

Light efficiency:

n/a Lumen/Watt

Light quality:

CRI: 93.9

Color temperature:

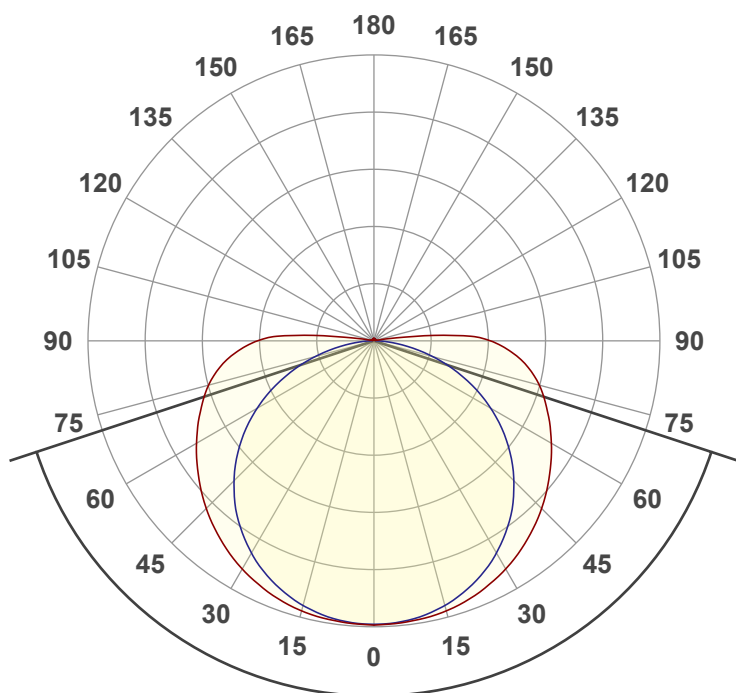
2735 K

Output: 150 lm

Peak: 37.1 cd

Power: 0.00 W

PF: n/a



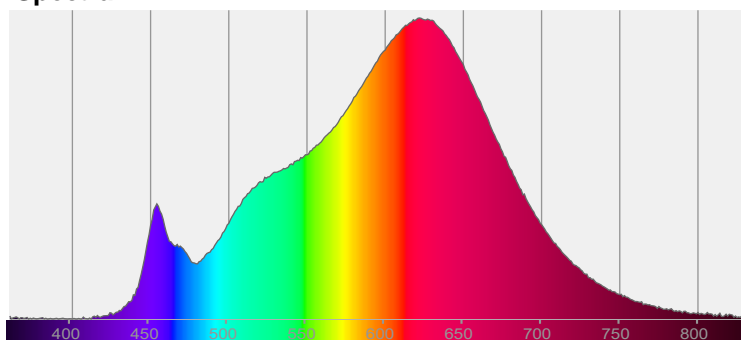
Beam angle

143.5°

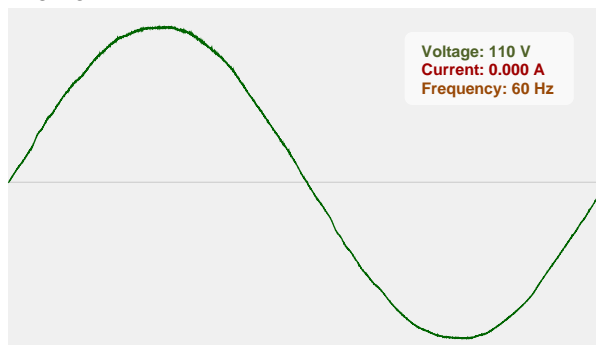


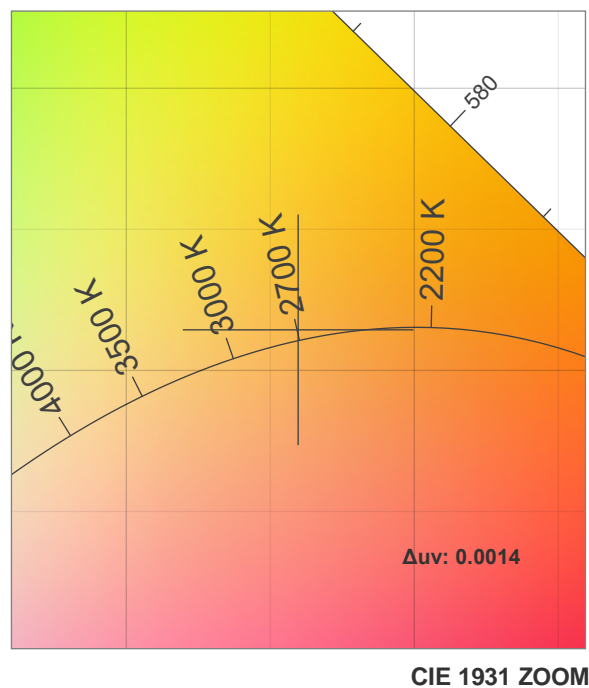
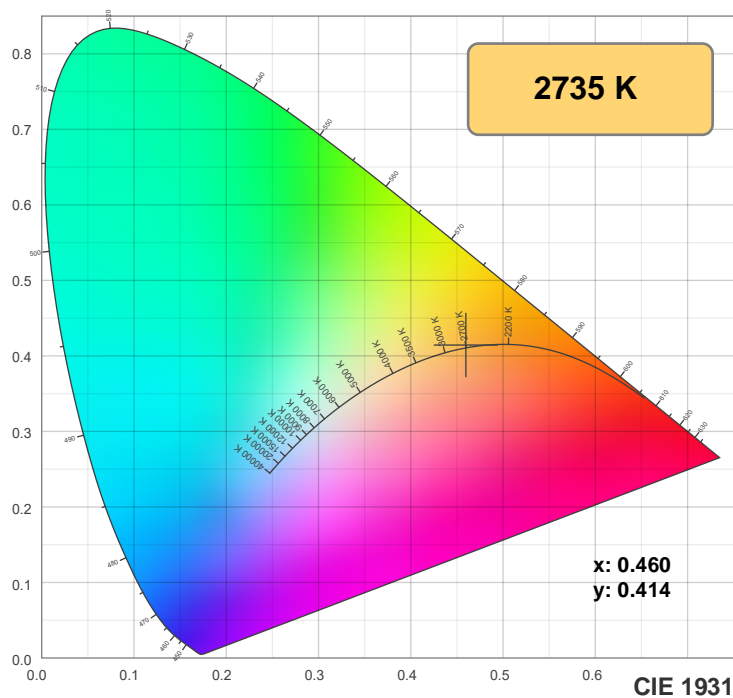
CIE 1931
x: 0.460
y: 0.414

