

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

TS - RA25 - 13L - 35HK - XW - xx -xx - MW

Track light for accent, display and general illumination.

Test Number

TSRA25-4

Test Date

2/18/25

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

Summary of Results

Power

| | |
|-------------|---------|
| Input Watts | 13.72 W |
|-------------|---------|

Lumen Output

| | |
|---------------|-----------|
| Output Lumens | 1163 |
| Efficacy | 84.8 lm/W |

Luminous Dimensions

| | |
|-----------------|------|
| 0° - 180° Size | 0 |
| 90° - 270° Size | 0.15 |
| Height | 0.46 |

Spacing Criterion

| | |
|---------------------------|------|
| Two luminaires, plane 0° | 0.86 |
| Two luminaires, plane 90° | 0.87 |
| Four luminaires | 0.85 |

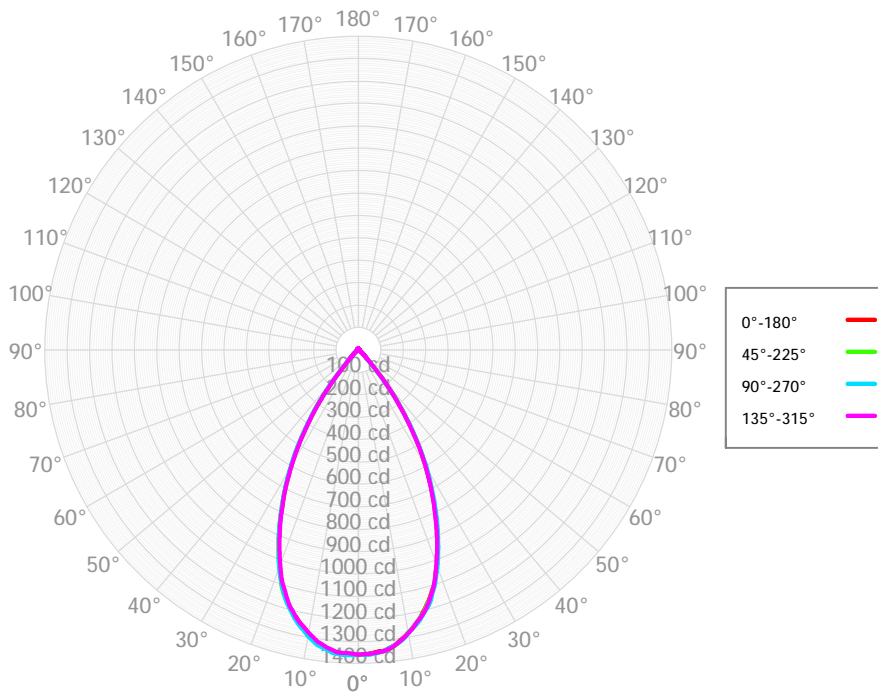
Full Beam Angle

| | |
|------------|-----|
| 0° - 180° | 56° |
| 90° - 270° | 57° |

IES File Header Contents

| Keyword | Value |
|-----------|---|
| TEST | TSRA25-4 |
| TESTLAB | Spectrum Lighting Photometric Lab. |
| MANUFAC | Spectrum Lighting |
| TESTDATE | 2/18/25 |
| ISSUEDATE | 2/18/25 |
| LUMCAT | TS - RA25 - 13L - 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° | 127.08 | 10.92% | 90.00° - 100.00° | 4.48 | 0.39% |
| 10.00° - 20.00° | 329.34 | 28.31% | 100.00° - 110.00° | 4.49 | 0.39% |
| 20.00° - 30.00° | 372.38 | 32.01% | 100.00° - 120.00° | 8.70 | 0.75% |
| 30.00° - 40.00° | 230.78 | 19.84% | 120.00° - 130.00° | 3.92 | 0.34% |
| 40.00° - 50.00° | 47.07 | 4.05% | 130.00° - 140.00° | 3.47 | 0.30% |
| 50.00° - 60.00° | 13.64 | 1.17% | 140.00° - 150.00° | 2.90 | 0.25% |
| 60.00° - 70.00° | 6.22 | 0.53% | 150.00° - 160.00° | 2.32 | 0.20% |
| 70.00° - 80.00° | 4.61 | 0.40% | 160.00° - 170.00° | 1.44 | 0.12% |
| 80.00° - 90.00° | 4.57 | 0.39% | 170.00° - 180.00° | 0.50 | 0.04% |
| 0.00° - 90.00° | 1135.69 | 97.62% | 0.00° - 180.00° | 1163.42 | 100.00% |

