

Light efficiency:

129 Lumen/Watt

Light quality:

CRI: 94,7

Color temperature:

2724 K

Output: 310 lm

Peak: 106 cd

Power: 2,4 W

PF: 1,0



Product name:

Sta-Maria-6_510mm_927_Cover-Round-Transparent

Item number:

NP/L1C/01E/G1/L1C/0510/927/CRT

Date and time:

24.06.2022 09:23:43

Description:

Rank: C80-AD-8GB

Tolerances:

Lumen +/-4%

Candela +/-2,5%

Colour Temp +/-35 Kelvin

CRI +/-0,7

Angular Resolution: 1 Degree Step

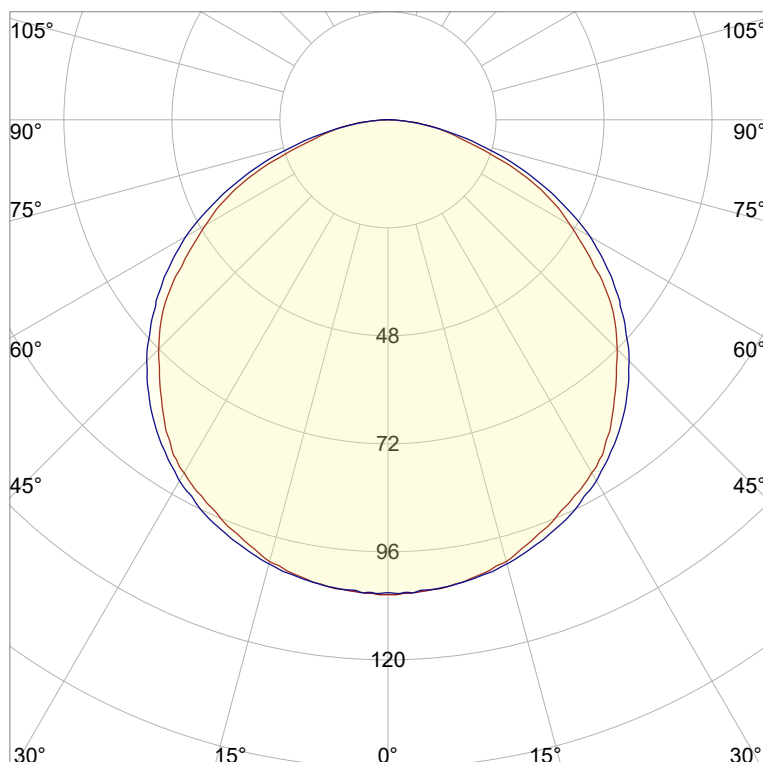
Last Calibration 20-09-2021

Tester: Peter Ulrich

Test Site: Lichtlabor

Gaustrasse 13

55411 Bingen am Rhein

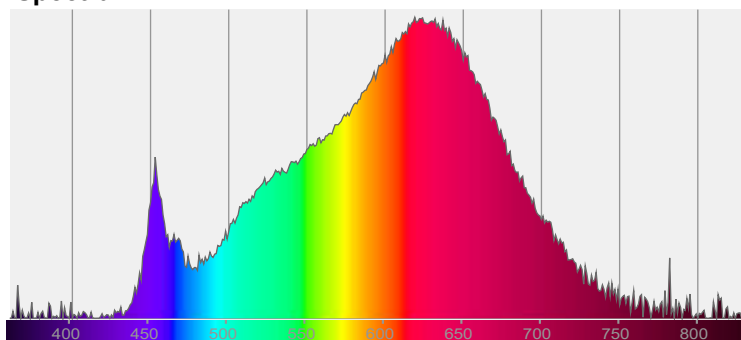


CIE 1931

x: 0,458

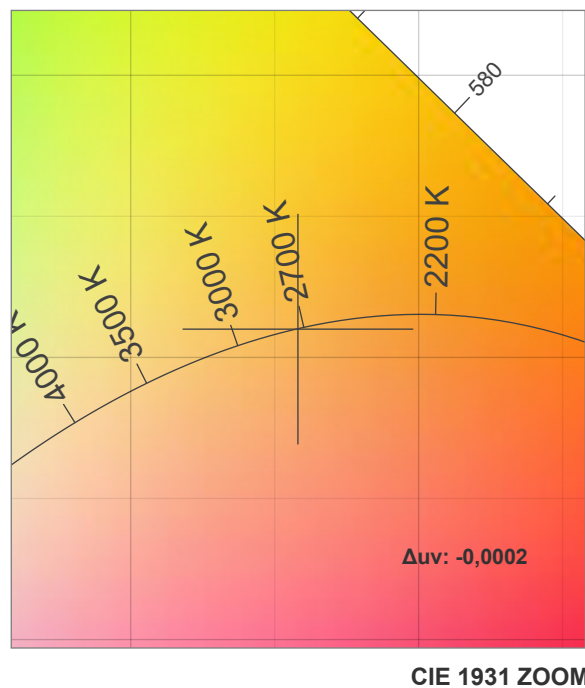
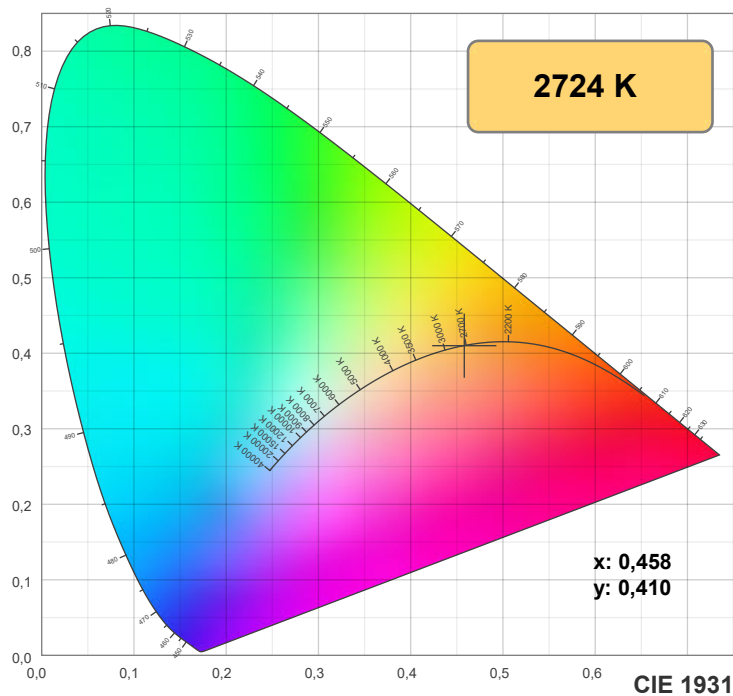
y: 0,410

Spectra

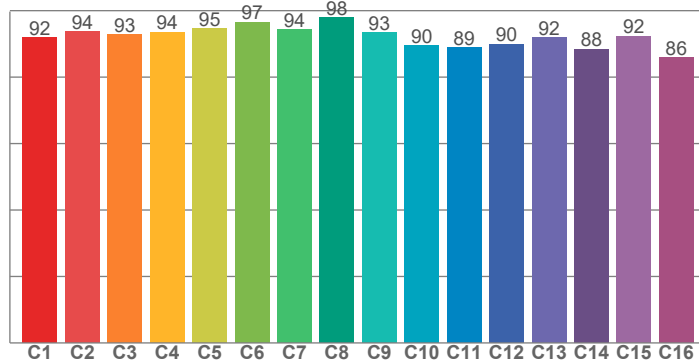


Power

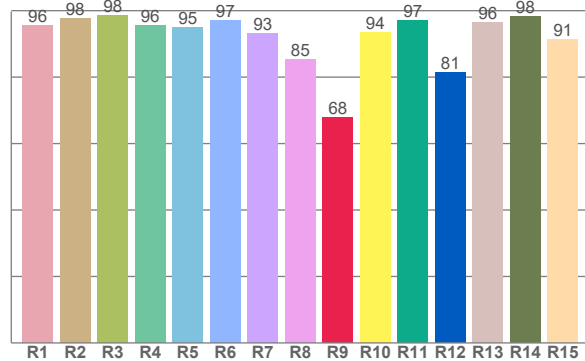
