

Light efficiency:

72 Lumen/Watt

Light quality:

CRI: 21,4

Color temperature:

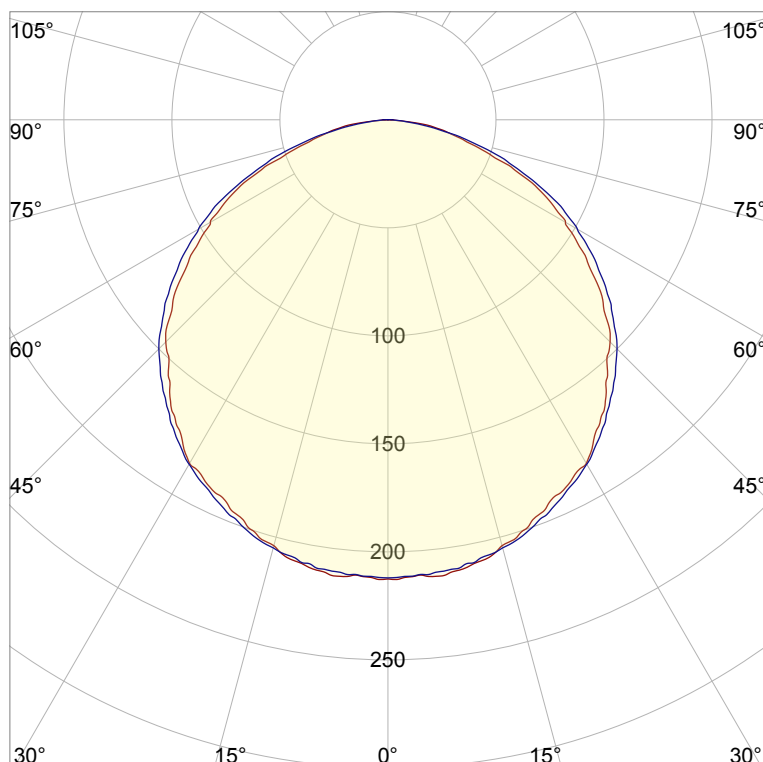
7371 K

Output: 619 lm

Peak: 213 cd

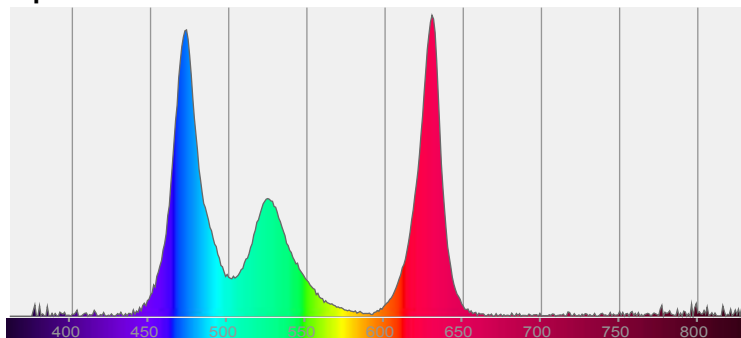
Power: 8,6 W

PF: 1,0

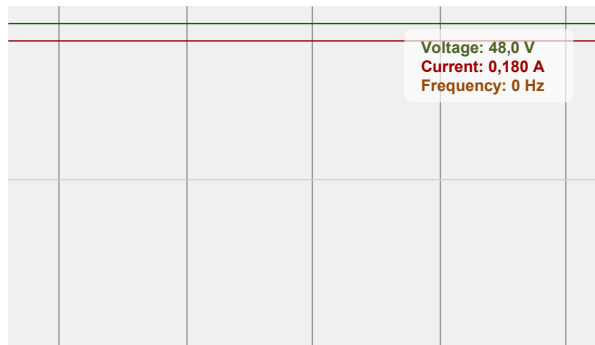


CIE 1931
x: 0,304
y: 0,302

Spectra



Power



Voltage: 48,0 V
Current: 0,180 A
Frequency: 0 Hz

Product name:

Defiant-0508-RGB-CRT

Item number:

FLNP/L22A0508/RGB/CRT

Date and time:

24.06.2020 16:21:17

Description:

Rank: R2G2B4/RC2GA2BA5/A

Toleranzen:

Lumen +/-4%

Candela +/-2,5%

Colour Temp +/-35 K

CRI +/-0,7

Angular Resolution 1 Grad Step

Last Calibration 20.05.2020

Pruefer:

