

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

#### Luminaire

STR2 835 10 xx xx RD2XS RB2BD xx RA2HL

2" Adjustable Track Luminaire with extra narrow spot optic, hex louver and  
snoot/deep cutoff bezel

#### Test Number

SP-01581\_1

#### Test Date

9/19/2024

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

### Summary of Results

#### Power

Input Watts	11.8 W
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#### Lumen Output

Output Lumens	657
Efficacy	55.67 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.2
Two luminaires, plane 90°	0.21
Four luminaires	0.22

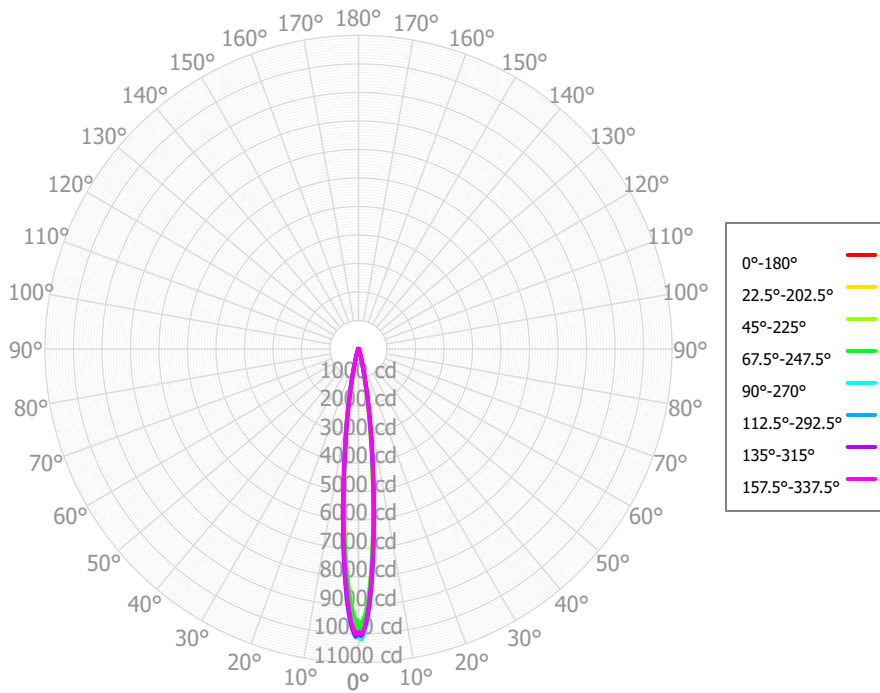
#### Full Beam Angle

0° - 180°	12°
90° - 270°	12°

### IES File Header Contents

Keyword	Value
TEST	SP-01581_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/19/2024
ISSUEDATE	9/19/2024
LUMCAT	STR2 835 10 xx xx RD2XS RB2BD xx RA2HL
LUMINAIRE	2" Adjustable Track Luminaire with extra narrow spot optic, hex louver and snoot/deep cutoff bezel
OTHER	Beam Angle: 12 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°	439.01	66.83%	90.00° - 100.00°	1.14	0.17%
10.00° - 20.00°	160.65	24.46%	100.00° - 110.00°	1.16	0.18%
20.00° - 30.00°	37.33	5.68%	100.00° - 120.00°	2.28	0.35%
30.00° - 40.00°	6.78	1.03%	120.00° - 130.00°	1.04	0.16%
40.00° - 50.00°	1.28	0.20%	130.00° - 140.00°	0.90	0.14%
50.00° - 60.00°	1.10	0.17%	140.00° - 150.00°	0.75	0.11%
60.00° - 70.00°	1.13	0.17%	150.00° - 160.00°	0.59	0.09%
70.00° - 80.00°	1.23	0.19%	160.00° - 170.00°	0.34	0.05%
80.00° - 90.00°	1.21	0.18%	170.00° - 180.00°	0.11	0.02%
0.00° - 90.00°	649.72	98.91%	0.00° - 180.00°	656.87	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°	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34	9933.34
0.50°	9880.98	9729.36	9632.56	9617.63	10203.27	10096.24	10087.08	9987.60	9837.80	9655.88	9560.60	9555.79	10125.70	10060.47	10068.19	10004.67	9880.98
1.00°	9737.78	9600.66	9505.74	9500.68	10034.57	9960.27	9924.09	9822.94	9656.10	9468.80	9356.90	9360.87	9953.55	9903.79	9911.79	9865.17	9737.78
1.50°	9478.42	9362.09	9308.58	9288.44	9811.18	9732.18	9662.13	9566.80	9392.34	9163.85	9051.93	9084.33	9668.90	9669.41	9668.25	9613.35	9478.42
2.00°	9168.54	9052.07	8949.87	8972.80	9492.27	9395.06	9330.59	9215.84	9012.12	8768.85	8675.72	8737.71	9296.91	9305.46	9342.05	9272.51	9168.54
2.50°	8755.76	8643.15	8548.37	8567.36	9071.90	8974.42	8880.05	8774.00	8565.05	8329.45	8257.72	8334.29	8840.54	8842.78	8911.85	8817.57	8755.76
