

Light efficiency:

n/a Lumen/Watt

Light quality:

CRI: 96.4

Color temperature:

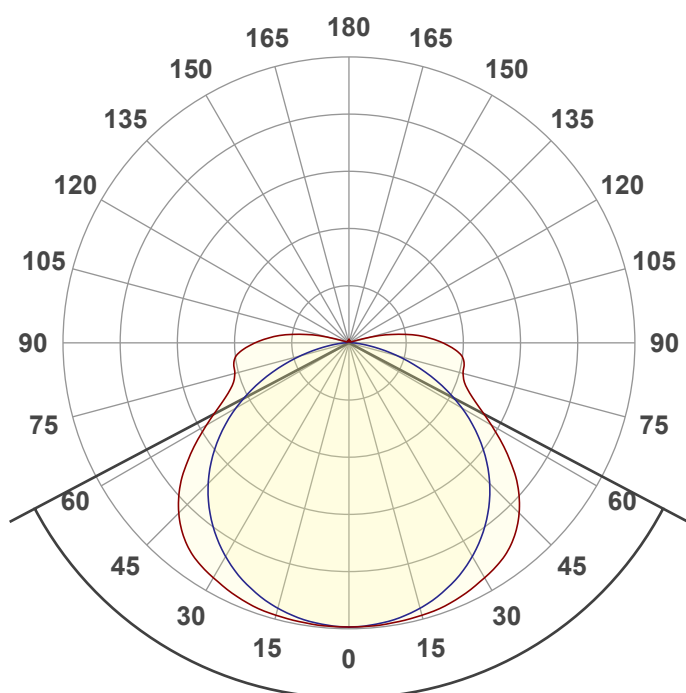
3902 K

Output: 153 lm

Peak: 40.7 cd

Power: 0.00 W

PF: n/a



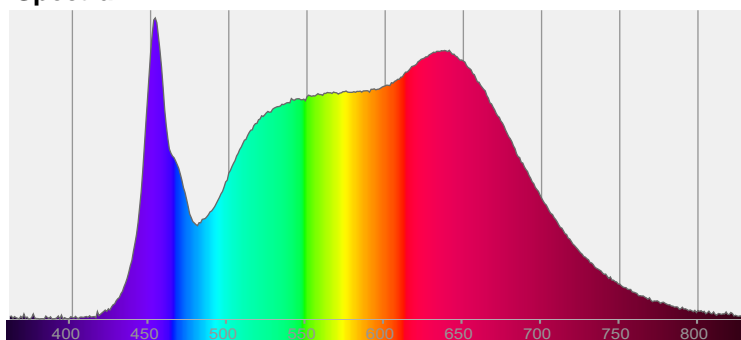
Beam angle

124.3°

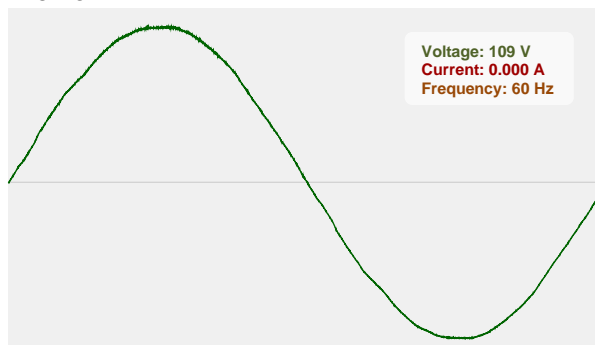


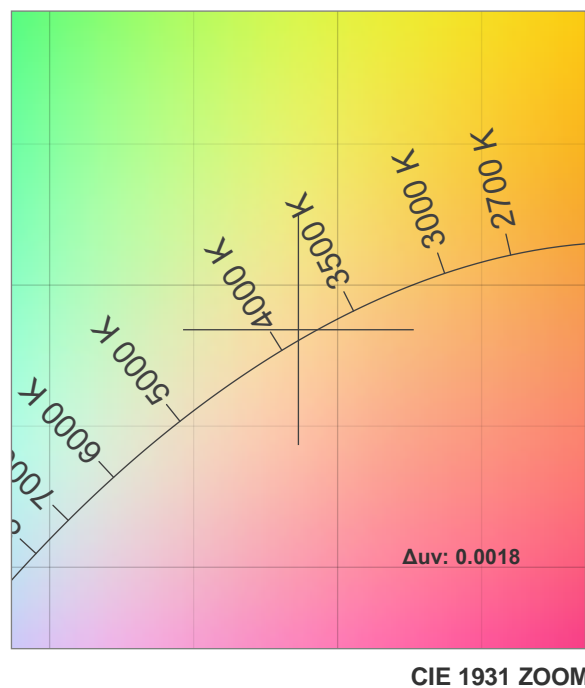
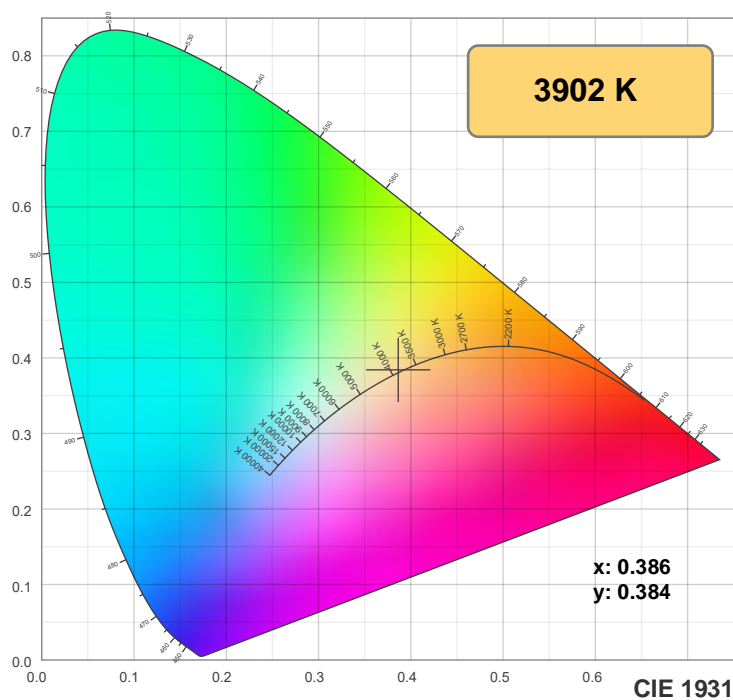
CIE 1931
x: 0.386
y: 0.384

