

Light efficiency:



Light quality:



Color temperature:

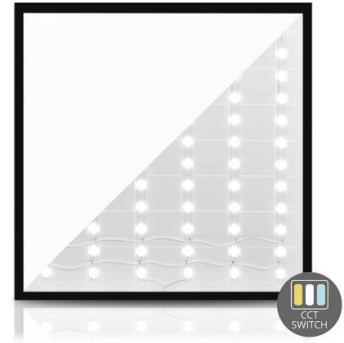


Output: 3554 lm

Peak: 1628 cd

Power: 29,5 W

PF: 0,96



Tracking number: [VT241007-001575](#)

Product name:

**277717-3000K**

Item number:

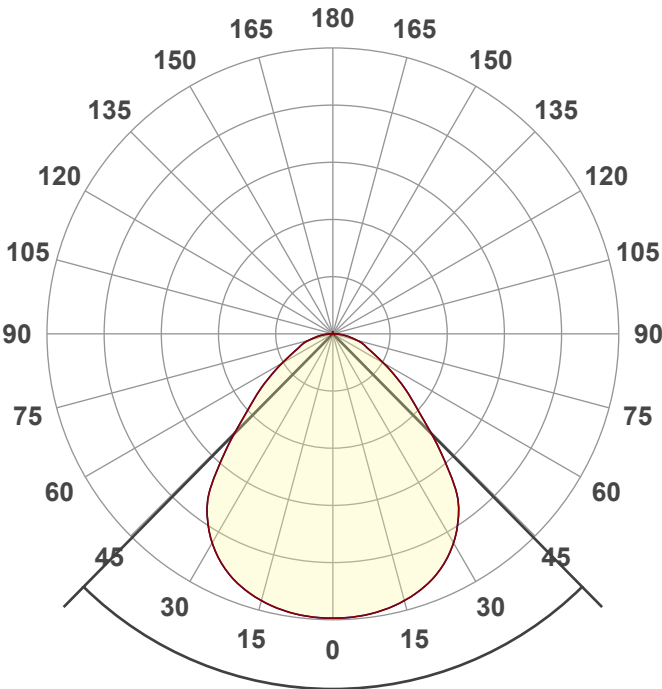
**277717-3000K**

Date and time:

**7-10-2024 16:34:39**

Description:

**BACK-LIT LED PANEEL | EUROPA | 60X60CM | 30W | ZWART | CCT-SWITCH**

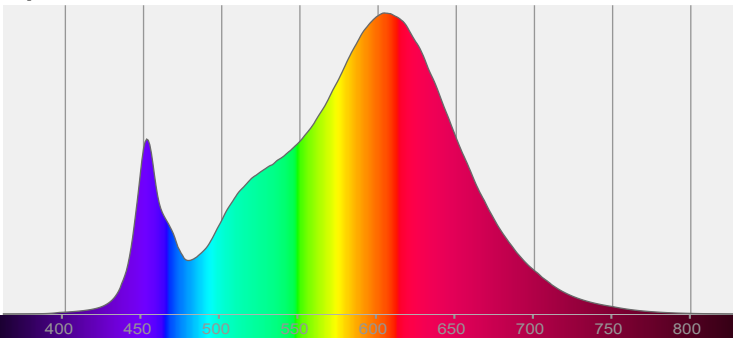


Beam angle **89,2°**

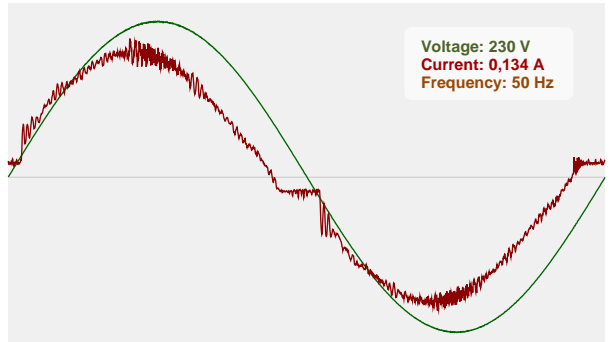


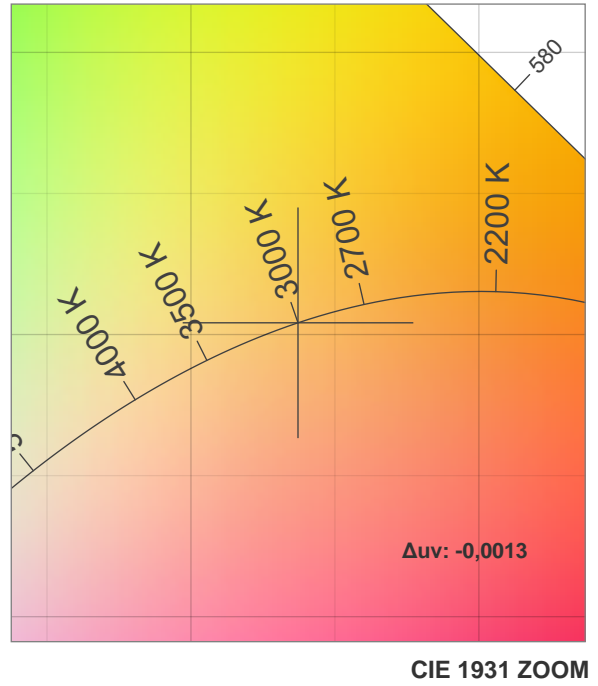
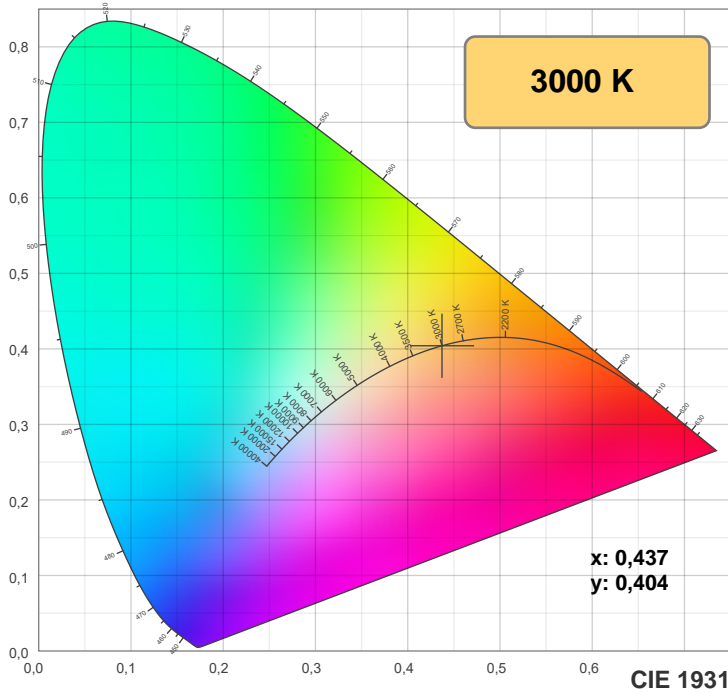
CIE 1931  
x: 0,437  
y: 0,404

