

#### Light efficiency:

**117 Lumen/Watt**

#### Light quality:

**CRI: 94,8**

#### Color temperature:

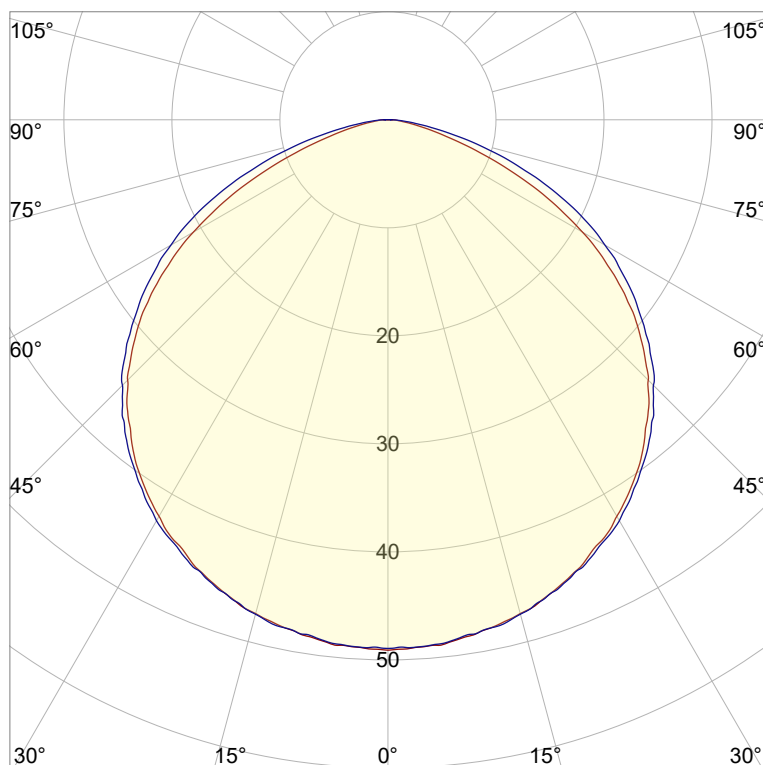
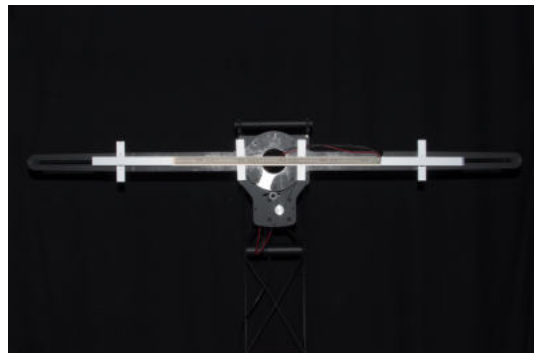
**2742 K**

