

## Indoor Distribution Test Report

### Spectrum Lighting Inc.

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### Spectrum Lighting Photometric Lab

**Luminaire**

STR2 835 13 xx xx RD2SP RB2BD xx xx

2" Adjustable Track Luminaire with spot optic and snoot/deep cutoff bezel

**Test Number**

SP-01578\_2

**Test Date**

9/26/2023

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	1144
Efficacy	79.45 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.37
Two luminaires, plane 90°	0.36
Four luminaires	0.35

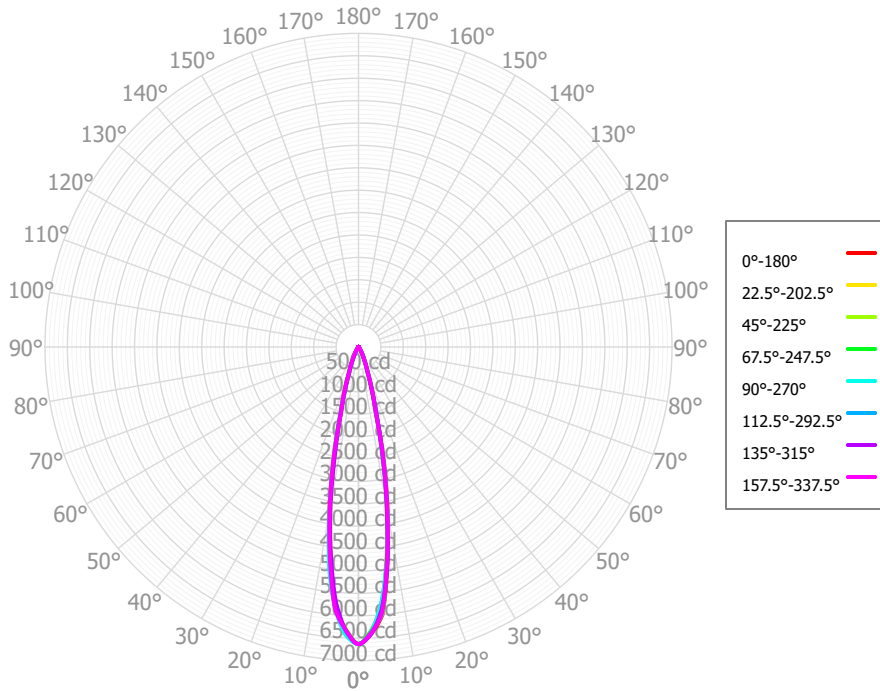
#### Full Beam Angle

0° - 180°	22°
90° - 270°	22°

### IES File Header Contents

Keyword	Value
TEST	SP-01578_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/26/2023
ISSUEDATE	9/29/2023
LUMCAT	STR2 835 13 xx xx RD2SP RB2BD xx xx
LUMINAIRE	2" Adjustable Track Luminaire with spot optic and snoot/deep cutoff bezel
OTHER	Beam Angle: 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°	487.96	42.65%	90.00° - 100.00°	1.69	0.15%
10.00° - 20.00°	455.56	39.82%	100.00° - 110.00°	1.62	0.14%
20.00° - 30.00°	140.74	12.30%	100.00° - 120.00°	3.11	0.27%
30.00° - 40.00°	36.50	3.19%	120.00° - 130.00°	1.38	0.12%
40.00° - 50.00°	6.30	0.55%	130.00° - 140.00°	1.33	0.12%
50.00° - 60.00°	1.81	0.16%	140.00° - 150.00°	1.11	0.10%
60.00° - 70.00°	1.65	0.14%	150.00° - 160.00°	0.87	0.08%
70.00° - 80.00°	1.63	0.14%	160.00° - 170.00°	0.53	0.05%
80.00° - 90.00°	1.75	0.15%	170.00° - 180.00°	0.16	0.01%
0.00° - 90.00°	1133.88	99.11%	0.00° - 180.00°	1144.05	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°	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76	6631.76
2.50°	6403.87	6390.03	6352.32	6353.67	6389.86	6335.57	6349.17	6341.40	6340.79	6347.44	6311.71	6371.55	6443.06	6382.32	6421.58	6398.31	6403.87
5.00°	6018.84	5889.83	5994.76	5799.18	5762.76	5866.74	5739.59	5900.94	5876.06	5866.10	5896.86	5876.41	5890.08	5979.60	5897.63	5965.41	6018.84
7.50°	4927.80	4836.85	4804.42	4798.40	4838.19	4790.61	4715.21	4848.45	4820.73	4883.81	4752.41	4918.54	5003.17	4890.35	4921.96	4852.29	4927.80
10.00°	3734.25	3713.59	3615.97	3688.22	3696.45	3693.54	3606.73	3685.43	3741.46	3692.05	3611.16	3684.74	3704.07	3687.84	3626.82	3715.68	3734.25
12.50°	2594.15	2467.40	2498.23	2442.18	2424.40	2519.61	2408.26	2594.98	2565.97	2618.63	2513.66	2593.96	2564.30	2559.11	2519.83	2498.40	2594.15
15.00°	1460.07	1503.27	1413.52	1519.28	1574.23	1509.46	1537.40	1515.50	1542.46	1588.88	1476.43	1580.78	1604.71	1440.44	1532.54	1462.34	1460.07
17.50°	994.40	981.85	984.54	963.92	954.48	1019.24	983.10	1035.40	1054.40	1046.50	1023.54	1002.06	958.79	975.11	952.36	977.96	994.40
20.00°	586.57	600.29	575.43	592.73	616.72	611.36	623.12	628.97	641.85	661.49	605.07	633.85	633.27	577.93	608.32	580.28	586.57
22.50°	424.00	419.22	417.27	410.75	416.51	436.25	432.74	455.85	464.78	460.68	441.70	425.72	410.39	412.57	405.22	413.89	424.00
25.00°	275.50	278.49	266.86	277.97	288.15	287.49	296.57	304.14	310.83	312.51	290.04	287.73	282.22	265.38	276.48	272.62	275.50
