

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CR2 835 10 xx xx RD2XF RB2BS xx xx

Nom 2.5 inch dia CR2 cylinder with black bezel and xtra wide flood optic

Test Number

SP-01271_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	1303
Efficacy	104.2 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	1.04
Two luminaires, plane 90°	1.06
Four luminaires	0.87

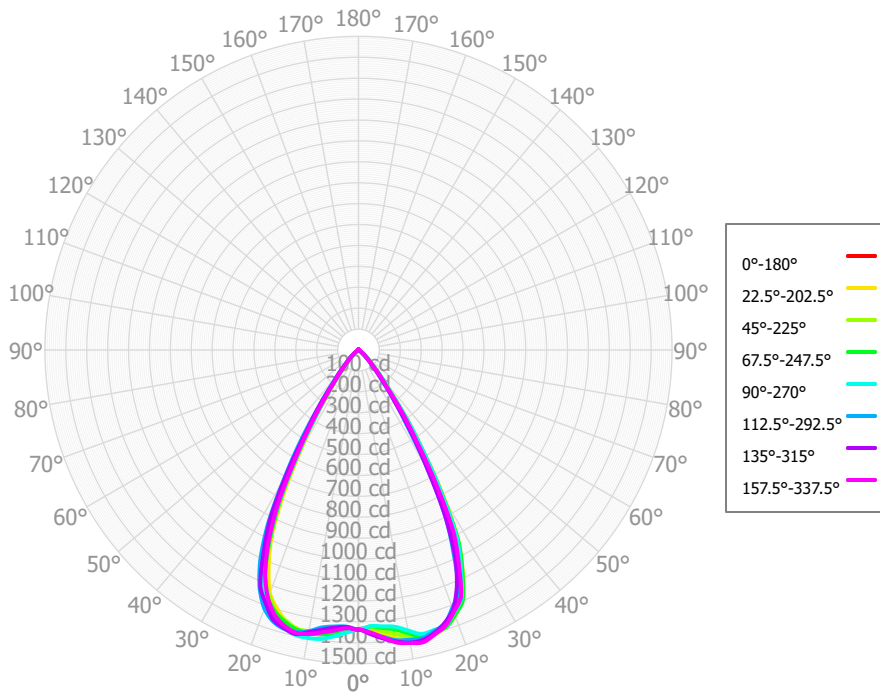
Full Beam Angle

0° - 180°	59°
90° - 270°	60°

IES File Header Contents

Keyword	Value
TEST	SP-01271_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 RD2XF RB2BS xx xx
LUMINAIRE	Nom 2.5 inch dia CR2 cylinder with black bezel and xtra wide flood optic
OTHER	Beam Angle: 57 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°	132.68	10.19%	90.00° - 100.00°	1.59	0.12%
10.00° - 20.00°	386.94	29.71%	100.00° - 110.00°	1.57	0.12%
20.00° - 30.00°	479.39	36.80%	100.00° - 120.00°	3.09	0.24%
30.00° - 40.00°	215.27	16.53%	120.00° - 130.00°	1.46	0.11%
40.00° - 50.00°	55.87	4.29%	130.00° - 140.00°	1.31	0.10%
50.00° - 60.00°	14.71	1.13%	140.00° - 150.00°	1.11	0.09%
60.00° - 70.00°	4.15	0.32%	150.00° - 160.00°	0.85	0.06%
70.00° - 80.00°	1.76	0.14%	160.00° - 170.00°	0.52	0.04%
80.00° - 90.00°	1.64	0.13%	170.00° - 180.00°	0.18	0.01%
0.00° - 90.00°	1292.41	99.22%	0.00° - 180.00°	1302.52	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°	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10	1338.10
2.50°	1350.06	1343.50	1333.77	1324.10	1322.74	1324.89	1326.93	1332.48	1334.70	1342.54	1342.46	1343.11	1353.93	1357.35	1361.34	1353.72	1350.06
5.00°	1380.35	1361.08	1350.85	1334.61	1327.42	1328.40	1333.93	1347.71	1349.57	1355.28	1353.01	1359.80	1376.16	1378.62	1386.39	1381.49	1380.35
7.50°	1406.73	1389.87	1369.83	1348.29	1335.87	1339.26	1350.18	1363.33	1368.65	1365.71	1364.16	1373.00	1393.87	1400.43	1407.27	1412.13	1406.73
10.00°	1422.76	1408.35	1395.12	1375.75	1362.75	1365.92	1370.45	1380.04	1376.63	1374.41	1365.84	1375.07	1398.74	1407.72	1421.58	1423.34	1422.76
12.50°	1426.94	1419.29	1411.80	1404.55	1391.89	1382.29	1391.96	1385.32	1383.05	1364.17	1366.67	1370.38	1395.99	1412.10	1421.24	1431.99	1426.94
