Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGRTV12BX-80L35K-MD-DO101-AR12BX-SGWF

Nom. 12" Diam x 10" H, Open aperture

Test Number

SP-00686_4

Test Date

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

Summary of Results

Power

Input Watts	60 W

Lumen Output

Output Lumens	6469
Efficacy	107.82 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.63
Two luminaires, plane 90°	0.63
Four luminaires	0.64

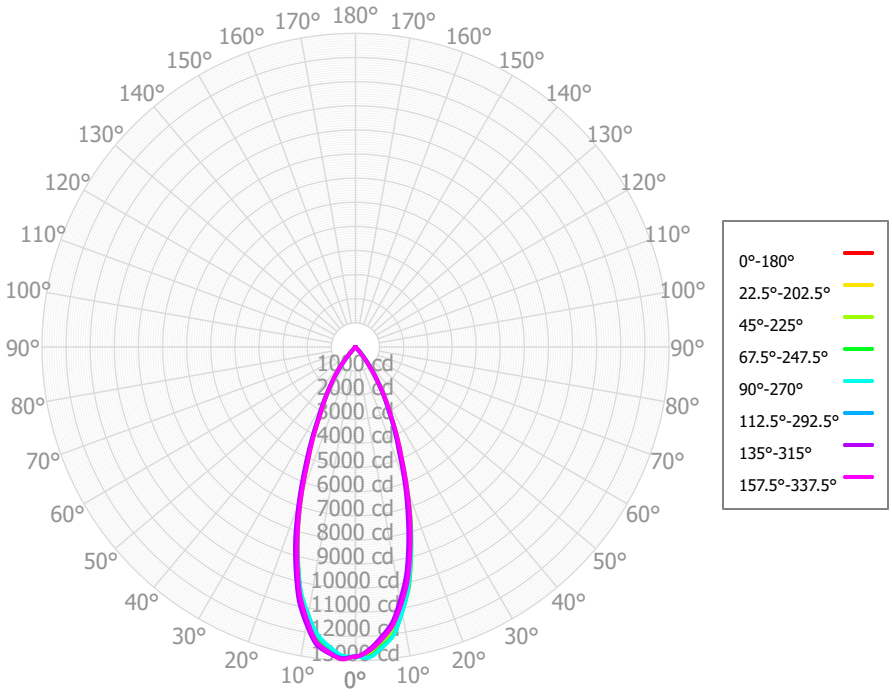
Full Beam Angle

0° - 180°	40°
90° - 270°	40°

IES File Header Contents

Keyword	Value
TEST	SP-00686_4
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/29/2018
LUMCAT	SGRTV12BX-80L35K-MD-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, Medium Beam
OTHER	39.8 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°	1166.92	18.04%	90.00° - 100.00°	0.14	0.00%
10.00° - 20.00°	2458.15	38.00%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1885.18	29.14%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	857.91	13.26%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	94.37	1.46%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	2.38	0.04%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.39	0.02%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.31	0.02%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.30	0.02%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	6468.90	100.00%	0.00° - 180.00°	6469.03	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
0.00°	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	12836.52	1283
2.50°	12637.79	12725.27	12751.04	12858.23	12888.97	12903.98	12917.78	12959.22	12942.77	12940.70	12898.99	12862.54	12803.67	12621.73	12566.00	12628.73	1263
5.00°	12183.57	12314.84	12303.30	12467.65	12523.49	12664.21	12751.55	12698.67	12710.96	12630.18	12609.19	12489.59	12467.53	12201.23	12088.26	12199.70	1218
7.50°	11684.69	11836.28	11814.99	12046.65	12062.95	12319.38	12445.58	12345.59	12374.45	12266.69	12252.69	12108.60	12032.16	11668.55	11546.78	11682.85	1168
10.00°	10824.33	10989.10	10893.39	11143.80	11157.84	11529.10	11692.98	11512.58	11564.37	11420.37	11492.08	11276.70	11285.82	10838.81	10657.65	10868.00	1082
12.50°	9913.56	10075.18	9932.58	10209.55	10150.60	10616.50	10818.34	10582.03	10662.53	10519.87	10658.68	10437.75	10427.82	9899.48	9692.40	9960.36	9913
15.00°	8688.38	8850.39	8655.03	8914.96	8838.49	9371.78	9588.08	9292.96	9397.81	9229.74	9439.85	9197.40	9256.37	8698.08	8458.46	8771.94	868
17.50°	7426.23	7606.66	7356.45	7614.05	7465.68	8044.93	8304.93	7941.54	8094.66	7905.67	8188.50	7952.64	8029.76	7453.85	7173.76	7555.37	7426
20.00°	6155.99	6286.00	6064.17	6254.54	6135.70	6682.95	6883.23	6556.38	6654.47	6525.74	6788.60	6593.94	6663.67	6115.23	5947.01	6260.98	615
22.50°	4885.00	5039.28	4772.19	4943.51	4813.00	5313.40	5539.95	5166.13	5303.85	5142.29	5449.62	5254.98	5388.13	4909.66	4729.54	5053.05	488
25.00°	3964.88	4062.95	3887.33	3994.63	3857.62	4250.40	4385.51	4140.17	4237.24	4136.70	4353.71	4236.79	4323.29	3970.86	3842.10	4060.69	396
27.50°	3070.05	3155.81	3012.62	3088.18	2956.20	3245.94	3375.92	3159.33	3276.56	3147.75	3346.37	3244.57	3375.29	3122.17	3000.07	3160.76	307
30.00°	2396.77	2473.34	2369.74	2444.95	2334.37	2575.18	2682.52	2540.58	2616.61	2523.97	2657.55	2571.89	2674.07	2438.24	2333.78	2472.99	239
32.50°	1734.30	1833.08	1729.91	1825.32	1746.15	1958.54	2058.23	1958.98	2006.57	1908.18	2011.23	1915.88	2022.16	1805.17	1687.06	1829.43	1734
