Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx 835 015 DLNFGP MW

Nominal 3" diam round recessed Infinium downlight

Test Number

SP-00759_2_M-015L

Test Date

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

Summary of Results

Power

Input Watts	12.2 W

Lumen Output

Output Lumens	1051
Efficacy	86.11 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.47
Two luminaires, plane 90°	0.48
Four luminaires	0.49

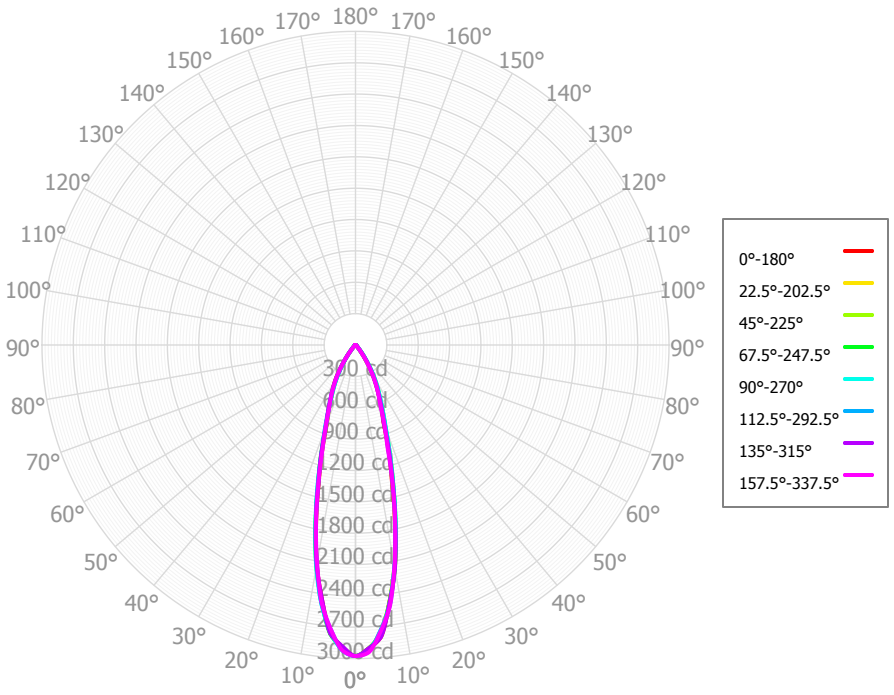
Full Beam Angle

0° - 180°	28°
90° - 270°	29°

IES File Header Contents

Keyword	Value
TEST	SP-00759_2_M-015L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 015 DLNFGP MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 28 degrees
OTHER	Narrow flood 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, scaled from 20L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	245.44	23.36%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	379.61	36.13%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	251.29	23.92%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	115.25	10.97%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	27.20	2.59%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	14.08	1.34%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	10.28	0.98%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	5.92	0.56%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.43	0.14%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,050.51	99.99%	0.00° - 180.00°	1,050.57	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°	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93	2,975.93
2.50°	2,906.67	2,921.39	2,904.73	2,907.65	2,916.94	2,924.72	2,886.78	2,923.86	2,891.56	2,914.24	2,902.44	2,902.27	2,920.91	2,935.02	2,905.46	2,942.77	2,906.67
5.00°	2,803.98	2,750.79	2,773.38	2,777.51	2,761.17	2,730.31	2,770.09	2,727.13	2,768.36	2,743.76	2,762.90	2,775.92	2,760.38	2,741.74	2,803.67	2,752.68	2,803.98
7.50°	2,485.72	2,495.72	2,482.08	2,489.09	2,497.77	2,496.93	2,456.39	2,486.75	2,457.70	2,485.15	2,475.66	2,482.91	2,497.20	2,515.62	2,491.42	2,522.13	2,485.72
10.00°	2,164.26	2,147.94	2,145.90	2,168.92	2,148.60	2,126.76	2,138.72	2,117.20	2,138.46	2,126.00	2,153.88	2,150.71	2,162.22	2,145.46	2,171.03	2,146.51	2,164.26
12.50°	1,750.70	1,746.68	1,758.93	1,771.61	1,778.72	1,757.89	1,749.12	1,746.69	1,741.03	1,755.07	1,757.56	1,768.38	1,767.24	1,754.92	1,761.75	1,745.00	1,750.70
15.00°	1,345.48	1,385.40	1,360.50	1,402.46	1,394.31	1,392.81	1,368.44	1,373.76	1,357.81	1,372.27	1,390.77	1,376.82	1,408.45	1,394.70	1,365.00	1,376.33	1,345.48
17.50°	1,053.58	1,043.91	1,074.91	1,092.34	1,094.72	1,071.86	1,085.47	1,050.99	1,066.44	1,066.26	1,078.40	1,089.25	1,075.90	1,037.44	1,064.24	1,012.14	1,053.58
20.00°	777.85	821.93	809.09	837.39	846.49	858.11	820.20	835.33	801.63	827.39	826.83	816.39	839.78	834.68	788.08	808.77	777.85
22.50°	647.83	651.07	663.01	681.40	680.59	677.20	686.59	660.26	670.90	662.52	671.74	673.23	665.05	641.38	651.10	620.36	647.83
25.00°	522.04	531.09	532.91	548.16	558.21	565.14	559.16	559.31	549.81	554.65	543.57	542.75	538.10	534.52	521.49	517.30	522.04
27.50°	423.46	429.43	434.62	450.62	454.71	459.69	466.80	461.98	467.20	459.28	452.91	445.98	437.34	429.80	425.11	419.08	423.46
30.00°	325.99	330.54	339.20	355.64	359.71	366.07	373.97	370.44	381.14	372.24	361.93	351.27	342.98	335.93	330.48	324.23	325.99
32.50°	233.92	232.49	249.66	264.14	271.30	276.11	279.01	280.26	283.64	282.36	270.59	264.02	251.68	243.02	242.19	229.82	233.92
