

PHOTOMETRIC TEST REPORT

ATTICUS 900 MATT BLACK

astro

LIGHT EFFICIENCY:

58 Lumen/Watt

OUTPUT: 976 lm

LIGHT QUALITY:

CRI: 83.3

PEAK: 332 cd

COLOR TEMPERATURE:

2716 K

POWER: 16.8 W

PF: 0.92

Tracking number: [n/a](#)

Product name:

Atticus 900 Matt Black

Item number:

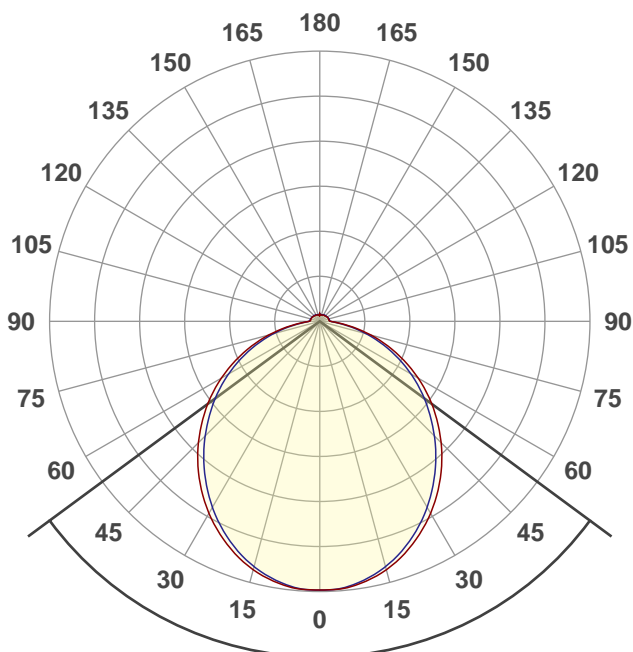
1440006

Date and time:

10/02/2021 16:30:51

Description:

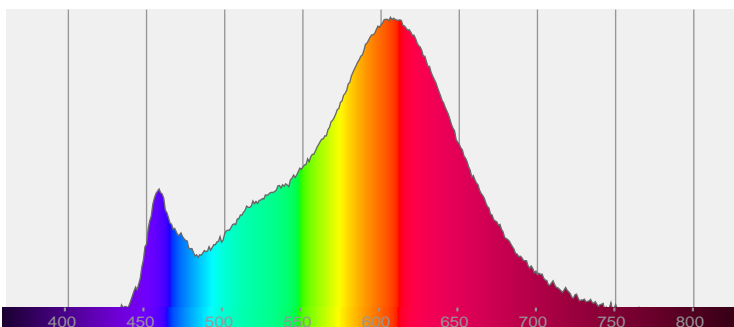
IP44 Bathroom Wall Light



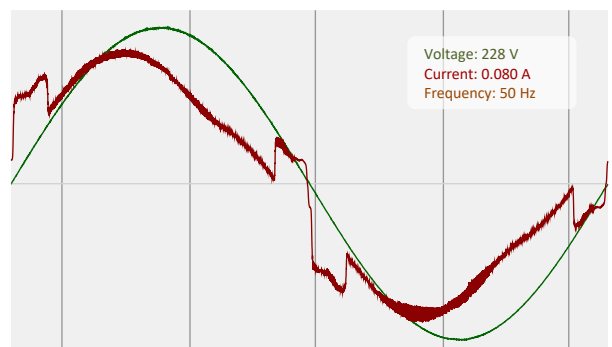
107.2°

CIE 1931
x: 0.458
y: 0.408

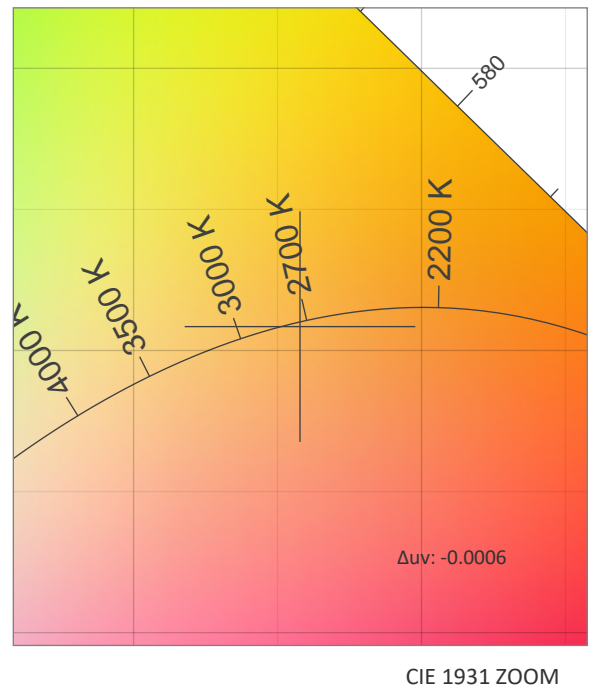
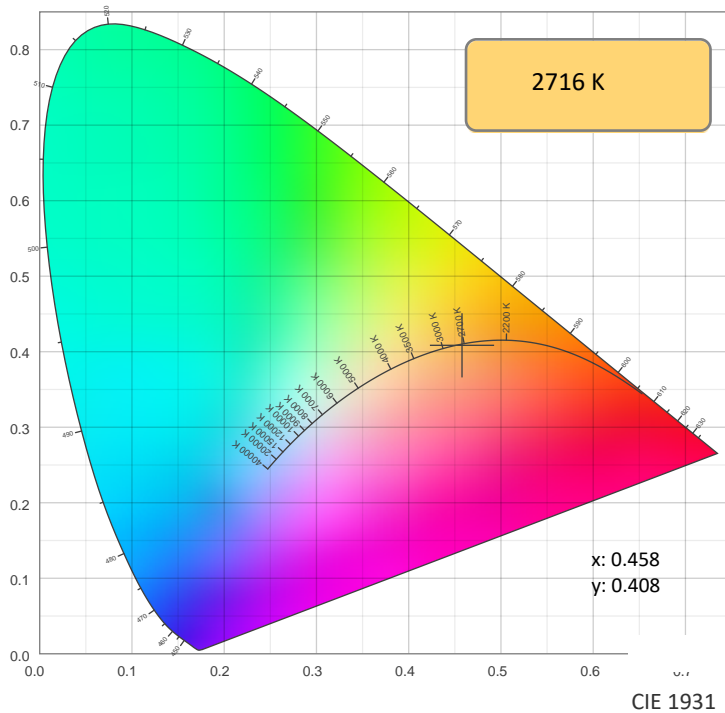
SPECTRA



