

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

TS - RA35 - 29L - 35HK - XW - xx - xx - MW

Track light for accent, display and general illumination.

Test Number

TSRA35-4

Test Date

2/18/25

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

Summary of Results

Power

| | |
|-------------|---------|
| Input Watts | 27.89 W |
|-------------|---------|

Lumen Output

| | |
|---------------|------------|
| Output Lumens | 2638 |
| Efficacy | 94.58 lm/W |

Luminous Dimensions

| | |
|-----------------|------|
| 0° - 180° Size | 0 |
| 90° - 270° Size | 0.23 |
| Height | 0.71 |

Spacing Criterion

| | |
|---------------------------|------|
| Two luminaires, plane 0° | 0.9 |
| Two luminaires, plane 90° | 0.9 |
| Four luminaires | 0.88 |

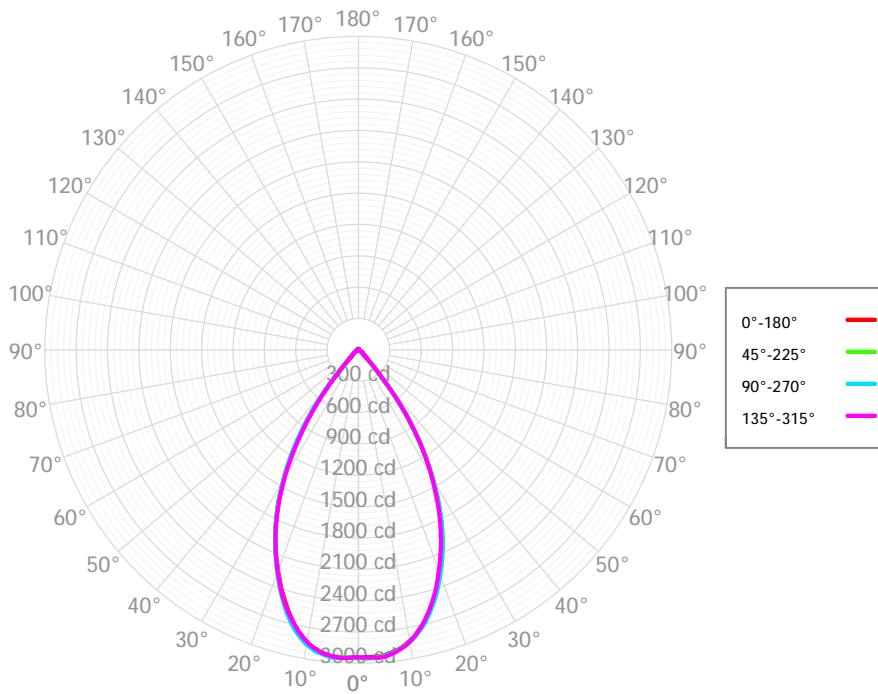
Full Beam Angle

| | |
|------------|-----|
| 0° - 180° | 59° |
| 90° - 270° | 59° |

IES File Header Contents

| Keyword | Value |
|-----------|---|
| TEST | TSRA35-4 |
| TESTLAB | Spectrum Lighting Photometric Lab. |
| MANUFAC | Spectrum Lighting |
| TESTDATE | 2/18/25 |
| ISSUEDATE | 2/18/25 |
| LUMCAT | TS - RA35 - 29L - 35HK - XW - 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° | 278.23 | 10.55% | 90.00° - 100.00° | 4.55 | 0.17% |
| 10.00° - 20.00° | 724.34 | 27.46% | 100.00° - 110.00° | 4.62 | 0.17% |
| 20.00° - 30.00° | 851.15 | 32.27% | 100.00° - 120.00° | 9.22 | 0.35% |
| 30.00° - 40.00° | 564.58 | 21.40% | 120.00° - 130.00° | 4.47 | 0.17% |
| 40.00° - 50.00° | 121.04 | 4.59% | 130.00° - 140.00° | 4.16 | 0.16% |
| 50.00° - 60.00° | 40.72 | 1.54% | 140.00° - 150.00° | 3.72 | 0.14% |
| 60.00° - 70.00° | 15.34 | 0.58% | 150.00° - 160.00° | 3.10 | 0.12% |
| 70.00° - 80.00° | 5.73 | 0.22% | 160.00° - 170.00° | 2.06 | 0.08% |
| 80.00° - 90.00° | 4.60 | 0.17% | 170.00° - 180.00° | 0.73 | 0.03% |
| 0.00° - 90.00° | 2605.73 | 98.79% | 0.00° - 180.00° | 2637.74 | 100.00% |

