

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03RMx xx DWDD1020 DLSPGPMW

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

Test Number

SP-00942_1

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	1278
Efficacy	58.88 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

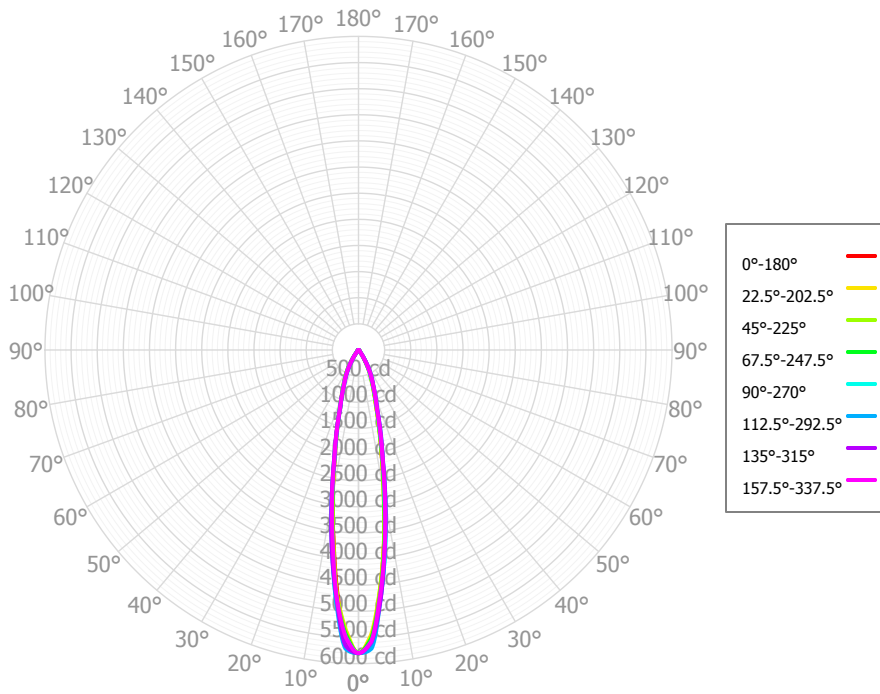
Full Beam Angle

0° - 180°	20°
90° - 270°	20°

IES File Header Contents

Keyword	Value
TEST	SP-00942_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	5/1/2019
ISSUEDATE	11/13/2019
LUMCAT	IF03RMx xx DWDD1020 DLSPGPMW
LUMINAIRE	Nom 3" diam Infinium, dim to warm 20L 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
_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°	392.64	30.73%	90.00° - 100.00°	0.09	0.01%
10.00° - 20.00°	445.71	34.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	270.81	21.20%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	96.94	7.59%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	24.67	1.93%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	20.59	1.61%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	16.02	1.25%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	8.30	0.65%	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°	1,277.52	99.99%	0.00° - 180.00°	1,277.61	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°	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93	5,801.93
2.50°	5,644.45	5,462.61	5,529.05	5,529.08	5,601.24	5,720.26	5,667.00	5,511.09	5,567.02	5,382.03	5,423.85	5,460.67	5,512.92	5,719.09	5,603.12	5,585.91	5,644.45
5.00°	4,684.22	4,638.60	4,658.12	4,721.02	4,802.38	4,861.96	4,788.89	4,769.21	4,657.13	4,716.86	4,721.47	4,803.58	4,844.29	4,801.77	4,821.60	4,724.41	4,684.22
7.50°	3,735.03	3,718.66	3,739.26	3,790.79	3,879.91	3,871.83	3,896.14	3,761.36	3,655.87	3,697.71	3,694.13	3,771.88	3,817.44	3,886.83	3,829.68	3,835.90	3,735.03
10.00°	2,853.93	2,745.47	2,778.27	2,800.79	2,876.61	2,981.03	2,968.60	2,912.13	2,856.79	2,816.83	2,832.16	2,865.10	2,917.41	2,982.51	2,966.99	2,904.06	2,853.93
12.50°	2,035.16	2,041.60	2,047.78	2,097.71	2,139.82	2,104.30	2,163.95	2,140.65	2,075.50	2,130.36	2,118.96	2,156.00	2,172.07	2,156.37	2,144.56	2,130.34	2,035.16
15.00°	1,551.93	1,476.33	1,503.60	1,522.20	1,562.64	1,603.67	1,624.14	1,609.20	1,607.27	1,581.92	1,582.60	1,581.44	1,596.00	1,642.97	1,623.78	1,589.14	1,551.93
17.50°	1,116.99	1,116.81	1,123.88	1,159.45	1,184.48	1,148.08	1,181.09	1,184.65	1,159.06	1,211.76	1,192.57	1,205.02	1,209.89	1,191.14	1,188.27	1,173.94	1,116.99
20.00°	905.89	853.67	868.15	883.86	915.30	920.49	930.85	926.49	946.35	936.98	928.00	919.62	930.23	956.63	940.92	928.82	905.89
22.50°	709.21	680.94	682.84	703.49	724.09	714.40	723.30	736.62	744.20	775.45	760.27	757.27	762.08	747.25	740.49	731.46	709.21
25.00°	570.86	547.29	546.28	558.30	572.45	578.01	593.36	600.75	625.70	634.60	623.35	615.93	617.76	616.75	597.25	594.21	570.86
