

Light efficiency:

127 Lumen/Watt

Output: 15533 lm

Light quality:

CRI: 71.7

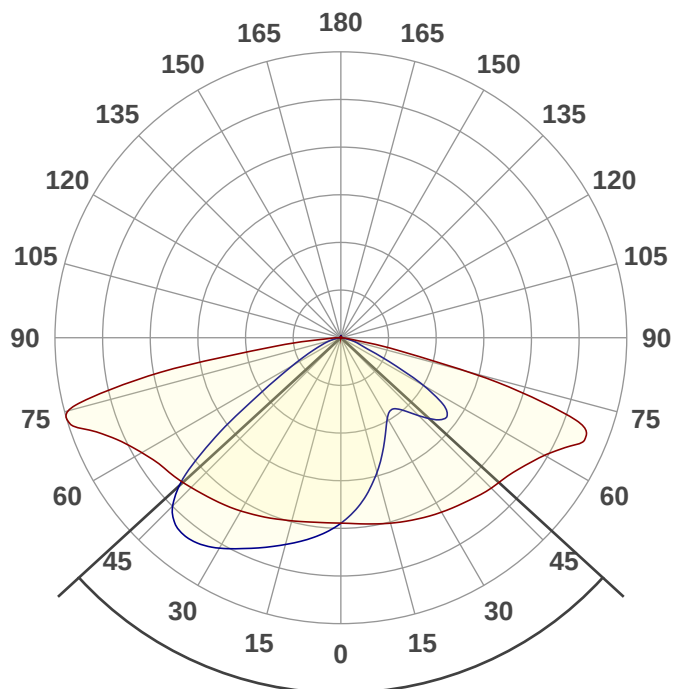
Peak: 7203 cd

Color temperature:

3099 K

Power: 122.5 W

PF: 1.0



Product name:

RWLA-30K120AT2-GRSF

Date and time:

7/16/2020 1:38:25 PM

Beam angle

95°

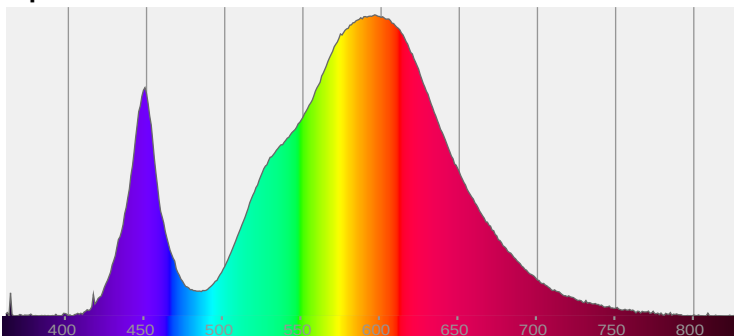


CIE 1931

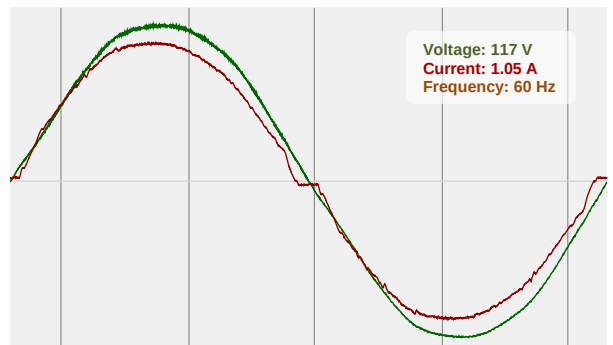
x: 0.425

y: 0.391

Spectra



Power



Voltage: 117 V  
Current: 1.05 A  
Frequency: 60 Hz



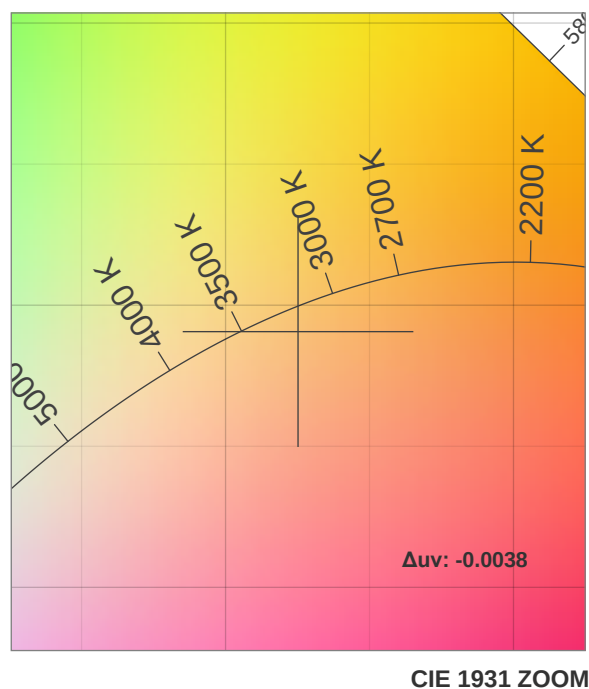
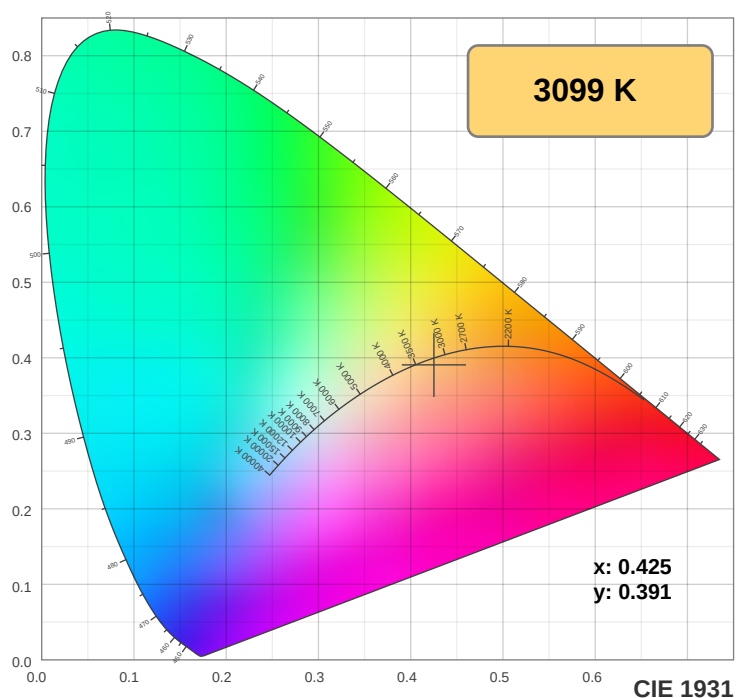
T 314.743.3067

