Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx DWDD1015 DLSPGPM

Nom 3" diam Infinium, dim to warm 15L emitter - Spot optic, No lens

Test Number

SP-00942_1_M-15L

Test Date

5/1/2019

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

Summary of Results

Power

Input Watts	17.2 W

Lumen Output

Output Lumens	1022
Efficacy	59.42 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.33
Two luminaires, plane 90°	0.33
Four luminaires	0.37

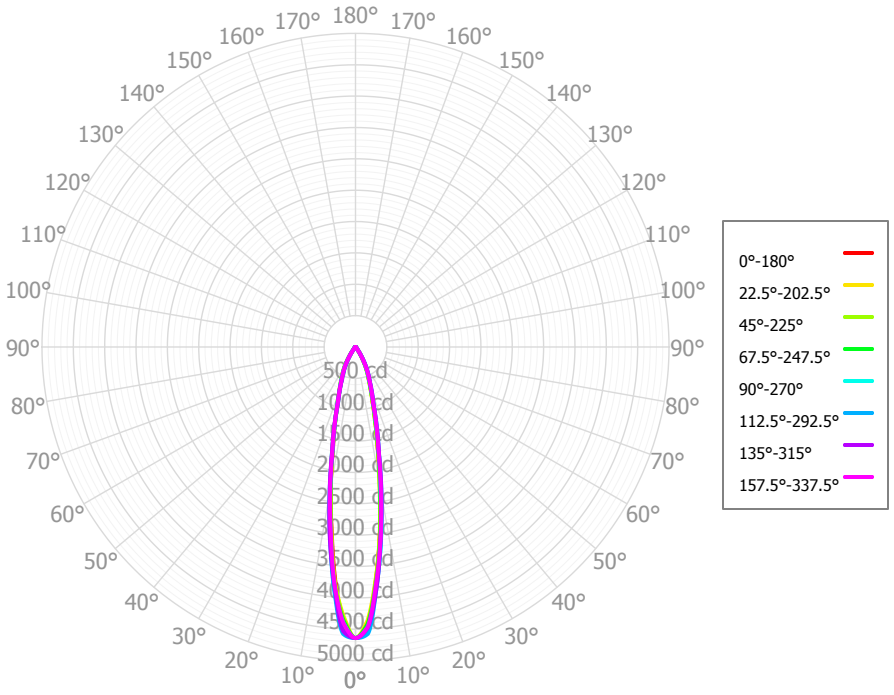
Full Beam Angle

0° - 180°	20°
90° - 270°	20°

IES File Header Contents

Keyword	Value
TEST	SP-00942_1_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/1/2019
ISSUEDATE	11/14/2019
LUMCAT	IF03RMx xx DWDD1015 DLSPGPM
LUMINAIRE	Nom 3" diam Infinium, dim to warm 15L emitter - Spot optic, No lens
OTHER	Beam Angle: 19.8 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

