Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx 835 010 DLWFGN MW

Nominal 3" diam round recessed Infinium downlight

Test Number

SP-00761_1_M-010L

Test Date

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

Summary of Results

Power

Input Watts	9.3 W

Lumen Output

Output Lumens	712
Efficacy	76.55 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.96
Two luminaires, plane 90°	0.95
Four luminaires	0.88

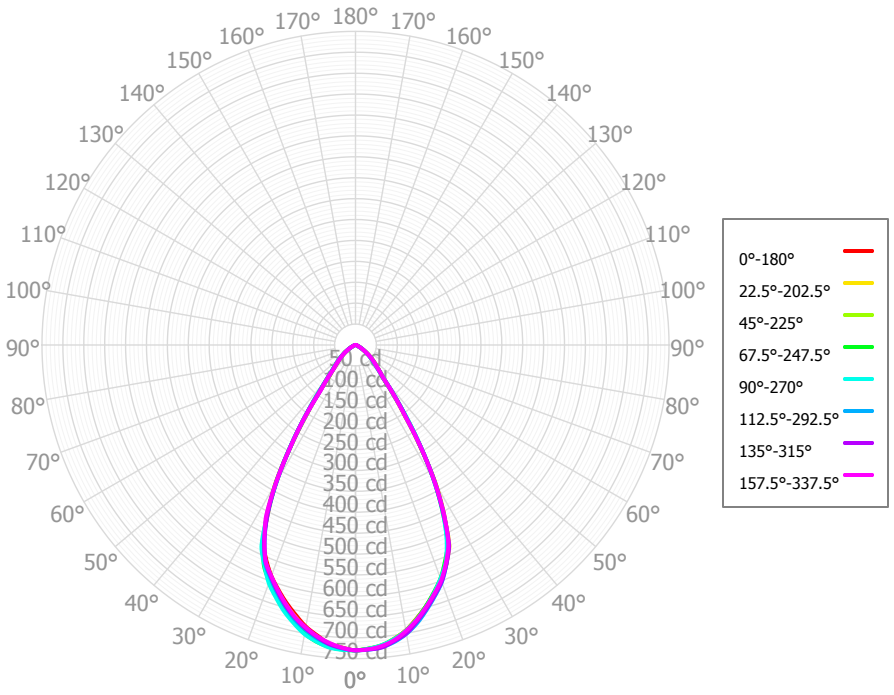
Full Beam Angle

0° - 180°	61°
90° - 270°	61°

IES File Header Contents

Keyword	Value
TEST	SP-00761_1_M-010L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/28/2019
LUMCAT	IF03RMx xx 835 010 DLWFGN MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 61 degrees
OTHER	Wide flood optic, Open aperture / no lens
OTHER	Aluminum bezel
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°	68.92	9.68%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	181.85	25.54%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	231.65	32.54%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	135.82	19.08%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	54.02	7.59%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	27.48	3.86%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	8.96	1.26%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.41	0.34%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.78	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	711.89	99.99%	0.00° - 180.00°	711.93	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°	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34	730.34
2.50°	727.92	727.41	727.09	727.25	727.13	726.91	725.48	724.93	724.94	724.89	727.60	729.39	729.74	729.52	729.05	728.50	727.92
5.00°	722.94	721.52	720.88	721.41	720.72	718.80	718.47	715.45	717.47	717.05	721.91	724.78	726.37	725.26	726.28	722.77	722.94
7.50°	709.04	708.68	709.29	709.73	709.42	707.53	704.42	702.82	701.03	703.81	708.67	715.79	715.52	716.10	714.23	711.91	709.04
10.00°	693.55	694.16	693.92	694.88	694.47	691.23	688.57	685.81	684.12	687.65	693.31	700.87	702.31	701.47	700.76	694.88	693.55
12.50°	671.47	672.30	672.06	672.96	673.79	672.51	668.13	666.90	661.37	665.93	671.87	680.03	681.91	681.39	677.85	674.21	671.47
15.00°	648.80	649.19	648.62	647.93	650.38	648.33	645.51	642.21	638.50	642.90	649.20	656.26	659.80	656.33	654.10	649.94	648.80
17.50°	624.23	623.70	622.92	621.52	623.47	622.11	618.52	615.57	613.79	617.87	623.56	630.12	633.42	630.37	628.43	624.81	624.23
20.00°	598.07	597.95	595.74	594.66	594.70	593.94	590.62	588.64	588.43	591.06	597.51	601.84	606.35	603.73	602.53	598.97	598.07
22.50°	568.00	564.90	566.86	559.72	564.01	565.21	561.22	561.63	557.58	562.04	562.91	572.17	569.84	567.55	567.66	565.05	568.00
25.00°	525.67	531.42	520.23	522.74	516.24	514.18	517.43	514.82	521.18	518.03	527.67	520.97	532.39	525.59	530.08	525.79	525.67
