Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03SSx IC 835 010 N11 DLSPGN MW

Nom 3" Square Infinium recessed downlight

Test Number

SP-00780_1_M-010

Test Date

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

Summary of Results

Power

Input Watts	7.3 W

Lumen Output

Output Lumens	531
Efficacy	72.74 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.41
Four luminaires	0.43

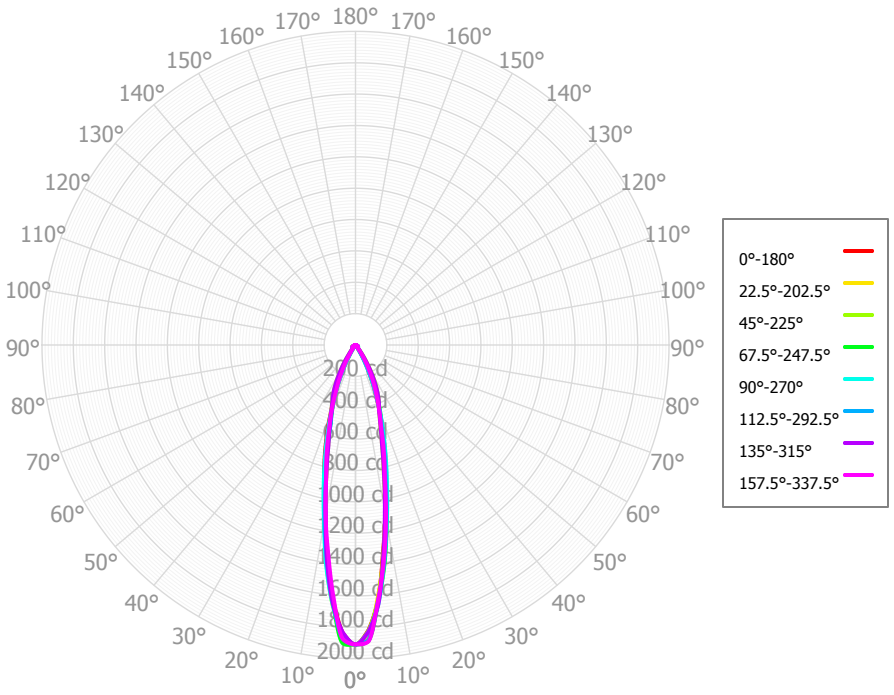
Full Beam Angle

0° - 180°	24°
90° - 270°	24°

IES File Header Contents

Keyword	Value
TEST	SP-00780_1_M-010
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/11/2019
UPDATE	3/11/2019
LUMCAT	IF03SSx IC 835 010 N11 DLSPGN MW
LUMINAIRE	Nom 3" Square Infinium recessed downlight
OTHER	Beam Angle: 24 degrees
OTHER	Spot optic, Open aperture / no lens
OTHER	Aluminum bezel
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multiplier: 40K x 1.03
OTHER	Total luminaire wattage 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°	140.51	26.46%	90.00° - 100.00°	0.05	0.01%
10.00° - 20.00°	195.64	36.84%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	124.27	23.40%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	33.48	6.30%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	6.25	1.18%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	13.59	2.56%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	12.09	2.28%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.65	0.69%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.49	0.28%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	530.98	99.99%	0.00° - 180.00°	531.03	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°	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78	1,909.78
2.50°	1,826.88	1,872.42	1,831.07	1,889.78	1,835.53	1,874.16	1,837.87	1,877.03	1,840.57	1,884.99	1,858.47	1,903.60	1,851.43	1,884.61	1,834.89	1,893.13	1,826.88
5.00°	1,640.84	1,622.16	1,641.27	1,652.30	1,662.77	1,649.89	1,656.34	1,614.43	1,638.45	1,638.83	1,667.57	1,646.98	1,663.79	1,644.91	1,663.72	1,641.33	1,640.84
7.50°	1,341.13	1,371.01	1,352.81	1,412.80	1,391.63	1,393.47	1,391.49	1,337.82	1,392.30	1,363.23	1,413.00	1,390.38	1,425.85	1,399.90	1,357.36	1,387.55	1,341.13
10.00°	1,095.48	1,115.83	1,084.52	1,143.65	1,147.02	1,132.01	1,089.67	1,100.01	1,117.84	1,111.97	1,107.04	1,134.33	1,153.27	1,134.29	1,078.52	1,119.02	1,095.48
12.50°	906.46	878.74	833.15	884.20	928.41	869.94	865.21	863.77	918.99	862.88	867.35	883.54	936.55	889.64	840.18	865.18	906.46
15.00°	734.78	710.04	651.76	718.59	744.72	694.84	669.93	709.70	762.87	702.06	674.98	706.00	753.75	711.94	651.61	695.86	734.78
17.50°	578.97	555.88	521.60	561.52	590.94	527.05	546.47	557.32	610.97	545.73	543.37	535.76	594.27	553.38	527.80	539.71	578.97
20.00°	446.45	447.04	439.45	462.93	456.75	436.21	446.16	443.03	461.13	441.22	449.49	433.47	447.04	447.00	438.36	442.83	446.45
22.50°	332.82	347.24	388.33	366.57	337.42	348.92	383.26	331.47	341.68	338.11	381.70	334.28	331.31	347.06	387.94	350.92	332.82
25.00°	239.25	271.53	329.72	282.21	236.63	272.60	330.33	252.80	235.10	262.68	328.15	255.75	230.00	262.01	328.80	277.11	239.25
27.50°	159.86	199.11	266.92	200.55	148.08	196.64	264.05	176.17	156.85	187.94	263.69	179.47	150.33	182.33	260.87	205.66	159.86
30.00°	99.46	134.13	200.67	130.34	87.97	130.41	194.84	116.62	88.77	126.82	194.12	114.94	79.11	113.44	193.43	141.42	99.46
