

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

AS01RDF NC 935 007 DL SP MW xx
Nom 1" round recessed downlight

Test Number

SP-01014

Test Date

10/29/2019

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

Summary of Results

Power

Input Watts	9.7 W
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Lumen Output

Output Lumens	574
Efficacy	59.14 lm/W

Luminous Dimensions

0° - 180° Size	-0.08
90° - 270° Size	-0.08
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.33
Two luminaires, plane 90°	0.33
Four luminaires	0.35

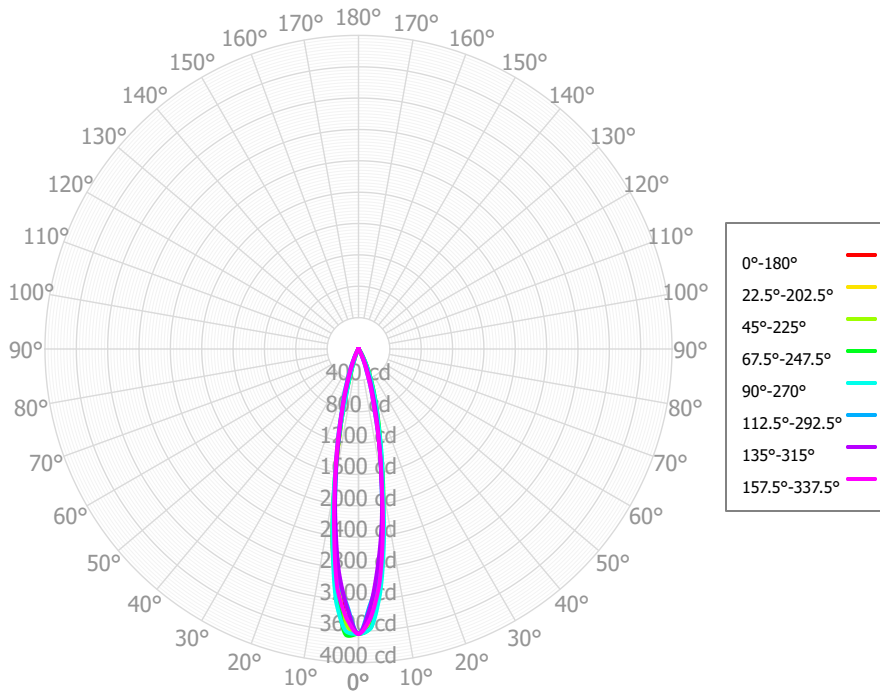
Full Beam Angle

0° - 180°	19°
90° - 270°	20°

IES File Header Contents

Keyword	Value
TEST	SP-01014
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/29/2019
ISSUEDATE	12/29/2021
LUMCAT	AS01RDF NC 935 007 DL SP MW xx
LUMINAIRE	Nom 1" round recessed downlight
OTHER	Beam angle: 19.3 degrees
LAMP	N/A
LAMPCAT	N/A, CRI: 90 min
OTHER	CCT Multipliers: 927 x 0.96, 930 x 0.99, 935 x 1.0, 940 x 1.02
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	90+
_CCTMULT	927 x 0.96, 930 x 0.99, 940 x 1.02
_LAMPMULT	004 x 0.56

