

Light efficiency:

115 Lumen/Watt

Light quality:

CRI: 94,5

Color temperature:

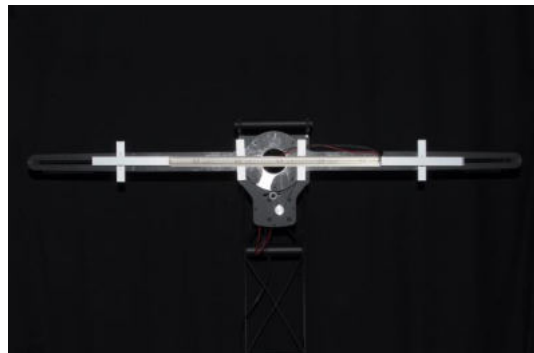
2728 K

Output: 277 lm

Peak: 306 cd

Power: 2,4 W

PF: 1,0



Product name:

**Sta-Maria-6\_510mm\_927\_Lens-Asymmetric-Frosted-2**

Item number:

**NP/L1C/01E/G1/L1C/0510/927/LAF-2**

Date and time:

**29.06.2022 15:01:42**

Description:

**Rank: C80-AD-8GB**

**Tolerances:**

**Lumen +/-4%**

**Candela +/-2,5%**

**Colour Temp +/-35 Kelvin**

**CRI +/-0,7**

**Angular Resolution: 1 Degree Step**

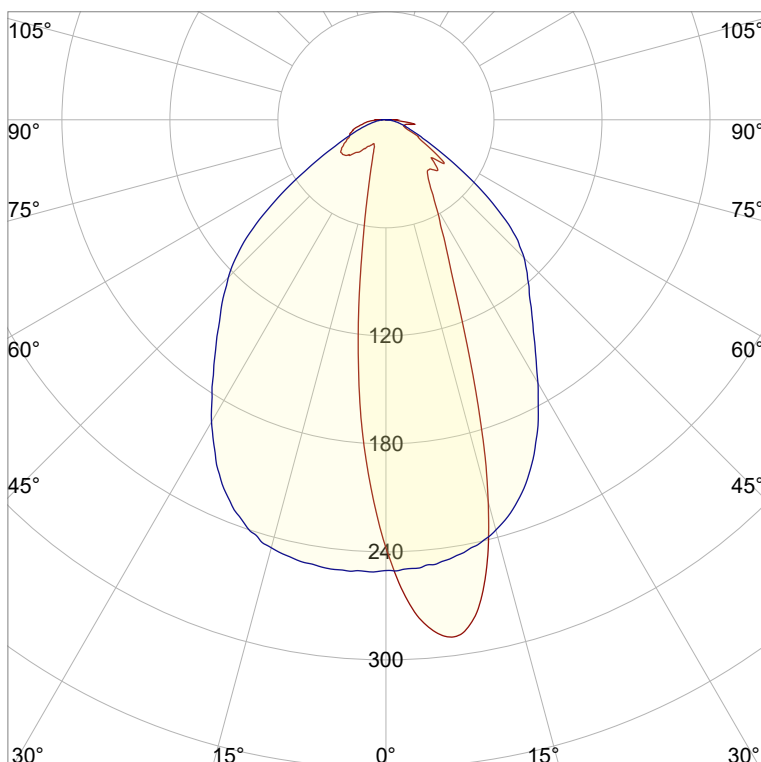
