

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CR2 835 10 xx xx RD2FL RB2BS xx xx
Nom 2.5 inch dia CR2 cylinder with black bezel and flood optic

Test Number

SP-01268_1

Test Date

9/21/2021

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

Summary of Results

Power

Input Watts	12.5 W
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Lumen Output

Output Lumens	1211
Efficacy	96.91 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.57
Two luminaires, plane 90°	0.58
Four luminaires	0.53

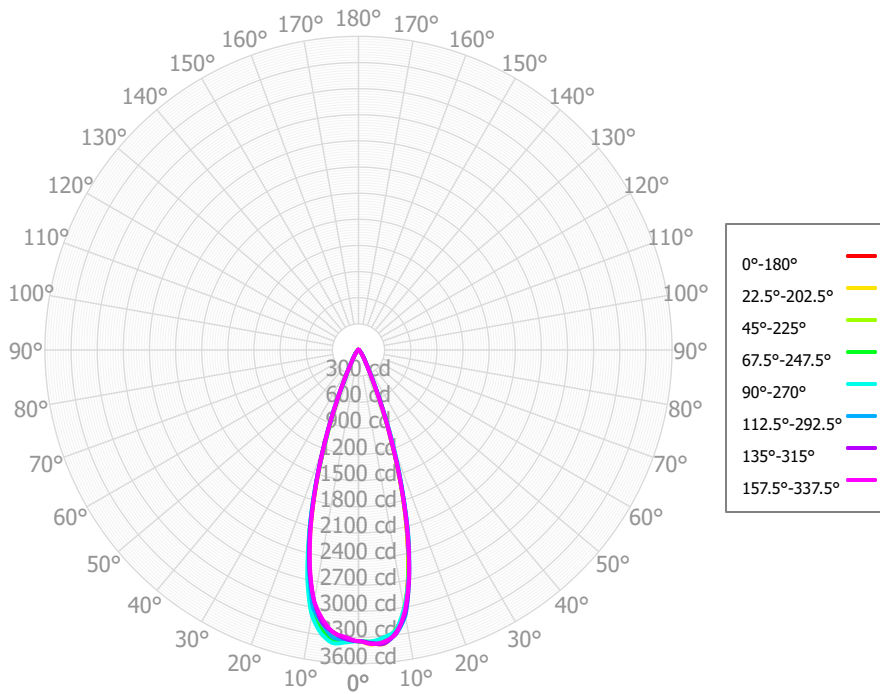
Full Beam Angle

0° - 180°	34°
90° - 270°	35°

IES File Header Contents

Keyword	Value
TEST	SP-01268_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2021
ISSUEDATE	11/5/2021
LUMCAT	CR2 835 10 xx xx RD2FL RB2BS xx xx
LUMINAIRE	Nom 2.5 inch dia CR2 cylinder with black bezel and flood optic
OTHER	Beam Angle: 35 deg
LAMPCAT	N/A
LAMP	N/A, 6mm LES
OTHER	80 CRI, 35K tested
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 wattage is approximate
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	312.21	25.77%	90.00° - 100.00°	1.64	0.13%
10.00° - 20.00°	568.84	46.96%	100.00° - 110.00°	1.71	0.14%
20.00° - 30.00°	212.92	17.58%	100.00° - 120.00°	3.28	0.27%
30.00° - 40.00°	60.23	4.97%	120.00° - 130.00°	1.42	0.12%
40.00° - 50.00°	26.57	2.19%	130.00° - 140.00°	1.33	0.11%
50.00° - 60.00°	12.23	1.01%	140.00° - 150.00°	1.19	0.10%
60.00° - 70.00°	4.51	0.37%	150.00° - 160.00°	0.86	0.07%
70.00° - 80.00°	1.78	0.15%	160.00° - 170.00°	0.53	0.04%
80.00° - 90.00°	1.68	0.14%	170.00° - 180.00°	0.17	0.01%
0.00° - 90.00°	1200.96	99.14%	0.00° - 180.00°	1211.37	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°	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55	3343.55
2.50°	3370.07	3385.29	3360.40	3352.79	3349.85	3323.92	3321.71	3300.72	3316.66	3314.06	3333.01	3335.27	3360.73	3374.48	3367.71	3379.26	3370.07
5.00°	3385.02	3352.98	3381.34	3328.92	3313.18	3314.33	3258.23	3259.47	3256.34	3286.42	3321.86	3346.33	3377.69	3376.47	3381.29	3362.14	3385.02
7.50°	3252.85	3288.86	3242.10	3253.03	3249.47	3174.17	3161.13	3125.92	3157.69	3182.37	3211.27	3242.45	3283.41	3291.33	3275.76	3288.82	3252.85
10.00°	3047.39	3009.90	3081.45	3032.62	3012.04	3004.64	2929.80	2930.35	2940.83	2966.23	3062.36	3076.76	3089.99	3099.08	3079.17	3051.05	3047.39
12.50°	2635.45	2651.83	2630.00	2661.51	2664.00	2608.02	2598.43	2571.72	2590.01	2622.29	2629.51	2675.12	2709.99	2682.68	2687.44	2674.17	2635.45
15.00°	2141.30	2150.59	2166.42	2189.37	2193.18	2175.69	2152.82	2122.26	2145.08	2124.10	2174.99	2171.38	2192.94	2212.07	2171.45	2184.68	2141.30
17.50°	1610.68	1608.65	1610.75	1630.23	1657.75	1650.94	1637.42	1623.64	1612.07	1610.91	1609.28	1630.75	1656.95	1648.21	1633.76	1616.78	1610.68
20.00°	1068.72	1116.48	1082.36	1132.91	1164.09	1116.87	1154.78	1102.91	1131.75	1082.54	1080.89	1077.29	1109.39	1138.78	1084.83	1118.00	1068.72
22.50°	696.85	634.75	696.54	680.09	688.09	734.11	688.65	723.26	692.70	685.48	692.10	702.22	718.53	705.97	698.85	659.17	696.85
25.00°	365.61	412.92	367.79	411.61	430.48	358.39	423.39	393.75	416.20	397.99	372.44	374.57	405.37	406.37	381.72	400.96	365.61
27.50°	244.41	229.72	255.96	251.73	246.75	253.11	239.10	250.39	244.26	236.49	250.94	246.66	254.77	261.20	243.67	236.54	244.41