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	244.49	42.62%	90.00° - 100.00°	0.08	0.01%
10.00° - 20.00°	231.04	40.27%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	73.85	12.87%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	13.76	2.40%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	4.02	0.70%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	2.16	0.38%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.60	0.28%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.41	0.25%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.26	0.22%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	573.59	99.99%	0.00° - 180.00°	573.67	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°	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88	3633.88
2.50°	3453.67	3502.28	3450.41	3561.24	3567.48	3280.88	3310.33	3445.08	3456.97	3560.73	3519.10	3652.65	3607.24	3278.74	3315.87	3443.87	3453.67
5.00°	2915.42	2898.76	2989.64	3032.02	3140.90	2923.84	2860.01	3074.78	2983.97	2978.86	3045.40	3135.65	3250.65	2924.76	2798.86	3024.60	2915.42
7.50°	2345.51	2297.82	2325.35	2365.46	2482.50	2289.18	2249.69	2379.47	2333.01	2387.55	2456.10	2545.31	2512.22	2289.03	2261.56	2380.48	2345.51
10.00°	1721.35	1743.12	1775.49	1820.27	1783.88	1656.77	1691.57	1731.93	1727.64	1736.64	1728.66	1781.08	1792.44	1664.03	1687.73	1683.74	1721.35
12.50°	1206.52	1208.22	1300.92	1313.00	1355.26	1239.44	1155.67	1231.80	1142.73	1093.52	1126.39	1112.71	1144.34	1197.95	1203.75	1200.14	1206.52
15.00°	863.20	922.58	968.66	999.23	965.95	828.67	792.84	799.50	762.52	734.97	661.74	653.89	590.61	751.58	867.60	759.87	863.20
17.50°	587.55	648.39	723.51	739.17	739.67	608.16	497.77	554.83	467.01	386.24	353.68	309.24	357.70	519.96	595.61	520.00	587.55
20.00°	410.72	488.98	537.68	558.38	533.52	392.93	319.06	345.84	296.66	251.60	206.34	191.58	167.16	301.37	420.38	315.00	410.72
22.50°	268.06	336.06	385.07	397.42	394.55	270.18	181.37	227.41	173.06	122.78	111.80	102.38	107.56	198.42	274.91	207.17	268.06
25.00°	171.20	234.89	270.93	280.48	262.16	152.31	110.70	130.92	105.36	78.32	67.12	65.62	58.39	103.40	171.22	114.00	171.20
27.50°	99.49	140.00	176.45	173.15	182.63	98.04	61.18	84.78	56.41	36.78	38.27	37.65	38.11	65.55	93.82	71.57	99.49
30.00°	59.21	87.69	112.04	113.74	106.99	47.24	37.26	47.47	35.20	26.54	23.36	24.52	21.76	31.45	50.32	35.42	59.21
32.50°	31.02	40.80	61.85	63.36	70.82	30.59	20.69	28.54	22.46	16.94	14.37	14.77	15.37	19.89	22.70	22.00	31.02
35.00°	16.71	24.81	34.93	41.04	36.78	15.34	13.64	15.07	15.65	13.02	10.15	10.27	10.35	9.84	14.18	10.80	16.71
37.50°	8.58	11.05	18.00	23.35	24.02	11.10	9.01	12.15	10.45	9.31	7.56	7.09	8.45	7.67	8.61	8.09	8.58
40.00°	6.99	8.47	10.58	15.41	11.93	7.24	7.15	9.37	8.26	7.09	6.16	5.79	6.53	5.72	6.30	6.03	6.99
42.50°	5.29	6.25	6.86	8.80	10.39	5.93	5.91	6.83	6.78	5.10	5.06	4.68	4.53	4.79	4.80	4.98	5.29
45.00°	3.48	5.63	6.00	7.27	8.98	4.79	4.91	5.24	5.68	4.54	4.16	3.83	3.00	3.89	4.16	3.98	3.48
47.50°	2.46	4.80	6.17	6.30	7.12	4.59	3.97	5.19	4.64	3.99	3.56	3.19	2.38	3.12	3.59	3.16	2.46
50.00°	2.18	3.23	4.75	4.63	5.27	4.32	3.22	4.52	3.56	3.51	3.14	2.83	2.06	2.49	3.11	2.35	2.18
52.50°	1.98	2.08	2.83	2.90	3.70	3.62	2.51	2.92	2.46	3.06	2.71	2.36	2.26	2.38	2.80	2.13	1.98
55.00°	1.86	2.38	2.38	2.48	2.21	2.98	2.16	2.00	2.36	2.71	2.26	1.79	2.18	2.23	2.65	1.92	1.86
57.50°	1.71	2.50	2.34	2.15	2.29	2.54	1.86	2.00	2.43	2.32	1.99	1.54	1.64	1.92	2.34	2.15	1.71
60.00°	1.55	2.07	1.98	1.76	2.33	2.16	1.65	1.92	2.07	1.79	1.82	1.62	1.28	1.76	1.89	2.36	1.55
62.50°	1.56	1.71	1.53	1.37	1.90	1.94	1.46	1.74	1.66	1.40	1.75	1.61	1.19	2.04	1.53	1.81	1.56
65.00°	1.68	1.56	1.52	1.75	1.48	1.80	1.75	1.65	1.38	1.54	1.74	1.50	1.25	2.07	1.21	1.35	1.68
67.50°	1.71	1.42	1.60	2.13	1.23	1.90	2.10	1.64	1.12	1.57	1.61	1.29	1.50	1.53	1.33	1.58	1.71
70.00°	1.70	1.30	1.28	1.92	1.03	1.82	1.61	1.50	1.29	1.38	1.44	1.01	1.64	1.38	1.68	1.67	1.70
72.50°	1.52	1.36	0.97	1.74	1.10	1.36	1.24	1.24	1.39	1.30	1.51	1.12	1.68	1.58	1.43	1.50	1.52
75.00°	1.37	1.57	1.18	1.67	1.22	1.19	1.40	1.31	1.15	1.33	1.43	1.20	1.32	1.12	1.17	1.20	1.37
77.50°	1.36	1.14	1.17	1.58	1.43	1.24	1.45	1.47	1.28	1.29	1.16	1.06	1.09	1.07	1.11	1.08	1.36
80.00°	1.31	0.91	1.00	1.42	1.20	1.30	1.39	1.48	1.61	1.17	1.65	1.32	1.29	1.28	1.20	1.35	1.31
82.50°	1.09	1.06	1.07	1.01	1.28	1.28	1.21	1.56	1.85	1.04	1.57	1.59	1.66	1.01	1.21	1.38	1.09
85.00°	1.13	1.15	1.44	1.23	1.46	1.52	1.38	1.20	1.40	1.14	1.03	1.12	1.30	1.01	1.23	1.26	1.13
87.50°	1.03	0.87	1.16	1.17	1.12	1.54	0.92	1.26	1.09	1.35	1.01	1.02	1.09	0.84	1.21	1.29	1.03
90.00°	0.00	0.00	1.23	1.53	1.10	1.08	1.12	0.88	1.03	1.14	0.00	0.00	0.00	0.00	0.00	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

