

Light efficiency:

76 Lumen/Watt

Light quality:

CRI: 92.3

Color temperature:

6124 K

Output: 742 lm

Peak: 130 cd

Power: 9.8 W

PF: 1.0



Tracking number: [n/a](#)

Product name:

**PC20.5MRBOVWDR2012.0VW-COOL  
WHITE**

Item number:

Date and time:

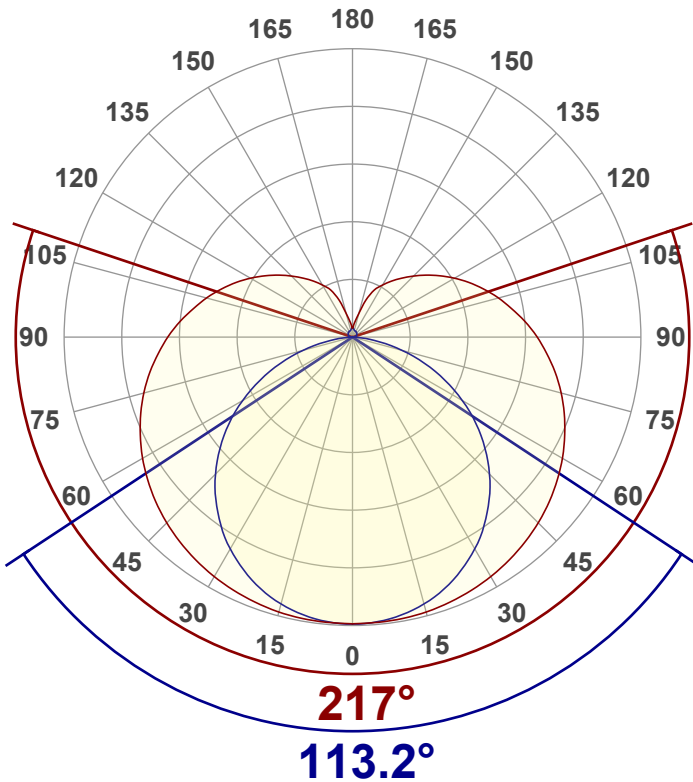
**2024/10/14 10:47:46**

Operator:

**Nick**

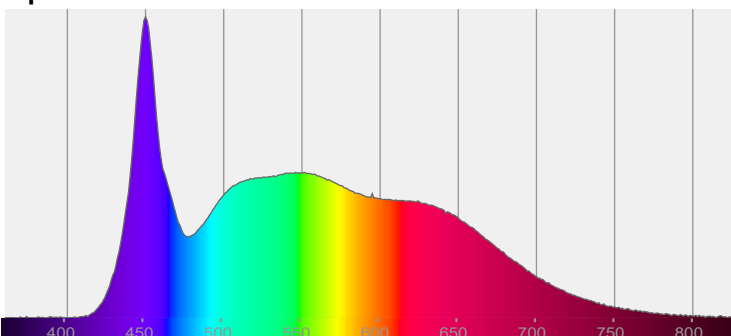
Description:

**DIAMETER 61MM,LENGTH 500MM**

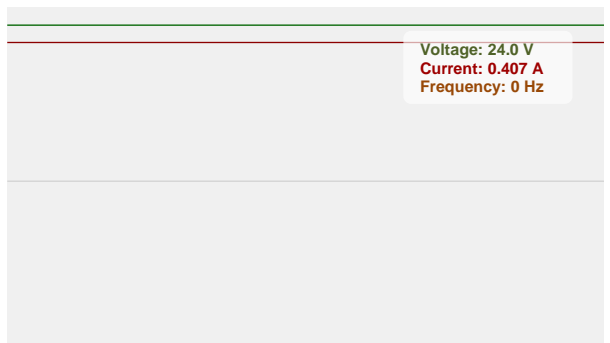


CIE 1931  
x: 0.319  
y: 0.336

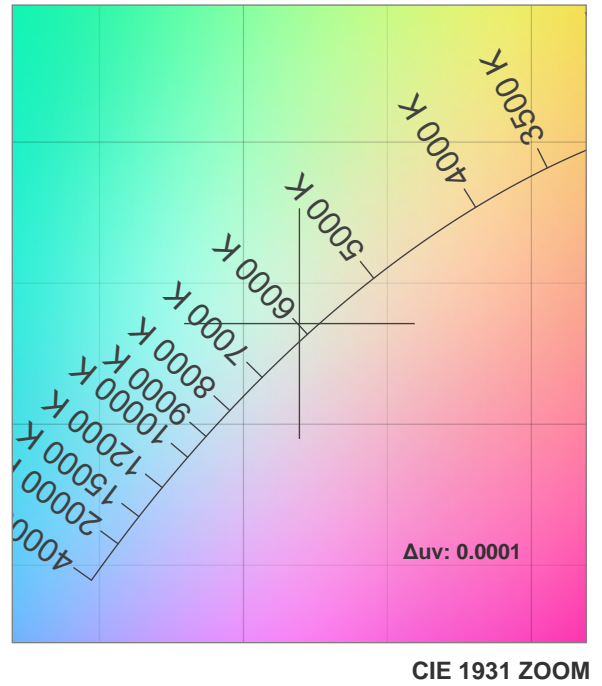
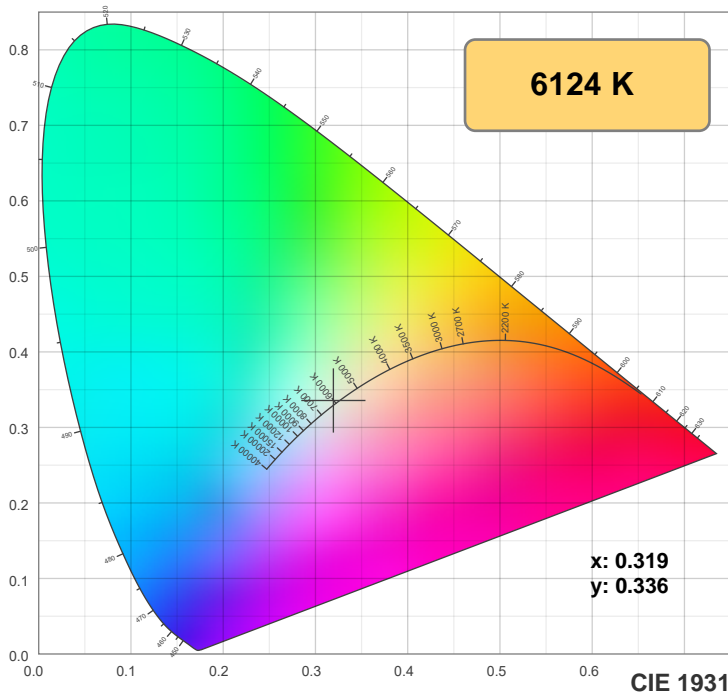
Spectra



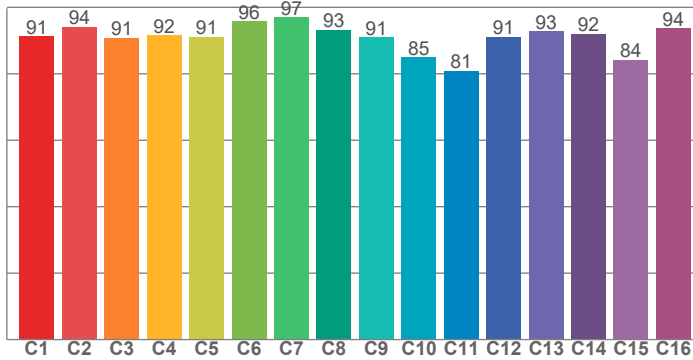
Power



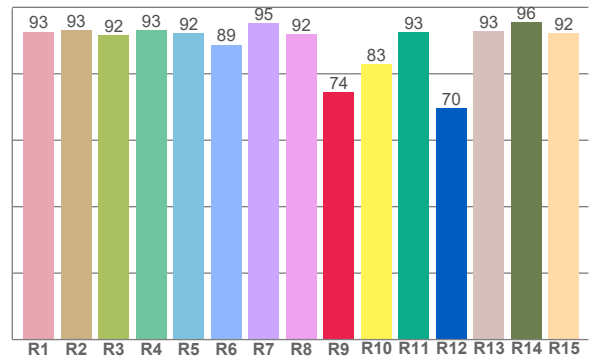
Voltage: 24.0 V  
Current: 0.407 A  
Frequency: 0 Hz



TM-30: 90.7



CRI: 92.3 (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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 92.7 | 93.0 | 91.7 | 93.2 | 92.1 | 88.8 | 95.3 | 91.9 | 74.4 | 82.9 | 92.6 | 69.6 | 92.8 | 95.5 | 92.3 |

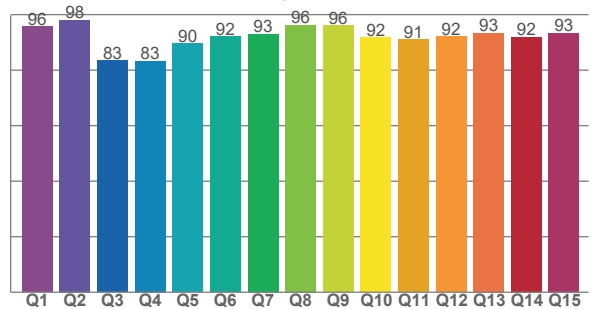
TM30 C values, 16 binned values out of total of 99 C values

| C1   | C2   | C3   | C4   | C5   | C6   | C7   | C8   | C9   | C10  | C11  | C12  | C13  | C14  | C15  | C16  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 91.2 | 94.1 | 90.8 | 91.6 | 91.2 | 95.8 | 96.9 | 93.2 | 91.1 | 85.0 | 80.9 | 91.2 | 92.7 | 92.0 | 84.2 | 93.7 |

CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 95.6 | 98.0 | 83.5 | 83.2 | 89.6 | 92.1 | 93.1 | 96.3 | 96.1 | 91.7 | 91.0 | 92.1 | 93.4 | 91.9 | 93.4 |

CQS: 91.1



## 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 deviation from black body |
|-------------------|-----------------------|---------------|----------------|-------------|---------------------|---------------------------|---------------------------|------------------|------------------|---------------------------------|
| CCT               | CRI                   | CRI R9        | TM30 Rf        | TM30 Rg     | CQS                 | x                         | y                         | u                | v                | Δuv                             |
| 6124 K            | 92.3                  | 74.4          | 90.7           | 100.0       | 91.1                | 0.319                     | 0.336                     | 0.200            | 0.315            | 0.0001                          |

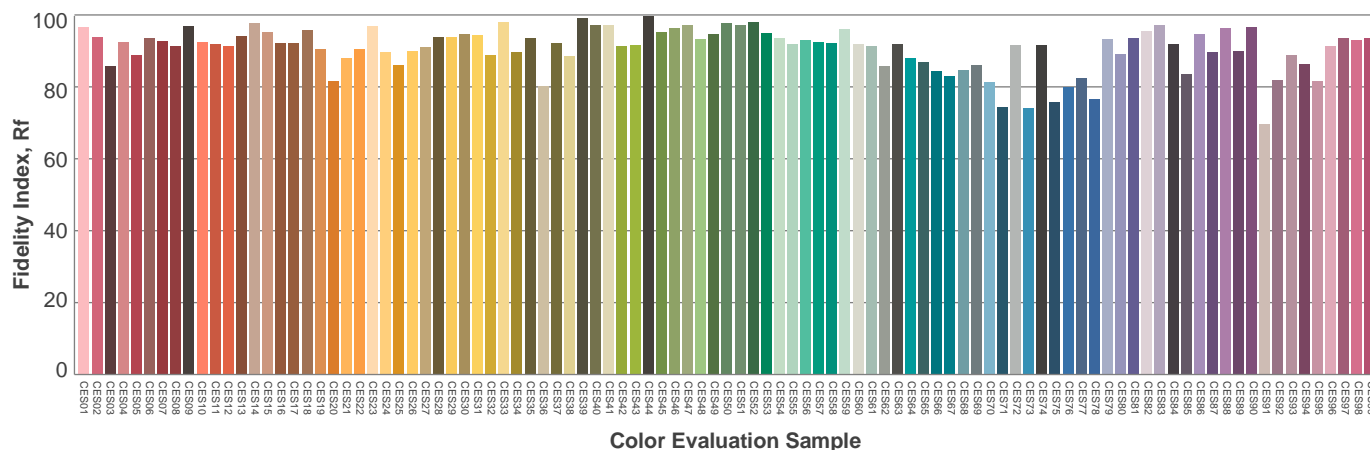
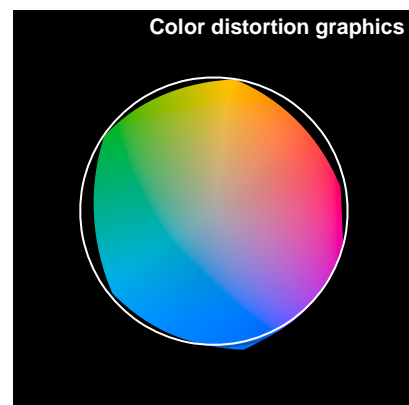
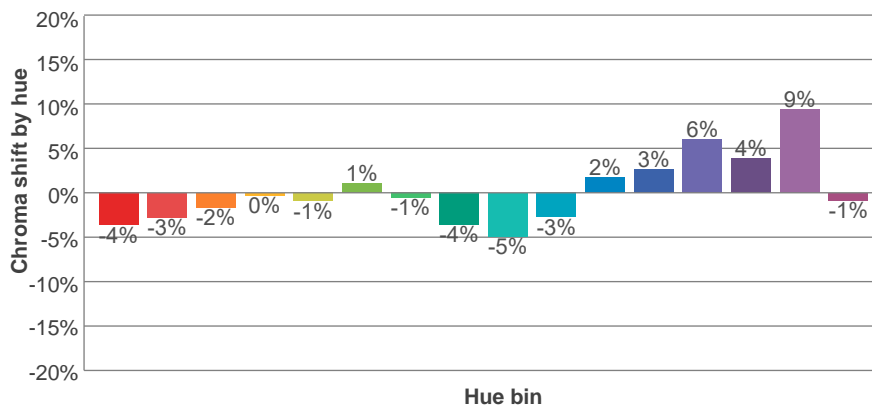
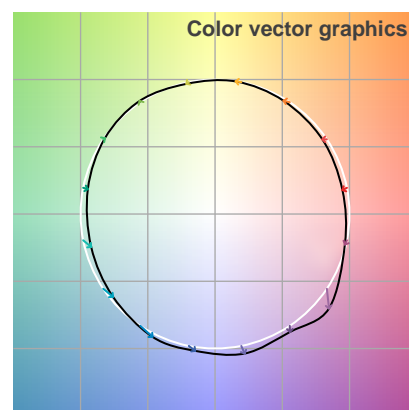
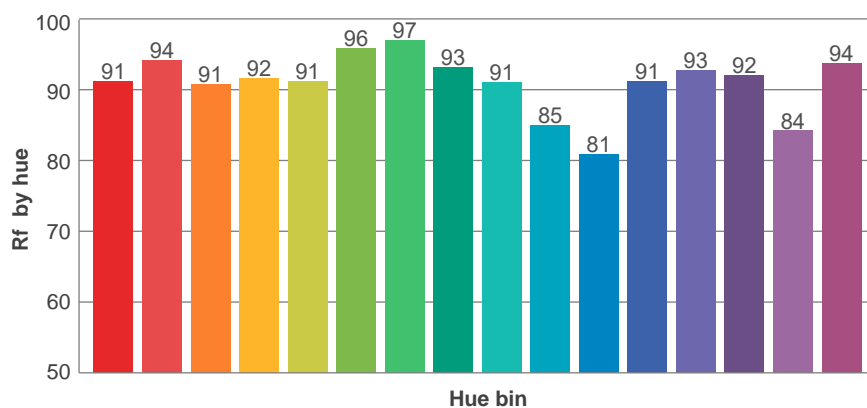
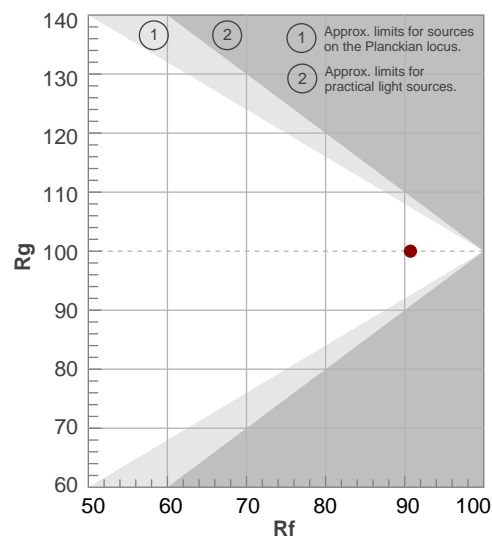
**Rf 90.7**