32.50°	50.93	79.26	132.72	69.06	44.41	66.23	134.92	62.04	53.95	68.43	133.80	58.48	45.95	59.98	126.44	84.70	50.93
35.00°	27.79	44.32	82.75	39.21	24.89	41.12	76.59	37.98	29.09	42.13	77.24	35.47	25.52	33.29	75.62	47.40	27.79
37.50°	18.36	19.42	40.32	15.87	17.42	17.69	46.81	17.28	19.75	18.33	46.28	16.92	17.82	15.39	37.25	19.42	18.36
40.00°	12.38	11.60	20.95	11.56	12.50	12.76	20.79	13.00	14.30	14.31	24.12	13.46	13.65	10.72	17.16	12.27	12.38
42.50°	8.02	6.72	9.77	8.07	8.67	8.22	13.19	9.22	10.72	10.52	14.33	10.26	10.46	7.51	9.50	7.08	8.02
45.00°	5.57	6.16	6.51	6.56	6.30	6.58	7.25	7.41	7.51	8.09	8.08	7.79	7.49	6.27	5.94	5.64	5.57
47.50°	3.88	5.98	5.63	5.91	4.46	5.58	7.02	6.45	6.44	6.27	6.89	6.36	6.03	5.90	4.80	4.98	3.88
50.00°	5.14	6.31	7.87	7.11	6.62	8.22	7.08	8.32	5.71	7.37	6.91	7.43	4.85	6.55	6.07	5.62	5.14
52.50°	7.43	9.19	10.89	9.79	10.03	11.62	13.85	11.69	10.91	9.90	12.53	10.45	8.99	9.50	8.58	8.04	7.43
55.00°	12.56	15.00	14.93	15.21	14.89	18.45	20.66	19.21	16.80	17.98	19.20	17.56	13.85	14.81	13.26	13.08	12.56
57.50°	18.51	17.79	19.17	18.34	20.13	23.39	22.01	23.92	20.85	23.75	21.30	21.83	17.47	17.96	18.89	16.67	18.51
60.00°	18.39	17.52	17.18	17.76	19.58	21.26	23.07	22.08	24.77	22.17	22.71	20.94	20.98	19.18	17.97	18.43	18.39
62.50°	16.84	14.98	14.22	15.31	17.81	18.14	17.68	18.63	20.27	19.08	17.53	17.89	18.19	17.18	14.54	16.88	16.84
65.00°	13.17	10.43	10.43	10.20	12.95	11.95	12.32	11.93	15.41	12.00	11.65	11.38	15.02	12.64	10.65	11.60	13.17
67.50°	9.10	7.12	6.56	6.59	7.56	6.92	7.18	6.82	10.02	6.62	7.18	6.70	9.75	8.38	6.61	7.51	9.10
70.00°	6.74	4.66	4.13	4.63	5.86	4.22	3.26	3.93	5.33	4.27	3.25	4.08	5.41	4.32	3.92	4.50	6.74
72.50°	4.89	3.85	2.29	3.60	4.55	2.89	2.36	2.93	3.41	2.98	1.98	3.08	4.86	3.40	1.75	3.66	4.89
75.00°	4.85	3.66	2.45	3.08	3.95	2.56	2.34	2.89	2.80	2.41	1.54	2.79	4.58	3.30	2.36	3.76	4.85
77.50°	6.15	4.29	3.19	3.77	4.25	2.61	2.60	2.68	3.16	2.18	1.82	2.85	4.46	3.35	2.96	4.53	6.15
80.00°	7.01	4.52	3.44	3.41	4.33	2.86	2.16	2.50	3.63	1.96	2.15	3.00	4.21	3.38	3.28	4.66	7.01
82.50°	3.04	3.14	1.44	2.27	1.22	2.26	1.38	1.62	1.61	1.42	1.32	1.88	1.31	2.44	1.99	3.31	3.04
85.00°	0.56	1.02	0.93	1.14	0.49	1.07	0.78	0.77	0.82	0.69	0.90	0.63	0.90	0.90	1.23	1.12	0.56
87.50°	0.52	0.60	0.72	0.57	0.57	0.72	0.65	0.93	0.69	0.78	0.75	0.59	0.60	0.68	0.80	0.82	0.52
90.00°	0.78	0.81	0.69	0.49	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.69	0.79	0.78
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	632	632	632	632	617	617	617	617	590	590	590	565	565	565	542	542	542	531
	1	605	592	580	569	593	581	570	560	559	551	543	540	533	527	521	516	511	506
	2	580	557	538	522	569	548	530	516	531	517	505	515	504	494	501	492	484	482
	3	556	526	503	485	546	519	498	481	506	488	473	493	478	466	482	469	459	461
	4	535	500	475	455	526	494	471	453	483	463	447	473	456	442	463	449	437	441
RCR	5	514	477	450	431	506	472	447	429	463	442	425	454	436	422	447	431	418	423
	6	496	456	429	410	488	452	427	409	444	422	406	437	418	403	431	414	401	407
	7	478	437	411	392	472	434	409	391	428	405	389	422	402	387	416	399	385	392
	8	462	420	394	376	456	417	392	375	412	390	374	407	387	372	402	384	371	378
	9	447	405	379	361	442	402	378	361	398	375	360	394	373	359	390	371	358	366
	10	432	390	365	348	428	388	364	348	384	362	347	381	361	346	377	359	345	354

