

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

IF03RSx IC 835 015 N11 DLSPGN MW

Test Number

SP-00776_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
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Lumen Output

Output Lumens	1096
Efficacy	107.41 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

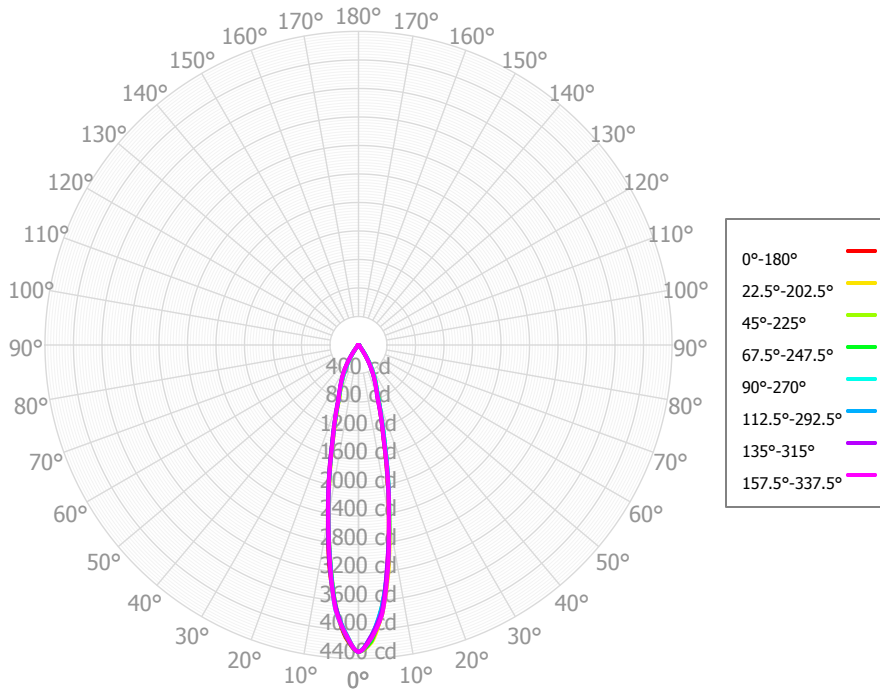
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-00776_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 DLSPGN MW
LUMINIARE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 23 degrees
OTHER	Spot optic, Open aperture / no lens
OTHER	Aluminum bezel contains lens
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°	314.17	28.68%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	396.18	36.16%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	251.16	22.93%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	94.83	8.66%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	10.47	0.96%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	10.48	0.96%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	12.31	1.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.54	0.41%	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°	1,095.49	99.99%	0.00° - 180.00°	1,095.55	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°	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36	4,304.36
2.50°	4,141.07	4,179.21	4,124.64	4,158.97	4,093.75	4,049.85	4,083.18	4,063.88	4,109.83	4,080.47	4,054.60	4,089.85	4,069.83	4,092.06	4,086.32	4,123.19	4,141.07
5.00°	3,787.85	3,780.88	3,794.63	3,707.17	3,716.01	3,687.82	3,683.53	3,724.19	3,697.73	3,674.59	3,707.69	3,672.96	3,728.49	3,703.74	3,747.34	3,798.09	3,787.85
7.50°	3,102.98	3,213.97	3,167.20	3,160.22	3,126.10	3,040.54	3,110.11	3,066.84	3,132.36	3,035.07	3,059.56	3,048.16	3,079.82	3,136.43	3,091.69	3,169.13	3,102.98
10.00°	2,448.78	2,489.53	2,461.61	2,491.37	2,468.28	2,427.92	2,461.82	2,429.30	2,470.00	2,426.55	2,429.77	2,448.62	2,450.97	2,470.81	2,455.46	2,463.09	2,448.78
12.50°	1,851.56	1,890.79	1,903.76	1,903.64	1,924.09	1,889.98	1,923.64	1,892.13	1,913.08	1,857.04	1,890.82	1,872.00	1,898.97	1,909.85	1,873.45	1,898.35	1,851.56
15.00°	1,349.04	1,415.55	1,387.72	1,425.28	1,419.36	1,414.77	1,435.78	1,391.35	1,426.49	1,384.01	1,386.52	1,413.71	1,394.87	1,409.59	1,357.05	1,372.27	1,349.04
17.50°	1,034.65	1,062.62	1,072.97	1,053.71	1,088.28	1,082.84	1,105.60	1,093.07	1,080.63	1,038.70	1,070.48	1,068.35	1,091.71	1,068.88	1,036.28	1,049.38	1,034.65
20.00°	779.79	836.04	819.40	833.72	821.50	811.01	851.72	818.80	833.60	784.06	782.03	820.12	817.83	825.78	762.52	786.27	779.79
22.50°	650.13	665.29	671.97	660.81	669.72	684.86	693.98	692.20	671.06	655.75	659.11	670.40	677.33	656.86	638.72	639.87	650.13
25.00°	528.26	555.18	559.11	559.10	563.26	565.44	585.45	569.07	570.99	541.18	539.17	540.05	541.17	535.79	518.48	530.28	528.26
27.50°	423.76	444.48	449.72	456.25	460.27	463.35	479.22	469.77	469.09	446.79	439.07	430.35	426.59	422.08	410.40	421.03	423.76
30.00°	316.79	333.13	341.53	351.60	358.74	361.30	374.22	369.12	365.77	346.29	338.39	323.67	314.57	313.38	303.80	311.90	316.79
32.50°	203.97	227.31	237.13	250.70	259.99	259.37	270.09	257.93	260.11	236.35	233.31	220.36	216.57	214.37	202.76	210.20	203.97
