

Light efficiency:

76 Lumen/Watt

Light quality:

CRI: 56.7

Color temperature:

7299 K

Output: 1408 lm

Peak: 246 cd

Power: 18.6 W

PF: 1.0



Tracking number: [n/a](#)

Product name:

**PC20.5MRBORGBWADR2012.0RGB3  
0-ALL ON**

Item number:

**ALL ON**

Date and time:

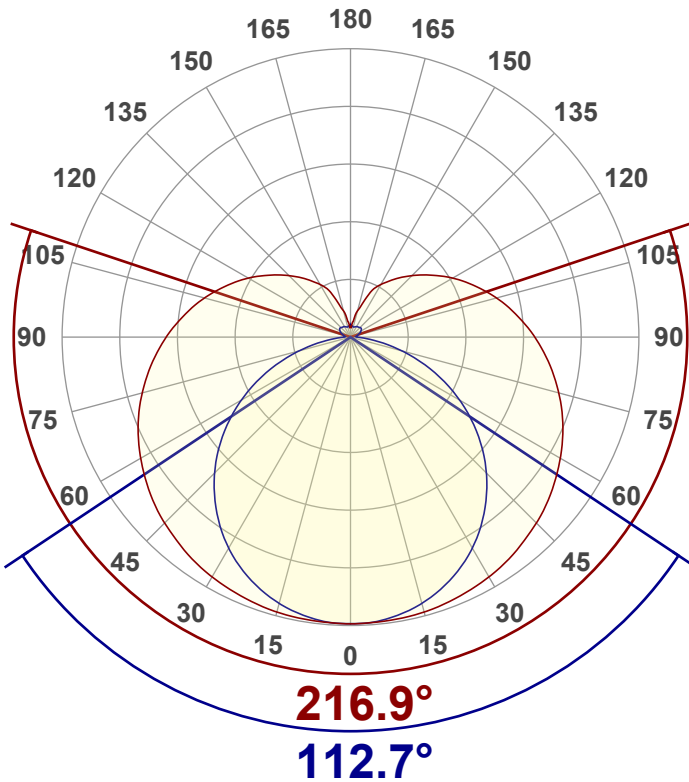
**2024/9/9 14:46:44**

Operator:

**Nick**

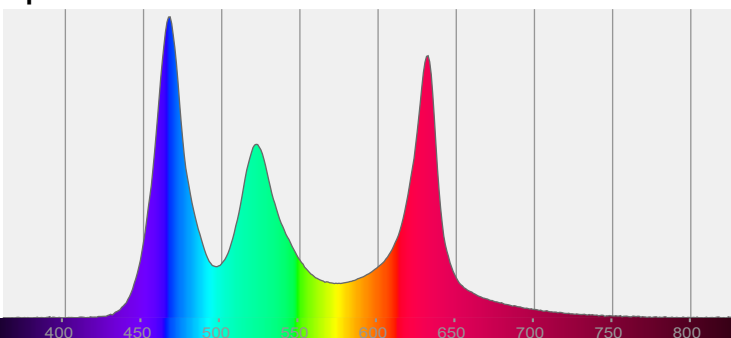
Description:

**DIAMETER 61MM,LENGTH 500MM**



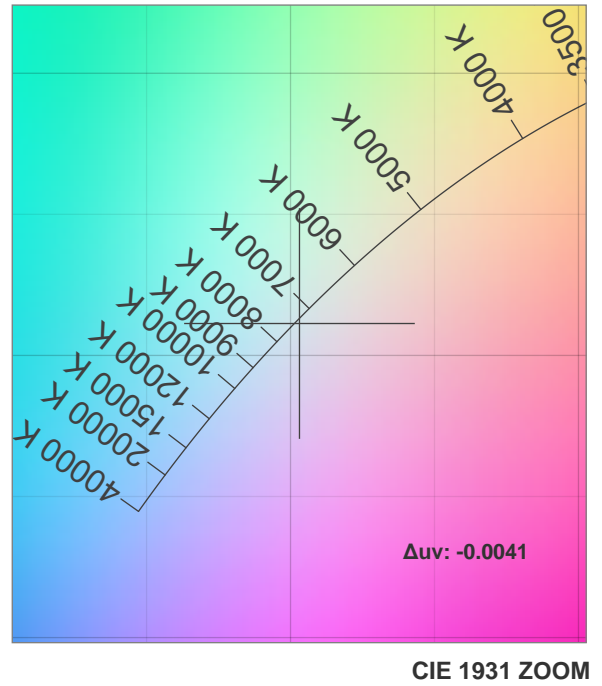
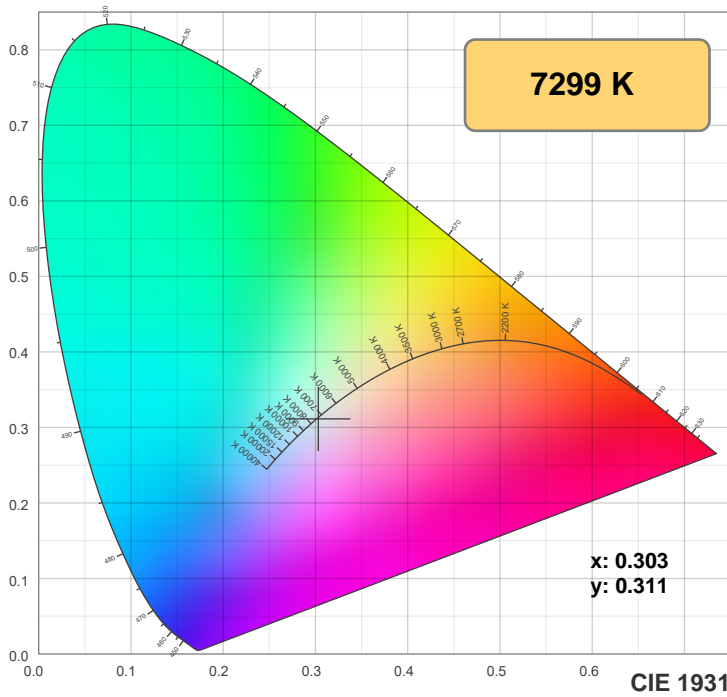
CIE 1931  
x: 0.303  
y: 0.311

