

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

994 Jefferson Street  
Fall River, MA 02721  
+1.508.678.2303

## Spectrum Lighting Photometric Lab

### Luminaire

SAZI4XT 20L 35K ND xx SA4NXT MW PGX (aimed at 0 deg - nadir)  
Nom 4 inch square adj accent downlight (measured at nadir) with ND optic

### Test Number

SP-01255\_3

### Test Date

8/4/2021

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

### Summary of Results

#### Power

|             |        |
|-------------|--------|
| Input Watts | 24.8 W |
|-------------|--------|

#### Lumen Output

|               |           |
|---------------|-----------|
| Output Lumens | 1714      |
| Efficacy      | 69.1 lm/W |

#### Luminous Dimensions

|                 |      |
|-----------------|------|
| 0° - 180° Size  | 0.33 |
| 90° - 270° Size | 0.33 |
| Height          | 0    |

#### Spacing Criterion

|                           |      |
|---------------------------|------|
| Two luminaires, plane 0°  | 0.62 |
| Two luminaires, plane 90° | 0.58 |
| Four luminaires           | 0.64 |

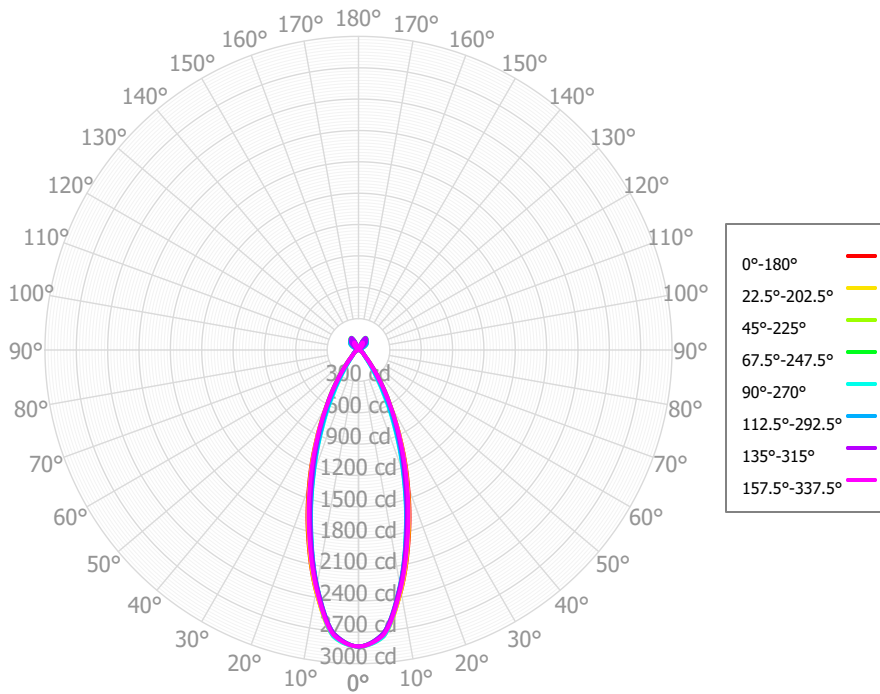
#### Full Beam Angle

|            |     |
|------------|-----|
| 0° - 180°  | 39° |
| 90° - 270° | 37° |

### IES File Header Contents

| Keyword   | Value  |
|-----------|--|
| TEST      | SP-01255_3   |
| TESTLAB   | Spectrum Lighting Photometric Lab, VLS-245-981                           |
| MANUFAC   | Spectrum Lighting  |
| TESTDATE  | 8/4/2021   |
| ISSUEDATE | 8/5/2021   |
| LUMCAT    | SAZI4XT 20L 35K ND xx SA4NXT MW PGX (aimed at 0 deg - nadir)             |
| LUMINAIRE | Nom 4 inch square adj accent downlight (measured at nadir) with ND optic |
| OTHER     | Matte white finish, Prismatic lens                                       |
| OTHER     | Beam Angle: 39 deg   |
| LAMP      | N/A  |
| LAMPCAT   | N/A, 19mm LES  |
| OTHER     | LEDXT lumen output is the same for all available CCT's                   |
| OTHER     | Total luminaire wattage is approximate                                   |
| OTHER     | This report prepared by Spectrum Lighting                                |
| _CRI      | 83   |
| _CCTMULT  | Same for all available CCT's   |
| _LAMPMULT | 10L x 0.48, 13L x 0.65   |

