

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx 835 020 DLSPGN MW
Nominal 3" diam round recessed Infinium downlight

Test Number

SP-00760_1

Test Date

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

Summary of Results

Power

Input Watts	15 W
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Lumen Output

Output Lumens	1405
Efficacy	93.64 lm/W

Luminous Dimensions

0° - 180° Size	-0.2
90° - 270° Size	-0.2
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.38
Two luminaires, plane 90°	0.38
Four luminaires	0.41

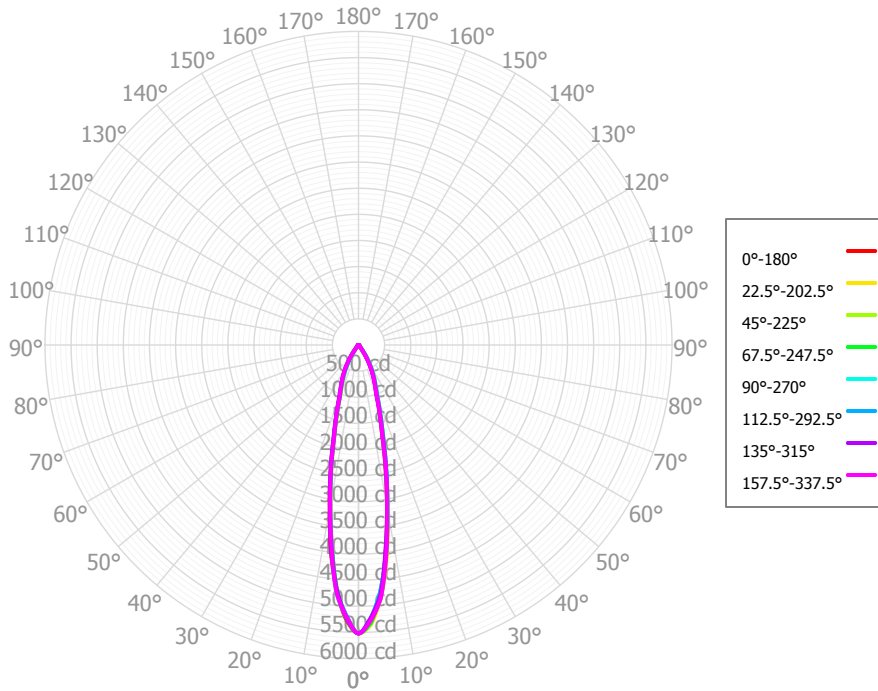
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-00760_1
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 020 DLSPGN MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 23 degrees
OTHER	Spot optic, Open aperture / no lens
OTHER	Aluminum bezel
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multipliers: 40K x 1.03
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80
_CCTMULT	40K x 1.03
_LAMPMULT	07L x 0.40, 10L x 0.56, 15L x 0.78

