

Light efficiency:



Output: 1602 lm

Light quality:

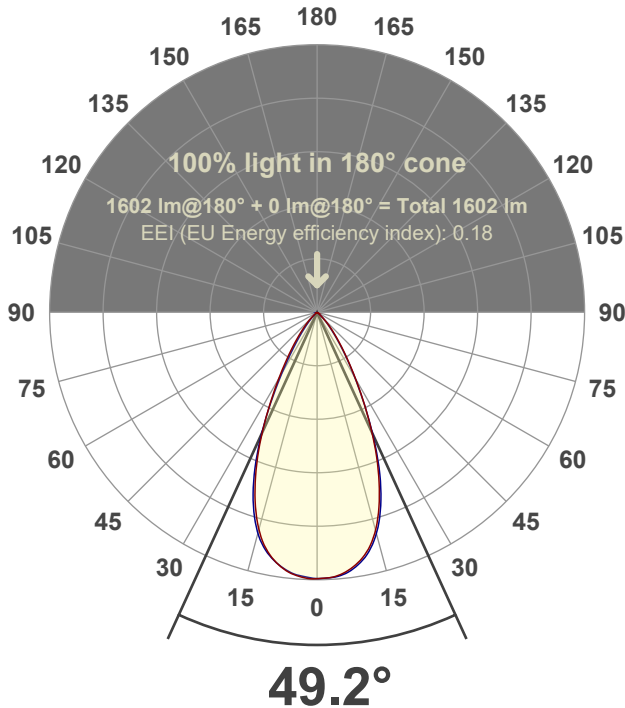


Peak: 2301 cd

Power: 20.7 W



Beam angle



Test number:

GR-F-CZ20-30k-WF-SQ-91A-Rev2

Luminaire Model:

Graffiti Regress Square Fixed Downlight-CZ20 30k 60° Optic-Solite

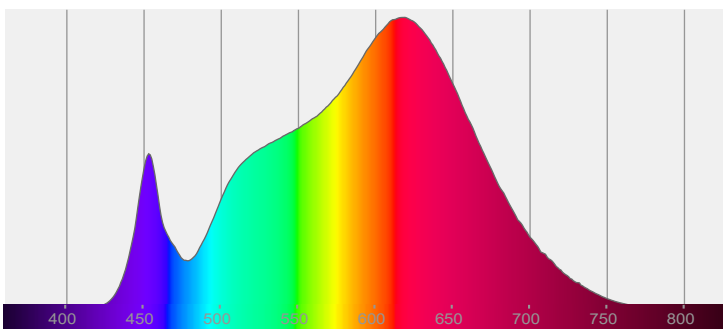
Date and time:

6/30/2022 7:58:18 PM

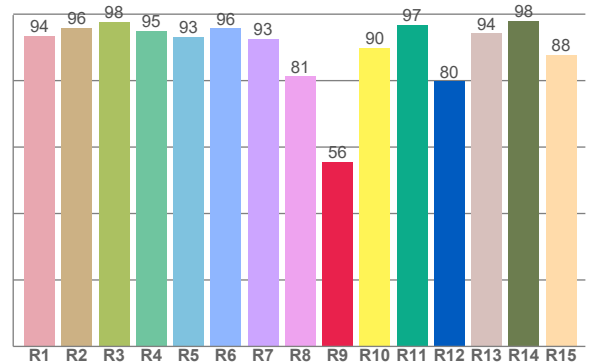
Delivered Lumens

1602

Spectra



CRI: 93.1 (R1-R8)



