

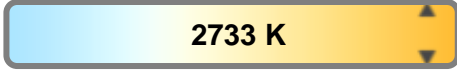
Light efficiency:



Light quality:



Color temperature:

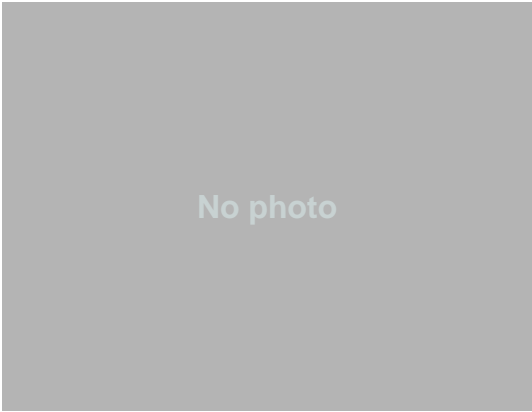


Output: 1154 lm

Peak: 180 cd

Power: 17,5 W

PF: 0,82



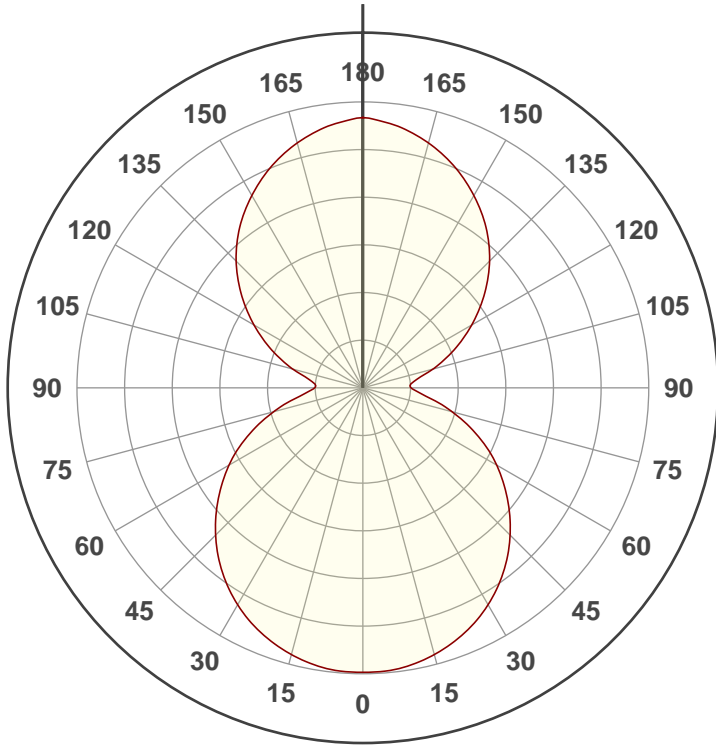
Tracking number: [n/a](#)

Product name:
FM.S 360deg 2700K

Item number:

Date and time:
4/09/2019 11:04:13

Description:

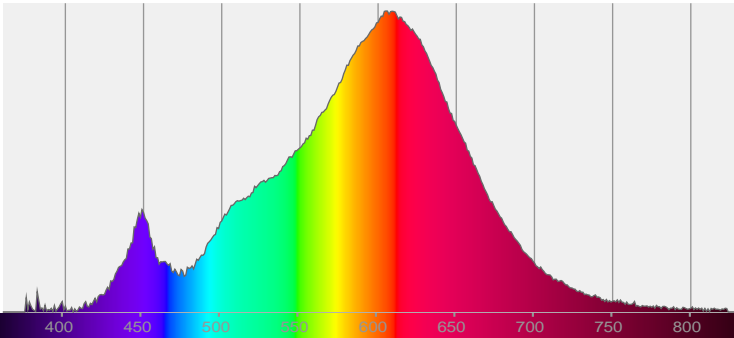


Beam angle **360°**

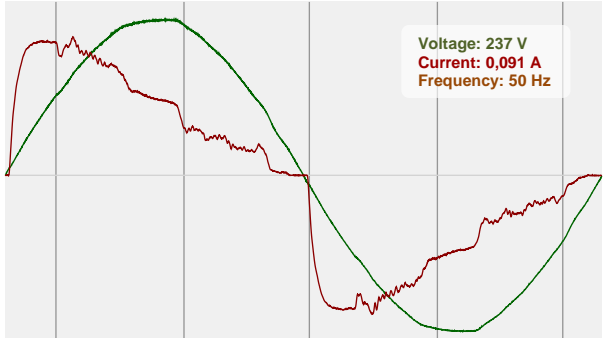


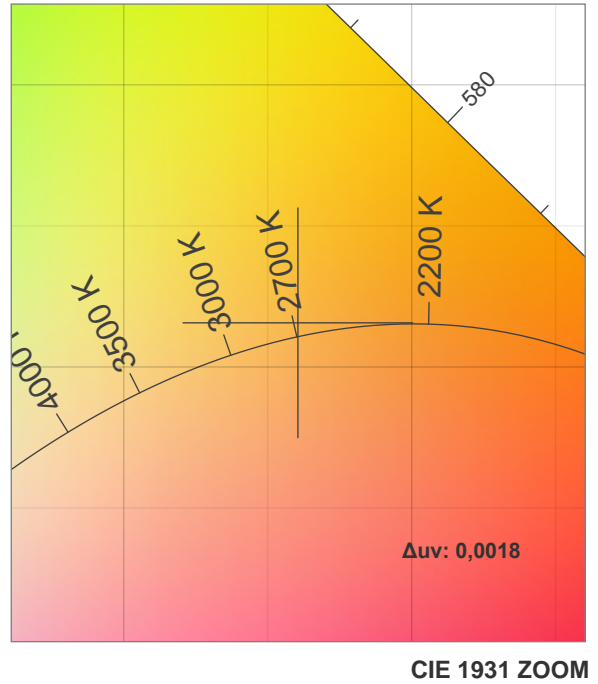
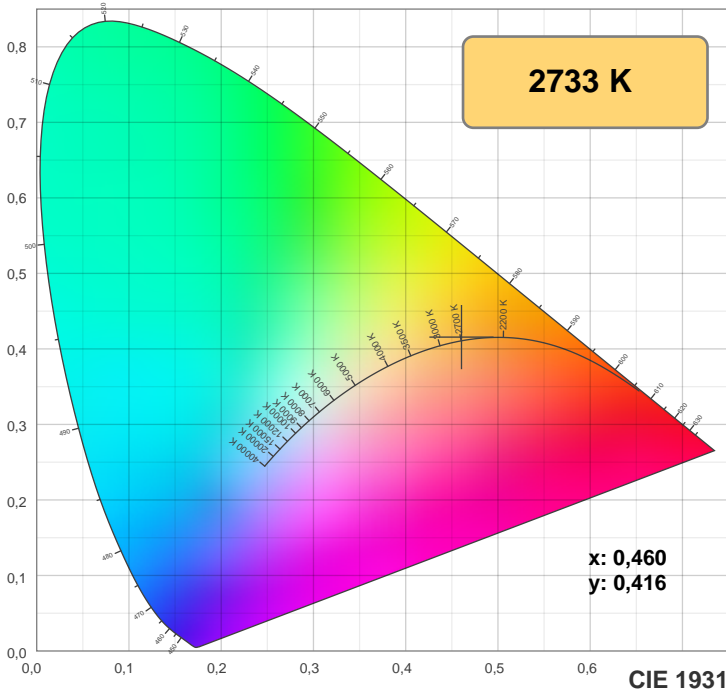
CIE 1931
x: 0,460
y: 0,416

