

Light efficiency:

124 Lumen/Watt

Light quality:

CRI: 94,1

Color temperature:

2735 K

Output: 1426 lm

Peak: 607 cd

Power: 11,5 W

PF: 1,0



Product name:

**Jago-2\_510mm\_927\_Lens-90°-Transparent**

Item number:

**NP/L1C/19B/G1/L1C/0510/927/L9T**

Date and time:

**20.07.2022 16:37:49**

Description:

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

**Tolerances:**

**Lumen +/-4%**

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

**Colour Temp +/-35 Kelvin**

**CRI +/-0,7**

**Angular Resolution: 1 Degree Step**

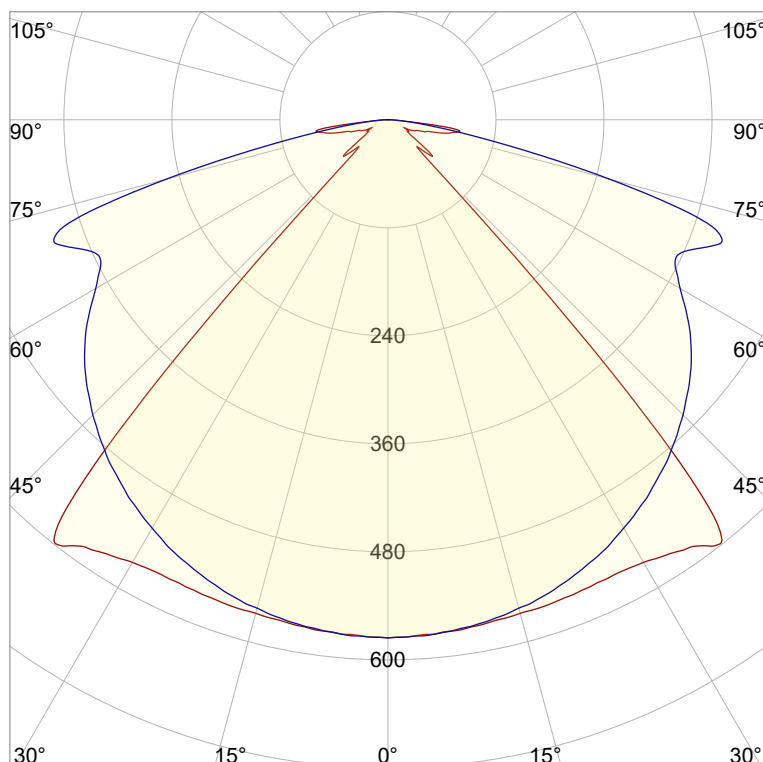
**Last Calibration 20-09-2021**

**Tester: Peter Ulrich**

**Test Site: Lichtlabor**

**Gaustrasse 13**

**55411 Bingen am Rhein**

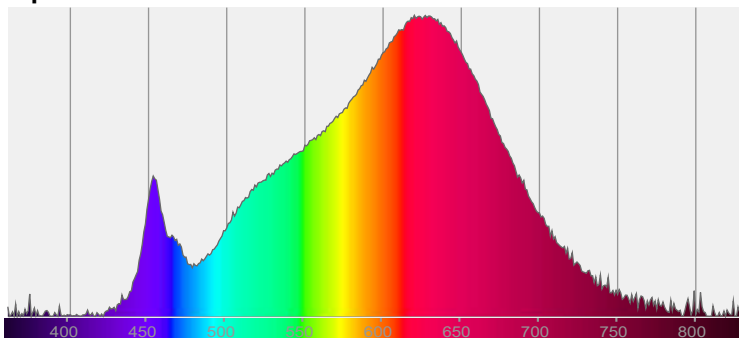


CIE 1931

x: 0,456

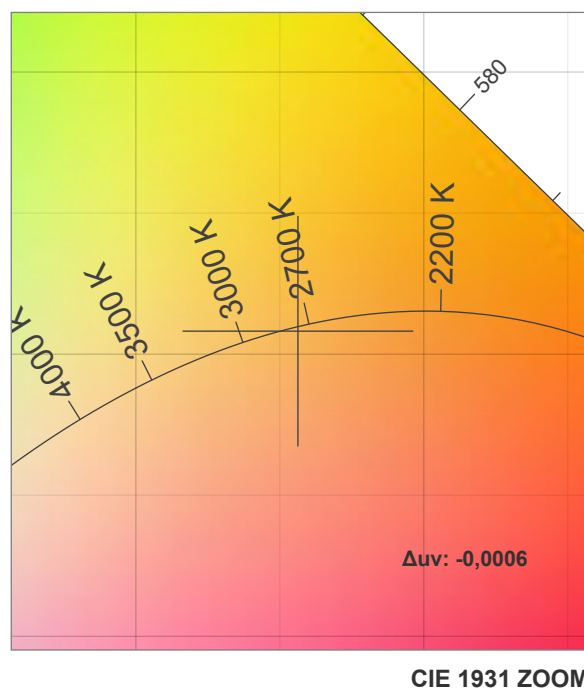
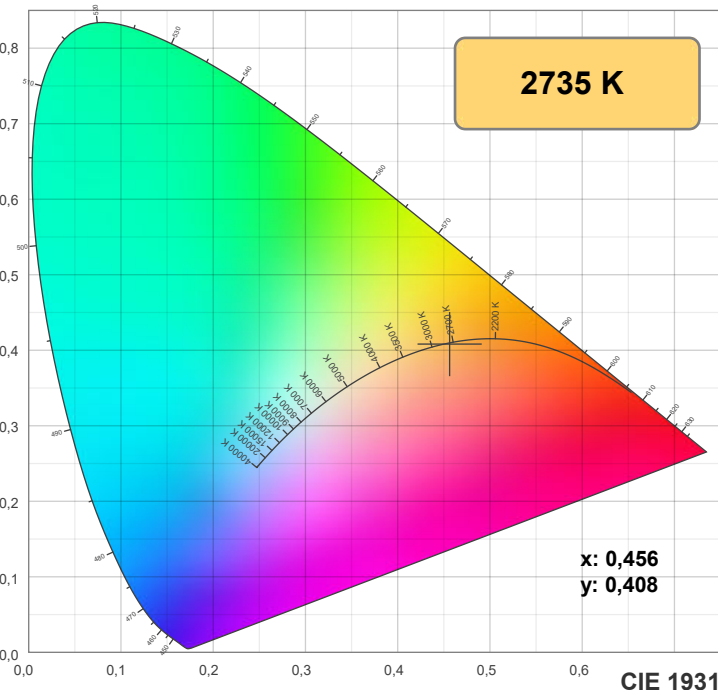
y: 0,408