**Last Calibration 20-09-2021**

**Tester: Peter Ulrich**

**Test Site: Lichtlabor**

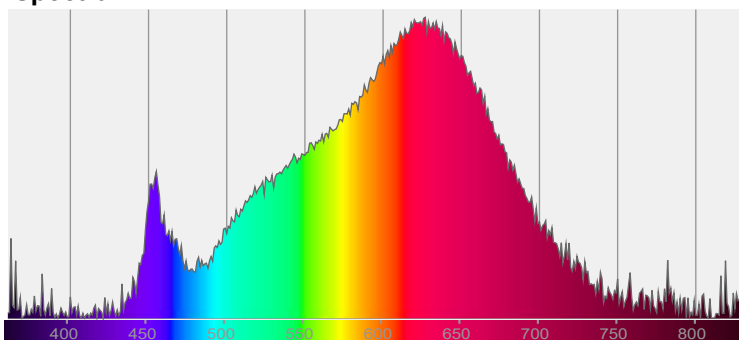
**Gaustrasse 13**

**55411 Bingen am Rhein**

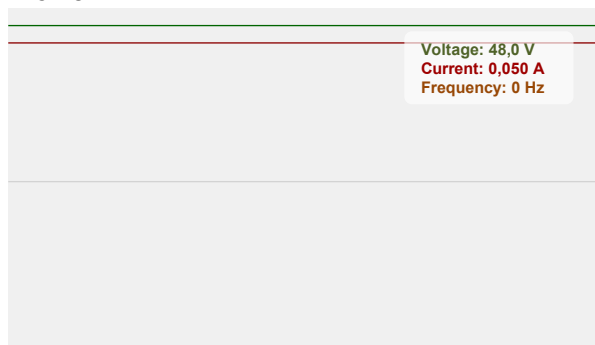


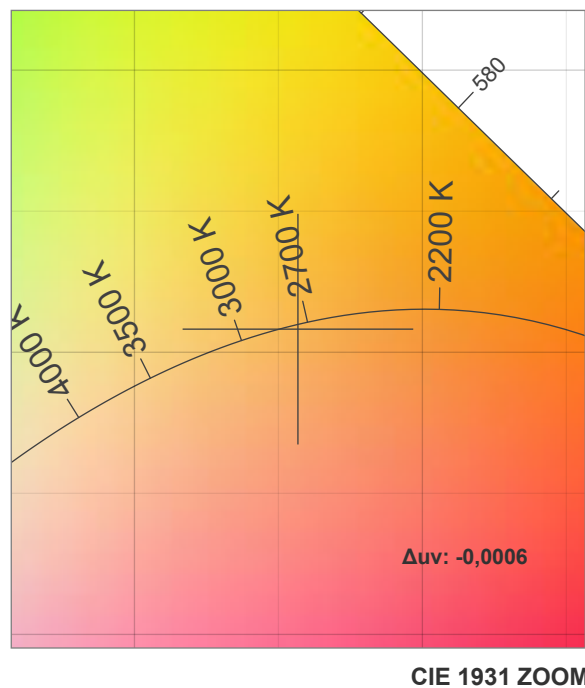
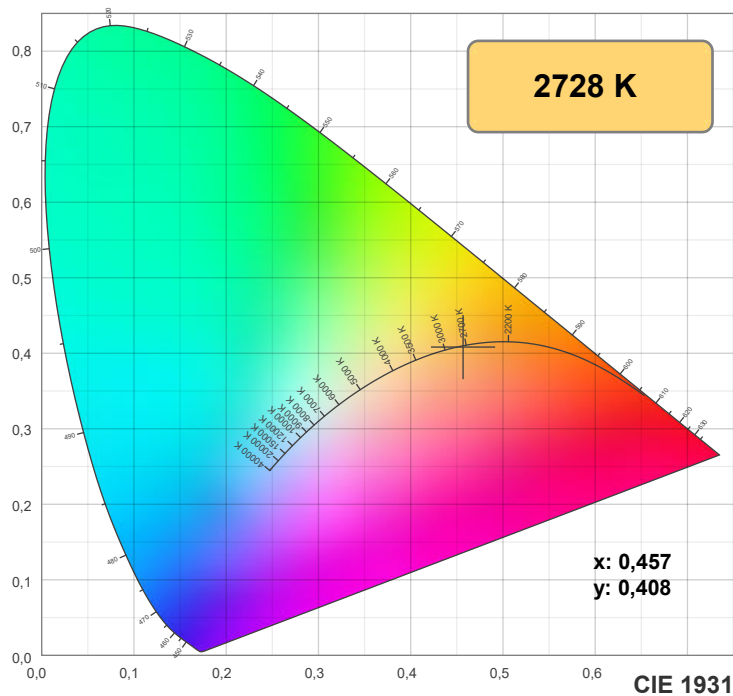
CIE 1931  
x: 0,457  
y: 0,408

Spectra

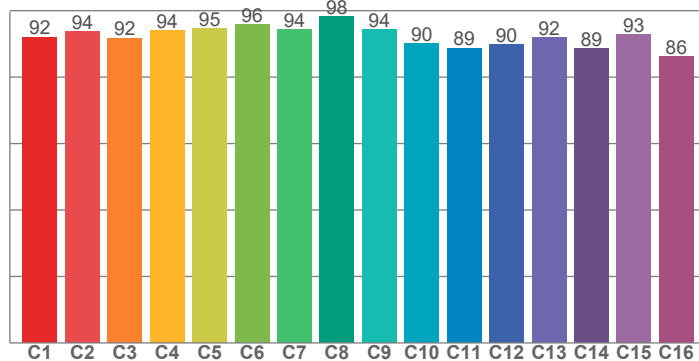


Power

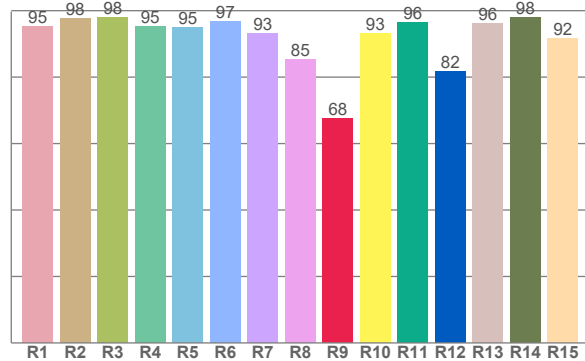




**TM30: 92,2**



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

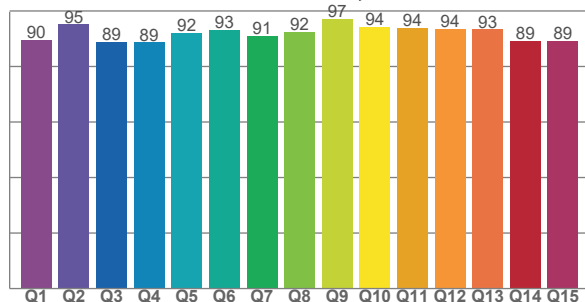
**TM30 C values, 16 binned values out of total of 99 C values**