Spectra

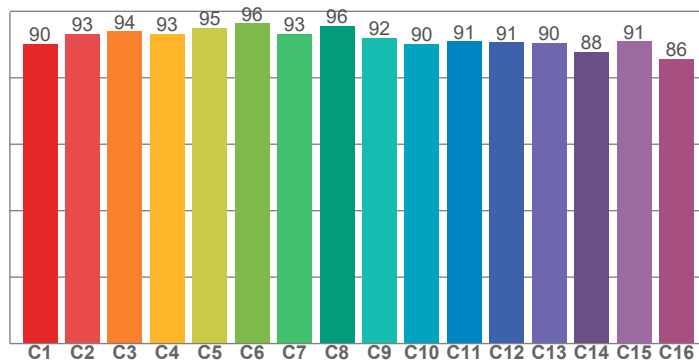


Power

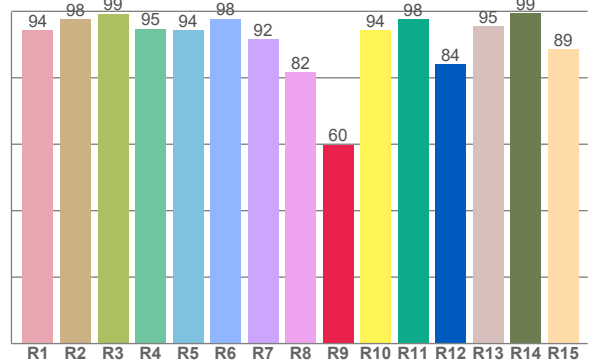




TM30: 91.8



CRI: 93.9 (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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 94.3 | 97.7 | 99.2 | 94.7 | 94.3 | 97.8 | 91.6 | 81.6 | 59.8 | 94.2 | 97.5 | 84.0 | 95.4 | 99.4 | 88.6 |

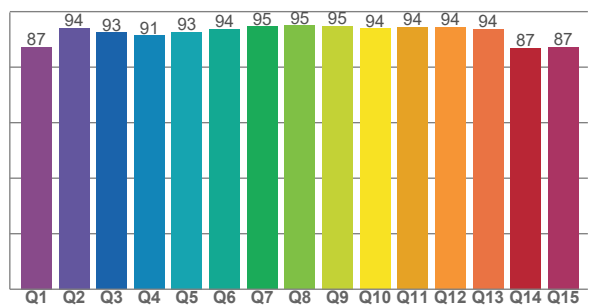
TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 90.2 | 93.1 | 94.0 | 93.3 | 95.0 | 96.3 | 93.3 | 95.6 | 92.1 | 90.2 | 90.9 | 90.6 | 90.4 | 87.8 | 90.9 | 85.6 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 87.3 | 94.2 | 92.5 | 91.4 | 92.6 | 93.8 | 94.6 | 95.0 | 94.7 | 93.9 | 94.4 | 94.5 | 93.6 | 86.8 | 87.3 |

CQS: 91.7



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 |
| 2735 K | 93.9 | 59.8 | 91.8 | 97.1 | 91.7 | 0.460 | 0.414 | 0.261 | 0.353 | 0.0014 |

