

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

### Spectrum Lighting Photometric Lab

#### Luminaire

STR2 835 13 xx xx RD2SP RB2BS xx RA2LL

2" Adjustable Track Luminaire with extra narrow spot optic, linear spread lens  
and standard bezel

#### Test Number

SP-01591\_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	1026
Efficacy	71.27 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.68
Two luminaires, plane 90°	0.36
Four luminaires	0.47

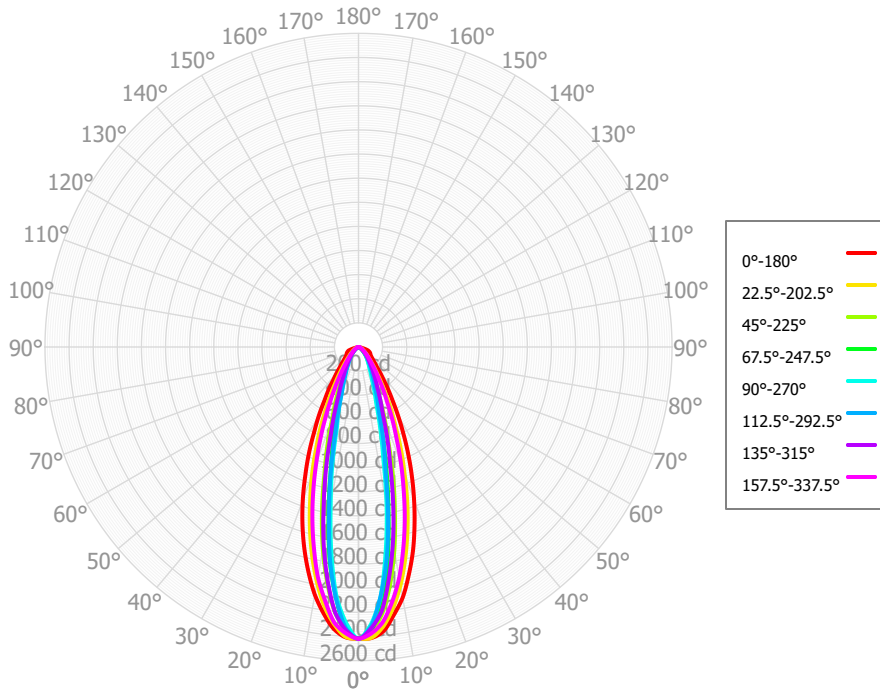
#### Full Beam Angle

0° - 180°	44°
90° - 270°	22°

### IES File Header Contents

Keyword	Value
TEST	SP-01591_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/27/2023
ISSUDATE	10/03/2023
LUMCAT	STR2 835 13 xx xx RD2SP RB2BS xx RA2LL
LUMINAIRE	2" Adjustable Track Luminaire with extra narrow spot optic, linear spread lens and standard bezel
OTHER	Beam Angle: 44 x 22 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°	195.78	19.08%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	316.39	30.83%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	226.76	22.09%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	133.95	13.05%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	75.81	7.39%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	42.49	4.14%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	24.40	2.38%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	9.11	0.89%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.62	0.16%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1026.30	100.00%	0.00° - 180.00°	1026.30	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°	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49	2418.49
2.50°	2416.26	2414.27	2369.02	2359.46	2307.60	2338.94	2353.10	2377.53	2410.50	2406.55	2357.37	2352.90	2295.98	2325.36	2339.83	2379.48	2416.26
5.00°	2366.60	2329.74	2225.28	2120.05	2086.31	2107.32	2212.18	2295.19	2347.23	2308.47	2215.43	2096.34	2081.99	2083.04	2200.60	2292.88	2366.60
7.50°	2241.92	2185.08	1995.80	1828.39	1722.73	1799.06	1957.53	2121.59	2226.55	2168.98	1977.08	1812.77	1725.47	1784.44	1934.17	2133.21	2241.92
10.00°	2110.46	2005.81	1710.69	1436.87	1343.31	1407.99	1663.90	1938.66	2086.03	1981.42	1702.79	1434.64	1327.84	1412.50	1646.06	1943.70	2110.46
12.50°	1931.03	1792.55	1393.42	1084.98	952.70	1061.85	1332.46	1707.91	1914.35	1775.85	1399.57	1072.35	1004.33	1031.33	1328.20	1714.28	1931.03
15.00°	1746.90	1568.41	1102.26	778.39	694.06	746.07	1038.45	1477.02	1733.79	1555.56	1091.30	811.81	692.32	789.50	1018.12	1481.46	1746.90
17.50°	1545.26	1342.01	819.81	567.63	489.58	552.76	766.34	1245.48	1544.75	1332.53	859.10	586.43	544.33	563.33	792.43	1245.88	1545.26
20.00°	1346.90	1115.29	633.28	423.56	381.17	407.12	582.28	1024.15	1350.37	1125.39	637.82	462.34	406.29	451.41	589.52	1031.03	1346.90
22.50°	1155.04	918.18	460.71	332.65	292.15	325.23	428.05	827.09	1152.85	921.90	506.09	360.10	334.09	352.00	469.05	826.54	1155.04