### Candela Polar Plot



### Zonal Lumen Summary

| Zone            | Lumens  | % Fixture | Zone              | Lumens  | % Fixture |
|-----------------|---------|-----------|-------------------|---------|-----------|
| 0.00° - 10.00°  | 257.61  | 15.03%    | 90.00° - 100.00°  | 1.53    | 0.09%     |
| 10.00° - 20.00° | 487.74  | 28.46%    | 100.00° - 110.00° | 1.52    | 0.09%     |
| 20.00° - 30.00° | 407.58  | 23.78%    | 100.00° - 120.00° | 10.70   | 0.62%     |
| 30.00° - 40.00° | 207.64  | 12.12%    | 120.00° - 130.00° | 30.73   | 1.79%     |
| 40.00° - 50.00° | 82.55   | 4.82%     | 130.00° - 140.00° | 48.22   | 2.81%     |
| 50.00° - 60.00° | 48.94   | 2.86%     | 140.00° - 150.00° | 54.30   | 3.17%     |
| 60.00° - 70.00° | 28.42   | 1.66%     | 150.00° - 160.00° | 31.44   | 1.83%     |
| 70.00° - 80.00° | 9.36    | 0.55%     | 160.00° - 170.00° | 3.91    | 0.23%     |
| 80.00° - 90.00° | 2.80    | 0.16%     | 170.00° - 180.00° | 0.22    | 0.01%     |
| 0.00° - 90.00°  | 1532.65 | 89.44%    | 0.00° - 180.00°   | 1713.69 | 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°   | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 | 2836.77 |
| 5.00°   | 2732.93 | 2750.28 | 2735.24 | 2723.42 | 2752.48 | 2724.01 | 2722.27 | 2738.63 | 2732.93 | 2750.28 | 2735.24 | 2723.42 | 2752.48 | 2724.01 | 2722.27 | 2738.63 | 2732.93 |
| 10.00°  | 2341.16 | 2340.18 | 2312.68 | 2293.01 | 2299.91 | 2286.44 | 2293.99 | 2321.61 | 2341.16 | 2340.18 | 2312.68 | 2293.01 | 2299.91 | 2286.44 | 2293.99 | 2321.61 | 2341.16 |
| 15.00°  | 1859.26 | 1845.38 | 1795.64 | 1765.01 | 1753.18 | 1755.43 | 1774.18 | 1825.03 | 1859.26 | 1845.38 | 1795.64 | 1765.01 | 1753.18 | 1755.43 | 1774.18 | 1825.03 | 1859.26 |
| 20.00°  | 1385.69 | 1367.82 | 1311.53 | 1269.06 | 1244.71 | 1258.93 | 1294.21 | 1353.80 | 1385.69 | 1367.82 | 1311.53 | 1269.06 | 1244.71 | 1258.93 | 1294.21 | 1353.80 | 1385.69 |
| 25.00°  | 955.16  | 950.03  | 916.48  | 853.60  | 814.31  | 843.46  | 904.59  | 937.92  | 955.16  | 950.03  | 916.48  | 853.60  | 814.31  | 843.46  | 904.59  | 937.92  | 955.16  |
| 30.00°  | 590.37  | 597.22  | 606.40  | 524.71  | 468.39  | 514.42  | 597.09  | 593.11  | 590.37  | 597.22  | 606.40  | 524.71  | 468.39  | 514.42  | 597.09  | 593.11  | 590.37  |
| 35.00°  | 328.88  | 338.31  | 365.89  | 291.78  | 247.60  | 284.61  | 360.38  | 337.89  | 328.88  | 338.31  | 365.89  | 291.78  | 247.60  | 284.61  | 360.38  | 337.89  | 328.88  |
| 40.00°  | 174.96  | 179.12  | 199.92  | 155.62  | 134.94  | 152.91  | 197.63  | 179.56  | 174.96  | 179.12  | 199.92  | 155.62  | 134.94  | 152.91  | 197.63  | 179.56  | 174.96  |
