

## 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 07 xx xx RD2XS RB2BS xx RA2LL

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

#### Test Number

SP-01590

#### Test Date

9/27/2023

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

### Summary of Results

#### Power

Input Watts	6.9 W
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#### Lumen Output

Output Lumens	560
Efficacy	81.22 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.26
Two luminaires, plane 90°	0.67
Four luminaires	0.37

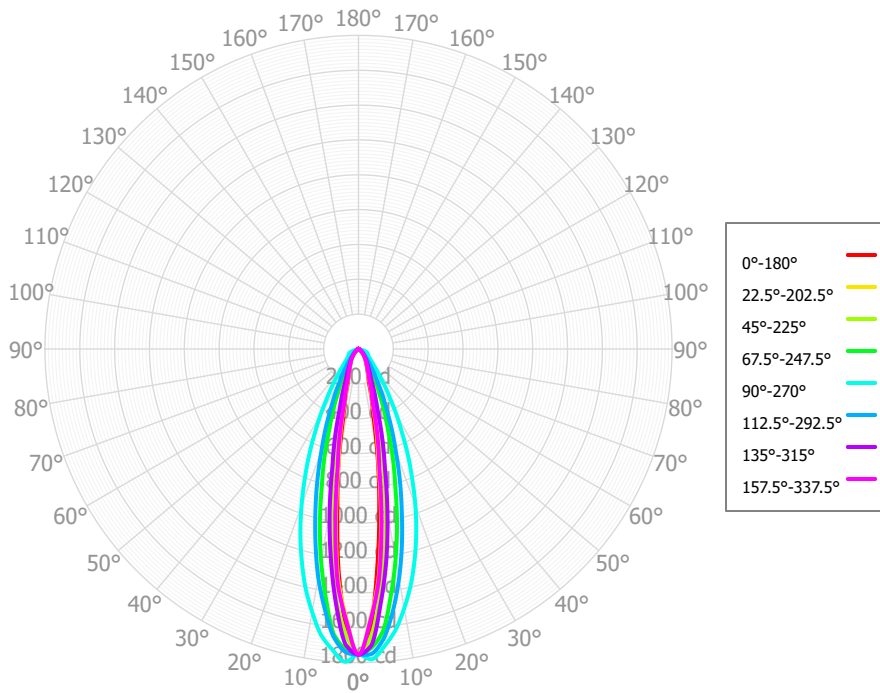
#### Full Beam Angle

0° - 180°	15°
90° - 270°	42°

### IES File Header Contents

Keyword	Value
TEST	SP-01590
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/27/2023
ISSUEDATE	10/03/2023
LUMCAT	STR2 835 07 xx xx RD2XS RB2BS xx RA2LL
LUMINAIRE	2" Adjustable Track Luminaire with extra narrow spot optic, linear spread lens and standard bezel
OTHER	Beam Angle: 15 x 42 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