Voltage: 48,0 V
Current: 0,050 A
Frequency: 0 Hz



TM30: 92,1



CRI: 94,7 (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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 95,5 | 97,8 | 98,4 | 95,5 | 95,1 | 97,0 | 93,2 | 85,4 | 67,9 | 93,6 | 97,0 | 81,4 | 96,3 | 98,2 | 91,4 |

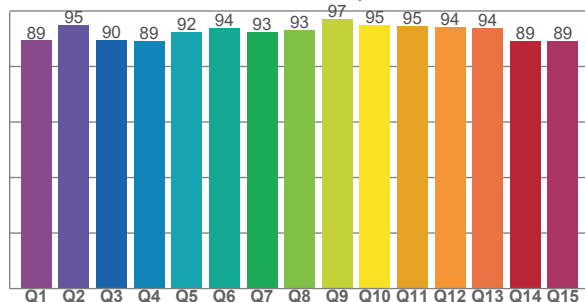
TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 91,9 | 93,8 | 92,8 | 93,6 | 94,7 | 96,6 | 94,4 | 97,9 | 93,3 | 89,6 | 88,8 | 89,9 | 91,9 | 88,4 | 92,4 | 86,0 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 89,4 | 94,9 | 89,6 | 89,2 | 92,3 | 93,9 | 92,5 | 93,2 | 97,2 | 94,9 | 94,7 | 94,3 | 93,8 | 89,1 | 89,3 |

CQS: 92,0



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 |
| 2724 K | 94,7 | 67,9 | 92,1 | 99,2 | 92,0 | 0,458 | 0,410 | 0,262 | 0,351 | -0,0002 |

