

Light efficiency:



Output: 22404 lm

Light quality:



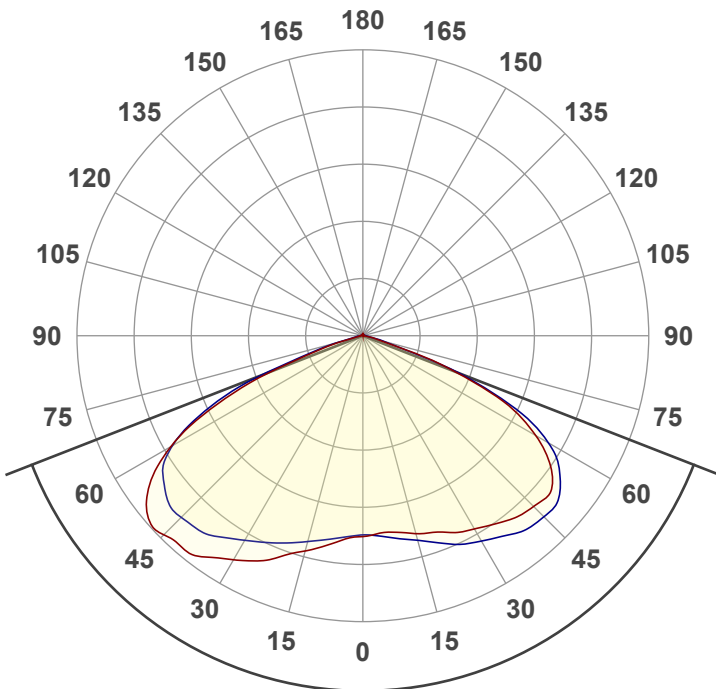
Peak: 6393 cd

Color temperature:



Power: 147.2 W

PF: 1.0



Product name:

**PTLP-R1-SW3B150S 40K 150W**

Date and time:

**2/29/2024 1:34:05 PM**

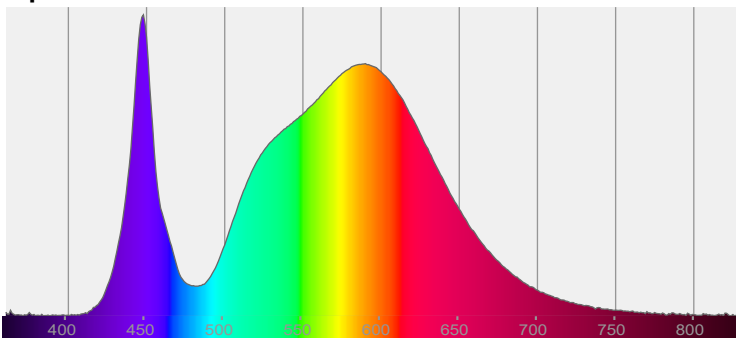
Beam angle

**137.4°**

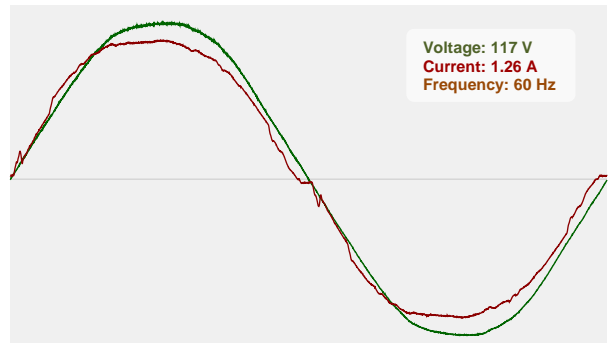


CIE 1931  
x: 0.389  
y: 0.383

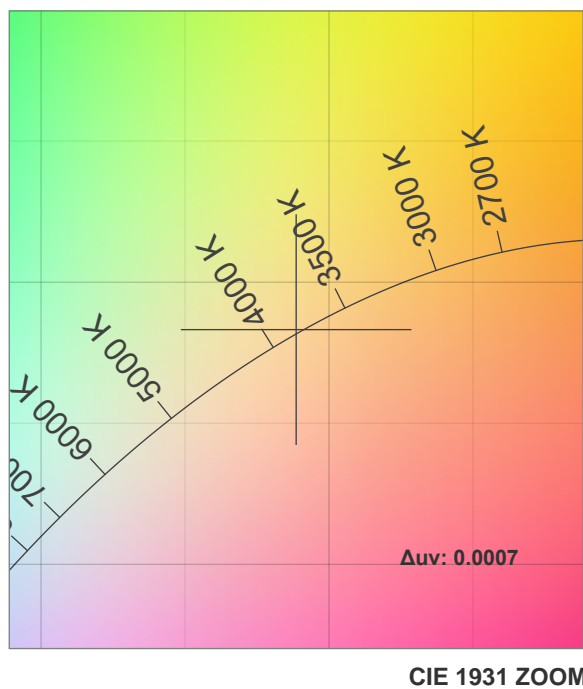
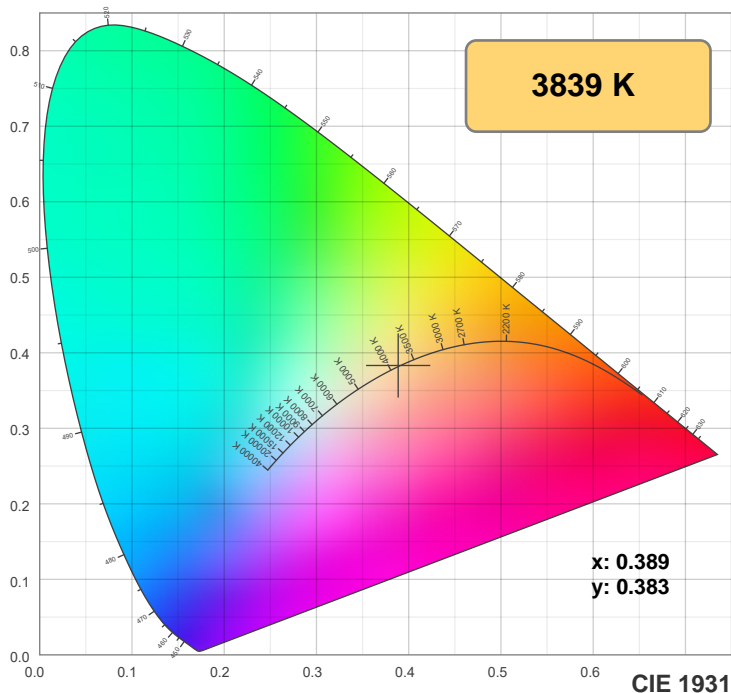
Spectra



