## Indoor Distribution Test Report

# Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

## Spectrum Lighting Photometric Lab

**Luminaire**

IF03SSx IC 835 007 N11 DLWFGP MW

Nom 3" Square Infinium recessed downlight

**Test Number**

SP-00765_2_M-007L

**Test Date**

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

## Summary of Results

### Power

| | |
|---|---|
| **Input Watts** | 5.4 W |

### Lumen Output

| | |
|---|---|
| **Output Lumens** | 362 |
| **Efficacy** | 67.02 lm/W |

### Luminous Dimensions

| | |
|---|---|
| **0° - 180° Size** | 0.16 |
| **90° - 270° Size** | 0.16 |
| **Height** | 0 |

### Spacing Criterion

| | |
|---|---|
| **Two luminaires, plane 0°** | 0.84 |
| **Two luminaires, plane 90°** | 0.84 |
| **Four luminaires** | 0.86 |

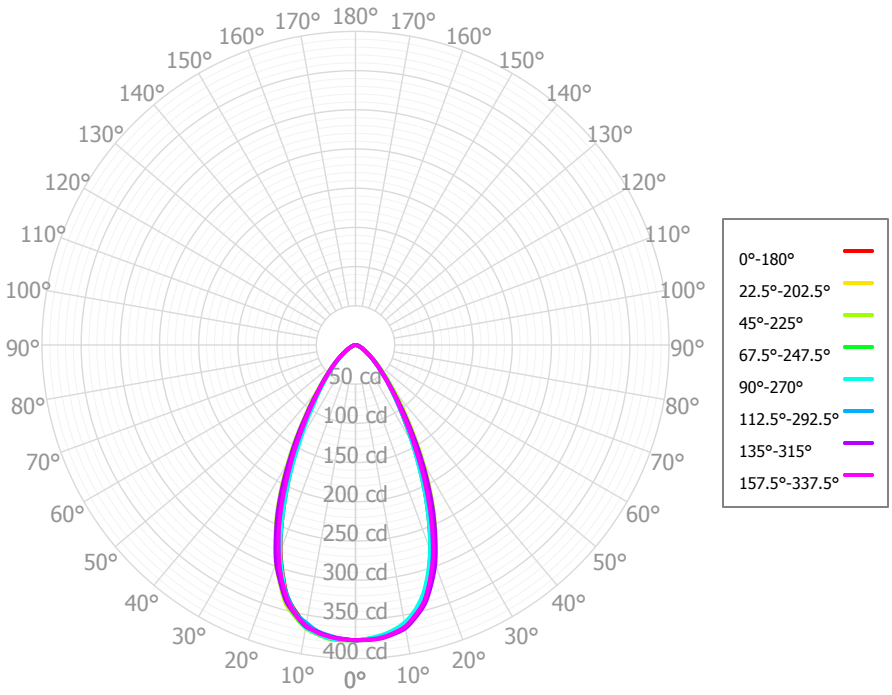
### Full Beam Angle

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

## IES File Header Contents

| Keyword | Value |
|---|---|
| TEST | SP-00765_2_M-007L |
| TESTLAB | Spectrum Lighting Photometric Lab, VLS-245-981 |
| MANUFAC | Spectrum Lighting |
| ISSUEDATE | 2/11/2019 |
| UPDATE | 3/11/2019 |
| LUMCAT | IF03SSx IC 835 007 N11 DLWFGP MW |
| LUMINAIRE | Nom 3" Square Infinium recessed downlight |
| OTHER | Beam Angle: 54 degrees |
| OTHER | Wide Flood optic, Solite Lens |
| OTHER | Aluminum bezel contains lens |
| LAMPCAT | N/A |
| LAMP | N/A, CRI: 80, Philips |
| OTHER | CCT Multiplier: 40K x 1.03 |
| OTHER | Total luminaire wattage is approximate |
| OTHER | This report prepared by Spectrum Lighting, scaled from 20L |

