

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

STR2 835 13 xx xx RD2FL RB2BD xx RA2HL

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

Test Number

SP-01583_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	979
Efficacy	68 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.51
Two luminaires, plane 90°	0.5
Four luminaires	0.47

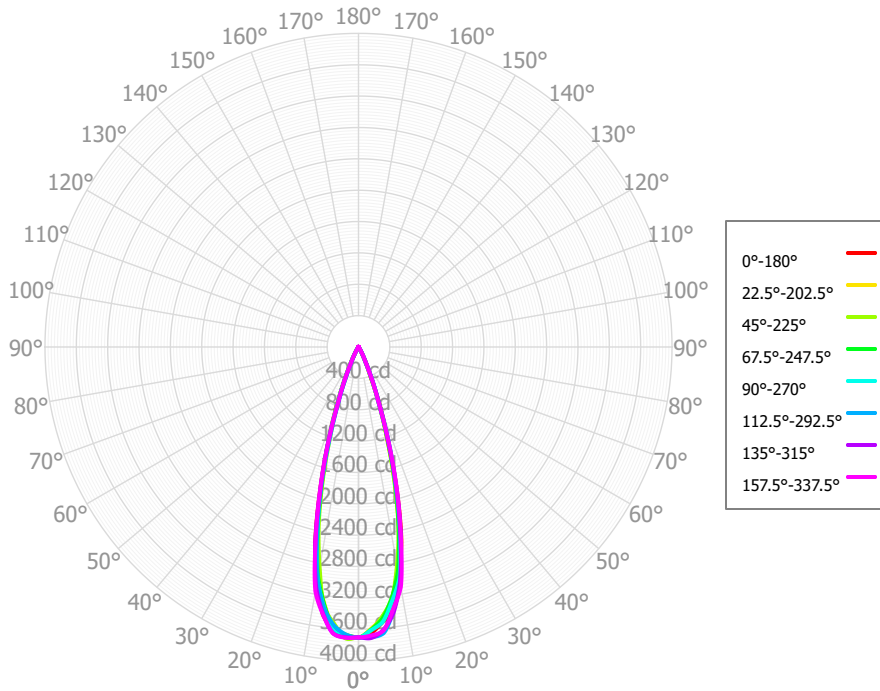
Full Beam Angle

0° - 180°	30°
90° - 270°	30°

IES File Header Contents

Keyword	Value
TEST	SP-01583_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/26/2023
ISSUEDATE	10/02/2023
LUMCAT	STR2 835 13 xx xx RD2FL RB2BD xx RA2HL
LUMINAIRE	2" Adjustable Track Luminaire with flood optic, hex louver and snoot/deep cutoff bezel
OTHER	Beam Angle: 30 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°	326.32	33.33%	90.00° - 100.00°	1.78	0.18%
10.00° - 20.00°	487.42	49.78%	100.00° - 110.00°	1.65	0.17%
20.00° - 30.00°	131.27	13.41%	100.00° - 120.00°	3.26	0.33%
30.00° - 40.00°	14.92	1.52%	120.00° - 130.00°	1.43	0.15%
40.00° - 50.00°	2.06	0.21%	130.00° - 140.00°	1.34	0.14%
50.00° - 60.00°	1.45	0.15%	140.00° - 150.00°	1.17	0.12%
60.00° - 70.00°	1.63	0.17%	150.00° - 160.00°	0.89	0.09%
70.00° - 80.00°	1.74	0.18%	160.00° - 170.00°	0.54	0.06%
80.00° - 90.00°	1.77	0.18%	170.00° - 180.00°	0.17	0.02%
0.00° - 90.00°	968.59	98.92%	0.00° - 180.00°	979.18	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°	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85	3705.85
2.50°	3653.04	3602.10	3619.08	3612.93	3619.35	3672.28	3708.23	3713.10	3713.70	3673.49	3722.29	3678.33	3695.30	3706.23	3716.39	3685.21	3653.04
5.00°	3524.09	3462.80	3454.33	3481.10	3524.68	3568.49	3670.84	3672.51	3622.01	3597.86	3547.22	3620.58	3635.77	3665.82	3625.31	3634.32	3524.09
7.50°	3378.65	3241.18	3252.34	3235.69	3274.39	3360.64	3440.64	3450.66	3452.42	3317.71	3356.50	3326.16	3359.19	3401.89	3420.36	3377.06	3378.65