Spectra

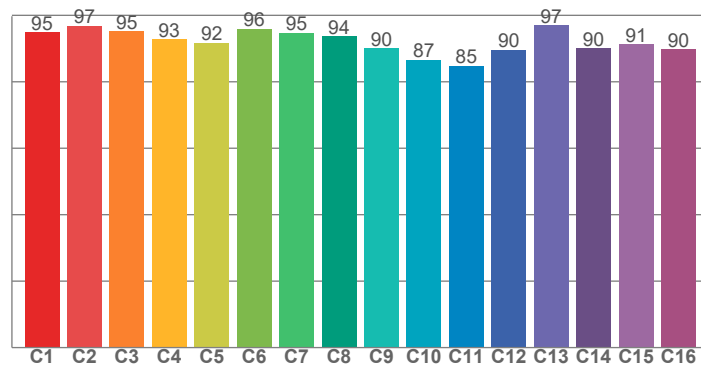


Power

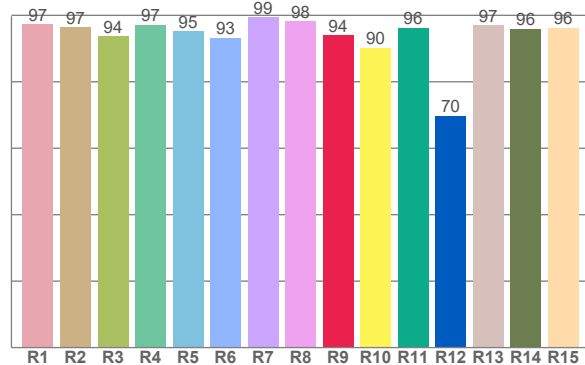




TM30: 92.1



CRI: 96.4 (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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 97.3 | 96.5 | 93.7 | 97.2 | 95.3 | 93.3 | 99.5 | 98.2 | 93.9 | 90.2 | 96.3 | 69.8 | 97.1 | 96.0 | 96.2 |

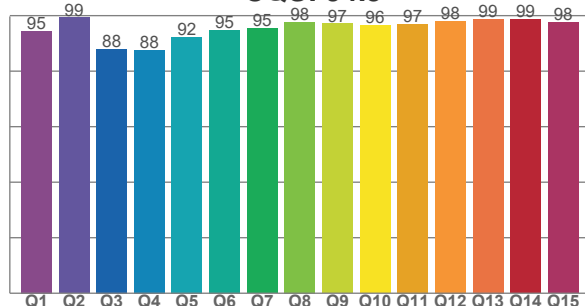
TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 94.8 | 96.9 | 95.2 | 92.8 | 91.7 | 96.0 | 94.8 | 93.6 | 90.1 | 86.6 | 84.7 | 89.6 | 97.0 | 90.1 | 91.3 | 89.7 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 94.5 | 99.3 | 87.9 | 87.7 | 92.3 | 94.8 | 95.4 | 97.8 | 97.1 | 96.5 | 97.0 | 98.0 | 98.7 | 98.7 | 97.6 |

CQS: 94.3



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 |
| 3902 K | 96.4 | 93.9 | 92.1 | 99.9 | 94.3 | 0.386 | 0.384 | 0.226 | 0.337 | 0.0018 |

