

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SGRTV12BX-60L35K-ND-DO101-AR12BX-MWWF  
Nom. 12" Diam x 10" H, Open aperture

### **Test Number**

SP-00686\_1\_M-60L

### **Test Date**

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

## Summary of Results

### Power

Input Watts	44 W
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### Lumen Output

Output Lumens	4944
Efficacy	112.36 lm/W

### Luminous Dimensions

0° - 180° Size	-0.97
90° - 270° Size	-0.97
Height	0

### Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.4
Four luminaires	0.41

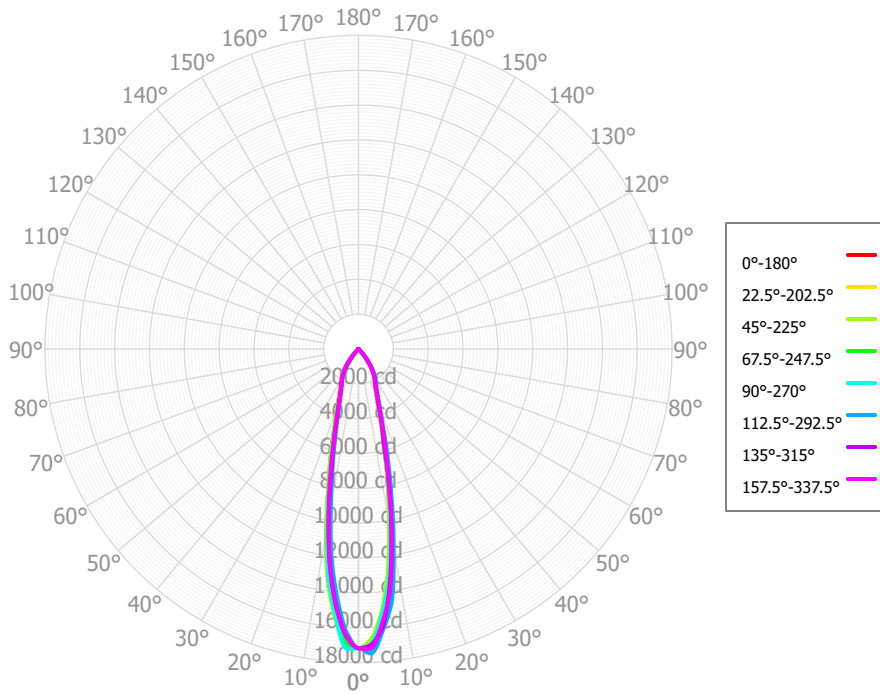
### Full Beam Angle

0° - 180°	23°
90° - 270°	23°

## IES File Header Contents

Keyword	Value
TEST	SP-00686_1_M-60L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/12/2018
LUMCAT	SGRTV12BX-60L35K-ND-DO101-AR12BX-MWWF
LUMINAIRE	Nom. 12" Diam x 10" H, Open aperture
OTHER	Matte White reflector trim
OTHER	Deep regressed retrofit high output LED downlight
OTHER	BX Series, Narrow Beam
OTHER	23.6 Deg Beam Angle
LAMPCAT	N/A
LAMP	N/A, Bridgelux Vero 29
OTHER	Dimmable driver tested at 100% output
OTHER	Tested CCT: 3500K
OTHER	CCT Output: 27K x 0.932, 30K x 1.00, 40K x 1.01
OTHER	This report prepared by Spectrum Lighting, scaled from 80L

