Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire
IF03RSx IC 835 007 N11 DLSPGN MW

Test Number
SP-00776_1_M-007L

Test Date

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

Summary of Results

Power

Input Watts	5.4 W

Lumen Output

Output Lumens	562
Efficacy	104.04 lm/W

Luminous Dimensions

0° - 180° Size	-0.2
90° - 270° Size	-0.2
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.38
Two luminaires, plane 90°	0.38
Four luminaires	0.41

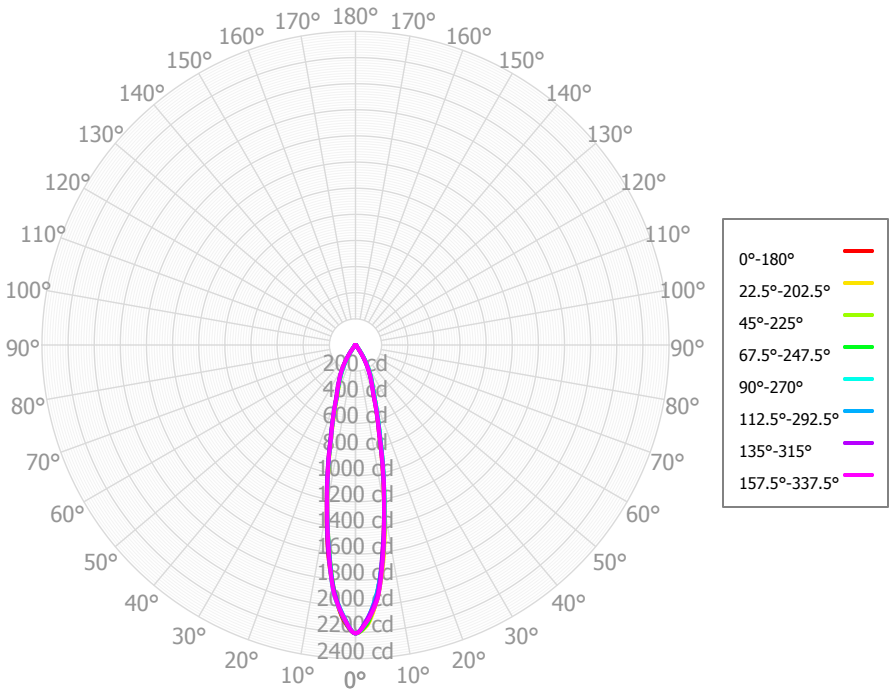
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-00776_1_M-007L
TESTLAB	Spectrum Lighting Photometric lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	2/8/2019
UPDATE	3/11/2019
LUMCAT	IF03RSx IC 835 007 N11 DLSPGN MW
LUMINIARE	Nominal 3" diam round recessed Infinium downlight
OTHER	Beam Angle: 23 degrees
OTHER	Spot optic, Open aperture / no lens
OTHER	Aluminum bezel
LAMPCAT	N/A
LAMP	N/A, CRI: 80, Philips
OTHER	CCT Multipliers: 40K x 1.03
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 20L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	161.11	28.68%	90.00° - 100.00°	0.03	0.01%
10.00° - 20.00°	203.17	36.16%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	128.80	22.93%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	48.63	8.66%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	5.37	0.96%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	5.37	0.96%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	6.31	1.12%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.33	0.41%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.69	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	561.79	99.99%	0.00° - 180.00°	561.82	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°	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36	2,207.36
2.50°	2,123.62	2,143.19	2,115.20	2,132.80	2,099.36	2,076.85	2,093.94	2,084.04	2,107.61	2,092.55	2,079.28	2,097.36	2,087.09	2,098.49	2,095.55	2,114.46	2,123.62
5.00°	1,942.49	1,938.91	1,945.96	1,901.11	1,905.65	1,891.19	1,888.99	1,909.84	1,896.27	1,884.41	1,901.38	1,883.57	1,912.05	1,899.35	1,921.71	1,947.74	1,942.49
7.50°	1,591.27	1,648.19	1,624.21	1,620.63	1,603.13	1,559.25	1,594.93	1,572.74	1,606.34	1,556.45	1,569.01	1,563.16	1,579.40	1,608.43	1,585.48	1,625.20	1,591.27
10.00°	1,255.79	1,276.68	1,262.36	1,277.63	1,265.78	1,245.09	1,262.47	1,245.79	1,266.66	1,244.39	1,246.03	1,255.70	1,256.91	1,267.08	1,259.21	1,263.12	1,255.79
12.50°	949.52	969.64	976.29	976.23	986.71	969.22	986.48	970.32	981.07	952.33	969.65	960.00	973.83	979.41	960.74	973.51	949.52
15.00°	691.81	725.92	711.65	730.91	727.88	725.53	736.30	713.51	731.53	709.75	711.03	724.98	715.32	722.87	695.92	703.73	691.81
17.50°	530.59	544.94	550.24	540.36	558.09	555.30	566.97	560.55	554.17	532.67	548.96	547.87	559.85	548.15	531.43	538.14	530.59
20.00°	399.89	428.74	420.20	427.55	421.28	415.90	436.78	419.90	427.49	402.08	401.04	420.57	419.40	423.48	391.04	403.22	399.89
22.50°	333.40	341.18	344.60	338.88	343.45	351.21	355.89	354.97	344.14	336.28	338.01	343.79	347.35	336.85	327.55	328.14	333.40
25.00°	270.91	284.71	286.72	286.72	288.85	289.97	300.23	291.83	292.81	277.53	276.50	276.95	277.52	274.76	265.89	271.94	270.91
27.50°	217.31	227.94	230.62	233.98	236.04	237.62	245.75	240.91	240.56	229.12	225.17	220.69	218.76	216.45	210.46	215.91	217.31