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	125.74	22.44%	90.00° - 100.00°	0.78	0.14%
10.00° - 20.00°	171.16	30.54%	100.00° - 110.00°	0.77	0.14%
20.00° - 30.00°	115.61	20.63%	100.00° - 120.00°	1.51	0.27%
30.00° - 40.00°	67.33	12.02%	120.00° - 130.00°	0.68	0.12%
40.00° - 50.00°	37.50	6.69%	130.00° - 140.00°	0.59	0.11%
50.00° - 60.00°	20.91	3.73%	140.00° - 150.00°	0.51	0.09%
60.00° - 70.00°	12.07	2.15%	150.00° - 160.00°	0.39	0.07%
70.00° - 80.00°	4.45	0.79%	160.00° - 170.00°	0.24	0.04%
80.00° - 90.00°	0.84	0.15%	170.00° - 180.00°	0.08	0.01%
0.00° - 90.00°	555.62	99.15%	0.00° - 180.00°	560.39	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°	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31	1754.31
2.50°	1595.76	1551.23	1652.53	1716.79	1782.33	1740.46	1698.88	1567.82	1598.81	1556.61	1643.08	1725.75	1797.44	1751.27	1703.21	1563.44	1595.76
5.00°	1246.66	1323.22	1421.39	1624.34	1712.66	1656.43	1472.99	1358.10	1296.26	1332.80	1450.82	1642.00	1732.62	1668.45	1465.05	1335.50	1246.66
7.50°	912.57	989.62	1164.03	1425.33	1627.58	1498.39	1214.68	1019.25	927.78	991.83	1152.91	1439.51	1654.39	1516.08	1222.67	1014.17	912.57
10.00°	635.03	657.86	880.50	1226.17	1511.67	1331.22	953.78	688.28	654.66	651.68	880.88	1236.19	1532.92	1339.41	955.65	688.66	635.03
12.50°	394.00	471.89	644.81	1020.79	1386.86	1139.90	692.49	491.43	404.55	466.67	633.21	1024.42	1405.30	1151.01	701.89	495.02	394.00
15.00°	286.41	288.10	455.94	816.62	1246.68	953.90	516.66	302.45	288.88	282.96	446.22	812.66	1258.36	958.62	522.30	306.58	286.41
17.50°	194.99	226.11	319.68	655.38	1102.20	781.60	353.15	235.63	205.17	224.33	315.23	650.41	1109.62	788.90	357.29	237.98	194.99
20.00°	161.78	164.98	233.86	495.91	953.82	621.45	267.11	171.52	166.13	166.26	227.12	488.46	955.36	626.71	270.73	173.44	161.78
22.50°	131.86	140.89	175.23	388.77	804.38	491.82	191.73	146.03	137.36	143.79	177.80	383.27	805.50	498.41	192.49	146.28	131.86
25.00°	113.46	117.04	142.15	283.34	669.88	375.28	155.31	121.25	118.41	121.47	142.45	278.57	668.70	381.19	157.44	120.19	113.46
27.50°	96.41	101.47	116.99	221.62	539.32	290.85	124.00	105.77	101.66	105.60	119.59	219.59	540.00	296.25	125.07	104.07	96.41
30.00°	83.96	86.05	99.15	161.13	436.20	216.93	105.00	90.60	89.65	89.86	101.18	161.03	434.73	221.57	106.41	88.19	83.96
32.50°	72.25	75.03	84.04	128.31	340.22	168.17	87.53	79.35	78.65	78.93	86.66	129.26	339.21	171.52	88.70	77.66	72.25
35.00°	62.94	64.10	71.40	96.23	271.87	126.16	74.60	68.26	68.82	68.05	73.70	97.80	271.12	129.09	75.59	67.23	62.94
37.50°	54.20	56.01	60.22	79.06	210.48	99.90	62.23	59.08	59.22	58.68	62.07	80.82	210.62	101.76	62.99	57.89	54.20