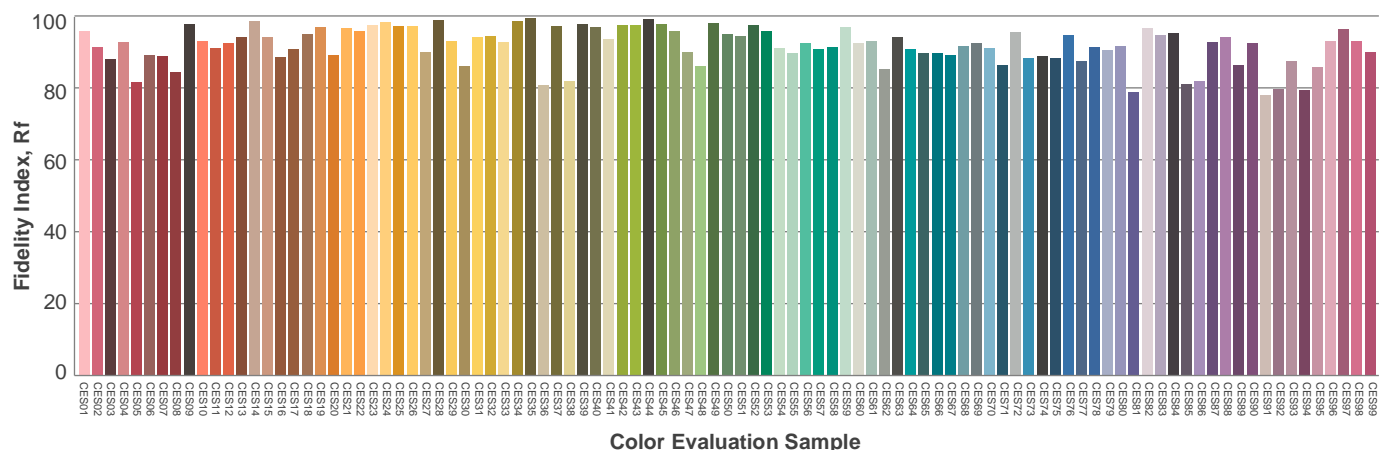
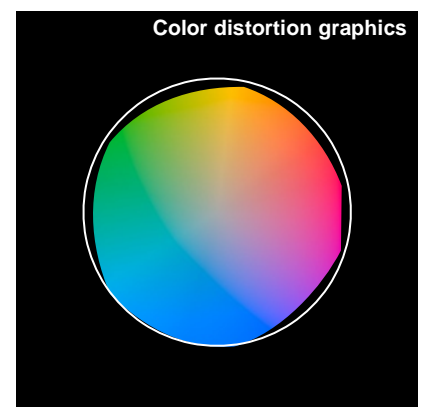
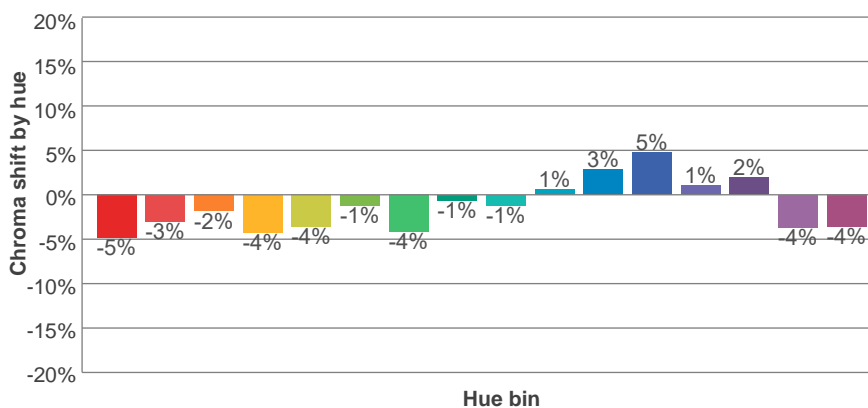
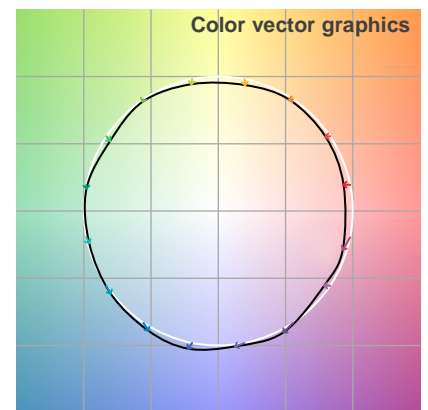
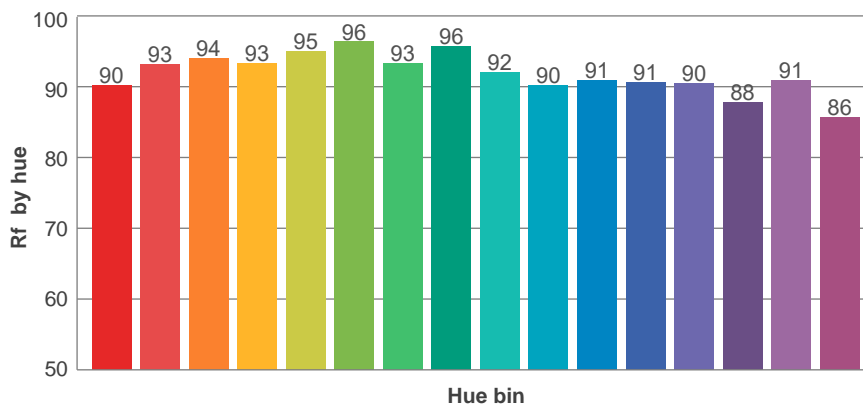
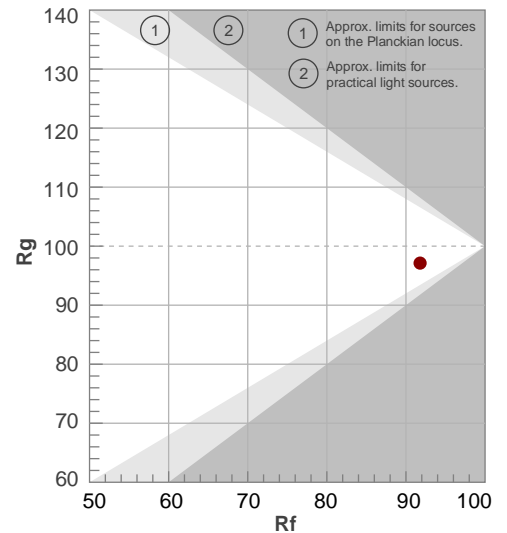
Rf 91.8