Spectra



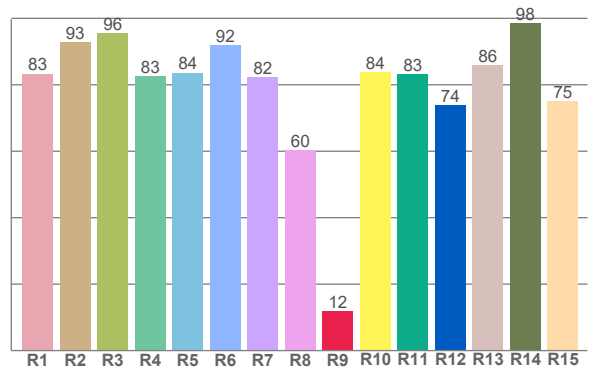
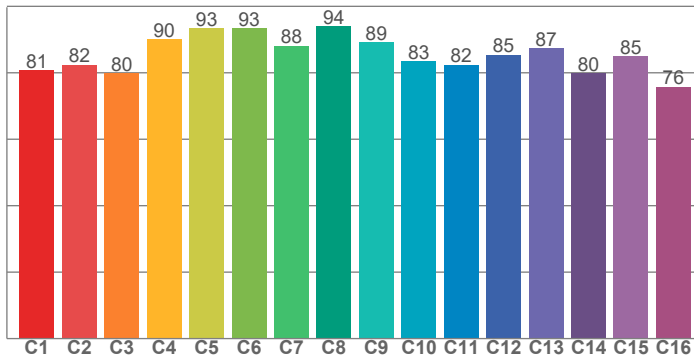
Power



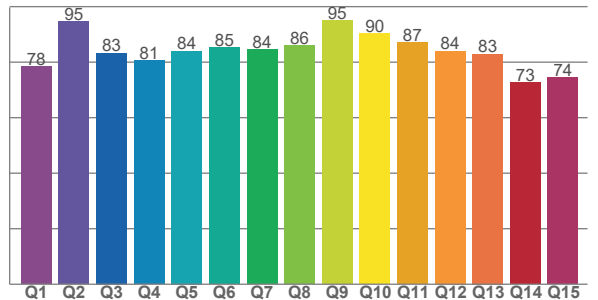


**TM-30: 85,5**

**CRI: 84,1 (R1-R8)**



**CQS: 83,0**



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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 83,3 | 92,9 | 95,6 | 82,6 | 83,6 | 91,8 | 82,4 | 60,3 | 11,9 | 83,9 | 83,1 | 73,8 | 85,9 | 98,5 | 75,1 |

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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 80,7 | 82,4 | 79,9 | 90,1 | 93,3 | 93,4 | 88,1 | 94,0 | 89,1 | 83,5 | 82,4 | 85,4 | 87,4 | 79,9 | 84,9 | 75,8 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 78,4 | 94,6 | 83,3 | 80,6 | 84,1 | 85,2 | 84,5 | 86,0 | 95,1 | 90,4 | 87,0 | 84,1 | 82,9 | 72,6 | 74,4 |

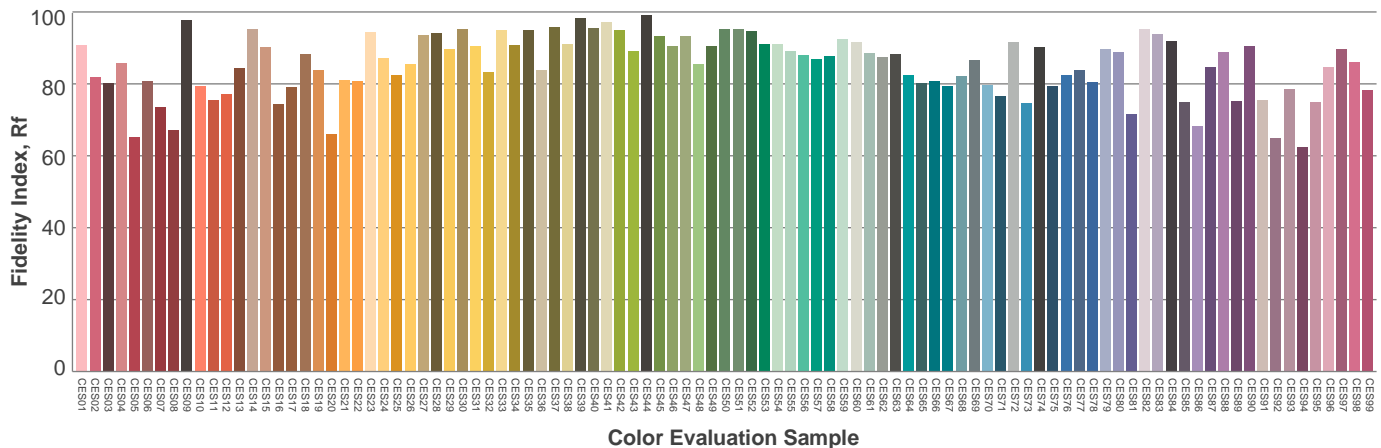
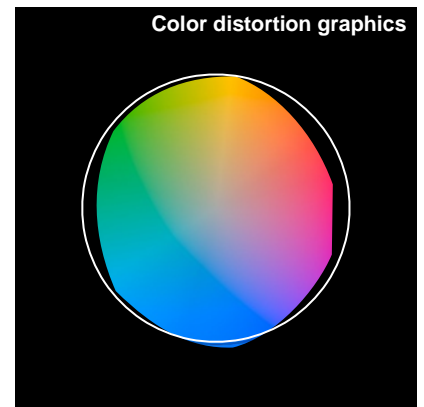
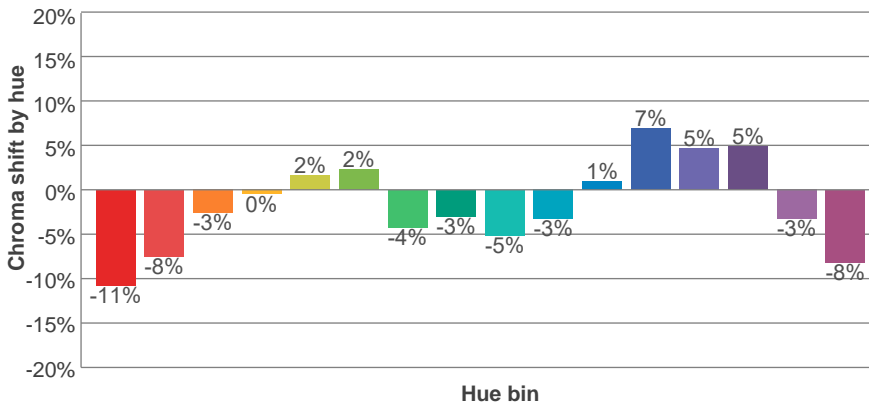
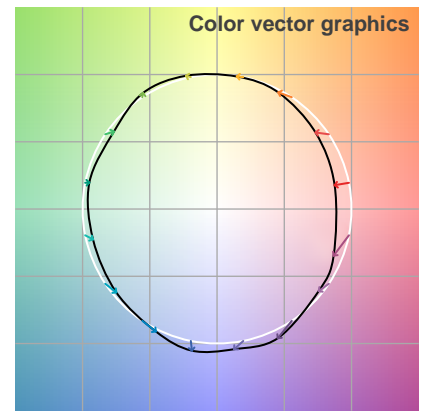
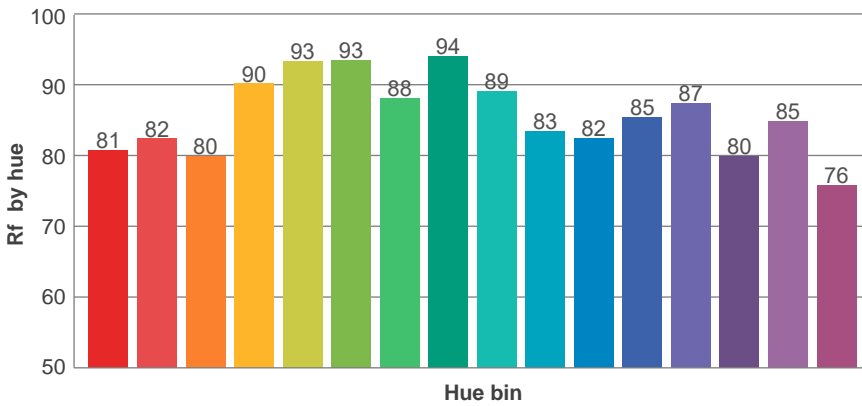
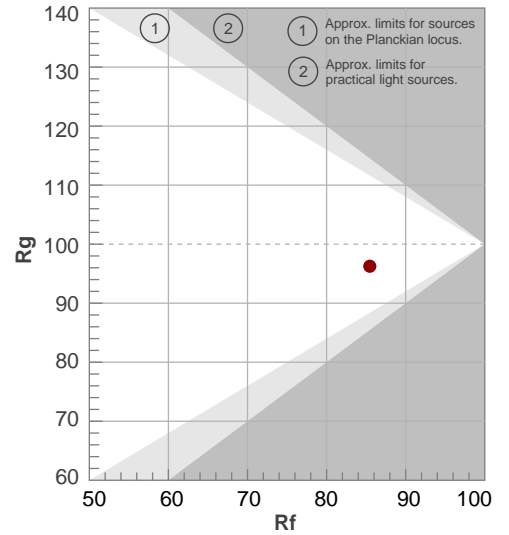
**Color parameters**