Candela Distribution

| | 0.00° | 45.00° | 90.00° | 135.00° | 180.00° | 225.00° | 270.00° | 315.00° | 360.00° |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0.00° | 1360.69 | 1360.69 | 1360.69 | 1360.69 | 1360.69 | 1360.69 | 1360.69 | 1360.69 | 1360.69 |
| 1.00° | 1359.44 | 1363.11 | 1363.00 | 1357.20 | 1360.01 | 1361.23 | 1363.09 | 1359.26 | 1359.44 |
| 2.00° | 1357.32 | 1360.61 | 1362.09 | 1354.83 | 1358.41 | 1360.75 | 1364.19 | 1358.51 | 1357.32 |
| 3.00° | 1353.73 | 1356.72 | 1358.30 | 1355.08 | 1355.90 | 1360.51 | 1363.44 | 1355.68 | 1353.73 |
| 4.00° | 1348.87 | 1353.92 | 1354.22 | 1353.38 | 1354.97 | 1356.68 | 1360.06 | 1352.52 | 1348.87 |
| 5.00° | 1347.83 | 1348.80 | 1348.18 | 1344.38 | 1347.77 | 1352.41 | 1356.81 | 1349.07 | 1347.83 |
| 6.00° | 1337.48 | 1342.33 | 1337.99 | 1336.40 | 1340.86 | 1344.78 | 1345.98 | 1342.31 | 1337.48 |
| 7.00° | 1329.10 | 1331.76 | 1329.05 | 1324.88 | 1331.87 | 1335.21 | 1338.18 | 1329.82 | 1329.10 |
| 8.00° | 1313.22 | 1315.92 | 1318.96 | 1314.39 | 1319.95 | 1321.34 | 1328.94 | 1316.09 | 1313.22 |
| 9.00° | 1299.49 | 1303.62 | 1304.25 | 1297.50 | 1303.83 | 1305.39 | 1313.17 | 1301.00 | 1299.49 |
| 10.00° | 1284.08 | 1280.77 | 1285.09 | 1281.96 | 1285.76 | 1290.70 | 1297.05 | 1284.59 | 1284.08 |
| 11.00° | 1265.77 | 1267.27 | 1267.95 | 1263.33 | 1264.90 | 1273.84 | 1276.99 | 1267.47 | 1265.77 |
| 12.00° | 1249.46 | 1245.79 | 1253.05 | 1247.73 | 1247.75 | 1258.26 | 1259.57 | 1246.53 | 1249.46 |
| 13.00° | 1226.67 | 1226.58 | 1234.35 | 1228.38 | 1226.99 | 1234.45 | 1239.89 | 1229.16 | 1226.67 |
| 14.00° | 1202.86 | 1206.78 | 1211.38 | 1204.95 | 1211.15 | 1214.81 | 1216.96 | 1209.62 | 1202.86 |
| 15.00° | 1178.66 | 1180.09 | 1191.87 | 1183.14 | 1186.10 | 1190.56 | 1193.36 | 1185.70 | 1178.66 |
| 16.00° | 1153.98 | 1158.36 | 1169.20 | 1154.50 | 1160.15 | 1165.81 | 1167.87 | 1158.37 | 1153.98 |
| 17.00° | 1125.25 | 1127.79 | 1134.27 | 1123.26 | 1130.73 | 1140.08 | 1136.45 | 1128.30 | 1125.25 |
| 18.00° | 1098.91 | 1098.77 | 1105.59 | 1095.27 | 1099.27 | 1108.84 | 1105.41 | 1096.98 | 1098.91 |
| 19.00° | 1057.39 | 1061.02 | 1067.80 | 1060.09 | 1065.55 | 1070.30 | 1070.79 | 1059.62 | 1057.39 |
| 20.00° | 1023.04 | 1025.46 | 1032.80 | 1019.37 | 1026.97 | 1032.13 | 1033.22 | 1018.84 | 1023.04 |
| 21.00° | 979.72 | 987.96 | 992.92 | 980.41 | 987.45 | 994.39 | 992.89 | 979.92 | 979.72 |
| 22.00° | 942.34 | 945.13 | 953.19 | 940.20 | 945.90 | 952.32 | 949.98 | 939.63 | 942.34 |
| 23.00° | 898.64 | 905.93 | 911.22 | 899.65 | 904.08 | 911.93 | 909.73 | 898.98 | 898.64 |
| 24.00° | 857.81 | 862.94 | 870.04 | 858.08 | 864.31 | 867.72 | 866.12 | 856.25 | 857.81 |
| 25.00° | 814.49 | 821.04 | 828.03 | 816.00 | 820.85 | 822.53 | 822.71 | 812.02 | 814.49 |
| 26.00° | 773.03 | 776.02 | 784.27 | 771.44 | 773.96 | 782.58 | 777.44 | 770.85 | 773.03 |
| 27.00° | 731.34 | 731.83 | 742.14 | 729.53 | 733.22 | 736.12 | 736.48 | 726.47 | 731.34 |
| 28.00° | 687.47 | 689.34 | 696.62 | 688.43 | 688.33 | 693.20 | 693.62 | 685.76 | 687.47 |
| 29.00° | 642.39 | 648.77 | 655.55 | 639.65 | 642.48 | 647.42 | 650.72 | 642.05 | 642.39 |
| 30.00° | 601.47 | 603.69 | 613.91 | 592.66 | 597.63 | 601.36 | 605.79 | 599.74 | 601.47 |
| 31.00° | 556.84 | 562.08 | 567.40 | 548.06 | 556.73 | 556.93 | 561.64 | 555.95 | 556.84 |
| 32.00° | 515.93 | 515.20 | 518.63 | 501.95 | 510.96 | 511.14 | 516.50 | 512.47 | 515.93 |
| 33.00° | 470.01 | 472.63 | 473.10 | 455.24 | 465.41 | 462.68 | 469.13 | 462.61 | 470.01 |
| 34.00° | 426.03 | 424.27 | 427.99 | 408.24 | 419.19 | 415.31 | 421.30 | 417.74 | 426.03 |
| 35.00° | 380.18 | 378.16 | 381.47 | 364.66 | 371.57 | 366.27 | 378.52 | 372.14 | 380.18 |
| 36.00° | 336.39 | 331.14 | 334.23 | 319.86 | 330.25 | 322.95 | 332.57 | 329.00 | 336.39 |
| 37.00° | 293.61 | 292.27 | 291.28 | 271.79 | 285.83 | 277.67 | 286.30 | 284.83 | 293.61 |
| 38.00° | 255.29 | 250.67 | 246.28 | 229.05 | 237.46 | 234.55 | 241.95 | 243.88 | 255.29 |
| 39.00° | 213.52 | 211.76 | 203.81 | 180.87 | 191.42 | 187.01 | 201.76 | 207.38 | 213.52 |
| 40.00° | 173.58 | 171.11 | 158.80 | 140.86 | 149.94 | 146.48 | 158.41 | 167.24 | 173.58 |
| 41.00° | 136.11 | 129.62 | 124.85 | 104.24 | 113.68 | 112.19 | 123.34 | 129.80 | 136.11 |
| 42.00° | 102.99 | 98.59 | 92.50 | 82.19 | 86.37 | 87.47 | 94.53 | 102.62 | 102.99 |
| 43.00° | 76.32 | 76.92 | 73.07 | 62.43 | 68.24 | 68.81 | 71.38 | 81.32 | 76.32 |

