

Light efficiency:

132 Lumen/Watt

Light quality:

CRI: 73.7

Color temperature:

5084 K

Output: 4649 lm

Peak: 2392 cd

Power: 35.3 W

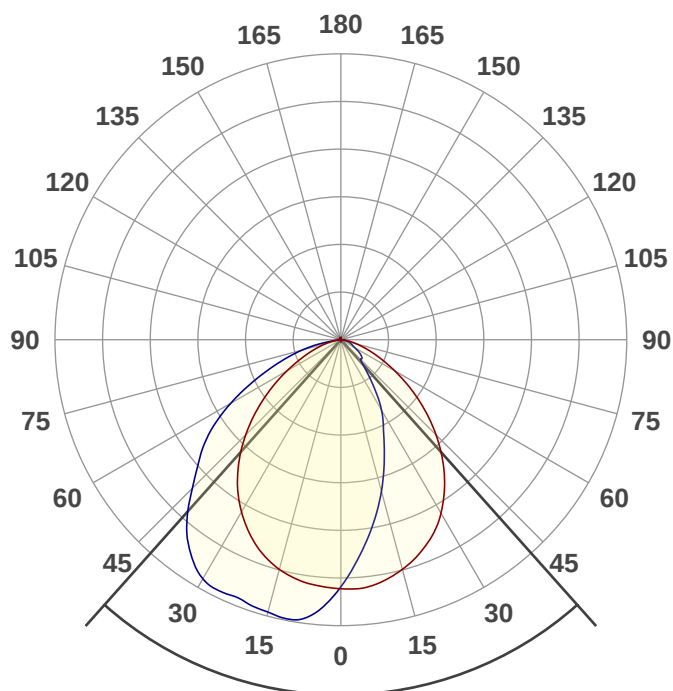
PF: 1.0

Product name:

**WPA-50K35-W**

Date and time:

**11/21/2019 2:19:47 PM**



Beam angle

**83.4°**

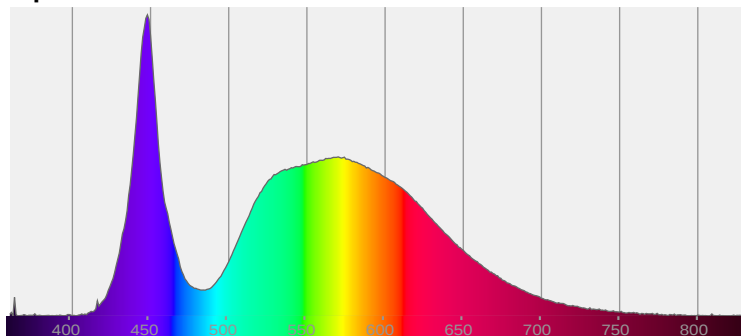


CIE 1931

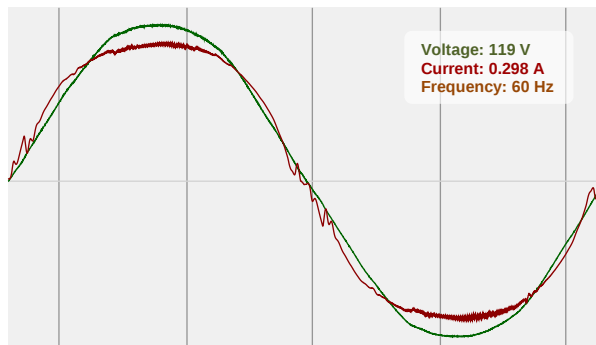
x: 0.343

y: 0.350

Spectra



Power



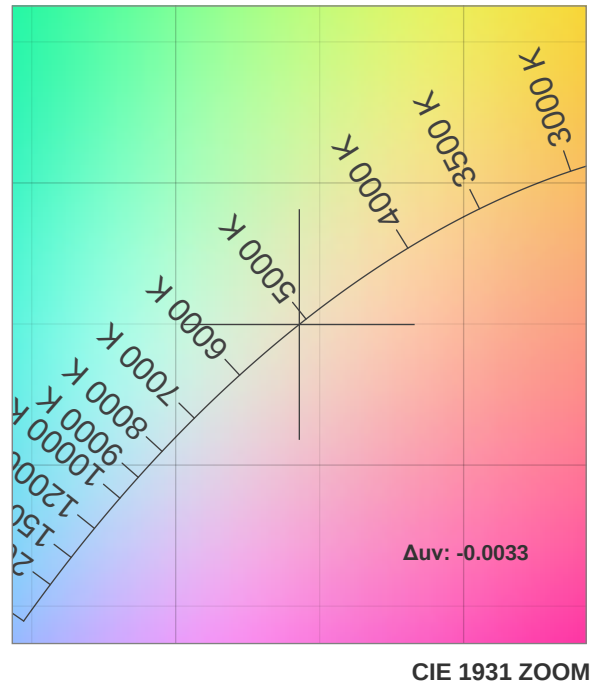
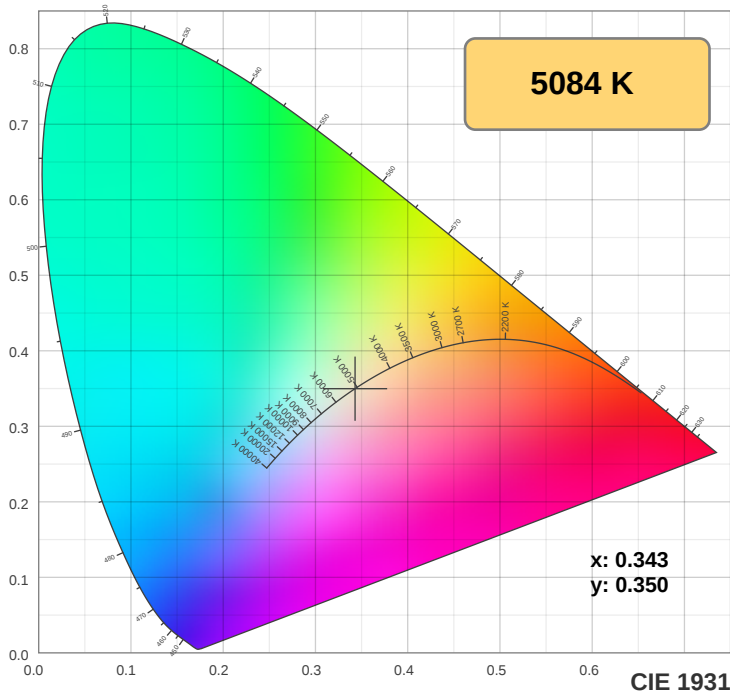
T 314.743.3067