10.00°	2970.74	2893.21	2828.76	2900.66	3000.72	3010.45	3113.29	3167.54	3031.15	2957.82	2856.91	2973.76	3008.82	3054.62	3047.99	3110.07	2970.74
12.50°	2526.47	2354.79	2370.84	2367.52	2443.34	2437.55	2544.45	2528.70	2545.19	2404.72	2347.20	2413.95	2431.39	2482.76	2473.77	2504.05	2526.47
15.00°	1890.32	1791.90	1761.13	1815.74	1857.91	1842.70	1873.09	1898.10	1890.38	1789.44	1765.85	1814.71	1857.60	1842.06	1872.63	1898.34	1890.32
17.50°	1237.25	1197.32	1189.81	1229.68	1290.48	1218.38	1304.70	1303.21	1301.79	1281.24	1194.70	1302.89	1292.90	1290.22	1243.50	1299.05	1237.25
20.00°	799.83	729.56	753.38	745.43	724.05	738.45	772.01	776.05	855.41	800.29	809.15	802.89	807.36	760.26	768.97	727.88	799.83
22.50°	372.34	403.13	387.63	420.96	451.95	422.93	468.20	482.69	493.71	507.05	443.25	515.80	487.77	471.99	430.96	455.44	372.34
25.00°	235.58	199.98	224.52	198.32	188.40	217.09	229.08	241.84	286.05	250.16	278.14	246.84	247.90	228.71	228.77	207.12	235.58
27.50°	104.15	113.58	98.26	110.75	117.52	117.39	131.56	146.43	137.85	149.72	127.78	156.19	147.56	139.83	129.84	130.54	104.15
30.00°	66.92	60.11	58.33	53.03	49.97	57.51	65.07	70.64	81.96	71.68	79.56	73.25	74.90	71.27	70.23	62.49	66.92
32.50°	31.50	33.11	27.82	29.38	30.09	30.83	37.21	40.18	41.95	42.99	36.98	46.37	43.65	43.51	35.89	38.02	31.50
35.00°	18.67	17.17	15.60	14.51	11.89	15.40	15.78	17.84	22.79	19.08	22.54	20.42	21.97	19.28	18.18	17.13	18.67
37.50°	7.04	8.89	7.17	8.18	8.35	8.04	9.01	11.10	10.58	11.20	10.33	12.49	12.40	11.92	9.59	10.48	7.04
40.00°	5.00	4.88	4.99	4.36	5.10	4.39	3.91	6.05	6.11	4.12	6.77	5.06	6.12	5.31	5.40	4.98	5.00
42.50°	3.15	3.40	3.26	2.66	3.73	2.99	2.71	3.77	3.34	3.02	3.86	3.53	3.42	3.93	3.22	3.19	3.15
45.00°	2.37	2.43	2.16	1.83	2.54	2.29	1.79	2.23	2.21	1.99	2.95	2.19	2.08	2.59	2.49	1.87	2.37
47.50°	1.74	1.71	1.62	1.63	2.17	1.95	1.61	1.71	1.64	1.66	2.19	2.30	2.00	2.02	2.31	1.77	1.74
50.00°	1.69	1.45	1.76	1.54	1.87	1.71	1.45	1.49	1.55	1.37	1.85	2.32	1.85	1.51	1.99	1.63	1.69
52.50°	1.67	1.38	1.78	1.52	1.84	1.51	1.50	1.63	1.60	1.54	1.69	1.79	1.65	1.64	1.62	1.41	1.67
