

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STR2 835 13 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_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
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Lumen Output

Output Lumens	876
Efficacy	60.82 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

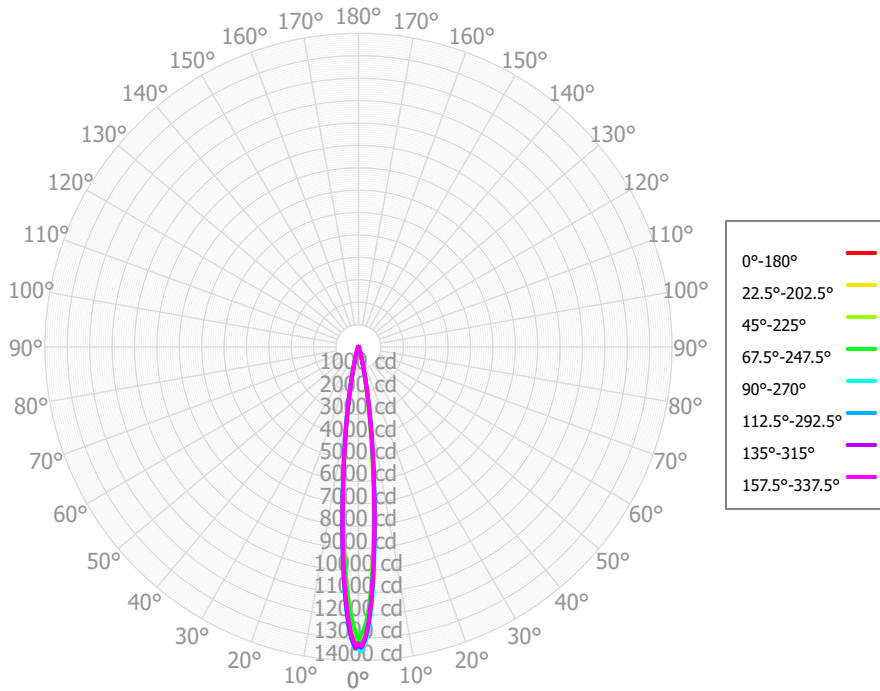
Full Beam Angle

0° - 180°	12°
90° - 270°	12°

IES File Header Contents

Keyword	Value
TEST	SP-01581_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 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
_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°	585.34	66.83%	90.00° - 100.00°	1.52	0.17%
10.00° - 20.00°	214.20	24.46%	100.00° - 110.00°	1.54	0.18%
20.00° - 30.00°	49.77	5.68%	100.00° - 120.00°	3.03	0.35%
30.00° - 40.00°	9.03	1.03%	120.00° - 130.00°	1.39	0.16%
40.00° - 50.00°	1.71	0.20%	130.00° - 140.00°	1.20	0.14%
50.00° - 60.00°	1.47	0.17%	140.00° - 150.00°	1.00	0.11%
60.00° - 70.00°	1.51	0.17%	150.00° - 160.00°	0.78	0.09%
70.00° - 80.00°	1.64	0.19%	160.00° - 170.00°	0.45	0.05%
80.00° - 90.00°	1.61	0.18%	170.00° - 180.00°	0.15	0.02%
0.00° - 90.00°	866.29	98.91%	0.00° - 180.00°	875.82	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°	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45	13244.45
0.50°	13174.64	12972.48	12843.41	12823.51	13604.36	13461.65	13449.44	13316.79	13117.06	12874.51	12747.46	12741.05	13500.94	13413.96	13424.26	13339.56	13174.64
1.00°	12983.71	12800.88	12674.32	12667.58	13379.43	13280.36	13232.12	13097.25	12874.80	12625.07	12475.87	12481.16	13271.40	13205.05	13215.73	13153.56	12983.71
1.50°	12637.90	12482.79	12411.44	12384.59	13081.57	12976.24	12882.83	12755.73	12523.12	12218.46	12069.24	12112.44	12891.87	12892.54	12891.00	12817.80	12637.90
2.00°	12224.72	12069.43	11933.16	11963.73	12656.36	12526.74	12440.78	12287.79	12016.16	11691.80	11567.63	11650.28	12395.88	12407.27	12456.07	12363.35	12224.72
2.50°	11674.35	11524.20	11397.83	11423.15	12095.87	11965.89	11840.06	11698.67	11420.07	11105.93	11010.29	11112.38	11787.39	11790.37	11882.47	11756.76	11674.35
3.00°	10987.34	10928.44	10753.39	10797.90	11452.36	11316.95	11191.20	11028.72	10762.67	10462.61	10406.98	10493.45	11101.21	11140.21	11211.23	11110.08	10987.34
3.50°	10277.77	10210.97	10049.73	10086.99	10716.49	10599.45	10513.70	10335.45	10077.43	9831.94	9775.76	9854.64	10345.57	10393.31	10491.42	10379.77	10277.77
