

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STR2 835 13 xx xx RD2XF RB2BS xx RA2LS

2" Adjustable Track Luminaire with extra wide flood optic, difusing lens and standard bezel

Test Number

SP-01593_2

Test Date

9/27/2023

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

Summary of Results

Power

Input Watts	14.4 W
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Lumen Output

Output Lumens	1343
Efficacy	93.23 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.93
Two luminaires, plane 90°	0.94
Four luminaires	0.86

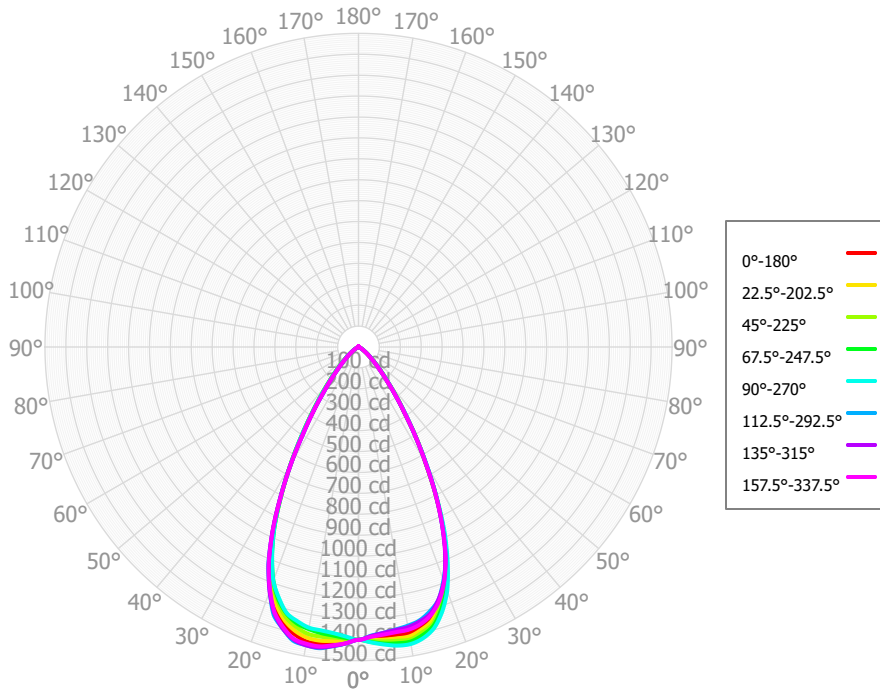
Full Beam Angle

0° - 180°	57°
90° - 270°	58°

IES File Header Contents

Keyword	Value
TEST	SP-01593_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/27/2023
ISSUEDATE	10/03/2023
LUMCAT	STR2 835 13 xx xx RD2XF RB2BS xx RA2LS
LUMINAIRE	2" Adjustable Track Luminaire with extra wide flood optic, difusing lens and standard bezel
OTHER	Beam Angle: 58 deg
OTHER	80 CRI, 3500K 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 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	07L x .55, 10L x .75

