

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 RD2XS RB2BS xx RA2HL

2" Adjustable Track Luminaire with extra narrow spot optic, hex louver and standard bezel

Test Number

SP-01573_2

Test Date

2/19/2024

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

Summary of Results

Power

Input Watts	14.4 W
-------------	--------

Lumen Output

Output Lumens	923
Efficacy	64.07 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°	0.2
Four luminaires	0.22

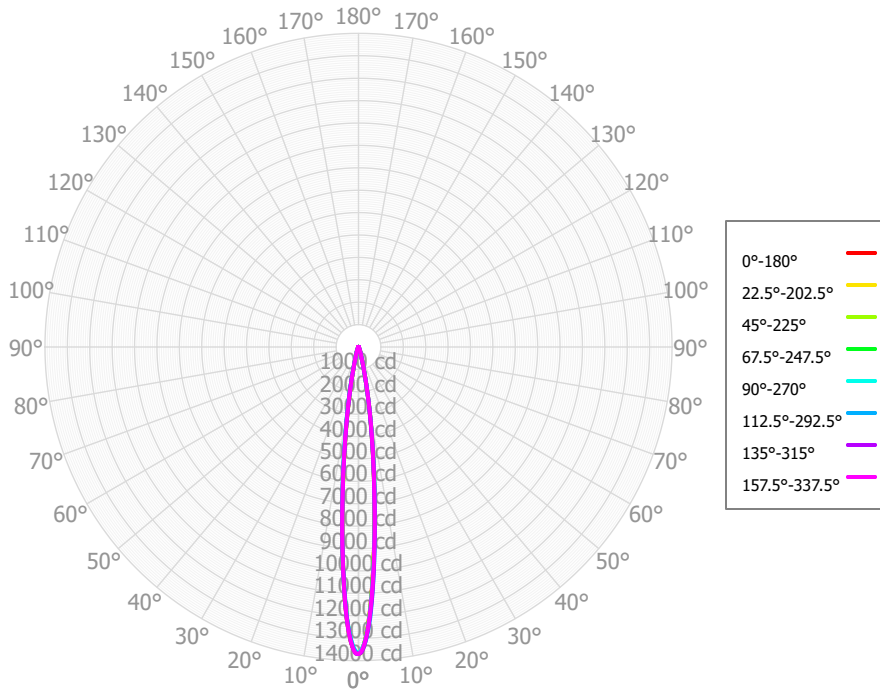
Full Beam Angle

0° - 180°	12°
90° - 270°	12°

IES File Header Contents

Keyword	Value
TEST	SP-01573_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/19/2024
ISSUEDATE	2/19/2024
LUMCAT	STR2 835 13 xx xx RD2XS RB2BS xx RA2HL
LUMINAIRE	2" Adjustable Track Luminaire with extra narrow spot optic, hex louver and standard 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
_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°	602.01	65.25%	90.00° - 100.00°	1.63	0.18%
10.00° - 20.00°	218.17	23.65%	100.00° - 110.00°	1.63	0.18%
20.00° - 30.00°	58.98	6.39%	100.00° - 120.00°	3.18	0.34%
30.00° - 40.00°	22.33	2.42%	120.00° - 130.00°	1.48	0.16%
40.00° - 50.00°	4.82	0.52%	130.00° - 140.00°	1.23	0.13%
50.00° - 60.00°	1.64	0.18%	140.00° - 150.00°	1.05	0.11%
60.00° - 70.00°	1.50	0.16%	150.00° - 160.00°	0.81	0.09%
70.00° - 80.00°	1.58	0.17%	160.00° - 170.00°	0.48	0.05%
80.00° - 90.00°	1.57	0.17%	170.00° - 180.00°	0.14	0.02%
0.00° - 90.00°	912.59	98.92%	0.00° - 180.00°	922.59	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°	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23	13700.23
0.50°	13592.21	13663.61	13621.33	13579.87	13522.26	13611.94	13694.87	13675.18	13655.83	13642.56	13682.49	13641.40	13590.40	13620.96	13652.16	13597.78	13592.21
1.00°	13310.71	13340.52	13376.57	13326.13	13312.65	13426.96	13480.34	13487.82	13473.01	13462.72	13449.00	13472.91	13369.94	13392.50	13407.10	13345.62	13310.71
1.50°	12920.75	12920.97	12973.86	12942.62	12955.72	13044.77	13144.37	13143.14	13161.61	13124.13	13116.99	13127.28	13043.24	13064.46	13027.08	12981.96	12920.75
2.00°	12372.53	12422.90	12443.89	12456.74	12474.93	12592.25	12671.91	12694.12	12701.09	12671.56	12656.21	12628.49	12622.68	12596.42	12534.67	12484.27	12372.53
2.50°	11759.76	11819.20	11831.15	11852.75	11842.96	12029.16	12092.70	12106.96	12131.32	12064.59	12058.77	12039.06	12055.71	12082.06	11957.86	11878.93	11759.76
