

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CR2 835 05 xx xx RD2FL RB2BS xx xx
Nom 2.5 inch dia CR2 cylinder with black bezel and flood optic

Test Number

SP-01268

Test Date

9/21/2021

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

Summary of Results

Power

Input Watts	7 W
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Lumen Output

Output Lumens	759
Efficacy	108.39 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.56
Two luminaires, plane 90°	0.59
Four luminaires	0.52

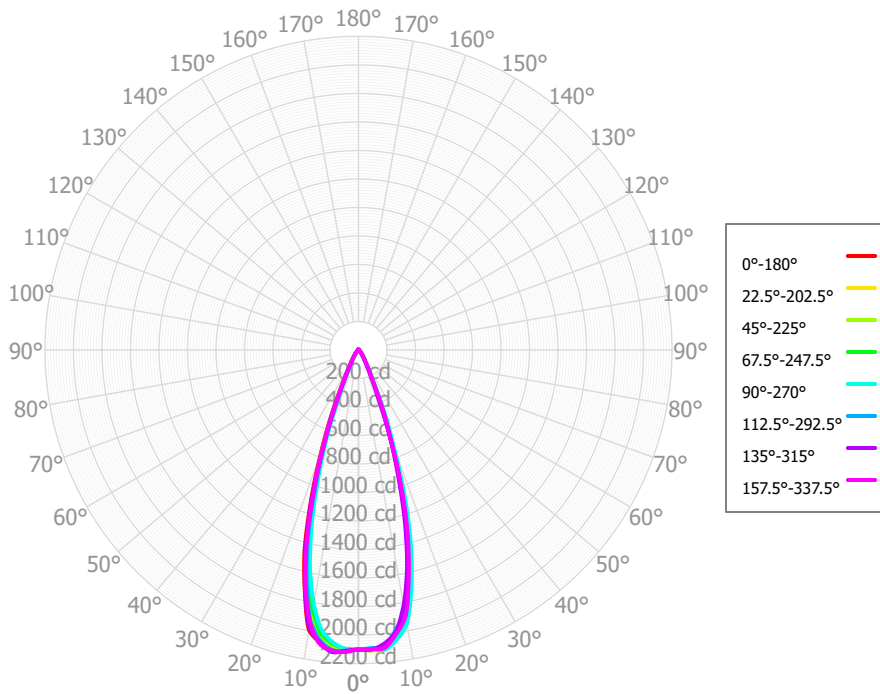
Full Beam Angle

0° - 180°	35°
90° - 270°	34°

IES File Header Contents

Keyword	Value
TEST	SP-01268
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2021
ISSUEDATE	11/5/2021
LUMCAT	CR2 835 05 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°	196.53	25.90%	90.00° - 100.00°	1.46	0.19%
10.00° - 20.00°	356.05	46.93%	100.00° - 110.00°	1.39	0.18%
20.00° - 30.00°	131.35	17.31%	100.00° - 120.00°	2.78	0.37%
30.00° - 40.00°	36.49	4.81%	120.00° - 130.00°	1.26	0.17%
40.00° - 50.00°	15.73	2.07%	130.00° - 140.00°	1.19	0.16%
50.00° - 60.00°	7.27	0.96%	140.00° - 150.00°	1.01	0.13%
60.00° - 70.00°	3.13	0.41%	150.00° - 160.00°	0.74	0.10%
70.00° - 80.00°	1.57	0.21%	160.00° - 170.00°	0.45	0.06%
80.00° - 90.00°	1.55	0.20%	170.00° - 180.00°	0.15	0.02%
0.00° - 90.00°	749.67	98.81%	0.00° - 180.00°	758.71	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°	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57	2102.57
2.50°	2108.02	2106.18	2110.14	2104.40	2103.39	2115.68	2112.68	2121.13	2112.10	2107.00	2099.71	2099.32	2100.30	2093.98	2104.31	2100.91	2108.02
5.00°	2100.07	2110.72	2096.93	2103.89	2110.62	2113.88	2127.01	2115.97	2124.19	2093.29	2098.72	2067.31	2059.81	2090.28	2068.45	2098.89	2100.07
7.50°	2015.10	2028.09	2022.02	2030.45	2050.76	2056.66	2071.89	2081.21	2069.39	2045.58	2020.34	2006.54	1982.88	1985.03	1997.12	2012.67	2015.10
10.00°	1883.83	1927.40	1886.27	1920.70	1951.93	1933.95	1981.09	1949.67	1996.65	1916.10	1934.52	1852.94	1808.99	1870.18	1821.92	1901.15	1883.83