POWER

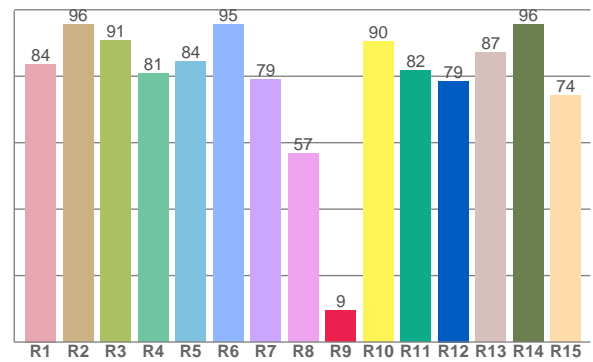
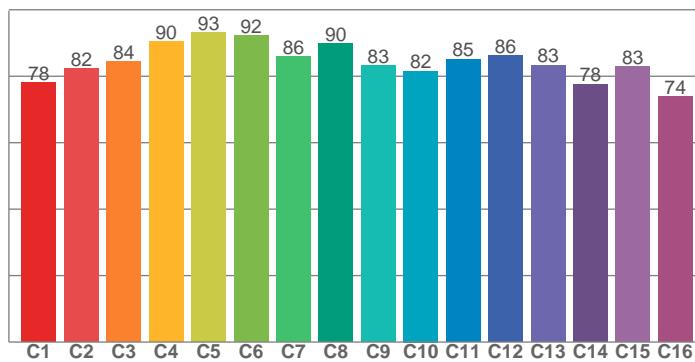


COLOR DETAILS



TM30: 84.3

CRI: 83.3 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|
| 83.7 | 95.6 | 90.9 | 80.7 | 84.4 | 95.5 | 79.1 | 56.7 | 9.5 | 90.4 | 81.6 | 78.6 | 87.1 | 95.7 | 74.3 |

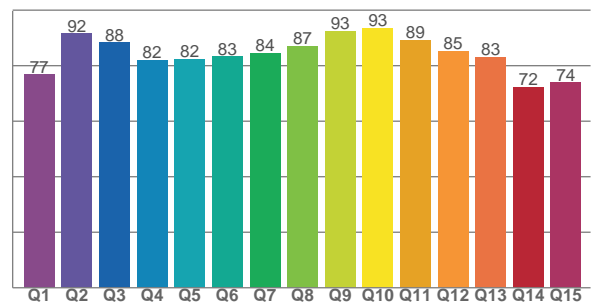
TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 78.1 | 82.4 | 84.4 | 90.4 | 93.2 | 92.3 | 86.0 | 89.8 | 83.3 | 81.6 | 85.1 | 86.1 | 83.4 | 77.7 | 82.9 | 73.9 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 76.7 | 91.6 | 88.3 | 81.9 | 82.3 | 83.3 | 84.5 | 87.1 | 92.5 | 93.5 | 89.3 | 85.2 | 83.0 | 72.3 | 74.0 |

CQS: 83.0



COLOR PARAMETERS

| Color temperature | 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 deviation from black body |
|-------------------|-----------------------|---------------|----------------|-------------|---------------------|---------------------------|---------------------------|------------------|------------------|---------------------------------|
| CCT | CRI | CRI R9 | TM30 Rf | TM30 Rg | CQS | x | y | u | v | Δuv |
| 2716 K | 83.3 | 9.5 | 84.3 | 92.5 | 83.0 | 0.458 | 0.408 | 0.262 | 0.351 | -0.0006 |