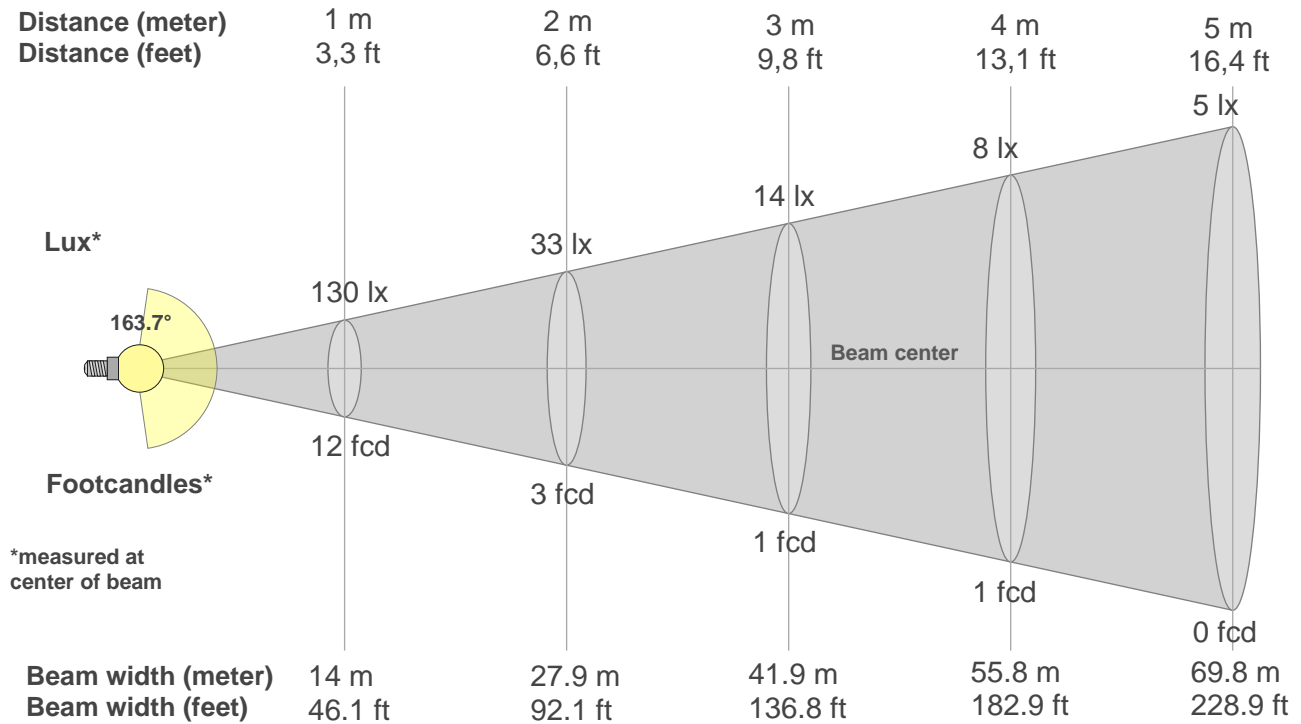
Fidelity index Rf

**Rg 100.0**

Gamut index Rg

| Hue Bin | R <sub>f</sub> | Shifts (%) |      |
|---------|----------------|------------|------|
|         |                | Chroma     | Hue  |
| 1       | 91             | -4%        | -1%  |
| 2       | 94             | -3%        | 2%   |
| 3       | 91             | -2%        | 4%   |
| 4       | 92             | 0%         | 4%   |
| 5       | 91             | -1%        | 2%   |
| 6       | 96             | 1%         | 0%   |
| 7       | 97             | -1%        | -1%  |
| 8       | 93             | -4%        | 0%   |
| 9       | 91             | -5%        | 6%   |
| 10      | 85             | -3%        | 9%   |
| 11      | 81             | 2%         | 12%  |
| 12      | 91             | 3%         | 5%   |
| 13      | 93             | 6%         | 1%   |
| 14      | 92             | 4%         | -2%  |
| 15      | 84             | 9%         | -11% |
| 16      | 94             | -1%        | -3%  |





## 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 |
| 130lx   | 33lx  | 14lx   | 8lx    | 5lx    | 4lx    | 3lx    | 2lx    | 2lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 1lx    | 0lx    | 0lx    | 0lx    | 0lx    |
| 12.1fcd | 3fcd  | 1.3fcd | 0.8fcd | 0.5fcd | 0.3fcd | 0.2fcd | 0.2fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0.1fcd | 0fcd   | 0fcd   | 0fcd   | 0fcd   | 0fcd   |