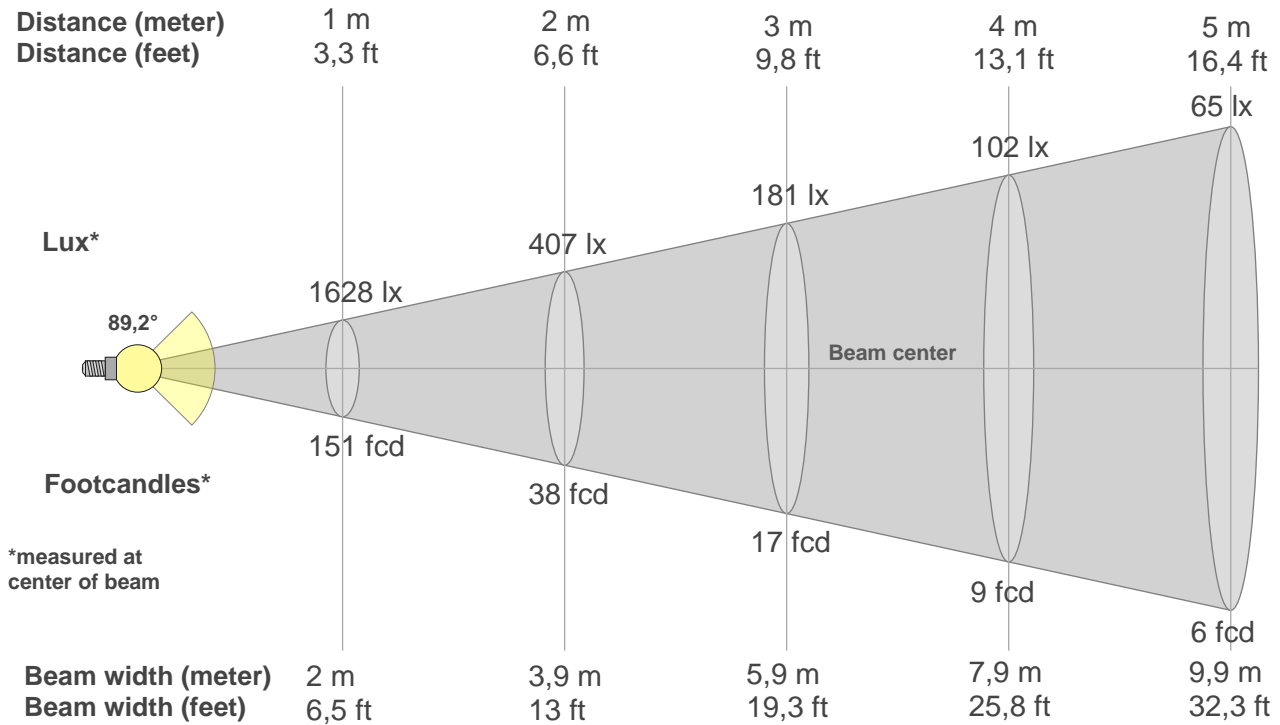
| Color temperature | Color rendering index | Red component | Color fidelity | Color gamut | Color quality scale | Color coordinate cie 1931 | Color coordinate cie 1931 | Color coordinate | Color coordinate | Color deviation from black body |
|-------------------|-----------------------|---------------|----------------|-------------|---------------------|---------------------------|---------------------------|------------------|------------------|---------------------------------|
| CCT               | CRI                   | CRI R9        | TM30 Rf        | TM30 Rg     | CQS                 | x                         | y                         | u                | v                | Δuv                             |
| 3000 K            | 84,1                  | 11,9          | 85,5           | 96,3        | 83,0                | 0,437                     | 0,404                     | 0,251            | 0,348            | -0,0013                         |

