

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SS4Mx TA5L E1 SDD4x AMB MW GL
Nom 4" square recessed downlight

Test Number

SP-00787_1

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	365
Efficacy	23.08 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.1
Two luminaires, plane 90°	1.11
Four luminaires	1.14

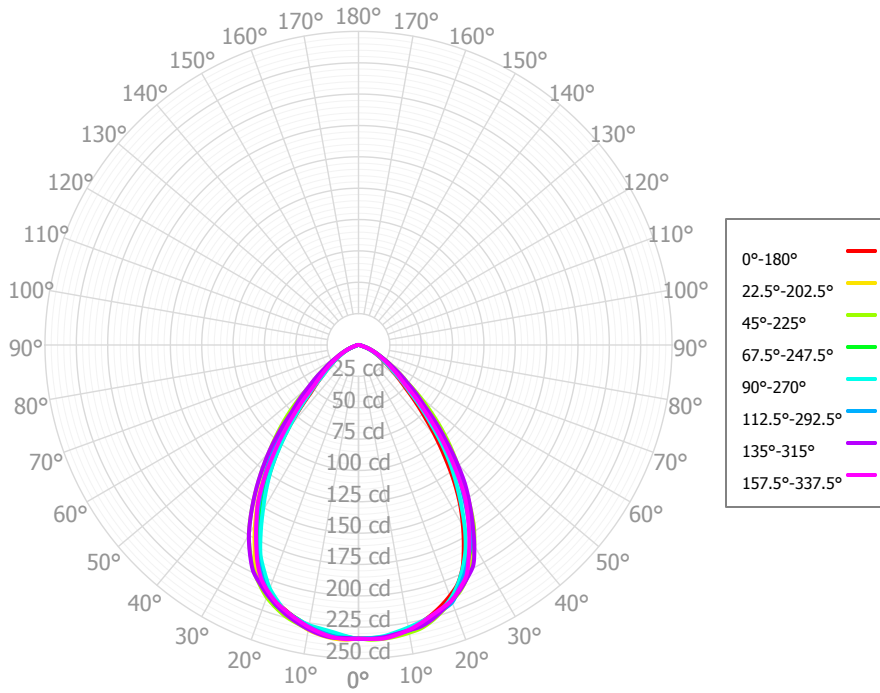
Full Beam Angle

0° - 180°	73°
90° - 270°	74°

IES File Header Contents

Keyword	Value
TEST	SP-00787_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	3/14/2019
UPDATE	4/23/2019
LUMCAT	SS4Mx TA5L E1 SDD4x AMB MW GL
LUMINAIRE	Nom 4" square recessed downlight
OTHER	Beam Angle: 73 degrees
OTHER	Matte white trim; Clear 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°	22.50	6.17%	90.00° - 100.00°	0.10	0.03%
10.00° - 20.00°	62.81	17.22%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	89.35	24.50%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	86.02	23.58%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	56.43	15.47%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	28.97	7.94%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	13.74	3.77%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.56	0.98%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.24	0.34%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	364.63	99.97%	0.00° - 180.00°	364.72	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°	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20	234.20
2.50°	234.46	234.80	235.19	233.94	233.87	233.79	233.88	234.77	233.85	235.20	233.73	232.77	232.34	234.06	234.50	234.63	234.46
5.00°	234.53	234.43	235.09	233.70	233.05	232.97	234.25	233.92	234.33	234.80	232.98	231.57	229.93	233.86	233.92	234.88	234.53
7.50°	232.68	233.12	234.29	232.50	230.94	230.78	232.87	231.49	231.78	233.17	231.64	230.05	228.24	232.58	232.33	233.24	232.68
10.00°	230.36	231.60	232.97	230.88	228.76	228.10	230.13	228.38	228.57	230.65	229.81	227.54	226.81	231.11	231.04	230.76	230.36
12.50°	227.05	228.73	231.29	228.12	226.50	224.29	226.64	224.46	224.37	226.31	227.22	223.84	224.10	228.13	229.95	227.37	227.05
15.00°	223.19	225.66	227.47	224.96	223.88	220.46	222.67	220.28	220.03	221.43	224.13	220.69	221.04	224.98	226.60	223.67	223.19
17.50°	218.41	221.57	222.45	221.12	220.83	216.59	217.67	215.86	215.40	215.69	219.49	218.10	214.21	221.68	221.91	220.27	218.41
20.00°	212.92	217.39	217.33	217.11	215.12	210.37	212.16	209.75	210.74	209.71	214.02	210.42	206.66	218.37	216.82	216.96	212.92
22.50°	206.49	211.05	212.18	209.29	206.83	200.53	205.70	202.26	200.04	203.42	206.45	198.60	195.99	209.52	211.54	210.47	206.49
25.00°	196.25	204.56	204.86	200.78	196.57	189.28	198.85	190.75	189.06	193.43	197.98	186.60	184.89	200.57	205.07	203.38	196.25
27.50°	181.79	191.87	196.77	190.52	184.75	176.26	187.53	176.59	173.35	179.45	186.87	174.48	168.88	190.15	198.16	190.41	181.79
30.00°	166.60	179.01	184.54	180.06	169.89	162.09	174.82	162.81	157.51	164.86	174.87	159.41	152.52	179.09	184.74	176.72	166.60
32.50°	150.75	163.71	171.20	164.06	153.04	146.70	159.39	149.23	139.89	149.74	159.34	142.73	137.14	162.21	169.42	162.33	150.75