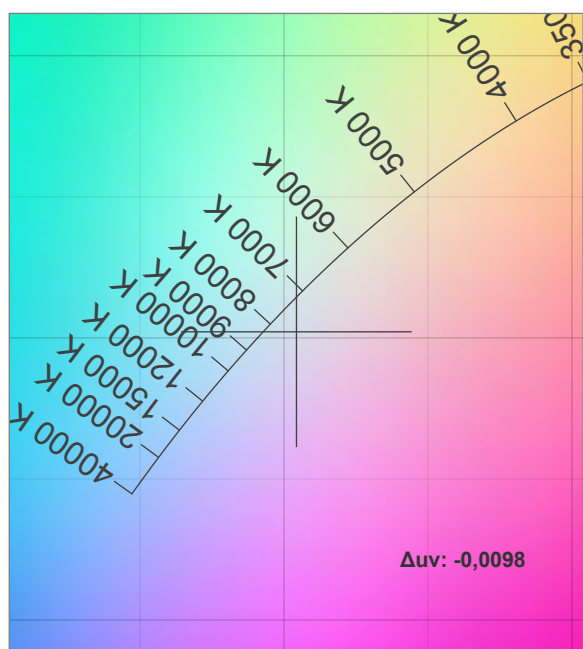
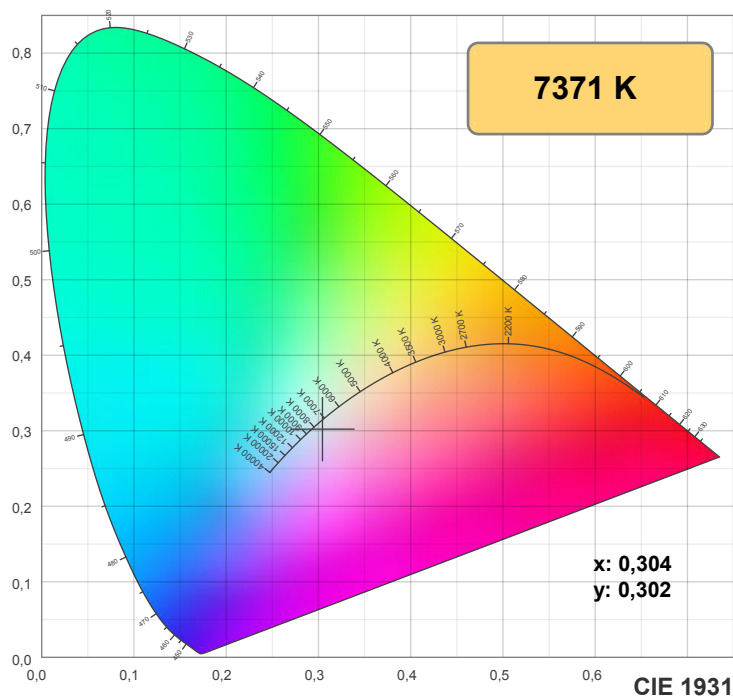
Peter Ulrich

Pruefort:

Lichtlabor

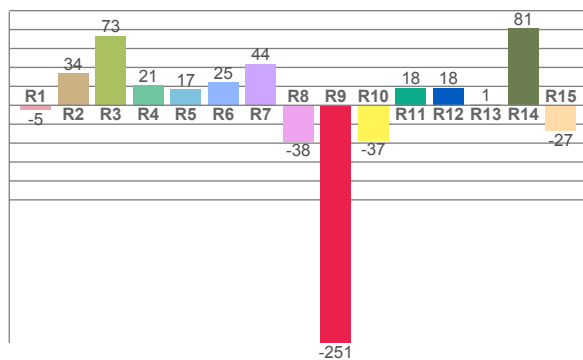
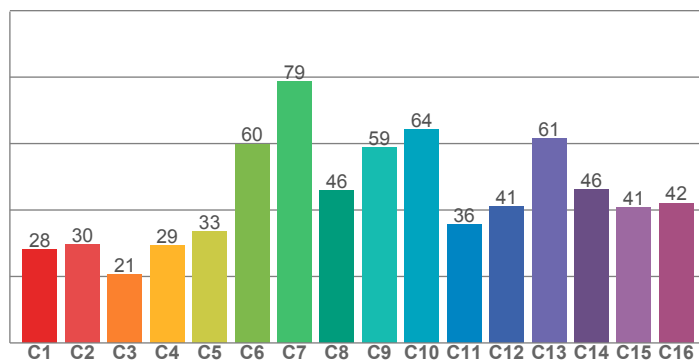
Gaustrasse 13

55411 Bingen am Rhein



TM30: 43,9

CRI: 21,4 (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 |
|------|------|------|------|------|------|------|-------|--------|-------|------|------|-----|------|-------|
| -5,2 | 34,0 | 73,4 | 21,5 | 16,8 | 24,6 | 43,9 | -38,1 | -251,2 | -37,2 | 18,5 | 18,5 | 0,9 | 81,0 | -27,1 |

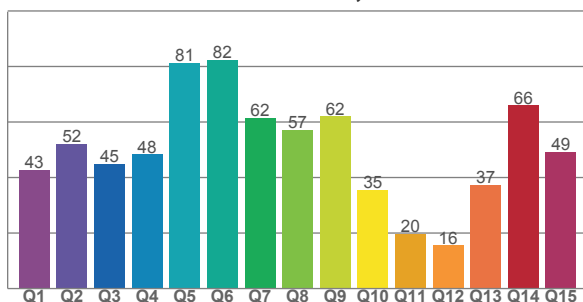
TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 28,1 | 29,5 | 20,6 | 29,2 | 33,4 | 59,9 | 78,7 | 45,9 | 58,8 | 64,3 | 35,6 | 41,2 | 61,5 | 46,2 | 40,8 | 42,1 |