Spectra

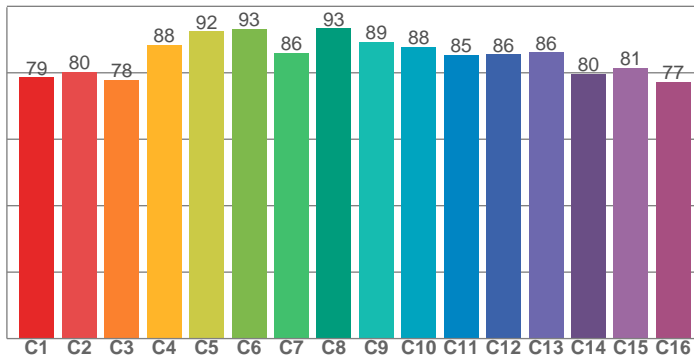


Power

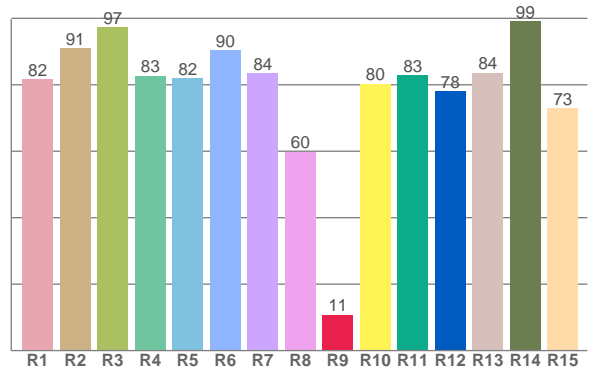




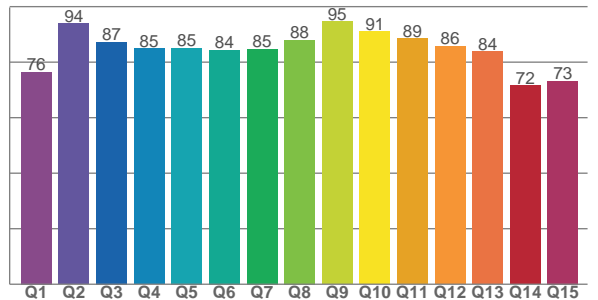
TM30: 85,0



CRI: 83,6 (R1-R8)



CQS: 83,3



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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 81,6 | 91,0 | 97,4 | 82,7 | 81,9 | 90,4 | 83,6 | 59,8 | 10,8 | 80,4 | 82,9 | 78,0 | 83,6 | 99,1 | 73,0 |

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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 78,6 | 80,3 | 77,8 | 88,4 | 92,5 | 93,3 | 86,0 | 93,4 | 89,3 | 87,8 | 85,5 | 85,5 | 86,2 | 79,7 | 81,5 | 77,2 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 76,4 | 94,0 | 87,3 | 84,9 | 85,1 | 84,5 | 84,7 | 88,0 | 94,6 | 91,1 | 88,5 | 85,7 | 83,8 | 71,6 | 73,2 |