F 314.972.6202

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

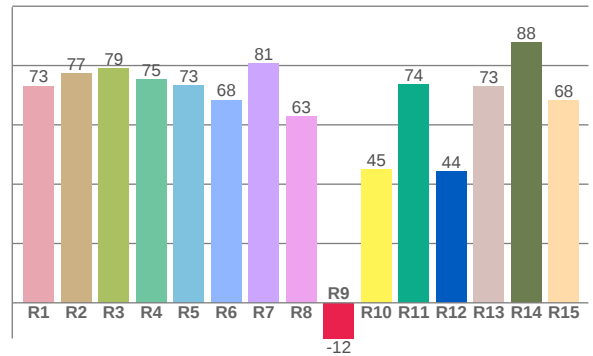
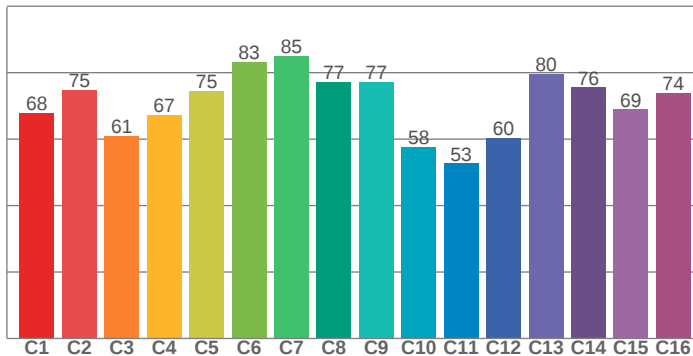
[www.superbrightleds.com/](http://www.superbrightleds.com/)

## Color Specifications



TM30: 71.0

CRI: 73.7 (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  |
|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|
| 73.2 | 77.3 | 79.0 | 75.5 | 73.2 | 68.4 | 80.7 | 62.7 | -12.0 | 45.0 | 73.6 | 44.2 | 73.1 | 87.9 | 68.1 |

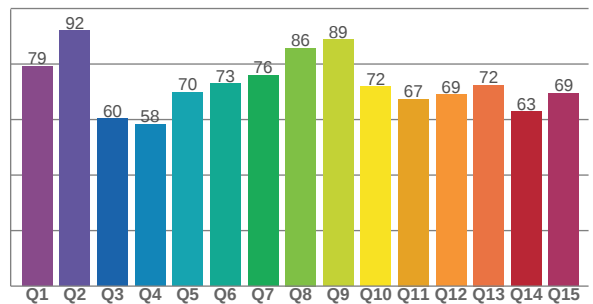
TM30 C values, 16 binned values out of total of 99 C values

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 67.8 | 74.7 | 61.0 | 67.4 | 74.6 | 83.2 | 85.0 | 77.3 | 77.2 | 57.7 | 52.7 | 60.4 | 79.7 | 75.5 | 68.9 | 74.0 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 79.3 | 92.0 | 60.4 | 58.3 | 69.8 | 73.0 | 76.0 | 85.7 | 88.9 | 71.8 | 67.4 | 69.0 | 72.4 | 62.8 | 69.4 |

CQS: 71.4



## 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                             |
| 5084 K            | 73.7                  | -12.0         | 71.0           | 95.9        | 71.4                | 0.343                     | 0.350                     | 0.211            | 0.322            | -0.0033                         |



