

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-00787_2

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	370
Efficacy	23.4 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.03
Two luminaires, plane 90°	1.03
Four luminaires	1.09

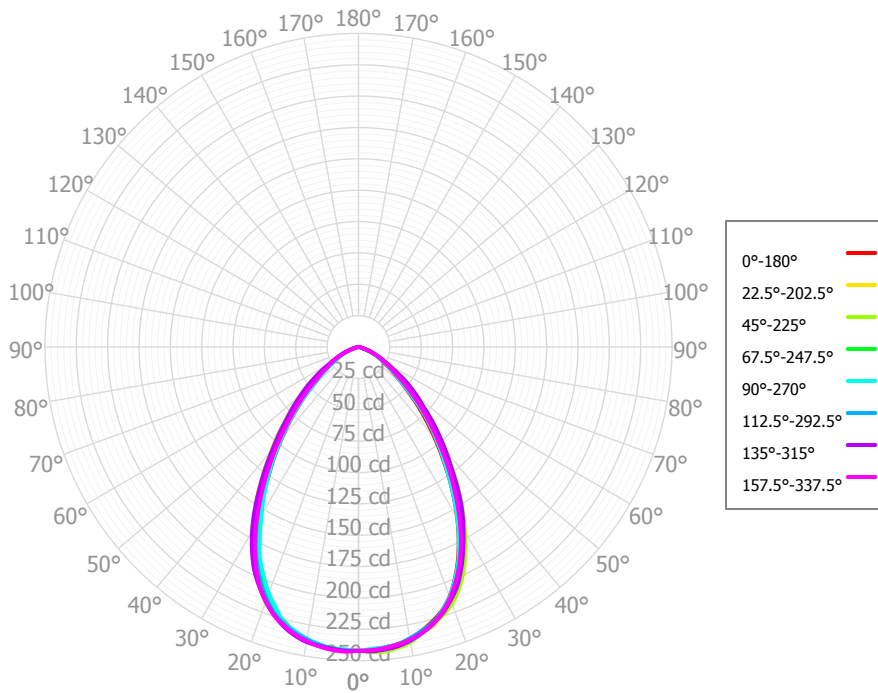
Full Beam Angle

0° - 180°	71°
90° - 270°	71°

IES File Header Contents

Keyword	Value
TEST	SP-00787_2
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 SO
LUMINAIRE	Nom 4" square recessed downlight
OTHER	Beam Angle: 71 degrees
OTHER	Matte white trim; Solite 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°	23.27	6.29%	90.00° - 100.00°	0.08	0.02%
10.00° - 20.00°	64.09	17.33%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	87.39	23.63%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	82.02	22.18%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	58.79	15.90%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	33.27	9.00%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	15.80	4.27%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.99	1.08%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.06	0.29%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	369.68	99.98%	0.00° - 180.00°	369.76	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°	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33	242.33
2.50°	241.72	242.20	243.56	242.05	240.95	242.37	242.43	243.13	241.99	242.80	242.26	241.83	241.45	242.12	242.91	241.86	241.72
5.00°	241.00	241.56	243.66	240.59	240.37	241.36	241.54	242.42	242.10	242.21	241.79	240.86	241.39	241.70	242.13	240.84	241.00
7.50°	239.25	239.62	241.95	238.92	239.41	239.58	240.34	240.81	240.49	240.59	239.99	239.82	238.98	239.63	240.71	239.19	239.25
10.00°	236.44	236.95	239.12	236.14	237.89	236.89	238.85	238.04	238.20	238.11	237.87	236.39	236.40	235.91	237.72	236.91	236.44
12.50°	231.99	233.63	233.75	232.92	233.80	233.61	235.52	234.54	233.99	234.63	233.91	232.86	232.19	231.94	233.68	233.45	231.99
15.00°	226.82	230.02	228.67	227.84	228.90	228.69	230.69	229.77	229.14	229.54	229.61	227.13	227.91	227.75	228.54	228.99	226.82
17.50°	220.68	223.19	224.12	221.80	221.05	222.89	224.01	224.31	221.96	222.85	223.29	221.28	218.51	221.31	222.77	222.05	220.68
20.00°	212.07	215.11	217.93	212.48	212.28	213.99	216.00	215.91	214.16	214.80	216.71	212.11	209.03	213.16	214.93	213.24	212.07
22.50°	200.62	204.67	208.99	202.51	200.87	203.69	206.69	206.16	202.63	205.56	206.70	202.69	197.65	202.45	206.08	202.72	200.62
25.00°	187.60	193.47	198.02	190.63	188.41	191.39	196.58	193.27	190.30	193.91	196.38	189.91	185.95	190.08	194.13	191.09	187.60
27.50°	173.04	179.78	184.18	177.72	173.35	178.31	183.83	179.14	175.37	180.43	183.05	176.89	170.29	176.77	180.91	177.06	173.04
30.00°	157.52	165.44	169.68	162.36	157.80	163.28	169.71	163.08	160.03	165.35	169.56	161.70	154.74	162.93	167.33	161.72	157.52
32.50°	141.15	149.23	154.36	146.89	141.22	147.61	153.97	146.40	142.58	149.23	153.86	146.49	140.00	147.81	153.64	146.03	141.15
35.00°	125.00	132.62	138.83	131.24	125.31	132.55	137.53	130.40	124.89	133.16	138.16	131.10	125.28	132.09	138.04	130.18	125.00