15.00°	1406.82	1409.72	1406.11	1398.60	1388.19	1380.62	1377.15	1366.35	1355.78	1342.60	1341.48	1349.30	1376.53	1393.95	1402.35	1408.77	1406.82
17.50°	1378.32	1387.75	1389.75	1391.03	1382.52	1361.13	1354.11	1330.53	1325.66	1297.15	1314.54	1317.84	1345.02	1372.90	1369.64	1383.37	1378.32
20.00°	1336.18	1347.12	1351.81	1349.10	1336.32	1316.61	1293.56	1265.54	1254.08	1240.39	1248.08	1265.99	1292.66	1312.90	1322.34	1333.80	1336.18
22.50°	1263.81	1297.56	1287.53	1301.94	1286.32	1235.56	1227.30	1167.34	1178.84	1124.00	1173.88	1170.65	1194.82	1250.36	1229.29	1280.62	1263.81
25.00°	1150.67	1180.64	1180.86	1176.66	1159.06	1113.08	1077.01	1023.04	1011.21	985.31	996.44	1007.36	1031.97	1078.97	1097.18	1138.03	1150.67
27.50°	981.74	1038.62	1020.58	1038.56	1022.32	937.39	918.75	840.06	839.32	778.94	814.02	815.01	834.79	903.58	903.32	986.97	981.74
30.00°	751.99	818.83	788.87	802.21	794.39	711.42	692.92	613.72	615.88	553.14	595.90	586.12	597.99	669.02	666.94	746.93	751.99
32.50°	544.62	576.36	573.34	575.56	573.51	511.52	466.41	427.43	405.10	390.45	394.82	402.35	410.96	443.69	473.53	517.80	544.62
35.00°	356.99	401.77	375.25	396.93	396.10	331.56	328.15	278.57	282.65	240.71	273.96	265.81	270.40	311.81	304.53	359.97	356.99
37.50°	231.31	241.37	240.33	241.17	239.23	217.60	195.39	181.31	173.53	171.13	169.74	174.46	177.25	190.56	203.44	219.37	231.31
40.00°	151.09	168.30	160.50	169.53	168.57	144.19	142.39	123.03	125.96	112.23	124.22	121.40	120.94	137.18	132.79	154.48	151.09
42.50°	101.53	107.17	107.58	109.07	108.04	99.04	92.79	85.66	84.09	83.61	85.11	85.08	84.00	89.36	92.67	98.25	101.53
45.00°	70.02	77.91	74.15	79.42	78.69	68.12	68.80	60.97	61.21	57.33	62.99	60.21	59.17	65.54	63.09	69.79	70.02
47.50°	48.89	51.23	50.86	54.12	53.20	49.12	46.70	43.86	41.65	43.28	44.26	43.17	42.09	44.38	44.84	45.74	48.89
50.00°	32.60	36.48	33.45	38.09	37.09	34.81	33.86	30.53	30.75	29.66	32.51	30.55	28.86	31.61	29.62	32.84	32.60
52.50°	22.75	22.28	22.58	24.78	23.98	24.38	22.34	21.31	21.29	21.53	22.19	21.51	19.94	20.65	20.74	21.98	22.75
55.00°	15.31	16.67	14.72	16.21	16.61	15.11	15.66	13.69	14.75	13.77	14.30	14.05	12.75	14.18	13.04	15.16	15.31