**Rf 85,5**  
Fidelity index Rf

**Rg 96,3**  
Gamut index Rg

| Hue Bin | R <sub>f</sub> | Shifts (%) |      |
|---------|----------------|------------|------|
|         |                | Chroma     | Hue  |
| 1       | 81             | -11%       | 0%   |
| 2       | 82             | -8%        | 7%   |
| 3       | 80             | -3%        | 10%  |
| 4       | 90             | 0%         | 5%   |
| 5       | 93             | 2%         | 3%   |
| 6       | 93             | 2%         | -2%  |
| 7       | 88             | -4%        | -5%  |
| 8       | 94             | -3%        | -1%  |
| 9       | 89             | -5%        | 4%   |
| 10      | 83             | -3%        | 10%  |
| 11      | 82             | 1%         | 13%  |
| 12      | 85             | 7%         | 2%   |
| 13      | 87             | 5%         | -8%  |
| 14      | 80             | 5%         | -16% |
| 15      | 85             | -3%        | -9%  |
| 16      | 76             | -8%        | -17% |





**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 |
| 1628lx   | 407lx   | 181lx   | 102lx  | 65lx   | 45lx   | 33lx   | 25lx   | 20lx   | 16lx   | 13lx   | 11lx   | 10lx   | 8lx    | 7lx    | 6lx    | 6lx    | 5lx    | 5lx    | 4lx    |
| 151,3fcd | 37,8fcd | 16,8fcd | 9,5fcd | 6,1fcd | 4,2fcd | 3,1fcd | 2,4fcd | 1,9fcd | 1,5fcd | 1,3fcd | 1,1fcd | 0,9fcd | 0,8fcd | 0,7fcd | 0,6fcd | 0,5fcd | 0,5fcd | 0,4fcd | 0,4fcd |

**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° |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1628 | 1624 | 1609 | 1581 | 1537 | 1472 | 1378 | 1247 | 1042 | 795 | 601 | 460 | 340 | 250 | 194 | 144 | 91  | 47  | 14  | 1   |
| 100% | 100% | 99%  | 97%  | 94%  | 90%  | 85%  | 77%  | 64%  | 49% | 37% | 28% | 21% | 15% | 12% | 9%  | 6%  | 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° |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1628 | 1624 | 1609 | 1581 | 1537 | 1472 | 1378 | 1247 | 1042 | 795 | 601 | 460 | 340 | 250 | 194 | 144 | 91  | 47  | 14  | 1   |
| 100% | 100% | 99%  | 97%  | 94%  | 90%  | 85%  | 77%  | 64%  | 49% | 37% | 28% | 21% | 15% | 12% | 9%  | 6%  | 3%  | 1%  | 0%  |

**Intensities in 180° c-plane**

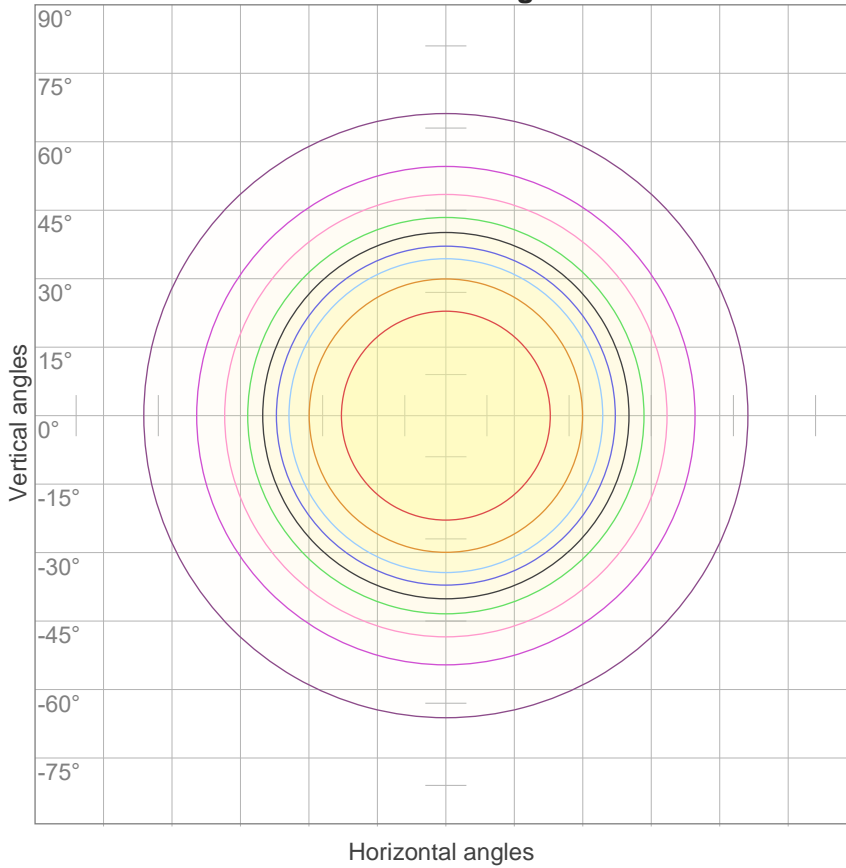
| 0°   | 5°   | 10°  | 15°  | 20°  | 25°  | 30°  | 35°  | 40°  | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1628 | 1624 | 1609 | 1581 | 1537 | 1472 | 1378 | 1247 | 1042 | 795 | 601 | 460 | 340 | 250 | 194 | 144 | 91  | 47  | 14  | 1   |
| 100% | 100% | 99%  | 97%  | 94%  | 90%  | 85%  | 77%  | 64%  | 49% | 37% | 28% | 21% | 15% | 12% | 9%  | 6%  | 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° |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1628 | 1624 | 1609 | 1581 | 1537 | 1472 | 1378 | 1247 | 1042 | 795 | 601 | 460 | 340 | 250 | 194 | 144 | 91  | 47  | 14  | 1   |
| 100% | 100% | 99%  | 97%  | 94%  | 90%  | 85%  | 77%  | 64%  | 49% | 37% | 28% | 21% | 15% | 12% | 9%  | 6%  | 3%  | 1%  | 0%  |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| <b>89,2°</b>   | <b>146,8°</b>   | <b>171,5°</b>     | <b>86,8%</b>                 | <b>67,5%</b>                |