Candela Distribution

| | 0.00° | 45.00° | 90.00° | 135.00° | 180.00° | 225.00° | 270.00° | 315.00° | 360.00° |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.00° | 2942.81 | 2942.81 | 2942.81 | 2942.81 | 2942.81 | 2942.81 | 2942.81 | 2942.81 | 2942.81 |
| 1.00° | 2942.39 | 2953.69 | 2947.78 | 2942.14 | 2941.64 | 2945.29 | 2943.48 | 2943.44 | 2942.39 |
| 2.00° | 2943.05 | 2952.49 | 2950.93 | 2950.14 | 2944.38 | 2945.31 | 2946.51 | 2946.09 | 2943.05 |
| 3.00° | 2940.37 | 2950.66 | 2951.99 | 2951.90 | 2943.69 | 2944.55 | 2953.20 | 2948.48 | 2940.37 |
| 4.00° | 2937.36 | 2941.36 | 2949.21 | 2948.06 | 2944.79 | 2950.75 | 2954.96 | 2951.45 | 2937.36 |
| 5.00° | 2930.01 | 2933.73 | 2937.47 | 2941.07 | 2943.52 | 2947.09 | 2952.69 | 2945.41 | 2930.01 |
| 6.00° | 2916.82 | 2924.23 | 2923.47 | 2929.73 | 2930.76 | 2939.62 | 2943.05 | 2931.01 | 2916.82 |
| 7.00° | 2901.68 | 2908.07 | 2908.17 | 2915.64 | 2918.52 | 2924.46 | 2926.71 | 2914.53 | 2901.68 |
| 8.00° | 2884.47 | 2888.03 | 2889.48 | 2893.48 | 2895.37 | 2907.09 | 2915.00 | 2892.91 | 2884.47 |
| 9.00° | 2857.63 | 2863.18 | 2865.55 | 2869.42 | 2870.10 | 2883.33 | 2890.14 | 2868.40 | 2857.63 |
| 10.00° | 2829.06 | 2836.38 | 2838.05 | 2834.71 | 2837.62 | 2853.09 | 2861.64 | 2834.42 | 2829.06 |
| 11.00° | 2797.53 | 2798.28 | 2805.05 | 2797.58 | 2795.59 | 2814.36 | 2823.94 | 2796.40 | 2797.53 |
| 12.00° | 2752.56 | 2761.79 | 2763.04 | 2754.59 | 2752.75 | 2773.12 | 2782.96 | 2752.31 | 2752.56 |
| 13.00° | 2707.19 | 2717.75 | 2721.15 | 2704.67 | 2701.76 | 2724.33 | 2734.46 | 2706.72 | 2707.19 |
| 14.00° | 2660.74 | 2669.24 | 2674.11 | 2650.37 | 2646.75 | 2668.15 | 2683.82 | 2654.07 | 2660.74 |
| 15.00° | 2603.27 | 2613.57 | 2617.20 | 2595.68 | 2586.08 | 2602.17 | 2622.11 | 2595.90 | 2603.27 |
| 16.00° | 2545.59 | 2558.86 | 2557.00 | 2535.99 | 2520.65 | 2540.80 | 2555.69 | 2534.71 | 2545.59 |
| 17.00° | 2486.06 | 2498.41 | 2495.91 | 2472.78 | 2454.47 | 2469.39 | 2486.79 | 2469.67 | 2486.06 |
| 18.00° | 2418.25 | 2428.59 | 2433.01 | 2402.90 | 2390.17 | 2403.67 | 2414.02 | 2402.80 | 2418.25 |
| 19.00° | 2349.47 | 2361.16 | 2359.95 | 2327.56 | 2316.52 | 2330.00 | 2343.81 | 2327.98 | 2349.47 |
| 20.00° | 2276.11 | 2291.75 | 2286.02 | 2257.81 | 2247.17 | 2253.50 | 2265.10 | 2250.44 | 2276.11 |
