

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx DWDD1020 DLFLGPMW

Nom 3" diam Infinium, dim to warm 20L emitter - Flood optic, No lens

Test Number

SP-00942_3

Test Date

5/1/2019

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

Summary of Results

Power

Input Watts	21.7 W
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Lumen Output

Output Lumens	1321
Efficacy	60.85 lm/W

Luminous Dimensions

0° - 180° Size	-0.22
90° - 270° Size	-0.22
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.55
Two luminaires, plane 90°	0.56
Four luminaires	0.6

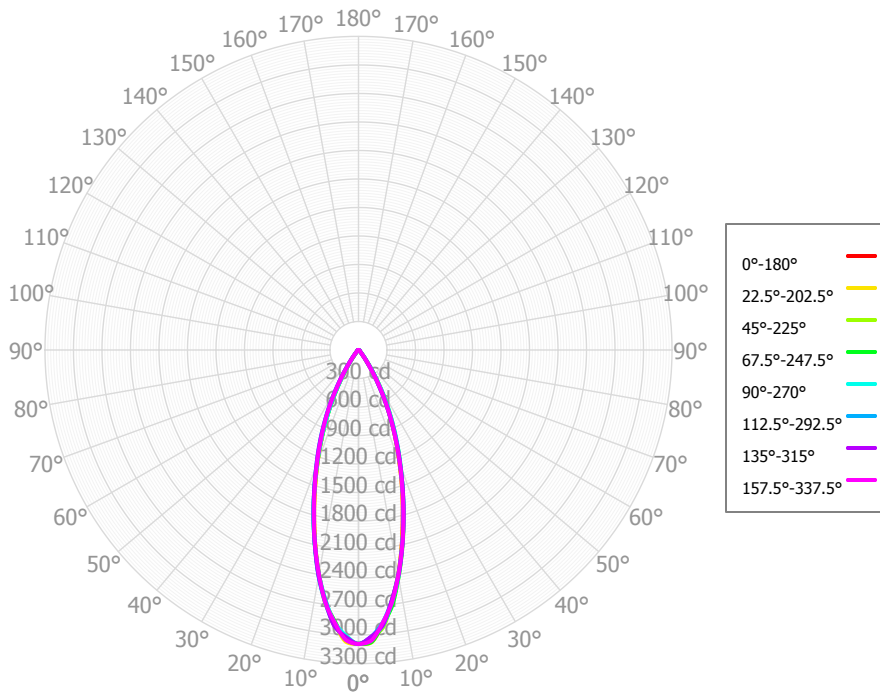
Full Beam Angle

0° - 180°	35°
90° - 270°	35°

IES File Header Contents

Keyword	Value
TEST	SP-00942_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/1/2019
ISSUEDATE	11/14/2019
LUMCAT	IF03RMx xx DWDD1020 DLFLGPMW
LUMINAIRE	Nom 3" diam Infinium, dim to warm 20L emitter - Flood optic, No lens
OTHER	Beam Angle: 34.6 degrees
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: N/A - dim to warm
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	95
_CCTMULT	N/A, dim to warm emitter
_LAMPMULT	7L x 0.38, 10L x 0.49, 15L x 0.8

