

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
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Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 25L 35HK ND xx xx RH3F 25L 35HK ND MW GL
Nom. 3" Round Pinhole A-Spec, Narrow Beam

Test Number

SP-01403_3

Test Date

9/14/2022

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

Summary of Results

Power

| | |
|-------------|--------|
| Input Watts | 26.3 W |
|-------------|--------|

Lumen Output

| | |
|---------------|------------|
| Output Lumens | 1330 |
| Efficacy | 50.57 lm/W |

Luminous Dimensions

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

Spacing Criterion

| | |
|---------------------------|------|
| Two luminaires, plane 0° | 0.41 |
| Two luminaires, plane 90° | 0.4 |
| Four luminaires | 0.47 |

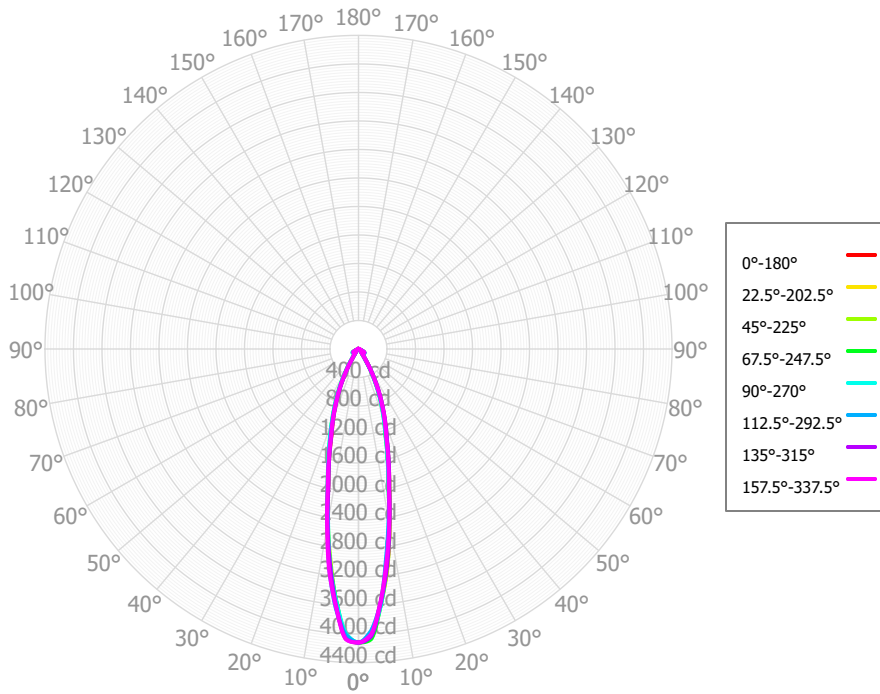
Full Beam Angle

| | |
|------------|-----|
| 0° - 180° | 24° |
| 90° - 270° | 24° |

IES File Header Contents

| Keyword | Value |
|-----------|--|
| TEST | SP-01403_3 |
| TESTLAB | Spectrum Lighting Photometric Lab, VLS-245-981 |
| MANUFAC | Spectrum Lighting |
| TESTDATE | 9/14/2022 |
| ISSUDATE | 10/25/2022 |
| LUMCAT | SR3Mx 25L 35HK ND xx xx RH3F 25L 35HK ND MW GL |
| LUMINAIRE | Nom. 3" Round Pinhole A-Spec, Narrow Beam |
| OTHER | Matte White Trim, Clear glass lens |
| OTHER | 24 Degree Beam Angle |
| LAMP | N/A, 19mm LES |
| LAMPCAT | N/A, Min. 90 CRI |
| OTHER | Reference project SL167 |
| OTHER | minus 2W, no thermal protection required for 7L, 10L, and 15L (non-IC) |
| OTHER | minus 2W, no thermal protection required for all (including 20L and 25L) IC luminaires |
| OTHER | Total Luminaire Watts is approximate |
| OTHER | This report prepared by Spectrum Lighting |
| _CRI | 90 |

