

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

TS - RA31 - 21L - 35HK - ND - xx - xx -MW

Track light for accent, display and general illumination.

Test Number

TSRA31-2

Test Date

2/18/25

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

Summary of Results

Power

Input Watts	20.06 W
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Lumen Output

Output Lumens	1956
Efficacy	97.51 lm/W

Luminous Dimensions

0° - 180° Size	0
90° - 270° Size	0.2
Height	0.59

Spacing Criterion

Two luminaires, plane 0°	0.47
Two luminaires, plane 90°	0.47
Four luminaires	0.44

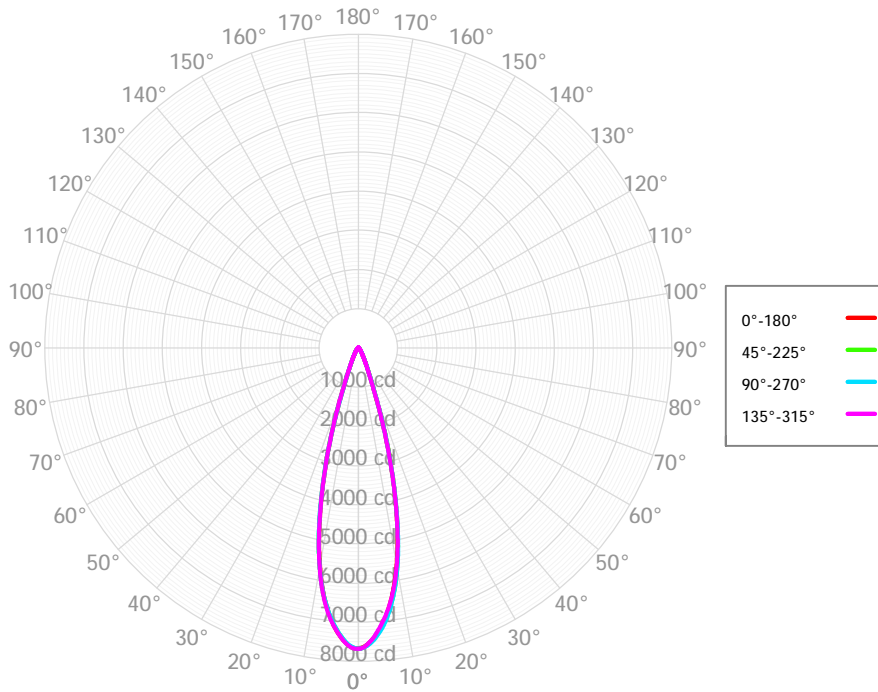
Full Beam Angle

0° - 180°	28°
90° - 270°	28°

IES File Header Contents

Keyword	Value
TEST	TSRA31-2
TESTLAB	Spectrum Lighting Photometric Lab.
MANUFAC	Spectrum Lighting
TESTDATE	2/18/25
ISSUEDATE	2/18/25
LUMCAT	TS - RA31 - 21L - 35HK - ND - xx - xx -MW
LUMINAIRE	Track light for accent, display and general illumination.

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	634.21	32.42%	90.00° - 100.00°	5.14	0.26%
10.00° - 20.00°	890.79	45.54%	100.00° - 110.00°	4.81	0.25%
20.00° - 30.00°	237.80	12.16%	100.00° - 120.00°	9.49	0.49%
30.00° - 40.00°	84.48	4.32%	120.00° - 130.00°	4.65	0.24%
40.00° - 50.00°	39.56	2.02%	130.00° - 140.00°	4.28	0.22%
50.00° - 60.00°	18.60	0.95%	140.00° - 150.00°	3.72	0.19%
60.00° - 70.00°	7.34	0.38%	150.00° - 160.00°	2.83	0.14%
70.00° - 80.00°	5.28	0.27%	160.00° - 170.00°	2.06	0.11%
80.00° - 90.00°	4.98	0.25%	170.00° - 180.00°	0.77	0.04%
0.00° - 90.00°	1923.05	98.32%	0.00° - 180.00°	1955.99	100.00%