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 42,7 | 52,2 | 44,8 | 48,3 | 81,3 | 82,3 | 61,5 | 57,2 | 62,0 | 35,4 | 19,7 | 15,5 | 37,4 | 66,0 | 49,1 |

CQS: 46,6



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 |
| 7371 K | 21,4 | -251,2 | 43,9 | 96,7 | 46,6 | 0,304 | 0,302 | 0,202 | 0,301 | -0,0098 |

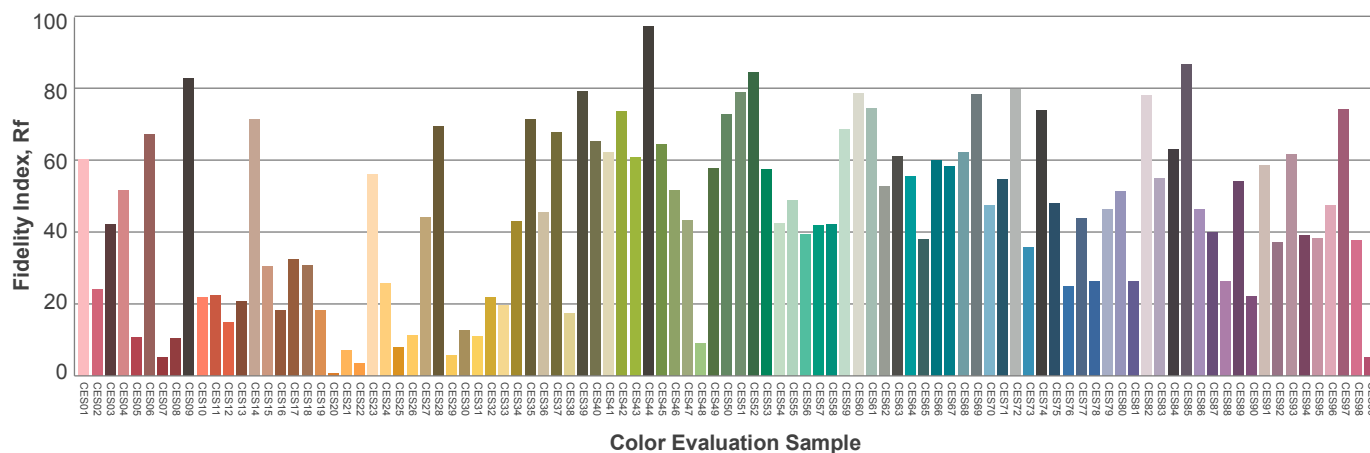
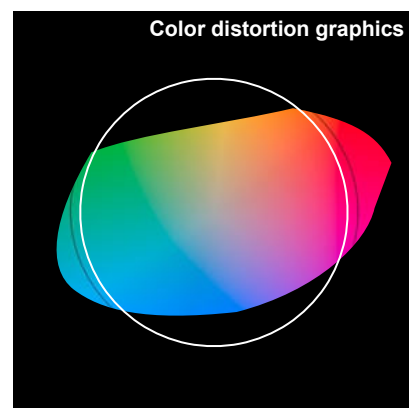
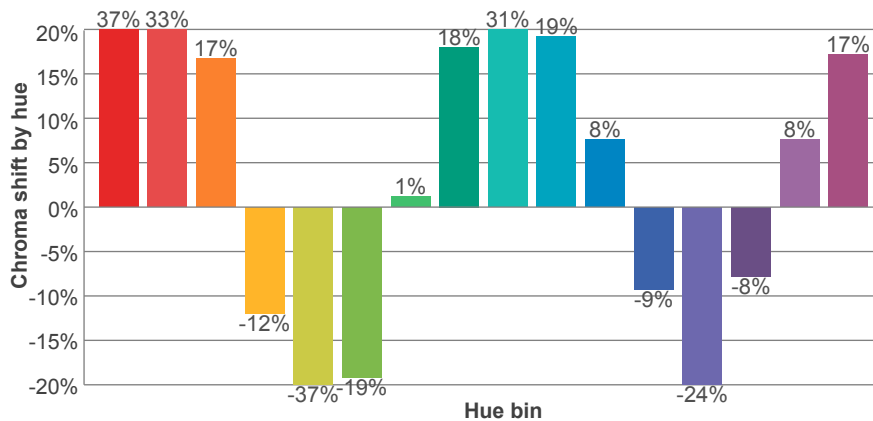
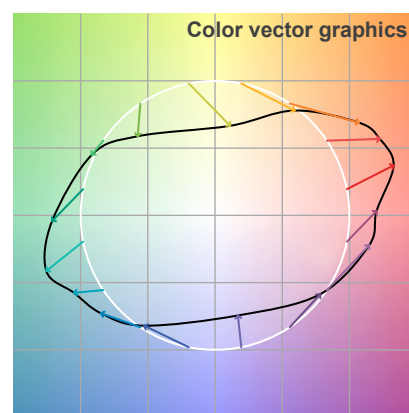
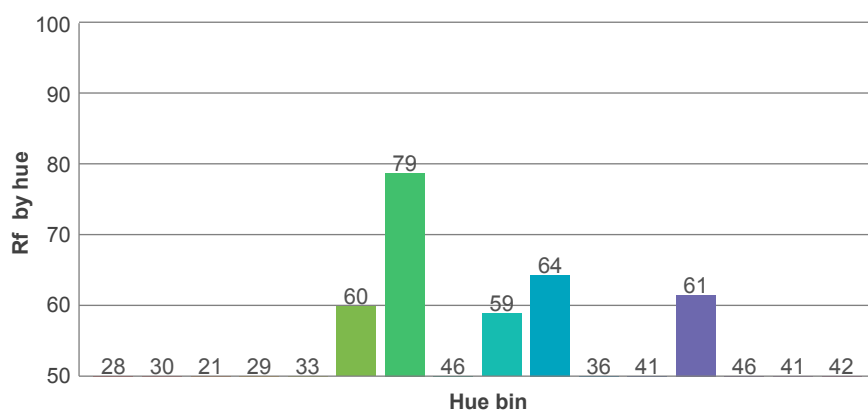
Rf 43,9

