

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-00759

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	1306
Efficacy	87.05 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.46
Two luminaires, plane 90°	0.47
Four luminaires	0.48

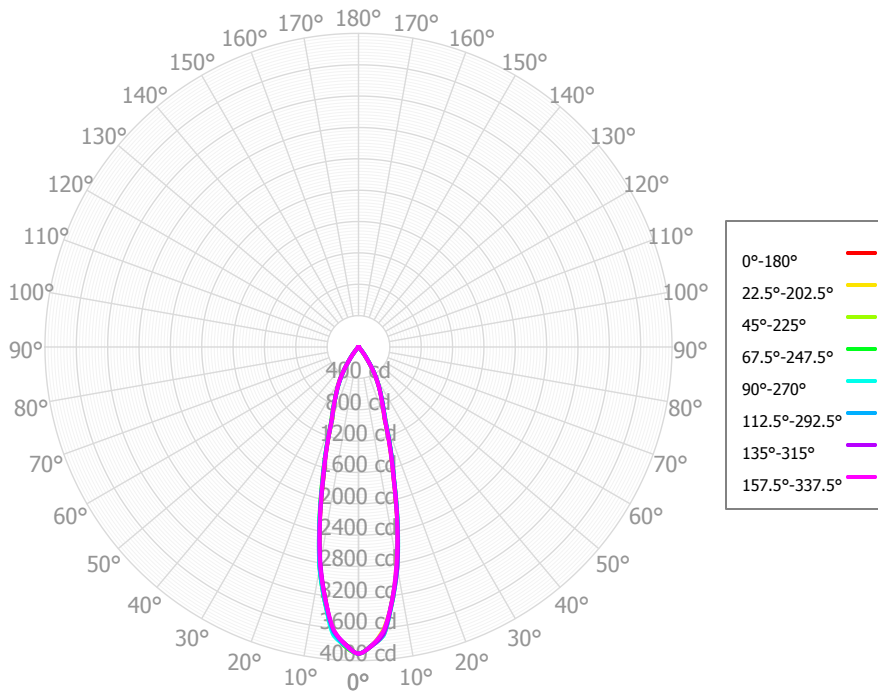
Full Beam Angle

0° - 180°	28°
90° - 270°	28°

IES File Header Contents

Keyword	Value
TEST	SP-00759
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	2/27/2019
LUMCAT	IF03RMx xx 835 020 DLNFGC MW
LUMINAIRE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 28 degrees
OTHER	Narrow flood optic, Clear glass lens
OTHER	Aluminum bezel contains lens
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°	323.26	24.76%	90.00° - 100.00°	0.07	0.01%
10.00° - 20.00°	485.78	37.20%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	313.73	24.03%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	136.97	10.49%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	22.61	1.73%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	10.98	0.84%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	7.34	0.56%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.64	0.28%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.31	0.10%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,305.64	99.99%	0.00° - 180.00°	1,305.71	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°	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47	3,911.47
2.50°	3,810.43	3,815.95	3,815.86	3,817.92	3,816.12	3,812.81	3,795.52	3,806.45	3,797.88	3,825.97	3,807.78	3,828.75	3,814.79	3,812.47	3,821.58	3,812.63	3,810.43
5.00°	3,680.12	3,622.69	3,688.68	3,644.80	3,692.33	3,651.58	3,632.36	3,622.85	3,657.55	3,626.79	3,674.77	3,653.09	3,688.95	3,655.53	3,678.32	3,638.65	3,680.12
7.50°	3,265.59	3,281.79	3,279.44	3,288.58	3,288.65	3,267.88	3,242.91	3,250.33	3,239.87	3,271.82	3,260.58	3,288.20	3,280.23	3,274.09	3,278.98	3,271.06	3,265.59
10.00°	2,834.32	2,795.64	2,855.22	2,821.26	2,860.68	2,848.22	2,798.49	2,821.69	2,819.83	2,828.74	2,844.65	2,860.05	2,865.33	2,817.27	2,853.81	2,795.41	2,834.32
12.50°	2,280.96	2,282.66	2,302.70	2,306.01	2,313.26	2,296.36	2,277.96	2,274.19	2,272.58	2,281.56	2,295.54	2,309.15	2,310.39	2,293.72	2,290.93	2,274.36	2,280.96
15.00°	1,718.67	1,741.94	1,741.56	1,760.11	1,753.70	1,773.42	1,737.45	1,766.49	1,726.30	1,782.19	1,746.51	1,799.67	1,760.48	1,746.26	1,751.59	1,726.55	1,718.67
17.50°	1,334.67	1,314.57	1,354.36	1,346.54	1,366.02	1,365.18	1,351.06	1,348.15	1,350.38	1,342.23	1,365.32	1,375.22	1,373.98	1,349.41	1,350.51	1,316.72	1,334.67
20.00°	966.32	1,010.44	981.36	1,022.16	998.47	1,002.72	1,008.25	1,003.70	974.46	1,013.07	984.12	1,028.08	991.50	1,010.09	981.72	992.62	966.32
22.50°	808.37	793.12	817.95	811.46	826.25	836.84	825.32	835.23	828.55	828.73	832.09	848.96	836.40	815.32	823.61	791.02	808.37
25.00°	672.05	675.04	674.75	681.46	679.99	680.17	690.95	683.62	684.21	678.72	682.85	689.50	681.47	679.27	670.75	669.65	672.05
27.50°	554.08	553.53	554.40	557.64	560.80	566.54	568.57	574.72	576.41	575.92	571.35	575.35	561.33	555.53	556.27	549.32	554.08
30.00°	438.27	427.90	436.60	438.44	445.65	451.91	450.10	460.90	469.32	463.46	460.79	458.28	441.18	437.10	441.06	429.70	438.27
32.50°	311.93	306.14	313.59	321.27	329.07	332.21	329.45	333.63	338.62	337.00	336.65	334.09	324.14	321.33	319.69	310.81	311.93
