Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGRTV12BX-80L35K-XW-DO101-AR12BX-MWWF

Nom. 12" Diam x 10" H open aperture

Test Number

SP-00686_3

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	6463
Efficacy	107.72 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

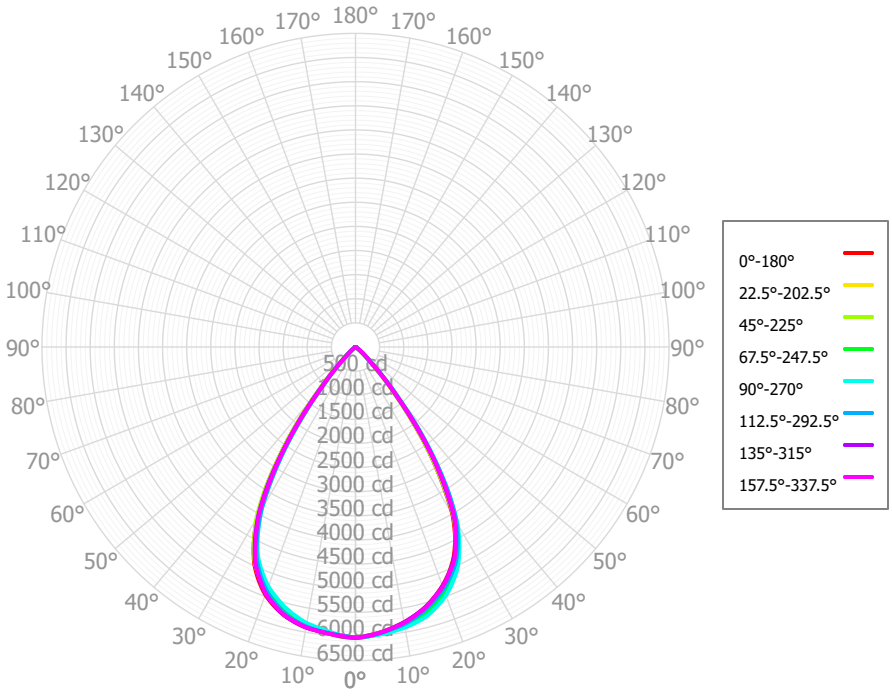
Full Beam Angle

0° - 180°	68°
90° - 270°	68°

IES File Header Contents

Keyword	Value
TEST	SP-00686_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/19/2018
LUMCAT	SGRTV12BX-80L35K-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	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°	573.87	8.88%	90.00° - 100.00°	0.11	0.00%
10.00° - 20.00°	1591.87	24.63%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	2209.39	34.18%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	1641.18	25.39%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	394.06	6.10%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	48.15	0.75%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.34	0.04%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.14	0.02%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.09	0.02%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	6463.07	100.00%	0.00° - 180.00°	6463.17	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°	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36	6027.36
2.50°	5986.34	5999.07	5992.58	6005.52	6006.60	5990.21	6008.19	6000.84	6014.18	6000.74	6008.00	5991.26	5991.21	6004.90	5990.11	5995.78	5986.34
5.00°	5938.44	5943.50	5950.42	5964.15	5983.55	5958.33	5972.20	5970.58	5974.78	5969.28	5965.09	5946.53	5934.72	5953.73	5946.00	5941.40	5938.44
7.50°	5872.86	5881.98	5894.19	5920.07	5947.63	5929.05	5938.26	5939.01	5938.67	5934.69	5923.05	5898.79	5874.50	5896.29	5875.44	5876.72	5872.86
10.00°	5795.83	5818.03	5829.87	5875.54	5904.76	5883.60	5905.44	5899.19	5904.98	5890.27	5881.34	5845.63	5812.36	5834.74	5796.06	5808.73	5795.83
12.50°	5700.57	5724.87	5738.88	5798.82	5845.52	5809.26	5837.62	5827.48	5840.31	5816.24	5800.18	5747.20	5713.79	5743.73	5697.48	5706.17	5700.57
15.00°	5585.37	5619.06	5635.46	5716.09	5765.71	5709.15	5749.45	5742.45	5751.68	5727.61	5703.47	5643.61	5595.50	5632.38	5585.16	5591.75	5585.37
17.50°	5436.69	5478.56	5488.03	5573.80	5634.56	5560.38	5612.34	5601.68	5624.27	5591.94	5562.35	5490.64	5447.28	5495.40	5441.14	5446.09	5436.69
20.00°	5267.85	5322.14	5327.38	5419.35	5481.88	5380.86	5445.23	5441.67	5465.32	5434.35	5402.61	5330.48	5281.97	5339.78	5279.70	5289.00	5267.85
22.50°	5063.27	5114.89	5116.31	5209.76	5272.03	5139.92	5206.89	5194.27	5242.04	5200.96	5182.34	5089.75	5052.48	5145.72	5075.58	5082.04	5063.27
25.00°	4811.99	4882.95	4873.68	4987.89	5023.15	4839.41	4922.52	4915.40	4963.75	4931.32	4935.15	4837.35	4784.29	4922.23	4835.82	4855.64	4811.99
27.50°	4473.36	4519.91	4501.01	4614.79	4663.73	4412.94	4515.16	4477.54	4567.87	4526.72	4554.69	4428.75	4381.68	4595.81	4503.19	4512.65	4473.36
30.00°	4024.41	4089.50	4071.02	4205.16	4230.96	3901.22	4024.06	3999.86	4066.25	4063.43	4111.42	4001.96	3893.60	4186.49	4090.87	4121.35	4024.41
32.50°	3357.37	3468.65	3380.02	3557.35	3576.34	3198.50	3376.41	3301.24	3440.52	3364.21	3464.68	3274.57	3249.37	3611.03	3457.35	3512.42	3357.37
35.00°	2666.46	2743.15	2679.79	2847.35	2893.26	2475.06	2616.52	2592.43	2697.46	2654.92	2716.45	2546.99	2499.35	2894.85	2790.13	2807.78	2666.46