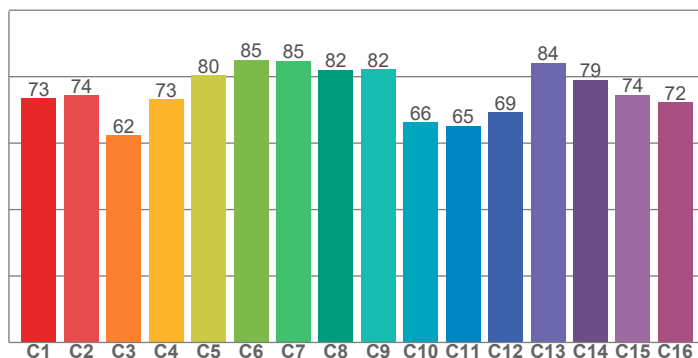
Power



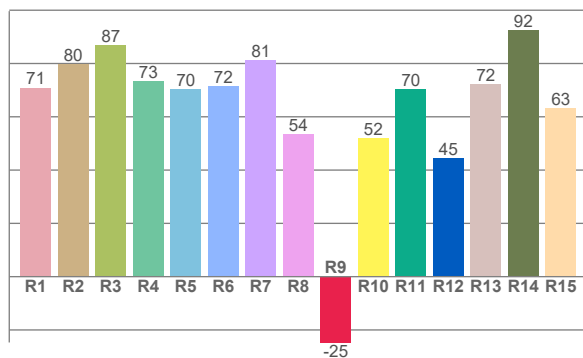
### Color Specifications



**TM30: 75.1**



**CRI: 73.4 (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  |
|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|
| 70.9 | 79.7 | 86.8 | 73.4 | 70.3 | 71.5 | 81.1 | 53.6 | -24.7 | 52.0 | 70.2 | 44.5 | 72.3 | 92.4 | 63.2 |

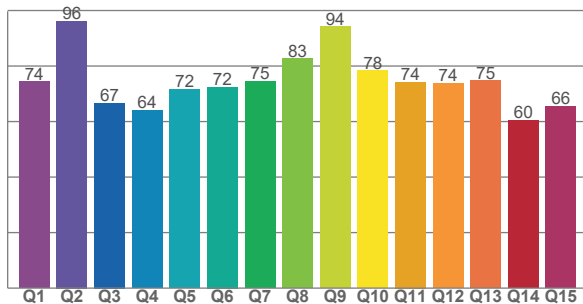
TM30 C values, 16 binned values out of total of 99 C values

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 73.5 | 74.4 | 62.3 | 73.1 | 80.4 | 85.1 | 84.8 | 82.1 | 82.2 | 66.2 | 65.2 | 69.2 | 84.3 | 79.0 | 74.4 | 72.3 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 74.4 | 96.2 | 66.7 | 64.1 | 71.6 | 72.4 | 74.5 | 82.7 | 94.2 | 78.4 | 74.3 | 73.8 | 74.7 | 60.4 | 65.5 |

**CQS: 73.1**



### 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 division from black body |
|-------------------|-----------------------|---------------|----------------|-------------|---------------------|---------------------------|---------------------------|------------------|------------------|--------------------------------|
| CCT               | CRI                   | CRI R9        | TM30 Rf        | TM30 Rg     | CQS                 | x                         | y                         | u                | v                | Δuv                            |
| 3839 K            | 73.4                  | -24.7         | 75.1           | 95.7        | 73.1                | 0.389                     | 0.383                     | 0.228            | 0.337            | 0.0007                         |