**Output: 140 lm**

**Peak: 49,1 cd**

**Power: 1,2 W**

**PF: 1,0**



#### Product name:

**Mayflower-3\_510mm\_927\_Cover-Flat-Transparent**

#### Item number:

**NP/L1C/10C/G1/L1C/0510/927/CFT**

#### Date and time:

**10.06.2022 11:52:58**

#### 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**

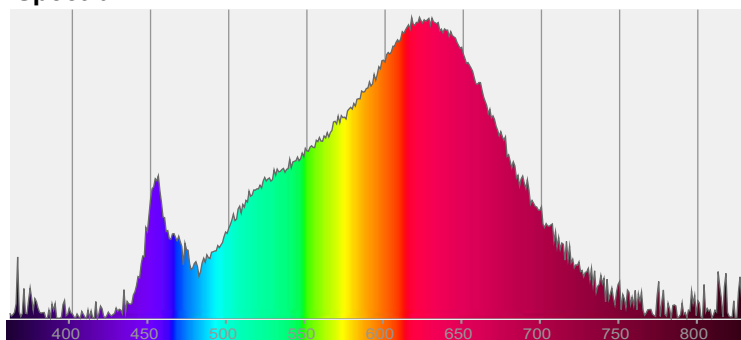


**CIE 1931**

**x: 0,456**

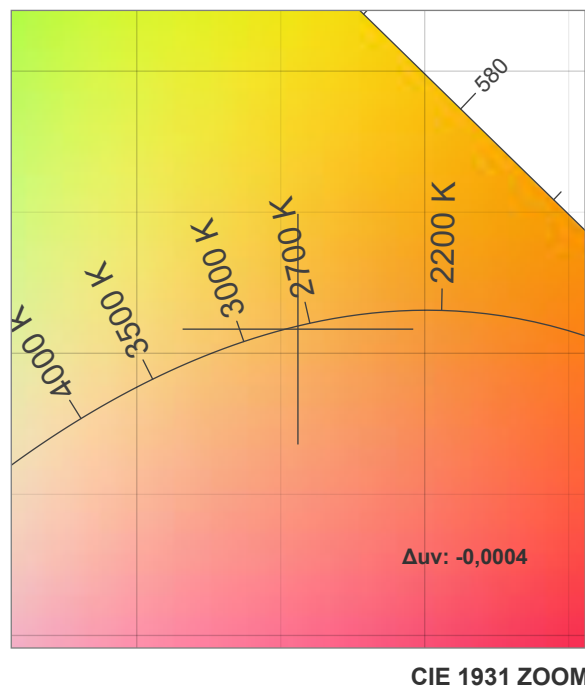
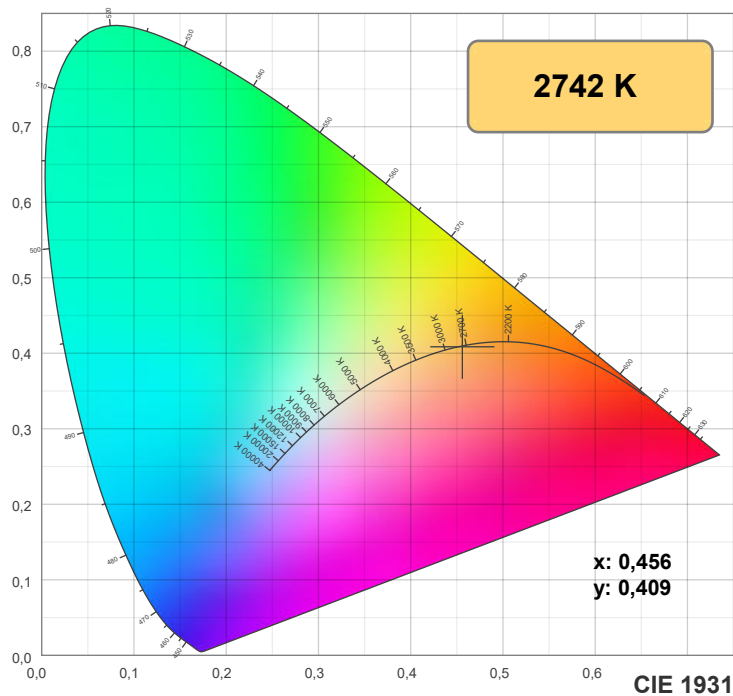
**y: 0,409**

#### Spectra

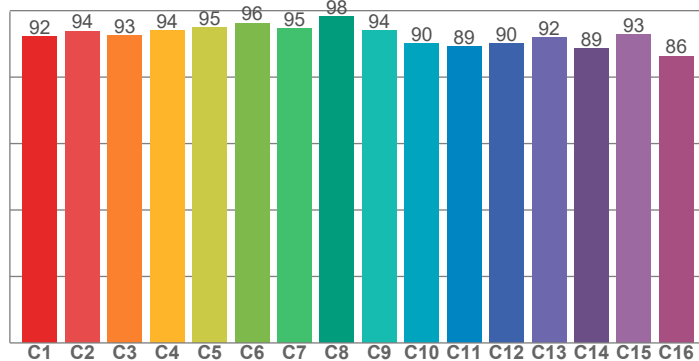


#### Power

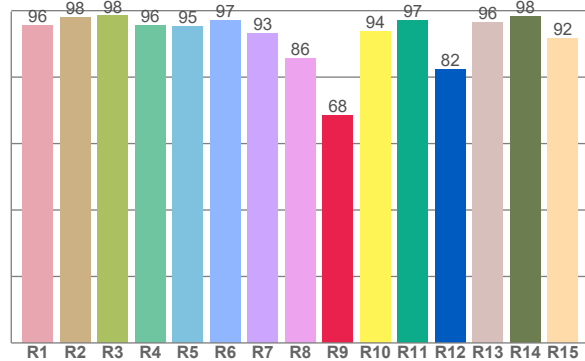
**Voltage: 24,0 V**  
**Current: 0,050 A**  
**Frequency: 0 Hz**



**TM30: 92,3**



**CRI: 94,8 (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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 95,6 | 97,8 | 98,4 | 95,6 | 95,2 | 97,0 | 93,2 | 85,6 | 68,4 | 93,8 | 97,0 | 82,3 | 96,4 | 98,2 | 91,7 |

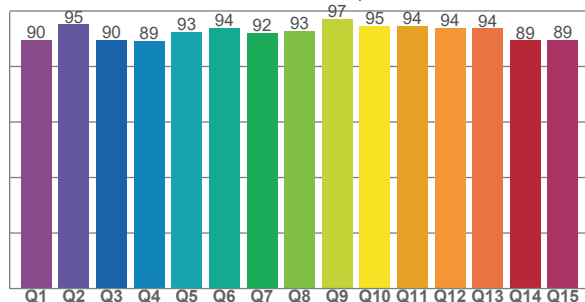
TM30 C values, 16 binned values out of total of 99 C values

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 92,1 | 93,9 | 92,5 | 94,0 | 94,9 | 96,3 | 94,6 | 98,1 | 94,0 | 90,1 | 89,2 | 90,1 | 92,0 | 88,7 | 92,8 | 86,3 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 89,7 | 95,1 | 89,5 | 89,3 | 92,6 | 93,9 | 92,0 | 92,9 | 97,3 | 94,7 | 94,5 | 94,0 | 93,7 | 89,3 | 89,4 |

**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                | $\Delta uv$                     |
| 2742 K            | 94,8                  | 68,4          | 92,3           | 99,5        | 92,0                | 0,456                     | 0,409                     | 0,261            | 0,351            | -0,0004                         |

