

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx DWDD1020 DLNFGPMW

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

Test Number

SP-00942_2

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	1288
Efficacy	59.36 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.43
Two luminaires, plane 90°	0.43
Four luminaires	0.45

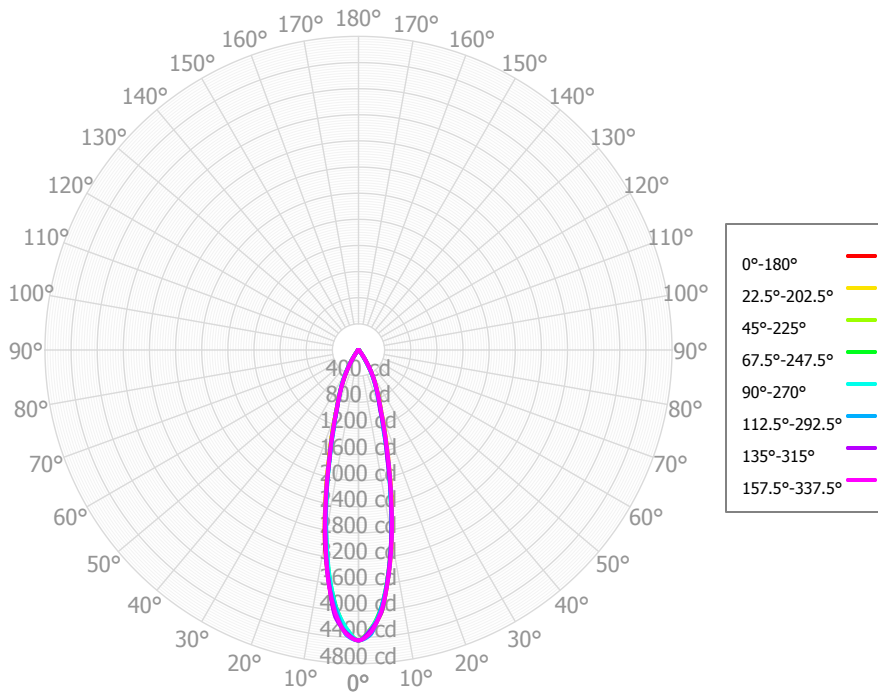
Full Beam Angle

0° - 180°	26°
90° - 270°	25°

IES File Header Contents

Keyword	Value
TEST	SP-00942_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/1/2019
ISSUEDATE	11/13/2019
LUMCAT	IF03RMx xx DWDD1020 DLNFGPMW
LUMINAIRE	Nom 3" diam Infinium, dim to warm 20L emitter - Narrow flood optic, No lens
OTHER	Beam Angle: 25.9 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°	348.32	27.04%	90.00° - 100.00°	0.09	0.01%
10.00° - 20.00°	482.24	37.44%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	289.14	22.45%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	101.50	7.88%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	25.05	1.94%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	17.20	1.33%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	14.67	1.14%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	8.02	0.62%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.84	0.14%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,287.96	99.99%	0.00° - 180.00°	1,288.05	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°	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69	4,445.69
2.50°	4,303.46	4,310.00	4,269.24	4,285.00	4,278.46	4,362.27	4,330.71	4,350.64	4,327.08	4,306.01	4,269.17	4,285.51	4,263.32	4,356.02	4,290.31	4,331.45	4,303.46
5.00°	4,025.82	4,014.64	4,034.07	3,967.44	3,996.64	3,989.01	4,098.99	4,047.20	4,073.36	3,998.00	4,032.96	3,946.77	3,958.46	3,968.01	4,031.00	4,013.04	4,025.82
7.50°	3,497.32	3,507.10	3,469.75	3,476.92	3,471.81	3,542.81	3,530.35	3,557.07	3,537.36	3,507.93	3,471.12	3,464.94	3,444.23	3,501.94	3,479.03	3,506.31	3,497.32
10.00°	2,907.67	2,945.98	2,903.34	2,902.74	2,898.73	2,879.19	2,944.09	2,913.00	2,970.66	2,907.75	2,906.26	2,849.74	2,837.15	2,891.22	2,888.77	2,933.18	2,907.67
12.50°	2,323.51	2,325.39	2,303.01	2,267.89	2,254.57	2,248.99	2,292.71	2,302.15	2,329.92	2,320.17	2,303.26	2,263.10	2,252.21	2,253.44	2,289.79	2,305.53	2,323.51
15.00°	1,740.45	1,796.31	1,722.31	1,746.52	1,708.96	1,702.72	1,702.27	1,715.18	1,760.51	1,739.29	1,722.98	1,699.70	1,675.77	1,745.47	1,690.04	1,781.70	1,740.45
17.50°	1,358.97	1,355.99	1,345.67	1,297.82	1,289.81	1,247.19	1,301.71	1,296.43	1,338.06	1,327.92	1,340.51	1,287.02	1,290.53	1,255.86	1,318.90	1,333.32	1,358.97
20.00°	1,008.24	1,041.20	993.29	1,004.34	978.97	985.96	961.41	984.46	993.69	993.87	984.96	981.39	966.89	1,003.34	959.43	1,029.60	1,008.24
22.50°	825.18	832.81	816.55	796.95	791.24	764.92	778.73	770.59	790.08	775.88	799.49	772.12	780.77	774.37	795.62	817.30	825.18
25.00°	661.24	662.47	645.55	636.83	625.35	619.03	608.56	610.65	608.82	603.74	621.23	623.24	632.00	638.77	635.98	655.03	661.24
27.50°	522.12	520.68	505.77	499.65	481.17	474.27	466.20	463.65	462.45	458.71	479.04	481.89	493.76	509.17	507.54	520.58	522.12
30.00°	384.83	387.97	370.21	365.24	345.88	331.33	332.91	322.78	330.13	322.70	343.24	344.63	357.83	376.43	379.60	390.72	384.83
32.50°	270.78	261.19	253.23	231.98	218.33	213.40	217.22	216.62	216.89	221.54	232.98	234.59	244.90	243.76	262.30	263.05	270.78