Color parameters

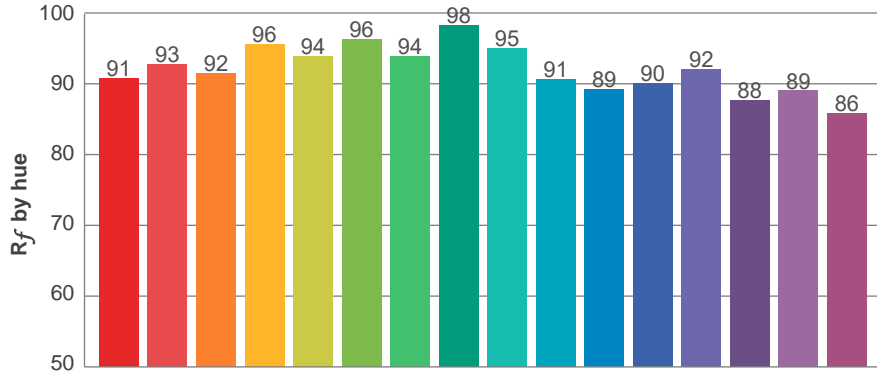
| Color rendering index | Red component | Color fidelity | Color gamut | Color quality scale | Color coordinate cie 1931 | Color coordinate cie 1931 | Color coordinate | Color coordinate | Color divition from black body |
|-----------------------|---------------|---------------------|---------------------|---------------------|---------------------------|---------------------------|------------------|------------------|--------------------------------|
| CRI | CRI R9 | TM30 R _f | TM30 R _g | CQS | x | y | u | v | Δuv |
| 93.1 | 55.6 | 92.2 | 99.1 | 91.6 | 0.437 | 0.408 | 0.249 | 0.349 | 0.0016 |

R_f 92.2
Fidelity index R_f

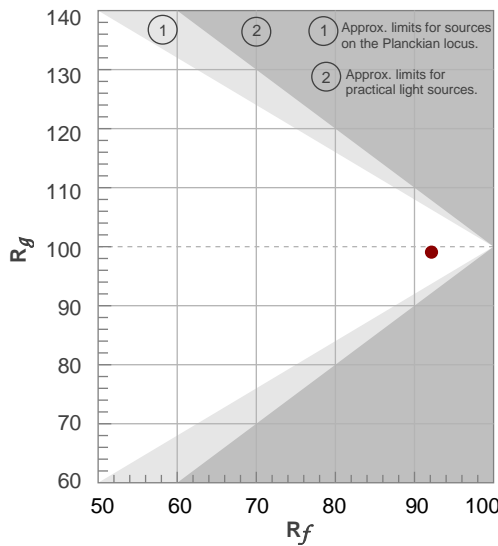
R_g 99.1
Gammut index R_g

TM30: 92.2

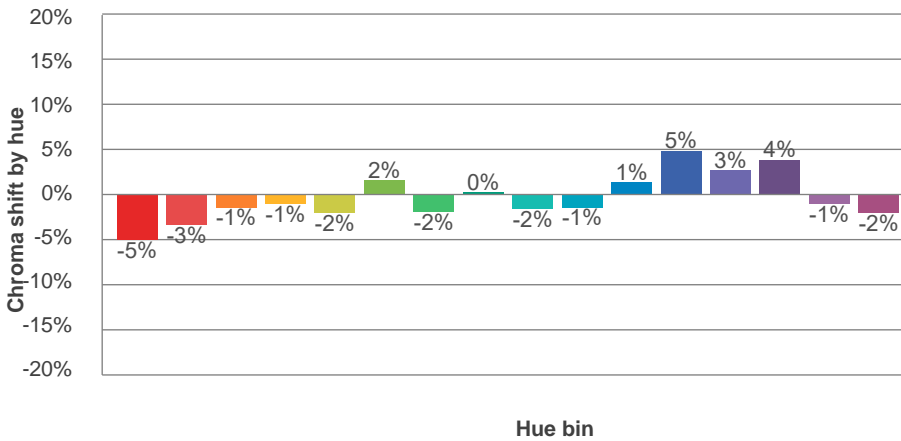
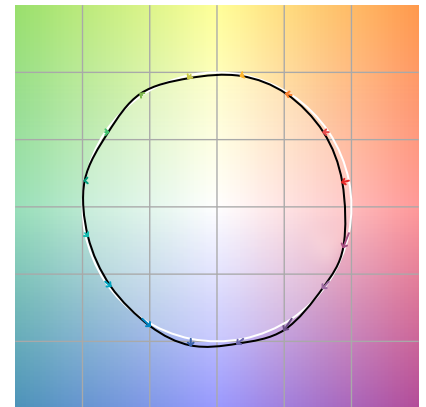
TM-30Color