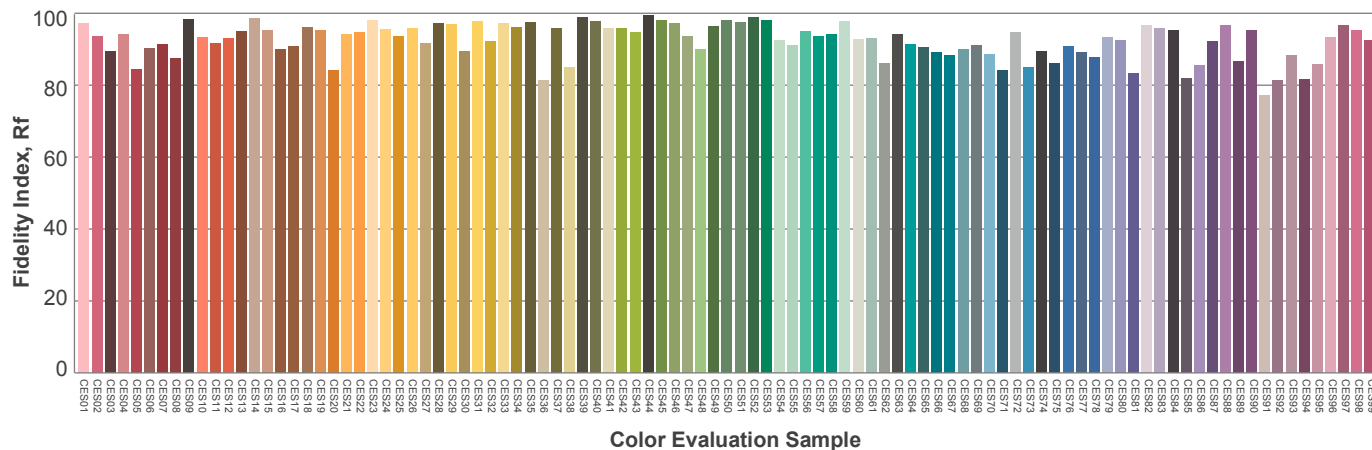
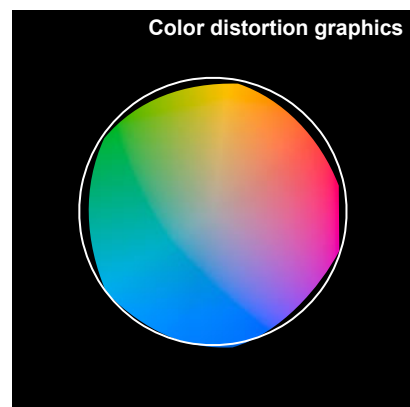
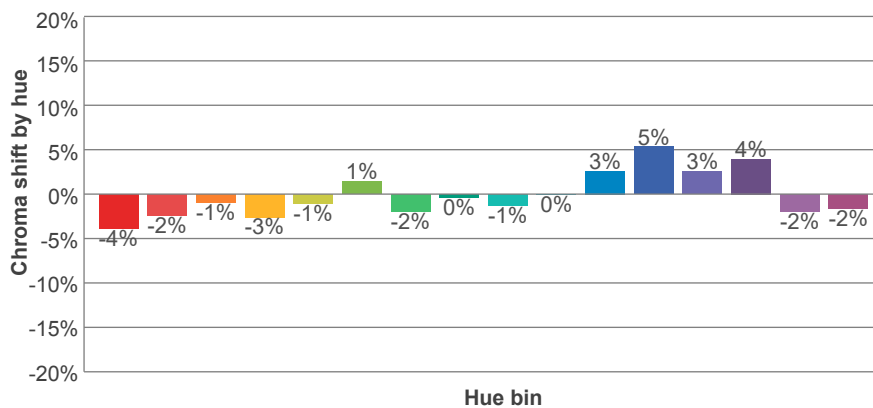
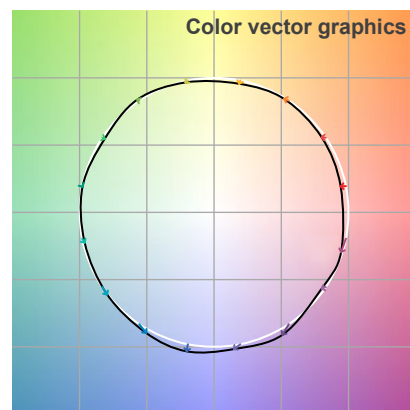
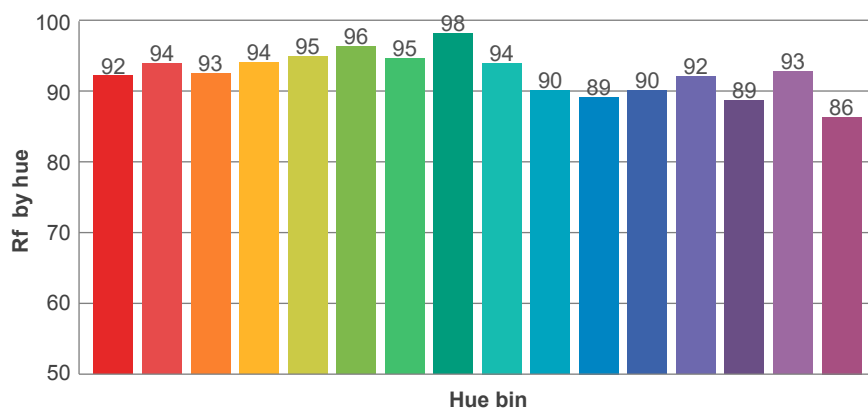
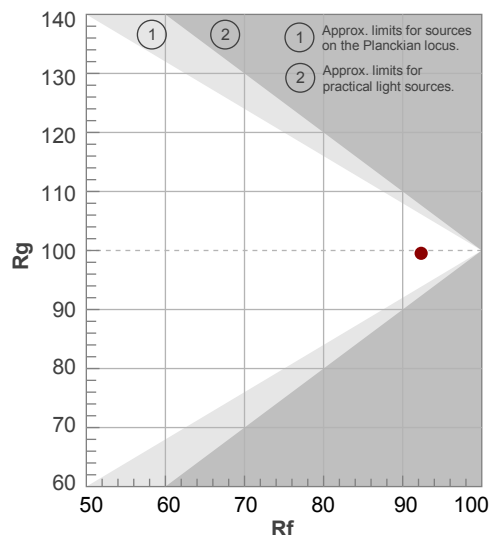
## Rf 92,3