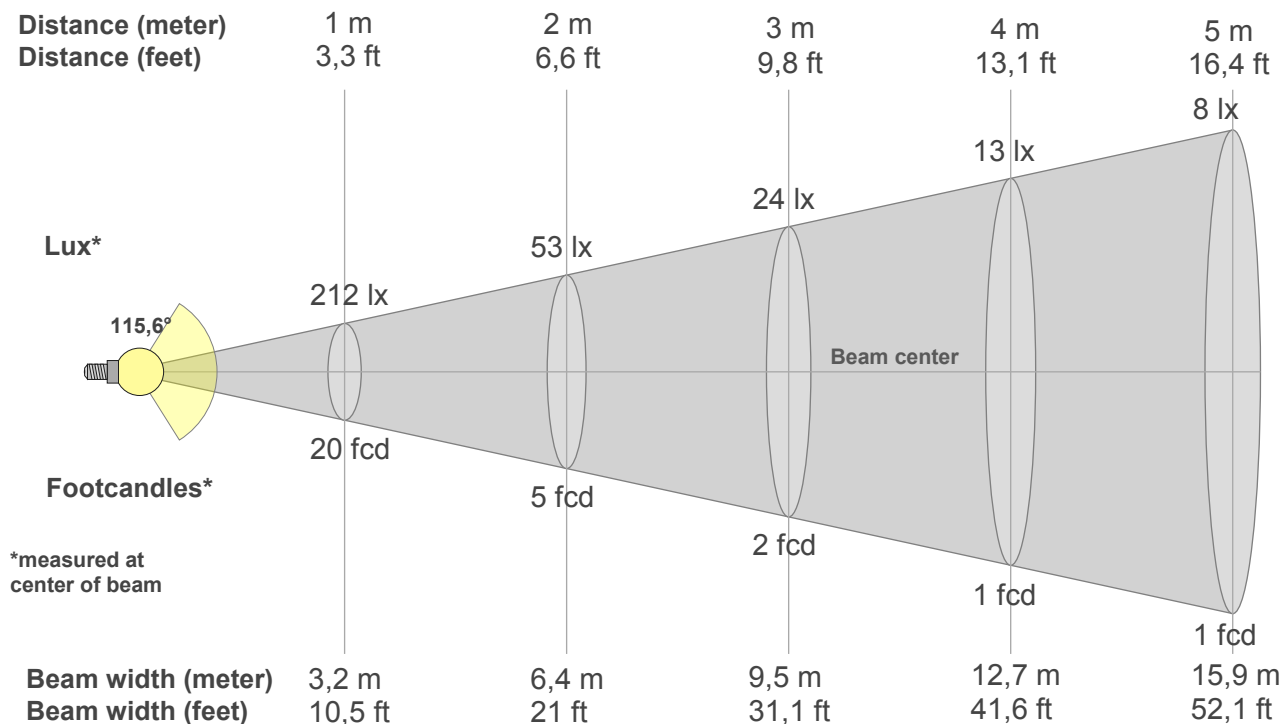
Fidelity index Rf

Rg 96,7

Gammut index Rg

| Hue Bin | R _f | Graphic shifts (%) | |
|---------|----------------|--------------------|------|
| | | Chroma | Hue |
| 1 | 28 | 37% | 10% |
| 2 | 30 | 33% | -21% |
| 3 | 21 | 17% | -51% |
| 4 | 29 | -12% | -43% |
| 5 | 33 | -37% | -24% |
| 6 | 60 | -19% | 15% |
| 7 | 79 | 1% | 14% |
| 8 | 46 | 18% | 28% |
| 9 | 59 | 31% | 16% |
| 10 | 64 | 19% | -10% |
| 11 | 36 | 8% | -30% |
| 12 | 41 | -9% | -36% |
| 13 | 61 | -24% | 2% |
| 14 | 46 | -8% | 32% |
| 15 | 41 | 8% | 45% |
| 16 | 42 | 17% | 27% |