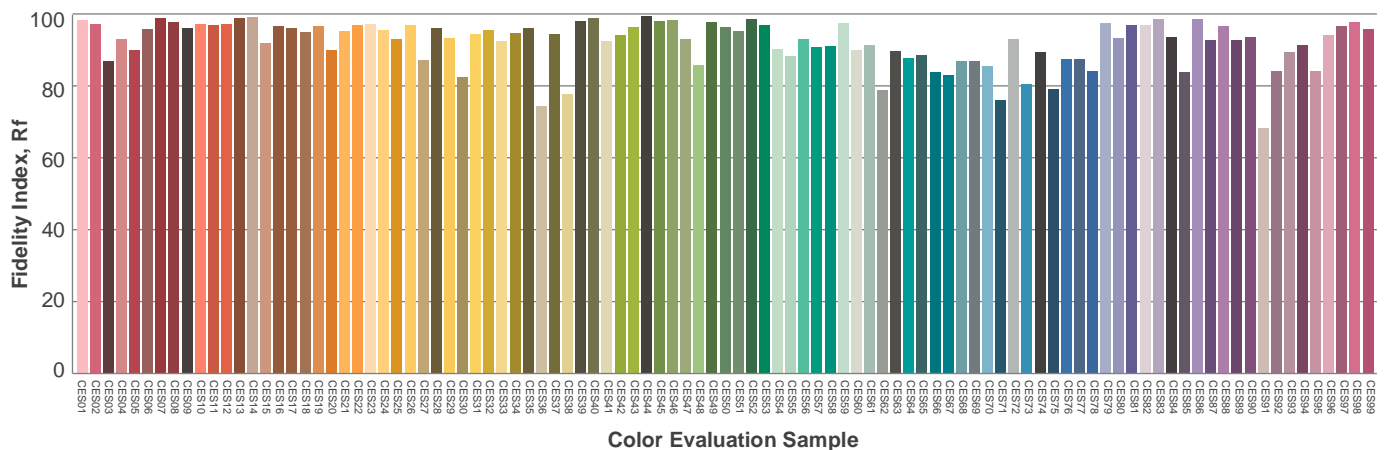
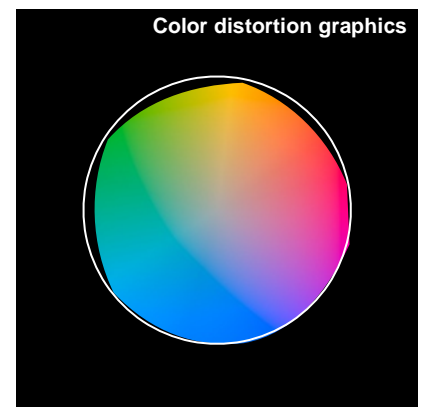
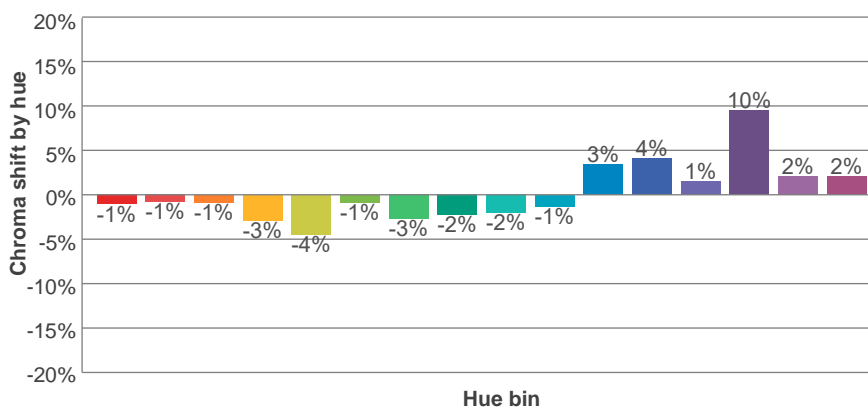
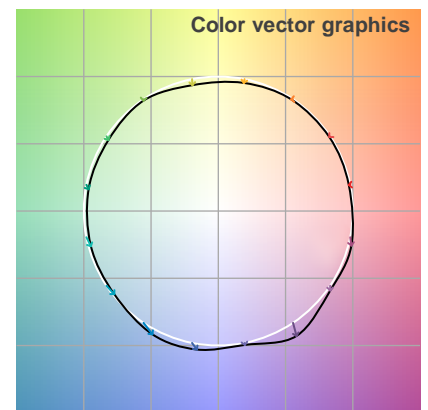
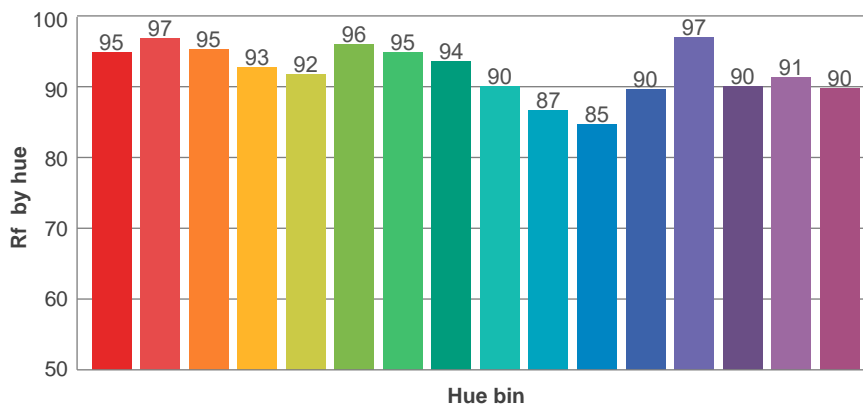
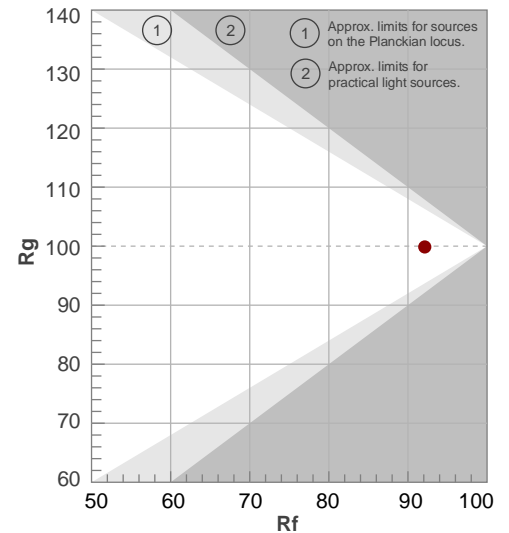
Rf 92.1