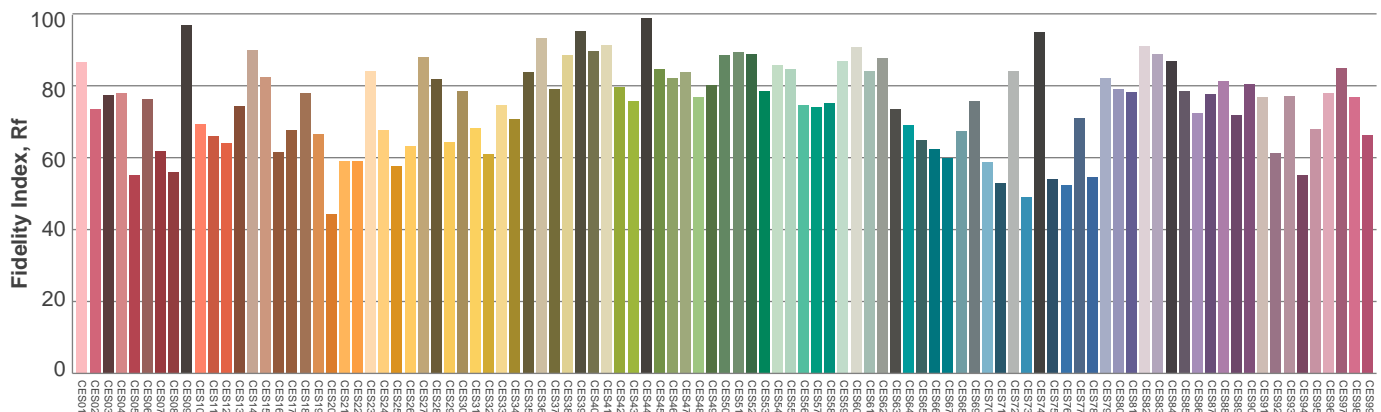
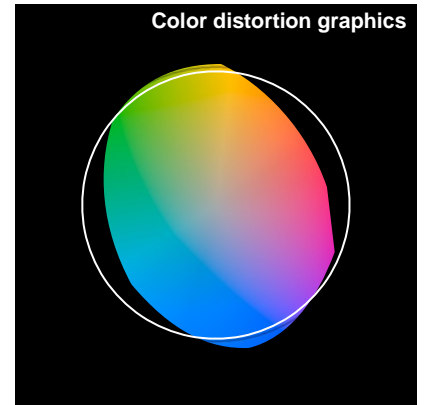
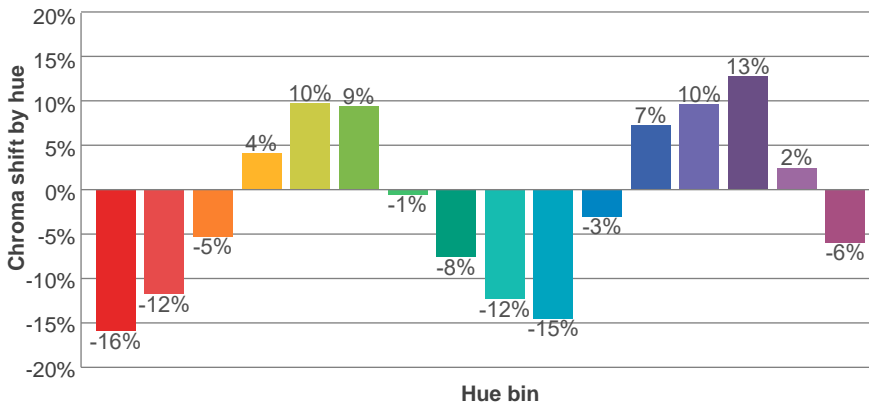
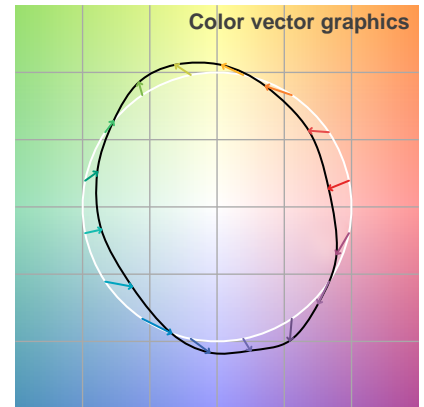
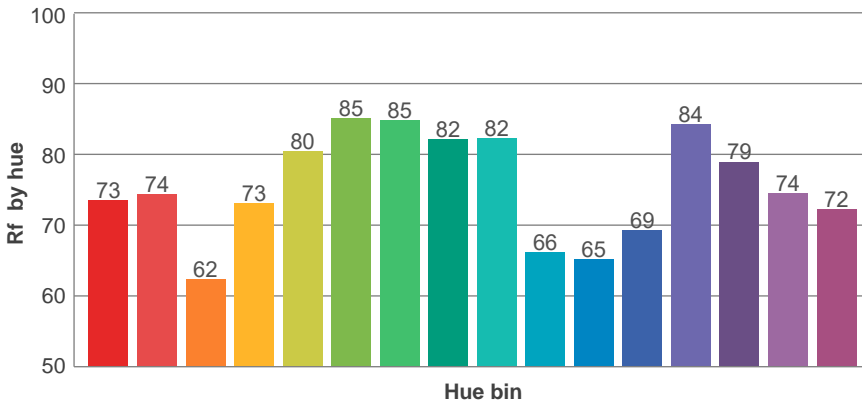
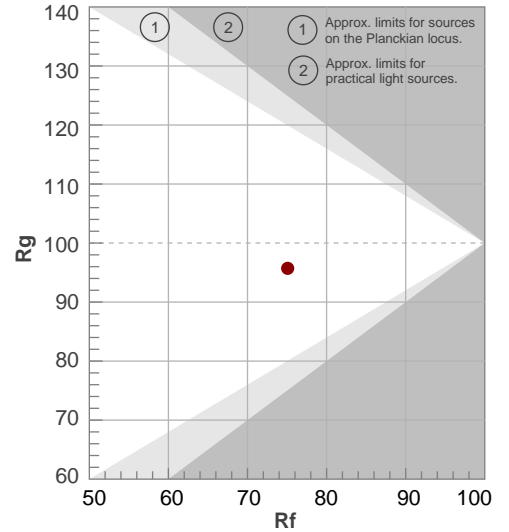