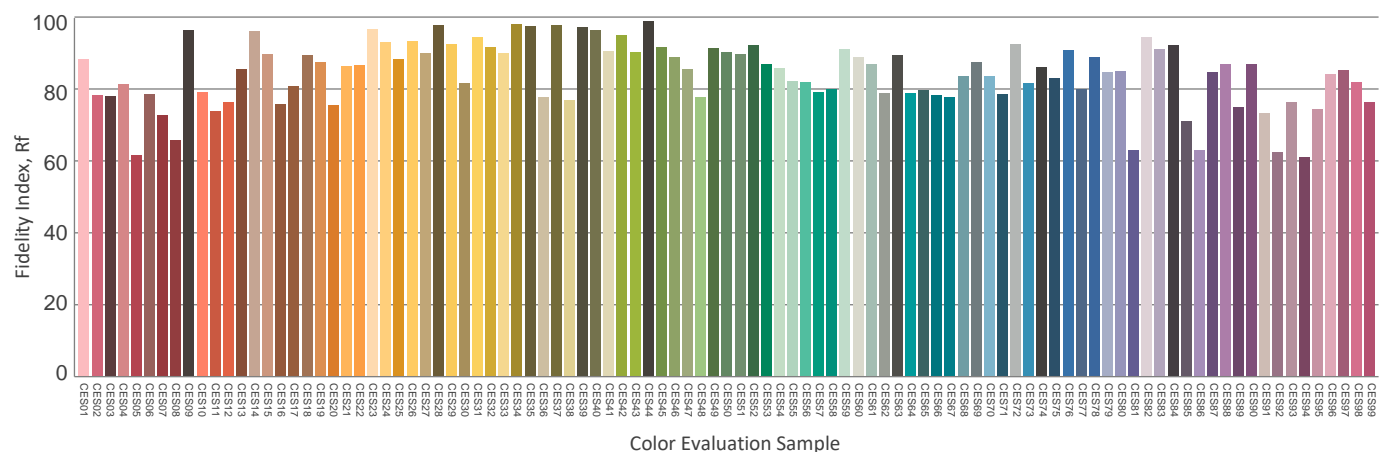
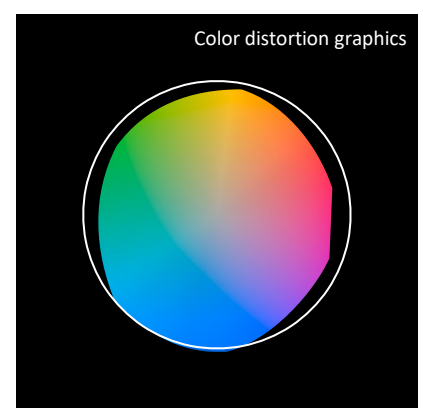
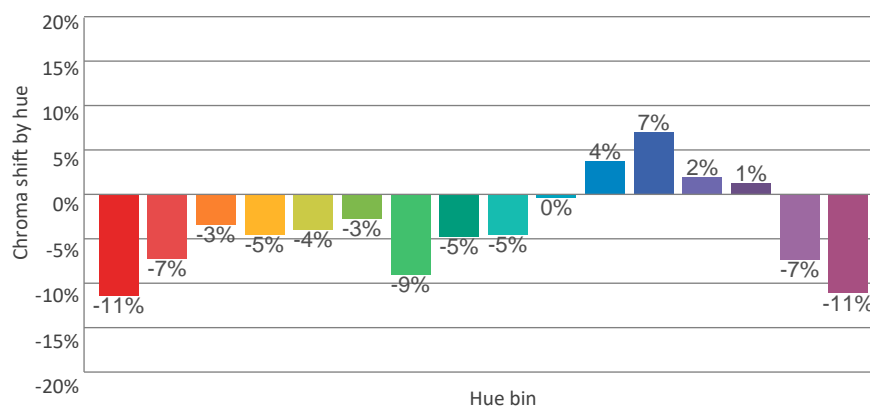
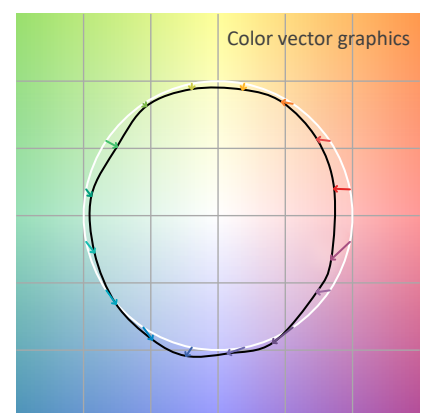
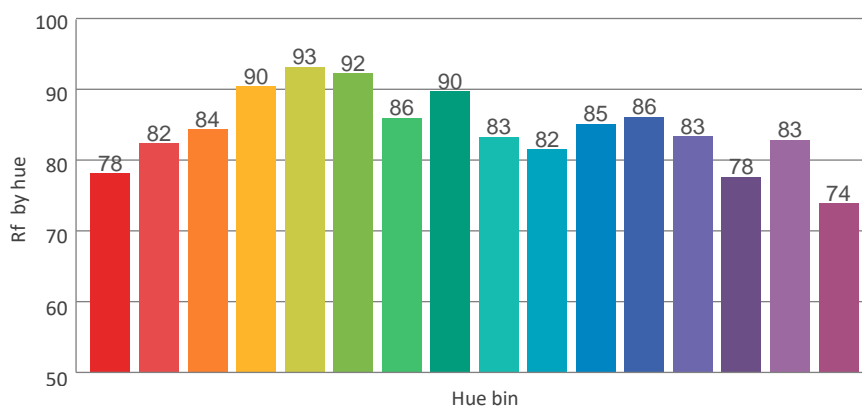
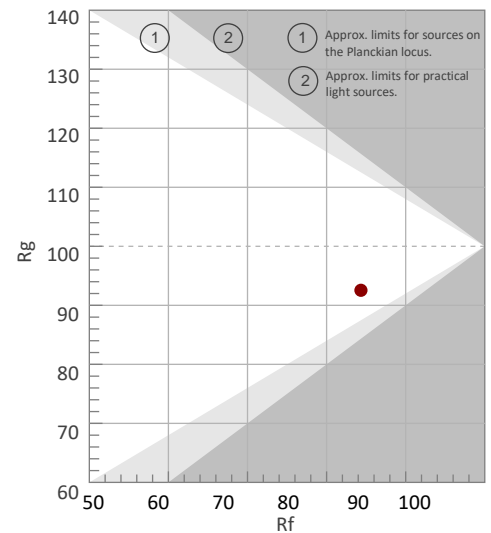
Rf 84.3

