

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CR2 835 15 xx xx RD2SP RB2BSA3 xx xx
Nom 2.5 inch dia cylinder with spot optic and 6 inch acrylic style bezel

Test Number

SP-01274_8

Test Date

10/4/2021

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

Summary of Results

Power

Input Watts	19.5 W
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Lumen Output

Output Lumens	1131
Efficacy	57.98 lm/W

Luminous Dimensions

0° - 180° Size	-0.21
90° - 270° Size	-0.21
Height	0.42

Spacing Criterion

Two luminaires, plane 0°	0.25
Two luminaires, plane 90°	0.26
Four luminaires	0.24

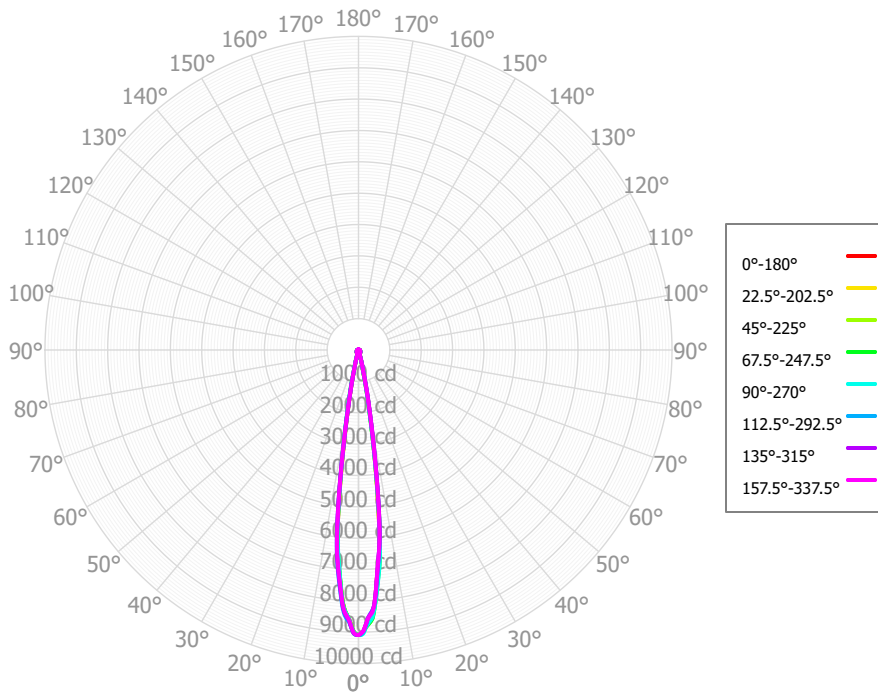
Full Beam Angle

0° - 180°	15°
90° - 270°	15°

IES File Header Contents

Keyword	Value
TEST	SP-01274_8
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/4/2021
ISSUEDATE	11/5/2021
LUMCAT	CR2 835 15 xx xx RD2SP RB2BSA3 xx xx
LUMINAIRE	Nom 2.5 inch dia cylinder with spot optic and 6 inch acrylic style bezel
OTHER	Beam Angle: 15 deg
LAMPCAT	N/A
LAMP	N/A, 6mm LES
OTHER	80 CRI, 3500K tested
OTHER	LER (luminaire efficacy) = 58 lms / watt
OTHER	CCT Output Multipliers: 822 x 0.75, 827 x 0.93, 830 x 1.0, 840 x 1.0
OTHER	CCT Output Multipliers: 927 x 0.81, 930 x 0.81, 935 x 0.81, 940 x 0.87
OTHER	Total luminaire wattages are approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80+
_CCTMULT	822 x 0.75, 827 x 0.93, 830 x 1.0, 840 x 1.0
_CCTMULTA	927 x 0.81, 930 x 0.81, 935 x 0.81, 940 x 0.87
_LAMPMULT	N/A