### TM30 Report

**Rf 75.1**  
Fidelity index Rf

**Rg 95.7**  
Gammut index Rg

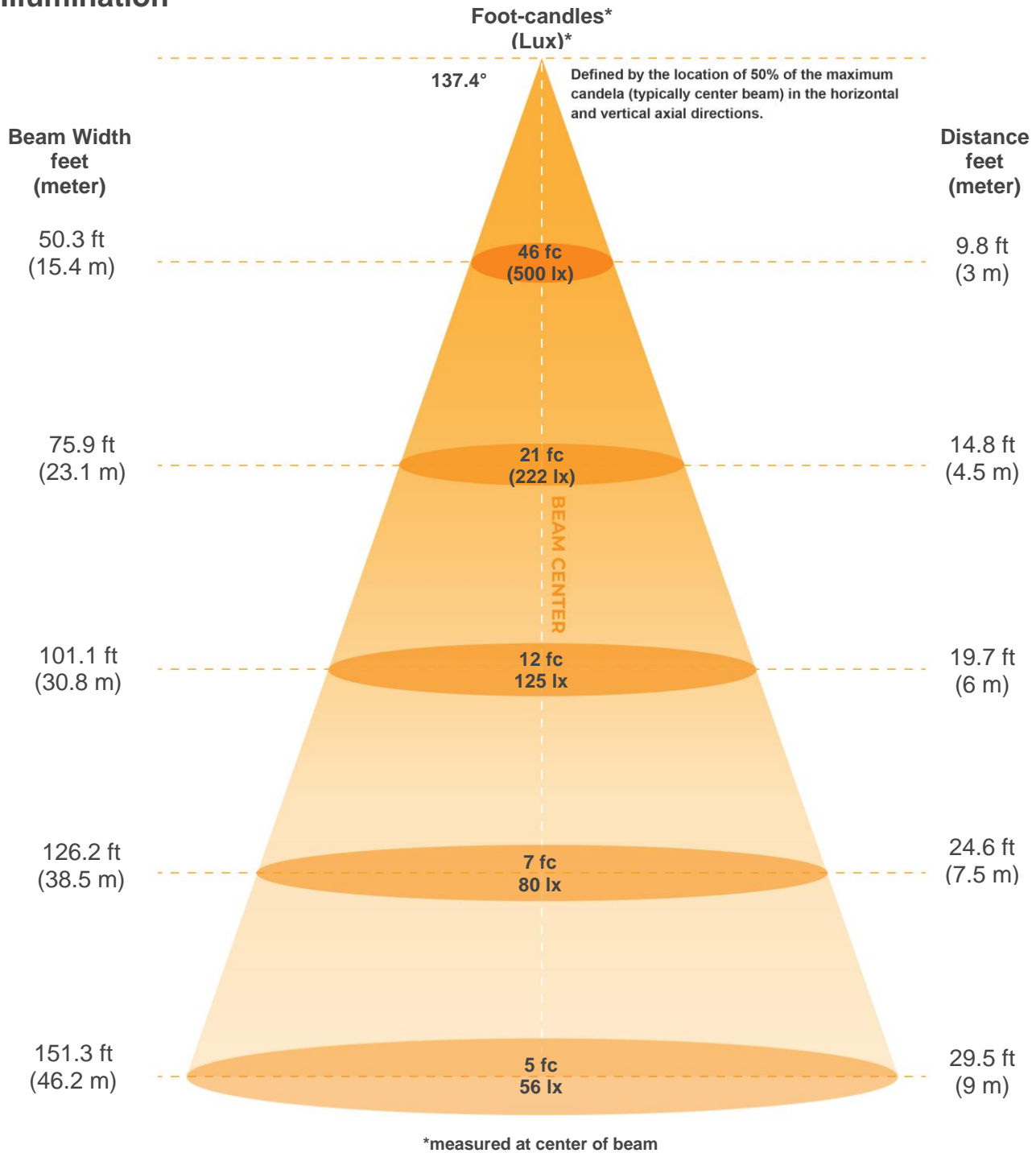
| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 73             | -16%               | -3%  |
| 2       | 74             | -12%               | 9%   |
| 3       | 62             | -5%                | 20%  |
| 4       | 73             | 4%                 | 17%  |
| 5       | 80             | 10%                | 10%  |
| 6       | 85             | 9%                 | -3%  |
| 7       | 85             | -1%                | -10% |
| 8       | 82             | -8%                | -8%  |
| 9       | 82             | -12%               | 0%   |
| 10      | 66             | -15%               | 14%  |
| 11      | 65             | -3%                | 24%  |
| 12      | 69             | 7%                 | 16%  |
| 13      | 84             | 10%                | 4%   |
| 14      | 79             | 13%                | -10% |
| 15      | 74             | 2%                 | -18% |
| 16      | 72             | -6%                | -17% |



Color Evaluation Sample



**Illumination**



**Beam intensities from 1-20m**

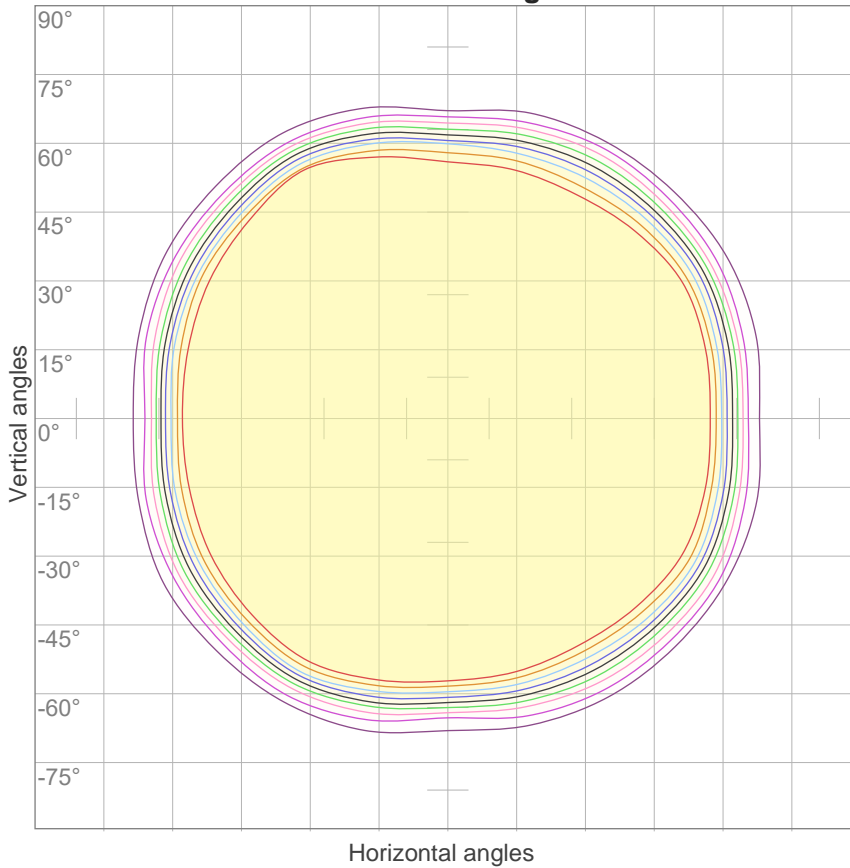
| 1m      | 2m      | 3m      | 4m      | 5m      | 6m      | 7m     | 8m     | 9m     | 10m    | 11m    | 12m    | 13m    | 14m    | 15m    | 16m    | 17m    | 18m    | 19m    | 20m    |
|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| 4500lx  | 1125lx  | 500lx   | 281lx   | 180lx   | 125lx   | 92lx   | 70lx   | 56lx   | 45lx   | 37lx   | 31lx   | 27lx   | 23lx   | 20lx   | 18lx   | 16lx   | 14lx   | 12lx   | 11lx   |
| 418.1fc | 104.5fc | 46.5fcd | 26.1fcd | 16.7fcd | 11.6fcd | 8.5fcd | 6.5fcd | 5.2fcd | 4.2fcd | 3.5fcd | 2.9fcd | 2.5fcd | 2.1fcd | 1.9fcd | 1.6fcd | 1.4fcd | 1.3fcd | 1.2fcd | 1fcd   |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| <b>137.4°</b>  | <b>153.3°</b>   | <b>163.3°</b>     | <b>75.8%</b>                 | <b>43.7%</b>                |