## Candela Polar Plot




## Zonal Lumen Summary

| Zone | Lumens | % Fixture | Zone | Lumens | % Fixture |
|---|---|---|---|---|---|
| 0.00° - 10.00° | 35.89 | 9.92% | 90.00° - 100.00° | 0.03 | 0.01% |
| 10.00° - 20.00° | 92.78 | 25.64% | 100.00° - 110.00° | 0.00 | 0.00% |
| 20.00° - 30.00° | 100.61 | 27.80% | 100.00° - 120.00° | 0.00 | 0.00% |
| 30.00° - 40.00° | 66.08 | 18.26% | 120.00° - 130.00° | 0.00 | 0.00% |
| 40.00° - 50.00° | 36.13 | 9.98% | 130.00° - 140.00° | 0.00 | 0.00% |
| 50.00° - 60.00° | 17.88 | 4.94% | 140.00° - 150.00° | 0.00 | 0.00% |
| 60.00° - 70.00° | 8.24 | 2.28% | 150.00° - 160.00° | 0.00 | 0.00% |
| 70.00° - 80.00° | 3.47 | 0.96% | 160.00° - 170.00° | 0.00 | 0.00% |
| 80.00° - 90.00° | 0.77 | 0.21% | 170.00° - 180.00° | 0.00 | 0.00% |
| 0.00° - 90.00° | 361.86 | 99.99% | 0.00° - 180.00° | 361.89 | 100.00% |

SPECTRUM LIGHTING INC.

