

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SGRTV12BX-70L35K-XW-DO101-AR12BX-MWWF  
Nom. 12" Diam x 10" H open aperture

### **Test Number**

SP-00686\_3\_M-70L

### **Test Date**

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

## Summary of Results

### Power

Input Watts	51 W
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### Lumen Output

Output Lumens	5558
Efficacy	108.99 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°	1.09
Four luminaires	0.98

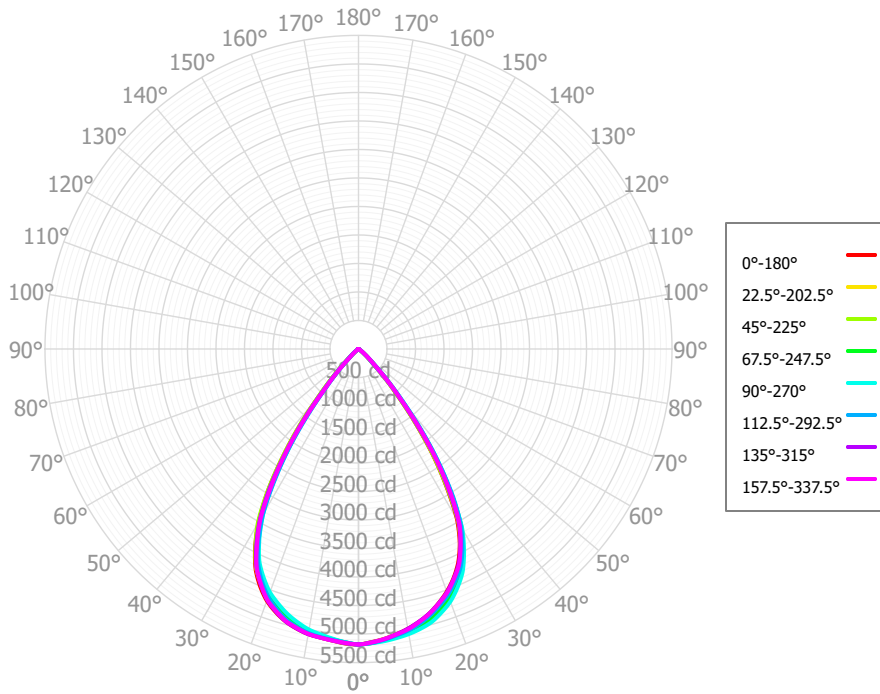
### Full Beam Angle

0° - 180°	68°
90° - 270°	68°

## IES File Header Contents

Keyword	Value
TEST	SP-00686_3_M-70L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/12/2018
LUMCAT	SGRTV12BX-70L35K-XW-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, Xtra Wide Beam
OTHER	67.7 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°	493.53	8.88%	90.00° - 100.00°	0.09	0.00%
10.00° - 20.00°	1369.00	24.63%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1900.07	34.18%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	1411.41	25.39%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	338.89	6.10%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	41.41	0.75%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.01	0.04%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.98	0.02%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.93	0.02%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	5558.24	100.00%	0.00° - 180.00°	5558.33	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°	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53	5183.53
2.50°	5148.25	5159.20	5153.62	5164.75	5165.67	5151.58	5167.05	5160.72	5172.19	5160.64	5166.88	5152.48	5152.44	5164.21	5151.50	5156.37	5148.25
5.00°	5107.06	5111.41	5117.36	5129.17	5145.85	5124.17	5136.09	5134.70	5138.31	5133.58	5129.98	5114.01	5103.86	5120.21	5113.56	5109.60	5107.06
7.50°	5050.66	5058.50	5069.01	5091.26	5114.96	5098.98	5106.90	5107.55	5107.26	5103.84	5093.82	5072.96	5052.07	5070.81	5052.88	5053.98	5050.66
10.00°	4984.42	5003.51	5013.69	5052.96	5078.09	5059.90	5078.68	5073.30	5078.29	5065.64	5057.95	5027.24	4998.63	5017.88	4984.61	4995.51	4984.42
12.50°	4902.49	4923.39	4935.44	4986.98	5027.15	4995.96	5020.35	5011.63	5022.66	5001.97	4988.16	4942.59	4913.86	4939.61	4899.83	4907.31	4902.49