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 92,1 | 93,6 | 91,8 | 93,9 | 94,7 | 95,9 | 94,4 | 98,1 | 94,3 | 90,0 | 88,7 | 89,8 | 92,0 | 88,5 | 92,9 | 86,2 |

**CQS Q values**

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 89,6 | 95,2 | 88,8 | 88,7 | 92,2 | 93,3 | 91,1 | 92,3 | 97,2 | 94,2 | 93,9 | 93,5 | 93,4 | 89,1 | 89,1 |

**CQS: 91,6**



## 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                             |
| 2728 K            | 94,5                  | 67,7          | 92,2           | 99,8        | 91,6                | 0,457                     | 0,408                     | 0,262            | 0,351            | -0,0006                         |

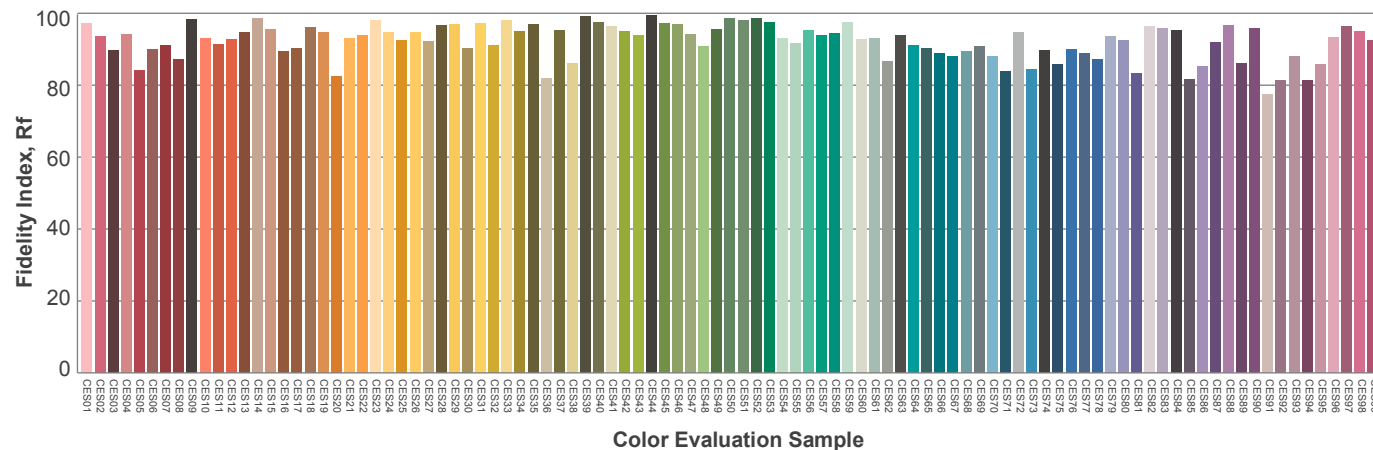
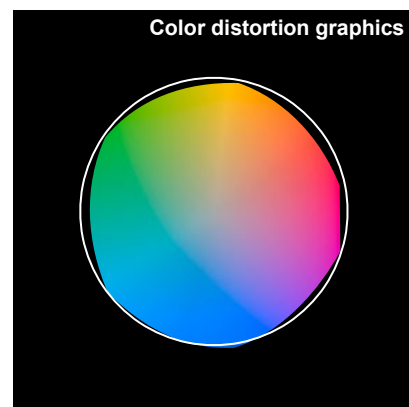
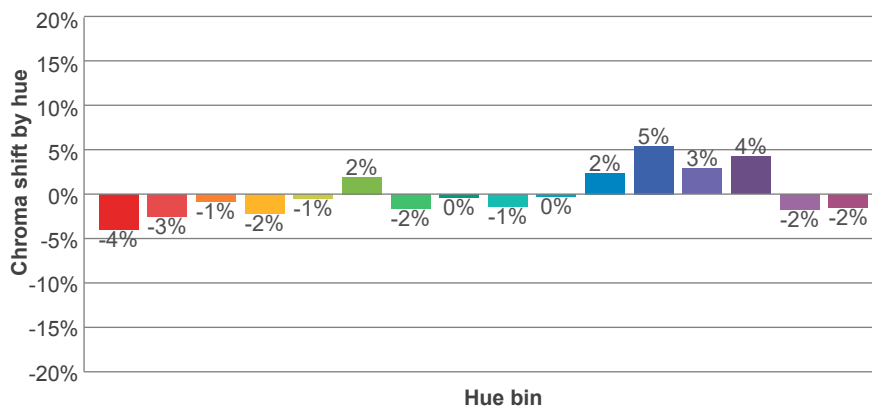
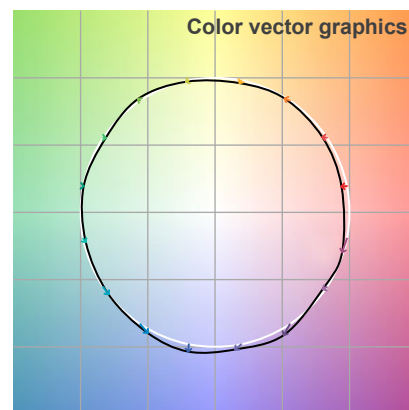
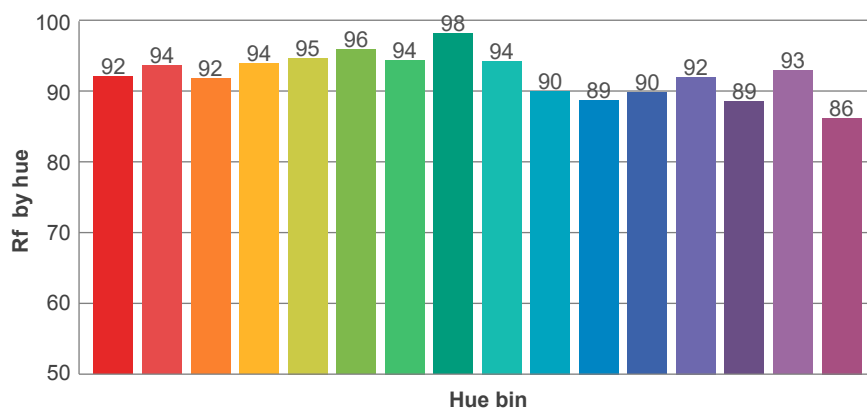
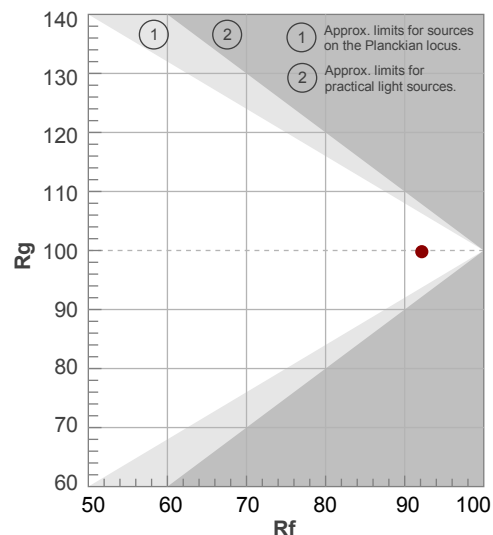
## Rf 92,2

