

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## **Spectrum Lighting Photometric Lab**

### **Luminaire**

CR2 835 15 xx xx RD2XS RB2BSA3 xx xx

Nom 2.5 inch dia cylinder with xtra narrow spot optic and 6 inch acrylic style bezel

### **Test Number**

SP-01276\_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
-------------	--------

#### Lumen Output

Output Lumens	1048
Efficacy	53.77 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.16
Two luminaires, plane 90°	0.16
Four luminaires	0.17

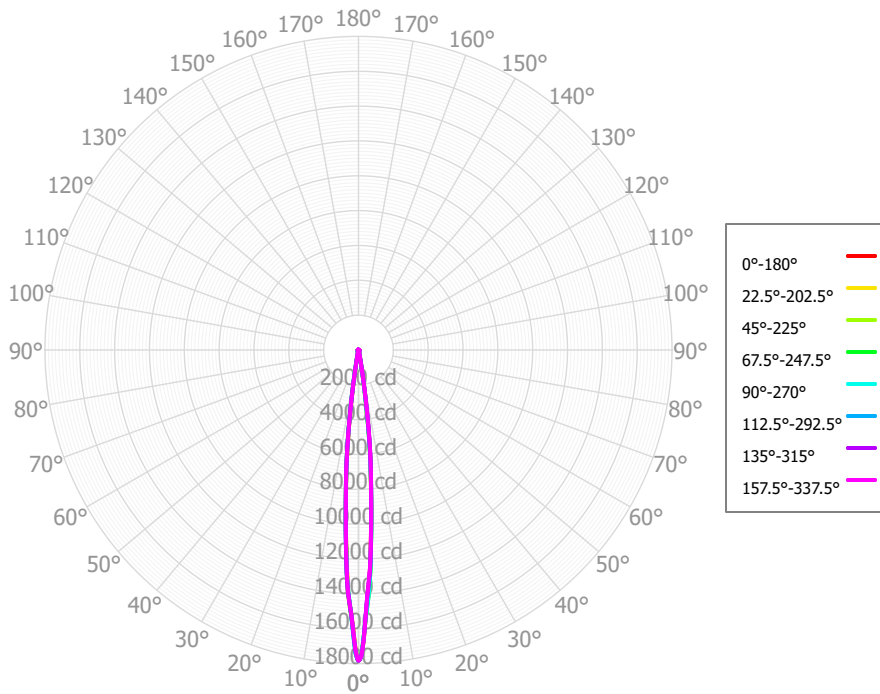
#### Full Beam Angle

0° - 180°	9°
90° - 270°	9°

### IES File Header Contents

Keyword	Value
TEST	SP-01276_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 RD2XS RB2BSA3 xx xx
LUMINAIRE	Nom 2.5 inch dia cylinder with xtra narrow spot optic and 6 inch acrylic style bezel
OTHER	Beam Angle: 9 deg
LAMPCAT	N/A
LAMP	N/A, 6mm LES
OTHER	80 CRI, 3500K tested
OTHER	LER (luminaire efficacy) = 54 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°	546.40	52.12%	90.00° - 100.00°	31.16	2.97%
10.00° - 20.00°	54.84	5.23%	100.00° - 110.00°	26.21	2.50%
20.00° - 30.00°	43.50	4.15%	100.00° - 120.00°	46.11	4.40%
30.00° - 40.00°	53.62	5.11%	120.00° - 130.00°	10.80	1.03%
40.00° - 50.00°	58.95	5.62%	130.00° - 140.00°	4.09	0.39%
50.00° - 60.00°	58.41	5.57%	140.00° - 150.00°	1.19	0.11%
60.00° - 70.00°	53.74	5.13%	150.00° - 160.00°	0.66	0.06%
70.00° - 80.00°	46.47	4.43%	160.00° - 170.00°	0.37	0.04%
80.00° - 90.00°	38.02	3.63%	170.00° - 180.00°	0.12	0.01%
0.00° - 90.00°	953.94	90.99%	0.00° - 180.00°	1048.44	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°
0.00°	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43	17828.43
0.50°	17581.47	17562.31	17523.39	17537.18	17551.43	17433.70	17408.62	17357.27	17325.36	17326.98	17401.71	17429.00	17513.08	17627.96	17596.13	17604.92
1.00°	16701.71	16649.38	16587.87	16563.69	16540.67	16418.69	16376.04	16274.67	16217.50	16242.76	16327.96	16370.96	16490.88	16585.40	16661.06	16694.04
1.50°	15428.34	15428.74	15442.87	15480.39	15479.82	15377.08	15311.77	15278.71	15246.89	15337.97	15394.77	15334.50	15327.66	15333.52	15359.60	15409.17
2.00°	14331.69	14467.43	14573.75	14654.25	14655.80	14574.11	14571.77	14585.67	14555.53	14620.87	14678.29	14588.91	14482.85	14301.37	14208.93	14226.61
2.50°	13458.60	13672.69	13816.90	13885.91	13866.94	13848.20	13893.97	13896.39	13801.08	13813.78	13909.68	13854.93	13736.89	13520.28	13389.32	13359.26
3.00°	12603.93	12723.69	12842.20	12852.75	12820.82	12877.75	12899.08	12790.76	12657.74	12666.39	12782.29	12817.38	12817.89	12722.41	12621.21	12554.04
3.50°	11440.48	11502.87	11588.12	11599.42	11600.07	11648.67	11674.36	11595.10	11501.50	11495.99	11566.19	11573.88	11576.27	11588.33	11526.63	11443.06
4.00°	10309.06	10397.95	10479.92	10444.90	10462.94	10515.95	10518.59	10405.60	10327.97	10334.98	10395.57	10429.43	10429.60	10454.39	10398.06	10320.26
4.50°	9243.46	9296.01	9315.17	9275.03	9304.68	9374.62	9342.98	9276.76	9224.04	9261.31	9281.76	9278.29	9297.44	9382.17	9341.91	9278.06
5.00°	8234.43	8280.23	8297.63	8297.64	8287.98	8355.82	8351.36	8304.11	8250.68	8313.81	8311.52	8288.88	8283.46	8369.80	8351.94	8297.97
5.50°	7383.80	7403.44	7420.52	7437.09	7400.82	7473.77	7481.51	7425.57	7348.39	7421.33	7442.13	7423.66	7400.91	7491.90	7494.93	7460.96
6.00°	6577.74	6579.24	6583.13	6609.22	6555.41	6615.69	6634.92	6564.38	6448.74	6536.52	6575.60	6586.07	6559.90	6669.89	6723.30	6685.88
6.50°	5764.78	5728.15	5716.90	5739.74	5664.73	5727.40	5731.80	5634.35	5494.01	5592.10	5654.56	5698.72	5681.88	5846.79	5942.91	5915.92
7.00°	4896.55	4823.77	4804.78	4815.88	4739.35	4787.29	4790.98	4701.51	4537.44	4634.04	4718.89	4794.94	4787.41	4970.97	5088.39	5065.06