Spectra



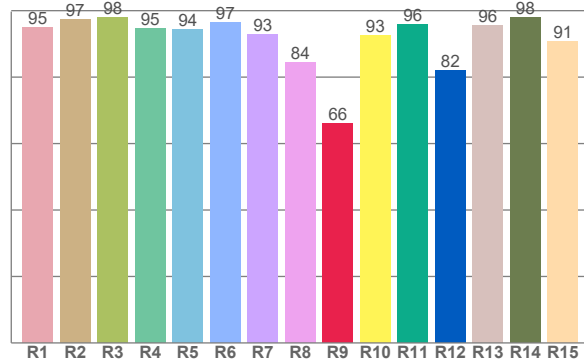
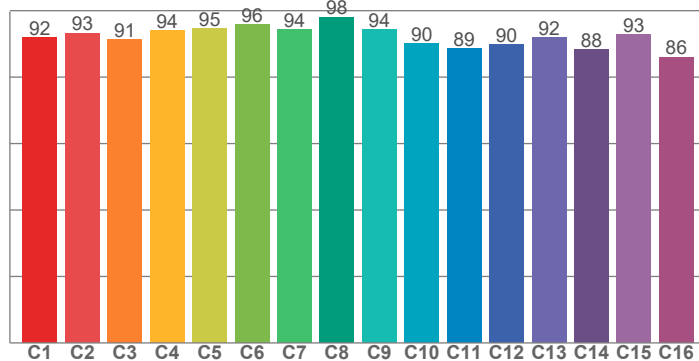
Power

Voltage: 48,0 V  
Current: 0,240 A  
Frequency: 0 Hz



**TM30: 92,1**

**CRI: 94,1 (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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 94,8 | 97,3 | 98,0 | 94,7 | 94,4 | 96,5 | 92,8 | 84,5 | 66,0 | 92,5 | 95,9 | 82,0 | 95,7 | 98,0 | 90,9 |

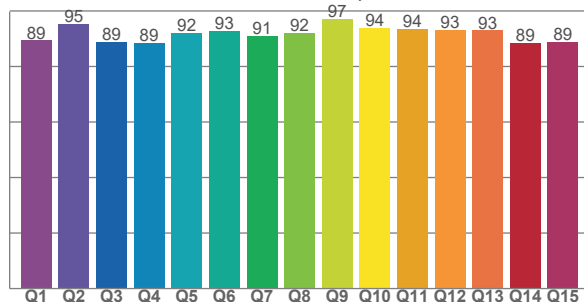
**TM30 C values, 16 binned values out of total of 99 C values**

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

**CQS Q values**

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 89,4 | 95,2 | 88,7 | 88,5 | 92,0 | 92,9 | 90,9 | 92,1 | 97,2 | 94,0 | 93,6 | 93,1 | 93,0 | 88,6 | 88,7 |

**CQS: 91,3**



## 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            | 94,1                  | 66,0          | 92,1           | 99,7        | 91,3                | 0,456                     | 0,408                     | 0,261            | 0,351            | -0,0006                         |