3.00°	8240.50	8196.33	8065.05	8098.42	8589.27	8487.71	8393.40	8271.54	8072.00	7846.96	7805.24	7870.09	8325.91	8355.16	8408.42	8332.56	8240.50
3.50°	7708.33	7658.23	7537.30	7565.24	8037.36	7949.59	7885.27	7751.59	7558.07	7373.95	7331.82	7390.98	7759.18	7794.98	7868.56	7784.82	7708.33
4.00°	7154.02	7110.42	7037.09	7025.85	7457.78	7388.93	7335.07	7222.73	7047.01	6886.48	6834.75	6870.17	7226.91	7229.96	7288.38	7226.36	7154.02
4.50°	6609.90	6570.72	6481.76	6471.61	6865.35	6810.16	6752.83	6672.52	6533.19	6384.77	6322.79	6354.60	6709.13	6665.15	6716.84	6670.70	6609.90
5.00°	6076.33	5987.07	5907.28	5919.26	6284.46	6222.93	6173.05	6101.00	6009.47	5859.43	5811.57	5838.68	6202.66	6127.88	6151.56	6118.54	6076.33
5.50°	5531.81	5437.89	5352.95	5396.67	5728.89	5658.54	5602.97	5550.52	5473.69	5361.65	5307.64	5354.58	5662.45	5606.47	5584.88	5577.67	5531.81
6.00°	5010.19	4892.94	4813.45	4875.98	5171.38	5099.80	5049.71	5047.90	5005.05	4891.62	4814.52	4870.34	5165.56	5097.73	5049.69	5048.65	5010.19
6.50°	4505.14	4380.66	4296.56	4382.45	4663.57	4568.31	4528.74	4542.96	4549.53	4446.62	4366.21	4426.06	4697.25	4609.42	4548.53	4534.07	4505.14
7.00°	4038.24	3893.94	3819.21	3922.59	4198.55	4094.20	4049.08	4088.76	4115.01	4030.22	3953.46	3997.33	4246.59	4156.63	4099.22	4079.89	4038.24
7.50°	3603.00	3448.40	3385.23	3507.10	3752.62	3673.47	3614.09	3665.06	3727.50	3640.26	3554.75	3604.80	3823.37	3741.18	3664.93	3657.02	3603.00
8.00°	3199.91	3041.01	2995.89	3126.23	3352.82	3280.57	3217.23	3284.56	3348.75	3280.02	3189.99	3236.16	3441.52	3356.69	3266.84	3245.08	3199.91
8.50°	2825.30	2678.64	2642.65	2772.53	2984.91	2923.24	2860.10	2929.27	3016.50	2942.85	2861.11	2906.06	3082.27	3007.52	2896.01	2878.43	2825.30
9.00°	2464.55	2352.78	2315.13	2443.04	2637.00	2599.20	2540.22	2613.35	2702.50	2625.09	2555.05	2600.98	2748.23	2682.46	2578.65	2546.69	2464.55
9.50°	2145.56	2053.01	2015.34	2144.48	2316.02	2296.09	2238.67	2310.74	2411.26	2328.78	2271.27	2317.87	2446.31	2383.84	2276.36	2225.94	2145.56
10.00°	1859.60	1787.37	1753.80	1869.64	2029.17	2015.17	1970.37	2038.44	2129.84	2058.55	2019.95	2060.05	2158.51	2108.36	1992.26	1944.27	1859.60
10.50°	1595.58	1526.03	1509.42	1617.46	1761.26	1754.36	1713.99	1791.98	1867.62	1820.69	1787.56	1826.52	1894.90	1842.81	1736.04	1680.09	1595.58
11.00°	1361.19	1313.49	1284.06	1385.55	1510.56	1518.75	1494.29	1561.80	1631.78	1596.88	1569.19	1612.14	1658.45	1620.21	1505.35	1450.30	1361.19
11.50°	1157.80	1117.80	1102.13	1178.31	1296.69	1305.12	1288.17	1357.75	1421.73	1393.92	1377.16	1417.51	1441.29	1402.50	1293.06	1236.49	1157.80