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	63.1 fc	2.3 ft
6.5 ft	45.2 fc	2.8 ft
7.5 ft	34.0 fc	3.2 ft
8.0 ft	29.8 fc	3.4 ft
10.0 ft	19.1 fc	4.3 ft
12.0 ft	13.3 fc	5.1 ft
14.0 ft	9.7 fc	6.0 ft
16.0 ft	7.5 fc	6.8 ft
20.0 ft	4.8 fc	8.5 ft
24.0 ft	3.3 fc	10.2 ft
28.0 ft	2.4 fc	11.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	802,994	802,994	802,994
45.00°	3,310	3,869	3,744
55.00°	9,207	10,942	10,916
65.00°	13,104	10,381	12,880
75.00°	7,872	3,976	6,420
85.00°	2,678	4,481	2,342

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	16.5	17.5	16.9	17.8	18.1	18.1	19.1	18.4	19.4	19.7
	3H	17.3	18.2	17.7	18.5	18.9	18.4	19.3	18.8	19.6	20.0
	4H	17.5	18.3	17.9	18.7	19.1	18.5	19.3	18.9	19.7	20.1
	6H	18.5	19.3	18.9	19.6	20.0	18.8	19.5	19.2	19.9	20.3
	8H	18.8	19.5	19.3	19.9	20.3	18.8	19.5	19.3	19.9	20.3
	12H	18.8	19.5	19.3	19.9	20.3	18.8	19.5	19.2	19.9	20.3
4H	2H	16.8	17.6	17.2	18.0	18.4	18.3	19.1	18.7	19.4	19.8
	3H	17.5	18.2	18.0	18.6	19.0	18.6	19.3	19.0	19.7	20.1
	4H	17.9	18.5	18.3	18.9	19.3	18.7	19.3	19.1	19.7	20.2
	6H	19.1	19.6	19.6	20.1	20.6	19.1	19.6	19.6	20.1	20.5
	8H	19.5	20.0	20.0	20.4	20.9	19.2	19.7	19.7	20.1	20.6
	12H	19.6	20.0	20.1	20.5	21.0	19.2	19.6	19.7	20.1	20.5
8H	4H	17.9	18.3	18.3	18.8	19.3	18.6	19.1	19.1	19.5	20.0
	6H	19.3	19.7	19.8	20.2	20.7	19.1	19.5	19.6	20.0	20.5
	8H	19.8	20.2	20.4	20.7	21.2	19.2	19.6	19.8	20.1	20.6
	12H	20.0	20.2	20.5	20.7	21.3	19.3	19.6	19.8	20.1	20.6
12H	4H	17.9	18.3	18.4	18.8	19.2	18.6	19.0	19.0	19.5	19.9
	6H	19.3	19.7	19.9	20.1	20.7	19.1	19.4	19.6	19.9	20.4
	8H	19.9	20.2	20.4	20.7	21.2	19.2	19.5	19.8	20.0	20.6

Corrected UGR values based on total output lumens

SHR = 1.0