**ISO Diagrams**

**ISO candela diagram**



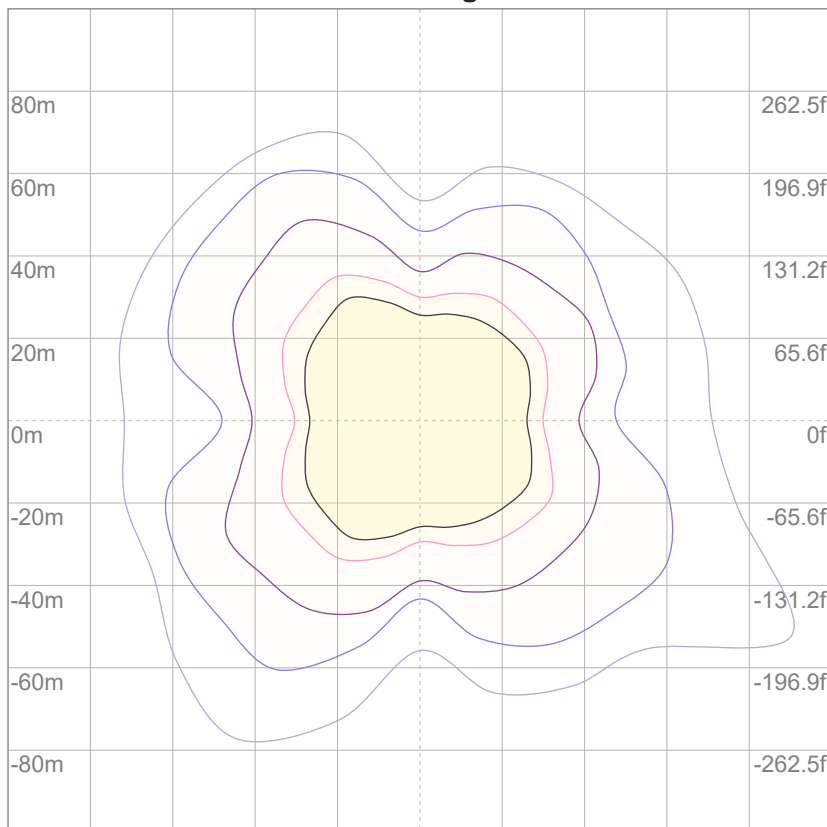
- 10% 450 cd
- 20% 900 cd
- 30% 1350 cd
- 40% 1800 cd
- 50% 2250 cd
- 60% 2700 cd
- 70% 3150 cd
- 80% 3600 cd
- 90% 4050 cd

Conditions:

Number of c-planes: 12

Candela at center: 4500 cd

**ISO lux diagram**



- 3% 1.35 lx
- 5% 2.25 lx
- 10% 4.50 lx
- 30% 13.5 lx
- 50% 22.5 lx

Conditions:

Number of c-planes: 12

Lux at center: 45.0 lx

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



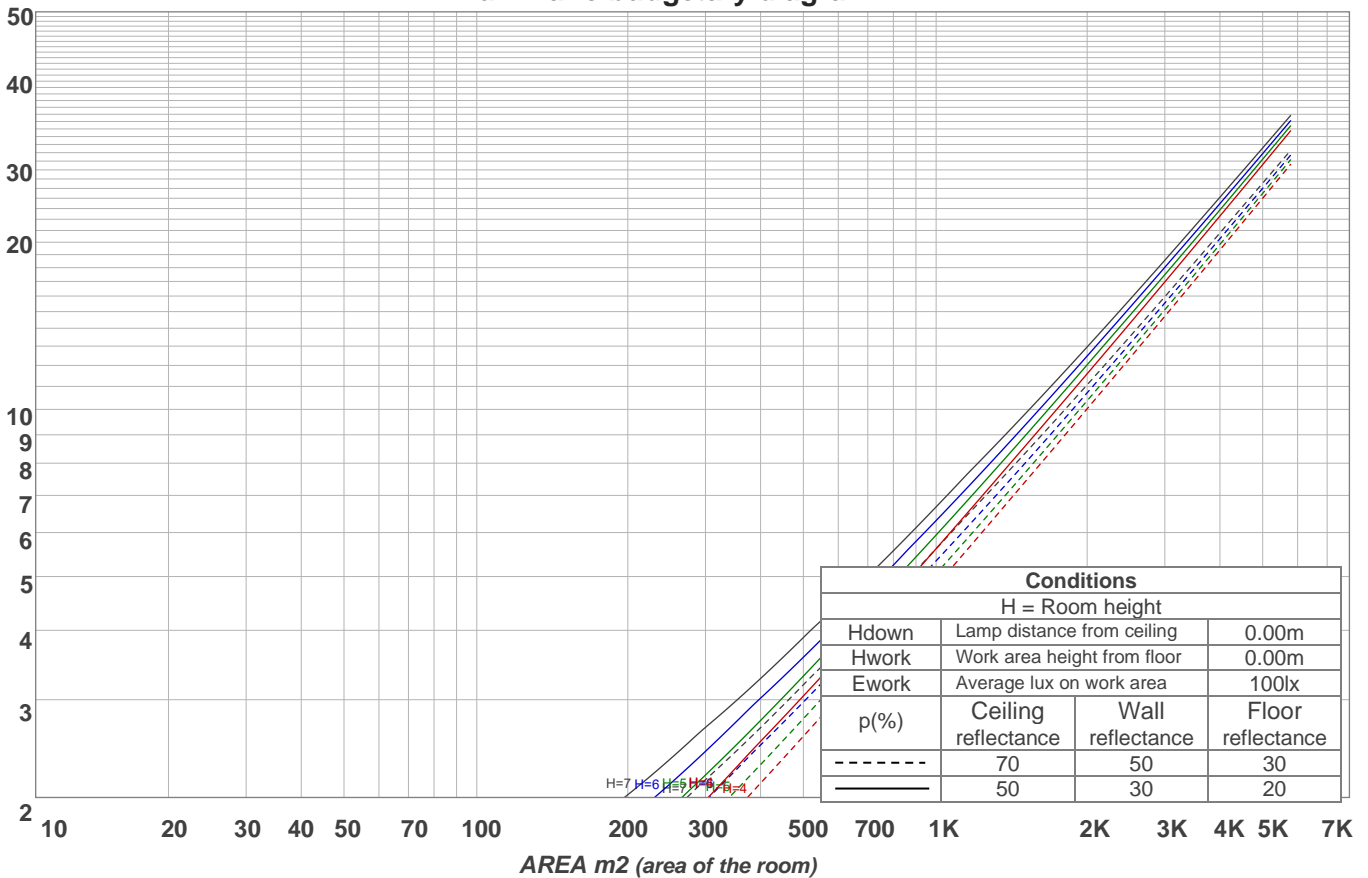
## Light Planning

### 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 | 0 |
| <b>RCR</b>          | <b>(RCR: Room Cavity Ratio)</b>   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |   |
|                     | Room Values are expressed as percentage of Lumens delivered to the task surface |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |   |
| <b>0</b>            | 119   | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 101 | 101 | 101 | 99 |   |
| <b>1</b>            | 108   | 104 | 99  | 95  | 106 | 101 | 97  | 94  | 97  | 94  | 91  | 93  | 90  | 88  | 89  | 87  | 85  | 83 |   |
| <b>2</b>            | 98  | 89  | 82  | 76  | 95  | 87  | 81  | 75  | 83  | 78  | 73  | 80  | 75  | 71  | 77  | 73  | 69  | 67 |   |
| <b>3</b>            | 88  | 77  | 68  | 61  | 85  | 75  | 67  | 61  | 72  | 65  | 60  | 69  | 63  | 58  | 66  | 61  | 57  | 55 |   |
| <b>4</b>            | 80  | 67  | 58  | 50  | 77  | 66  | 57  | 50  | 63  | 55  | 49  | 60  | 54  | 48  | 58  | 52  | 48  | 45 |   |
| <b>5</b>            | 73  | 59  | 49  | 42  | 70  | 58  | 49  | 42  | 55  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 40  | 38 |   |
| <b>6</b>            | 66  | 52  | 43  | 36  | 64  | 51  | 42  | 36  | 49  | 41  | 35  | 47  | 40  | 35  | 46  | 39  | 34  | 32 |   |
| <b>7</b>            | 61  | 47  | 37  | 31  | 59  | 46  | 37  | 31  | 44  | 36  | 30  | 43  | 35  | 30  | 41  | 35  | 30  | 28 |   |
| <b>8</b>            | 56  | 42  | 33  | 27  | 55  | 41  | 33  | 27  | 40  | 32  | 26  | 39  | 31  | 26  | 37  | 31  | 26  | 24 |   |
| <b>9</b>            | 52  | 38  | 30  | 24  | 51  | 38  | 29  | 24  | 36  | 29  | 23  | 35  | 28  | 23  | 34  | 28  | 23  | 21 |   |
| <b>10</b>           | 49  | 35  | 27  | 21  | 48  | 34  | 26  | 21  | 33  | 26  | 21  | 32  | 25  | 21  | 31  | 25  | 21  | 19 |   |

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°   |
| 436 lm   | 1366 lm   | 2397 lm   | 3472 lm   | 4430 lm   | 4879 lm   | 3931 lm   | 1196 lm   | 98.3 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 42.5 lm  | 31.7 lm   | 26.6 lm   | 25.6 lm   | 24.1 lm   | 20.4 lm   | 15.6 lm   | 9.57 lm   | 3.22 lm   |

