Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx 835 015 DLFLGC MW

Nominal 3" diam round recessed Infinium downlight

Test Number

SP-00758_M-15L

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	1028
Efficacy	84.25 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.6
Two luminaires, plane 90°	0.61
Four luminaires	0.64

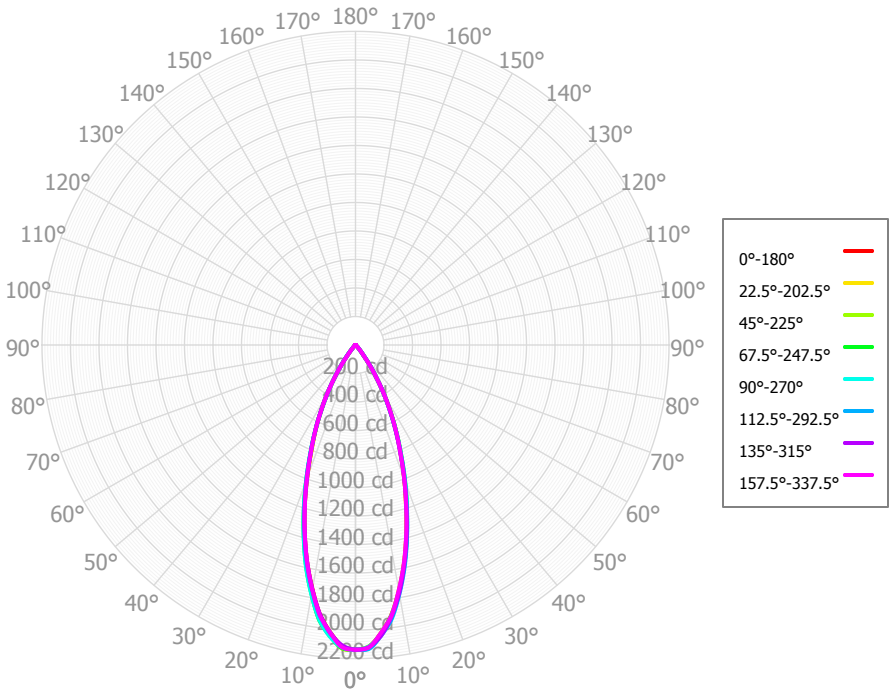
Full Beam Angle

0° - 180°	38°
90° - 270°	39°

IES File Header Contents

Keyword	Value
TEST	SP-00758_M-15L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 015 DLFLGC MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 38 degrees
OTHER	Flood optic, Clear glass 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°	187.92	18.28%	90.00° - 100.00°	0.05	0.01%
10.00° - 20.00°	378.94	36.86%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	306.45	29.81%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	118.00	11.48%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	18.99	1.85%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	7.67	0.75%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	5.44	0.53%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.31	0.32%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.14	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,027.85	99.99%	0.00° - 180.00°	1,027.91	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°	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87	2,137.87
2.50°	2,119.77	2,130.86	2,117.40	2,124.61	2,119.37	2,120.84	2,110.58	2,124.06	2,116.27	2,132.89	2,118.43	2,130.47	2,124.45	2,135.27	2,123.13	2,125.18	2,119.77
5.00°	2,032.64	2,030.09	2,039.56	2,035.86	2,039.31	2,028.32	2,030.23	2,027.40	2,024.55	2,030.86	2,042.84	2,050.93	2,055.13	2,049.18	2,049.31	2,029.75	2,032.64
7.50°	1,914.49	1,923.97	1,917.36	1,924.67	1,919.72	1,917.93	1,907.68	1,914.08	1,907.79	1,923.04	1,925.34	1,948.50	1,945.31	1,940.73	1,924.49	1,920.41	1,914.49
10.00°	1,751.69	1,749.49	1,760.86	1,759.73	1,763.45	1,750.46	1,743.12	1,745.28	1,739.21	1,749.18	1,760.62	1,776.97	1,779.63	1,774.78	1,767.13	1,746.98	1,751.69
12.50°	1,570.18	1,573.01	1,577.45	1,579.79	1,583.75	1,577.09	1,565.57	1,566.87	1,563.68	1,572.40	1,582.61	1,598.93	1,599.90	1,593.73	1,580.84	1,569.33	1,570.18
15.00°	1,376.66	1,375.09	1,386.45	1,390.21	1,395.09	1,385.43	1,375.36	1,375.14	1,374.11	1,379.29	1,390.17	1,402.51	1,401.76	1,395.75	1,387.13	1,373.76	1,376.66
17.50°	1,178.41	1,178.95	1,189.69	1,198.13	1,200.82	1,194.61	1,185.06	1,181.28	1,183.39	1,185.62	1,194.97	1,206.40	1,205.51	1,193.67	1,187.15	1,180.88	1,178.41
20.00°	999.42	1,000.71	1,007.58	1,016.32	1,017.13	1,006.24	994.67	999.69	990.45	996.70	996.93	1,011.10	1,011.61	1,008.74	1,001.58	998.76	999.42
22.50°	827.57	825.78	835.99	837.09	839.69	827.29	824.69	819.94	813.99	807.89	821.85	827.31	833.46	827.64	827.58	824.13	827.57
25.00°	677.90	679.64	680.23	682.68	681.17	673.97	672.70	672.18	667.30	666.22	669.66	673.22	674.52	673.93	671.99	677.91	677.90
27.50°	536.23	535.05	535.44	534.01	533.26	527.55	530.59	528.68	526.76	525.12	527.70	526.61	527.20	526.14	530.87	534.61	536.23
30.00°	404.73	402.28	402.27	403.46	403.03	399.41	397.00	402.03	397.09	399.73	395.56	398.18	393.35	399.09	401.18	401.60	404.73
32.50°	276.68	273.82	276.85	276.85	282.48	280.49	280.51	277.43	277.51	274.57	279.20	279.41	276.92	276.13	280.01	276.55	276.68