Spectra

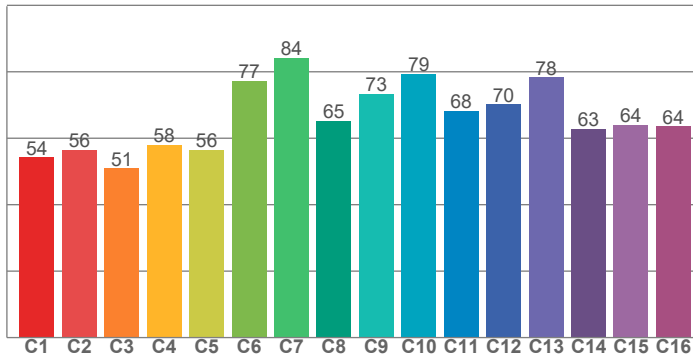


Power

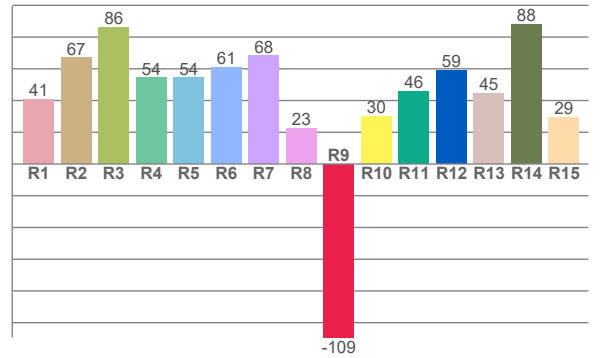
Voltage: 24.0 V  
Current: 0.776 A  
Frequency: 0 Hz



TM-30: 66.0



CRI: 56.7 (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  |
|------|------|------|------|------|------|------|------|--------|------|------|------|------|------|------|
| 40.6 | 66.8 | 86.0 | 54.3 | 54.3 | 60.8 | 68.1 | 22.6 | -109.4 | 30.2 | 45.9 | 58.8 | 44.7 | 87.9 | 29.3 |

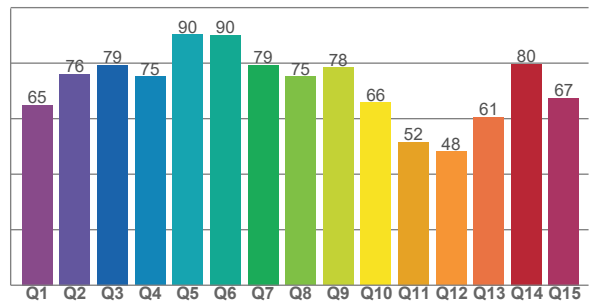
TM30 C values, 16 binned values out of total of 99 C values

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 54.2 | 56.5 | 50.9 | 58.0 | 56.5 | 77.3 | 84.2 | 65.2 | 73.3 | 79.4 | 68.3 | 70.2 | 78.3 | 62.8 | 64.1 | 63.6 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 65.0 | 76.1 | 79.3 | 75.2 | 90.3 | 90.1 | 79.3 | 75.1 | 78.4 | 65.8 | 51.7 | 48.2 | 60.6 | 79.6 | 67.4 |

CQS: 69.7



## 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                             |
| 7299 K            | 56.7                  | -109.4        | 66.0           | 103.1       | 69.7                | 0.303                     | 0.311                     | 0.198            | 0.305            | -0.0041                         |

