# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

## Laboratory and Equipment

| | |
|---|---|
| Laboratory Owner and Location | Viso Systems, Copenhagen V, Denmark |
| Goniospectrometer System and Type | LabSpion – Type C, horizontal |
| Sensor Name, Calibr. Date and Serial No. | LabSensor Model2 – 11-1-2024 – 3130191315 |
| Spectrometer Manufacturer and Model | Ibsen Photonics, Denmark – Freedom VIS (Custom Viso) |

## Measurement Conditions

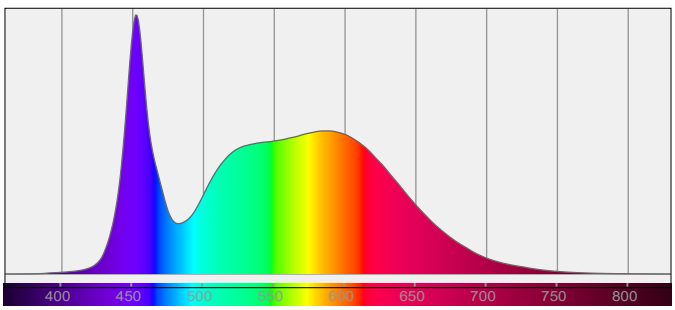
| | |
|---|---|
| Number of C-planes and Resolution | 12 planes – 30° |
| γ (gamma)-Resolution | 5° |
| Test Distance | 11,99 m |
| Input Power, Power and Displ. Factors | 60,4 W – PF 0,96 – DPF 0,97 |
| Input RMS Voltage and Current | 230 V – 0,273 A |
| Frequency of Input Power | 50 Hz |
| Warm-up Time and Variation | Lamp stabilized in 15 min 1 sec – 2,0% |

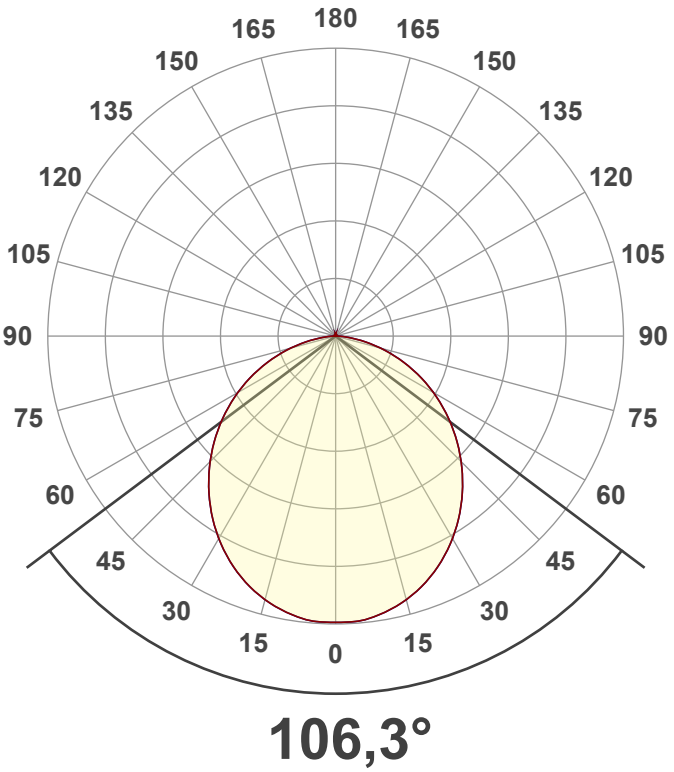
## Tested Light Source

| | |
|---|---|
| Product Name | 810337-5000K |
| Item No. and Manufacturer | 810337-5000K – Dutchfulfillment |
| Product Description (line 1) | LED TRI-PROOF \| LYNN \| 34-42-50-60W \| 150CM \| CCT SWITCH |

## Main Light Measurement Results

| | |
|---|---|
| Output – Total Lumen (Up% / Down%) | 6986 lm – 1,23% / 98,77% |
| Efficiency | 116 lm/W |
| Peak Intensity and Beam Angle | 2587 cd – 106,3° |
| Correlated Color Temperature, Target/Measured | CCT = 5000 K / 5003 K |
| Color Rendering Index | CRI 83,7 |
| Color Rendering TM30-18 | $R_f$ 83,3 – $R_g$ 96,6 |
| Color Shift, CIE duv and MacAdam Steps | Duv 0,0013 – SDCM 1,2 |
| Flicker | SVM 0,01 – PstLM 0,01 |