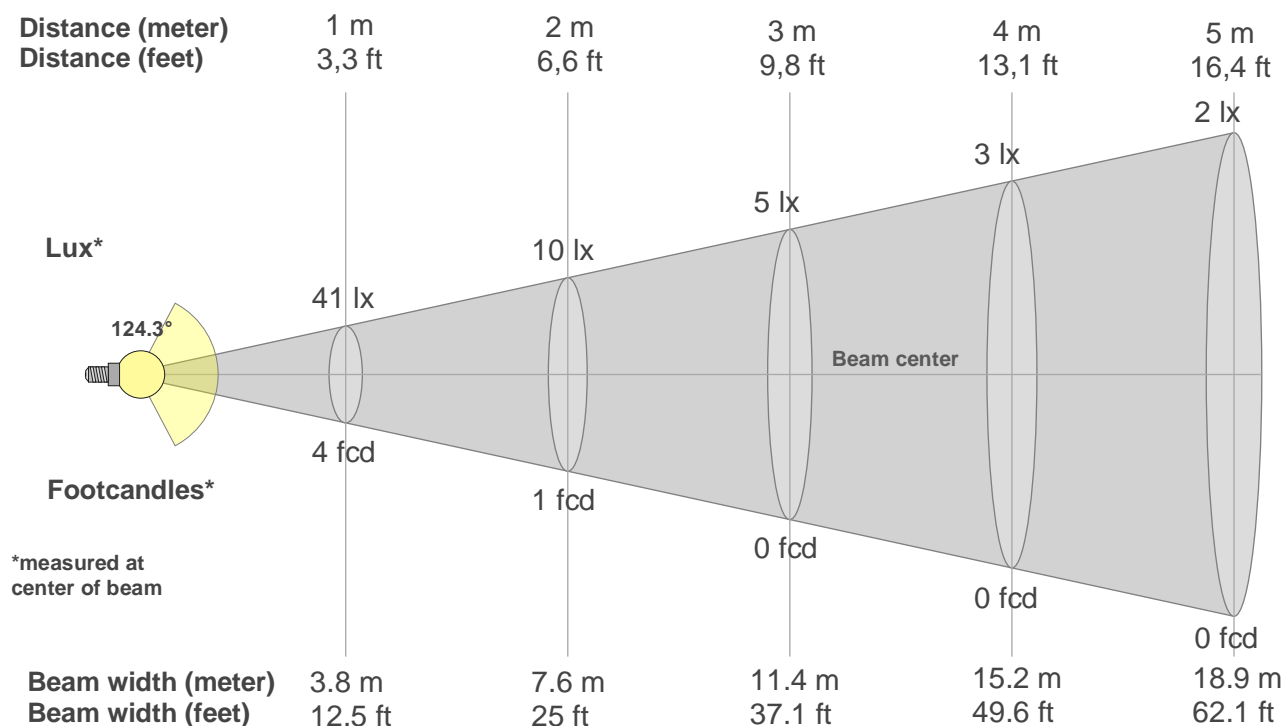
Fidelity index Rf

Rg 99.9

Gamut index Rg

| Hue Bin | R _f | Shifts (%) | |
|---------|----------------|------------|-----|
| | | Chroma | Hue |
| 1 | 95 | -1% | 0% |
| 2 | 97 | -1% | 0% |
| 3 | 95 | -1% | 1% |
| 4 | 93 | -3% | 0% |
| 5 | 92 | -4% | 1% |
| 6 | 96 | -1% | 1% |
| 7 | 95 | -3% | 1% |
| 8 | 94 | -2% | 3% |
| 9 | 90 | -2% | 7% |
| 10 | 87 | -1% | 8% |
| 11 | 85 | 3% | 10% |
| 12 | 90 | 4% | 4% |
| 13 | 97 | 1% | 0% |
| 14 | 90 | 10% | -3% |
| 15 | 91 | 2% | -3% |
| 16 | 90 | 2% | -6% |





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 |
| 41lx | 10lx | 5lx | 3lx | 2lx | 1lx | 1lx | 1lx | 1lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx |
| 3.8fcd | 0.9fcd | 0.4fcd | 0.2fcd | 0.2fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd |

Intensities in 0° c-plane

| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| 40.7 | 40.6 | 40.3 | 39.3 | 37.8 | 34.5 | 28.4 | 21.3 | 17.3 | 16.7 | 13.4 | 7.8 | 1.1 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 |
| 100% | 100% | 99% | 97% | 93% | 85% | 70% | 52% | 43% | 41% | 33% | 19% | 3% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |

Intensities in 90° c-plane

| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 40.7 | 40.2 | 38.8 | 36.4 | 32.9 | 28.5 | 22.9 | 16.4 | 9.4 | 3.3 | 0.6 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| 100% | 99% | 95% | 89% | 81% | 70% | 56% | 40% | 23% | 8% | 2% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |

Intensities in 180° c-plane

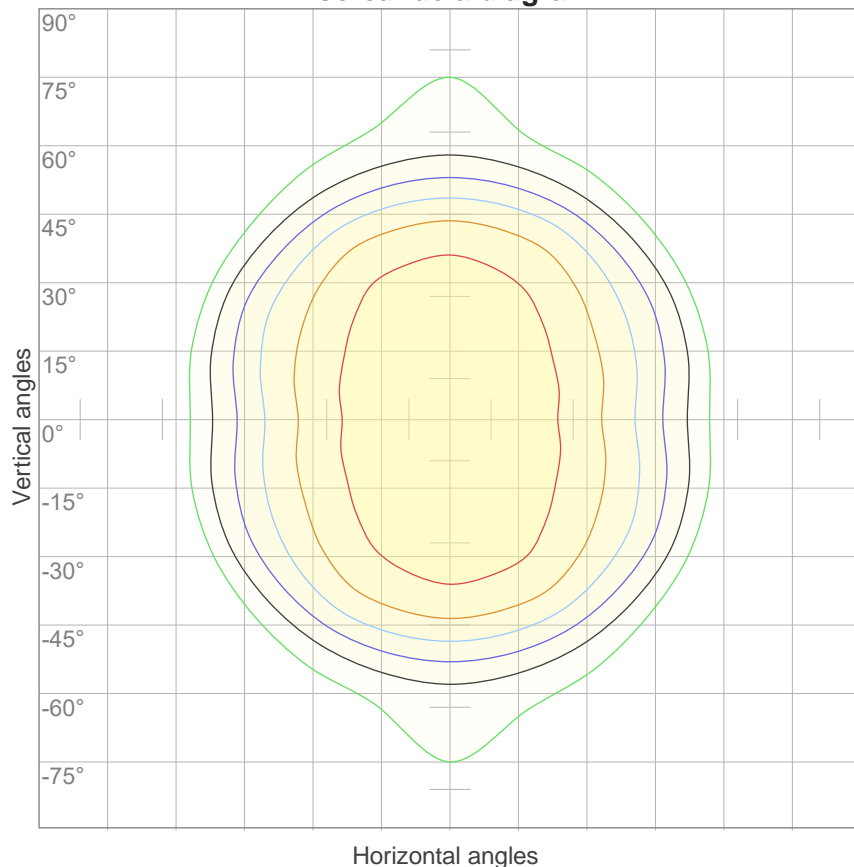
| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| 40.7 | 40.6 | 40.3 | 39.3 | 37.8 | 34.5 | 28.4 | 21.3 | 17.3 | 16.7 | 13.4 | 7.8 | 1.1 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 |
| 100% | 100% | 99% | 97% | 93% | 85% | 70% | 52% | 43% | 41% | 33% | 19% | 3% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |

Intensities in 270° c-plane

| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 40.7 | 40.2 | 38.8 | 36.4 | 32.9 | 28.5 | 22.9 | 16.4 | 9.4 | 3.3 | 0.6 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| 100% | 99% | 95% | 89% | 81% | 70% | 56% | 40% | 23% | 8% | 2% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 124.3° | 189.8° | 203.1° | 67.5% | 44.2% |

iso-candela diagram



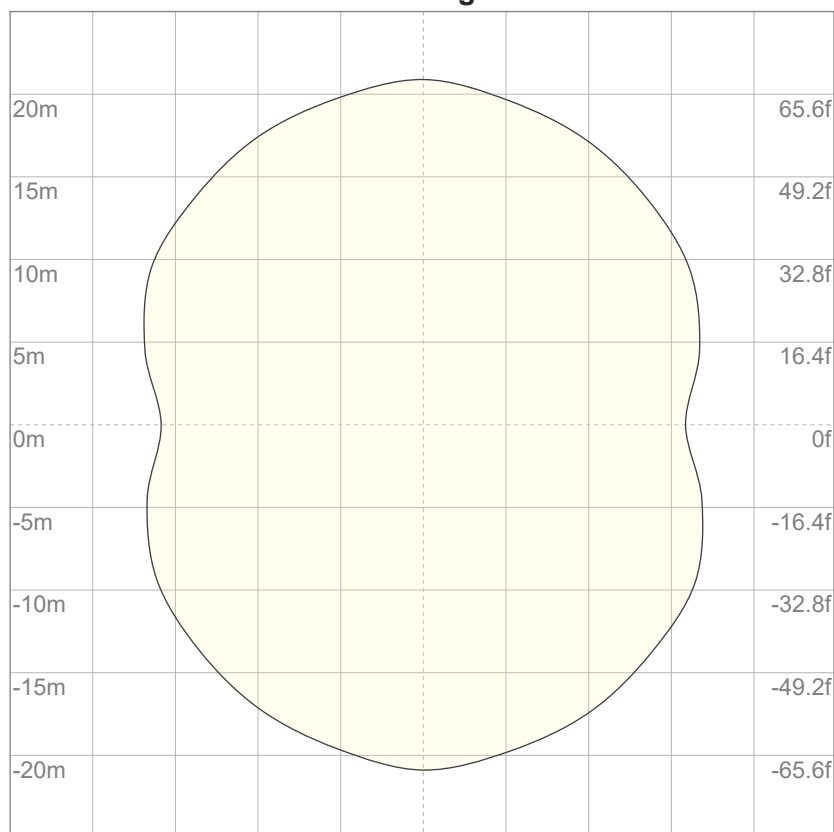
| | |
|-----|-------|
| 10% | 4 cd |
| 20% | 8 cd |
| 30% | 12 cd |
| 40% | 16 cd |
| 50% | 20 cd |
| 60% | 24 cd |
| 70% | 28 cd |
| 80% | 33 cd |
| 90% | 37 cd |

Conditions:

Number of c-planes: 12

Candela at center: 41 cd

iso-lux diagram



| | |
|-----|----------|
| 3% | 12.2m lx |
| 5% | 20.3m lx |
| 10% | 40.7m lx |
| 30% | 0.122 lx |
| 50% | 0.203 lx |