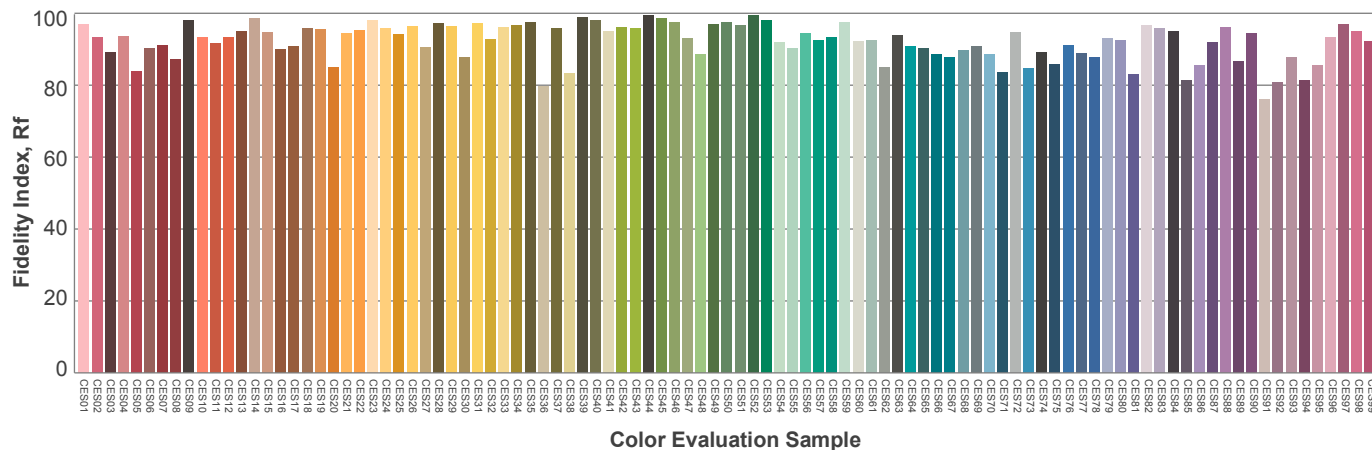
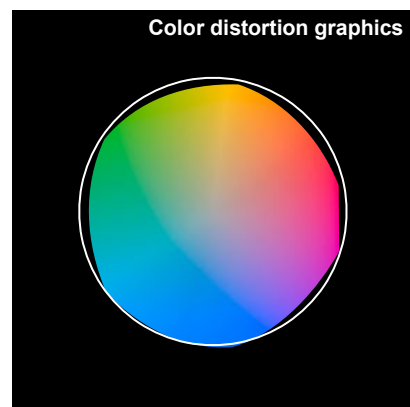
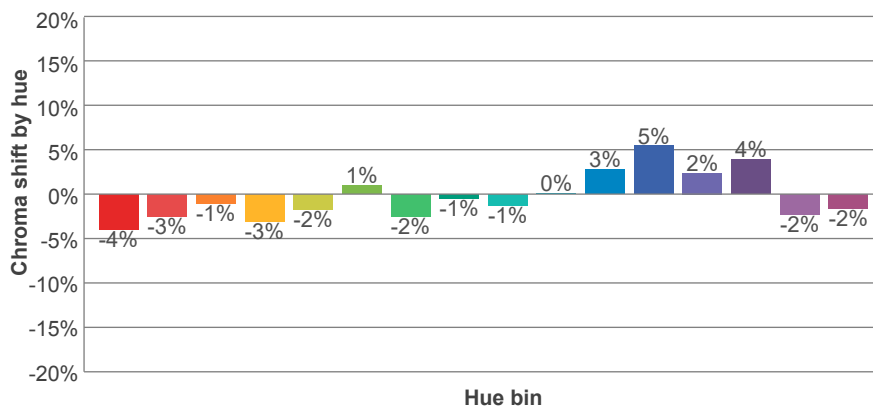
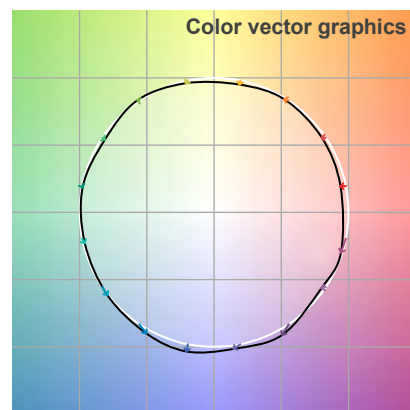
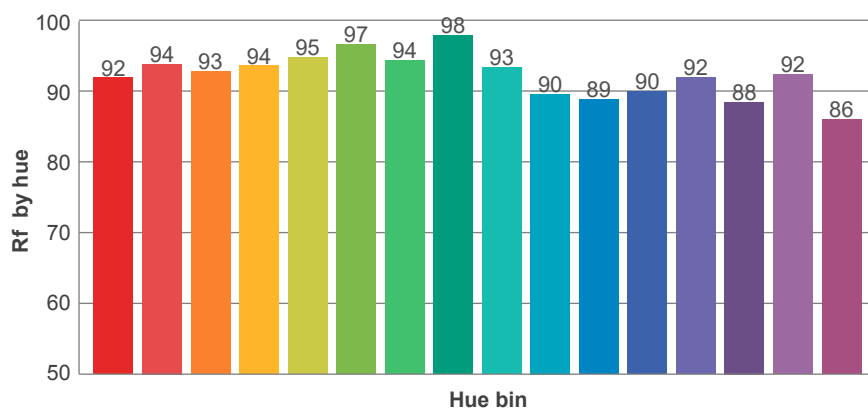
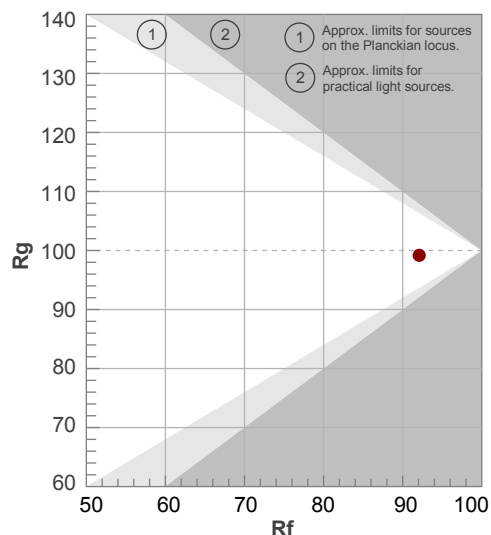
Rf 92,1