40.00°	47.33	47.97	50.34	62.23	170.51	77.26	52.05	50.05	51.12	49.38	51.80	63.97	170.96	78.98	52.80	48.57	47.33
42.50°	40.61	40.95	41.75	51.42	135.78	62.99	42.13	42.62	43.31	41.95	42.65	53.00	136.29	63.79	43.03	41.05	40.61
45.00°	34.39	33.98	34.28	40.88	114.59	50.54	34.61	35.25	36.57	34.54	34.76	42.17	114.92	50.84	35.20	33.56	34.39
47.50°	28.52	28.00	27.47	34.91	96.59	42.19	27.36	28.39	30.04	27.92	27.92	36.00	96.65	42.51	27.80	27.78	28.52
50.00°	23.67	22.11	21.22	29.04	85.19	35.12	21.85	21.73	24.41	21.40	22.17	29.86	86.43	35.50	22.29	22.02	23.67
52.50°	18.91	17.91	16.38	24.57	75.30	30.86	16.53	16.93	18.95	17.29	17.32	24.68	77.53	30.12	17.14	17.38	18.91
55.00°	14.41	13.74	12.73	20.20	69.90	26.61	13.11	12.28	14.03	13.22	13.07	19.60	72.02	25.19	13.51	12.76	14.41
57.50°	10.31	9.85	9.60	17.12	65.50	22.41	9.87	9.04	9.22	9.66	9.32	17.00	67.29	21.56	10.15	9.59	10.31
60.00°	7.32	6.11	6.92	14.07	62.64	18.54	7.68	5.99	6.69	6.21	6.81	14.38	64.54	18.27	7.92	6.43	7.32
62.50°	4.78	4.69	4.91	11.35	60.11	15.37	5.58	4.50	4.55	4.50	5.28	11.21	61.80	15.57	5.84	4.70	4.78
65.00°	3.50	3.31	3.45	8.69	56.85	12.57	4.34	3.10	3.38	2.84	3.86	8.10	59.09	13.01	4.37	2.99	3.50
67.50°	2.44	2.39	2.52	6.75	53.44	10.53	3.16	2.38	2.37	2.02	2.52	6.48	54.44	9.97	2.96	2.27	2.44
70.00°	1.97	1.52	2.02	4.83	46.22	8.17	2.36	1.71	1.65	1.25	1.76	4.86	45.18	6.80	1.80	1.55	1.97
72.50°	1.53	1.29	1.53	3.21	38.25	5.14	1.59	1.40	0.98	1.18	1.43	3.47	34.03	4.70	0.88	1.34	1.53
75.00°	1.21	1.07	1.05	1.68	24.46	2.74	1.15	1.10	0.89	1.11	1.15	2.12	18.45	2.86	0.88	1.12	1.21
77.50°	0.93	0.97	0.84	1.17	9.56	1.56	0.73	0.88	0.90	0.89	0.90	1.43	6.52	1.84	0.87	0.85	0.93
80.00°	0.78	0.87	0.83	0.70	4.46	0.77	0.68	0.68	0.82	0.69	0.81	0.78	3.01	1.02	0.75	0.58	0.78
82.50°	0.66	0.82	0.85	0.74	1.18	0.70	0.65	0.62	0.73	0.72	0.85	0.85	0.58	0.77	0.67	0.66	0.66
85.00°	0.66	0.77	0.87	0.77	0.65	0.63	0.67	0.56	0.72	0.74	0.80	0.91	0.57	0.65	0.69	0.73	0.66
87.50°	0.65	0.75	0.82	0.77	0.61	0.58	0.69	0.55	0.72	0.72	0.67	0.81	0.58	0.70	0.74	0.74	0.65
90.00°	0.64	0.73	0.73	0.77	0.64	0.63	0.67	0.55	0.79	0.69	0.60	0.72	0.64	0.79	0.87	0.74	0.64
92.50°	0.64	0.73	0.74	0.79	0.68	0.87	0.64	0.63	0.87	0.66	0.57	0.78	0.69	0.72	0.94	0.69	0.64
95.00°	0.64	0.73	0.84	0.81	0.69	0.95	0.67	0.69	0.78	0.63	0.56	0.83	0.72	0.61	0.77	0.65	0.64
97.50°	0.68	0.78	0.87	0.72	0.70	0.74	0.71	0.65	0.67	0.69	0.57	0.77	0.73	0.58	0.66	0.69	0.68
100.00°	0.80	0.84	0.86	0.65	0.70	0.60	0.73	0.63	0.75	0.74	0.63	0.71	0.72	0.58	0.71	0.73	0.80
102.50°	0.88	0.95	0.82	0.68	0.71	0.57	0.75	0.62	0.85	0.77	0.72	0.66	0.69	0.64	0.75	0.75	0.88
105.00°	0.84	1.03	0.77	0.71	0.63	0.56	0.72	0.63	0.84	0.79	0.75	0.63	0.63	0.71	0.74	0.77	0.84