## TM30 Report

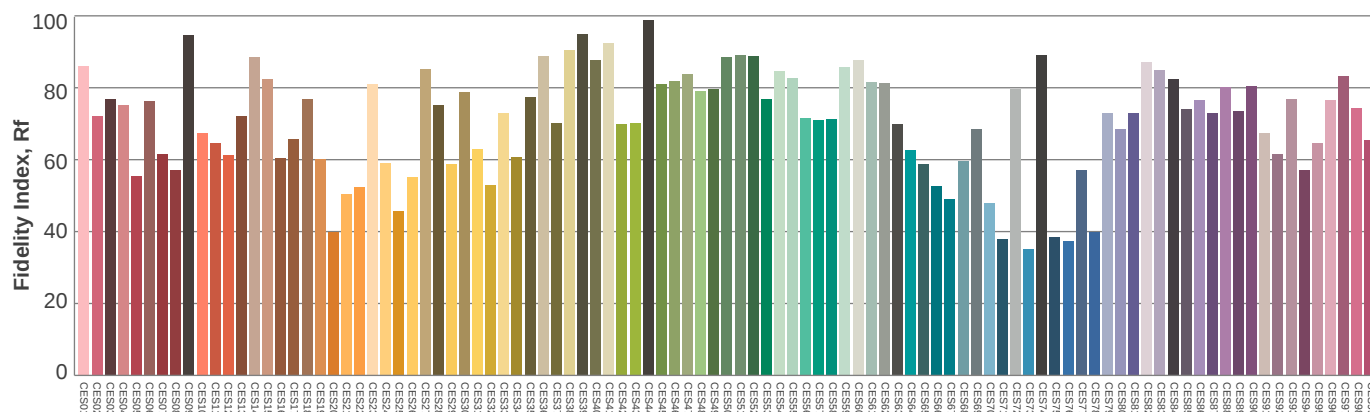
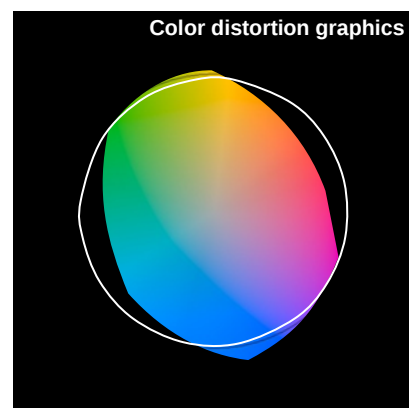
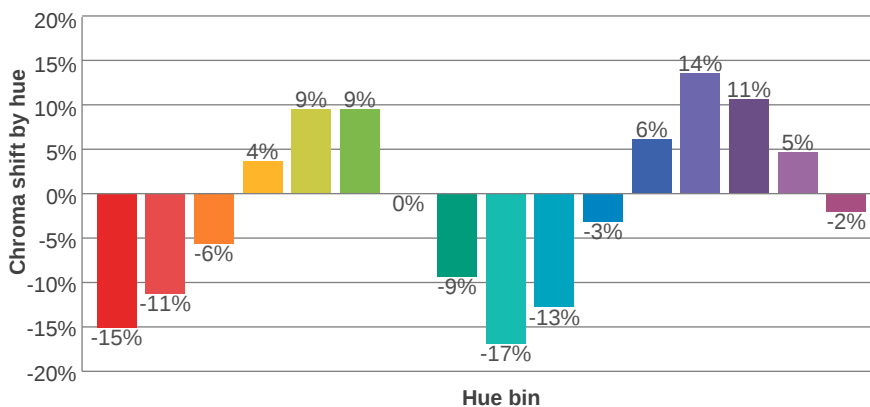
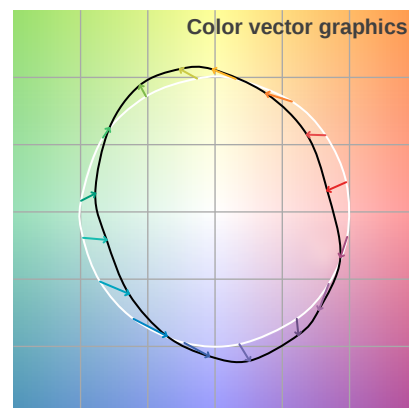
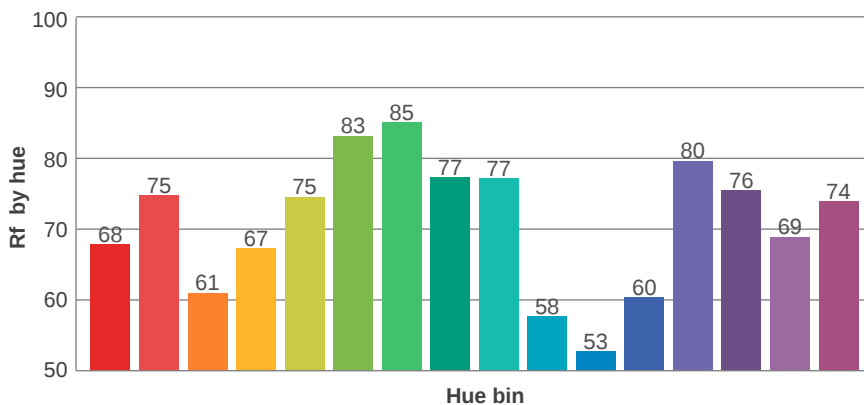
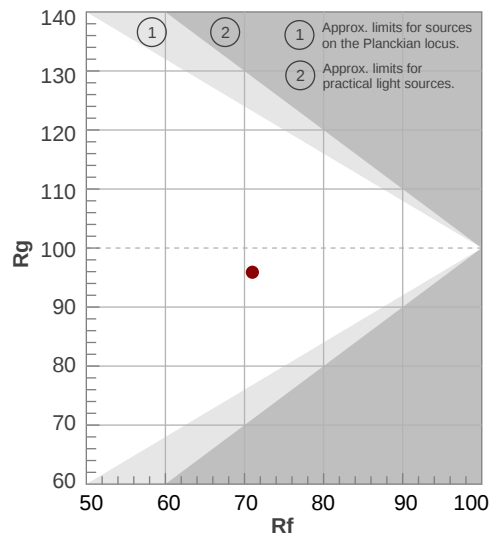
**Rf 71.0**