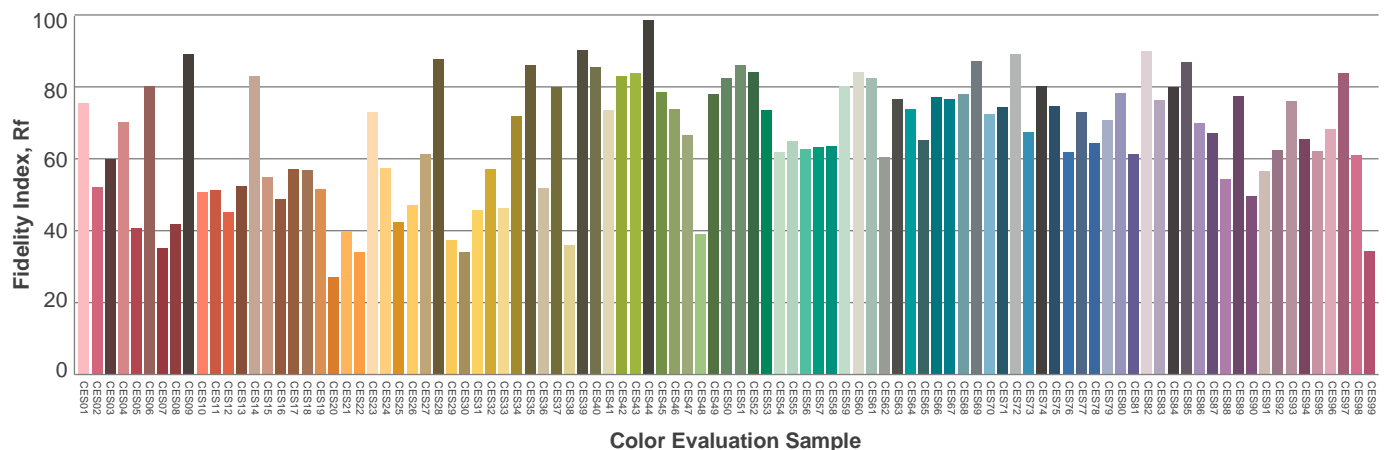
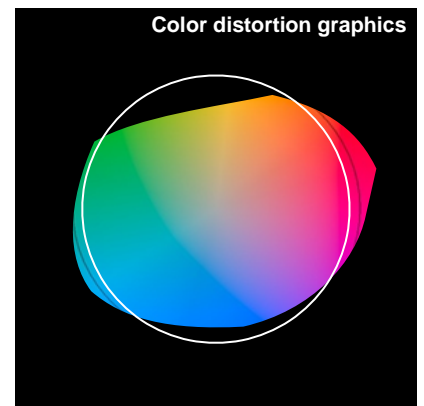
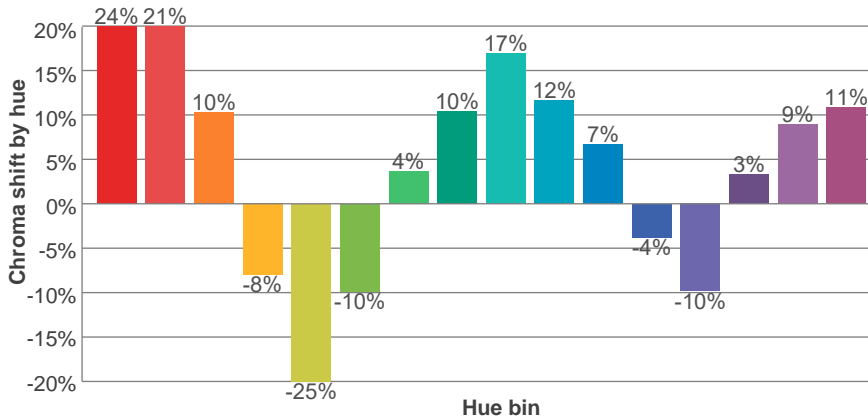
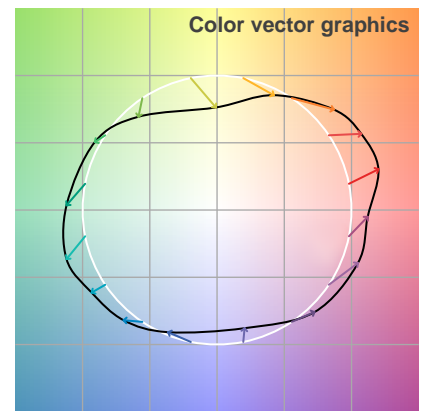
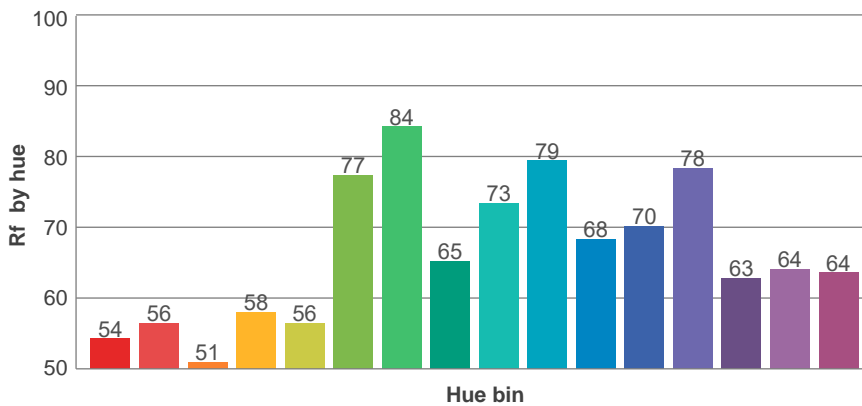
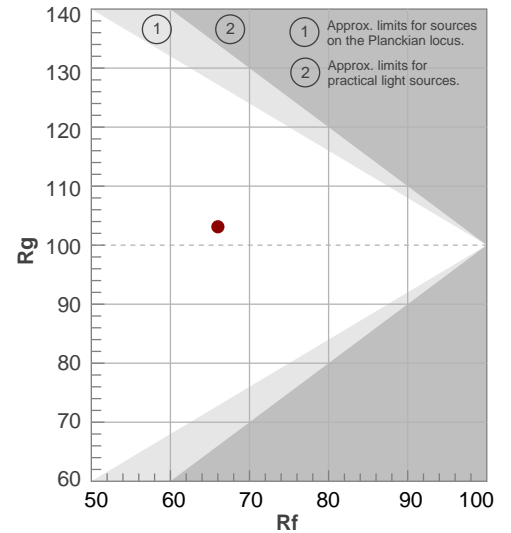
**Rf 66.0**