4.00°	9538.69	9480.56	9382.78	9367.79	9943.71	9851.91	9780.09	9630.31	9396.02	9181.98	9113.00	9160.23	9635.88	9639.95	9717.83	9635.15	9538.69
4.50°	8813.21	8760.96	8642.35	8628.81	9153.80	9080.22	9003.77	8896.70	8710.92	8513.03	8430.38	8472.80	8945.51	8886.87	8955.79	8894.26	8813.21
5.00°	8101.77	7982.77	7876.37	7892.35	8379.28	8297.24	8230.73	8134.66	8012.62	7812.58	7748.76	7784.90	8270.22	8170.51	8202.08	8158.05	8101.77
5.50°	7375.75	7250.53	7137.26	7195.55	7638.52	7544.72	7470.62	7400.70	7298.25	7148.87	7076.85	7139.45	7549.94	7475.30	7446.51	7436.90	7375.75
6.00°	6680.25	6523.91	6417.93	6501.30	6895.18	6799.73	6732.94	6730.53	6673.40	6522.16	6419.36	6493.79	6887.41	6796.97	6732.92	6731.54	6680.25
6.50°	6006.86	5840.88	5728.74	5843.27	6218.10	6091.08	6038.32	6057.28	6066.04	5928.83	5821.61	5901.41	6263.00	6145.89	6064.70	6045.42	6006.86
7.00°	5384.32	5191.92	5092.29	5230.12	5598.06	5458.94	5398.77	5451.68	5486.68	5373.63	5271.28	5329.77	5662.13	5542.17	5465.62	5439.85	5384.32
7.50°	4804.00	4597.87	4513.64	4676.14	5003.49	4897.96	4818.78	4886.75	4970.00	4853.68	4739.66	4806.40	5097.82	4988.24	4886.58	4876.03	4804.00
8.00°	4266.55	4054.68	3994.52	4168.30	4470.42	4374.09	4289.64	4379.42	4465.01	4373.36	4253.32	4314.87	4588.70	4475.59	4355.79	4326.78	4266.55
8.50°	3767.07	3571.52	3523.53	3696.71	3979.88	3897.65	3813.47	3905.69	4022.00	3923.79	3814.82	3874.75	4109.69	4010.03	3861.35	3837.91	3767.07
9.00°	3286.06	3137.03	3086.84	3257.38	3516.00	3465.60	3386.96	3484.46	3603.33	3500.12	3406.73	3467.97	3664.31	3576.61	3438.21	3395.59	3286.06
9.50°	2860.75	2737.35	2687.12	2859.31	3088.02	3061.46	2984.89	3080.99	3215.01	3105.04	3028.37	3090.49	3261.75	3178.46	3035.15	2967.92	2860.75
10.00°	2479.47	2383.16	2338.40	2492.85	2705.55	2686.89	2627.17	2717.92	2839.78	2744.74	2693.27	2746.74	2878.02	2811.14	2656.34	2592.36	2479.47
10.50°	2127.43	2034.71	2012.56	2156.61	2348.35	2339.15	2285.32	2389.30	2490.16	2427.59	2383.41	2435.35	2526.54	2457.08	2314.72	2240.13	2127.43
11.00°	1814.91	1751.32	1712.08	1847.40	2014.08	2025.00	1992.39	2082.40	2175.71	2129.18	2092.26	2149.53	2211.27	2160.29	2007.13	1933.73	1814.91
11.50°	1543.73	1490.41	1469.50	1571.08	1728.92	1740.16	1717.55	1810.34	1895.64	1858.57	1836.22	1890.02	1921.73	1870.00	1724.08	1648.65	1543.73