Fidelity index Rf

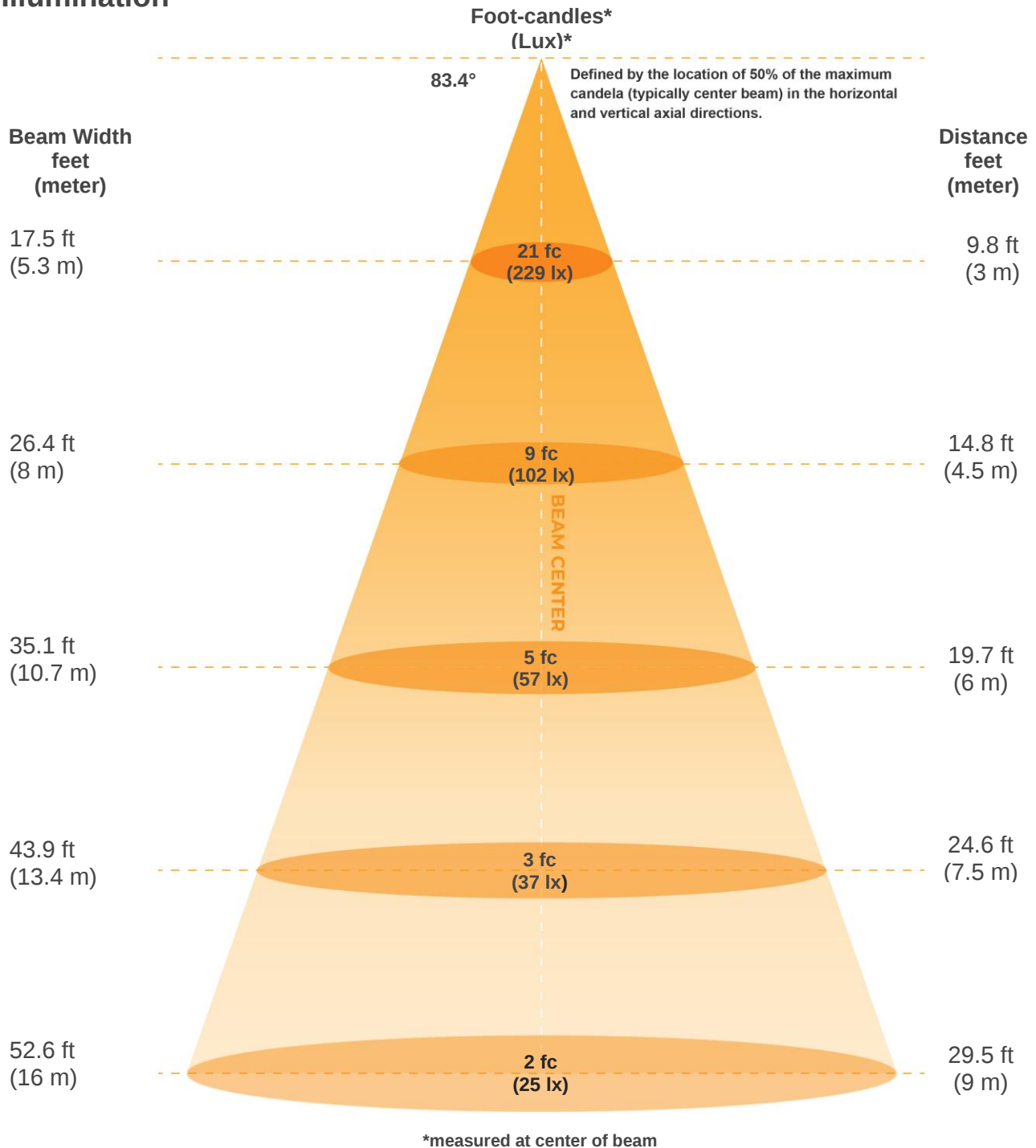
**Rg 95.9**

Gammut index Rg

| Hue Bin | R <sub>f</sub> | Graphic shifts (%) |      |
|---------|----------------|--------------------|------|
|         |                | Chroma             | Hue  |
| 1       | 68             | -15%               | -3%  |
| 2       | 75             | -11%               | 8%   |
| 3       | 61             | -6%                | 19%  |
| 4       | 67             | 4%                 | 18%  |
| 5       | 75             | 9%                 | 11%  |
| 6       | 83             | 9%                 | -1%  |
| 7       | 85             | 0%                 | -9%  |
| 8       | 77             | -9%                | -7%  |
| 9       | 77             | -17%               | 5%   |
| 10      | 58             | -13%               | 19%  |
| 11      | 53             | -3%                | 27%  |
| 12      | 60             | 6%                 | 20%  |
| 13      | 80             | 14%                | 5%   |
| 14      | 76             | 11%                | -6%  |
| 15      | 69             | 5%                 | -20% |
| 16      | 74             | -2%                | -16% |