27.50°	433.48	413.48	416.11	425.36	436.93	446.50	466.06	484.88	509.10	516.65	508.28	500.68	496.40	485.98	466.77	456.40	433.48
30.00°	299.59	279.60	290.00	296.55	308.86	326.70	343.16	364.33	381.88	394.36	388.23	382.56	375.23	354.42	339.48	317.94	299.59
32.50°	182.12	184.16	192.08	200.25	210.03	207.49	234.74	242.23	255.22	267.64	264.90	261.12	254.23	235.87	212.79	206.51	182.12
35.00°	117.75	102.51	110.80	113.76	123.44	138.89	148.72	157.75	166.82	169.30	171.55	166.68	163.13	150.85	140.14	123.85	117.75
37.50°	65.57	65.69	67.34	72.90	77.43	71.73	85.95	84.65	80.78	97.57	96.33	101.05	96.78	83.56	76.35	71.57	65.57
40.00°	48.67	43.28	44.29	44.25	47.04	51.89	56.16	54.49	57.03	55.44	57.17	58.25	57.40	57.58	52.63	49.49	48.67
42.50°	34.46	34.01	32.97	34.32	35.16	32.53	36.26	35.85	34.28	39.24	38.26	37.89	38.53	37.89	34.56	36.00	34.46
45.00°	27.36	28.51	27.51	28.89	29.70	28.91	29.25	29.51	28.95	30.08	29.33	27.87	29.02	31.71	28.95	30.36	27.36
47.50°	22.57	25.69	25.06	27.73	26.65	25.36	25.11	26.06	24.01	26.60	25.52	27.35	26.05	26.94	24.77	26.72	22.57
50.00°	23.30	23.57	23.97	27.46	24.34	23.87	24.48	25.20	24.06	24.88	24.26	26.89	24.64	24.88	24.81	24.76	23.30
52.50°	23.57	22.77	22.99	25.05	22.50	22.45	23.36	24.87	24.04	24.49	24.19	26.49	24.27	23.48	25.24	24.09	23.57
55.00°	22.86	22.28	22.05	22.26	20.78	22.37	21.71	24.02	23.44	24.01	24.30	25.83	23.51	23.25	24.14	24.43	22.86
57.50°	21.44	21.44	20.48	20.99	19.38	22.10	20.30	23.07	22.74	23.47	24.49	24.97	22.52	22.49	22.93	22.72	21.44
60.00°	18.59	20.53	18.66	19.96	18.06	19.53	19.16	20.68	21.28	21.60	23.23	23.26	21.96	20.85	20.79	19.55	18.59
62.50°	15.77	17.69	15.35	17.33	16.60	17.00	17.86	18.06	19.70	18.86	21.42	20.93	21.64	19.31	18.60	17.30	15.77
65.00°	13.04	14.52	11.52	14.49	15.12	14.98	16.41	17.00	17.39	17.50	19.09	18.96	19.65	17.92	15.78	15.68	13.04
67.50°	10.75	11.65	10.01	12.37	12.81	12.94	14.14	16.13	14.94	16.95	16.59	17.22	16.81	16.20	13.04	13.36	10.75
70.00°	9.06	8.97	8.99	10.29	10.41	10.78	11.24	12.85	11.91	14.33	15.00	15.40	14.71	14.08	11.88	10.69	9.06
72.50°	7.66	7.27	7.24	8.29	8.12	8.81	9.54	9.74	9.92	10.86	13.55	13.53	12.85	12.16	10.47	9.04	7.66
75.00°	6.33	5.20	5.60	6.34	6.00	7.10	8.03	7.53	9.42	9.33	10.72	10.92	10.52	10.16	8.50	7.17	6.33
77.50°	4.33	3.06	4.08	4.51	4.03	5.06	5.90	5.75	7.47	7.21	8.06	8.19	8.15	5.75	6.25	4.37	4.33
80.00°	2.36	2.04	2.32	3.00	2.13	2.87	4.16	4.07	5.00	3.88	5.59	5.37	5.76	3.85	3.87	2.44	2.36
82.50°	1.16	1.24	1.26	1.52	1.25	1.23	2.34	2.10	2.48	2.49	2.98	2.76	2.81	2.81	1.74	1.56	1.16
85.00°	1.08	1.18	1.30	1.49	1.15	1.28	1.20	1.45	1.28	1.36	1.52	1.54	1.48	1.59	1.33	1.36	1.08
87.50°	1.06	1.34	1.24	1.55	1.07	1.21	1.17	1.23	1.47	0.98	1.67	1.15	1.27	1.76	0.99	1.20	1.06
90.00°	0.00	0.00	0.00	0.00	0.00	0.14	0.00	1.26	1.16	1.50	1.11	1.29	1.25	1.52	1.38	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.