35.00°	179.37	176.56	177.93	182.05	186.72	184.55	178.06	182.03	174.78	180.32	177.27	183.50	179.69	183.31	182.28	178.14	179.37
37.50°	91.76	88.06	95.81	93.77	103.83	104.63	105.51	89.85	95.66	87.25	103.69	103.76	105.87	95.90	101.17	94.81	91.76
40.00°	54.35	56.38	51.54	58.09	59.49	62.18	56.27	55.35	54.58	56.17	55.14	60.09	57.31	58.40	54.67	59.45	54.35
42.50°	32.32	28.36	30.37	32.25	34.06	30.34	29.74	26.34	26.94	25.77	28.52	28.02	28.87	29.51	32.19	30.94	32.32
45.00°	22.26	21.73	19.85	22.96	21.77	22.71	20.54	19.57	20.13	19.59	20.56	20.36	21.08	21.35	20.33	22.78	22.26
47.50°	15.61	15.66	15.57	16.57	15.77	16.31	15.22	14.77	14.70	13.53	14.99	14.29	15.60	16.41	15.46	15.97	15.61
50.00°	12.20	12.72	12.64	13.15	12.21	12.56	12.72	11.98	11.28	11.04	11.36	11.48	12.38	12.76	12.23	13.01	12.20
52.50°	9.65	10.07	10.45	10.22	9.74	9.67	10.42	9.35	8.79	8.65	8.99	9.16	9.94	9.29	10.06	10.49	9.65
55.00°	8.15	8.93	8.68	8.62	8.14	8.57	8.24	7.86	7.60	8.10	7.63	7.76	8.25	7.96	8.57	9.13	8.15
57.50°	6.92	7.79	7.13	7.22	6.91	7.67	6.98	6.45	6.71	7.55	7.00	6.75	7.03	6.92	7.51	7.69	6.92
60.00°	6.45	6.71	6.54	6.67	6.66	7.17	6.34	5.90	6.23	6.98	6.93	6.45	6.23	6.44	6.91	6.02	6.45
62.50°	6.17	5.77	6.44	6.23	6.83	6.59	6.01	5.39	5.72	6.39	6.56	6.02	5.63	6.02	6.57	4.92	6.17
65.00°	5.62	5.43	5.74	5.70	5.89	5.88	5.89	5.05	5.17	5.52	5.97	5.34	5.20	5.68	6.02	5.21	5.62
67.50°	5.02	5.02	4.76	5.15	4.53	5.17	5.26	4.71	4.59	4.69	5.15	4.64	4.69	5.36	5.36	4.99	5.02
70.00°	3.99	4.39	3.95	4.67	4.26	4.48	4.42	4.28	3.99	4.07	4.21	3.91	4.13	4.61	4.55	3.83	3.99
72.50°	3.04	3.68	3.20	3.96	4.19	3.68	3.78	3.95	3.65	3.63	4.11	3.52	3.68	3.92	3.69	3.30	3.04
75.00°	2.78	2.87	2.73	2.57	3.61	2.90	3.16	3.82	3.30	3.41	3.85	3.24	3.17	3.41	3.29	3.22	2.78
77.50°	2.51	2.24	2.39	2.31	2.93	2.49	2.57	2.51	2.61	2.68	3.05	2.62	2.47	2.54	2.60	2.47	2.51
80.00°	2.08	1.65	2.11	2.14	2.19	2.09	2.13	1.57	2.13	2.08	2.52	2.08	1.94	1.72	1.66	1.85	2.08
82.50°	1.16	1.15	1.47	1.20	1.56	1.33	1.57	1.25	1.24	1.55	1.59	1.26	1.10	1.38	1.30	1.37	1.16
85.00°	1.01	0.87	0.79	0.79	0.85	0.83	0.77	0.95	0.70	1.00	0.94	0.85	0.77	0.94	0.88	1.08	1.01
87.50°	0.81	0.72	0.69	0.90	0.79	0.77	0.73	0.85	0.67	0.77	0.87	0.69	0.78	0.66	0.88	0.79	0.81
90.00°	0.76	0.73	0.83	0.47	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.73	0.88	0.76
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	1,224	1,224	1,224	1,224	1,195	1,195	1,195	1,195	1,142	1,142	1,142	1,093	1,093	1,093	1,049	1,049	1,049	1,028
	1	1,173	1,147	1,123	1,102	1,148	1,124	1,104	1,085	1,083	1,067	1,051	1,045	1,032	1,020	1,010	1,000	991	980
	2	1,123	1,078	1,041	1,009	1,101	1,060	1,027	998	1,028	1,000	976	997	975	956	969	952	936	933
	3	1,075	1,017	971	935	1,055	1,003	961	928	976	942	913	952	923	899	929	906	885	888
	4	1,030	962	912	874	1,013	950	904	868	929	890	858	909	876	849	891	862	839	847
RCR	5	987	912	860	821	972	903	854	817	885	843	810	869	832	803	854	822	797	807
	6	947	867	814	775	933	860	809	773	845	801	767	831	792	762	818	784	758	771
	7	909	826	772	735	897	820	769	733	807	762	729	796	755	725	785	749	722	737
	8	874	789	735	698	862	783	732	697	773	727	694	763	722	691	754	716	689	705
	9	840	754	701	665	830	749	699	664	740	694	662	732	690	660	724	686	658	676
	10	809	722	670	636	800	718	668	635	710	665	633	703	661	632	696	658	630	648