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</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>	666	666	666	666	650	650	650	650	620	620	620	593	593	593	567	567	556
	<b>1</b>	635	620	606	593	621	607	595	583	583	574	565	562	554	547	542	536	525
	<b>2</b>	604	578	555	537	592	568	547	530	549	532	518	531	518	506	515	504	494
	<b>3</b>	576	541	514	492	564	533	508	488	517	497	479	503	486	471	490	476	466
	<b>4</b>	549	509	479	456	539	502	474	453	489	466	447	478	458	442	467	450	441
	<b>5</b>	525	480	449	426	515	475	446	424	464	439	420	455	433	416	446	427	419
	<b>6</b>	502	455	423	401	494	450	421	399	442	416	396	434	411	393	426	406	399
	<b>7</b>	481	433	401	379	474	429	399	378	421	395	376	414	391	373	408	387	381
	<b>8</b>	462	413	381	360	455	409	380	359	403	376	358	397	373	356	392	370	364
	<b>9</b>	444	394	364	343	438	392	363	343	386	360	341	381	357	340	376	355	349
	<b>10</b>	428	378	348	329	422	376	347	328	371	345	327	367	343	326	362	341	336

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	58.0 fc	1.5 ft
6.5 ft	41.5 fc	1.8 ft
7.5 ft	31.2 fc	2.0 ft
8.0 ft	27.4 fc	2.2 ft
10.0 ft	17.5 fc	2.7 ft
12.0 ft	12.2 fc	3.2 ft
14.0 ft	9.0 fc	3.8 ft
16.0 ft	6.9 fc	4.3 ft
20.0 ft	4.4 fc	5.4 ft
24.0 ft	3.0 fc	6.5 ft
28.0 ft	2.2 fc	7.6 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	545189	545189	545189
<b>45.00°</b>	15116	15065	50360
<b>55.00°</b>	7810	6896	37873
<b>65.00°</b>	2577	2539	41803
<b>75.00°</b>	1453	1258	29373
<b>85.00°</b>	2347	3100	2301

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	10.1	11.2	10.5	11.5	11.8	17.6	18.6	17.9	19.0	19.3
	<b>3H</b>	10.2	11.2	10.6	11.5	11.9	21.2	22.2	21.6	22.5	22.9
	<b>4H</b>	10.3	11.1	10.7	11.5	11.9	22.1	22.9	22.5	23.3	23.7
	<b>6H</b>	10.3	11.1	10.7	11.4	11.9	22.1	22.9	22.5	23.3	23.7
	<b>8H</b>	10.3	11.0	10.7	11.4	11.9	22.0	22.8	22.5	23.2	23.6
	<b>12H</b>	10.3	11.0	10.8	11.4	11.9	22.0	22.7	22.4	23.1	23.6
<b>4H</b>	<b>2H</b>	10.1	11.0	10.5	11.3	11.8	17.3	18.2	17.7	18.6	19.0
	<b>3H</b>	10.3	11.0	10.7	11.4	11.8	21.0	21.7	21.4	22.1	22.6
	<b>4H</b>	10.3	11.0	10.8	11.4	11.9	21.8	22.4	22.3	22.9	23.3
	<b>6H</b>	10.4	10.9	10.9	11.4	11.9	21.8	22.4	22.3	22.8	23.3
	<b>8H</b>	10.4	10.9	10.9	11.4	11.9	21.8	22.3	22.3	22.8	23.3
	<b>12H</b>	10.5	11.0	11.0	11.5	12.0	21.7	22.2	22.2	22.7	23.2
<b>8H</b>	<b>4H</b>	10.3	10.8	10.8	11.3	11.8	21.6	22.1	22.1	22.6	23.1
	<b>6H</b>	10.4	10.9	11.0	11.4	11.9	21.7	22.1	22.2	22.6	23.1
	<b>8H</b>	10.6	10.9	11.1	11.4	12.0	21.6	22.0	22.2	22.5	23.0
	<b>12H</b>	10.8	11.1	11.3	11.6	12.2	21.6	21.9	22.1	22.4	23.0
<b>12H</b>	<b>4H</b>	10.3	10.7	10.8	11.2	11.7	21.6	22.0	22.1	22.5	23.0
	<b>6H</b>	10.4	10.8	11.0	11.3	11.9	21.6	22.0	22.1	22.4	23.0
	<b>8H</b>	10.6	10.9	11.1	11.4	12.0	21.6	21.9	22.1	22.4	23.0

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0