Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

IF03SMx IC DWDD1010 DLFLGPMW

Nom 3" Infinium Square Downlight, 10L dim to warm 27HK emitter

Test Number

SP-00948_3_M-10L

Test Date

11/6/2019

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

Summary of Results

Power

Input Watts	9.3 W

Lumen Output

Output Lumens	456
Efficacy	49.01 lm/W

Luminous Dimensions

0° - 180° Size	0.16
90° - 270° Size	0.16
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.61
Two luminaires, plane 90°	0.61
Four luminaires	0.67

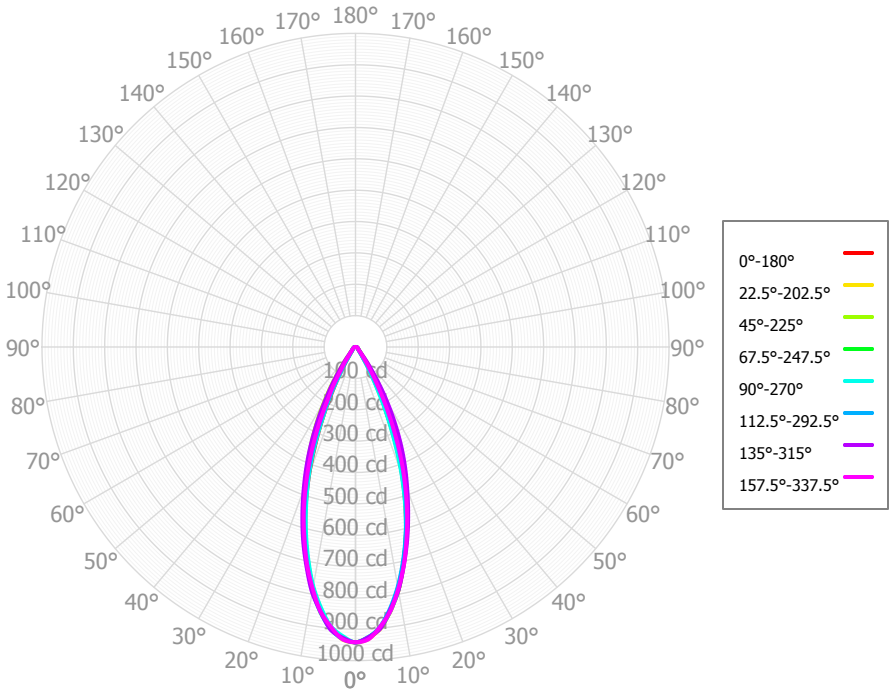
Full Beam Angle

0° - 180°	38°
90° - 270°	38°

IES File Header Contents

Keyword	Value
TEST	SP-00948_3_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/6/2019
ISSUEDATE	11/15/2019
LUMCAT	IF03SMx IC DWDD1010 DLFLGPMW
LUMINAIRE	Nom 3" Infinium Square Downlight, 10L dim to warm 27HK emitter
OTHER	Beam angle: 38.0 degrees
OTHER	Shallow IC
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°	83.07	18.23%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	170.67	37.45%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	126.90	27.84%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	39.73	8.72%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	13.34	2.93%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	8.79	1.93%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	7.10	1.56%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.82	1.06%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.28	0.28%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	455.71	99.99%	0.00° - 180.00°	455.75	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°	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89	941.89
2.50°	928.89	932.66	926.86	928.49	926.09	932.33	928.47	933.47	928.73	934.34	927.72	930.91	923.44	928.34	926.90	933.62	928.89
5.00°	902.38	898.31	901.44	897.61	900.21	904.11	905.77	896.26	901.69	899.42	904.22	898.51	895.27	896.19	901.78	896.16	902.38
7.50°	849.15	851.79	848.07	848.65	850.09	854.31	851.34	851.88	848.98	854.36	845.24	849.92	840.04	842.16	846.40	850.65	849.15
10.00°	788.61	782.66	787.92	781.17	787.43	790.03	795.66	783.92	785.52	782.92	781.24	780.74	775.77	776.40	787.79	784.25	788.61
12.50°	706.85	707.27	710.16	705.19	705.72	711.05	719.84	712.40	703.12	704.77	703.15	700.60	695.33	699.94	712.49	712.55	706.85
15.00°	620.95	622.55	630.96	621.92	619.02	628.49	643.64	630.75	617.37	620.11	623.85	618.24	610.88	618.95	636.56	630.06	620.95
17.50°	528.28	535.52	548.72	536.23	526.16	542.96	563.03	548.23	526.86	534.21	546.60	534.95	522.90	537.10	558.32	546.28	528.28
20.00°	434.74	445.69	469.59	448.86	427.75	452.14	482.86	460.10	432.15	446.11	469.55	449.00	434.26	454.97	482.12	460.41	434.74
22.50°	337.34	355.75	395.67	358.76	323.63	357.66	405.49	371.77	332.47	357.74	398.44	362.20	338.56	369.66	411.83	373.36	337.34
25.00°	239.66	265.71	322.56	267.12	231.02	268.21	328.56	283.80	241.70	273.16	327.51	277.56	242.04	283.55	340.94	284.71	239.66
27.50°	167.14	189.05	250.56	190.39	148.05	181.54	253.58	197.72	159.53	188.81	259.24	193.47	168.31	205.47	268.72	205.82	167.14
30.00°	96.54	123.42	184.24	120.49	92.88	121.07	182.99	137.74	101.53	131.84	192.30	132.94	95.81	128.82	200.30	137.66	96.54