## Illumination



### Beam intensities from 1-20m

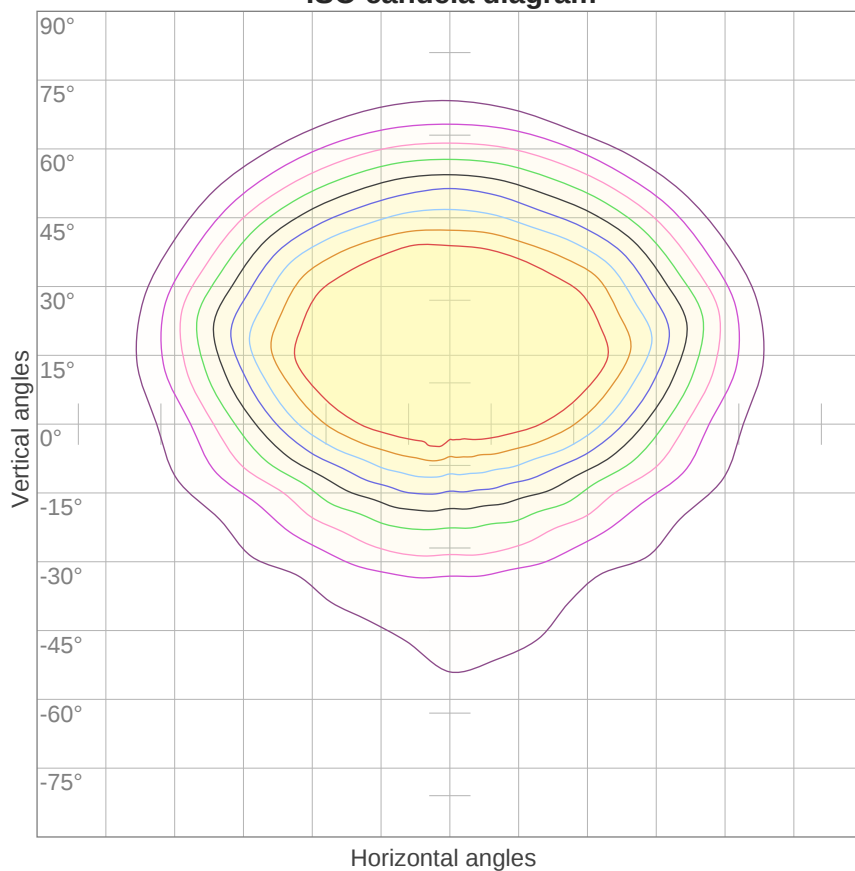
| 1m       | 2m      | 3m      | 4m     | 5m     | 6m     | 7m     | 8m     | 9m     | 10m    | 11m    | 12m    | 13m    | 14m    | 15m    | 16m    | 17m    | 18m    | 19m    | 20m    |
|----------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| 2063lx   | 516lx   | 229lx   | 129lx  | 83lx   | 57lx   | 42lx   | 32lx   | 25lx   | 21lx   | 17lx   | 14lx   | 12lx   | 11lx   | 9lx    | 8lx    | 7lx    | 6lx    | 6lx    | 5lx    |
| 191.6fcd | 47.9fcd | 21.3fcd | 12fcd  | 7.7fcd | 5.3fcd | 3.9fcd | 3fcd   | 2.4fcd | 1.9fcd | 1.6fcd | 1.3fcd | 1.1fcd | 1fcd   | 0.9fcd | 0.7fcd | 0.7fcd | 0.6fcd | 0.5fcd | 0.5fcd |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 83.4°          | 131°            | 160.2°            | 84.1%                        | 60.4%                       |



## ISO Diagrams

ISO candela diagram



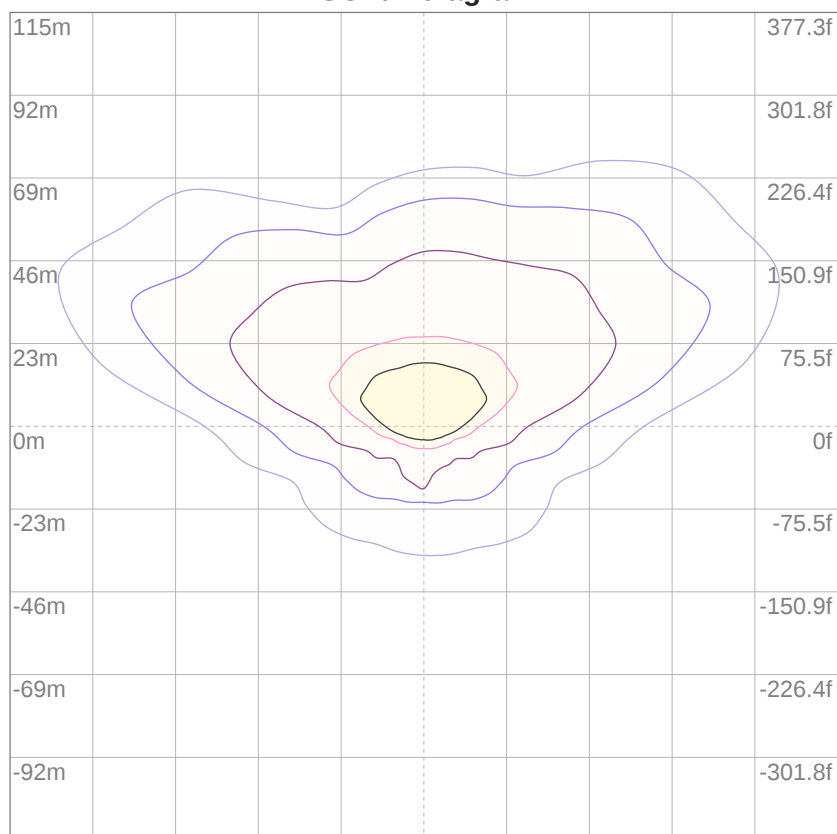
|     |         |
|-----|---------|
| 10% | 206 cd  |
| 20% | 413 cd  |
| 30% | 619 cd  |
| 40% | 825 cd  |
| 50% | 1031 cd |
| 60% | 1238 cd |
| 70% | 1444 cd |
| 80% | 1650 cd |
| 90% | 1856 cd |