F 314.972.6202

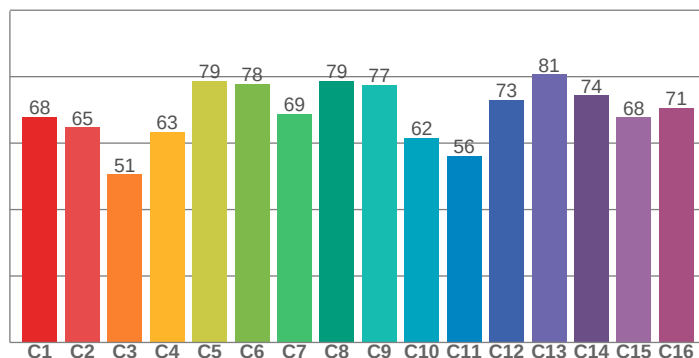
email: [commercial-sales@superbrightleds.com](mailto:commercial-sales@superbrightleds.com)

[www.superbrightleds.com/](http://www.superbrightleds.com/)

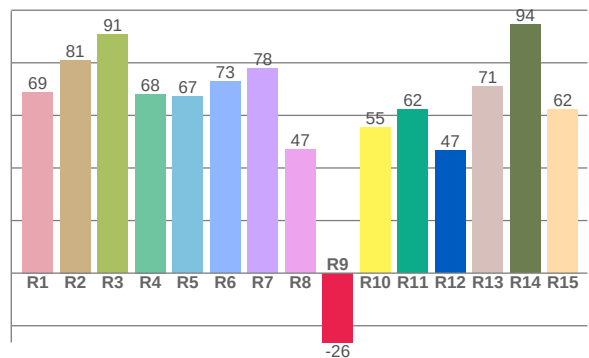
## Color Specifications



**TM30: 68.8**



**CRI: 71.7 (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  |
|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|
| 68.9 | 81.1 | 90.6 | 68.1 | 67.2 | 72.8 | 77.9 | 47.0 | -26.4 | 55.4 | 62.2 | 46.7 | 70.9 | 94.4 | 62.4 |

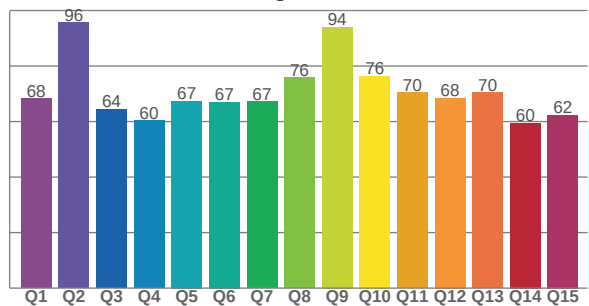
**TM30 C values, 16 binned values out of total of 99 C values**

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 67.9 | 64.7 | 50.6 | 63.3 | 78.7 | 77.9 | 68.8 | 78.8 | 77.5 | 61.6 | 56.1 | 73.1 | 80.7 | 74.4 | 67.8 | 70.6 |

**CQS Q values**

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 68.3 | 95.6 | 64.5 | 60.3 | 67.4 | 67.1 | 67.2 | 75.9 | 94.1 | 76.4 | 70.5 | 68.5 | 70.4 | 59.5 | 62.3 |

**CQS: 69.3**



## 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                             |
| 3099 K            | 71.7                  | -26.4         | 68.8           | 96.8        | 69.3                | 0.425                     | 0.391                     | 0.249            | 0.343            | -0.0038                         |