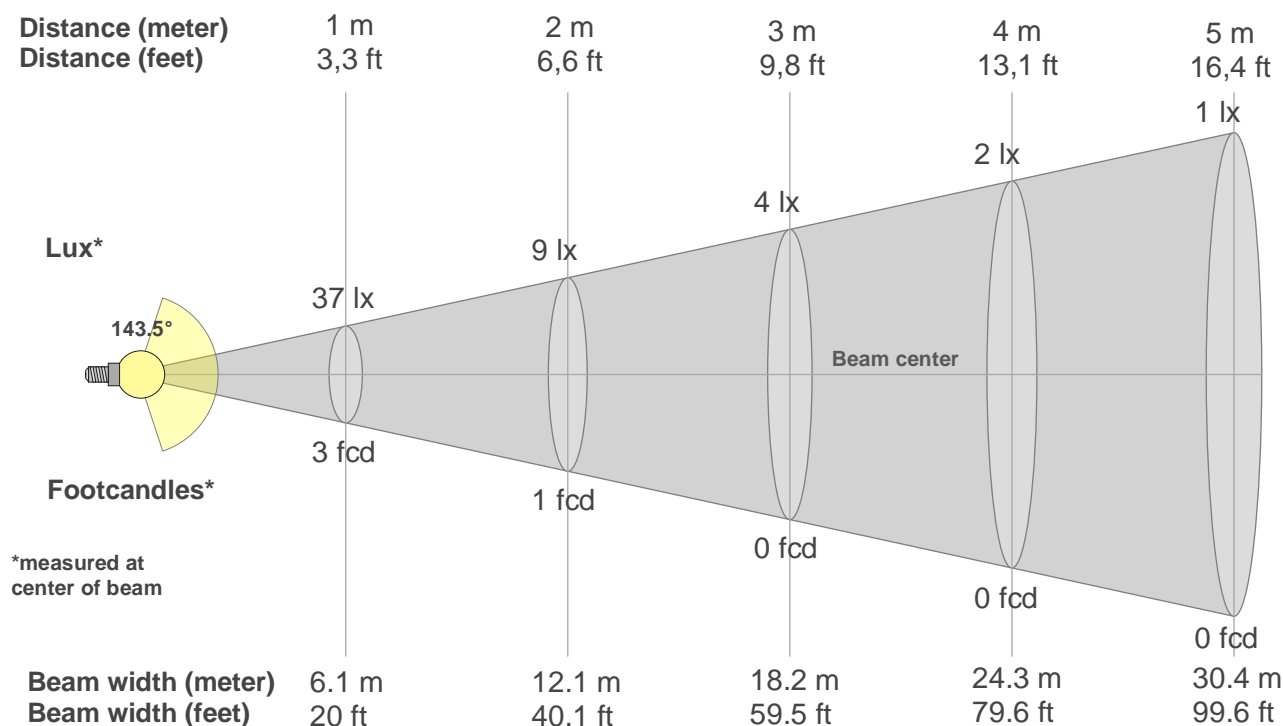
Fidelity index Rf

Rg 97.1

Gamut index Rg

| Hue Bin | R _f | Shifts (%) | |
|---------|----------------|------------|------|
| | | Chroma | Hue |
| 1 | 90 | -5% | 1% |
| 2 | 93 | -3% | 2% |
| 3 | 94 | -2% | 2% |
| 4 | 93 | -4% | -1% |
| 5 | 95 | -4% | 1% |
| 6 | 96 | -1% | 2% |
| 7 | 93 | -4% | 1% |
| 8 | 96 | -1% | 3% |
| 9 | 92 | -1% | 5% |
| 10 | 90 | 1% | 7% |
| 11 | 91 | 3% | 6% |
| 12 | 91 | 5% | -2% |
| 13 | 90 | 1% | -7% |
| 14 | 88 | 2% | -10% |
| 15 | 91 | -4% | -2% |
| 16 | 86 | -4% | -10% |





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 |
| 37lx | 9lx | 4lx | 2lx | 1lx | 1lx | 1lx | 1lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx |
| 3.4fcd | 0.9fcd | 0.4fcd | 0.2fcd | 0.1fcd | 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° |
|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| 37.0 | 36.8 | 36.2 | 34.9 | 33.1 | 30.9 | 28.4 | 25.8 | 23.2 | 20.1 | 15.2 | 1.7 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| 100% | 100% | 98% | 94% | 90% | 84% | 77% | 70% | 63% | 54% | 41% | 5% | 1% | 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° |
|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 37.0 | 36.5 | 35.2 | 32.9 | 29.7 | 25.8 | 21.1 | 15.7 | 9.9 | 4.2 | 0.6 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 |
| 100% | 99% | 95% | 89% | 80% | 70% | 57% | 43% | 27% | 11% | 2% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |

Intensities in 180° c-plane

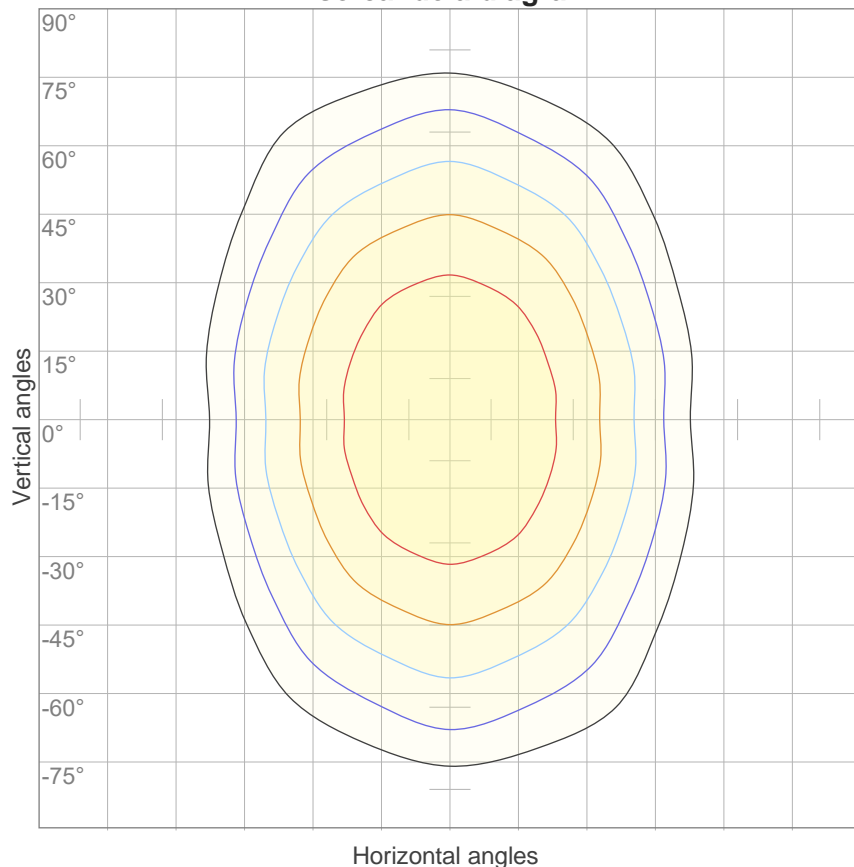
| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| 37.0 | 36.8 | 36.2 | 34.9 | 33.1 | 30.9 | 28.4 | 25.8 | 23.2 | 20.1 | 15.2 | 1.7 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| 100% | 100% | 98% | 94% | 90% | 84% | 77% | 70% | 63% | 54% | 41% | 5% | 1% | 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° |
|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 37.0 | 36.5 | 35.2 | 32.9 | 29.7 | 25.8 | 21.1 | 15.7 | 9.9 | 4.2 | 0.6 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 |
| 100% | 99% | 95% | 89% | 80% | 70% | 57% | 43% | 27% | 11% | 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 |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 143.5° | 185.9° | 192.8° | 62.5% | 40.3% |

iso-candela diagram



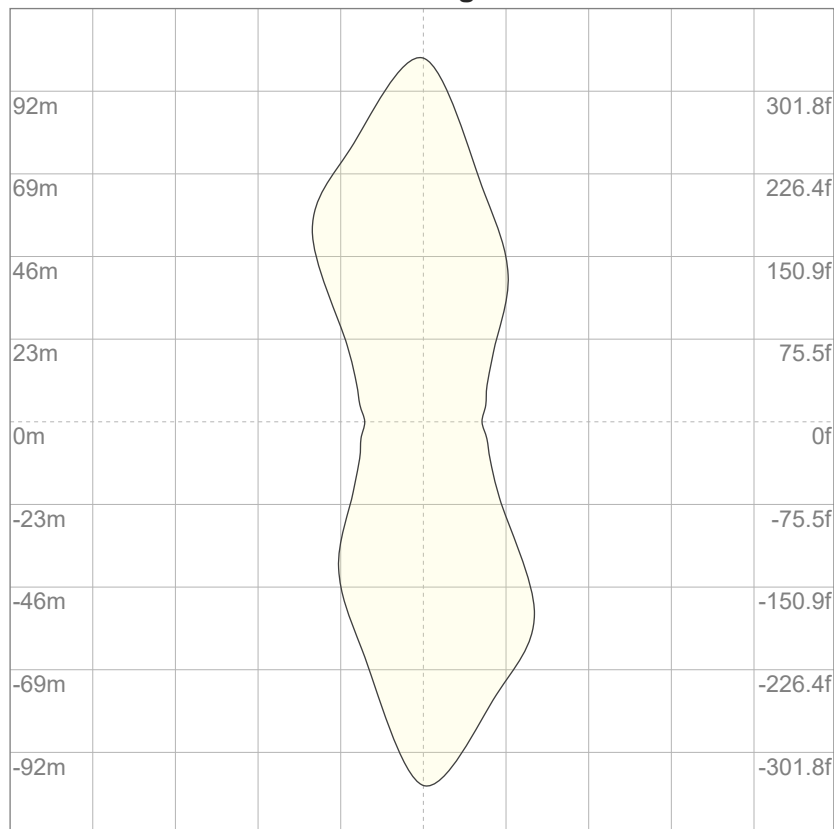
| | |
|-----|-------|
| 10% | 4 cd |
| 20% | 7 cd |
| 30% | 11 cd |
| 40% | 15 cd |
| 50% | 18 cd |
| 60% | 22 cd |
| 70% | 26 cd |
| 80% | 30 cd |
| 90% | 33 cd |