7.50°	4012.09	3919.40	3881.51	3876.17	3818.49	3884.18	3865.49	3778.11	3615.92	3720.96	3809.69	3905.12	3887.65	4091.31	4216.77	4191.37
8.00°	3149.13	3058.85	3013.69	3010.39	2951.94	3017.95	2994.79	2929.75	2781.08	2891.03	2980.01	3073.58	3071.49	3256.67	3364.80	3342.42
8.50°	2387.38	2293.25	2255.39	2247.63	2204.14	2256.20	2245.76	2180.97	2065.45	2163.58	2245.20	2358.76	2367.26	2525.48	2609.47	2572.12
9.00°	1748.13	1658.95	1618.69	1622.58	1586.10	1631.50	1603.03	1554.71	1473.63	1554.15	1633.24	1755.34	1796.87	1912.42	1966.45	1920.71
9.50°	1240.91	1160.84	1131.37	1121.30	1100.35	1133.98	1089.27	1051.05	1013.61	1088.31	1155.93	1274.36	1324.37	1409.63	1440.56	1384.99
10.00°	851.58	782.11	759.61	752.22	750.38	753.79	720.38	705.72	686.75	743.10	801.76	896.96	953.15	1030.27	1021.33	963.18
10.50°	574.98	528.39	516.22	520.22	526.51	525.12	503.10	500.48	488.13	529.09	569.82	650.51	693.70	741.38	729.50	677.55
11.00°	423.92	401.53	401.51	405.39	411.00	410.48	391.43	380.54	374.64	393.46	424.73	469.36	502.37	544.21	541.67	499.76
11.50°	338.81	327.74	325.70	323.51	324.43	322.99	309.59	295.81	289.50	298.66	311.66	326.70	350.43	402.16	425.93	395.00
12.00°	283.91	278.46	275.44	271.03	272.97	270.14	261.03	254.89	251.25	262.18	260.29	263.35	263.66	294.29	322.92	309.29
12.50°	248.12	247.82	252.53	241.08	241.10	241.23	233.60	226.90	230.63	236.49	238.04	228.07	226.02	253.67	281.83	266.58
13.00°	227.13	227.25	224.98	216.15	221.66	212.42	205.15	198.99	198.95	210.28	208.37	201.98	197.76	222.56	247.09	233.76
13.50°	205.57	206.60	204.84	200.55	198.14	192.95	181.43	182.88	184.34	188.53	188.19	181.48	172.89	188.57	204.71	207.78
14.00°	190.85	190.03	186.78	181.49	179.39	171.14	165.51	166.11	168.26	173.90	169.97	168.90	153.42	164.82	180.15	186.57
14.50°	171.99	173.53	176.24	165.57	164.40	159.69	152.43	152.03	155.97	162.44	160.12	155.88	141.47	151.72	161.80	170.86
15.00°	163.26	161.37	164.04	155.15	154.42	148.12	142.38	142.19	143.69	153.82	152.43	145.39	132.15	139.81	151.52	158.15
15.50°	153.93	156.01	152.60	150.92	147.14	141.49	135.37	134.79	136.41	145.93	144.04	135.68	126.62	132.85	141.41	153.80
16.00°	145.74	148.94	145.27	140.83	140.09	134.73	130.00	129.33	129.79	139.09	135.66	130.20	121.09	126.62	134.23	148.47
16.50°	139.38	142.01	140.26	135.27	133.05	127.69	124.65	123.88	124.00	132.39	130.88	124.73	117.40	121.26	127.66	140.49
17.00°	132.72	135.10	134.82	132.32	126.78	120.64	120.02	119.31	120.83	125.83	127.64	120.37	114.02	115.89	123.34	133.36
17.50°	126.03	129.50	129.08	129.19	122.17	115.12	115.39	114.95	117.66	122.27	124.40	117.85	110.76	113.18	119.01	128.37
18.00°	120.39	125.91	123.34	124.12	117.55	111.37	110.76	110.59	114.49	118.71	121.32	115.34	108.12	110.56	115.14	123.37
18.50°	118.41	122.33	119.75	119.05	112.93	107.63	107.11	106.68	111.56	115.16	118.69	112.83	105.48	107.94	111.86	118.75
19.00°	116.43	118.75	116.92	113.97	109.07	103.88	104.50	105.62	108.75	111.79	116.06	110.28	102.84	105.05	108.58	116.39
19.50°	114.45	116.34	114.09	110.51	105.48	101.43	101.90	104.56	105.95	108.96	113.43	107.70	100.98	101.94	105.30	114.03
20.00°	111.97	113.96	111.26	108.16	101.89	99.61	99.30	103.49	103.14	106.12	110.80	105.13	99.80	98.83	103.01	111.67
20.50°	109.14	111.59	109.07	105.82	98.29	97.79	96.70	102.43	100.75	103.29	108.89	102.55	98.63	95.73	101.00	109.36
21.00°	106.31	109.21	106.89	103.48	95.36	95.96	95.91	100.89	100.45	100.45	107.05	99.99	97.45	93.17	99.00	107.72
21.50°	103.49	106.79	104.72	101.36	94.57	94.14	95.11	98.94	100.16	98.73	105.21	99.15	96.28	92.86	96.99	106.08
22.00°	100.69	104.35	102.54	100.39	93.79	93.02	94.32	96.99	99.86	97.89	103.38	98.31	94.88	92.55	95.33	104.44
22.50°	99.08	101.90	100.64	99.43	93.00	91.94	93.52	95.04	99.56	97.06	101.54	97.48	93.47	92.25	95.20	102.80