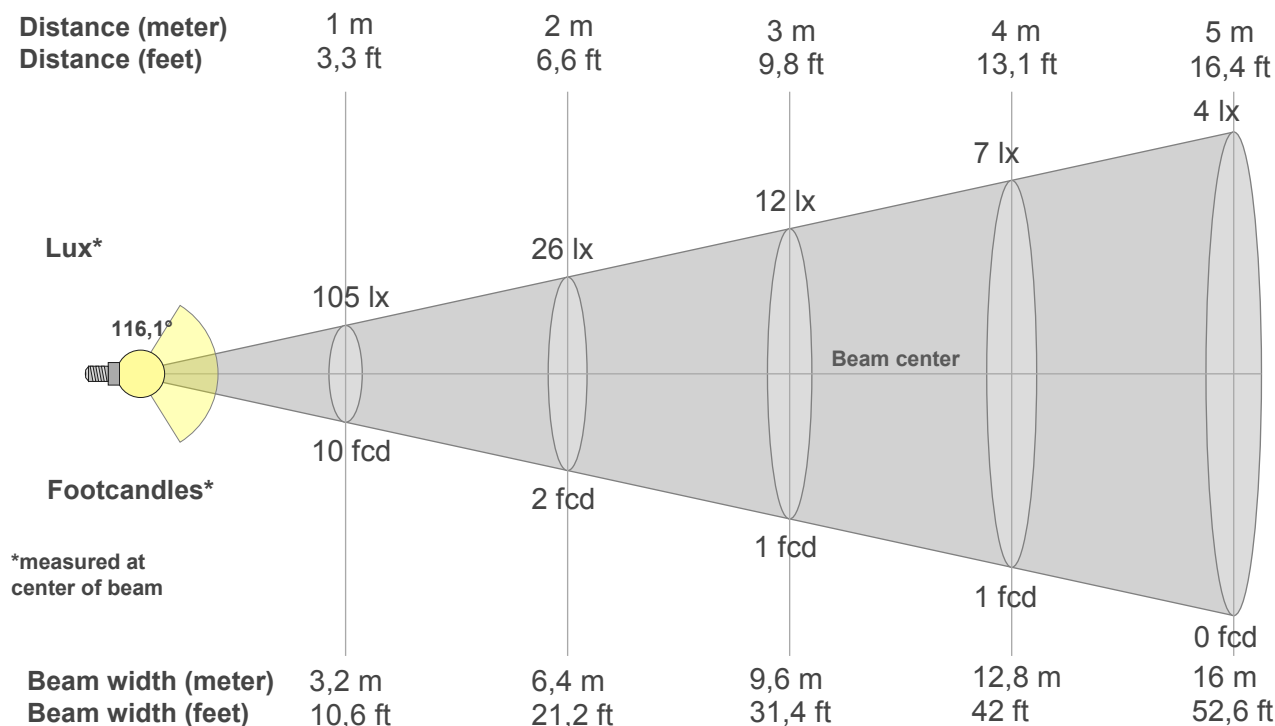
Fidelity index Rf

Rg 99,2

Gammut index Rg

| Hue Bin | R _f | Graphic shifts (%) | |
|---------|----------------|--------------------|------|
| | | Chroma | Hue |
| 1 | 92 | -4% | 1% |
| 2 | 94 | -3% | 2% |
| 3 | 93 | -1% | 3% |
| 4 | 94 | -3% | 0% |
| 5 | 95 | -2% | 2% |
| 6 | 97 | 1% | 1% |
| 7 | 94 | -2% | 0% |
| 8 | 98 | -1% | 1% |
| 9 | 93 | -1% | 4% |
| 10 | 90 | 0% | 7% |
| 11 | 89 | 3% | 8% |
| 12 | 90 | 5% | 0% |
| 13 | 92 | 2% | -6% |
| 14 | 88 | 4% | -8% |
| 15 | 92 | -2% | -2% |
| 16 | 86 | -2% | -11% |