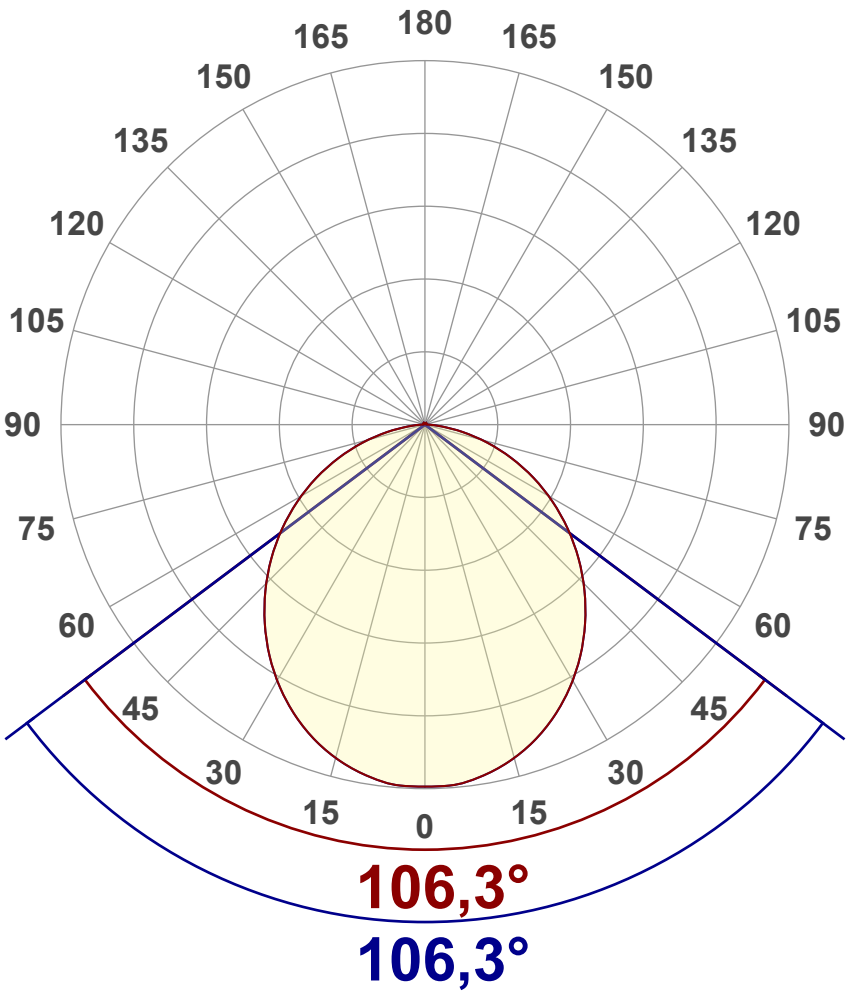


# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

**Luminous Intensity diagram** Unit: 0-100% of peak intensity




## Main Values

| | |
|---|---|
| Output (total Lumen) | 6986 lm |
| Lumen Up% / Down% | 1,23% / 98,77% |
| Peak Intensity | 2587 cd |
| Beam Angle (50%) | 106,3° |
| Beam Angle (90%) | 106,3° |
| Beam Angle (10%) | 106,3° |

## Cut-off Angle

| | |
|---|---|
| Average 2,5% | 173,8° |

## Field Angle

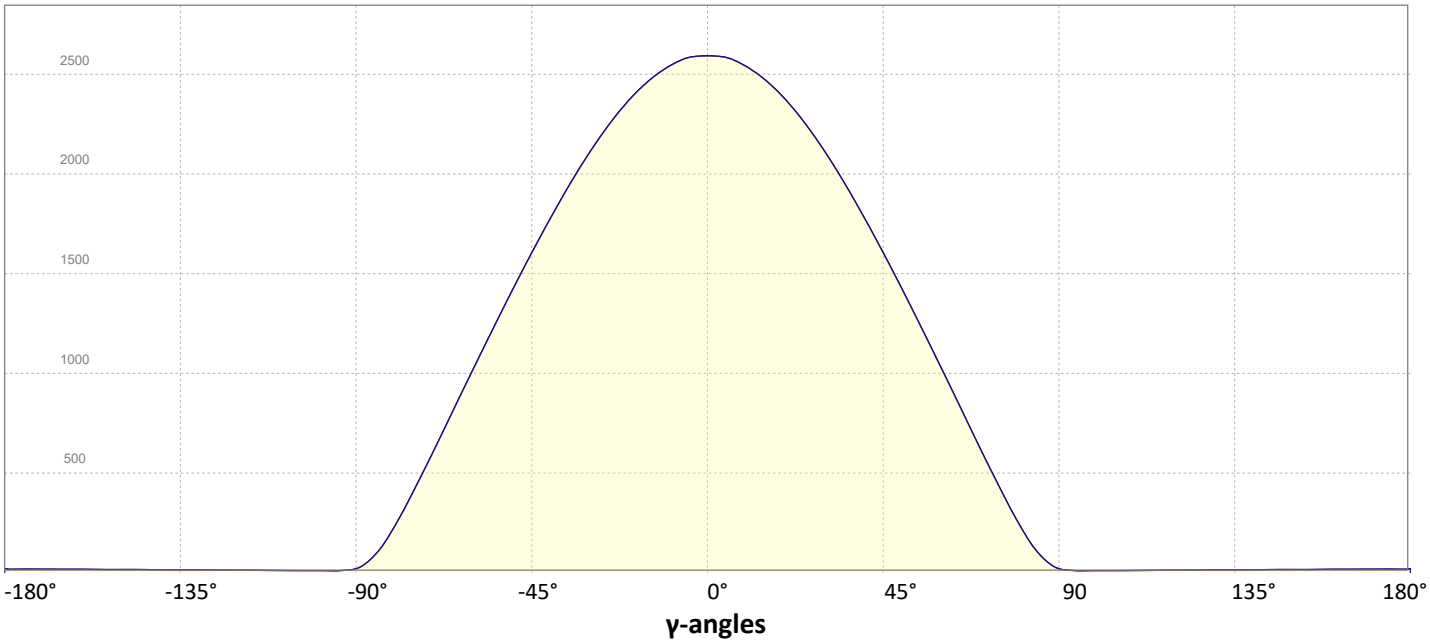
| | |
|---|---|
| Average 10% | 158,8° |