Candela Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % Fixture | Zone | Lumens | % Fixture |
|-----------------|---------|-----------|-------------------|---------|-----------|
| 0.00° - 10.00° | 308.75 | 23.21% | 90.00° - 100.00° | 2.06 | 0.15% |
| 10.00° - 20.00° | 447.16 | 33.62% | 100.00° - 110.00° | 1.93 | 0.14% |
| 20.00° - 30.00° | 301.24 | 22.65% | 100.00° - 120.00° | 3.75 | 0.28% |
| 30.00° - 40.00° | 88.67 | 6.67% | 120.00° - 130.00° | 1.66 | 0.12% |
| 40.00° - 50.00° | 35.77 | 2.69% | 130.00° - 140.00° | 1.52 | 0.11% |
| 50.00° - 60.00° | 66.70 | 5.02% | 140.00° - 150.00° | 1.37 | 0.10% |
| 60.00° - 70.00° | 47.34 | 3.56% | 150.00° - 160.00° | 1.10 | 0.08% |
| 70.00° - 80.00° | 14.25 | 1.07% | 160.00° - 170.00° | 0.59 | 0.04% |
| 80.00° - 90.00° | 7.85 | 0.59% | 170.00° - 180.00° | 0.20 | 0.01% |
| 0.00° - 90.00° | 1317.73 | 99.08% | 0.00° - 180.00° | 1329.96 | 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° | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 | 4118.90 |
| 2.50° | 4033.25 | 4001.63 | 4044.37 | 4075.56 | 4015.35 | 4018.17 | 4071.68 | 4076.67 | 4056.03 | 4039.79 | 4014.96 | 4046.17 | 4001.61 | 3965.44 | 4039.17 | 4010.95 | 4033.25 |
| 5.00° | 3578.86 | 3574.45 | 3599.45 | 3594.20 | 3609.87 | 3652.29 | 3614.82 | 3634.25 | 3615.67 | 3607.98 | 3572.73 | 3557.55 | 3564.03 | 3576.10 | 3570.90 | 3556.63 | 3578.86 |
| 7.50° | 3084.76 | 3006.08 | 3102.26 | 3035.46 | 3015.49 | 3124.12 | 3057.99 | 3142.79 | 3056.43 | 3109.79 | 3004.92 | 3052.29 | 3053.80 | 2961.66 | 3073.29 | 3006.05 | 3084.76 |
| 10.00° | 2504.47 | 2477.52 | 2505.91 | 2482.56 | 2465.66 | 2485.97 | 2499.67 | 2532.35 | 2507.15 | 2507.56 | 2475.85 | 2488.51 | 2461.35 | 2433.55 | 2497.20 | 2481.27 | 2504.47 |
| 12.50° | 1998.25 | 1963.77 | 1994.56 | 1930.36 | 1940.28 | 1997.93 | 1941.08 | 1996.13 | 1960.37 | 1995.28 | 1958.39 | 1982.00 | 1991.43 | 1984.41 | 1989.35 | 1961.92 | 1998.25 |
| 15.00° | 1625.98 | 1602.31 | 1618.51 | 1583.69 | 1567.80 | 1596.88 | 1590.89 | 1611.39 | 1590.73 | 1603.96 | 1604.75 | 1636.78 | 1639.36 | 1616.53 | 1633.90 | 1614.11 | 1625.98 |
| 17.50° | 1313.51 | 1287.42 | 1302.98 | 1251.56 | 1265.21 | 1302.08 | 1267.32 | 1284.05 | 1254.86 | 1290.40 | 1289.51 | 1325.34 | 1343.80 | 1312.69 | 1324.95 | 1293.42 | 1313.51 |
| 20.00° | 1093.40 | 1061.31 | 1070.04 | 1043.71 | 1035.47 | 1059.57 | 1042.70 | 1054.65 | 1035.72 | 1065.55 | 1060.62 | 1091.71 | 1094.40 | 1070.23 | 1102.41 | 1079.72 | 1093.40 |