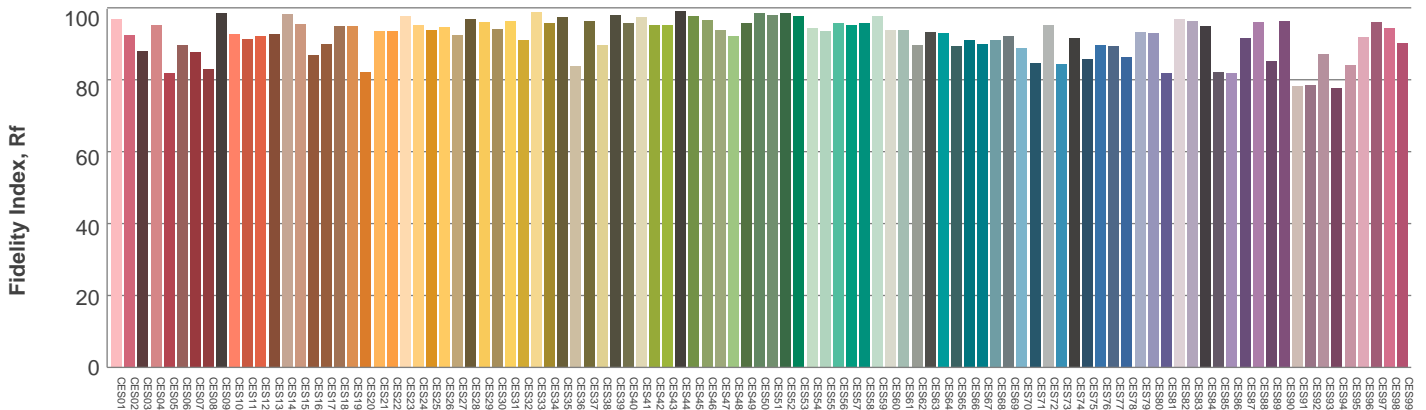
| Hue Bin | R_f | Graphic shifts (%) | |
|---------|-------|--------------------|------|
| | | Chroma | Hue |
| 1 | 91 | -5% | 0% |
| 2 | 93 | -3% | 2% |
| 3 | 92 | -1% | 4% |
| 4 | 96 | -1% | 2% |
| 5 | 94 | -2% | 2% |
| 6 | 96 | 2% | 1% |
| 7 | 94 | -2% | -1% |
| 8 | 98 | 0% | 0% |
| 9 | 95 | -2% | 3% |
| 10 | 91 | -1% | 5% |
| 11 | 89 | 1% | 8% |
| 12 | 90 | 5% | 1% |
| 13 | 92 | 3% | -5% |
| 14 | 88 | 4% | -9% |
| 15 | 89 | -1% | -7% |
| 16 | 86 | -2% | -11% |