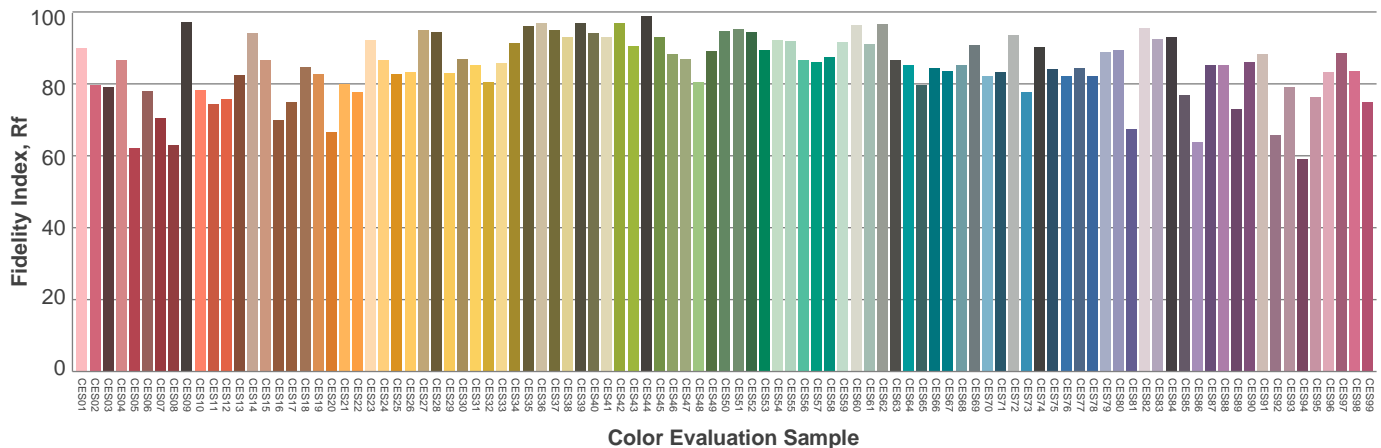
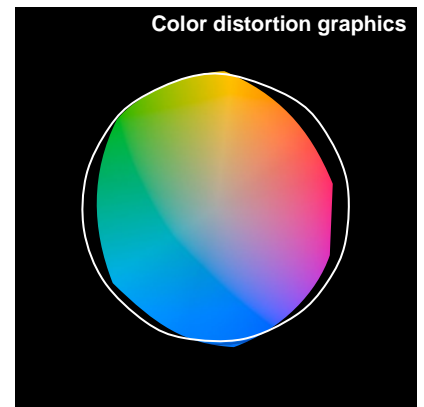
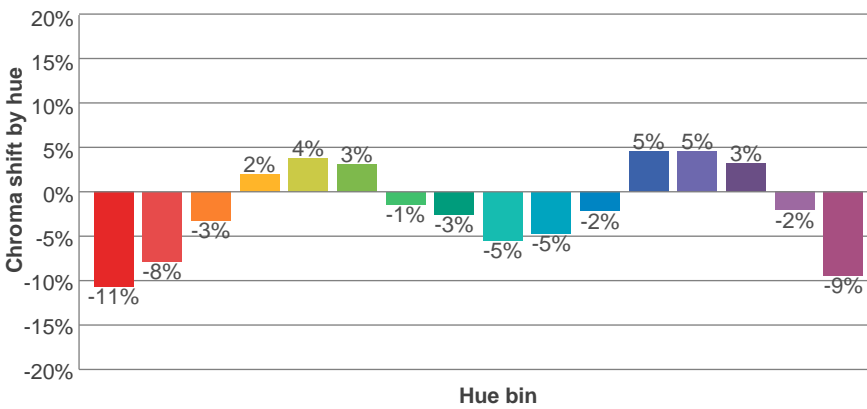
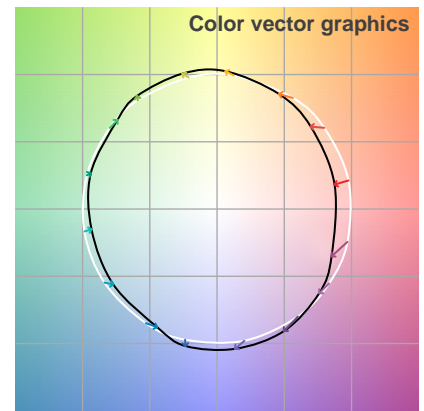
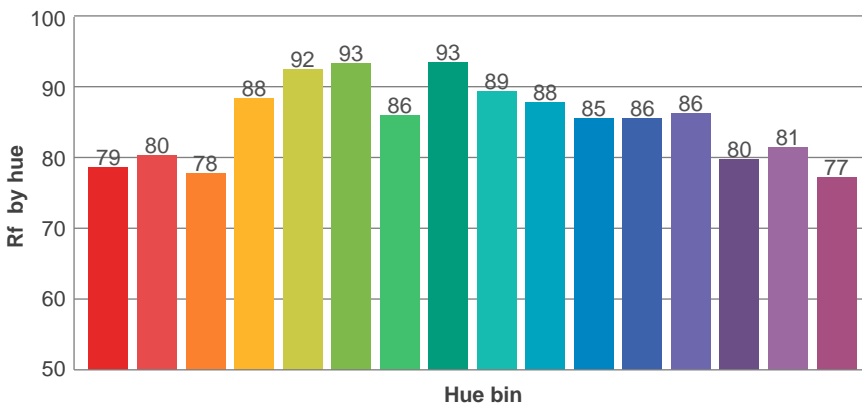
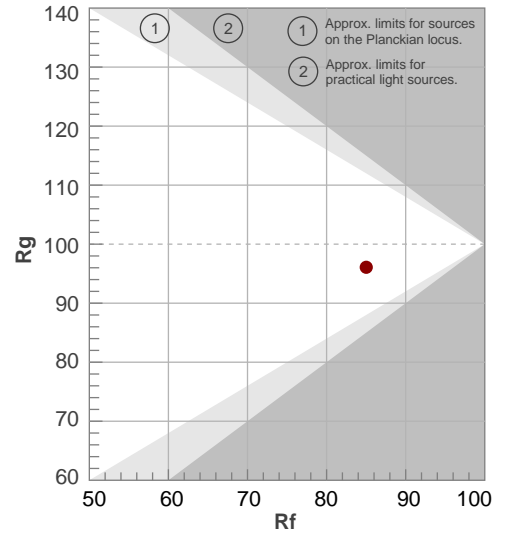
Color parameters

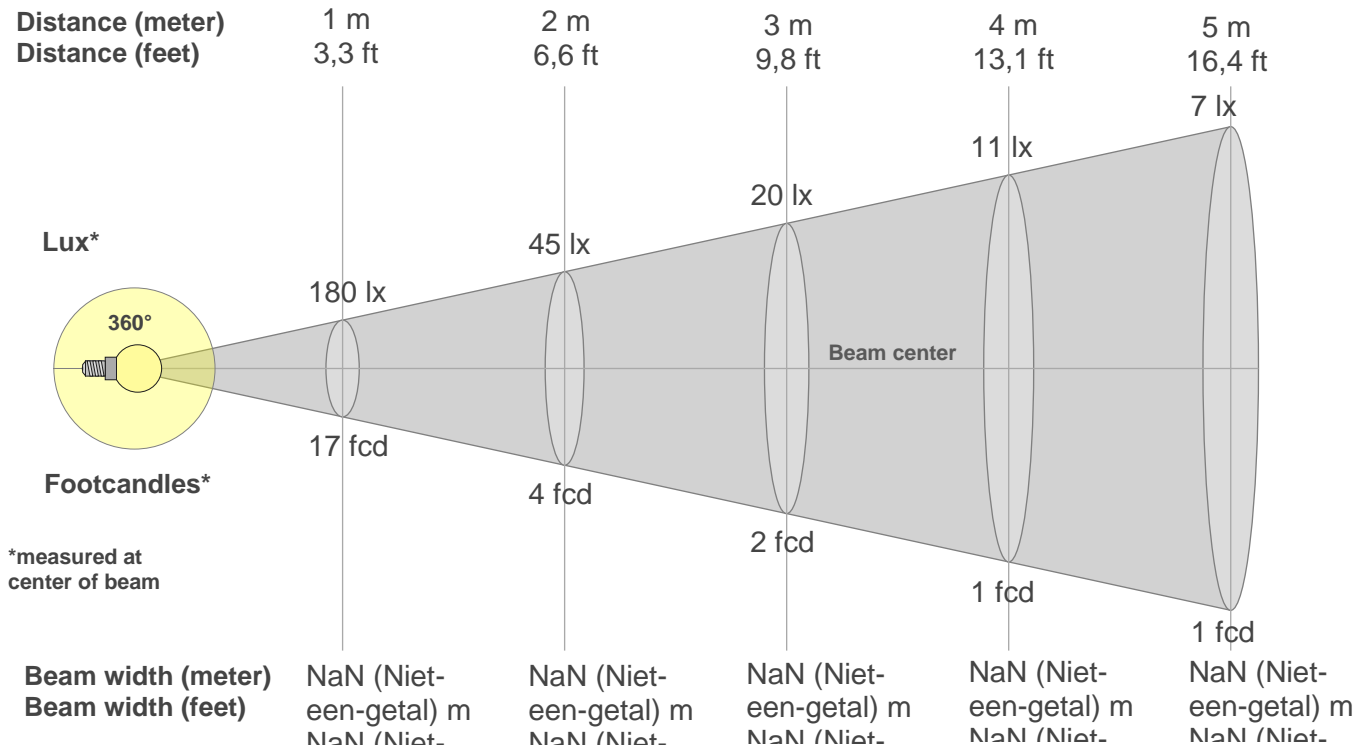
| Color temperature | Color rendering index | Red component | Color fidelity | Color gamut | Color quality scale | Color coordinate cie 1931 | Color coordinate cie 1931 | Color coordinate | Color coordinate | Color divition from black body |
|-------------------|-----------------------|---------------|----------------|-------------|---------------------|---------------------------|---------------------------|------------------|------------------|--------------------------------|
| CCT | CRI | CRI R9 | TM30 Rf | TM30 Rg | CQS | x | y | u | v | Δuv |
| 2733 K | 83,6 | 10,8 | 85,0 | 96,1 | 83,3 | 0,460 | 0,416 | 0,261 | 0,353 | 0,0018 |

