

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

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

### **Test Number**

SP-00686\_1

### **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	4966
Efficacy	112.87 lm/W

### Luminous Dimensions

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

### Spacing Criterion

Two luminaires, plane 0°	0.38
Two luminaires, plane 90°	0.38
Four luminaires	0.41

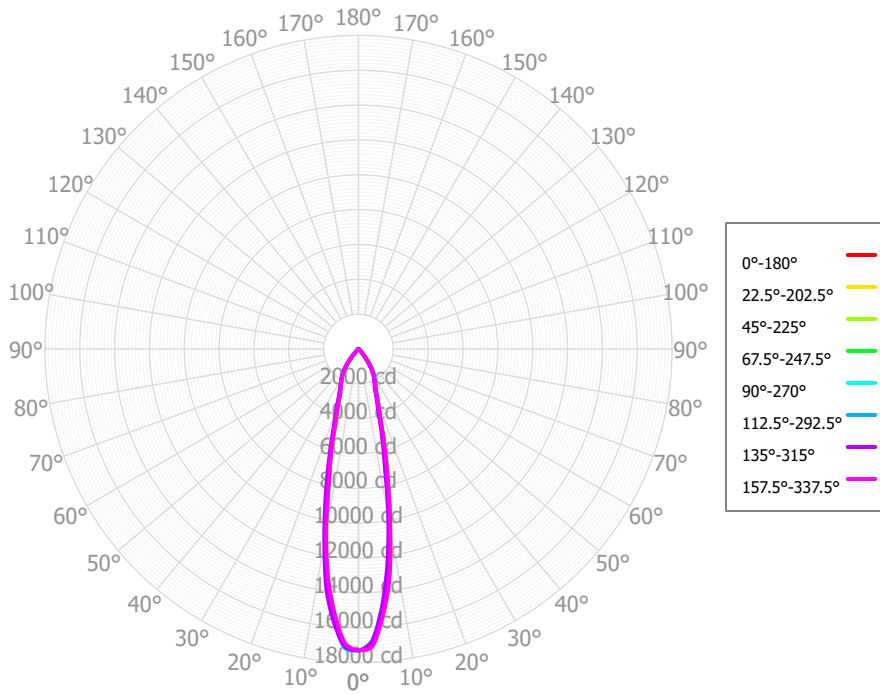
### Full Beam Angle

0° - 180°	24°
90° - 270°	24°

## IES File Header Contents

Keyword	Value
TEST	SP-00686_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/29/2018
LUMCAT	SGRTV12BX-60L35K-ND-DO101-AR12BX-SGWF
LUMINAIRE	Nom. 12" Diam x 10" H, Open aperture
OTHER	Semi-diffuse clear anodized alum. 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°	1327.84	26.74%	90.00° - 100.00°	0.07	0.00%
10.00° - 20.00°	1642.33	33.07%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1100.92	22.17%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	751.09	15.12%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	139.93	2.82%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.81	0.04%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	0.78	0.02%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.71	0.01%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.71	0.01%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	4966.12	100.00%	0.00° - 180.00°	4966.18	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°	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55	17295.55
2.50°	17081.20	17100.20	16940.29	16997.08	16905.07	17026.62	17152.70	16969.35	17051.60	16968.90	17121.60	17106.38	17237.92	16847.32	16893.09	17140.52	17081.20
5.00°	15326.62	15481.50	15103.51	15291.82	15051.80	15712.97	15846.88	15380.00	15577.96	15322.74	15625.79	15445.04	15675.82	15284.89	15064.05	15547.96	15326.62
7.50°	13060.21	13477.04	12911.48	13313.55	12950.29	13613.68	14012.68	13342.05	13685.46	13289.17	13794.03	13479.63	13840.92	12989.40	12618.81	13479.39	13060.21
10.00°	10274.77	10517.80	10142.78	10407.19	10192.06	11098.25	11263.28	10702.40	10872.16	10619.36	10966.13	10727.36	10954.23	10033.58	9877.53	10476.68	10274.77
12.50°	7345.07	7851.99	7266.66	7755.04	7352.01	8267.72	8712.59	7870.24	8300.52	7797.78	8348.41	7855.28	8261.64	7562.51	7026.29	7814.17	7345.07
15.00°	5537.10	5807.79	5509.94	5825.69	5644.10	6179.46	6461.31	5971.93	6186.50	5944.51	6267.03	6013.16	6199.85	5479.40	5251.18	5738.65	5537.10
17.50°	3983.06	4175.49	3911.85	4203.75	4031.80	4581.99	4726.02	4321.09	4506.47	4280.17	4542.59	4289.02	4444.78	4082.17	3812.10	4141.79	3983.06
20.00°	3185.45	3296.22	3175.20	3336.07	3288.83	3548.97	3679.54	3453.48	3549.98	3445.49	3596.36	3469.79	3526.56	3164.83	3056.90	3263.47	3185.45
22.50°	2526.85	2630.26	2525.01	2645.82	2586.80	2840.53	2919.82	2753.84	2834.55	2735.16	2844.18	2718.54	2776.54	2608.87	2481.95	2610.65	2526.85
