Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
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Spectrum Lighting Photometric Lab

Luminaire
IF03RSx IC 835 015 N11 DLFLGN MW

Test Number
SP-00774_1_M-015L

Test Date

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

Summary of Results

Power

Input Watts	10.2 W

Lumen Output

Output Lumens	1078
Efficacy	105.72 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	0.63

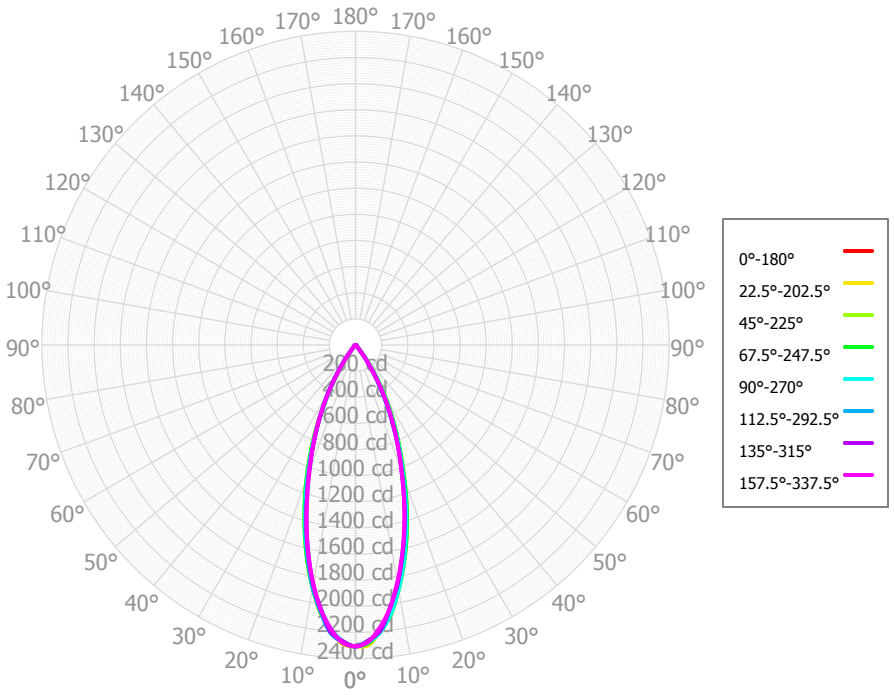
Full Beam Angle

0° - 180°	38°
90° - 270°	38°

IES File Header Contents

Keyword	Value
TEST	SP-00774_1_M-015L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	4/3/2019
LUMCAT	IF03RSx IC 835 015 N11 DLFLGN MW
LUMINIARE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 38 degrees
OTHER	Flood optic, open aperture / no lens
OTHER	Aluminum bezel
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multiplier: 27K x 0.95, 30K x 0.98, 40K x 1.03
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 20L
_CRI	80
_CCTMULT	27K x 0.95, 30K x 0.98, 40K x 1.03
_LAMPMULT	07L x 0.40, 10L x 0.56