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	314.11	30.73%	90.00° - 100.00°	0.07	0.01%
10.00° - 20.00°	356.57	34.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	216.65	21.20%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	77.55	7.59%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.73	1.93%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	16.47	1.61%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	12.82	1.25%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	6.64	0.65%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.47	0.14%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1,022.02	99.99%	0.00° - 180.00°	1,022.09	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°	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54	4,641.54
2.50°	4,515.56	4,370.09	4,423.24	4,423.26	4,480.99	4,576.21	4,533.60	4,408.87	4,453.62	4,305.62	4,339.08	4,368.53	4,410.34	4,575.27	4,482.49	4,468.73	4,515.56
5.00°	3,747.38	3,710.88	3,726.50	3,776.81	3,841.91	3,889.56	3,831.11	3,815.37	3,725.70	3,773.49	3,777.18	3,842.86	3,875.43	3,841.42	3,857.28	3,779.53	3,747.38
7.50°	2,988.03	2,974.93	2,991.41	3,032.63	3,103.93	3,097.46	3,116.91	3,009.09	2,924.69	2,958.17	2,955.30	3,017.50	3,053.96	3,109.47	3,063.75	3,068.72	2,988.03
10.00°	2,283.14	2,196.38	2,222.62	2,240.63	2,301.29	2,384.82	2,374.88	2,329.71	2,285.43	2,253.47	2,265.73	2,292.08	2,333.93	2,386.01	2,373.59	2,323.25	2,283.14
12.50°	1,628.13	1,633.28	1,638.22	1,678.17	1,711.85	1,683.44	1,731.16	1,712.52	1,660.40	1,704.29	1,695.17	1,724.80	1,737.66	1,725.09	1,715.64	1,704.27	1,628.13
15.00°	1,241.54	1,181.06	1,202.88	1,217.76	1,250.11	1,282.94	1,299.31	1,287.36	1,285.82	1,265.54	1,266.08	1,265.15	1,276.80	1,314.38	1,299.03	1,271.31	1,241.54
17.50°	893.59	893.44	899.11	927.56	947.59	918.46	944.87	947.72	927.25	969.41	954.06	964.02	967.91	952.91	950.62	939.15	893.59
20.00°	724.71	682.93	694.52	707.09	732.24	736.39	744.68	741.19	757.08	749.58	742.40	735.69	744.18	765.31	752.74	743.06	724.71
22.50°	567.37	544.75	546.27	562.79	579.27	571.52	578.64	589.29	595.36	620.36	608.22	605.82	609.67	597.80	592.39	585.17	567.37
25.00°	456.69	437.84	437.03	446.64	457.96	462.41	474.69	480.60	500.56	507.68	498.68	492.74	494.20	493.40	477.80	475.37	456.69
27.50°	346.78	330.78	332.89	340.28	349.55	357.20	372.85	387.90	407.28	413.32	406.63	400.54	397.12	388.78	373.42	365.12	346.78
30.00°	239.67	223.68	232.00	237.24	247.09	261.36	274.53	291.47	305.50	315.49	310.59	306.05	300.18	283.54	271.58	254.36	239.67
32.50°	145.69	147.33	153.66	160.20	168.02	165.99	187.80	193.79	204.17	214.11	211.92	208.89	203.38	188.70	170.23	165.20	145.69
35.00°	94.20	82.01	88.64	91.01	98.75	111.12	118.98	126.20	133.45	135.44	137.24	133.34	130.50	120.68	112.11	99.08	94.20
37.50°	52.46	52.55	53.88	58.32	61.94	57.39	68.76	67.72	64.62	78.06	77.06	80.84	77.42	66.85	61.08	57.25	52.46
40.00°	38.94	34.62	35.43	35.40	37.63	41.51	44.93	43.59	45.63	44.35	45.73	46.60	45.92	46.06	42.10	39.59	38.94
42.50°	27.57	27.21	26.38	27.45	28.13	26.03	29.01	28.68	27.42	31.39	30.61	30.31	30.83	30.31	27.65	28.80	27.57
45.00°	21.89	22.80	22.01	23.11	23.76	23.13	23.40	23.61	23.16	24.06	23.46	22.30	23.22	25.37	23.16	24.29	21.89
47.50°	18.06	20.55	20.04	22.18	21.32	20.29	20.09	20.85	19.21	21.28	20.42	21.88	20.84	21.55	19.81	21.37	18.06
50.00°	18.64	18.86	19.18	21.97	19.47	19.10	19.58	20.16	19.25	19.90	19.41	21.51	19.72	19.91	19.85	19.81	18.64
52.50°	18.86	18.22	18.39	20.04	18.00	17.96	18.69	19.90	19.23	19.59	19.36	21.19	19.41	18.78	20.19	19.27	18.86
55.00°	18.29	17.82	17.64	17.81	16.62	17.89	17.37	19.22	18.75	19.21	19.44	20.66	18.80	18.60	19.31	19.54	18.29
57.50°	17.15	17.15	16.38	16.79	15.50	17.68	16.24	18.46	18.19	18.78	19.59	19.97	18.01	17.99	18.35	18.18	17.15
60.00°	14.87	16.43	14.93	15.96	14.45	15.62	15.33	16.55	17.02	17.28	18.59	18.60	17.57	16.68	16.63	15.64	14.87
62.50°	12.62	14.16	12.28	13.86	13.28	13.60	14.29	14.45	15.76	15.09	17.13	16.75	17.31	15.44	14.88	13.84	12.62
65.00°	10.43	11.62	9.21	11.59	12.10	11.98	13.13	13.60	13.92	14.00	15.27	15.17	15.72	14.34	12.62	12.55	10.43
67.50°	8.60	9.32	8.01	9.89	10.25	10.35	11.31	12.90	11.95	13.56	13.27	13.78	13.45	12.96	10.43	10.69	8.60
70.00°	7.25	7.18	7.19	8.23	8.33	8.62	8.99	10.28	9.53	11.46	12.00	12.32	11.76	11.26	9.51	8.55	7.25
72.50°	6.13	5.81	5.79	6.63	6.50	7.05	7.63	7.79	7.94	8.69	10.84	10.83	10.28	9.73	8.38	7.23	6.13
75.00°	5.07	4.16	4.48	5.07	4.80	5.68	6.43	6.02	7.54	7.46	8.57	8.74	8.42	8.13	6.80	5.74	5.07
77.50°	3.47	2.45	3.26	3.61	3.23	4.05	4.72	4.60	5.98	5.77	6.45	6.55	6.52	4.60	5.00	3.50	3.47
80.00°	1.89	1.63	1.85	2.40	1.71	2.29	3.33	3.25	4.00	3.10	4.47	4.30	4.61	3.08	3.10	1.95	1.89
82.50°	0.93	0.99	1.01	1.22	1.00	0.98	1.88	1.68	1.98	1.99	2.38	2.21	2.25	2.25	1.39	1.25	0.93
85.00°	0.86	0.94	1.04	1.19	0.92	1.02	0.96	1.16	1.02	1.08	1.22	1.23	1.18	1.27	1.06	1.09	0.86
87.50°	0.85	1.07	0.99	1.24	0.86	0.97	0.94	0.98	1.18	0.78	1.33	0.92	1.02	1.40	0.79	0.96	0.85
90.00°	0.00	0.00	0.00	0.00	0.00	0.12	0.00	1.01	0.93	1.20	0.88	1.04	1.00	1.21	1.10	0.00	0.00
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.