Fidelity index Rf

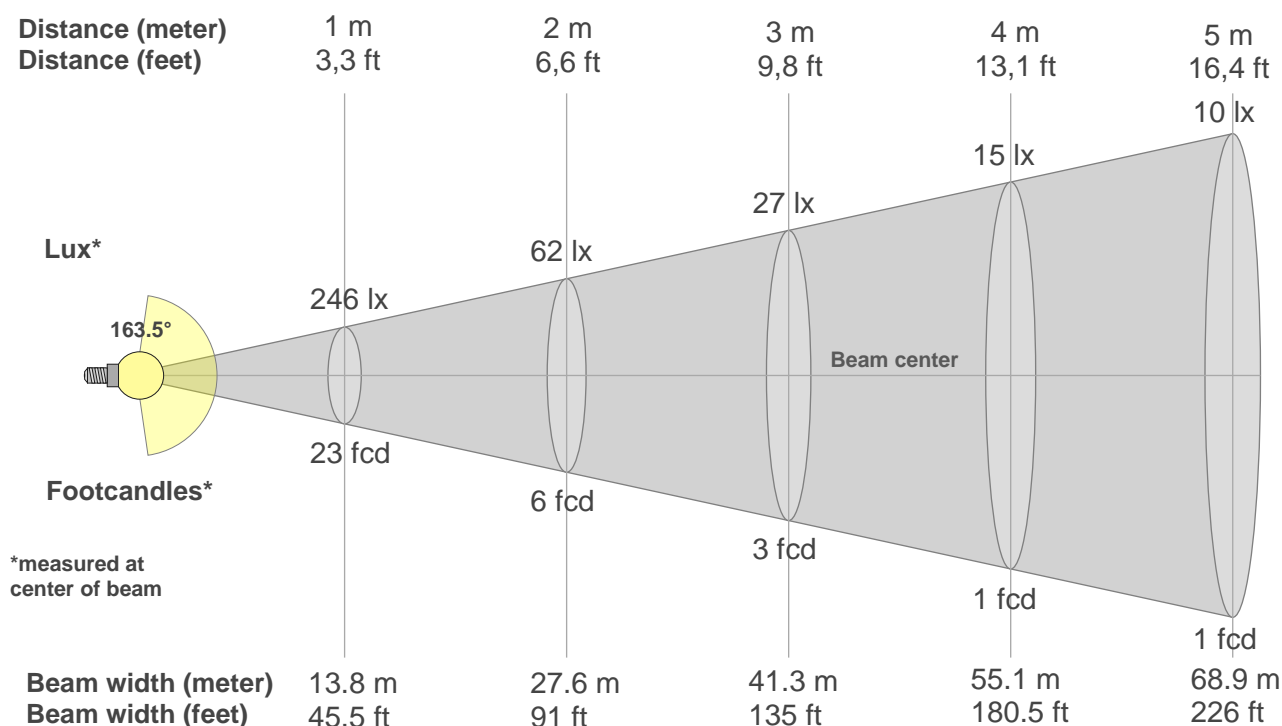
**Rg 103.1**

Gamut index Rg

| Hue Bin | R <sub>f</sub> | Shifts (%) |      |
|---------|----------------|------------|------|
|         |                | Chroma     | Hue  |
| 1       | 54             | 24%        | 6%   |
| 2       | 56             | 21%        | -12% |
| 3       | 51             | 10%        | -31% |
| 4       | 58             | -8%        | -25% |
| 5       | 56             | -25%       | -14% |
| 6       | 77             | -10%       | 10%  |
| 7       | 84             | 4%         | 8%   |
| 8       | 65             | 10%        | 18%  |
| 9       | 73             | 17%        | 14%  |
| 10      | 79             | 12%        | -1%  |
| 11      | 68             | 7%         | -12% |
| 12      | 70             | -4%        | -18% |
| 13      | 78             | -10%       | 3%   |
| 14      | 63             | 3%         | 18%  |
| 15      | 64             | 9%         | 25%  |
| 16      | 64             | 11%        | 17%  |