27.50°	459.82	457.27	457.04	453.04	453.82	458.42	454.61	464.36	454.80	458.62	454.14	458.15	456.43	457.43	455.74	459.34	459.82
30.00°	383.22	382.21	379.66	377.21	378.65	376.95	379.83	379.55	383.01	382.02	379.49	378.44	378.68	376.41	379.87	378.32	383.22
32.50°	289.66	290.17	291.26	292.74	294.51	291.87	292.24	290.77	290.61	291.07	292.21	291.55	294.35	293.75	292.05	292.36	289.66
35.00°	209.29	202.12	214.74	207.25	218.46	215.82	214.55	212.52	206.04	212.81	207.28	215.57	211.60	210.46	209.23	204.28	209.29
37.50°	145.69	148.83	145.66	153.24	146.99	140.52	145.71	134.89	144.61	143.24	150.08	143.15	154.47	153.58	151.73	149.47	145.69
40.00°	104.11	101.01	107.52	101.01	107.37	108.72	103.81	105.20	96.31	103.26	98.20	107.93	101.54	104.55	102.71	105.66	104.11
42.50°	85.25	84.71	84.85	83.60	82.25	78.56	81.43	76.66	77.96	79.75	81.71	82.09	83.95	83.08	84.86	84.86	85.25
45.00°	70.94	69.75	70.30	66.82	67.30	66.71	66.26	65.48	62.91	65.54	66.39	68.74	67.64	67.69	68.96	69.93	70.94
47.50°	60.54	60.14	59.05	56.89	56.00	55.07	55.29	54.53	53.80	55.42	56.43	57.57	58.12	57.42	58.56	59.56	60.54
50.00°	50.59	50.48	49.06	47.07	46.61	46.07	45.78	45.76	44.86	45.95	46.79	48.04	48.66	47.94	48.66	50.01	50.59
52.50°	40.96	40.64	39.47	38.12	37.75	37.23	36.97	37.14	36.18	36.70	38.19	38.69	39.43	38.95	39.89	39.92	40.96
55.00°	31.99	31.45	31.05	29.50	30.07	29.51	29.43	29.38	28.66	29.07	30.04	30.33	30.91	30.01	31.48	29.78	31.99
57.50°	23.40	23.79	22.88	22.85	22.62	22.13	22.36	22.07	22.54	21.87	23.01	22.03	24.43	23.69	23.72	23.57	23.40
60.00°	17.20	17.23	17.07	16.59	16.87	16.36	16.97	16.61	16.90	16.52	16.75	16.84	18.25	17.47	17.22	17.59	17.20
62.50°	12.10	12.72	11.65	12.00	11.34	11.17	12.06	11.72	11.73	11.52	12.05	11.73	12.77	12.58	12.53	12.57	12.10
65.00°	8.47	8.77	8.36	8.02	8.54	8.06	8.93	8.56	8.11	8.83	8.13	8.13	8.30	7.89	8.66	7.74	8.47
67.50°	5.37	5.61	5.31	5.84	5.96	5.53	6.16	5.81	5.72	6.41	5.40	4.91	5.60	5.58	5.73	5.91	5.37
70.00°	3.60	3.60	3.82	3.97	4.65	4.18	4.32	3.85	4.21	4.63	3.76	3.69	3.71	3.55	3.69	4.17	3.60
72.50°	2.18	2.53	2.56	2.56	3.45	3.21	2.88	2.60	3.07	3.21	2.98	2.76	2.52	2.50	2.27	2.76	2.18
75.00°	1.71	2.07	1.97	1.96	2.56	2.50	2.36	1.85	2.53	2.66	2.12	2.20	1.68	1.82	2.02	1.83	1.71
77.50°	1.47	1.73	1.64	1.58	1.95	2.01	1.84	1.66	2.05	1.94	1.47	1.61	1.18	1.46	1.75	1.31	1.47
80.00°	1.33	1.43	1.38	0.96	1.45	1.43	1.32	1.49	1.54	1.29	1.13	1.19	1.07	1.06	1.06	1.16	1.33
82.50°	0.88	0.93	1.03	0.57	0.95	0.96	0.81	1.02	0.87	0.87	0.64	0.85	0.79	0.88	0.75	1.01	0.88
85.00°	0.59	0.53	0.73	0.46	0.61	0.62	0.59	0.53	0.65	0.59	0.76	0.53	0.68	0.67	0.63	0.66	0.59
87.50°	0.71	0.50	0.63	0.71	0.63	0.80	0.65	0.48	0.51	0.60	0.67	0.61	0.48	0.56	0.60	0.61	0.71
90.00°	0.65	0.71	0.61	0.81	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.63	0.66	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.