Color vector graphics

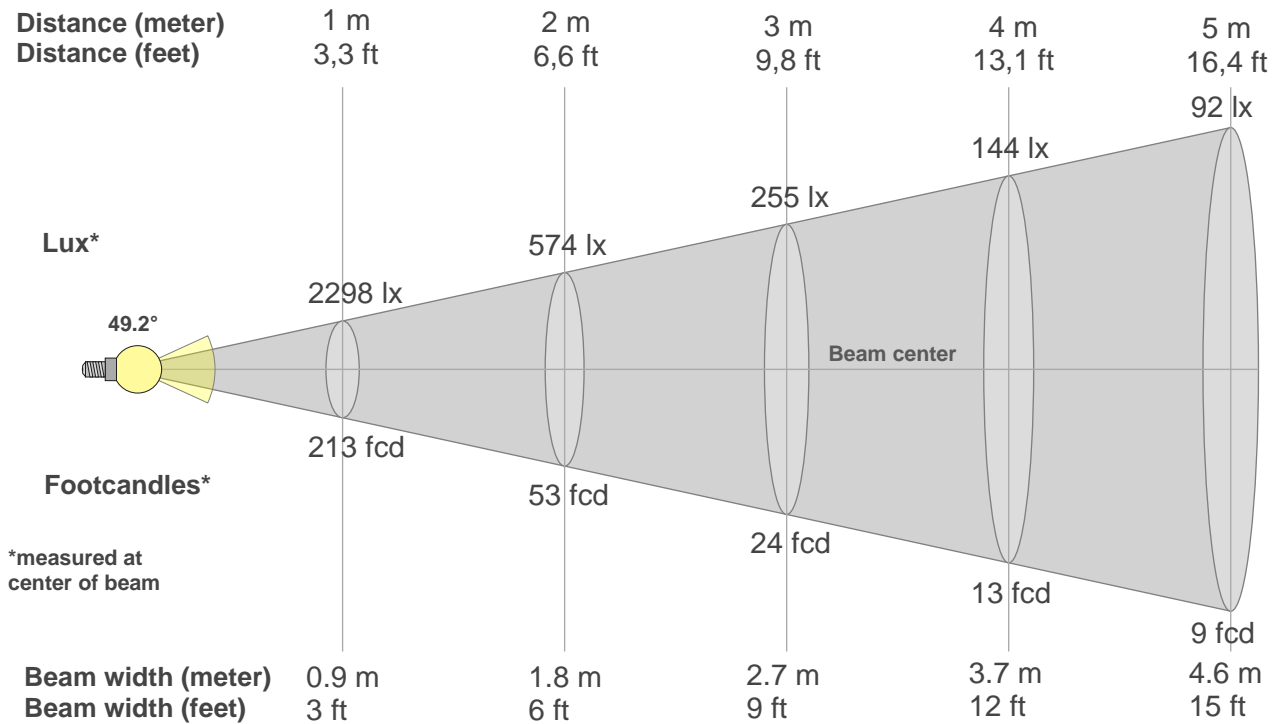


Color distortion



Color Evaluation Sample

Beam details



Beam intensities from 1-20m

| 1m | 2m | 3m | 4m | 5m | 6m | 7m | 8m | 9m | 10m | 11m | 12m | 13m | 14m | 15m | 16m | 17m | 18m | 19m | 20m |
|----------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 3.3ft | 6.6ft | 9.8ft | 13.1ft | 16.4ft | 19.7ft | 23ft | 26.2ft | 29.5ft | 32.8ft | 36.1ft | 39.4ft | 42.7ft | 45.9ft | 49.2ft | 52.5ft | 55.8ft | 59.1ft | 62.3ft | 65.6ft |
| 2298lx | 574lx | 255lx | 144lx | 92lx | 64lx | 47lx | 36lx | 28lx | 23lx | 19lx | 16lx | 14lx | 12lx | 10lx | 9lx | 8lx | 7lx | 6lx | 6lx |
| 213.5fcd | 53.4fcd | 23.7fcd | 13.3fcd | 8.5fcd | 5.9fcd | 4.4fcd | 3.3fcd | 2.6fcd | 2.1fcd | 1.8fcd | 1.5fcd | 1.3fcd | 1.1fcd | 0.9fcd | 0.8fcd | 0.7fcd | 0.7fcd | 0.6fcd | 0.5fcd |

Intensities in 0° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 2298 | 2294 | 2283 | 2258 | 2221 | 2168 | 2097 | 2003 | 1882 | 1736 | 1569 | 1389 | 1200 | 1012 | 836 | 678 | 544 | 438 | 349 | 277 |
| 100% | 100% | 99% | 98% | 97% | 94% | 91% | 87% | 82% | 76% | 68% | 60% | 52% | 44% | 36% | 30% | 24% | 19% | 15% | 12% |

Intensities in 90° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 2298 | 2295 | 2288 | 2269 | 2234 | 2185 | 2121 | 2033 | 1916 | 1773 | 1608 | 1422 | 1219 | 1013 | 826 | 667 | 532 | 418 | 323 | 247 |
| 100% | 100% | 100% | 99% | 97% | 95% | 92% | 88% | 83% | 77% | 70% | 62% | 53% | 44% | 36% | 29% | 23% | 18% | 14% | 11% |

