

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SGRTV12BX-60L35K-XW-DO101-AR12BX-SGWF

Nom. 12" Diam x 10" H open aperture

### **Test Number**

SP-00686\_7

### **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	4852
Efficacy	110.27 lm/W

### Luminous Dimensions

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

### Spacing Criterion

Two luminaires, plane 0°	1.06
Two luminaires, plane 90°	1.1
Four luminaires	0.99

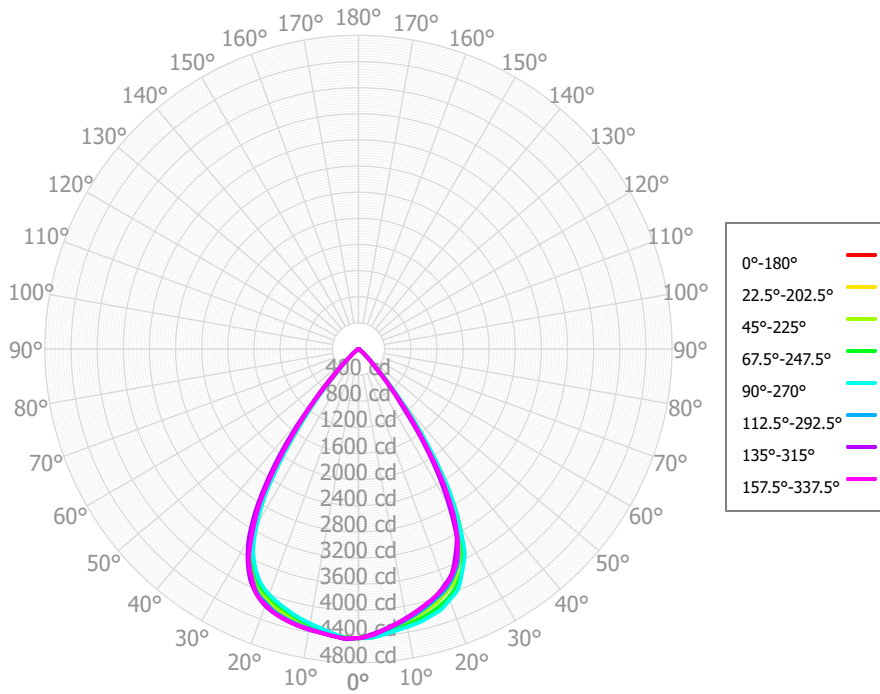
### Full Beam Angle

0° - 180°	68°
90° - 270°	68°

## IES File Header Contents

Keyword	Value
TEST	SP-00686_7
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/29/2018
LUMCAT	SGRTV12BX-60L35K-XW-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, Xtra Wide Beam
OTHER	68.6 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°	420.42	8.67%	90.00° - 100.00°	0.08	0.00%
10.00° - 20.00°	1175.98	24.24%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1683.11	34.69%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	1240.78	25.57%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	287.86	5.93%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	39.31	0.81%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.38	0.05%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.93	0.02%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.88	0.02%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	4851.66	100.00%	0.00° - 180.00°	4851.74	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°	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58	4426.58
2.50°	4381.43	4408.37	4398.84	4423.64	4424.52	4430.67	4443.11	4432.13	4441.16	4424.82	4434.81	4420.21	4430.64	4395.62	4375.36	4393.84	4381.43
5.00°	4324.45	4343.77	4352.92	4375.29	4389.84	4410.51	4412.54	4413.47	4402.53	4396.06	4391.76	4381.72	4374.57	4334.72	4316.48	4326.95	4324.45
7.50°	4261.67	4280.30	4300.83	4330.24	4351.08	4375.71	4385.70	4382.18	4369.06	4356.99	4350.22	4333.38	4319.43	4274.22	4252.35	4259.83	4261.67
10.00°	4193.76	4218.98	4243.39	4292.13	4319.00	4345.34	4364.45	4355.05	4344.84	4320.82	4311.84	4283.14	4268.04	4214.27	4182.37	4192.32	4193.76
12.50°	4124.03	4154.51	4184.32	4248.03	4287.67	4317.02	4336.45	4329.53	4316.73	4285.61	4267.27	4232.34	4213.32	4148.13	4109.79	4120.63	4124.03
15.00°	4046.25	4084.82	4117.56	4193.10	4237.41	4273.95	4299.64	4290.82	4282.47	4240.38	4211.67	4172.43	4147.34	4074.26	4034.84	4042.92	4046.25
17.50°	3966.05	4007.17	4048.88	4127.75	4185.72	4225.02	4248.90	4247.74	4232.37	4192.37	4149.25	4110.31	4078.13	3995.21	3958.99	3960.38	3966.05
20.00°	3866.81	3918.12	3948.27	4045.82	4083.78	4139.60	4182.08	4163.43	4160.54	4106.87	4076.16	4022.50	3999.78	3910.52	3848.30	3871.67	3866.81
22.50°	3762.89	3793.02	3841.17	3924.55	3979.91	4041.75	4070.12	4067.83	4045.67	4012.79	3972.46	3929.74	3894.78	3778.71	3726.61	3742.01	3762.89
25.00°	3555.53	3622.22	3630.23	3748.88	3755.25	3855.70	3912.63	3864.65	3878.53	3818.43	3827.06	3749.83	3726.12	3601.35	3503.77	3566.72	3555.53