3.00°	11058.33	11088.72	11159.01	11153.19	11131.17	11294.69	11394.47	11418.72	11448.34	11373.59	11394.87	11360.35	11407.84	11377.47	11336.83	11195.13	11058.33
3.50°	10326.00	10376.25	10420.97	10399.18	10408.79	10537.65	10620.80	10663.55	10671.85	10572.97	10654.68	10646.37	10686.68	10656.18	10603.60	10471.11	10326.00
4.00°	9613.61	9624.70	9652.44	9641.46	9700.48	9803.94	9858.25	9874.63	9867.51	9793.33	9887.69	9919.04	9918.44	9908.79	9866.01	9730.00	9613.61
4.50°	8862.42	8901.38	8892.49	8908.42	8982.79	9067.34	9084.47	9095.35	9074.84	9043.31	9112.90	9125.77	9146.58	9121.64	9061.99	8987.21	8862.42
5.00°	8145.06	8181.07	8169.88	8203.87	8280.96	8336.19	8311.23	8324.09	8303.05	8268.32	8312.83	8366.20	8385.69	8360.75	8291.97	8253.15	8145.06
5.50°	7461.59	7469.19	7451.15	7518.27	7587.06	7617.22	7548.28	7544.72	7535.38	7500.84	7532.93	7598.06	7634.89	7627.25	7519.15	7529.31	7461.59
6.00°	6823.67	6774.14	6785.10	6834.70	6909.84	6908.27	6816.66	6820.10	6819.47	6764.70	6777.39	6833.80	6916.55	6906.80	6821.65	6817.69	6823.67
6.50°	6211.00	6151.31	6125.01	6193.57	6256.44	6234.38	6133.05	6160.19	6164.35	6102.86	6060.83	6131.11	6254.43	6231.44	6157.31	6171.88	6211.00
7.00°	5611.44	5581.79	5523.40	5591.50	5654.31	5595.91	5482.17	5517.74	5543.19	5481.26	5406.73	5497.20	5649.44	5632.87	5526.90	5578.05	5611.44
7.50°	5058.25	5040.49	4972.67	5013.42	5076.88	5007.86	4869.06	4912.87	4942.10	4900.14	4816.43	4925.95	5061.91	5079.08	4991.86	5025.94	5058.25
8.00°	4558.64	4514.99	4443.48	4496.72	4547.63	4466.21	4307.09	4370.44	4384.84	4351.15	4279.10	4377.17	4529.00	4562.19	4446.73	4508.16	4558.64
8.50°	4094.49	4040.89	3942.52	4024.54	4047.91	3955.07	3817.88	3878.64	3894.44	3842.03	3789.04	3895.68	4041.01	4079.98	3971.56	4027.37	4094.49
9.00°	3635.28	3609.85	3497.14	3572.87	3600.83	3495.95	3356.20	3425.01	3434.17	3386.22	3340.90	3444.97	3597.71	3634.71	3529.05	3577.92	3635.28
9.50°	3213.07	3198.48	3092.58	3164.25	3181.05	3080.24	2969.41	3004.09	3004.22	2961.21	2920.76	3030.61	3167.10	3220.88	3122.85	3167.36	3213.07
10.00°	2831.05	2819.78	2717.16	2782.66	2783.85	2708.59	2604.24	2619.82	2618.43	2561.45	2542.48	2654.21	2765.11	2837.97	2746.73	2788.59	2831.05
10.50°	2479.80	2474.67	2373.04	2424.19	2424.84	2356.93	2262.22	2274.59	2263.58	2217.11	2199.53	2304.68	2407.25	2476.64	2403.62	2453.37	2479.80
11.00°	2153.60	2150.22	2060.14	2108.08	2095.85	2050.89	1958.15	1968.14	1949.60	1908.81	1898.42	1993.90	2086.08	2148.65	2089.64	2130.08	2153.60
11.50°	1862.05	1858.82	1785.28	1829.76	1807.93	1774.42	1688.08	1696.06	1663.17	1633.42	1622.80	1711.24	1795.58	1849.61	1804.63	1842.99	1862.05
