

# Light Measurement Report

Print date: 30-10-2025

Measurement date and time: 30-10-2025 10:42:50 – Measurement no. VFR-251030-3825-MS

Measurement tracking No. and Link: [VT251030-003631](#)

Operator:



## Laboratory and Equipment

Laboratory Owner and Location  
Goniospectrometer System and Type  
Sensor Name, Calibr. Date and Serial No.  
Spectrometer Manufacturer and Model

Viso Systems, Copenhagen V, Denmark  
LabSpion – Type C, horizontal  
LabSensor Model2 – 11-1-2024 – 3130191315  
Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

## Measurement Conditions

Number of C-planes and Resolution  
 $\gamma$  (gamma)-Resolution  
Test Distance  
Input Power, Power and Displ. Factors  
Input RMS Voltage and Current  
Frequency of Input Power  
Warm-up Time and Variation

12 planes – 30°  
5°  
12,09 m  
43,9 W – PF 0,96 – DPF 0,96  
230 V – 0,199 A  
50 Hz  
Lamp stabilized in 15 min 1 sec – 2,0%

## Tested Light Source

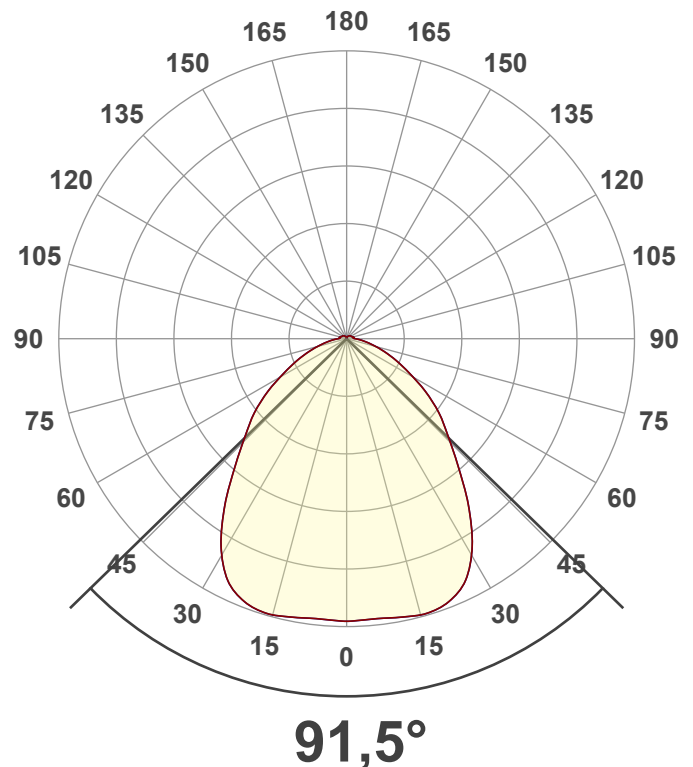
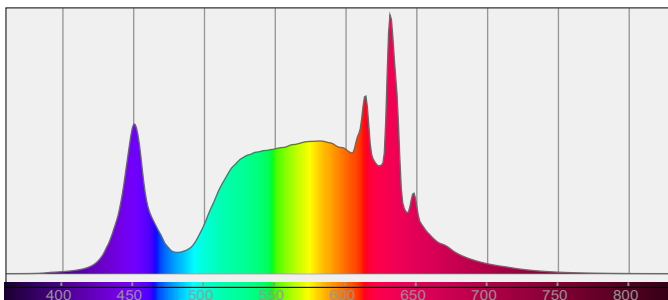
Product Name  
Item No. and Manufacturer  
Product Description (line 1)  
35W/40W/45W/55W | ZWART | CCT SWITCH

812973-4000K-45W  
812973-4000K-45W – Dutchfulfillment  
3-FASE RAILARMATUUR | TARVOS | KANTELBAAR | 150CM |

## Main Light Measurement Results

Output – Total Lumen (Up% / Down%)  
Efficiency  
Peak Intensity and Beam Angle  
Correlated Color Temperature, Target/Measured  
Color Rendering Index  
Color Rendering TM30-18  
Color Shift, CIE duv and MacAdam Steps  
Flicker

6532 lm – 4,45% / 95,55%  
149 lm/W  
2641 cd – 91,5°  
CCT = 4000 K / 3771 K  
CRI 83,2  
 $R_f$  83,9 –  $R_g$  99,0  
Duv 0,0052 – SDCM 7,7  
SVM 0,01 – PstLM 0,02



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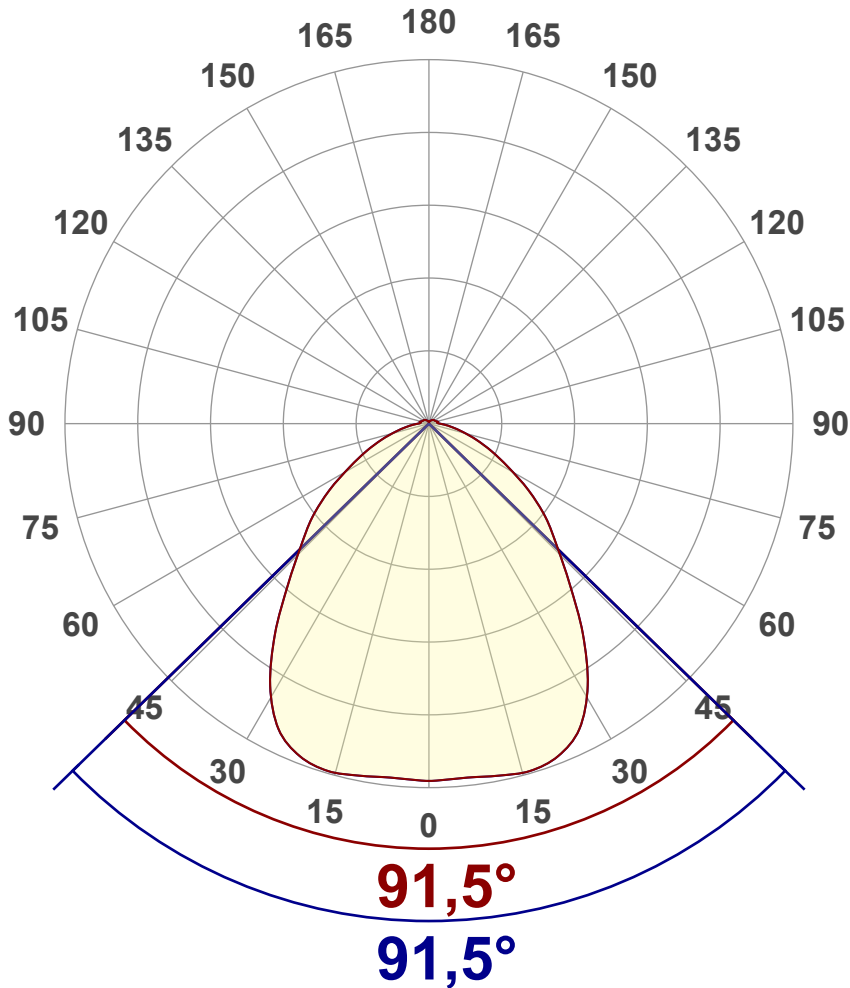
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## Luminous Intensity diagram