	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	1,217	1,217	1,217	1,217	1,188	1,188	1,188	1,188	1,136	1,136	1,136	1,087	1,087	1,087	1,043	1,043	1,043	1,022
	1	1,168	1,144	1,121	1,101	1,144	1,122	1,102	1,084	1,081	1,065	1,051	1,043	1,031	1,019	1,008	999	990	979
	2	1,122	1,079	1,044	1,015	1,100	1,062	1,030	1,004	1,030	1,004	982	1,000	979	961	972	956	941	937
	3	1,079	1,024	981	948	1,060	1,010	971	940	984	952	925	960	934	911	938	916	897	899
	4	1,039	975	929	893	1,022	964	921	888	943	907	878	924	893	868	906	880	858	864
RCR	5	1,001	932	884	848	987	923	878	844	906	867	837	890	857	830	875	846	823	832
	6	967	894	845	809	953	886	840	807	872	832	801	859	823	796	846	816	791	802
	7	934	859	810	775	923	853	806	774	841	800	770	830	793	766	819	787	762	774
	8	904	827	779	746	894	822	776	744	812	771	741	803	766	738	794	761	736	749
	9	876	798	751	719	867	794	749	718	785	744	715	777	740	713	770	736	711	725
	10	850	772	725	694	841	768	724	693	761	720	692	754	717	690	747	713	689	703

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	153.4 fc	1.9 ft
6.5 ft	109.9 fc	2.3 ft
7.5 ft	82.5 fc	2.6 ft
8.0 ft	72.5 fc	2.8 ft
10.0 ft	46.4 fc	3.5 ft
12.0 ft	32.2 fc	4.2 ft
14.0 ft	23.7 fc	4.9 ft
16.0 ft	18.1 fc	5.6 ft
20.0 ft	11.6 fc	7.0 ft
24.0 ft	8.1 fc	8.3 ft
28.0 ft	5.9 fc	9.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,314,308	1,314,308	1,314,308
45.00°	8,766	8,812	9,514
55.00°	9,029	8,707	8,207
65.00°	6,987	6,174	8,104
75.00°	5,542	4,901	5,249
85.00°	2,807	3,371	2,986

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	12.4	13.4	12.8	13.7	14.0
	3H	13.2	14.0	13.5	14.3	14.7	14.1	15.0	14.5	15.3	15.7
	4H	13.5	14.3	13.9	14.7	15.1	14.7	15.5	15.1	15.8	16.2
	6H	13.7	14.4	14.1	14.7	15.1	15.0	15.7	15.4	16.1	16.5
	8H	13.6	14.3	14.1	14.7	15.1	15.0	15.7	15.5	16.1	16.5
	12H	13.6	14.2	14.0	14.6	15.1	15.0	15.7	15.5	16.1	16.5
4H	2H	12.4	13.1	12.8	13.5	13.9	13.0	13.8	13.4	14.1	14.5
	3H	13.7	14.4	14.1	14.8	15.2	14.9	15.5	15.3	15.9	16.3
	4H	14.2	14.7	14.6	15.2	15.6	15.6	16.2	16.0	16.6	17.0
	6H	14.3	14.8	14.8	15.3	15.7	16.0	16.5	16.4	16.9	17.4
	8H	14.3	14.8	14.8	15.2	15.7	16.0	16.5	16.5	16.9	17.4
	12H	14.3	14.7	14.8	15.2	15.7	16.0	16.4	16.5	16.9	17.4
8H	4H	14.3	14.8	14.8	15.2	15.7	15.8	16.2	16.3	16.7	17.2
	6H	14.5	14.9	15.0	15.4	15.9	16.3	16.6	16.8	17.1	17.6
	8H	14.5	14.9	15.1	15.4	15.9	16.3	16.6	16.9	17.2	17.7
	12H	14.6	14.8	15.1	15.3	15.9	16.4	16.6	16.9	17.1	17.7
12H	4H	14.3	14.7	14.8	15.2	15.7	15.8	16.2	16.3	16.6	17.1
	6H	14.5	14.8	15.1	15.3	15.9	16.3	16.6	16.8	17.0	17.6
	8H	14.6	14.8	15.1	15.3	15.9	16.4	16.6	16.9	17.1	17.7

Corrected UGR values based on total output lumens

SHR = 1.0