32.50°	67.81	80.54	124.34	78.42	56.59	72.13	127.28	81.68	62.51	76.55	135.32	76.52	65.38	86.18	138.64	88.74	67.81
35.00°	40.65	52.84	79.80	46.28	36.80	46.89	79.63	56.79	39.89	53.86	83.27	51.43	36.24	47.61	88.77	57.03	40.65
37.50°	31.71	36.62	49.40	32.32	26.30	30.03	52.82	34.67	27.99	32.64	55.32	29.71	28.39	34.54	56.23	37.33	31.71
40.00°	23.48	26.73	31.93	23.25	20.85	22.89	32.15	26.79	21.56	26.05	31.71	23.46	20.89	22.97	34.00	26.61	23.48
42.50°	19.89	21.08	24.13	19.06	17.66	18.33	23.90	19.99	17.99	19.98	23.98	17.97	16.80	18.46	24.06	20.07	19.89
45.00°	16.62	17.29	18.80	15.85	15.54	16.12	17.72	17.15	15.72	17.19	17.54	15.40	13.16	14.11	17.68	16.06	16.62
47.50°	14.78	14.68	15.03	13.52	13.81	14.35	14.97	14.55	13.97	14.56	14.66	12.89	12.20	12.88	14.73	13.90	14.78
50.00°	12.92	12.47	12.65	11.30	11.93	12.77	12.78	12.64	12.29	12.65	12.14	11.57	11.16	11.65	12.44	12.63	12.92
52.50°	10.99	11.52	10.97	10.82	10.01	11.22	11.33	11.01	10.62	10.88	10.41	10.25	9.79	10.44	10.67	11.35	10.99
55.00°	9.47	10.90	10.03	10.47	9.02	9.87	10.19	10.00	9.89	9.56	9.00	8.94	8.56	9.31	9.38	10.07	9.47
57.50°	9.01	10.02	9.37	9.04	8.21	8.55	9.40	9.02	9.38	8.52	8.19	7.80	7.77	8.54	8.40	9.21	9.01
60.00°	8.66	9.10	8.58	7.62	7.49	8.09	8.67	8.11	8.45	8.18	7.65	7.59	7.17	7.88	7.99	8.48	8.66
62.50°	8.53	8.60	7.74	7.28	6.79	7.63	8.00	7.41	7.45	7.82	7.49	7.37	7.02	7.67	7.88	8.12	8.53
65.00°	8.20	8.16	7.12	6.89	6.17	6.85	7.17	7.00	7.13	7.41	7.29	7.09	6.64	7.44	7.34	7.83	8.20
67.50°	7.57	7.38	6.55	6.13	5.57	6.09	6.21	6.69	6.84	6.85	7.03	6.71	5.84	7.19	6.63	7.59	7.57
70.00°	6.81	6.58	6.01	5.36	4.99	5.44	5.81	6.47	6.08	6.11	6.27	6.10	5.42	6.72	6.31	7.35	6.81
72.50°	5.93	5.74	5.44	4.54	4.39	4.58	5.52	5.49	5.19	5.71	5.22	5.66	5.36	5.95	6.09	6.93	5.93
75.00°	4.93	4.94	4.73	3.57	3.70	3.45	4.65	4.38	4.11	5.23	4.67	5.37	4.43	5.11	5.79	6.12	4.93
77.50°	3.90	4.20	3.80	2.61	2.80	2.94	3.88	3.54	3.21	3.75	4.01	3.78	3.33	4.16	4.86	4.61	3.90
80.00°	2.87	2.95	2.71	2.37	2.02	2.29	2.89	2.59	2.27	2.49	2.99	2.80	2.26	2.91	3.27	3.38	2.87
82.50°	1.64	1.94	1.61	1.53	1.44	1.47	1.54	1.68	1.37	1.61	1.46	2.02	1.57	2.03	1.82	2.06	1.64
85.00°	0.97	1.10	0.67	0.85	0.62	0.79	0.90	0.92	0.66	0.87	0.98	1.06	0.67	0.99	0.98	1.01	0.97
87.50°	0.69	0.70	0.66	0.66	0.64	0.67	0.61	0.61	0.78	0.66	0.77	0.64	0.76	0.67	0.55	0.60	0.69
90.00°	0.66	0.59	0.56	0.53	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.76	0.61	0.66
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	543	543	543	543	530	530	530	530	506	506	506	485	485	485	465	465	465	456
	1	518	506	495	485	507	496	486	477	478	470	463	461	455	449	445	440	436	432
	2	495	474	456	442	485	466	450	437	451	438	427	438	427	418	425	417	409	409
	3	473	446	425	408	464	439	420	404	428	411	398	417	403	392	407	395	386	388
	4	452	421	398	380	445	416	394	378	406	388	373	397	382	369	389	376	365	369
RCR	5	433	399	375	357	426	395	372	355	387	367	352	379	362	349	372	358	346	351
	6	416	379	354	337	409	375	352	336	369	349	333	363	345	331	357	341	329	336
	7	399	361	336	319	393	358	335	318	353	332	317	347	329	315	343	326	314	321
	8	383	345	320	304	378	342	319	303	337	317	302	333	314	301	329	312	299	307
	9	369	330	306	290	364	328	305	289	324	303	288	320	301	287	316	299	286	295
	10	355	316	292	277	351	314	292	277	311	290	276	307	288	275	304	287	274	283