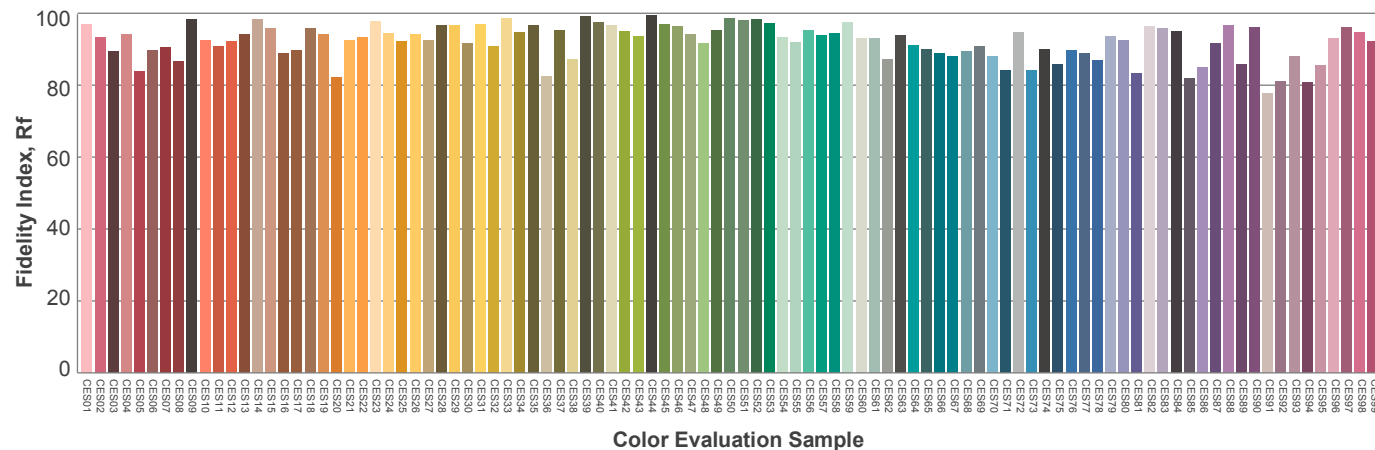
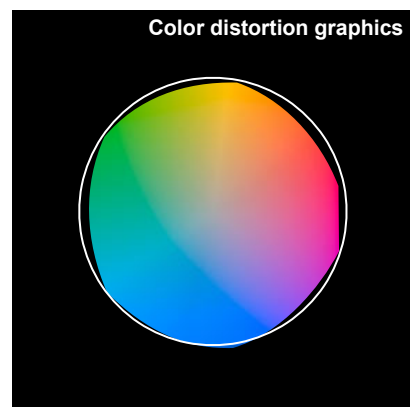
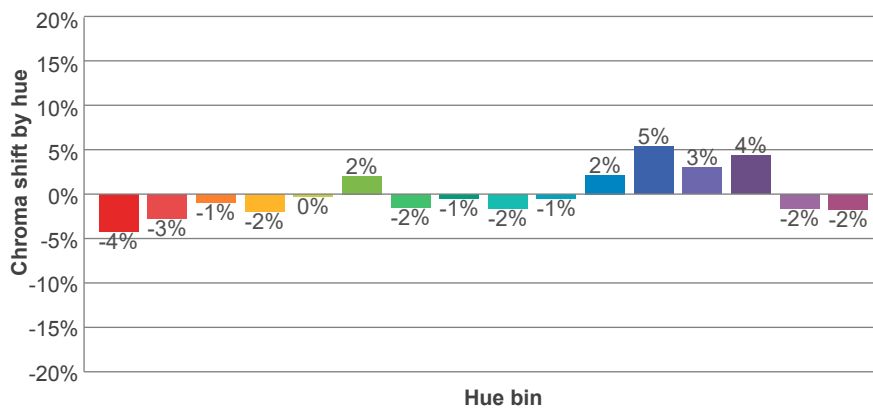
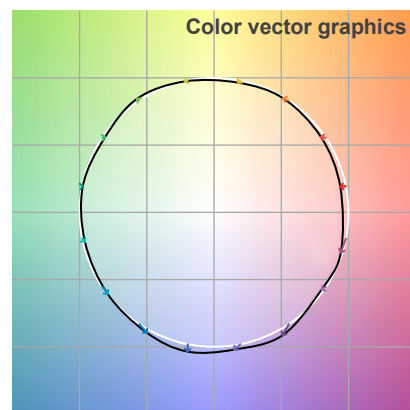
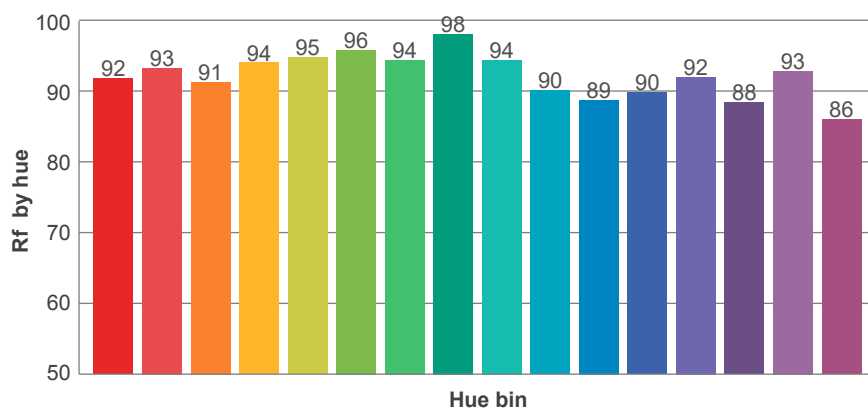
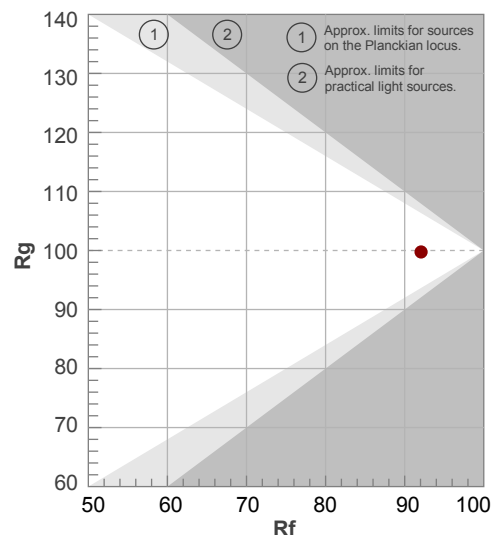
## Rf 92,1