Conditions:

Number of c-planes: 12

Lux at center: 0.407 lx

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

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 | | | | |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Variation of the observer position for the luminaire distance S | | | | | | | | | | |
| n/a | n/a | | | | | n/a | | | | |
| n/a | n/a | | | | | n/a | | | | |
| n/a | n/a | | | | | n/a | | | | |
| CIE 117-1995. Corrected glare indices referring to 153 lm total luminous flux | | | | | | | | | | |

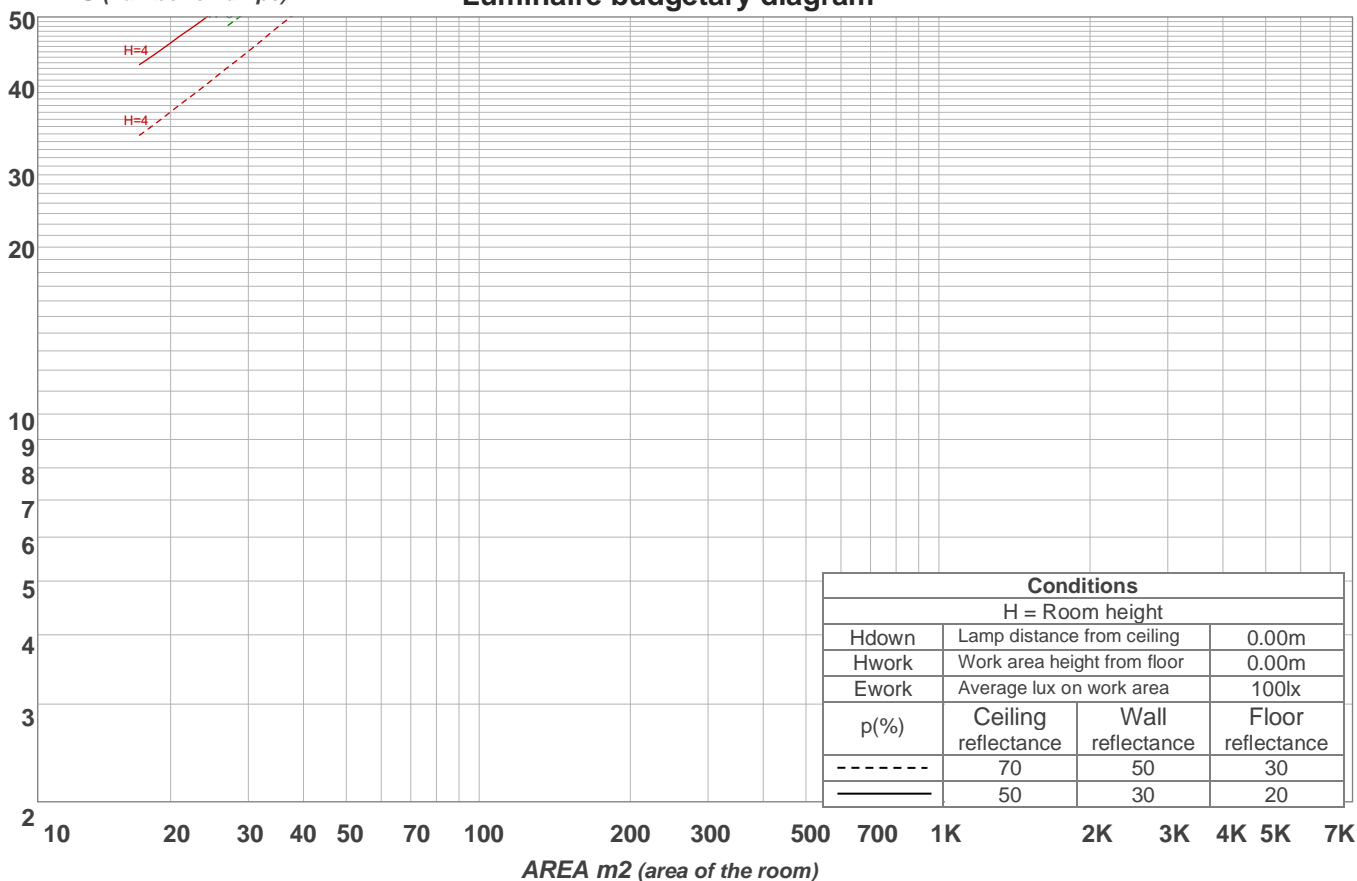
UGR data could not be calculated due to missing/wrong symmetry. Goto Edit->Photometric->Corrections and select Correct asymmetry.