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	402.78	28.68%	90.00° - 100.00°	0.08	0.01%
10.00° - 20.00°	507.93	36.16%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	322.00	22.93%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	121.58	8.66%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	13.43	0.96%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	13.43	0.96%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	15.79	1.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	5.82	0.41%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.72	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,404.47	99.99%	0.00° - 180.00°	1,404.55	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°	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41	5,518.41
2.50°	5,309.06	5,357.97	5,288.01	5,332.01	5,248.40	5,192.12	5,234.85	5,210.10	5,269.02	5,231.37	5,198.20	5,243.40	5,217.73	5,246.23	5,238.87	5,286.14	5,309.06
5.00°	4,856.22	4,847.28	4,864.91	4,752.78	4,764.12	4,727.98	4,722.48	4,774.60	4,740.68	4,711.01	4,753.45	4,708.92	4,780.12	4,748.38	4,804.28	4,869.34	4,856.22
7.50°	3,978.17	4,120.47	4,060.51	4,051.57	4,007.83	3,898.12	3,987.32	3,931.84	4,015.85	3,891.12	3,922.52	3,907.90	3,948.49	4,021.07	3,963.71	4,062.99	3,978.17
10.00°	3,139.46	3,191.71	3,155.91	3,194.07	3,164.46	3,112.72	3,156.18	3,114.49	3,166.66	3,110.97	3,115.09	3,139.26	3,142.27	3,167.71	3,148.02	3,157.81	3,139.46
12.50°	2,373.80	2,424.09	2,440.71	2,440.57	2,466.78	2,423.05	2,466.21	2,425.81	2,452.67	2,380.82	2,424.13	2,400.00	2,434.57	2,448.53	2,401.86	2,433.78	2,373.80
15.00°	1,729.54	1,814.80	1,779.13	1,827.28	1,819.69	1,813.81	1,840.74	1,783.79	1,828.84	1,774.38	1,777.58	1,812.45	1,788.29	1,807.17	1,739.80	1,759.32	1,729.54
17.50°	1,326.47	1,362.34	1,375.60	1,350.91	1,395.23	1,388.26	1,417.43	1,401.38	1,385.43	1,331.67	1,372.40	1,369.68	1,399.63	1,370.36	1,328.57	1,345.36	1,326.47
20.00°	999.74	1,071.85	1,050.51	1,068.87	1,053.21	1,039.75	1,091.95	1,049.75	1,068.72	1,005.21	1,002.60	1,051.43	1,048.50	1,058.69	977.59	1,008.04	999.74
22.50°	833.50	852.94	861.50	847.20	858.61	878.03	889.71	887.44	860.34	840.70	845.01	859.48	868.37	842.13	818.88	820.34	833.50
25.00°	677.26	711.76	716.81	716.79	722.13	724.92	750.58	729.58	732.03	693.82	691.24	692.37	693.80	686.90	664.72	679.85	677.26
27.50°	543.29	569.85	576.56	584.94	590.10	594.04	614.38	602.26	601.39	572.81	562.92	551.73	546.91	541.13	526.15	539.79	543.29
30.00°	406.14	427.09	437.86	450.77	459.93	463.21	479.77	473.24	468.93	443.96	433.84	414.96	403.30	401.77	389.49	399.87	406.14
32.50°	261.51	291.42	304.01	321.41	333.32	332.53	346.28	330.68	333.48	303.01	299.12	282.51	277.65	274.83	259.95	269.48	261.51
35.00°	139.60	164.24	171.96	200.14	208.29	211.67	213.43	193.93	195.58	182.72	170.98	172.75	160.13	156.77	143.80	142.53	139.60
37.50°	74.75	77.16	95.09	104.63	122.29	119.60	120.98	109.78	102.27	96.08	98.65	89.76	91.58	82.95	81.79	76.72	74.75
40.00°	25.52	40.71	40.00	54.81	54.68	45.40	52.90	32.00	47.36	36.05	32.21	37.72	30.95	42.45	29.67	34.36	25.52
42.50°	18.04	17.84	18.86	20.11	24.28	27.18	21.47	20.93	18.27	21.76	23.28	24.08	23.32	21.91	20.88	18.18	18.04
45.00°	12.21	12.99	12.16	13.76	12.43	12.54	13.33	10.65	12.55	12.13	14.93	15.57	16.27	17.20	13.46	12.68	12.21
47.50°	11.11	10.42	10.01	9.82	8.52	10.10	9.70	10.16	9.78	10.94	13.22	13.75	13.74	14.22	12.50	10.88	11.11
50.00°	10.61	11.01	9.91	10.69	8.78	8.56	9.09	9.85	9.82	10.35	11.70	13.17	11.71	12.69	11.95	10.68	10.61
52.50°	11.93	12.00	10.77	11.92	10.78	10.32	9.96	12.16	10.42	10.93	12.69	14.26	14.13	13.38	13.60	11.92	11.93
55.00°	14.03	13.55	12.09	13.89	13.76	12.64	11.88	14.47	11.57	13.21	13.87	16.34	16.62	16.00	15.69	13.83	14.03
57.50°	18.71	16.00	15.54	16.29	17.02	17.13	15.25	16.94	13.99	18.92	18.08	19.87	19.92	19.56	20.39	17.93	18.71
60.00°	21.96	19.82	20.08	19.64	20.46	20.63	19.70	19.26	17.76	22.50	21.99	21.07	22.67	23.99	23.85	23.09	21.96
62.50°	20.14	20.89	19.64	20.76	19.69	19.91	20.07	17.95	18.82	21.44	18.92	18.74	18.95	22.96	19.51	21.00	20.14
65.00°	17.56	17.46	16.54	16.64	16.29	18.53	17.25	16.56	16.89	18.86	15.83	15.38	15.22	16.65	15.18	15.19	17.56
67.50°	12.04	13.66	12.93	12.64	13.55	14.13	14.16	12.59	14.19	12.77	11.88	10.35	11.33	11.69	11.01	11.19	12.04
70.00°	7.20	9.20	9.03	8.94	11.22	10.07	10.83	8.65	10.60	7.80	7.98	6.85	7.55	8.11	7.07	8.18	7.20
72.50°	5.21	5.85	6.81	6.09	9.09	7.75	8.17	6.81	7.97	5.61	6.59	5.94	5.91	5.82	5.04	6.02	5.21
75.00°	3.57	4.53	5.59	5.49	7.07	5.76	6.09	5.00	6.52	4.25	5.21	4.90	4.39	4.91	3.23	4.35	3.57
77.50°	3.43	3.47	4.78	4.75	5.71	5.33	5.18	4.55	5.29	4.87	4.19	3.68	4.06	4.06	3.18	3.20	3.43
80.00°	2.83	2.80	4.19	3.67	4.78	4.37	5.16	3.89	4.27	4.01	3.03	2.52	3.22	3.25	2.89	2.31	2.83
82.50°	1.36	1.87	2.39	2.36	2.83	2.32	3.03	2.40	2.45	1.45	1.56	1.47	1.48	1.93	2.00	1.48	1.36
85.00°	1.08	1.00	1.04	1.06	1.09	1.34	1.32	1.36	1.14	1.10	1.03	1.19	0.85	1.03	1.42	1.27	1.08
87.50°	1.14	0.83	1.21	1.58	1.13	0.88	0.94	1.01	1.01	0.89	0.82	1.13	1.06	0.89	1.45	1.23	1.14
90.00°	0.84	0.96	1.49	1.06	1.10	0.90	1.21	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.84
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.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%	
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	1,672	1,672	1,672	1,672	1,633	1,633	1,633	1,633	1,561	1,561	1,561	1,494	1,494	1,494	1,433	1,433	1,433	1,404
	1	1,606	1,573	1,543	1,515	1,573	1,543	1,516	1,491	1,486	1,465	1,446	1,435	1,418	1,403	1,387	1,374	1,362	1,347
	2	1,544	1,486	1,438	1,398	1,514	1,462	1,419	1,382	1,418	1,383	1,352	1,377	1,348	1,324	1,339	1,316	1,296	1,291
	3	1,485	1,410	1,352	1,306	1,458	1,391	1,338	1,295	1,355	1,311	1,275	1,323	1,286	1,256	1,292	1,262	1,237	1,239
	4	1,429	1,343	1,279	1,231	1,406	1,328	1,269	1,224	1,299	1,249	1,210	1,272	1,230	1,196	1,247	1,212	1,183	1,190
	5	1,378	1,283	1,217	1,168	1,357	1,271	1,209	1,163	1,247	1,194	1,153	1,225	1,179	1,143	1,205	1,165	1,134	1,145
	6	1,329	1,229	1,162	1,114	1,311	1,219	1,156	1,110	1,200	1,144	1,103	1,181	1,133	1,096	1,164	1,122	1,089	1,103
	7	1,284	1,180	1,113	1,066	1,268	1,172	1,108	1,063	1,156	1,099	1,058	1,140	1,090	1,053	1,126	1,082	1,048	1,064
	8	1,242	1,136	1,069	1,023	1,227	1,129	1,065	1,021	1,115	1,058	1,018	1,102	1,051	1,014	1,090	1,044	1,010	1,028
	9	1,202	1,095	1,029	985	1,189	1,089	1,026	984	1,077	1,020	981	1,066	1,015	978	1,056	1,009	975	994
	10	1,165	1,057	993	950	1,153	1,052	991	949	1,042	986	947	1,033	981	945	1,024	976	942	963