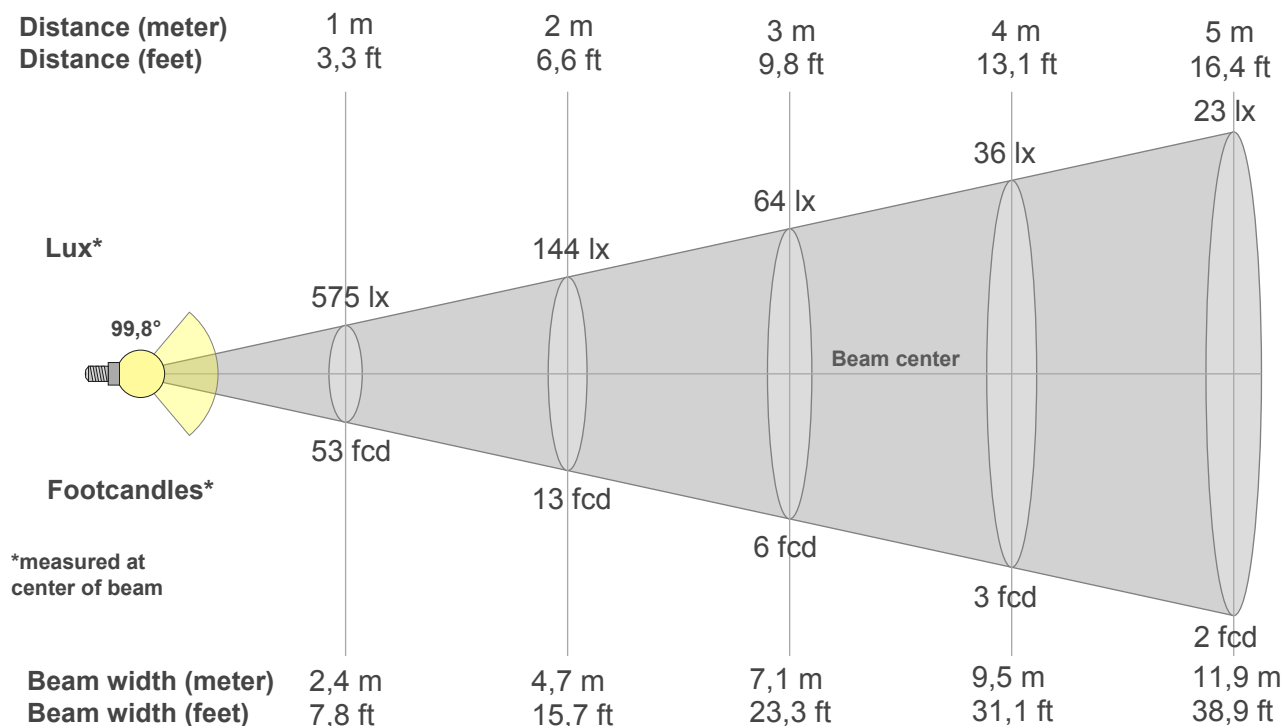
Fidelity index Rf

## Rg 99,7

Gammut index Rg

| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 92             | -4%                | 0%   |
| 2       | 93             | -3%                | 2%   |
| 3       | 91             | -1%                | 4%   |
| 4       | 94             | -2%                | 1%   |
| 5       | 95             | 0%                 | 2%   |
| 6       | 96             | 2%                 | 1%   |
| 7       | 94             | -2%                | -1%  |
| 8       | 98             | -1%                | 0%   |
| 9       | 94             | -2%                | 3%   |
| 10      | 90             | -1%                | 7%   |
| 11      | 89             | 2%                 | 8%   |
| 12      | 90             | 5%                 | 1%   |
| 13      | 92             | 3%                 | -5%  |
| 14      | 88             | 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 |
| 575lx   | 144lx   | 64lx   | 36lx   | 23lx   | 16lx   | 12lx   | 9lx    | 7lx    | 6lx    | 5lx    | 4lx    | 3lx    | 3lx    | 3lx    | 2lx    | 2lx    | 2lx    | 2lx    | 1lx    |
| 53,4fcd | 13,3fcd | 5,9fcd | 3,3fcd | 2,1fcd | 1,5fcd | 1,1fcd | 0,8fcd | 0,7fcd | 0,5fcd | 0,4fcd | 0,4fcd | 0,3fcd | 0,3fcd | 0,2fcd | 0,2fcd | 0,2fcd | 0,2fcd | 0,1fcd | 0,1fcd |

## 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° |
|------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 575  | 574  | 571 | 568 | 566 | 565 | 568 | 581  | 529 | 65  | 61  | 36  | 25  | 26  | 35  | 54  | 79  | 17  | 1   | 0   |
| 100% | 100% | 99% | 99% | 99% | 98% | 99% | 101% | 92% | 11% | 11% | 6%  | 4%  | 5%  | 6%  | 9%  | 14% | 3%  | 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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 575  | 574  | 569 | 562 | 552 | 540 | 524 | 506 | 486 | 464 | 439 | 409 | 375 | 356 | 394 | 255 | 81  | 19  | 3   | 3   |
| 100% | 100% | 99% | 98% | 96% | 94% | 91% | 88% | 85% | 81% | 76% | 71% | 65% | 62% | 69% | 44% | 14% | 3%  | 0%  | 0%  |