Unit: 0-100% of peak intensity



## Main Values

|                      |                |
|----------------------|----------------|
| Output (total Lumen) | 6532 lm        |
| Lumen Up% / Down%    | 4,45% / 95,55% |
| Peak Intensity       | 2641 cd        |
| Beam Angle (50%)     | 91,5°          |
| Beam Angle (90%)     | 91,5°          |
| Beam Angle (10%)     | 91,5°          |

## Cut-off Angle

|              |        |
|--------------|--------|
| Average 2,5% | 203,8° |
|--------------|--------|

## Field Angle

|             |        |
|-------------|--------|
| Average 10% | 151,5° |
|-------------|--------|

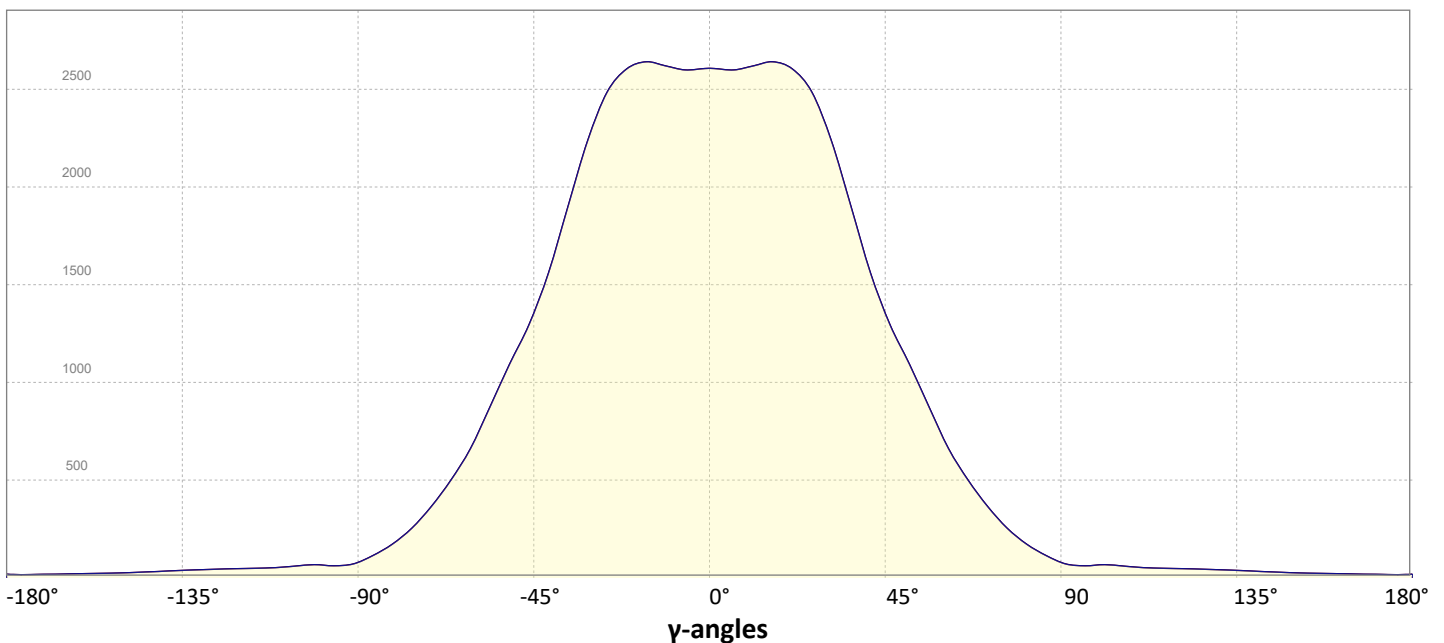
## Intensity Ratio

|              |       |
|--------------|-------|
| In 120° cone | 80,6% |
| In 90° cone  | 60,2% |

**C000-C180**

**C090-C270**

## Linear distribution diagram - Intensity (candela) vs $\gamma$ -angle



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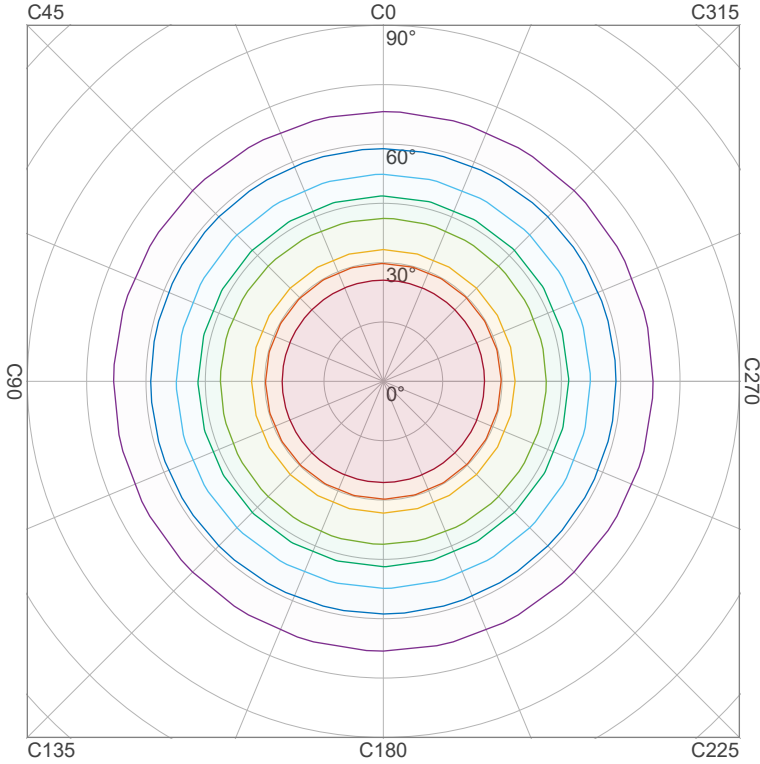
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## Iso-intensity Diagram (Iso-candela)

