

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR4MOTA 5LE1 RDD4x AMB MWxFG
Nom 4" diam recessed downlight

Test Number

SP-00789

Test Date

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

Summary of Results

Power

Input Watts	15.8 W
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Lumen Output

Output Lumens	326
Efficacy	20.66 lm/W

Luminous Dimensions

0° - 180° Size	-0.33
90° - 270° Size	-0.33
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.06
Two luminaires, plane 90°	1.05
Four luminaires	1.06

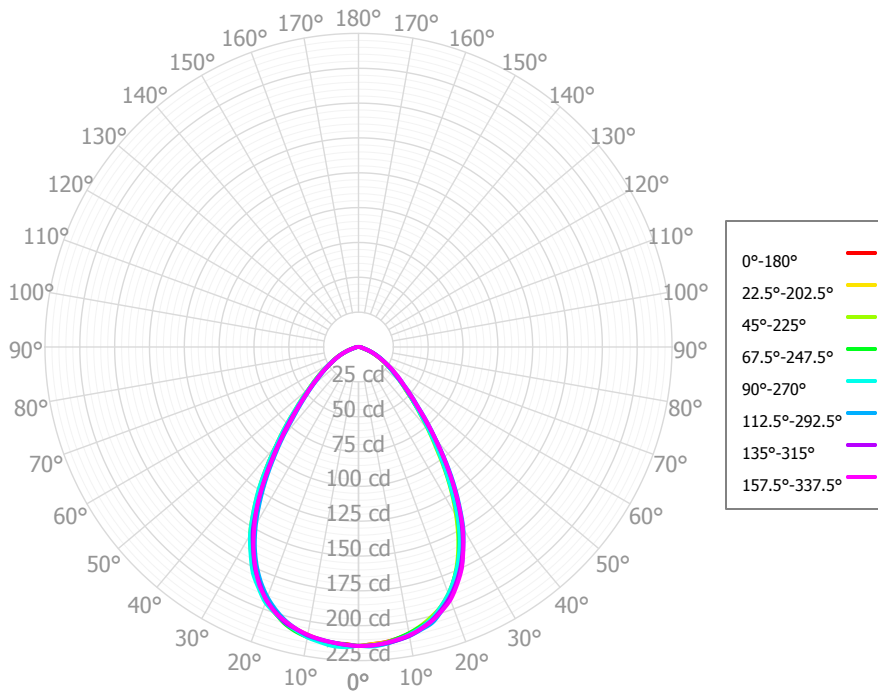
Full Beam Angle

0° - 180°	73°
90° - 270°	73°

IES File Header Contents

Keyword	Value
TEST	SP-00789
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	3/14/2019
UPDATE	4/23/2019
LUMCAT	SR4MOTA 5LE1 RDD4x AMB MWxFG
LUMINAIRE	Nom 4" diam recessed downlight
OTHER	Beam Angle: 73 degrees
OTHER	Matte white trim; Frosted glass lens
LAMPCAT	N/A
LAMP	N/A, LEDs Amber in color, 590 nm
OTHER	CCT Output Multipliers: N/A
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	N/A, Amber Light
_CCTMULT	N/A
_LAMPMULT	N/A