Rf 85,0
Fidelity index Rf

Rg 96,1
Gammut index Rg

| Hue Bin | R _f | Graphic shifts (%) | |
|---------|----------------|--------------------|------|
| | | Chroma | Hue |
| 1 | 79 | -11% | -1% |
| 2 | 80 | -8% | 6% |
| 3 | 78 | -3% | 10% |
| 4 | 88 | 2% | 7% |
| 5 | 92 | 4% | 4% |
| 6 | 93 | 3% | -1% |
| 7 | 86 | -1% | -8% |
| 8 | 93 | -3% | -2% |
| 9 | 89 | -5% | -1% |
| 10 | 88 | -5% | 5% |
| 11 | 85 | -2% | 8% |
| 12 | 86 | 5% | 1% |
| 13 | 86 | 5% | -8% |
| 14 | 80 | 3% | -15% |
| 15 | 81 | -2% | -10% |
| 16 | 77 | -9% | -13% |





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 |
| 180lx | 45lx | 20lx | 11lx | 7lx | 5lx | 4lx | 3lx | 2lx | 2lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx | 0lx | 0lx |
| 16,7fcd | 4,2fcd | 1,9fcd | 1fcd | 0,7fcd | 0,5fcd | 0,3fcd | 0,3fcd | 0,2fcd | 0,2fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 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° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 180 | 178 | 172 | 162 | 149 | 131 | 112 | 90 | 66 | 44 | 31 | 35 | 52 | 73 | 93 | 113 | 130 | 145 | 157 | 166 |
| 100% | 99% | 96% | 90% | 83% | 73% | 62% | 50% | 37% | 25% | 18% | 19% | 29% | 40% | 52% | 63% | 73% | 81% | 87% | 92% |

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° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 180 | 178 | 172 | 162 | 149 | 131 | 112 | 90 | 66 | 44 | 31 | 35 | 52 | 73 | 93 | 113 | 130 | 145 | 157 | 166 |
| 100% | 99% | 96% | 90% | 83% | 73% | 62% | 50% | 37% | 25% | 18% | 19% | 29% | 40% | 52% | 63% | 73% | 81% | 87% | 92% |

Intensities in 180° c-plane

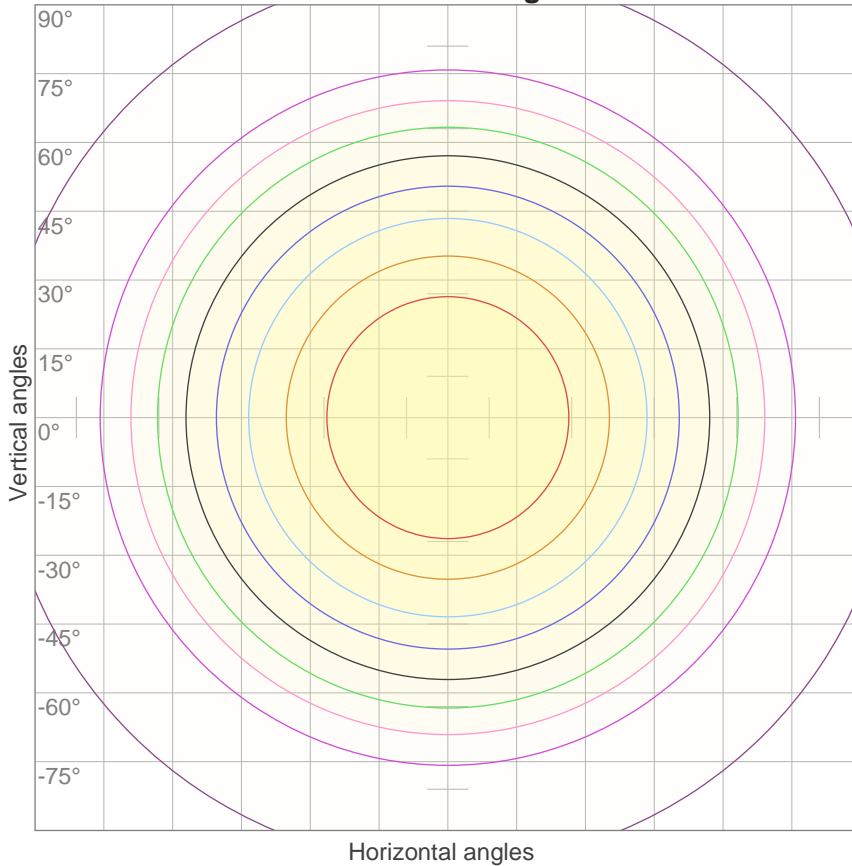
| 0° | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 180 | 178 | 172 | 162 | 149 | 131 | 112 | 90 | 66 | 44 | 31 | 35 | 52 | 73 | 93 | 113 | 130 | 145 | 157 | 166 |
| 100% | 99% | 96% | 90% | 83% | 73% | 62% | 50% | 37% | 25% | 18% | 19% | 29% | 40% | 52% | 63% | 73% | 81% | 87% | 92% |

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° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 180 | 178 | 172 | 162 | 149 | 131 | 112 | 90 | 66 | 44 | 31 | 35 | 52 | 73 | 93 | 113 | 130 | 145 | 157 | 166 |
| 100% | 99% | 96% | 90% | 83% | 73% | 62% | 50% | 37% | 25% | 18% | 19% | 29% | 40% | 52% | 63% | 73% | 81% | 87% | 92% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 360° | 360° | 360° | 37,8% | 24,9% |