30.00°	158.84	170.15	163.31	171.53	171.57	151.39	160.06	158.92	157.29	161.53	155.56	157.44	168.55	169.02	165.09	161.42	158.84
32.50°	122.18	121.56	127.45	129.94	124.39	120.16	114.18	116.38	114.82	116.65	120.30	120.61	124.37	128.29	124.38	119.45	122.18
35.00°	90.79	95.26	96.23	99.63	96.65	90.17	88.39	83.88	87.46	88.91	90.57	90.80	93.42	97.73	93.23	92.16	90.79
37.50°	71.15	69.85	75.87	73.68	72.54	71.98	67.49	65.32	66.55	68.74	71.05	71.98	73.83	75.33	72.93	69.16	71.15
40.00°	52.17	55.32	57.82	57.57	58.41	54.85	53.74	48.76	51.66	52.05	54.32	53.99	56.93	58.26	54.67	53.76	52.17
42.50°	41.87	41.20	44.18	44.47	45.55	44.18	41.22	39.66	38.80	41.30	41.86	42.20	44.73	44.71	43.48	40.01	41.87
45.00°	31.84	33.70	33.55	35.28	36.72	33.98	31.57	31.20	31.15	32.72	32.19	30.72	33.33	34.76	33.17	32.21	31.84
47.50°	26.63	26.52	27.59	26.98	28.16	25.84	22.23	25.28	24.85	26.93	26.04	25.36	26.66	26.78	26.95	25.34	26.63
50.00°	21.53	21.97	22.37	21.45	22.47	19.06	19.38	19.49	21.34	21.94	21.19	20.11	20.50	21.44	21.00	21.45	21.53
52.50°	17.50	17.49	18.10	16.36	16.89	16.70	16.92	16.92	18.36	17.59	17.71	16.42	16.98	17.26	16.38	17.85	17.50
55.00°	13.63	13.45	14.02	12.29	13.92	13.85	13.37	14.29	14.09	13.37	14.55	12.90	13.62	13.44	11.84	13.03	13.63
57.50°	10.77	9.85	10.14	8.32	10.95	9.78	9.87	10.84	9.66	11.10	11.67	10.68	10.61	9.77	9.01	8.18	10.77
60.00°	8.03	8.10	7.26	6.83	7.92	6.60	7.75	7.56	8.26	9.10	9.08	8.51	7.65	7.25	6.32	7.38	8.03
62.50°	5.87	6.34	5.25	5.47	5.15	5.28	5.66	5.75	7.06	6.91	6.69	6.64	5.95	5.04	5.38	6.52	5.87
65.00°	4.00	4.58	3.82	4.23	4.27	4.15	3.95	4.07	5.16	4.71	4.66	4.86	4.32	3.82	4.34	4.50	4.00
67.50°	3.12	3.13	2.81	3.02	3.39	3.38	2.43	3.09	3.29	3.86	2.83	3.38	3.41	2.80	2.68	2.62	3.12
70.00°	2.35	2.48	2.27	2.53	2.45	2.73	2.09	2.18	2.45	3.06	1.98	2.27	2.53	1.93	1.30	2.14	2.35
72.50°	1.91	1.99	2.02	2.06	1.68	2.25	1.80	1.60	1.67	2.30	1.60	2.26	1.84	1.07	1.29	1.70	1.91
75.00°	1.54	1.82	1.82	1.82	1.52	1.81	1.70	1.17	1.50	1.58	1.50	2.12	1.26	1.15	1.28	1.55	1.54
77.50°	1.30	1.75	1.63	1.66	1.45	1.41	1.66	1.20	1.42	1.50	1.51	1.69	1.19	1.29	1.26	1.42	1.30
80.00°	1.27	1.81	1.58	1.91	1.66	1.26	1.76	1.29	1.94	1.43	1.57	1.33	1.17	1.34	1.31	1.38	1.27
82.50°	1.61	1.79	1.57	2.05	1.75	1.33	1.82	1.49	2.30	1.47	1.65	1.12	1.31	1.39	1.57	1.32	1.61
85.00°	1.80	1.67	1.46	1.72	1.56	1.30	1.74	1.65	1.86	1.52	1.69	1.07	1.44	1.58	1.68	1.18	1.80
87.50°	1.77	1.64	1.32	1.47	1.46	1.18	1.58	1.72	1.47	1.59	1.73	1.27	1.52	1.74	1.46	1.16	1.77
90.00°	1.75	1.73	1.11	1.48	1.53	1.14	1.23	1.75	1.29	1.59	1.66	1.36	1.52	1.65	1.31	1.44	1.75
92.50°	1.76	1.68	0.90	1.48	1.62	1.15	1.07	1.71	1.23	1.31	1.57	1.29	1.31	1.56	1.26	1.58	1.76
95.00°	1.77	1.49	1.40	1.46	1.75	1.28	1.24	1.67	1.51	1.26	1.64	1.31	1.28	1.51	1.28	1.46	1.77
97.50°	1.78	1.49	2.02	1.44	1.78	1.47	1.29	1.63	1.64	1.92	1.73	1.42	1.55	1.48	1.42	1.42	1.78
100.00°	1.74	1.63	1.93	1.42	1.68	1.54	1.17	1.64	1.43	2.26	1.52	1.46	1.78	1.63	1.42	1.53	1.74
102.50°	1.67	1.65	1.76	1.47	1.69	1.56	1.15	1.69	1.55	1.83	1.31	1.46	1.96	1.70	1.22	1.61	1.67
105.00°	1.67	1.58	1.57	1.61	1.81	1.54	1.27	1.61	2.30	1.57	1.56	1.57	2.01	1.47	1.25	1.63	1.67
107.50°	1.71	1.71	1.39	1.74	1.67	1.51	1.31	1.40	2.50	1.65	1.81	1.78	1.91	1.33	1.51	1.51	1.71
110.00°	1.66	1.92	1.31	1.87	1.29	1.87	1.28	1.28	1.89	1.65	1.80	1.81	1.84	1.44	1.71	1.23	1.66
112.50°	1.55	1.99	1.26	1.81	1.19	2.33	1.24	1.24	1.56	1.52	1.77	1.72	1.81	1.51	1.84	1.17	1.55

