

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx 835 020 DLNFGN MW
Nominal 3" diam round recessed Infinium downlight

Test Number

SP-00759_1

Test Date

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

Summary of Results

Power

Input Watts	15 W
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Lumen Output

Output Lumens	1386
Efficacy	92.43 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.47
Two luminaires, plane 90°	0.47
Four luminaires	0.48

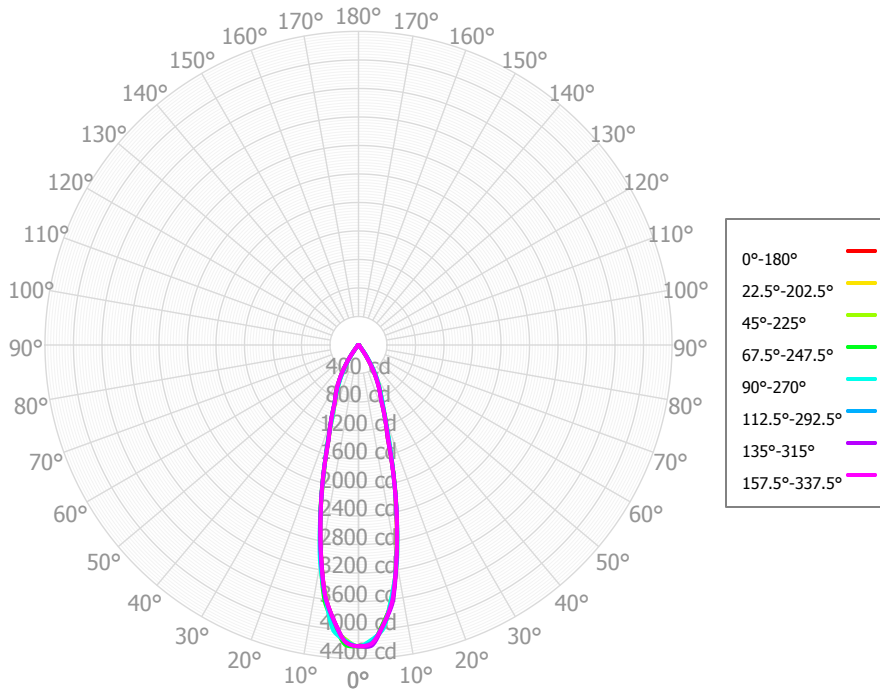
Full Beam Angle

0° - 180°	28°
90° - 270°	28°

IES File Header Contents

Keyword	Value
TEST	SP-00759_1
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 020 DLNFGN MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 28 degrees
OTHER	Narrow 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
_CRI	80
_CCTMULT	40K x 1.03
_LAMPMULT	07L x 0.40, 10L x 0.56, 15L x 0.78