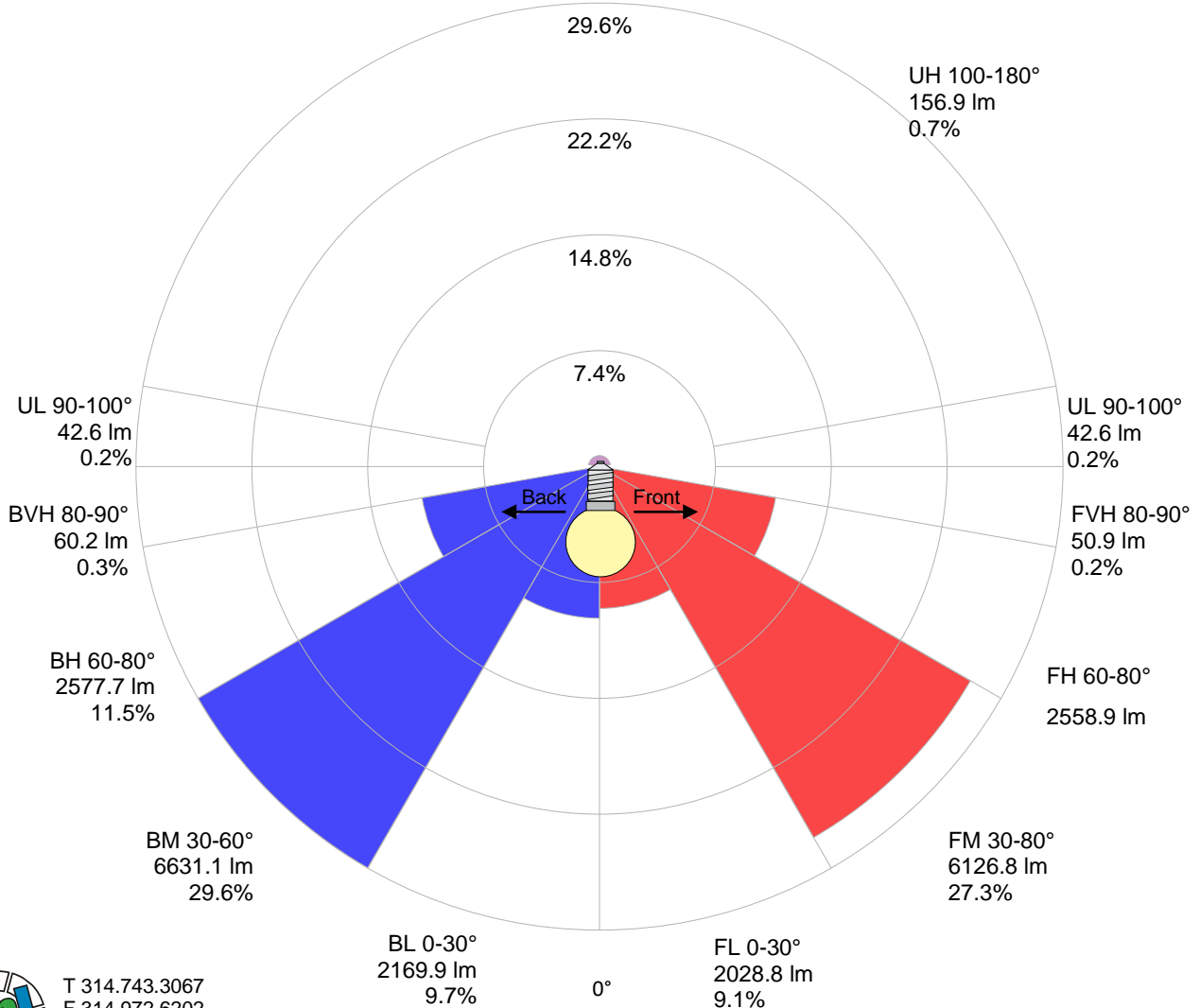


**Road Report**

**LCS table**

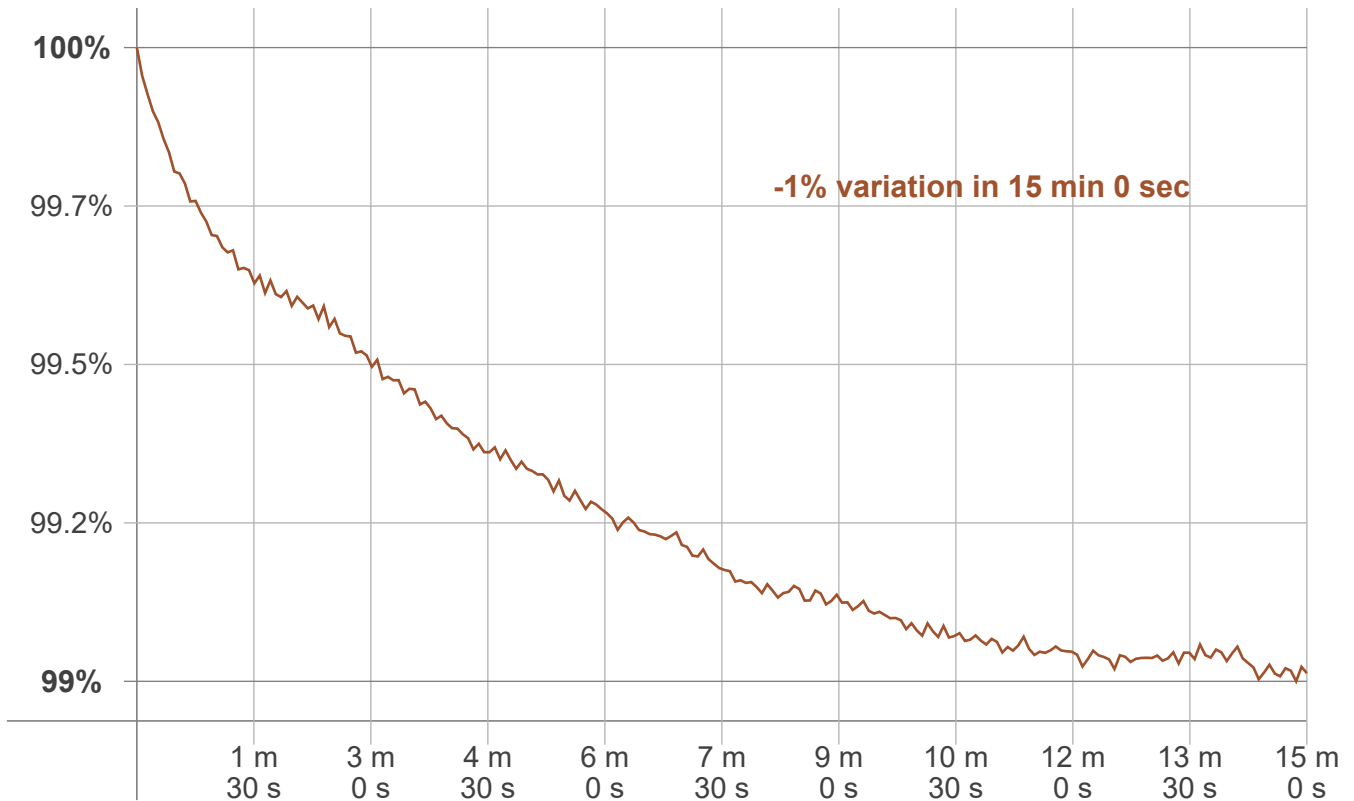
| <b>BUG rating:</b>   | <b>B4 U3 G4</b> |          |
|----------------------|-----------------|----------|
| <b>Forward light</b> | Lumens          | Lumens % |
| Low(0-30):           | 2028.8          | 9.1%     |
| Medium(30-60):       | 6126.8          | 27.3%    |
| High(60-80):         | 2558.9          | 11.4%    |
| Very high(80-90):    | 50.9            | 0.2%     |
| <b>Back light</b>    |                 |          |
| Low(0-30):           | 2169.9          | 9.7%     |
| Medium(30-60):       | 6631.1          | 29.6%    |
| High(60-80):         | 2577.7          | 11.5%    |
| Very high(80-90):    | 60.2            | 0.3%     |
| <b>Uplight</b>       |                 |          |
| Low(90-100):         | 42.6            | 0.2%     |
| High(100-180):       | 156.9           | 0.7%     |