Intensities in 180° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 2298 | 2297 | 2284 | 2260 | 2219 | 2164 | 2092 | 1998 | 1877 | 1731 | 1565 | 1387 | 1200 | 1010 | 831 | 674 | 543 | 434 | 344 | 270 |
| 100% | 100% | 99% | 98% | 97% | 94% | 91% | 87% | 82% | 75% | 68% | 60% | 52% | 44% | 36% | 29% | 24% | 19% | 15% | 12% |

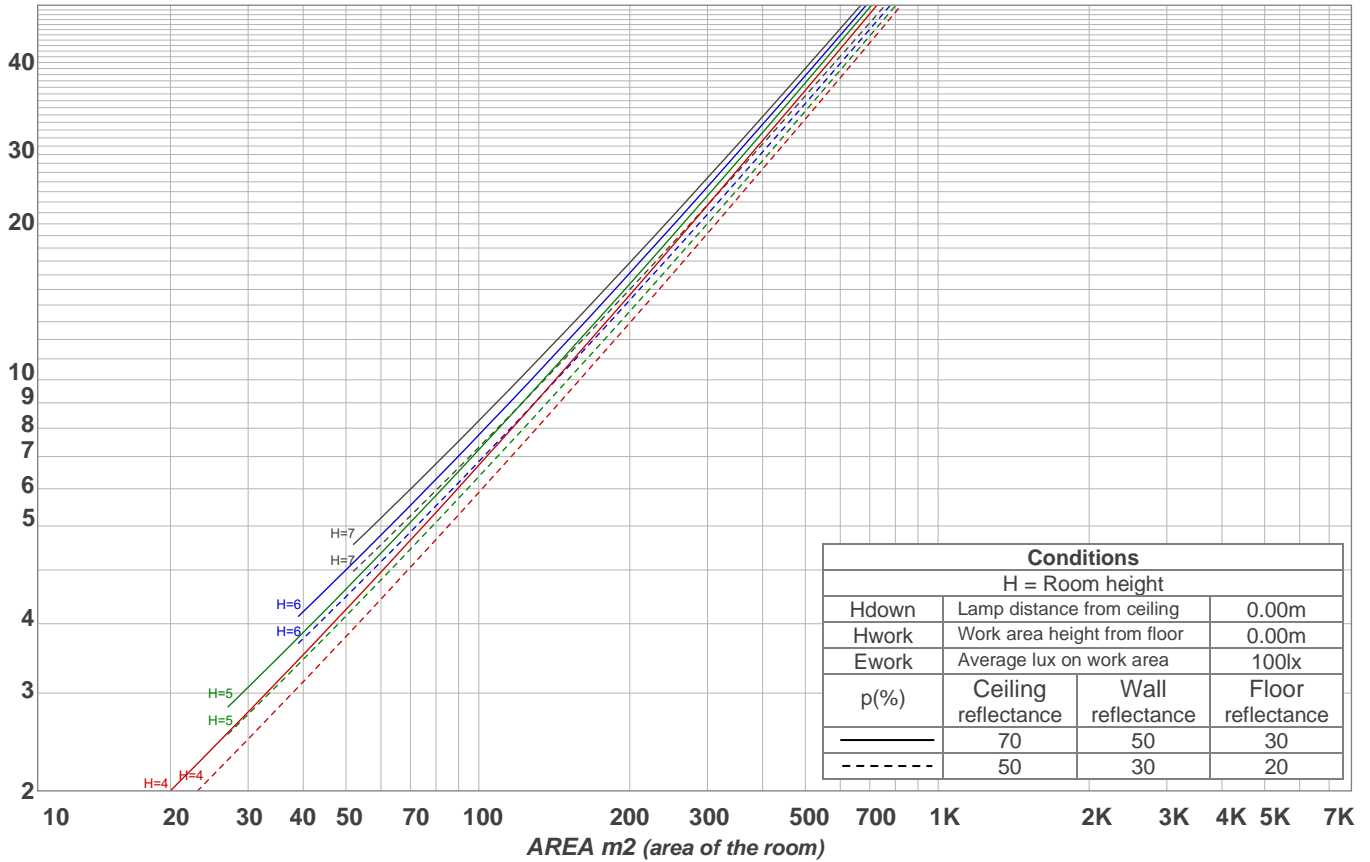
Intensities in 270° c-plane

| 0° | 2° | 4° | 6° | 8° | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 2298 | 2288 | 2275 | 2252 | 2216 | 2170 | 2108 | 2024 | 1912 | 1775 | 1613 | 1428 | 1221 | 1006 | 804 | 626 | 477 | 360 | 271 | 203 |
| 100% | 100% | 99% | 98% | 96% | 94% | 92% | 88% | 83% | 77% | 70% | 62% | 53% | 44% | 35% | 27% | 21% | 16% | 12% | 9% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 49.2° | 77.3° | 95.5° | 98.9% | 96.2% |

LAMPS (number of lamps)
50

Light planning Luminaire budgetary diagram



Luminaire budgetary diagram AREA m2 (area of the room) Coefficients of Utilization

| Ceiling reflectance | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 | | | |
|---------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| Wall reflectance | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| Floor reflectance | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 |
| RCR | (RCR: Room Cavity Ratio) Room Values are expressed as percentage of Lumens delivered to the task surface | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | 100 | 100 | |
