

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

ES03SMFxx 930 007 xxx DL WF GP MW  
Nom 3 inch diam round recessed estimator downlight

### **Test Number**

SP-00875\_M-007L

### **Test Date**

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

### Summary of Results

#### Power

|             |       |
|-------------|-------|
| Input Watts | 8.8 W |
|-------------|-------|

#### Lumen Output

|               |            |
|---------------|------------|
| Output Lumens | 343        |
| Efficacy      | 38.99 lm/W |

#### Luminous Dimensions

|                 |      |
|-----------------|------|
| 0° - 180° Size  | 0.22 |
| 90° - 270° Size | 0.22 |
| Height          | 0    |

#### Spacing Criterion

|                           |      |
|---------------------------|------|
| Two luminaires, plane 0°  | 0.82 |
| Two luminaires, plane 90° | 0.83 |
| Four luminaires           | 0.85 |

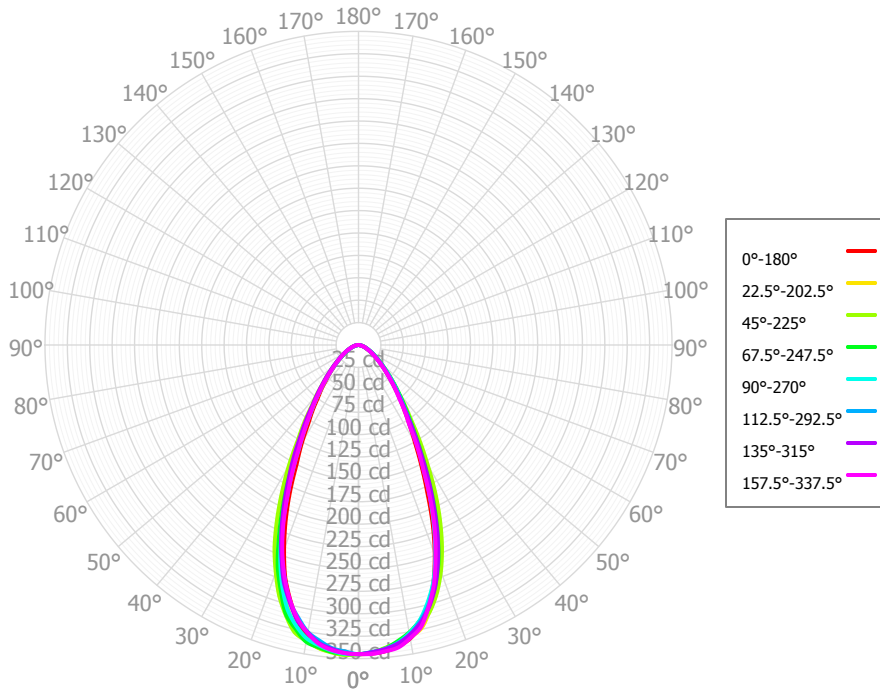
#### Full Beam Angle

|            |     |
|------------|-----|
| 0° - 180°  | 51° |
| 90° - 270° | 53° |

### IES File Header Contents

| Keyword   | Value  |
|-----------|--|
| TEST      | SP-00875_M-007L  |
| TESTLAB   | Spectrum Lighting Photometric Lab, VLS-245-981             |
| MANUFAC   | Spectrum Lighting  |
| ISSUEDATE | 6/6/2019   |
| UPDATE    | 7/26/2019  |
| LUMCAT    | ES03SMFxx 930 007 xxx DL WF GP MW                          |
| LUMINAIRE | Nom 3 inch diam round recessed estimator downlight         |
| LAMPCAT   | N/A  |
| LAMP      | N/A; CRI: 90, 9mm LES                                      |
| OTHER     | Beam Angle: 51.6 degrees                                   |
| OTHER     | CCT Output Multipliers: 27HK x 0.97                        |
| OTHER     | This report prepared by Spectrum Lighting, scaled from 13L |
| _CCTMULT  | 27HK x 0.97  |