Conditions:

Number of c-planes: 12

Candela at center: 37 cd

iso-lux diagram



| | |
|-----|----------|
| 3% | 11.1m lx |
| 5% | 18.5m lx |
| 10% | 37.0m lx |
| 30% | 0.111 lx |
| 50% | 0.185 lx |

Conditions:

Number of c-planes: 12

Lux at center: 0.370 lx

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

| | | | | | | | | | | |
|---|---|-----|-----|-----|-----|---|-----|-----|-----|-----|
| 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 150 lm total luminous flux | | | | | | | | | | |

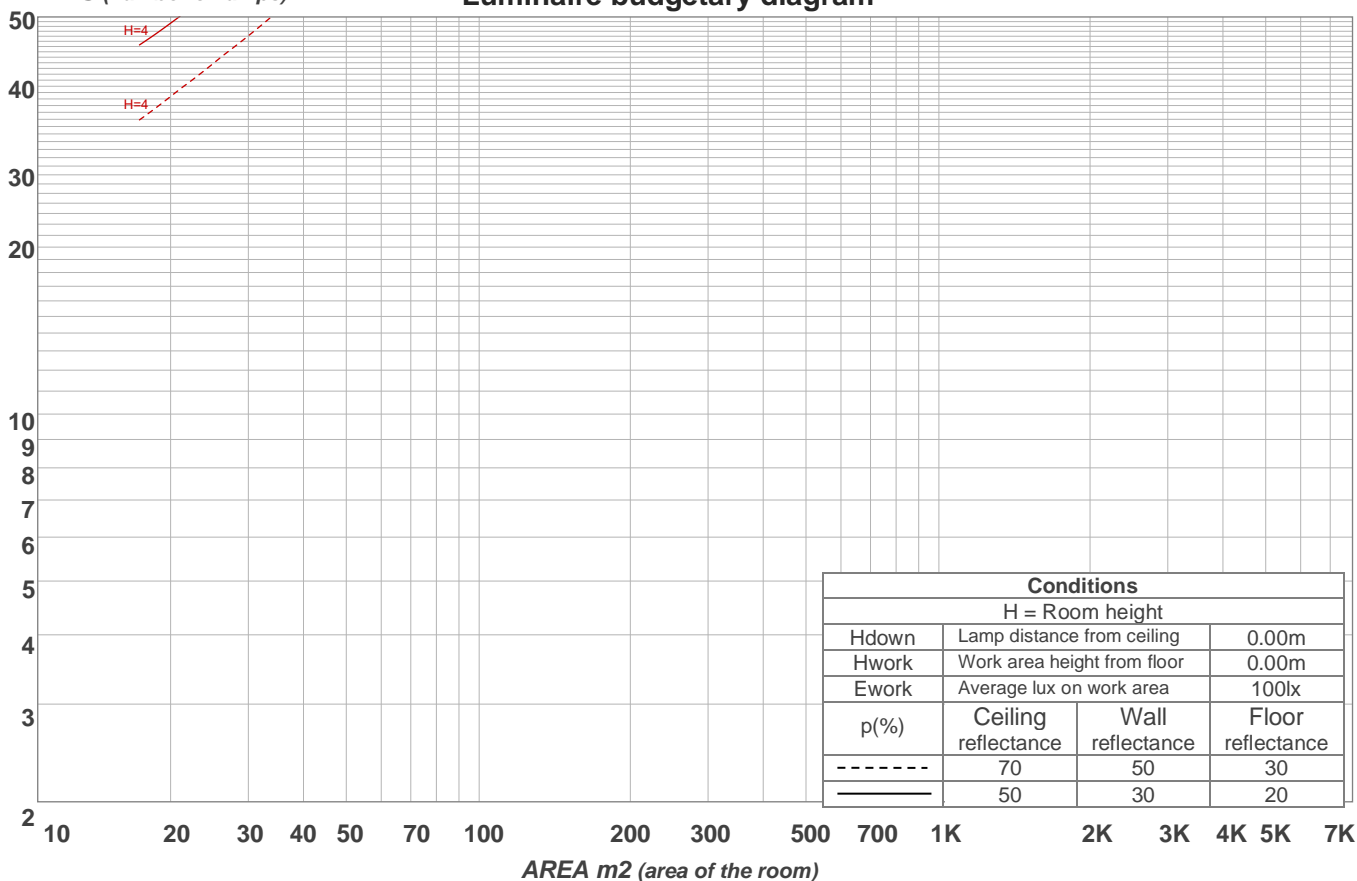
Viso Systems Aps – Copenhagen, Denmark – www.visosystems.com