## 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° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 130  | 130  | 129 | 127 | 124 | 120 | 114 | 108 | 101 | 93  | 84  | 75  | 66   | 57   | 48   | 39   | 32   | 25   | 15   | 7    |
| 100% | 100% | 99% | 97% | 95% | 92% | 88% | 83% | 77% | 71% | 64% | 57% | 50%  | 43%  | 37%  | 30%  | 24%  | 19%  | 12%  | 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° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 130  | 129 | 124 | 115 | 103 | 88  | 71  | 51  | 30  | 11  | 1   | 1   | 1    | 2    | 2    | 3    | 3    | 3    | 3    | 4    |
| 100% | 99% | 95% | 88% | 79% | 68% | 54% | 39% | 23% | 9%  | 1%  | 0%  | 1%   | 2%   | 2%   | 2%   | 2%   | 2%   | 2%   | 3%   |

## Intensities in 180° c-plane

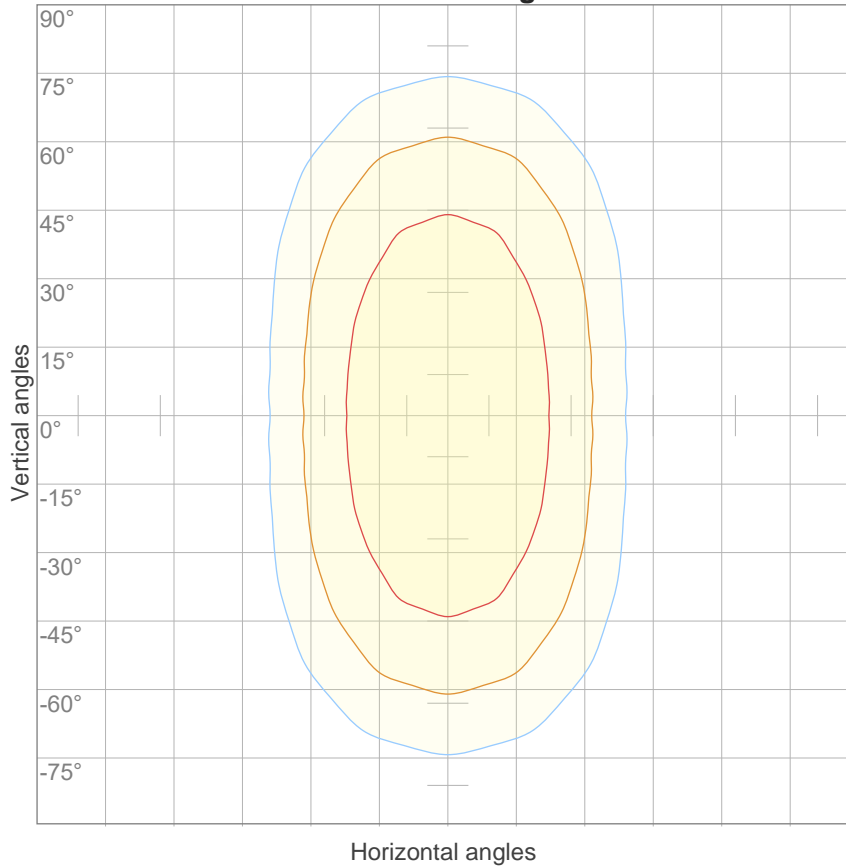
| 0°   | 9°   | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° | 99° | 108° | 117° | 126° | 135° | 144° | 153° | 162° | 171° |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 130  | 130  | 129 | 127 | 124 | 120 | 114 | 108 | 101 | 93  | 84  | 75  | 66   | 57   | 48   | 39   | 32   | 25   | 15   | 7    |
| 100% | 100% | 99% | 97% | 95% | 92% | 88% | 83% | 77% | 71% | 64% | 57% | 50%  | 43%  | 37%  | 30%  | 24%  | 19%  | 12%  | 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° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| 130  | 129 | 124 | 115 | 103 | 88  | 71  | 51  | 30  | 11  | 1   | 1   | 1    | 2    | 2    | 3    | 3    | 3    | 3    | 4    |
| 100% | 99% | 95% | 88% | 79% | 68% | 54% | 39% | 23% | 9%  | 1%  | 0%  | 1%   | 2%   | 2%   | 2%   | 2%   | 2%   | 2%   | 3%   |