12.50°	1609.41	1657.36	1629.91	1668.20	1714.09	1677.22	1731.10	1714.15	1737.75	1673.29	1669.97	1632.09	1574.37	1591.61	1573.62	1629.69	1609.41
15.00°	1309.97	1371.20	1335.21	1368.72	1421.49	1377.04	1426.73	1407.14	1462.61	1378.96	1398.23	1333.59	1268.98	1307.93	1263.79	1330.05	1309.97
17.50°	959.55	1026.03	987.60	1031.63	1078.11	1013.30	1078.06	1043.93	1105.66	1032.48	1052.06	994.68	933.20	971.78	923.89	988.72	959.55
20.00°	647.16	688.15	676.36	687.24	721.65	693.60	719.88	728.12	770.11	721.55	720.28	691.83	642.58	652.51	629.31	646.88	647.16
22.50°	390.18	440.65	400.80	448.37	474.89	419.58	473.84	438.45	498.61	436.17	464.23	401.48	364.87	417.67	349.87	423.66	390.18
25.00°	220.70	221.74	231.90	219.30	243.09	246.69	239.18	274.01	284.40	268.64	250.63	256.41	236.29	224.00	225.20	216.17	220.70
27.50°	141.62	152.26	139.39	153.40	165.59	148.33	166.87	156.03	183.75	160.06	168.24	141.66	131.53	152.85	131.26	154.05	141.62
30.00°	94.72	94.67	92.61	91.27	96.12	97.09	99.20	107.03	113.21	110.43	104.47	102.96	97.90	98.07	98.63	99.22	94.72
32.50°	71.43	73.61	68.61	69.54	72.67	70.82	76.98	74.50	85.44	81.03	79.88	72.24	68.61	75.57	71.38	77.08	71.43
35.00°	54.07	55.10	52.08	49.65	50.73	54.25	56.47	58.16	63.61	61.99	59.72	56.44	53.54	56.26	55.73	57.28	54.07
37.50°	39.83	41.89	38.00	39.23	39.22	41.12	45.31	43.77	47.78	45.09	46.02	41.30	39.27	41.46	40.73	43.94	39.83
40.00°	31.56	31.57	30.12	29.94	29.02	32.30	35.02	34.21	36.34	35.84	35.58	32.43	31.54	30.86	32.57	32.87	31.56
42.50°	25.38	25.44	23.50	24.06	23.66	24.41	27.47	24.96	28.05	27.31	28.51	24.08	24.23	24.49	24.84	26.15	25.38
45.00°	20.10	20.00	18.04	18.68	18.94	19.31	20.83	18.93	21.91	21.10	22.12	18.61	18.64	18.92	19.27	20.65	20.10
47.50°	15.01	15.26	12.69	14.29	15.76	14.52	16.15	13.62	16.88	15.20	16.25	14.02	14.09	13.92	14.65	16.79	15.01
50.00°	12.61	11.97	11.30	10.92	12.79	12.86	12.42	12.76	13.26	12.75	12.60	12.25	12.35	11.50	12.91	13.25	12.61
52.50°	10.51	9.77	9.84	9.04	10.16	11.18	10.08	11.41	10.12	10.20	10.12	10.35	10.39	10.40	10.68	10.03	10.51
55.00°	7.69	7.88	7.62	7.45	8.01	8.78	8.24	8.36	8.03	7.08	8.15	8.18	8.04	8.53	7.48	7.52	7.69