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	263.46	19.95%	90.00° - 100.00°	0.09	0.01%
10.00° - 20.00°	498.70	37.76%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	371.84	28.16%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	121.36	9.19%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	26.26	1.99%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	16.22	1.23%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	13.41	1.02%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	7.45	0.56%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.74	0.13%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,320.43	99.99%	0.00° - 180.00°	1,320.53	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°	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93	3,093.93
2.50°	3,030.06	3,081.63	3,034.66	3,078.22	3,026.82	3,033.97	3,024.04	3,055.27	3,025.64	3,072.50	3,019.37	3,051.47	3,010.15	3,023.67	3,021.33	3,062.98	3,030.06
5.00°	2,919.36	2,895.05	2,934.57	2,900.25	2,916.26	2,906.71	2,916.67	2,879.02	2,910.49	2,882.23	2,908.51	2,866.82	2,885.50	2,885.94	2,913.51	2,887.28	2,919.36
7.50°	2,668.80	2,698.80	2,686.61	2,716.19	2,679.86	2,681.76	2,668.07	2,680.83	2,666.05	2,686.53	2,661.54	2,677.21	2,656.66	2,668.87	2,665.43	2,685.93	2,668.80
10.00°	2,407.43	2,402.92	2,428.91	2,424.17	2,422.63	2,420.31	2,413.77	2,396.65	2,410.57	2,395.10	2,407.08	2,396.01	2,399.41	2,404.49	2,414.82	2,408.33	2,407.43
12.50°	2,103.22	2,106.87	2,120.35	2,131.72	2,120.90	2,119.04	2,115.33	2,109.92	2,103.64	2,103.54	2,113.04	2,114.30	2,116.56	2,120.56	2,122.59	2,122.40	2,103.22
15.00°	1,797.57	1,809.65	1,817.81	1,834.59	1,827.42	1,828.76	1,821.43	1,815.20	1,802.84	1,809.43	1,818.36	1,827.37	1,828.20	1,826.71	1,831.15	1,827.09	1,797.57
17.50°	1,526.41	1,519.65	1,540.23	1,543.13	1,548.82	1,548.81	1,552.97	1,532.93	1,525.54	1,518.48	1,540.18	1,543.27	1,548.82	1,548.93	1,552.62	1,531.09	1,526.41
20.00°	1,256.59	1,266.67	1,273.60	1,292.86	1,289.98	1,298.71	1,292.64	1,283.00	1,260.13	1,262.06	1,264.16	1,278.89	1,270.99	1,278.22	1,278.22	1,276.12	1,256.59
22.50°	1,025.93	1,022.52	1,043.34	1,049.57	1,062.55	1,073.46	1,068.98	1,046.62	1,031.53	1,010.87	1,027.01	1,021.07	1,029.17	1,035.32	1,042.92	1,022.75	1,025.93
25.00°	798.03	815.22	824.02	843.40	847.08	861.27	850.85	840.69	811.02	797.63	793.13	798.76	791.77	802.62	812.38	813.87	798.03
27.50°	606.58	615.35	634.41	643.07	647.90	658.42	652.44	640.63	611.14	590.54	595.45	585.92	595.51	602.00	613.01	606.27	606.58
30.00°	420.67	440.25	456.45	466.73	468.14	478.25	465.57	451.70	426.94	416.96	405.35	412.54	402.45	411.03	423.42	432.76	420.67
32.50°	280.77	283.39	305.77	305.73	311.06	311.96	312.15	293.05	277.37	258.38	270.78	257.81	276.05	277.05	284.10	265.25	280.77
35.00°	152.94	176.39	181.96	197.36	193.41	199.14	183.87	183.23	159.74	164.32	148.98	165.23	152.57	157.10	161.19	173.06	152.94
37.50°	98.51	92.09	111.15	107.62	116.61	115.06	118.18	103.88	101.71	85.56	95.51	89.24	102.49	99.98	103.88	88.13	98.51
40.00°	51.54	61.27	60.47	70.13	67.89	70.86	67.35	67.89	59.66	59.25	49.77	60.19	53.97	55.17	56.51	61.28	51.54
42.50°	39.76	38.37	43.53	41.22	44.22	44.77	47.54	43.40	43.04	38.13	37.52	37.42	41.25	39.52	41.09	37.23	39.76
45.00°	29.44	31.17	31.30	32.28	31.13	32.87	32.53	32.97	30.95	31.54	27.42	29.42	29.11	28.09	28.79	30.14	29.44
47.50°	24.53	25.40	26.02	25.48	26.14	26.34	26.05	25.80	25.21	25.66	24.80	23.28	25.26	23.74	25.02	23.85	24.53
50.00°	20.50	22.03	22.20	22.99	22.85	22.33	21.36	22.04	21.11	21.48	22.22	20.85	21.57	20.08	21.44	21.23	20.50
52.50°	19.11	19.29	20.22	20.74	20.71	19.13	19.42	19.23	18.97	18.37	19.77	18.93	19.38	18.79	18.28	18.83	19.11
55.00°	17.97	17.46	18.72	18.90	19.40	17.91	17.71	17.31	17.46	17.40	17.67	17.87	17.48	17.65	15.95	17.25	17.97
57.50°	17.49	15.91	17.73	17.76	18.57	17.22	16.31	16.05	16.59	16.41	16.43	16.56	17.45	16.48	15.21	15.83	17.49
60.00°	16.56	14.72	16.53	17.64	18.07	16.76	15.44	15.30	15.86	15.39	15.09	14.89	16.95	15.30	14.36	14.88	16.56
62.50°	14.65	13.95	15.11	17.27	17.74	16.35	15.18	14.48	15.23	14.47	13.53	13.55	14.26	12.82	13.32	14.00	14.65
65.00°	13.07	13.67	14.19	16.57	16.53	15.17	14.25	13.59	14.40	13.68	12.14	12.62	12.03	10.48	12.19	13.29	13.07
67.50°	12.08	12.58	13.67	15.22	14.94	13.86	12.70	11.90	13.42	12.31	11.00	11.31	11.31	10.25	10.94	12.17	12.08
70.00°	10.78	10.75	12.75	13.24	12.75	11.50	11.01	9.82	11.32	10.42	9.72	9.68	10.26	9.72	9.79	10.28	10.78
72.50°	9.11	9.04	11.60	11.54	10.41	9.31	9.25	8.41	8.89	8.36	8.35	7.95	8.75	8.25	8.73	8.48	9.11
75.00°	7.00	7.31	8.85	9.87	8.12	7.66	6.94	6.76	6.57	6.27	6.20	6.14	6.58	6.44	6.90	6.74	7.00
77.50°	4.75	4.55	6.11	6.49	6.11	5.88	4.91	4.60	4.77	4.22	4.32	4.10	4.69	4.47	4.92	4.52	4.75
80.00°	2.66	2.64	3.89	3.99	4.22	3.83	3.14	2.98	3.41	3.21	2.77	2.94	3.59	2.98	3.02	2.71	2.66
82.50°	1.75	1.55	2.46	2.25	1.50	1.75	1.63	1.76	2.18	1.57	1.70	1.80	1.23	1.95	2.06	1.52	1.75
85.00°	1.19	1.07	1.70	1.24	1.59	1.29	1.23	1.46	1.13	1.36	1.32	1.38	1.64	1.55	1.31	1.08	1.19
87.50°	1.08	1.20	1.27	1.60	1.48	1.65	1.44	1.03	1.05	1.36	1.23	1.31	1.53	1.30	0.87	1.36	1.08
90.00°	1.00	1.27	1.56	1.60	1.41	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	1.01	1.00
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.