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	1313.63	26.57%	90.00° - 100.00°	0.06	0.00%
10.00° - 20.00°	1625.94	32.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1107.20	22.40%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	755.61	15.28%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	138.11	2.79%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.29	0.03%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	0.66	0.01%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.59	0.01%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.57	0.01%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	4943.60	100.00%	0.00° - 180.00°	4943.66	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°	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43	17174.43
2.50°	16860.46	16802.82	16672.65	16986.82	16944.30	16246.88	16479.00	16450.65	16881.42	16604.21	16977.66	16835.36	17183.00	17475.19	16991.49	17181.61	16860.46
5.00°	15318.58	15443.14	15163.14	15410.95	15380.57	14256.43	14814.28	14815.42	15232.09	15337.19	15474.43	15220.63	15305.25	16188.50	16012.76	15761.73	15318.58
7.50°	13155.61	13246.29	12886.15	13499.54	13350.90	11939.14	12540.91	12588.16	13343.23	12966.24	13464.51	12962.32	13216.65	14637.16	13733.81	13950.43	13155.61
10.00°	10220.49	10627.45	10076.15	10703.97	10528.97	9110.67	9908.99	9795.30	10541.52	10284.77	10727.02	10081.02	10250.89	11633.25	10884.68	10991.60	10220.49
12.50°	7732.65	7807.73	7702.98	7959.10	8043.48	6844.02	7167.60	7466.77	7888.31	7896.75	7899.79	7683.09	7540.08	8784.85	8225.76	8068.82	7732.65
15.00°	5540.88	5896.89	5478.47	6037.39	5864.90	5050.88	5510.30	5373.15	5987.41	5629.34	6081.33	5533.30	5635.23	6485.83	5602.53	6061.40	5540.88
17.50°	4203.86	4172.00	4227.51	4372.57	4452.45	3912.35	4013.29	4176.87	4403.44	4423.25	4425.44	4266.27	4133.31	4649.71	4388.35	4328.17	4203.86
20.00°	3150.09	3359.73	3125.45	3457.65	3407.84	3060.68	3298.98	3181.97	3500.73	3375.45	3546.03	3201.69	3253.81	3590.80	3275.95	3409.31	3150.09
22.50°	2653.71	2629.56	2674.11	2767.71	2847.82	2613.75	2672.74	2738.52	2841.06	2833.22	2825.58	2725.81	2663.83	2862.43	2741.05	2705.07	2653.71
25.00°	2227.44	2321.55	2269.81	2400.05	2388.27	2239.49	2357.31	2338.02	2455.27	2410.02	2434.14	2299.53	2314.95	2432.00	2300.58	2316.75	2227.44
27.50°	2018.46	2033.75	2052.72	2115.77	2163.66	2018.74	2076.22	2121.14	2176.10	2172.13	2128.17	2088.02	2066.22	2150.12	2074.51	2027.42	2018.46
30.00°	1784.04	1795.13	1802.03	1896.87	1931.35	1784.47	1851.97	1886.30	1961.52	1918.02	1915.38	1851.46	1860.77	1938.60	1822.87	1816.77	1784.04
32.50°	1455.26	1508.48	1490.74	1601.57	1624.58	1475.45	1575.12	1604.06	1688.71	1650.30	1637.44	1547.67	1541.31	1637.96	1540.60	1522.28	1455.26
35.00°	1120.93	1160.90	1157.27	1276.03	1305.96	1150.99	1251.52	1288.87	1399.05	1334.57	1321.40	1227.39	1201.88	1319.23	1218.98	1193.52	1120.93
37.50°	776.83	827.17	802.15	928.80	958.23	791.51	905.31	929.52	1046.46	997.90	988.28	884.72	865.26	973.90	872.32	864.18	776.83
40.00°	480.89	502.80	501.66	580.17	625.01	481.42	548.57	601.63	694.29	661.41	650.45	572.64	542.09	640.44	576.56	536.37	480.89
42.50°	229.85	273.95	229.04	319.80	310.35	229.66	309.30	296.53	402.32	325.25	385.05	283.01	291.54	384.84	296.83	313.58	229.85
45.00°	94.59	77.61	100.89	94.47	126.13	89.10	93.29	133.14	156.62	163.76	140.73	126.41	99.17	173.00	151.40	117.31	94.59
47.50°	17.12	30.53	6.31	38.93	30.75	19.26	43.38	21.47	62.83	25.04	61.70	19.18	36.93	68.67	26.42	49.54	17.12
50.00°	2.50	1.24	2.02	1.68	4.09	2.07	2.19	5.14	4.40	11.02	1.68	4.26	2.71	8.15	12.08	3.01	2.50
52.50°	1.40	1.18	0.93	2.05	1.05	1.14	1.46	1.31	2.20	1.27	1.27	1.75	1.19	2.98	0.89	1.52	1.40
55.00°	1.31	1.12	0.95	1.89	0.68	0.87	1.09	1.16	1.04	1.18	0.99	1.17	0.64	0.83	0.74	0.62	1.31
57.50°	1.20	1.11	1.01	1.15	0.61	0.66	1.54	1.01	0.75	1.00	0.88	0.69	0.71	0.73	0.66	0.37	1.20
60.00°	0.77	1.00	1.19	1.00	0.53	0.53	1.48	0.83	0.57	0.73	0.77	0.62	0.70	0.66	0.69	0.33	0.77
62.50°	0.54	0.70	1.08	1.20	0.52	0.47	0.78	0.66	0.43	0.64	0.67	0.52	0.66	0.59	0.67	0.41	0.54
65.00°	0.79	0.69	0.59	0.95	0.74	0.61	0.46	0.49	0.63	0.66	0.66	0.37	0.87	0.85	0.60	0.45	0.79
67.50°	0.78	0.96	0.48	0.57	0.80	0.60	0.40	0.50	0.88	0.53	0.69	0.31	1.06	1.11	0.71	0.47	0.78
70.00°	0.40	1.16	0.65	0.58	0.57	0.31	0.50	0.70	0.78	0.37	0.46	0.34	0.72	0.86	0.89	0.41	0.40
72.50°	0.35	1.34	0.57	0.59	0.46	0.33	0.63	0.59	0.65	0.56	0.23	0.53	0.56	0.60	0.61	0.38	0.35
75.00°	0.46	0.89	0.44	0.52	0.43	0.57	0.63	0.39	0.48	0.63	0.32	0.75	0.75	0.29	0.38	0.55	0.46
77.50°	0.55	0.62	0.40	0.44	0.78	0.67	0.50	0.77	0.43	0.37	0.46	0.44	0.98	0.67	0.59	0.45	0.55
80.00°	0.54	0.64	0.52	0.45	0.66	0.64	0.28	0.80	0.52	0.33	0.55	0.37	0.99	0.98	0.42	0.27	0.54
82.50°	0.49	0.36	0.54	0.71	0.48	0.54	0.56	0.67	0.77	0.43	0.28	0.41	0.59	0.58	0.33	0.35	0.49
85.00°	0.48	0.61	0.43	0.61	0.80	0.47	0.78	0.64	0.79	0.74	0.29	0.41	0.39	0.29	0.36	0.86	0.48
87.50°	0.67	0.55	0.41	0.50	0.48	0.56	0.45	0.41	0.61	0.44	0.71	0.41	0.53	0.49	0.45	0.61	0.67
90.00°	0.59	0.11	0.16	0.10	0.63	0.68	0.31	0.54	0.24	0.77	0.09	0.73	0.44	0.16	0.60	0.66	0.59
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