25.00°	2229.54	2308.02	2266.30	2328.41	2310.56	2415.54	2495.13	2417.68	2469.11	2413.28	2456.60	2404.87	2423.55	2273.22	2191.98	2257.74	2229.54
27.50°	1982.59	2022.16	2033.40	2041.11	2041.27	2133.81	2173.35	2144.27	2167.04	2133.34	2128.42	2108.00	2113.91	2010.56	1962.75	1964.15	1982.59
30.00°	1709.06	1787.40	1765.42	1808.44	1783.20	1874.54	1956.94	1905.88	1946.55	1879.77	1898.51	1849.53	1892.08	1787.09	1682.35	1739.62	1709.06
32.50°	1432.92	1508.99	1496.37	1542.94	1521.72	1625.03	1696.46	1672.01	1686.21	1628.13	1631.90	1589.33	1627.42	1480.42	1393.19	1459.45	1432.92
35.00°	1091.36	1176.17	1158.15	1224.95	1195.64	1313.11	1395.85	1337.58	1380.96	1306.58	1312.38	1251.39	1287.70	1135.23	1056.03	1122.53	1091.36
37.50°	745.61	850.73	821.16	897.72	868.44	977.69	1061.79	994.24	1048.07	982.49	987.38	914.92	952.67	811.60	712.73	802.38	745.61
40.00°	477.76	533.36	519.61	557.61	528.34	647.47	701.03	649.32	687.87	640.28	655.46	602.38	624.89	496.49	461.54	497.43	477.76
42.50°	213.02	291.31	230.25	293.03	213.87	318.90	411.53	304.31	397.65	303.31	380.19	304.31	354.84	283.38	218.42	275.30	213.02
45.00°	109.72	121.35	112.67	120.54	101.67	153.84	171.68	158.02	168.89	156.08	168.33	157.07	162.67	105.04	109.48	118.95	109.72
47.50°	9.89	31.46	6.06	23.62	5.43	31.65	55.23	17.45	50.10	17.21	47.53	25.96	45.22	40.23	7.78	38.76	9.89
50.00°	5.39	9.69	3.36	8.59	3.09	6.64	14.86	8.98	15.89	9.09	16.09	12.58	15.99	7.69	3.49	11.43	5.39
52.50°	1.18	0.91	1.01	1.12	1.13	2.73	0.78	0.88	1.79	1.65	1.33	1.23	0.99	1.27	1.05	0.86	1.18
55.00°	1.00	1.79	1.10	0.84	0.97	1.46	0.77	0.86	1.19	1.10	1.14	1.07	0.91	0.93	1.06	0.57	1.00
57.50°	0.83	1.62	1.15	0.78	0.82	0.65	0.71	0.86	0.88	0.67	0.89	0.96	0.79	0.79	1.07	0.55	0.83
60.00°	0.78	0.77	0.96	0.91	0.72	0.45	0.63	1.01	0.75	1.09	0.61	1.05	0.64	0.68	0.99	0.67	0.78
62.50°	0.73	0.52	0.85	0.90	0.70	0.32	0.63	1.12	0.77	1.38	0.71	1.08	0.63	0.69	0.93	0.73	0.73
65.00°	0.73	0.63	1.12	0.80	0.91	0.35	0.67	0.82	0.87	0.93	1.06	0.93	0.73	0.70	0.95	0.75	0.73
67.50°	0.71	0.60	1.24	0.75	0.99	0.39	0.75	0.57	0.76	0.63	1.22	0.72	0.75	0.69	0.96	0.65	0.71
70.00°	0.59	0.53	0.95	0.74	0.78	0.43	0.86	0.56	0.58	0.82	1.29	0.35	0.71	0.65	0.94	0.49	0.59
72.50°	0.60	0.54	0.77	0.59	0.60	0.54	0.69	0.69	0.88	0.77	1.03	0.38	0.72	0.45	0.85	0.37	0.60
75.00°	0.76	0.54	0.68	0.50	0.43	0.87	0.51	0.98	1.09	0.43	0.76	0.77	0.68	0.51	0.68	0.39	0.76
77.50°	0.73	0.50	0.82	0.75	0.50	0.80	0.33	0.96	0.96	0.60	0.66	0.60	0.38	0.89	0.65	0.74	0.73
80.00°	0.69	0.82	1.07	0.93	0.44	0.61	1.13	0.63	0.65	0.77	0.62	0.47	0.37	0.48	0.57	0.54	0.69
82.50°	0.67	0.87	1.18	0.80	0.53	0.51	1.28	0.30	0.64	0.79	0.72	0.59	0.50	0.37	0.44	0.30	0.67
85.00°	0.63	0.62	0.90	0.79	0.77	0.58	0.68	0.72	0.61	0.59	0.69	0.73	0.73	0.43	0.43	0.72	0.63
87.50°	0.66	0.62	1.01	0.80	0.43	0.72	0.38	0.70	0.95	0.75	0.88	0.78	0.45	0.62	0.98	0.46	0.66
90.00°	0.43	0.56	0.50	0.49	0.75	0.47	0.44	0.70	0.30	0.43	0.92	0.45	0.42	0.40	0.37	0.22	0.43
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-SGW