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 |
| 105lx | 26lx | 12lx | 7lx | 4lx | 3lx | 2lx | 2lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx | 0lx | 0lx | 0lx | 0lx | 0lx | 0lx |
| 9,8fcd | 2,4fcd | 1,1fcd | 0,6fcd | 0,4fcd | 0,3fcd | 0,2fcd | 0,2fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd | 0fcd |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 105 | 105 | 104 | 102 | 98 | 94 | 91 | 85 | 79 | 72 | 65 | 56 | 47 | 38 | 28 | 17 | 11 | 4 | 0 | 0 |
| 100% | 100% | 98% | 96% | 93% | 90% | 86% | 81% | 75% | 68% | 62% | 53% | 44% | 36% | 26% | 17% | 11% | 4% | 0% | 0% |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 105 | 105 | 104 | 102 | 100 | 97 | 93 | 88 | 82 | 76 | 68 | 60 | 52 | 42 | 31 | 21 | 11 | 4 | 0 | 0 |
| 100% | 100% | 99% | 97% | 95% | 92% | 88% | 83% | 78% | 72% | 65% | 57% | 49% | 39% | 30% | 20% | 11% | 4% | 0% | 0% |

Intensities in 180° c-plane

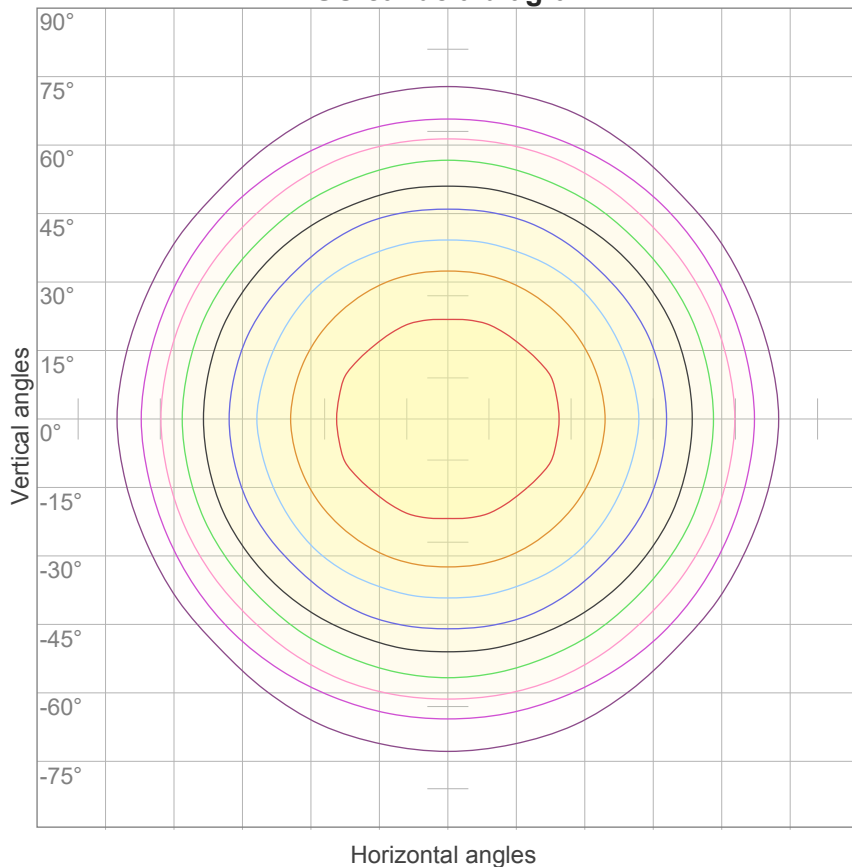
| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 105 | 105 | 104 | 102 | 98 | 94 | 91 | 85 | 79 | 72 | 65 | 56 | 47 | 38 | 28 | 17 | 11 | 4 | 0 | 0 |
| 100% | 100% | 98% | 96% | 93% | 90% | 86% | 81% | 75% | 68% | 62% | 53% | 44% | 36% | 26% | 17% | 11% | 4% | 0% | 0% |

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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 105 | 105 | 104 | 102 | 100 | 97 | 93 | 88 | 82 | 76 | 68 | 60 | 52 | 42 | 31 | 21 | 11 | 4 | 0 | 0 |
| 100% | 100% | 99% | 97% | 95% | 92% | 88% | 83% | 78% | 72% | 65% | 57% | 49% | 39% | 30% | 20% | 11% | 4% | 0% | 0% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 116,1° | 159,7° | 172,1° | 79,3% | 53,4% |