55.00°	1.73	1.31	1.68	1.48	1.80	1.64	1.56	1.66	1.75	1.67	1.91	1.40	1.54	1.72	1.52	1.36	1.73
57.50°	1.76	1.24	1.51	1.43	1.71	1.89	1.76	1.58	1.75	1.48	1.95	1.60	1.50	1.45	1.49	1.63	1.76
60.00°	1.71	1.63	1.28	1.38	1.61	1.69	1.95	1.47	1.66	1.34	1.69	1.73	1.47	1.31	1.44	1.77	1.71
62.50°	1.71	2.14	1.56	1.32	1.53	1.36	1.95	1.35	1.75	1.50	1.58	1.66	1.43	1.85	1.39	1.71	1.71
65.00°	1.81	1.77	2.24	1.42	1.47	1.52	1.92	1.43	1.94	1.62	1.70	1.57	1.67	2.18	1.48	1.61	1.81
67.50°	1.77	1.20	2.12	1.58	1.46	1.77	1.65	1.64	2.00	1.60	1.78	1.42	2.04	1.67	1.60	1.47	1.77
70.00°	1.47	1.34	1.51	1.68	1.48	1.80	1.49	1.63	2.00	1.61	1.82	1.32	2.04	1.35	1.54	1.50	1.47
72.50°	1.31	1.58	1.25	1.77	1.54	1.79	1.89	1.48	1.86	1.75	1.78	1.37	1.89	1.63	1.47	1.70	1.31
75.00°	1.41	1.86	1.18	1.69	1.53	1.91	2.17	1.54	1.66	1.80	1.66	1.44	1.61	1.81	1.45	1.81	1.41
77.50°	1.47	2.14	1.36	1.57	1.41	2.04	2.03	1.69	1.80	1.59	1.53	1.52	1.30	1.71	1.43	1.84	1.47
80.00°	1.49	1.99	1.65	1.79	1.40	1.84	1.86	1.61	2.04	1.54	1.38	1.51	1.48	1.69	1.52	1.73	1.49
82.50°	1.58	1.82	1.70	2.07	1.51	1.62	1.65	1.42	1.87	1.89	1.36	1.33	1.80	1.89	1.61	1.51	1.58
85.00°	1.75	1.64	1.66	1.76	1.52	1.66	1.53	1.47	1.60	2.04	1.45	1.30	1.67	1.95	1.67	1.41	1.75
87.50°	1.77	1.46	1.74	1.39	1.40	1.71	1.64	1.62	1.57	1.80	1.41	1.48	1.45	1.75	1.72	1.41	1.77
90.00°	1.63	1.45	1.86	1.46	1.52	1.80	1.69	1.69	1.58	1.63	1.28	1.56	1.55	1.58	1.63	1.62	1.63
92.50°	1.65	1.42	1.83	1.56	1.83	1.87	1.62	1.75	1.60	1.55	1.46	1.54	1.69	1.47	1.56	1.96	1.65
95.00°	1.79	1.33	1.75	1.78	1.81	1.67	1.56	1.64	1.61	1.51	1.82	1.74	1.69	1.54	1.55	1.90	1.79
97.50°	1.72	1.27	1.48	2.00	1.54	1.51	1.48	1.49	1.49	1.52	1.78	2.16	1.68	1.86	1.54	1.64	1.72
100.00°	1.51	1.39	1.17	1.62	1.41	1.72	1.44	1.71	1.36	1.48	1.55	2.18	1.61	1.93	1.49	1.71	1.51
102.50°	1.39	1.50	1.33	1.26	1.37	1.87	1.46	2.00	1.40	1.38	1.53	1.88	1.54	1.71	1.48	1.93	1.39
105.00°	1.32	1.54	1.54	1.50	1.38	1.70	1.42	1.76	1.44	1.42	1.59	1.72	1.55	1.64	1.60	1.76	1.32

