Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGRTV12BX-70L35K-WD-DO101-AR12BX-SGWF

Nom. 12" Diam x 10" H open aperture

Test Number

SP-00686_6

Test Date

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

Summary of Results

Power

Input Watts	51 W

Lumen Output

Output Lumens	5495
Efficacy	107.75 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.89
Two luminaires, plane 90°	0.91
Four luminaires	0.9

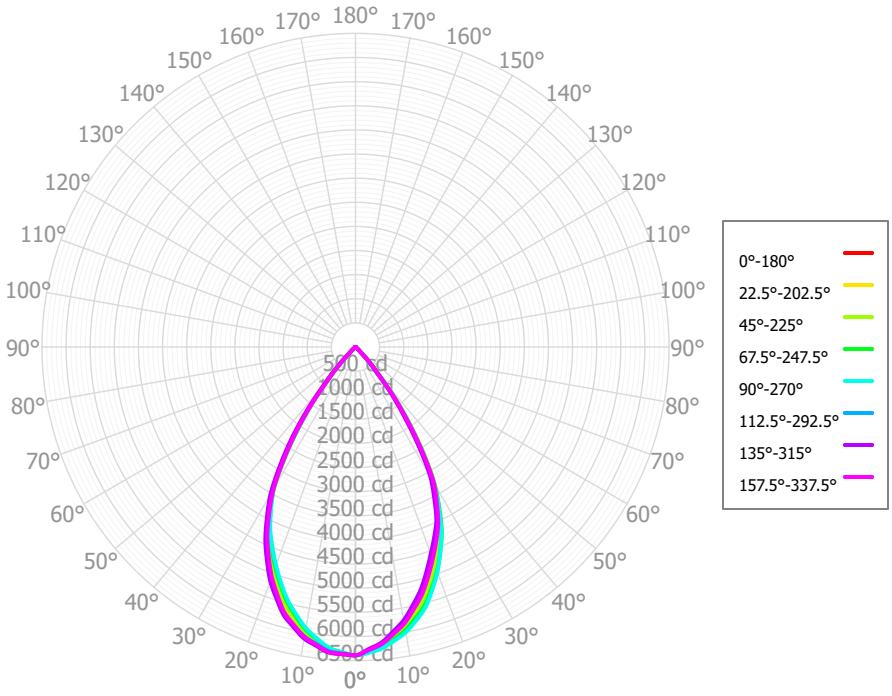
Full Beam Angle

0° - 180°	61°
90° - 270°	61°

IES File Header Contents

Keyword	Value
TEST	SP-00686_6
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	6/29/2018
LUMCAT	SGRTV12BX-70L35K-WD-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, Wide Beam
OTHER	60.5 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°	595.20	10.83%	90.00° - 100.00°	0.09	0.00%
10.00° - 20.00°	1530.18	27.84%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1900.22	34.58%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	1251.60	22.78%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	209.34	3.81%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	6.07	0.11%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.12	0.02%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.81	0.01%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.80	0.01%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	5495.32	100.00%	0.00° - 180.00°	5495.41	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°	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31	6391.31
2.50°	6288.01	6309.01	6303.87	6335.53	6343.39	6358.74	6370.70	6369.64	6374.73	6359.38	6362.91	6336.69	6342.94	6286.46	6268.97	6290.22	6288.01
5.00°	6172.29	6202.83	6204.17	6254.76	6273.19	6325.89	6357.42	6344.80	6346.26	6309.54	6307.03	6264.46	6261.96	6181.09	6153.56	6184.94	6172.29
7.50°	5998.87	6046.63	6048.38	6113.85	6145.07	6210.44	6248.01	6224.96	6222.83	6181.38	6175.73	6114.30	6097.45	5990.29	5953.67	6006.25	5998.87
10.00°	5824.40	5873.69	5877.82	5961.72	6006.75	6094.80	6137.66	6100.91	6097.89	6033.36	6019.66	5950.63	5918.97	5799.14	5753.14	5823.70	5824.40
12.50°	5581.52	5654.18	5663.28	5757.95	5807.77	5909.80	5945.89	5902.85	5892.40	5827.20	5806.79	5716.70	5680.98	5531.55	5483.97	5572.20	5581.52
15.00°	5337.57	5419.29	5426.83	5544.46	5592.61	5724.70	5753.07	5698.47	5684.82	5595.35	5575.15	5471.86	5433.23	5263.78	5214.22	5317.00	5337.57
17.50°	5033.89	5127.61	5125.95	5250.46	5283.07	5425.71	5460.27	5388.11	5378.88	5287.89	5291.08	5169.87	5129.85	4947.01	4888.42	5000.19	5033.89
20.00°	4729.23	4817.07	4819.82	4941.59	4964.41	5126.47	5166.46	5074.42	5071.79	4972.87	4989.94	4863.52	4817.27	4630.35	4562.29	4680.24	4729.23
22.50°	4401.84	4490.51	4498.14	4591.79	4593.60	4753.16	4794.85	4703.91	4717.06	4635.91	4659.57	4534.71	4501.01	4329.55	4265.60	4368.88	4401.84
25.00°	4074.13	4158.69	4142.72	4234.58	4207.42	4379.35	4422.05	4328.45	4360.43	4278.36	4319.64	4196.27	4184.15	4028.15	3969.01	4057.95	4074.13
27.50°	3639.94	3729.05	3688.79	3765.39	3732.68	3919.65	3973.75	3872.07	3920.55	3860.66	3906.89	3809.13	3796.67	3608.17	3539.02	3652.21	3639.94
30.00°	3204.53	3267.80	3184.48	3275.77	3231.17	3459.07	3523.02	3405.27	3475.84	3386.03	3470.62	3378.69	3397.98	3186.36	3108.42	3241.80	3204.53
32.50°	2538.07	2649.70	2534.98	2642.24	2578.33	2820.26	2906.28	2775.98	2840.91	2747.32	2861.52	2727.75	2773.43	2521.77	2442.99	2589.36	2538.07