RCR	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%
	0	1,572	1,572	1,572	1,572	1,535	1,535	1,535	1,535	1,467	1,467	1,467	1,405	1,405	1,405	1,347	1,347	1,320
	1	1,506	1,472	1,442	1,415	1,474	1,444	1,417	1,393	1,391	1,369	1,350	1,342	1,325	1,310	1,297	1,284	1,259
	2	1,442	1,384	1,336	1,296	1,413	1,361	1,318	1,281	1,319	1,284	1,253	1,280	1,252	1,227	1,245	1,222	1,198
	3	1,381	1,306	1,248	1,201	1,356	1,288	1,235	1,192	1,254	1,210	1,173	1,223	1,186	1,155	1,194	1,163	1,141
	4	1,324	1,237	1,173	1,124	1,302	1,222	1,163	1,117	1,195	1,144	1,104	1,169	1,126	1,092	1,145	1,109	1,089
	5	1,271	1,175	1,107	1,058	1,251	1,163	1,100	1,053	1,140	1,086	1,044	1,119	1,072	1,035	1,099	1,059	1,040
	6	1,220	1,118	1,050	1,001	1,202	1,109	1,044	998	1,090	1,033	991	1,072	1,023	985	1,056	1,012	995
	7	1,173	1,067	999	951	1,157	1,059	994	948	1,043	986	944	1,029	977	939	1,015	969	953
	8	1,129	1,021	953	906	1,114	1,014	949	904	1,000	942	901	988	935	897	976	929	894
	9	1,087	978	911	866	1,074	972	908	864	960	902	862	950	897	859	939	891	856
	10	1,048	938	873	829	1,036	933	870	828	923	866	826	914	861	824	905	857	822