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	509.26	45.04%	90.00° - 100.00°	36.19	3.20%
10.00° - 20.00°	110.79	9.80%	100.00° - 110.00°	30.08	2.66%
20.00° - 30.00°	45.59	4.03%	100.00° - 120.00°	53.56	4.74%
30.00° - 40.00°	61.35	5.43%	120.00° - 130.00°	14.51	1.28%
40.00° - 50.00°	68.40	6.05%	130.00° - 140.00°	5.52	0.49%
50.00° - 60.00°	66.99	5.92%	140.00° - 150.00°	1.69	0.15%
60.00° - 70.00°	60.57	5.36%	150.00° - 160.00°	0.76	0.07%
70.00° - 80.00°	51.55	4.56%	160.00° - 170.00°	0.45	0.04%
80.00° - 90.00°	43.29	3.83%	170.00° - 180.00°	0.14	0.01%
0.00° - 90.00°	1017.79	90.02%	0.00° - 180.00°	1130.62	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°	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92	9088.92
0.50°	9049.03	9059.98	9077.84	9077.86	9091.39	9090.44	9083.95	9076.77	9076.30	9069.81	9076.30	9060.55	9072.53	9065.18	9048.34	9038.46	9049.03
1.00°	8977.51	8984.42	8989.52	9007.78	9037.47	9037.68	9029.24	9011.58	9002.58	8989.70	8984.91	8972.77	8994.03	8975.28	8961.33	8962.36	8977.51
1.50°	8783.95	8825.23	8849.83	8859.43	8857.22	8851.45	8846.28	8826.40	8826.04	8788.43	8807.43	8801.61	8828.27	8816.02	8780.31	8770.27	8783.95
2.00°	8655.52	8728.88	8762.56	8766.20	8732.33	8680.10	8639.70	8616.74	8622.74	8593.34	8592.24	8600.37	8602.83	8575.96	8558.53	8584.64	8655.52
2.50°	8572.28	8648.95	8683.69	8677.85	8640.61	8587.57	8531.65	8495.19	8480.91	8473.70	8457.88	8460.00	8460.14	8441.30	8445.70	8474.10	8572.28
3.00°	8463.63	8531.08	8567.29	8564.40	8532.66	8462.36	8411.96	8370.12	8336.12	8327.84	8319.69	8314.05	8332.90	8329.95	8341.06	8380.90	8463.63
3.50°	8172.91	8224.79	8249.57	8289.62	8275.35	8246.24	8205.22	8164.95	8120.30	8103.95	8106.07	8101.94	8145.55	8180.30	8157.86	8171.30	8172.91
4.00°	7810.59	7854.93	7882.50	7938.21	7960.58	7928.33	7883.12	7832.33	7800.02	7762.42	7768.85	7765.88	7800.91	7816.48	7813.37	7811.40	7810.59
4.50°	7373.80	7457.17	7514.32	7591.66	7611.56	7595.91	7549.85	7497.86	7449.89	7398.92	7398.56	7380.28	7405.44	7423.33	7394.52	7372.26	7373.80
5.00°	7021.49	7117.34	7189.25	7256.13	7283.85	7276.92	7226.12	7175.97	7107.70	7067.76	7072.74	7023.89	7006.93	7023.46	7000.59	6975.15	7021.49
5.50°	6695.78	6802.86	6880.50	6936.55	6949.17	6949.84	6913.31	6852.57	6770.25	6746.32	6735.74	6687.92	6660.05	6668.73	6662.26	6645.21	6695.78
6.00°	6335.21	6417.71	6477.01	6540.74	6538.90	6572.69	6565.79	6497.91	6393.22	6386.55	6366.36	6348.51	6305.99	6325.14	6344.94	6341.17	6335.21
6.50°	5864.20	5899.48	5965.53	6032.33	6015.87	6083.76	6115.78	6038.34	5907.98	5912.80	5913.05	5918.24	5882.63	5923.25	5957.66	5919.50	5864.20
7.00°	5289.17	5301.35	5379.06	5435.57	5399.39	5484.35	5542.99	5468.72	5321.16	5319.95	5358.25	5385.09	5347.79	5406.07	5457.23	5408.62	5289.17
7.50°	4660.64	4677.17	4738.78	4791.62	4741.71	4840.41	4902.14	4845.30	4674.80	4682.30	4740.54	4787.22	4735.41	4814.07	4870.93	4828.58	4660.64
8.00°	4072.15	4064.74	4118.38	4154.93	4103.29	4176.38	4245.79	4202.16	4027.90	4043.45	4115.60	4168.57	4121.25	4205.21	4269.17	4223.08	4072.15
8.50°	3516.49	3495.88	3517.17	3548.26	3501.75	3554.27	3603.71	3571.39	3429.28	3440.71	3507.25	3573.87	3554.91	3629.24	3693.77	3646.64	3516.49
9.00°	3009.54	2977.78	2963.38	2981.82	2956.24	2986.37	3006.29	2989.58	2890.49	2893.67	2950.62	3022.12	3038.45	3100.27	3148.76	3117.75	3009.54