12.00°	979.03	945.78	938.26	1001.84	1101.42	1108.43	1112.21	1171.57	1230.76	1209.23	1201.56	1225.06	1238.06	1211.34	1106.64	1053.75	979.03
12.50°	827.84	802.93	797.02	854.38	937.91	940.41	949.26	1003.12	1061.13	1042.50	1041.22	1062.10	1057.85	1034.22	946.30	891.68	827.84
13.00°	700.59	684.13	678.31	724.93	797.66	799.61	811.66	863.07	908.21	897.57	894.20	912.32	895.99	879.68	801.52	752.30	700.59
13.50°	593.33	584.58	582.79	624.03	680.89	680.57	695.28	738.72	774.80	766.72	767.71	775.31	763.35	741.71	678.11	637.57	593.33
14.00°	505.75	500.31	505.46	537.53	583.01	582.24	599.39	640.76	663.61	657.92	659.91	663.01	644.95	625.01	575.07	544.05	505.75
14.50°	434.46	434.53	440.52	468.09	506.27	506.18	519.66	553.22	568.78	562.75	564.99	566.59	548.87	532.59	494.36	466.70	434.46
15.00°	379.95	380.58	388.78	412.20	441.74	438.89	452.89	484.54	490.19	485.00	489.34	485.73	470.51	454.99	425.79	403.66	379.95
15.50°	337.53	334.90	343.44	364.70	388.89	382.79	397.87	429.53	428.95	419.13	419.45	417.34	405.08	391.41	365.41	353.25	337.53
16.00°	299.57	300.26	307.19	326.20	348.94	344.85	356.19	379.95	377.99	366.95	367.13	364.65	353.85	342.30	323.16	311.90	299.57
16.50°	270.85	273.41	276.83	296.42	314.09	306.94	316.77	339.31	339.88	323.63	324.97	323.13	311.35	301.32	288.89	281.14	270.85
17.00°	243.51	251.02	253.92	271.01	284.47	278.75	286.94	307.87	299.90	288.61	287.96	285.38	277.64	267.30	259.94	257.12	243.51
17.50°	222.81	227.43	232.99	249.19	258.10	254.47	258.23	279.49	272.97	259.08	258.87	256.73	250.36	237.99	236.53	229.95	222.81
18.00°	204.34	207.96	212.67	230.89	236.80	233.70	240.41	253.70	249.75	236.22	233.84	232.96	225.49	216.35	217.15	208.32	204.34
18.50°	186.28	191.09	196.29	214.63	215.96	213.90	220.12	235.56	227.09	218.15	212.66	214.78	206.09	193.92	198.12	193.53	186.28
19.00°	174.58	179.06	182.06	197.41	202.47	195.55	204.27	220.71	208.84	196.26	195.06	193.75	190.79	182.60	181.61	180.84	174.58
19.50°	166.74	163.87	167.26	180.87	191.47	182.80	185.54	204.83	193.58	182.91	180.02	179.06	176.38	167.48	168.51	167.02	166.74
20.00°	154.54	155.26	154.09	169.18	181.43	173.39	176.47	191.10	181.26	167.28	165.73	163.17	162.24	156.47	157.42	157.51	154.54
20.50°	143.98	140.82	144.65	156.86	164.52	162.68	166.90	177.40	167.20	157.21	151.14	151.00	153.21	143.38	147.61	147.39	143.98
21.00°	135.30	133.77	135.47	150.68	155.41	150.07	154.57	167.08	157.50	142.08	139.25	139.70	142.56	133.62	137.99	138.25	135.30