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 | 118 | 118 | 118 | 118 | 114 | 114 | 114 | 114 | 108 | 108 | 108 | 102 | 102 | 102 | 97 | 97 | 97 | 94 |
| 1 | 105 | 99 | 94 | 90 | 102 | 97 | 92 | 88 | 91 | 87 | 84 | 86 | 83 | 80 | 82 | 79 | 77 | 74 |
| 2 | 95 | 86 | 78 | 72 | 92 | 83 | 76 | 70 | 79 | 73 | 68 | 74 | 70 | 65 | 71 | 67 | 63 | 60 |
| 3 | 86 | 75 | 66 | 59 | 83 | 73 | 64 | 58 | 69 | 62 | 56 | 65 | 59 | 54 | 62 | 57 | 53 | 50 |
| 4 | 79 | 66 | 56 | 49 | 76 | 64 | 55 | 48 | 61 | 53 | 47 | 58 | 51 | 46 | 55 | 49 | 45 | 42 |
| 5 | 72 | 58 | 49 | 42 | 69 | 57 | 48 | 41 | 54 | 46 | 40 | 51 | 45 | 39 | 49 | 43 | 38 | 36 |
| 6 | 66 | 52 | 43 | 36 | 64 | 51 | 42 | 36 | 49 | 41 | 35 | 46 | 40 | 34 | 44 | 38 | 34 | 31 |
| 7 | 61 | 47 | 38 | 32 | 59 | 46 | 38 | 31 | 44 | 36 | 31 | 42 | 35 | 30 | 40 | 34 | 30 | 27 |
| 8 | 57 | 43 | 34 | 28 | 55 | 42 | 34 | 28 | 40 | 33 | 27 | 39 | 32 | 27 | 37 | 31 | 26 | 24 |
| 9 | 53 | 39 | 31 | 25 | 51 | 39 | 30 | 25 | 37 | 30 | 25 | 35 | 29 | 24 | 34 | 28 | 24 | 22 |
| 10 | 50 | 36 | 28 | 23 | 48 | 35 | 28 | 22 | 34 | 27 | 22 | 33 | 26 | 22 | 32 | 26 | 21 | 20 |

LAMPS (number of lamps)

Luminaire budgetary diagram



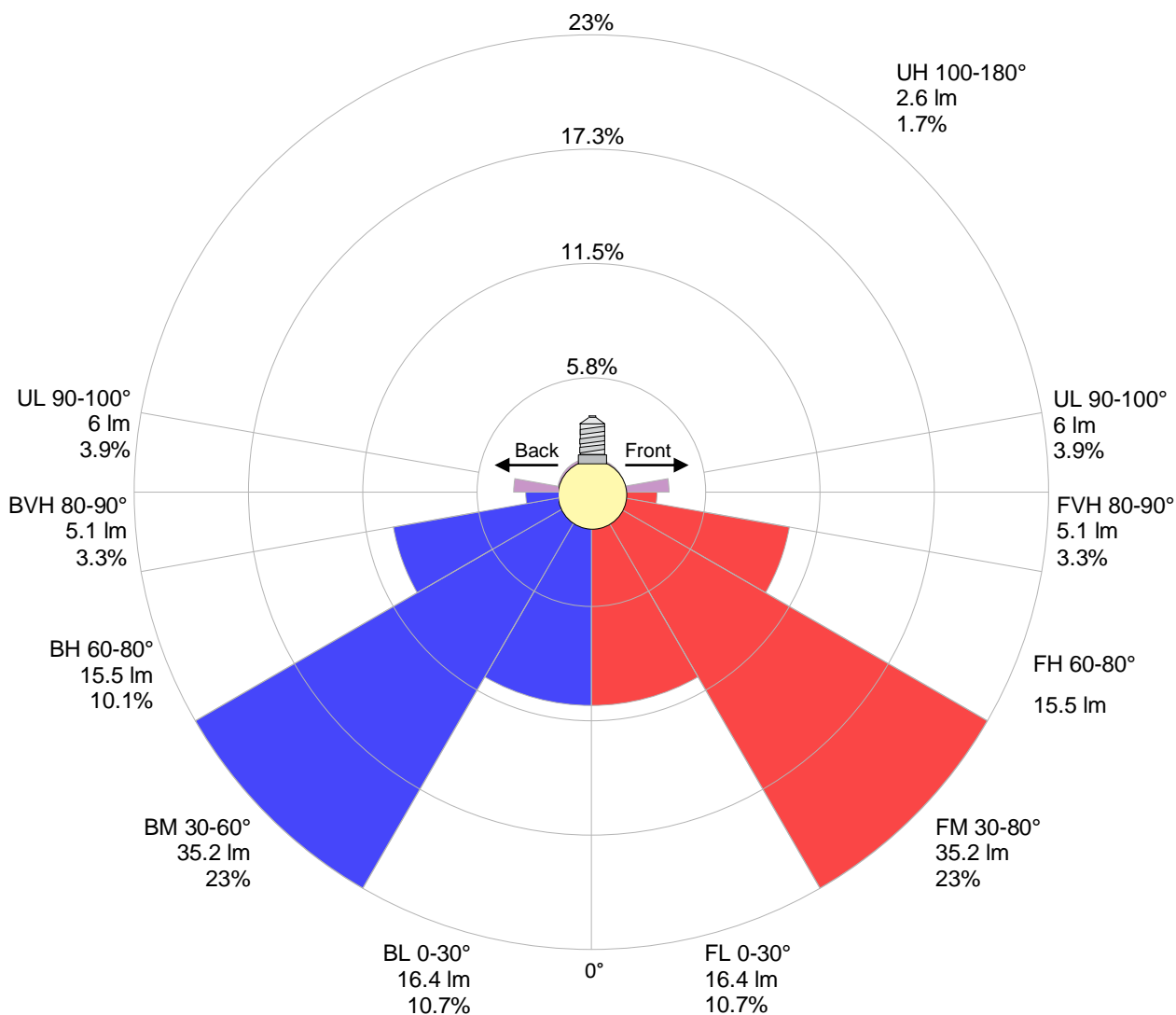
Zonal Lumen Summary

| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| {LUM0-10} | 11.3 lm | 17.7 lm | 22.5 lm | 24.7 lm | 23.2 lm | 18.0 lm | 13.0 lm | 10.1 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 5.98 lm | 1.52 lm | 0.264 lm | 0.210 lm | 0.190 lm | 0.170 lm | 0.128 lm | 0.083 lm | 0.030 lm |