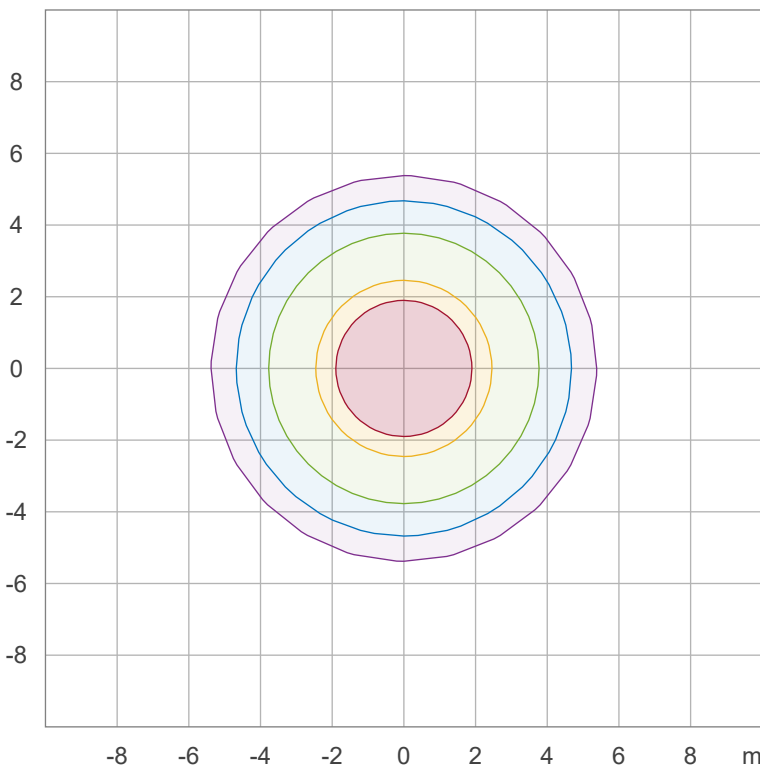


|      |           |
|------|-----------|
| 90 % | 2375,8 cd |
| 80 % | 2111,8 cd |
| 70 % | 1847,8 cd |
| 60 % | 1583,9 cd |
| 50 % | 1319,9 cd |
| 40 % | 1055,9 cd |
| 30 % | 791,9 cd  |
| 20 % | 528,0 cd  |
| 10 % | 264,0 cd  |

Peak intensity: 2639,8 cd

Number of c-planes: 12

## Iso-illuminance Diagram (Iso-lux)



|        |          |
|--------|----------|
| 50,0 % | 144,8 lx |
| 30,0 % | 86,9 lx  |
| 10,0 % | 29,0 lx  |
| 5,0 %  | 14,5 lx  |
| 3,0 %  | 8,7 lx   |

Peak illuminance: 289,6 lx

Mounting height: 3,0 m

Number of c-planes: 12

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## Color details

Correlated Color Temperature, Target CCT = 4000 K  
 Correlated Color Temperature, Measured CCT = 3771 K  
 Color Rendering Index CRI 83,2  
 Color Rendering Index, R9 (red component) R9 = 32,2  
 Color Rendering TM30-18 R<sub>f</sub> 83,9 – R<sub>g</sub> 99,0  
 Color Quality Scale CQS = 84,1

MacAdam Steps SDCM = 7,7  
 Color coordinates CIE 1931 (x;y) = (0,381;0,377)  
 Color coordinate CIEs 1960 (u;v) = (0,225;0,334)  
 Color deviation from BBL Duv = 0,0052  
 Color coordinate CIEs 1976 (CIELUV) (u';v') = (0,225;0,502)

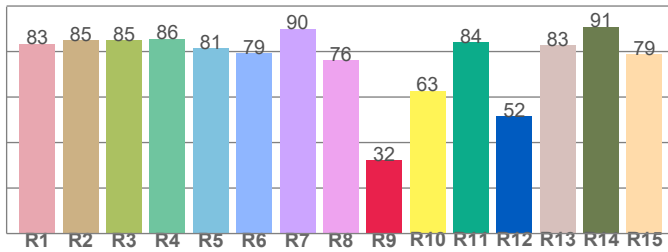
### CIE 1931



### CIE 1931 – zoomed on Planckian locus



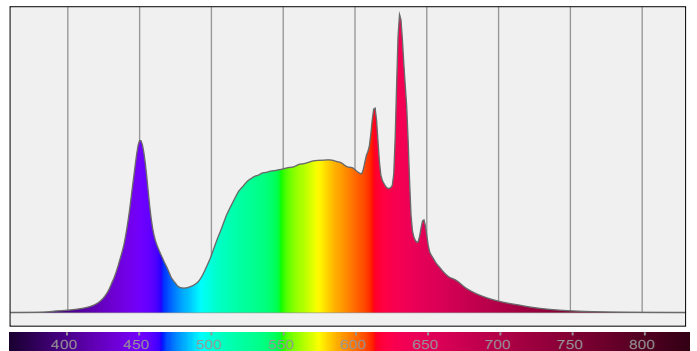
### Color Rendering Index per reference color (CIE 1995)



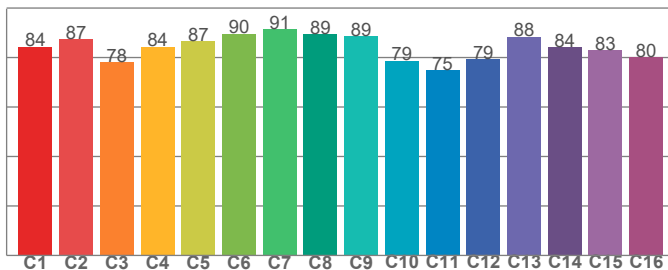
CRI R values, only R1-R8 are used to calculate final CRI value

| R1   | R2   | R3   | R4   | R5   | R6   | R7   | R8   | R9   | R10  | R11  | R12  | R13  | R14  | R15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 83,5 | 84,9 | 85,1 | 85,6 | 81,3 | 79,3 | 90,0 | 76,2 | 32,2 | 62,8 | 84,1 | 51,6 | 82,9 | 90,8 | 78,8 |

### Spectral power distribution (SPD) / W/nm – 0-100%



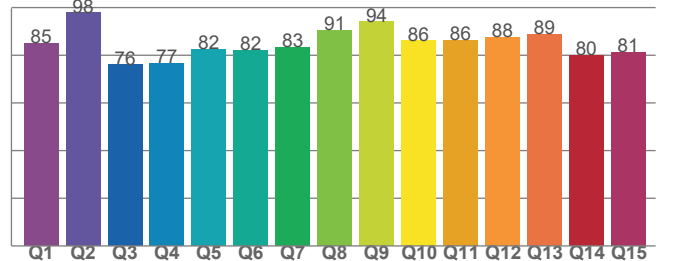
### TM30-18 R<sub>f</sub>-values per hue bin



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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 84,4 | 87,4 | 78,2 | 84,4 | 86,7 | 89,6 | 91,4 | 89,4 | 88,5 | 78,7 | 74,8 | 79,3 | 88,3 | 84,1 | 82,9 | 80,1 |