27.50°	3327.96	3352.35	3403.07	3475.59	3523.48	3644.71	3673.88	3637.07	3627.15	3605.97	3596.79	3556.71	3493.35	3298.78	3254.07	3285.68	3327.96
30.00°	2862.03	2972.76	2932.03	3082.80	3062.10	3262.87	3362.46	3245.78	3286.37	3197.08	3265.60	3133.88	3127.50	2890.42	2783.56	2900.14	2862.03
32.50°	2359.38	2485.41	2433.42	2588.91	2592.16	2841.77	2925.18	2825.31	2829.86	2760.67	2808.12	2686.10	2677.43	2371.04	2265.81	2398.84	2359.38
35.00°	1780.22	1892.25	1848.77	1986.88	1988.22	2269.06	2389.58	2244.22	2265.96	2171.89	2217.49	2084.03	2076.80	1768.62	1684.47	1797.54	1780.22
37.50°	1192.56	1347.23	1257.50	1417.74	1393.18	1668.14	1807.06	1640.95	1690.68	1568.18	1641.35	1470.70	1506.10	1238.33	1092.24	1260.19	1192.56
40.00°	783.64	843.52	825.51	879.79	888.05	1116.56	1192.58	1105.46	1106.02	1058.34	1078.57	988.36	982.46	755.01	718.44	771.76	783.64
42.50°	388.15	504.81	399.80	514.91	427.38	571.91	738.72	576.49	678.60	554.42	662.58	510.68	581.09	454.75	372.36	461.00	388.15
45.00°	262.39	291.53	270.19	293.46	281.70	361.19	381.21	365.33	363.93	358.74	366.52	339.67	346.93	259.41	246.96	268.61	262.39
47.50°	146.81	170.81	145.06	165.92	150.67	184.80	205.74	172.35	196.38	172.24	201.70	173.42	189.05	155.30	141.42	160.47	146.81
50.00°	101.67	111.35	100.78	106.26	100.34	122.20	124.64	116.13	121.95	119.43	130.39	120.73	123.50	96.26	93.57	101.76	101.67
52.50°	57.59	69.50	57.68	64.64	55.04	66.82	75.53	63.57	74.37	67.64	81.22	69.66	74.46	58.16	48.70	62.55	57.59
55.00°	35.57	37.77	34.38	34.53	31.53	41.16	40.88	39.91	41.52	41.62	45.97	42.84	42.86	29.06	28.94	33.22	35.57
57.50°	14.45	19.05	12.65	16.90	11.92	16.48	21.45	16.89	21.98	16.92	24.08	17.76	21.49	14.52	9.90	16.90	14.45
60.00°	8.09	6.88	6.93	6.17	6.30	9.47	7.87	9.26	8.83	9.25	9.47	9.68	9.58	5.30	5.96	6.24	8.09
62.50°	2.24	2.51	1.84	2.09	2.00	2.68	3.41	2.14	3.68	2.30	3.45	2.51	3.46	2.42	2.19	2.55	2.24
65.00°	1.50	1.51	1.32	1.22	1.64	1.91	1.95	1.58	1.80	1.71	1.52	1.72	2.09	1.52	1.57	1.47	1.50
67.50°	0.91	1.18	0.90	1.00	1.32	1.22	1.33	1.10	1.11	1.20	1.00	1.06	1.52	1.30	1.01	1.14	0.91
70.00°	1.00	1.06	0.88	1.01	1.08	1.09	0.90	1.07	0.77	0.95	0.98	0.94	1.43	1.24	0.84	1.01	1.00
72.50°	0.93	0.82	0.80	0.91	0.95	1.00	0.91	1.01	0.85	0.78	0.93	0.86	1.19	1.08	0.69	1.11	0.93
75.00°	0.62	0.65	0.66	0.81	0.92	0.97	0.92	0.94	0.89	0.71	0.86	0.81	0.94	0.96	0.57	1.09	0.62
77.50°	0.75	0.66	0.82	0.76	0.72	0.77	0.94	0.96	0.81	0.86	0.72	1.01	0.82	0.91	0.72	0.81	0.75
80.00°	1.08	0.79	0.91	0.62	0.77	0.64	0.97	1.06	0.88	0.97	0.73	1.10	0.89	0.96	0.77	0.80	1.08
82.50°	1.21	0.70	0.91	0.79	0.92	0.71	0.92	1.13	0.86	0.87	0.85	0.96	1.09	0.85	0.69	0.90	1.21
85.00°	0.66	0.78	0.95	0.78	0.93	0.90	0.61	0.89	0.78	0.60	0.77	0.81	1.05	0.99	0.78	0.82	0.66
87.50°	0.86	0.65	0.79	0.71	0.71	1.03	0.88	0.82	0.72	0.88	0.80	0.79	0.92	0.91	0.62	0.61	0.86
90.00°	0.46	0.42	0.68	0.56	0.83	0.86	0.67	0.84	0.65	0.48	0.41	0.44	0.40	0.35	0.98	0.40	0.46
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