## TM30 Report

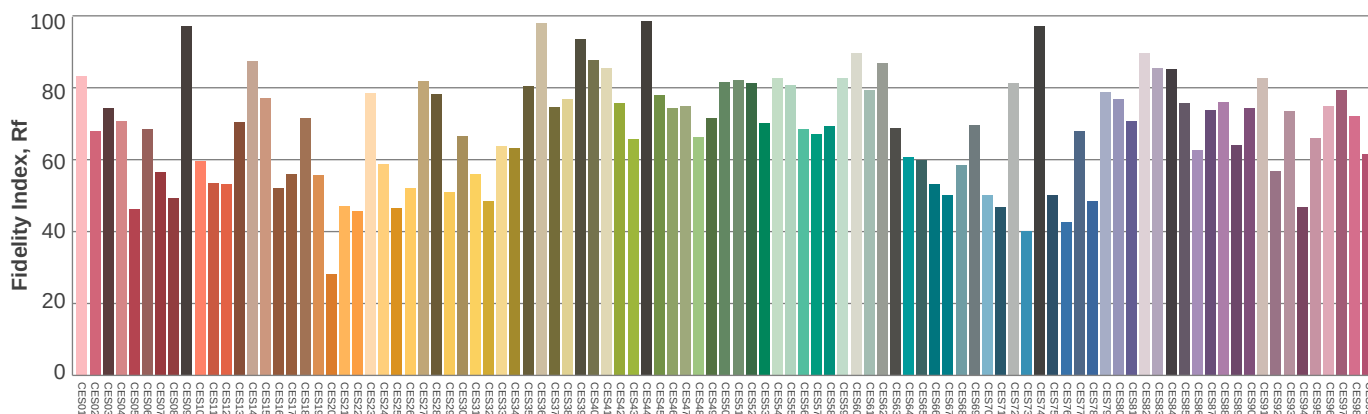
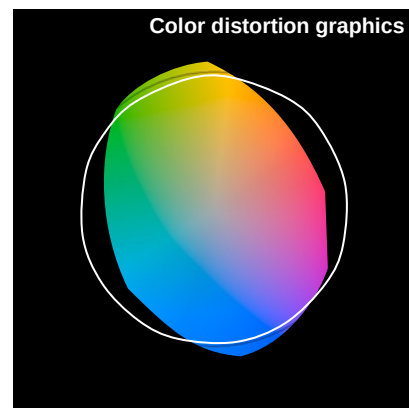
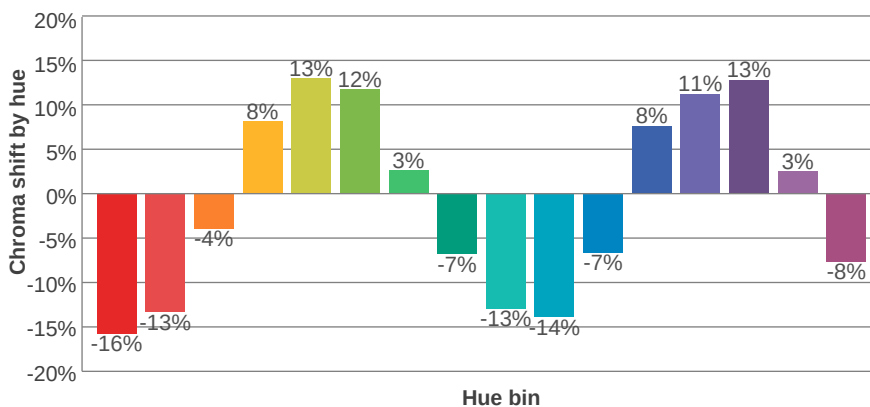
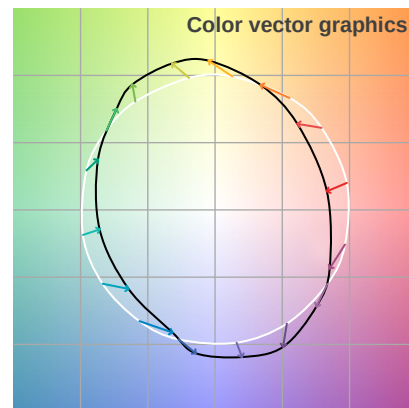
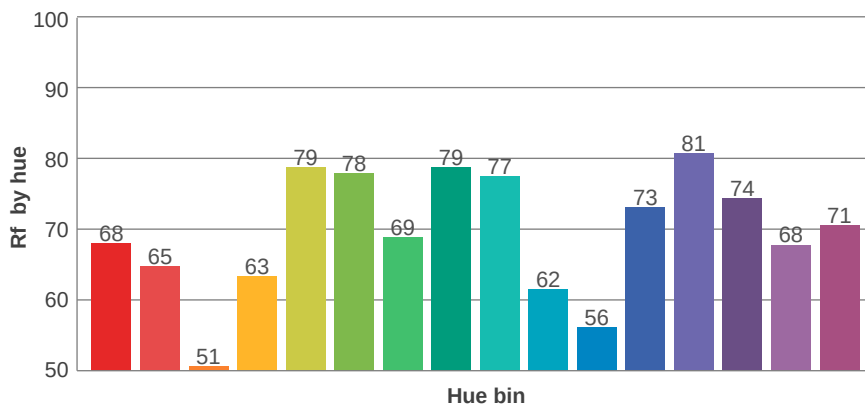
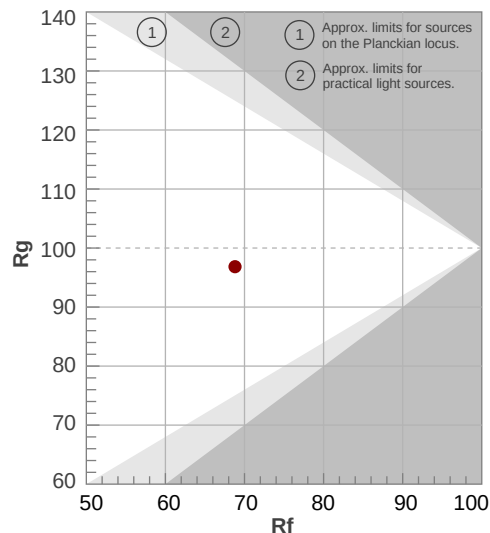
**Rf 68.8**

Fidelity index Rf

**Rg 96.8**

Gammut index Rg

| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 68             | -16%               | -3%  |
| 2       | 65             | -13%               | 12%  |
| 3       | 51             | -4%                | 23%  |
| 4       | 63             | 8%                 | 20%  |
| 5       | 79             | 13%                | 10%  |
| 6       | 78             | 12%                | -5%  |
| 7       | 69             | 3%                 | -18% |
| 8       | 79             | -7%                | -10% |
| 9       | 77             | -13%               | -2%  |
| 10      | 62             | -14%               | 14%  |
| 11      | 56             | -7%                | 25%  |
| 12      | 73             | 8%                 | 15%  |
| 13      | 81             | 11%                | 2%   |
| 14      | 74             | 13%                | -12% |
| 15      | 68             | 3%                 | -18% |
| 16      | 71             | -8%                | -20% |