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 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 103 | 103 | 103 | 98 | 98 | 98 | 96 |
| 1 | 104 | 98 | 92 | 87 | 101 | 95 | 90 | 85 | 90 | 86 | 82 | 85 | 82 | 78 | 81 | 78 | 75 | 73 |
| 2 | 93 | 83 | 75 | 68 | 90 | 81 | 73 | 67 | 77 | 70 | 65 | 73 | 67 | 63 | 69 | 64 | 60 | 58 |
| 3 | 84 | 72 | 63 | 55 | 81 | 70 | 61 | 54 | 66 | 59 | 53 | 63 | 57 | 51 | 60 | 54 | 50 | 47 |
| 4 | 77 | 63 | 53 | 46 | 74 | 61 | 52 | 45 | 58 | 50 | 44 | 55 | 49 | 43 | 53 | 47 | 42 | 39 |
| 5 | 70 | 56 | 46 | 39 | 68 | 55 | 45 | 38 | 52 | 44 | 37 | 49 | 42 | 37 | 47 | 41 | 36 | 33 |
| 6 | 65 | 50 | 40 | 33 | 62 | 49 | 40 | 33 | 47 | 39 | 32 | 45 | 37 | 32 | 43 | 36 | 31 | 29 |
| 7 | 60 | 45 | 36 | 29 | 58 | 44 | 35 | 29 | 42 | 34 | 28 | 40 | 33 | 28 | 39 | 32 | 27 | 25 |
| 8 | 56 | 41 | 32 | 26 | 54 | 40 | 32 | 26 | 39 | 31 | 25 | 37 | 30 | 25 | 35 | 29 | 24 | 22 |
| 9 | 52 | 38 | 29 | 23 | 50 | 37 | 29 | 23 | 35 | 28 | 23 | 34 | 27 | 22 | 33 | 26 | 22 | 20 |
| 10 | 49 | 35 | 26 | 21 | 47 | 34 | 26 | 21 | 33 | 25 | 20 | 31 | 25 | 20 | 30 | 24 | 20 | 18 |

LAMPS (number of lamps)

Luminaire budgetary diagram



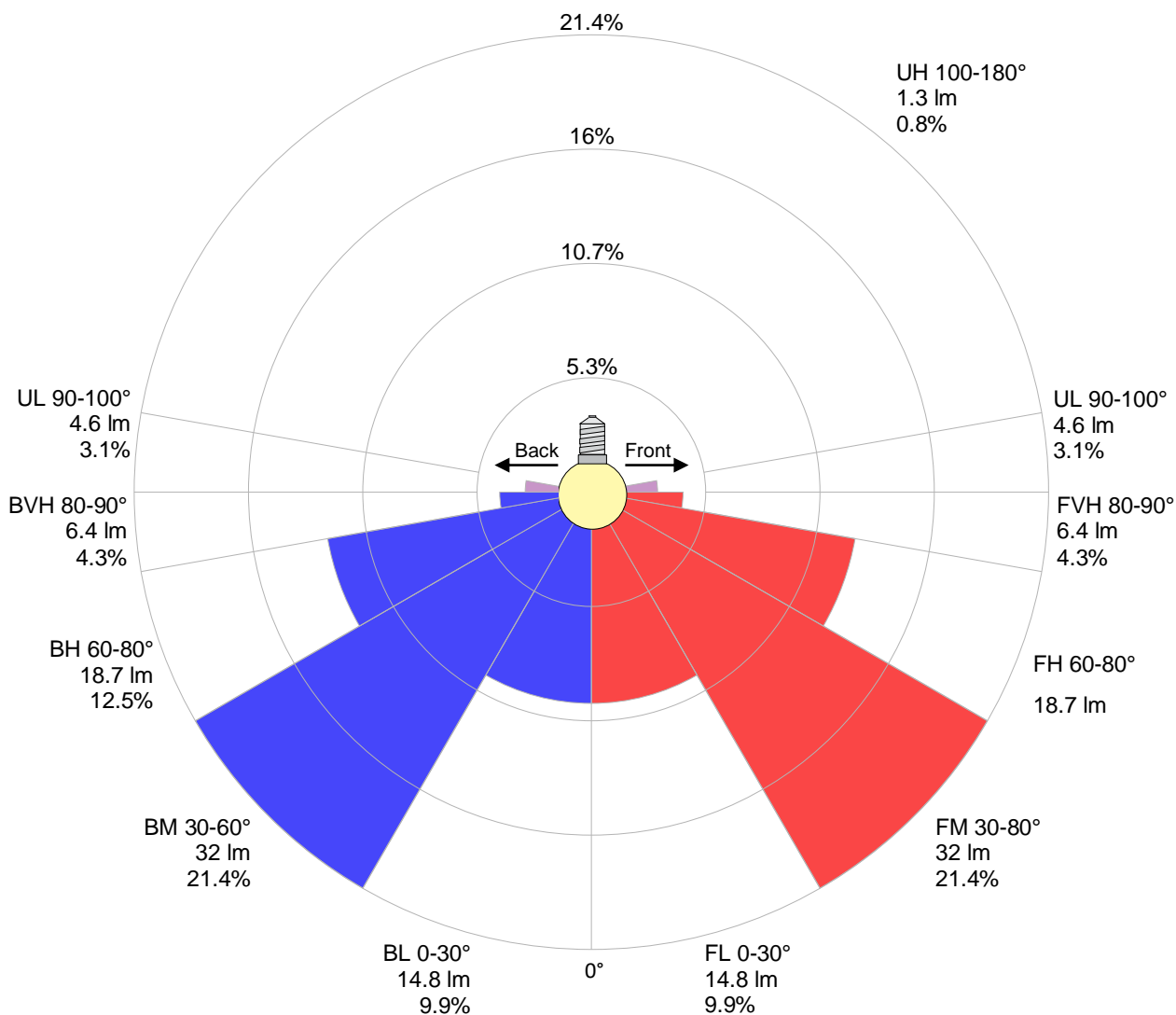
Zonal Lumen Summary

| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| {LUM0-10} | 10.2 lm | 15.9 lm | 19.9 lm | 22.0 lm | 22.1 lm | 20.3 lm | 17.2 lm | 12.8 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 4.63 lm | 0.295 lm | 0.222 lm | 0.202 lm | 0.178 lm | 0.150 lm | 0.113 lm | 0.072 lm | 0.024 lm |