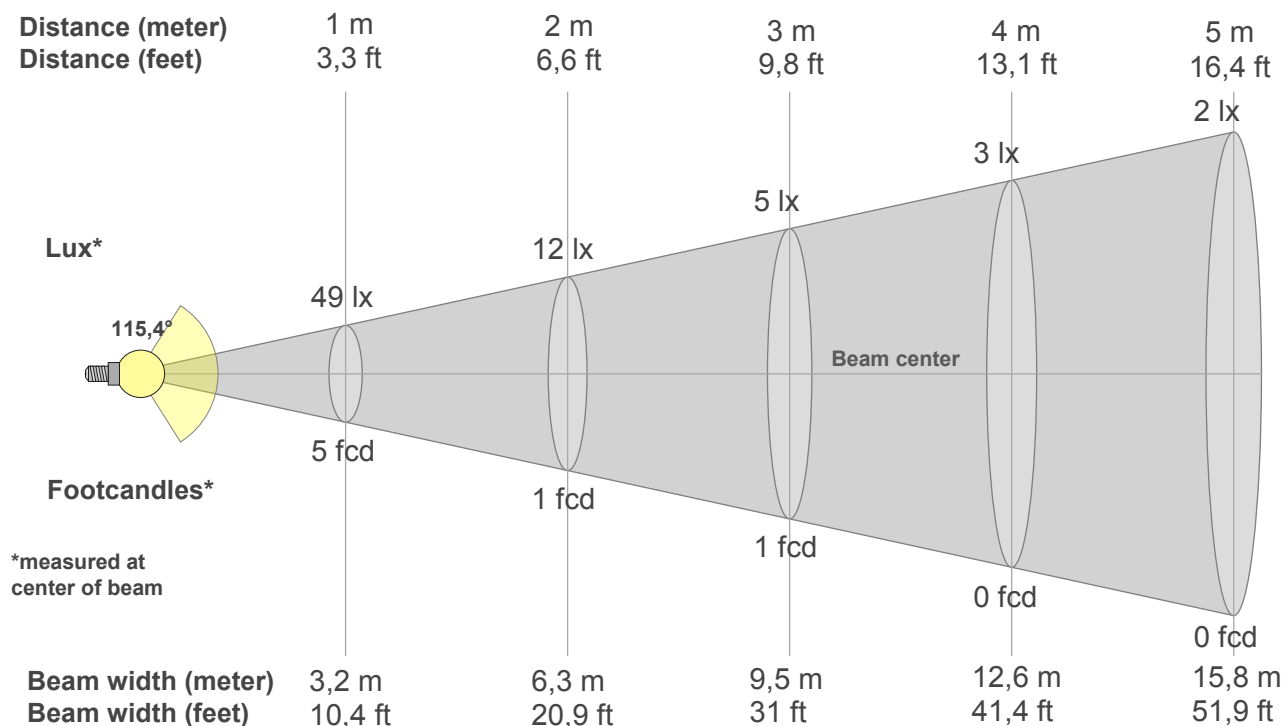
Fidelity index Rf

## Rg 99,5

Gammut index Rg

| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 92             | -4%                | 1%   |
| 2       | 94             | -2%                | 2%   |
| 3       | 93             | -1%                | 3%   |
| 4       | 94             | -3%                | 0%   |
| 5       | 95             | -1%                | 2%   |
| 6       | 96             | 1%                 | 1%   |
| 7       | 95             | -2%                | 0%   |
| 8       | 98             | 0%                 | 0%   |
| 9       | 94             | -1%                | 3%   |
| 10      | 90             | 0%                 | 7%   |
| 11      | 89             | 3%                 | 8%   |
| 12      | 90             | 5%                 | 0%   |
| 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 |
| 49lx   | 12lx   | 5lx    | 3lx    | 2lx    | 1lx    | 1lx    | 1lx    | 1lx    | 0lx    | 0lx    | 0lx    | 0lx    | 0lx    | 0lx    | 0lx    | 0lx    | 0lx    | 0lx    | 0lx    |
| 4,6fcd | 1,1fcd | 0,5fcd | 0,3fcd | 0,2fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0,1fcd | 0fcd   | 0fcd   | 0fcd   | 0fcd   | 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° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 49,0 | 48,8 | 48,2 | 47,3 | 46,1 | 44,3 | 42,4 | 40,1 | 37,1 | 34,1 | 30,3 | 25,9 | 20,8 | 15,1 | 9,4 | 5,0 | 2,3 | 1,0 | 0,3 | 0,0 |
| 100% | 100% | 98%  | 97%  | 94%  | 90%  | 86%  | 82%  | 76%  | 70%  | 62%  | 53%  | 42%  | 31%  | 19% | 10% | 5%  | 2%  | 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° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|
| 49,0 | 48,8 | 48,2 | 47,4 | 46,2 | 44,6 | 42,9 | 40,5 | 37,9 | 34,8 | 31,3 | 27,5 | 23,2 | 18,5 | 13,2 | 8,2 | 4,0 | 1,5 | 0,2 | 0,0 |
| 100% | 99%  | 98%  | 97%  | 94%  | 91%  | 87%  | 83%  | 77%  | 71%  | 64%  | 56%  | 47%  | 38%  | 27%  | 17% | 8%  | 3%  | 0%  | 0%  |

