

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SGRTV12BX-80L35K-WD-DO101-AR12BX-MWWF  
Nom. 12" Diam x 10" H open aperture

### **Test Number**

SP-00686\_2

### **Test Date**

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

## Summary of Results

### Power

Input Watts	60 W
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### Lumen Output

Output Lumens	6482
Efficacy	108.04 lm/W

### Luminous Dimensions

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

### Spacing Criterion

Two luminaires, plane 0°	0.91
Two luminaires, plane 90°	0.93
Four luminaires	0.91

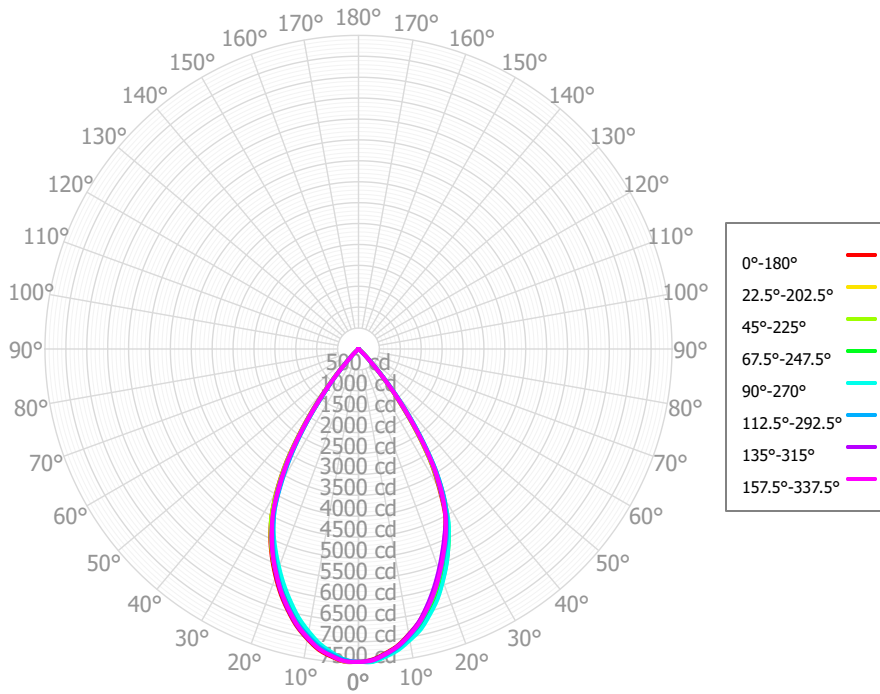
### Full Beam Angle

0° - 180°	61°
90° - 270°	61°

## IES File Header Contents

Keyword	Value
TEST	SP-00686_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/19/2018
LUMCAT	SGRTV12BX-80L35K-WD-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, Wide Beam
OTHER	60.9 Deg Beam Angle
LAMPCAT	N/A
LAMP	N/A, Bridgelux Vero 29
OTHER	Dimmable driver tested at 100% output
OTHER	Tested CCT: 3500K
OTHER	This report prepared by Spectrum Lighting
_CCTMULT	CCT Output: 27K x 0.932, 30K x 1.00, 40K x 1.01