**Candela Polar Plot**



**Zonal Lumen Summary**

| Zone            | Lumens | % Fixture | Zone              | Lumens | % Fixture |
|-----------------|--------|-----------|-------------------|--------|-----------|
| 0.00° - 10.00°  | 32.74  | 9.54%     | 90.00° - 100.00°  | 0.04   | 0.01%     |
| 10.00° - 20.00° | 83.50  | 24.34%    | 100.00° - 110.00° | 0.00   | 0.00%     |
| 20.00° - 30.00° | 88.90  | 25.91%    | 100.00° - 120.00° | 0.00   | 0.00%     |
| 30.00° - 40.00° | 60.56  | 17.65%    | 120.00° - 130.00° | 0.00   | 0.00%     |
| 40.00° - 50.00° | 37.24  | 10.85%    | 130.00° - 140.00° | 0.00   | 0.00%     |
| 50.00° - 60.00° | 21.73  | 6.33%     | 140.00° - 150.00° | 0.00   | 0.00%     |
| 60.00° - 70.00° | 11.90  | 3.47%     | 150.00° - 160.00° | 0.00   | 0.00%     |
| 70.00° - 80.00° | 5.47   | 1.59%     | 160.00° - 170.00° | 0.00   | 0.00%     |
| 80.00° - 90.00° | 1.07   | 0.31%     | 170.00° - 180.00° | 0.00   | 0.00%     |
| 0.00° - 90.00°  | 343.09 | 99.99%    | 0.00° - 180.00°   | 343.13 | 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°   | 345.14 | 345.14 | 345.14 | 345.14 | 345.14 | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  | 345.14  |
| 2.50°   | 344.88 | 344.30 | 343.66 | 343.46 | 343.88 | 342.52  | 344.21  | 344.34  | 345.27  | 345.58  | 346.49  | 345.06  | 345.17  | 343.11  | 343.34  | 345.21  | 344.88  |
| 5.00°   | 343.18 | 341.61 | 339.51 | 340.27 | 340.45 | 339.75  | 340.64  | 341.92  | 343.18  | 343.80  | 344.52  | 343.90  | 342.53  | 340.79  | 340.76  | 343.26  | 343.18  |
| 7.50°   | 339.47 | 338.78 | 334.67 | 333.66 | 335.64 | 333.03  | 335.87  | 336.76  | 340.29  | 341.07  | 341.20  | 340.37  | 338.23  | 335.61  | 336.43  | 340.59  | 339.47  |
| 10.00°  | 332.68 | 331.62 | 328.91 | 325.95 | 326.78 | 325.49  | 326.06  | 326.61  | 329.16  | 333.53  | 335.43  | 336.46  | 332.61  | 328.32  | 328.74  | 332.30  | 332.68  |
| 12.50°  | 320.70 | 324.05 | 320.07 | 315.45 | 315.11 | 311.53  | 315.02  | 313.20  | 315.32  | 323.65  | 328.71  | 324.56  | 321.16  | 316.49  | 318.24  | 322.54  | 320.70  |
| 15.00°  | 302.06 | 307.19 | 307.86 | 302.21 | 297.93 | 296.70  | 296.83  | 295.03  | 294.58  | 304.92  | 312.75  | 311.90  | 305.85  | 301.17  | 303.41  | 302.34  | 302.06  |
| 17.50°  | 278.22 | 289.39 | 290.64 | 283.36 | 277.67 | 273.96  | 277.42  | 273.68  | 272.15  | 284.29  | 293.99  | 288.02  | 282.72  | 279.90  | 284.09  | 280.11  | 278.22  |
| 20.00°  | 248.95 | 261.42 | 268.95 | 260.62 | 250.72 | 250.57  | 251.40  | 248.55  | 242.97  | 258.23  | 270.03  | 263.67  | 255.44  | 255.21  | 259.17  | 251.67  | 248.95  |
| 22.50°  | 216.69 | 232.75 | 243.42 | 231.53 | 220.80 | 221.65  | 224.65  | 220.23  | 212.64  | 230.22  | 244.89  | 231.99  | 223.44  | 225.82  | 230.90  | 222.46  | 216.69  |
| 25.00°  | 181.90 | 199.36 | 215.03 | 201.28 | 189.84 | 192.61  | 196.70  | 188.74  | 181.08  | 197.89  | 215.06  | 200.37  | 189.45  | 195.29  | 199.14  | 189.81  | 181.90  |
| 27.50°  | 152.35 | 166.83 | 185.03 | 169.48 | 158.50 | 164.49  | 168.69  | 159.78  | 149.40  | 167.03  | 184.51  | 169.59  | 160.29  | 163.45  | 168.47  | 156.94  | 152.35  |
| 30.00°  | 126.51 | 138.25 | 154.07 | 141.33 | 133.23 | 136.87  | 144.39  | 132.86  | 126.77  | 138.78  | 155.10  | 139.80  | 132.74  | 136.13  | 138.73  | 131.01  | 126.51  |
| 32.50°  | 106.53 | 112.15 | 127.43 | 117.14 | 109.59 | 115.90  | 120.35  | 111.68  | 104.63  | 114.42  | 125.80  | 117.84  | 112.35  | 113.02  | 114.05  | 105.53  | 106.53  |
| 35.00°  | 89.89  | 94.31  | 102.85 | 97.72  | 93.47  | 95.76   | 101.48  | 94.26   | 89.53   | 95.70   | 105.40  | 97.03   | 93.75   | 94.36   | 92.85   | 89.69   | 89.89   |
| 37.50°  | 76.21  | 78.03  | 84.79  | 82.58  | 78.79  | 81.59   | 83.25   | 79.90   | 74.66   | 79.82   | 85.44   | 82.42   | 80.19   | 79.06   | 77.08   | 74.30   | 76.21   |
| 40.00°  | 63.87  | 65.84  | 69.24  | 69.72  | 67.42  | 68.09   | 70.99   | 67.20   | 64.33   | 67.31   | 72.47   | 68.63   | 67.51   | 66.48   | 64.40   | 63.58   | 63.87   |