**iso-candela diagram**



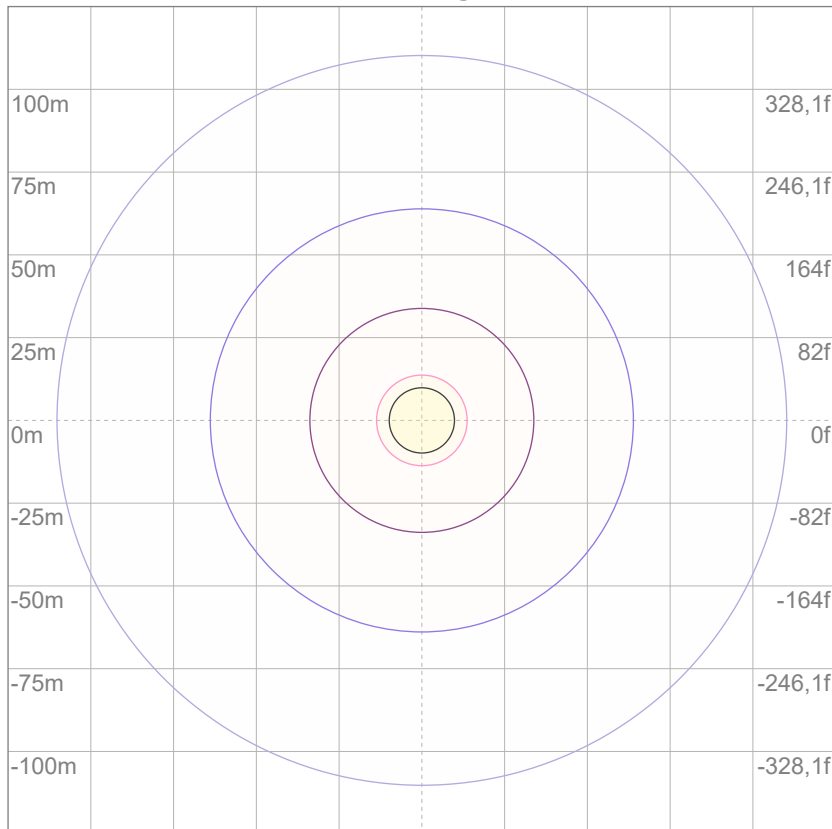
|     |         |
|-----|---------|
| 10% | 163 cd  |
| 20% | 326 cd  |
| 30% | 488 cd  |
| 40% | 651 cd  |
| 50% | 814 cd  |
| 60% | 977 cd  |
| 70% | 1140 cd |
| 80% | 1303 cd |
| 90% | 1465 cd |

Conditions:

Number of c-planes: 12

Candela at center: 1628 cd

**iso-lux diagram**



|     |          |
|-----|----------|
| 3%  | 0,488 lx |
| 5%  | 0,814 lx |
| 10% | 1,63 lx  |
| 30% | 4,88 lx  |
| 50% | 8,14 lx  |

Conditions:

Number of c-planes: 12

Lux at center: 16,3 lx

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

Mounting height: 10 meters (33 feet)