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	699.43	10.79%	90.00° - 100.00°	0.13	0.00%
10.00° - 20.00°	1791.83	27.64%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	2237.74	34.52%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	1492.68	23.03%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	248.77	3.84%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	7.65	0.12%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.63	0.03%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.26	0.02%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.29	0.02%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	6482.29	100.00%	0.00° - 180.00°	6482.42	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°	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50	7483.50
2.50°	7437.76	7466.81	7468.42	7486.22	7493.89	7443.21	7471.08	7478.29	7489.83	7479.76	7484.27	7447.30	7440.24	7465.49	7445.02	7460.17	7437.76
5.00°	7308.69	7333.77	7329.49	7372.73	7392.97	7328.25	7370.92	7371.30	7390.75	7355.02	7351.39	7304.51	7285.99	7352.81	7323.92	7333.14	7308.69
7.50°	7157.38	7183.95	7180.73	7236.50	7265.12	7178.80	7234.17	7233.84	7260.43	7207.99	7203.48	7130.32	7107.24	7202.44	7169.35	7179.11	7157.38
10.00°	6929.96	6976.75	6963.58	7046.52	7075.55	6962.87	7026.48	7008.95	7045.23	6978.01	6961.26	6879.57	6859.47	6988.46	6938.68	6962.37	6929.96
12.50°	6686.34	6745.75	6743.56	6829.46	6873.82	6721.71	6781.41	6761.67	6802.24	6735.72	6708.64	6609.64	6588.07	6733.68	6683.59	6713.75	6686.34
15.00°	6365.63	6445.75	6434.29	6557.70	6584.04	6409.86	6472.75	6444.93	6495.24	6421.68	6405.65	6288.92	6259.38	6418.24	6349.04	6401.73	6365.63
17.50°	6032.18	6122.64	6122.78	6252.24	6280.97	6075.51	6136.70	6113.57	6167.02	6100.05	6092.77	5957.76	5919.32	6077.61	5993.44	6064.95	6032.18
20.00°	5660.31	5742.95	5756.02	5888.06	5907.55	5692.27	5760.23	5732.78	5796.94	5731.13	5740.60	5602.12	5555.73	5704.36	5619.04	5685.02	5660.31
22.50°	5283.77	5363.24	5387.02	5508.12	5526.21	5296.20	5360.70	5343.92	5410.34	5358.88	5377.16	5242.60	5187.25	5340.87	5240.52	5308.22	5283.77
25.00°	4889.62	4983.46	4980.62	5104.03	5099.59	4829.51	4931.51	4890.79	4995.20	4930.95	4977.02	4831.09	4809.93	4988.56	4877.10	4936.16	4889.62
27.50°	4493.96	4541.01	4553.98	4636.01	4669.69	4347.56	4423.34	4429.98	4507.21	4500.77	4516.93	4413.37	4344.12	4573.07	4516.24	4508.64	4493.96
30.00°	3869.58	3983.96	3914.66	4082.66	4044.61	3670.70	3825.15	3766.63	3909.85	3817.53	3890.34	3725.55	3739.43	4094.27	3933.61	4008.13	3869.58
32.50°	3234.50	3334.36	3257.27	3419.03	3412.67	2961.00	3124.75	3086.48	3225.07	3130.69	3207.63	3016.45	3048.62	3454.05	3322.96	3371.76	3234.50
35.00°	2445.70	2538.26	2468.02	2625.06	2622.97	2190.66	2322.54	2291.88	2424.32	2333.51	2392.87	2235.34	2240.20	2672.39	2537.23	2577.10	2445.70
37.50°	1658.69	1792.27	1702.72	1876.47	1836.48	1412.51	1584.08	1492.13	1673.70	1549.36	1635.78	1451.28	1512.11	1921.16	1735.83	1827.94	1658.69
40.00°	1053.25	1116.26	1072.53	1174.75	1175.06	851.85	901.94	910.65	981.13	951.86	994.76	899.81	881.09	1193.56	1112.77	1125.12	1053.25