35.00°	133.02	148.07	154.24	147.72	136.84	131.63	143.35	131.98	122.31	133.36	142.94	127.29	121.70	145.67	154.40	147.89	133.02
37.50°	113.87	129.89	136.58	131.68	120.99	116.82	126.99	113.15	105.08	116.07	126.68	112.38	104.03	131.11	139.44	129.17	113.87
40.00°	96.01	111.91	121.60	115.62	103.83	100.48	110.58	95.43	87.74	98.53	110.44	95.90	86.55	116.15	121.52	110.44	96.01
42.50°	78.93	95.00	106.98	99.35	86.14	83.08	92.78	78.09	69.89	80.86	95.77	78.88	71.28	99.50	103.18	92.57	78.93
45.00°	64.51	78.28	92.06	83.17	70.59	67.76	74.84	62.83	53.92	65.41	81.28	64.13	56.59	83.16	86.75	75.01	64.51
47.50°	51.43	62.22	77.12	67.90	55.75	53.58	63.14	48.12	44.74	51.06	66.04	49.98	45.78	67.74	70.47	60.61	51.43
50.00°	42.22	48.42	63.12	53.40	45.36	43.34	51.70	40.34	36.48	41.36	50.76	40.83	35.92	53.78	59.24	47.22	42.22
52.50°	34.52	41.00	49.30	43.54	36.07	34.88	42.68	33.85	30.72	33.44	42.26	32.60	30.57	43.43	48.21	39.95	34.52
55.00°	28.98	34.13	40.82	34.52	30.00	28.64	33.81	28.39	25.47	27.77	33.87	27.42	25.45	34.61	39.90	33.02	28.98
57.50°	24.08	28.50	32.51	29.02	24.50	23.17	27.60	23.05	21.36	22.77	27.20	22.62	21.14	28.76	31.76	27.59	24.08
60.00°	20.11	23.40	26.13	23.80	20.72	19.29	21.58	19.15	17.62	19.46	20.75	18.74	17.20	23.60	25.72	22.59	20.11
62.50°	16.36	19.24	20.03	19.49	17.15	15.82	17.15	15.35	14.54	16.53	16.49	14.91	14.22	19.54	19.92	18.99	16.36
65.00°	13.42	15.61	15.84	15.49	13.69	12.59	12.88	12.40	11.68	12.98	12.43	11.91	11.34	15.66	15.93	15.48	13.42
67.50°	10.62	12.72	11.87	12.25	10.31	9.41	9.38	9.48	9.11	9.35	9.44	8.92	8.67	12.02	12.08	12.20	10.62
70.00°	7.76	9.59	8.66	9.12	7.85	6.20	6.31	6.69	6.35	6.59	6.58	5.80	5.96	9.00	8.71	9.10	7.76
72.50°	5.04	6.27	5.74	6.15	5.28	3.42	4.12	4.18	3.46	4.08	3.97	3.22	3.21	6.41	5.65	6.23	5.04
75.00°	2.76	3.75	3.14	3.56	2.49	2.02	2.59	2.15	2.05	2.29	2.45	1.57	1.97	3.74	2.93	3.67	2.76
77.50°	1.75	2.03	2.15	1.72	1.77	1.50	1.54	1.60	1.24	1.49	1.56	1.42	1.24	1.93	1.89	1.87	1.75
80.00°	1.42	1.41	1.65	1.37	1.49	1.30	1.16	1.36	1.08	1.17	1.06	1.41	0.88	1.45	1.39	1.59	1.42
82.50°	1.38	1.02	1.53	1.22	1.22	1.00	1.51	1.06	1.25	1.10	1.31	1.24	1.19	1.62	1.20	1.34	1.38
85.00°	1.27	1.23	1.49	1.41	1.35	0.95	1.15	0.85	0.85	1.25	0.76	1.33	1.04	1.20	1.13	0.99	1.27
87.50°	1.22	0.93	1.09	0.92	1.27	1.33	1.06	0.87	0.88	1.17	1.56	1.31	0.89	1.21	1.25	1.05	1.22
90.00°	0.86	0.46	0.95	0.48	0.89	1.13	0.53	1.06	0.45	0.79	0.50	0.84	0.90	0.49	0.66	0.49	0.86
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	434	434	434	434	424	424	424	424	405	405	405	388	388	388	372	372	365
	1	408	396	385	374	399	388	378	368	373	364	357	359	352	346	346	341	336
	2	382	359	341	326	373	353	336	322	341	327	315	329	318	308	319	309	301
	3	356	327	304	286	348	322	301	284	311	294	279	302	287	274	293	281	270
	4	333	298	273	254	325	294	271	253	286	265	249	278	260	246	270	256	243
	5	311	273	247	228	304	270	245	227	263	241	224	256	237	222	250	233	220
	6	291	251	225	206	285	248	223	205	242	220	203	237	217	202	231	214	200
	7	273	232	206	187	268	229	204	186	224	202	185	220	199	184	215	197	183
	8	257	215	189	171	252	213	188	170	208	186	170	204	184	169	200	182	168
	9	242	200	174	157	237	198	173	157	194	172	156	191	170	155	187	169	155
	10	228	187	162	145	224	185	161	145	182	159	144	178	158	144	175	157	143