## Intensity Ratio

| | |
|---|---|
| In 120° cone | 79,1% |
| In 90° cone | 54,8% |

**C000-C180**
**C090-C270**

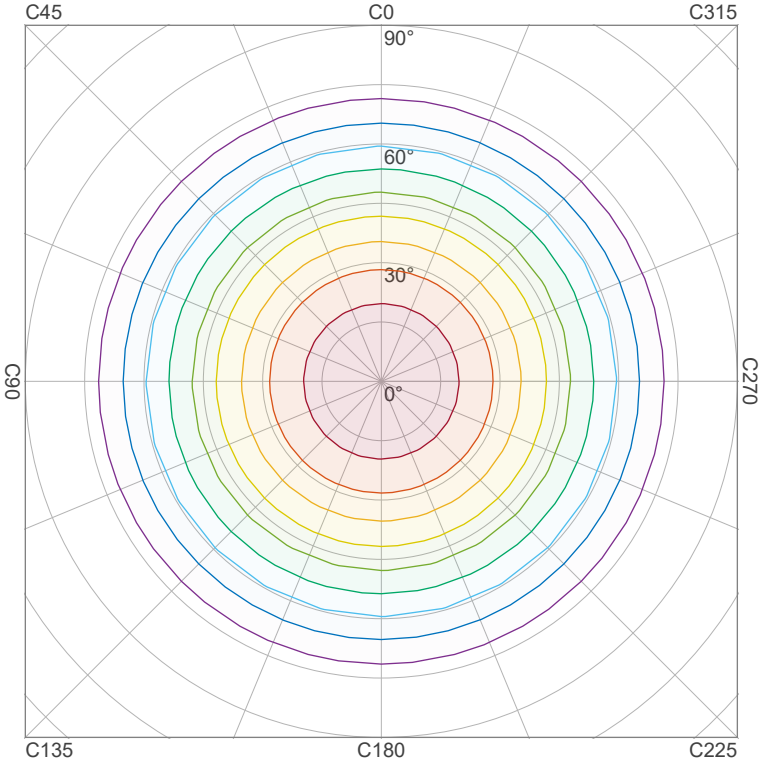
**Linear distribution diagram** - Intensity (candela) vs γ-angle



# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

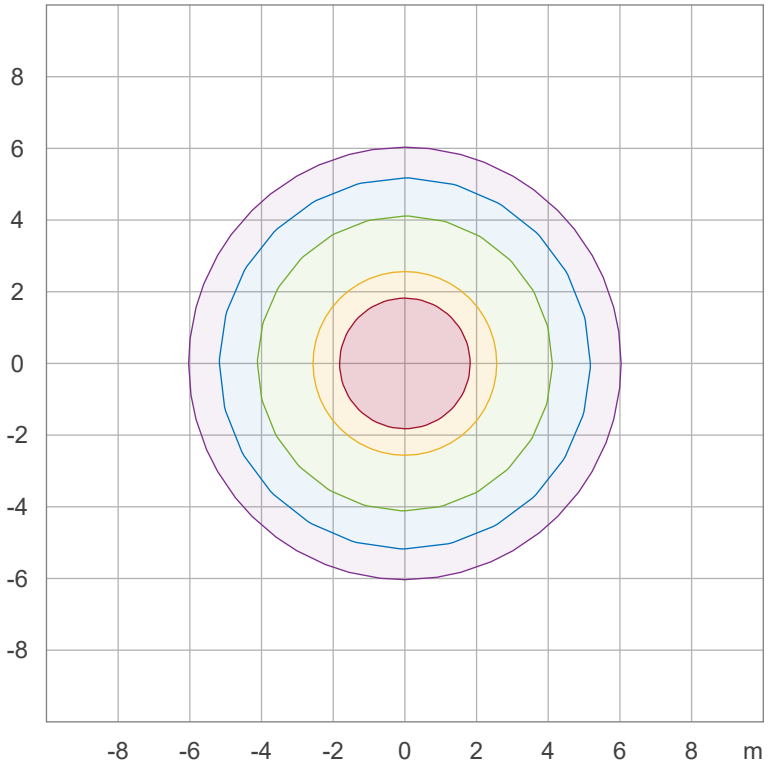
## Iso-intensity Diagram (Iso-candela)




| | | |
|---|---|---|
| | 90 % | 2328,7 cd |
| | 80 % | 2070,0 cd |
| | 70 % | 1811,2 cd |
| | 60 % | 1552,5 cd |
| | 50 % | 1293,7 cd |
| | 40 % | 1035,0 cd |
| | 30 % | 776,2 cd |
| | 20 % | 517,5 cd |
| | 10 % | 258,7 cd |

Peak intensity: 2587,4 cd
Number of c-planes: 12

## Iso-illuminance Diagram (Iso-lux)




| | | |
|---|---|---|
| | 50,0 % | 143,7 lx |
| | 30,0 % | 86,2 lx |
| | 10,0 % | 28,7 lx |
| | 5,0 % | 14,4 lx |
| | 3,0 % | 8,6 lx |