| 45.00°  | 97.11   | 98.94   | 110.83  | 92.92   | 85.38   | 92.40   | 107.41  | 98.61   | 97.11   | 98.94   | 110.83  | 92.92   | 85.38   | 92.40   | 107.41  | 98.61   | 97.11   |
| 50.00°  | 65.01   | 68.12   | 70.53   | 70.00   | 66.22   | 69.58   | 68.45   | 67.66   | 65.01   | 68.12   | 70.53   | 70.00   | 66.22   | 69.58   | 68.45   | 67.66   | 65.01   |
| 55.00°  | 52.22   | 53.05   | 54.42   | 57.90   | 56.28   | 57.56   | 52.68   | 52.68   | 52.22   | 53.05   | 54.42   | 57.90   | 56.28   | 57.56   | 52.68   | 52.68   | 52.22   |
| 60.00°  | 40.48   | 41.33   | 42.09   | 45.73   | 44.08   | 45.33   | 41.40   | 40.36   | 40.48   | 41.33   | 42.09   | 45.73   | 44.08   | 45.33   | 41.40   | 40.36   | 40.48   |
| 65.00°  | 26.38   | 28.06   | 27.37   | 30.89   | 29.03   | 30.65   | 28.67   | 28.09   | 26.38   | 28.06   | 27.37   | 30.89   | 29.03   | 30.65   | 28.67   | 28.09   | 26.38   |
| 70.00°  | 14.80   | 15.09   | 14.64   | 16.52   | 15.76   | 17.34   | 16.57   | 15.87   | 14.80   | 15.09   | 14.64   | 16.52   | 15.76   | 17.34   | 16.57   | 15.87   | 14.80   |
| 75.00°  | 7.58    | 7.24    | 7.99    | 8.06    | 8.05    | 8.43    | 8.36    | 7.27    | 7.58    | 7.24    | 7.99    | 8.06    | 8.05    | 8.43    | 8.36    | 7.27    | 7.58    |
| 80.00°  | 3.83    | 3.88    | 4.25    | 4.38    | 4.63    | 4.05    | 4.02    | 4.14    | 3.83    | 3.88    | 4.25    | 4.38    | 4.63    | 4.05    | 4.02    | 4.14    | 3.83    |
| 85.00°  | 2.28    | 2.12    | 1.93    | 2.44    | 2.62    | 2.15    | 2.35    | 2.51    | 2.28    | 2.12    | 1.93    | 2.44    | 2.62    | 2.15    | 2.35    | 2.51    | 2.28    |
| 90.00°  | 1.66    | 1.39    | 1.36    | 1.64    | 1.81    | 1.54    | 1.42    | 1.66    | 1.66    | 1.39    | 1.36    | 1.64    | 1.81    | 1.54    | 1.42    | 1.66    | 1.66    |
| 95.00°  | 1.39    | 1.32    | 1.35    | 1.41    | 1.40    | 1.40    | 1.24    | 1.34    | 1.39    | 1.32    | 1.35    | 1.41    | 1.40    | 1.40    | 1.24    | 1.34    | 1.39    |
| 100.00° | 1.27    | 1.26    | 1.09    | 1.28    | 1.43    | 1.40    | 1.44    | 1.42    | 1.27    | 1.26    | 1.09    | 1.28    | 1.43    | 1.40    | 1.44    | 1.42    | 1.27    |
| 105.00° | 1.21    | 1.33    | 1.30    | 1.45    | 1.48    | 1.65    | 1.54    | 1.28    | 1.21    | 1.33    | 1.30    | 1.45    | 1.48    | 1.65    | 1.54    | 1.28    | 1.21    |