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	200.98	18.64%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	403.23	37.39%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	321.59	29.82%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	112.39	10.42%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	15.59	1.45%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	9.30	0.86%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	8.47	0.79%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	5.41	0.50%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.34	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,078.30	99.99%	0.00° - 180.00°	1,078.36	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°	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18	2,307.18
2.50°	2,268.62	2,300.34	2,274.64	2,285.10	2,273.97	2,277.43	2,268.54	2,282.19	2,272.46	2,290.29	2,274.26	2,281.58	2,268.79	2,264.57	2,264.77	2,274.15	2,268.62
5.00°	2,183.43	2,182.22	2,203.54	2,195.29	2,204.72	2,211.82	2,203.87	2,177.87	2,190.08	2,183.43	2,197.25	2,180.76	2,181.09	2,191.46	2,194.83	2,166.84	2,183.43
7.50°	2,032.93	2,060.10	2,065.29	2,080.70	2,074.45	2,057.11	2,035.99	2,041.47	2,038.54	2,067.56	2,056.80	2,060.66	2,037.17	2,032.52	2,026.71	2,030.29	2,032.93
10.00°	1,856.70	1,872.79	1,898.04	1,901.43	1,901.07	1,887.97	1,864.65	1,857.74	1,867.92	1,884.52	1,892.11	1,884.81	1,869.32	1,861.01	1,854.73	1,843.46	1,856.70
12.50°	1,661.31	1,684.31	1,707.84	1,714.37	1,704.57	1,680.70	1,656.38	1,660.58	1,671.95	1,696.17	1,697.66	1,700.63	1,682.72	1,661.96	1,652.38	1,648.23	1,661.31
15.00°	1,460.17	1,481.75	1,509.83	1,511.39	1,494.92	1,470.67	1,447.54	1,448.35	1,468.08	1,481.19	1,498.23	1,498.97	1,483.26	1,460.52	1,448.35	1,441.02	1,460.17
17.50°	1,253.41	1,279.23	1,301.22	1,305.19	1,282.35	1,254.89	1,235.12	1,233.05	1,255.43	1,271.58	1,293.77	1,295.67	1,275.41	1,251.92	1,235.33	1,236.33	1,253.41
20.00°	1,045.41	1,076.98	1,089.91	1,093.74	1,068.47	1,050.46	1,029.78	1,044.50	1,060.31	1,081.31	1,096.69	1,097.52	1,076.47	1,043.61	1,030.34	1,034.53	1,045.41
22.50°	872.83	883.18	908.83	902.12	887.56	865.33	856.35	859.54	881.02	894.21	905.71	899.74	882.19	862.12	855.93	855.66	872.83
25.00°	705.79	730.06	733.45	737.45	718.66	696.81	689.14	699.70	709.71	715.89	719.52	713.45	700.38	682.34	687.25	698.39	705.79
27.50°	561.54	579.92	586.51	583.48	567.83	551.05	542.43	541.86	544.25	543.33	536.58	529.51	523.72	526.34	534.91	549.16	561.54
30.00°	419.39	440.16	442.97	441.32	421.97	414.34	401.59	398.53	392.92	383.44	379.30	381.73	381.28	375.11	391.89	406.26	419.39
32.50°	292.47	307.35	317.11	312.76	301.02	287.72	275.78	256.84	250.22	243.35	236.24	240.07	250.11	260.56	270.20	280.19	292.47
35.00°	166.72	192.87	192.29	196.45	184.97	181.79	166.70	159.27	149.19	137.79	140.03	146.52	156.40	154.36	165.13	164.85	166.72
37.50°	98.19	100.30	115.32	112.18	110.37	95.19	91.82	67.17	68.49	64.55	64.41	64.55	71.84	89.95	90.20	92.15	98.19
40.00°	33.33	54.50	41.41	51.98	41.42	46.58	40.29	44.43	36.96	37.41	34.95	41.62	42.96	37.00	39.80	41.24	33.33
42.50°	23.38	23.32	27.50	24.06	25.78	26.80	26.93	23.88	24.22	21.08	21.49	22.72	23.54	26.10	25.19	22.19	23.38
45.00°	14.32	16.98	14.66	15.74	14.05	17.18	17.94	18.79	18.11	17.43	17.80	19.11	18.74	17.50	16.48	16.42	14.32
47.50°	12.18	12.35	12.39	11.67	12.42	13.79	14.83	14.26	14.01	15.07	16.69	15.92	15.59	15.43	14.95	13.86	12.18
50.00°	10.27	10.06	10.29	9.66	10.96	11.72	12.65	12.33	12.57	13.96	14.77	13.92	13.77	13.81	13.77	12.32	10.27
52.50°	9.64	8.78	9.27	8.75	9.59	10.30	11.50	10.64	11.72	12.75	12.70	12.29	12.03	13.18	12.95	11.23	9.64
55.00°	8.99	8.67	8.38	8.28	8.29	9.92	10.49	9.80	10.57	11.46	11.36	11.45	11.93	12.34	11.99	10.24	8.99
57.50°	8.28	8.52	8.06	8.28	7.83	9.96	9.62	9.08	9.39	10.23	10.12	10.54	11.78	11.11	10.91	9.76	8.28
60.00°	7.86	8.33	7.78	8.43	7.56	9.50	9.30	8.67	8.98	9.04	9.65	9.52	10.38	10.25	10.48	9.37	7.86
62.50°	8.23	8.24	7.61	8.48	8.63	8.89	9.40	8.37	8.63	8.75	9.23	9.04	9.07	9.94	10.49	9.32	8.23
65.00°	8.52	8.23	7.33	8.51	9.39	8.49	8.80	8.27	8.38	8.93	9.48	9.34	8.53	9.28	9.79	9.30	8.52
67.50°	8.60	8.01	6.75	8.10	8.65	8.13	7.80	7.91	8.09	8.32	9.46	8.91	7.99	8.23	8.72	8.18	8.60
70.00°	7.98	7.65	6.41	7.62	7.83	7.55	7.14	7.19	7.48	7.45	7.83	7.84	7.41	7.24	7.81	7.08	7.98
72.50°	6.41	6.73	6.42	6.84	6.84	6.74	6.42	5.76	6.40	6.13	5.88	6.26	6.54	6.30	6.92	6.53	6.41
75.00°	5.43	5.66	5.96	6.00	5.89	5.23	4.68	4.18	4.70	4.78	3.59	4.66	5.37	5.20	4.93	5.35	5.43
77.50°	4.61	4.47	5.13	5.06	4.95	4.53	3.44	3.61	3.27	3.39	2.83	3.34	3.23	3.85	3.43	3.41	4.61
80.00°	3.26	3.21	3.34	4.03	3.36	3.51	2.35	2.32	1.93	2.21	1.84	2.18	1.95	2.20	2.46	2.73	3.26
82.50°	2.09	1.92	1.79	2.52	1.77	1.62	1.15	1.27	1.01	0.94	1.31	1.48	1.18	1.40	1.36	1.79	2.09
85.00°	0.91	1.00	1.17	1.18	1.00	1.01	0.72	1.02	0.69	0.84	1.12	0.91	0.83	0.86	0.76	1.14	0.91
87.50°	0.72	0.80	1.07	0.99	0.96	1.00	0.99	0.94	0.77	0.56	0.95	0.79	0.88	0.86	0.99	0.95	0.72
90.00°	0.69	0.91	1.06	0.95	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.78	0.81	0.69
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	1,284	1,284	1,284	1,284	1,254	1,254	1,254	1,254	1,198	1,198	1,198	1,147	1,147	1,147	1,100	1,100	1,100	1,078
	1	1,230	1,202	1,178	1,156	1,204	1,179	1,157	1,137	1,136	1,118	1,102	1,096	1,082	1,070	1,059	1,049	1,039	1,028
	2	1,177	1,130	1,091	1,058	1,154	1,112	1,076	1,046	1,077	1,049	1,024	1,046	1,022	1,002	1,016	998	981	978
	3	1,128	1,066	1,019	981	1,107	1,052	1,008	973	1,024	988	958	998	968	943	975	950	929	932
	4	1,081	1,009	957	917	1,062	997	949	911	975	934	901	954	919	891	935	905	881	889
RCR	5	1,037	958	903	862	1,020	948	897	859	930	885	851	913	874	844	897	863	837	848
	6	995	911	855	815	980	903	851	812	888	842	807	874	833	802	860	825	797	811
	7	956	869	813	773	943	862	809	771	849	802	767	837	795	763	826	788	760	775
	8	919	830	774	736	907	824	771	734	813	765	731	803	760	728	793	755	726	743
	9	884	794	739	702	873	789	737	701	780	732	698	771	727	696	763	723	694	712
	10	852	761	707	671	842	757	705	670	749	701	668	741	697	667	734	694	665	684