## Intensities in 180° c-plane

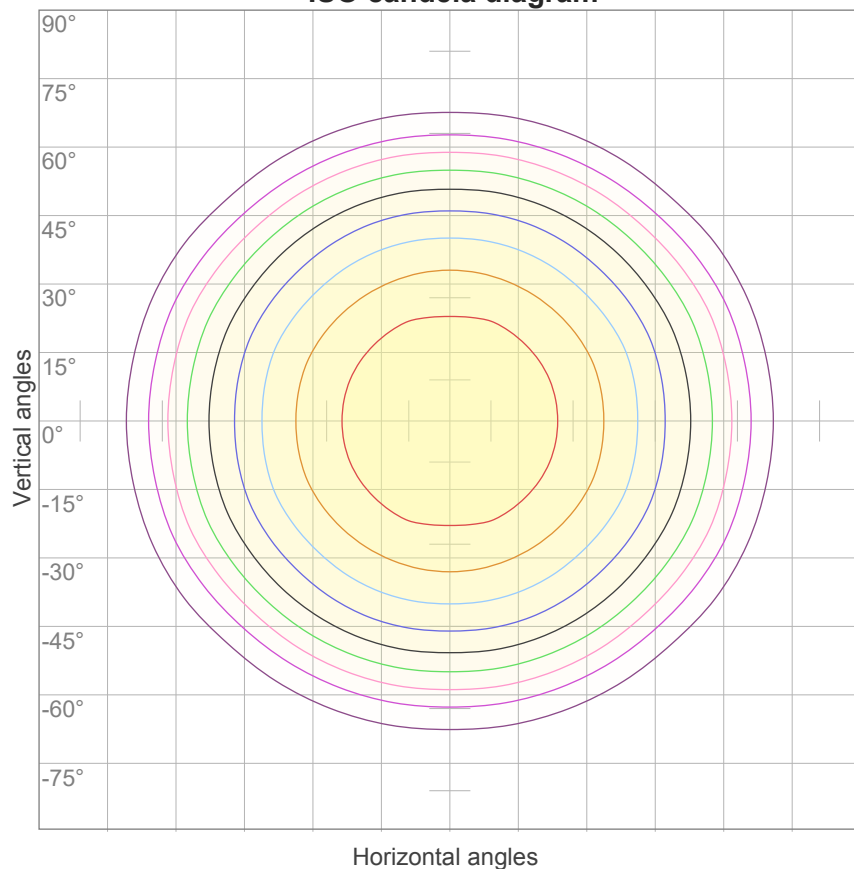
| 0°   | 5°   | 10°  | 15°  | 20°  | 25°  | 30°  | 35°  | 40°  | 45°  | 50°  | 55°  | 60°  | 65°  | 70° | 75° | 80° | 85° | 90° | 95° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 49,0 | 48,8 | 48,2 | 47,3 | 46,1 | 44,3 | 42,4 | 40,1 | 37,1 | 34,1 | 30,3 | 25,9 | 20,8 | 15,1 | 9,4 | 5,0 | 2,3 | 1,0 | 0,3 | 0,0 |
| 100% | 100% | 98%  | 97%  | 94%  | 90%  | 86%  | 82%  | 76%  | 70%  | 62%  | 53%  | 42%  | 31%  | 19% | 10% | 5%  | 2%  | 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° |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|
| 49,0 | 48,8 | 48,2 | 47,4 | 46,2 | 44,6 | 42,9 | 40,5 | 37,9 | 34,8 | 31,3 | 27,5 | 23,2 | 18,5 | 13,2 | 8,2 | 4,0 | 1,5 | 0,2 | 0,0 |
| 100% | 99%  | 98%  | 97%  | 94%  | 91%  | 87%  | 83%  | 77%  | 71%  | 64%  | 56%  | 47%  | 38%  | 27%  | 17% | 8%  | 3%  | 0%  | 0%  |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 115,4°         | 153,9°          | 170,5°            | 81,5%                        | 55,0%                       |