| 110.00° | 1.30    | 1.71    | 1.55    | 1.65    | 1.58    | 2.00    | 1.63    | 1.60    | 1.30    | 1.71    | 1.55    | 1.65    | 1.58    | 2.00    | 1.63    | 1.60    | 1.30    |
| 115.00° | 1.37    | 1.94    | 1.54    | 16.94   | 7.01    | 25.07   | 2.58    | 1.64    | 1.37    | 1.94    | 1.54    | 16.94   | 7.01    | 25.07   | 2.58    | 1.64    | 1.37    |
| 120.00° | 1.35    | 1.93    | 2.13    | 65.05   | 27.86   | 66.35   | 7.38    | 1.48    | 1.35    | 1.93    | 2.13    | 65.05   | 27.86   | 66.35   | 7.38    | 1.48    | 1.35    |
| 125.00° | 1.54    | 2.01    | 9.49    | 91.37   | 49.98   | 92.63   | 28.23   | 1.95    | 1.54    | 2.01    | 9.49    | 91.37   | 49.98   | 92.63   | 28.23   | 1.95    | 1.54    |
| 130.00° | 1.95    | 3.52    | 38.37   | 102.98  | 56.70   | 105.01  | 68.23   | 5.18    | 1.95    | 3.52    | 38.37   | 102.98  | 56.70   | 105.01  | 68.23   | 5.18    | 1.95    |
| 135.00° | 6.38    | 13.45   | 81.31   | 111.56  | 59.70   | 112.89  | 98.10   | 23.37   | 6.38    | 13.45   | 81.31   | 111.56  | 59.70   | 112.89  | 98.10   | 23.37   | 6.38    |
| 140.00° | 17.34   | 32.62   | 96.41   | 122.47  | 63.68   | 120.29  | 113.52  | 53.35   | 17.34   | 32.62   | 96.41   | 122.47  | 63.68   | 120.29  | 113.52  | 53.35   | 17.34   |
| 145.00° | 23.37   | 47.25   | 113.04  | 132.99  | 66.03   | 128.60  | 127.89  | 75.06   | 23.37   | 47.25   | 113.04  | 132.99  | 66.03   | 128.60  | 127.89  | 75.06   | 23.37   |
| 150.00° | 21.02   | 50.23   | 121.71  | 134.79  | 63.04   | 129.45  | 132.55  | 82.00   | 21.02   | 50.23   | 121.71  | 134.79  | 63.04   | 129.45  | 132.55  | 82.00   | 21.02   |
| 155.00° | 14.41   | 39.05   | 95.09   | 101.97  | 49.36   | 92.53   | 100.17  | 63.58   | 14.41   | 39.05   | 95.09   | 101.97  | 49.36   | 92.53   | 100.17  | 63.58   | 14.41   |
| 160.00° | 8.21    | 17.89   | 40.38   | 36.03   | 23.95   | 34.91   | 42.82   | 30.21   | 8.21    | 17.89   | 40.38   | 36.03   | 23.95   | 34.91   | 42.82   | 30.21   | 8.21    |
| 165.00° | 4.59    | 5.50    | 8.99    | 7.84    | 5.74    | 7.79    | 10.01   | 8.33    | 4.59    | 5.50    | 8.99    | 7.84    | 5.74    | 7.79    | 10.01   | 8.33    | 4.59    |
| 170.00° | 2.35    | 2.14    | 2.49    | 2.40    | 2.37    | 2.45    | 2.96    | 2.89    | 2.35    | 2.14    | 2.49    | 2.40    | 2.37    | 2.45    | 2.96    | 2.89    | 2.35    |
| 175.00° | 2.13    | 2.01    | 1.94    | 1.55    | 1.92    | 2.12    | 1.99    | 1.74    | 2.13    | 2.01    | 1.94    | 1.55    | 1.92    | 2.12    | 1.99    | 1.74    | 2.13    |
| 180.00° | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    | 1.72    |