42.50°	469.12	605.63	514.88	655.59	540.29	310.25	456.17	340.79	497.85	394.19	494.92	359.96	441.34	676.95	498.81	619.44	469.12
45.00°	269.37	296.47	278.63	301.29	300.49	165.67	192.72	186.92	226.39	214.98	244.02	199.95	203.59	303.02	283.85	291.77	269.37
47.50°	82.87	108.63	84.65	108.67	79.60	40.67	63.21	40.36	73.93	55.41	75.44	47.38	68.61	118.02	78.99	110.81	82.87
50.00°	43.52	49.93	42.50	45.43	42.56	21.71	23.70	21.45	28.27	28.68	32.72	24.87	28.51	45.60	41.62	45.54	43.52
52.50°	8.39	16.55	9.78	14.78	9.71	4.85	7.71	4.04	6.94	5.99	7.05	4.25	8.28	14.94	5.98	13.93	8.39
55.00°	5.35	7.06	5.71	6.86	5.76	3.60	5.64	3.04	4.68	4.14	4.09	3.31	4.29	5.76	4.42	5.44	5.35
57.50°	2.80	2.39	2.65	3.03	2.34	2.40	4.20	2.17	3.06	2.62	2.36	2.45	2.41	2.65	2.94	2.09	2.80
60.00°	3.03	1.71	2.21	1.72	1.77	2.18	3.09	2.28	1.88	2.47	2.06	2.13	2.02	2.20	2.54	1.85	3.03
62.50°	3.04	1.50	1.76	1.44	1.29	1.93	2.73	2.36	1.79	2.19	1.62	1.80	1.62	1.82	2.11	1.74	3.04
65.00°	2.05	1.64	1.33	1.72	1.21	1.32	2.72	2.30	2.35	1.51	1.03	1.40	1.20	1.47	1.53	1.70	2.05
67.50°	1.28	1.59	1.06	1.36	1.15	0.91	1.88	2.12	2.26	1.11	0.78	1.01	1.08	1.32	1.09	1.59	1.28
70.00°	1.15	1.45	1.04	0.74	1.14	1.46	0.77	1.59	1.86	1.34	0.80	0.64	1.11	1.22	1.23	1.45	1.15
72.50°	1.10	1.30	0.98	0.78	1.08	1.68	1.35	1.19	1.55	1.50	1.11	0.70	0.94	1.42	1.31	1.34	1.10
75.00°	1.13	1.21	0.90	0.97	0.98	1.41	1.71	0.94	1.30	1.59	1.42	1.24	0.72	1.31	1.33	1.22	1.13
77.50°	1.52	1.31	1.06	1.37	1.12	1.51	1.40	1.27	1.22	1.07	1.34	1.08	0.44	0.57	1.36	1.03	1.52
80.00°	1.34	1.29	1.05	1.12	1.20	1.36	1.46	1.31	1.24	0.95	1.15	1.02	0.75	1.22	1.32	1.18	1.34
82.50°	0.83	1.31	1.14	0.99	1.22	1.17	1.71	1.16	1.35	1.10	0.92	1.20	0.90	1.26	1.32	1.34	0.83
85.00°	0.84	1.33	1.26	1.13	0.99	1.74	1.85	1.17	1.19	1.09	0.97	1.16	1.01	1.39	1.45	1.34	0.84
87.50°	1.16	1.33	0.70	1.31	0.54	1.34	2.55	0.86	1.24	1.48	1.21	0.96	1.34	0.83	0.80	2.07	1.16
90.00°	1.52	0.77	0.84	0.80	1.37	0.98	0.81	1.09	0.83	1.19	1.11	0.74	0.60	0.62	1.49	0.99	1.52
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>	7717	7717	7717	7717	7538	7538	7538	7538	7203	7203	7203	6896	6896	6896	6615	6615	6615	6482
	<b>1</b>	7368	7193	7036	6895	7209	7053	6913	6785	6791	6679	6577	6551	6463	6381	6329	6261	6197	6136
	<b>2</b>	7016	6709	6455	6242	6874	6598	6367	6171	6389	6200	6036	6196	6042	5907	6018	5894	5784	5779
	<b>3</b>	6674	6268	5955	5705	6545	6179	5891	5659	6010	5768	5569	5853	5651	5482	5708	5541	5398	5435
	<b>4</b>	6344	5868	5519	5252	6229	5794	5471	5221	5656	5379	5159	5527	5291	5099	5407	5207	5041	5110
	<b>5</b>	6031	5503	5134	4861	5927	5442	5097	4839	5327	5027	4796	5220	4959	4754	5120	4894	4713	4806
	<b>6</b>	5734	5170	4791	4519	5640	5119	4762	4503	5022	4707	4472	4932	4654	4442	4848	4603	4412	4523
	<b>7</b>	5455	4865	4483	4215	5369	4822	4461	4204	4740	4417	4182	4664	4375	4159	4592	4334	4138	4262
	<b>8</b>	5192	4587	4206	3944	5115	4550	4188	3936	4480	4153	3919	4414	4119	3903	4353	4086	3887	4021
	<b>9</b>	4947	4332	3956	3701	4876	4301	3941	3695	4240	3912	3682	4183	3884	3670	4130	3857	3658	3798
	<b>10</b>	4718	4099	3729	3482	4653	4072	3716	3477	4019	3693	3467	3969	3670	3458	3923	3647	3448	3594