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	1440	1440	1440	1440	1405	1405	1405	1405	1340	1340	1340	1281	1281	1281	1227	1227	1201
	1	1385	1357	1331	1308	1355	1330	1307	1287	1279	1262	1246	1233	1219	1207	1190	1180	1170
	2	1333	1285	1245	1211	1306	1263	1227	1197	1224	1195	1170	1187	1164	1143	1153	1135	1118
	3	1284	1222	1173	1135	1261	1205	1161	1125	1173	1136	1106	1143	1113	1088	1116	1091	1071
	4	1238	1166	1113	1072	1218	1152	1103	1065	1126	1085	1052	1102	1067	1039	1080	1051	1027
	5	1195	1116	1060	1019	1177	1104	1053	1015	1083	1039	1005	1063	1025	996	1045	1013	987
	6	1154	1070	1014	974	1138	1061	1008	970	1044	997	963	1027	987	956	1012	977	949
	7	1116	1029	973	933	1102	1021	968	931	1007	960	925	993	951	920	980	943	915
	8	1080	992	936	897	1067	985	932	895	972	925	891	961	918	887	950	912	883
	9	1047	957	902	865	1035	951	899	863	941	893	860	930	888	857	921	882	854
	10	1015	925	871	835	1004	920	868	834	911	864	831	902	859	829	894	855	826