57.50°	10.91	11.25	10.53	9.89	10.85	10.50	10.08	9.23	9.58	10.20	8.83	9.82	9.29	9.25	9.68	10.05	10.91
60.00°	7.37	8.17	7.69	6.70	7.53	6.95	7.51	5.68	6.60	6.90	6.65	6.70	6.97	7.31	6.82	7.63	7.37
62.50°	5.79	5.38	5.72	4.73	5.07	5.22	5.47	4.33	4.45	5.34	5.07	5.01	5.14	5.64	5.17	5.62	5.79
65.00°	4.59	4.58	4.00	4.14	3.69	3.75	4.57	3.46	3.42	3.90	4.14	3.71	3.42	4.38	3.60	4.14	4.59
67.50°	3.27	3.73	2.76	3.35	2.83	2.98	3.58	2.75	2.68	2.95	3.34	2.67	2.65	3.21	3.11	3.02	3.27
70.00°	1.92	2.66	1.61	2.37	2.49	2.26	2.44	2.07	2.26	2.15	2.66	1.68	2.03	2.17	2.62	2.27	1.92
72.50°	1.60	1.83	1.61	1.85	2.03	2.16	1.77	1.58	1.95	1.84	2.01	1.36	1.79	1.56	2.14	1.71	1.60
75.00°	1.36	1.86	1.77	1.66	1.46	2.08	1.73	1.11	1.73	1.61	1.39	1.11	1.58	1.41	1.69	1.31	1.36
77.50°	1.44	1.85	1.55	1.63	1.14	1.71	1.59	1.09	1.52	1.62	1.26	1.32	1.56	1.41	1.64	1.33	1.44
80.00°	1.53	1.71	1.31	1.69	1.00	1.37	1.32	1.09	1.32	1.54	1.41	1.56	1.54	1.53	1.60	1.64	1.53
82.50°	1.63	1.61	1.38	1.78	1.14	1.48	1.20	1.27	1.34	1.31	1.58	1.57	1.41	1.55	1.63	1.67	1.63
85.00°	1.70	1.58	1.46	1.89	1.42	1.57	1.22	1.42	1.48	1.28	1.75	1.57	1.29	1.52	1.70	1.55	1.70
87.50°	1.40	1.54	1.61	1.75	1.50	1.57	1.37	1.30	1.45	1.56	1.67	1.46	1.32	1.57	1.92	1.63	1.40
90.00°	1.17	1.47	1.72	1.51	1.49	1.61	1.61	1.21	1.34	1.59	1.50	1.37	1.33	1.68	2.01	1.79	1.17
92.50°	1.32	1.47	1.40	1.44	1.52	1.84	1.65	1.31	1.38	1.31	1.53	1.33	1.14	1.64	1.67	1.57	1.32
95.00°	1.41	1.56	1.14	1.44	1.56	1.90	1.57	1.40	1.46	1.22	1.61	1.31	1.02	1.54	1.46	1.21	1.41
97.50°	1.24	1.58	1.28	1.49	1.56	1.38	1.60	1.42	1.48	1.34	1.53	1.46	1.27	1.51	1.55	1.35	1.24
100.00°	1.12	1.52	1.38	1.55	1.54	1.10	1.69	1.42	1.48	1.45	1.42	1.60	1.43	1.50	1.63	1.61	1.12
102.50°	1.16	1.48	1.27	1.51	1.84	1.45	1.59	1.36	1.46	1.58	1.38	1.68	1.29	1.68	1.66	1.51	1.16
105.00°	1.20	1.45	1.29	1.45	2.20	1.69	1.41	1.35	1.44	1.55	1.35	1.65	1.22	1.91	1.63	1.34	1.20
107.50°	1.26	1.44	1.71	1.38	1.86	1.68	1.42	1.50	1.39	1.41	1.30	1.33	1.35	1.80	1.52	1.38	1.26
110.00°	1.30	1.44	1.89	1.31	1.44	1.66	1.47	1.64	1.33	1.39	1.24	1.26	1.46	1.64	1.48	1.45	1.30
112.50°	1.32	1.44	1.50	1.42	1.41	1.59	1.49	1.75	1.28	1.42	1.29	1.77	1.54	1.83	1.53	1.46	1.32