ISO candela diagram



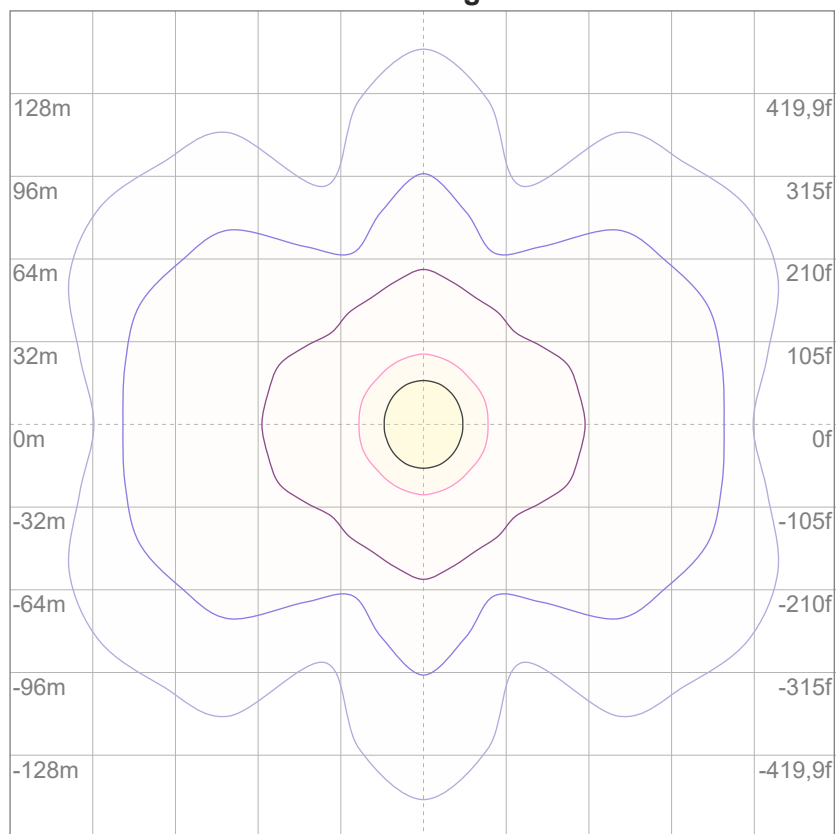
| | |
|-----|-------|
| 10% | 11 cd |
| 20% | 21 cd |
| 30% | 32 cd |
| 40% | 42 cd |
| 50% | 53 cd |
| 60% | 63 cd |
| 70% | 74 cd |
| 80% | 84 cd |
| 90% | 95 cd |

Conditions:

Number of c-planes: 16

Candela at center: 105 cd

ISO lux diagram



| | |
|-----|----------|
| 3% | 31,6m lx |
| 5% | 52,7m lx |
| 10% | 0,105 lx |
| 30% | 0,316 lx |
| 50% | 0,527 lx |

Conditions:

Number of c-planes: 16

Lux at center: 1,05 lx

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

Glare Evaluation According to UGR

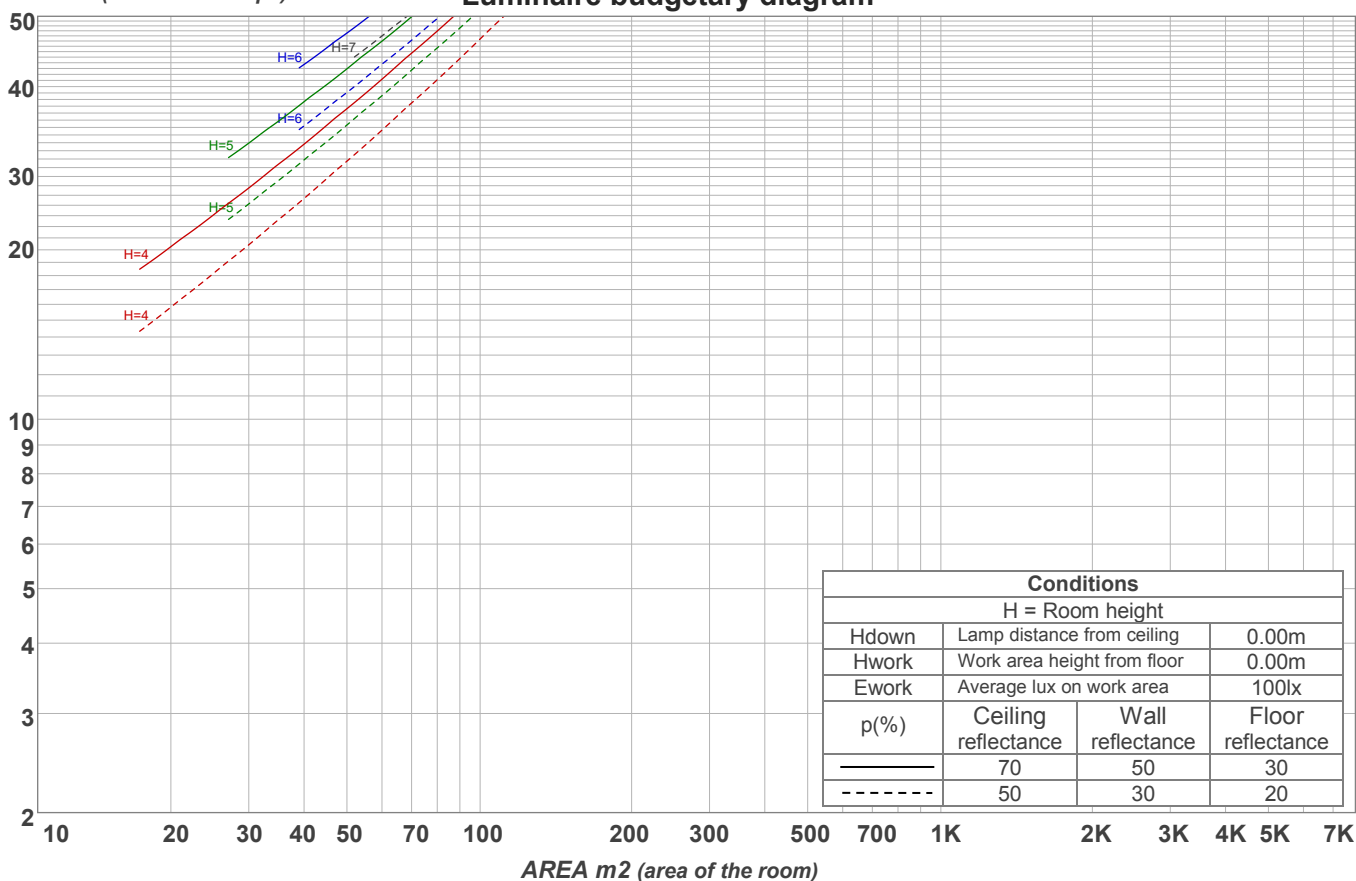
| | | | | | | | | | | | |
|---|-----|---|------|------|------|------|---|------|------|------|------|
| p Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| p Walls | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| p Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room size X Y | | Viewing direction at right angles to lamp axis | | | | | Viewing direction parallel to lamp axis | | | | |
| 2H | 2H | 18,4 | 19,6 | 18,6 | 19,9 | 20,1 | 19,8 | 21,0 | 20,0 | 21,3 | 21,5 |
| | 3H | 19,4 | 20,6 | 19,8 | 20,9 | 21,1 | 21,2 | 22,4 | 21,6 | 22,7 | 22,9 |
| | 4H | 19,7 | 20,9 | 20,1 | 21,2 | 21,4 | 21,7 | 22,9 | 22,1 | 23,2 | 23,4 |
| | 6H | 19,9 | 21,0 | 20,2 | 21,3 | 21,6 | 22,1 | 23,2 | 22,4 | 23,4 | 23,8 |
| | 8H | 20,0 | 21,0 | 20,3 | 21,3 | 21,7 | 22,2 | 23,2 | 22,5 | 23,5 | 23,9 |
| | 12H | 20,0 | 20,9 | 20,3 | 21,3 | 21,7 | 22,2 | 23,2 | 22,5 | 23,5 | 24,0 |
| 4H | 2H | 18,9 | 20,2 | 19,4 | 20,4 | 20,7 | 20,1 | 21,3 | 20,5 | 21,6 | 21,8 |
| | 3H | 20,2 | 21,2 | 20,6 | 21,6 | 22,0 | 21,8 | 22,7 | 22,1 | 23,1 | 23,5 |
| | 4H | 20,5 | 21,5 | 21,0 | 21,9 | 22,4 | 22,3 | 23,2 | 22,7 | 23,6 | 24,1 |
| | 6H | 20,8 | 21,7 | 21,3 | 22,0 | 22,4 | 22,7 | 23,5 | 23,1 | 23,9 | 24,3 |
| | 8H | 20,9 | 21,7 | 21,4 | 22,0 | 22,4 | 22,7 | 23,5 | 23,2 | 23,9 | 24,3 |
| | 12H | 20,9 | 21,6 | 21,4 | 22,0 | 22,5 | 22,8 | 23,4 | 23,3 | 23,9 | 24,3 |
| 8H | 4H | 20,7 | 21,5 | 21,2 | 21,9 | 22,3 | 22,3 | 23,1 | 22,8 | 23,5 | 23,9 |
| | 6H | 21,1 | 21,7 | 21,6 | 22,2 | 22,7 | 22,8 | 23,4 | 23,3 | 23,8 | 24,4 |
| | 8H | 21,2 | 21,8 | 21,7 | 22,3 | 22,9 | 22,9 | 23,4 | 23,4 | 24,0 | 24,6 |
| | 12H | 21,3 | 21,7 | 21,9 | 22,2 | 22,8 | 23,0 | 23,4 | 23,6 | 23,9 | 24,5 |
| 12H | 4H | 20,7 | 21,4 | 21,2 | 21,8 | 22,3 | 22,3 | 23,0 | 22,8 | 23,4 | 23,9 |
| | 6H | 21,1 | 21,6 | 21,6 | 22,2 | 22,8 | 22,8 | 23,3 | 23,3 | 23,8 | 24,5 |
| | 8H | 21,2 | 21,7 | 21,8 | 22,2 | 22,8 | 22,9 | 23,4 | 23,5 | 23,9 | 24,5 |
| Variation of the observer position for the luminaire distance S | | | | | | | | | | | |
| S = 1.0H | | 0,1 / -0,2 | | | | | 0,1 / -0,1 | | | | |
| S = 1.5H | | 0,4 / -0,6 | | | | | 0,3 / -0,5 | | | | |
| S = 2.0H | | 0,7 / -1,0 | | | | | 0,9 / -1,1 | | | | |
| Standard table | | n/a | | | | | n/a | | | | |
| Correction summand | | n/a | | | | | n/a | | | | |
| Corrected glare indices referring to 310 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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 94 | 97 | 94 | 91 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 78 | 96 | 89 | 82 | 77 | 85 | 80 | 75 | 82 | 77 | 74 | 79 | 75 | 72 | 70 |
| 3 | 90 | 80 | 71 | 65 | 88 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 67 | 62 | 69 | 65 | 61 | 59 |
| 4 | 82 | 70 | 62 | 55 | 80 | 69 | 61 | 54 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 56 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 59 | 52 | 46 | 57 | 51 | 46 | 56 | 50 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 41 | 54 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 40 | 37 |
| 7 | 65 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 49 | 41 | 36 | 47 | 40 | 35 | 46 | 40 | 35 | 33 |
| 8 | 60 | 47 | 38 | 32 | 59 | 46 | 38 | 32 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 31 | 29 |
| 9 | 56 | 43 | 34 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 28 | 39 | 33 | 28 | 26 |
| 10 | 53 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 30 | 26 | 36 | 30 | 26 | 24 |

