Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03SSx IC 835 015 N11 DLFLGC MW

Nom 3" Square Infinium recessed downlight

Test Number

SP-00778_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	695
Efficacy	68.13 lm/W

Luminous Dimensions

0° - 180° Size	0.16
90° - 270° Size	0.16
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.66
Two luminaires, plane 90°	0.67
Four luminaires	0.71

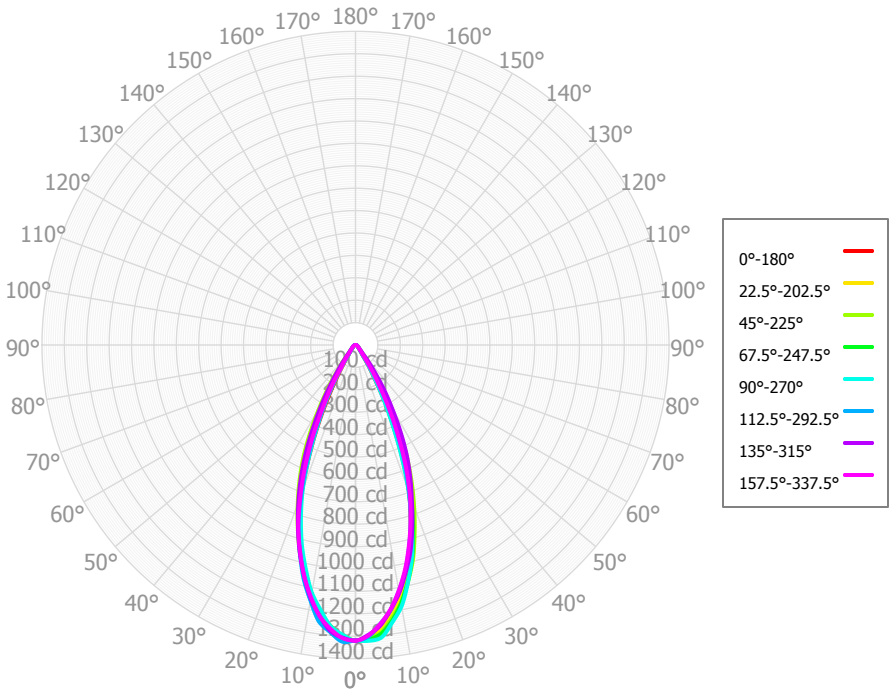
Full Beam Angle

0° - 180°	41°
90° - 270°	41°

IES File Header Contents

Keyword	Value
TEST	SP-00778_M-015L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	4/4/2019
LUMCAT	IF03SSx IC 835 015 N11 DLFLGC MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 41 degrees
OTHER	Flood optic, Clear glass 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, +2W for thermal protection
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°	118.72	17.08%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	260.06	37.43%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	206.80	29.76%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	64.32	9.26%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.32	2.78%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	11.59	1.67%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	8.34	1.20%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.27	0.61%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.40	0.20%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	694.82	99.99%	0.00° - 180.00°	694.88	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°	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18	1,320.18
2.50°	1,301.14	1,308.88	1,309.02	1,317.68	1,322.39	1,326.47	1,308.66	1,310.64	1,303.17	1,302.91	1,297.38	1,300.48	1,296.14	1,304.09	1,296.15	1,299.36	1,301.14
5.00°	1,271.99	1,272.41	1,290.70	1,296.16	1,312.18	1,287.73	1,282.58	1,273.27	1,275.00	1,261.29	1,269.51	1,261.72	1,261.66	1,251.83	1,258.93	1,251.92	1,271.99
7.50°	1,206.29	1,222.25	1,232.77	1,243.72	1,251.02	1,246.47	1,220.83	1,222.24	1,213.07	1,209.69	1,203.87	1,203.30	1,193.75	1,195.85	1,193.94	1,192.53	1,206.29
10.00°	1,135.61	1,145.56	1,170.39	1,172.04	1,185.07	1,158.85	1,150.40	1,144.12	1,142.25	1,129.92	1,137.01	1,128.19	1,123.45	1,115.15	1,124.62	1,113.41	1,135.61
12.50°	1,038.36	1,058.65	1,083.36	1,080.55	1,083.89	1,069.89	1,057.77	1,057.91	1,047.03	1,043.40	1,049.28	1,038.33	1,025.30	1,030.30	1,038.44	1,024.78	1,038.36
15.00°	939.17	955.40	990.94	979.19	976.25	959.91	960.46	955.41	945.12	942.89	960.15	941.33	925.07	926.83	950.58	923.45	939.17
17.50°	819.50	843.18	877.51	856.24	836.55	846.54	853.73	849.37	828.90	840.08	856.76	839.06	810.41	819.58	843.39	818.26	819.50
20.00°	698.48	719.37	764.09	724.84	692.94	706.20	745.36	719.86	699.05	718.95	753.60	720.60	690.54	699.90	735.54	708.77	698.48
22.50°	547.10	588.38	650.66	582.53	535.04	566.79	634.35	586.71	545.25	596.00	651.81	592.48	545.97	577.96	637.80	587.52	547.10
25.00°	397.81	449.84	535.07	436.84	387.13	432.17	519.06	450.69	399.17	459.68	547.18	467.94	407.36	450.16	539.51	455.60	397.81
27.50°	274.26	324.38	414.43	320.52	266.74	305.53	398.08	314.40	264.02	322.87	430.65	345.09	289.19	331.38	432.04	334.79	274.26
30.00°	158.82	210.42	303.81	210.89	164.30	209.41	290.94	214.48	161.56	219.44	319.13	243.21	184.22	230.95	326.66	222.19	158.82