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 |
| 212lx | 53lx | 24lx | 13lx | 8lx | 6lx | 4lx | 3lx | 3lx | 2lx | 2lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx | 1lx |
| 19,7fcd | 4,9fcd | 2,2fcd | 1,2fcd | 0,8fcd | 0,5fcd | 0,4fcd | 0,3fcd | 0,2fcd | 0,2fcd | 0,2fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 212 | 212 | 210 | 204 | 197 | 190 | 184 | 171 | 157 | 145 | 130 | 112 | 95 | 78 | 55 | 36 | 24 | 6 | 1 | 0 |
| 100% | 100% | 99% | 96% | 93% | 90% | 86% | 81% | 74% | 69% | 61% | 53% | 45% | 37% | 26% | 17% | 11% | 3% | 1% | 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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 212 | 211 | 209 | 205 | 199 | 192 | 184 | 174 | 162 | 150 | 135 | 118 | 101 | 82 | 61 | 40 | 21 | 7 | 1 | 0 |
| 100% | 100% | 98% | 97% | 94% | 91% | 87% | 82% | 76% | 71% | 64% | 56% | 48% | 39% | 29% | 19% | 10% | 3% | 0% | 0% |

Intensities in 180° c-plane

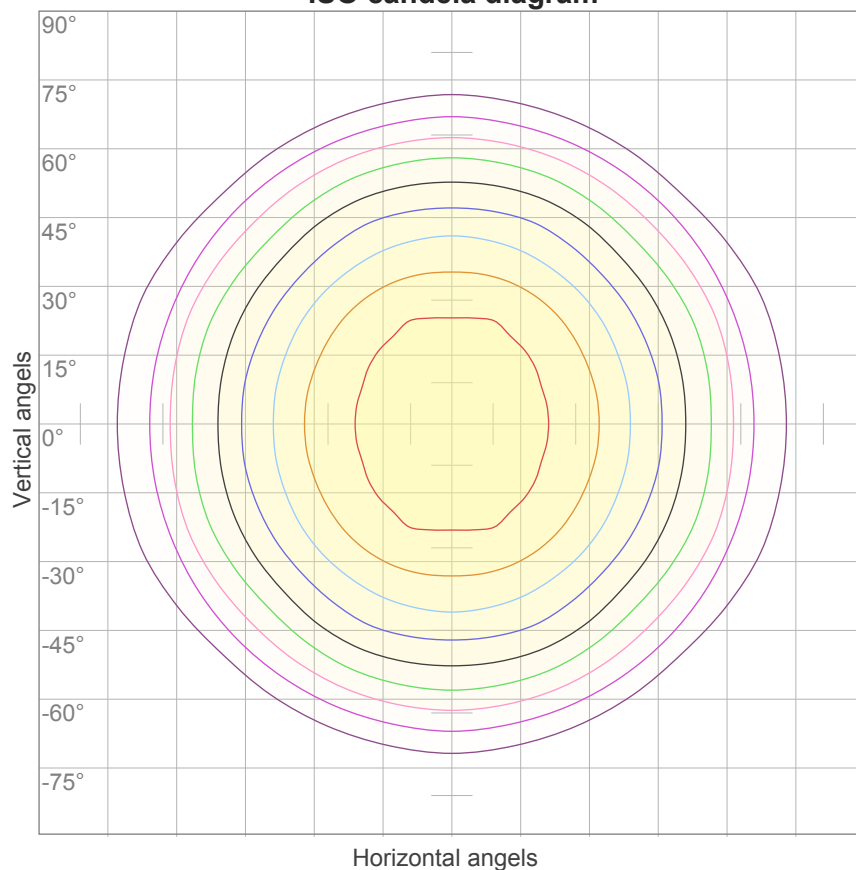
| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 212 | 212 | 210 | 204 | 197 | 190 | 184 | 171 | 157 | 145 | 130 | 112 | 95 | 78 | 55 | 36 | 24 | 6 | 1 | 0 |
| 100% | 100% | 99% | 96% | 93% | 90% | 86% | 81% | 74% | 69% | 61% | 53% | 45% | 37% | 26% | 17% | 11% | 3% | 1% | 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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 212 | 211 | 209 | 205 | 199 | 192 | 184 | 174 | 162 | 150 | 135 | 118 | 101 | 82 | 61 | 40 | 21 | 7 | 1 | 0 |
| 100% | 100% | 98% | 97% | 94% | 91% | 87% | 82% | 76% | 71% | 64% | 56% | 48% | 39% | 29% | 19% | 10% | 3% | 0% | 0% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 115,6° | 159,7° | 171,9° | 79,4% | 53,5% |