27.50°	196.44	190.64	190.19	190.85	190.95	205.46	203.73	218.27	219.96	220.80	209.87	200.43	188.15	188.67	190.03	190.48	196.44
30.00°	119.70	122.73	118.31	124.83	125.62	134.17	136.09	136.50	141.78	142.92	135.93	132.78	122.90	115.46	123.49	122.06	119.70
32.50°	81.80	78.39	81.40	76.75	72.73	86.97	86.61	93.31	94.15	96.66	93.26	88.78	77.66	80.03	81.75	82.78	81.80
35.00°	44.52	47.08	47.51	46.37	46.21	50.57	55.16	51.61	55.28	57.10	55.26	52.98	47.92	45.45	50.37	51.19	44.52
37.50°	31.01	29.68	31.80	29.57	28.91	35.69	35.59	37.15	35.43	38.16	37.50	33.95	29.13	33.03	33.03	34.16	31.01
40.00°	17.79	17.58	17.55	18.16	18.12	22.56	21.83	23.07	19.67	22.85	21.91	19.99	17.99	20.72	20.96	20.17	17.79
42.50°	11.36	10.67	10.52	10.53	9.31	12.62	11.50	14.71	11.82	14.69	14.29	12.52	10.44	12.85	13.14	11.43	11.36
45.00°	5.23	6.32	4.56	5.88	5.67	5.87	6.36	6.59	6.20	7.58	7.81	6.73	5.15	5.28	6.72	5.41	5.23
47.50°	3.65	4.25	3.09	3.11	3.38	4.33	4.03	4.99	4.51	5.27	5.02	4.90	2.94	4.05	4.43	3.61	3.65
50.00°	2.18	2.84	1.89	1.91	2.32	3.11	2.84	3.43	3.24	3.51	2.86	3.98	2.50	2.90	3.34	2.30	2.18
52.50°	2.01	1.95	1.63	1.60	1.55	2.35	2.20	2.36	2.64	2.58	2.45	2.91	2.05	2.83	2.50	1.71	2.01
55.00°	1.83	1.56	1.49	1.58	1.79	1.87	2.01	1.41	2.26	1.71	2.14	1.81	1.59	2.74	1.72	1.51	1.83
57.50°	1.54	1.52	1.73	1.71	2.23	1.73	2.01	1.77	2.22	1.45	2.10	1.57	1.58	2.36	1.64	1.79	1.54
60.00°	1.28	1.82	1.94	1.63	1.73	1.62	1.95	2.05	2.09	1.22	2.11	1.48	1.77	2.00	1.71	1.90	1.28
62.50°	1.21	2.33	2.07	1.44	1.07	1.53	1.87	1.64	1.84	1.43	2.24	1.94	1.73	1.80	1.58	1.80	1.21
65.00°	1.19	1.93	2.08	1.57	1.15	1.50	1.85	1.33	1.66	1.67	2.18	2.46	1.60	1.61	1.42	1.71	1.19
67.50°	1.44	0.97	1.80	1.83	1.31	1.51	1.85	1.65	1.56	1.44	1.77	2.15	1.55	1.54	1.47	1.64	1.44
70.00°	1.61	0.88	1.62	1.64	1.34	1.49	1.86	1.90	1.54	1.22	1.43	1.75	1.53	1.53	1.56	1.51	1.61
72.50°	1.40	1.25	1.66	1.28	1.36	1.44	1.86	1.83	1.59	1.38	1.23	1.42	1.33	1.84	1.43	1.35	1.40
75.00°	1.35	1.48	1.61	1.30	1.52	1.63	1.71	1.84	1.59	1.53	1.18	1.09	1.08	2.04	1.28	1.40	1.35
77.50°	1.92	1.64	1.35	1.44	1.70	2.03	1.53	2.23	1.54	1.41	1.36	1.31	1.28	1.76	1.35	1.65	1.92
80.00°	2.31	1.70	1.17	1.29	1.71	2.04	1.90	2.53	1.53	1.33	1.43	1.55	1.61	1.53	1.45	1.76	2.31
82.50°	2.03	1.70	1.13	1.06	1.70	1.70	2.40	2.52	1.55	1.76	1.32	1.75	1.54	1.50	1.46	1.77	2.03
85.00°	1.86	1.80	1.16	1.03	1.53	1.59	1.85	2.40	1.58	2.13	1.27	1.95	1.36	1.44	1.47	1.59	1.86
87.50°	2.01	1.93	1.32	1.05	1.36	1.64	1.10	1.94	1.62	1.89	1.32	1.63	1.42	1.26	1.34	1.26	2.01
90.00°	2.02	1.79	1.51	1.46	1.50	1.52	1.26	1.57	1.69	1.69	1.36	1.34	1.52	1.29	1.20	1.31	2.02
92.50°	1.65	1.56	1.76	1.96	1.63	1.27	1.58	1.45	1.80	1.76	1.42	1.56	1.37	1.91	1.14	1.62	1.65
95.00°	1.42	1.49	1.82	1.91	1.47	1.30	1.50	1.44	1.74	1.83	1.38	1.75	1.18	2.26	1.09	1.54	1.42
97.50°	1.52	1.46	1.61	1.77	1.31	1.50	1.38	1.72	1.58	1.84	1.26	1.53	1.33	1.94	1.39	1.22	1.52
100.00°	1.54	1.35	1.37	1.49	1.18	1.59	1.31	1.89	1.58	1.82	1.29	1.34	1.53	1.73	1.69	1.30	1.54
102.50°	1.35	1.22	1.09	1.21	1.07	1.62	1.24	1.81	1.68	1.63	1.47	1.47	1.56	1.80	1.63	1.60	1.35
105.00°	1.23	1.71	1.12	1.28	1.21	1.59	1.68	1.77	1.66	1.47	1.63	1.60	1.58	1.91	1.56	1.58	1.23