Fidelity index Rf

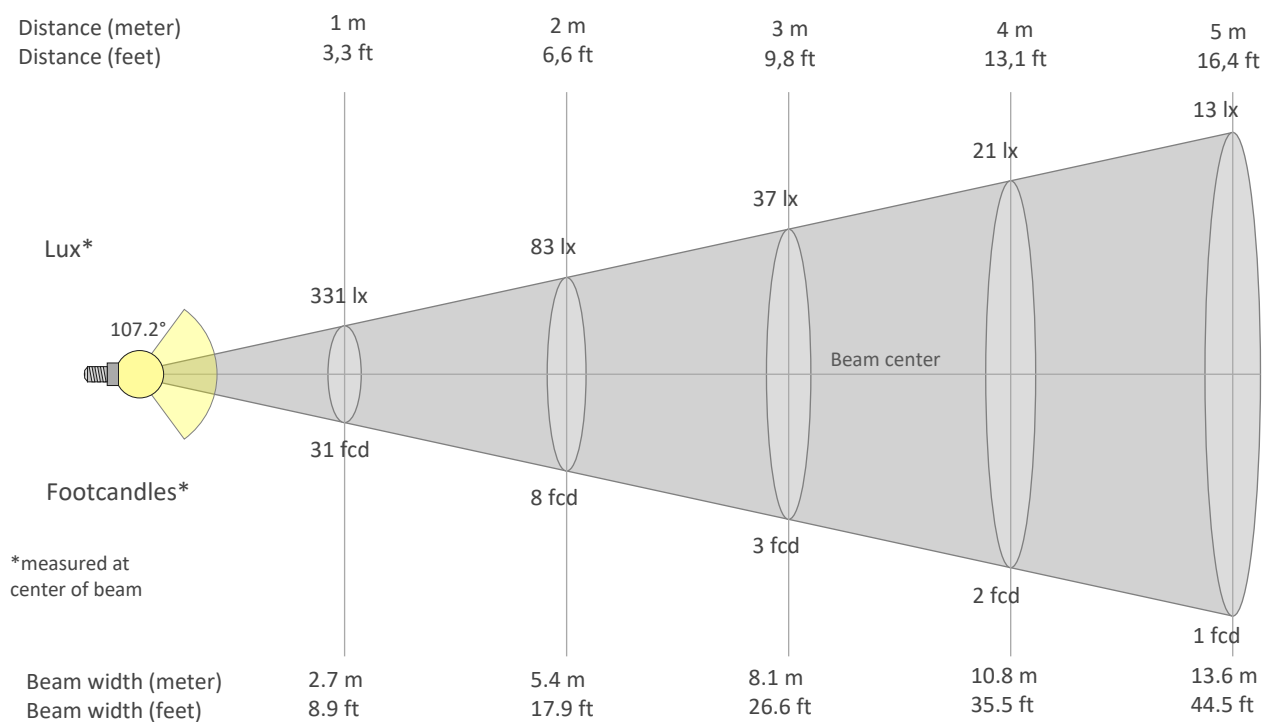
Rg 92.5

Gammut index Rg

| Hue Bin | Graphic shifts (%) | | |
|---------|--------------------|--------|------|
| | R _f | Chroma | Hue |
| 1 | 78 | -11% | 3% |
| 2 | 82 | -7% | 6% |
| 3 | 84 | -3% | 7% |
| 4 | 90 | -5% | 0% |
| 5 | 93 | -4% | 1% |
| 6 | 92 | -3% | -1% |
| 7 | 86 | -9% | -1% |
| 8 | 90 | -5% | 4% |
| 9 | 83 | -5% | 9% |
| 10 | 82 | 0% | 12% |
| 11 | 85 | 4% | 11% |
| 12 | 86 | 7% | -3% |
| 13 | 83 | 2% | -13% |
| 14 | 78 | 1% | -19% |
| 15 | 83 | -7% | -7% |
| 16 | 74 | -11% | -16% |



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 |
| 331lx | 83lx | 37lx | 21lx | 13lx | 9lx | 7lx | 5lx | 4lx | 3lx | 3lx | 2lx | 2lx | 2lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx |
| 30.8fcd | 7.7fcd | 3.4fcd | 1.9fcd | 1.2fcd | 0.9fcd | 0.6fcd | 0.5fcd | 0.4fcd | 0.3fcd | 0.3fcd | 0.2fcd | 0.2fcd | 0.2fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd |

Intensities in 0° c-plane

| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 331 | 330 | 325 | 317 | 305 | 290 | 273 | 254 | 234 | 212 | 188 | 165 | 140 | 115 | 90 | 65 | 42 | 24 | 14 | 12 |
| 100% | 100% | 98% | 96% | 92% | 88% | 82% | 77% | 70% | 64% | 57% | 50% | 42% | 35% | 27% | 20% | 13% | 7% | 4% | 4% |