25.00°	972.39	727.46	368.96	263.92	242.42	255.24	340.33	651.18	972.10	752.99	387.31	294.49	270.22	291.46	366.96	664.37	972.39
27.50°	800.96	583.05	282.56	218.27	196.31	213.15	262.55	505.42	796.92	593.68	316.21	242.65	230.76	240.11	301.76	513.46	800.96
30.00°	653.94	449.81	231.36	177.40	169.33	173.62	218.22	389.17	657.62	471.44	254.14	204.75	196.07	204.63	246.64	410.70	653.94
32.50°	525.02	352.70	184.69	152.96	143.89	149.35	175.83	298.53	523.49	364.10	210.40	175.04	169.25	174.11	203.54	314.03	525.02
35.00°	426.13	270.19	152.74	129.69	125.15	126.57	147.41	232.48	430.14	287.18	173.12	150.34	146.49	148.92	168.68	253.96	426.13
37.50°	340.73	213.74	124.11	111.25	107.87	109.83	120.85	179.17	341.15	224.21	143.64	129.31	127.89	128.64	139.81	197.40	340.73
40.00°	281.52	168.40	101.61	93.56	93.83	93.76	100.44	144.42	283.10	178.66	118.36	109.59	111.01	111.55	116.51	160.43	281.52
42.50°	228.33	134.99	82.25	79.09	80.58	79.09	81.50	115.07	231.00	143.82	96.18	93.48	95.18	94.76	95.66	127.46	228.33
45.00°	197.93	109.58	66.37	65.39	68.36	65.52	65.33	94.38	198.51	117.15	78.45	77.95	80.19	78.08	78.66	105.40	197.93
47.50°	169.69	89.52	53.53	53.40	56.25	53.33	52.12	74.85	170.79	97.31	62.70	63.34	65.50	63.71	62.52	85.93	169.69
50.00°	152.48	75.63	42.80	42.62	44.24	42.86	42.23	63.74	151.84	80.53	51.51	49.19	52.31	49.77	50.00	70.50	152.48
52.50°	136.49	64.12	34.03	33.43	34.83	33.73	33.77	53.24	136.72	69.21	41.36	39.20	39.38	40.31	38.02	57.81	136.49
55.00°	126.27	54.53	26.07	25.54	26.67	26.02	26.28	46.55	125.84	59.19	32.58	29.91	30.42	31.18	30.54	47.77	126.27
57.50°	117.85	45.31	20.91	18.69	20.01	18.95	19.96	39.88	118.63	50.43	24.01	23.06	21.80	24.00	23.36	40.35	117.85
60.00°	113.80	40.35	16.31	13.56	13.75	13.16	14.11	33.25	113.97	41.96	17.70	16.59	15.47	17.12	17.50	34.47	113.80
62.50°	108.86	35.48	11.58	9.27	10.26	7.68	10.34	27.29	108.75	37.25	12.16	10.86	10.08	11.34	12.47	28.59	108.86
65.00°	102.65	29.69	7.12	7.01	7.09	5.99	6.97	22.46	103.31	32.37	10.28	6.77	8.10	6.97	9.37	22.70	102.65
67.50°	93.86	23.71	6.05	5.28	5.65	4.64	5.31	17.58	95.95	26.66	8.20	4.61	6.30	5.43	6.79	18.05	93.86
70.00°	82.85	16.92	4.86	3.99	4.23	3.69	3.79	12.65	88.21	20.91	5.66	3.58	4.83	4.08	4.92	13.58	82.85
72.50°	62.39	10.88	3.16	2.76	2.94	2.78	2.79	8.39	64.39	15.04	3.83	3.37	3.52	2.95	3.56	10.39	62.39
75.00°	36.92	6.43	1.87	2.13	1.95	2.08	1.93	4.54	40.12	9.59	2.99	2.68	2.39	2.13	2.64	7.24	36.92
77.50°	19.03	3.32	1.47	1.57	1.75	1.56	1.64	2.77	19.66	4.73	2.30	1.78	1.80	1.54	1.94	4.31	19.03
80.00°	3.31	1.86	1.24	1.38	1.68	1.54	1.41	1.73	2.98	2.13	1.74	1.52	1.59	1.34	1.35	1.99	3.31
82.50°	1.58	1.28	1.22	1.36	1.80	1.50	1.30	1.50	2.11	1.52	1.49	1.40	1.56	1.34	1.23	1.64	1.58
85.00°	1.42	1.37	1.22	1.76	1.78	1.43	1.30	1.39	1.48	1.30	1.41	1.24	1.60	1.30	1.25	1.45	1.42
87.50°	1.40	1.29	1.22	1.90	1.62	1.45	1.46	1.57	1.35	1.30	1.46	1.11	1.53	1.27	1.27	1.55	1.40
90.00°	1.41	1.12	1.27	1.65	1.70	1.53	1.50	1.74	1.37	1.22	1.56	1.35	1.44	1.56	1.30	1.52	1.41