37.50°	1925.61	2027.32	1933.71	2115.40	2118.02	1702.38	1876.49	1821.18	1965.04	1901.75	1987.65	1815.46	1799.26	2177.19	2023.05	2087.83	1925.61
40.00°	1264.70	1317.12	1233.52	1377.29	1396.34	1030.84	1151.62	1095.29	1243.19	1199.59	1269.11	1094.91	1134.81	1458.22	1325.05	1360.74	1264.70
42.50°	780.95	824.55	783.37	878.62	860.84	614.80	664.56	679.08	721.08	739.17	779.40	706.31	685.60	915.65	846.02	865.97	780.95
45.00°	402.01	465.20	379.57	452.30	408.37	284.40	368.42	298.93	407.66	334.89	417.19	323.34	398.02	538.27	442.40	485.85	402.01
47.50°	269.43	264.33	254.50	265.43	266.51	184.27	190.34	195.65	206.05	221.60	227.05	222.77	224.23	296.78	295.11	285.55	269.43
50.00°	157.93	165.74	139.14	156.07	142.04	99.37	111.94	98.87	127.22	118.46	138.11	122.58	140.35	189.07	166.50	179.12	157.93
52.50°	99.05	99.33	88.73	93.94	87.83	58.18	59.14	60.60	69.28	73.18	79.75	77.88	80.81	111.30	106.19	108.66	99.05
55.00°	49.54	54.80	41.88	48.14	40.28	24.23	29.07	24.67	35.46	32.05	40.36	33.17	41.50	64.52	53.02	58.05	49.54
57.50°	24.93	26.68	22.40	24.22	21.90	12.49	11.59	13.19	13.62	17.18	18.03	18.43	17.62	31.34	28.01	28.15	24.93
60.00°	6.14	10.31	4.74	8.38	6.21	3.24	5.86	2.51	6.31	4.00	6.86	3.86	7.23	12.99	7.18	10.32	6.14
62.50°	3.86	2.84	3.10	2.98	3.39	2.13	2.64	1.77	1.99	2.67	2.14	2.54	2.04	2.78	4.15	2.91	3.86
65.00°	2.01	2.08	1.59	1.74	1.03	1.25	1.88	1.08	1.53	1.45	1.86	1.46	1.66	1.87	1.61	1.88	2.01
67.50°	1.48	1.40	1.48	1.37	1.09	1.19	1.44	1.05	1.23	1.15	1.53	1.25	1.39	1.33	1.32	1.37	1.48
70.00°	1.06	0.78	1.38	1.36	1.13	1.13	1.33	1.02	1.16	0.89	1.14	1.07	1.24	1.22	1.09	1.20	1.06
72.50°	0.97	0.75	1.24	1.43	1.00	1.13	1.19	0.95	1.16	0.95	0.98	1.24	1.11	1.07	1.19	1.01	0.97
75.00°	0.88	1.21	1.11	1.54	0.93	1.12	1.02	0.90	1.27	1.01	0.97	1.43	1.00	0.87	1.23	0.83	0.88
77.50°	0.81	1.34	1.04	1.36	1.17	1.07	1.03	0.91	1.26	0.98	0.85	1.34	1.02	0.86	0.96	0.78	0.81
80.00°	0.76	1.21	1.02	1.05	1.31	1.13	1.19	0.96	1.11	0.94	0.65	1.25	1.16	1.04	0.78	0.81	0.76
82.50°	0.75	0.85	1.16	0.86	1.27	1.37	0.91	1.11	1.08	0.83	1.03	1.17	0.91	0.98	0.76	0.98	0.75
85.00°	0.79	0.79	0.99	0.94	1.08	0.99	0.72	1.04	1.25	1.03	1.17	1.29	0.94	0.95	1.08	1.16	0.79
87.50°	0.71	1.03	1.01	1.13	1.05	0.97	1.00	0.92	1.43	0.90	1.00	1.25	1.30	1.03	1.23	1.19	0.71
90.00°	0.53	0.92	0.88	0.88	0.59	0.79	1.10	0.50	0.63	0.66	1.20	0.91	0.64	0.56	0.66	0.92	0.53
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	7694	7694	7694	7694	7515	7515	7515	7515	7181	7181	7181	6876	6876	6876	6595	6595	6595	6463
	1	7331	7150	6988	6842	7172	7011	6865	6733	6749	6633	6526	6508	6417	6331	6287	6215	6148	6091
	2	6961	6642	6378	6157	6818	6531	6291	6087	6321	6124	5953	6128	5967	5826	5949	5820	5704	5705
	3	6600	6178	5852	5592	6470	6088	5788	5546	5918	5665	5457	5761	5549	5372	5615	5439	5289	5334
	4	6254	5757	5393	5115	6136	5683	5345	5084	5543	5253	5023	5413	5165	4964	5292	5081	4907	4985
RCR	5	5924	5373	4988	4704	5818	5312	4952	4682	5195	4881	4640	5087	4813	4599	4985	4748	4558	4662
	6	5614	5024	4629	4345	5517	4973	4600	4330	4875	4545	4300	4783	4492	4270	4697	4441	4241	4363
	7	5322	4707	4308	4029	5234	4663	4286	4018	4580	4242	3996	4502	4200	3974	4429	4159	3953	4089
	8	5049	4418	4021	3748	4969	4380	4003	3740	4309	3967	3724	4242	3933	3707	4179	3900	3692	3837
	9	4795	4155	3762	3497	4722	4122	3747	3491	4061	3719	3479	4002	3691	3467	3948	3663	3455	3606
	10	4559	3915	3529	3272	4492	3887	3517	3268	3833	3493	3258	3782	3469	3249	3734	3447	3239	3396