35.00°	149.67	159.02	160.44	184.52	185.46	191.88	190.52	191.96	193.79	190.83	190.64	177.34	178.20	171.49	162.04	157.93	149.67
37.50°	96.51	91.63	109.51	119.10	126.68	124.52	125.44	122.07	124.98	125.52	122.81	122.80	111.93	102.92	106.10	88.20	96.51
40.00°	52.59	60.31	59.74	73.35	76.67	80.05	70.84	74.25	69.49	73.37	75.97	69.79	74.07	69.14	60.82	61.76	52.59
42.50°	38.62	36.04	43.87	48.03	52.28	49.51	47.53	43.31	45.41	46.75	48.56	50.21	45.82	38.20	42.57	36.87	38.62
45.00°	27.29	27.32	28.59	32.45	34.70	35.62	29.21	30.19	27.66	31.02	32.03	31.72	33.34	30.17	28.66	29.29	27.29
47.50°	23.20	20.96	24.49	25.66	26.96	26.57	23.33	22.16	22.60	23.42	24.38	25.93	25.35	22.88	24.06	22.22	23.20
50.00°	19.57	19.01	20.51	20.72	21.37	22.53	18.63	18.82	18.52	18.77	19.71	20.57	21.09	19.95	20.29	19.10	19.57
52.50°	17.00	17.54	17.74	17.25	18.99	19.09	16.47	16.11	16.15	16.25	17.15	18.69	17.69	17.22	18.10	16.30	17.00
55.00°	15.00	14.84	15.19	15.68	17.14	16.19	14.70	13.90	14.13	14.37	15.17	16.81	16.08	15.40	16.24	15.30	15.00
57.50°	14.16	12.06	14.30	15.41	15.12	14.70	13.64	12.66	12.64	13.15	13.55	14.90	14.80	13.54	14.92	14.26	14.16
60.00°	13.09	12.33	13.24	14.14	13.09	14.32	12.34	12.10	11.98	12.10	12.12	13.04	13.83	11.51	13.20	13.00	13.09
62.50°	11.62	12.70	11.18	12.25	12.60	13.60	10.67	11.29	12.42	10.98	10.79	11.41	12.89	9.83	10.92	11.70	11.62
65.00°	10.04	10.49	9.48	11.06	12.23	12.65	9.78	10.33	11.55	9.86	10.07	9.65	10.88	9.18	9.22	10.22	10.04
67.50°	8.29	8.36	9.34	10.24	10.67	11.34	9.87	8.86	9.33	8.49	9.59	7.52	8.89	8.40	8.22	8.70	8.29
70.00°	7.26	7.42	8.92	9.30	9.05	9.86	9.19	7.18	7.90	7.27	7.77	6.81	7.43	7.34	6.97	7.02	7.26
72.50°	6.97	6.50	7.77	8.32	7.14	8.43	8.05	7.06	6.87	6.95	6.08	7.54	6.06	6.12	5.51	5.67	6.97
75.00°	5.53	5.68	6.19	6.87	5.72	6.81	5.92	6.13	6.14	6.00	5.17	6.55	4.82	4.75	4.90	4.70	5.53
77.50°	3.77	4.34	4.19	5.26	5.61	4.84	4.52	3.71	4.87	4.55	4.02	4.65	4.10	3.58	4.26	3.46	3.77
80.00°	2.53	2.82	2.49	3.39	4.19	3.45	3.48	3.46	3.36	2.90	2.65	2.58	2.33	2.49	2.57	2.28	2.53
82.50°	1.69	1.83	1.42	1.77	2.31	1.92	1.90	2.02	2.08	1.47	1.31	1.50	1.00	1.48	1.30	1.37	1.69
85.00°	1.05	1.27	1.02	1.20	0.91	0.91	0.79	1.07	1.12	0.93	1.56	0.89	1.00	0.59	0.81	0.96	1.05
87.50°	1.00	0.78	1.03	1.31	1.07	0.76	0.95	0.77	1.16	1.11	0.91	1.17	0.00	0.92	0.77	0.85	1.00
90.00°	0.82	0.58	0.76	1.45	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.84	1.04	0.82
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%
	0	1,251	1,251	1,251	1,251	1,222	1,222	1,222	1,222	1,167	1,167	1,167	1,118	1,118	1,118	1,072	1,072	1,072	1,051
	1	1,198	1,172	1,148	1,127	1,173	1,149	1,128	1,109	1,107	1,090	1,075	1,068	1,055	1,043	1,033	1,022	1,013	1,002
	2	1,148	1,102	1,064	1,033	1,125	1,084	1,050	1,021	1,051	1,023	999	1,020	997	978	992	973	957	955
	3	1,100	1,041	995	958	1,080	1,027	984	951	1,000	965	936	975	946	921	952	928	907	910
	4	1,055	986	936	897	1,038	975	928	892	953	913	882	933	899	872	914	886	862	869
RCR	5	1,013	938	885	846	998	928	879	842	911	868	835	894	857	828	878	847	821	832
	6	974	894	840	802	960	886	836	799	871	827	794	858	819	789	845	810	784	797
	7	938	854	801	763	925	848	797	761	835	790	757	824	783	753	813	777	750	764
	8	903	818	765	728	892	813	762	727	802	757	724	792	751	721	783	746	718	734
	9	871	785	733	697	861	781	730	696	771	726	694	763	722	692	755	717	690	707
	10	841	755	703	669	832	751	702	668	743	698	667	736	694	665	729	691	663	681