### Color Quality Scale by reference color



CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 85,0 | 97,9 | 76,1 | 76,8 | 82,5 | 82,1 | 83,4 | 90,6 | 94,0 | 86,0 | 86,2 | 87,7 | 88,8 | 80,0 | 81,2 |

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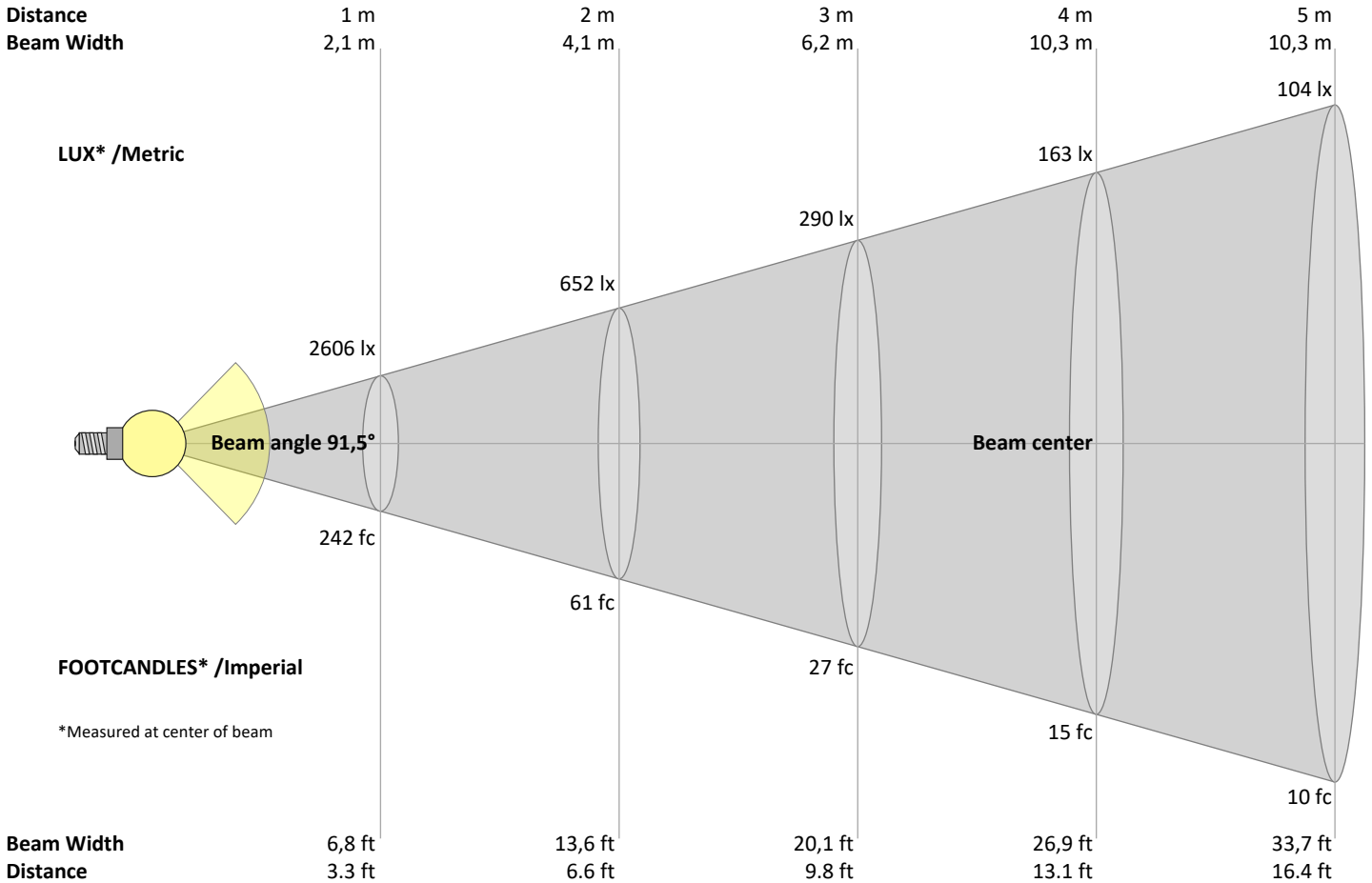
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## Beam Details



### Beam intensities from 1 – 20 m

| 1     | 2    | 3    | 4    | 5    | 6    | 7   | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | m   |
|-------|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| 3,3   | 6,6  | 9,8  | 13,1 | 16,4 | 19,7 | 23  | 26,2 | 29,5 | 32,8 | 36,1 | 39,4 | 42,7 | 45,9 | 49,2 | 52,5 | 55,8 | 59,1 | 62,3 | 65,6 | ft  |
| 2606  | 652  | 290  | 163  | 104  | 72   | 53  | 41   | 32   | 26   | 22   | 18   | 15   | 13   | 12   | 10   | 9    | 8    | 7    | 7    | lux |
| 242,1 | 60,5 | 26,9 | 15,1 | 9,7  | 6,7  | 4,9 | 3,8  | 3    | 2,4  | 2    | 1,7  | 1,4  | 1,2  | 1,1  | 0,9  | 0,8  | 0,7  | 0,7  | 0,6  | fc  |

### Intensities in 0° c-plane

| 0°   | 5°   | 10°  | 15°  | 20°  | 25°  | 30°  | 35°  | 40°  | 45°  | 50°  | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ        |
|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2606 | 2601 | 2615 | 2636 | 2613 | 2514 | 2297 | 1983 | 1644 | 1360 | 1142 | 927 | 713 | 539 | 398 | 281 | 192 | 128 | 81  | 64  | cd       |
| 100% | 100% | 100% | 101% | 100% | 96%  | 88%  | 76%  | 63%  | 52%  | 44%  | 36% | 27% | 21% | 15% | 11% | 7%  | 5%  | 3%  | 2%  | of 0°val |

### Intensities in 90° c-plane

| 0°   | 5°   | 10°  | 15°  | 20°  | 25°  | 30°  | 35°  | 40°  | 45°  | 50°  | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ        |
|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2606 | 2601 | 2615 | 2636 | 2613 | 2514 | 2297 | 1983 | 1644 | 1360 | 1142 | 927 | 713 | 539 | 398 | 281 | 192 | 128 | 81  | 64  | cd       |
| 100% | 100% | 100% | 101% | 100% | 96%  | 88%  | 76%  | 63%  | 52%  | 44%  | 36% | 27% | 21% | 15% | 11% | 7%  | 5%  | 3%  | 2%  | of 0°val |

### Intensities in 180° c-plane

| 0°   | 5°   | 10°  | 15°  | 20°  | 25°  | 30°  | 35°  | 40°  | 45°  | 50°  | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ        |
|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2606 | 2601 | 2615 | 2636 | 2613 | 2514 | 2297 | 1983 | 1644 | 1360 | 1142 | 927 | 713 | 539 | 398 | 281 | 192 | 128 | 81  | 64  | cd       |
| 100% | 100% | 100% | 101% | 100% | 96%  | 88%  | 76%  | 63%  | 52%  | 44%  | 36% | 27% | 21% | 15% | 11% | 7%  | 5%  | 3%  | 2%  | of 0°val |