35.00°	184.17	189.28	189.91	205.71	212.25	218.03	208.05	216.05	207.14	223.19	211.99	220.33	207.12	206.79	202.44	192.45	184.17
37.50°	113.68	103.47	117.29	123.18	133.70	134.78	127.76	126.76	128.44	128.70	135.71	133.74	130.40	126.96	125.41	112.79	113.68
40.00°	51.81	58.96	51.99	67.99	62.16	60.51	62.70	54.88	52.19	62.05	61.96	64.46	54.50	63.94	53.41	62.71	51.81
42.50°	34.48	30.26	33.68	36.61	39.37	41.88	36.65	37.30	36.31	40.18	41.57	43.19	37.14	35.49	39.00	34.95	34.48
45.00°	24.76	23.72	22.88	25.95	26.37	24.85	25.99	23.01	24.08	24.90	24.70	26.15	21.76	24.76	25.21	25.14	24.76
47.50°	19.95	18.89	18.55	19.77	20.82	19.19	20.19	19.72	19.29	20.83	19.94	21.60	19.16	19.13	20.02	19.09	19.95
50.00°	16.07	16.59	15.40	17.67	16.91	14.11	16.43	16.57	15.06	17.14	16.16	17.42	17.16	16.27	15.00	16.24	16.07
52.50°	14.54	14.51	13.58	14.95	13.95	13.68	14.11	13.87	13.54	14.15	14.39	14.37	14.15	13.78	12.83	13.67	14.54
55.00°	13.51	12.79	12.02	11.64	11.22	13.06	12.44	11.45	12.26	11.74	12.80	11.69	11.07	11.50	10.71	11.36	13.51
57.50°	12.24	11.36	10.82	10.01	10.49	10.73	11.06	10.10	10.88	10.42	10.96	10.23	9.67	9.87	9.65	9.85	12.24
60.00°	10.92	10.42	9.69	10.07	10.28	8.59	9.82	9.00	9.49	9.23	9.09	8.89	8.40	8.63	8.60	9.07	10.92
62.50°	9.25	9.42	8.46	9.69	9.18	8.51	8.55	8.92	8.75	8.30	9.00	7.98	7.24	7.68	8.03	8.09	9.25
65.00°	7.49	8.30	7.20	8.84	7.84	8.35	7.26	8.53	8.08	7.36	9.15	6.99	6.10	6.92	7.44	6.90	7.49
67.50°	6.21	6.74	6.03	7.75	6.38	7.09	6.52	6.74	6.80	6.40	6.71	5.75	4.90	5.92	5.68	5.68	6.21
70.00°	5.07	4.38	4.88	6.39	4.88	5.82	6.07	5.09	5.44	5.38	3.91	4.58	3.70	4.75	3.93	4.41	5.07
72.50°	4.20	2.88	3.71	5.11	4.30	4.27	5.15	4.10	4.49	4.24	3.28	3.74	3.82	3.88	3.56	3.54	4.20
75.00°	3.41	3.05	2.55	3.92	4.02	2.82	3.98	3.27	3.61	3.29	3.00	2.96	4.11	3.23	3.20	3.09	3.41
77.50°	3.08	2.85	2.46	3.03	3.21	2.66	3.17	3.14	3.03	2.74	2.77	2.45	3.07	2.80	2.64	2.38	3.08
80.00°	2.86	2.05	2.65	2.44	2.22	2.37	2.53	2.68	2.46	2.21	2.46	1.88	2.03	2.51	2.07	1.42	2.86
82.50°	1.82	1.26	1.66	1.66	1.49	1.75	1.39	1.57	1.66	1.69	1.62	1.21	1.33	1.53	1.47	1.10	1.82
85.00°	1.05	0.69	0.85	0.99	0.99	1.20	0.87	1.01	1.19	0.96	1.04	0.91	1.44	1.09	1.11	1.01	1.05
87.50°	0.81	0.70	0.55	0.79	0.82	1.10	0.87	0.97	1.07	0.81	0.99	1.02	0.80	1.38	0.82	0.91	0.81
90.00°	0.67	0.75	1.34	0.99	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	1.08	1.04	0.67
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	1,554	1,554	1,554	1,554	1,518	1,518	1,518	1,518	1,451	1,451	1,451	1,389	1,389	1,389	1,332	1,332	1,306
	1	1,493	1,461	1,432	1,407	1,461	1,433	1,408	1,385	1,380	1,360	1,342	1,332	1,317	1,302	1,288	1,276	1,251
	2	1,433	1,378	1,333	1,295	1,405	1,356	1,315	1,281	1,315	1,282	1,253	1,277	1,250	1,226	1,241	1,220	1,196
	3	1,376	1,305	1,250	1,207	1,351	1,288	1,237	1,197	1,254	1,213	1,178	1,224	1,189	1,160	1,195	1,167	1,145
	4	1,323	1,240	1,180	1,134	1,301	1,226	1,170	1,127	1,199	1,152	1,114	1,174	1,134	1,101	1,151	1,117	1,097
	5	1,272	1,182	1,118	1,072	1,253	1,170	1,111	1,067	1,148	1,097	1,058	1,128	1,084	1,049	1,109	1,071	1,052
	6	1,225	1,129	1,064	1,018	1,208	1,119	1,059	1,015	1,101	1,048	1,008	1,084	1,037	1,002	1,068	1,027	995
	7	1,181	1,081	1,016	971	1,165	1,073	1,012	969	1,058	1,003	964	1,043	995	959	1,030	987	954
	8	1,139	1,037	973	929	1,125	1,030	969	927	1,017	962	923	1,005	956	920	994	949	916
	9	1,100	997	933	891	1,087	991	931	889	980	925	887	969	920	884	959	914	881
	10	1,063	959	897	856	1,052	954	895	855	945	891	853	936	886	851	927	882	849