**LCS graph**



**Stabilization**

**Warmup curve**



**Warmup result**

|                         |  |
|-------------------------|--|
| <b>Warmup time:</b>     | <b>Lamp stabilized in 15 min 0 sec</b> |
| <b>Warmup variation</b> | <b>-1.0%</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**

| <b>CCT start</b> | <b>CCT change</b> | <b>CCT end</b> |
|------------------|-------------------|----------------|
| <b>3835 K</b>    | <b>+4 K</b>       | <b>3839 K</b>  |

**Output change**

| <b>Output start</b> | <b>Output change</b> | <b>Output end</b> |
|---------------------|----------------------|-------------------|
| <b>22588 lm</b>     | <b>-184 lm</b>       | <b>22404 lm</b>   |



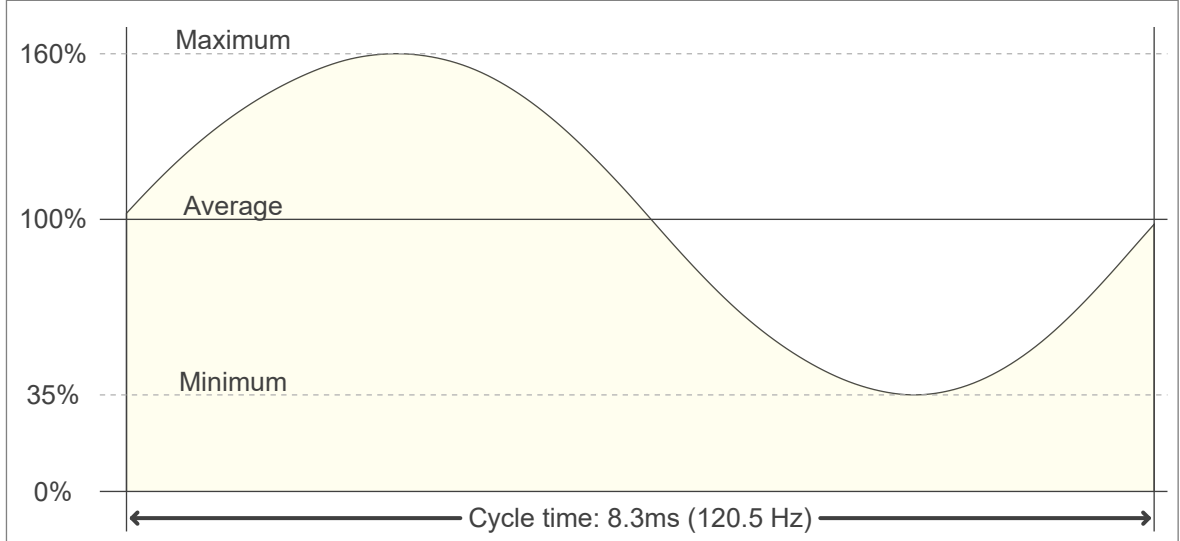


### Flicker Specifications

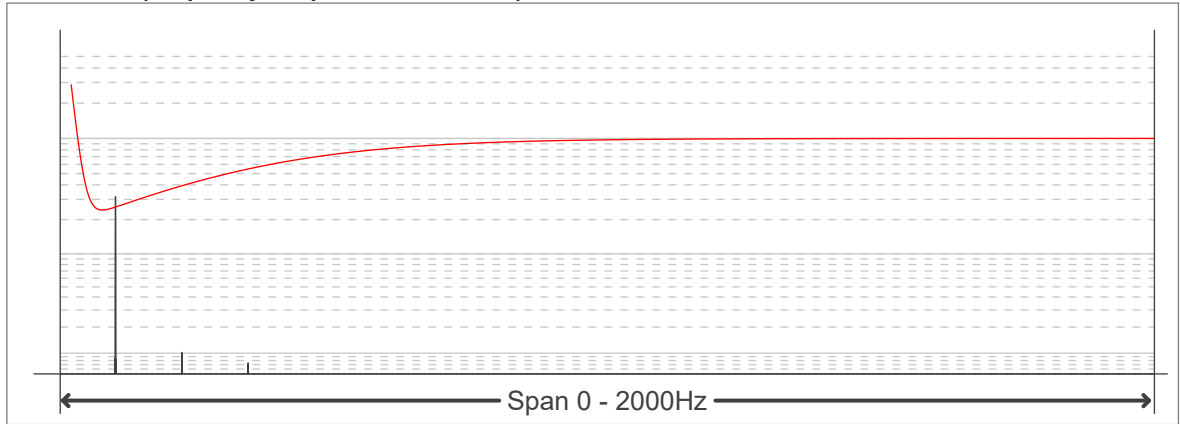
**Flicker curve (complete sampled flicker signal)**



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



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



**Flicker results:**

|                              |                  |
|------------------------------|------------------|
| <b>Flicker frequency:</b>    | <b>120.48 Hz</b> |
| <b>Flicker index:</b>        | <b>0.2</b>       |
| <b>Flicker percentage:</b>   | <b>64 %</b>      |
| <b>SVM: (Visual flicker)</b> | <b>2.3</b>       |

**Flicker conditions:**

|                     |                             |
|---------------------|-----------------------------|
| <b>Sample rate:</b> | <b>20000 samples/second</b> |
|---------------------|-----------------------------|