35.00°	157.58	170.34	150.49	150.50	133.54	130.63	126.97	124.72	132.58	130.19	137.41	137.25	135.91	160.94	150.21	172.89	157.58
37.50°	106.38	100.15	98.70	87.50	81.64	73.90	79.34	78.25	83.05	85.65	89.98	85.37	89.15	80.34	99.22	98.06	106.38
40.00°	56.53	62.80	56.26	59.30	52.29	49.55	46.67	47.54	50.85	51.81	51.76	51.88	50.58	57.45	52.42	61.97	56.53
42.50°	42.33	41.75	41.57	41.46	38.04	34.33	36.12	35.21	36.89	38.63	39.22	37.72	38.05	35.77	39.90	39.51	42.33
45.00°	28.84	32.00	29.77	33.20	30.03	29.01	28.43	28.19	28.15	29.16	29.41	30.16	27.87	29.96	28.65	30.25	28.84
47.50°	26.11	27.14	25.32	27.27	25.65	24.47	24.45	25.04	24.27	24.83	26.06	25.86	24.22	24.47	25.10	24.84	26.11
50.00°	23.56	24.03	21.89	23.16	22.52	20.68	21.13	22.82	21.48	21.23	23.28	22.51	20.91	21.87	21.71	22.07	23.56
52.50°	22.76	21.56	20.67	19.41	20.03	18.53	18.58	19.98	19.56	19.97	21.66	19.99	20.28	19.46	19.07	19.92	22.76
55.00°	21.92	20.89	19.64	19.40	18.74	17.77	17.55	17.03	18.03	18.95	20.01	17.66	19.67	18.29	17.18	18.72	21.92
57.50°	20.93	20.78	18.97	19.97	17.98	17.15	18.05	15.87	16.77	18.01	18.33	17.18	17.55	17.32	18.17	17.70	20.93
60.00°	19.87	20.21	18.30	18.93	17.21	16.64	17.01	14.98	15.51	17.07	16.83	17.06	15.51	17.29	18.45	17.54	19.87
62.50°	18.41	19.51	17.60	17.70	16.42	15.38	14.63	13.45	14.25	15.16	15.58	16.12	15.23	16.93	16.43	17.50	18.41
65.00°	17.04	18.22	16.76	15.77	15.39	13.64	13.28	11.86	12.70	13.28	14.38	15.07	14.83	15.27	14.61	16.65	17.04
67.50°	16.01	16.79	15.73	13.78	14.29	11.93	12.67	10.42	11.01	12.21	13.21	13.33	13.43	13.44	13.31	15.71	16.01
70.00°	14.83	14.62	13.94	11.40	11.93	10.22	9.86	9.08	9.08	11.22	10.74	11.57	11.88	11.16	11.70	13.31	14.83
72.50°	13.22	12.36	11.38	9.21	9.34	8.59	6.74	8.09	7.45	10.39	7.69	9.92	10.01	9.02	9.56	10.92	13.22
75.00°	10.65	10.13	9.13	7.72	7.09	6.91	6.01	6.31	6.94	8.04	6.41	7.68	7.75	7.07	7.85	8.87	10.65
77.50°	7.15	7.75	7.03	5.32	4.99	5.11	4.17	4.26	4.47	5.40	4.70	5.09	5.25	5.01	6.36	6.77	7.15
80.00°	4.81	5.20	4.97	2.59	3.10	2.41	2.31	2.69	2.43	3.40	3.16	2.85	2.62	3.07	4.16	4.59	4.81
82.50°	2.61	2.85	2.49	1.41	1.88	1.21	1.53	1.55	1.94	1.75	2.05	1.52	1.46	1.48	2.49	2.19	2.61
85.00°	1.27	1.88	1.38	1.23	1.61	1.09	1.35	1.16	1.32	1.32	1.24	1.70	1.36	0.90	1.52	1.25	1.27
87.50°	1.33	1.36	1.49	1.34	1.45	1.41	1.52	1.35	1.43	1.45	1.46	1.44	1.98	1.52	1.75	1.53	1.33
90.00°	1.50	1.15	1.23	1.06	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	1.25	1.36	1.50
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	1,533	1,533	1,533	1,533	1,498	1,498	1,498	1,498	1,431	1,431	1,431	1,370	1,370	1,370	1,314	1,314	1,288
	1	1,472	1,440	1,412	1,386	1,440	1,412	1,387	1,364	1,361	1,341	1,322	1,313	1,298	1,283	1,269	1,257	1,246
	2	1,412	1,358	1,313	1,276	1,385	1,336	1,296	1,262	1,296	1,263	1,234	1,258	1,231	1,208	1,223	1,202	1,183
	3	1,357	1,287	1,233	1,189	1,333	1,269	1,220	1,180	1,237	1,195	1,161	1,207	1,172	1,144	1,179	1,150	1,129
	4	1,305	1,224	1,165	1,119	1,284	1,210	1,155	1,113	1,184	1,137	1,100	1,159	1,119	1,087	1,136	1,103	1,083
	5	1,257	1,168	1,106	1,060	1,238	1,157	1,099	1,056	1,135	1,085	1,047	1,115	1,072	1,038	1,096	1,059	1,040
	6	1,212	1,118	1,055	1,010	1,195	1,108	1,049	1,006	1,091	1,039	1,000	1,074	1,028	994	1,058	1,018	987
	7	1,170	1,072	1,010	965	1,155	1,065	1,005	963	1,050	997	958	1,036	989	953	1,022	981	949
	8	1,130	1,031	969	926	1,117	1,024	965	924	1,012	959	921	1,000	952	917	989	946	914
	9	1,093	993	932	890	1,081	987	929	889	977	924	886	966	918	884	957	913	881
	10	1,059	958	898	858	1,047	953	896	857	944	891	855	935	887	853	927	883	851