## Beam details



### 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 |
| 246lx   | 62lx   | 27lx   | 15lx   | 10lx   | 7lx    | 5lx    | 4lx    | 3lx    | 2lx    | 2lx    | 2lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    |
| 22.9fcd | 5.7fcd | 2.5fcd | 1.4fcd | 0.9fcd | 0.6fcd | 0.5fcd | 0.4fcd | 0.3fcd | 0.2fcd | 0.2fcd | 0.2fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd |

### Intensities in 0° c-plane

| 0°   | 9°   | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 246  | 245  | 243 | 239 | 234 | 226 | 216 | 204 | 190 | 175 | 158 | 141 | 124  | 107  | 90   | 75   | 61   | 48   | 27   | 14   |
| 100% | 100% | 99% | 97% | 95% | 92% | 88% | 83% | 77% | 71% | 64% | 57% | 50%  | 43%  | 37%  | 30%  | 25%  | 19%  | 11%  | 5%   |

### Intensities in 90° c-plane

| 0°   | 9°  | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 246  | 243 | 232 | 216 | 193 | 165 | 132 | 96  | 58  | 25  | 6   | 5   | 7    | 10   | 11   | 12   | 11   | 10   | 9    | 10   |
| 100% | 99% | 94% | 88% | 78% | 67% | 54% | 39% | 24% | 10% | 3%  | 2%  | 3%   | 4%   | 5%   | 5%   | 4%   | 4%   | 4%   | 4%   |

### Intensities in 180° c-plane

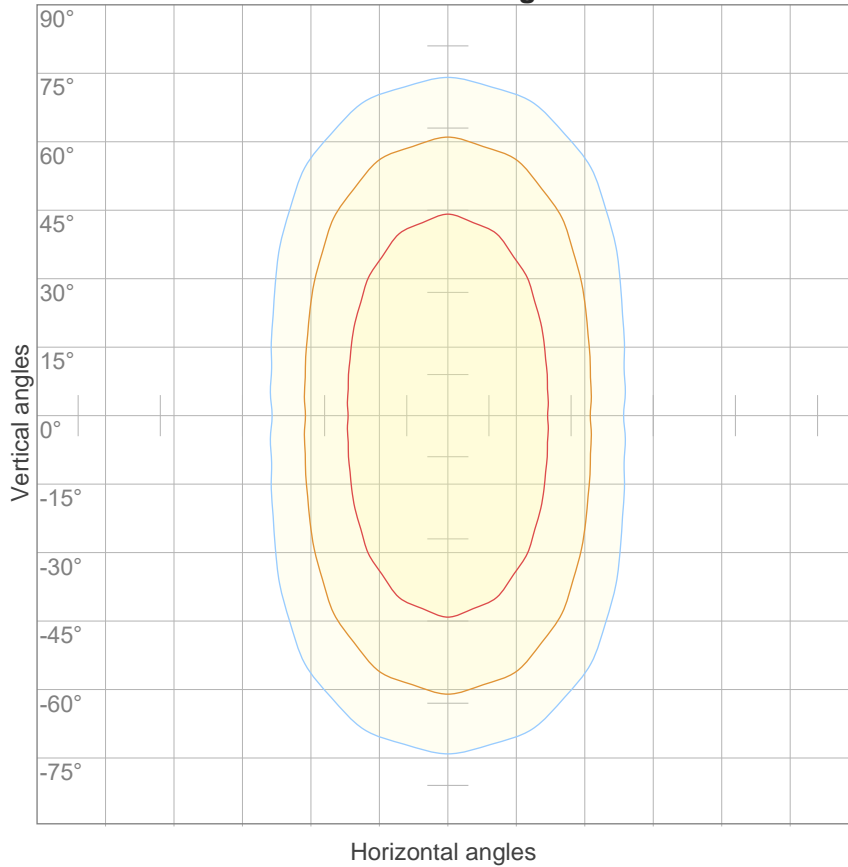
| 0°   | 9°   | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 246  | 245  | 243 | 239 | 234 | 226 | 216 | 204 | 190 | 175 | 158 | 141 | 124  | 107  | 90   | 75   | 61   | 48   | 27   | 14   |
| 100% | 100% | 99% | 97% | 95% | 92% | 88% | 83% | 77% | 71% | 64% | 57% | 50%  | 43%  | 37%  | 30%  | 25%  | 19%  | 11%  | 5%   |

### Intensities in 270° c-plane

| 0°   | 9°  | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 246  | 243 | 232 | 216 | 193 | 165 | 132 | 96  | 58  | 25  | 6   | 5   | 7    | 10   | 11   | 12   | 11   | 10   | 9    | 10   |
| 100% | 99% | 94% | 88% | 78% | 67% | 54% | 39% | 24% | 10% | 3%  | 2%  | 3%   | 4%   | 5%   | 5%   | 4%   | 4%   | 4%   | 4%   |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 163.5°         | 280.2°          | 360°              | 45.6%                        | 29.0%                       |