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	136.29	10.15%	90.00° - 100.00°	1.48	0.11%
10.00° - 20.00°	376.25	28.03%	100.00° - 110.00°	1.46	0.11%
20.00° - 30.00°	429.58	32.00%	100.00° - 120.00°	2.86	0.21%
30.00° - 40.00°	246.66	18.37%	120.00° - 130.00°	1.36	0.10%
40.00° - 50.00°	97.84	7.29%	130.00° - 140.00°	1.17	0.09%
50.00° - 60.00°	33.77	2.52%	140.00° - 150.00°	1.00	0.07%
60.00° - 70.00°	8.95	0.67%	150.00° - 160.00°	0.80	0.06%
70.00° - 80.00°	2.31	0.17%	160.00° - 170.00°	0.47	0.03%
80.00° - 90.00°	1.57	0.12%	170.00° - 180.00°	0.16	0.01%
0.00° - 90.00°	1333.22	99.31%	0.00° - 180.00°	1342.52	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°	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23	1401.23
2.50°	1394.41	1403.04	1407.62	1413.00	1415.10	1420.52	1419.92	1419.00	1413.64	1406.98	1397.38	1393.46	1386.66	1382.48	1384.46	1388.14	1394.41
5.00°	1389.62	1405.59	1413.67	1424.34	1429.17	1437.26	1436.77	1432.89	1425.28	1411.58	1394.81	1385.89	1374.49	1372.80	1373.06	1381.18	1389.62
7.50°	1389.64	1406.17	1417.66	1429.71	1440.88	1453.43	1449.84	1444.61	1430.94	1417.08	1397.54	1380.36	1367.89	1363.25	1365.58	1376.08	1389.64
10.00°	1390.54	1405.67	1421.01	1431.23	1442.85	1448.38	1449.15	1441.52	1430.80	1412.29	1393.53	1370.59	1363.72	1354.25	1361.07	1373.70	1390.54
12.50°	1372.06	1386.26	1400.03	1412.76	1427.33	1440.03	1433.86	1430.10	1408.61	1392.59	1372.85	1355.54	1344.82	1341.03	1345.77	1359.80	1372.06
15.00°	1350.41	1357.11	1372.19	1382.12	1393.77	1395.93	1396.51	1389.20	1376.68	1356.48	1340.00	1322.91	1320.07	1311.51	1322.74	1330.49	1350.41
17.50°	1283.70	1293.47	1303.35	1316.46	1329.71	1346.91	1337.29	1333.14	1310.57	1298.48	1279.82	1270.19	1262.08	1270.28	1269.06	1278.59	1283.70
20.00°	1210.83	1213.63	1224.28	1231.28	1241.13	1240.73	1244.79	1237.29	1229.97	1213.77	1201.51	1190.64	1191.80	1188.18	1195.21	1198.09	1210.83
22.50°	1087.47	1093.95	1095.39	1106.57	1114.53	1128.14	1121.46	1122.79	1104.05	1095.32	1085.01	1082.07	1079.45	1091.60	1084.40	1090.29	1087.47
25.00°	958.52	956.72	955.12	961.08	972.50	969.74	974.04	971.65	968.48	958.78	955.04	951.76	953.13	949.89	950.94	950.64	958.52
27.50°	803.20	803.38	800.25	805.35	807.87	807.16	806.06	804.40	805.83	801.19	799.18	799.77	803.74	805.02	801.77	802.41	803.20
30.00°	645.40	643.59	642.49	644.69	651.82	649.22	647.33	646.87	648.79	650.90	649.68	653.24	647.25	651.02	643.65	644.95	645.40
32.50°	511.61	509.06	509.87	507.73	507.32	491.62	496.08	493.22	506.44	508.67	511.57	511.87	514.01	507.63	505.98	505.22	511.61
35.00°	379.51	383.81	381.77	381.28	384.93	381.07	375.74	378.19	379.59	389.66	391.33	394.56	387.17	391.96	378.96	383.54	379.51
37.50°	293.81	294.53	295.84	291.24	290.70	272.81	278.41	277.56	289.52	294.25	300.72	298.21	298.07	289.71	286.39	286.59	293.81
40.00°	210.66	217.35	216.31	216.10	215.62	211.80	206.95	210.03	211.61	219.82	224.54	225.06	218.13	220.18	210.71	212.86	210.66
42.50°	163.75	165.58	167.89	165.30	163.01	152.39	153.69	153.61	160.74	165.29	170.35	170.52	166.85	160.47	159.04	157.39	163.75
45.00°	118.04	121.47	123.50	123.50	121.16	118.41	114.71	116.25	117.00	123.37	125.93	128.72	121.93	122.48	118.08	118.13	118.04
47.50°	91.35	92.72	95.10	94.14	90.94	84.77	84.97	84.82	87.72	92.61	95.59	96.59	93.88	90.06	89.44	88.12	91.35
50.00°	65.03	68.25	68.44	69.07	67.59	65.13	62.91	63.56	62.76	68.70	70.32	72.08	69.07	68.87	65.97	65.67	65.03
52.50°	49.99	52.15	51.50	51.63	51.27	45.67	45.47	45.11	46.05	50.40	51.76	52.88	51.69	50.22	48.81	48.27	49.99
55.00°	35.10	38.12	35.38	36.55	37.61	34.23	33.29	32.98	32.20	36.33	36.84	38.65	35.60	36.41	34.04	34.77	35.10
57.50°	26.37	28.49	26.55	26.74	26.46	23.00	24.06	22.41	23.33	25.53	26.46	27.68	25.97	24.98	24.45	24.57	26.37
60.00°	17.75	19.85	18.22	18.44	18.13	16.99	16.62	15.93	16.17	17.88	18.43	19.48	17.28	17.71	16.67	16.72	17.75
62.50°	12.41	14.18	13.37	12.76	12.33	11.13	10.09	10.36	11.73	12.47	13.11	12.95	12.39	11.76	11.90	11.55	12.41
65.00°	7.26	9.09	8.68	7.75	8.16	7.94	6.74	7.33	8.09	8.58	9.01	8.69	8.00	7.98	8.09	8.14	7.26
67.50°	5.23	6.34	6.19	5.49	5.33	4.89	4.93	4.79	5.64	5.71	6.21	5.72	5.97	5.10	5.78	5.49	5.23
70.00°	3.31	3.98	3.77	3.86	3.50	3.67	3.40	3.31	3.88	3.92	4.29	3.95	4.19	3.58	3.91	3.30	3.31
72.50°	2.64	2.97	2.80	2.66	2.43	2.50	2.00	2.02	3.08	2.79	3.24	2.82	3.00	2.41	2.87	2.27	2.64
75.00°	2.00	2.17	1.86	1.54	1.74	1.81	1.53	1.65	2.30	2.25	2.39	2.04	1.86	1.76	2.05	1.90	2.00
77.50°	1.73	1.81	1.70	1.36	1.33	1.21	1.45	1.42	1.53	2.06	1.73	1.44	1.59	1.53	1.71	1.68	1.73
80.00°	1.50	1.50	1.54	1.35	1.25	1.30	1.42	1.47	1.26	1.80	1.33	1.32	1.38	1.85	1.49	1.54	1.50
82.50°	1.57	1.47	1.63	1.40	1.40	1.37	1.42	1.56	1.59	1.50	1.18	1.43	1.39	1.95	1.55	1.43	1.57
85.00°	1.61	1.47	1.70	1.47	1.32	1.32	1.35	1.46	1.64	1.39	1.13	1.43	1.41	1.79	1.67	1.33	1.61
87.50°	1.39	1.59	1.67	1.52	1.10	1.28	1.25	1.35	1.39	1.37	1.18	1.39	1.31	1.58	1.56	1.34	1.39
90.00°	1.22	1.72	1.64	1.57	1.15	1.31	1.30	1.40	1.30	1.32	1.29	1.30	1.20	1.32	1.40	1.39	1.22
92.50°	1.33	1.54	1.57	1.45	1.37	1.33	1.39	1.46	1.39	1.27	1.46	1.19	1.40	1.19	1.31	1.36	1.33
95.00°	1.41	1.35	1.51	1.31	1.38	1.31	1.28	1.37	1.42	1.35	1.48	1.30	1.60	1.20	1.24	1.29	1.41
97.50°	1.35	1.34	1.44	1.27	1.27	1.29	1.12	1.28	1.41	1.49	1.39	1.47	1.57	1.15	1.12	1.35	1.35
100.00°	1.30	1.34	1.37	1.25	1.45	1.25	1.08	1.16	1.48	1.56	1.41	1.45	1.53	1.07	1.00	1.46	1.30
102.50°	1.32	1.55	1.34	1.25	1.76	1.23	1.07	1.04	1.62	1.62	1.48	1.38	1.51	1.11	1.18	1.33	1.32
105.00°	1.35	1.76	1.31	1.26	1.64	1.24	1.18	1.40	1.64	1.66	1.40	1.26	1.51	1.28	1.39	1.11	1.35