37.50°	109.01	117.40	123.05	116.27	110.53	117.64	121.88	114.57	109.96	117.12	123.01	116.02	110.59	117.99	121.90	114.94	109.01
40.00°	94.50	102.40	108.54	102.48	96.68	103.26	106.53	99.89	95.23	103.05	107.99	102.40	96.18	104.53	108.15	99.95	94.50
42.50°	80.92	89.21	95.17	89.21	84.22	88.99	93.29	85.44	82.20	89.91	94.95	89.09	82.95	91.42	94.94	86.80	80.92
45.00°	68.17	76.21	82.68	76.70	71.44	77.50	80.70	73.39	69.24	77.39	82.15	76.95	69.96	78.44	82.42	74.24	68.17
47.50°	55.86	64.44	70.91	64.64	58.23	66.44	70.41	61.70	57.89	65.12	71.50	65.01	57.84	66.52	70.00	62.77	55.86
50.00°	46.22	52.76	60.83	53.12	47.27	55.46	60.69	51.65	46.71	54.15	61.07	53.66	46.76	54.88	60.71	51.58	46.22
52.50°	37.82	43.60	51.90	43.53	38.82	44.49	51.57	41.78	39.31	43.61	52.05	43.32	38.71	45.15	51.83	42.86	37.82
55.00°	31.43	34.57	43.09	36.05	32.06	37.38	42.57	35.16	32.08	36.49	43.06	35.55	31.38	35.81	42.35	34.65	31.43
57.50°	25.80	29.51	34.34	29.49	26.97	30.50	34.62	28.78	26.79	30.29	34.21	28.64	25.81	30.06	32.82	29.12	25.80
60.00°	21.64	24.49	27.14	23.80	22.35	25.26	26.82	24.57	21.76	25.34	26.21	23.55	20.90	24.88	26.72	24.02	21.64
62.50°	17.96	20.08	20.74	19.39	18.11	20.13	21.73	20.43	18.35	20.66	21.00	19.28	17.21	20.85	20.75	20.16	17.96
65.00°	14.29	15.76	15.74	16.00	14.36	15.93	16.91	16.46	14.91	16.95	16.37	16.13	14.01	16.94	16.30	16.45	14.29
67.50°	10.63	12.52	11.35	12.36	10.95	12.03	12.88	12.66	11.40	13.26	12.55	12.39	11.20	12.62	11.89	12.74	10.63
70.00°	7.24	9.23	8.27	8.54	7.63	8.78	9.00	9.16	7.89	9.45	8.86	8.48	8.04	8.27	8.72	9.03	7.24
72.50°	3.90	5.69	5.65	5.33	4.36	5.40	5.36	5.50	4.61	6.07	5.48	5.22	4.82	5.37	5.70	5.28	3.90
75.00°	2.95	2.93	3.51	2.45	2.89	2.75	3.67	2.91	2.23	3.60	2.83	3.05	2.16	2.90	3.62	2.17	2.95
77.50°	2.23	1.98	1.63	1.94	2.12	1.66	2.07	2.01	1.53	2.49	2.23	1.89	1.66	2.16	2.21	1.97	2.23
80.00°	1.84	1.63	1.40	1.76	1.58	1.65	1.68	1.55	1.43	1.65	1.58	1.82	1.53	1.72	1.78	1.66	1.84
82.50°	1.56	1.59	1.24	1.17	1.27	1.41	1.40	1.31	1.32	1.01	1.51	1.30	1.26	1.48	1.31	1.31	1.56
85.00°	1.27	1.34	1.16	1.28	1.25	1.27	1.08	1.34	0.00	0.00	0.00	0.00	0.00	1.07	1.20	1.25	1.27
87.50°	0.99	1.14	1.13	1.20	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	1.47	1.41	0.99
90.00°	1.37	0.83	1.21	1.01	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	1.47	1.34	1.37
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	440	440	440	440	430	430	430	430	411	411	411	393	393	393	377	377	370
	1	414	401	389	379	404	393	382	373	377	369	361	363	357	350	350	345	338
	2	386	363	344	328	377	357	339	325	344	330	317	333	321	310	322	312	306
	3	360	330	307	288	352	324	303	286	314	296	281	305	289	276	296	283	277
	4	336	301	275	255	328	296	272	254	288	267	251	280	262	247	272	257	252
	5	314	275	248	229	307	271	246	227	264	242	225	258	238	223	251	234	230
	6	294	253	226	206	287	250	224	205	244	221	204	238	218	202	233	215	211
	7	275	233	206	187	270	231	205	187	226	202	185	221	200	184	216	197	194
	8	259	216	190	171	254	214	188	171	209	186	170	205	184	169	201	182	179
	9	244	201	175	157	239	199	174	157	195	172	156	192	171	156	188	169	166
	10	230	188	162	145	226	186	161	145	183	160	144	179	159	144	176	157	155