**iso-candela diagram**



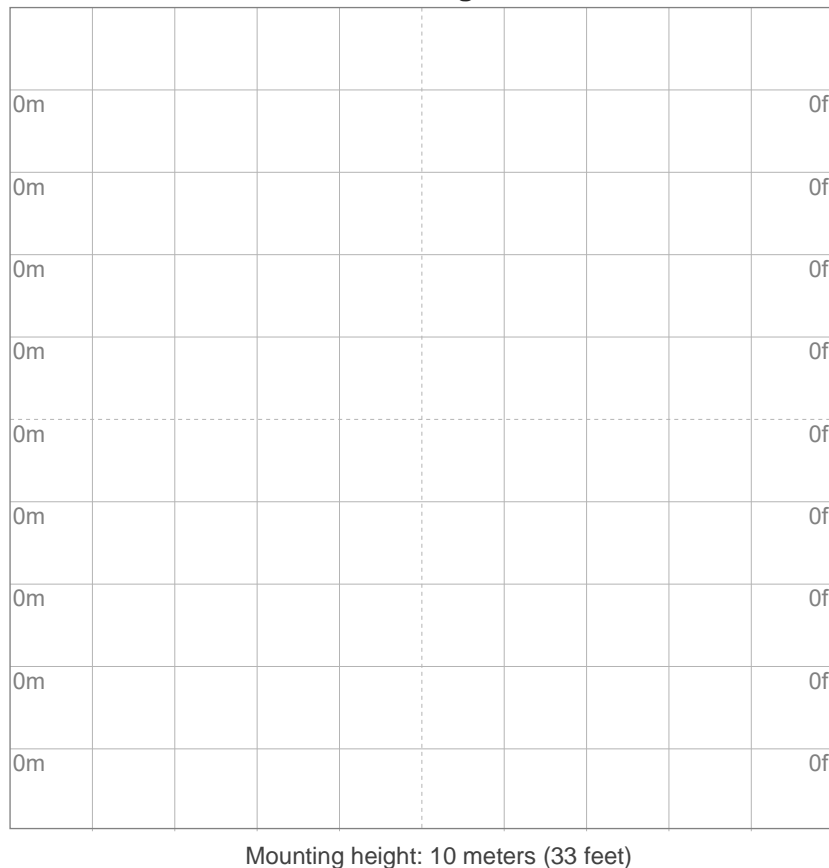
|     |        |
|-----|--------|
| 10% | 25 cd  |
| 20% | 49 cd  |
| 30% | 74 cd  |
| 40% | 98 cd  |
| 50% | 123 cd |
| 60% | 148 cd |
| 70% | 172 cd |
| 80% | 197 cd |
| 90% | 222 cd |

Conditions:

Number of c-planes: 24

Candela at center: 246 cd

**iso-lux diagram**



|     |          |
|-----|----------|
| 3%  | 73.8m lx |
| 5%  | 0.123 lx |
| 10% | 0.246 lx |
| 30% | 0.738 lx |
| 50% | 1.23 lx  |

Conditions:

Number of c-planes: 24

Lux at center: 2.46 lx

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

Glare evaluation according to UGR

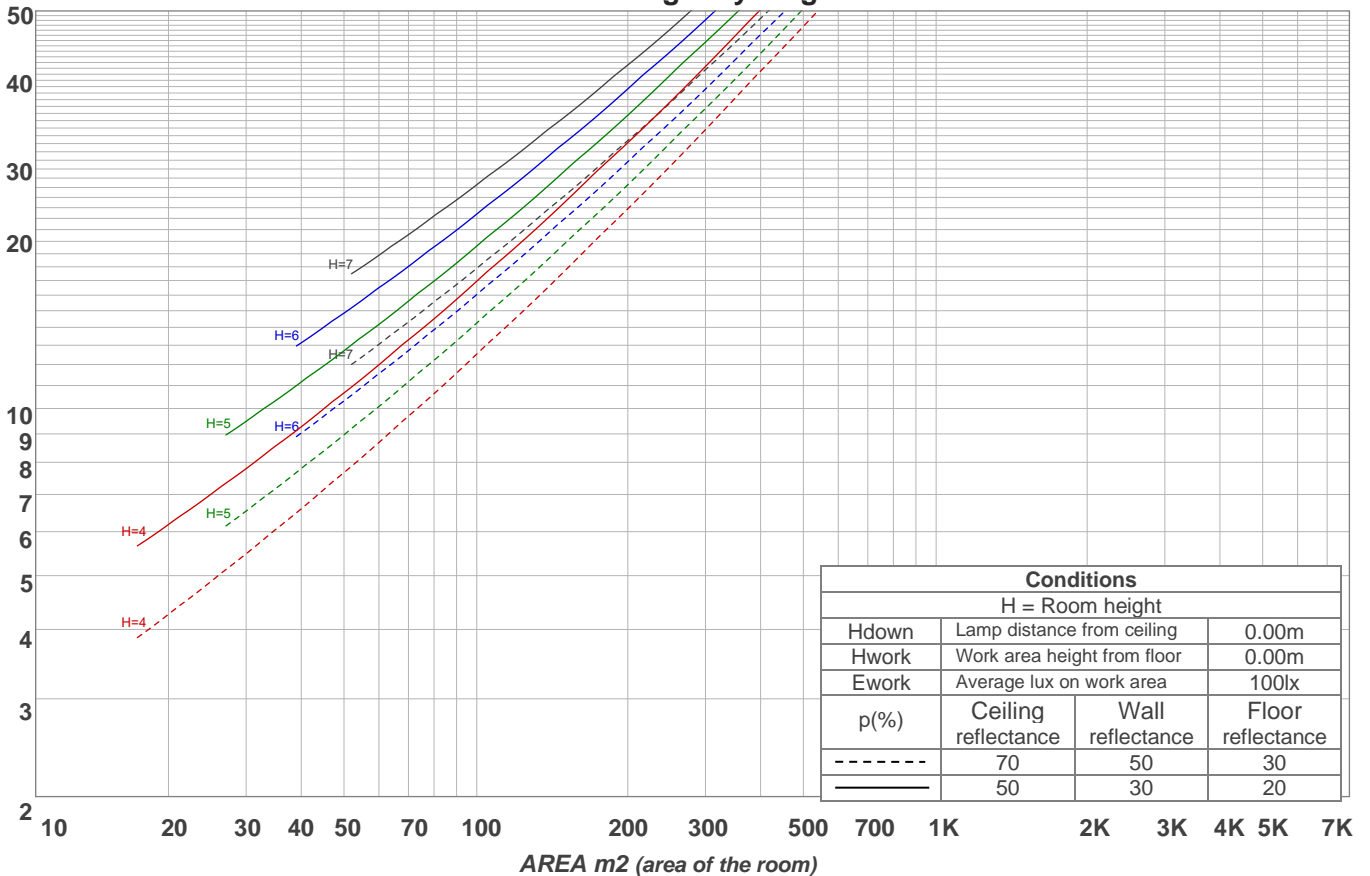
|                                                                                |     |                                                   |      |      |      |      |                                         |      |      |      |      |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------|------|------|------|------|-----------------------------------------|------|------|------|------|
| 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  | 17.0                                              | 18.1 | 17.6 | 18.7 | 19.5 | 15.7                                    | 16.8 | 16.4 | 17.5 | 18.3 |
|                                                                                | 3H  | 19.2                                              | 20.3 | 20.0 | 21.0 | 21.7 | 17.1                                    | 18.2 | 17.8 | 18.8 | 19.6 |
|                                                                                | 4H  | 20.4                                              | 21.4 | 21.1 | 22.1 | 22.9 | 17.6                                    | 18.6 | 18.3 | 19.3 | 20.1 |
|                                                                                | 6H  | 21.6                                              | 22.5 | 22.3 | 23.2 | 24.1 | 18.0                                    | 18.9 | 18.7 | 19.6 | 20.5 |
|                                                                                | 8H  | 22.2                                              | 23.1 | 22.9 | 23.8 | 24.6 | 18.1                                    | 19.1 | 18.8 | 19.8 | 20.6 |
|                                                                                | 12H | 22.7                                              | 23.7 | 23.4 | 24.3 | 25.2 | 18.2                                    | 19.2 | 18.9 | 19.8 | 20.7 |
| 4H                                                                             | 2H  | 17.5                                              | 18.6 | 18.3 | 19.2 | 20.0 | 16.6                                    | 17.6 | 17.3 | 18.3 | 19.0 |
|                                                                                | 3H  | 20.1                                              | 21.1 | 20.8 | 21.7 | 22.6 | 18.3                                    | 19.3 | 19.0 | 19.9 | 20.7 |
|                                                                                | 4H  | 21.4                                              | 22.5 | 22.1 | 23.0 | 23.9 | 18.9                                    | 20.0 | 19.7 | 20.5 | 21.4 |
|                                                                                | 6H  | 22.8                                              | 23.6 | 23.5 | 24.3 | 25.1 | 19.4                                    | 20.2 | 20.2 | 20.9 | 21.7 |
|                                                                                | 8H  | 23.4                                              | 24.1 | 24.2 | 24.9 | 25.7 | 19.6                                    | 20.2 | 20.4 | 21.0 | 21.8 |
|                                                                                | 12H | 24.1                                              | 24.7 | 24.9 | 25.5 | 26.3 | 19.7                                    | 20.3 | 20.5 | 21.1 | 21.9 |
| 8H                                                                             | 4H  | 21.7                                              | 22.4 | 22.5 | 23.1 | 24.0 | 19.6                                    | 20.3 | 20.4 | 21.1 | 21.9 |
|                                                                                | 6H  | 23.3                                              | 23.9 | 24.1 | 24.7 | 25.6 | 20.5                                    | 21.0 | 21.3 | 21.8 | 22.7 |
|                                                                                | 8H  | 24.2                                              | 24.6 | 25.0 | 25.5 | 26.5 | 20.8                                    | 21.2 | 21.6 | 22.1 | 23.1 |
|                                                                                | 12H | 25.0                                              | 25.4 | 25.9 | 26.3 | 27.2 | 21.0                                    | 21.4 | 21.8 | 22.3 | 23.2 |
| 12H                                                                            | 4H  | 21.7                                              | 22.3 | 22.5 | 23.1 | 24.0 | 19.8                                    | 20.4 | 20.6 | 21.2 | 22.1 |
|                                                                                | 6H  | 23.4                                              | 23.9 | 24.2 | 24.8 | 25.7 | 20.8                                    | 21.3 | 21.6 | 22.1 | 23.1 |