### ISO candela diagram



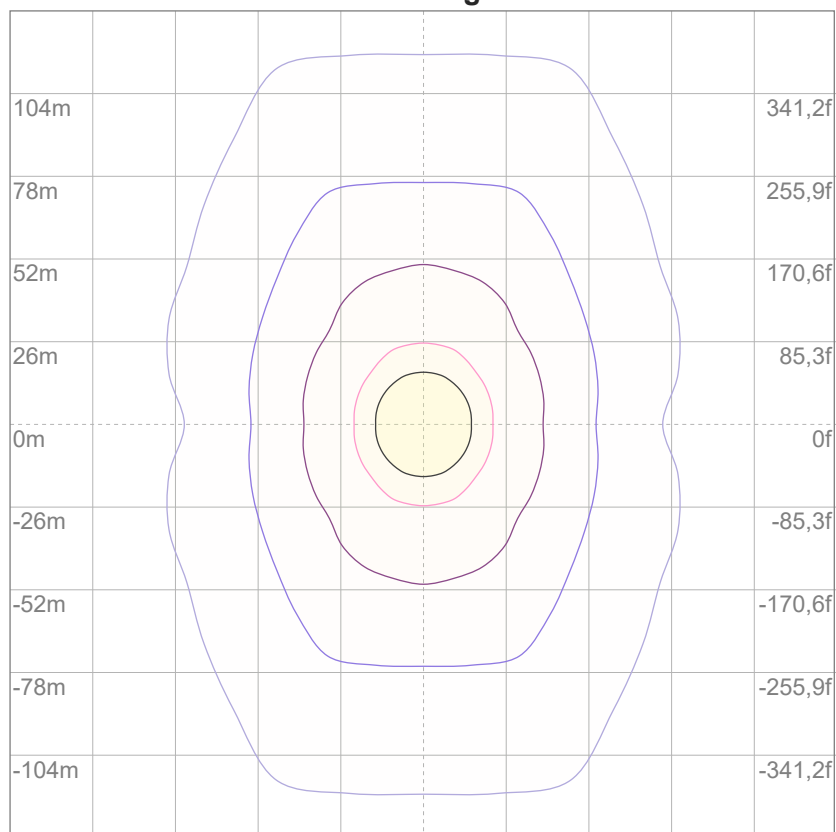
|     |       |
|-----|-------|
| 10% | 5 cd  |
| 20% | 10 cd |
| 30% | 15 cd |
| 40% | 20 cd |
| 50% | 25 cd |
| 60% | 29 cd |
| 70% | 34 cd |
| 80% | 39 cd |
| 90% | 44 cd |

#### Conditions:

Number of c-planes: 16

Candela at center: 49 cd

### ISO lux diagram



|     |          |
|-----|----------|
| 3%  | 14,7m lx |
| 5%  | 24,5m lx |
| 10% | 49,0m lx |
| 30% | 0,147 lx |
| 50% | 0,245 lx |