Peak illuminance: 287,5 lx
Mounting height: 3,0 m
Number of c-planes: 12

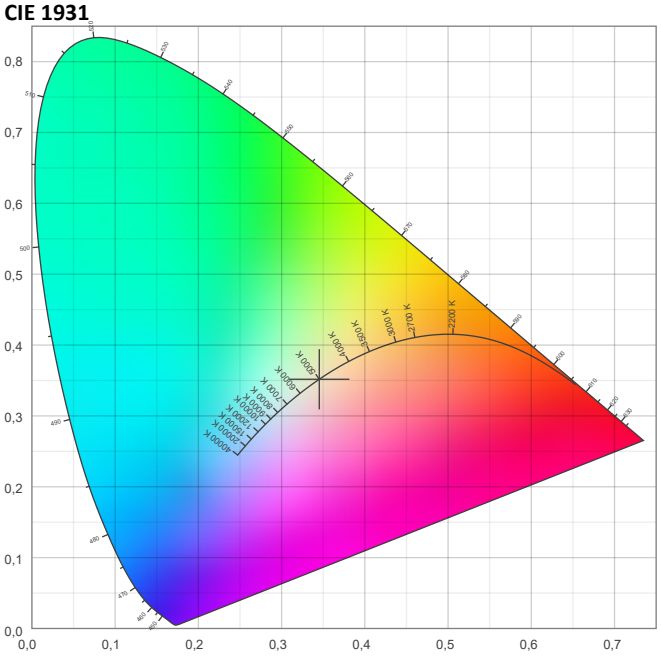
# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

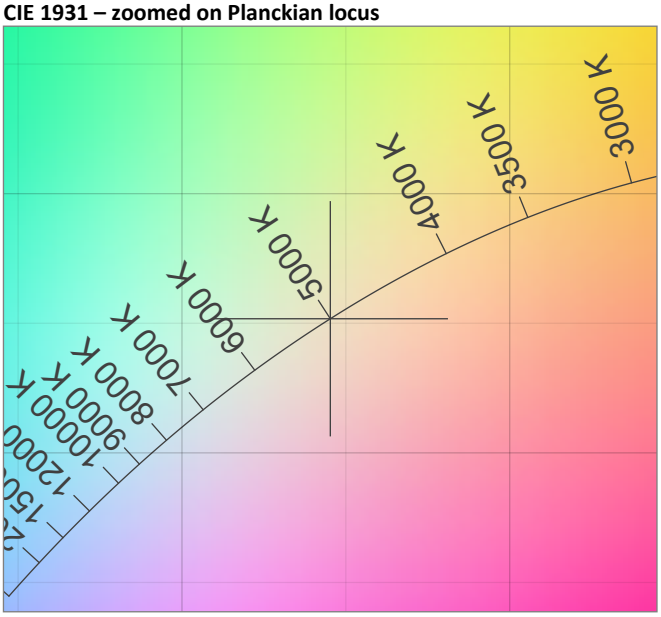
## Color details

| | |
|---|---|
| Correlated Color Temperature, Target | CCT = 5000 K |
| Correlated Color Temperature, Measured | CCT = 5003 K |
| Color Rendering Index | CRI 83,7 |
| Color Rendering Index, R9 (red component) | R9 = 13,7 |
| Color Rendering TM30-18 | $R_f$ 83,3 – $R_g$ 96,6 |
| Color Quality Scale | CQS = 80,9 |
| MacAdam Steps | SDCM = 1,2 |
| Color coordinates CIE 1931 | (x;y) = (0,345;0,352) |
| Color coordinate CIEs 1960 | (u;v) = (0,211;0,323) |
| Color deviation from BBL | Duv = 0,0013 |
| Color coordinate CIEs 1976 (CIELUV) | (u';v') = (0,211;0,485) |

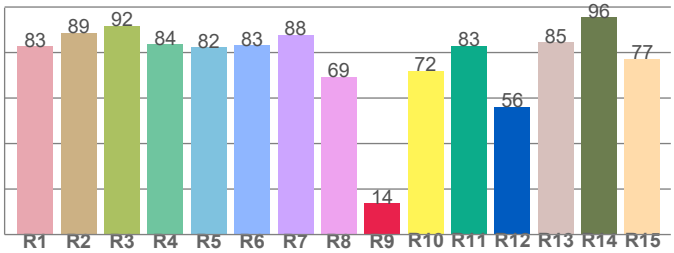
**CIE 1931**



**CIE 1931 – zoomed on Planckian locus**



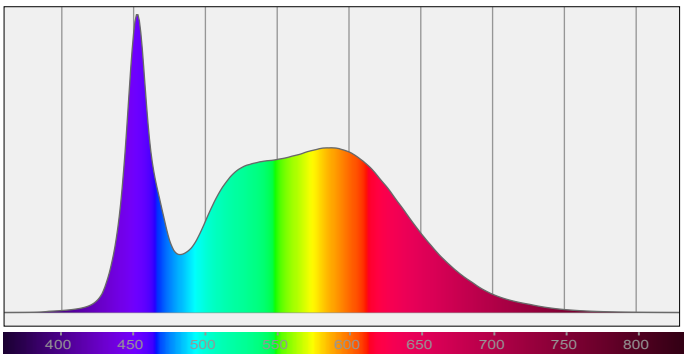

**Color Rendering Index per reference color (CIE 1995)**



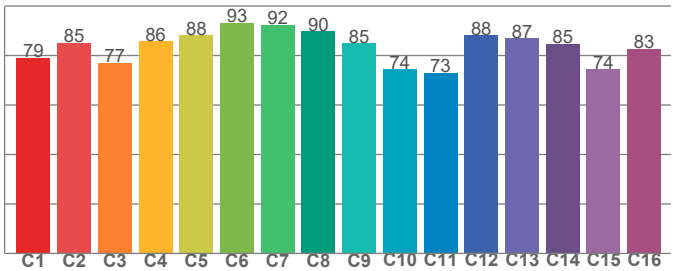

CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 82,8 | 88,7 | 91,8 | 83,7 | 82,4 | 83,1 | 87,8 | 69,4 | 13,7 | 71,9 | 82,9 | 56,2 | 84,6 | 95,6 | 77,3 |