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	102.3 fc	3.4 ft
6.5 ft	73.2 fc	4.1 ft
7.5 ft	55.0 fc	4.7 ft
8.0 ft	48.3 fc	5.0 ft
10.0 ft	30.9 fc	6.2 ft
12.0 ft	21.5 fc	7.5 ft
14.0 ft	15.8 fc	8.7 ft
16.0 ft	12.1 fc	10.0 ft
20.0 ft	7.7 fc	12.5 ft
24.0 ft	5.4 fc	15.0 ft
28.0 ft	3.9 fc	17.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	876,084	876,084	876,084
45.00°	11,791	12,536	12,464
55.00°	8,874	9,242	9,577
65.00°	8,758	9,504	11,075
75.00°	7,656	9,679	8,888
85.00°	3,872	5,522	5,164

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	10.6	11.6	11.0	11.9	12.2	11.0	12.0	11.4	12.3	12.6
	3H	12.8	13.6	13.2	14.0	14.3	13.2	14.0	13.5	14.3	14.7
	4H	13.5	14.2	13.9	14.6	15.0	13.8	14.6	14.2	14.9	15.3
	6H	13.7	14.4	14.1	14.8	15.2	14.2	14.9	14.6	15.2	15.6
	8H	13.7	14.4	14.2	14.8	15.2	14.2	14.8	14.6	15.2	15.6
	12H	13.7	14.4	14.2	14.7	15.2	14.2	14.8	14.6	15.2	15.6
4H	2H	11.3	12.0	11.7	12.4	12.8	11.6	12.3	12.0	12.7	13.1
	3H	13.6	14.3	14.0	14.7	15.1	13.9	14.5	14.3	14.9	15.3
	4H	14.4	15.0	14.8	15.4	15.8	14.6	15.2	15.0	15.6	16.0
	6H	14.7	15.2	15.1	15.6	16.1	15.0	15.5	15.5	15.9	16.4
	8H	14.7	15.1	15.2	15.6	16.1	15.0	15.5	15.5	15.9	16.4
	12H	14.7	15.1	15.2	15.6	16.1	15.1	15.4	15.6	15.9	16.4
8H	4H	14.7	15.1	15.1	15.6	16.0	14.7	15.2	15.2	15.6	16.1
	6H	15.0	15.3	15.5	15.9	16.3	15.2	15.6	15.7	16.1	16.6
	8H	15.0	15.4	15.6	15.9	16.4	15.3	15.6	15.8	16.1	16.6
	12H	15.1	15.4	15.6	15.9	16.4	15.4	15.6	15.9	16.1	16.7
12H	4H	14.6	15.0	15.1	15.5	16.0	14.7	15.1	15.2	15.6	16.0
	6H	15.0	15.3	15.5	15.8	16.3	15.2	15.5	15.7	16.0	16.5
	8H	15.1	15.3	15.6	15.8	16.4	15.3	15.6	15.8	16.1	16.6

Corrected UGR values based on total output lumens

SHR = 1.0