12.00°	1305.38	1261.04	1251.02	1335.79	1468.56	1477.90	1482.94	1562.10	1641.01	1612.31	1602.08	1633.41	1650.75	1615.13	1475.52	1404.99	1305.38
12.50°	1103.78	1070.57	1062.69	1139.18	1250.55	1253.89	1265.68	1337.49	1414.84	1390.00	1388.29	1416.13	1410.46	1378.96	1261.73	1188.90	1103.78
13.00°	934.12	912.17	904.41	966.58	1063.54	1066.15	1082.21	1150.76	1210.94	1196.75	1192.26	1216.42	1194.66	1172.90	1068.69	1003.07	934.12
13.50°	791.11	779.44	777.05	832.04	907.85	907.43	927.04	984.96	1033.06	1022.30	1023.61	1033.75	1017.80	988.95	904.15	850.09	791.11
14.00°	674.33	667.07	673.95	716.71	777.35	776.32	799.19	854.35	884.82	877.23	879.88	884.01	859.93	833.34	766.76	725.40	674.33
14.50°	579.28	579.38	587.36	624.12	675.03	674.90	692.89	737.63	758.37	750.33	753.32	755.46	731.82	710.12	659.14	622.27	579.28
15.00°	506.60	507.44	518.38	549.61	588.99	585.19	603.86	646.06	653.58	646.66	652.45	647.63	627.34	606.65	567.72	538.21	506.60
15.50°	450.04	446.53	457.92	486.27	518.52	510.38	530.50	572.71	571.93	558.84	559.26	556.45	540.11	521.88	487.22	471.00	450.04
16.00°	399.43	400.35	409.58	434.93	465.26	459.80	474.91	506.60	503.98	489.26	489.51	486.20	471.79	456.40	430.89	415.86	399.43
16.50°	361.14	364.55	369.11	395.23	418.79	409.25	422.36	452.42	453.17	431.51	433.29	430.83	415.13	401.76	385.19	374.86	361.14
17.00°	324.68	334.69	338.55	361.35	379.29	371.67	382.59	410.50	399.86	384.81	383.95	380.50	370.18	356.39	346.58	342.83	324.68
17.50°	297.09	303.24	310.66	332.26	344.13	339.29	344.31	372.65	363.96	345.44	345.17	342.30	333.81	317.32	315.38	306.60	297.09
18.00°	272.45	277.28	283.55	307.86	315.73	311.61	320.55	338.27	333.00	314.95	311.79	310.61	300.65	288.47	289.54	277.76	272.45
18.50°	248.37	254.79	261.73	286.17	287.95	285.20	293.50	314.09	302.78	290.86	283.54	286.37	274.79	258.56	264.16	258.04	248.37
19.00°	232.77	238.75	242.75	263.21	269.96	260.73	272.36	294.28	278.46	261.67	260.09	258.33	254.39	243.47	242.15	241.12	232.77
19.50°	222.32	218.50	223.01	241.17	255.30	243.73	247.38	273.11	258.11	243.88	240.02	238.75	235.17	223.31	224.68	222.69	222.32
20.00°	206.05	207.01	205.45	225.57	241.90	231.19	235.30	254.80	241.68	223.04	220.97	217.55	216.32	208.63	209.89	210.01	206.05
20.50°	191.98	187.77	192.86	209.14	219.36	216.90	222.54	236.54	222.93	209.61	201.52	201.33	204.28	191.17	196.81	196.52	191.98
21.00°	180.40	178.36	180.62	200.91	207.22	200.10	206.09	222.77	210.00	189.45	185.67	186.27	190.08	178.15	183.98	184.34	180.40