12.00°	1602.36	1598.70	1537.14	1574.11	1552.03	1517.84	1450.08	1448.95	1416.26	1385.26	1382.23	1457.60	1535.04	1581.12	1553.56	1589.33	1602.36
12.50°	1372.56	1367.15	1321.38	1343.29	1320.65	1295.56	1240.14	1226.81	1202.78	1175.35	1167.74	1237.01	1302.78	1341.94	1330.01	1362.54	1372.56
13.00°	1169.32	1166.10	1123.99	1143.16	1121.45	1101.54	1056.61	1041.52	1021.81	999.52	1001.94	1054.24	1101.98	1141.42	1140.66	1156.87	1169.32
13.50°	993.14	995.16	957.62	968.99	951.20	935.82	904.49	892.09	872.31	850.59	850.23	896.07	935.61	972.41	972.32	987.51	993.14
14.00°	845.34	847.56	822.16	825.60	810.60	806.31	776.36	761.43	747.05	725.16	731.75	768.33	798.50	825.85	832.63	843.50	845.34
14.50°	722.89	723.03	707.36	710.33	696.39	693.10	671.81	650.99	644.82	628.79	636.34	666.75	687.80	714.52	721.09	723.82	722.89
15.00°	625.71	625.41	615.82	615.78	600.10	603.58	586.43	568.60	558.80	546.77	555.18	583.23	596.87	619.79	630.43	625.05	625.71
15.50°	543.33	547.84	540.01	535.21	522.83	524.77	514.33	504.45	491.93	481.80	490.20	510.03	523.96	541.97	549.32	542.87	543.33
16.00°	474.48	481.70	469.17	466.65	459.29	460.51	456.92	443.94	434.02	427.98	436.67	456.76	465.14	477.27	485.76	482.16	474.48
16.50°	423.62	427.53	423.37	418.28	408.50	410.19	407.90	396.17	386.38	383.64	393.91	405.74	418.51	433.26	437.97	430.51	423.62
17.00°	385.88	382.93	379.60	377.62	372.02	368.07	367.15	362.67	352.51	349.37	356.99	375.56	382.32	388.92	397.24	389.60	385.88
17.50°	349.47	353.78	349.33	341.68	336.83	334.49	337.15	330.11	325.14	321.29	329.25	342.75	349.03	357.52	360.91	354.24	349.47
18.00°	314.55	317.05	316.47	310.02	306.69	306.92	310.39	301.63	293.92	294.53	302.72	317.57	319.85	324.28	332.08	322.24	314.55
18.50°	291.69	289.54	292.59	285.26	278.17	286.06	283.98	285.43	275.13	270.17	278.03	295.76	295.94	300.59	302.27	292.88	291.69
19.00°	269.12	268.73	271.31	265.23	262.95	266.18	264.29	260.45	253.48	249.30	259.30	272.74	274.75	277.61	278.57	270.27	269.12
19.50°	251.13	248.86	254.00	246.50	244.22	246.51	247.06	240.20	236.49	235.66	243.98	250.23	257.50	255.01	263.51	252.89	251.13
20.00°	232.82	233.07	234.92	229.12	228.21	228.47	231.31	228.17	223.42	222.70	230.73	236.44	243.06	242.60	240.99	238.61	232.82
20.50°	218.74	219.26	220.00	215.29	210.76	216.05	220.12	216.18	211.68	205.51	213.36	223.55	228.79	226.91	225.89	225.59	218.74
21.00°	206.56	206.43	205.14	201.46	203.10	205.52	208.04	204.52	191.93	191.76	197.92	210.46	215.11	212.54	213.60	212.74	206.56