15.00°	4803.42	4832.40	4846.49	4915.84	4958.51	4909.87	4944.53	4938.51	4946.44	4925.75	4904.99	4853.50	4812.13	4843.84	4803.24	4808.90	4803.42
17.50°	4675.56	4711.56	4719.71	4793.47	4845.72	4781.92	4826.62	4817.45	4836.87	4809.07	4783.62	4721.95	4684.66	4726.04	4679.38	4683.64	4675.56
20.00°	4530.35	4577.04	4581.54	4660.64	4714.42	4627.54	4682.89	4679.84	4700.18	4673.54	4646.25	4584.21	4542.49	4592.21	4540.54	4548.54	4530.35
22.50°	4354.42	4398.81	4400.03	4480.39	4533.95	4420.33	4477.92	4467.07	4508.16	4472.82	4456.81	4377.19	4345.13	4425.32	4365.00	4370.55	4354.42
25.00°	4138.31	4199.34	4191.36	4289.59	4319.91	4161.90	4233.36	4227.25	4268.83	4240.93	4244.23	4160.12	4114.49	4233.12	4158.81	4175.85	4138.31
27.50°	3847.09	3887.12	3870.87	3968.72	4010.80	3795.13	3883.04	3850.69	3928.37	3892.98	3917.03	3808.72	3768.24	3952.40	3872.74	3880.88	3847.09
30.00°	3460.99	3516.97	3501.07	3616.44	3638.63	3355.05	3460.69	3439.88	3496.97	3494.55	3535.82	3441.69	3348.50	3600.38	3518.15	3544.36	3460.99
32.50°	2887.34	2983.04	2906.82	3059.32	3075.65	2750.71	2903.71	2839.06	2958.84	2893.22	2979.63	2816.13	2794.46	3105.49	2973.32	3020.68	2887.34
35.00°	2293.16	2359.11	2304.62	2448.72	2488.20	2128.55	2250.21	2229.49	2319.82	2283.23	2336.14	2190.41	2149.44	2489.57	2399.51	2414.69	2293.16
37.50°	1656.03	1743.50	1662.99	1819.25	1821.49	1464.05	1613.78	1566.22	1689.93	1635.51	1709.38	1561.29	1547.37	1872.38	1739.82	1795.53	1656.03
40.00°	1087.64	1132.72	1060.83	1184.47	1200.85	886.52	990.39	941.95	1069.14	1031.64	1091.43	941.62	975.94	1254.07	1139.55	1170.24	1087.64
42.50°	671.62	709.12	673.70	755.61	740.32	528.73	571.52	584.01	620.13	635.68	670.28	607.43	589.61	787.46	727.57	744.73	671.62
45.00°	345.73	400.07	326.43	388.98	351.20	244.59	316.84	257.08	350.59	288.00	358.78	278.08	342.30	462.91	380.46	417.83	345.73
47.50°	231.71	227.33	218.87	228.27	229.20	158.47	163.69	168.26	177.20	190.58	195.26	191.58	192.84	255.23	253.79	245.57	231.71
50.00°	135.82	142.54	119.66	134.22	122.15	85.46	96.27	85.03	109.41	101.88	118.78	105.42	120.70	162.60	143.19	154.04	135.82
52.50°	85.19	85.43	76.31	80.79	75.53	50.03	50.86	52.12	59.58	62.93	68.59	66.97	69.49	95.72	91.32	93.45	85.19
55.00°	42.61	47.13	36.01	41.40	34.64	20.84	25.00	21.22	30.50	27.56	34.71	28.53	35.69	55.48	45.60	49.92	42.61
57.50°	21.44	22.95	19.26	20.83	18.83	10.74	9.97	11.34	11.71	14.78	15.51	15.85	15.16	26.96	24.09	24.21	21.44