Intensities in 90° c-plane

| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 331 | 329 | 323 | 313 | 299 | 283 | 265 | 244 | 222 | 200 | 177 | 154 | 130 | 106 | 82 | 60 | 39 | 23 | 14 | 12 |
| 100% | 99% | 97% | 94% | 90% | 85% | 80% | 74% | 67% | 60% | 53% | 46% | 39% | 32% | 25% | 18% | 12% | 7% | 4% | 4% |

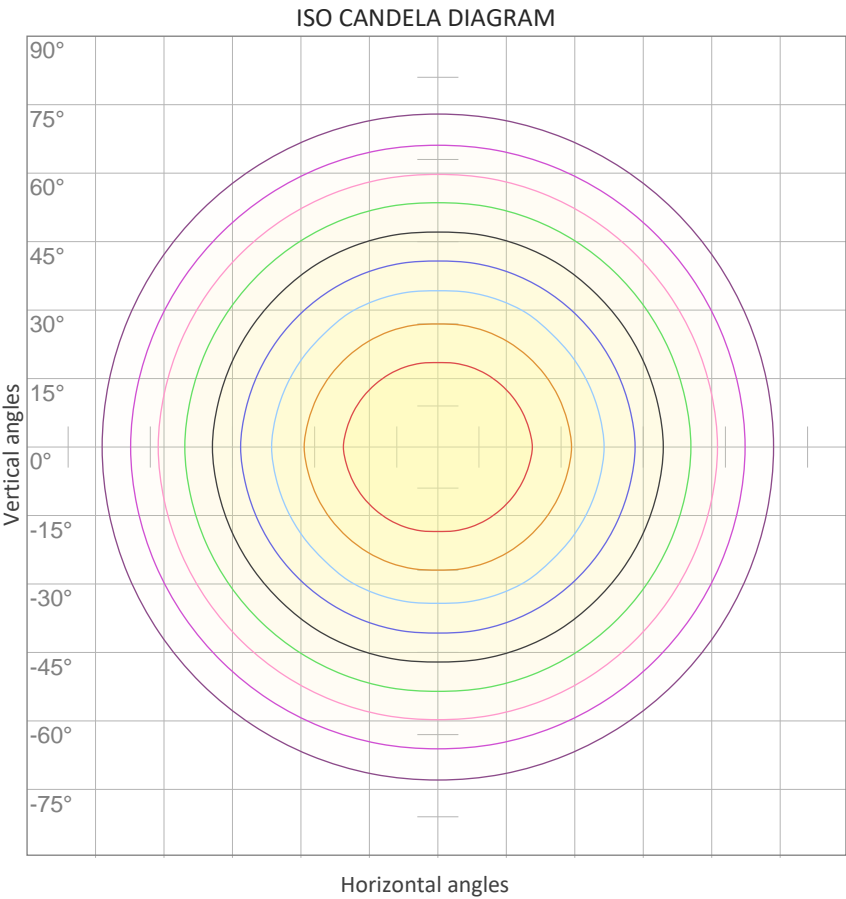
Intensities in 180° c-plane

| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 331 | 330 | 325 | 317 | 305 | 290 | 273 | 254 | 234 | 212 | 188 | 165 | 140 | 115 | 90 | 65 | 42 | 24 | 14 | 12 |
| 100% | 100% | 98% | 96% | 92% | 88% | 82% | 77% | 70% | 64% | 57% | 50% | 42% | 35% | 27% | 20% | 13% | 7% | 4% | 4% |

Intensities in 270° c-plane

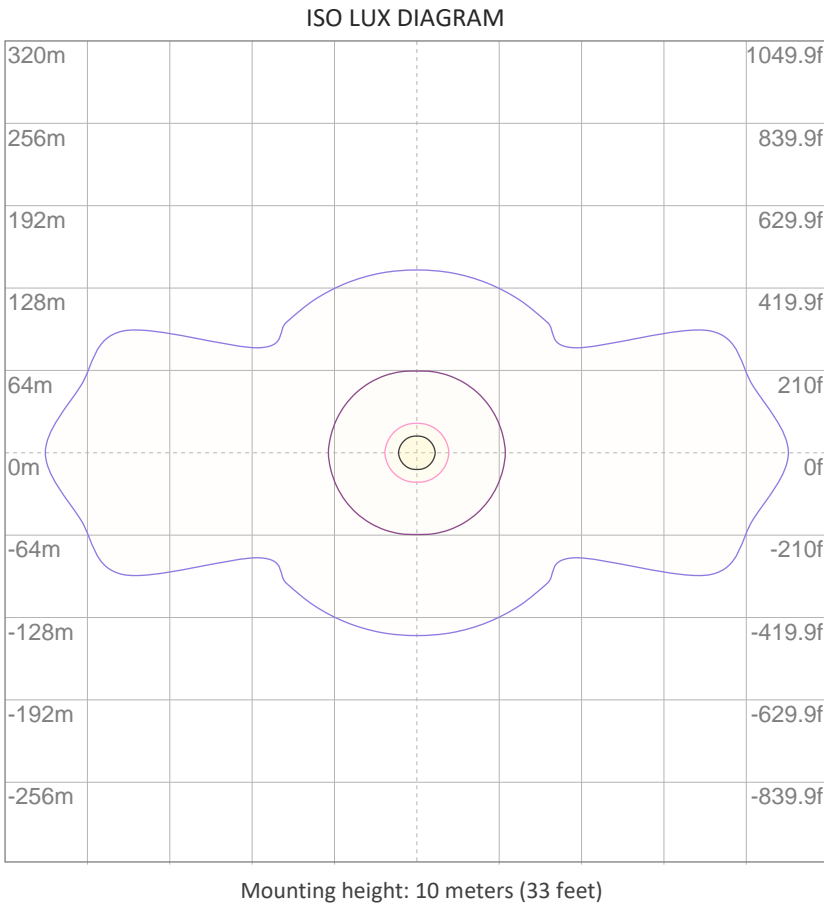
| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 331 | 329 | 323 | 313 | 299 | 283 | 265 | 244 | 222 | 200 | 177 | 154 | 130 | 106 | 82 | 60 | 39 | 23 | 14 | 12 |
| 100% | 99% | 97% | 94% | 90% | 85% | 80% | 74% | 67% | 60% | 53% | 46% | 39% | 32% | 25% | 18% | 12% | 7% | 4% | 4% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 107.2° | 163.8° | 336.3° | 72.7% | 50.1% |