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	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	1096	1096	1096	1096	1069	1069	1069	1069	1020	1020	1020	974	974	974	932	932	913
	1	1065	1047	1032	1018	1042	1027	1013	1001	989	978	969	953	946	939	921	915	897
	2	1037	1008	985	965	1018	992	971	954	963	946	932	935	922	911	910	900	882
	3	1012	976	948	926	995	964	939	918	940	920	903	918	902	888	898	885	869
	4	990	949	919	896	975	939	912	891	920	898	880	903	884	869	887	871	856
	5	969	925	895	872	957	917	889	868	902	879	860	888	868	853	875	858	844
	6	951	905	875	853	940	899	870	850	886	862	844	875	854	838	864	846	832
	7	934	887	857	836	925	882	854	834	872	847	829	862	841	825	853	835	821
	8	918	871	842	821	910	867	839	819	858	834	816	850	829	813	843	824	811
	9	904	857	828	808	896	853	826	807	846	821	804	839	817	802	833	813	799
	10	890	843	815	797	884	840	814	796	834	810	794	828	807	792	823	804	793

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	452.9 fc	1.2 ft
6.5 ft	324.3 fc	1.4 ft
7.5 ft	243.6 fc	1.6 ft
8.0 ft	214.1 fc	1.7 ft
10.0 ft	137.0 fc	2.1 ft
12.0 ft	95.1 fc	2.5 ft
14.0 ft	69.9 fc	2.9 ft
16.0 ft	53.5 fc	3.4 ft
20.0 ft	34.3 fc	4.2 ft
24.0 ft	23.8 fc	5.0 ft
28.0 ft	17.5 fc	5.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	4257644	4257644	4257644
45.00°	3377	1608	2003
55.00°	886	1017	1017
65.00°	1479	1234	1290
75.00°	1741	1350	1936
85.00°	7078	4261	4857

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	-3.0	-2.2	-2.7	-1.8	-1.5	-2.9	-2.0	-2.5	-1.6	-1.3
	3H	-0.3	0.5	0.1	0.8	1.2	-0.3	0.4	0.1	0.8	1.2
	4H	1.3	2.0	1.7	2.4	2.8	1.4	2.1	1.8	2.5	2.9
	6H	2.9	3.5	3.3	3.9	4.4	3.4	4.1	3.8	4.5	4.9
	8H	4.3	4.9	4.7	5.3	5.8	4.3	4.9	4.7	5.3	5.7
	12H	6.3	6.9	6.8	7.3	7.7	5.2	5.8	5.7	6.2	6.7
4H	2H	-2.4	-1.7	-1.9	-1.3	-0.9	-2.5	-1.8	-2.1	-1.4	-1.0
	3H	0.8	1.4	1.2	1.8	2.3	0.4	1.0	0.8	1.4	1.9
	4H	2.6	3.1	3.0	3.5	4.0	2.3	2.8	2.7	3.2	3.7
	6H	4.3	4.8	4.8	5.3	5.8	4.5	5.0	5.0	5.5	6.0
	8H	5.8	6.2	6.3	6.7	7.2	5.6	6.0	6.1	6.5	7.0
	12H	7.8	8.2	8.3	8.7	9.2	6.7	7.1	7.2	7.6	8.1
8H	4H	3.3	3.7	3.8	4.2	4.7	2.8	3.2	3.3	3.7	4.2
	6H	5.4	5.7	5.9	6.2	6.7	5.4	5.8	6.0	6.3	6.8
	8H	6.8	7.1	7.4	7.7	8.2	6.8	7.1	7.3	7.6	8.1
	12H	8.9	9.2	9.5	9.7	10.3	8.1	8.4	8.7	8.9	9.5
12H	4H	3.6	4.0	4.1	4.5	5.0	3.0	3.4	3.5	3.9	4.4
	6H	5.8	6.0	6.3	6.5	7.1	5.8	6.0	6.3	6.5	7.1
	8H	7.3	7.5	7.8	8.0	8.7	7.3	7.5	7.8	8.0	8.6

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0