35.00°	108.88	128.11	134.13	156.11	162.46	165.11	166.47	151.27	152.55	142.52	133.36	134.75	124.90	122.28	112.16	111.18	108.88
37.50°	58.31	60.18	74.17	81.62	95.39	93.29	94.37	85.63	79.77	74.94	76.94	70.01	71.43	64.70	63.79	59.84	58.31
40.00°	19.91	31.76	31.20	42.75	42.65	35.41	41.26	24.96	36.94	28.12	25.12	29.42	24.14	33.11	23.14	26.80	19.91
42.50°	14.07	13.91	14.71	15.69	18.94	21.20	16.74	16.33	14.25	16.98	18.16	18.78	18.19	17.09	16.29	14.18	14.07
45.00°	9.52	10.13	9.48	10.73	9.70	9.78	10.40	8.31	9.79	9.46	11.65	12.14	12.69	13.41	10.50	9.89	9.52
47.50°	8.67	8.12	7.80	7.66	6.64	7.88	7.57	7.93	7.63	8.53	10.31	10.73	10.72	11.09	9.75	8.49	8.67
50.00°	8.28	8.59	7.73	8.34	6.85	6.67	7.09	7.68	7.66	8.07	9.12	10.27	9.14	9.90	9.32	8.33	8.28
52.50°	9.30	9.36	8.40	9.29	8.41	8.05	7.77	9.48	8.13	8.53	9.90	11.12	11.02	10.44	10.60	9.30	9.30
55.00°	10.94	10.57	9.43	10.83	10.73	9.86	9.26	11.29	9.02	10.30	10.82	12.75	12.96	12.48	12.24	10.79	10.94
57.50°	14.59	12.48	12.12	12.71	13.28	13.36	11.90	13.21	10.91	14.76	14.10	15.50	15.53	15.26	15.90	13.98	14.59
60.00°	17.13	15.46	15.66	15.32	15.96	16.09	15.37	15.03	13.85	17.55	17.15	16.44	17.68	18.71	18.61	18.01	17.13
62.50°	15.71	16.30	15.32	16.20	15.35	15.53	15.66	14.00	14.68	16.73	14.76	14.62	14.78	17.91	15.21	16.38	15.71
65.00°	13.70	13.62	12.90	12.98	12.71	14.46	13.46	12.92	13.17	14.71	12.35	12.00	11.87	12.99	11.84	11.85	13.70
67.50°	9.39	10.65	10.09	9.86	10.57	11.02	11.04	9.82	11.07	9.96	9.27	8.07	8.83	9.12	8.59	8.73	9.39
70.00°	5.62	7.17	7.05	6.97	8.75	7.85	8.45	6.74	8.27	6.09	6.22	5.34	5.89	6.33	5.51	6.38	5.62
72.50°	4.06	4.56	5.31	4.75	7.09	6.05	6.37	5.31	6.22	4.37	5.14	4.63	4.61	4.54	3.93	4.70	4.06
75.00°	2.79	3.54	4.36	4.29	5.52	4.49	4.75	3.90	5.09	3.31	4.07	3.82	3.42	3.83	2.52	3.40	2.79
77.50°	2.68	2.71	3.73	3.71	4.45	4.16	4.04	3.55	4.13	3.80	3.27	2.87	3.16	3.16	2.48	2.50	2.68
80.00°	2.21	2.18	3.27	2.86	3.73	3.41	4.02	3.04	3.33	3.12	2.36	1.97	2.51	2.54	2.25	1.80	2.21
82.50°	1.06	1.46	1.86	1.84	2.21	1.81	2.36	1.88	1.91	1.13	1.22	1.15	1.16	1.50	1.56	1.15	1.06
85.00°	0.84	0.78	0.81	0.83	0.85	1.05	1.03	1.06	0.89	0.86	0.80	0.93	0.66	0.80	1.11	0.99	0.84
87.50°	0.89	0.65	0.95	1.23	0.88	0.69	0.73	0.79	0.79	0.70	0.64	0.88	0.82	0.69	1.13	0.96	0.89
90.00°	0.65	0.75	1.16	0.83	0.86	0.70	0.94	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.65
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%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1,304	1,304	1,304	1,304	1,274	1,274	1,274	1,274	1,217	1,217	1,217	1,165	1,165	1,165	1,118	1,118	1,118
	1	1,253	1,227	1,203	1,182	1,227	1,203	1,182	1,163	1,159	1,143	1,128	1,119	1,106	1,094	1,082	1,072	1,063
	2	1,204	1,159	1,122	1,090	1,181	1,140	1,107	1,078	1,106	1,078	1,055	1,074	1,052	1,032	1,044	1,027	1,011
	3	1,158	1,100	1,055	1,019	1,138	1,085	1,044	1,010	1,057	1,023	995	1,032	1,003	979	1,008	985	965
	4	1,115	1,047	998	960	1,097	1,036	990	955	1,013	974	944	992	960	933	973	945	923
	5	1,075	1,001	949	911	1,059	991	943	907	973	931	899	956	920	892	940	909	884
	6	1,037	959	906	869	1,023	951	902	866	936	892	860	922	884	855	908	875	849
	7	1,002	921	868	831	989	914	865	829	901	857	825	890	850	821	878	844	817
	8	969	886	834	798	957	880	831	797	870	825	794	860	820	791	850	814	788
	9	938	854	803	768	927	849	801	767	840	796	765	832	791	763	824	787	760
	10	909	825	775	741	899	821	773	740	813	769	739	805	765	737	798	762	735