CR2 835 15 xx xx RD2XS RB2BSA3 xx xx

### 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>	1226	1226	1226	1226	1186	1186	1186	1186	1112	1112	1112	1045	1045	1045	983	983	983	954
	<b>1</b>	1147	1110	1076	1046	1111	1077	1047	1020	1017	993	971	961	943	925	910	896	882	869
	<b>2</b>	1086	1026	977	935	1053	999	955	917	950	914	883	904	875	850	861	839	818	815
	<b>3</b>	1034	961	904	859	1004	939	888	846	898	855	821	859	825	796	824	796	772	775
	<b>4</b>	990	909	850	805	964	891	837	795	857	811	776	824	787	757	794	764	738	744
	<b>5</b>	953	868	808	764	930	852	798	757	823	777	741	796	757	727	771	738	712	720
	<b>6</b>	921	834	775	733	900	821	766	727	796	749	715	773	733	703	751	718	691	701
	<b>7</b>	893	805	749	709	874	794	741	704	773	727	694	753	714	684	734	700	675	686
	<b>8</b>	868	781	727	689	851	772	721	685	753	709	677	736	697	669	720	686	661	673
	<b>9</b>	846	761	709	673	831	753	704	670	737	693	663	722	684	656	707	674	650	661
	<b>10</b>	827	744	694	660	814	736	689	657	722	680	651	709	672	646	696	664	640	652

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	589.4 fc	0.9 ft
6.5 ft	422.0 fc	1.1 ft
7.5 ft	316.9 fc	1.2 ft
8.0 ft	278.6 fc	1.3 ft
10.0 ft	178.3 fc	1.6 ft
12.0 ft	123.8 fc	2.0 ft
14.0 ft	91.0 fc	2.3 ft
16.0 ft	69.6 fc	2.6 ft
20.0 ft	44.6 fc	3.3 ft
24.0 ft	31.0 fc	3.9 ft
28.0 ft	22.7 fc	4.6 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	5540574	5540574	5540574
<b>45.00°</b>	9444	9569	9555
<b>55.00°</b>	7336	7428	7459
<b>65.00°</b>	6087	6297	6160
<b>75.00°</b>	5230	5409	5140
<b>85.00°</b>	4143	4413	3792

### 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