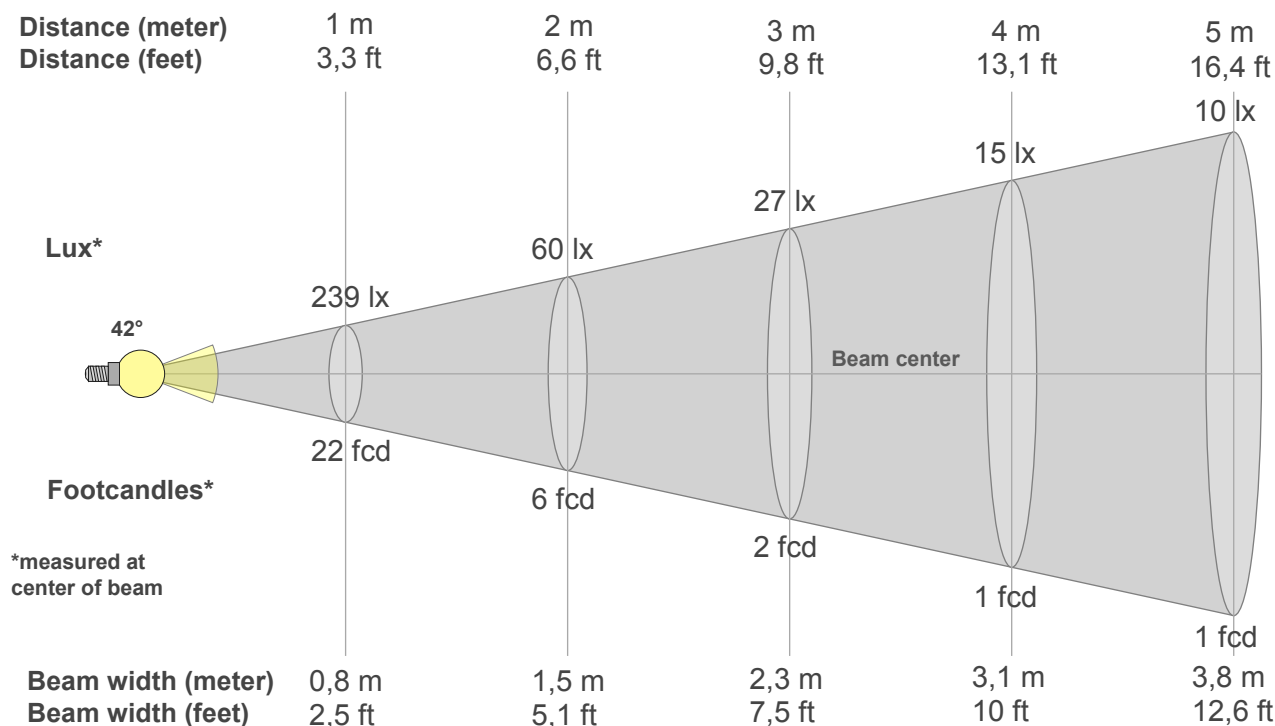
Fidelity index Rf

## Rg 99,8

Gammut index Rg

| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 92             | -4%                | 0%   |
| 2       | 94             | -3%                | 2%   |
| 3       | 92             | -1%                | 4%   |
| 4       | 94             | -2%                | 1%   |
| 5       | 95             | -1%                | 2%   |
| 6       | 96             | 2%                 | 1%   |
| 7       | 94             | -2%                | -1%  |
| 8       | 98             | 0%                 | 0%   |
| 9       | 94             | -1%                | 3%   |
| 10      | 90             | 0%                 | 7%   |
| 11      | 89             | 2%                 | 8%   |
| 12      | 90             | 5%                 | 1%   |
| 13      | 92             | 3%                 | -5%  |
| 14      | 89             | 4%                 | -8%  |
| 15      | 93             | -2%                | -3%  |
| 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 |
| 239lx   | 60lx   | 27lx   | 15lx   | 10lx   | 7lx    | 5lx    | 4lx    | 3lx    | 2lx    | 2lx    | 2lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    |