### Intensities in 270° c-plane

| 0°   | 5°   | 10°  | 15°  | 20°  | 25°  | 30°  | 35°  | 40°  | 45°  | 50°  | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ        |
|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2606 | 2601 | 2615 | 2636 | 2613 | 2514 | 2297 | 1983 | 1644 | 1360 | 1142 | 927 | 713 | 539 | 398 | 281 | 192 | 128 | 81  | 64  | cd       |
| 100% | 100% | 100% | 101% | 100% | 96%  | 88%  | 76%  | 63%  | 52%  | 44%  | 36% | 27% | 21% | 15% | 11% | 7%  | 5%  | 3%  | 2%  | of 0°val |

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## Light Planning – UGR table

Uncorrected, comprehensive UGR table according to 117-1995

| Reflectances                        |           | 70   | 70   | 50   | 50   | 30   | 70   | 70   | 50   | 50   | 30   |
|-------------------------------------|-----------|--|------|------|------|------|--|------|------|------|------|
|                                     | ρ Ceiling | 70   | 70   | 50   | 50   | 30   | 70   | 70   | 50   | 50   | 30   |
|                                     | ρ Walls   | 50   | 30   | 50   | 30   | 30   | 50   | 30   | 50   | 30   | 30   |
|                                     | ρ Floor   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   |
| Room size                           |           | Viewed Crosswise                                   |      |      |      |      | Viewed Endwise                                   |      |      |      |      |
| H = mounting height above eye level |           | (Viewing direction orthogonal to lamp length axis) |      |      |      |      | (Viewing direction parallel to lamp length axis) |      |      |      |      |
| X                                   | Y         |  |      |      |      |      |  |      |      |      |      |
| 2H                                  | 2H        | 22,5   | 23,6 | 22,8 | 23,9 | 24,2 | 22,8   | 23,9 | 23,1 | 24,2 | 24,5 |
|                                     | 3H        | 23,4   | 24,5 | 23,8 | 24,8 | 25,1 | 23,7   | 24,9 | 24,2 | 25,2 | 25,5 |
|                                     | 4H        | 23,7   | 24,8 | 24,2 | 25,1 | 25,5 | 24,2   | 25,3 | 24,7 | 25,6 | 26,0 |
|                                     | 6H        | 24,1   | 25,0 | 24,5 | 25,4 | 25,9 | 24,7   | 25,6 | 25,1 | 26,0 | 26,4 |
|                                     | 8H        | 24,2   | 25,1 | 24,6 | 25,5 | 26,0 | 24,9   | 25,8 | 25,3 | 26,2 | 26,6 |
|                                     | 12H       | 24,3   | 25,2 | 24,8 | 25,6 | 26,1 | 25,1   | 26,0 | 25,5 | 26,4 | 26,9 |
| 4H                                  | 2H        | 22,9   | 23,9 | 23,3 | 24,3 | 24,6 | 23,1   | 24,2 | 23,6 | 24,5 | 24,8 |
|                                     | 3H        | 24,1   | 24,9 | 24,5 | 25,3 | 25,9 | 24,4   | 25,3 | 24,8 | 25,7 | 26,2 |
|                                     | 4H        | 24,5   | 25,3 | 25,0 | 25,8 | 26,4 | 24,9   | 25,8 | 25,4 | 26,2 | 26,8 |
|                                     | 6H        | 24,9   | 25,7 | 25,5 | 26,1 | 26,6 | 25,4   | 26,2 | 26,0 | 26,6 | 27,1 |
|                                     | 8H        | 25,1   | 25,8 | 25,7 | 26,2 | 26,7 | 25,7   | 26,4 | 26,3 | 26,9 | 27,3 |
|                                     | 12H       | 25,3   | 25,8 | 25,8 | 26,3 | 26,9 | 26,0   | 26,6 | 26,5 | 27,1 | 27,6 |
| 8H                                  | 4H        | 24,7   | 25,4 | 25,3 | 25,8 | 26,3 | 25,1   | 25,8 | 25,6 | 26,2 | 26,7 |
|                                     | 6H        | 25,3   | 25,8 | 25,8 | 26,3 | 27,0 | 25,8   | 26,3 | 26,3 | 26,8 | 27,5 |
|                                     | 8H        | 25,6   | 26,0 | 26,2 | 26,6 | 27,3 | 26,2   | 26,6 | 26,7 | 27,2 | 27,9 |
|                                     | 12H       | 25,8   | 26,2 | 26,5 | 26,8 | 27,5 | 26,6   | 26,9 | 27,2 | 27,5 | 28,2 |
| 12H                                 | 4H        | 24,7   | 25,3 | 25,3 | 25,8 | 26,3 | 25,1   | 25,6 | 25,6 | 26,1 | 26,7 |
|                                     | 6H        | 25,4   | 25,8 | 25,9 | 26,4 | 27,1 | 25,8   | 26,3 | 26,4 | 26,9 | 27,6 |
|                                     | 8H        | 25,7   | 26,1 | 26,3 | 26,6 | 27,3 | 26,2   | 26,6 | 26,9 | 27,2 | 27,9 |

### Variations with the observer position for the luminaire spacings, S:

|          |            |            |
|----------|------------|------------|
| S = 1.0H | 0,1 / -0,2 | 0,1 / -0,2 |
| S = 1.5H | 0,3 / -0,5 | 0,2 / -0,4 |
| S = 2.0H | 0,7 / -0,9 | 0,6 / -0,8 |

## 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 Lumen delivered to the task surface |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |
| 0                   | 118  | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 103 | 103 | 103 | 98 | 98 | 98 | 96 |
| 1                   | 109  | 104 | 100 | 97  | 105 | 101 | 98  | 95  | 96  | 93  | 91  | 92  | 89  | 87  | 87 | 86 | 84 | 82 |
| 2                   | 100  | 92  | 86  | 80  | 97  | 90  | 84  | 79  | 86  | 81  | 77  | 82  | 78  | 74  | 78 | 75 | 72 | 70 |
| 3                   | 92   | 82  | 74  | 68  | 89  | 80  | 73  | 67  | 76  | 71  | 66  | 73  | 68  | 64  | 70 | 66 | 62 | 60 |
| 4                   | 84   | 73  | 65  | 59  | 82  | 72  | 64  | 58  | 69  | 62  | 57  | 66  | 60  | 56  | 63 | 59 | 55 | 52 |
| 5                   | 78   | 66  | 58  | 51  | 76  | 65  | 57  | 51  | 62  | 55  | 50  | 60  | 54  | 49  | 58 | 52 | 48 | 46 |
| 6                   | 72   | 60  | 52  | 45  | 70  | 59  | 51  | 45  | 57  | 50  | 44  | 54  | 48  | 44  | 53 | 47 | 43 | 41 |
| 7                   | 67   | 55  | 46  | 41  | 65  | 54  | 46  | 40  | 52  | 45  | 40  | 50  | 44  | 39  | 48 | 43 | 39 | 37 |
| 8                   | 63   | 50  | 42  | 37  | 61  | 49  | 42  | 36  | 48  | 41  | 36  | 46  | 40  | 35  | 45 | 39 | 35 | 33 |
| 9                   | 59   | 46  | 38  | 33  | 57  | 45  | 38  | 33  | 44  | 37  | 33  | 43  | 37  | 32  | 41 | 36 | 32 | 30 |
| 10                  | 55   | 43  | 35  | 30  | 54  | 42  | 35  | 30  | 41  | 34  | 30  | 40  | 34  | 29  | 38 | 33 | 29 | 27 |