ISO candela diagram



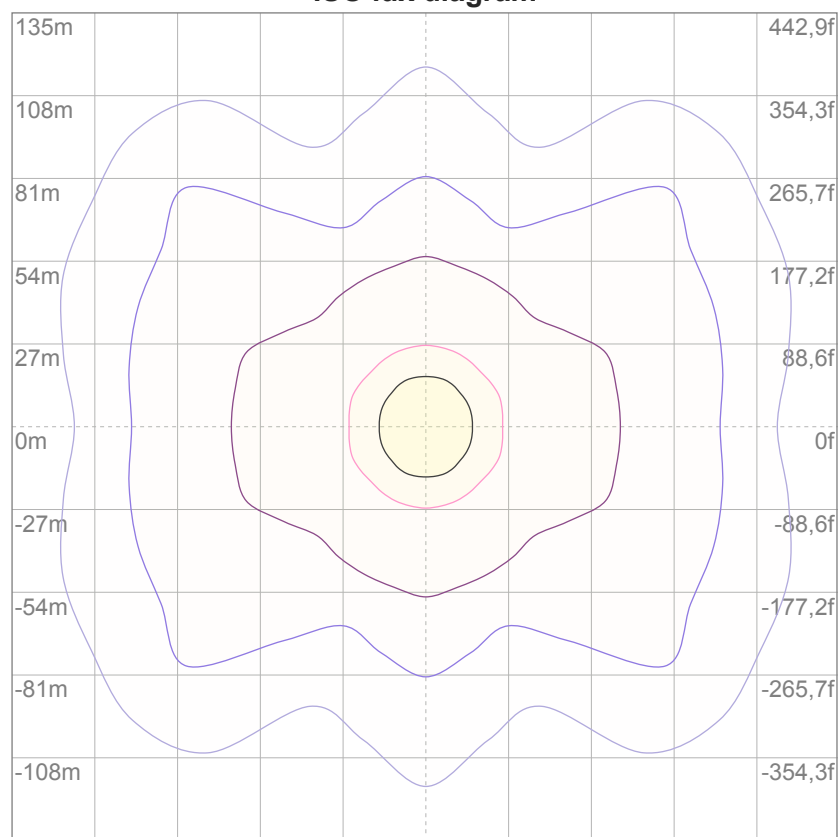
| | |
|-----|--------|
| 10% | 21 cd |
| 20% | 42 cd |
| 30% | 64 cd |
| 40% | 85 cd |
| 50% | 106 cd |
| 60% | 127 cd |
| 70% | 149 cd |
| 80% | 170 cd |
| 90% | 191 cd |

Conditions:

Number of c-planes: 16

Candela at center: 212 cd

ISO lux diagram



| | |
|-----|----------|
| 3% | 63,7m lx |
| 5% | 0,106 lx |
| 10% | 0,212 lx |
| 30% | 0,637 lx |
| 50% | 1,06 lx |

Conditions:

Number of c-planes: 16

Lux at center: 2,12 lx

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

Glare Evaluation According to UGR

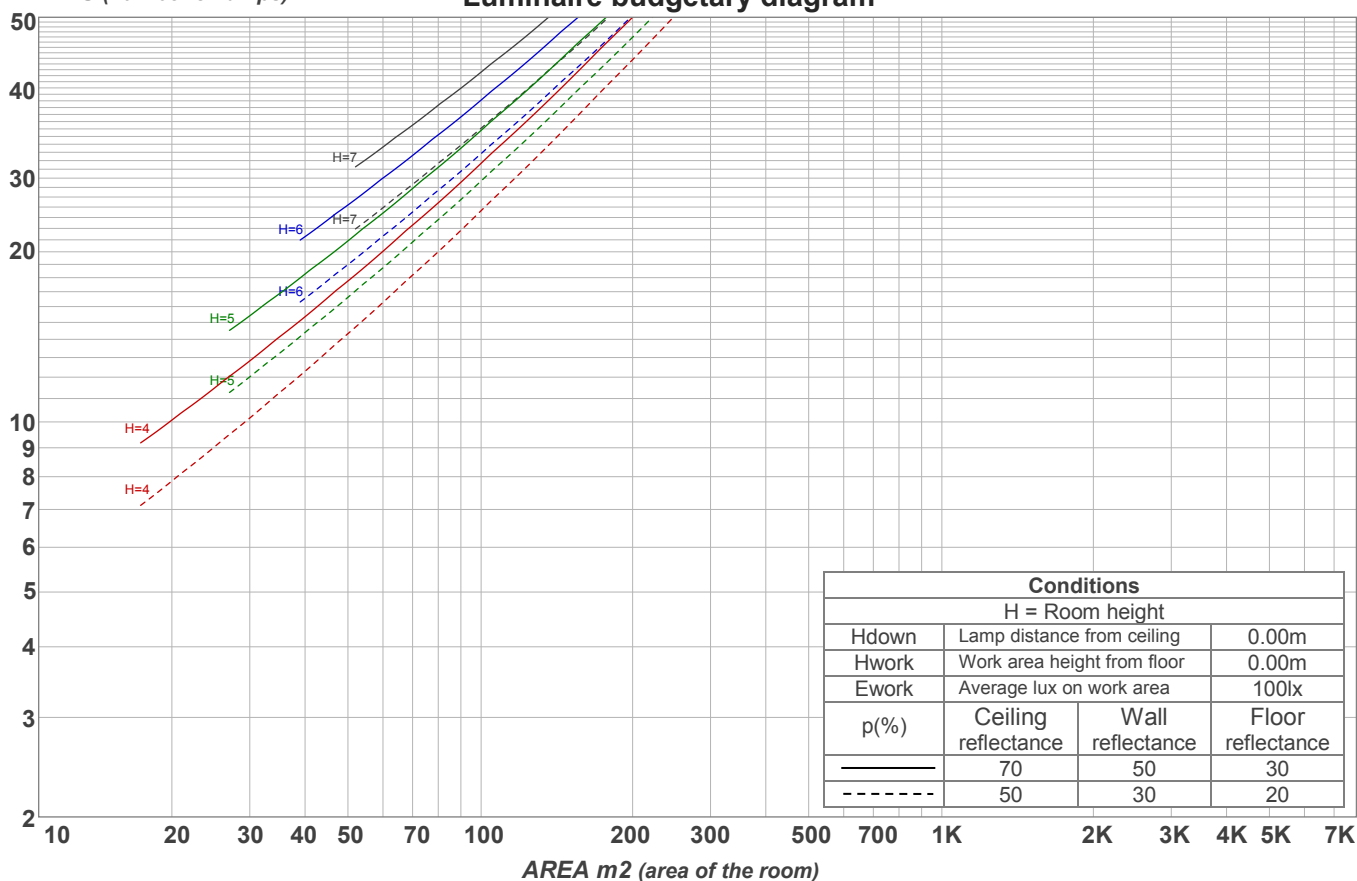
| | | | | | | | | | | | |
|---|-----|---|------|------|------|------|---|------|------|------|------|
| p Ceiling | | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| p Walls | | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| p Floor | | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Room size X Y | | Viewing direction at right angles to lamp axis | | | | | Viewing direction parallel to lamp axis | | | | |
| 2H | 2H | 20,8 | 22,0 | 21,1 | 22,4 | 22,6 | 22,2 | 23,4 | 22,4 | 23,7 | 23,9 |
| | 3H | 21,9 | 23,1 | 22,3 | 23,4 | 23,6 | 23,6 | 24,8 | 24,0 | 25,1 | 25,3 |
| | 4H | 22,2 | 23,4 | 22,6 | 23,7 | 23,9 | 24,1 | 25,3 | 24,5 | 25,6 | 25,8 |
| | 6H | 22,5 | 23,5 | 22,8 | 23,8 | 24,2 | 24,5 | 25,5 | 24,8 | 25,8 | 26,2 |
| | 8H | 22,5 | 23,5 | 22,8 | 23,8 | 24,2 | 24,5 | 25,5 | 24,8 | 25,8 | 26,2 |
| | 12H | 22,5 | 23,5 | 22,9 | 23,8 | 24,3 | 24,5 | 25,5 | 24,8 | 25,8 | 26,3 |
| 4H | 2H | 21,4 | 22,6 | 21,8 | 22,9 | 23,2 | 22,5 | 23,7 | 22,9 | 24,0 | 24,2 |
| | 3H | 22,7 | 23,7 | 23,1 | 24,1 | 24,5 | 24,2 | 25,2 | 24,5 | 25,5 | 25,9 |
| | 4H | 23,1 | 24,0 | 23,5 | 24,4 | 24,9 | 24,7 | 25,6 | 25,1 | 26,0 | 26,5 |
| | 6H | 23,3 | 24,2 | 23,8 | 24,6 | 24,9 | 25,0 | 25,9 | 25,5 | 26,2 | 26,6 |
| | 8H | 23,4 | 24,2 | 23,9 | 24,6 | 25,0 | 25,1 | 25,9 | 25,6 | 26,2 | 26,6 |
| | 12H | 23,4 | 24,1 | 23,9 | 24,5 | 25,0 | 25,1 | 25,7 | 25,6 | 26,2 | 26,6 |
| 8H | 4H | 23,2 | 24,0 | 23,8 | 24,4 | 24,8 | 24,7 | 25,5 | 25,2 | 25,9 | 26,3 |
| | 6H | 23,6 | 24,2 | 24,1 | 24,7 | 25,2 | 25,1 | 25,7 | 25,6 | 26,2 | 26,8 |
| | 8H | 23,8 | 24,3 | 24,3 | 24,8 | 25,5 | 25,2 | 25,8 | 25,8 | 26,3 | 26,9 |
| | 12H | 23,8 | 24,3 | 24,4 | 24,8 | 25,4 | 25,3 | 25,7 | 25,9 | 26,2 | 26,8 |
| 12H | 4H | 23,2 | 23,9 | 23,7 | 24,3 | 24,8 | 24,7 | 25,4 | 25,2 | 25,8 | 26,3 |
| | 6H | 23,7 | 24,2 | 24,2 | 24,7 | 25,3 | 25,2 | 25,7 | 25,7 | 26,2 | 26,8 |
| | 8H | 23,8 | 24,2 | 24,4 | 24,7 | 25,4 | 25,2 | 25,7 | 25,8 | 26,2 | 26,8 |
| Variation of the observer position for the luminaire distance S | | | | | | | | | | | |
| S = 1.0H | | 0,1 / -0,2 | | | | | 0,1 / -0,1 | | | | |
| S = 1.5H | | 0,3 / -0,5 | | | | | 0,3 / -0,4 | | | | |
| S = 2.0H | | 0,7 / -0,9 | | | | | 0,9 / -1,1 | | | | |
| Standard table | | n/a | | | | | n/a | | | | |
| Correction summand | | n/a | | | | | n/a | | | | |
| Corrected glare indices referring to 619 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 | 95 | 98 | 94 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 78 | 96 | 89 | 83 | 77 | 85 | 80 | 75 | 82 | 78 | 74 | 79 | 75 | 72 | 70 |
| 3 | 90 | 80 | 71 | 65 | 88 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 67 | 62 | 70 | 65 | 61 | 59 |
| 4 | 82 | 70 | 62 | 55 | 80 | 69 | 61 | 54 | 67 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 60 | 52 | 46 | 58 | 51 | 46 | 56 | 50 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 41 | 54 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 40 | 38 |
| 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 | 45 | 37 | 32 | 43 | 37 | 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)