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	110.5 fc	3.4 ft
6.5 ft	79.1 fc	4.0 ft
7.5 ft	59.4 fc	4.7 ft
8.0 ft	52.2 fc	5.0 ft
10.0 ft	33.4 fc	6.2 ft
12.0 ft	23.2 fc	7.4 ft
14.0 ft	17.1 fc	8.7 ft
16.0 ft	13.1 fc	9.9 ft
20.0 ft	8.4 fc	12.4 ft
24.0 ft	5.8 fc	14.9 ft
28.0 ft	4.3 fc	17.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1039080	1039080	1039080
45.00°	13992	14744	16136
55.00°	7385	7596	7544
65.00°	2944	2808	3143
75.00°	1846	2183	1821
85.00°	6409	5199	5570

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	7.4	8.3	7.7	8.6	9.0	8.0	8.9	8.4	9.2	9.6
	3H	7.7	8.5	8.1	8.8	9.2	8.3	9.1	8.7	9.5	9.9
	4H	7.8	8.5	8.2	8.9	9.3	8.4	9.2	8.8	9.5	9.9
	6H	7.9	8.6	8.4	9.0	9.4	8.5	9.2	9.0	9.6	10.0
	8H	8.2	8.8	8.6	9.2	9.6	8.7	9.3	9.1	9.7	10.2
	12H	8.6	9.2	9.0	9.6	10.1	8.9	9.6	9.4	10.0	10.4
4H	2H	7.4	8.1	7.8	8.5	8.9	8.0	8.7	8.4	9.1	9.5
	3H	7.8	8.4	8.2	8.8	9.2	8.4	9.0	8.8	9.5	9.9
	4H	8.0	8.5	8.4	9.0	9.4	8.6	9.1	9.1	9.6	10.1
	6H	8.3	8.8	8.8	9.2	9.7	8.8	9.3	9.3	9.8	10.3
	8H	8.7	9.1	9.1	9.6	10.1	9.1	9.5	9.6	10.0	10.5
	12H	9.3	9.7	9.8	10.2	10.7	9.5	9.9	10.0	10.4	10.9
8H	4H	8.0	8.4	8.5	8.9	9.4	8.6	9.0	9.1	9.5	10.0
	6H	8.5	8.8	9.0	9.4	9.9	9.0	9.3	9.5	9.8	10.3
	8H	9.1	9.4	9.6	9.9	10.4	9.3	9.6	9.9	10.2	10.7
	12H	10.0	10.2	10.5	10.7	11.3	9.9	10.2	10.5	10.7	11.3
12H	4H	8.0	8.3	8.5	8.8	9.3	8.6	8.9	9.1	9.4	9.9
	6H	8.6	8.9	9.1	9.4	9.9	9.0	9.3	9.6	9.8	10.4
	8H	9.2	9.5	9.8	10.0	10.6	9.5	9.8	10.0	10.3	10.9

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0