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	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	1596	1596	1596	1596	1558	1558	1558	1558	1487	1487	1487	1421	1421	1421	1361	1361	1333
	1	1519	1481	1447	1416	1485	1451	1421	1393	1395	1371	1348	1344	1324	1306	1296	1281	1255
	2	1442	1375	1320	1273	1411	1351	1301	1258	1306	1265	1229	1264	1231	1201	1226	1199	1174
	3	1367	1279	1211	1156	1339	1260	1197	1146	1223	1170	1127	1189	1145	1108	1157	1121	1099
	4	1296	1193	1117	1059	1271	1177	1107	1052	1146	1086	1039	1118	1067	1026	1092	1049	1028
	5	1229	1115	1035	976	1206	1102	1027	971	1076	1012	962	1053	997	952	1031	982	964
	6	1167	1045	963	905	1146	1034	957	901	1012	945	894	993	933	887	974	922	905
	7	1108	982	899	842	1089	972	894	839	954	885	834	937	875	829	921	866	851
	8	1054	924	843	787	1037	916	839	785	901	831	781	886	823	777	872	816	802
	9	1003	872	792	737	988	865	788	736	852	782	733	839	775	730	827	769	757
	10	956	825	746	693	942	818	743	692	807	738	690	796	732	687	785	727	716