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



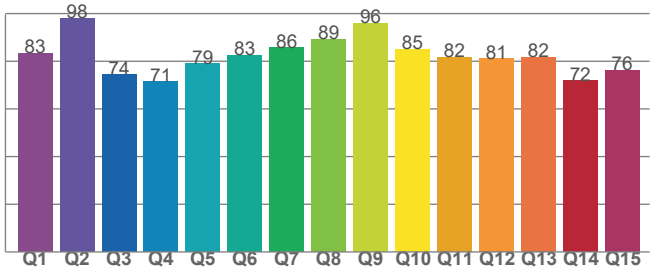

**TM30-18 Rf-values per hue bin**




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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79,0 | 85,2 | 77,1 | 85,8 | 88,2 | 93,2 | 92,4 | 89,8 | 85,0 | 74,3 | 73,1 | 88,1 | 87,0 | 84,8 | 74,3 | 82,8 |

**Color Quality Scale by reference color**



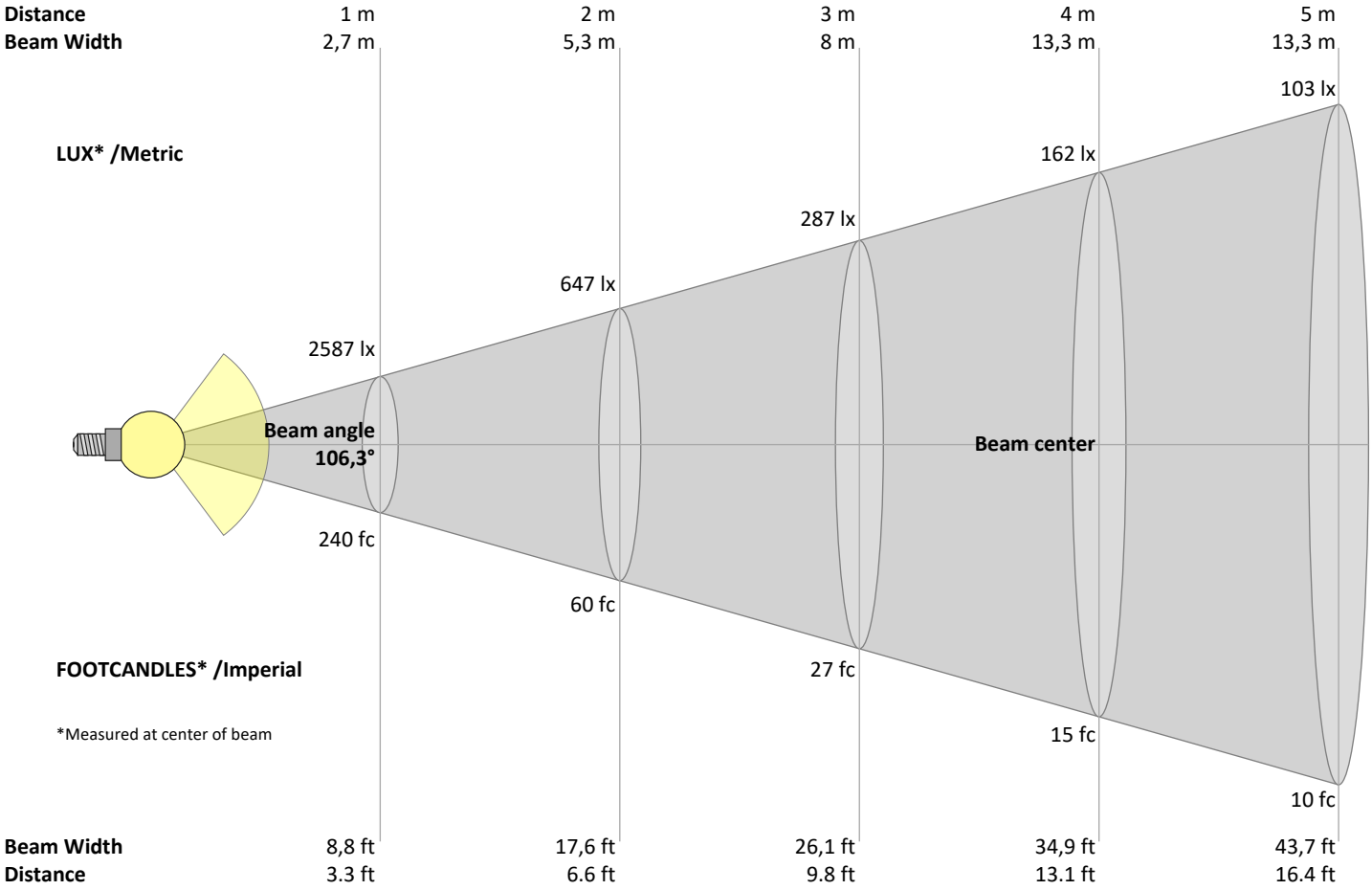

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 83,4 | 98,1 | 74,3 | 71,4 | 78,9 | 82,7 | 85,6 | 89,3 | 95,9 | 85,1 | 81,7 | 81,1 | 81,7 | 71,9 | 76,2 |

# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

## 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 |
| 2587 | 647 | 287 | 162 | 103 | 72 | 53 | 40 | 32 | 26 | 21 | 18 | 15 | 13 | 11 | 10 | 9 | 8 | 7 | 6 | lux |
| 240,4 | 60,1 | 26,7 | 15 | 9,6 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2587 | 2579 | 2536 | 2466 | 2370 | 2251 | 2112 | 1956 | 1785 | 1604 | 1415 | 1220 | 1021 | 820 | 617 | 422 | 241 | 99 | 25 | 11 | cd |
| 100% | 100% | 98% | 95% | 92% | 87% | 82% | 76% | 69% | 62% | 55% | 47% | 39% | 32% | 24% | 16% | 9% | 4% | 1% | 0% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2587 | 2579 | 2536 | 2466 | 2370 | 2251 | 2112 | 1956 | 1785 | 1604 | 1415 | 1220 | 1021 | 820 | 617 | 422 | 241 | 99 | 25 | 11 | cd |
| 100% | 100% | 98% | 95% | 92% | 87% | 82% | 76% | 69% | 62% | 55% | 47% | 39% | 32% | 24% | 16% | 9% | 4% | 1% | 0% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2587 | 2579 | 2536 | 2466 | 2370 | 2251 | 2112 | 1956 | 1785 | 1604 | 1415 | 1220 | 1021 | 820 | 617 | 422 | 241 | 99 | 25 | 11 | cd |
| 100% | 100% | 98% | 95% | 92% | 87% | 82% | 76% | 69% | 62% | 55% | 47% | 39% | 32% | 24% | 16% | 9% | 4% | 1% | 0% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2587 | 2579 | 2536 | 2466 | 2370 | 2251 | 2112 | 1956 | 1785 | 1604 | 1415 | 1220 | 1021 | 820 | 617 | 422 | 241 | 99 | 25 | 11 | cd |
| 100% | 100% | 98% | 95% | 92% | 87% | 82% | 76% | 69% | 62% | 55% | 47% | 39% | 32% | 24% | 16% | 9% | 4% | 1% | 0% | of 0°val |

# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

## Light Planning – UGR table

*Uncorrected, comprehensive UGR table according to 117-1995*

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

| **Variations with the observer position for the luminaire spacings, S:** | | |
|---|---|---|
| S = 1.0H | 0,1 / -0,2 | 0,1 / -0,1 |
| S = 1.5H | 0,3 / -0,4 | 0,2 / -0,3 |
| S = 2.0H | 0,6 / -0,8 | 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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 110 | 110 | 110 | 105 | 105 | 105 | 101 | 101 | 101 | 99 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 94 | 97 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 99 | 91 | 84 | 78 | 96 | 89 | 83 | 77 | 85 | 80 | 75 | 82 | 77 | 74 | 78 | 75 | 72 | 70 |
| 3 | 90 | 80 | 72 | 65 | 88 | 78 | 71 | 65 | 75 | 69 | 63 | 72 | 67 | 62 | 69 | 65 | 61 | 59 |
| 4 | 83 | 71 | 62 | 56 | 80 | 70 | 61 | 55 | 67 | 60 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 50 |
| 5 | 76 | 63 | 55 | 48 | 74 | 62 | 54 | 48 | 60 | 53 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 44 |
| 6 | 70 | 57 | 48 | 42 | 68 | 56 | 48 | 42 | 54 | 47 | 41 | 52 | 46 | 41 | 51 | 45 | 40 | 38 |
| 7 | 65 | 52 | 43 | 37 | 63 | 51 | 43 | 37 | 49 | 42 | 37 | 48 | 41 | 36 | 46 | 40 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 30 |
| 9 | 57 | 44 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 35 | 30 | 40 | 34 | 29 | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 26 | 25 |

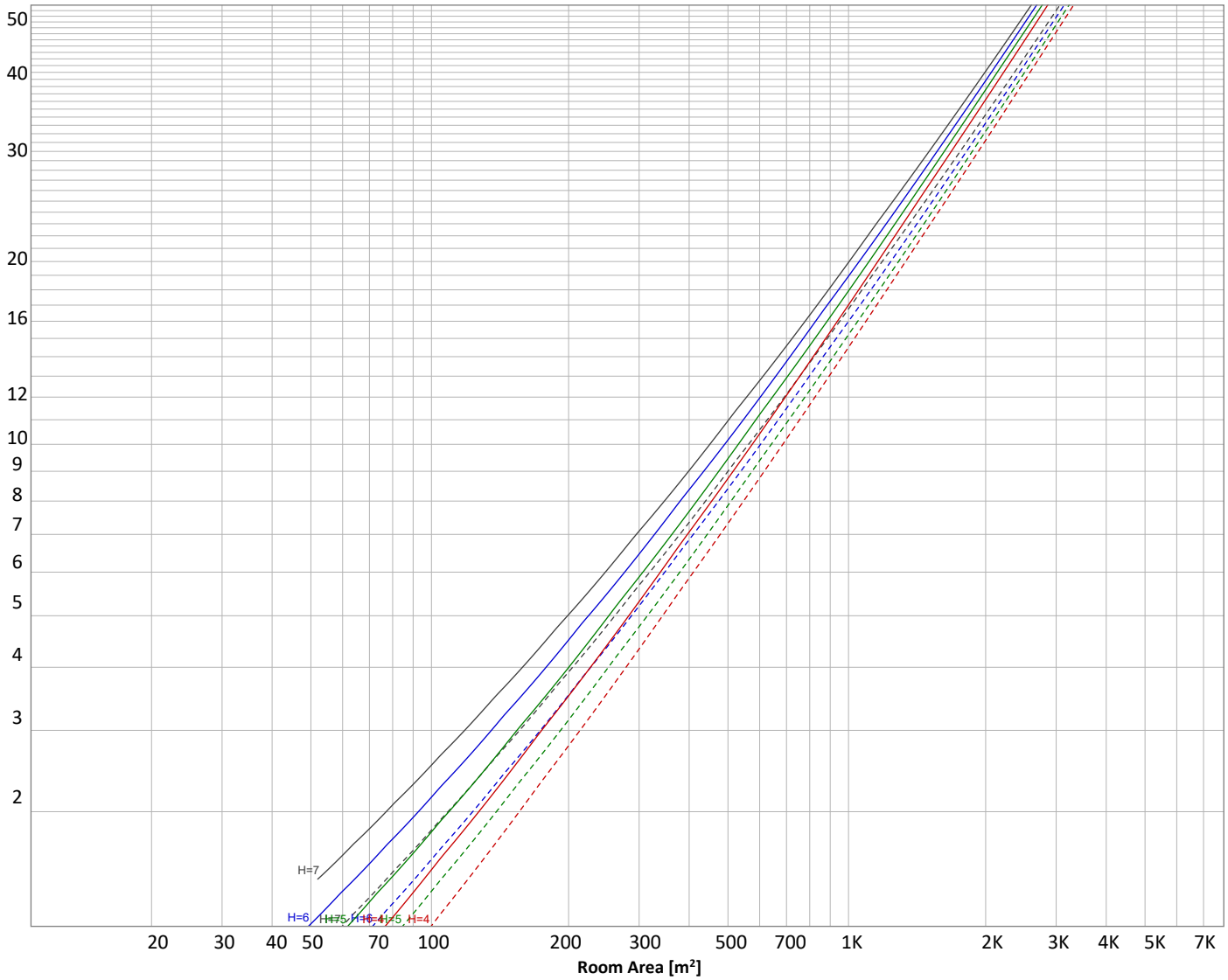
# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