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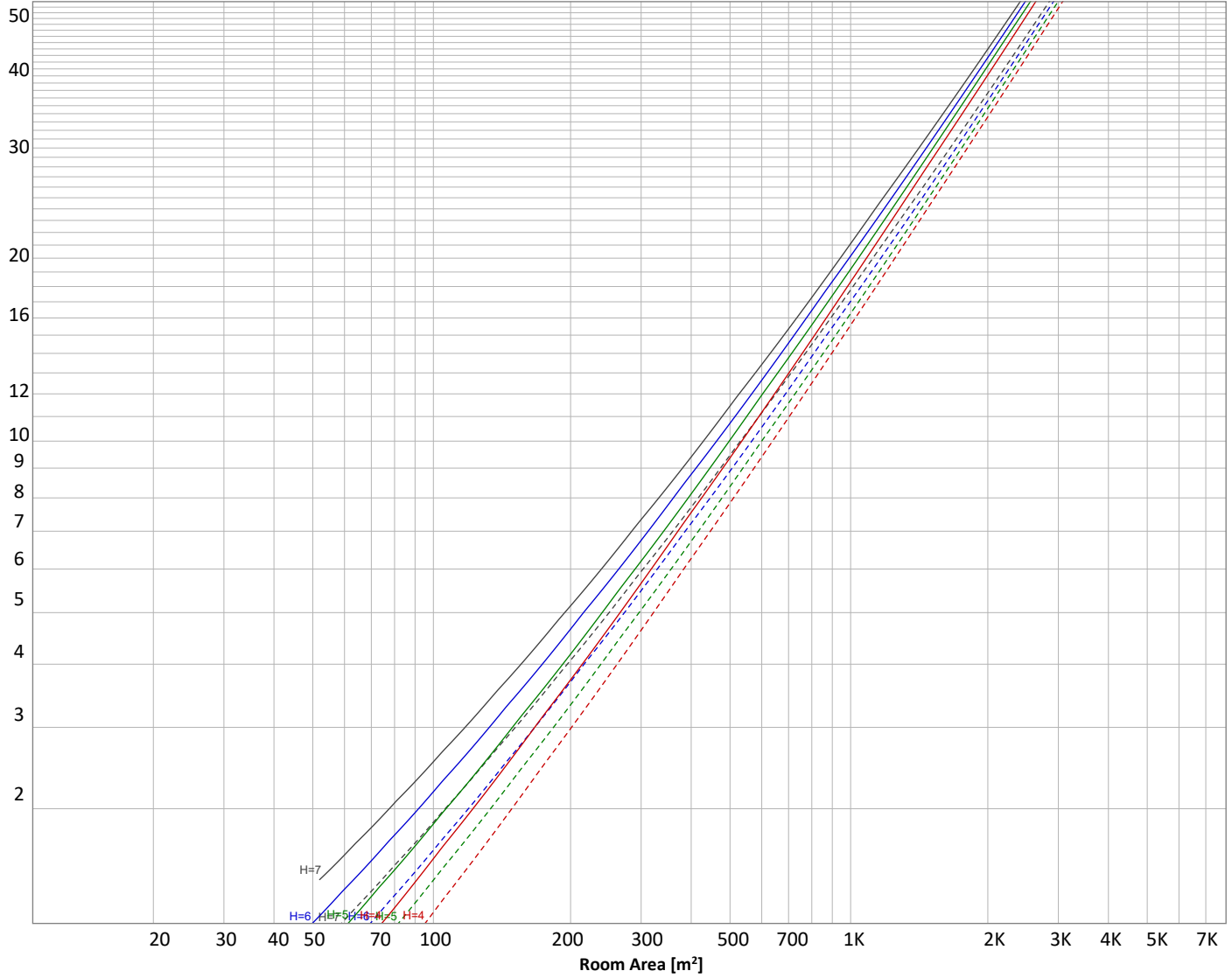
Operator:



## Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



### Conditions

|   |                |           |                     |                          |                   |
|---|----------------|-----------|---------------------|--------------------------|-------------------|
| H = Room height                                   | Flux = 6532 lm |           |                     |                          |                   |
| H <sub>down</sub> = Lamp distance from ceiling =  | 0.00 m         | Line type | Ceiling reflectance | ρ(%)<br>Wall reflectance | Floor reflectance |
| H <sub>work</sub> = Work area height from floor = | 0.00 m         | -----     | 70                  | 50                       | 30                |
| E <sub>work</sub> = Average lux on work area =    | 100 lx         | —————     | 50                  | 30                       | 20                |

### Zonal Lumen Summary

| 0°-10°   | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 249 lm   | 745 lm    | 1151 lm   | 1236 lm   | 1054 lm   | 829 lm    | 536 lm    | 300 lm    | 141 lm    |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 71,5 lm  | 64,8 lm   | 49,0 lm   | 39,8 lm   | 29,2 lm   | 18,4 lm   | 10,7 lm   | 5,55 lm   | 1,61 lm   |

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## Outdoor Light Planning

### Lumen per Zone

| Zone (γ)     | Lumen          | % Total       |
|--------------|----------------|---------------|
| 0-10°        | 249 lm         | 3,8%          |
| 10-20°       | 745 lm         | 11,4%         |
| 20-30°       | 1151 lm        | 17,6%         |
| 30-40°       | 1236 lm        | 18,9%         |
| 40-50°       | 1054 lm        | 16,1%         |
| 50-60°       | 829 lm         | 12,7%         |
| 60-70°       | 536 lm         | 8,2%          |
| 70-80°       | 300 lm         | 4,6%          |
| 80-90°       | 141 lm         | 2,2%          |
| 90-100°      | 72 lm          | 1,1%          |
| 100-110°     | 65 lm          | 1,0%          |
| 110-120°     | 49 lm          | 0,8%          |
| 120-130°     | 40 lm          | 0,6%          |
| 130-140°     | 29 lm          | 0,4%          |
| 140-150°     | 18 lm          | 0,3%          |
| 150-160°     | 11 lm          | 0,2%          |
| 160-170°     | 6 lm           | 0,1%          |
| 170-180°     | 2 lm           | 0,0%          |
| <b>Total</b> | <b>6532 lm</b> | <b>100,0%</b> |