LAMPS (number of lamps)

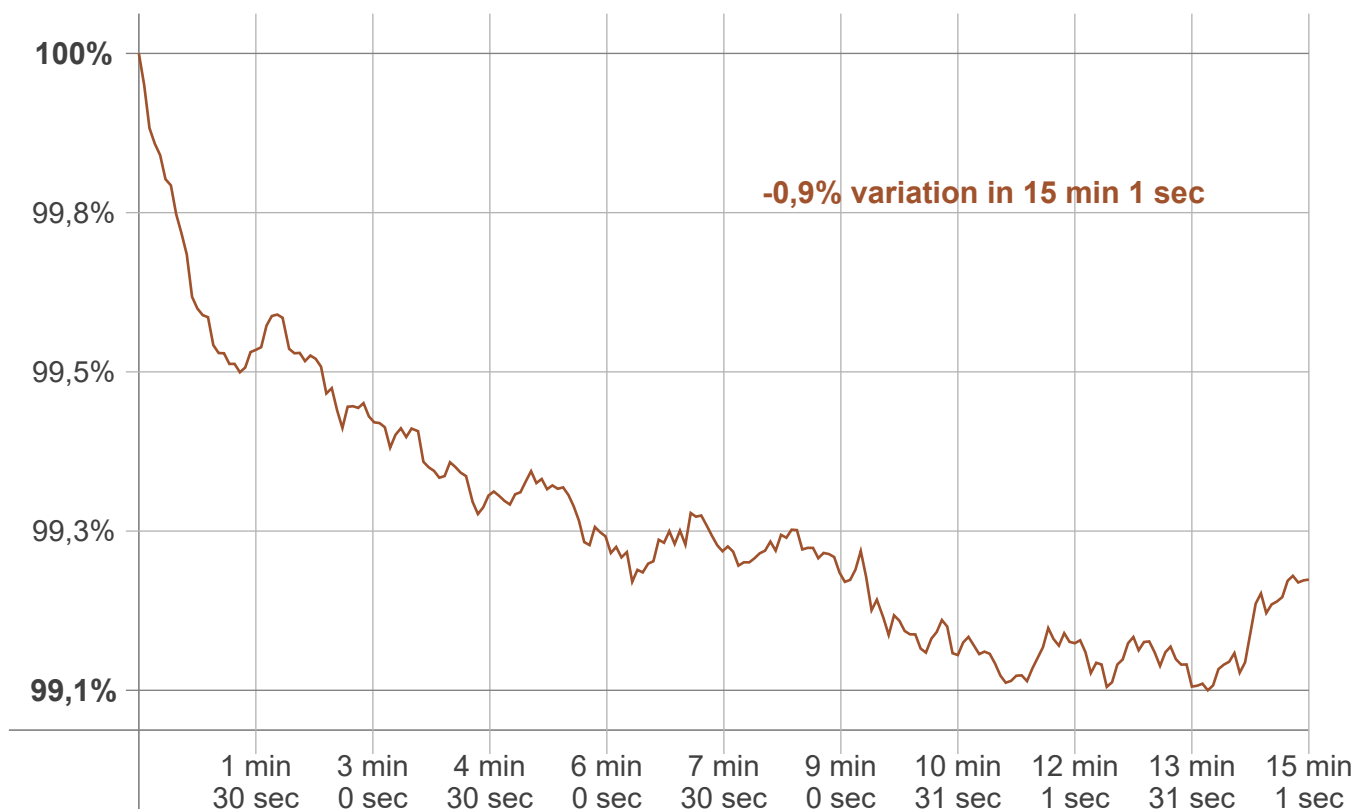
Luminaire budgetary diagram



Zonal Lumen Summary

| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 9,98 lm | 28,7 lm | 44,0 lm | 54,1 lm | 56,9 lm | 51,9 lm | 38,7 lm | 19,8 lm | 4,74 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0,354 lm | 0,089 lm | 0,072 lm | 0,065 lm | 0,056 lm | 0,045 lm | 0,033 lm | 0,020 lm | 0,007 lm |

Warmup curve



Warmup result

| | |
|------------------|---------------------------------|
| Warmup time: | Lamp stabilized in 15 min 1 sec |
| Warmup variation | -0,9% |

Warmup conditions

| | |
|--------------------|--------|
| Stable period: | 15 min |
| Stable change max: | 2,0% |
| Minimum time: | 15 min |

Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 2726 K | -2 K | 2724 K |

Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 312 lm | -2 lm | 310 lm |