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	1548	1548	1548	1548	1511	1511	1511	1511	1442	1442	1442	1378	1378	1378	1320	1320	1292
	1	1477	1441	1409	1381	1444	1412	1384	1358	1358	1335	1314	1308	1290	1273	1262	1248	1222
	2	1406	1344	1292	1249	1376	1320	1274	1234	1277	1239	1206	1237	1206	1178	1199	1174	1151
	3	1337	1255	1192	1142	1311	1237	1179	1132	1201	1153	1112	1168	1128	1094	1138	1105	1083
	4	1272	1176	1105	1052	1248	1160	1095	1045	1131	1075	1031	1104	1057	1018	1079	1039	1019
	5	1209	1103	1029	974	1188	1091	1021	970	1066	1006	960	1044	992	951	1023	978	960
	6	1151	1038	962	907	1131	1027	955	904	1006	944	897	987	932	890	970	921	905
	7	1096	978	901	848	1078	968	896	845	951	887	840	935	878	835	920	869	854
	8	1044	923	847	794	1028	915	843	792	900	835	789	886	828	785	873	820	807
	9	995	873	798	747	981	866	794	745	853	788	742	841	782	739	830	776	764
	10	950	827	753	704	937	821	750	702	810	745	700	799	740	698	789	735	724

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	44.2 fc	6.5 ft
6.5 ft	31.7 fc	7.7 ft
7.5 ft	23.8 fc	8.9 ft
8.0 ft	20.9 fc	9.5 ft
10.0 ft	13.4 fc	11.9 ft
12.0 ft	9.3 fc	14.2 ft
14.0 ft	6.8 fc	16.6 ft
16.0 ft	5.2 fc	19.0 ft
20.0 ft	3.3 fc	23.7 ft
24.0 ft	2.3 fc	28.5 ft
28.0 ft	1.7 fc	33.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	415844	415844	415844
45.00°	30774	32589	34586
55.00°	8295	7976	9001
65.00°	3377	2943	2716
75.00°	1631	2123	1750
85.00°	6057	5220	5068

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	8.0	8.9	8.3	9.2	9.6	7.6	8.5	7.9	8.8	9.2
	3H	8.2	9.0	8.6	9.4	9.8	7.8	8.6	8.2	8.9	9.3
	4H	8.2	9.0	8.7	9.4	9.8	7.8	8.6	8.3	9.0	9.4
	6H	8.4	9.1	8.8	9.5	9.9	8.0	8.7	8.4	9.1	9.5
	8H	8.6	9.3	9.0	9.7	10.1	8.1	8.8	8.6	9.2	9.6
	12H	8.9	9.6	9.4	10.0	10.4	8.4	9.0	8.8	9.4	9.8
4H	2H	7.9	8.6	8.3	9.0	9.4	7.6	8.3	8.0	8.7	9.1
	3H	8.2	8.9	8.7	9.3	9.7	7.9	8.5	8.3	8.9	9.3
	4H	8.3	8.9	8.8	9.3	9.8	8.0	8.6	8.5	9.0	9.5
	6H	8.7	9.1	9.1	9.6	10.1	8.3	8.8	8.8	9.2	9.7
	8H	9.0	9.4	9.5	9.9	10.4	8.5	9.0	9.0	9.4	9.9
	12H	9.5	9.9	10.0	10.4	10.9	9.0	9.3	9.5	9.8	10.3
8H	4H	8.3	8.8	8.8	9.2	9.7	8.0	8.4	8.5	8.9	9.4
	6H	8.8	9.2	9.4	9.7	10.2	8.4	8.8	9.0	9.3	9.8
	8H	9.3	9.6	9.9	10.2	10.7	8.9	9.2	9.4	9.7	10.2
	12H	10.1	10.4	10.7	10.9	11.5	9.6	9.8	10.1	10.4	11.0
12H	4H	8.3	8.7	8.8	9.2	9.7	8.0	8.4	8.5	8.9	9.4
	6H	8.9	9.2	9.4	9.7	10.2	8.5	8.8	9.0	9.3	9.9
	8H	9.5	9.8	10.0	10.3	10.9	9.0	9.3	9.6	9.8	10.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0