

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CR2 835 15 xx xx RD2WW RB2BW xx xx
Nom 2.5 inch dia cylinder with flood optic and wall wash lens

Test Number

SP-01273_7

Test Date

9/24/2021

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	1167
Efficacy	59.84 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.36
Two luminaires, plane 90°	0.81
Four luminaires	1.04

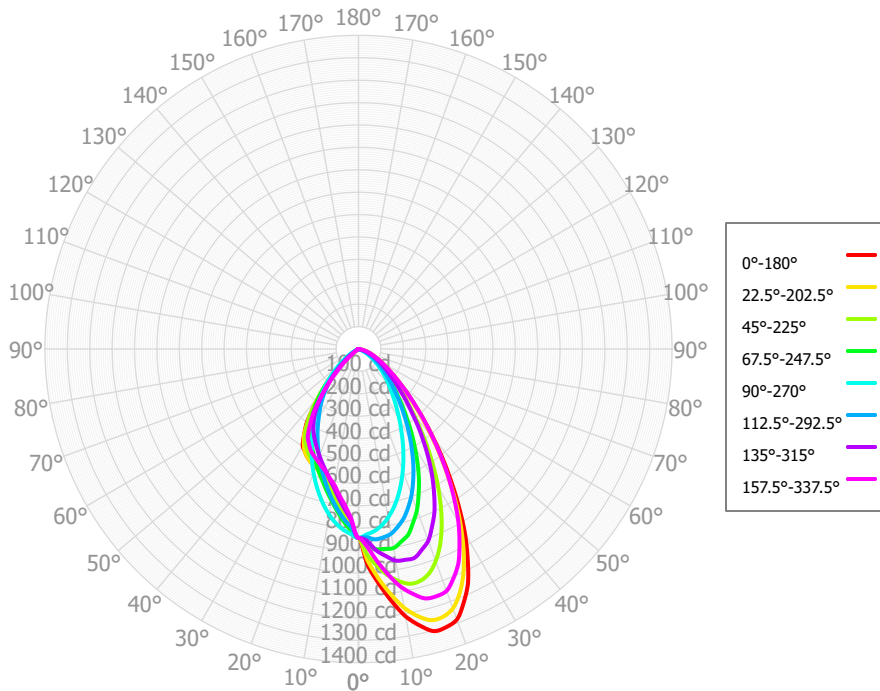
Full Beam Angle

0° - 180°	46°
90° - 270°	33°

IES File Header Contents

Keyword	Value
TEST	SP-01273_7
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/24/2021
ISSUEDATE	10/8/2021
LUMCAT	CR2 835 15 xx xx RD2WW RB2BW xx xx
LUMINAIRE	Nom 2.5 inch dia cylinder with flood optic and wall wash lens
OTHER	Beam Angle: 33 X 46 degrees
LAMPCAT	N/A
LAMP	N/A, 6mm LES
OTHER	80 CRI, 3500K tested
OTHER	LER (luminaire efficacy) = 60 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+