### Conditions:

Number of c-planes: 16

Candela at center: 2063 cd

ISO lux diagram



|     |          |
|-----|----------|
| 3%  | 0.619 lx |
| 5%  | 1.03 lx  |
| 10% | 2.06 lx  |
| 30% | 6.19 lx  |
| 50% | 10.3 lx  |

### Conditions:

Number of c-planes: 16

Lux at center: 20.6 lx

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



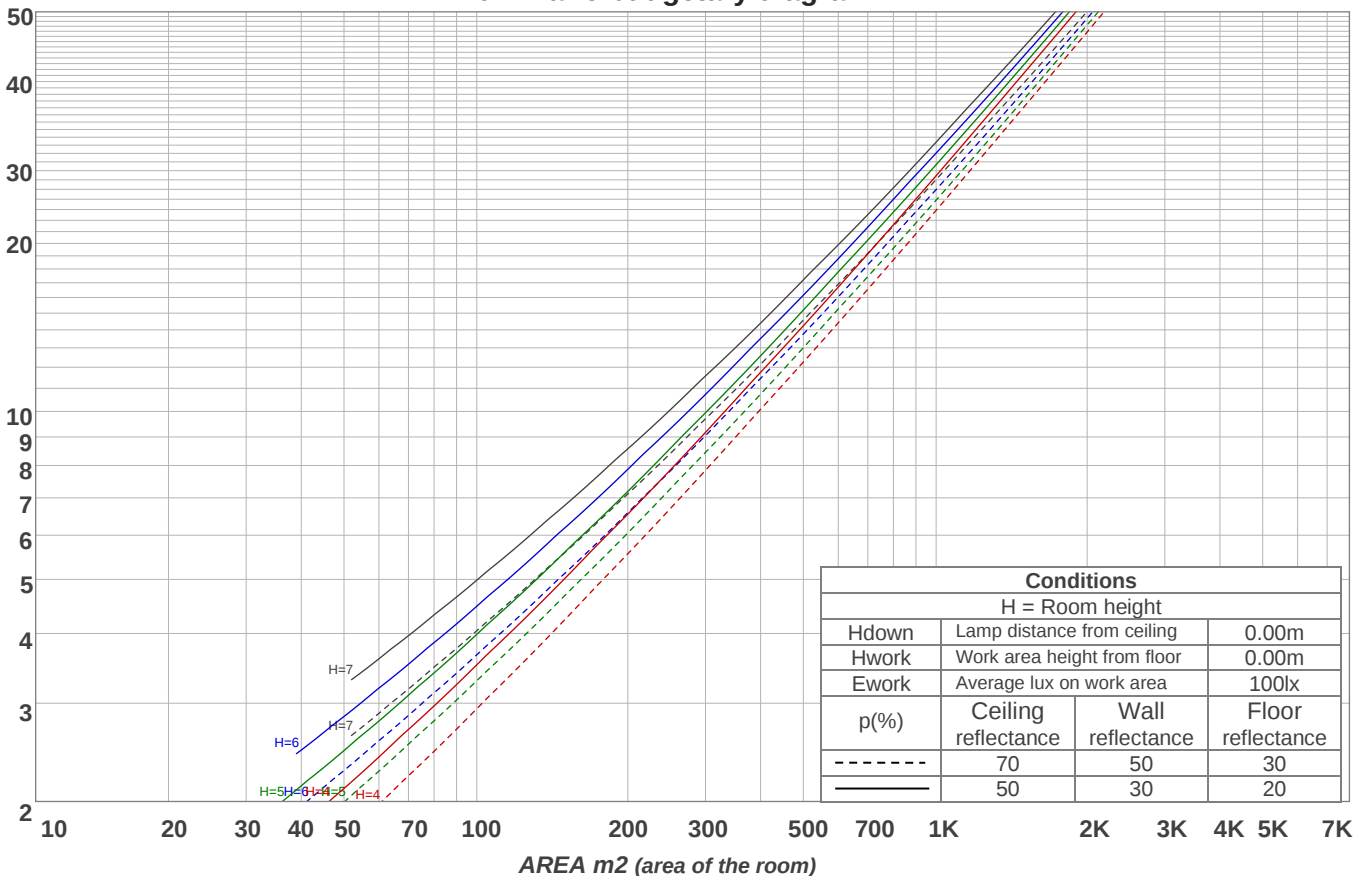
## Light Planning

### 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  | 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                   | 110                                                                                                      | 106 | 102 | 98  | 107 | 103 | 100 | 97  | 99  | 96  | 93  | 95  | 93  | 91  | 91  | 90  | 88  | 86  |
| 2                   | 101                                                                                                      | 93  | 87  | 81  | 98  | 91  | 85  | 80  | 88  | 83  | 79  | 84  | 80  | 77  | 81  | 78  | 75  | 73  |
| 3                   | 92                                                                                                       | 82  | 75  | 69  | 90  | 81  | 74  | 68  | 78  | 72  | 67  | 75  | 70  | 66  | 73  | 68  | 65  | 63  |
| 4                   | 85                                                                                                       | 74  | 65  | 59  | 83  | 72  | 65  | 59  | 70  | 63  | 58  | 67  | 62  | 57  | 65  | 60  | 56  | 54  |
| 5                   | 78                                                                                                       | 66  | 58  | 51  | 76  | 65  | 57  | 51  | 63  | 56  | 50  | 61  | 55  | 50  | 59  | 54  | 49  | 47  |
| 6                   | 73                                                                                                       | 60  | 51  | 45  | 71  | 59  | 51  | 45  | 57  | 50  | 45  | 55  | 49  | 44  | 54  | 48  | 44  | 42  |
| 7                   | 67                                                                                                       | 55  | 46  | 40  | 66  | 54  | 46  | 40  | 52  | 45  | 40  | 51  | 44  | 40  | 49  | 44  | 39  | 37  |
| 8                   | 63                                                                                                       | 50  | 42  | 36  | 61  | 49  | 41  | 36  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 35  | 34  |
| 9                   | 59                                                                                                       | 46  | 38  | 33  | 58  | 45  | 38  | 33  | 44  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 32  | 30  |
| 10                  | 55                                                                                                       | 43  | 35  | 30  | 54  | 42  | 35  | 30  | 41  | 34  | 30  | 40  | 34  | 30  | 39  | 34  | 29  | 28  |

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°   |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 195 lm   | 537 lm    | 771 lm    | 878 lm    | 834 lm    | 694 lm    | 469 lm    | 225 lm    | 35.7 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 1.06 lm  | 1.21 lm   | 1.36 lm   | 1.39 lm   | 1.46 lm   | 1.40 lm   | 1.17 lm   | 0.769 lm  | 0.282 lm  |