## Intensities in 180° c-plane

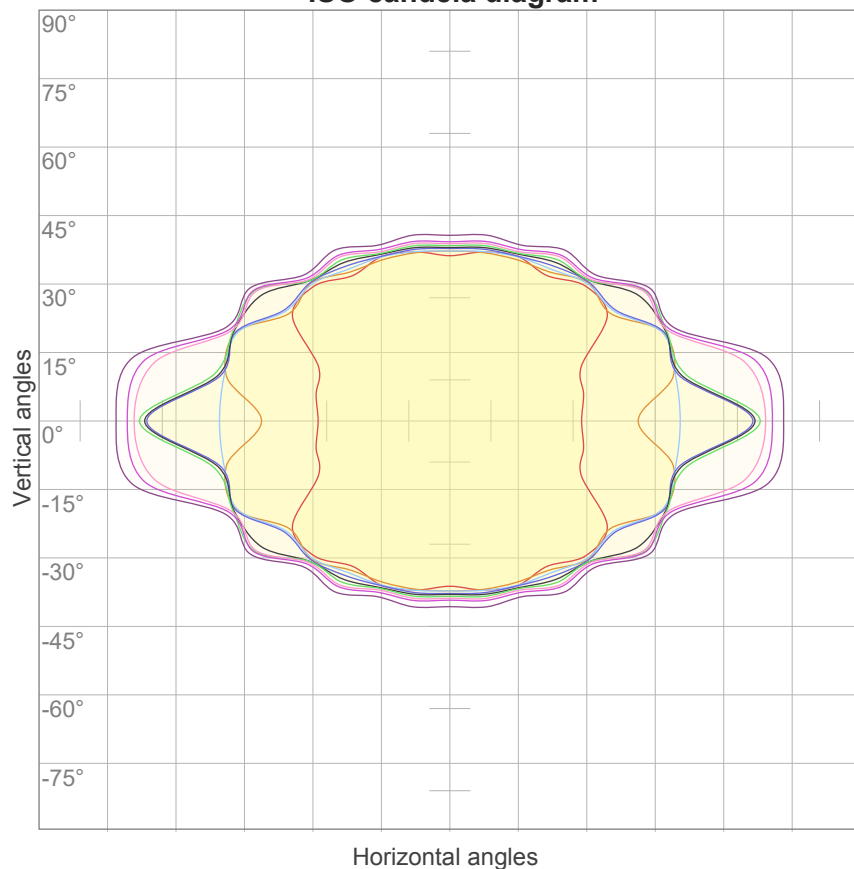
| 0°   | 5°   | 10° | 15° | 20° | 25° | 30° | 35°  | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 575  | 574  | 571 | 568 | 566 | 565 | 568 | 581  | 529 | 65  | 61  | 36  | 25  | 26  | 35  | 54  | 79  | 17  | 1   | 0   |
| 100% | 100% | 99% | 99% | 99% | 98% | 99% | 101% | 92% | 11% | 11% | 6%  | 4%  | 5%  | 6%  | 9%  | 14% | 3%  | 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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 575  | 574  | 569 | 562 | 552 | 540 | 524 | 506 | 486 | 464 | 439 | 409 | 375 | 356 | 394 | 255 | 81  | 19  | 3   | 3   |
| 100% | 100% | 99% | 98% | 96% | 94% | 91% | 88% | 85% | 81% | 76% | 71% | 65% | 62% | 69% | 44% | 14% | 3%  | 0%  | 0%  |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 99,8°          | 144,8°          | 177,6°            | 88,1%                        | 68,7%                       |

## ISO candela diagram



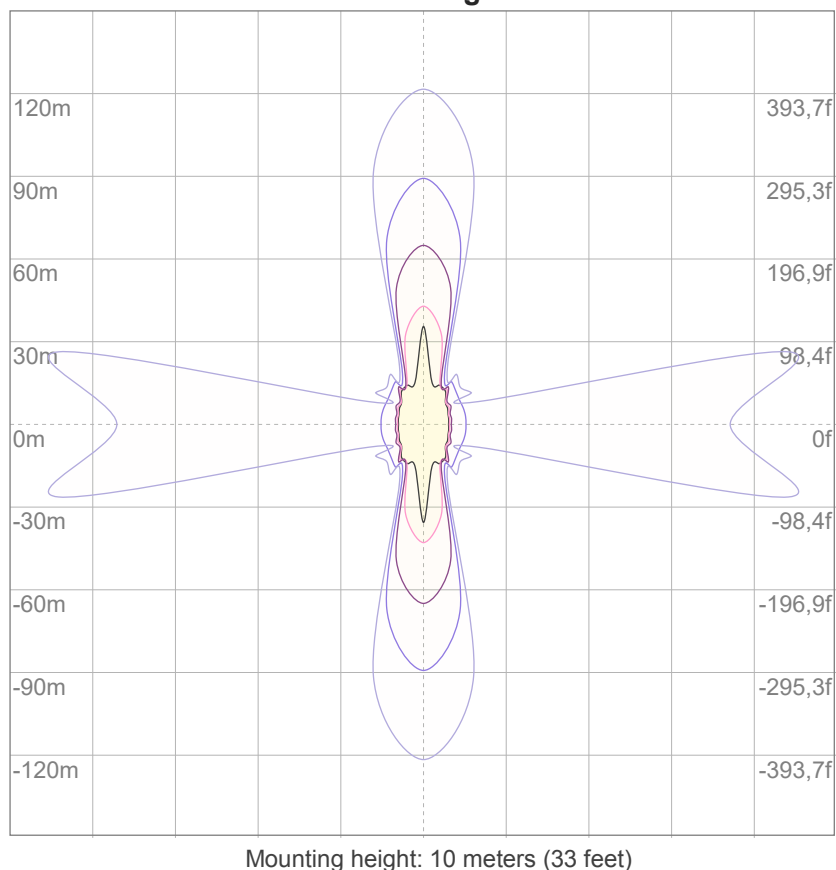
|     |        |
|-----|--------|
| 10% | 57 cd  |
| 20% | 115 cd |
| 30% | 172 cd |
| 40% | 230 cd |
| 50% | 287 cd |
| 60% | 345 cd |
| 70% | 402 cd |
| 80% | 460 cd |
| 90% | 517 cd |