| 22,2fcd | 5,6fcd | 2,5fcd | 1,4fcd | 0,9fcd | 0,6fcd | 0,5fcd | 0,3fcd | 0,3fcd | 0,2fcd | 0,2fcd | 0,2fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd |

## Intensities in 0° c-plane

| 0°   | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 239  | 261  | 278  | 287  | 289  | 281  | 263  | 236 | 202 | 165 | 130 | 104 | 86  | 74  | 64  | 56  | 49  | 44  | 40  | 37  |
| 100% | 109% | 116% | 120% | 121% | 117% | 110% | 99% | 84% | 69% | 55% | 44% | 36% | 31% | 27% | 23% | 21% | 18% | 17% | 16% |

## Intensities in 90° c-plane

| 0°   | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 239  | 250  | 250  | 248  | 247  | 244  | 242  | 238  | 233 | 228 | 221 | 212 | 203 | 192 | 180 | 169 | 157 | 147 | 139 | 131 |
| 100% | 105% | 104% | 104% | 103% | 102% | 101% | 100% | 98% | 95% | 92% | 89% | 85% | 80% | 75% | 71% | 66% | 62% | 58% | 55% |

## Intensities in 180° c-plane

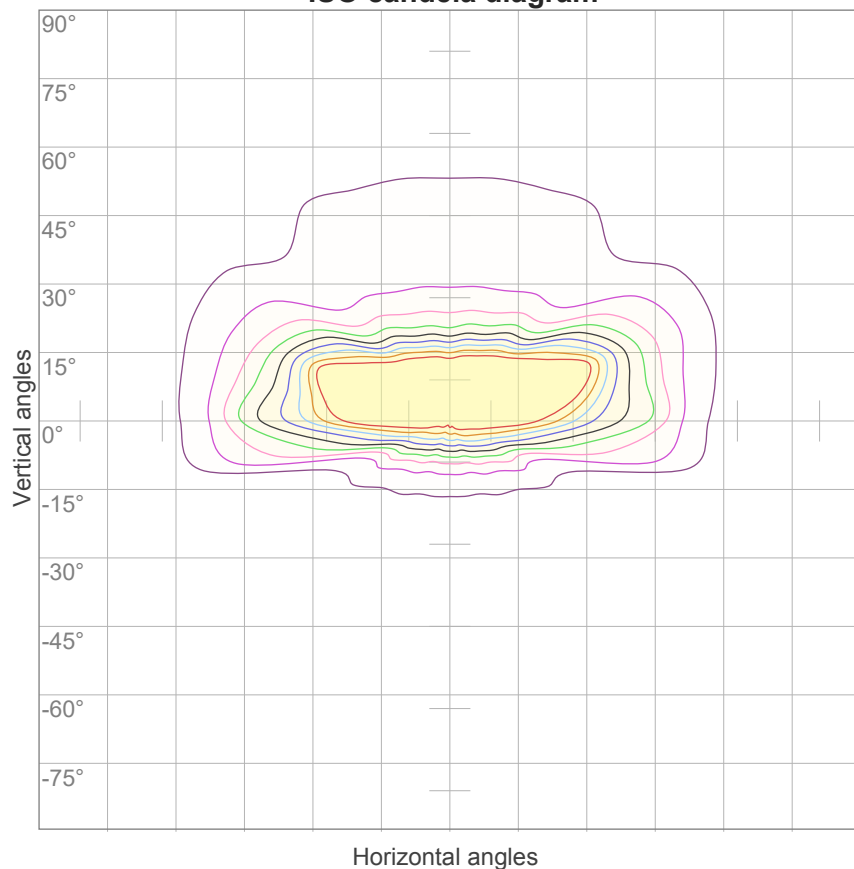
| 0°   | 2°  | 4°  | 6°  | 8°  | 10° | 12° | 14° | 16° | 18° | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 239  | 209 | 179 | 144 | 109 | 78  | 56  | 41  | 32  | 25  | 21  | 18  | 16  | 15  | 15  | 16  | 17  | 18  | 20  | 21  |
| 100% | 88% | 75% | 60% | 46% | 33% | 23% | 17% | 13% | 11% | 9%  | 8%  | 7%  | 6%  | 6%  | 7%  | 7%  | 7%  | 8%  | 9%  |