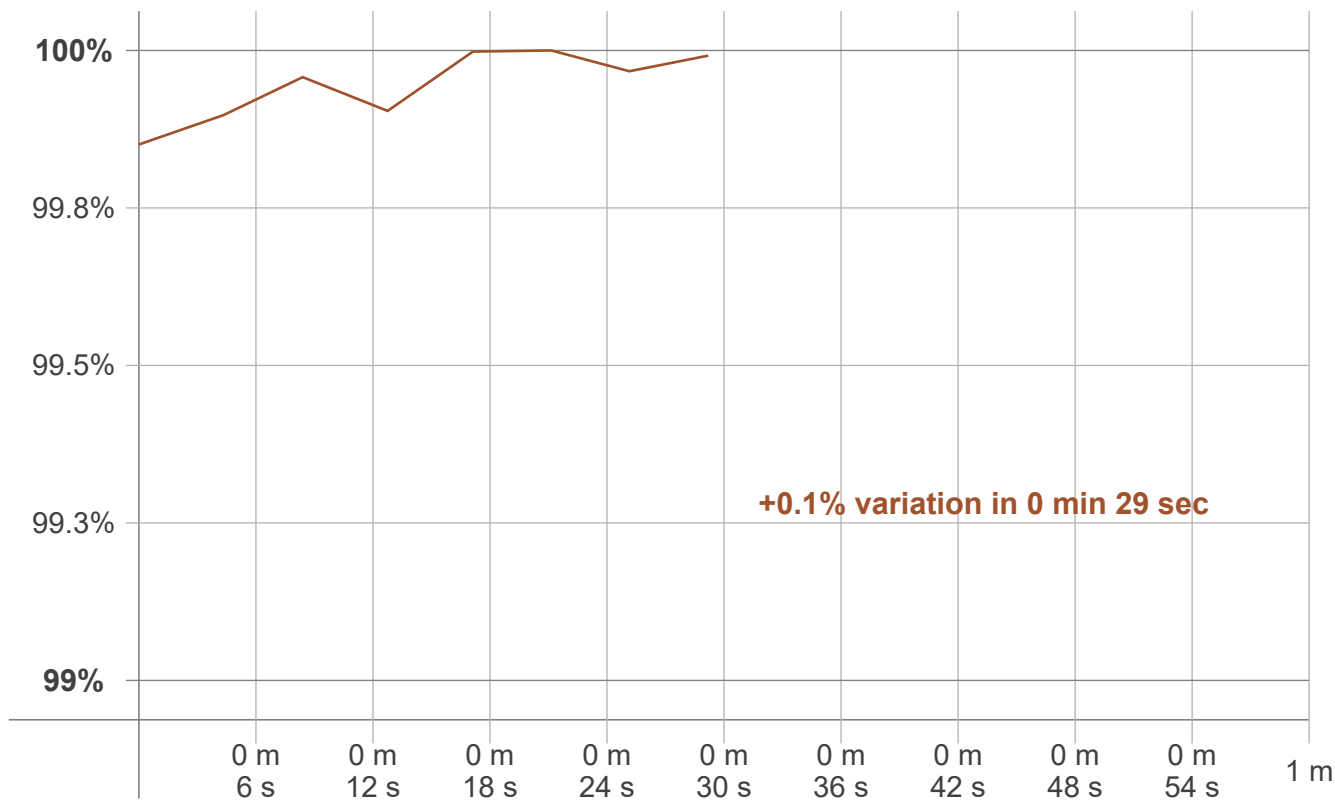
LCS table

| BUG rating: | B0 U1 G0 | |
|-------------------|----------|----------|
| Forward light | Lumens | Lumens % |
| Low(0-30): | 14.8 | 9.9% |
| Medium(30-60): | 32 | 21.4% |
| High(60-80): | 18.7 | 12.5% |
| Very high(80-90): | 6.4 | 4.3% |
| Back light | | |
| Low(0-30): | 14.8 | 9.9% |
| Medium(30-60): | 32 | 21.4% |
| High(60-80): | 18.7 | 12.5% |
| Very high(80-90): | 6.4 | 4.3% |
| Uplight | | |
| Low(90-100): | 4.6 | 3.1% |
| High(100-180): | 1.3 | 0.8% |

LCS graph



Warmup curve



Warmup result

| | |
|------------------|---------------|
| Warmup time: | Not completed |
| Warmup variation | +0.1% |

Warmup conditions

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

Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 2736 K | -1 K | 2735 K |

Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 150 lm | + 1m | 150 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 |
|--------------|--------------------|