| 42.50°  | 53.92  | 54.88  | 58.20  | 58.52  | 56.50  | 57.75   | 59.27   | 56.80   | 54.25   | 56.70   | 59.74   | 57.95   | 57.50   | 55.60   | 54.12   | 53.20   | 53.92   |
| 45.00°  | 44.83  | 46.44  | 48.50  | 49.20  | 47.97  | 48.09   | 50.59   | 47.38   | 46.43   | 47.93   | 50.71   | 48.16   | 47.80   | 47.12   | 44.94   | 45.00   | 44.83   |
| 47.50°  | 38.04  | 38.97  | 40.77  | 40.99  | 39.61  | 40.92   | 42.35   | 40.07   | 38.95   | 40.49   | 42.00   | 40.88   | 40.24   | 39.85   | 38.18   | 37.24   | 38.04   |
| 50.00°  | 31.89  | 33.07  | 33.46  | 34.45  | 33.62  | 34.37   | 35.89   | 33.47   | 33.42   | 34.14   | 35.85   | 34.17   | 32.79   | 33.64   | 32.28   | 31.46   | 31.89   |
| 52.50°  | 27.22  | 27.66  | 28.37  | 28.71  | 27.73  | 29.52   | 29.92   | 28.78   | 28.09   | 29.03   | 29.92   | 28.74   | 28.36   | 27.87   | 27.26   | 26.10   | 27.22   |
| 55.00°  | 22.86  | 22.91  | 23.62  | 24.37  | 23.87  | 25.02   | 25.45   | 24.59   | 23.64   | 24.73   | 25.18   | 23.89   | 23.96   | 23.71   | 22.49   | 22.11   | 22.86   |
| 57.50°  | 19.44  | 19.02  | 19.93  | 20.56  | 20.08  | 21.23   | 21.36   | 21.24   | 19.53   | 20.94   | 20.82   | 20.09   | 20.22   | 20.06   | 19.32   | 18.45   | 19.44   |
| 60.00°  | 16.14  | 16.06  | 16.32  | 16.82  | 17.00  | 17.83   | 18.19   | 18.05   | 16.50   | 17.42   | 17.82   | 16.93   | 16.58   | 17.22   | 16.46   | 15.58   | 16.14   |
| 62.50°  | 13.64  | 13.47  | 13.41  | 13.11  | 14.05  | 15.09   | 15.17   | 15.39   | 13.78   | 14.53   | 14.92   | 14.71   | 13.99   | 14.56   | 13.49   | 12.95   | 13.64   |
| 65.00°  | 11.21  | 11.20  | 10.62  | 11.19  | 11.93  | 12.66   | 12.42   | 12.79   | 11.84   | 11.92   | 12.31   | 12.56   | 11.56   | 12.03   | 10.51   | 10.77   | 11.21   |
| 67.50°  | 9.19   | 9.16   | 9.16   | 9.63   | 9.82   | 10.67   | 10.18   | 10.64   | 10.13   | 10.09   | 10.07   | 10.49   | 10.10   | 9.52    | 8.96    | 9.15    | 9.19    |
| 70.00°  | 7.33   | 7.23   | 7.68   | 8.33   | 7.73   | 8.54    | 8.67    | 8.54    | 8.85    | 8.51    | 8.63    | 8.52    | 8.44    | 7.86    | 7.49    | 8.09    | 7.33    |
| 72.50°  | 5.83   | 5.78   | 6.14   | 6.82   | 6.18   | 6.30    | 7.19    | 7.00    | 7.35    | 7.33    | 7.18    | 6.64    | 6.36    | 6.25    | 6.15    | 6.18    | 5.83    |
| 75.00°  | 4.54   | 4.42   | 4.76   | 4.86   | 5.13   | 5.28    | 5.73    | 5.58    | 5.64    | 6.10    | 5.72    | 5.12    | 4.81    | 4.74    | 5.00    | 4.38    | 4.54    |
| 77.50°  | 3.32   | 3.14   | 3.49   | 3.33   | 3.70   | 4.16    | 5.00    | 4.41    | 4.22    | 4.22    | 4.42    | 3.73    | 3.53    | 3.50    | 3.75    | 3.10    | 3.32    |
| 80.00°  | 2.12   | 1.95   | 2.26   | 2.20   | 2.40   | 2.17    | 3.92    | 3.10    | 2.90    | 2.86    | 3.05    | 2.48    | 2.06    | 2.08    | 2.04    | 1.70    | 2.12    |
| 82.50°  | 0.95   | 1.11   | 1.01   | 1.39   | 1.27   | 1.49    | 2.30    | 1.96    | 1.69    | 1.82    | 1.61    | 1.33    | 1.03    | 0.87    | 0.97    | 0.97    | 0.95    |
| 85.00°  | 0.50   | 0.49   | 0.68   | 0.66   | 0.58   | 0.84    | 0.62    | 1.16    | 1.05    | 0.81    | 1.02    | 0.78    | 0.56    | 0.57    | 0.60    | 0.56    | 0.50    |
| 87.50°  | 0.74   | 0.00   | 0.55   | 0.49   | 0.68   | 0.48    | 0.44    | 0.59    | 0.60    | 0.52    | 0.50    | 0.75    | 0.60    | 0.55    | 0.46    | 0.00    | 0.74    |
| 90.00°  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.44    | 0.37    | 0.65    | 0.58    | 0.49    | 0.58    | 0.53    | 0.51    | 0.00    | 0.00    | 0.00    | 0.00    |
| 92.50°  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 95.00°  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 97.50°  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 100.00° | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 102.50° | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 105.00° | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 107.50° | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 110.00° | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |
| 112.50° | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    | 0.00    |