| 22.50° | 882.82 | 856.99 | 859.99 | 839.84 | 833.60 | 848.99 | 826.24 | 842.42 | 832.42 | 857.46 | 847.30 | 871.80 | 880.48 | 868.70 | 892.08 | 877.37 | 882.82 |
| 25.00° | 684.89 | 668.29 | 676.41 | 657.38 | 646.39 | 651.39 | 639.09 | 654.87 | 648.03 | 665.61 | 657.09 | 678.58 | 691.47 | 681.34 | 701.12 | 685.83 | 684.89 |
| 27.50° | 502.08 | 482.49 | 500.65 | 476.27 | 463.73 | 474.33 | 453.19 | 477.16 | 465.34 | 486.77 | 469.79 | 496.74 | 514.91 | 501.93 | 519.55 | 494.97 | 502.08 |
| 30.00° | 336.29 | 329.87 | 332.68 | 321.40 | 313.31 | 304.05 | 304.54 | 311.61 | 314.09 | 318.80 | 319.51 | 333.75 | 345.83 | 345.50 | 350.55 | 339.32 | 336.29 |
| 32.50° | 212.36 | 181.60 | 210.52 | 175.73 | 170.92 | 196.24 | 160.20 | 191.28 | 164.35 | 201.70 | 172.24 | 206.79 | 224.42 | 200.00 | 219.98 | 186.20 | 212.36 |
| 35.00° | 128.44 | 125.95 | 127.20 | 123.89 | 114.82 | 105.19 | 114.02 | 119.12 | 119.53 | 120.62 | 122.69 | 130.15 | 127.00 | 128.05 | 133.70 | 130.83 | 128.44 |
| 37.50° | 81.19 | 78.23 | 80.92 | 76.71 | 74.98 | 75.46 | 70.51 | 76.51 | 76.34 | 79.80 | 76.84 | 81.30 | 83.73 | 85.47 | 82.24 | 77.96 | 81.19 |
| 40.00° | 64.16 | 62.86 | 61.64 | 61.86 | 58.19 | 58.69 | 57.97 | 60.65 | 63.57 | 63.39 | 63.90 | 65.36 | 63.05 | 65.28 | 64.89 | 64.82 | 64.16 |
| 42.50° | 52.69 | 48.90 | 49.95 | 48.42 | 44.59 | 48.39 | 46.25 | 50.04 | 51.20 | 51.85 | 51.19 | 53.22 | 52.68 | 52.34 | 51.66 | 52.21 | 52.69 |
| 45.00° | 45.16 | 43.74 | 42.92 | 42.01 | 39.26 | 39.10 | 40.82 | 43.45 | 43.88 | 42.78 | 43.98 | 44.97 | 45.88 | 44.29 | 41.92 | 44.66 | 45.16 |
| 47.50° | 43.75 | 39.21 | 40.74 | 37.90 | 34.65 | 36.87 | 37.06 | 41.67 | 38.27 | 41.53 | 38.05 | 41.96 | 42.51 | 37.48 | 40.11 | 39.60 | 43.75 |
| 50.00° | 46.01 | 49.95 | 41.12 | 42.74 | 42.16 | 35.37 | 42.29 | 43.06 | 46.05 | 43.61 | 46.83 | 43.56 | 40.10 | 46.65 | 43.98 | 50.20 | 46.01 |
| 52.50° | 63.06 | 61.39 | 56.99 | 52.24 | 50.21 | 54.27 | 50.86 | 57.03 | 55.95 | 59.96 | 57.23 | 58.50 | 59.00 | 59.02 | 61.74 | 62.56 | 63.06 |
| 55.00° | 87.50 | 81.35 | 79.62 | 76.13 | 72.98 | 74.38 | 72.97 | 78.08 | 77.79 | 81.29 | 79.48 | 83.39 | 82.57 | 80.85 | 88.01 | 83.29 | 87.50 |
| 57.50° | 92.24 | 97.24 | 86.13 | 90.87 | 94.57 | 82.54 | 87.94 | 84.90 | 93.01 | 86.04 | 96.31 | 92.21 | 92.96 | 104.04 | 95.78 | 97.12 | 92.24 |
