Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx 835 020 DLSPGP MW

Nominal 3" diam round recessed Infinium downlight

Test Number

SP-00760_2

Test Date

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

Summary of Results

Power

Input Watts	15 W

Lumen Output

Output Lumens	1365
Efficacy	90.97 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.4
Two luminaires, plane 90°	0.4
Four luminaires	0.43

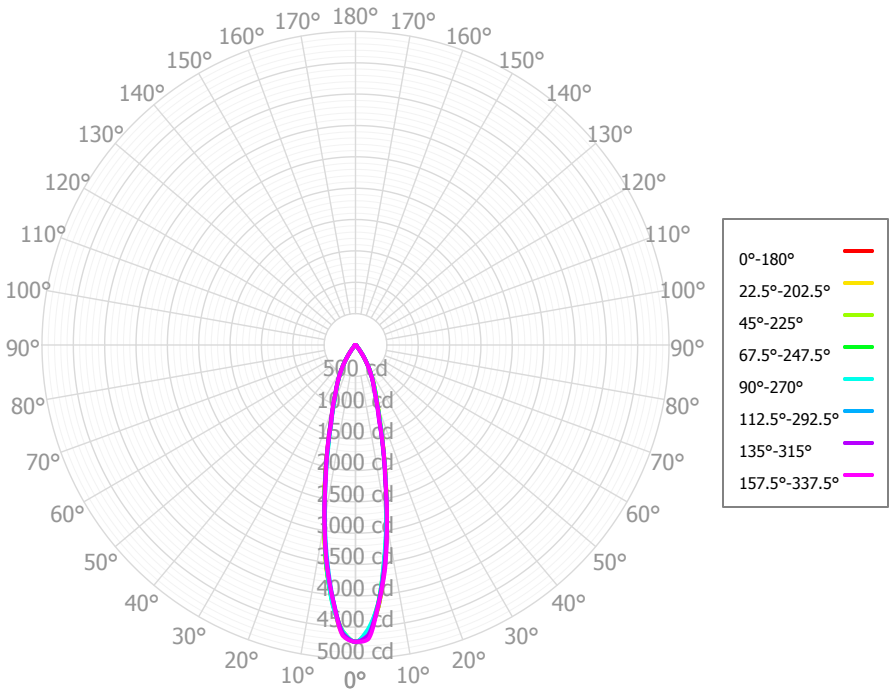
Full Beam Angle

0° - 180°	24°
90° - 270°	24°

IES File Header Contents

Keyword	Value
TEST	SP-00760_2
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 020 DLSPGP MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 24 degrees
OTHER	Spot optic, Solite lens
OTHER	Aluminum bezel contains lens
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°	355.83	26.08%	90.00° - 100.00°	0.08	0.01%
10.00° - 20.00°	476.11	34.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	312.78	22.92%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	140.63	10.31%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	32.41	2.38%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	22.58	1.66%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	15.26	1.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	7.18	0.53%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.71	0.13%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,364.49	99.99%	0.00° - 180.00°	1,364.57	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°	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18	4,733.18
2.50°	4,608.96	4,633.19	4,570.61	4,573.34	4,539.27	4,609.23	4,606.10	4,642.10	4,587.44	4,629.81	4,570.72	4,607.32	4,575.34	4,661.06	4,631.40	4,694.97	4,608.96
5.00°	4,194.58	4,156.97	4,192.37	4,138.06	4,148.11	4,086.11	4,088.33	4,101.39	4,128.59	4,135.53	4,155.56	4,146.95	4,168.57	4,148.15	4,162.76	4,165.88	4,194.58
7.50°	3,549.77	3,542.15	3,525.35	3,488.17	3,475.10	3,460.23	3,516.66	3,513.15	3,551.52	3,576.08	3,548.79	3,561.91	3,545.56	3,583.42	3,542.35	3,607.90	3,549.77
10.00°	2,889.77	2,881.19	2,871.28	2,846.50	2,826.11	2,820.53	2,844.47	2,853.81	2,861.32	2,880.46	2,853.87	2,856.08	2,833.95	2,868.99	2,870.76	2,891.35	2,889.77
12.50°	2,219.04	2,206.72	2,235.94	2,210.66	2,215.01	2,178.19	2,237.46	2,189.90	2,257.00	2,248.90	2,259.31	2,242.99	2,230.61	2,212.68	2,181.94	2,214.70	2,219.04
15.00°	1,706.54	1,725.05	1,710.42	1,710.97	1,696.60	1,711.51	1,737.23	1,732.73	1,724.50	1,732.60	1,704.09	1,708.39	1,664.72	1,698.16	1,685.30	1,710.69	1,706.54
17.50°	1,292.57	1,290.51	1,323.37	1,294.97	1,307.30	1,271.05	1,331.82	1,282.76	1,327.65	1,308.61	1,328.10	1,315.94	1,302.35	1,266.37	1,242.31	1,262.56	1,292.57
20.00°	1,018.98	1,042.40	1,031.62	1,025.01	1,011.44	1,035.02	1,061.40	1,052.12	1,031.23	1,030.65	1,011.20	1,030.05	999.75	1,009.76	991.66	1,011.01	1,018.98
22.50°	821.03	830.55	846.35	832.68	829.10	820.78	846.61	824.99	827.22	812.89	824.77	828.09	821.37	798.05	785.60	791.29	821.03
25.00°	674.57	688.34	689.89	685.24	676.49	689.04	701.87	689.73	682.74	677.96	674.71	680.88	672.78	668.14	654.69	666.36	674.57
27.50°	552.35	556.79	561.57	558.63	555.90	563.16	567.68	555.45	554.83	552.92	552.30	551.03	548.63	544.00	537.52	543.97	552.35
30.00°	429.45	433.67	438.34	438.71	437.85	443.90	445.11	434.16	436.30	439.93	436.14	430.98	429.26	429.09	421.62	427.92	429.45
32.50°	306.27	311.49	319.46	321.44	322.19	324.86	329.97	315.41	324.77	329.56	324.26	319.42	319.28	318.40	305.90	316.01	306.27
35.00°	211.11	214.72	219.07	223.79	223.91	228.12	222.00	219.40	216.66	221.99	213.16	212.06	210.71	213.56	213.06	213.08	211.11