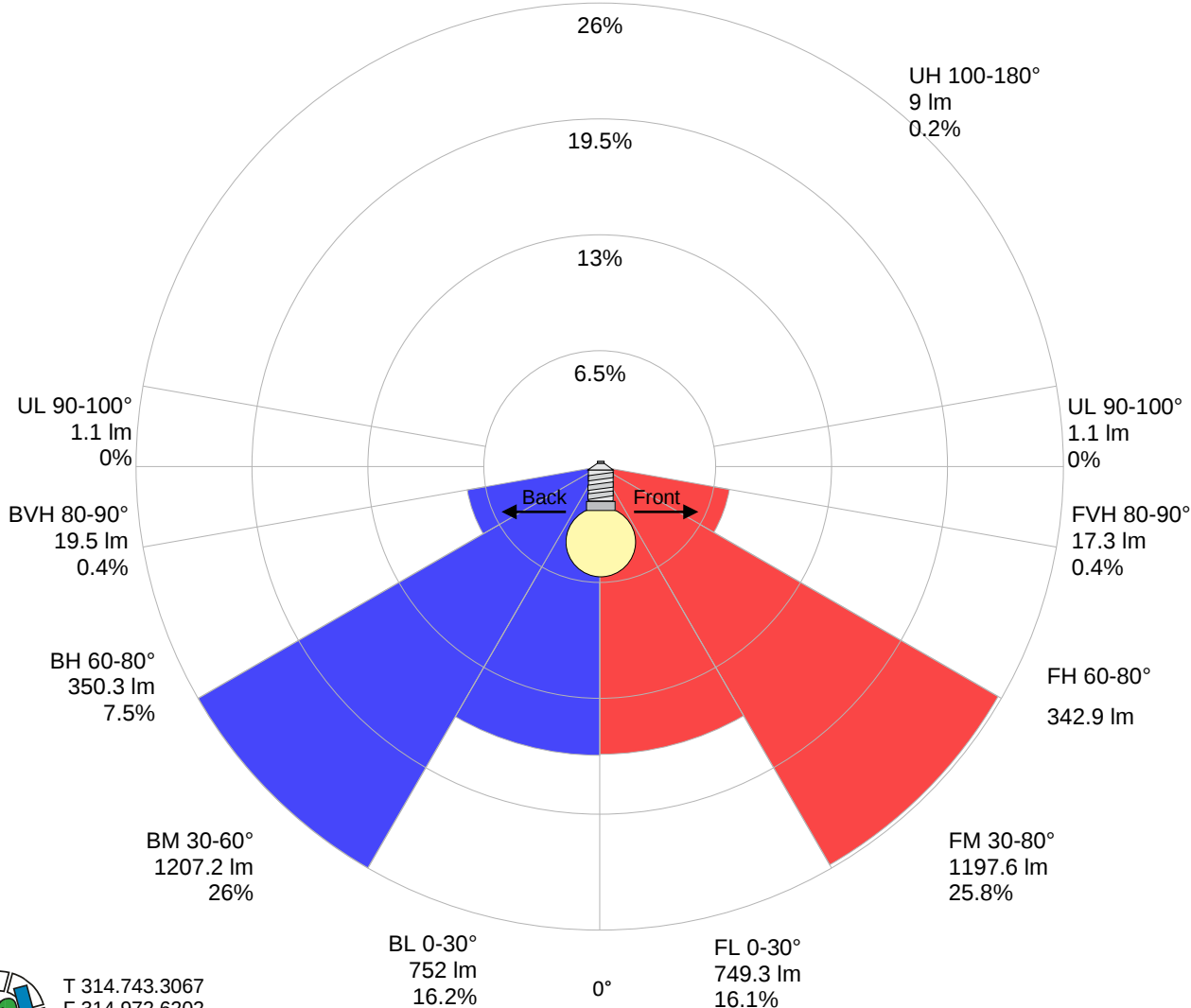


## Road Report

LCS table

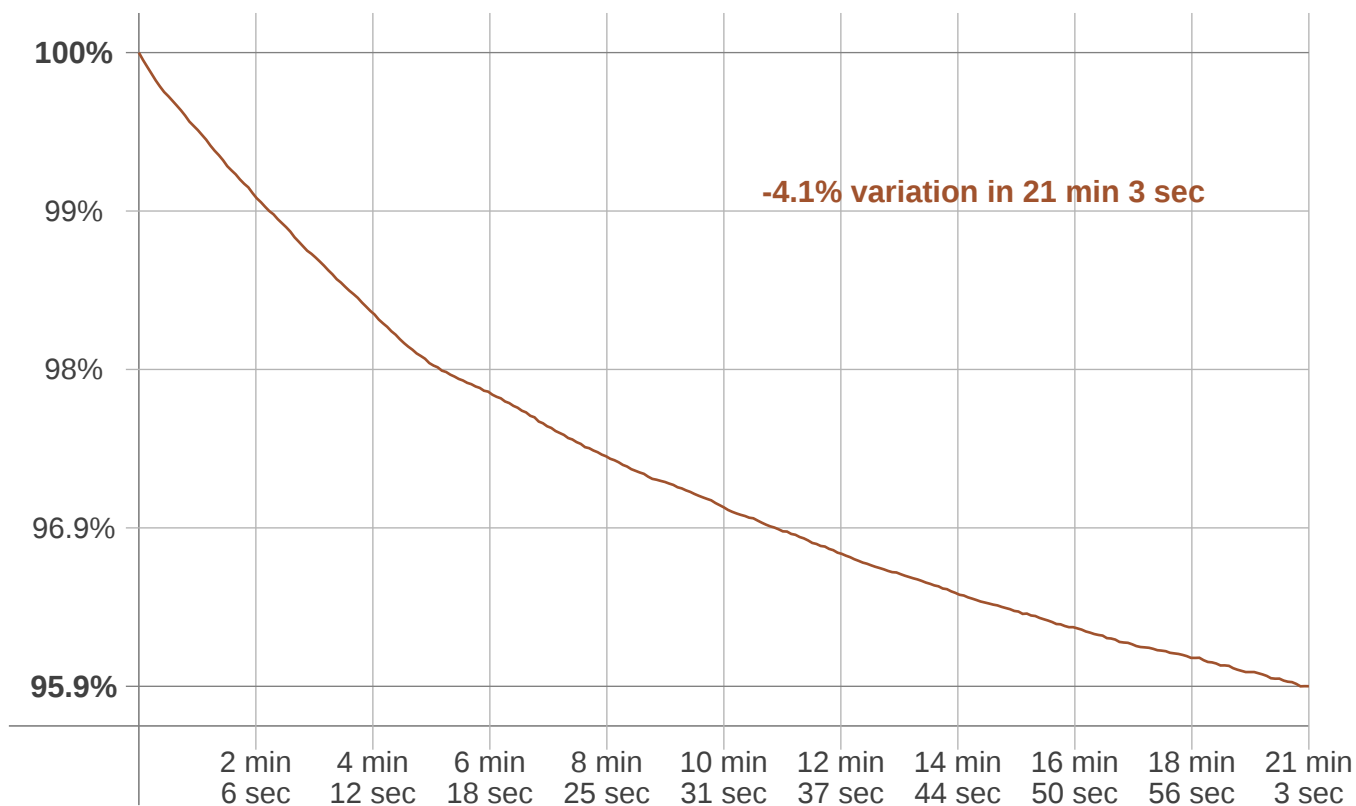
| BUG rating:       | B2 U1 G1 |          |
|-------------------|----------|----------|
| Forward light     | Lumens   | Lumens % |
| Low(0-30):        | 749.3    | 16.1%    |
| Medium(30-60):    | 1197.6   | 25.8%    |
| High(60-80):      | 342.9    | 7.4%     |
| Very high(80-90): | 17.3     | 0.4%     |
| Back light        |          |          |
| Low(0-30):        | 752      | 16.2%    |
| Medium(30-60):    | 1207.2   | 26%      |
| High(60-80):      | 350.3    | 7.5%     |
| Very high(80-90): | 19.5     | 0.4%     |
| Uplight           |          |          |
| Low(90-100):      | 1.1      | 0%       |
| High(100-180):    | 9        | 0.2%     |

LCS graph



## Stabilization

### Warmup curve



### Warmup result

|                  |              |
|------------------|--------------|
| Warmup time:     | 21 min 3 sec |
| Warmup variation | -4.1%        |

### Warmup conditions

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

### Color temperature change

| CCT start | CCT change | CCT end |
|-----------|------------|---------|
| 5062 K    | +22 K      | 5084 K  |

### Output change

| Output start | Output change | Output end |
|--------------|---------------|------------|
| 4840 lm      | -191 lm       | 4649 lm    |