35.00°	1868.71	1980.65	1893.86	1982.96	1928.93	2181.44	2288.89	2145.50	2205.63	2108.49	2197.32	2081.13	2112.75	1857.72	1777.09	1924.75	1868.71
37.50°	1291.22	1381.59	1277.01	1371.22	1299.17	1543.35	1633.63	1496.08	1556.15	1469.30	1570.92	1456.11	1503.32	1276.22	1208.34	1333.33	1291.22
40.00°	714.64	804.98	733.55	768.05	715.62	906.89	982.30	863.92	913.73	890.65	956.63	872.62	901.92	697.42	639.88	745.39	714.64
42.50°	424.21	459.07	399.93	438.06	390.28	521.87	574.82	493.90	532.94	485.08	554.91	498.33	536.14	417.65	385.60	449.69	424.21
45.00°	136.93	187.51	135.29	156.39	107.48	139.74	173.44	142.42	161.00	164.37	220.41	173.33	207.58	140.40	131.88	167.11	136.93
47.50°	75.91	81.16	68.92	71.62	57.92	79.28	97.67	77.32	88.43	83.17	92.99	92.17	102.30	80.58	73.90	88.39	75.91
50.00°	16.82	27.34	17.61	21.00	15.04	19.41	23.27	15.94	17.67	20.64	31.41	23.04	31.55	21.29	15.97	19.04	16.82
52.50°	9.95	9.83	9.04	9.16	9.02	10.71	13.03	9.58	10.18	11.04	11.73	12.44	14.08	12.20	9.25	9.80	9.95
55.00°	3.59	3.72	2.56	4.10	3.70	2.10	2.98	3.56	2.90	3.62	5.20	3.48	4.92	3.21	2.56	3.16	3.59
57.50°	2.71	2.01	2.02	2.50	2.23	1.91	2.46	2.67	2.40	2.28	2.62	2.58	3.10	2.35	2.25	2.35	2.71
60.00°	1.87	1.70	1.54	1.50	1.00	1.72	1.95	1.81	1.91	1.32	1.28	1.77	2.41	1.50	1.94	1.79	1.87
62.50°	1.38	1.31	1.21	1.27	1.02	1.59	1.69	1.27	1.45	1.41	0.85	1.40	1.94	1.03	1.57	1.26	1.38
65.00°	0.88	0.89	0.96	1.17	1.03	1.45	1.44	0.76	0.99	1.37	0.71	1.07	1.52	0.57	1.19	0.73	0.88
67.50°	0.95	0.91	0.93	0.98	0.94	1.11	0.95	0.70	0.75	0.97	0.61	0.95	1.28	0.59	0.93	0.74	0.95
70.00°	0.97	1.06	0.85	0.76	0.86	0.80	0.61	0.60	0.56	0.72	0.52	0.85	1.07	0.63	0.71	0.76	0.97
72.50°	0.67	0.71	0.70	0.75	0.79	0.77	1.28	0.37	0.69	0.73	0.98	0.82	0.84	0.69	0.76	0.66	0.67
75.00°	0.51	0.45	0.69	0.75	0.81	0.72	1.44	0.37	0.76	0.85	1.34	0.74	0.64	0.85	0.70	0.61	0.51
77.50°	0.58	0.77	0.77	0.73	0.93	0.66	0.88	0.65	0.74	0.98	1.08	0.62	0.53	1.17	0.45	0.66	0.58
80.00°	0.63	0.76	0.92	0.69	0.77	0.94	0.69	0.77	0.76	0.35	0.86	0.73	0.52	1.20	0.55	0.83	0.63
82.50°	0.84	0.71	0.63	0.78	0.57	0.84	0.75	0.66	0.66	0.57	0.80	0.69	0.57	0.79	0.56	0.84	0.84
85.00°	0.81	0.85	0.64	1.02	0.49	0.62	1.09	0.61	0.74	0.75	0.65	0.55	0.68	0.68	0.49	0.78	0.81
87.50°	1.02	1.15	0.81	0.95	0.76	0.83	0.74	0.78	0.76	0.39	0.47	1.22	0.78	0.92	0.40	0.77	1.02
90.00°	0.44	0.59	0.87	0.68	0.61	0.85	0.72	0.48	0.53	0.51	0.81	0.81	0.82	0.60	0.48	0.84	0.44
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	6542	6542	6542	6542	6390	6390	6390	6390	6106	6106	6106	5846	5846	5846	5607	5607	5607	5495
	1	6247	6099	5966	5846	6112	5980	5861	5754	5758	5664	5577	5555	5480	5411	5367	5309	5255	5203
	2	5949	5689	5474	5294	5829	5595	5400	5234	5418	5258	5120	5255	5125	5010	5104	4999	4906	4901
	3	5659	5317	5052	4840	5551	5241	4997	4801	5098	4893	4725	4965	4794	4651	4842	4701	4579	4610
	4	5381	4978	4683	4457	5283	4916	4642	4430	4798	4564	4378	4689	4489	4327	4588	4418	4278	4336
RCR	5	5116	4669	4357	4126	5028	4618	4326	4108	4520	4266	4071	4429	4209	4035	4345	4154	4001	4079
	6	4865	4387	4067	3837	4785	4344	4043	3823	4262	3996	3797	4186	3951	3772	4115	3908	3746	3840
	7	4628	4130	3806	3580	4556	4093	3787	3570	4024	3750	3551	3959	3715	3532	3898	3680	3514	3619
	8	4407	3894	3572	3351	4341	3863	3557	3343	3804	3527	3329	3748	3498	3315	3696	3470	3302	3415
	9	4199	3679	3360	3145	4139	3652	3348	3139	3601	3323	3129	3553	3300	3118	3507	3277	3108	3227
	10	4005	3481	3168	2959	3950	3458	3157	2955	3413	3137	2947	3371	3118	2939	3332	3099	2930	3053