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	7.7 fc	8.4 ft
6.5 ft	5.5 fc	10.0 ft
7.5 ft	4.2 fc	11.5 ft
8.0 ft	3.7 fc	12.3 ft
10.0 ft	2.3 fc	15.4 ft
12.0 ft	1.6 fc	18.4 ft
14.0 ft	1.2 fc	21.5 ft
16.0 ft	0.9 fc	24.6 ft
20.0 ft	0.6 fc	30.7 ft
24.0 ft	0.4 fc	36.8 ft
28.0 ft	0.3 fc	43.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	23,148	23,148	23,148
45.00°	9,018	12,868	9,867
55.00°	4,994	7,035	5,170
65.00°	3,139	3,704	3,202
75.00°	1,055	1,201	952
85.00°	1,441	1,688	1,532

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	17.4	14.2	15.5	14.6	15.8	16.1
	3H	16.1	17.3	16.5	17.6	18.0	14.8	16.0	15.2	16.3	16.7
	4H	16.2	17.2	16.6	17.6	18.0	14.8	15.9	15.2	16.2	16.6
	6H	16.1	17.1	16.6	17.5	17.9	14.8	15.8	15.2	16.1	16.5
	8H	16.1	17.0	16.6	17.4	17.8	14.8	15.7	15.2	16.1	16.5
	12H	16.1	17.0	16.6	17.4	17.8	14.8	15.7	15.2	16.0	16.5
4H	2H	15.8	16.8	16.2	17.2	17.5	14.5	15.5	14.9	15.9	16.3
	3H	16.6	17.4	17.0	17.8	18.2	15.2	16.0	15.6	16.4	16.8
	4H	16.6	17.4	17.1	17.8	18.3	15.2	15.9	15.6	16.3	16.8
	6H	16.6	17.3	17.1	17.7	18.2	15.1	15.8	15.6	16.2	16.7
	8H	16.6	17.2	17.1	17.7	18.1	15.1	15.7	15.6	16.2	16.7
	12H	16.6	17.1	17.1	17.6	18.1	15.2	15.7	15.6	16.2	16.7
8H	4H	16.6	17.2	17.1	17.6	18.1	15.1	15.7	15.6	16.1	16.6
	6H	16.6	17.1	17.1	17.6	18.0	15.1	15.6	15.6	16.1	16.6
	8H	16.6	17.0	17.1	17.5	18.0	15.1	15.5	15.6	16.1	16.5
	12H	16.6	17.0	17.1	17.5	18.1	15.2	15.6	15.7	16.1	16.6
12H	4H	16.5	17.1	17.0	17.6	18.0	15.0	15.6	15.5	16.1	16.5
	6H	16.5	17.0	17.1	17.4	18.0	15.0	15.5	15.6	16.0	16.5
	8H	16.5	16.9	17.1	17.4	18.0	15.1	15.5	15.6	16.0	16.5

Corrected UGR values based on total output lumens

SHR = 1.0