ISO candela diagram



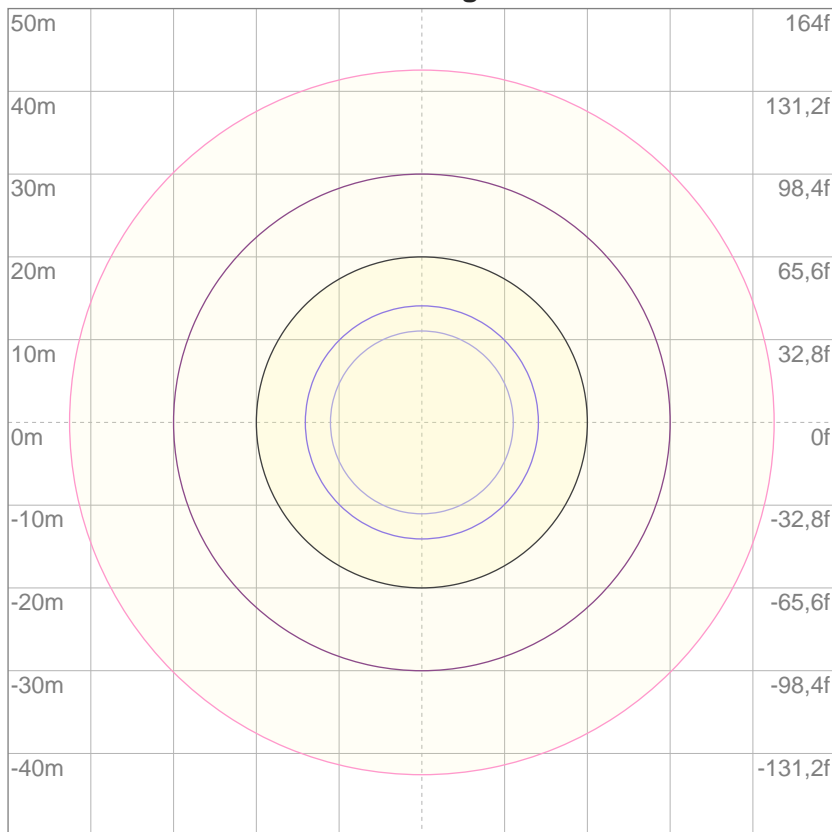
| | |
|-----|--------|
| 10% | 18 cd |
| 20% | 36 cd |
| 30% | 54 cd |
| 40% | 72 cd |
| 50% | 90 cd |
| 60% | 108 cd |
| 70% | 126 cd |
| 80% | 144 cd |
| 90% | 162 cd |

Conditions:

Number of c-planes: 2

Candela at center: 180 cd

ISO lux diagram



| | |
|-----|----------|
| 3% | 53,9m lx |
| 5% | 89,8m lx |
| 10% | 0,180 lx |
| 30% | 0,539 lx |
| 50% | 0,898 lx |

Conditions:

Number of c-planes: 2

Lux at center: 1,80 lx

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

Glare Evaluation According to UGR

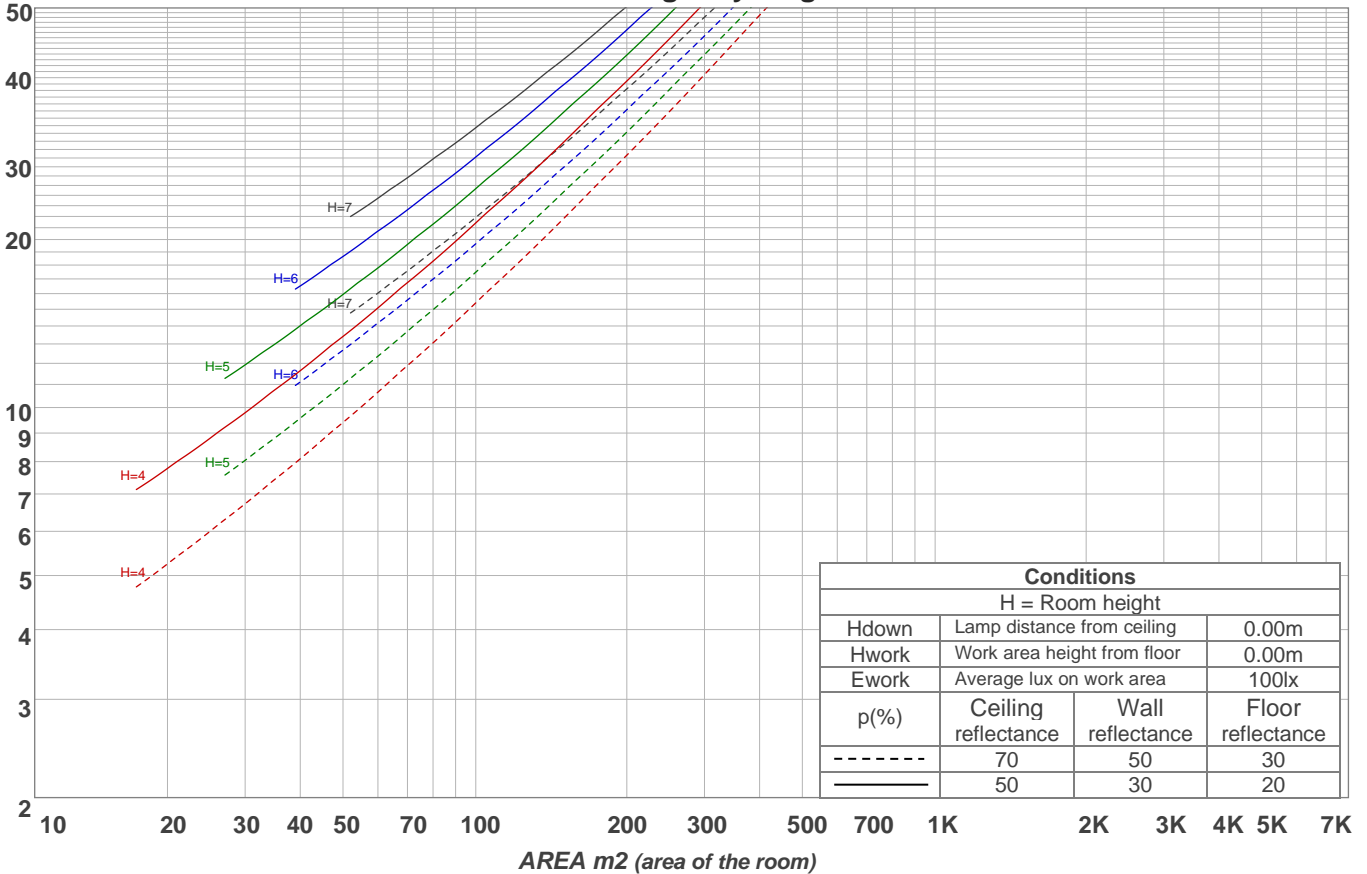
| | | | | | | | | | | | |
|------------------------------------------------------------------|-----|---------------------------------------------------|------|------|------|------|-----------------------------------------|------|------|------|------|
| p Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 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 | | | | |
| 2H | 2H | 9,4 | 10,3 | 10,3 | 11,2 | 12,3 | 9,4 | 10,3 | 10,3 | 11,2 | 12,3 |
| | 3H | 11,4 | 12,2 | 12,3 | 13,1 | 14,2 | 11,4 | 12,2 | 12,3 | 13,1 | 14,2 |
| | 4H | 12,4 | 13,1 | 13,3 | 14,0 | 15,1 | 12,4 | 13,1 | 13,3 | 14,0 | 15,1 |
| | 6H | 13,4 | 14,0 | 14,3 | 14,9 | 16,1 | 13,4 | 14,0 | 14,3 | 14,9 | 16,1 |
| | 8H | 13,9 | 14,5 | 14,8 | 15,4 | 16,6 | 13,9 | 14,5 | 14,8 | 15,4 | 16,6 |
| | 12H | 14,4 | 15,1 | 15,4 | 16,0 | 17,2 | 14,4 | 15,1 | 15,4 | 16,0 | 17,2 |
| 4H | 2H | 10,1 | 10,9 | 11,0 | 11,7 | 12,9 | 10,1 | 10,9 | 11,0 | 11,7 | 12,9 |
| | 3H | 12,3 | 12,9 | 13,2 | 13,8 | 15,0 | 12,3 | 12,9 | 13,2 | 13,8 | 15,0 |
| | 4H | 13,4 | 14,0 | 14,3 | 14,9 | 16,1 | 13,4 | 14,0 | 14,3 | 14,9 | 16,1 |
| | 6H | 14,5 | 15,0 | 15,5 | 16,0 | 17,2 | 14,5 | 15,0 | 15,5 | 16,0 | 17,2 |
| | 8H | 15,1 | 15,6 | 16,1 | 16,5 | 17,8 | 15,1 | 15,6 | 16,1 | 16,5 | 17,8 |
| | 12H | 15,8 | 16,2 | 16,8 | 17,2 | 18,5 | 15,8 | 16,2 | 16,8 | 17,2 | 18,5 |
| 8H | 4H | 13,8 | 14,2 | 14,8 | 15,2 | 16,5 | 13,8 | 14,2 | 14,8 | 15,2 | 16,5 |
| | 6H | 15,2 | 15,6 | 16,2 | 16,5 | 17,8 | 15,2 | 15,6 | 16,2 | 16,5 | 17,8 |
| | 8H | 15,9 | 16,3 | 16,9 | 17,3 | 18,5 | 15,9 | 16,3 | 16,9 | 17,3 | 18,5 |
| | 12H | 16,8 | 17,1 | 17,9 | 18,1 | 19,4 | 16,8 | 17,1 | 17,9 | 18,1 | 19,4 |
| 12H | 4H | 13,9 | 14,3 | 14,8 | 15,2 | 16,5 | 13,9 | 14,3 | 14,8 | 15,2 | 16,5 |
| | 6H | 15,3 | 15,7 | 16,3 | 16,7 | 17,9 | 15,3 | 15,7 | 16,3 | 16,7 | 17,9 |
| | 8H | 16,2 | 16,5 | 17,2 | 17,5 | 18,8 | 16,2 | 16,5 | 17,2 | 17,5 | 18,8 |
| Variation of the observer position for the luminaire distance S | | | | | | | | | | | |
| S = 1,0H | | +0,1 / -0,1 | | | | | +0,1 / -0,1 | | | | |
| S = 1,5H | | +0,3 / -0,2 | | | | | +0,3 / -0,2 | | | | |
| S = 2,0H | | +0,3 / -0,5 | | | | | +0,3 / -0,5 | | | | |
| Standard table | | BK10 | | | | | BK10 | | | | |
| Correction summand | | 1,3 | | | | | 1,3 | | | | |
| Corrected glare indices referring to 1154 lm total luminous flux | | | | | | | | | | | |

Coefficients of Utilization

| Ceiling reflectance | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
|---------------------|---------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|
| | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 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 | 108 | 108 | 108 | 108 | 100 | 100 | 100 | 100 | 86 | 86 | 86 | 72 | 72 | 72 | 60 | 60 | 60 | 54 |
| 1 | 97 | 92 | 88 | 84 | 90 | 85 | 82 | 78 | 73 | 70 | 67 | 61 | 59 | 57 | 50 | 49 | 48 | 42 |
| 2 | 88 | 80 | 73 | 67 | 81 | 74 | 68 | 63 | 63 | 58 | 54 | 53 | 49 | 46 | 44 | 41 | 39 | 34 |
| 3 | 80 | 69 | 62 | 55 | 73 | 64 | 57 | 52 | 55 | 50 | 45 | 46 | 42 | 39 | 38 | 35 | 32 | 28 |
| 4 | 73 | 61 | 53 | 46 | 67 | 57 | 49 | 43 | 49 | 43 | 38 | 41 | 36 | 33 | 34 | 30 | 27 | 24 |
| 5 | 67 | 54 | 46 | 39 | 61 | 50 | 43 | 37 | 43 | 37 | 32 | 36 | 32 | 28 | 30 | 27 | 24 | 20 |
| 6 | 61 | 49 | 40 | 34 | 56 | 45 | 37 | 32 | 39 | 33 | 28 | 33 | 28 | 24 | 27 | 23 | 21 | 18 |
| 7 | 57 | 44 | 35 | 30 | 52 | 41 | 33 | 28 | 35 | 29 | 25 | 30 | 25 | 21 | 25 | 21 | 18 | 16 |
| 8 | 52 | 40 | 32 | 26 | 48 | 37 | 30 | 25 | 32 | 26 | 22 | 27 | 22 | 19 | 23 | 19 | 16 | 14 |
| 9 | 49 | 36 | 28 | 23 | 45 | 34 | 27 | 22 | 29 | 23 | 19 | 25 | 20 | 17 | 21 | 17 | 14 | 12 |
| 10 | 46 | 33 | 26 | 21 | 42 | 31 | 24 | 19 | 27 | 21 | 17 | 23 | 18 | 15 | 19 | 16 | 13 | 11 |

LAMPS (number of lamps)