Candela Distribution

	0.00°	45.00°	90.00°	135.00°	180.00°	225.00°	270.00°	315.00°	360.00°
0.00°	7679.49	7679.49	7679.49	7679.49	7679.49	7679.49	7679.49	7679.49	7679.49
1.00°	7633.79	7647.21	7649.02	7667.52	7648.86	7665.34	7643.08	7646.18	7633.79
2.00°	7546.03	7558.23	7579.21	7591.83	7579.99	7587.07	7562.80	7540.59	7546.03
3.00°	7417.75	7430.82	7467.39	7468.08	7461.94	7446.80	7432.60	7402.60	7417.75
4.00°	7257.92	7273.66	7321.94	7307.76	7310.73	7283.70	7275.40	7224.33	7257.92
5.00°	7064.86	7105.85	7151.40	7129.71	7128.46	7099.10	7091.48	7033.90	7064.86
6.00°	6846.76	6910.24	6946.15	6926.04	6902.81	6889.27	6876.68	6828.11	6846.76
7.00°	6592.78	6667.52	6694.92	6680.99	6645.38	6651.54	6639.22	6583.86	6592.78
8.00°	6297.98	6390.77	6404.48	6396.56	6354.33	6380.21	6360.31	6311.86	6297.98
9.00°	5982.59	6071.71	6082.27	6063.96	6013.39	6055.01	6042.84	5999.84	5982.59
10.00°	5621.41	5707.46	5718.25	5683.49	5640.51	5684.22	5676.49	5649.85	5621.41
11.00°	5221.92	5294.00	5313.79	5269.98	5236.07	5281.17	5282.35	5250.38	5221.92
12.00°	4789.36	4839.55	4860.43	4822.05	4804.82	4843.80	4860.55	4808.07	4789.36
13.00°	4325.03	4358.91	4381.98	4340.76	4334.28	4362.78	4389.68	4330.67	4325.03
14.00°	3847.27	3869.84	3879.12	3850.83	3847.22	3869.20	3886.91	3850.95	3847.27
15.00°	3352.83	3381.75	3375.05	3362.79	3354.23	3372.38	3374.42	3346.55	3352.83
16.00°	2872.76	2898.55	2892.65	2889.14	2880.30	2896.96	2888.12	2856.42	2872.76
17.00°	2409.31	2448.37	2436.18	2424.56	2419.37	2432.52	2417.69	2383.35	2409.31
18.00°	1979.07	2003.15	1994.74	1993.24	1972.06	1991.88	1971.62	1947.09	1979.07
19.00°	1564.33	1573.55	1599.80	1599.60	1577.48	1579.79	1544.32	1546.00	1564.33
20.00°	1217.26	1233.20	1249.08	1259.06	1231.52	1214.91	1185.03	1200.70	1217.26
21.00°	974.82	999.66	992.81	983.34	962.19	951.31	944.30	950.75	974.82
22.00°	792.75	816.30	805.74	784.36	766.70	763.09	763.29	765.10	792.75
23.00°	649.94	673.33	660.12	645.22	630.59	632.00	629.54	634.35	649.94
24.00°	545.83	566.19	551.17	536.85	522.48	534.59	532.61	531.95	545.83
25.00°	461.93	483.29	471.07	457.88	447.15	455.70	455.86	452.94	461.93
26.00°	400.24	419.95	404.29	394.48	380.32	390.94	394.61	388.73	400.24
27.00°	346.52	360.52	351.08	338.52	327.24	340.77	341.99	337.74	346.52
28.00°	301.31	309.52	305.97	298.85	286.83	294.68	298.35	295.80	301.31
29.00°	259.35	272.47	265.36	253.19	251.14	255.88	260.84	259.07	259.35
30.00°	228.95	234.27	231.36	220.47	218.77	222.15	226.49	226.64	228.95
31.00°	205.96	210.43	204.79	196.68	193.49	199.01	201.67	200.53	205.96
32.00°	179.48	186.77	181.96	177.56	170.73	173.02	180.04	178.07	179.48
33.00°	162.37	168.95	165.06	155.58	152.48	161.32	162.73	159.56	162.37
34.00°	143.03	152.57	147.08	143.56	140.76	143.25	146.86	140.47	143.03
35.00°	132.22	138.85	133.62	126.50	126.68	126.08	132.75	134.38	132.22
36.00°	117.74	123.07	121.65	114.24	112.72	116.29	117.18	116.51	117.74
37.00°	107.90	109.46	108.01	102.74	103.15	102.61	107.99	104.47	107.90
38.00°	94.68	102.44	95.26	91.15	94.85	93.28	96.79	98.31	94.68
39.00°	88.06	95.56	88.49	81.00	84.81	85.03	88.59	84.33	88.06
40.00°	80.93	79.95	80.00	72.88	72.65	76.33	80.26	81.80	80.93
41.00°	73.55	73.82	72.45	67.78	66.28	67.08	75.52	71.55	73.55
42.00°	67.45	66.04	67.64	61.16	63.82	61.00	68.22	65.96	67.45
43.00°	62.48	61.27	59.80	55.17	62.83	59.41	61.12	60.44	62.48