## 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°** | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 | 376.65 |
| **2.50°** | 375.54 | 375.74 | 375.69 | 375.18 | 374.72 | 375.55 | 375.19 | 375.93 | 375.55 | 376.41 | 377.03 | 376.76 | 376.66 | 376.30 | 376.49 | 376.53 | 375.54 |
| **5.00°** | 373.74 | 373.60 | 373.64 | 373.17 | 371.83 | 372.36 | 373.41 | 373.81 | 374.79 | 374.43 | 376.67 | 375.67 | 375.76 | 374.29 | 375.73 | 375.25 | 373.74 |
| **7.50°** | 369.50 | 368.82 | 369.51 | 367.62 | 367.08 | 368.46 | 369.12 | 370.21 | 369.68 | 371.13 | 372.15 | 371.76 | 371.17 | 371.04 | 372.04 | 370.81 | 369.50 |
| **10.00°** | 362.19 | 361.63 | 363.34 | 361.23 | 359.76 | 360.18 | 364.63 | 363.29 | 362.96 | 363.59 | 366.90 | 365.36 | 365.64 | 365.08 | 366.94 | 364.85 | 362.19 |
| **12.50°** | 350.55 | 349.48 | 352.33 | 348.89 | 347.65 | 351.00 | 352.47 | 352.62 | 349.42 | 353.45 | 355.07 | 354.00 | 351.56 | 355.10 | 355.51 | 352.91 | 350.55 |
| **15.00°** | 332.96 | 333.67 | 338.27 | 335.58 | 330.81 | 333.02 | 339.72 | 335.92 | 333.96 | 336.15 | 342.47 | 338.35 | 335.89 | 338.21 | 341.94 | 338.63 | 332.96 |
| **17.50°** | 308.58 | 311.12 | 318.45 | 312.37 | 306.72 | 313.83 | 318.36 | 313.67 | 308.00 | 315.23 | 319.87 | 315.78 | 309.20 | 316.31 | 321.09 | 315.17 | 308.58 |
| **20.00°** | 279.30 | 284.56 | 295.13 | 288.15 | 278.35 | 285.05 | 296.03 | 286.53 | 279.79 | 287.03 | 296.68 | 289.13 | 281.22 | 287.25 | 297.38 | 288.98 | 279.30 |
| **22.50°** | 245.33 | 253.48 | 266.44 | 255.44 | 244.66 | 255.46 | 265.68 | 255.70 | 245.52 | 255.92 | 266.84 | 257.06 | 245.73 | 255.28 | 266.24 | 256.21 | 245.33 |
| **25.00°** | 211.24 | 220.17 | 236.06 | 222.32 | 210.37 | 220.46 | 234.73 | 222.58 | 210.39 | 222.01 | 236.85 | 223.77 | 209.79 | 219.92 | 234.23 | 222.02 | 211.24 |
| **27.50°** | 177.05 | 187.31 | 203.56 | 189.13 | 175.45 | 185.41 | 200.59 | 188.02 | 177.54 | 187.24 | 203.80 | 189.16 | 175.81 | 185.43 | 200.46 | 188.03 | 177.05 |
| **30.00°** | 146.99 | 154.62 | 171.99 | 156.30 | 145.37 | 154.50 | 167.38 | 156.83 | 144.86 | 156.74 | 171.07 | 157.34 | 142.22 | 151.77 | 167.68 | 154.07 | 146.99 |
| **32.50°** | 119.56 | 128.23 | 141.38 | 129.84 | 119.41 | 124.23 | 137.71 | 127.34 | 120.37 | 127.24 | 141.54 | 128.01 | 117.30 | 123.25 | 136.59 | 127.51 | 119.56 |
| **35.00°** | 98.60 | 103.71 | 115.50 | 104.28 | 98.60 | 102.75 | 110.19 | 104.15 | 96.31 | 105.07 | 113.28 | 104.27 | 93.21 | 98.84 | 109.27 | 101.63 | 98.60 |
| **37.50°** | 81.05 | 85.68 | 93.67 | 86.75 | 81.35 | 82.21 | 89.03 | 83.52 | 80.96 | 84.10 | 92.92 | 84.69 | 77.93 | 80.32 | 87.14 | 83.86 | 81.05 |
| **40.00°** | 67.07 | 69.12 | 75.93 | 70.06 | 67.52 | 68.70 | 70.47 | 68.89 | 65.93 | 69.90 | 73.83 | 69.10 | 63.29 | 65.61 | 69.10 | 66.44 | 67.07 |
| **42.50°** | 54.58 | 57.12 | 61.10 | 58.11 | 55.67 | 55.87 | 57.92 | 56.17 | 55.09 | 56.38 | 60.46 | 55.91 | 52.78 | 53.65 | 55.61 | 55.58 | 54.58 |
| **45.00°** | 45.04 | 45.84 | 49.54 | 46.93 | 45.81 | 46.37 | 46.87 | 46.42 | 44.60 | 46.72 | 48.18 | 45.68 | 42.78 | 43.12 | 44.78 | 44.92 | 45.04 |
| **47.50°** | 36.46 | 38.25 | 39.84 | 38.84 | 36.87 | 37.47 | 38.59 | 37.37 | 36.86 | 37.27 | 39.52 | 36.92 | 34.96 | 35.36 | 36.42 | 37.27 | 36.46 |
| **50.00°** | 30.04 | 31.00 | 32.20 | 31.31 | 30.03 | 30.80 | 31.19 | 30.72 | 29.48 | 30.41 | 31.58 | 30.30 | 27.70 | 28.80 | 29.40 | 29.83 | 30.04 |
| **52.50°** | 24.16 | 25.15 | 25.52 | 25.54 | 23.94 | 24.53 | 25.15 | 24.48 | 23.88 | 23.67 | 25.48 | 24.50 | 22.31 | 23.54 | 23.39 | 24.13 | 24.16 |
| **55.00°** | 19.81 | 19.39 | 20.71 | 20.37 | 19.24 | 19.36 | 19.99 | 19.93 | 18.73 | 19.36 | 20.02 | 19.70 | 17.58 | 18.71 | 18.66 | 18.77 | 19.81 |
| **57.50°** | 15.73 | 16.16 | 16.59 | 16.64 | 14.93 | 14.98 | 15.94 | 15.55 | 15.22 | 15.20 | 15.90 | 15.20 | 14.56 | 15.05 | 14.72 | 15.30 | 15.73 |
| **60.00°** | 12.98 | 13.00 | 13.44 | 13.38 | 12.05 | 12.32 | 12.57 | 12.67 | 12.02 | 12.48 | 12.42 | 12.10 | 11.76 | 11.69 | 12.06 | 12.11 | 12.98 |
| **62.50°** | 10.38 | 10.88 | 10.57 | 11.02 | 9.47 | 9.84 | 9.90 | 9.87 | 9.67 | 9.88 | 9.98 | 9.34 | 9.40 | 9.81 | 10.05 | 10.00 | 10.38 |
| **65.00°** | 8.69 | 8.86 | 8.94 | 8.69 | 7.76 | 7.70 | 7.70 | 8.11 | 7.51 | 7.88 | 8.03 | 7.92 | 7.50 | 8.21 | 8.01 | 8.12 | 8.69 |
| **67.50°** | 7.06 | 7.56 | 7.57 | 6.42 | 6.17 | 5.92 | 5.89 | 6.40 | 5.70 | 6.15 | 6.71 | 6.70 | 6.30 | 6.60 | 5.96 | 6.90 | 7.06 |
| **70.00°** | 5.58 | 6.29 | 5.91 | 5.13 | 4.61 | 4.57 | 4.65 | 5.02 | 4.47 | 5.20 | 5.39 | 5.18 | 5.27 | 5.05 | 5.18 | 5.67 | 5.58 |
| **72.50°** | 4.27 | 5.10 | 4.41 | 4.67 | 3.28 | 3.67 | 3.67 | 3.89 | 3.82 | 4.25 | 4.08 | 3.88 | 4.39 | 4.13 | 4.64 | 4.45 | 4.27 |
| **75.00°** | 3.34 | 3.97 | 3.71 | 3.70 | 2.71 | 2.93 | 3.13 | 3.16 | 2.97 | 3.29 | 3.30 | 3.18 | 2.82 | 3.23 | 3.70 | 3.41 | 3.34 |
| **77.50°** | 2.41 | 2.86 | 2.89 | 2.69 | 2.05 | 2.09 | 2.18 | 2.23 | 2.05 | 2.29 | 2.48 | 2.41 | 1.68 | 2.35 | 2.69 | 2.47 | 2.41 |
| **80.00°** | 1.65 | 1.51 | 2.02 | 1.81 | 1.35 | 1.34 | 1.18 | 1.67 | 1.15 | 1.47 | 1.63 | 1.59 | 1.19 | 1.42 | 1.66 | 1.67 | 1.65 |
| **82.50°** | 1.20 | 0.97 | 1.22 | 0.79 | 0.72 | 0.74 | 0.80 | 1.30 | 0.77 | 0.87 | 1.07 | 0.85 | 0.81 | 0.82 | 0.87 | 1.12 | 1.20 |
| **85.00°** | 0.57 | 0.55 | 0.72 | 0.54 | 0.39 | 0.47 | 0.51 | 0.58 | 0.63 | 0.59 | 0.59 | 0.54 | 0.56 | 0.61 | 0.32 | 0.56 | 0.57 |
| **87.50°** | 0.48 | 0.52 | 0.51 | 0.65 | 0.47 | 0.40 | 0.35 | 0.42 | 0.53 | 0.54 | 0.43 | 0.49 | 0.45 | 0.50 | 0.53 | 0.49 | 0.48 |
| **90.00°** | 0.52 | 0.52 | 0.54 | 0.61 | 0.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.49 | 0.46 | 0.40 | 0.52 |
| **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.