| 21.00° | 2203.30 | 2222.16 | 2208.06 | 2180.63 | 2173.96 | 2177.21 | 2192.43 | 2176.74 | 2203.30 |
| 22.00° | 2128.01 | 2146.81 | 2134.71 | 2106.03 | 2105.30 | 2109.45 | 2113.34 | 2099.52 | 2128.01 |
| 23.00° | 2051.43 | 2068.31 | 2056.12 | 2027.91 | 2031.10 | 2029.67 | 2035.48 | 2023.65 | 2051.43 |
| 24.00° | 1968.28 | 1988.86 | 1972.20 | 1947.64 | 1950.00 | 1951.45 | 1955.15 | 1938.95 | 1968.28 |
| 25.00° | 1891.50 | 1903.53 | 1893.66 | 1863.51 | 1873.19 | 1869.49 | 1874.93 | 1856.84 | 1891.50 |
| 26.00° | 1800.43 | 1813.57 | 1805.92 | 1778.54 | 1788.20 | 1789.35 | 1791.39 | 1772.42 | 1800.43 |
| 27.00° | 1712.41 | 1717.74 | 1718.29 | 1688.14 | 1705.71 | 1703.04 | 1705.56 | 1684.85 | 1712.41 |
| 28.00° | 1618.51 | 1621.86 | 1617.30 | 1598.89 | 1616.44 | 1613.26 | 1618.34 | 1589.51 | 1618.51 |
| 29.00° | 1523.74 | 1522.63 | 1521.66 | 1500.70 | 1523.15 | 1522.27 | 1521.67 | 1498.24 | 1523.74 |
| 30.00° | 1428.40 | 1425.02 | 1428.39 | 1404.32 | 1431.52 | 1430.12 | 1430.59 | 1406.34 | 1428.40 |
| 31.00° | 1328.52 | 1323.68 | 1326.96 | 1304.95 | 1334.36 | 1336.24 | 1336.74 | 1308.37 | 1328.52 |
| 32.00° | 1230.18 | 1218.09 | 1226.91 | 1203.09 | 1238.81 | 1243.25 | 1245.43 | 1213.63 | 1230.18 |
| 33.00° | 1131.58 | 1116.95 | 1124.77 | 1100.74 | 1139.49 | 1145.43 | 1150.15 | 1117.08 | 1131.58 |
| 34.00° | 1028.81 | 1013.01 | 1020.16 | 997.69 | 1039.77 | 1042.00 | 1053.67 | 1015.65 | 1028.81 |
| 35.00° | 923.95 | 902.06 | 914.89 | 894.92 | 938.61 | 944.98 | 954.07 | 911.99 | 923.95 |
| 36.00° | 819.09 | 796.50 | 808.11 | 795.36 | 835.02 | 842.68 | 853.26 | 808.85 | 819.09 |
| 37.00° | 714.86 | 691.73 | 708.48 | 695.68 | 737.58 | 741.31 | 753.38 | 703.39 | 714.86 |
| 38.00° | 610.36 | 581.77 | 604.87 | 595.18 | 638.68 | 637.96 | 653.81 | 604.33 | 610.36 |
| 39.00° | 495.07 | 468.84 | 494.38 | 494.91 | 535.07 | 538.63 | 549.32 | 493.61 | 495.07 |
| 40.00° | 375.42 | 363.01 | 382.73 | 395.28 | 430.25 | 426.45 | 437.06 | 383.81 | 375.42 |
| 41.00° | 296.43 | 286.91 | 297.03 | 307.52 | 326.19 | 328.53 | 339.53 | 303.14 | 296.43 |
| 42.00° | 242.29 | 231.56 | 233.99 | 240.27 | 250.06 | 253.91 | 263.25 | 247.89 | 242.29 |
| 43.00° | 194.12 | 183.39 | 182.55 | 190.35 | 193.16 | 197.13 | 210.00 | 196.87 | 194.12 |