## Luminaire budgetary diagram

*Uncorrected, comprehensive UGR table according to 117-1995*

**LAMPS (number of lamps)**




**Conditions**

| | | | | | |
|---|---|---|---|---|---|
| H = Room height | Flux = 6986 lm | | ρ(%) | | |
| $H_{down}$ = Lamp distance from ceiling = | 0.00 m | Line type | Ceiling reflectance | Wall reflectance | Floor reflectance |
| $H_{work}$ = Work area height from floor = | 0.00 m | ---------- | 70 | 50 | 30 |
| $E_{work}$ = 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° |
|---|---|---|---|---|---|---|---|---|
| 245 lm | 695 lm | 1037 lm | 1223 lm | 1237 lm | 1090 lm | 810 lm | 446 lm | 117 lm |

| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
|---|---|---|---|---|---|---|---|---|
| 14,7 lm | 11,6 lm | 12,1 lm | 11,9 lm | 11,0 lm | 9,97 lm | 7,69 lm | 5,04 lm | 1,73 lm |

# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

## Outdoor Light Planning

### Lumen per Zone

| Zone (γ) | Lumen | % Total |
|---|---|---|
| 0-10° | 245 lm | 3,5% |
| 10-20° | 695 lm | 10,0% |
| 20-30° | 1037 lm | 14,8% |
| 30-40° | 1223 lm | 17,5% |
| 40-50° | 1237 lm | 17,7% |
| 50-60° | 1090 lm | 15,6% |
| 60-70° | 810 lm | 11,6% |
| 70-80° | 446 lm | 6,4% |
| 80-90° | 117 lm | 1,7% |
| 90-100° | 15 lm | 0,2% |
| 100-110° | 12 lm | 0,2% |
| 110-120° | 12 lm | 0,2% |
| 120-130° | 12 lm | 0,2% |
| 130-140° | 11 lm | 0,2% |
| 140-150° | 10 lm | 0,1% |
| 150-160° | 8 lm | 0,1% |
| 160-170° | 5 lm | 0,1% |
| 170-180° | 2 lm | 0,0% |
| Total | 6986 lm | 100,0% |

### Intensity peaks

| | |
|---|---|
| Max intensity | 2587 cd |
| Intensity, 90° | 25 cd |
| Intensity, 0° | 2587 cd |