### 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>   | 408 | 408 | 408 | 408 | 399 | 399 | 399 | 399 | 381 | 381 | 381 | 365 | 365 | 365 | 350 | 350 | 343 |
|            | <b>1</b>   | 386 | 374 | 364 | 355 | 377 | 367 | 358 | 350 | 353 | 346 | 339 | 340 | 334 | 329 | 328 | 323 | 317 |
|            | <b>2</b>   | 362 | 343 | 327 | 313 | 354 | 337 | 322 | 309 | 325 | 313 | 303 | 315 | 305 | 296 | 305 | 297 | 291 |
|            | <b>3</b>   | 341 | 315 | 295 | 279 | 333 | 310 | 292 | 277 | 301 | 285 | 273 | 292 | 279 | 268 | 284 | 273 | 268 |
|            | <b>4</b>   | 321 | 291 | 269 | 252 | 314 | 287 | 266 | 251 | 279 | 262 | 248 | 272 | 257 | 245 | 265 | 252 | 247 |
|            | <b>5</b>   | 302 | 270 | 247 | 230 | 296 | 266 | 245 | 229 | 260 | 241 | 227 | 254 | 237 | 225 | 248 | 234 | 230 |
|            | <b>6</b>   | 285 | 251 | 228 | 211 | 280 | 248 | 226 | 210 | 243 | 223 | 209 | 238 | 220 | 207 | 233 | 218 | 214 |
|            | <b>7</b>   | 270 | 234 | 211 | 195 | 265 | 232 | 210 | 195 | 227 | 208 | 193 | 223 | 205 | 192 | 219 | 203 | 200 |
|            | <b>8</b>   | 256 | 220 | 197 | 181 | 251 | 218 | 196 | 181 | 214 | 194 | 180 | 210 | 192 | 179 | 206 | 190 | 187 |
|            | <b>9</b>   | 243 | 206 | 184 | 169 | 239 | 205 | 183 | 169 | 201 | 182 | 168 | 198 | 180 | 168 | 195 | 179 | 176 |
|            | <b>10</b>  | 231 | 195 | 173 | 158 | 227 | 193 | 172 | 158 | 190 | 171 | 158 | 187 | 170 | 157 | 185 | 168 | 166 |

### Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|------------|-------------|---------------|
| 5.5 ft     | 11.4 fc     | 5.4 ft        |
| 6.5 ft     | 8.2 fc      | 6.3 ft        |
| 7.5 ft     | 6.1 fc      | 7.3 ft        |
| 8.0 ft     | 5.4 fc      | 7.8 ft        |
| 10.0 ft    | 3.5 fc      | 9.8 ft        |
| 12.0 ft    | 2.4 fc      | 11.7 ft       |
| 14.0 ft    | 1.8 fc      | 13.7 ft       |
| 16.0 ft    | 1.3 fc      | 15.6 ft       |
| 20.0 ft    | 0.9 fc      | 19.5 ft       |
| 24.0 ft    | 0.6 fc      | 23.4 ft       |
| 28.0 ft    | 0.4 fc      | 27.3 ft       |

### Average Luminaire Luminance [cd/m²]

|               | 0.00°  | 45.00° | 90.00° |
|---------------|--------|--------|--------|
| <b>0.00°</b>  | 76,758 | 76,758 | 76,758 |
| <b>45.00°</b> | 14,101 | 15,253 | 15,087 |
| <b>55.00°</b> | 8,863  | 9,158  | 9,256  |
| <b>65.00°</b> | 5,898  | 5,588  | 6,277  |
| <b>75.00°</b> | 3,898  | 4,093  | 4,408  |
| <b>85.00°</b> | 1,264  | 1,725  | 1,493  |