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	351.87	25.38%	90.00° - 100.00°	0.09	0.01%
10.00° - 20.00°	522.23	37.67%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	331.15	23.88%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	130.62	9.42%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	17.53	1.26%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	10.73	0.77%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	13.15	0.95%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	7.35	0.53%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.73	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,386.36	99.99%	0.00° - 180.00°	1,386.45	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°	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85	4,227.85
2.50°	4,200.89	4,215.02	4,151.84	4,210.60	4,142.40	4,166.45	4,171.85	4,174.10	4,171.39	4,200.03	4,136.16	4,212.09	4,152.70	4,181.43	4,224.01	4,194.62	4,200.89
5.00°	3,937.37	3,930.42	3,989.91	3,927.66	3,998.42	3,907.35	3,891.77	3,895.26	3,897.59	3,907.46	3,975.64	3,928.82	4,027.63	3,952.55	3,953.14	3,952.61	3,937.37
7.50°	3,620.96	3,636.07	3,563.23	3,629.44	3,556.83	3,571.83	3,569.29	3,558.37	3,559.18	3,592.47	3,538.82	3,632.50	3,569.15	3,614.20	3,654.36	3,626.17	3,620.96
10.00°	3,063.61	3,054.95	3,097.28	3,056.87	3,100.87	3,045.07	3,020.49	3,024.78	3,015.51	3,031.53	3,068.28	3,055.77	3,103.90	3,057.76	3,074.03	3,061.07	3,063.61
12.50°	2,466.32	2,474.59	2,479.94	2,485.36	2,487.94	2,458.91	2,470.54	2,451.57	2,466.90	2,470.79	2,473.38	2,480.88	2,489.04	2,489.11	2,475.55	2,487.35	2,466.32
15.00°	1,908.40	1,909.66	1,900.35	1,925.60	1,895.90	1,926.41	1,915.66	1,920.13	1,905.10	1,911.71	1,867.85	1,927.76	1,887.68	1,899.16	1,913.46	1,893.03	1,908.40
17.50°	1,355.46	1,367.46	1,442.98	1,398.45	1,460.96	1,407.60	1,419.25	1,395.16	1,419.92	1,392.62	1,448.70	1,403.81	1,456.72	1,415.92	1,353.28	1,389.78	1,355.46
20.00°	1,082.55	1,096.54	1,060.97	1,118.99	1,065.81	1,118.60	1,128.53	1,118.04	1,110.95	1,105.31	1,038.35	1,120.60	1,053.11	1,094.24	1,087.84	1,075.78	1,082.55
22.50°	833.53	840.89	883.18	861.16	894.32	877.81	879.00	868.60	865.65	848.57	877.46	858.74	877.86	848.63	827.30	826.58	833.53
25.00°	698.79	707.62	717.92	729.45	730.38	738.32	752.11	743.83	745.81	733.76	720.10	726.20	707.77	704.75	695.54	693.35	698.79
27.50°	569.89	572.39	581.45	596.81	600.64	615.30	622.87	628.50	622.31	614.96	595.65	592.90	569.19	563.92	563.15	556.61	569.89
30.00°	420.51	425.27	443.91	459.92	470.62	482.25	487.71	491.54	492.48	481.19	470.58	455.90	432.45	426.62	422.58	414.42	420.51
32.50°	271.47	283.78	304.19	326.23	339.61	347.97	354.21	353.74	358.52	348.28	334.26	322.32	304.65	297.43	285.07	281.48	271.47
35.00°	164.59	168.96	184.22	204.33	217.83	229.46	224.29	227.67	218.38	218.01	202.32	201.95	186.51	176.63	175.01	161.19	164.59
37.50°	61.92	72.40	98.34	101.85	124.54	112.25	120.07	103.94	114.23	110.19	119.49	100.60	106.07	95.12	76.02	80.39	61.92
40.00°	41.69	45.39	40.90	59.70	52.22	68.76	63.84	62.25	57.08	61.76	44.40	59.86	41.35	49.16	48.65	46.75	41.69
42.50°	22.84	23.95	26.71	27.65	34.33	28.84	25.96	22.73	22.96	25.60	28.46	27.80	28.07	25.04	24.85	26.53	22.84
45.00°	19.44	20.30	17.77	21.95	20.85	22.62	17.73	17.07	15.47	17.01	14.61	19.35	17.67	18.16	19.24	20.52	19.44
47.50°	16.25	16.99	15.79	17.42	17.31	16.92	12.95	11.90	11.83	11.04	13.00	13.24	15.15	14.34	14.48	16.19	16.25
50.00°	14.72	14.58	14.35	15.52	14.63	15.64	13.09	11.76	12.09	10.23	11.54	12.54	12.94	12.64	13.17	13.43	14.72
52.50°	13.30	12.94	13.56	13.70	13.62	14.33	12.93	11.57	11.73	9.92	10.79	11.52	11.46	12.27	11.96	12.11	13.30
55.00°	12.54	13.09	12.73	12.05	12.90	12.21	12.39	11.07	10.79	10.45	10.11	9.85	10.17	12.70	11.11	11.97	12.54
57.50°	12.04	13.56	11.85	11.18	12.66	10.45	12.41	10.86	10.31	10.92	9.71	9.42	9.26	12.26	11.04	12.27	12.04
60.00°	12.80	14.64	12.65	11.61	13.13	12.64	13.05	12.27	10.19	11.29	9.89	11.14	9.90	11.34	13.15	12.87	12.80
62.50°	13.57	15.44	14.95	12.77	14.65	14.73	13.56	13.39	11.22	12.01	11.84	12.18	13.24	11.57	14.76	13.94	13.57
65.00°	14.38	15.77	15.02	14.99	14.91	16.02	13.93	13.29	13.05	13.20	13.00	12.18	14.63	12.34	15.15	15.31	14.38
67.50°	14.24	14.57	13.31	14.63	13.58	16.41	13.46	13.01	13.61	13.27	12.25	11.70	13.37	11.87	14.61	13.56	14.24
70.00°	11.70	11.40	11.28	11.26	11.49	13.07	12.35	12.22	13.52	12.27	10.59	10.73	11.20	10.98	12.48	10.36	11.70
72.50°	8.68	8.54	9.08	8.03	8.71	10.70	10.45	10.64	10.53	9.83	7.90	8.81	8.46	7.96	8.92	7.65	8.68
75.00°	5.19	5.90	6.62	4.87	6.87	9.65	8.27	8.23	7.43	6.96	6.24	6.57	6.30	5.50	4.43	5.32	5.19
77.50°	3.70	4.09	4.66	4.44	5.42	7.50	5.80	6.49	5.29	4.86	4.79	4.31	4.45	4.29	3.45	3.84	3.70
80.00°	2.48	2.31	3.65	3.48	4.33	5.16	4.20	4.39	4.07	3.42	3.33	3.04	2.73	2.62	2.33	2.47	2.48
82.50°	1.59	1.27	2.33	2.28	2.60	2.88	2.29	2.22	2.08	2.07	1.76	1.88	1.17	1.63	1.33	1.99	1.59
85.00°	1.38	1.33	1.21	1.61	1.66	1.06	1.05	1.27	1.20	1.22	0.77	0.91	1.16	1.15	0.99	1.67	1.38
87.50°	0.96	1.39	0.92	1.24	1.31	1.19	1.15	1.07	1.15	1.07	1.07	1.09	1.18	1.25	1.21	1.27	0.96
90.00°	1.42	1.03	1.15	1.16	1.08	1.71	1.09	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	1.42
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.