## Intensities in 270° c-plane

| 0°   | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° |
|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 239  | 251  | 251  | 251  | 251  | 250  | 249  | 247  | 245  | 241  | 236 | 230 | 223 | 214 | 204 | 194 | 182 | 171 | 161 | 152 |
| 100% | 105% | 105% | 105% | 105% | 105% | 104% | 103% | 102% | 101% | 99% | 96% | 93% | 90% | 85% | 81% | 76% | 72% | 68% | 64% |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 42°            | 92,7°           | 172,5°            | 84,3%                        | 66,7%                       |

### ISO candela diagram



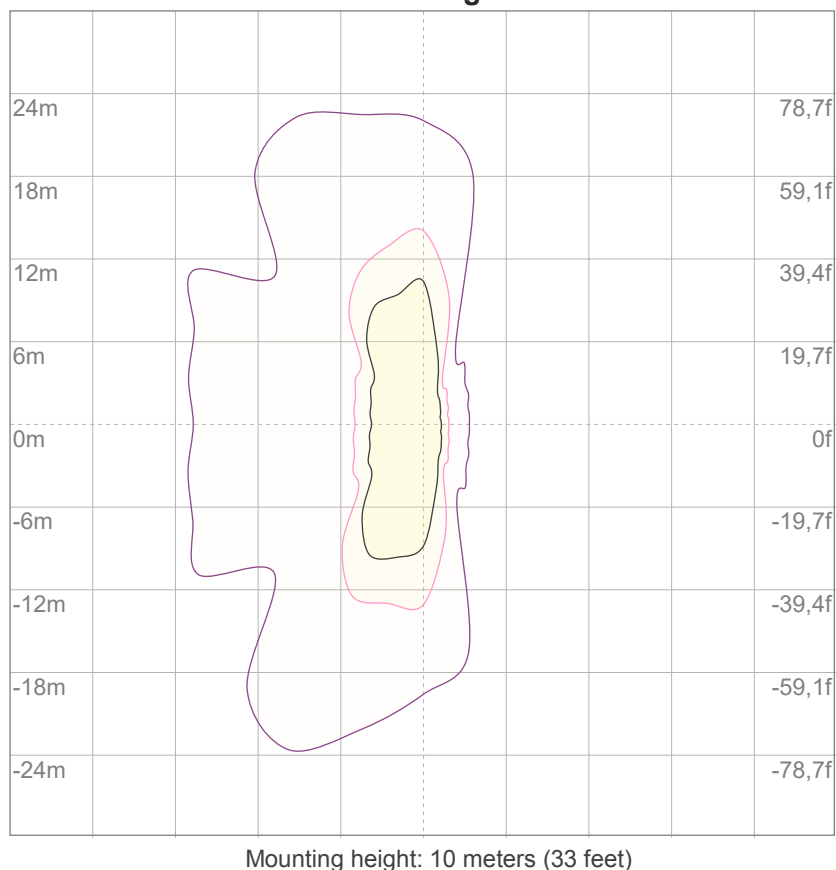
|     |        |
|-----|--------|
| 10% | 24 cd  |
| 20% | 48 cd  |
| 30% | 72 cd  |
| 40% | 96 cd  |
| 50% | 120 cd |
| 60% | 143 cd |
| 70% | 167 cd |
| 80% | 191 cd |
| 90% | 215 cd |

#### Conditions:

Number of c-planes: 16

Candela at center: 239 cd

### ISO lux diagram



|     |          |
|-----|----------|
| 3%  | 71,7m lx |
| 5%  | 0,120 lx |
| 10% | 0,239 lx |
| 30% | 0,717 lx |
| 50% | 1,20 lx  |

#### Conditions:

Number of c-planes: 16

Lux at center: 2,39 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<br>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 |
| 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                                     |     |     |     |     |
| Standard table  | n/a  |     |     |     |     | n/a                                     |     |     |     |     |
| Correction summand  | n/a  |     |     |     |     | n/a                                     |     |     |     |     |
| Corrected glare indices referring to 277 lm total luminous flux |  |     |     |     |     |   |     |     |     |     |