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 | 1378 | 1378 | 1378 | 1378 | 1343 | 1343 | 1343 | 1343 | 1277 | 1277 | 1277 | 1217 | 1217 | 1217 | 1162 | 1162 | 1136 |
| | 1 | 1312 | 1279 | 1249 | 1222 | 1280 | 1251 | 1224 | 1200 | 1199 | 1178 | 1158 | 1151 | 1134 | 1119 | 1106 | 1094 | 1069 |
| | 2 | 1246 | 1189 | 1142 | 1102 | 1218 | 1167 | 1124 | 1087 | 1124 | 1089 | 1059 | 1086 | 1057 | 1032 | 1050 | 1027 | 1005 |
| | 3 | 1184 | 1109 | 1051 | 1004 | 1158 | 1090 | 1037 | 994 | 1056 | 1012 | 975 | 1024 | 987 | 956 | 995 | 964 | 944 |
| | 4 | 1124 | 1037 | 972 | 923 | 1101 | 1021 | 962 | 916 | 993 | 942 | 902 | 966 | 924 | 889 | 942 | 906 | 887 |
| | 5 | 1068 | 971 | 904 | 854 | 1047 | 959 | 896 | 849 | 935 | 880 | 839 | 913 | 866 | 829 | 892 | 851 | 835 |
| | 6 | 1015 | 912 | 843 | 794 | 997 | 902 | 837 | 790 | 882 | 825 | 782 | 863 | 813 | 775 | 845 | 801 | 786 |
| | 7 | 966 | 859 | 789 | 741 | 949 | 850 | 784 | 738 | 832 | 774 | 732 | 816 | 765 | 726 | 801 | 755 | 742 |
| | 8 | 920 | 810 | 741 | 694 | 904 | 802 | 737 | 691 | 787 | 729 | 687 | 773 | 721 | 682 | 760 | 713 | 701 |
| | 9 | 877 | 766 | 698 | 651 | 863 | 759 | 694 | 650 | 746 | 687 | 646 | 734 | 681 | 642 | 722 | 674 | 663 |
| | 10 | 837 | 725 | 658 | 614 | 824 | 719 | 655 | 612 | 708 | 649 | 609 | 697 | 644 | 606 | 687 | 638 | 628 |

Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|------------|-------------|---------------|
| 5.5 ft | 45.0 fc | 5.9 ft |
| 6.5 ft | 32.2 fc | 6.9 ft |
| 7.5 ft | 24.2 fc | 8.0 ft |
| 8.0 ft | 21.3 fc | 8.6 ft |
| 10.0 ft | 13.6 fc | 10.7 ft |
| 12.0 ft | 9.4 fc | 12.8 ft |
| 14.0 ft | 6.9 fc | 15.0 ft |
| 16.0 ft | 5.3 fc | 17.1 ft |
| 20.0 ft | 3.4 fc | 21.4 ft |
| 24.0 ft | 2.4 fc | 25.7 ft |
| 28.0 ft | 1.7 fc | 29.9 ft |

Average Luminaire Luminance [cd/m²]

| | 0.00° | 45.00° | 90.00° |
|--------|-------|--------|-----------------------|
| 0.00° | 0 | 0 | 0 |
| 45.00° | 10616 | 15683 | 185054719976706899968 |
| 55.00° | 2956 | 4424 | 46350300732498575360 |
| 65.00° | 1157 | 1704 | 15644653078902714368 |
| 75.00° | 599 | 1009 | 12524243118128330752 |
| 85.00° | 716 | 889 | 8609437369515662336 |

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 | 5.8 | 6.7 | 6.2 | 7.1 | 7.5 | 9.1 | 10.1 | 9.5 | 10.4 | 10.8 |
| | 3H | 6.4 | 7.2 | 6.8 | 7.6 | 8.0 | 10.3 | 11.2 | 10.8 | 11.6 | 12.0 |
| | 4H | 6.6 | 7.4 | 7.1 | 7.8 | 8.3 | 11.0 | 11.8 | 11.5 | 12.2 | 12.7 |
| | 6H | 7.1 | 7.8 | 7.5 | 8.2 | 8.6 | 12.0 | 12.7 | 12.4 | 13.1 | 13.6 |
| | 8H | 7.3 | 8.0 | 7.8 | 8.4 | 8.9 | 12.9 | 13.5 | 13.3 | 14.0 | 14.4 |
| | 12H | 7.5 | 8.2 | 8.0 | 8.6 | 9.1 | 13.6 | 14.3 | 14.1 | 14.7 | 15.2 |
| 4H | 2H | 6.0 | 6.8 | 6.5 | 7.2 | 7.6 | 9.0 | 9.8 | 9.5 | 10.2 | 10.6 |
| | 3H | 6.8 | 7.4 | 7.3 | 7.9 | 8.3 | 10.3 | 11.0 | 10.8 | 11.4 | 11.9 |
| | 4H | 7.2 | 7.7 | 7.6 | 8.2 | 8.7 | 11.1 | 11.7 | 11.6 | 12.2 | 12.7 |
| | 6H | 7.8 | 8.3 | 8.3 | 8.7 | 9.3 | 12.2 | 12.7 | 12.7 | 13.2 | 13.7 |
| | 8H | 8.1 | 8.6 | 8.6 | 9.1 | 9.6 | 13.1 | 13.6 | 13.6 | 14.1 | 14.6 |
| | 12H | 8.4 | 8.8 | 9.0 | 9.4 | 9.9 | 14.0 | 14.4 | 14.5 | 14.9 | 15.4 |
| 8H | 4H | 7.4 | 7.8 | 7.9 | 8.3 | 8.9 | 11.1 | 11.5 | 11.6 | 12.0 | 12.5 |
| | 6H | 8.1 | 8.5 | 8.7 | 9.0 | 9.6 | 12.2 | 12.6 | 12.8 | 13.1 | 13.7 |
| | 8H | 8.6 | 8.9 | 9.2 | 9.5 | 10.1 | 13.2 | 13.5 | 13.8 | 14.1 | 14.7 |
| | 12H | 9.1 | 9.4 | 9.7 | 9.9 | 10.6 | 14.2 | 14.5 | 14.8 | 15.0 | 15.6 |
| 12H | 4H | 7.4 | 7.8 | 8.0 | 8.4 | 8.9 | 11.0 | 11.4 | 11.6 | 11.9 | 12.5 |
| | 6H | 8.2 | 8.6 | 8.8 | 9.1 | 9.7 | 12.2 | 12.5 | 12.8 | 13.0 | 13.6 |
| | 8H | 8.8 | 9.1 | 9.4 | 9.6 | 10.3 | 13.2 | 13.5 | 13.8 | 14.1 | 14.7 |

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0