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	147.0 fc	2.5 ft
6.5 ft	105.2 fc	3.0 ft
7.5 ft	79.0 fc	3.4 ft
8.0 ft	69.5 fc	3.7 ft
10.0 ft	44.5 fc	4.6 ft
12.0 ft	30.9 fc	5.5 ft
14.0 ft	22.7 fc	6.4 ft
16.0 ft	17.4 fc	7.4 ft
20.0 ft	11.1 fc	9.2 ft
24.0 ft	7.7 fc	11.0 ft
28.0 ft	5.7 fc	12.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,258,850	1,258,850	1,258,850
45.00°	11,550	11,920	12,026
55.00°	10,824	9,695	9,252
65.00°	11,414	11,232	10,314
75.00°	11,650	9,992	7,760
85.00°	4,132	4,493	5,228

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	12.0	13.0	12.4	13.3	13.6	11.2	12.1	11.5	12.4	12.8
	3H	14.6	15.4	14.9	15.7	16.1	13.4	14.2	13.8	14.6	14.9
	4H	15.4	16.2	15.8	16.6	17.0	14.0	14.8	14.4	15.2	15.6
	6H	15.8	16.5	16.3	16.9	17.3	14.3	15.0	14.7	15.4	15.8
	8H	15.9	16.6	16.3	16.9	17.4	14.3	15.0	14.7	15.3	15.8
	12H	15.9	16.5	16.3	16.9	17.3	14.3	14.9	14.7	15.3	15.7
4H	2H	12.7	13.4	13.1	13.8	14.2	11.8	12.6	12.2	12.9	13.3
	3H	15.3	15.9	15.7	16.4	16.8	14.1	14.7	14.5	15.1	15.5
	4H	16.3	16.8	16.7	17.3	17.7	14.8	15.4	15.3	15.8	16.3
	6H	16.8	17.3	17.2	17.7	18.2	15.1	15.6	15.6	16.1	16.5
	8H	16.8	17.3	17.3	17.7	18.2	15.1	15.6	15.6	16.0	16.5
	12H	16.8	17.2	17.3	17.7	18.2	15.2	15.5	15.6	16.0	16.5
8H	4H	16.4	16.9	16.9	17.3	17.8	14.9	15.4	15.4	15.8	16.3
	6H	17.0	17.4	17.5	17.9	18.4	15.3	15.6	15.8	16.1	16.6
	8H	17.1	17.4	17.7	18.0	18.5	15.3	15.6	15.8	16.1	16.6
	12H	17.2	17.5	17.7	18.0	18.5	15.4	15.7	15.9	16.2	16.7
12H	4H	16.4	16.8	16.9	17.3	17.7	14.9	15.3	15.4	15.8	16.2
	6H	17.0	17.3	17.5	17.8	18.3	15.3	15.6	15.8	16.0	16.6
	8H	17.1	17.4	17.7	17.9	18.5	15.3	15.6	15.8	16.1	16.7

Corrected UGR values based on total output lumens

SHR = 1.0