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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>	5912	5912	5912	5912	5775	5775	5775	5775	5518	5518	5518	5283	5283	5283	5067	5067	5067	4966
	<b>1</b>	5682	5563	5457	5361	5562	5457	5362	5276	5258	5183	5115	5075	5017	4963	4907	4862	4820	4766
	<b>2</b>	5456	5251	5081	4939	5351	5167	5014	4884	5010	4886	4778	4865	4765	4677	4731	4652	4580	4562
	<b>3</b>	5240	4972	4765	4600	5147	4905	4716	4564	4780	4622	4492	4663	4533	4423	4556	4448	4357	4365
	<b>4</b>	5034	4722	4493	4319	4952	4668	4457	4294	4566	4387	4244	4472	4320	4196	4384	4256	4150	4178
	<b>5</b>	4840	4496	4256	4079	4767	4452	4228	4061	4369	4175	4026	4291	4124	3992	4218	4074	3959	4003
	<b>6</b>	4657	4292	4046	3870	4592	4255	4025	3857	4186	3983	3832	4121	3944	3808	4060	3905	3784	3840
	<b>7</b>	4485	4105	3859	3686	4427	4075	3842	3677	4017	3809	3659	3962	3778	3641	3911	3748	3623	3687
	<b>8</b>	4324	3935	3690	3522	4271	3909	3677	3515	3860	3651	3502	3814	3626	3488	3770	3601	3475	3546
	<b>9</b>	4173	3779	3538	3375	4126	3757	3527	3370	3715	3506	3359	3675	3485	3349	3638	3466	3339	3414
	<b>10</b>	4032	3636	3399	3242	3989	3617	3390	3238	3581	3373	3230	3547	3356	3222	3514	3340	3214	3293