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	81.16	6.95%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	224.68	19.25%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	302.95	25.96%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	271.33	23.25%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	164.90	14.13%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	76.13	6.52%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	32.88	2.82%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	10.65	0.91%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.23	0.19%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1166.91	100.00%	0.00° - 180.00°	1166.91	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°	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73	843.73
2.50°	969.16	946.47	921.56	872.75	829.43	794.45	763.82	756.63	810.23	799.11	807.63	809.69	826.32	841.67	856.92	883.36	969.16
5.00°	1053.49	1028.84	973.77	896.82	816.06	760.78	717.07	699.48	737.98	736.96	751.75	771.54	808.49	853.29	902.48	950.64	1053.49
7.50°	1136.41	1104.19	1020.99	900.49	794.52	721.56	672.19	657.07	686.81	683.09	702.97	729.90	783.47	848.44	932.49	1016.26	1136.41
10.00°	1212.87	1173.49	1053.83	902.35	763.78	680.79	629.80	617.34	639.04	641.39	660.13	688.81	751.49	837.69	959.68	1076.81	1212.87
12.50°	1264.98	1221.70	1073.74	880.99	725.88	638.25	595.88	591.03	610.86	610.31	625.68	650.78	714.82	812.42	964.38	1119.78	1264.98
15.00°	1304.35	1253.54	1071.14	858.27	680.92	595.28	563.48	566.69	585.17	588.01	597.75	613.80	673.94	781.85	965.59	1153.11	1304.35
17.50°	1302.35	1254.07	1050.28	811.59	631.03	553.88	535.64	549.11	572.77	572.60	575.26	581.69	631.39	739.76	940.05	1157.51	1302.35
20.00°	1285.56	1232.75	1008.21	764.18	578.31	512.79	508.38	532.35	561.75	560.35	556.57	549.84	587.49	693.11	911.26	1149.59	1285.56
22.50°	1226.96	1180.59	950.67	701.46	523.82	472.74	482.65	517.34	549.01	550.39	538.51	519.06	541.70	637.37	858.05	1108.14	1226.96
25.00°	1156.58	1108.52	878.70	638.48	469.54	432.88	457.08	502.50	536.15	536.07	520.85	488.56	494.53	579.92	802.64	1055.64	1156.58
27.50°	1055.93	1017.02	796.99	569.56	415.39	394.09	431.87	478.40	517.50	518.89	499.60	459.02	448.38	519.44	731.43	976.66	1055.93
30.00°	950.42	914.28	710.86	500.88	366.28	355.44	403.90	453.74	498.59	488.60	476.27	428.51	402.90	460.67	659.13	892.37	950.42
32.50°	833.91	807.31	622.05	437.79	319.78	321.53	370.07	404.03	451.51	450.61	438.97	395.01	361.86	404.63	583.92	796.86	833.91
35.00°	721.46	698.16	538.21	375.37	279.92	288.13	330.47	353.33	403.69	392.83	394.44	358.48	323.49	351.85	508.60	701.12	721.46
37.50°	617.16	599.28	457.06	323.60	243.12	252.87	279.97	288.36	332.48	324.34	338.33	313.59	285.52	303.87	439.55	604.94	617.16
40.00°	519.99	505.28	387.42	273.07	213.29	217.46	229.60	223.40	261.62	258.58	276.90	267.44	247.76	261.10	370.69	514.73	519.99
42.50°	436.03	424.92	323.51	235.74	186.39	184.11	179.43	170.15	202.91	194.13	219.17	218.23	212.28	225.26	317.41	434.87	436.03
45.00°	360.99	350.29	272.31	199.67	160.82	150.86	134.32	117.43	144.87	142.21	162.98	171.67	177.89	193.22	264.62	362.33	360.99
47.50°	300.70	292.00	226.73	173.57	135.73	120.42	97.06	80.47	100.46	95.64	118.81	130.75	146.93	165.72	226.23	301.18	300.70
50.00°	248.01	239.76	191.61	148.41	114.58	90.04	65.44	44.55	57.43	58.85	79.10	93.95	117.47	141.07	188.56	247.97	248.01
52.50°	206.58	201.57	160.57	129.50	94.70	68.99	41.68	25.30	31.91	25.89	49.07	65.24	92.20	119.57	162.38	206.19	206.58
55.00°	170.44	168.10	136.15	110.96	77.27	48.11	23.39	7.41	8.56	11.76	22.18	40.74	68.56	100.09	136.72	170.67	170.44
57.50°	141.54	141.84	113.98	94.37	60.56	32.74	11.96	4.21	4.98	4.06	10.87	23.59	50.40	82.64	117.18	143.25	141.54
60.00°	116.65	117.67	96.42	78.35	46.56	17.77	5.03	1.39	1.78	1.89	4.10	11.10	34.12	66.72	98.04	118.99	116.65
62.50°	96.73	98.36	80.28	64.88	33.24	11.31	3.36	1.54	1.48	1.36	2.15	5.92	21.68	52.18	82.48	98.43	96.73
65.00°	79.66	80.26	67.38	51.63	22.41	5.16	2.27	1.62	1.21	1.44	1.41	2.55	10.42	38.82	67.15	81.20	79.66
67.50°	65.78	66.44	55.34	39.23	12.11	3.45	1.78	1.30	1.14	1.69	1.40	1.82	5.76	26.45	53.39	67.53	65.78
70.00°	52.45	53.57	42.66	27.33	7.22	1.89	1.57	1.06	1.11	1.69	1.53	1.41	2.85	16.44	39.92	54.26	52.45
72.50°	39.67	40.91	29.83	17.09	3.33	1.85	1.62	1.26	1.30	1.64	1.39	1.45	2.19	8.21	28.14	41.36	39.67
75.00°	27.92	28.29	19.41	8.48	2.30	1.82	1.69	1.46	1.45	1.57	1.20	1.42	2.03	3.93	17.18	29.77	27.92
77.50°	17.12	18.30	9.47	4.65	1.69	1.84	1.78	1.66	1.42	1.49	1.58	1.31	1.75	2.31	10.06	19.32	17.12
80.00°	9.32	8.70	5.47	1.80	1.55	1.84	1.68	1.84	1.38	1.53	2.04	1.16	1.45	1.66	4.13	11.33	9.32
82.50°	4.03	4.90	2.44	1.55	1.46	1.80	1.43	1.89	1.29	1.58	1.71	0.96	1.88	1.62	2.93	5.28	4.03
85.00°	1.81	1.82	1.95	1.47	1.38	1.73	1.38	1.88	1.27	1.58	1.29	1.11	2.43	1.57	1.92	2.29	1.81
87.50°	1.98	1.64	1.78	1.79	1.29	1.57	1.48	1.66	1.44	1.57	1.48	1.59	2.18	1.52	1.56	1.55	1.98
90.00°	1.97	1.73	1.64	1.90	1.37	1.42	1.70	1.55	1.54	1.59	1.71	1.78	1.83	1.64	1.37	1.33	1.97