| 60.00° | 88.68 | 81.48 | 86.78 | 82.30 | 81.47 | 89.83 | 79.60 | 85.02 | 80.27 | 86.06 | 84.95 | 90.88 | 101.22 | 92.24 | 94.06 | 85.70 | 88.68 |
| 62.50° | 69.59 | 64.78 | 67.58 | 68.24 | 67.60 | 66.26 | 67.22 | 66.94 | 65.26 | 67.24 | 71.03 | 73.02 | 77.13 | 77.01 | 74.43 | 70.98 | 69.59 |
| 65.00° | 45.06 | 42.96 | 42.59 | 42.64 | 44.26 | 43.21 | 44.00 | 41.81 | 42.61 | 44.24 | 46.75 | 46.26 | 49.37 | 51.76 | 47.04 | 46.41 | 45.06 |
| 67.50° | 30.08 | 24.10 | 27.48 | 23.37 | 22.77 | 28.17 | 25.32 | 26.16 | 24.03 | 28.66 | 26.08 | 29.03 | 31.97 | 26.00 | 30.17 | 26.70 | 30.08 |
| 70.00° | 17.77 | 17.43 | 14.63 | 15.38 | 16.04 | 14.55 | 16.66 | 13.54 | 16.52 | 14.33 | 17.17 | 16.12 | 15.29 | 18.53 | 17.03 | 18.71 | 17.77 |
| 72.50° | 14.47 | 12.71 | 13.16 | 11.27 | 10.69 | 13.91 | 11.96 | 11.68 | 11.72 | 12.62 | 10.85 | 11.76 | 13.61 | 11.49 | 13.42 | 13.64 | 14.47 |
| 75.00° | 13.12 | 14.42 | 13.67 | 12.97 | 13.00 | 13.51 | 14.52 | 12.60 | 13.10 | 12.38 | 11.29 | 10.60 | 12.32 | 12.03 | 12.57 | 14.49 | 13.12 |
| 77.50° | 14.32 | 15.29 | 14.83 | 13.67 | 14.60 | 14.57 | 15.19 | 13.36 | 13.59 | 12.40 | 11.60 | 11.62 | 12.59 | 12.53 | 13.49 | 14.73 | 14.32 |
| 80.00° | 15.93 | 13.85 | 16.07 | 13.09 | 13.18 | 14.53 | 12.89 | 14.09 | 12.42 | 12.45 | 11.62 | 13.30 | 12.72 | 12.26 | 14.82 | 13.91 | 15.93 |
| 82.50° | 11.35 | 11.49 | 12.03 | 10.46 | 11.06 | 9.40 | 9.94 | 10.70 | 9.99 | 8.61 | 10.33 | 10.11 | 10.25 | 11.53 | 11.69 | 11.68 | 11.35 |
| 85.00° | 6.09 | 7.07 | 7.59 | 5.59 | 6.63 | 5.02 | 6.12 | 6.72 | 5.56 | 4.70 | 6.66 | 5.73 | 7.75 | 6.88 | 7.80 | 7.41 | 6.09 |
| 87.50° | 4.16 | 3.76 | 4.70 | 2.89 | 3.24 | 3.30 | 3.43 | 4.38 | 2.87 | 3.46 | 3.93 | 3.69 | 4.85 | 2.79 | 5.01 | 4.35 | 4.16 |
| 90.00° | 2.45 | 2.54 | 1.87 | 2.24 | 2.69 | 1.97 | 2.01 | 2.18 | 2.54 | 2.27 | 2.66 | 2.09 | 2.27 | 2.00 | 2.35 | 2.77 | 2.45 |
| 92.50° | 2.16 | 1.82 | 1.70 | 1.77 | 2.25 | 1.75 | 1.57 | 1.80 | 2.27 | 2.22 | 2.00 | 1.69 | 1.76 | 1.41 | 1.98 | 1.93 | 2.16 |
| 95.00° | 1.90 | 1.91 | 1.54 | 1.46 | 2.08 | 1.58 | 2.09 | 1.52 | 2.04 | 2.17 | 2.13 | 1.44 | 1.36 | 1.67 | 1.77 | 1.87 | 1.90 |
| 97.50° | 1.95 | 1.87 | 1.53 | 1.46 | 1.93 | 1.53 | 2.11 | 1.73 | 1.93 | 2.08 | 2.09 | 1.84 | 1.46 | 1.91 | 1.79 | 1.82 | 1.95 |
| 100.00° | 2.01 | 1.69 | 1.54 | 1.70 | 1.81 | 1.56 | 1.74 | 1.93 | 1.93 | 1.98 | 1.86 | 2.30 | 1.59 | 2.08 | 1.82 | 1.79 | 2.01 |