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	199.3 fc	7.4 ft
6.5 ft	142.7 fc	8.7 ft
7.5 ft	107.2 fc	10.1 ft
8.0 ft	94.2 fc	10.7 ft
10.0 ft	60.3 fc	13.4 ft
12.0 ft	41.9 fc	16.1 ft
14.0 ft	30.8 fc	18.8 ft
16.0 ft	23.5 fc	21.5 ft
20.0 ft	15.1 fc	26.8 ft
24.0 ft	10.5 fc	32.2 ft
28.0 ft	7.7 fc	37.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	87794	87794	87794
45.00°	8281	7819	8412
55.00°	1258	1063	1023
65.00°	69	55	36
75.00°	50	62	52
85.00°	132	165	180

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	-2.0	-1.0	-1.6	-0.7	-0.4	-5.5	-4.6	-5.2	-4.2	-3.9
	3H	-2.2	-1.3	-1.8	-1.0	-0.6	-5.7	-4.8	-5.3	-4.5	-4.1
	4H	-2.3	-1.5	-1.9	-1.1	-0.7	-5.8	-5.0	-5.3	-4.6	-4.2
	6H	-2.4	-1.7	-1.9	-1.3	-0.9	-5.8	-5.1	-5.4	-4.7	-4.3
	8H	-2.4	-1.7	-2.0	-1.4	-0.9	-5.8	-5.1	-5.3	-4.7	-4.3
	12H	-2.5	-1.8	-2.0	-1.4	-1.0	-5.7	-5.1	-5.3	-4.7	-4.3
4H	2H	-2.3	-1.5	-1.9	-1.2	-0.8	-5.8	-5.0	-5.4	-4.7	-4.3
	3H	-2.5	-1.8	-2.1	-1.4	-1.0	-6.0	-5.3	-5.5	-4.9	-4.5
	4H	-2.6	-2.0	-2.1	-1.6	-1.1	-6.0	-5.4	-5.6	-5.0	-4.6
	6H	-2.7	-2.2	-2.2	-1.7	-1.3	-6.0	-5.5	-5.5	-5.0	-4.6
	8H	-2.7	-2.3	-2.2	-1.8	-1.3	-5.9	-5.4	-5.4	-5.0	-4.5
	12H	-2.7	-2.3	-2.2	-1.9	-1.4	-5.8	-5.4	-5.3	-4.9	-4.4
8H	4H	-2.8	-2.3	-2.3	-1.9	-1.4	-6.2	-5.7	-5.7	-5.3	-4.8
	6H	-2.8	-2.5	-2.3	-2.0	-1.5	-6.1	-5.7	-5.5	-5.2	-4.7
	8H	-2.9	-2.5	-2.3	-2.0	-1.5	-5.9	-5.6	-5.4	-5.1	-4.6
	12H	-2.8	-2.6	-2.3	-2.1	-1.5	-5.6	-5.4	-5.1	-4.9	-4.3
12H	4H	-2.8	-2.4	-2.3	-1.9	-1.5	-6.2	-5.8	-5.7	-5.3	-4.9
	6H	-2.9	-2.6	-2.4	-2.1	-1.5	-6.1	-5.8	-5.6	-5.3	-4.8
	8H	-2.9	-2.6	-2.4	-2.1	-1.5	-5.9	-5.6	-5.4	-5.1	-4.5

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0