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	31.1 fc	3.8 ft
6.5 ft	22.3 fc	4.5 ft
7.5 ft	16.7 fc	5.2 ft
8.0 ft	14.7 fc	5.5 ft
10.0 ft	9.4 fc	6.9 ft
12.0 ft	6.5 fc	8.3 ft
14.0 ft	4.8 fc	9.6 ft
16.0 ft	3.7 fc	11.0 ft
20.0 ft	2.4 fc	13.8 ft
24.0 ft	1.6 fc	16.5 ft
28.0 ft	1.2 fc	19.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	396,034	396,034	396,034
45.00°	9,885	11,182	9,242
55.00°	6,944	7,349	6,614
65.00°	8,162	7,082	6,143
75.00°	8,013	7,680	6,009
85.00°	4,698	3,210	2,999

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	13.1	14.1	14.4	11.7	12.7	12.1	13.0	13.3
	3H	15.2	16.1	15.6	16.4	16.8	13.9	14.8	14.3	15.1	15.5
	4H	16.1	17.0	16.5	17.3	17.7	14.8	15.6	15.2	16.0	16.4
	6H	16.7	17.5	17.2	17.9	18.3	15.3	16.1	15.8	16.5	16.9
	8H	16.9	17.6	17.3	18.0	18.4	15.5	16.2	15.9	16.6	17.0
	12H	16.9	17.6	17.3	18.0	18.4	15.5	16.2	15.9	16.6	17.0
4H	2H	13.3	14.1	13.7	14.5	14.9	12.5	13.3	12.9	13.7	14.1
	3H	16.0	16.7	16.4	17.1	17.5	14.9	15.6	15.3	16.0	16.4
	4H	17.2	17.8	17.6	18.2	18.6	16.0	16.6	16.4	17.0	17.4
	6H	17.9	18.4	18.4	18.9	19.3	16.6	17.1	17.1	17.6	18.0
	8H	18.1	18.5	18.5	19.0	19.5	16.8	17.2	17.2	17.7	18.2
	12H	18.1	18.5	18.6	19.0	19.5	16.8	17.2	17.3	17.7	18.2
8H	4H	17.5	18.0	18.0	18.4	18.9	16.4	16.8	16.8	17.3	17.8
	6H	18.4	18.7	18.9	19.2	19.7	17.1	17.5	17.7	18.0	18.5
	8H	18.6	18.9	19.1	19.4	19.9	17.4	17.7	17.9	18.2	18.7
	12H	18.7	19.0	19.2	19.5	20.1	17.5	17.8	18.0	18.3	18.9
12H	4H	17.5	17.9	18.0	18.4	18.9	16.4	16.8	16.9	17.3	17.8
	6H	18.4	18.7	18.9	19.2	19.7	17.2	17.5	17.7	18.0	18.5
	8H	18.7	18.9	19.2	19.4	20.0	17.5	17.8	18.0	18.3	18.9

Corrected UGR values based on total output lumens

SHR = 1.0