60.00°	5.28	8.86	4.08	7.21	5.34	2.79	5.04	2.16	5.43	3.44	5.90	3.32	6.21	11.17	6.17	8.88	5.28
62.50°	3.32	2.44	2.66	2.57	2.92	1.83	2.27	1.53	1.71	2.30	1.84	2.18	1.76	2.39	3.57	2.50	3.32
65.00°	1.73	1.79	1.37	1.50	0.89	1.08	1.62	0.93	1.31	1.25	1.60	1.25	1.42	1.61	1.38	1.62	1.73
67.50°	1.27	1.21	1.28	1.17	0.94	1.02	1.24	0.90	1.06	0.99	1.31	1.08	1.20	1.14	1.14	1.18	1.27
70.00°	0.91	0.67	1.19	1.17	0.97	0.98	1.14	0.87	1.00	0.76	0.98	0.92	1.07	1.05	0.94	1.03	0.91
72.50°	0.83	0.65	1.07	1.23	0.86	0.97	1.02	0.82	1.00	0.82	0.84	1.07	0.96	0.92	1.03	0.87	0.83
75.00°	0.76	1.04	0.95	1.33	0.80	0.96	0.88	0.77	1.09	0.87	0.84	1.23	0.86	0.75	1.06	0.71	0.76
77.50°	0.70	1.15	0.89	1.17	1.00	0.92	0.88	0.78	1.08	0.85	0.73	1.15	0.88	0.74	0.83	0.67	0.70
80.00°	0.66	1.04	0.87	0.90	1.13	0.97	1.02	0.82	0.96	0.81	0.56	1.07	1.00	0.89	0.67	0.70	0.66
82.50°	0.65	0.73	1.00	0.74	1.09	1.18	0.78	0.95	0.93	0.72	0.88	1.01	0.78	0.84	0.65	0.84	0.65
85.00°	0.68	0.68	0.85	0.81	0.93	0.85	0.62	0.89	1.08	0.89	1.01	1.11	0.81	0.81	0.93	0.99	0.68
87.50°	0.61	0.89	0.86	0.97	0.90	0.83	0.86	0.79	1.23	0.77	0.86	1.07	1.12	0.89	1.06	1.03	0.61
90.00°	0.46	0.79	0.76	0.76	0.51	0.68	0.95	0.43	0.54	0.57	1.03	0.78	0.55	0.48	0.57	0.79	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>	6617	6617	6617	6617	6463	6463	6463	6463	6176	6176	6176	5913	5913	5913	5672	5672	5672	5558
	<b>1</b>	6305	6149	6010	5884	6168	6029	5904	5791	5804	5704	5612	5597	5518	5445	5407	5345	5288	5238
	<b>2</b>	5987	5712	5485	5295	5863	5616	5410	5235	5436	5266	5120	5270	5132	5010	5117	5005	4905	4906
	<b>3</b>	5676	5313	5033	4809	5565	5236	4978	4770	5089	4872	4693	4954	4772	4620	4829	4678	4548	4587
	<b>4</b>	5378	4951	4638	4399	5277	4887	4597	4372	4767	4517	4320	4655	4442	4269	4551	4370	4220	4287
	<b>5</b>	5095	4621	4290	4045	5003	4568	4258	4027	4468	4198	3990	4374	4139	3955	4287	4084	3920	4009
	<b>6</b>	4828	4321	3981	3737	4745	4277	3956	3724	4192	3909	3698	4113	3863	3672	4040	3820	3647	3752
	<b>7</b>	4577	4048	3705	3465	4501	4010	3686	3455	3939	3648	3436	3872	3612	3418	3809	3577	3400	3516
	<b>8</b>	4342	3799	3458	3223	4274	3767	3442	3216	3706	3412	3202	3648	3383	3188	3594	3354	3175	3300
	<b>9</b>	4124	3573	3236	3008	4061	3545	3223	3002	3492	3198	2992	3442	3174	2981	3395	3150	2971	3101
	<b>10</b>	3921	3367	3035	2814	3863	3342	3024	2810	3296	3004	2802	3253	2984	2794	3211	2964	2786	2920