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

|            |            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>RCR</b> | <b>pfc</b> | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 0%   |
|            | <b>pcc</b> | 80%  | 80%  | 80%  | 80%  | 70%  | 70%  | 70%  | 70%  | 50%  | 50%  | 50%  | 30%  | 30%  | 30%  | 10%  | 10%  | 0%   |
|            | <b>pw</b>  | 70%  | 50%  | 30%  | 10%  | 70%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 30%  |
|            | <b>0</b>   | 1997 | 1997 | 1997 | 1997 | 1930 | 1930 | 1930 | 1930 | 1804 | 1804 | 1804 | 1688 | 1688 | 1688 | 1582 | 1582 | 1533 |
|            | <b>1</b>   | 1896 | 1846 | 1802 | 1761 | 1835 | 1792 | 1752 | 1716 | 1689 | 1659 | 1631 | 1595 | 1572 | 1550 | 1508 | 1491 | 1475 |
|            | <b>2</b>   | 1797 | 1711 | 1640 | 1580 | 1742 | 1666 | 1602 | 1548 | 1581 | 1531 | 1487 | 1503 | 1463 | 1428 | 1431 | 1400 | 1373 |
|            | <b>3</b>   | 1705 | 1592 | 1505 | 1436 | 1655 | 1555 | 1476 | 1413 | 1484 | 1420 | 1367 | 1418 | 1367 | 1324 | 1358 | 1317 | 1282 |
|            | <b>4</b>   | 1618 | 1488 | 1392 | 1319 | 1573 | 1456 | 1369 | 1301 | 1396 | 1324 | 1267 | 1341 | 1281 | 1233 | 1289 | 1241 | 1200 |
|            | <b>5</b>   | 1538 | 1395 | 1295 | 1222 | 1497 | 1368 | 1276 | 1208 | 1317 | 1240 | 1181 | 1270 | 1205 | 1154 | 1226 | 1172 | 1128 |
|            | <b>6</b>   | 1464 | 1313 | 1212 | 1139 | 1427 | 1290 | 1196 | 1128 | 1246 | 1166 | 1106 | 1205 | 1137 | 1085 | 1167 | 1109 | 1064 |
|            | <b>7</b>   | 1396 | 1240 | 1138 | 1067 | 1362 | 1220 | 1125 | 1059 | 1182 | 1100 | 1041 | 1146 | 1076 | 1024 | 1113 | 1053 | 1006 |
|            | <b>8</b>   | 1333 | 1174 | 1074 | 1005 | 1302 | 1156 | 1063 | 998  | 1123 | 1041 | 983  | 1092 | 1021 | 969  | 1063 | 1001 | 954  |
|            | <b>9</b>   | 1275 | 1115 | 1016 | 950  | 1247 | 1099 | 1007 | 944  | 1070 | 989  | 932  | 1043 | 971  | 919  | 1017 | 954  | 907  |
|            | <b>10</b>  | 1221 | 1061 | 965  | 901  | 1195 | 1047 | 957  | 896  | 1021 | 941  | 885  | 997  | 925  | 875  | 974  | 911  | 865  |

### Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|------------|-------------|---------------|
| 5.5 ft     | 93.8 fc     | 3.8 ft        |
| 6.5 ft     | 67.1 fc     | 4.5 ft        |
| 7.5 ft     | 50.4 fc     | 5.2 ft        |
| 8.0 ft     | 44.3 fc     | 5.5 ft        |
| 10.0 ft    | 28.4 fc     | 6.9 ft        |
| 12.0 ft    | 19.7 fc     | 8.3 ft        |
| 14.0 ft    | 14.5 fc     | 9.6 ft        |
| 16.0 ft    | 11.1 fc     | 11.0 ft       |
| 20.0 ft    | 7.1 fc      | 13.8 ft       |
| 24.0 ft    | 4.9 fc      | 16.5 ft       |
| 28.0 ft    | 3.6 fc      | 19.3 ft       |