37.50°	125.44	119.74	132.65	132.81	140.15	133.08	141.90	130.46	143.53	141.68	142.64	138.52	139.59	132.58	122.52	129.18	125.44
40.00°	80.70	80.49	80.76	85.79	85.90	89.64	85.54	87.24	85.25	87.12	77.69	79.31	72.45	80.57	81.33	80.87	80.70
42.50°	47.69	43.31	51.58	51.17	53.13	48.43	52.68	49.59	56.02	53.68	54.12	51.74	49.53	46.78	43.16	46.67	47.69
45.00°	35.97	34.82	36.51	38.62	36.85	39.56	37.29	40.33	37.23	37.65	34.68	35.75	29.74	32.60	34.26	35.64	35.97
47.50°	29.23	26.62	29.63	31.25	31.01	31.36	30.63	32.58	31.43	30.41	32.04	29.34	26.89	25.39	26.23	28.24	29.23
50.00°	27.42	26.18	27.09	28.69	28.35	29.73	29.71	30.96	29.53	29.50	30.41	25.87	24.62	24.74	26.50	26.02	27.42
52.50°	26.55	25.71	26.74	27.03	27.45	28.17	29.22	29.19	28.17	27.78	27.93	24.72	24.46	23.75	26.71	24.71	26.55
55.00°	24.43	24.73	26.11	27.14	27.64	27.11	28.96	26.91	26.94	25.53	25.42	24.16	24.24	22.49	25.24	24.53	24.43
57.50°	22.12	23.65	25.35	27.51	28.34	25.80	25.77	24.21	23.93	23.53	23.49	22.20	21.66	20.92	23.61	22.78	22.12
60.00°	20.38	21.59	21.86	23.74	24.09	23.16	21.12	20.37	20.56	21.66	21.53	19.95	19.09	19.14	19.76	19.31	20.38
62.50°	18.70	19.51	17.37	19.54	17.78	20.16	18.63	17.15	17.27	18.64	18.72	17.35	16.86	16.72	16.08	16.58	18.70
65.00°	16.05	17.31	15.17	16.75	14.94	15.68	17.06	15.40	13.99	15.05	15.79	14.70	14.67	13.88	13.95	14.56	16.05
67.50°	13.34	14.85	13.69	14.05	13.34	11.95	13.95	13.07	12.12	11.84	11.85	12.87	12.79	11.81	11.91	12.53	13.34
70.00°	10.86	11.31	10.91	10.97	10.71	10.25	10.36	9.79	10.25	8.75	8.83	10.92	10.58	10.12	10.24	10.52	10.86
72.50°	8.72	8.78	7.96	8.42	7.87	8.81	8.93	7.75	7.74	7.44	7.80	8.03	7.76	8.76	8.79	8.40	8.72
75.00°	7.70	7.78	6.60	7.73	6.68	7.60	7.62	6.51	5.51	6.21	5.88	5.91	6.72	7.18	7.66	6.34	7.70
77.50°	5.94	5.66	4.88	5.92	5.47	5.95	6.40	5.97	3.72	4.99	3.99	4.46	5.65	4.76	5.22	4.81	5.94
80.00°	3.85	3.69	2.82	3.57	4.22	3.88	4.13	4.23	3.47	2.92	2.99	3.39	3.32	3.51	3.17	3.38	3.85
82.50°	1.96	2.43	1.93	1.88	1.76	2.08	1.99	2.20	1.85	1.67	1.55	1.43	1.23	1.94	2.03	2.16	1.96
85.00°	0.93	1.24	1.52	1.26	1.25	1.58	1.44	1.31	0.88	0.75	1.07	1.34	1.34	0.92	1.03	1.30	0.93
87.50°	0.99	1.12	1.48	0.98	0.74	1.10	1.50	1.42	1.39	1.00	0.84	1.06	0.99	1.49	1.09	1.30	0.99
90.00°	0.99	1.14	1.00	1.09	0.83	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	1.31	1.06	0.99
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.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
RCR	0	1,624	1,624	1,624	1,624	1,587	1,587	1,587	1,587	1,516	1,516	1,516	1,452	1,452	1,452	1,392	1,392	1,392	1,364
	1	1,558	1,524	1,493	1,466	1,525	1,494	1,467	1,442	1,439	1,418	1,398	1,389	1,372	1,357	1,343	1,330	1,318	1,303
	2	1,493	1,434	1,386	1,345	1,464	1,411	1,367	1,330	1,368	1,332	1,301	1,328	1,299	1,273	1,291	1,268	1,247	1,243
	3	1,432	1,356	1,297	1,250	1,406	1,337	1,284	1,240	1,303	1,258	1,221	1,270	1,233	1,202	1,241	1,210	1,184	1,187
	4	1,375	1,287	1,222	1,173	1,352	1,272	1,212	1,166	1,244	1,193	1,152	1,217	1,174	1,139	1,193	1,157	1,127	1,136
	5	1,322	1,225	1,158	1,108	1,301	1,213	1,150	1,103	1,190	1,135	1,093	1,168	1,121	1,084	1,148	1,108	1,075	1,088
	6	1,272	1,170	1,101	1,052	1,254	1,160	1,095	1,048	1,141	1,084	1,042	1,123	1,073	1,035	1,106	1,062	1,028	1,044
	7	1,226	1,120	1,051	1,003	1,210	1,111	1,046	1,000	1,095	1,038	995	1,080	1,029	990	1,066	1,020	986	1,004
	8	1,183	1,074	1,006	960	1,168	1,067	1,003	958	1,054	995	954	1,041	989	950	1,029	982	947	967
	9	1,142	1,033	966	921	1,129	1,027	963	919	1,015	957	916	1,004	951	914	994	946	911	932
	10	1,104	995	929	886	1,092	990	927	885	979	922	882	970	917	880	961	913	878	900