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	247.4 fc	6.5 ft
6.5 ft	177.1 fc	7.7 ft
7.5 ft	133.0 fc	8.8 ft
8.0 ft	116.9 fc	9.4 ft
10.0 ft	74.8 fc	11.8 ft
12.0 ft	52.0 fc	14.2 ft
14.0 ft	38.2 fc	16.5 ft
16.0 ft	29.2 fc	18.9 ft
20.0 ft	18.7 fc	23.6 ft
24.0 ft	13.0 fc	28.3 ft
28.0 ft	9.5 fc	33.0 ft

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

	0.00°	45.00°	90.00°
<b>0.00°</b>	109004	109004	109004
<b>45.00°</b>	5549	5740	6190
<b>55.00°</b>	136	145	146
<b>65.00°</b>	71	46	42
<b>75.00°</b>	63	51	55
<b>85.00°</b>	140	211	165

### 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	-18.7	-17.7	-18.3	-17.4	-17.1	-18.4	-17.5	-18.1	-17.2	-16.9
	3H	-17.1	-16.3	-16.7	-15.9	-15.6	-17.5	-16.7	-17.1	-16.4	-16.0
	4H	-16.2	-15.4	-15.8	-15.1	-14.7	-16.7	-15.9	-16.3	-15.6	-15.2
	6H	-14.4	-13.7	-14.0	-13.3	-12.9	-15.5	-14.8	-15.1	-14.5	-14.1
	8H	-13.8	-13.2	-13.4	-12.8	-12.4	-14.6	-14.0	-14.2	-13.6	-13.2
	12H	-13.2	-12.6	-12.8	-12.2	-11.8	-13.6	-13.0	-13.2	-12.6	-12.2
4H	2H	-18.4	-17.6	-18.0	-17.3	-16.9	-17.7	-17.0	-17.3	-16.6	-16.2
	3H	-16.4	-15.8	-16.0	-15.4	-15.0	-16.6	-16.0	-16.2	-15.6	-15.2
	4H	-15.2	-14.7	-14.8	-14.3	-13.8	-15.4	-14.8	-14.9	-14.4	-13.9
	6H	-13.2	-12.8	-12.8	-12.3	-11.9	-13.9	-13.4	-13.4	-13.0	-12.5
	8H	-12.5	-12.0	-12.0	-11.6	-11.1	-12.9	-12.5	-12.5	-12.1	-11.6
	12H	-11.6	-11.3	-11.1	-10.8	-10.3	-11.7	-11.4	-11.2	-10.9	-10.4
8H	4H	-14.8	-14.3	-14.3	-13.9	-13.4	-14.6	-14.2	-14.2	-13.8	-13.3
	6H	-12.5	-12.1	-12.0	-11.6	-11.1	-12.8	-12.5	-12.3	-12.0	-11.5
	8H	-11.4	-11.1	-10.8	-10.5	-10.0	-11.6	-11.3	-11.1	-10.8	-10.3
	12H	-10.1	-9.9	-9.6	-9.4	-8.8	-10.1	-9.8	-9.5	-9.3	-8.7
12H	4H	-14.6	-14.2	-14.1	-13.8	-13.3	-14.5	-14.1	-14.0	-13.6	-13.1
	6H	-12.2	-11.9	-11.7	-11.4	-10.9	-12.5	-12.2	-11.9	-11.7	-11.1
	8H	-10.9	-10.7	-10.4	-10.2	-9.6	-11.1	-10.8	-10.6	-10.3	-9.8

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0