	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	1,521	1,521	1,521	1,521	1,486	1,486	1,486	1,486	1,420	1,420	1,420	1,359	1,359	1,359	1,304	1,304	1,278
	1	1,460	1,429	1,402	1,377	1,430	1,402	1,377	1,355	1,351	1,331	1,313	1,304	1,288	1,274	1,260	1,249	1,238
	2	1,403	1,349	1,305	1,269	1,375	1,328	1,288	1,254	1,287	1,255	1,227	1,250	1,224	1,201	1,216	1,195	1,172
	3	1,349	1,280	1,227	1,185	1,325	1,263	1,214	1,175	1,230	1,190	1,157	1,201	1,167	1,139	1,173	1,145	1,124
	4	1,298	1,219	1,161	1,117	1,277	1,205	1,152	1,110	1,179	1,134	1,097	1,155	1,116	1,085	1,132	1,100	1,080
	5	1,252	1,165	1,105	1,060	1,233	1,154	1,098	1,055	1,133	1,084	1,046	1,113	1,071	1,038	1,094	1,058	1,029
	6	1,208	1,117	1,056	1,012	1,192	1,108	1,050	1,008	1,090	1,040	1,002	1,074	1,029	995	1,058	1,019	989
	7	1,168	1,074	1,012	969	1,153	1,066	1,008	967	1,051	1,000	962	1,037	992	957	1,024	984	953
	8	1,130	1,034	974	932	1,117	1,028	970	930	1,015	963	927	1,003	957	923	992	951	920
	9	1,095	998	938	898	1,083	992	936	897	982	930	894	972	925	892	962	920	889
	10	1,062	965	907	868	1,051	960	904	867	951	900	865	942	896	863	934	891	861

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	191.8 fc	1.9 ft
6.5 ft	137.3 fc	2.3 ft
7.5 ft	103.1 fc	2.6 ft
8.0 ft	90.7 fc	2.8 ft
10.0 ft	58.0 fc	3.5 ft
12.0 ft	40.3 fc	4.2 ft
14.0 ft	29.6 fc	4.9 ft
16.0 ft	22.7 fc	5.6 ft
20.0 ft	14.5 fc	7.0 ft
24.0 ft	10.1 fc	8.3 ft
28.0 ft	7.4 fc	9.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1,642,885	1,642,885	1,642,885
45.00°	10,958	11,016	11,893
55.00°	11,287	10,884	10,259
65.00°	8,734	7,717	10,130
75.00°	6,928	6,126	6,561
85.00°	3,508	4,213	3,733

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	12.8	13.8	13.2	14.1	14.4	13.2	14.1	13.6	14.5	14.8
	3H	13.9	14.8	14.3	15.1	15.5	14.9	15.7	15.3	16.1	16.4
	4H	14.3	15.1	14.7	15.5	15.8	15.5	16.3	15.9	16.6	17.0
	6H	14.4	15.1	14.8	15.5	15.9	15.8	16.5	16.2	16.9	17.3
	8H	14.4	15.1	14.8	15.5	15.9	15.8	16.5	16.3	16.9	17.3
	12H	14.4	15.0	14.8	15.4	15.8	15.8	16.4	16.2	16.8	17.3
4H	2H	13.1	13.9	13.5	14.3	14.7	13.8	14.5	14.2	14.9	15.3
	3H	14.5	15.1	14.9	15.5	15.9	15.7	16.3	16.1	16.7	17.1
	4H	14.9	15.5	15.4	15.9	16.4	16.4	16.9	16.8	17.4	17.8
	6H	15.1	15.6	15.6	16.0	16.5	16.7	17.2	17.2	17.7	18.2
	8H	15.1	15.5	15.6	16.0	16.5	16.8	17.2	17.3	17.7	18.2
	12H	15.1	15.5	15.6	16.0	16.4	16.8	17.2	17.3	17.7	18.1
8H	4H	15.1	15.6	15.6	16.0	16.5	16.6	17.0	17.0	17.5	17.9
	6H	15.3	15.7	15.8	16.2	16.7	17.0	17.4	17.5	17.9	18.4
	8H	15.3	15.6	15.9	16.2	16.7	17.1	17.4	17.6	17.9	18.4
	12H	15.3	15.6	15.9	16.1	16.7	17.1	17.4	17.7	17.9	18.5
12H	4H	15.1	15.5	15.6	16.0	16.4	16.5	16.9	17.0	17.4	17.9
	6H	15.3	15.6	15.8	16.1	16.6	17.0	17.3	17.6	17.8	18.4
	8H	15.3	15.6	15.9	16.1	16.7	17.1	17.4	17.7	17.9	18.5

Corrected UGR values based on total output lumens

SHR = 1.0