### 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>	1360	1360	1360	1360	1327	1327	1327	1327	1266	1266	1266	1210	1210	1210	1158	1158	1134
	<b>1</b>	1315	1291	1269	1250	1286	1266	1247	1230	1218	1204	1190	1175	1164	1153	1135	1126	1103
	<b>2</b>	1274	1233	1200	1173	1249	1214	1184	1159	1177	1153	1132	1142	1124	1107	1111	1096	1075
	<b>3</b>	1236	1184	1145	1113	1214	1169	1133	1104	1139	1110	1086	1112	1088	1068	1087	1067	1047
	<b>4</b>	1200	1141	1098	1065	1182	1129	1089	1059	1105	1072	1046	1083	1056	1033	1063	1040	1021
	<b>5</b>	1167	1103	1059	1026	1151	1093	1052	1021	1074	1039	1012	1056	1026	1002	1039	1014	996
	<b>6</b>	1137	1069	1024	992	1123	1061	1019	988	1045	1009	981	1030	999	974	1017	989	973
	<b>7</b>	1108	1038	993	962	1096	1032	989	959	1018	981	954	1006	973	949	994	966	950
	<b>8</b>	1081	1010	966	935	1070	1004	962	933	993	956	929	983	950	925	973	944	929
	<b>9</b>	1056	984	941	911	1046	979	938	909	970	933	906	961	927	903	953	923	909
	<b>10</b>	1032	960	917	889	1023	956	915	888	948	911	885	940	907	883	933	903	890