Color Evaluation Sample



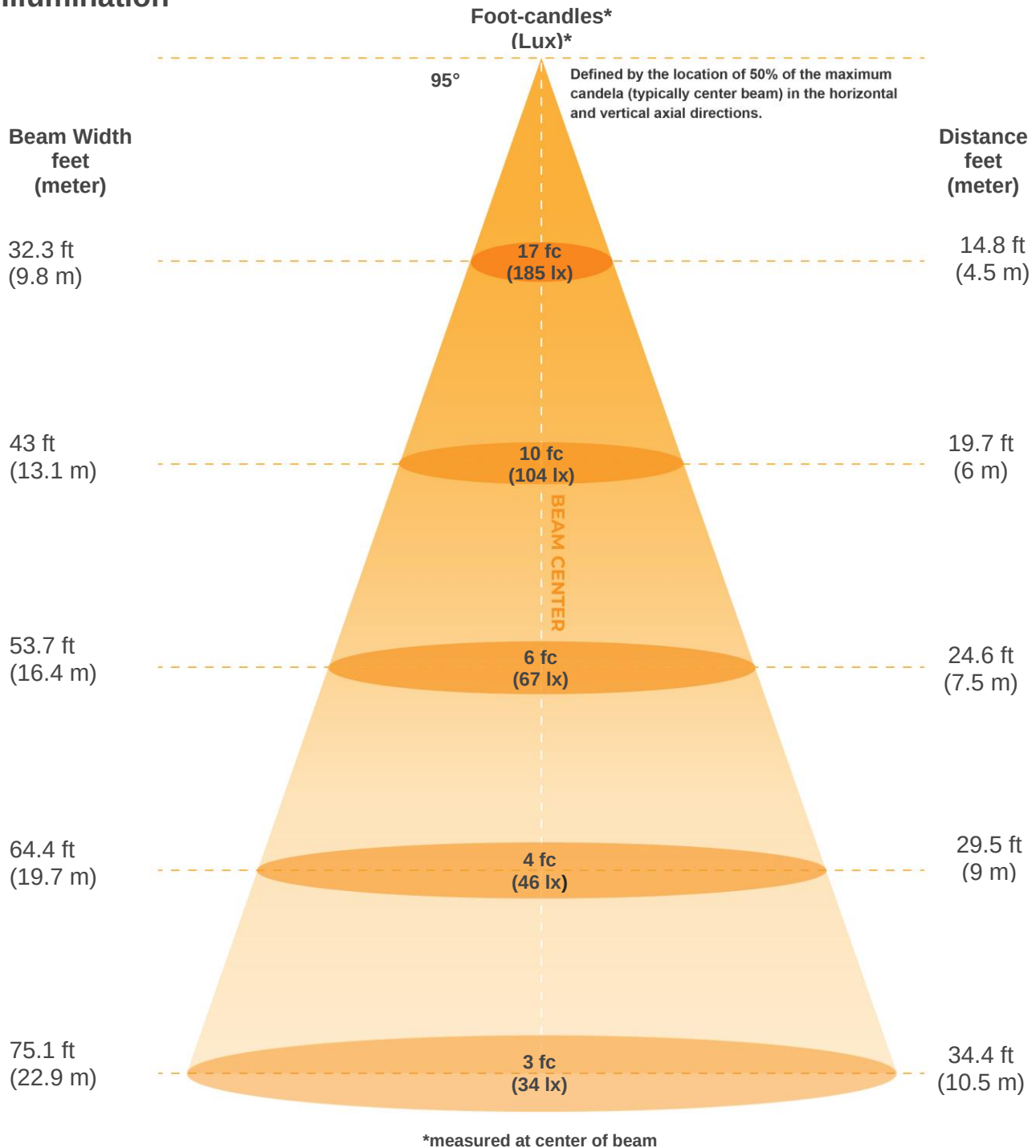
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## Illumination