| | ρfc | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ρcc | 80% | 80% | 80% | 80% | 70% | 70% | 70% | 70% | 50% | 50% | 50% | 30% | 30% | 30% | 10% | 10% | 10% | 0% |
| | ρw | 70% | 50% | 30% | 10% | 70% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 30% |
| | 0 | 431 | 431 | 431 | 431 | 421 | 421 | 421 | 421 | 402 | 402 | 402 | 385 | 385 | 385 | 369 | 369 | 369 | 362 |
| | 1 | 408 | 397 | 387 | 378 | 399 | 389 | 380 | 372 | 374 | 367 | 360 | 361 | 355 | 350 | 348 | 344 | 339 | 337 |
| | 2 | 385 | 365 | 349 | 336 | 377 | 359 | 344 | 332 | 347 | 335 | 324 | 336 | 326 | 317 | 326 | 318 | 311 | 312 |
| | 3 | 363 | 337 | 318 | 302 | 356 | 332 | 314 | 299 | 323 | 307 | 294 | 314 | 301 | 290 | 305 | 294 | 285 | 289 |
| | 4 | 343 | 313 | 291 | 274 | 336 | 308 | 288 | 272 | 300 | 283 | 269 | 293 | 278 | 266 | 286 | 273 | 263 | 268 |
| RCR | 5 | 324 | 291 | 268 | 251 | 318 | 287 | 266 | 249 | 281 | 262 | 247 | 274 | 258 | 245 | 269 | 254 | 243 | 249 |
| | 6 | 306 | 271 | 248 | 231 | 301 | 268 | 246 | 230 | 263 | 243 | 228 | 257 | 240 | 227 | 253 | 237 | 225 | 233 |
| | 7 | 290 | 254 | 230 | 214 | 285 | 251 | 229 | 213 | 247 | 227 | 212 | 242 | 224 | 211 | 238 | 222 | 210 | 218 |
| | 8 | 275 | 238 | 215 | 199 | 271 | 236 | 214 | 199 | 232 | 212 | 198 | 228 | 210 | 197 | 225 | 208 | 196 | 205 |
| | 9 | 262 | 224 | 202 | 186 | 257 | 223 | 201 | 186 | 219 | 199 | 185 | 216 | 198 | 184 | 213 | 196 | 184 | 193 |
| | 10 | 249 | 212 | 189 | 175 | 245 | 210 | 189 | 174 | 207 | 187 | 174 | 204 | 186 | 173 | 201 | 185 | 173 | 182 |

## Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|---|---|---|
| 5.5 ft | 12.5 fc | 5.5 ft |
| 6.5 ft | 8.9 fc | 6.5 ft |
| 7.5 ft | 6.7 fc | 7.5 ft |
| 8.0 ft | 5.9 fc | 8.0 ft |
| 10.0 ft | 3.8 fc | 10.0 ft |
| 12.0 ft | 2.6 fc | 12.0 ft |
| 14.0 ft | 1.9 fc | 14.0 ft |
| 16.0 ft | 1.5 fc | 16.0 ft |
| 20.0 ft | 0.9 fc | 20.0 ft |
| 24.0 ft | 0.7 fc | 24.1 ft |
| 28.0 ft | 0.5 fc | 28.1 ft |

## Average Luminaire Luminance [cd/m²]

| | 0.00° | 45.00° | 90.00° |
|---|---|---|---|
| 0.00° | 158,369 | 158,369 | 158,369 |
| 45.00° | 26,785 | 29,455 | 27,239 |
| 55.00° | 14,519 | 15,184 | 14,102 |
| 65.00° | 8,644 | 8,895 | 7,720 |
| 75.00° | 5,423 | 6,032 | 4,396 |
| 85.00° | 2,732 | 3,484 | 1,860 |

## 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 | 16.8 | 18.0 | 17.2 | 18.3 | 18.6 | 16.5 | 17.7 | 16.9 | 18.0 | 18.3 |
| | 3H | 17.7 | 18.7 | 18.1 | 19.0 | 19.4 | 17.2 | 18.2 | 17.6 | 18.5 | 18.9 |
| | 4H | 17.9 | 18.9 | 18.3 | 19.2 | 19.6 | 17.4 | 18.3 | 17.8 | 18.7 | 19.1 |
| | 6H | 18.0 | 18.9 | 18.4 | 19.2 | 19.6 | 17.4 | 18.3 | 17.8 | 18.7 | 19.1 |
| | 8H | 18.0 | 18.8 | 18.5 | 19.2 | 19.6 | 17.4 | 18.2 | 17.9 | 18.6 | 19.0 |
| | 12H | 18.0 | 18.8 | 18.4 | 19.2 | 19.6 | 17.4 | 18.2 | 17.8 | 18.5 | 19.0 |
| 4H | 2H | 17.0 | 18.0 | 17.4 | 18.3 | 18.7 | 16.7 | 17.6 | 17.1 | 18.0 | 18.4 |
| | 3H | 18.1 | 18.8 | 18.5 | 19.2 | 19.6 | 17.5 | 18.3 | 18.0 | 18.7 | 19.1 |
| | 4H | 18.4 | 19.1 | 18.9 | 19.5 | 20.0 | 17.8 | 18.5 | 18.2 | 18.9 | 19.3 |
| | 6H | 18.6 | 19.2 | 19.1 | 19.6 | 20.1 | 17.9 | 18.5 | 18.4 | 18.9 | 19.4 |
| | 8H | 18.6 | 19.1 | 19.1 | 19.6 | 20.1 | 17.9 | 18.4 | 18.4 | 18.9 | 19.4 |
| | 12H | 18.6 | 19.1 | 19.1 | 19.6 | 20.0 | 17.9 | 18.4 | 18.4 | 18.8 | 19.3 |
| 8H | 4H | 18.5 | 19.0 | 18.9 | 19.5 | 19.9 | 17.8 | 18.4 | 18.3 | 18.8 | 19.3 |
| | 6H | 18.7 | 19.1 | 19.2 | 19.6 | 20.1 | 18.0 | 18.4 | 18.5 | 18.9 | 19.4 |
| | 8H | 18.7 | 19.1 | 19.3 | 19.7 | 20.1 | 18.0 | 18.4 | 18.5 | 18.9 | 19.4 |
| | 12H | 18.8 | 19.1 | 19.3 | 19.6 | 20.2 | 18.0 | 18.4 | 18.5 | 18.9 | 19.4 |
| 12H | 4H | 18.4 | 18.9 | 18.9 | 19.4 | 19.9 | 17.8 | 18.3 | 18.3 | 18.8 | 19.2 |
| | 6H | 18.7 | 19.1 | 19.2 | 19.5 | 20.1 | 18.0 | 18.4 | 18.5 | 18.8 | 19.4 |
| | 8H | 18.7 | 19.1 | 19.3 | 19.6 | 20.2 | 18.0 | 18.4 | 18.5 | 18.9 | 19.4 |

Corrected UGR values based on total output lumens

SHR = 1.0