### UGR CIE 190:2010

|                            |            |                         |            |            |            |            |                       |            |            |            |            |
|----------------------------|------------|-------------------------|------------|------------|------------|------------|-----------------------|------------|------------|------------|------------|
| <b>Ceiling reflectance</b> |            | <b>0.7</b>              | <b>0.7</b> | <b>0.5</b> | <b>0.5</b> | <b>0.3</b> | <b>0.7</b>            | <b>0.7</b> | <b>0.5</b> | <b>0.5</b> | <b>0.3</b> |
| <b>Wall reflectance</b>    |            | <b>0.5</b>              | <b>0.3</b> | <b>0.5</b> | <b>0.3</b> | <b>0.3</b> | <b>0.5</b>            | <b>0.3</b> | <b>0.5</b> | <b>0.3</b> | <b>0.3</b> |
| <b>Plane reflectance</b>   |            | <b>0.2</b>              | <b>0.2</b> | <b>0.2</b> | <b>0.2</b> | <b>0.2</b> | <b>0.2</b>            | <b>0.2</b> | <b>0.2</b> | <b>0.2</b> | <b>0.2</b> |
| <b>Room dimensions</b>     |            | <b>Viewed crosswise</b> |            |            |            |            | <b>Viewed endwise</b> |            |            |            |            |
| <b>2H</b>                  | <b>2H</b>  | 16.0                    | 17.2       | 16.4       | 17.5       | 17.8       | 16.6                  | 17.8       | 17.0       | 18.1       | 18.4       |
|                            | <b>3H</b>  | 17.0                    | 18.1       | 17.4       | 18.4       | 18.8       | 17.6                  | 18.7       | 18.0       | 19.0       | 19.4       |
|                            | <b>4H</b>  | 17.3                    | 18.3       | 17.7       | 18.6       | 19.0       | 17.9                  | 18.9       | 18.3       | 19.3       | 19.7       |
|                            | <b>6H</b>  | 17.4                    | 18.3       | 17.8       | 18.7       | 19.1       | 18.1                  | 19.0       | 18.5       | 19.3       | 19.7       |
|                            | <b>8H</b>  | 17.4                    | 18.2       | 17.8       | 18.6       | 19.0       | 18.1                  | 18.9       | 18.5       | 19.3       | 19.7       |
|                            | <b>12H</b> | 17.4                    | 18.2       | 17.8       | 18.6       | 19.0       | 18.0                  | 18.9       | 18.5       | 19.2       | 19.7       |
| <b>4H</b>                  | <b>2H</b>  | 16.3                    | 17.2       | 16.7       | 17.6       | 18.0       | 16.9                  | 17.9       | 17.3       | 18.3       | 18.7       |
|                            | <b>3H</b>  | 17.5                    | 18.3       | 17.9       | 18.7       | 19.1       | 18.2                  | 19.0       | 18.6       | 19.4       | 19.8       |
|                            | <b>4H</b>  | 17.8                    | 18.5       | 18.2       | 19.0       | 19.4       | 18.5                  | 19.3       | 19.0       | 19.7       | 20.1       |
|                            | <b>6H</b>  | 18.0                    | 18.6       | 18.5       | 19.1       | 19.5       | 18.8                  | 19.4       | 19.2       | 19.8       | 20.3       |
|                            | <b>8H</b>  | 18.0                    | 18.6       | 18.5       | 19.0       | 19.5       | 18.8                  | 19.3       | 19.2       | 19.8       | 20.3       |
|                            | <b>12H</b> | 18.0                    | 18.5       | 18.5       | 19.0       | 19.4       | 18.7                  | 19.2       | 19.2       | 19.7       | 20.2       |
| <b>8H</b>                  | <b>4H</b>  | 17.9                    | 18.5       | 18.4       | 18.9       | 19.4       | 18.7                  | 19.3       | 19.2       | 19.7       | 20.2       |
|                            | <b>6H</b>  | 18.1                    | 18.6       | 18.6       | 19.1       | 19.6       | 19.0                  | 19.4       | 19.5       | 19.9       | 20.4       |
|                            | <b>8H</b>  | 18.1                    | 18.6       | 18.7       | 19.1       | 19.6       | 19.0                  | 19.4       | 19.5       | 19.9       | 20.4       |
|                            | <b>12H</b> | 18.1                    | 18.5       | 18.7       | 19.0       | 19.6       | 19.0                  | 19.4       | 19.5       | 19.9       | 20.4       |
| <b>12H</b>                 | <b>4H</b>  | 17.9                    | 18.4       | 18.4       | 18.9       | 19.4       | 18.7                  | 19.2       | 19.2       | 19.7       | 20.1       |
|                            | <b>6H</b>  | 18.1                    | 18.5       | 18.6       | 19.0       | 19.5       | 19.0                  | 19.4       | 19.5       | 19.9       | 20.4       |
|                            | <b>8H</b>  | 18.1                    | 18.5       | 18.7       | 19.0       | 19.6       | 19.0                  | 19.4       | 19.6       | 19.9       | 20.5       |

Corrected UGR values based on total output lumens

SHR = 1.0