### Beam intensities from 1-20m

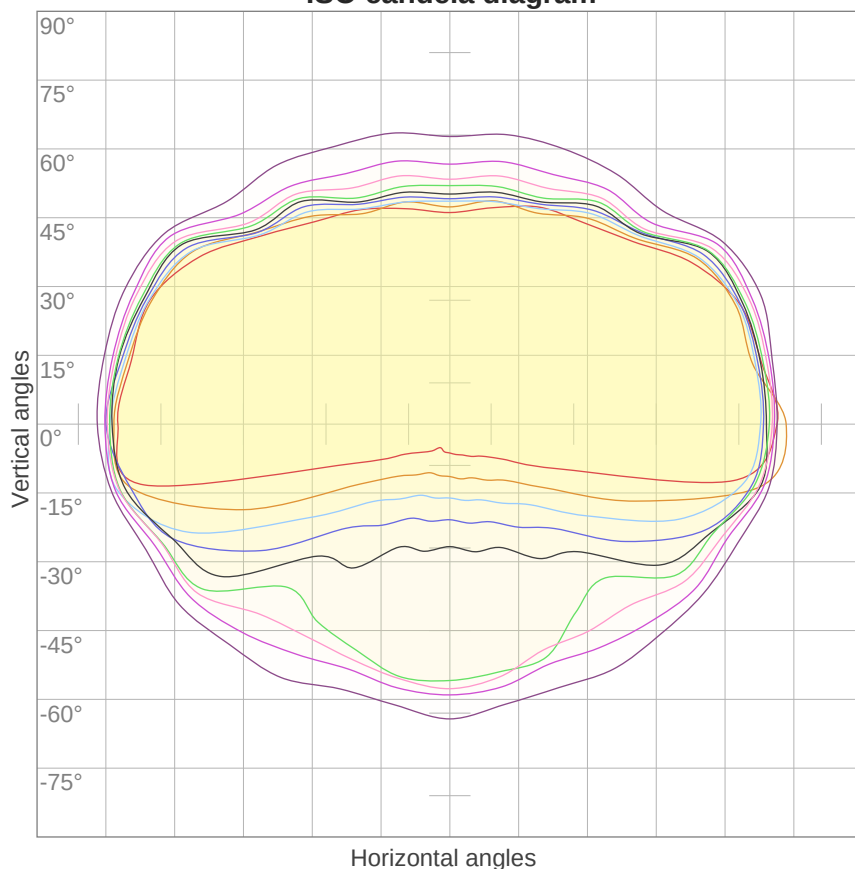
| 1m      | 2m      | 3m      | 4m      | 5m      | 6m     | 7m     | 8m     | 9m     | 10m    | 11m    | 12m    | 13m    | 14m    | 15m    | 16m    | 17m    | 18m    | 19m    | 20m    |
|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| 3751lx  | 938lx   | 417lx   | 234lx   | 150lx   | 104lx  | 77lx   | 59lx   | 46lx   | 38lx   | 31lx   | 26lx   | 22lx   | 19lx   | 17lx   | 15lx   | 13lx   | 12lx   | 10lx   | 9lx    |
| 348.5fc | 87.1fcd | 38.7fcd | 21.8fcd | 13.9fcd | 9.7fcd | 7.1fcd | 5.4fcd | 4.3fcd | 3.5fcd | 2.9fcd | 2.4fcd | 2.1fcd | 1.8fcd | 1.5fcd | 1.4fcd | 1.2fcd | 1.1fcd | 1fcd   | 0.9fcd |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 95°            | 146.9°          | 161.7°            | 73.7%                        | 44.1%                       |



## ISO Diagrams

ISO candela diagram



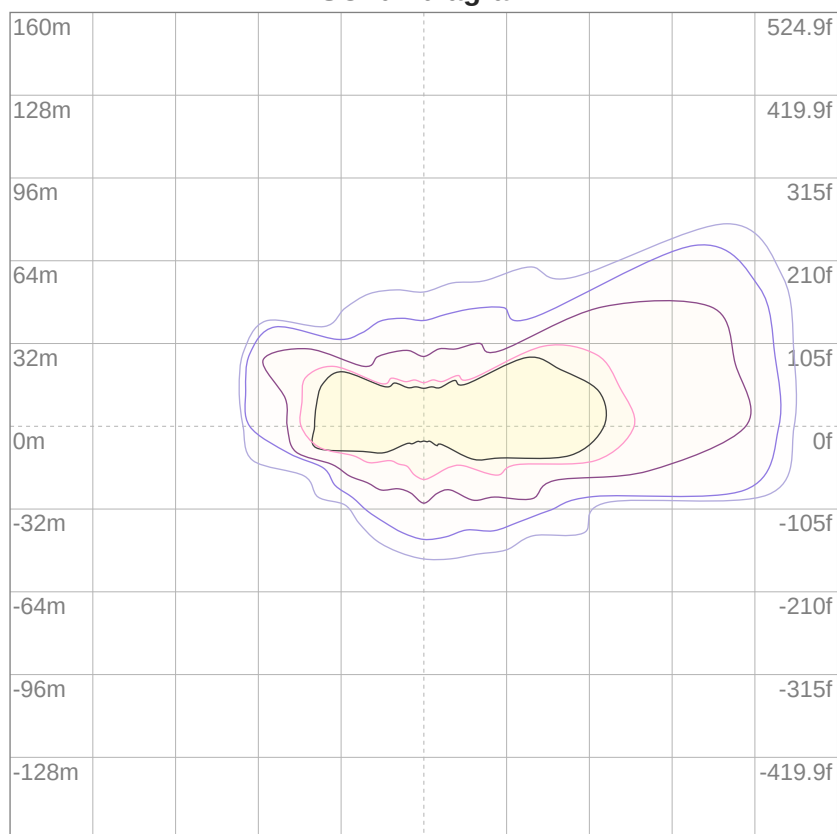
|     |         |
|-----|---------|
| 10% | 375 cd  |
| 20% | 750 cd  |
| 30% | 1125 cd |
| 40% | 1500 cd |
| 50% | 1875 cd |
| 60% | 2250 cd |
| 70% | 2625 cd |
| 80% | 3001 cd |
| 90% | 3376 cd |

### Conditions:

Number of c-planes: 16

Candela at center: 3751 cd

ISO lux diagram



|     |         |
|-----|---------|
| 3%  | 1.13 lx |
| 5%  | 1.88 lx |
| 10% | 3.75 lx |
| 30% | 11.3 lx |
| 50% | 18.8 lx |

### Conditions:

Number of c-planes: 16

Lux at center: 37.5 lx

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

Mounting height: 10 meters (33 feet)