### Conditions:

Number of c-planes: 16

Candela at center: 575 cd

## ISO lux diagram



|     |          |
|-----|----------|
| 3%  | 0,172 lx |
| 5%  | 0,287 lx |
| 10% | 0,575 lx |
| 30% | 1,72 lx  |
| 50% | 2,87 lx  |

### Conditions:

Number of c-planes: 16

Lux at center: 5,75 lx

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

### Glare Evaluation According to UGR

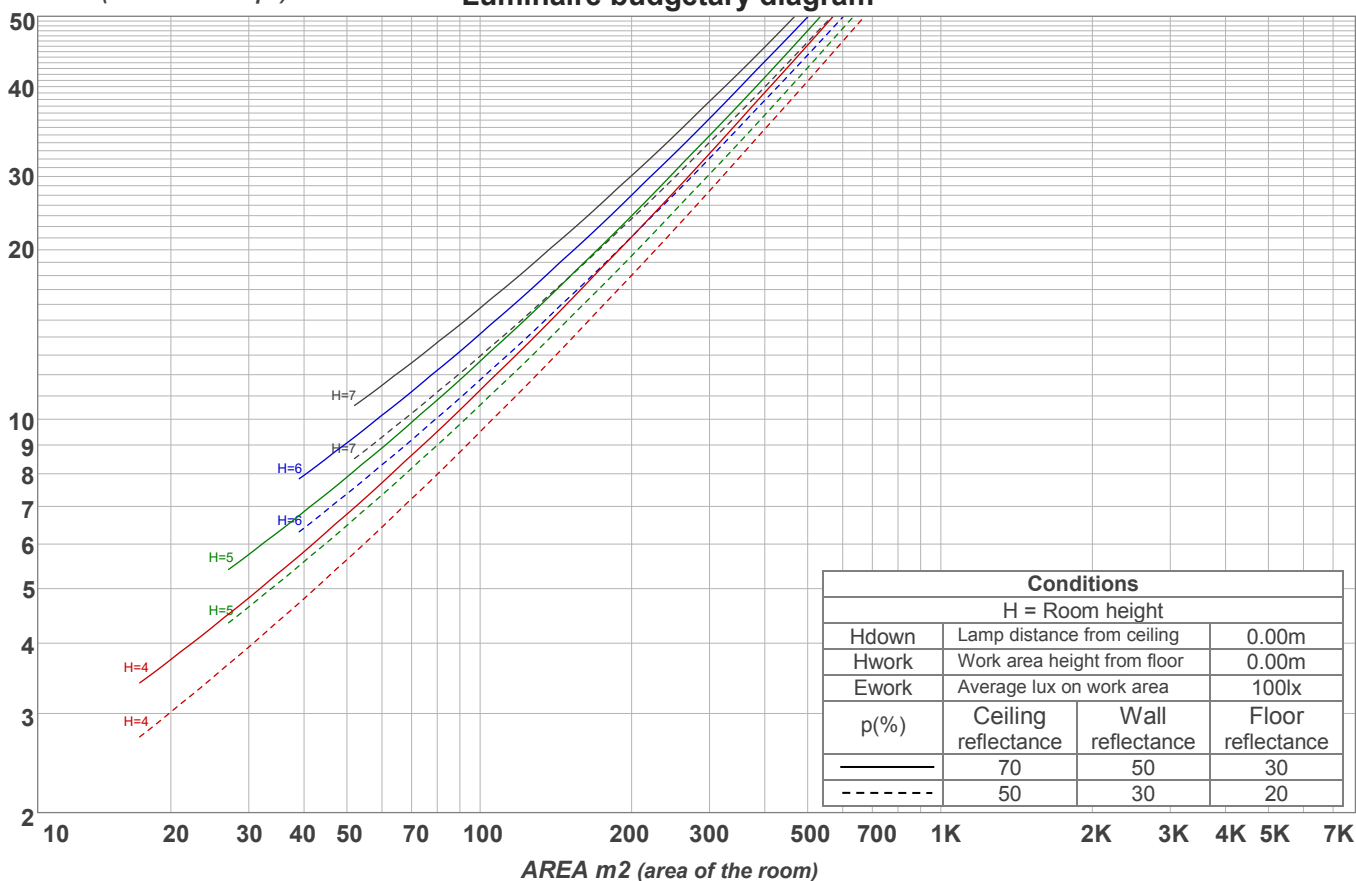
|  |     |   |      |      |      |      |   |      |      |      |      |
|--|-----|---|------|------|------|------|---|------|------|------|------|
| p Ceiling  |     | 70  | 70   | 50   | 50   | 30   | 70                                      | 70   | 50   | 50   | 30   |
| p Walls  |     | 50  | 30   | 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<br>lamp axis |      |      |      |      | Viewing direction parallel to lamp axis |      |      |      |      |
| 2H   | 2H  | 19,9  | 21,0 | 20,1 | 21,3 | 21,5 | 26,6                                    | 27,7 | 26,8 | 28,0 | 28,2 |
|  | 3H  | 19,9  | 21,0 | 20,3 | 21,3 | 21,5 | 28,7                                    | 29,8 | 29,1 | 30,1 | 30,3 |
|  | 4H  | 20,3  | 21,4 | 20,7 | 21,6 | 21,9 | 29,9                                    | 31,0 | 30,3 | 31,2 | 31,5 |
|  | 6H  | 21,6  | 22,6 | 22,0 | 22,8 | 23,2 | 30,4                                    | 31,3 | 30,7 | 31,6 | 32,0 |
|  | 8H  | 22,4  | 23,3 | 22,8 | 23,6 | 24,0 | 30,4                                    | 31,3 | 30,7 | 31,6 | 32,0 |
|  | 12H | 22,7  | 23,5 | 23,0 | 23,9 | 24,3 | 30,4                                    | 31,3 | 30,7 | 31,6 | 32,0 |
| 4H   | 2H  | 20,0  | 21,1 | 20,4 | 21,4 | 21,6 | 26,3                                    | 27,4 | 26,7 | 27,6 | 27,9 |
|  | 3H  | 20,2  | 21,1 | 20,6 | 21,4 | 21,9 | 28,5                                    | 29,4 | 28,9 | 29,7 | 30,2 |
|  | 4H  | 20,7  | 21,5 | 21,1 | 21,9 | 22,4 | 29,7                                    | 30,5 | 30,1 | 30,9 | 31,4 |
|  | 6H  | 22,4  | 23,2 | 22,9 | 23,5 | 23,9 | 30,1                                    | 30,9 | 30,6 | 31,2 | 31,6 |
|  | 8H  | 23,4  | 24,1 | 23,9 | 24,5 | 24,9 | 30,2                                    | 30,9 | 30,7 | 31,2 | 31,6 |
|  | 12H | 23,8  | 24,4 | 24,3 | 24,8 | 25,3 | 30,2                                    | 30,8 | 30,7 | 31,2 | 31,6 |
| 8H   | 4H  | 20,7  | 21,4 | 21,2 | 21,8 | 22,2 | 29,6                                    | 30,3 | 30,1 | 30,6 | 31,0 |
|  | 6H  | 22,8  | 23,3 | 23,3 | 23,8 | 24,3 | 30,0                                    | 30,6 | 30,5 | 31,0 | 31,6 |
|  | 8H  | 24,2  | 24,6 | 24,7 | 25,1 | 25,8 | 30,1                                    | 30,6 | 30,6 | 31,1 | 31,7 |