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	571.8 fc	2.3 ft
6.5 ft	409.4 fc	2.7 ft
7.5 ft	307.5 fc	3.1 ft
8.0 ft	270.2 fc	3.3 ft
10.0 ft	173.0 fc	4.2 ft
12.0 ft	120.1 fc	5.0 ft
14.0 ft	88.2 fc	5.8 ft
16.0 ft	67.6 fc	6.7 ft
20.0 ft	43.2 fc	8.3 ft
24.0 ft	30.0 fc	10.0 ft
28.0 ft	22.1 fc	11.7 ft

### Average Luminaire Luminance [cd/m<sup>2</sup>]

	0.00°	45.00°	90.00°
<b>0.00°</b>	251925	251925	251925
<b>45.00°</b>	2260	2321	2094
<b>55.00°</b>	25	28	25
<b>65.00°</b>	25	39	31
<b>75.00°</b>	43	38	24
<b>85.00°</b>	106	150	128

### 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	-22.9	-22.0	-22.5	-21.7	-21.4	-25.0	-24.1	-24.7	-23.8	-23.5
	3H	-21.5	-20.7	-21.1	-20.3	-20.0	-22.4	-21.6	-22.1	-21.3	-20.9
	4H	-20.3	-19.6	-19.9	-19.2	-18.8	-20.9	-20.1	-20.5	-19.8	-19.4
	6H	-18.4	-17.7	-18.0	-17.3	-16.9	-19.7	-19.0	-19.3	-18.7	-18.3
	8H	-17.4	-16.8	-16.9	-16.4	-15.9	-18.9	-18.3	-18.5	-17.9	-17.5
	12H	-16.3	-15.7	-15.8	-15.3	-14.9	-17.2	-16.6	-16.8	-16.2	-15.8
4H	2H	-22.0	-21.3	-21.6	-20.9	-20.5	-23.9	-23.1	-23.4	-22.8	-22.4
	3H	-20.4	-19.8	-20.0	-19.4	-19.0	-21.2	-20.6	-20.8	-20.2	-19.8
	4H	-19.3	-18.7	-18.8	-18.3	-17.9	-19.2	-18.7	-18.8	-18.2	-17.8
	6H	-17.1	-16.6	-16.6	-16.2	-15.7	-17.8	-17.4	-17.4	-16.9	-16.4
	8H	-16.0	-15.5	-15.5	-15.1	-14.6	-17.0	-16.6	-16.5	-16.1	-15.6
	12H	-14.7	-14.3	-14.2	-13.8	-13.4	-15.3	-14.9	-14.8	-14.4	-14.0
8H	4H	-18.5	-18.1	-18.0	-17.6	-17.1	-18.5	-18.1	-18.0	-17.6	-17.2
	6H	-16.0	-15.7	-15.5	-15.1	-14.7	-16.6	-16.3	-16.1	-15.8	-15.3
	8H	-14.7	-14.4	-14.2	-13.9	-13.4	-15.6	-15.3	-15.1	-14.8	-14.3
	12H	-13.2	-13.0	-12.7	-12.5	-11.9	-13.7	-13.5	-13.2	-13.0	-12.4
12H	4H	-18.2	-17.8	-17.7	-17.3	-16.9	-18.2	-17.9	-17.7	-17.4	-16.9
	6H	-15.5	-15.2	-15.0	-14.7	-14.2	-16.0	-15.7	-15.4	-15.2	-14.7
	8H	-14.1	-13.9	-13.6	-13.4	-12.8	-14.7	-14.5	-14.2	-14.0	-13.4

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0