35.00°	1229.27	1315.34	1250.92	1333.31	1276.51	1471.05	1571.15	1473.63	1526.36	1436.07	1500.71	1417.09	1466.60	1258.43	1168.09	1278.02	1229
37.50°	728.39	835.41	776.45	859.56	818.11	1000.98	1097.58	995.79	1057.86	965.86	1015.56	930.86	963.57	780.57	660.69	789.89	728.
40.00°	408.83	455.94	428.91	470.87	452.48	593.05	648.86	591.20	616.89	572.29	604.30	543.00	554.23	409.76	368.84	421.94	408
42.50°	94.15	160.67	96.77	142.57	93.76	192.15	300.52	190.59	266.94	189.86	265.15	193.45	244.49	152.94	91.29	153.82	94.1
45.00°	47.84	67.49	48.09	65.22	41.38	88.00	120.97	94.05	114.34	95.47	114.91	91.67	97.24	58.63	42.61	61.51	47.8
47.50°	3.04	3.30	2.96	4.32	4.67	9.95	9.63	8.33	11.51	6.14	8.50	5.38	7.54	4.24	3.84	4.05	3.04
50.00°	2.91	3.24	3.38	3.59	2.65	4.53	4.96	4.83	6.85	4.73	5.87	3.73	5.19	2.92	2.94	2.75	2.91
52.50°	2.76	2.90	3.67	2.93	1.77	3.74	2.41	2.48	3.48	3.41	3.69	2.48	3.52	2.53	2.98	2.01	2.76
55.00°	2.43	2.01	2.53	2.55	1.78	3.08	2.89	2.07	2.44	3.17	2.51	3.14	2.81	3.29	2.55	2.11	2.43
57.50°	2.11	1.57	1.49	2.12	1.80	2.41	2.78	1.68	1.81	2.89	1.78	3.45	2.19	3.15	2.12	2.21	2.11
60.00°	1.91	1.97	1.22	1.56	1.31	2.05	1.91	1.53	1.86	2.13	1.93	2.26	1.70	1.98	1.83	2.31	1.91
62.50°	1.69	2.05	0.99	1.13	0.84	1.68	1.47	1.37	1.76	1.43	1.88	1.36	1.41	1.44	1.55	2.14	1.69
65.00°	1.30	1.58	1.03	1.02	0.85	1.28	1.58	1.12	1.44	1.12	1.46	1.49	1.36	1.58	1.34	1.65	1.30
67.50°	0.95	1.28	1.12	0.96	0.86	0.93	1.56	0.90	1.29	0.96	1.36	1.51	1.25	1.82	1.20	1.38	0.95
70.00°	0.77	1.20	1.34	0.99	0.89	1.12	1.40	0.86	1.31	1.38	1.72	1.24	1.11	2.15	1.47	1.34	0.77
72.50°	0.84	1.15	1.37	0.82	0.98	1.36	1.19	0.93	1.55	1.49	1.45	1.08	0.84	1.87	1.62	1.17	0.84
75.00°	1.27	1.14	1.19	0.51	1.15	1.70	1.04	1.19	1.81	1.20	0.86	1.02	0.60	1.52	1.55	1.05	1.27
77.50°	1.17	1.52	0.99	1.20	1.33	1.20	1.44	1.53	1.22	1.03	0.97	0.90	0.82	1.96	1.65	1.67	1.17
80.00°	1.03	1.57	0.94	1.37	1.33	0.72	1.36	1.57	1.24	0.88	1.04	1.08	1.01	1.49	1.65	1.52	1.03
82.50°	0.92	1.34	0.95	1.33	1.15	0.75	1.16	1.31	1.15	0.96	1.19	1.68	1.14	1.06	1.42	1.17	0.92
85.00°	1.05	1.61	1.05	1.28	1.11	1.25	1.13	1.35	1.05	1.32	1.47	1.86	1.06	0.94	1.04	1.36	1.05
87.50°	1.38	1.06	1.28	0.87	1.27	1.34	1.30	0.90	1.08	1.15	1.67	1.33	1.17	1.10	1.40	1.26	1.38
90.00°	0.80	1.23	1.01	0.91	1.21	1.16	1.00	1.17	0.76	1.41	0.76	0.97	0.91	0.87	0.92	1.14	0.80
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.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	7701	7701	7701	7701	7522	7522	7522	7522	7188	7188	7188	6882	6882	6882	6601	6601	6601	6469
	1	7391	7232	7090	6961	7234	7093	6966	6851	6834	6733	6641	6595	6517	6444	6375	6315	6259	6190
	2	7086	6811	6584	6393	6948	6702	6496	6322	6496	6329	6184	6307	6172	6053	6132	6024	5928	5907
	3	6793	6433	6155	5934	6670	6346	6091	5886	6181	5969	5794	6029	5853	5705	5888	5743	5618	5634
	4	6513	6092	5785	5550	6404	6022	5737	5517	5888	5645	5453	5764	5558	5391	5648	5474	5331	5375
RCR	5	6247	5783	5458	5219	6149	5724	5422	5196	5614	5352	5151	5512	5285	5108	5416	5221	5065	5129
	6	5994	5500	5168	4929	5907	5451	5140	4913	5360	5085	4881	5274	5033	4849	5194	4983	4818	4899
	7	5756	5240	4906	4672	5677	5200	4884	4660	5122	4841	4636	5050	4800	4613	4983	4760	4590	4683
	8	5530	5001	4669	4440	5460	4967	4651	4431	4902	4617	4414	4840	4584	4396	4782	4552	4379	4481
	9	5318	4781	4452	4230	5254	4752	4438	4224	4696	4410	4210	4643	4383	4197	4593	4357	4184	4293
	10	5119	4578	4255	4039	5061	4553	4243	4034	4504	4220	4024	4458	4198	4014	4415	4176	4004	4117