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	2321	2321	2321	2321	2263	2263	2263	2263	2155	2155	2155	2056	2056	2056	1966	1966	1923
	1	2235	2190	2150	2114	2184	2145	2110	2078	2061	2033	2008	1984	1963	1943	1913	1897	1856
	2	2155	2079	2017	1965	2111	2044	1988	1940	1977	1932	1894	1916	1880	1849	1859	1831	1794
	3	2081	1984	1909	1849	2042	1955	1887	1832	1902	1846	1800	1853	1807	1768	1807	1770	1735
	4	2012	1900	1818	1755	1978	1877	1802	1744	1833	1770	1720	1793	1740	1698	1756	1712	1676
	5	1947	1825	1740	1677	1917	1806	1728	1669	1771	1703	1652	1738	1680	1635	1707	1658	1628
	6	1887	1758	1672	1610	1861	1743	1662	1604	1713	1643	1591	1686	1625	1579	1660	1607	1580
	7	1831	1698	1612	1551	1807	1685	1604	1546	1660	1589	1537	1637	1574	1527	1615	1560	1534
	8	1778	1643	1557	1499	1757	1632	1551	1495	1610	1539	1488	1591	1527	1480	1572	1515	1492
	9	1728	1592	1508	1452	1710	1582	1503	1449	1564	1493	1443	1547	1483	1437	1531	1474	1451
	10	1682	1545	1463	1409	1665	1537	1459	1406	1521	1451	1402	1507	1442	1397	1493	1434	1414

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	253.9 fc	2.7 ft
6.5 ft	181.8 fc	3.2 ft
7.5 ft	136.5 fc	3.7 ft
8.0 ft	120.0 fc	4.0 ft
10.0 ft	76.8 fc	5.0 ft
12.0 ft	53.3 fc	6.0 ft
14.0 ft	39.2 fc	7.0 ft
16.0 ft	30.0 fc	8.0 ft
20.0 ft	19.2 fc	10.0 ft
24.0 ft	13.3 fc	12.0 ft
28.0 ft	9.8 fc	14.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	0	0	0
45.00°	6741	8941	99944182536704393216
55.00°	2310	3114	39835821978186645504
65.00°	775	837	11539346370518900736
75.00°	419	824	8894867495250139136
85.00°	411	656	6016010475315166208

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		Viewing C0-180					Viewing C90-270				
2H	2H	4.7	5.6	5.1	6.0	6.3	8.1	9.1	8.5	9.4	9.8
	3H	4.8	5.6	5.2	6.0	6.4	8.6	9.4	9.0	9.8	10.2
	4H	5.0	5.8	5.5	6.2	6.6	9.3	10.0	9.7	10.4	10.9
	6H	5.3	6.0	5.7	6.4	6.8	9.9	10.6	10.4	11.0	11.5
	8H	5.4	6.0	5.9	6.5	6.9	10.4	11.0	10.9	11.5	11.9
	12H	5.5	6.1	6.0	6.6	7.0	11.0	11.6	11.4	12.0	12.5
4H	2H	4.7	5.5	5.2	5.9	6.3	7.9	8.7	8.4	9.1	9.5
	3H	5.0	5.6	5.5	6.1	6.5	8.5	9.1	8.9	9.5	10.0
	4H	5.3	5.9	5.8	6.3	6.8	9.2	9.8	9.7	10.2	10.7
	6H	5.7	6.2	6.2	6.7	7.2	10.0	10.5	10.5	10.9	11.5
	8H	5.9	6.4	6.4	6.8	7.4	10.5	11.0	11.0	11.5	12.0
	12H	6.1	6.5	6.7	7.0	7.6	11.2	11.6	11.7	12.1	12.6
8H	4H	5.5	5.9	6.0	6.4	6.9	9.2	9.6	9.7	10.1	10.6
	6H	6.1	6.4	6.6	6.9	7.5	10.0	10.4	10.6	10.9	11.4
	8H	6.4	6.7	6.9	7.2	7.8	10.6	10.9	11.2	11.5	12.0
	12H	6.7	7.0	7.3	7.5	8.1	11.3	11.6	11.9	12.1	12.8
12H	4H	5.5	5.9	6.0	6.4	6.9	9.1	9.5	9.7	10.0	10.5
	6H	6.2	6.5	6.7	7.0	7.6	10.0	10.3	10.6	10.8	11.4
	8H	6.5	6.8	7.1	7.3	8.0	10.6	10.9	11.2	11.4	12.0

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0