| 1 | 114 | 111 | 109 | 106 | 111 | 109 | 107 | 105 | 105 | 103 | 101 | 101 | 100 | 98 | 98 | 97 | 96 | 94 | 94 | 94 | |
| 2 | 108 | 104 | 100 | 97 | 106 | 102 | 98 | 95 | 99 | 96 | 93 | 96 | 93 | 91 | 93 | 91 | 89 | 88 | 88 | 88 | |
| 3 | 103 | 97 | 92 | 89 | 101 | 96 | 91 | 88 | 93 | 90 | 87 | 91 | 88 | 85 | 89 | 86 | 84 | 82 | 82 | 82 | |
| 4 | 98 | 91 | 86 | 82 | 97 | 90 | 85 | 82 | 88 | 84 | 81 | 86 | 83 | 80 | 84 | 81 | 79 | 77 | 77 | 77 | |
| 5 | 94 | 86 | 81 | 76 | 92 | 85 | 80 | 76 | 83 | 79 | 75 | 82 | 78 | 75 | 80 | 77 | 74 | 73 | 73 | 73 | |
| 6 | 90 | 81 | 76 | 72 | 88 | 80 | 75 | 71 | 79 | 74 | 71 | 78 | 73 | 70 | 76 | 73 | 70 | 68 | 68 | 68 | |
| 7 | 86 | 77 | 71 | 67 | 84 | 76 | 71 | 67 | 75 | 70 | 67 | 74 | 70 | 66 | 73 | 69 | 66 | 65 | 65 | 65 | |
| 8 | 82 | 73 | 67 | 63 | 81 | 72 | 67 | 63 | 71 | 66 | 63 | 70 | 66 | 63 | 69 | 65 | 62 | 61 | 61 | 61 | |
| 9 | 78 | 69 | 64 | 60 | 77 | 69 | 63 | 60 | 68 | 63 | 60 | 67 | 63 | 59 | 66 | 62 | 59 | 58 | 58 | 58 | |
| 10 | 75 | 66 | 60 | 57 | 74 | 65 | 60 | 57 | 65 | 60 | 57 | 64 | 60 | 56 | 63 | 59 | 56 | 55 | 55 | 55 | |

Zonal Lumen Summary

| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 214 lm | 539 lm | 502 lm | 235 lm | 76.4 lm | 18.3 lm | 8.44 lm | 4.55 lm | 4.00 lm |

| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0.000 lm | 0.000 lm | 0.000 lm | 0.000 lm | 0.000 lm | 0.000 lm | 0.000 lm | 0.000 lm | 0.000 lm |