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	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%
	0	683	683	683	683	667	667	667	667	637	637	637	610	610	610	585	585	574
	1	660	648	637	628	647	636	626	618	613	606	599	592	586	581	573	569	557
	2	639	619	603	589	628	610	595	582	592	580	570	576	566	558	560	553	542
	3	620	595	575	559	610	587	569	554	573	558	546	560	548	538	548	538	528
	4	603	573	552	535	594	567	547	532	556	539	526	546	532	520	536	524	515
	5	586	554	532	515	579	549	529	513	540	522	509	532	517	505	524	511	502
	6	571	537	514	498	564	533	512	497	526	507	494	519	503	490	512	498	490
	7	557	522	499	483	551	519	497	482	512	494	480	507	490	478	501	487	479
	8	543	508	485	470	538	505	484	469	500	481	467	495	478	466	490	475	468
	9	531	495	473	458	526	492	472	457	488	469	456	484	467	455	480	465	458
	10	519	483	461	447	514	481	460	446	477	458	445	474	457	445	470	455	449

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	120.1 fc	1.9 ft
6.5 ft	86.0 fc	2.2 ft
7.5 ft	64.6 fc	2.5 ft
8.0 ft	56.8 fc	2.7 ft
10.0 ft	36.3 fc	3.4 ft
12.0 ft	25.2 fc	4.1 ft
14.0 ft	18.5 fc	4.7 ft
16.0 ft	14.2 fc	5.4 ft
20.0 ft	9.1 fc	6.8 ft
24.0 ft	6.3 fc	8.1 ft
28.0 ft	4.6 fc	9.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	7781635	7781635	7781635
45.00°	10524	18185	27195
55.00°	6926	8869	8238
65.00°	8508	7678	7505
75.00°	11368	9728	10121
85.00°	27738	35338	35899

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	6.8	7.7	7.2	8.0	8.3	6.3	7.2	6.7	7.5	7.9
	3H	9.0	9.8	9.4	10.1	10.5	8.4	9.2	8.8	9.5	9.9
	4H	10.2	10.9	10.6	11.3	11.7	9.6	10.3	10.0	10.7	11.1
	6H	11.6	12.2	12.0	12.6	13.0	11.1	11.8	11.5	12.1	12.5
	8H	12.3	12.9	12.7	13.3	13.7	12.2	12.9	12.7	13.3	13.7
	12H	13.1	13.7	13.6	14.1	14.6	13.5	14.1	14.0	14.5	15.0
4H	2H	7.1	7.8	7.5	8.2	8.5	7.0	7.7	7.4	8.1	8.5
	3H	9.7	10.3	10.1	10.7	11.1	9.4	10.0	9.8	10.4	10.8
	4H	11.1	11.7	11.6	12.1	12.5	10.6	11.2	11.1	11.6	12.1
	6H	12.7	13.1	13.1	13.6	14.1	12.4	12.9	12.9	13.3	13.8
	8H	13.5	14.0	14.0	14.4	14.9	13.7	14.2	14.2	14.6	15.1
	12H	14.6	15.0	15.1	15.4	15.9	15.2	15.5	15.7	16.0	16.5
8H	4H	11.5	12.0	12.0	12.4	12.9	11.3	11.7	11.8	12.2	12.6
	6H	13.4	13.7	13.9	14.2	14.7	13.4	13.8	13.9	14.3	14.8
	8H	14.5	14.8	15.0	15.3	15.8	14.9	15.2	15.5	15.8	16.3
	12H	15.9	16.1	16.4	16.6	17.2	16.6	16.8	17.1	17.3	17.9
12H	4H	11.7	12.0	12.2	12.5	13.0	11.5	11.9	12.0	12.4	12.8
	6H	13.6	13.9	14.1	14.4	14.9	13.8	14.1	14.3	14.6	15.1
	8H	14.9	15.1	15.4	15.6	16.2	15.4	15.7	15.9	16.2	16.7

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0