### Intensity peaks

|                |         |
|----------------|---------|
| Max intensity  | 2641 cd |
| Intensity, 90° | 81 cd   |
| Intensity, 0°  | 2606 cd |

### Zonal Lumen summary

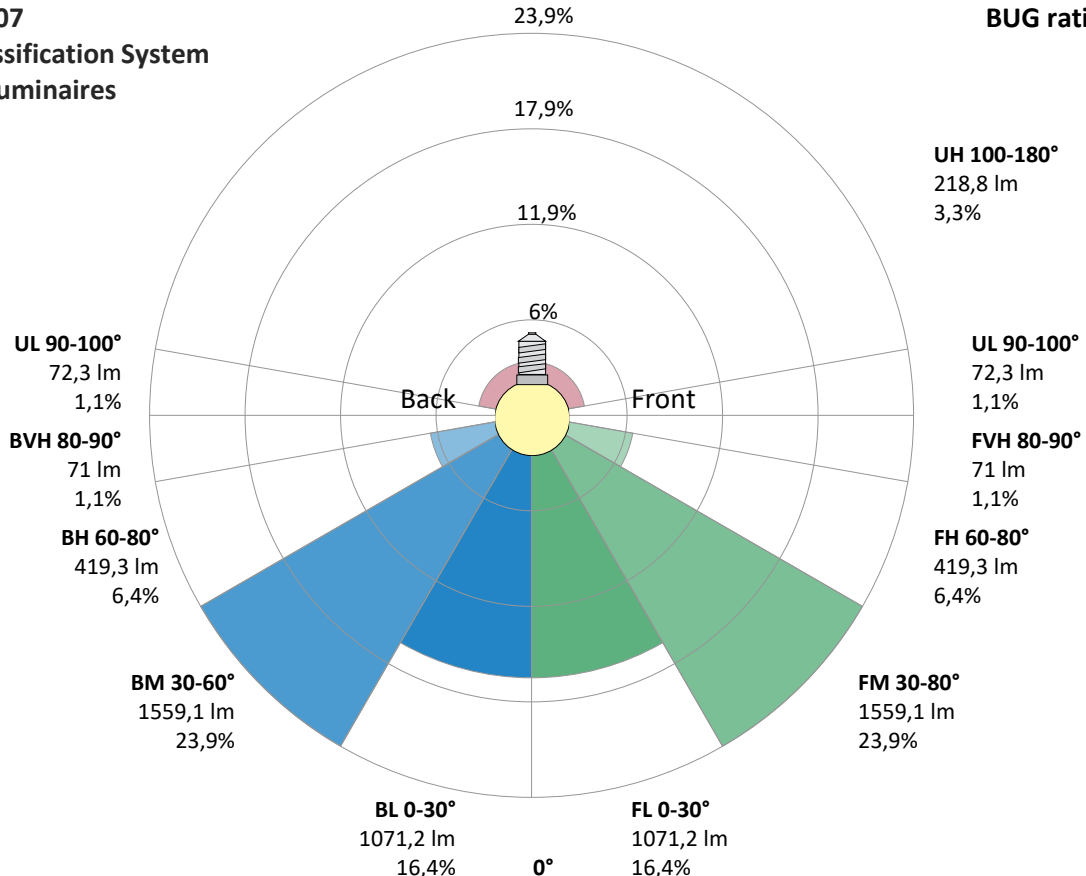
| Zone (γ) | Lumen   | % Total |
|----------|---------|---------|
| 0-30°    | 2145 lm | 32,8%   |
| 0-40°    | 3381 lm | 51,8%   |
| 0-60°    | 5264 lm | 80,6%   |
| 60-90°   | 978 lm  | 15,0%   |
| 70-100°  | 513 lm  | 7,9%    |
| 90-120°  | 185 lm  | 2,8%    |
| 0-90°    | 6242 lm | 95,6%   |
| 90-180°  | 291 lm  | 4,4%    |
| 0-180°   | 6532 lm | 100,0%  |

### BUG rating

|                      | Lumen   | % Total |
|----------------------|---------|---------|
| <b>Forward light</b> |         |         |
| Low(0-30°)           | 1071 lm | 16,4%   |
| Medium(30-60°)       | 1559 lm | 23,9%   |
| High(60-80°)         | 419 lm  | 6,4%    |
| Very high(80-90°)    | 71 lm   | 1,1%    |
| <b>Back light</b>    |         |         |
| Low(0-30°)           | 1071 lm | 16,4%   |
| Medium(30-60°)       | 1559 lm | 23,9%   |
| High(60-80°)         | 419 lm  | 6,4%    |
| Very high(80-90°)    | 71 lm   | 1,1%    |
| <b>Uplight</b>       |         |         |
| Low(90-100°)         | 72 lm   | 1,1%    |
| High(100-180°)       | 219 lm  | 3,3%    |

## IESNA TM-15-07 Luminaire Classification System For Outdoor Luminaires

**BUG rating B3 U3 G1**



# Light Measurement Report

Print date: 30-10-2025

Measurement date and time: 30-10-2025 10:42:50 – Measurement no. VFR-251030-3825-MS

Measurement tracking No. and Link: [VT251030-003631](#)

Operator:

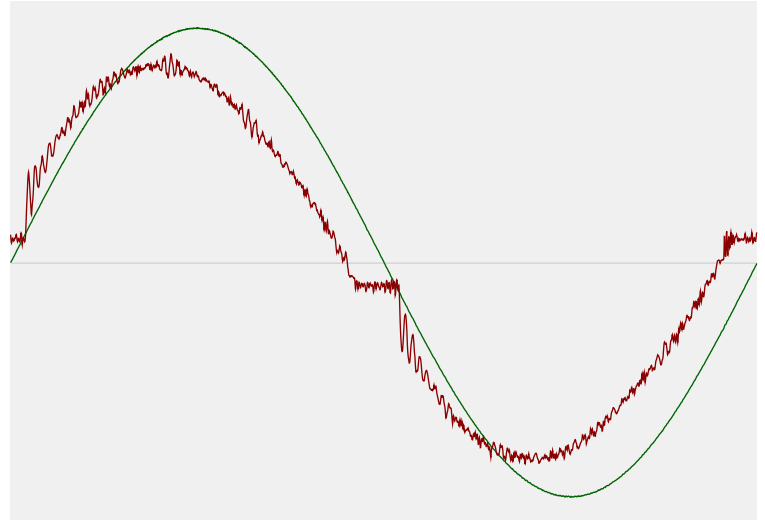


## Power Details

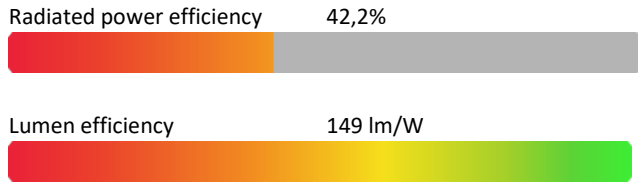
### Input Power

|   |          |
|---|----------|
| Power feed to light source                          | 43,9 W   |
| Frequency of input power                            | 50 Hz    |
| RMS Input voltage feed, $V_{RMS}$                   | 230 V    |
| RMS Input current feed, $I_{RMS}$                   | 0,199 A  |
| Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$ | 45,76 VA |
| Displacement factor of AC power feed                | 0,96     |
| Power factor of AC current feed                     | 0,96     |
| Total harmonic distortion of the current            | 7,64%    |
| Total harmonic distortion of the voltage            | 0,08%    |