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	20.57	6.30%	90.00° - 100.00°	0.10	0.03%
10.00° - 20.00°	57.06	17.48%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	79.18	24.25%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	72.64	22.25%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	47.28	14.48%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	28.15	8.62%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	14.93	4.57%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.92	1.51%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.67	0.51%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	326.39	99.97%	0.00° - 180.00°	326.50	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°	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55	214.55
2.50°	213.53	213.56	214.31	214.30	215.11	213.91	213.97	213.84	213.42	214.34	213.85	213.83	215.59	214.77	214.30	214.50	213.53
5.00°	212.79	213.00	213.67	213.34	214.19	212.81	212.90	212.83	213.51	213.76	213.98	212.98	215.33	213.99	213.66	213.39	212.79
7.50°	211.24	211.37	211.47	211.15	212.02	211.97	211.50	211.67	212.36	211.80	212.88	212.43	213.55	212.38	212.38	211.87	211.24
10.00°	209.02	209.29	208.67	208.67	209.57	210.36	210.03	209.67	210.35	209.64	211.24	211.30	211.55	210.58	210.48	210.05	209.02
12.50°	206.28	206.01	205.15	205.61	206.32	207.13	207.38	207.06	207.66	207.22	208.34	209.01	208.17	207.79	207.19	207.16	206.28
15.00°	201.93	202.33	200.83	202.46	202.10	203.07	204.58	203.55	204.59	203.77	205.02	205.38	204.69	204.85	203.13	203.60	201.93
17.50°	196.56	196.94	195.71	196.10	195.81	197.63	199.07	199.51	199.55	199.25	200.03	199.58	200.01	198.60	197.72	198.66	196.56
20.00°	189.88	191.13	188.54	189.44	188.57	191.02	193.39	193.08	193.58	193.07	194.62	193.23	195.23	192.08	191.23	193.04	189.88
22.50°	182.51	181.54	179.70	179.66	179.67	182.83	184.56	185.52	186.14	185.51	186.49	186.18	187.35	183.53	183.20	184.72	182.51
25.00°	171.73	171.27	168.30	169.71	169.41	172.96	175.57	174.91	178.16	176.26	177.88	177.30	179.20	174.84	173.57	175.35	171.73
27.50°	159.53	158.14	155.15	156.52	157.27	161.18	163.76	163.18	165.82	165.85	166.93	166.45	167.67	162.77	162.07	162.98	159.53
30.00°	144.76	144.69	140.42	143.10	142.89	147.39	151.55	149.59	152.28	152.63	155.70	153.45	155.69	150.43	148.53	149.67	144.76
32.50°	129.18	128.41	124.82	126.46	125.97	131.73	135.09	135.45	137.78	137.81	140.21	138.51	140.41	134.55	133.05	133.67	129.18
35.00°	112.89	111.98	108.54	109.97	109.57	115.69	118.69	118.70	123.08	121.61	124.46	122.51	124.83	118.57	117.01	117.06	112.89
37.50°	96.44	96.84	91.98	94.81	93.66	99.36	102.64	101.41	107.11	104.79	107.75	105.73	107.78	101.92	100.52	101.09	96.44
40.00°	81.85	81.83	78.47	80.07	79.47	84.39	87.13	86.51	90.97	89.51	91.15	90.13	91.45	85.82	85.11	85.23	81.85
42.50°	67.59	69.16	66.04	67.60	66.61	70.27	74.09	71.94	76.57	74.76	77.71	75.24	77.65	72.40	70.40	72.04	67.59
45.00°	57.17	56.92	56.08	56.18	56.26	59.52	61.88	61.48	62.31	63.22	64.61	63.38	64.84	59.96	58.83	59.13	57.17
47.50°	47.15	48.67	46.76	48.69	47.50	50.46	52.44	51.37	53.32	52.55	55.10	53.00	54.69	51.03	48.88	50.66	47.15
50.00°	41.11	40.78	40.18	41.47	40.10	42.85	43.87	44.15	44.54	45.04	46.03	45.14	45.66	42.84	41.32	42.41	41.11
52.50°	35.25	35.08	34.10	35.04	33.41	35.81	37.62	37.06	38.67	38.15	39.59	38.24	39.04	36.65	34.78	36.87	35.25
55.00°	30.03	29.67	29.11	29.35	28.49	30.89	31.74	32.00	32.84	32.42	33.40	32.36	33.08	30.95	29.93	31.37	30.03
57.50°	24.89	25.48	24.25	25.37	24.29	26.63	26.65	27.00	27.52	26.83	28.29	26.78	28.26	26.29	25.63	26.48	24.89
60.00°	21.12	21.30	20.62	21.36	21.09	22.58	22.32	22.78	22.47	22.82	23.51	22.77	23.64	22.01	21.57	21.65	21.12
62.50°	17.40	17.18	17.07	17.27	18.21	18.58	19.25	18.70	19.39	18.92	19.75	19.10	19.33	18.40	17.58	17.43	17.40
65.00°	14.18	13.48	13.63	13.76	14.50	15.33	15.99	15.53	16.21	15.76	16.17	15.96	15.70	14.89	14.57	13.51	14.18
67.50°	10.95	10.75	10.27	11.11	10.59	12.20	12.48	12.44	12.58	12.64	12.97	12.90	12.85	11.53	11.74	10.99	10.95
70.00°	7.69	7.86	7.50	8.21	7.85	8.93	9.49	9.62	9.40	9.85	10.03	9.66	9.88	8.59	8.39	8.38	7.69
72.50°	5.10	4.79	5.02	5.12	5.41	5.90	6.89	6.81	7.06	7.10	7.42	6.68	6.83	5.97	5.37	5.59	5.10
75.00°	3.28	3.46	3.06	3.84	3.69	3.59	4.97	4.02	4.98	4.39	5.00	4.41	4.91	4.29	3.37	4.09	3.28
77.50°	2.68	2.74	2.61	2.87	2.67	2.70	3.45	3.09	3.23	3.36	3.13	3.09	3.52	3.03	2.57	3.12	2.68
80.00°	2.26	2.37	2.26	2.06	2.03	2.24	2.46	2.70	2.27	2.53	2.37	2.24	2.70	2.27	2.26	1.87	2.26
82.50°	1.88	1.50	1.76	1.88	1.53	1.65	2.12	2.38	1.96	1.71	2.08	1.62	1.66	1.93	1.91	1.23	1.88
85.00°	1.42	1.85	1.55	1.66	1.27	1.51	1.60	1.71	1.57	1.52	1.89	1.51	1.59	1.70	1.53	1.40	1.42
87.50°	0.92	1.47	1.20	1.19	1.06	1.49	1.50	1.32	1.09	1.26	0.91	1.37	1.22	1.18	0.90	1.20	0.92
90.00°	0.93	0.47	0.86	0.45	0.90	1.02	0.53	1.06	0.53	0.82	0.51	0.78	1.18	0.59	1.04	0.56	0.93
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.