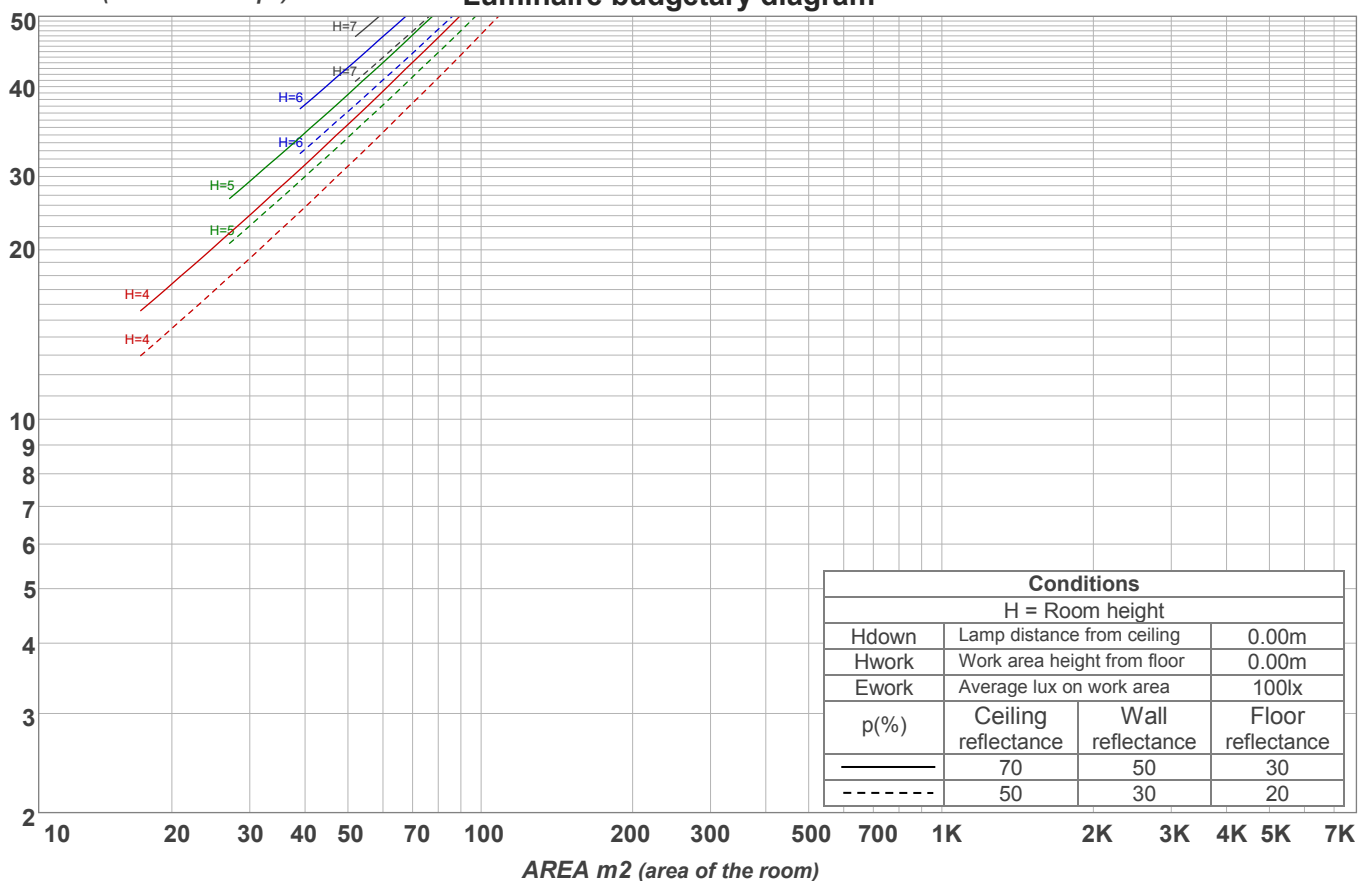
UGR data could not be calculated due to missing/wrong symmetry. Goto Edit->Photometric->Corrections and select Correct asymmetry.

## 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                   | 119  | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1                   | 110  | 105 | 101 | 98  | 107 | 103 | 99  | 96  | 99  | 96  | 93  | 95  | 92  | 90  | 91  | 89  | 88  | 86  |
| 2                   | 101  | 94  | 88  | 83  | 99  | 92  | 87  | 82  | 89  | 84  | 80  | 85  | 82  | 78  | 82  | 79  | 76  | 74  |
| 3                   | 94   | 85  | 77  | 72  | 92  | 83  | 76  | 71  | 80  | 74  | 70  | 78  | 73  | 69  | 75  | 71  | 67  | 65  |
| 4                   | 87   | 77  | 69  | 63  | 85  | 75  | 68  | 63  | 73  | 67  | 62  | 71  | 65  | 61  | 69  | 64  | 60  | 58  |
| 5                   | 81   | 70  | 62  | 56  | 80  | 69  | 62  | 56  | 67  | 61  | 55  | 65  | 59  | 55  | 63  | 58  | 54  | 52  |
| 6                   | 76   | 64  | 57  | 51  | 75  | 64  | 56  | 51  | 62  | 55  | 50  | 60  | 54  | 50  | 59  | 54  | 49  | 48  |
| 7                   | 72   | 60  | 52  | 46  | 70  | 59  | 51  | 46  | 57  | 51  | 46  | 56  | 50  | 46  | 55  | 49  | 45  | 44  |
| 8                   | 67   | 55  | 48  | 43  | 66  | 55  | 47  | 42  | 53  | 47  | 42  | 52  | 46  | 42  | 51  | 46  | 42  | 40  |
| 9                   | 64   | 52  | 44  | 39  | 62  | 51  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 48  | 43  | 39  | 37  |
| 10                  | 60   | 48  | 41  | 37  | 59  | 48  | 41  | 37  | 47  | 41  | 36  | 46  | 40  | 36  | 45  | 40  | 36  | 35  |

