69	341.29	239.95	165.56
35.00°	77.34	108.19	235.49	107.93	68.95	117.92	219.15	108.23	77.72	119.85	207.31	97.19	65.64	90.48	208.79	119.30	77.34
37.50°	56.30	70.72	132.31	60.29	52.92	50.76	133.03	55.27	55.25	61.69	128.46	53.01	50.39	51.60	115.89	73.30	56.30
40.00°	37.26	38.88	72.18	38.42	38.51	40.22	68.77	41.78	40.74	41.97	64.83	42.84	39.59	38.31	57.55	45.32	37.26
42.50°	31.60	32.66	48.28	29.88	29.13	30.67	48.25	31.45	30.41	32.04	49.48	33.11	32.55	30.17	40.93	35.40	31.60
45.00°	26.50	27.08	36.58	25.55	22.18	26.21	34.90	28.92	24.79	28.06	37.51	29.20	27.14	24.56	31.75	28.57	26.50
47.50°	23.92	28.00	33.20	27.76	21.24	24.58	33.22	26.89	21.18	25.18	33.92	26.55	22.87	25.18	30.00	26.51	23.92
50.00°	25.05	30.00	39.46	31.49	25.08	33.54	38.94	35.76	28.25	33.18	37.12	32.98	27.72	28.23	34.89	24.96	25.05
52.50°	38.89	44.21	51.16	41.52	38.21	43.83	54.49	44.92	38.84	42.45	53.60	40.79	37.77	40.65	45.25	40.06	38.89
55.00°	50.68	56.51	56.87	52.61	49.33	57.95	63.66	57.85	51.38	54.67	64.60	55.31	48.40	55.85	55.00	56.00	50.68
57.50°	57.16	56.26	59.89	52.61	57.33	64.05	65.92	67.45	64.40	67.08	66.91	63.98	59.30	56.71	64.34	59.11	57.16
60.00°	57.13	53.00	49.02	51.47	55.18	52.28	56.69	53.55	55.03	54.74	59.97	51.60	53.87	54.39	56.19	61.16	57.13
62.50°	43.62	36.41	33.31	36.60	39.89	39.20	37.19	39.30	41.61	42.03	40.97	38.93	42.61	39.98	38.52	43.59	43.62
65.00°	30.67	22.23	22.16	21.26	27.15	23.78	22.92	23.46	27.39	25.85	25.43	25.46	29.23	23.70	24.87	26.88	30.67
67.50°	18.64	15.84	12.25	15.86	17.11	13.14	12.32	11.44	13.57	11.88	13.35	15.24	15.30	14.78	12.97	17.31	18.64
70.00°	11.38	11.53	8.89	10.96	11.31	8.22	7.99	8.87	10.34	9.65	7.74	10.42	11.00	7.17	8.36	9.68	11.38
72.50°	8.83	10.57	6.74	8.47	8.29	7.17	6.00	7.57	8.35	7.61	5.44	7.89	8.03	6.94	5.72	7.78	8.83
75.00°	8.71	8.85	6.98	7.42	9.16	7.52	6.70	7.24	8.67	5.80	4.88	6.61	7.20	6.53	6.22	8.04	8.71
77.50°	9.30	7.29	7.00	7.82	9.27	6.57	6.60	7.04	7.27	6.02	4.80	5.31	7.59	5.88	6.68	9.57	9.30
80.00°	10.05	7.73	6.55	6.27	6.77	5.97	5.74	5.69	6.25	6.21	4.70	4.35	6.38	4.64	6.66	7.62	10.05
82.50°	7.16	4.87	4.83	3.86	4.23	4.89	4.10	3.89	4.51	4.62	3.30	3.39	3.06	3.20	4.01	4.93	7.16
85.00°	2.86	1.94	1.72	1.86	2.15	2.86	2.14	2.26	2.00	1.65	2.30	1.86	1.73	1.92	2.65	2.51	2.86
87.50°	1.65	1.88	1.16	1.49	1.86	1.99	1.30	1.53	2.36	1.13	1.58	1.17	1.59	1.33	2.06	1.60	1.65
90.00°	2.18	1.53	1.51	1.29	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.83	1.77	2.18
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	1611	1611	1611	1611	1574	1574	1574	1574	1504	1504	1504	1440	1440	1440	1381	1381	1353
	<b>1</b>	1543	1508	1477	1449	1510	1479	1451	1426	1424	1402	1382	1374	1357	1341	1328	1315	1289
	<b>2</b>	1476	1417	1367	1326	1447	1394	1349	1311	1350	1314	1282	1311	1281	1255	1274	1250	1229
	<b>3</b>	1415	1337	1278	1230	1389	1319	1264	1220	1284	1238	1201	1252	1214	1182	1222	1191	1169
	<b>4</b>	1358	1268	1203	1153	1335	1253	1193	1146	1225	1173	1132	1199	1155	1120	1175	1138	1117
	<b>5</b>	1305	1207	1139	1088	1284	1195	1131	1084	1172	1116	1074	1150	1102	1065	1130	1089	1056
	<b>6</b>	1256	1153	1083	1034	1237	1142	1077	1030	1123	1066	1024	1105	1055	1017	1089	1045	1010
	<b>7</b>	1210	1104	1035	986	1194	1095	1030	984	1079	1021	979	1064	1012	974	1050	1004	969
	<b>8</b>	1168	1059	991	944	1153	1052	988	943	1039	980	939	1026	974	935	1014	967	932
	<b>9</b>	1128	1019	952	907	1115	1013	949	906	1002	944	903	991	938	900	980	932	897
	<b>10</b>	1092	982	917	873	1080	977	914	872	967	910	870	958	905	868	949	901	866