| | |
|-----|--------|
| 10% | 33 cd |
| 20% | 66 cd |
| 30% | 99 cd |
| 40% | 133 cd |
| 50% | 166 cd |
| 60% | 199 cd |
| 70% | 232 cd |
| 80% | 265 cd |
| 90% | 298 cd |

Conditions:
Number of c-planes: 8
Candela at center: 331 cd



| | |
|-----|----------------|
| 3% | 99.4m lx |
| 5% | 0.166 lx |
| 10% | 0.331 lx |
| 30% | 0.994 lx |
| 50% | {LUX_10M50} lx |

Conditions:
Number of c-planes: 8
Lux at center: 3.31 lx

Lux distribution on a surface when lamp is mounted at 10 meters from the surface.

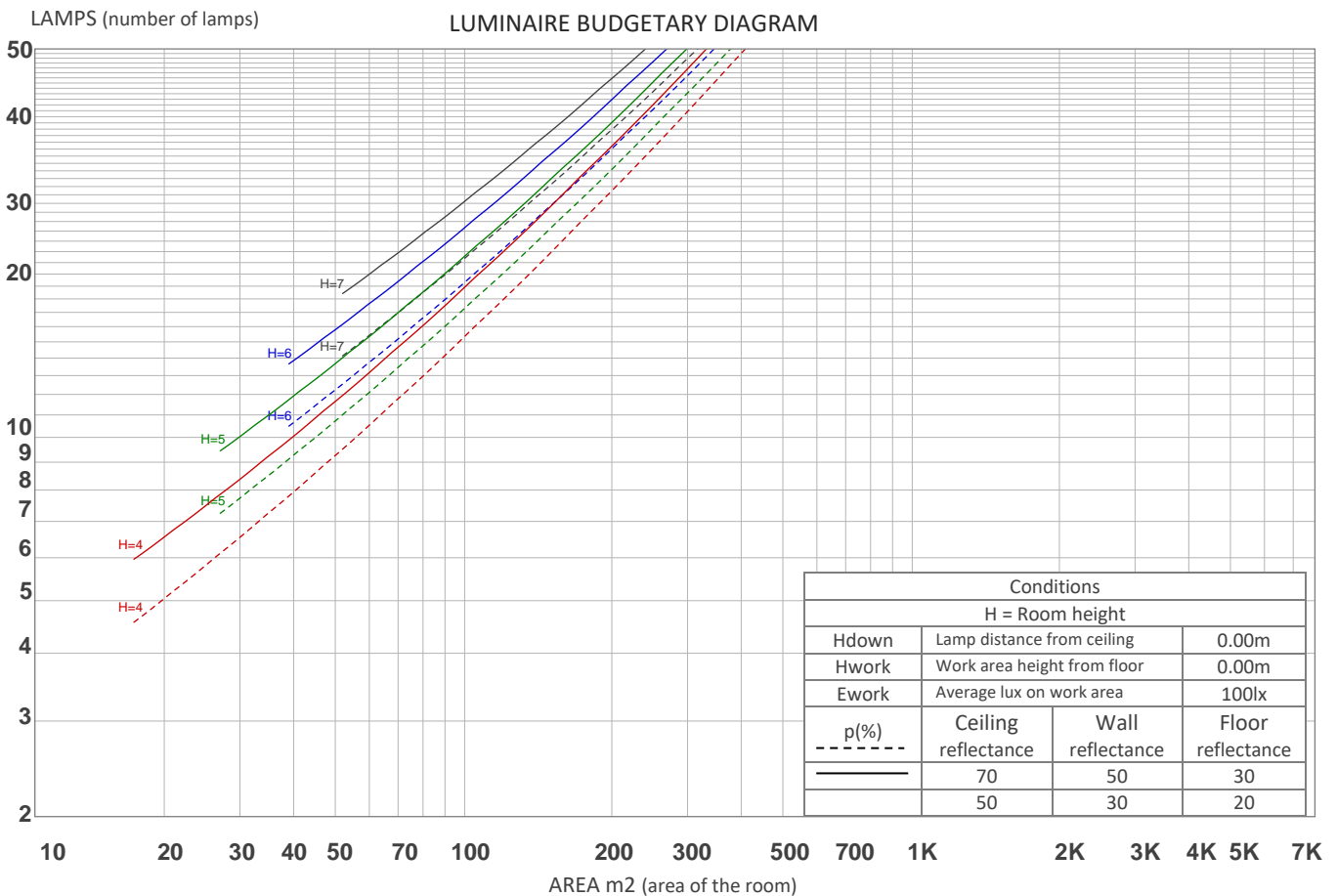
UGR

GLARE EVALUATION ACCORDING TO UGR

| | | | | | | | | | | | |
|---|-----|--|------|------|------|------|---|------|------|------|------|
| p Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| p Walls | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| p Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room size X Y | | Viewing direction at right angles to lamp axis | | | | | Viewing direction parallel to lamp axis | | | | |
| 2H | 2H | 15.3 | 16.4 | 15.6 | 16.8 | 17.2 | 16.7 | 17.9 | 17.1 | 18.3 | 18.6 |
| | 3H | 16.3 | 17.5 | 16.8 | 17.9 | 18.2 | 18.1 | 19.3 | 18.6 | 19.7 | 20.0 |
| | 4H | 16.7 | 17.8 | 17.2 | 18.2 | 18.6 | 18.7 | 19.8 | 19.2 | 20.2 | 20.6 |
| | 6H | 17.0 | 18.0 | 17.4 | 18.4 | 18.9 | 19.2 | 20.2 | 19.7 | 20.6 | 21.1 |
| | 8H | 17.0 | 18.0 | 17.5 | 18.4 | 18.9 | 19.4 | 20.4 | 19.8 | 20.8 | 21.3 |
| | 12H | 17.1 | 18.0 | 17.5 | 18.4 | 19.0 | 19.5 | 20.5 | 20.0 | 20.9 | 21.5 |
| 4H | 2H | 15.8 | 16.9 | 16.3 | 17.3 | 17.7 | 17.0 | 18.1 | 17.5 | 18.5 | 18.9 |
| | 3H | 17.1 | 18.0 | 17.6 | 18.5 | 19.0 | 18.6 | 19.6 | 19.1 | 20.0 | 20.6 |
| | 4H | 17.5 | 18.4 | 18.0 | 18.9 | 19.5 | 19.2 | 20.2 | 19.8 | 20.6 | 21.3 |
| | 6H | 17.8 | 18.7 | 18.4 | 19.1 | 19.6 | 19.8 | 20.6 | 20.4 | 21.1 | 21.6 |
| | 8H | 17.9 | 18.7 | 18.5 | 19.1 | 19.6 | 20.0 | 20.7 | 20.6 | 21.2 | 21.7 |
| | 12H | 18.0 | 18.6 | 18.6 | 19.1 | 19.7 | 20.2 | 20.8 | 20.8 | 21.3 | 21.9 |
| 8H | 4H | 17.7 | 18.5 | 18.3 | 18.9 | 19.4 | 19.3 | 20.0 | 19.9 | 20.5 | 21.0 |
| | 6H | 18.2 | 18.7 | 18.7 | 19.3 | 19.9 | 20.0 | 20.5 | 20.6 | 21.1 | 21.7 |