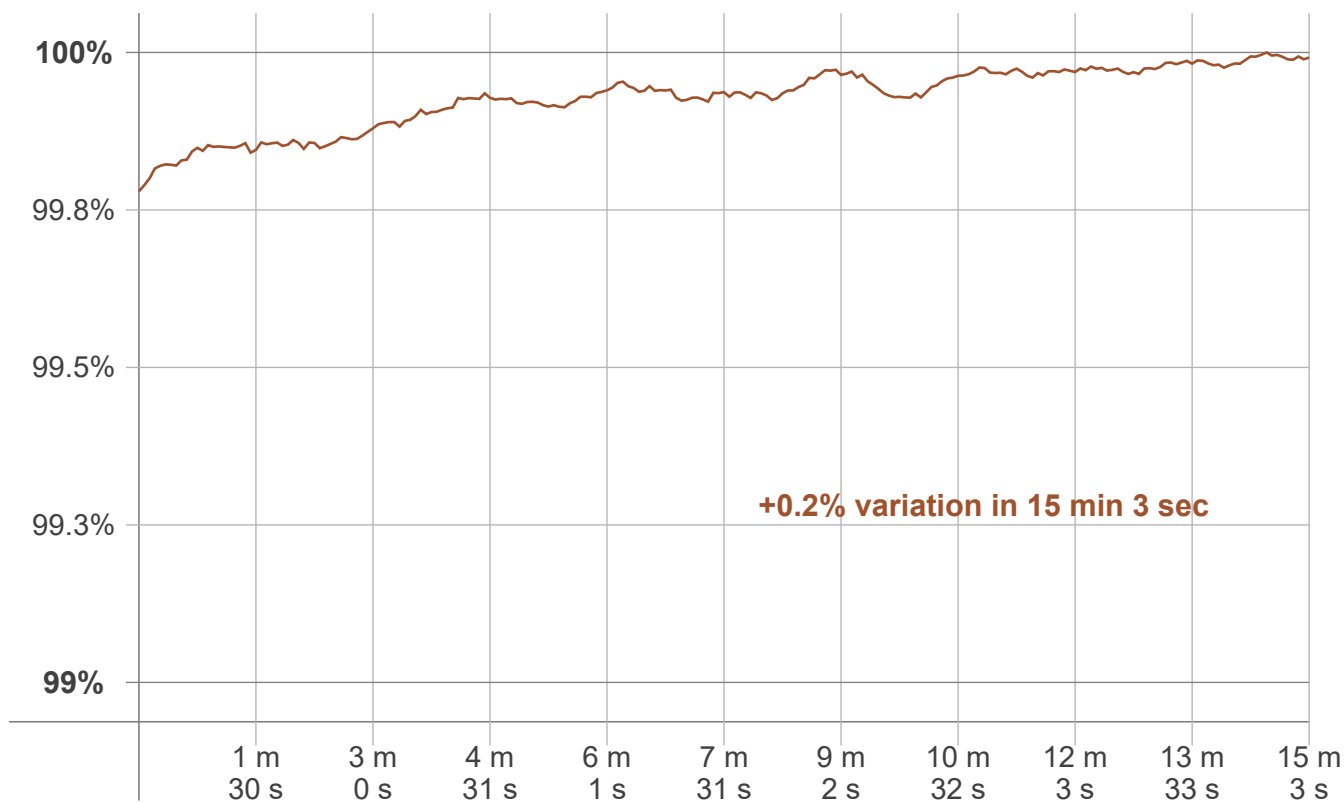
LCS table

| BUG rating: | B0 U1 G0 | |
|-------------------|----------|----------|
| Forward light | Lumens | Lumens % |
| Low(0-30): | 16.4 | 10.7% |
| Medium(30-60): | 35.2 | 23% |
| High(60-80): | 15.5 | 10.1% |
| Very high(80-90): | 5.1 | 3.3% |
| Back light | | |
| Low(0-30): | 16.4 | 10.7% |
| Medium(30-60): | 35.2 | 23% |
| High(60-80): | 15.5 | 10.1% |
| Very high(80-90): | 5.1 | 3.3% |
| Uplight | | |
| Low(90-100): | 6 | 3.9% |
| High(100-180): | 2.6 | 1.7% |

LCS graph



Warmup curve



Warmup result

| | |
|------------------|---------------------------------|
| Warmup time: | Lamp stabilized in 15 min 3 sec |
| Warmup variation | +0.2% |

Warmup conditions

| | |
|--------------------|--------|
| Stable period: | 15 min |
| Stable change max: | 2.0% |
| Minimum time: | 15 min |

Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 3904 K | -2 K | 3902 K |

Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 153 lm | + 1m | 153 lm |

Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

| Flicker frequency: | | n/a Hz | |
|-----------------------|-------|---------------|-------|
| Flicker index: | n/a | JA8/10 40Hz | n/a % |
| Flicker percentage: | n/a % | JA8/10 90Hz | n/a % |
| SVM: (Visual flicker) | n/a | JA8/10 200Hz | n/a % |
| PstLM | n/a | JA8/10 400Hz | n/a % |
| Mp | n/a | JA8/10 1000Hz | n/a % |

Flicker conditions:

| | |
|--------------|--------------------|
| Sample rate: | n/a samples/second |
|--------------|--------------------|