SGRTV12BX-60L35K-ND-DO101-AR12BX-MWWF

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### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	<b>0</b>	5885	5885	5885	5885	5748	5748	5748	5748	5493	5493	5493	5259	5259	5259	5044	5044	5044	4944
	<b>1</b>	5656	5537	5432	5336	5536	5432	5337	5252	5234	5159	5091	5052	4994	4940	4884	4839	4798	4744
	<b>2</b>	5430	5226	5057	4915	5325	5143	4990	4860	4986	4862	4755	4842	4742	4654	4709	4629	4558	4540
	<b>3</b>	5214	4948	4741	4577	5122	4881	4692	4540	4756	4599	4469	4640	4510	4401	4533	4426	4334	4343
	<b>4</b>	5009	4698	4470	4296	4927	4644	4434	4271	4543	4364	4222	4449	4297	4174	4361	4233	4128	4156
	<b>5</b>	4816	4473	4233	4056	4743	4429	4206	4039	4346	4152	4004	4268	4101	3970	4196	4052	3937	3981
	<b>6</b>	4633	4268	4023	3848	4568	4232	4002	3835	4163	3961	3810	4098	3921	3786	4038	3883	3762	3818
	<b>7</b>	4461	4082	3836	3664	4403	4052	3820	3655	3994	3787	3637	3939	3756	3619	3889	3725	3601	3665
	<b>8</b>	4300	3912	3668	3500	4248	3886	3655	3493	3837	3629	3480	3791	3604	3466	3748	3579	3453	3524
	<b>9</b>	4150	3757	3516	3353	4102	3735	3505	3348	3693	3484	3337	3653	3463	3327	3616	3444	3317	3393
	<b>10</b>	4009	3614	3377	3220	3966	3595	3368	3216	3559	3351	3208	3524	3334	3200	3492	3318	3192	3271