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 | 3133 | 3133 | 3133 | 3133 | 3056 | 3056 | 3056 | 3056 | 2913 | 2913 | 2913 | 2782 | 2782 | 2782 | 2662 | 2662 | 2606 |
| | 1 | 2983 | 2909 | 2842 | 2782 | 2915 | 2849 | 2789 | 2735 | 2736 | 2689 | 2645 | 2633 | 2595 | 2561 | 2537 | 2508 | 2456 |
| | 2 | 2834 | 2704 | 2597 | 2506 | 2772 | 2656 | 2558 | 2476 | 2565 | 2485 | 2416 | 2482 | 2417 | 2360 | 2405 | 2352 | 2304 |
| | 3 | 2690 | 2519 | 2387 | 2282 | 2634 | 2480 | 2359 | 2261 | 2406 | 2305 | 2221 | 2338 | 2253 | 2182 | 2274 | 2205 | 2160 |
| | 4 | 2553 | 2353 | 2206 | 2094 | 2503 | 2320 | 2184 | 2080 | 2259 | 2143 | 2051 | 2203 | 2104 | 2024 | 2150 | 2067 | 2026 |
| | 5 | 2423 | 2202 | 2047 | 1933 | 2378 | 2175 | 2031 | 1923 | 2124 | 1999 | 1903 | 2077 | 1968 | 1883 | 2033 | 1939 | 1902 |
| | 6 | 2301 | 2066 | 1907 | 1794 | 2260 | 2043 | 1894 | 1786 | 2000 | 1869 | 1771 | 1960 | 1845 | 1757 | 1923 | 1822 | 1788 |
| | 7 | 2187 | 1942 | 1783 | 1671 | 2150 | 1923 | 1772 | 1666 | 1886 | 1752 | 1654 | 1852 | 1733 | 1644 | 1820 | 1714 | 1684 |
| | 8 | 2081 | 1829 | 1671 | 1563 | 2047 | 1813 | 1663 | 1558 | 1782 | 1646 | 1550 | 1752 | 1630 | 1541 | 1724 | 1615 | 1588 |
| | 9 | 1982 | 1727 | 1571 | 1465 | 1951 | 1713 | 1564 | 1462 | 1686 | 1550 | 1455 | 1660 | 1537 | 1449 | 1636 | 1524 | 1500 |
| | 10 | 1890 | 1634 | 1480 | 1378 | 1861 | 1621 | 1474 | 1376 | 1597 | 1463 | 1370 | 1575 | 1452 | 1365 | 1554 | 1441 | 1419 |

Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|------------|-------------|---------------|
| 5.5 ft | 97.3 fc | 6.2 ft |
| 6.5 ft | 69.7 fc | 7.4 ft |
| 7.5 ft | 52.3 fc | 8.5 ft |
| 8.0 ft | 46.0 fc | 9.0 ft |
| 10.0 ft | 29.4 fc | 11.3 ft |
| 12.0 ft | 20.4 fc | 13.6 ft |
| 14.0 ft | 15.0 fc | 15.8 ft |
| 16.0 ft | 11.5 fc | 18.1 ft |
| 20.0 ft | 7.4 fc | 22.6 ft |
| 24.0 ft | 5.1 fc | 27.1 ft |
| 28.0 ft | 3.8 fc | 31.7 ft |