Luminaire budgetary diagram



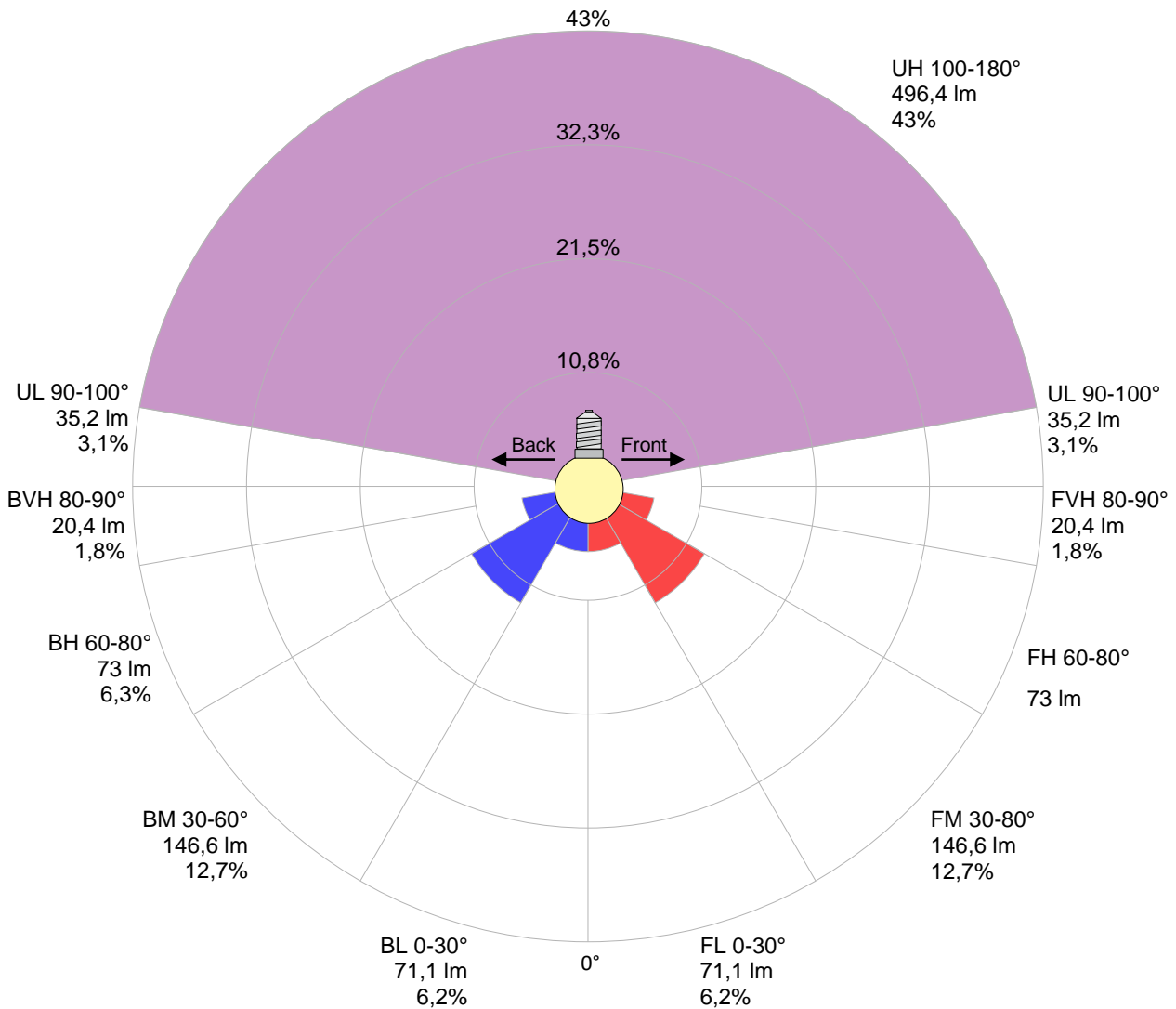
Zonal Lumen Summary

| | | | | | | | | |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
| 17,0 lm | 49,2 lm | 76,4 lm | 93,5 lm | 102 lm | 98,1 lm | 83,2 lm | 63,1 lm | 40,0 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 35,0 lm | 47,7 lm | 68,6 lm | 81,0 lm | 87,1 lm | 83,0 lm | 67,8 lm | 45,3 lm | 16,0 lm |

LCS table

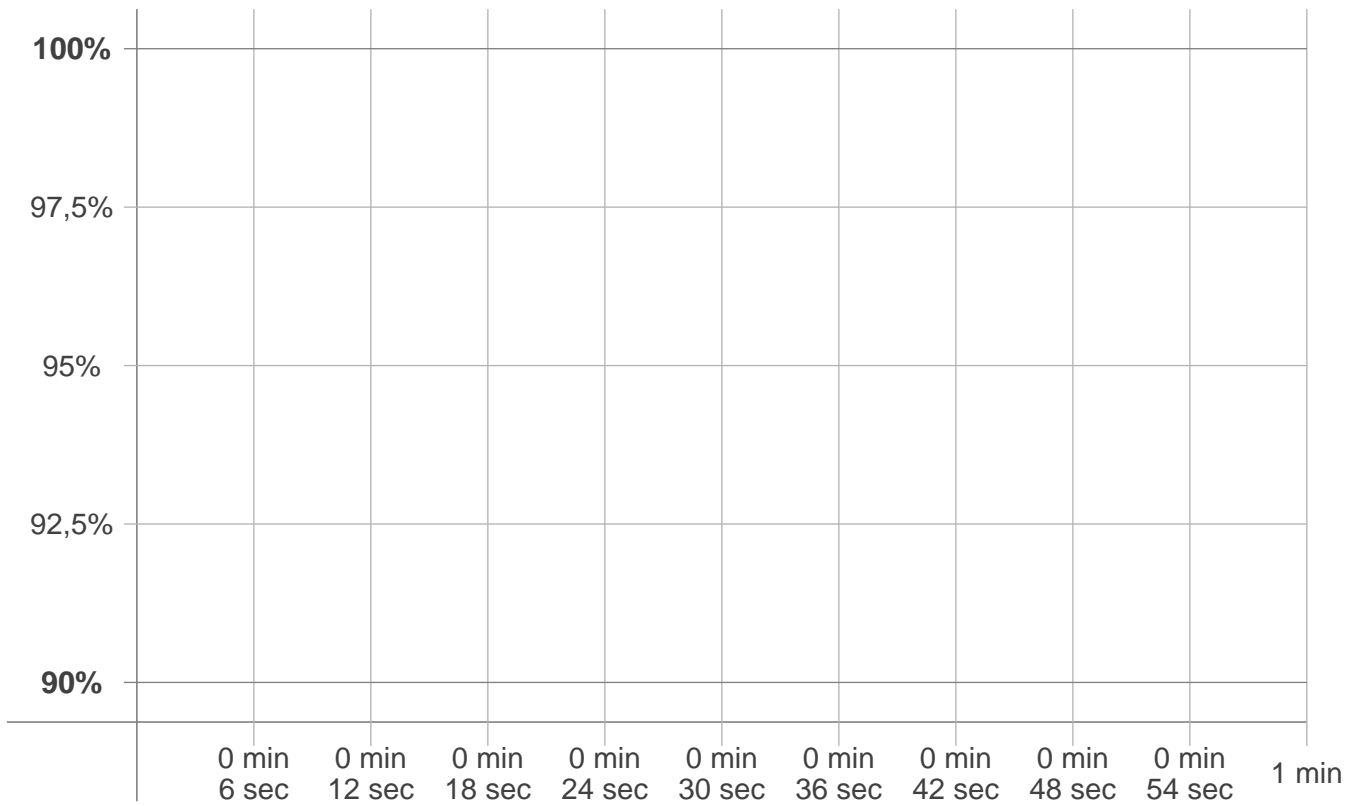
| BUG rating: | B0 U3 G1 | |
|----------------------|----------|----------|
| Forward light | Lumens | Lumens % |
| Low(0-30): | 71,1 | 6,2% |
| Medium(30-60): | 146,6 | 12,7% |
| High(60-80): | 73 | 6,3% |
| Very high(80-90): | 20,4 | 1,8% |
| Back light | | |
| Low(0-30): | 71,1 | 6,2% |
| Medium(30-60): | 146,6 | 12,7% |
| High(60-80): | 73 | 6,3% |
| Very high(80-90): | 20,4 | 1,8% |
| Uplight | | |
| Low(90-100): | 35,2 | 3,1% |
| High(100-180): | 496,4 | 43% |