9.50°	2561.03	2519.59	2472.74	2478.46	2469.27	2474.49	2480.28	2463.48	2405.11	2409.74	2469.21	2538.30	2588.13	2637.93	2673.20	2645.28	2561.03
10.00°	2163.28	2110.46	2065.63	2039.81	2042.33	2038.60	2020.70	2006.03	1974.65	1987.34	2045.71	2120.37	2182.32	2234.59	2255.28	2231.66	2163.28
10.50°	1818.22	1765.24	1718.95	1694.90	1691.24	1678.98	1645.87	1634.55	1616.42	1630.94	1687.94	1762.83	1827.98	1878.57	1891.95	1862.60	1818.22
11.00°	1512.24	1464.54	1423.93	1410.93	1396.67	1383.70	1359.73	1346.07	1330.23	1339.59	1400.05	1469.97	1533.22	1569.04	1590.07	1555.28	1512.24
11.50°	1217.84	1158.19	1130.94	1136.32	1135.34	1128.48	1115.79	1102.31	1087.48	1100.36	1150.73	1220.31	1270.33	1301.72	1310.79	1279.17	1217.84
12.00°	899.32	841.79	805.57	803.28	849.61	868.55	867.35	855.17	835.27	853.13	894.11	954.48	1011.50	1042.28	1031.97	983.71	899.32
12.50°	656.02	637.51	626.65	625.32	633.78	650.90	654.99	640.52	625.60	628.29	665.60	711.56	748.97	766.40	741.25	699.70	656.02
13.00°	566.88	546.94	536.02	539.86	541.23	545.17	538.59	527.07	521.98	532.93	551.80	583.21	597.73	610.04	608.49	587.83	566.88
13.50°	466.66	441.54	426.62	433.37	443.32	455.22	453.71	443.19	436.34	447.92	465.09	496.88	512.89	528.75	520.81	493.79	466.66
14.00°	342.62	310.49	295.18	300.31	318.98	341.48	348.52	338.66	326.70	339.44	354.26	386.51	406.26	423.69	415.84	377.19	342.62
14.50°	204.98	177.32	166.88	167.77	183.74	210.16	225.30	222.64	211.31	216.63	226.86	253.10	267.75	284.83	270.17	232.79	204.98
15.00°	114.95	105.68	98.44	98.49	108.36	122.82	128.33	130.45	131.11	131.39	135.02	141.81	148.46	151.70	146.11	129.10	114.95
15.50°	91.02	93.38	95.37	93.31	93.14	88.54	93.66	96.31	101.22	98.16	99.99	97.96	95.86	95.18	90.22	91.94	91.02
16.00°	92.45	95.09	96.39	93.83	92.72	91.85	92.67	95.54	99.95	98.51	100.10	95.29	89.49	89.29	90.11	89.55	92.45
16.50°	92.66	95.73	97.27	94.68	92.74	91.99	93.96	93.92	96.87	97.80	99.91	97.03	91.49	90.14	90.44	89.53	92.66
17.00°	95.95	96.26	98.21	93.99	92.45	89.65	92.25	93.52	96.75	100.16	98.83	96.16	91.61	89.89	91.04	92.04	95.95
17.50°	96.54	96.26	97.44	96.02	93.11	89.58	91.20	95.77	97.34	100.62	100.25	95.99	92.70	91.65	89.30	91.57	96.54
18.00°	95.09	94.80	96.35	92.48	94.58	91.86	92.28	95.33	98.60	98.72	100.65	97.48	92.61	92.11	90.19	91.47	95.09
18.50°	94.70	95.79	97.57	94.08	93.67	91.50	91.88	96.34	98.80	98.62	100.79	97.21	92.57	92.50	89.11	93.75	94.70
19.00°	92.86	94.84	98.11	94.62	93.63	90.24	91.65	96.51	98.14	98.33	101.56	96.97	92.42	90.62	91.65	92.17	92.86
19.50°	93.92	95.36	96.91	97.06	91.45	92.25	92.47	94.47	99.53	102.00	100.94	96.91	93.00	90.21	91.75	94.74	93.92
20.00°	96.58	95.35	96.84	95.38	93.98	93.26	93.44	94.31	100.01	103.02	100.59	96.11	93.26	92.89	92.75	93.54	96.58
20.50°	95.38	96.80	97.91	96.51	95.64	93.16	94.38	95.28	100.69	102.38	100.59	96.10	93.73	93.49	94.56	93.57	95.38
21.00°	95.02	97.78	98.13	97.17	95.63	92.90	95.30	96.26	101.62	101.13	101.42	96.23	94.46	94.06	95.04	93.69	95.02
21.50°	95.15	97.96	98.09	96.46	95.62	92.82	96.21	96.94	102.55	100.37	102.25	96.53	95.28	94.49	94.63	94.77	95.15
22.00°	95.44	98.14	98.04	95.75	96.07	92.99	96.22	97.38	102.74	101.25	102.91	97.27	95.98	94.92	94.32	95.86	95.44
22.50°	96.65	98.21	97.95	95.86	96.93	93.15	95.66	97.81	102.51	102.14	103.28	98.00	96.36	95.24	94.63	96.85	96.65