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	171.4 fc	7.4 ft
6.5 ft	122.7 fc	8.7 ft
7.5 ft	92.2 fc	10.1 ft
8.0 ft	81.0 fc	10.7 ft
10.0 ft	51.8 fc	13.4 ft
12.0 ft	36.0 fc	16.1 ft
14.0 ft	26.4 fc	18.8 ft
16.0 ft	20.2 fc	21.5 ft
20.0 ft	13.0 fc	26.8 ft
24.0 ft	9.0 fc	32.2 ft
28.0 ft	6.6 fc	37.5 ft

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

	0.00°	45.00°	90.00°
<b>0.00°</b>	75503	75503	75503
<b>45.00°</b>	7122	6724	7234
<b>55.00°</b>	1082	915	880
<b>65.00°</b>	60	47	31
<b>75.00°</b>	43	54	45
<b>85.00°</b>	114	142	155

### 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	-2.5	-1.6	-2.2	-1.2	-0.9	-6.0	-5.1	-5.7	-4.8	-4.5
	3H	-2.7	-1.9	-2.3	-1.5	-1.2	-6.2	-5.4	-5.8	-5.0	-4.7
	4H	-2.8	-2.0	-2.4	-1.7	-1.3	-6.3	-5.5	-5.9	-5.1	-4.7
	6H	-2.9	-2.2	-2.5	-1.8	-1.4	-6.3	-5.6	-5.9	-5.2	-4.8
	8H	-2.9	-2.3	-2.5	-1.9	-1.5	-6.3	-5.6	-5.8	-5.2	-4.8
	12H	-3.0	-2.3	-2.5	-2.0	-1.5	-6.2	-5.6	-5.8	-5.2	-4.8
4H	2H	-2.8	-2.0	-2.4	-1.7	-1.3	-6.3	-5.5	-5.9	-5.2	-4.8
	3H	-3.0	-2.4	-2.6	-2.0	-1.6	-6.5	-5.8	-6.1	-5.4	-5.0
	4H	-3.1	-2.5	-2.7	-2.1	-1.7	-6.5	-6.0	-6.1	-5.5	-5.1
	6H	-3.2	-2.7	-2.7	-2.3	-1.8	-6.5	-6.0	-6.0	-5.5	-5.1
	8H	-3.2	-2.8	-2.8	-2.3	-1.9	-6.4	-6.0	-5.9	-5.5	-5.0
	12H	-3.3	-2.9	-2.8	-2.4	-1.9	-6.3	-5.9	-5.8	-5.4	-4.9
8H	4H	-3.3	-2.8	-2.8	-2.4	-1.9	-6.7	-6.2	-6.2	-5.8	-5.3
	6H	-3.4	-3.0	-2.8	-2.5	-2.0	-6.6	-6.2	-6.1	-5.7	-5.2
	8H	-3.4	-3.1	-2.8	-2.5	-2.0	-6.4	-6.1	-5.9	-5.6	-5.1
	12H	-3.4	-3.1	-2.8	-2.6	-2.0	-6.2	-5.9	-5.6	-5.4	-4.8
12H	4H	-3.3	-3.0	-2.9	-2.5	-2.0	-6.7	-6.3	-6.2	-5.9	-5.4
	6H	-3.4	-3.1	-2.9	-2.6	-2.1	-6.6	-6.3	-6.1	-5.8	-5.3
	8H	-3.4	-3.1	-2.9	-2.6	-2.1	-6.4	-6.1	-5.9	-5.6	-5.1

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0