**Glare evaluation according to UGR**

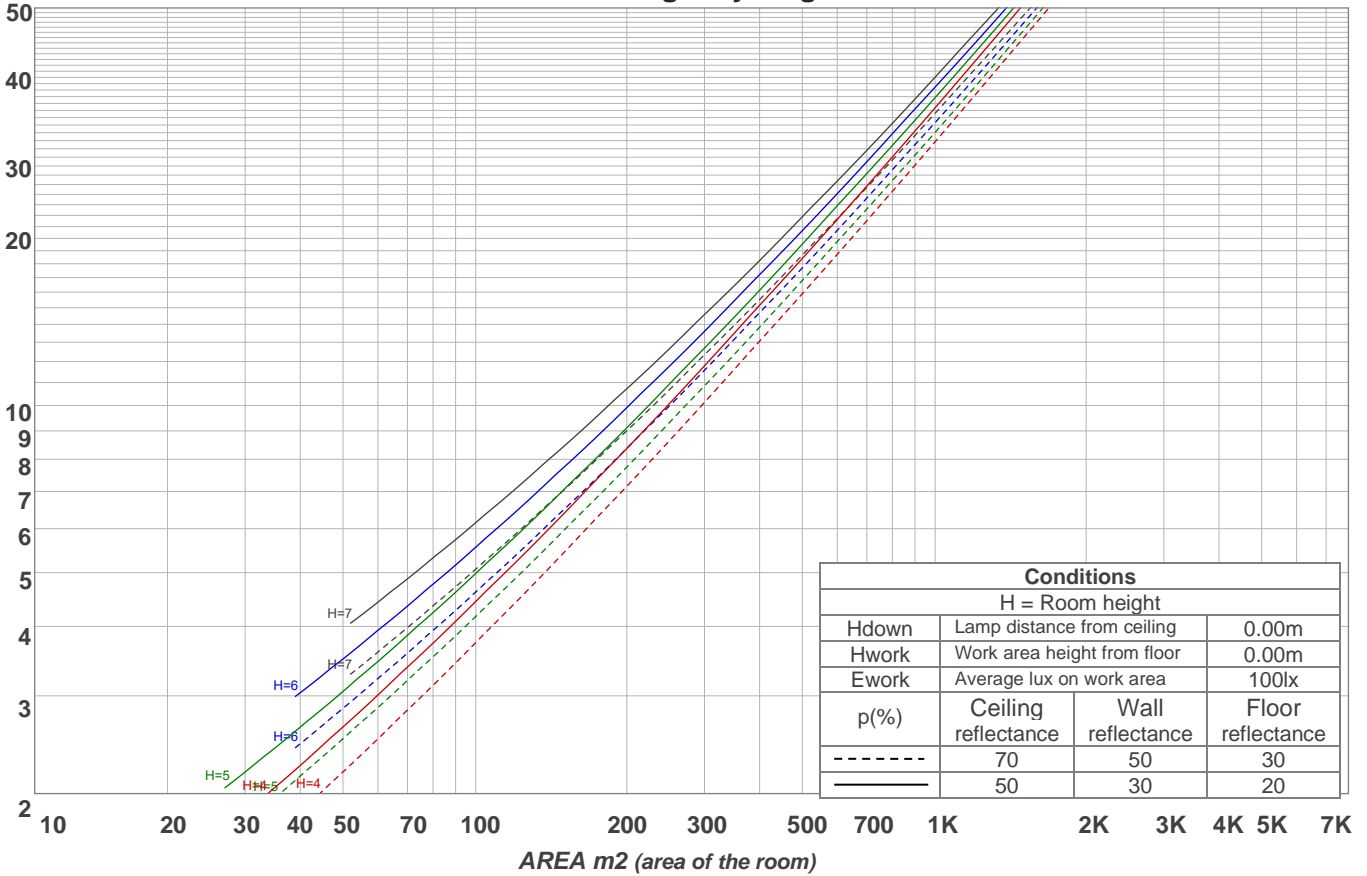
|  |  |      |      |      |      |   |      |      |      |      |      |
|--|--|------|------|------|------|---|------|------|------|------|------|
| p Ceiling  | 70   | 70   | 50   | 50   | 30   | 70                                      | 70   | 50   | 50   | 30   |      |
| p Walls  | 50   | 30   | 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 |      |      |      |      |      |
| 2H   | 2H   | 15,3 | 16,3 | 15,5 | 16,6 | 16,8                                    | 15,3 | 16,3 | 15,5 | 16,6 | 16,8 |
|  | 3H   | 16,0 | 17,2 | 16,4 | 17,4 | 17,6                                    | 16,0 | 17,2 | 16,4 | 17,4 | 17,6 |
|  | 4H   | 16,5 | 17,6 | 16,9 | 17,8 | 18,1                                    | 16,5 | 17,6 | 16,9 | 17,8 | 18,1 |
|  | 6H   | 16,9 | 17,8 | 17,2 | 18,1 | 18,5                                    | 16,9 | 17,8 | 17,2 | 18,1 | 18,5 |
|  | 8H   | 17,0 | 17,9 | 17,4 | 18,3 | 18,7                                    | 17,0 | 17,9 | 17,4 | 18,3 | 18,7 |
| 12H  | 17,1   | 18,0 | 17,5 | 18,4 | 18,8 | 17,1                                    | 18,0 | 17,5 | 18,4 | 18,8 |      |
| 4H   | 2H   | 15,5 | 16,6 | 15,9 | 16,9 | 17,1                                    | 15,5 | 16,6 | 15,9 | 16,9 | 17,1 |
|  | 3H   | 16,7 | 17,5 | 17,0 | 17,9 | 18,3                                    | 16,7 | 17,5 | 17,0 | 17,9 | 18,3 |
|  | 4H   | 17,2 | 18,0 | 17,6 | 18,4 | 19,0                                    | 17,2 | 18,0 | 17,6 | 18,4 | 19,0 |
|  | 6H   | 17,7 | 18,5 | 18,2 | 18,8 | 19,2                                    | 17,7 | 18,5 | 18,2 | 18,8 | 19,2 |
|  | 8H   | 17,9 | 18,6 | 18,4 | 19,0 | 19,4                                    | 17,9 | 18,6 | 18,4 | 19,0 | 19,4 |
| 12H  | 18,0   | 18,6 | 18,5 | 19,0 | 19,5 | 18,0                                    | 18,6 | 18,5 | 19,0 | 19,5 |      |
| 8H   | 4H   | 17,4 | 18,1 | 17,9 | 18,5 | 18,9                                    | 17,4 | 18,1 | 17,9 | 18,5 | 18,9 |
|  | 6H   | 18,1 | 18,6 | 18,6 | 19,1 | 19,6                                    | 18,1 | 18,6 | 18,6 | 19,1 | 19,6 |
|  | 8H   | 18,4 | 18,8 | 18,9 | 19,4 | 20,0                                    | 18,4 | 18,8 | 18,9 | 19,4 | 20,0 |
|  | 12H  | 18,6 | 19,0 | 19,2 | 19,5 | 20,1                                    | 18,6 | 19,0 | 19,2 | 19,5 | 20,1 |
| 12H  | 4H   | 17,4 | 18,0 | 17,9 | 18,4 | 18,9                                    | 17,4 | 18,0 | 17,9 | 18,4 | 18,9 |
|  | 6H   | 18,2 | 18,6 | 18,7 | 19,1 | 19,8                                    | 18,2 | 18,6 | 18,7 | 19,1 | 19,8 |
|  | 8H   | 18,5 | 18,8 | 19,1 | 19,4 | 20,0                                    | 18,5 | 18,8 | 19,1 | 19,4 | 20,0 |
| Variation of the observer position for the luminaire distance S                |  |      |      |      |      |   |      |      |      |      |      |
| S = 1.0H   | 0,2 / -0,3                                     |      |      |      |      | 0,2 / -0,3                              |      |      |      |      |      |
| S = 1.5H   | 0,5 / -0,6                                     |      |      |      |      | 0,5 / -0,6                              |      |      |      |      |      |
| S = 2.0H   | 1,1 / -0,9                                     |      |      |      |      | 1,1 / -0,9                              |      |      |      |      |      |
| CIE 117-1995. Corrected glare indices referring to 3554 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  | 20 | 20 | 20 | 0 |
| <b>RCR</b>          | <b>(RCR: Room Cavity Ratio)</b>   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |   |
|                     | 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 | 99 |    |    |   |
| 1                   | 110   | 106 | 102 | 99  | 107 | 104 | 100 | 97  | 99  | 97  | 94  | 95  | 93  | 91  | 92  | 90  | 88  | 86 |    |    |   |
| 2                   | 101   | 94  | 88  | 83  | 99  | 92  | 87  | 82  | 89  | 84  | 80  | 86  | 82  | 78  | 82  | 79  | 77  | 74 |    |    |   |
| 3                   | 94  | 84  | 77  | 71  | 91  | 83  | 76  | 71  | 80  | 74  | 69  | 77  | 72  | 68  | 74  | 70  | 67  | 65 |    |    |   |
| 4                   | 87  | 76  | 68  | 62  | 84  | 74  | 67  | 61  | 72  | 66  | 61  | 70  | 64  | 60  | 68  | 63  | 59  | 57 |    |    |   |
| 5                   | 80  | 69  | 60  | 54  | 78  | 67  | 60  | 54  | 65  | 59  | 53  | 63  | 58  | 53  | 62  | 56  | 52  | 50 |    |    |   |
| 6                   | 75  | 62  | 54  | 48  | 73  | 61  | 54  | 48  | 60  | 53  | 48  | 58  | 52  | 47  | 56  | 51  | 47  | 45 |    |    |   |
| 7                   | 70  | 57  | 49  | 43  | 68  | 56  | 49  | 43  | 55  | 48  | 43  | 53  | 47  | 42  | 52  | 46  | 42  | 40 |    |    |   |
| 8                   | 65  | 52  | 45  | 39  | 63  | 52  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 38  | 48  | 42  | 38  | 36 |    |    |   |
| 9                   | 61  | 48  | 41  | 36  | 60  | 48  | 40  | 35  | 47  | 40  | 35  | 46  | 39  | 35  | 45  | 39  | 35  | 33 |    |    |   |
| 10                  | 57  | 45  | 37  | 32  | 56  | 44  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 32  | 42  | 36  | 32  | 30 |    |    |   |

LAMPS (number of lamps)