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	219.2 fc	2.1 ft
6.5 ft	157.0 fc	2.5 ft
7.5 ft	117.9 fc	2.9 ft
8.0 ft	103.6 fc	3.1 ft
10.0 ft	66.3 fc	3.9 ft
12.0 ft	46.1 fc	4.6 ft
14.0 ft	33.8 fc	5.4 ft
16.0 ft	25.9 fc	6.2 ft
20.0 ft	16.6 fc	7.7 ft
24.0 ft	11.5 fc	9.3 ft
28.0 ft	8.5 fc	10.8 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	2060965	2060965	2060965
<b>45.00°</b>	2300	2003	2490
<b>55.00°</b>	990	807	971
<b>65.00°</b>	877	1530	842
<b>75.00°</b>	1615	1930	1830
<b>85.00°</b>	6649	4144	5473

### 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	-4.4	-3.5	-4.0	-3.2	-2.8	-4.2	-3.3	-3.8	-3.0	-2.6
	3H	-1.6	-0.8	-1.2	-0.5	-0.1	-0.9	-0.2	-0.5	0.2	0.6
	4H	0.1	0.8	0.5	1.2	1.6	0.4	1.1	0.8	1.5	1.9
	6H	3.4	4.1	3.8	4.5	4.9	2.7	3.4	3.2	3.8	4.2
	8H	4.9	5.5	5.4	5.9	6.4	4.0	4.6	4.4	5.0	5.4
	12H	6.3	6.9	6.8	7.3	7.7	5.2	5.8	5.7	6.2	6.6
4H	2H	-3.2	-2.5	-2.7	-2.1	-1.7	-2.7	-2.0	-2.3	-1.6	-1.2
	3H	-0.4	0.2	0.1	0.7	1.1	0.4	1.0	0.8	1.4	1.8
	4H	1.5	2.0	2.0	2.5	2.9	1.9	2.4	2.3	2.9	3.3
	6H	4.8	5.3	5.3	5.8	6.2	4.4	4.9	4.9	5.3	5.8
	8H	6.4	6.8	6.9	7.3	7.8	5.7	6.2	6.2	6.6	7.1
	12H	7.9	8.3	8.4	8.8	9.3	7.1	7.4	7.6	7.9	8.4
8H	4H	2.3	2.7	2.8	3.2	3.7	2.7	3.1	3.2	3.5	4.0
	6H	5.7	6.0	6.2	6.5	7.0	5.5	5.9	6.1	6.4	6.9
	8H	7.4	7.7	8.0	8.2	8.8	7.1	7.3	7.6	7.9	8.4
	12H	9.2	9.4	9.7	9.9	10.5	8.6	8.9	9.2	9.4	10.0
12H	4H	2.5	2.8	3.0	3.3	3.8	3.0	3.4	3.5	3.9	4.4
	6H	5.9	6.2	6.4	6.6	7.2	6.0	6.3	6.5	6.8	7.3
	8H	7.7	7.9	8.2	8.5	9.1	7.6	7.9	8.2	8.4	9.0

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0