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	1319	1319	1319	1319	1275	1275	1275	1275	1194	1194	1194	1119	1119	1119	1050	1050	1018
	1	1230	1188	1150	1116	1190	1152	1118	1088	1085	1058	1033	1023	1002	983	966	950	921
	2	1160	1093	1038	991	1123	1064	1014	971	1008	968	933	956	924	896	909	883	857
	3	1102	1019	955	905	1068	994	937	890	948	900	861	905	866	834	865	834	810
	4	1052	960	893	842	1022	939	878	831	900	849	809	864	822	787	830	795	774
	5	1008	912	844	795	982	894	832	786	861	809	769	831	787	752	802	765	746
	6	971	872	806	758	947	857	796	751	829	777	737	803	758	724	778	740	723
	7	938	839	774	729	917	826	766	723	802	750	712	779	734	701	758	720	704
	8	909	811	748	706	890	800	741	701	779	728	692	759	715	682	740	702	687
	9	884	786	727	686	867	777	721	682	759	709	675	741	698	667	725	687	674
	10	861	766	708	670	845	757	703	667	741	693	660	726	683	654	711	674	662

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	300.5 fc	1.5 ft
6.5 ft	215.1 fc	1.7 ft
7.5 ft	161.6 fc	2.0 ft
8.0 ft	142.0 fc	2.1 ft
10.0 ft	90.9 fc	2.7 ft
12.0 ft	63.1 fc	3.2 ft
14.0 ft	46.4 fc	3.7 ft
16.0 ft	35.5 fc	4.3 ft
20.0 ft	22.7 fc	5.4 ft
24.0 ft	15.8 fc	6.4 ft
28.0 ft	11.6 fc	7.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2824581	2824581	2824581
45.00°	11078	11203	11012
55.00°	8949	8806	8878
65.00°	7024	7383	6798
75.00°	5431	5537	5706
85.00°	4812	4657	4520

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	-	-	-	-	-	-	-	-	-	-
	3H	-	-	-	-	-	-	-	-	-	-
	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
4H	2H	-	-	-	-	-	-	-	-	-	-
	3H	-	-	-	-	-	-	-	-	-	-
	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
8H	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-
	12H	-	-	-	-	-	-	-	-	-	-
12H	4H	-	-	-	-	-	-	-	-	-	-
	6H	-	-	-	-	-	-	-	-	-	-
	8H	-	-	-	-	-	-	-	-	-	-

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0