30.00°	162.46	170.84	175.14	180.31	183.97	185.28	191.91	189.29	187.57	177.58	173.53	165.98	161.32	160.71	155.80	159.95	162.46
32.50°	104.60	116.57	121.60	128.57	133.33	133.01	138.51	132.27	133.39	121.21	119.65	113.00	111.06	109.93	103.98	107.79	104.60
35.00°	55.84	65.70	68.79	80.06	83.32	84.67	85.37	77.57	78.23	73.09	68.39	69.10	64.05	62.71	57.52	57.01	55.84
37.50°	29.90	30.86	38.03	41.85	48.92	47.84	48.39	43.91	40.91	38.43	39.46	35.90	36.63	33.18	32.71	30.69	29.90
40.00°	10.21	16.29	16.00	21.92	21.87	18.16	21.16	12.80	18.94	14.42	12.88	15.09	12.38	16.98	11.87	13.75	10.21
42.50°	7.21	7.14	7.54	8.05	9.71	10.87	8.59	8.37	7.31	8.71	9.31	9.63	9.33	8.76	8.35	7.27	7.21
45.00°	4.88	5.20	4.86	5.50	4.97	5.02	5.33	4.26	5.02	4.85	5.97	6.23	6.51	6.88	5.38	5.07	4.88
47.50°	4.44	4.17	4.00	3.93	3.41	4.04	3.88	4.07	3.91	4.37	5.29	5.50	5.50	5.69	5.00	4.35	4.44
50.00°	4.24	4.40	3.96	4.28	3.51	3.42	3.63	3.94	3.93	4.14	4.68	5.27	4.69	5.08	4.78	4.27	4.24
52.50°	4.77	4.80	4.31	4.77	4.31	4.13	3.98	4.86	4.17	4.37	5.08	5.70	5.65	5.35	5.44	4.77	4.77
55.00°	5.61	5.42	4.84	5.56	5.50	5.06	4.75	5.79	4.63	5.28	5.55	6.54	6.65	6.40	6.28	5.53	5.61
57.50°	7.48	6.40	6.22	6.52	6.81	6.85	6.10	6.78	5.60	7.57	7.23	7.95	7.97	7.83	8.15	7.17	7.48
60.00°	8.79	7.93	8.03	7.86	8.19	8.25	7.88	7.71	7.10	9.00	8.79	8.43	9.07	9.60	9.54	9.24	8.79
62.50°	8.06	8.36	7.86	8.31	7.87	7.96	8.03	7.18	7.53	8.58	7.57	7.50	7.58	9.18	7.80	8.40	8.06
65.00°	7.02	6.99	6.62	6.66	6.52	7.41	6.90	6.63	6.75	7.54	6.33	6.15	6.09	6.66	6.07	6.08	7.02
67.50°	4.81	5.46	5.17	5.06	5.42	5.65	5.66	5.04	5.68	5.11	4.75	4.14	4.53	4.68	4.40	4.48	4.81
70.00°	2.88	3.68	3.61	3.58	4.49	4.03	4.33	3.46	4.24	3.12	3.19	2.74	3.02	3.24	2.83	3.27	2.88
72.50°	2.08	2.34	2.72	2.43	3.63	3.10	3.27	2.72	3.19	2.24	2.63	2.37	2.36	2.33	2.01	2.41	2.08
75.00°	1.43	1.81	2.24	2.20	2.83	2.30	2.44	2.00	2.61	1.70	2.09	1.96	1.76	1.96	1.29	1.74	1.43
77.50°	1.37	1.39	1.91	1.90	2.28	2.13	2.07	1.82	2.12	1.95	1.67	1.47	1.62	1.62	1.27	1.28	1.37
80.00°	1.13	1.12	1.68	1.47	1.91	1.75	2.06	1.56	1.71	1.60	1.21	1.01	1.29	1.30	1.16	0.92	1.13
82.50°	0.55	0.75	0.95	0.94	1.13	0.93	1.21	0.96	0.98	0.58	0.62	0.59	0.59	0.77	0.80	0.59	0.55
85.00°	0.43	0.40	0.42	0.42	0.44	0.54	0.53	0.54	0.46	0.44	0.41	0.47	0.34	0.41	0.57	0.51	0.43
87.50°	0.46	0.33	0.49	0.63	0.45	0.35	0.38	0.41	0.40	0.36	0.33	0.45	0.42	0.35	0.58	0.49	0.46
90.00°	0.33	0.38	0.59	0.42	0.44	0.36	0.48	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.33
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	669	669	669	669	653	653	653	653	624	624	624	598	598	598	573	573	573	562
	1	643	629	617	606	629	617	606	597	595	586	578	574	567	561	555	550	545	539
	2	617	594	575	559	606	585	568	553	567	553	541	551	539	529	536	527	519	516
	3	594	564	541	522	583	556	535	518	542	525	510	529	514	502	517	505	495	495
	4	572	537	512	492	562	531	508	489	520	500	484	509	492	478	499	485	473	476
RCR	5	551	513	487	467	543	508	484	465	499	478	461	490	472	457	482	466	453	458
	6	532	492	465	445	525	488	462	444	480	458	441	473	453	438	466	449	436	441
	7	514	472	445	426	507	469	443	425	462	440	423	456	436	421	450	433	419	426
	8	497	454	428	409	491	451	426	409	446	423	407	441	420	405	436	418	404	411
	9	481	438	412	394	476	436	411	393	431	408	392	426	406	391	422	404	390	398
	10	466	423	397	380	461	421	396	380	417	394	379	413	392	378	409	391	377	385