| | 8H | 18.3 | 18.8 | 18.9 | 19.4 | 20.2 | 20.2 | 20.7 | 20.8 | 21.4 | 22.1 |
| | 12H | 18.4 | 18.8 | 19.1 | 19.5 | 20.2 | 20.5 | 20.9 | 21.1 | 21.5 | 22.2 |
| 12H | 4H | 17.7 | 18.3 | 18.3 | 18.9 | 19.5 | 19.3 | 19.9 | 19.9 | 20.4 | 21.0 |
| | 6H | 18.2 | 18.7 | 18.8 | 19.3 | 20.1 | 20.0 | 20.5 | 20.6 | 21.1 | 21.8 |
| | 8H | 18.4 | 18.8 | 19.0 | 19.4 | 20.1 | 20.2 | 20.7 | 20.9 | 21.3 | 22.0 |
| Variation of the observer position for the luminaire distance S | | | | | | | | | | | |
| S = 1.0H | | 0.1 / -0.2 | | | | | 0.1 / -0.2 | | | | |
| S = 1.5H | | 0.3 / -0.5 | | | | | 0.4 / -0.5 | | | | |
| S = 2.0H | | 0.7 / -0.9 | | | | | 1.0 / -1.0 | | | | |
| Standard table | | n/a | | | | | n/a | | | | |
| Correction summand | | n/a | | | | | n/a | | | | |
| Corrected glare indices referring to 976 lm total luminous flux | | | | | | | | | | | |

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 | 0 |
| Floor reflectance | 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 | 117 | 117 | 117 | 117 | 114 | 114 | 114 | 114 | 107 | 107 | 107 | 101 | 101 | 101 | 96 | 96 | 96 | 93 |
| 1 | 107 | 102 | 98 | 94 | 103 | 99 | 95 | 92 | 94 | 90 | 87 | 89 | 86 | 84 | 84 | 82 | 80 | 77 |
| 2 | 97 | 89 | 82 | 76 | 94 | 86 | 80 | 75 | 82 | 76 | 72 | 77 | 73 | 69 | 73 | 70 | 67 | 64 |
| 3 | 89 | 78 | 70 | 63 | 85 | 76 | 68 | 62 | 72 | 66 | 60 | 68 | 63 | 58 | 65 | 60 | 57 | 54 |
| 4 | 81 | 69 | 60 | 54 | 78 | 67 | 59 | 53 | 64 | 57 | 51 | 61 | 55 | 50 | 58 | 53 | 49 | 46 |
| 5 | 75 | 62 | 53 | 46 | 72 | 60 | 52 | 46 | 57 | 50 | 44 | 55 | 48 | 43 | 52 | 47 | 42 | 40 |
| 6 | 69 | 56 | 47 | 40 | 66 | 54 | 46 | 40 | 52 | 44 | 39 | 49 | 43 | 38 | 47 | 42 | 37 | 35 |
| 7 | 64 | 50 | 42 | 36 | 62 | 49 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 43 | 37 | 33 | 31 |
| 8 | 59 | 46 | 38 | 32 | 57 | 45 | 37 | 31 | 43 | 36 | 31 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 9 | 56 | 42 | 34 | 29 | 54 | 41 | 34 | 28 | 40 | 33 | 28 | 38 | 32 | 27 | 37 | 31 | 27 | 25 |
| 10 | 52 | 39 | 31 | 26 | 50 | 38 | 31 | 26 | 37 | 30 | 25 | 35 | 29 | 25 | 34 | 28 | 24 | 23 |