	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	848	848	848	848	828	828	828	828	791	791	791	757	757	757	726	726	726	712
	1	805	785	766	749	788	769	752	737	740	727	714	714	703	693	689	681	673	667
	2	763	726	695	670	747	713	686	662	690	667	648	669	650	634	649	634	621	621
	3	721	673	636	606	707	663	629	601	644	615	591	627	602	582	610	590	573	579
	4	682	626	584	552	669	617	579	549	602	569	542	587	559	536	574	550	530	539
RCR	5	646	583	540	507	634	576	536	505	563	528	500	551	520	496	540	513	491	504
	6	612	545	501	469	601	540	497	467	529	491	464	518	486	460	509	480	457	471
	7	580	511	466	435	570	506	464	434	497	459	431	488	454	429	480	450	427	442
	8	551	480	436	405	542	476	434	404	468	430	403	461	426	401	454	422	399	416
	9	524	452	409	379	516	449	407	378	442	404	377	435	401	376	429	398	374	391
	10	499	427	384	356	491	424	383	355	418	380	354	412	377	353	407	375	352	369

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	24.1 fc	6.5 ft
6.5 ft	17.3 fc	7.6 ft
7.5 ft	13.0 fc	8.8 ft
8.0 ft	11.4 fc	9.4 ft
10.0 ft	7.3 fc	11.8 ft
12.0 ft	5.1 fc	14.1 ft
14.0 ft	3.7 fc	16.5 ft
16.0 ft	2.9 fc	18.8 ft
20.0 ft	1.8 fc	23.5 ft
24.0 ft	1.3 fc	28.2 ft
28.0 ft	0.9 fc	32.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	250,235	250,235	250,235
45.00°	34,372	34,064	32,610
55.00°	19,112	18,545	17,961
65.00°	6,870	6,781	6,920
75.00°	2,266	2,609	3,391
85.00°	2,323	2,859	2,413

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	15.8	16.9	16.2	17.2	17.5	15.4	16.5	15.8	16.8	17.1
	3H	15.9	16.8	16.3	17.2	17.5	15.6	16.5	15.9	16.8	17.2
	4H	15.9	16.7	16.3	17.1	17.5	15.6	16.4	16.0	16.8	17.2
	6H	15.8	16.6	16.2	17.0	17.4	15.5	16.3	15.9	16.7	17.1
	8H	15.8	16.5	16.2	16.9	17.3	15.5	16.2	15.9	16.6	17.0
	12H	15.7	16.4	16.2	16.8	17.3	15.5	16.2	15.9	16.5	17.0
4H	2H	15.8	16.6	16.2	17.0	17.4	15.4	16.3	15.8	16.6	17.0
	3H	15.9	16.6	16.3	17.0	17.4	15.6	16.3	16.0	16.7	17.1
	4H	15.9	16.5	16.3	16.9	17.4	15.6	16.2	16.1	16.7	17.1
	6H	15.8	16.4	16.3	16.8	17.3	15.6	16.1	16.1	16.6	17.1
	8H	15.8	16.3	16.3	16.8	17.2	15.6	16.1	16.1	16.5	17.0
	12H	15.8	16.2	16.3	16.7	17.2	15.6	16.0	16.1	16.5	17.0
8H	4H	15.7	16.2	16.2	16.7	17.2	15.5	16.0	16.0	16.5	16.9
	6H	15.7	16.1	16.2	16.6	17.1	15.5	15.9	16.0	16.4	16.9
	8H	15.7	16.1	16.3	16.6	17.1	15.5	15.9	16.1	16.4	16.9
	12H	15.7	16.0	16.2	16.5	17.1	15.5	15.8	16.0	16.3	16.9
12H	4H	15.7	16.1	16.2	16.6	17.1	15.5	15.9	15.9	16.4	16.9
	6H	15.7	16.0	16.2	16.5	17.1	15.5	15.8	16.0	16.3	16.9
	8H	15.7	16.0	16.2	16.5	17.1	15.5	15.8	16.0	16.3	16.9

Corrected UGR values based on total output lumens

SHR = 1.0