### 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>	780	780	780	780	761	761	761	761	726	726	726	693	693	693	664	664	650
	<b>1</b>	758	746	736	726	742	732	722	714	705	697	691	680	674	669	657	653	639
	<b>2</b>	739	720	703	690	726	708	694	681	687	676	666	668	659	651	649	643	630
	<b>3</b>	722	698	678	663	711	689	671	657	672	658	647	657	645	636	642	633	622
	<b>4</b>	707	679	659	643	697	672	653	639	659	643	631	646	634	623	635	625	613
	<b>5</b>	694	663	642	627	685	658	638	624	647	631	618	637	623	613	628	616	606
	<b>6</b>	681	650	629	614	674	645	626	611	636	620	607	628	614	603	621	608	598
	<b>7</b>	670	638	617	602	663	634	614	601	627	610	598	620	605	594	614	601	592
	<b>8</b>	659	627	607	593	653	624	605	591	618	601	589	612	597	587	607	594	585
	<b>9</b>	649	617	597	584	644	614	596	583	609	593	581	605	590	579	600	587	579
	<b>10</b>	640	608	589	576	636	606	588	576	602	585	574	598	583	573	594	581	573

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	328.4 fc	1.1 ft
6.5 ft	235.1 fc	1.3 ft
7.5 ft	176.6 fc	1.6 ft
8.0 ft	155.2 fc	1.7 ft
10.0 ft	99.3 fc	2.1 ft
12.0 ft	69.0 fc	2.5 ft
14.0 ft	50.7 fc	2.9 ft
16.0 ft	38.8 fc	3.3 ft
20.0 ft	24.8 fc	4.1 ft
24.0 ft	17.2 fc	5.0 ft
28.0 ft	12.7 fc	5.8 ft

### Average Luminaire Luminance [cd/m<sup>2</sup>]

	0.00°	45.00°	90.00°
<b>0.00°</b>	3087001	3087001	3087001
<b>45.00°</b>	538	711	654
<b>55.00°</b>	592	475	590
<b>65.00°</b>	917	875	354
<b>75.00°</b>	970	1675	1457
<b>85.00°</b>	3470	3345	4417

### 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	-4.2	-3.3	-3.8	-3.0	-2.6	-4.3	-3.4	-3.9	-3.0	-2.7
	3H	-1.1	-0.3	-0.6	0.1	0.5	-1.8	-1.0	-1.4	-0.6	-0.2
	4H	0.1	0.8	0.5	1.2	1.6	0.2	0.9	0.6	1.3	1.7
	6H	1.8	2.4	2.2	2.8	3.2	3.2	3.8	3.6	4.2	4.7
	8H	2.9	3.5	3.4	3.9	4.4	4.4	5.0	4.8	5.4	5.9
	12H	4.1	4.7	4.6	5.1	5.6	5.5	6.1	6.0	6.5	7.0
4H	2H	-3.4	-2.7	-3.0	-2.3	-1.9	-3.3	-2.6	-2.9	-2.2	-1.8
	3H	-0.1	0.5	0.3	0.9	1.3	-0.5	0.1	-0.1	0.5	1.0
	4H	1.3	1.8	1.8	2.3	2.7	1.7	2.2	2.1	2.6	3.1
	6H	3.2	3.6	3.7	4.1	4.6	4.8	5.2	5.3	5.7	6.2
	8H	4.4	4.8	4.9	5.3	5.8	6.1	6.5	6.6	7.0	7.5
	12H	5.8	6.1	6.3	6.7	7.2	7.3	7.7	7.8	8.2	8.7
8H	4H	2.3	2.7	2.8	3.2	3.7	2.9	3.3	3.4	3.8	4.3
	6H	4.4	4.8	5.0	5.3	5.8	6.1	6.4	6.6	7.0	7.5
	8H	5.7	6.0	6.3	6.6	7.1	7.5	7.8	8.1	8.3	8.9
	12H	7.3	7.6	7.9	8.1	8.7	8.9	9.1	9.4	9.7	10.3
12H	4H	2.5	2.9	3.1	3.4	3.9	3.1	3.5	3.6	4.0	4.5
	6H	4.9	5.2	5.4	5.7	6.2	6.4	6.7	7.0	7.2	7.8
	8H	6.3	6.5	6.8	7.1	7.7	8.0	8.2	8.5	8.7	9.3

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0