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	389	389	389	389	380	380	380	380	363	363	363	347	347	347	333	333	326
	1	365	353	343	334	356	346	337	328	332	325	318	320	314	308	309	304	298
	2	340	320	303	289	333	314	299	286	303	290	279	293	282	273	284	275	269
	3	317	291	270	254	310	286	267	251	277	261	247	268	255	243	261	249	244
	4	296	265	242	225	290	261	240	224	254	235	221	247	231	218	240	226	222
	5	277	243	219	202	271	240	217	201	233	214	199	227	210	197	222	207	203
	6	259	223	199	182	254	221	198	181	215	195	180	210	192	179	205	190	186
	7	243	206	182	166	238	204	181	165	199	179	164	195	177	163	191	175	171
	8	229	191	168	152	224	189	167	151	185	165	150	182	163	150	178	161	159
	9	216	178	155	139	212	176	154	139	173	153	139	170	151	138	167	150	147
	10	204	166	144	129	200	165	143	129	162	142	128	159	141	128	156	139	137

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	7.1 fc	7.9 ft
6.5 ft	5.1 fc	9.3 ft
7.5 ft	3.8 fc	10.7 ft
8.0 ft	3.4 fc	11.4 ft
10.0 ft	2.1 fc	14.3 ft
12.0 ft	1.5 fc	17.1 ft
14.0 ft	1.1 fc	20.0 ft
16.0 ft	0.8 fc	22.8 ft
20.0 ft	0.5 fc	28.6 ft
24.0 ft	0.4 fc	34.3 ft
28.0 ft	0.3 fc	40.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	27,000	27,000	27,000
45.00°	10,175	9,980	10,014
55.00°	6,589	6,387	6,252
65.00°	4,223	4,060	4,317
75.00°	1,594	1,490	1,794
85.00°	2,050	2,242	1,830

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	15.4	16.7	15.8	17.0	17.3	15.6	16.9	16.0	17.2	17.6
	3H	16.1	17.2	16.5	17.6	17.9	16.5	17.6	16.8	17.9	18.3
	4H	16.2	17.2	16.6	17.6	18.0	16.6	17.6	17.0	18.0	18.4
	6H	16.2	17.2	16.6	17.5	17.9	16.6	17.6	17.0	18.0	18.4
	8H	16.2	17.1	16.6	17.5	17.9	16.6	17.5	17.0	17.9	18.3
	12H	16.2	17.1	16.7	17.5	17.9	16.6	17.5	17.1	17.9	18.3
4H	2H	15.7	16.7	16.1	17.1	17.5	16.0	17.1	16.4	17.4	17.8
	3H	16.4	17.3	16.9	17.7	18.1	16.9	17.8	17.3	18.2	18.6
	4H	16.6	17.3	17.0	17.8	18.2	17.1	17.9	17.5	18.3	18.7
	6H	16.6	17.3	17.1	17.8	18.2	17.2	17.8	17.6	18.3	18.7
	8H	16.7	17.3	17.1	17.7	18.2	17.2	17.8	17.6	18.2	18.7
	12H	16.7	17.3	17.2	17.7	18.2	17.2	17.7	17.7	18.2	18.7
8H	4H	16.5	17.2	17.0	17.6	18.1	17.1	17.7	17.6	18.2	18.6
	6H	16.6	17.2	17.2	17.7	18.1	17.2	17.7	17.7	18.2	18.7
	8H	16.7	17.2	17.2	17.7	18.2	17.2	17.7	17.8	18.2	18.7
	12H	16.8	17.2	17.3	17.7	18.3	17.3	17.7	17.8	18.2	18.8
12H	4H	16.5	17.0	17.0	17.5	18.0	17.1	17.6	17.5	18.1	18.6
	6H	16.6	17.1	17.2	17.6	18.1	17.2	17.6	17.7	18.1	18.7
	8H	16.7	17.1	17.2	17.6	18.2	17.3	17.7	17.8	18.2	18.7

Corrected UGR values based on total output lumens

SHR = 1.0