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	142.3 fc	2.2 ft
6.5 ft	101.9 fc	2.6 ft
7.5 ft	76.5 fc	3.0 ft
8.0 ft	67.3 fc	3.2 ft
10.0 ft	43.0 fc	4.0 ft
12.0 ft	29.9 fc	4.8 ft
14.0 ft	22.0 fc	5.6 ft
16.0 ft	16.8 fc	6.4 ft
20.0 ft	10.8 fc	8.0 ft
24.0 ft	7.5 fc	9.6 ft
28.0 ft	5.5 fc	11.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,474,784	1,474,784	1,474,784
45.00°	4,614	4,595	4,699
55.00°	6,537	5,632	6,410
65.00°	11,103	10,462	10,303
75.00°	3,691	5,774	7,305
85.00°	3,302	3,182	3,355

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	10.9	11.8	11.2	12.1	12.4	11.3	12.2	11.6	12.5	12.8
	3H	12.4	13.2	12.8	13.6	13.9	12.8	13.6	13.2	14.0	14.3
	4H	12.6	13.3	13.0	13.7	14.1	13.2	14.0	13.6	14.3	14.7
	6H	12.7	13.4	13.2	13.8	14.2	13.5	14.2	13.9	14.6	15.0
	8H	12.8	13.4	13.2	13.8	14.2	13.6	14.2	14.0	14.6	15.1
	12H	12.7	13.4	13.2	13.8	14.2	13.6	14.2	14.0	14.6	15.0
4H	2H	11.7	12.5	12.1	12.8	13.2	12.1	12.8	12.5	13.2	13.6
	3H	13.2	13.8	13.6	14.2	14.6	13.6	14.2	14.0	14.6	15.0
	4H	13.4	13.9	13.8	14.4	14.8	14.0	14.5	14.4	15.0	15.4
	6H	13.6	14.1	14.1	14.5	15.0	14.4	14.9	14.9	15.3	15.8
	8H	13.6	14.1	14.1	14.5	15.0	14.5	14.9	15.0	15.4	15.8
	12H	13.6	14.0	14.1	14.5	15.0	14.5	14.9	15.0	15.4	15.8
8H	4H	13.4	13.9	13.9	14.3	14.8	14.1	14.5	14.5	15.0	15.4
	6H	13.7	14.1	14.3	14.6	15.1	14.6	14.9	15.1	15.5	15.9
	8H	13.8	14.1	14.3	14.6	15.1	14.7	15.0	15.3	15.6	16.1
	12H	13.9	14.1	14.4	14.6	15.2	14.8	15.1	15.3	15.6	16.1
12H	4H	13.4	13.8	13.9	14.3	14.8	14.1	14.4	14.5	14.9	15.4
	6H	13.8	14.1	14.3	14.5	15.1	14.6	14.9	15.2	15.4	15.9
	8H	13.9	14.1	14.4	14.6	15.2	14.8	15.0	15.3	15.5	16.1

Corrected UGR values based on total output lumens

SHR = 1.0