#### Conditions:

Number of c-planes: 16

Lux at center: 0,490 lx

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

### Glare Evaluation According to UGR

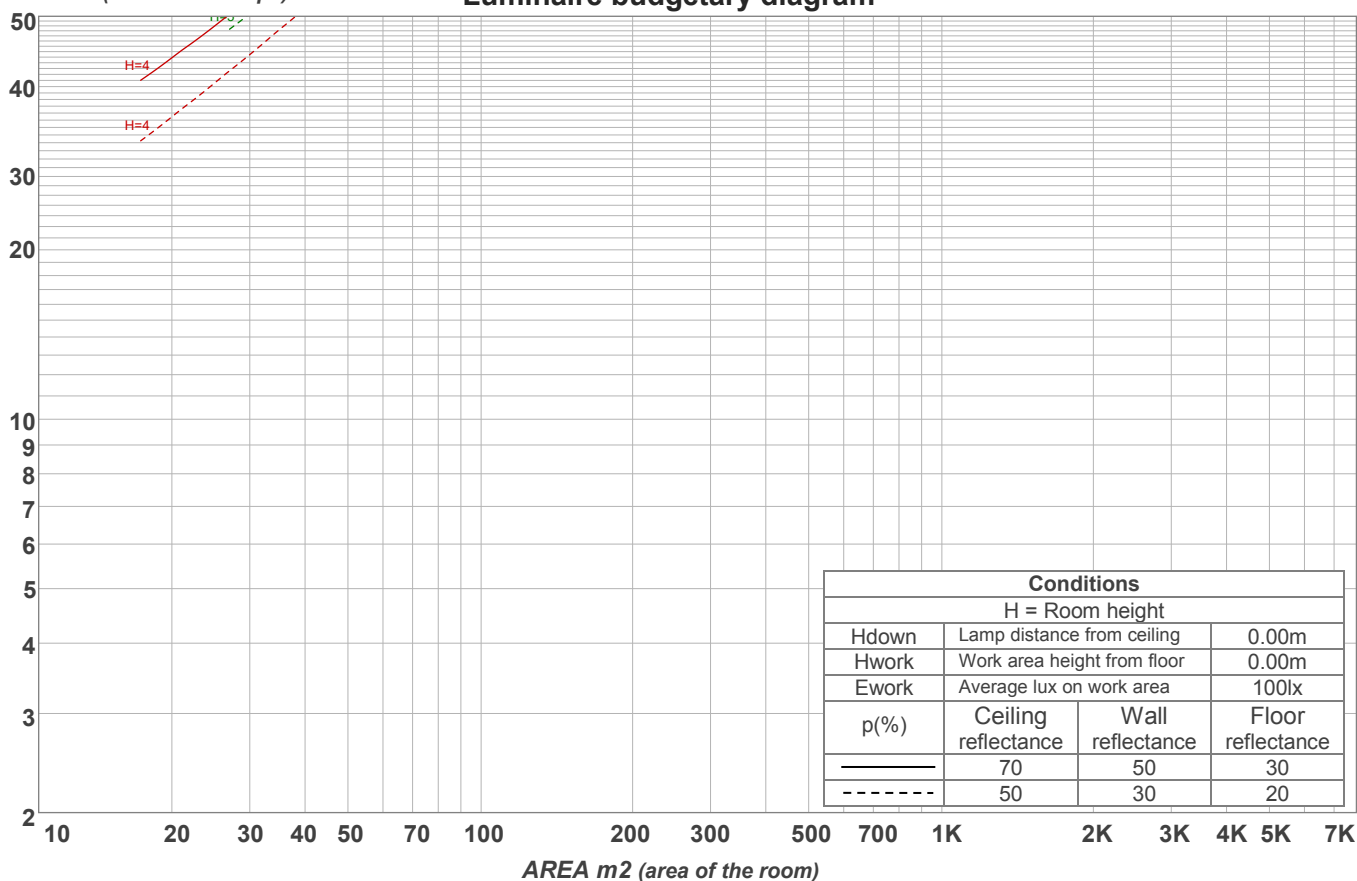
|   |     |   |      |      |      |      |   |      |      |      |      |
|---|-----|---|------|------|------|------|---|------|------|------|------|
| p Ceiling   |     | 70  | 70   | 50   | 50   | 30   | 70                                      | 70   | 50   | 50   | 30   |
| p Walls   |     | 50  | 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  | 16,6  | 17,8 | 16,9 | 18,1 | 18,3 | 17,6                                    | 18,7 | 17,8 | 19,1 | 19,3 |
|   | 3H  | 17,4  | 18,6 | 17,8 | 18,9 | 19,1 | 18,8                                    | 20,1 | 19,3 | 20,4 | 20,6 |
|   | 4H  | 17,5  | 18,7 | 17,9 | 19,0 | 19,2 | 19,3                                    | 20,5 | 19,7 | 20,7 | 21,0 |
|   | 6H  | 17,6  | 18,7 | 17,9 | 18,9 | 19,3 | 19,6                                    | 20,6 | 19,9 | 20,9 | 21,3 |
|   | 8H  | 17,6  | 18,6 | 17,9 | 18,9 | 19,3 | 19,6                                    | 20,6 | 20,0 | 20,9 | 21,3 |
|   | 12H | 17,6  | 18,5 | 17,9 | 18,9 | 19,3 | 19,6                                    | 20,6 | 20,0 | 20,9 | 21,4 |
| 4H  | 2H  | 17,2  | 18,4 | 17,6 | 18,6 | 18,9 | 17,9                                    | 19,1 | 18,3 | 19,4 | 19,6 |
|   | 3H  | 18,2  | 19,1 | 18,5 | 19,5 | 19,9 | 19,5                                    | 20,5 | 19,9 | 20,8 | 21,2 |
|   | 4H  | 18,3  | 19,2 | 18,7 | 19,6 | 20,1 | 19,9                                    | 20,8 | 20,4 | 21,2 | 21,8 |
|   | 6H  | 18,4  | 19,2 | 18,9 | 19,6 | 19,9 | 20,2                                    | 21,1 | 20,7 | 21,4 | 21,8 |
|   | 8H  | 18,4  | 19,1 | 18,9 | 19,5 | 19,9 | 20,3                                    | 21,1 | 20,8 | 21,4 | 21,8 |
|   | 12H | 18,3  | 19,0 | 18,8 | 19,4 | 19,9 | 20,3                                    | 21,0 | 20,8 | 21,4 | 21,9 |
| 8H  | 4H  | 18,4  | 19,2 | 19,0 | 19,6 | 20,0 | 20,0                                    | 20,7 | 20,5 | 21,1 | 21,5 |
|   | 6H  | 18,6  | 19,2 | 19,1 | 19,6 | 20,2 | 20,3                                    | 20,9 | 20,8 | 21,4 | 21,9 |
|   | 8H  | 18,6  | 19,1 | 19,1 | 19,6 | 20,3 | 20,5                                    | 21,0 | 21,0 | 21,5 | 22,1 |
|   | 12H | 18,6  | 19,0 | 19,2 | 19,5 | 20,2 | 20,5                                    | 20,9 | 21,1 | 21,4 | 22,1 |
| 12H   | 4H  | 18,4  | 19,1 | 18,9 | 19,5 | 20,0 | 19,9                                    | 20,6 | 20,4 | 21,0 | 21,5 |
|   | 6H  | 18,6  | 19,1 | 19,1 | 19,6 | 20,3 | 20,3                                    | 20,8 | 20,8 | 21,4 | 22,0 |
|   | 8H  | 18,6  | 19,1 | 19,2 | 19,6 | 20,2 | 20,4                                    | 20,9 | 21,0 | 21,4 | 22,0 |
| Variation of the observer position for the luminaire distance S |     |   |      |      |      |      |   |      |      |      |      |
| S = 1.0H  |     | 0,2 / -0,2  |      |      |      |      | 0,1 / -0,1                              |      |      |      |      |
| S = 1.5H  |     | 0,4 / -0,7  |      |      |      |      | 0,2 / -0,3                              |      |      |      |      |
| S = 2.0H  |     | 1,1 / -1,6  |      |      |      |      | 0,7 / -1,0                              |      |      |      |      |
| Standard table  |     | n/a   |      |      |      |      | n/a                                     |      |      |      |      |
| Correction<br>summand   |     | n/a   |      |      |      |      | n/a                                     |      |      |      |      |
| Corrected glare indices referring to 140 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  | 105 | 101 | 97  | 106 | 102 | 99  | 95  | 98  | 95  | 92  | 94  | 92  | 89  | 90  | 88  | 87  | 85  |
| 2                   | 100  | 92  | 85  | 79  | 97  | 90  | 84  | 78  | 86  | 81  | 77  | 83  | 78  | 75  | 80  | 76  | 73  | 71  |
| 3                   | 91   | 80  | 72  | 66  | 88  | 79  | 71  | 66  | 76  | 70  | 64  | 73  | 68  | 63  | 70  | 66  | 62  | 60  |
| 4                   | 83   | 71  | 63  | 56  | 81  | 70  | 62  | 56  | 67  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 53  | 51  |
| 5                   | 76   | 64  | 55  | 48  | 74  | 62  | 54  | 48  | 60  | 53  | 47  | 58  | 52  | 47  | 56  | 51  | 46  | 44  |
| 6                   | 70   | 57  | 48  | 42  | 69  | 56  | 48  | 42  | 54  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 41  | 39  |
| 7                   | 65   | 52  | 43  | 37  | 64  | 51  | 43  | 37  | 49  | 42  | 37  | 48  | 41  | 36  | 47  | 41  | 36  | 34  |
| 8                   | 61   | 47  | 39  | 33  | 59  | 47  | 38  | 33  | 45  | 38  | 33  | 44  | 37  | 32  | 43  | 37  | 32  | 30  |
| 9                   | 57   | 43  | 35  | 30  | 55  | 43  | 35  | 29  | 42  | 34  | 29  | 40  | 34  | 29  | 39  | 33  | 29  | 27  |
| 10                  | 53   | 40  | 32  | 27  | 52  | 39  | 32  | 27  | 38  | 31  | 27  | 37  | 31  | 26  | 36  | 31  | 26  | 25  |