|  | 12H | 24,8  | 25,2 | 25,3 | 25,7 | 26,3 | 30,1                                    | 30,5 | 30,7 | 31,0 | 31,6 |
| 12H  | 4H  | 20,7  | 21,3 | 21,2 | 21,7 | 22,2 | 29,5                                    | 30,1 | 30,0 | 30,5 | 31,0 |
|  | 6H  | 22,8  | 23,3 | 23,4 | 23,8 | 24,5 | 30,0                                    | 30,5 | 30,5 | 31,0 | 31,6 |
|  | 8H  | 24,3  | 24,7 | 24,9 | 25,2 | 25,8 | 30,1                                    | 30,5 | 30,7 | 31,0 | 31,6 |
| Variation of the observer position for the luminaire distance S  |     |   |      |      |      |      |   |      |      |      |      |
| S = 1.0H   |     | 0,7 / -0,7  |      |      |      |      | 0,7 / -1,1                              |      |      |      |      |
| S = 1.5H   |     | 1,5 / -0,7  |      |      |      |      | 2,0 / -3,4                              |      |      |      |      |
| S = 2.0H   |     | 2,5 / -0,8  |      |      |      |      | 3,0 / -6,2                              |      |      |      |      |
| Standard table   |     | n/a   |      |      |      |      | n/a                                     |      |      |      |      |
| Correction<br>summand  |     | n/a   |      |      |      |      | n/a                                     |      |      |      |      |
| Corrected glare indices referring to 1426 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 | 110 | 110 | 110 | 106 | 106 | 106 | 101 | 101 | 101 | 99 |
| 1                   | 110  | 106 | 102 | 98  | 107 | 103 | 100 | 97  | 99  | 96  | 93  | 95  | 92  | 90  | 91  | 89  | 87  | 85 |
| 2                   | 101  | 94  | 88  | 83  | 99  | 92  | 86  | 82  | 88  | 84  | 80  | 85  | 81  | 78  | 82  | 79  | 76  | 74 |
| 3                   | 93   | 84  | 77  | 71  | 91  | 82  | 76  | 70  | 79  | 74  | 69  | 76  | 72  | 68  | 74  | 70  | 66  | 64 |
| 4                   | 86   | 75  | 68  | 62  | 84  | 74  | 67  | 61  | 72  | 65  | 60  | 69  | 64  | 59  | 67  | 62  | 58  | 56 |
| 5                   | 80   | 68  | 60  | 54  | 78  | 67  | 59  | 54  | 65  | 58  | 53  | 63  | 57  | 52  | 61  | 56  | 52  | 50 |
| 6                   | 74   | 62  | 54  | 48  | 72  | 61  | 53  | 47  | 59  | 52  | 47  | 57  | 51  | 46  | 56  | 50  | 46  | 44 |
| 7                   | 69   | 56  | 48  | 42  | 67  | 55  | 48  | 42  | 54  | 47  | 42  | 52  | 46  | 42  | 51  | 45  | 41  | 39 |
| 8                   | 64   | 52  | 44  | 38  | 63  | 51  | 43  | 38  | 49  | 43  | 38  | 48  | 42  | 37  | 47  | 41  | 37  | 35 |
| 9                   | 60   | 47  | 40  | 34  | 59  | 47  | 39  | 34  | 46  | 39  | 34  | 44  | 38  | 34  | 43  | 38  | 34  | 32 |
| 10                  | 56   | 44  | 36  | 31  | 55  | 43  | 36  | 31  | 42  | 36  | 31  | 41  | 35  | 31  | 40  | 35  | 31  | 29 |