LCS graph



Stabilization

Warmup curve



Warmup result

| | |
|-------------------------|-----------------------|
| Warmup time: | n/a |
| Warmup variation | NaN (Niet-een-getal)% |

Warmup conditions

| | |
|---------------------------|------|
| Stable period: | n/a |
| Stable change max: | n/a% |
| Minimum time: | n/a |

Color temperature change

| CCT start | CCT change | CCT end |
|------------------------|------------------------|---------|
| NaN (Niet-een-getal) K | NaN (Niet-een-getal) K | 2733 K |

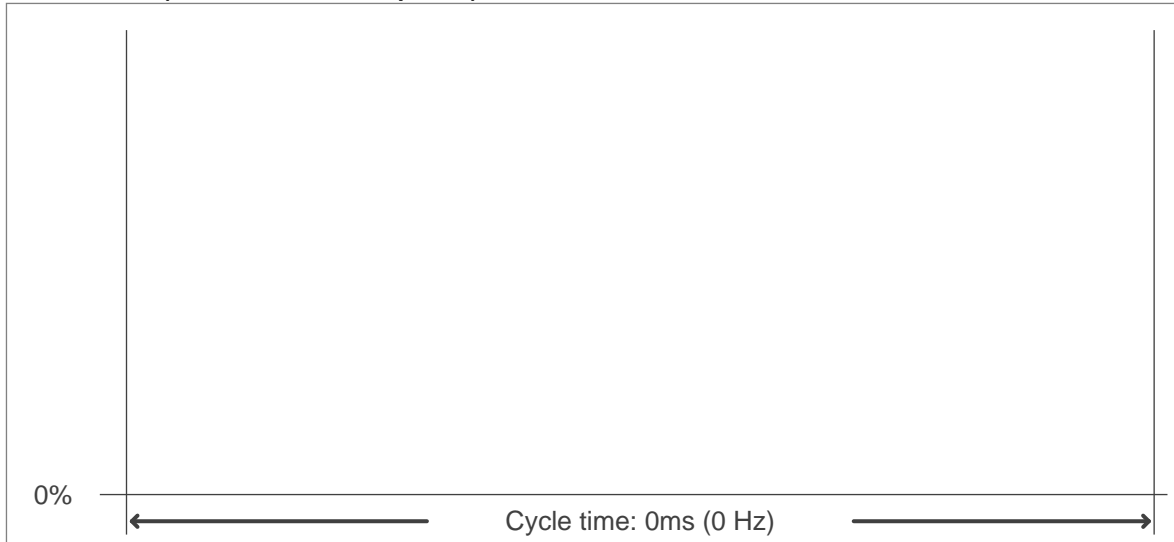
Output change

| Output start | Output change | Output end |
|-------------------------|-------------------------|------------|
| NaN (Niet-een-getal) lm | NaN (Niet-een-getal) lm | 1154 lm |

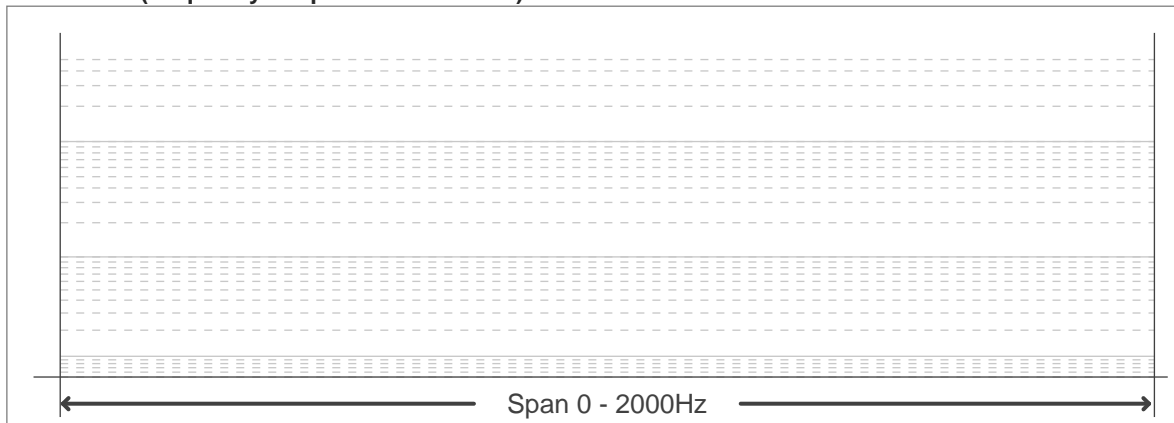
Flicker curve (complete sampled flicker signal)



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 |
| Flicker percentage: | n/a % |
| SVM: (Visual flicker) | n/a |

Flicker conditions:

| | |
|---------------------|-------------------------|
| Sample rate: | 0 samples/second |
|---------------------|-------------------------|