32.50°	101.41	130.09	211.68	138.39	100.99	126.12	198.82	116.54	96.68	119.34	223.76	149.39	114.35	147.02	238.66	140.67	101.41
35.00°	52.02	73.81	135.43	71.64	55.91	79.60	128.70	81.29	57.50	79.34	140.55	95.38	61.37	89.90	155.79	78.24	52.02
37.50°	40.70	46.54	83.44	50.36	42.90	44.84	77.99	47.61	43.07	42.47	87.36	53.03	44.06	51.17	99.98	49.03	40.70
40.00°	30.89	35.97	48.22	33.57	32.95	36.24	48.21	37.04	33.16	33.75	47.68	37.86	31.01	37.30	52.53	36.11	30.89
42.50°	26.41	28.98	33.76	29.02	27.32	29.50	33.85	27.29	26.78	25.79	34.26	28.61	25.13	28.06	37.78	29.29	26.41
45.00°	22.28	23.68	25.01	24.97	22.94	26.14	25.79	23.95	22.34	22.11	24.15	23.38	20.23	23.90	25.73	24.81	22.28
47.50°	19.10	20.40	22.01	20.93	20.02	22.63	21.46	20.76	19.13	18.67	19.34	18.76	16.71	20.00	21.60	20.83	19.10
50.00°	16.29	17.86	18.85	17.00	17.59	18.89	18.08	18.39	16.39	16.17	15.73	16.93	13.98	16.33	17.80	16.99	16.29
52.50°	14.23	14.83	15.55	14.91	15.63	15.69	15.15	16.05	13.89	13.97	13.67	15.35	12.17	13.62	14.74	15.22	14.23
55.00°	12.36	11.66	13.28	12.87	13.58	13.15	13.48	13.81	11.76	12.68	12.17	12.71	10.71	11.63	12.31	13.91	12.36
57.50°	10.80	10.17	11.71	11.31	11.46	11.83	12.30	11.72	9.76	11.43	11.26	10.08	9.57	10.57	11.05	12.49	10.80
60.00°	9.60	9.04	10.87	9.94	10.37	11.71	11.46	10.00	9.06	10.27	10.33	9.46	8.65	10.08	10.14	11.06	9.60
62.50°	8.91	8.60	10.42	9.50	9.94	10.86	10.73	8.66	8.76	9.15	9.39	8.83	7.91	9.43	9.76	9.98	8.91
65.00°	8.23	8.25	9.17	8.94	9.04	9.41	9.27	8.21	7.99	8.14	8.26	8.10	7.56	8.71	8.99	8.94	8.23
67.50°	7.57	7.67	7.56	7.94	7.88	7.73	7.66	7.45	7.10	7.15	7.00	7.27	7.45	7.44	7.76	7.99	7.57
70.00°	6.86	7.00	6.31	6.66	6.14	5.93	5.86	6.27	5.65	6.16	5.88	6.02	6.20	5.96	6.46	7.01	6.86
72.50°	6.13	5.59	5.13	4.88	4.28	4.66	4.32	5.13	4.39	4.96	4.85	5.08	4.69	5.06	5.10	5.73	6.13
75.00°	4.46	4.09	3.60	3.85	3.61	3.57	3.35	4.03	3.68	3.67	4.31	4.52	3.72	4.20	4.29	4.47	4.46
77.50°	3.06	2.47	2.61	3.18	2.75	2.70	2.44	2.99	3.20	2.37	3.13	3.53	3.13	3.25	3.53	3.25	3.06
80.00°	2.50	2.13	2.14	2.69	1.84	1.93	1.86	2.38	2.50	2.11	1.96	2.66	2.62	2.47	2.58	2.67	2.50
82.50°	2.13	1.60	1.77	1.90	1.72	1.48	1.49	1.95	1.72	1.60	1.74	2.08	1.72	1.81	1.53	1.93	2.13
85.00°	1.12	1.23	1.24	0.90	0.77	0.79	1.13	1.29	1.30	0.96	0.99	1.36	0.93	1.33	1.22	1.24	1.12
87.50°	1.04	0.91	0.83	1.06	0.61	0.93	0.96	1.08	0.98	0.78	0.93	0.74	0.93	0.94	0.72	1.00	1.04
90.00°	0.69	1.00	0.89	1.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.82	0.84	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	827	827	827	827	808	808	808	808	772	772	772	739	739	739	709	709	709	695
	1	791	773	756	742	774	758	743	730	730	718	707	704	695	686	680	673	667	660
	2	756	724	698	676	741	712	689	669	690	671	654	670	654	640	651	638	627	626
	3	723	682	650	625	709	672	643	619	654	630	610	638	617	600	622	605	591	594
	4	691	644	609	582	679	636	604	579	621	594	572	608	584	565	595	575	559	565
RCR	5	662	610	573	546	651	603	569	544	591	562	539	580	554	534	570	547	530	538
	6	634	579	542	515	625	574	539	513	564	533	510	554	527	506	545	522	503	513
	7	609	551	514	487	600	547	511	486	538	507	484	530	502	481	523	498	479	490
	8	584	525	488	463	577	522	487	462	515	483	460	508	479	458	501	476	457	468
	9	562	502	466	441	555	499	464	440	493	461	439	487	458	437	482	455	436	448
	10	540	481	445	421	534	478	444	420	473	441	419	468	439	418	463	436	417	430