**Luminaire budgetary diagram**



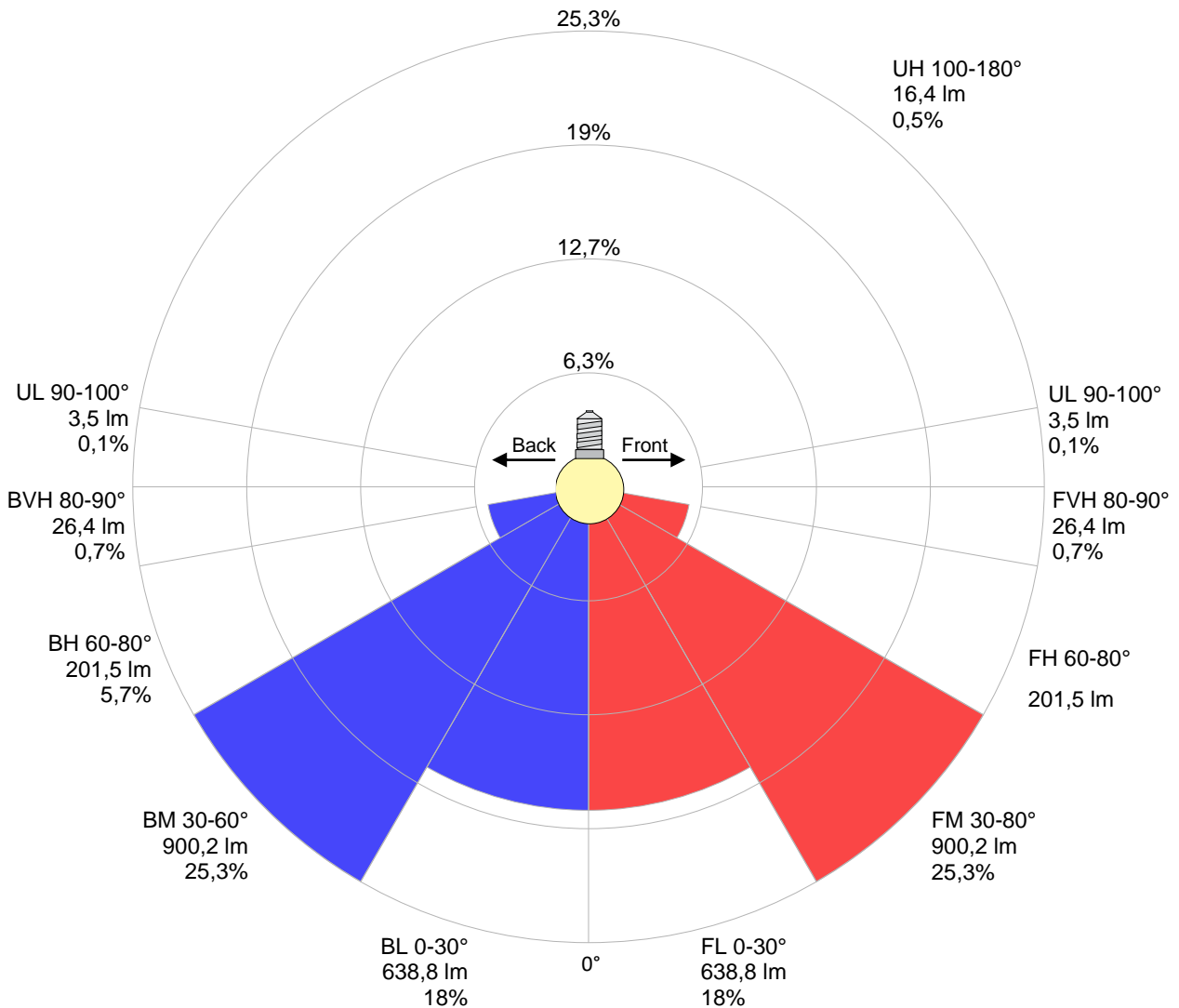
**Zonal Lumen Summary**

|           |           |           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0°-10°    | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
| {LUM0-10} | 447 lm    | 679 lm    | 780 lm    | 612 lm    | 411 lm    | 249 lm    | 152 lm    | 51,5 lm   |
| 90°-100°  | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 2,06 lm   | 2,01 lm   | 2,45 lm   | 2,79 lm   | 2,64 lm   | 2,59 lm   | 2,10 lm   | 1,40 lm   | 0,504 lm  |