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	182.4 fc	2.2 ft
6.5 ft	130.6 fc	2.6 ft
7.5 ft	98.1 fc	3.0 ft
8.0 ft	86.2 fc	3.2 ft
10.0 ft	55.2 fc	4.0 ft
12.0 ft	38.3 fc	4.8 ft
14.0 ft	28.2 fc	5.6 ft
16.0 ft	21.6 fc	6.4 ft
20.0 ft	13.8 fc	8.0 ft
24.0 ft	9.6 fc	9.6 ft
28.0 ft	7.0 fc	11.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,890,749	1,890,749	1,890,749
45.00°	5,915	5,891	6,024
55.00°	8,381	7,221	8,217
65.00°	14,235	13,413	13,209
75.00°	4,732	7,403	9,365
85.00°	4,234	4,080	4,302

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	11.7	12.6	12.1	13.0	13.3	12.1	13.1	12.5	13.4	13.7
	3H	13.3	14.1	13.7	14.4	14.8	13.7	14.5	14.1	14.8	15.2
	4H	13.5	14.2	13.9	14.6	15.0	14.1	14.8	14.5	15.2	15.6
	6H	13.6	14.3	14.0	14.7	15.1	14.4	15.1	14.8	15.5	15.9
	8H	13.6	14.3	14.1	14.7	15.1	14.5	15.1	14.9	15.5	15.9
	12H	13.6	14.2	14.0	14.6	15.0	14.5	15.1	14.9	15.5	15.9
4H	2H	12.6	13.3	13.0	13.7	14.1	12.9	13.7	13.3	14.1	14.4
	3H	14.0	14.6	14.4	15.1	15.5	14.4	15.1	14.8	15.5	15.9
	4H	14.2	14.8	14.7	15.2	15.7	14.8	15.4	15.3	15.8	16.3
	6H	14.5	14.9	14.9	15.4	15.9	15.3	15.7	15.7	16.2	16.7
	8H	14.5	14.9	15.0	15.4	15.8	15.3	15.8	15.8	16.2	16.7
	12H	14.5	14.9	15.0	15.4	15.8	15.4	15.7	15.8	16.2	16.7
8H	4H	14.3	14.7	14.8	15.2	15.7	14.9	15.4	15.4	15.8	16.3
	6H	14.6	15.0	15.1	15.5	15.9	15.5	15.8	16.0	16.3	16.8
	8H	14.7	15.0	15.2	15.5	16.0	15.6	15.9	16.1	16.4	16.9
	12H	14.7	15.0	15.3	15.5	16.1	15.7	15.9	16.2	16.4	17.0
12H	4H	14.3	14.7	14.8	15.2	15.6	14.9	15.3	15.4	15.8	16.3
	6H	14.6	14.9	15.2	15.4	16.0	15.5	15.8	16.0	16.3	16.8
	8H	14.7	15.0	15.3	15.5	16.1	15.6	15.9	16.2	16.4	17.0

Corrected UGR values based on total output lumens

SHR = 1.0