	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%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
RCR	0	1,651	1,651	1,651	1,651	1,612	1,612	1,612	1,612	1,540	1,540	1,540	1,475	1,475	1,475	1,415	1,415	1,386
	1	1,584	1,550	1,520	1,493	1,551	1,521	1,494	1,469	1,465	1,444	1,424	1,414	1,397	1,382	1,367	1,354	1,327
	2	1,521	1,462	1,414	1,374	1,491	1,439	1,396	1,359	1,395	1,360	1,329	1,355	1,326	1,301	1,317	1,294	1,269
	3	1,461	1,386	1,327	1,281	1,435	1,367	1,314	1,271	1,332	1,287	1,251	1,299	1,262	1,231	1,269	1,239	1,215
	4	1,405	1,317	1,253	1,205	1,382	1,302	1,243	1,197	1,274	1,224	1,184	1,247	1,205	1,170	1,223	1,187	1,165
	5	1,352	1,256	1,190	1,140	1,332	1,244	1,182	1,135	1,221	1,167	1,125	1,199	1,153	1,116	1,179	1,139	1,119
	6	1,303	1,201	1,133	1,084	1,285	1,191	1,127	1,081	1,172	1,116	1,074	1,154	1,105	1,067	1,137	1,094	1,076
	7	1,256	1,151	1,083	1,035	1,240	1,143	1,079	1,033	1,127	1,069	1,028	1,112	1,061	1,023	1,097	1,052	1,035
	8	1,213	1,106	1,038	992	1,198	1,098	1,034	990	1,085	1,027	986	1,072	1,020	982	1,060	1,013	998
	9	1,172	1,064	997	952	1,159	1,057	994	951	1,046	988	948	1,035	982	945	1,024	977	963
	10	1,134	1,025	960	916	1,122	1,020	957	915	1,009	952	913	1,000	948	911	991	943	930

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	139.8 fc	2.8 ft
6.5 ft	100.1 fc	3.3 ft
7.5 ft	75.2 fc	3.8 ft
8.0 ft	66.1 fc	4.0 ft
10.0 ft	42.3 fc	5.0 ft
12.0 ft	29.4 fc	6.0 ft
14.0 ft	21.6 fc	7.0 ft
16.0 ft	16.5 fc	8.0 ft
20.0 ft	10.6 fc	10.0 ft
24.0 ft	7.3 fc	12.0 ft
28.0 ft	5.4 fc	14.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,448,570	1,448,570	1,448,570
45.00°	9,420	8,612	10,105
55.00°	7,489	7,603	7,707
65.00°	11,658	12,173	12,092
75.00°	6,868	8,768	9,099
85.00°	5,427	4,754	6,526

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	9.6	10.5	9.9	10.8	11.1	8.0	8.9	8.4	9.3	9.6
	3H	13.1	13.9	13.5	14.3	14.6	12.6	13.5	13.0	13.8	14.2
	4H	13.6	14.3	14.0	14.7	15.1	13.5	14.2	13.9	14.6	15.0
	6H	13.7	14.4	14.2	14.8	15.2	13.9	14.6	14.4	15.0	15.4
	8H	13.8	14.4	14.2	14.8	15.2	14.0	14.7	14.4	15.1	15.5
	12H	13.8	14.4	14.2	14.8	15.2	14.0	14.7	14.5	15.0	15.5
4H	2H	11.0	11.7	11.4	12.1	12.5	9.7	10.5	10.1	10.9	11.2
	3H	14.1	14.7	14.5	15.1	15.5	13.8	14.4	14.2	14.8	15.2
	4H	14.6	15.1	15.0	15.6	16.0	14.7	15.3	15.2	15.7	16.2
	6H	14.8	15.3	15.3	15.7	16.2	15.3	15.8	15.7	16.2	16.7
	8H	14.8	15.2	15.3	15.7	16.2	15.4	15.8	15.8	16.3	16.7
	12H	14.8	15.2	15.3	15.7	16.2	15.4	15.8	15.9	16.3	16.7
8H	4H	14.7	15.2	15.2	15.6	16.1	15.0	15.5	15.5	15.9	16.4
	6H	15.0	15.3	15.5	15.8	16.3	15.7	16.0	16.2	16.5	17.0
	8H	15.0	15.3	15.6	15.9	16.4	15.8	16.1	16.3	16.6	17.1
	12H	15.1	15.4	15.7	15.9	16.5	15.9	16.1	16.4	16.6	17.2
12H	4H	14.7	15.1	15.2	15.6	16.0	15.0	15.4	15.5	15.9	16.3
	6H	15.0	15.3	15.5	15.8	16.3	15.7	16.0	16.2	16.4	17.0
	8H	15.1	15.3	15.6	15.8	16.4	15.8	16.1	16.4	16.6	17.2

Corrected UGR values based on total output lumens

SHR = 1.0