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	1040	1040	1040	1040	1015	1015	1015	1015	968	968	968	925	925	925	885	885	866
	1	1011	995	981	968	990	976	963	952	940	930	921	906	899	892	875	870	853
	2	986	959	938	919	968	944	925	909	916	901	888	890	878	868	866	857	849
	3	963	930	904	884	948	918	895	877	896	877	862	875	861	848	856	845	829
	4	943	906	878	857	930	896	871	852	878	858	841	862	845	831	847	833	818
	5	925	885	856	836	913	877	851	832	863	841	824	849	831	817	837	822	808
	6	908	866	838	818	898	860	834	815	849	826	810	838	819	804	828	811	798
	7	893	850	822	803	884	845	819	801	836	813	797	827	807	793	818	801	789
	8	879	836	809	790	871	832	806	789	824	801	785	816	796	782	809	792	780
	9	866	823	797	779	859	819	794	777	813	790	775	806	787	772	800	783	772
	10	854	811	785	768	848	808	784	767	802	781	765	797	777	763	792	774	764

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	437.8 fc	1.1 ft
6.5 ft	313.5 fc	1.3 ft
7.5 ft	235.5 fc	1.6 ft
8.0 ft	206.9 fc	1.7 ft
10.0 ft	132.4 fc	2.1 ft
12.0 ft	92.0 fc	2.5 ft
14.0 ft	67.6 fc	2.9 ft
16.0 ft	51.7 fc	3.3 ft
20.0 ft	33.1 fc	4.1 ft
24.0 ft	23.0 fc	5.0 ft
28.0 ft	16.9 fc	5.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	4116001	4116001	4116001
45.00°	717	947	873
55.00°	790	634	787
65.00°	1223	1167	472
75.00°	1293	2233	1942
85.00°	4626	4461	5890

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	-3.2	-2.3	-2.8	-2.0	-1.6	-3.3	-2.4	-2.9	-2.0	-1.7
	3H	-0.1	0.7	0.4	1.1	1.5	-0.8	0.0	-0.4	0.4	0.8
	4H	1.1	1.8	1.5	2.2	2.6	1.2	1.9	1.6	2.3	2.7
	6H	2.8	3.4	3.2	3.8	4.2	4.2	4.8	4.6	5.2	5.7
	8H	3.9	4.5	4.4	4.9	5.4	5.4	6.0	5.8	6.4	6.9
	12H	5.1	5.7	5.6	6.1	6.6	6.5	7.1	7.0	7.5	8.0
4H	2H	-2.4	-1.7	-2.0	-1.3	-0.9	-2.3	-1.6	-1.9	-1.2	-0.8
	3H	0.9	1.5	1.3	1.9	2.3	0.5	1.1	0.9	1.5	2.0
	4H	2.3	2.8	2.7	3.3	3.7	2.7	3.2	3.1	3.6	4.1
	6H	4.2	4.6	4.7	5.1	5.6	5.8	6.2	6.3	6.7	7.2
	8H	5.4	5.8	5.9	6.3	6.8	7.1	7.5	7.6	8.0	8.5
	12H	6.8	7.1	7.3	7.7	8.2	8.3	8.7	8.8	9.2	9.7
8H	4H	3.3	3.7	3.8	4.2	4.7	3.9	4.3	4.4	4.8	5.3
	6H	5.4	5.8	6.0	6.3	6.8	7.1	7.4	7.6	8.0	8.5
	8H	6.7	7.0	7.3	7.6	8.1	8.5	8.8	9.1	9.3	9.9
	12H	8.3	8.6	8.9	9.1	9.7	9.9	10.1	10.4	10.7	11.3
12H	4H	3.5	3.9	4.1	4.4	4.9	4.1	4.5	4.6	5.0	5.5
	6H	5.9	6.2	6.4	6.7	7.2	7.4	7.7	8.0	8.2	8.8
	8H	7.3	7.5	7.8	8.1	8.7	9.0	9.2	9.5	9.7	10.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0