|                                                                                | 8H  | 24.3                                              | 24.8 | 25.2 | 25.6 | 26.5 | 21.2                                    | 21.7 | 22.1 | 22.5 | 23.4 |
| Variation of the observer position for the luminaire distance S                |     |                                                   |      |      |      |      |                                         |      |      |      |      |
| S = 1.0H                                                                       |     | 0.1 / 0.0                                         |      |      |      |      | 0.0 / 0.0                               |      |      |      |      |
| S = 1.5H                                                                       |     | 0.1 / -0.1                                        |      |      |      |      | 0.1 / -0.1                              |      |      |      |      |
| S = 2.0H                                                                       |     | 0.2 / -0.2                                        |      |      |      |      | 0.3 / -0.3                              |      |      |      |      |
| CIE 117-1995. Corrected glare indices referring to 1408 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                   | 113                                                                                                      | 113 | 113 | 113 | 107 | 107 | 107 | 107 | 97 | 97 | 97 | 87 | 87 | 87 | 78 | 78 | 78 | 74 |
| 1                   | 99                                                                                                       | 93  | 88  | 83  | 94  | 88  | 83  | 79  | 79 | 75 | 72 | 71 | 68 | 65 | 63 | 61 | 58 | 54 |
| 2                   | 89                                                                                                       | 79  | 72  | 65  | 84  | 75  | 68  | 62  | 67 | 62 | 57 | 60 | 56 | 51 | 53 | 50 | 47 | 43 |
| 3                   | 80                                                                                                       | 69  | 60  | 52  | 76  | 65  | 57  | 50  | 58 | 52 | 46 | 52 | 47 | 42 | 46 | 42 | 38 | 35 |
| 4                   | 73                                                                                                       | 60  | 51  | 44  | 69  | 57  | 48  | 42  | 51 | 44 | 38 | 46 | 40 | 35 | 41 | 36 | 32 | 29 |
| 5                   | 67                                                                                                       | 53  | 44  | 37  | 63  | 51  | 42  | 35  | 46 | 38 | 33 | 41 | 35 | 30 | 36 | 31 | 27 | 24 |
| 6                   | 62                                                                                                       | 48  | 38  | 32  | 58  | 45  | 37  | 30  | 41 | 34 | 28 | 37 | 31 | 26 | 33 | 28 | 24 | 21 |
| 7                   | 57                                                                                                       | 43  | 34  | 28  | 53  | 41  | 32  | 27  | 37 | 30 | 25 | 33 | 27 | 23 | 30 | 25 | 21 | 18 |
| 8                   | 53                                                                                                       | 39  | 30  | 24  | 50  | 37  | 29  | 23  | 34 | 27 | 22 | 30 | 24 | 20 | 27 | 22 | 18 | 16 |
| 9                   | 49                                                                                                       | 36  | 27  | 22  | 46  | 34  | 26  | 21  | 31 | 24 | 19 | 28 | 22 | 18 | 25 | 20 | 16 | 14 |
| 10                  | 46                                                                                                       | 33  | 25  | 19  | 43  | 31  | 24  | 19  | 28 | 22 | 17 | 26 | 20 | 16 | 23 | 18 | 15 | 13 |

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} | 68.0 lm   | 106 lm    | 135 lm    | 152 lm    | 157 lm    | 150 lm    | 133 lm    | 113 lm    |
| 90°-100°  | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 95.9 lm   | 80.1 lm   | 64.7 lm   | 50.1 lm   | 36.2 lm   | 23.4 lm   | 12.6 lm   | 4.86 lm   | 1.11 lm   |

LCS table

| BUG rating:       | B1 U3 G1 |          |
|-------------------|----------|----------|
| Forward light     | Lumens   | Lumens % |
| Low(0-30):        | 98.9     | 7%       |
| Medium(30-60):    | 222.2    | 15.8%    |
| High(60-80):      | 141.4    | 10%      |
| Very high(80-90): | 56.8     | 4%       |
| Back light        |          |          |
| Low(0-30):        | 98.9     | 7%       |
| Medium(30-60):    | 222.2    | 15.8%    |
| High(60-80):      | 141.4    | 10%      |
| Very high(80-90): | 56.8     | 4%       |
| Uplight           |          |          |
| Low(90-100):      | 95.9     | 6.8%     |
| High(100-180):    | 273.2    | 19.4%    |

LCS graph