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	1389	1389	1389	1389	1357	1357	1357	1357	1297	1297	1297	1241	1241	1241	1191	1191	1167
	1	1310	1272	1237	1206	1281	1246	1215	1187	1198	1173	1150	1154	1134	1116	1114	1098	1076
	2	1229	1160	1104	1057	1201	1140	1088	1045	1101	1058	1021	1065	1030	999	1032	1003	983
	3	1151	1061	992	936	1126	1044	980	928	1012	958	913	983	937	898	955	917	898
	4	1078	973	896	837	1055	959	887	832	933	871	822	908	855	812	885	840	823
	5	1011	896	815	755	990	884	808	752	862	795	744	841	783	737	822	771	756
	6	950	827	745	686	931	817	740	683	798	730	678	781	720	673	764	710	697
	7	893	766	684	627	876	758	680	625	742	672	621	727	664	617	713	657	645
	8	842	713	631	576	826	705	628	574	692	621	571	679	615	569	666	609	599
	9	795	665	585	531	780	658	582	530	646	577	528	635	572	526	625	567	557
	10	752	622	544	492	738	616	542	492	606	537	490	596	533	488	587	529	521

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	27.9 fc	5.0 ft
6.5 ft	20.0 fc	5.9 ft
7.5 ft	15.0 fc	6.8 ft
8.0 ft	13.2 fc	7.3 ft
10.0 ft	8.4 fc	9.1 ft
12.0 ft	5.9 fc	10.9 ft
14.0 ft	4.3 fc	12.7 ft
16.0 ft	3.3 fc	14.5 ft
20.0 ft	2.1 fc	18.2 ft
24.0 ft	1.5 fc	21.8 ft
28.0 ft	1.1 fc	25.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	262207	262207	262207
45.00°	158653	119681	70678
55.00°	92345	73766	41868
65.00°	58580	49549	16479
75.00°	33524	23310	2760
85.00°	6465	6939	4906

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	26.1	27.3	26.5	27.6	27.9	15.9	17.1	16.3	17.4	17.7
	3H	27.0	28.1	27.4	28.4	28.8	15.9	17.0	16.3	17.3	17.7
	4H	27.2	28.2	27.6	28.5	28.9	15.8	16.8	16.2	17.2	17.6
	6H	27.2	28.1	27.6	28.5	28.9	15.8	16.7	16.2	17.1	17.5
	8H	27.2	28.0	27.6	28.4	28.8	15.8	16.6	16.2	17.0	17.4
	12H	27.1	28.0	27.6	28.3	28.8	15.8	16.6	16.2	17.0	17.4
4H	2H	26.2	27.2	26.6	27.6	27.9	15.6	16.6	16.1	17.0	17.4
	3H	27.3	28.1	27.7	28.5	28.9	15.6	16.5	16.1	16.9	17.3
	4H	27.6	28.3	28.0	28.7	29.1	15.6	16.3	16.0	16.7	17.2
	6H	27.6	28.2	28.1	28.7	29.2	15.6	16.2	16.0	16.6	17.1
	8H	27.6	28.2	28.1	28.6	29.1	15.6	16.1	16.0	16.6	17.1
	12H	27.5	28.0	28.0	28.5	29.0	15.6	16.1	16.1	16.6	17.1
8H	4H	27.5	28.0	27.9	28.5	29.0	15.5	16.0	15.9	16.5	17.0
	6H	27.5	28.0	28.0	28.5	29.0	15.4	15.9	16.0	16.4	16.9
	8H	27.5	27.9	28.0	28.5	28.9	15.5	15.9	16.0	16.4	16.9
	12H	27.5	27.8	28.0	28.3	28.9	15.6	16.0	16.1	16.5	17.0
12H	4H	27.4	27.9	27.9	28.4	28.9	15.4	15.9	15.9	16.4	16.9
	6H	27.5	27.9	28.0	28.4	28.9	15.4	15.8	15.9	16.3	16.8
	8H	27.5	27.8	28.0	28.3	28.9	15.5	15.8	16.0	16.3	16.9

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0