LAMPS (number of lamps)

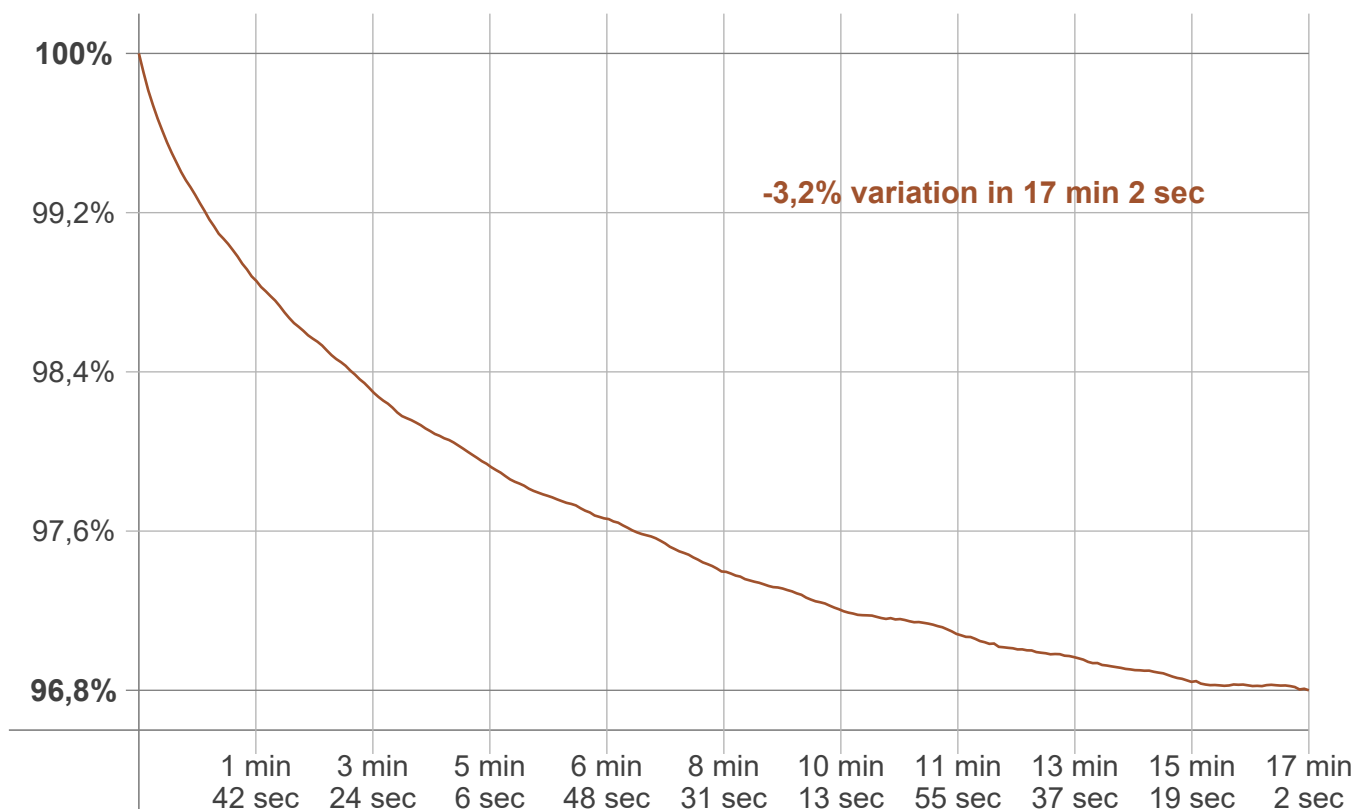
## Luminaire budgetary diagram



## Zonal Lumen Summary

| 0°-10°   | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 51,9 lm  | 159 lm    | 254 lm    | 342 lm    | 289 lm    | 160 lm    | 65,3 lm   | 58,7 lm   | 29,3 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 6,28 lm  | 2,59 lm   | 1,69 lm   | 1,53 lm   | 1,15 lm   | 0,850 lm  | 0,627 lm  | 0,384 lm  | 1,51 lm   |

### Warmup curve



### Warmup result

|                  |                                 |
|------------------|---------------------------------|
| Warmup time:     | Lamp stabilized in 17 min 2 sec |
| Warmup variation | -3,2%                           |

### Warmup conditions

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

### Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 2740 K    | -5 K       | 2735 K  |

### Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 1469 lm      | -43 lm        | 1426 lm    |