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>ptc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	1222	1222	1222	1222	1193	1193	1193	1193	1140	1140	1140	1092	1092	1092	1047	1047	1026
	<b>1</b>	1163	1134	1108	1085	1138	1112	1089	1067	1070	1052	1034	1032	1017	1004	997	985	975
	<b>2</b>	1105	1054	1012	977	1082	1037	998	966	1003	972	945	973	947	924	944	924	905
	<b>3</b>	1050	984	933	892	1030	970	923	885	943	903	871	918	885	857	895	867	844
	<b>4</b>	999	922	866	823	981	911	859	818	889	844	808	868	830	799	849	817	790
	<b>5</b>	953	868	809	766	936	859	804	762	840	792	756	823	782	749	807	771	742
	<b>6</b>	909	820	760	717	894	812	756	715	797	747	710	783	739	705	769	731	701
	<b>7</b>	869	777	718	676	856	771	714	674	758	707	670	746	701	667	734	694	664
	<b>8</b>	833	739	680	640	820	733	677	638	722	672	636	712	666	633	702	661	630
	<b>9</b>	799	704	647	608	788	699	644	607	690	640	605	681	635	603	673	631	601
	<b>10</b>	767	673	617	579	757	669	615	578	661	611	577	653	607	575	646	604	574

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	80.0 fc	4.4 ft
6.5 ft	57.2 fc	5.2 ft
7.5 ft	43.0 fc	6.0 ft
8.0 ft	37.8 fc	6.4 ft
10.0 ft	24.2 fc	8.0 ft
12.0 ft	16.8 fc	9.6 ft
14.0 ft	12.3 fc	11.2 ft
16.0 ft	9.4 fc	12.8 ft
20.0 ft	6.0 fc	16.0 ft
24.0 ft	4.2 fc	19.2 ft
28.0 ft	3.1 fc	22.4 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	751598	751598	751598
<b>45.00°</b>	86991	29169	30043
<b>55.00°</b>	68416	14123	14450
<b>65.00°</b>	75486	5232	5216
<b>75.00°</b>	44335	2244	2339
<b>85.00°</b>	5049	4336	6343

### 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	20.3	21.4	20.7	21.7	22.0	13.3	14.4	13.7	14.8	15.1
	3H	23.6	24.6	24.0	24.9	25.3	13.5	14.5	13.9	14.8	15.2
	4H	24.4	25.2	24.8	25.6	26.0	13.5	14.4	13.9	14.8	15.2
	6H	24.4	25.2	24.8	25.6	26.0	13.5	14.3	13.9	14.7	15.1
	8H	24.4	25.1	24.8	25.5	25.9	13.5	14.3	14.0	14.7	15.1
	12H	24.3	25.1	24.8	25.4	25.9	13.6	14.3	14.0	14.7	15.2
4H	2H	20.1	21.0	20.5	21.3	21.7	13.4	14.3	13.8	14.6	15.0
	3H	23.4	24.1	23.8	24.6	25.0	13.6	14.3	14.0	14.7	15.1
	4H	24.1	24.8	24.6	25.2	25.6	13.6	14.3	14.1	14.7	15.2
	6H	24.2	24.8	24.7	25.2	25.7	13.7	14.2	14.1	14.7	15.2
	8H	24.1	24.7	24.6	25.1	25.6	13.7	14.3	14.2	14.7	15.2
	12H	24.1	24.5	24.6	25.0	25.5	13.9	14.3	14.4	14.8	15.3
8H	4H	24.0	24.5	24.4	24.9	25.4	13.7	14.3	14.2	14.7	15.2
	6H	24.0	24.4	24.5	24.9	25.4	13.8	14.2	14.3	14.7	15.2
	8H	24.0	24.3	24.5	24.9	25.4	13.9	14.3	14.4	14.8	15.3
	12H	23.9	24.2	24.4	24.7	25.3	14.1	14.5	14.7	15.0	15.5
12H	4H	23.9	24.3	24.4	24.8	25.3	13.7	14.2	14.2	14.7	15.1
	6H	24.0	24.3	24.5	24.8	25.3	13.8	14.2	14.3	14.7	15.2
	8H	23.9	24.2	24.4	24.7	25.3	13.9	14.3	14.5	14.8	15.3

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0