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	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%	10%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	1163	1163	1163	1163	1135	1135	1135	1135	1082	1082	1082	1034	1034	1034	989	989	989
	1	1123	1102	1083	1066	1099	1080	1063	1048	1039	1026	1014	1002	992	983	967	960	953
	2	1086	1051	1022	997	1065	1034	1007	985	1002	981	962	972	955	941	944	931	920
	3	1052	1007	972	944	1034	993	961	936	968	941	920	944	923	905	922	905	890
	4	1020	968	930	901	1004	957	922	895	937	907	884	917	893	873	900	879	862
	5	991	934	894	864	977	925	888	860	908	876	852	892	865	844	878	855	836
	6	963	902	862	833	950	895	857	830	881	848	824	868	840	818	856	831	812
	7	936	874	833	805	925	868	830	803	856	823	798	845	816	794	835	809	790
	8	911	848	808	780	901	842	805	778	833	799	775	823	793	772	815	788	768
	9	887	823	784	757	879	819	781	756	810	777	753	803	772	751	795	768	748
	10	865	800	762	736	857	797	760	735	790	756	733	783	752	731	776	749	729

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	122.5 fc	3.0 ft
6.5 ft	87.7 fc	3.5 ft
7.5 ft	65.9 fc	4.1 ft
8.0 ft	57.9 fc	4.3 ft
10.0 ft	37.1 fc	5.4 ft
12.0 ft	25.7 fc	6.5 ft
14.0 ft	18.9 fc	7.6 ft
16.0 ft	14.5 fc	8.6 ft
20.0 ft	9.3 fc	10.8 ft
24.0 ft	6.4 fc	13.0 ft
28.0 ft	4.7 fc	15.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1151673	1151673	1151673
45.00°	1044	949	1118
55.00°	936	909	975
65.00°	1332	1644	1078
75.00°	1693	1416	1833
85.00°	6241	5912	5403

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	-2.9	-3.5	-2.7	-3.2	-2.3	-2.0
	3H	-0.9	-0.2	-0.5	0.2	0.6	-0.2	0.6	0.2	1.0	1.4
	4H	1.0	1.7	1.4	2.0	2.5	1.6	2.3	2.0	2.7	3.1
	6H	3.2	3.9	3.7	4.3	4.7	3.3	4.0	3.8	4.4	4.8
	8H	4.4	5.0	4.9	5.4	5.9	4.5	5.1	4.9	5.5	5.9
	12H	5.9	6.4	6.3	6.8	7.3	5.8	6.4	6.2	6.8	7.2
4H	2H	-2.9	-2.2	-2.5	-1.8	-1.4	-2.4	-1.7	-2.0	-1.3	-0.9
	3H	0.4	1.0	0.9	1.4	1.9	1.0	1.6	1.5	2.1	2.5
	4H	2.7	3.2	3.2	3.7	4.1	3.0	3.5	3.5	4.0	4.5
	6H	5.1	5.6	5.6	6.1	6.6	5.0	5.5	5.5	5.9	6.4
	8H	6.3	6.7	6.8	7.2	7.7	6.2	6.6	6.7	7.1	7.6
	12H	7.8	8.1	8.3	8.6	9.1	7.6	7.9	8.1	8.4	8.9
8H	4H	3.4	3.8	3.9	4.3	4.8	3.9	4.3	4.4	4.8	5.3
	6H	6.2	6.5	6.7	7.0	7.6	6.1	6.5	6.7	7.0	7.5
	8H	7.6	7.9	8.1	8.4	8.9	7.4	7.7	8.0	8.3	8.8
	12H	9.2	9.4	9.7	10.0	10.6	9.0	9.2	9.5	9.7	10.3
12H	4H	3.6	4.0	4.1	4.5	5.0	4.1	4.4	4.6	4.9	5.5
	6H	6.5	6.8	7.1	7.3	7.9	6.4	6.7	7.0	7.2	7.8
	8H	8.0	8.3	8.6	8.8	9.4	7.8	8.1	8.4	8.6	9.2

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0