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	156.0 fc	2.4 ft
6.5 ft	111.7 fc	2.8 ft
7.5 ft	83.9 fc	3.2 ft
8.0 ft	73.7 fc	3.5 ft
10.0 ft	47.2 fc	4.3 ft
12.0 ft	32.8 fc	5.2 ft
14.0 ft	24.1 fc	6.1 ft
16.0 ft	18.4 fc	6.9 ft
20.0 ft	11.8 fc	8.7 ft
24.0 ft	8.2 fc	10.4 ft
28.0 ft	6.0 fc	12.1 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1984572	1984572	1984572
<b>45.00°</b>	15758	21752	13190
<b>55.00°</b>	37153	41692	36165
<b>65.00°</b>	30510	22045	27015
<b>75.00°</b>	14151	11335	14889
<b>85.00°</b>	13816	8279	10384

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	21.5	22.5	21.9	22.8	23.2	22.1	23.1	22.4	23.4	23.7
	<b>3H</b>	21.7	22.6	22.1	23.0	23.3	22.1	23.0	22.5	23.4	23.7
	<b>4H</b>	21.8	22.6	22.2	23.0	23.4	22.2	23.0	22.6	23.3	23.7
	<b>6H</b>	22.0	22.8	22.4	23.1	23.5	22.2	23.0	22.6	23.4	23.8
	<b>8H</b>	22.1	22.8	22.6	23.2	23.7	22.2	22.9	22.7	23.3	23.7
	<b>12H</b>	22.2	22.8	22.6	23.2	23.7	22.2	22.9	22.6	23.3	23.7
<b>4H</b>	<b>2H</b>	21.5	22.3	21.9	22.7	23.1	22.0	22.9	22.4	23.2	23.6
	<b>3H</b>	21.8	22.4	22.2	22.9	23.3	22.1	22.8	22.6	23.2	23.6
	<b>4H</b>	21.9	22.5	22.3	22.9	23.4	22.2	22.8	22.6	23.2	23.7
	<b>6H</b>	22.3	22.8	22.7	23.2	23.7	22.3	22.8	22.8	23.3	23.8
	<b>8H</b>	22.4	22.9	22.9	23.4	23.8	22.4	22.8	22.8	23.3	23.8
	<b>12H</b>	22.5	22.9	23.0	23.4	23.9	22.3	22.8	22.8	23.2	23.7
<b>8H</b>	<b>4H</b>	21.8	22.3	22.3	22.7	23.2	22.1	22.5	22.5	23.0	23.5
	<b>6H</b>	22.3	22.7	22.8	23.2	23.7	22.3	22.6	22.8	23.2	23.6
	<b>8H</b>	22.5	22.9	23.1	23.4	23.9	22.3	22.7	22.9	23.2	23.7
	<b>12H</b>	22.7	23.0	23.2	23.5	24.0	22.4	22.7	22.9	23.2	23.8
<b>12H</b>	<b>4H</b>	21.8	22.2	22.3	22.7	23.2	22.0	22.4	22.5	22.9	23.4
	<b>6H</b>	22.3	22.6	22.8	23.1	23.6	22.2	22.6	22.8	23.1	23.6
	<b>8H</b>	22.6	22.8	23.1	23.3	23.9	22.4	22.6	22.9	23.1	23.7

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0