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	8.0 fc	7.9 ft
6.5 ft	5.7 fc	9.3 ft
7.5 ft	4.3 fc	10.7 ft
8.0 ft	3.8 fc	11.4 ft
10.0 ft	2.4 fc	14.3 ft
12.0 ft	1.7 fc	17.1 ft
14.0 ft	1.2 fc	20.0 ft
16.0 ft	0.9 fc	22.9 ft
20.0 ft	0.6 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°	23,952	23,952	23,952
45.00°	9,529	11,558	9,986
55.00°	5,415	7,426	5,525
65.00°	3,342	3,682	3,358
75.00°	1,127	1,339	1,102
85.00°	1,444	1,321	1,423

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	15.7	17.0	16.1	17.3	17.6	15.8	17.1	16.1	17.4	17.7
	3H	16.3	17.5	16.7	17.8	18.2	16.4	17.5	16.8	17.9	18.2
	4H	16.3	17.4	16.7	17.7	18.1	16.4	17.5	16.8	17.8	18.2
	6H	16.3	17.3	16.7	17.7	18.1	16.4	17.3	16.8	17.7	18.1
	8H	16.3	17.2	16.7	17.6	18.0	16.3	17.3	16.8	17.7	18.1
	12H	16.3	17.2	16.7	17.6	18.0	16.3	17.2	16.7	17.6	18.0
4H	2H	16.0	17.1	16.4	17.4	17.8	16.1	17.2	16.5	17.5	17.9
	3H	16.7	17.6	17.1	18.0	18.4	16.8	17.7	17.2	18.1	18.5
	4H	16.7	17.5	17.2	17.9	18.4	16.8	17.6	17.2	18.0	18.4
	6H	16.7	17.4	17.2	17.8	18.3	16.8	17.4	17.2	17.9	18.4
	8H	16.7	17.3	17.2	17.8	18.3	16.8	17.4	17.2	17.8	18.3
	12H	16.7	17.3	17.2	17.8	18.2	16.7	17.3	17.2	17.8	18.3
8H	4H	16.7	17.3	17.1	17.7	18.2	16.7	17.4	17.2	17.8	18.3
	6H	16.7	17.2	17.2	17.7	18.2	16.7	17.2	17.2	17.7	18.2
	8H	16.7	17.1	17.2	17.7	18.1	16.7	17.2	17.3	17.7	18.2
	12H	16.7	17.1	17.3	17.6	18.2	16.7	17.1	17.3	17.6	18.2
12H	4H	16.6	17.2	17.1	17.7	18.1	16.7	17.2	17.2	17.7	18.2
	6H	16.6	17.1	17.2	17.6	18.1	16.7	17.2	17.2	17.6	18.2
	8H	16.7	17.1	17.2	17.6	18.1	16.7	17.1	17.2	17.6	18.2

Corrected UGR values based on total output lumens

SHR = 1.0