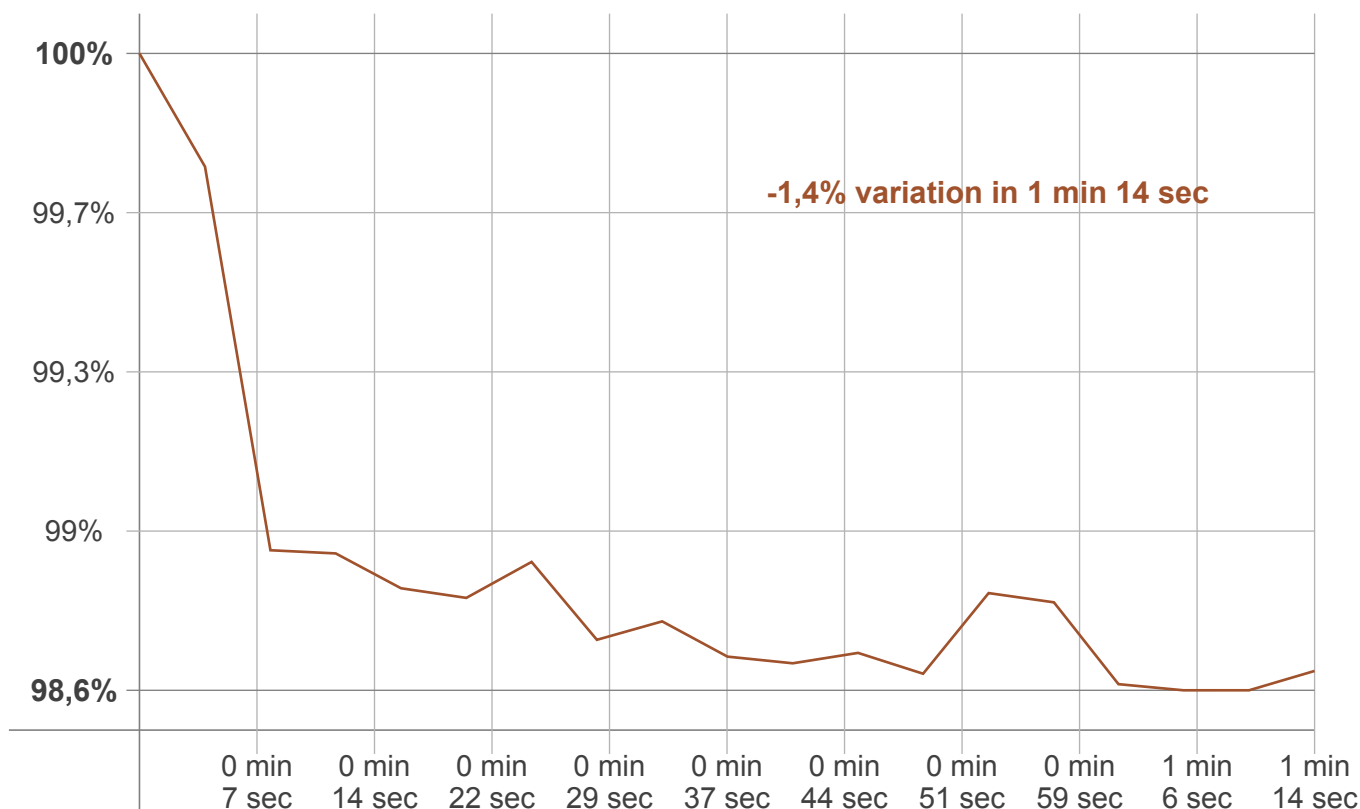
Luminaire budgetary diagram



Zonal Lumen Summary

| 0°-10° | 10°-20° | 20°-30° | 30°-40° | 40°-50° | 50°-60° | 60°-70° | 70°-80° | 80°-90° |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 20,1 lm | 57,9 lm | 88,2 lm | 108 lm | 114 lm | 104 lm | 78,1 lm | 39,8 lm | 9,39 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0,005 lm | 0,000 lm | 0,000 lm | 0,000 lm | 0,000 lm | 0,000 lm | 0,000 lm | 0,000 lm | 0,000 lm |

Warmup curve



Warmup result

| | |
|------------------|---------------|
| Warmup time: | Not completed |
| Warmup variation | -1,4% |

Warmup conditions

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

Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 8488 K | -1117 K | 7371 K |

Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 621 lm | -2 lm | 619 lm |