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	211.3 fc	6.5 ft
6.5 ft	151.3 fc	7.7 ft
7.5 ft	113.6 fc	8.9 ft
8.0 ft	99.9 fc	9.5 ft
10.0 ft	63.9 fc	11.8 ft
12.0 ft	44.4 fc	14.2 ft
14.0 ft	32.6 fc	16.5 ft
16.0 ft	25.0 fc	18.9 ft
20.0 ft	16.0 fc	23.6 ft
24.0 ft	11.1 fc	28.4 ft
28.0 ft	8.2 fc	33.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	93095	93095	93095
45.00°	2821	2787	2214
55.00°	91	65	94
65.00°	31	33	36
75.00°	29	39	46
85.00°	136	106	83

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	-18.3	-17.4	-18.0	-17.1	-16.8	-18.1	-17.2	-17.8	-16.9	-16.6
	3H	-17.6	-16.8	-17.2	-16.4	-16.1	-17.3	-16.5	-16.9	-16.1	-15.8
	4H	-17.3	-16.6	-16.9	-16.2	-15.8	-16.8	-16.1	-16.4	-15.7	-15.3
	6H	-16.6	-16.0	-16.2	-15.6	-15.2	-16.1	-15.4	-15.7	-15.0	-14.6
	8H	-15.9	-15.2	-15.4	-14.8	-14.4	-15.7	-15.0	-15.2	-14.6	-14.2
	12H	-14.8	-14.2	-14.4	-13.8	-13.4	-15.1	-14.5	-14.7	-14.1	-13.7
4H	2H	-18.3	-17.5	-17.8	-17.1	-16.8	-18.1	-17.3	-17.7	-17.0	-16.6
	3H	-17.3	-16.7	-16.8	-16.2	-15.8	-17.0	-16.4	-16.6	-16.0	-15.6
	4H	-16.9	-16.3	-16.4	-15.9	-15.5	-16.3	-15.8	-15.9	-15.4	-14.9
	6H	-15.8	-15.3	-15.3	-14.9	-14.4	-15.3	-14.8	-14.8	-14.4	-13.9
	8H	-14.8	-14.4	-14.3	-13.9	-13.4	-14.7	-14.2	-14.2	-13.8	-13.3
	12H	-13.5	-13.1	-13.0	-12.6	-12.1	-13.9	-13.6	-13.5	-13.1	-12.6
8H	4H	-16.6	-16.2	-16.1	-15.7	-15.3	-15.8	-15.3	-15.3	-14.9	-14.4
	6H	-15.1	-14.8	-14.6	-14.3	-13.8	-14.4	-14.1	-13.9	-13.6	-13.1
	8H	-13.9	-13.6	-13.3	-13.0	-12.5	-13.6	-13.3	-13.0	-12.8	-12.3
	12H	-12.2	-12.0	-11.7	-11.5	-10.9	-12.7	-12.4	-12.1	-11.9	-11.3
12H	4H	-16.5	-16.1	-16.0	-15.6	-15.1	-15.7	-15.3	-15.2	-14.9	-14.4
	6H	-14.9	-14.6	-14.3	-14.1	-13.5	-14.2	-13.9	-13.7	-13.5	-12.9
	8H	-13.5	-13.3	-13.0	-12.8	-12.2	-13.2	-13.0	-12.7	-12.5	-11.9

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0