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	76.3 fc	3.8 ft
6.5 ft	54.6 fc	4.4 ft
7.5 ft	41.0 fc	5.1 ft
8.0 ft	36.0 fc	5.5 ft
10.0 ft	23.1 fc	6.8 ft
12.0 ft	16.0 fc	8.2 ft
14.0 ft	11.8 fc	9.6 ft
16.0 ft	9.0 fc	10.9 ft
20.0 ft	5.8 fc	13.7 ft
24.0 ft	4.0 fc	16.4 ft
28.0 ft	2.9 fc	19.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	790,498	790,498	790,498
45.00°	6,940	7,105	6,809
55.00°	5,371	5,007	4,954
65.00°	6,909	5,944	7,609
75.00°	7,191	7,887	7,800
85.00°	3,585	4,595	3,946

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	7.9	8.9	8.3	9.2	9.5	8.8	9.7	9.1	10.0	10.3
	3H	11.0	11.8	11.4	12.1	12.5	11.4	12.2	11.7	12.5	12.9
	4H	12.0	12.7	12.4	13.1	13.5	12.2	13.0	12.6	13.3	13.7
	6H	12.6	13.3	13.0	13.7	14.1	12.7	13.4	13.1	13.8	14.2
	8H	12.8	13.4	13.2	13.8	14.2	12.8	13.5	13.2	13.8	14.3
	12H	12.8	13.4	13.3	13.8	14.3	12.8	13.4	13.3	13.8	14.3
4H	2H	8.9	9.7	9.3	10.0	10.4	9.6	10.4	10.0	10.7	11.1
	3H	12.0	12.6	12.4	13.0	13.4	12.3	12.9	12.7	13.3	13.7
	4H	13.0	13.6	13.5	14.0	14.5	13.2	13.7	13.6	14.2	14.6
	6H	13.7	14.2	14.2	14.7	15.1	13.8	14.2	14.2	14.7	15.2
	8H	13.9	14.4	14.4	14.8	15.3	13.9	14.3	14.3	14.7	15.2
	12H	14.0	14.4	14.5	14.8	15.3	13.9	14.3	14.4	14.8	15.2
8H	4H	13.3	13.8	13.8	14.2	14.7	13.3	13.8	13.8	14.2	14.7
	6H	14.2	14.5	14.7	15.0	15.5	14.0	14.4	14.5	14.9	15.4
	8H	14.4	14.7	14.9	15.2	15.7	14.2	14.5	14.7	15.0	15.5
	12H	14.5	14.8	15.0	15.3	15.9	14.3	14.5	14.8	15.0	15.6
12H	4H	13.3	13.7	13.8	14.2	14.7	13.3	13.7	13.8	14.2	14.7
	6H	14.2	14.5	14.7	15.0	15.5	14.0	14.3	14.5	14.8	15.3
	8H	14.4	14.7	15.0	15.2	15.8	14.2	14.4	14.7	14.9	15.5

Corrected UGR values based on total output lumens

SHR = 1.0