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	156.5 fc	2.3 ft
6.5 ft	112.0 fc	2.7 ft
7.5 ft	84.1 fc	3.2 ft
8.0 ft	74.0 fc	3.4 ft
10.0 ft	47.3 fc	4.2 ft
12.0 ft	32.9 fc	5.1 ft
14.0 ft	24.1 fc	5.9 ft
16.0 ft	18.5 fc	6.8 ft
20.0 ft	11.8 fc	8.4 ft
24.0 ft	8.2 fc	10.1 ft
28.0 ft	6.0 fc	11.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,621,710	1,621,710	1,621,710
45.00°	17,431	17,693	17,853
55.00°	14,591	15,595	16,508
65.00°	13,011	12,302	12,116
75.00°	10,191	8,732	8,838
85.00°	3,667	5,964	4,927

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	13.6	14.5	13.9	14.8	15.2	13.9	14.9	14.3	15.2	15.5
	3H	14.9	15.8	15.3	16.1	16.5	15.1	15.9	15.4	16.2	16.6
	4H	15.4	16.2	15.8	16.5	16.9	15.4	16.2	15.8	16.5	16.9
	6H	15.6	16.4	16.1	16.7	17.1	15.6	16.4	16.1	16.7	17.1
	8H	15.7	16.3	16.1	16.7	17.1	15.6	16.3	16.1	16.7	17.1
	12H	15.6	16.3	16.1	16.7	17.1	15.6	16.3	16.1	16.6	17.1
4H	2H	13.9	14.7	14.3	15.0	15.4	14.3	15.1	14.7	15.5	15.9
	3H	15.4	16.1	15.8	16.5	16.9	15.6	16.2	16.0	16.6	17.0
	4H	16.0	16.5	16.4	17.0	17.4	16.0	16.6	16.5	17.0	17.5
	6H	16.3	16.8	16.8	17.3	17.7	16.3	16.8	16.8	17.3	17.8
	8H	16.4	16.8	16.8	17.3	17.7	16.4	16.8	16.8	17.3	17.7
	12H	16.3	16.7	16.8	17.2	17.7	16.4	16.7	16.8	17.2	17.7
8H	4H	16.1	16.5	16.5	17.0	17.4	16.1	16.6	16.6	17.0	17.5
	6H	16.5	16.8	17.0	17.3	17.8	16.5	16.9	17.0	17.4	17.9
	8H	16.6	16.9	17.1	17.4	17.9	16.6	16.9	17.1	17.4	17.9
	12H	16.6	16.9	17.1	17.4	18.0	16.6	16.9	17.1	17.4	18.0
12H	4H	16.0	16.4	16.5	16.9	17.4	16.1	16.5	16.6	17.0	17.4
	6H	16.5	16.8	17.0	17.2	17.8	16.5	16.8	17.0	17.3	17.8
	8H	16.6	16.8	17.1	17.3	17.9	16.6	16.8	17.1	17.3	17.9

Corrected UGR values based on total output lumens

SHR = 1.0