57.50°	5.00	6.15	5.61	6.15	6.45	6.57	6.92	5.90	6.15	4.65	6.36	6.40	6.14	6.40	5.18	5.48	5.00
60.00°	4.21	4.67	4.67	4.91	5.52	5.39	5.45	4.82	4.68	4.38	4.98	5.20	4.79	5.13	4.15	4.63	4.21
62.50°	3.43	3.29	3.78	3.69	5.11	4.28	3.87	3.89	3.25	3.98	3.69	4.19	3.68	4.04	3.24	4.34	3.43
65.00°	2.72	2.56	3.05	2.94	4.09	3.44	3.02	3.23	2.93	3.31	3.00	3.36	2.79	3.07	2.46	3.39	2.72
67.50°	2.10	1.96	2.39	2.43	2.68	2.64	2.56	2.57	2.62	2.59	2.37	2.57	2.27	2.11	2.08	2.23	2.10
70.00°	1.81	1.54	1.91	1.87	1.92	1.96	2.12	1.93	2.20	1.79	1.84	1.80	2.01	1.73	2.01	1.81	1.81
72.50°	1.56	1.14	1.59	1.29	1.42	1.44	1.69	1.51	1.80	1.30	1.37	1.52	1.73	1.39	1.95	1.52	1.56
75.00°	1.38	1.12	1.48	1.12	1.48	1.17	1.41	1.28	1.48	1.14	1.60	1.50	1.46	1.50	1.90	1.44	1.38
77.50°	1.27	1.10	1.47	1.03	1.69	1.15	1.17	1.34	1.23	1.23	1.76	1.62	1.29	1.61	1.68	1.39	1.27
80.00°	1.26	1.08	1.57	1.27	1.66	1.41	1.56	1.56	1.19	1.52	1.44	1.80	1.15	1.73	1.40	1.58	1.26
82.50°	1.32	1.10	1.57	1.53	1.61	1.46	2.02	1.49	1.21	1.38	1.21	1.58	1.25	1.81	1.30	1.76	1.32
85.00°	1.45	1.36	1.51	1.47	1.43	1.35	1.75	1.30	1.33	1.03	1.24	1.27	1.40	1.75	1.23	1.76	1.45
87.50°	1.49	1.47	1.41	1.39	1.25	1.59	1.46	1.31	1.32	1.15	1.24	1.17	1.33	1.69	1.35	1.75	1.49
90.00°	1.48	1.06	1.29	1.28	1.37	2.01	1.10	1.38	1.11	1.45	1.17	1.09	1.25	1.61	1.50	1.68	1.48
92.50°	1.38	0.81	1.22	1.20	1.49	1.81	0.80	1.48	1.16	1.42	1.08	1.30	1.51	1.52	1.45	1.61	1.38
95.00°	1.22	0.92	1.15	1.24	1.58	1.38	0.82	1.60	1.50	1.32	0.98	1.52	1.74	1.40	1.39	1.54	1.22
97.50°	1.26	1.01	1.23	1.29	1.58	1.34	0.86	1.74	1.47	1.32	1.02	1.74	1.63	1.34	1.20	1.44	1.26
100.00°	1.38	1.07	1.33	1.35	1.26	1.38	0.91	1.87	1.19	1.33	1.22	1.89	1.53	1.33	1.12	1.29	1.38
102.50°	1.43	1.01	1.06	1.36	1.04	1.34	0.99	1.64	1.04	1.46	1.30	1.62	1.52	1.47	1.58	1.26	1.43
105.00°	1.46	0.83	0.75	1.28	1.06	1.28	1.11	1.44	0.96	1.58	1.28	1.37	1.51	1.71	1.84	1.39	1.46
107.50°	1.27	0.98	0.90	1.26	1.10	1.35	1.22	1.48	1.03	1.45	1.36	1.24	1.50	1.64	1.48	1.42	1.27
110.00°	1.06	1.36	1.05	1.36	1.19	1.42	1.30	1.45	1.16	1.32	1.49	1.25	1.57	1.40	1.27	1.35	1.06
112.50°	1.24	1.33	1.28	1.52	1.36	1.52	1.39	1.16	1.40	1.18	1.34	1.57	1.79	1.41	1.40	1.27	1.24