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	567.7 fc	2.3 ft
6.5 ft	406.5 fc	2.7 ft
7.5 ft	305.3 fc	3.1 ft
8.0 ft	268.4 fc	3.3 ft
10.0 ft	171.7 fc	4.1 ft
12.0 ft	119.3 fc	4.9 ft
14.0 ft	87.6 fc	5.7 ft
16.0 ft	67.1 fc	6.6 ft
20.0 ft	42.9 fc	8.2 ft
24.0 ft	29.8 fc	9.8 ft
28.0 ft	21.9 fc	11.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	250161	250161	250161
<b>45.00°</b>	1948	2078	2598
<b>55.00°</b>	33	24	17
<b>65.00°</b>	27	20	25
<b>75.00°</b>	26	25	24
<b>85.00°</b>	80	72	133

### 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	-24.5	-23.6	-24.2	-23.3	-23.0	-26.4	-25.4	-26.0	-25.1	-24.8
	3H	-21.9	-21.1	-21.6	-20.8	-20.4	-23.3	-22.5	-22.9	-22.2	-21.8
	4H	-20.8	-20.1	-20.4	-19.7	-19.4	-21.6	-20.9	-21.2	-20.5	-20.1
	6H	-19.4	-18.7	-19.0	-18.4	-18.0	-18.6	-18.0	-18.2	-17.6	-17.2
	8H	-18.7	-18.1	-18.3	-17.7	-17.3	-17.8	-17.1	-17.3	-16.8	-16.3
	12H	-17.7	-17.1	-17.3	-16.7	-16.3	-16.8	-16.2	-16.3	-15.8	-15.4
4H	2H	-24.1	-23.3	-23.7	-23.0	-22.6	-25.6	-24.9	-25.2	-24.5	-24.1
	3H	-20.7	-20.1	-20.3	-19.7	-19.3	-22.7	-22.1	-22.3	-21.7	-21.3
	4H	-19.3	-18.7	-18.8	-18.3	-17.8	-20.5	-19.9	-20.0	-19.5	-19.0
	6H	-17.8	-17.4	-17.4	-16.9	-16.5	-17.5	-17.1	-17.1	-16.6	-16.2
	8H	-17.1	-16.7	-16.7	-16.3	-15.8	-16.6	-16.2	-16.1	-15.7	-15.2
	12H	-16.0	-15.6	-15.5	-15.1	-14.7	-15.4	-15.1	-15.0	-14.6	-14.1
8H	4H	-18.9	-18.5	-18.4	-18.0	-17.5	-19.9	-19.5	-19.4	-19.0	-18.6
	6H	-17.3	-16.9	-16.7	-16.4	-15.9	-17.0	-16.7	-16.5	-16.2	-15.7
	8H	-16.4	-16.1	-15.9	-15.6	-15.1	-15.9	-15.6	-15.3	-15.1	-14.6
	12H	-14.7	-14.4	-14.2	-13.9	-13.3	-14.5	-14.2	-14.0	-13.7	-13.1
12H	4H	-18.7	-18.4	-18.2	-17.9	-17.4	-19.7	-19.4	-19.3	-18.9	-18.4
	6H	-17.0	-16.7	-16.5	-16.2	-15.7	-16.8	-16.5	-16.3	-16.1	-15.5
	8H	-16.0	-15.8	-15.5	-15.3	-14.7	-15.6	-15.3	-15.1	-14.8	-14.2

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0