SR3Mx 25L 35HK ND xx xx RH3F 25L 35HK ND
 MW GL

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 | 1580 | 1580 | 1580 | 1580 | 1542 | 1542 | 1542 | 1542 | 1471 | 1471 | 1471 | 1406 | 1406 | 1406 | 1346 | 1346 | 1318 |
| | 1 | 1505 | 1467 | 1433 | 1403 | 1470 | 1437 | 1407 | 1379 | 1381 | 1357 | 1334 | 1329 | 1310 | 1293 | 1282 | 1267 | 1241 |
| | 2 | 1432 | 1368 | 1314 | 1270 | 1402 | 1344 | 1295 | 1254 | 1299 | 1259 | 1225 | 1257 | 1225 | 1197 | 1219 | 1193 | 1169 |
| | 3 | 1366 | 1283 | 1218 | 1167 | 1339 | 1263 | 1204 | 1157 | 1227 | 1177 | 1137 | 1193 | 1152 | 1117 | 1162 | 1128 | 1106 |
| | 4 | 1305 | 1209 | 1139 | 1085 | 1281 | 1193 | 1129 | 1078 | 1164 | 1108 | 1064 | 1136 | 1089 | 1051 | 1110 | 1070 | 1050 |
| | 5 | 1250 | 1145 | 1073 | 1019 | 1228 | 1132 | 1065 | 1014 | 1108 | 1049 | 1004 | 1085 | 1034 | 994 | 1063 | 1020 | 1001 |
| | 6 | 1199 | 1089 | 1016 | 963 | 1179 | 1078 | 1010 | 959 | 1058 | 997 | 952 | 1039 | 985 | 945 | 1021 | 974 | 957 |
| | 7 | 1152 | 1040 | 967 | 915 | 1135 | 1030 | 962 | 913 | 1013 | 952 | 907 | 997 | 942 | 902 | 982 | 933 | 917 |
| | 8 | 1109 | 995 | 923 | 874 | 1093 | 987 | 919 | 872 | 972 | 911 | 867 | 959 | 904 | 863 | 946 | 896 | 882 |
| | 9 | 1069 | 955 | 884 | 837 | 1055 | 948 | 881 | 835 | 935 | 875 | 832 | 923 | 868 | 829 | 912 | 862 | 849 |
| | 10 | 1032 | 918 | 850 | 804 | 1020 | 912 | 847 | 803 | 901 | 841 | 800 | 891 | 836 | 798 | 881 | 831 | 819 |

Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|------------|-------------|---------------|
| 5.5 ft | 136.2 fc | 2.4 ft |
| 6.5 ft | 97.5 fc | 2.8 ft |
| 7.5 ft | 73.2 fc | 3.2 ft |
| 8.0 ft | 64.4 fc | 3.4 ft |
| 10.0 ft | 41.2 fc | 4.3 ft |
| 12.0 ft | 28.6 fc | 5.2 ft |
| 14.0 ft | 21.0 fc | 6.0 ft |
| 16.0 ft | 16.1 fc | 6.9 ft |
| 20.0 ft | 10.3 fc | 8.6 ft |
| 24.0 ft | 7.2 fc | 10.3 ft |
| 28.0 ft | 5.3 fc | 12.0 ft |