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	98.4 fc	2.8 ft
6.5 ft	70.4 fc	3.3 ft
7.5 ft	52.9 fc	3.8 ft
8.0 ft	46.5 fc	4.1 ft
10.0 ft	29.8 fc	5.1 ft
12.0 ft	20.7 fc	6.1 ft
14.0 ft	15.2 fc	7.1 ft
16.0 ft	11.6 fc	8.1 ft
20.0 ft	7.4 fc	10.2 ft
24.0 ft	5.2 fc	12.2 ft
28.0 ft	3.8 fc	14.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,019,632	1,019,632	1,019,632
45.00°	13,223	13,854	16,812
55.00°	8,962	9,076	10,239
65.00°	8,137	7,688	9,918
75.00°	7,324	8,194	7,571
85.00°	4,115	4,008	3,584

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	10.7	11.7	11.1	12.0	12.3	11.4	12.4	11.8	12.7	13.0
	3H	12.3	13.2	12.7	13.5	13.9	13.2	14.0	13.5	14.3	14.7
	4H	13.0	13.8	13.4	14.2	14.5	13.8	14.6	14.2	14.9	15.3
	6H	13.3	14.0	13.8	14.4	14.8	14.2	14.9	14.6	15.3	15.7
	8H	13.4	14.1	13.8	14.5	14.9	14.3	15.0	14.7	15.3	15.8
	12H	13.4	14.1	13.9	14.4	14.9	14.3	14.9	14.7	15.3	15.7
4H	2H	11.2	12.0	11.6	12.3	12.7	11.8	12.6	12.2	13.0	13.3
	3H	13.0	13.7	13.4	14.1	14.5	13.8	14.5	14.2	14.9	15.3
	4H	13.8	14.4	14.2	14.8	15.2	14.6	15.2	15.1	15.6	16.1
	6H	14.2	14.7	14.7	15.2	15.6	15.2	15.7	15.6	16.1	16.6
	8H	14.3	14.7	14.8	15.2	15.7	15.2	15.7	15.7	16.2	16.6
	12H	14.3	14.7	14.8	15.2	15.7	15.3	15.7	15.8	16.1	16.6
8H	4H	14.0	14.5	14.5	15.0	15.4	14.8	15.3	15.3	15.7	16.2
	6H	14.5	14.9	15.0	15.4	15.9	15.4	15.8	15.9	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	14.8	15.0	15.3	15.5	16.1	15.6	15.9	16.1	16.4	17.0
12H	4H	14.0	14.4	14.5	14.9	15.4	14.8	15.2	15.3	15.7	16.2
	6H	14.5	14.9	15.1	15.3	15.9	15.4	15.8	16.0	16.2	16.8
	8H	14.7	15.0	15.2	15.5	16.0	15.6	15.9	16.1	16.4	16.9

Corrected UGR values based on total output lumens

SHR = 1.0