### Input Power Curve



### Efficiency



## Stabilization Details

### Warmup Conditions

|                   |        |
|-------------------|--------|
| Stable period     | 15 min |
| Stable change max | 2,0%   |
| Minimum time      | 15 min |

### Color Temperature Change

|           |        |
|-----------|--------|
| CCT start | 4000 K |
| CCT shift | 0 K    |
| CCT end   | 4000 K |

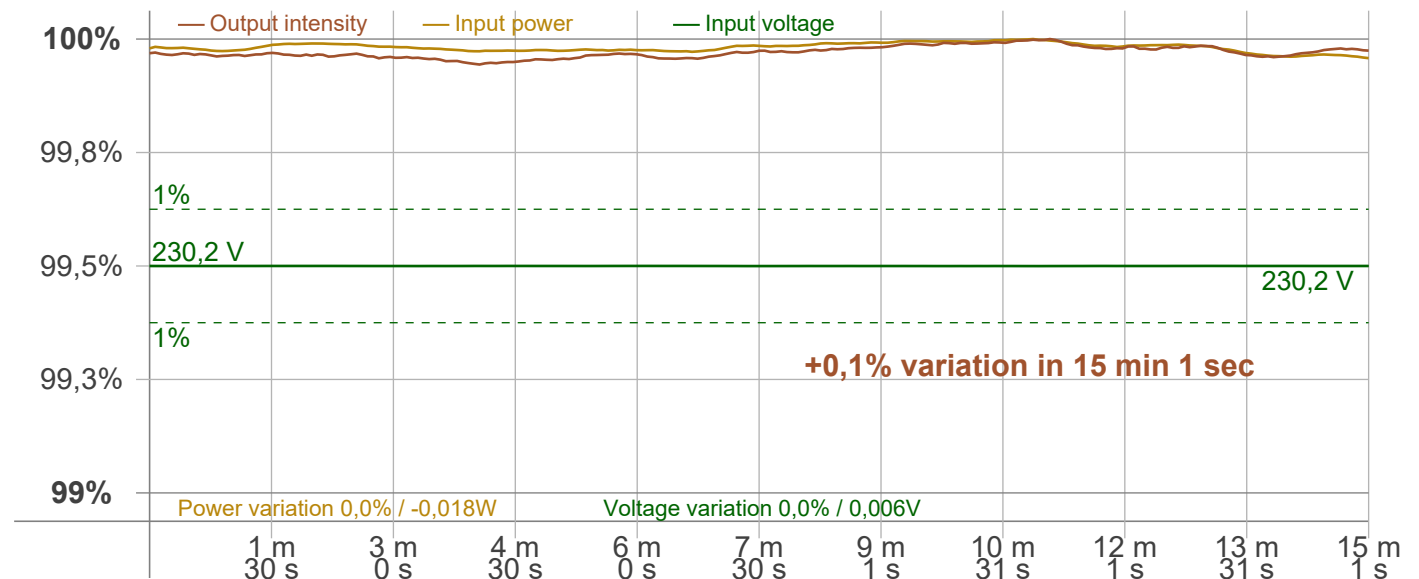
### Warmup Result

|                   |                                 |
|-------------------|---------------------------------|
| Total warmup time | Lamp stabilized in 15 min 1 sec |
| Warmup variation  | +0,1%                           |

### Output Change

|               |         |
|---------------|---------|
| Output start  | 6532 lm |
| Output change | + lm    |
| Output end    | 6532 lm |

## Stabilization Curve



# Light Measurement Report

Print date: 30-10-2025

Measurement date and time: 30-10-2025 10:42:50 – Measurement no. VFR-251030-3825-MS

Measurement tracking No. and Link: [VT251030-003631](#)

Operator:



## Flicker /TLA details

Flicker Meter Type: Viso Systems LabFlicker  
 Frequency of input power: 50 Hz  
 Flicker/TLA sample rate: 20000 samples/s

**Measurement time**  
 PstLM: 180 sec  
 All other indices: 1,2 sec

### Flicker indices according to Illuminating Engineering Society (IES)

Flicker frequency: 100 Hz  
 Percent Flicker: 0,22 %  
 Flicker index: 0

### Flicker indices according to California Energy Commission (CEC) 2016b

JA8/10 40 Hz: 0,02 %  
 JA8/10 90 Hz: 0,03 %  
 JA8/10 200 Hz: 0,17 %  
 JA8/10 400 Hz: 0,19 %  
 JA8/10 1000 Hz: 0,21 %

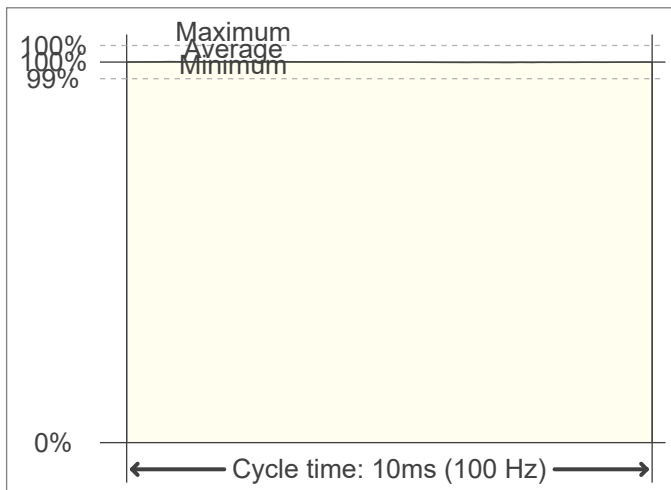
### TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

PstLM value (F < 80 Hz): 0,02  
 SVM value (80 < F < 2000 Hz): 0,01

### Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp: 0,01

### Flicker frame (frame of one flicker period in time domain)



### Flicker FFT (flicker curve in frequency domain)



### IEEE 1789 Frequency/modulation plot