| Beam angle 50% | Field angle 10% | Cutoff angle 2,5% | Intensity ratio in 120° cone | Intensity ratio in 90° cone |
|----------------|-----------------|-------------------|------------------------------|-----------------------------|
| 163.7°         | 278.4°          | 360°              | 45.9%                        | 29.2%                       |

**iso-candela diagram**



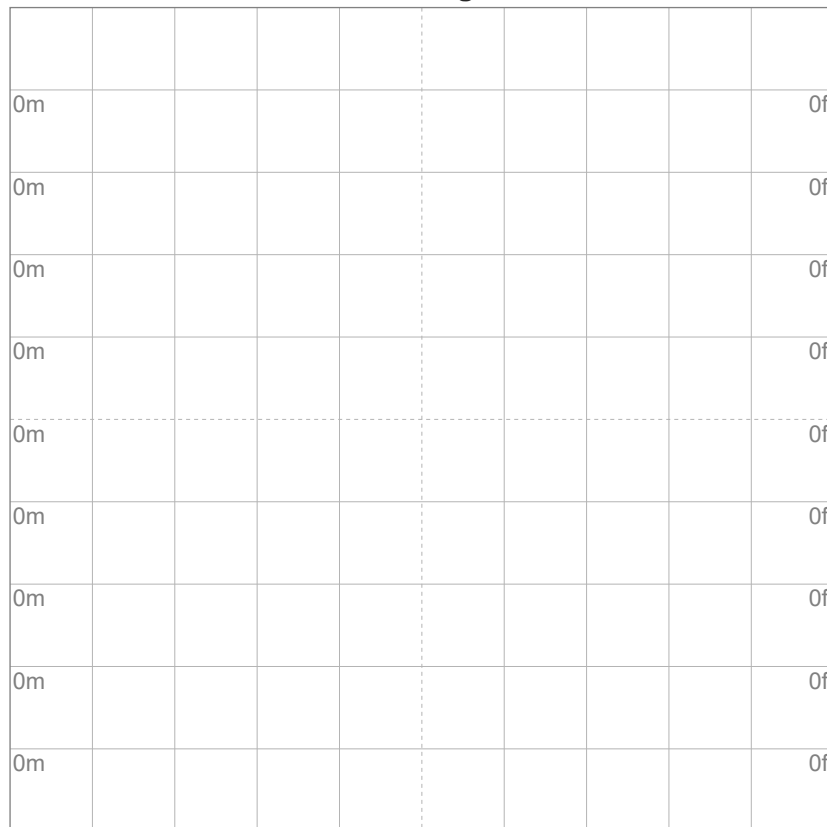
|     |        |
|-----|--------|
| 10% | 13 cd  |
| 20% | 26 cd  |
| 30% | 39 cd  |
| 40% | 52 cd  |
| 50% | 65 cd  |
| 60% | 78 cd  |
| 70% | 91 cd  |
| 80% | 104 cd |
| 90% | 117 cd |

Conditions:

Number of c-planes: 24

Candela at center: 130 cd

**iso-lux diagram**



Mounting height: 10 meters (33 feet)

|     |          |
|-----|----------|
| 3%  | 39.1m lx |
| 5%  | 65.2m lx |
| 10% | 0.130 lx |
| 30% | 0.391 lx |
| 50% | 0.652 lx |

Conditions:

Number of c-planes: 24

Lux at center: 1.30 lx

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

Glare evaluation according to UGR

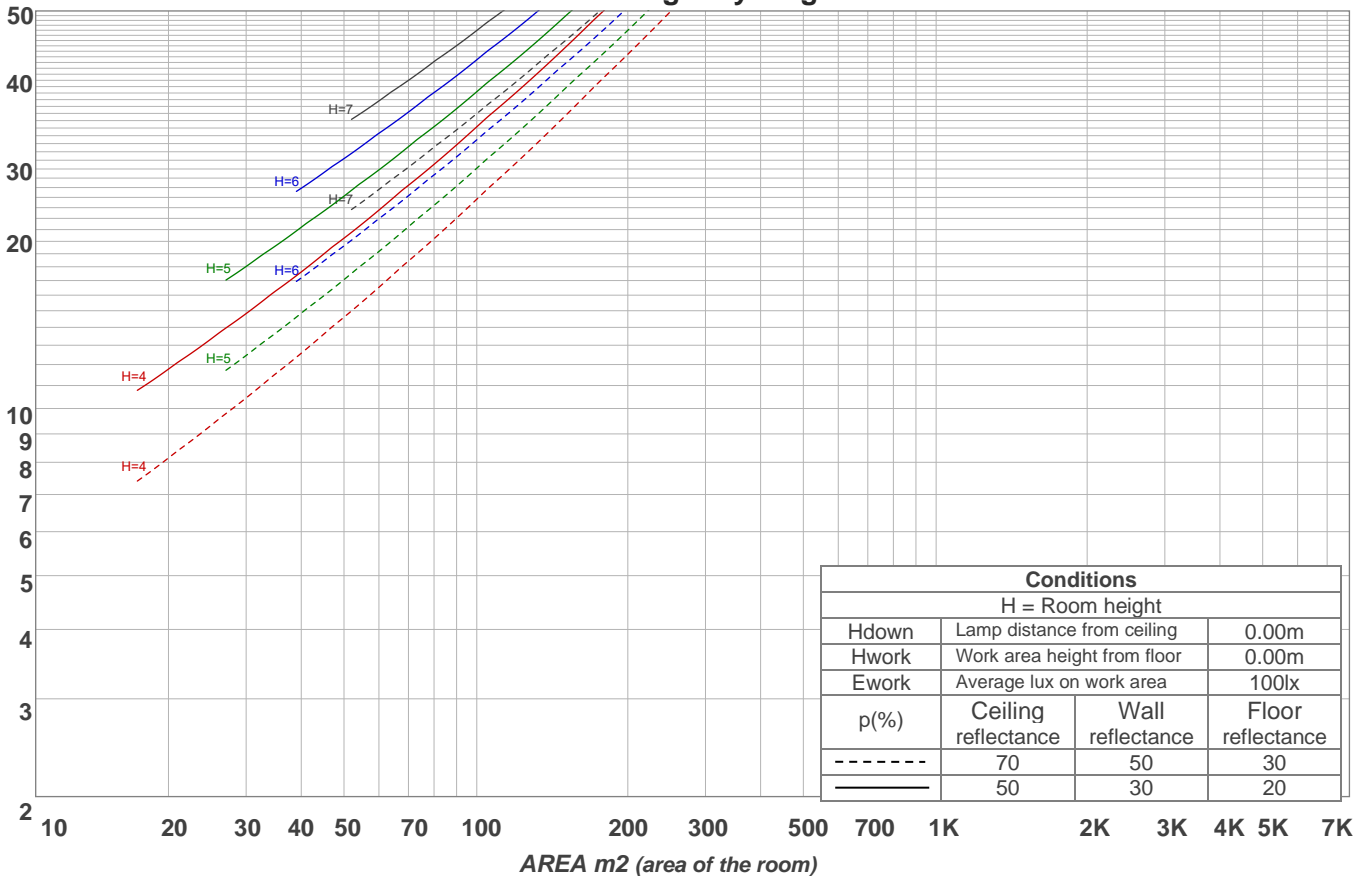
|   |     |   |      |      |      |      |   |      |      |      |      |
|---|-----|---|------|------|------|------|---|------|------|------|------|
| p Ceiling   |     | 70  | 70   | 50   | 50   | 30   | 70                                      | 70   | 50   | 50   | 30   |
| p Walls   |     | 50  | 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  | 14.8  | 15.9 | 15.4 | 16.6 | 17.3 | 13.6                                    | 14.7 | 14.2 | 15.4 | 16.1 |
|   | 3H  | 17.1  | 18.2 | 17.8 | 18.8 | 19.6 | 14.9                                    | 16.0 | 15.7 | 16.7 | 17.4 |
|   | 4H  | 18.3  | 19.3 | 19.0 | 20.0 | 20.7 | 15.5                                    | 16.5 | 16.2 | 17.2 | 17.9 |
|   | 6H  | 19.5  | 20.4 | 20.1 | 21.1 | 21.9 | 15.8                                    | 16.7 | 16.5 | 17.5 | 18.3 |
|   | 8H  | 20.0  | 21.0 | 20.7 | 21.6 | 22.5 | 15.9                                    | 16.9 | 16.6 | 17.5 | 18.4 |
|   | 12H | 20.6  | 21.6 | 21.3 | 22.2 | 23.0 | 15.9                                    | 16.9 | 16.6 | 17.6 | 18.4 |
| 4H  | 2H  | 15.4  | 16.4 | 16.1 | 17.1 | 17.8 | 14.4                                    | 15.5 | 15.2 | 16.1 | 16.9 |
|   | 3H  | 17.9  | 18.9 | 18.6 | 19.5 | 20.4 | 16.1                                    | 17.1 | 16.8 | 17.7 | 18.6 |
|   | 4H  | 19.2  | 20.3 | 20.0 | 20.8 | 21.7 | 16.7                                    | 17.9 | 17.5 | 18.3 | 19.3 |
|   | 6H  | 20.6  | 21.4 | 21.4 | 22.1 | 22.9 | 17.2                                    | 18.0 | 18.0 | 18.7 | 19.5 |
|   | 8H  | 21.3  | 21.9 | 22.0 | 22.7 | 23.5 | 17.4                                    | 18.1 | 18.2 | 18.8 | 19.6 |
|   | 12H | 21.9  | 22.5 | 22.7 | 23.3 | 24.2 | 17.5                                    | 18.0 | 18.2 | 18.8 | 19.7 |
| 8H  | 4H  | 19.5  | 20.2 | 20.3 | 21.0 | 21.8 | 17.5                                    | 18.2 | 18.3 | 18.9 | 19.8 |
|   | 6H  | 21.2  | 21.7 | 22.0 | 22.5 | 23.4 | 18.3                                    | 18.8 | 19.1 | 19.7 | 20.6 |
|   | 8H  | 22.0  | 22.5 | 22.8 | 23.3 | 24.3 | 18.6                                    | 19.1 | 19.4 | 19.9 | 20.9 |
|   | 12H | 22.9  | 23.3 | 23.7 | 24.1 | 25.1 | 18.8                                    | 19.2 | 19.6 | 20.0 | 21.0 |
| 12H   | 4H  | 19.6  | 20.1 | 20.3 | 20.9 | 21.8 | 17.7                                    | 18.3 | 18.4 | 19.0 | 19.9 |