### Average Luminaire Luminance [cd/m²]

|               | 0.00°  | 45.00° | 90.00° |
|---------------|--------|--------|--------|
| <b>0.00°</b>  | 280393 | 280393 | 280393 |
| <b>45.00°</b> | 13575  | 15492  | 11935  |
| <b>55.00°</b> | 8999   | 9378   | 9699   |
| <b>65.00°</b> | 6170   | 6401   | 6791   |
| <b>75.00°</b> | 2893   | 3052   | 3073   |
| <b>85.00°</b> | 2590   | 2188   | 2969   |

### 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  | 13.6             | 14.5 | 14.2 | 15.1 | 15.6 | 14.3           | 15.2 | 14.8 | 15.7 | 16.3 |
|                     | 3H  | 14.4             | 15.2 | 14.9 | 15.7 | 16.3 | 15.0           | 15.8 | 15.6 | 16.4 | 17.0 |
|                     | 4H  | 14.5             | 15.2 | 15.1 | 15.8 | 16.4 | 15.1           | 15.9 | 15.7 | 16.4 | 17.1 |
|                     | 6H  | 14.5             | 15.2 | 15.1 | 15.7 | 16.4 | 15.1           | 15.8 | 15.7 | 16.4 | 17.0 |
|                     | 8H  | 14.5             | 15.1 | 15.1 | 15.7 | 16.4 | 15.1           | 15.8 | 15.7 | 16.4 | 17.0 |
|                     | 12H | 14.5             | 15.1 | 15.1 | 15.7 | 16.3 | 15.1           | 15.7 | 15.7 | 16.3 | 17.0 |
| 4H                  | 2H  | 13.9             | 14.7 | 14.5 | 15.2 | 15.9 | 14.5           | 15.2 | 15.1 | 15.8 | 16.4 |
|                     | 3H  | 14.7             | 15.4 | 15.3 | 16.0 | 16.6 | 15.3           | 15.9 | 15.9 | 16.5 | 17.2 |
|                     | 4H  | 14.9             | 15.4 | 15.5 | 16.0 | 16.7 | 15.4           | 16.0 | 16.1 | 16.6 | 17.3 |
|                     | 6H  | 14.9             | 15.4 | 15.6 | 16.0 | 16.8 | 15.5           | 16.0 | 16.2 | 16.6 | 17.3 |
|                     | 8H  | 14.9             | 15.4 | 15.6 | 16.0 | 16.7 | 15.5           | 16.0 | 16.2 | 16.6 | 17.3 |
|                     | 12H | 15.0             | 15.3 | 15.6 | 16.0 | 16.7 | 15.5           | 15.9 | 16.2 | 16.6 | 17.3 |
| 8H                  | 4H  | 14.9             | 15.3 | 15.5 | 15.9 | 16.6 | 15.4           | 15.8 | 16.0 | 16.5 | 17.2 |
|                     | 6H  | 15.0             | 15.3 | 15.6 | 16.0 | 16.7 | 15.5           | 15.9 | 16.2 | 16.5 | 17.3 |
|                     | 8H  | 15.0             | 15.3 | 15.7 | 16.0 | 16.7 | 15.6           | 15.9 | 16.3 | 16.6 | 17.3 |
|                     | 12H | 15.1             | 15.3 | 15.8 | 16.0 | 16.8 | 15.6           | 15.9 | 16.3 | 16.6 | 17.4 |
| 12H                 | 4H  | 14.8             | 15.2 | 15.5 | 15.9 | 16.6 | 15.3           | 15.7 | 16.0 | 16.4 | 17.1 |
|                     | 6H  | 14.9             | 15.2 | 15.6 | 15.9 | 16.7 | 15.5           | 15.8 | 16.2 | 16.4 | 17.2 |
|                     | 8H  | 15.0             | 15.3 | 15.7 | 15.9 | 16.7 | 15.5           | 15.8 | 16.2 | 16.5 | 17.3 |

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0