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	424.3 fc	4.0 ft
6.5 ft	303.8 fc	4.7 ft
7.5 ft	228.2 fc	5.4 ft
8.0 ft	200.6 fc	5.8 ft
10.0 ft	128.4 fc	7.2 ft
12.0 ft	89.1 fc	8.7 ft
14.0 ft	65.5 fc	10.1 ft
16.0 ft	50.1 fc	11.5 ft
20.0 ft	32.1 fc	14.4 ft
24.0 ft	22.3 fc	17.3 ft
28.0 ft	16.4 fc	20.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	186975	186975	186975
45.00°	985	991	852
55.00°	62	64	45
65.00°	45	36	29
75.00°	71	67	65
85.00°	175	175	185

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	-19.8	-18.9	-19.4	-18.6	-18.3	-17.4	-16.5	-17.1	-16.2	-15.9
	3H	-18.4	-17.6	-18.0	-17.3	-16.9	-16.7	-15.9	-16.3	-15.6	-15.2
	4H	-17.2	-16.4	-16.7	-16.1	-15.7	-16.0	-15.3	-15.6	-14.9	-14.5
	6H	-15.3	-14.6	-14.9	-14.3	-13.9	-14.8	-14.2	-14.4	-13.8	-13.4
	8H	-14.5	-13.9	-14.1	-13.5	-13.1	-14.0	-13.4	-13.6	-13.0	-12.6
	12H	-13.5	-12.9	-13.1	-12.5	-12.1	-13.0	-12.4	-12.5	-12.0	-11.6
4H	2H	-19.5	-18.8	-19.1	-18.5	-18.1	-17.3	-16.6	-16.9	-16.2	-15.8
	3H	-17.4	-16.9	-17.0	-16.4	-16.0	-16.1	-15.5	-15.7	-15.1	-14.7
	4H	-16.0	-15.5	-15.5	-15.0	-14.6	-15.0	-14.4	-14.5	-14.0	-13.6
	6H	-13.6	-13.2	-13.2	-12.7	-12.2	-13.7	-13.2	-13.2	-12.8	-12.3
	8H	-12.8	-12.3	-12.3	-11.9	-11.4	-12.7	-12.3	-12.2	-11.8	-11.3
	12H	-11.6	-11.2	-11.1	-10.7	-10.3	-11.4	-11.0	-10.9	-10.5	-10.1
8H	4H	-15.1	-14.6	-14.6	-14.2	-13.7	-14.5	-14.1	-14.1	-13.7	-13.2
	6H	-12.4	-12.1	-11.9	-11.6	-11.1	-13.0	-12.6	-12.4	-12.1	-11.6
	8H	-11.3	-11.0	-10.8	-10.5	-10.0	-11.6	-11.3	-11.1	-10.8	-10.3
	12H	-9.8	-9.6	-9.3	-9.1	-8.5	-9.8	-9.6	-9.3	-9.1	-8.5
12H	4H	-14.8	-14.5	-14.3	-14.0	-13.5	-14.4	-14.0	-13.9	-13.5	-13.1
	6H	-12.1	-11.8	-11.6	-11.4	-10.8	-12.6	-12.4	-12.1	-11.9	-11.3
	8H	-10.9	-10.6	-10.4	-10.1	-9.5	-11.1	-10.9	-10.6	-10.4	-9.8

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0