|   | 6H  | 21.3  | 21.7 | 22.1 | 22.6 | 23.6 | 18.6                                    | 19.1 | 19.4 | 20.0 | 20.9 |
|   | 8H  | 22.2  | 22.6 | 23.0 | 23.4 | 24.4 | 19.0                                    | 19.5 | 19.9 | 20.3 | 21.3 |
| Variation of the observer position for the luminaire distance S               |     |   |      |      |      |      |   |      |      |      |      |
| S = 1.0H  |     | 0.1 / 0.0   |      |      |      |      | 0.0 / -0.1                              |      |      |      |      |
| S = 1.5H  |     | 0.1 / -0.1  |      |      |      |      | 0.1 / -0.1                              |      |      |      |      |
| S = 2.0H  |     | 0.2 / -0.2  |      |      |      |      | 0.3 / -0.4                              |      |      |      |      |
| CIE 117-1995. Corrected glare indices referring to 742 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  | 89  | 84  | 79  | 79 | 76 | 72 | 71 | 68 | 65 | 63 | 61 | 59 | 55 |
| 2                   | 89   | 80  | 72  | 65  | 84  | 75  | 68  | 62  | 68 | 62 | 57 | 60 | 56 | 52 | 54 | 50 | 47 | 43 |
| 3                   | 81   | 69  | 60  | 53  | 76  | 65  | 57  | 50  | 58 | 52 | 46 | 52 | 47 | 42 | 46 | 42 | 38 | 35 |
| 4                   | 73   | 60  | 51  | 44  | 69  | 57  | 49  | 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  | 54  | 41  | 33  | 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 | 17 | 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} | 36.1 lm   | 56.5 lm   | 71.8 lm   | 80.9 lm   | 83.4 lm   | 79.5 lm   | 70.7 lm   | 59.9 lm   |
| 90°-100°  | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 50.2 lm   | 41.7 lm   | 33.6 lm   | 25.8 lm   | 18.5 lm   | 12.0 lm   | 6.44 lm   | 2.35 lm   | 0.507 lm  |

LCS table

| BUG rating:       | B0 U3 G1 |          |
|-------------------|----------|----------|
| Forward light     | Lumens   | Lumens % |
| Low(0-30):        | 52.4     | 7.1%     |
| Medium(30-60):    | 118      | 15.9%    |
| High(60-80):      | 75.1     | 10.1%    |
| Very high(80-90): | 29.9     | 4%       |
| Back light        |          |          |
| Low(0-30):        | 52.4     | 7.1%     |
| Medium(30-60):    | 118      | 15.9%    |
| High(60-80):      | 75.1     | 10.1%    |
| Very high(80-90): | 29.9     | 4%       |
| Uplight           |          |          |
| Low(90-100):      | 50.2     | 6.8%     |
| High(100-180):    | 140.9    | 19%      |

LCS graph