LAMPS (number of lamps)

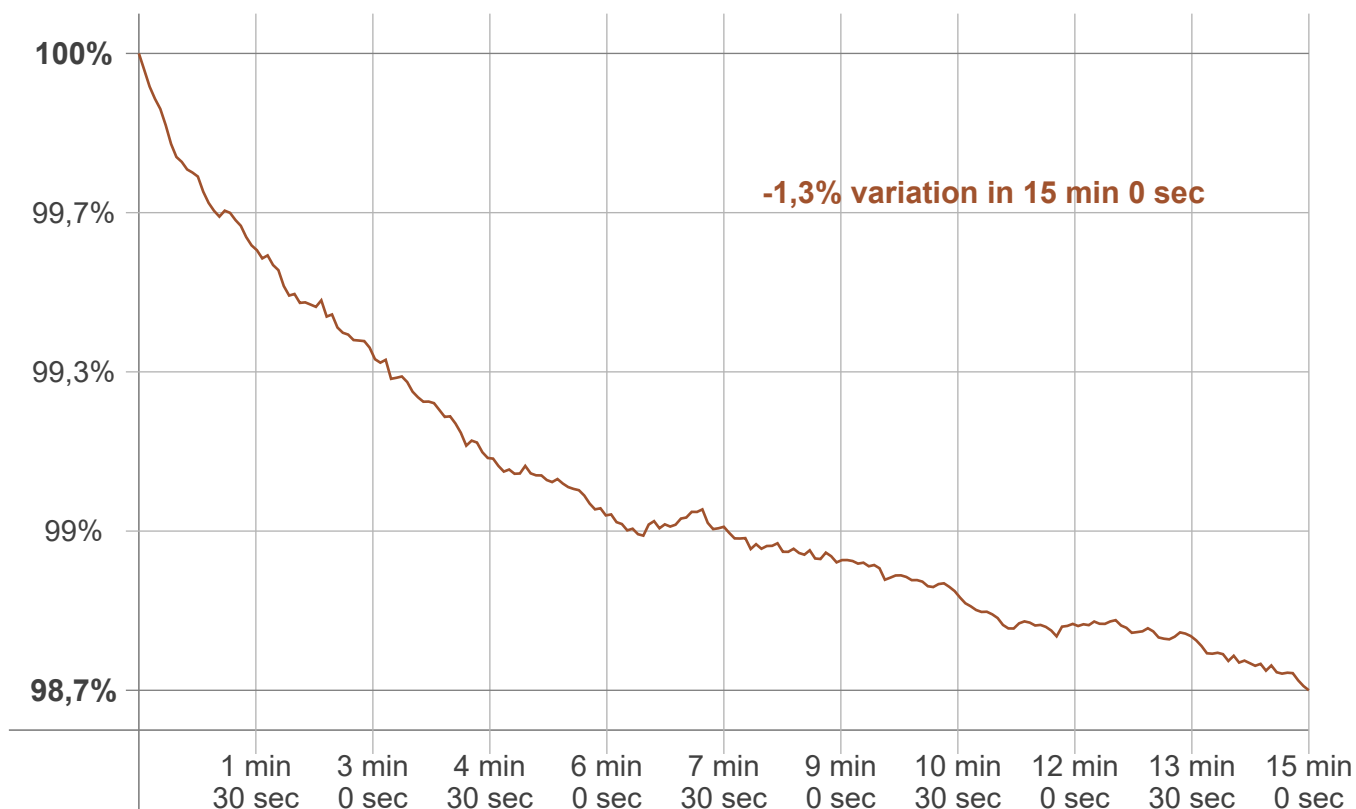
Luminaire budgetary diagram



## Zonal Lumen Summary

| 0°-10°   | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 21,3 lm  | 48,6 lm   | 50,9 lm   | 44,4 lm   | 37,6 lm   | 30,4 lm   | 20,4 lm   | 13,6 lm   | 9,58 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0,017 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:     | Lamp stabilized in 15 min 0 sec |
| Warmup variation | -1,3%                           |

## Warmup conditions

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

## Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 2728 K    | +0 K       | 2728 K  |

## Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 280 lm       | -3 lm         | 277 lm     |