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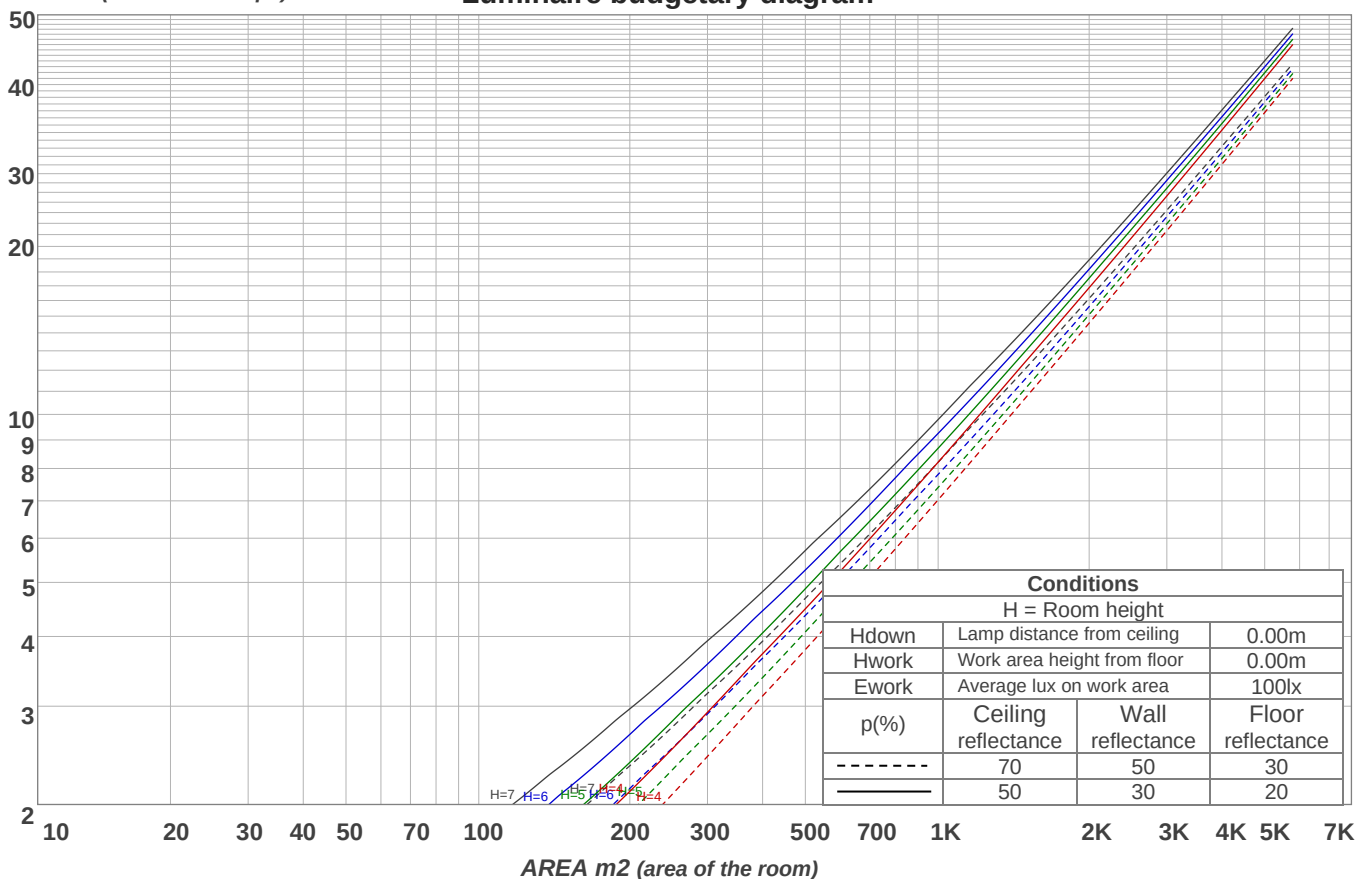
## Light Planning

### 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  | 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                   | 108                                                                                                      | 103 | 98  | 94  | 105 | 101 | 96  | 93  | 96  | 93  | 90  | 92  | 89  | 87  | 88  | 86  | 84  | 82  |
| 2                   | 97                                                                                                       | 88  | 81  | 75  | 94  | 86  | 79  | 74  | 83  | 77  | 72  | 79  | 74  | 70  | 76  | 72  | 68  | 66  |
| 3                   | 88                                                                                                       | 76  | 67  | 60  | 85  | 75  | 66  | 60  | 71  | 64  | 59  | 69  | 63  | 57  | 66  | 61  | 56  | 54  |
| 4                   | 79                                                                                                       | 67  | 57  | 50  | 77  | 65  | 56  | 49  | 62  | 55  | 49  | 60  | 53  | 48  | 58  | 52  | 47  | 45  |
| 5                   | 72                                                                                                       | 59  | 49  | 42  | 70  | 57  | 48  | 42  | 55  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 40  | 38  |
| 6                   | 66                                                                                                       | 52  | 43  | 36  | 64  | 51  | 42  | 36  | 49  | 41  | 35  | 48  | 40  | 35  | 46  | 39  | 34  | 32  |
| 7                   | 61                                                                                                       | 47  | 38  | 31  | 59  | 46  | 37  | 31  | 44  | 36  | 31  | 43  | 36  | 30  | 41  | 35  | 30  | 28  |
| 8                   | 57                                                                                                       | 42  | 33  | 27  | 55  | 42  | 33  | 27  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 26  | 24  |
| 9                   | 53                                                                                                       | 39  | 30  | 24  | 51  | 38  | 30  | 24  | 37  | 29  | 24  | 36  | 29  | 24  | 35  | 28  | 24  | 22  |
| 10                  | 49                                                                                                       | 35  | 27  | 22  | 48  | 35  | 27  | 22  | 34  | 26  | 21  | 33  | 26  | 21  | 32  | 26  | 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°   |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 357 lm   | 1051 lm   | 1704 lm   | 2340 lm   | 2936 lm   | 3059 lm   | 2504 lm   | 1360 lm   | 148 lm    |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 7.82 lm  | 10.1 lm   | 10.8 lm   | 11.3 lm   | 11.0 lm   | 9.70 lm   | 7.79 lm   | 5.09 lm   | 1.78 lm   |