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	46.3 fc	6.0 ft
6.5 ft	33.2 fc	7.1 ft
7.5 ft	24.9 fc	8.2 ft
8.0 ft	21.9 fc	8.8 ft
10.0 ft	14.0 fc	11.0 ft
12.0 ft	9.7 fc	13.2 ft
14.0 ft	7.1 fc	15.4 ft
16.0 ft	5.5 fc	17.5 ft
20.0 ft	3.5 fc	21.9 ft
24.0 ft	2.4 fc	26.3 ft
28.0 ft	1.8 fc	30.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	435463	435463	435463
45.00°	51880	54277	53248
55.00°	19019	19171	20378
65.00°	5335	6379	5999
75.00°	2404	2232	2092
85.00°	5741	6075	4697

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	14.1	15.1	14.4	15.4	15.7	13.8	14.8	14.2	15.2	15.5
	3H	14.1	15.0	14.5	15.3	15.7	13.9	14.7	14.3	15.1	15.5
	4H	14.0	14.9	14.5	15.2	15.6	13.8	14.6	14.2	15.0	15.4
	6H	14.0	14.7	14.4	15.1	15.5	13.7	14.5	14.2	14.9	15.3
	8H	14.0	14.7	14.4	15.1	15.5	13.7	14.4	14.2	14.8	15.3
	12H	14.0	14.7	14.4	15.1	15.5	13.7	14.4	14.2	14.8	15.3
4H	2H	14.0	14.8	14.4	15.1	15.6	13.7	14.5	14.1	14.9	15.3
	3H	14.0	14.7	14.4	15.1	15.5	13.8	14.5	14.2	14.9	15.3
	4H	14.0	14.6	14.4	15.0	15.5	13.7	14.3	14.2	14.8	15.2
	6H	14.0	14.5	14.4	14.9	15.4	13.7	14.2	14.2	14.7	15.2
	8H	14.0	14.4	14.5	14.9	15.4	13.7	14.2	14.2	14.6	15.1
	12H	14.0	14.4	14.5	14.9	15.4	13.7	14.2	14.2	14.7	15.2
8H	4H	13.8	14.3	14.3	14.8	15.3	13.6	14.1	14.1	14.5	15.0
	6H	13.9	14.2	14.4	14.7	15.2	13.6	14.0	14.1	14.5	15.0
	8H	13.9	14.2	14.4	14.8	15.3	13.6	14.0	14.2	14.5	15.0
	12H	14.1	14.3	14.6	14.9	15.5	13.8	14.1	14.3	14.6	15.2
12H	4H	13.8	14.2	14.3	14.7	15.2	13.6	14.0	14.1	14.5	15.0
	6H	13.8	14.2	14.4	14.6	15.2	13.5	13.9	14.1	14.4	14.9
	8H	13.9	14.2	14.4	14.7	15.3	13.6	13.9	14.2	14.4	15.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0