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	129.3 fc	2.7 ft
6.5 ft	92.6 fc	3.2 ft
7.5 ft	69.5 fc	3.7 ft
8.0 ft	61.1 fc	4.0 ft
10.0 ft	39.1 fc	5.0 ft
12.0 ft	27.2 fc	6.0 ft
14.0 ft	20.0 fc	7.0 ft
16.0 ft	15.3 fc	8.0 ft
20.0 ft	9.8 fc	10.0 ft
24.0 ft	6.8 fc	12.0 ft
28.0 ft	5.0 fc	14.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,340,172	1,340,172	1,340,172
45.00°	11,998	11,086	12,777
55.00°	8,070	7,182	6,704
65.00°	6,071	5,840	6,354
75.00°	4,515	3,369	5,326
85.00°	4,131	3,328	3,886

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	8.6	9.5	9.0	9.8	10.2	8.2	9.2	8.6	9.5	9.8
	3H	9.8	10.6	10.2	11.0	11.3	9.6	10.4	9.9	10.7	11.1
	4H	10.2	11.0	10.6	11.3	11.7	10.1	10.8	10.5	11.2	11.6
	6H	10.6	11.3	11.1	11.7	12.1	10.5	11.2	10.9	11.5	11.9
	8H	10.8	11.4	11.2	11.8	12.3	10.6	11.2	11.0	11.6	12.0
	12H	10.9	11.5	11.3	11.9	12.3	10.6	11.3	11.1	11.7	12.1
4H	2H	9.0	9.7	9.4	10.1	10.5	8.8	9.6	9.3	10.0	10.3
	3H	10.3	10.9	10.7	11.3	11.7	10.3	10.9	10.7	11.3	11.7
	4H	10.7	11.3	11.2	11.7	12.2	10.8	11.4	11.2	11.8	12.2
	6H	11.3	11.8	11.8	12.2	12.7	11.3	11.8	11.8	12.2	12.7
	8H	11.5	11.9	11.9	12.4	12.8	11.4	11.9	11.9	12.3	12.8
	12H	11.6	12.0	12.1	12.5	12.9	11.6	11.9	12.1	12.4	12.9
8H	4H	10.8	11.3	11.3	11.7	12.2	11.0	11.4	11.4	11.9	12.3
	6H	11.5	11.8	12.0	12.3	12.8	11.6	11.9	12.1	12.4	12.9
	8H	11.7	12.0	12.3	12.6	13.1	11.8	12.1	12.3	12.6	13.1
	12H	11.9	12.2	12.4	12.7	13.3	12.0	12.3	12.6	12.8	13.4
12H	4H	10.8	11.2	11.3	11.7	12.2	11.0	11.3	11.5	11.8	12.3
	6H	11.5	11.8	12.1	12.3	12.9	11.6	11.9	12.2	12.4	13.0
	8H	11.8	12.1	12.3	12.6	13.2	11.9	12.2	12.4	12.7	13.2

Corrected UGR values based on total output lumens

SHR = 1.0