LAMPS (number of lamps)

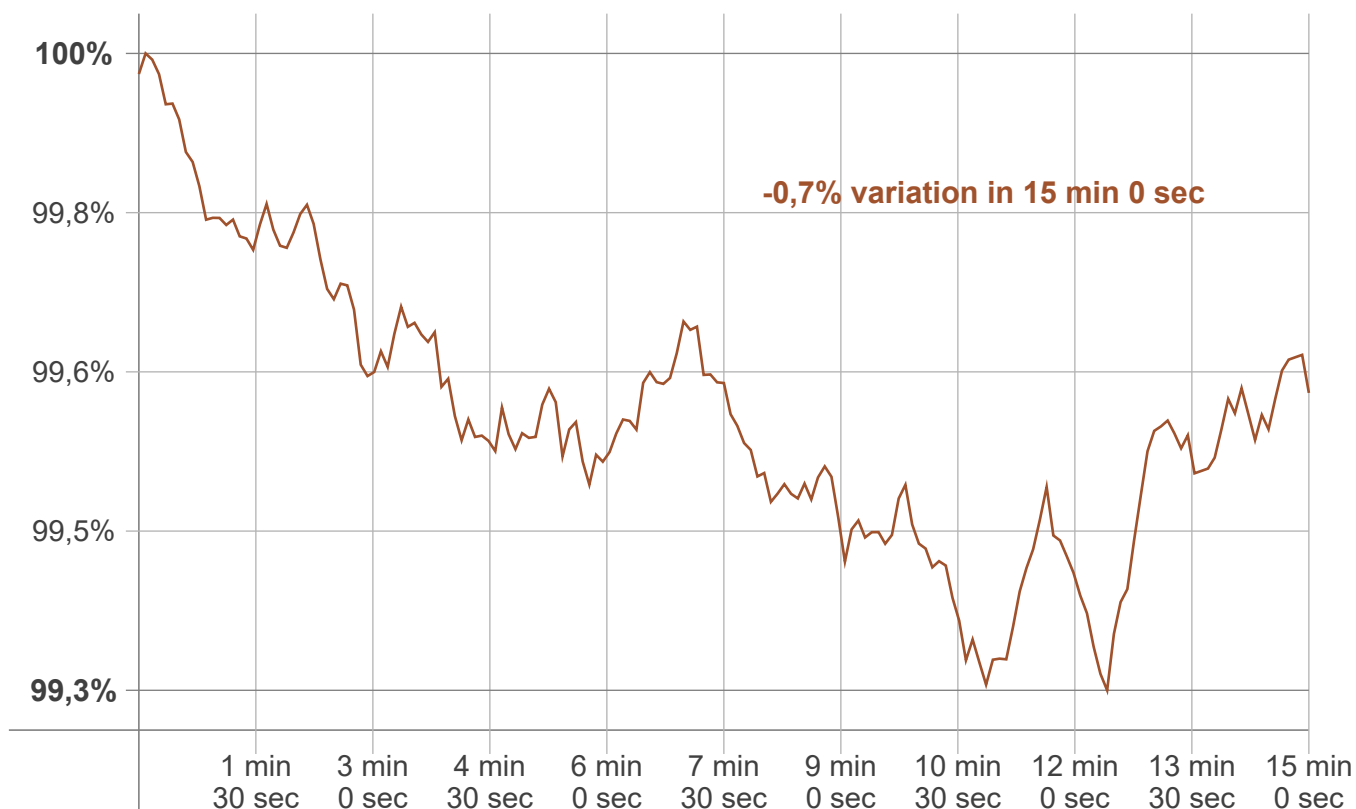
Luminaire budgetary diagram



## Zonal Lumen Summary

| 0°-10°   | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 4,64 lm  | 13,4 lm   | 20,5 lm   | 25,2 lm   | 26,6 lm   | 24,0 lm   | 16,7 lm   | 7,12 lm   | 1,57 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0,297 lm | 0,077 lm  | 0,062 lm  | 0,056 lm  | 0,048 lm  | 0,039 lm  | 0,029 lm  | 0,018 lm  | 0,006 lm  |

## Warmup curve



## Warmup result

|                  |                                 |
|------------------|---------------------------------|
| Warmup time:     | Lamp stabilized in 15 min 0 sec |
| Warmup variation | -0,7%                           |

## Warmup conditions

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

## Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 2746 K    | -4 K       | 2742 K  |

## Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 141 lm       | lm            | 140 lm     |