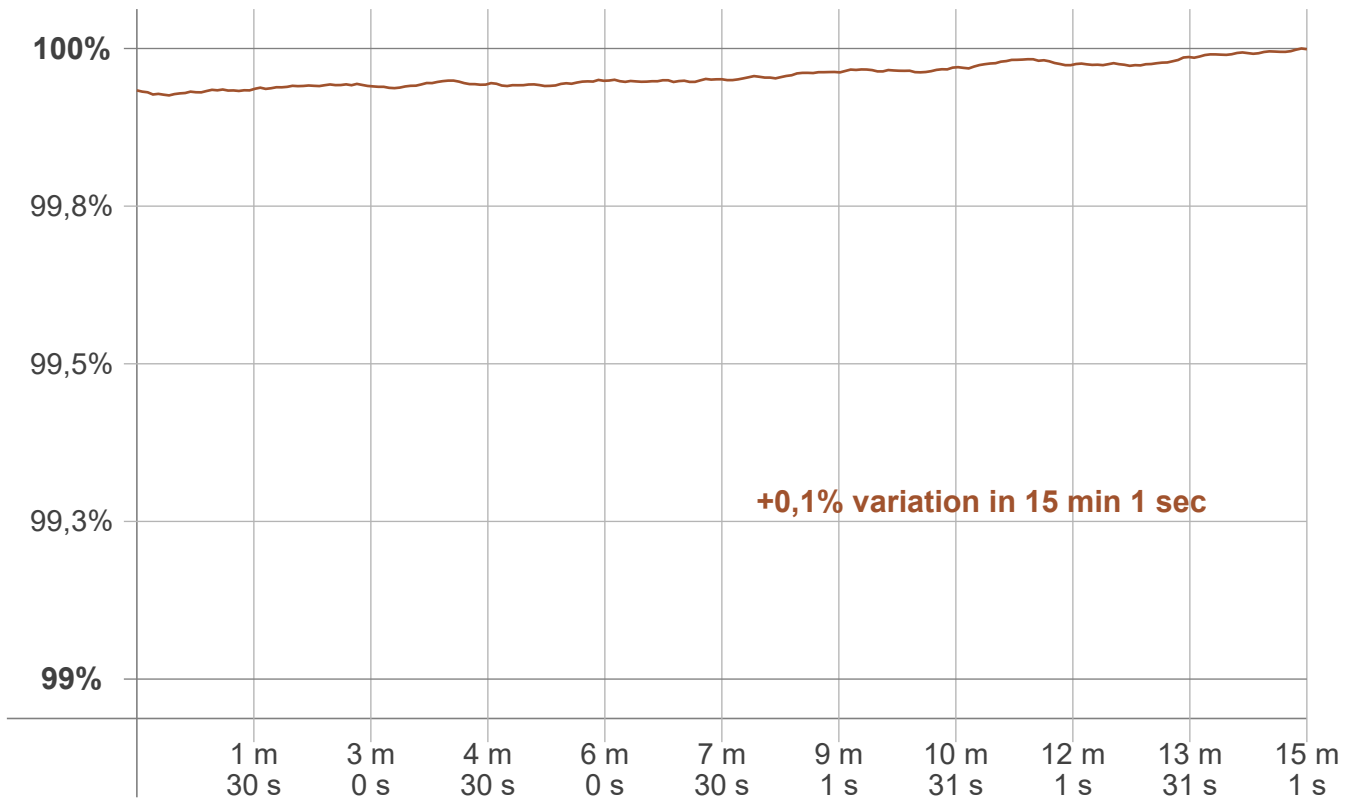
LCS table

| BUG rating:          | B2 U2 G1 |          |
|----------------------|----------|----------|
| <b>Forward light</b> | Lumens   | Lumens % |
| Low(0-30):           | 638,8    | 18%      |
| Medium(30-60):       | 900,2    | 25,3%    |
| High(60-80):         | 201,5    | 5,7%     |
| Very high(80-90):    | 26,4     | 0,7%     |
| <b>Back light</b>    |          |          |
| Low(0-30):           | 638,8    | 18%      |
| Medium(30-60):       | 900,2    | 25,3%    |
| High(60-80):         | 201,5    | 5,7%     |
| Very high(80-90):    | 26,4     | 0,7%     |
| <b>Uplight</b>       |          |          |
| Low(90-100):         | 3,5      | 0,1%     |
| High(100-180):       | 16,4     | 0,5%     |

LCS graph



**Warmup curve**



**Warmup result**

|                         |  |
|-------------------------|--|
| <b>Warmup time:</b>     | <b>Lamp stabilized in 15 min 1 sec</b> |
| <b>Warmup variation</b> | <b>+0,1%</b>                           |

**Warmup conditions**

|                           |               |
|---------------------------|---------------|
| <b>Stable period:</b>     | <b>15 min</b> |
| <b>Stable change max:</b> | <b>2,0%</b>   |
| <b>Minimum time:</b>      | <b>15 min</b> |

**Color temperature change**

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 2999 K    | +1 K       | 3000 K  |

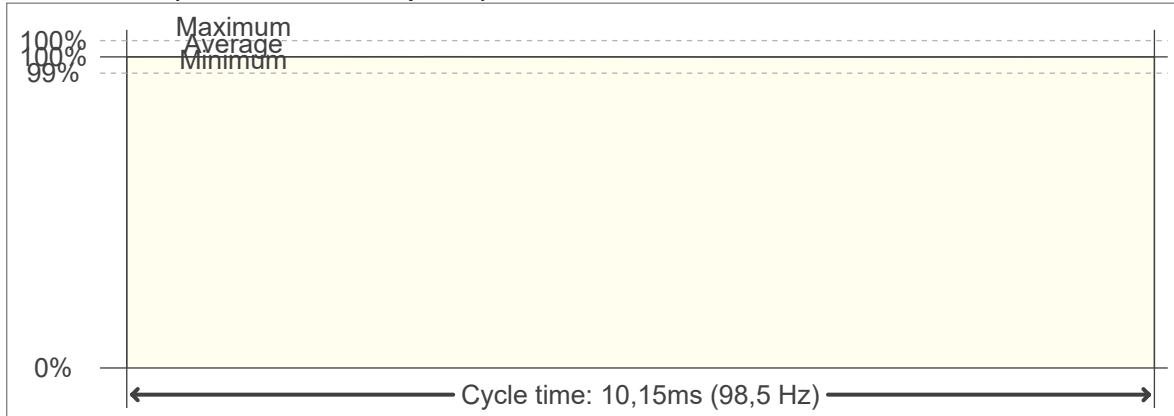
**Output change**

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 3552 lm      | +2 lm         | 3554 lm    |

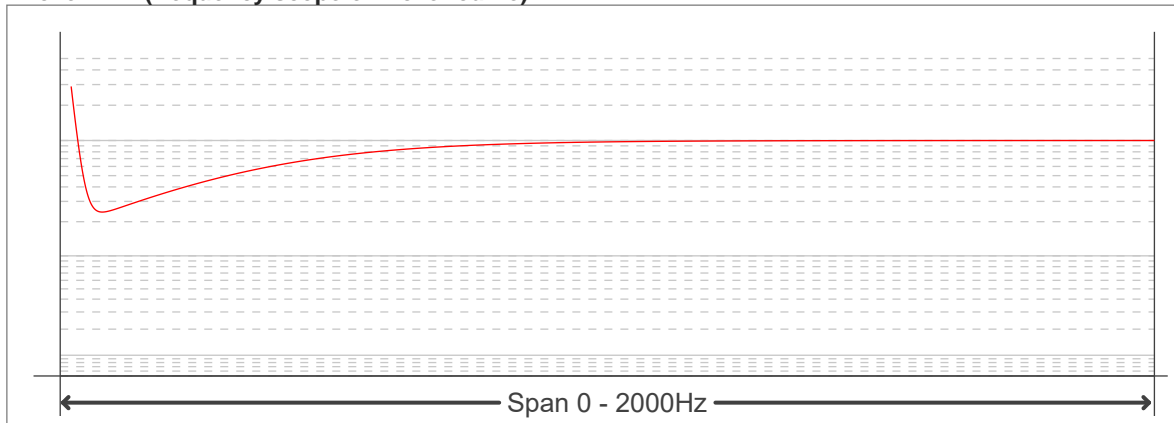
**Flicker curve (complete sampled flicker signal)**



**Flicker frame (frame of one flicker period)**



**Flicker FFT (frequency scope of flicker curve)**



**Flicker results:**

| Flicker frequency:    |        | 98,52 Hz      |        |
|-----------------------|--------|---------------|--------|
| Flicker index:        | 0      | JA8/10 40Hz   | 0,01 % |
| Flicker percentage:   | 0,11 % | JA8/10 90Hz   | 0,02 % |
| SVM: (Visual flicker) | 0      | JA8/10 200Hz  | 0,1 %  |
| PstLM                 | 0,01   | JA8/10 400Hz  | 0,1 %  |
| Mp                    | 0,01   | JA8/10 1000Hz | 0,11 % |

**Flicker conditions:**

|              |                      |
|--------------|----------------------|
| Sample rate: | 20000 samples/second |
|--------------|----------------------|