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	73.0 fc	2.2 ft
6.5 ft	52.2 fc	2.6 ft
7.5 ft	39.2 fc	3.0 ft
8.0 ft	34.5 fc	3.2 ft
10.0 ft	22.1 fc	4.0 ft
12.0 ft	15.3 fc	4.8 ft
14.0 ft	11.3 fc	5.6 ft
16.0 ft	8.6 fc	6.4 ft
20.0 ft	5.5 fc	8.0 ft
24.0 ft	3.8 fc	9.6 ft
28.0 ft	2.8 fc	11.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	756,300	756,300	756,300
45.00°	2,366	2,356	2,409
55.00°	3,352	2,888	3,287
65.00°	5,694	5,365	5,284
75.00°	1,893	2,961	3,746
85.00°	1,693	1,632	1,721

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	8.5	9.5	8.9	9.8	10.1	9.0	9.9	9.3	10.2	10.5
	3H	10.1	10.9	10.5	11.3	11.6	10.5	11.3	10.9	11.7	12.0
	4H	10.3	11.0	10.7	11.4	11.8	10.9	11.6	11.3	12.0	12.4
	6H	10.4	11.1	10.8	11.5	11.9	11.2	11.9	11.6	12.3	12.7
	8H	10.4	11.1	10.9	11.5	11.9	11.3	11.9	11.7	12.3	12.7
	12H	10.4	11.0	10.9	11.4	11.9	11.3	11.9	11.7	12.3	12.7
4H	2H	9.4	10.1	9.8	10.5	10.9	9.8	10.5	10.2	10.9	11.3
	3H	10.8	11.5	11.3	11.9	12.3	11.2	11.9	11.7	12.3	12.7
	4H	11.1	11.6	11.5	12.0	12.5	11.7	12.2	12.1	12.6	13.1
	6H	11.3	11.7	11.7	12.2	12.7	12.1	12.5	12.5	13.0	13.5
	8H	11.3	11.7	11.8	12.2	12.7	12.2	12.6	12.6	13.1	13.5
	12H	11.3	11.7	11.8	12.2	12.6	12.2	12.6	12.7	13.0	13.5
8H	4H	11.1	11.6	11.6	12.0	12.5	11.8	12.2	12.2	12.6	13.1
	6H	11.4	11.8	11.9	12.3	12.8	12.3	12.6	12.8	13.1	13.6
	8H	11.5	11.8	12.0	12.3	12.8	12.4	12.7	12.9	13.2	13.7
	12H	11.6	11.8	12.1	12.3	12.9	12.5	12.7	13.0	13.2	13.8
12H	4H	11.1	11.5	11.6	12.0	12.4	11.7	12.1	12.2	12.6	13.1
	6H	11.4	11.7	12.0	12.2	12.8	12.3	12.6	12.8	13.1	13.6
	8H	11.6	11.8	12.1	12.3	12.9	12.5	12.7	13.0	13.2	13.8

Corrected UGR values based on total output lumens

SHR = 1.0