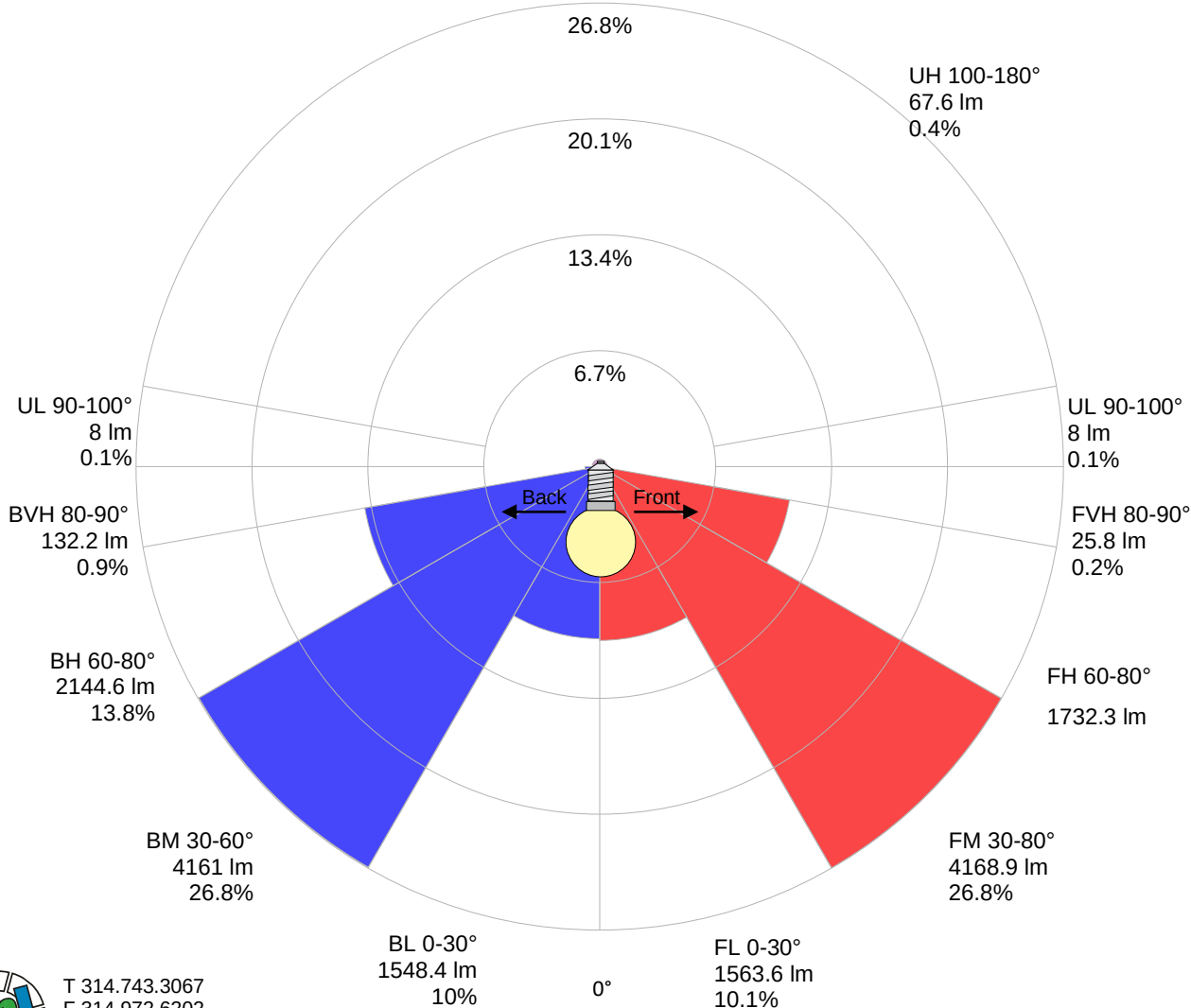


## Road Report

LCS table

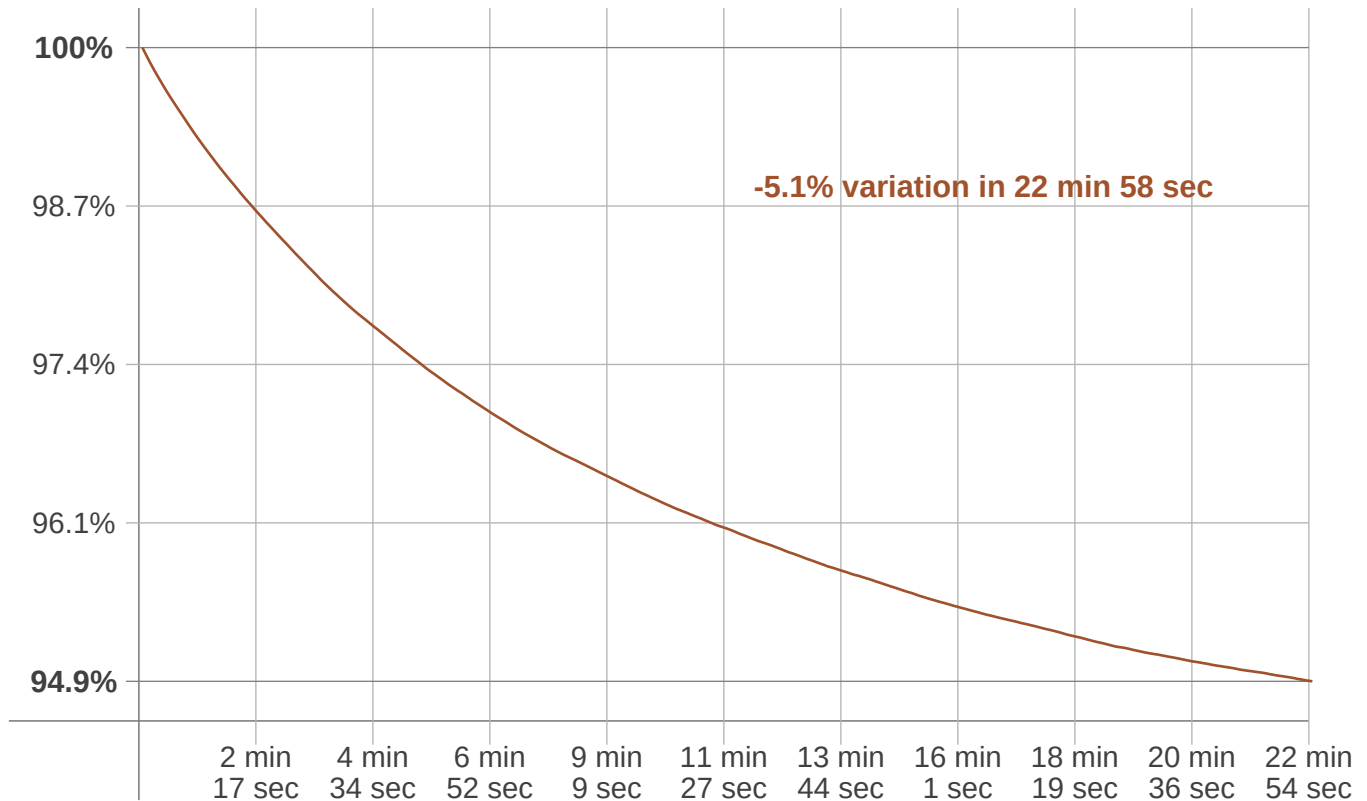
| BUG rating:       | B3 U3 G3 |          |
|-------------------|----------|----------|
| Forward light     | Lumens   | Lumens % |
| Low(0-30):        | 1563.6   | 10.1%    |
| Medium(30-60):    | 4168.9   | 26.8%    |
| High(60-80):      | 1732.3   | 11.2%    |
| Very high(80-90): | 25.8     | 0.2%     |
| Back light        |          |          |
| Low(0-30):        | 1548.4   | 10%      |
| Medium(30-60):    | 4161     | 26.8%    |
| High(60-80):      | 2144.6   | 13.8%    |
| Very high(80-90): | 132.2    | 0.9%     |
| Uplight           |          |          |
| Low(90-100):      | 8        | 0.1%     |
| High(100-180):    | 67.6     | 0.4%     |

LCS graph



## Stabilization

### Warmup curve



### Warmup result

|                  |               |
|------------------|---------------|
| Warmup time:     | 22 min 58 sec |
| Warmup variation | -5.2%         |

### Warmup conditions

|                    |        |