Average Luminaire Luminance [cd/m²]

| | 0.00° | 45.00° | 90.00° |
|---------------|---------|---------|---------|
| 0.00° | 2508876 | 2508876 | 2508876 |
| 45.00° | 38898 | 36968 | 33816 |
| 55.00° | 92921 | 84551 | 77503 |
| 65.00° | 64941 | 61378 | 63784 |
| 75.00° | 30878 | 32176 | 30601 |
| 85.00° | 42545 | 53043 | 46309 |

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 | 25.4 | 26.5 | 25.8 | 26.8 | 27.2 | 24.9 | 26.0 | 25.3 | 26.3 | 26.6 |
| | 3H | 25.6 | 26.5 | 26.0 | 26.9 | 27.3 | 25.1 | 26.1 | 25.5 | 26.4 | 26.8 |
| | 4H | 25.6 | 26.5 | 26.1 | 26.9 | 27.3 | 25.2 | 26.0 | 25.6 | 26.4 | 26.8 |
| | 6H | 25.9 | 26.7 | 26.3 | 27.1 | 27.5 | 25.3 | 26.2 | 25.8 | 26.6 | 27.0 |
| | 8H | 26.0 | 26.7 | 26.4 | 27.2 | 27.6 | 25.5 | 26.2 | 25.9 | 26.6 | 27.1 |
| | 12H | 26.1 | 26.8 | 26.5 | 27.2 | 27.6 | 25.6 | 26.3 | 26.0 | 26.7 | 27.1 |
| 4H | 2H | 25.5 | 26.4 | 25.9 | 26.8 | 27.2 | 25.1 | 25.9 | 25.5 | 26.3 | 26.7 |
| | 3H | 25.7 | 26.5 | 26.2 | 26.9 | 27.3 | 25.3 | 26.0 | 25.7 | 26.5 | 26.9 |
| | 4H | 25.8 | 26.5 | 26.3 | 26.9 | 27.4 | 25.4 | 26.0 | 25.8 | 26.5 | 26.9 |
| | 6H | 26.2 | 26.8 | 26.7 | 27.2 | 27.7 | 25.7 | 26.3 | 26.2 | 26.8 | 27.3 |
| | 8H | 26.4 | 26.9 | 26.9 | 27.4 | 27.9 | 25.9 | 26.4 | 26.4 | 26.9 | 27.4 |
| | 12H | 26.6 | 27.0 | 27.1 | 27.5 | 28.0 | 26.1 | 26.5 | 26.6 | 27.0 | 27.5 |
| 8H | 4H | 25.8 | 26.3 | 26.3 | 26.8 | 27.3 | 25.4 | 25.9 | 25.9 | 26.4 | 26.8 |
| | 6H | 26.4 | 26.8 | 26.9 | 27.3 | 27.8 | 25.9 | 26.3 | 26.4 | 26.8 | 27.3 |
| | 8H | 26.7 | 27.1 | 27.2 | 27.6 | 28.1 | 26.2 | 26.5 | 26.7 | 27.1 | 27.6 |
| | 12H | 26.9 | 27.2 | 27.5 | 27.8 | 28.4 | 26.4 | 26.7 | 26.9 | 27.2 | 27.8 |
| 12H | 4H | 25.8 | 26.3 | 26.3 | 26.8 | 27.3 | 25.4 | 25.8 | 25.9 | 26.3 | 26.8 |
| | 6H | 26.4 | 26.8 | 27.0 | 27.3 | 27.8 | 25.9 | 26.3 | 26.5 | 26.8 | 27.3 |
| | 8H | 26.8 | 27.1 | 27.3 | 27.6 | 28.2 | 26.2 | 26.6 | 26.8 | 27.1 | 27.7 |

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0