### 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>	5776	5776	5776	5776	5642	5642	5642	5642	5391	5391	5391	5161	5161	5161	4951	4951	4951	4852
	<b>1</b>	5503	5367	5245	5135	5383	5262	5152	5053	5065	4978	4897	4885	4815	4751	4718	4664	4614	4571
	<b>2</b>	5224	4984	4785	4619	5116	4900	4720	4566	4743	4594	4466	4598	4477	4370	4464	4366	4279	4280
	<b>3</b>	4952	4635	4389	4193	4855	4567	4341	4159	4439	4249	4092	4321	4162	4028	4211	4079	3966	4000
	<b>4</b>	4691	4317	4043	3834	4603	4261	4007	3811	4156	3938	3765	4059	3872	3721	3968	3809	3678	3737
	<b>5</b>	4443	4028	3738	3524	4363	3982	3711	3508	3894	3658	3476	3813	3607	3446	3737	3558	3415	3493
	<b>6</b>	4209	3765	3468	3254	4136	3727	3446	3243	3653	3405	3220	3584	3365	3198	3520	3327	3176	3268
	<b>7</b>	3989	3526	3226	3016	3923	3493	3209	3008	3431	3176	2991	3372	3145	2975	3317	3114	2959	3061
	<b>8</b>	3784	3309	3010	2804	3724	3280	2996	2798	3227	2970	2786	3176	2944	2774	3129	2919	2762	2872
	<b>9</b>	3593	3110	2815	2615	3538	3086	2804	2611	3040	2782	2601	2996	2761	2592	2955	2741	2583	2698
	<b>10</b>	3415	2930	2639	2446	3365	2908	2630	2442	2868	2612	2435	2830	2594	2428	2794	2577	2421	2539