|--------------------|--------|
| Stable period:     | 15 min |
| Stable change max: | 2.0%   |
| Minimum time:      | 15 min |

### Color temperature change

|           |            |         |
|-----------|------------|---------|
| CCT start | CCT change | CCT end |
| 3078 K    | +21 K      | 3099 K  |

### Output change

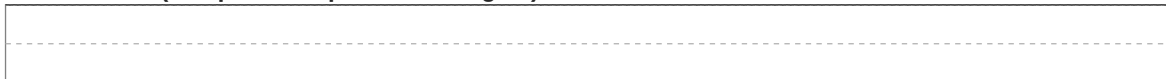
|              |               |            |
|--------------|---------------|------------|
| Output start | Output change | Output end |
| 16356 lm     | -822 lm       | 15533 lm   |





## Flicker

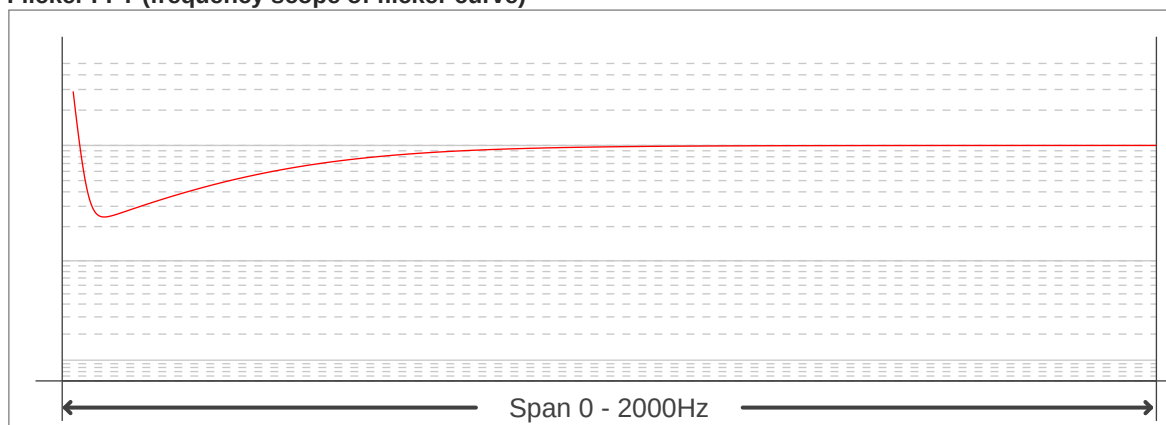
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

|                       |           |
|-----------------------|-----------|
| Flicker frequency:    | 119.05 Hz |
| Flicker index:        | 0         |
| Flicker percentage:   | 0.31 %    |
| SVM: (Visual flicker) | 0.01      |

Flicker conditions:

|              |                      |
|--------------|----------------------|
| Sample rate: | 40000 samples/second |
|--------------|----------------------|