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	43.6 fc	4.1 ft
6.5 ft	31.2 fc	4.9 ft
7.5 ft	23.5 fc	5.6 ft
8.0 ft	20.6 fc	6.0 ft
10.0 ft	13.2 fc	7.5 ft
12.0 ft	9.2 fc	9.0 ft
14.0 ft	6.7 fc	10.5 ft
16.0 ft	5.2 fc	12.0 ft
20.0 ft	3.3 fc	15.0 ft
24.0 ft	2.3 fc	18.0 ft
28.0 ft	1.7 fc	21.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	555,089	555,089	555,089
45.00°	13,246	14,870	13,639
55.00°	9,059	9,732	9,953
65.00°	8,189	9,125	8,990
75.00°	7,251	5,846	5,865
85.00°	5,424	5,974	3,711

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	12.5	13.5	12.9	13.8	14.1	12.3	13.3	12.7	13.6	13.9
	3H	14.4	15.3	14.8	15.6	16.0	14.1	15.0	14.5	15.3	15.7
	4H	15.0	15.8	15.4	16.2	16.6	14.6	15.4	15.0	15.7	16.1
	6H	15.3	16.1	15.7	16.4	16.8	14.9	15.6	15.3	16.0	16.4
	8H	15.5	16.2	15.9	16.5	17.0	15.0	15.7	15.4	16.1	16.5
	12H	15.6	16.2	16.0	16.6	17.0	15.0	15.7	15.5	16.1	16.5
4H	2H	13.1	13.9	13.6	14.3	14.7	12.9	13.7	13.4	14.1	14.5
	3H	15.2	15.8	15.6	16.2	16.6	14.8	15.5	15.2	15.9	16.3
	4H	15.9	16.4	16.3	16.9	17.3	15.4	16.0	15.8	16.4	16.8
	6H	16.2	16.7	16.7	17.2	17.7	15.8	16.3	16.3	16.8	17.2
	8H	16.4	16.9	16.9	17.3	17.8	16.0	16.4	16.4	16.9	17.4
	12H	16.5	16.9	17.0	17.4	17.9	16.0	16.4	16.5	16.9	17.4
8H	4H	16.0	16.4	16.5	16.9	17.4	15.5	16.0	16.0	16.4	16.9
	6H	16.5	16.8	17.0	17.3	17.8	16.1	16.4	16.6	16.9	17.4
	8H	16.7	17.1	17.3	17.6	18.1	16.3	16.6	16.8	17.1	17.6
	12H	16.9	17.2	17.5	17.7	18.3	16.5	16.7	17.0	17.2	17.8
12H	4H	16.0	16.4	16.5	16.9	17.3	15.5	15.9	16.0	16.4	16.9
	6H	16.5	16.8	17.0	17.3	17.8	16.1	16.4	16.6	16.9	17.4
	8H	16.8	17.1	17.3	17.6	18.2	16.4	16.6	16.9	17.1	17.7

Corrected UGR values based on total output lumens

SHR = 1.0