ZONAL LUMEN SUMMARY

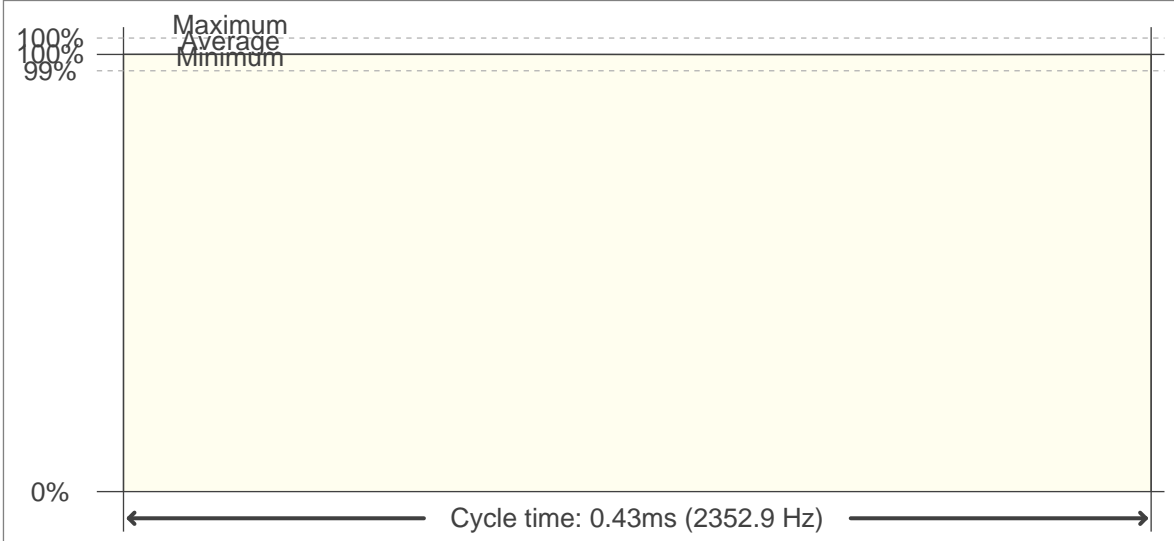
| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 31.3 lm | 88.8 lm | 132 lm | 156 lm | 159 lm | 142 lm | 109 lm | 66.0 lm | 25.9 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 13.1 lm | 12.1 lm | 10.8 lm | 9.27 lm | 7.43 lm | 5.81 lm | 3.98 lm | 2.34 lm | 0.775 lm |

FLICKER

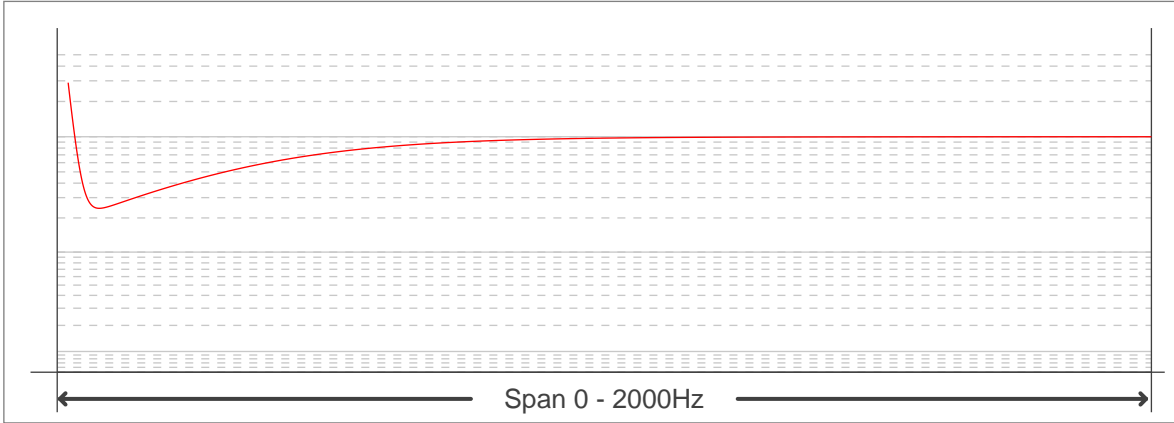
FLICKER CURVE (COMPLETE SAMPLED FLICKER)



FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

| | |
|-----------------------|------------|
| Flicker frequency: | 2352.94 Hz |
| Flicker index: | 0 |
| Flicker percentage: | 0.15 % |
| SVM: (Visual flicker) | 0 |

FLICKER CONDITIONS:

| | |
|--------------|----------------------|
| Sample rate: | 40000 samples/second |
|--------------|----------------------|