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	70.7 fc	3.8 ft
6.5 ft	50.6 fc	4.5 ft
7.5 ft	38.0 fc	5.2 ft
8.0 ft	33.4 fc	5.6 ft
10.0 ft	21.4 fc	6.9 ft
12.0 ft	14.8 fc	8.3 ft
14.0 ft	10.9 fc	9.7 ft
16.0 ft	8.4 fc	11.1 ft
20.0 ft	5.3 fc	13.9 ft
24.0 ft	3.7 fc	16.7 ft
28.0 ft	2.7 fc	19.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	732,489	732,489	732,489
45.00°	10,787	9,617	10,549
55.00°	4,868	5,185	4,863
65.00°	4,558	4,656	4,778
75.00°	3,677	3,616	4,776
85.00°	3,972	3,100	3,339

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	6.9	7.8	7.2	8.1	8.4	6.5	7.5	6.9	7.8	8.1
	3H	8.5	9.4	8.9	9.7	10.1	8.3	9.1	8.7	9.4	9.8
	4H	9.1	9.8	9.5	10.2	10.6	9.1	9.8	9.5	10.2	10.6
	6H	9.6	10.3	10.0	10.7	11.1	9.7	10.4	10.1	10.8	11.2
	8H	9.7	10.4	10.2	10.8	11.2	9.9	10.5	10.3	10.9	11.3
	12H	9.9	10.5	10.3	10.9	11.3	9.9	10.6	10.4	10.9	11.4
4H	2H	7.5	8.2	7.9	8.6	9.0	7.2	8.0	7.6	8.3	8.7
	3H	9.3	9.9	9.7	10.3	10.7	9.1	9.7	9.5	10.2	10.6
	4H	10.0	10.5	10.4	10.9	11.4	10.0	10.6	10.4	11.0	11.4
	6H	10.6	11.0	11.0	11.5	12.0	10.7	11.2	11.2	11.6	12.1
	8H	10.7	11.2	11.2	11.6	12.1	10.9	11.4	11.4	11.8	12.3
	12H	10.9	11.3	11.4	11.8	12.2	11.0	11.4	11.5	11.9	12.4
8H	4H	10.2	10.6	10.7	11.1	11.6	10.3	10.8	10.8	11.2	11.7
	6H	10.9	11.3	11.4	11.8	12.3	11.2	11.5	11.7	12.0	12.5
	8H	11.2	11.5	11.7	12.0	12.5	11.5	11.8	12.0	12.3	12.8
	12H	11.4	11.7	12.0	12.2	12.8	11.7	11.9	12.2	12.4	13.0
12H	4H	10.2	10.6	10.7	11.0	11.5	10.3	10.7	10.8	11.2	11.7
	6H	11.0	11.3	11.5	11.7	12.3	11.2	11.6	11.8	12.0	12.6
	8H	11.3	11.5	11.8	12.0	12.6	11.6	11.8	12.1	12.3	12.9

Corrected UGR values based on total output lumens

SHR = 1.0