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	901	901	901	901	879	879	879	879	838	838	838	800	800	800	766	766	750
	1	866	849	833	818	847	832	817	804	800	788	778	770	762	754	743	737	721
	2	834	804	778	757	817	790	767	748	765	746	731	741	727	714	720	708	694
	3	803	764	734	710	788	753	726	703	733	710	691	714	695	680	697	681	668
	4	775	729	696	671	761	720	690	666	704	678	658	689	667	649	674	656	644
	5	748	698	663	638	736	691	659	634	677	649	628	665	641	622	653	633	621
	6	722	670	634	609	712	664	631	607	653	624	602	642	617	598	632	610	600
	7	699	644	609	584	689	639	606	582	630	600	579	621	595	575	612	590	580
	8	676	621	586	562	668	616	583	560	608	579	558	601	574	555	594	570	561
	9	655	599	565	541	648	595	563	540	588	559	538	582	555	536	576	552	543
	10	635	579	545	523	629	576	544	522	570	541	520	564	538	519	559	535	527

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	69.5 fc	3.4 ft
6.5 ft	49.8 fc	4.0 ft
7.5 ft	37.4 fc	4.6 ft
8.0 ft	32.9 fc	4.9 ft
10.0 ft	21.0 fc	6.2 ft
12.0 ft	14.6 fc	7.4 ft
14.0 ft	10.7 fc	8.7 ft
16.0 ft	8.2 fc	9.9 ft
20.0 ft	5.3 fc	12.4 ft
24.0 ft	3.7 fc	14.8 ft
28.0 ft	2.7 fc	17.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	653420	653420	653420
45.00°	8834	7929	8325
55.00°	4166	4131	4343
65.00°	1998	2240	3005
75.00°	1655	1775	1779
85.00°	5153	5397	5082

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	5.5	6.4	5.9	6.7	7.1	6.4	7.3	6.8	7.6	8.0
	3H	6.0	6.8	6.4	7.2	7.6	6.9	7.7	7.3	8.1	8.5
	4H	6.3	7.0	6.7	7.4	7.8	7.1	7.9	7.6	8.3	8.7
	6H	6.7	7.4	7.1	7.8	8.2	7.6	8.3	8.0	8.7	9.1
	8H	7.1	7.7	7.5	8.1	8.6	7.9	8.6	8.4	9.0	9.4
	12H	7.7	8.4	8.2	8.8	9.2	8.5	9.1	8.9	9.5	9.9
4H	2H	5.6	6.3	6.0	6.7	7.1	6.4	7.2	6.8	7.5	8.0
	3H	6.2	6.9	6.7	7.3	7.7	7.1	7.7	7.5	8.2	8.6
	4H	6.6	7.2	7.1	7.6	8.1	7.4	8.0	7.9	8.4	8.9
	6H	7.3	7.8	7.8	8.2	8.7	8.1	8.6	8.6	9.1	9.6
	8H	7.9	8.3	8.4	8.8	9.3	8.7	9.1	9.2	9.6	10.1
	12H	8.8	9.2	9.3	9.7	10.2	9.4	9.8	9.9	10.3	10.8
8H	4H	6.8	7.3	7.3	7.7	8.2	7.5	8.0	8.0	8.4	8.9
	6H	7.8	8.2	8.3	8.7	9.2	8.6	8.9	9.1	9.4	9.9
	8H	8.7	9.0	9.2	9.5	10.0	9.3	9.6	9.9	10.2	10.7
	12H	9.9	10.2	10.5	10.7	11.3	10.3	10.6	10.9	11.1	11.7
12H	4H	6.9	7.3	7.4	7.8	8.3	7.6	7.9	8.1	8.4	9.0
	6H	8.0	8.3	8.6	8.8	9.4	8.7	9.0	9.3	9.5	10.1
	8H	9.0	9.2	9.5	9.8	10.4	9.6	9.9	10.2	10.4	11.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0