Average Luminaire Luminance [cd/m²]

| | 0.00° | 45.00° | 90.00° |
|--------|-------|--------|-----------------------|
| 0.00° | 0 | 0 | 0 |
| 45.00° | 11705 | 15813 | 183969147670251634688 |
| 55.00° | 3435 | 4953 | 56243833824651091968 |
| 65.00° | 1084 | 1160 | 17109306878233047040 |
| 75.00° | 306 | 471 | 5097543908302149632 |
| 85.00° | 221 | 366 | 3997102873042979840 |

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 | 8.3 | 9.3 | 8.7 | 9.6 | 10.0 | 11.8 | 12.7 | 12.2 | 13.1 | 13.4 |
| | 3H | 8.3 | 9.2 | 8.7 | 9.5 | 9.9 | 12.0 | 12.9 | 12.4 | 13.2 | 13.6 |
| | 4H | 8.3 | 9.0 | 8.7 | 9.4 | 9.9 | 12.1 | 12.9 | 12.5 | 13.2 | 13.7 |
| | 6H | 8.2 | 8.9 | 8.6 | 9.3 | 9.7 | 12.2 | 12.9 | 12.6 | 13.3 | 13.7 |
| | 8H | 8.2 | 8.8 | 8.6 | 9.3 | 9.7 | 12.3 | 12.9 | 12.7 | 13.4 | 13.8 |
| | 12H | 8.2 | 8.8 | 8.6 | 9.2 | 9.7 | 12.5 | 13.1 | 12.9 | 13.5 | 14.0 |
| 4H | 2H | 8.3 | 9.1 | 8.7 | 9.4 | 9.9 | 11.6 | 12.3 | 12.0 | 12.7 | 13.1 |
| | 3H | 8.3 | 9.0 | 8.8 | 9.4 | 9.8 | 11.8 | 12.5 | 12.3 | 12.9 | 13.3 |
| | 4H | 8.3 | 8.8 | 8.7 | 9.3 | 9.8 | 11.9 | 12.5 | 12.3 | 12.9 | 13.4 |
| | 6H | 8.2 | 8.7 | 8.7 | 9.2 | 9.7 | 12.0 | 12.5 | 12.5 | 13.0 | 13.5 |
| | 8H | 8.2 | 8.7 | 8.7 | 9.2 | 9.7 | 12.1 | 12.6 | 12.6 | 13.1 | 13.6 |
| | 12H | 8.2 | 8.6 | 8.7 | 9.1 | 9.6 | 12.4 | 12.8 | 12.9 | 13.3 | 13.8 |
| 8H | 4H | 8.2 | 8.6 | 8.7 | 9.1 | 9.6 | 11.7 | 12.2 | 12.2 | 12.7 | 13.2 |
| | 6H | 8.2 | 8.5 | 8.7 | 9.1 | 9.6 | 11.9 | 12.2 | 12.4 | 12.8 | 13.3 |
| | 8H | 8.2 | 8.5 | 8.8 | 9.1 | 9.6 | 12.0 | 12.3 | 12.6 | 12.9 | 13.4 |
| | 12H | 8.2 | 8.5 | 8.8 | 9.0 | 9.7 | 12.4 | 12.6 | 12.9 | 13.2 | 13.8 |
| 12H | 4H | 8.1 | 8.5 | 8.6 | 9.0 | 9.5 | 11.7 | 12.1 | 12.2 | 12.6 | 13.1 |
| | 6H | 8.1 | 8.5 | 8.7 | 9.0 | 9.5 | 11.8 | 12.1 | 12.4 | 12.6 | 13.2 |
| | 8H | 8.2 | 8.5 | 8.8 | 9.0 | 9.6 | 12.0 | 12.3 | 12.5 | 12.8 | 13.4 |

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0