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	146.3 fc	7.5 ft
6.5 ft	104.8 fc	8.8 ft
7.5 ft	78.7 fc	10.2 ft
8.0 ft	69.2 fc	10.9 ft
10.0 ft	44.3 fc	13.6 ft
12.0 ft	30.7 fc	16.3 ft
14.0 ft	22.6 fc	19.0 ft
16.0 ft	17.3 fc	21.7 ft
20.0 ft	11.1 fc	27.1 ft
24.0 ft	7.7 fc	32.6 ft
28.0 ft	5.6 fc	38.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	64477	64477	64477
<b>45.00°</b>	5405	5566	5803
<b>55.00°</b>	903	873	801
<b>65.00°</b>	52	46	57
<b>75.00°</b>	35	37	52
<b>85.00°</b>	110	159	155

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	-4.0	-3.1	-3.7	-2.8	-2.4	-4.1	-3.1	-3.7	-2.8	-2.5
	<b>3H</b>	-4.2	-3.4	-3.8	-3.0	-2.7	-4.2	-3.4	-3.8	-3.0	-2.7
	<b>4H</b>	-4.3	-3.5	-3.9	-3.2	-2.8	-4.3	-3.5	-3.9	-3.2	-2.8
	<b>6H</b>	-4.4	-3.7	-3.9	-3.3	-2.9	-4.4	-3.7	-4.0	-3.3	-2.9
	<b>8H</b>	-4.4	-3.7	-3.9	-3.3	-2.9	-4.4	-3.7	-4.0	-3.3	-2.9
	<b>12H</b>	-4.4	-3.7	-3.9	-3.3	-2.9	-4.4	-3.7	-3.9	-3.4	-2.9
<b>4H</b>	<b>2H</b>	-4.3	-3.5	-3.9	-3.2	-2.8	-4.3	-3.6	-3.9	-3.2	-2.8
	<b>3H</b>	-4.5	-3.9	-4.1	-3.5	-3.1	-4.5	-3.9	-4.1	-3.5	-3.1
	<b>4H</b>	-4.6	-4.0	-4.2	-3.6	-3.2	-4.6	-4.0	-4.2	-3.6	-3.2
	<b>6H</b>	-4.6	-4.2	-4.2	-3.7	-3.2	-4.6	-4.1	-4.2	-3.7	-3.2
	<b>8H</b>	-4.6	-4.2	-4.1	-3.7	-3.2	-4.6	-4.2	-4.1	-3.7	-3.3
	<b>12H</b>	-4.6	-4.2	-4.1	-3.7	-3.2	-4.6	-4.2	-4.1	-3.7	-3.2
<b>8H</b>	<b>4H</b>	-4.8	-4.3	-4.3	-3.9	-3.4	-4.8	-4.3	-4.3	-3.9	-3.4
	<b>6H</b>	-4.8	-4.4	-4.3	-3.9	-3.4	-4.8	-4.4	-4.3	-3.9	-3.4
	<b>8H</b>	-4.7	-4.4	-4.2	-3.9	-3.4	-4.7	-4.4	-4.2	-3.9	-3.4
	<b>12H</b>	-4.6	-4.3	-4.1	-3.8	-3.3	-4.6	-4.3	-4.0	-3.8	-3.2
<b>12H</b>	<b>4H</b>	-4.8	-4.4	-4.3	-3.9	-3.5	-4.8	-4.4	-4.3	-3.9	-3.5
	<b>6H</b>	-4.8	-4.5	-4.3	-4.0	-3.5	-4.8	-4.5	-4.3	-4.0	-3.5
	<b>8H</b>	-4.7	-4.5	-4.2	-4.0	-3.4	-4.7	-4.5	-4.2	-4.0	-3.4

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0