### Zonal Lumen summary

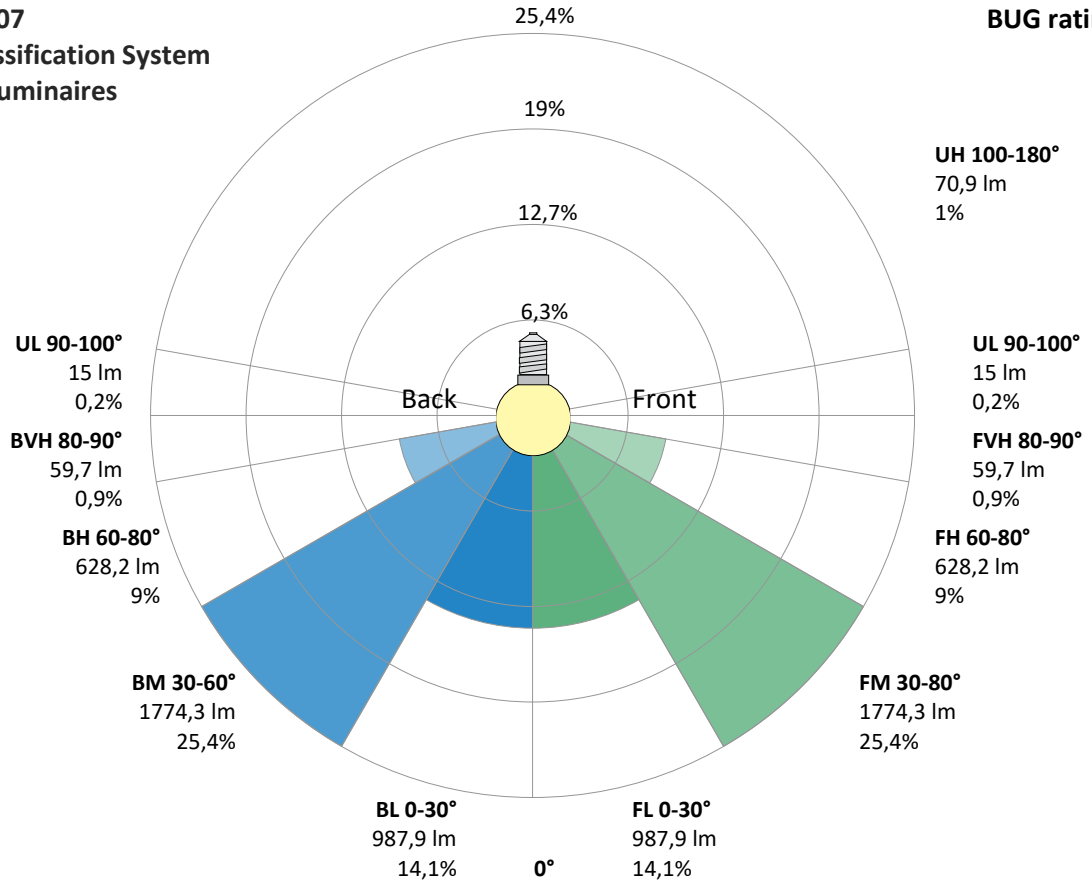
| Zone (γ) | Lumen | % Total |
|---|---|---|
| 0-30° | 1977 lm | 28,3% |
| 0-40° | 3200 lm | 45,8% |
| 0-60° | 5527 lm | 79,1% |
| 60-90° | 1373 lm | 19,7% |
| 70-100° | 578 lm | 8,3% |
| 90-120° | 38 lm | 0,5% |
| 0-90° | 6901 lm | 98,8% |
| 90-180° | 86 lm | 1,2% |
| 0-180° | 6986 lm | 100,0% |

### BUG rating

| | Lumen | % Total |
|---|---|---|
| **Forward light** | | |
| Low(0-30°) | 988 lm | 14,1% |
| Medium(30-60°) | 1774 lm | 25,4% |
| High(60-80°) | 628 lm | 9,0% |
| Very high(80-90°) | 60 lm | 0,9% |
| **Back light** | | |
| Low(0-30°) | 988 lm | 14,1% |
| Medium(30-60°) | 1774 lm | 25,4% |
| High(60-80°) | 628 lm | 9,0% |
| Very high(80-90°) | 60 lm | 0,9% |
| **Uplight** | | |
| Low(90-100°) | 15 lm | 0,2% |
| High(100-180°) | 71 lm | 1,0% |

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

**BUG rating B2 U3 G1**



# Light Measurement Report

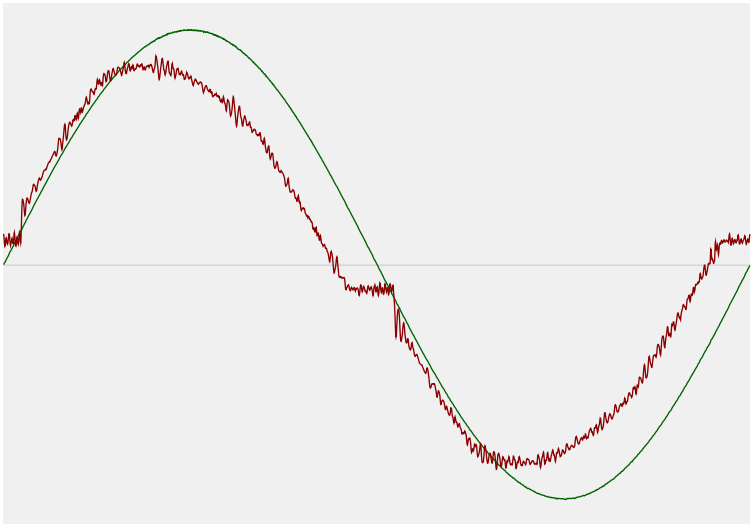
Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
Operator:

## Power Details

### Input Power

| | |
|---|---|
| Power feed to light source | 60,4 W |
| Frequency of input power | 50 Hz |
| RMS Input voltage feed, $V_{RMS}$ | 230 V |
| RMS Input current feed, $I_{RMS}$ | 0,273 A |
| Volt-Ampere or apparent power = $V_{RMS}$*$I_{RMS}$ | 62,82 VA |
| Displacement factor of AC power feed | 0,97 |
| Power factor of AC current feed | 0,96 |
| Total harmonic distortion of the current | 9,8% |
| Total harmonic distortion of the voltage | 0,08% |

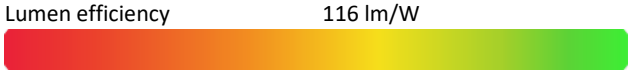
### Input Power Curve



### Efficiency

Radiated power efficiency 35,9%

Lumen efficiency 116 lm/W



## Stabilization Details

### Warmup Conditions

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

### Color Temperature Change

| | |
|---|---|
| CCT start | 5000 K |
| CCT shift | 0 K |
| CCT end | 5000 K |

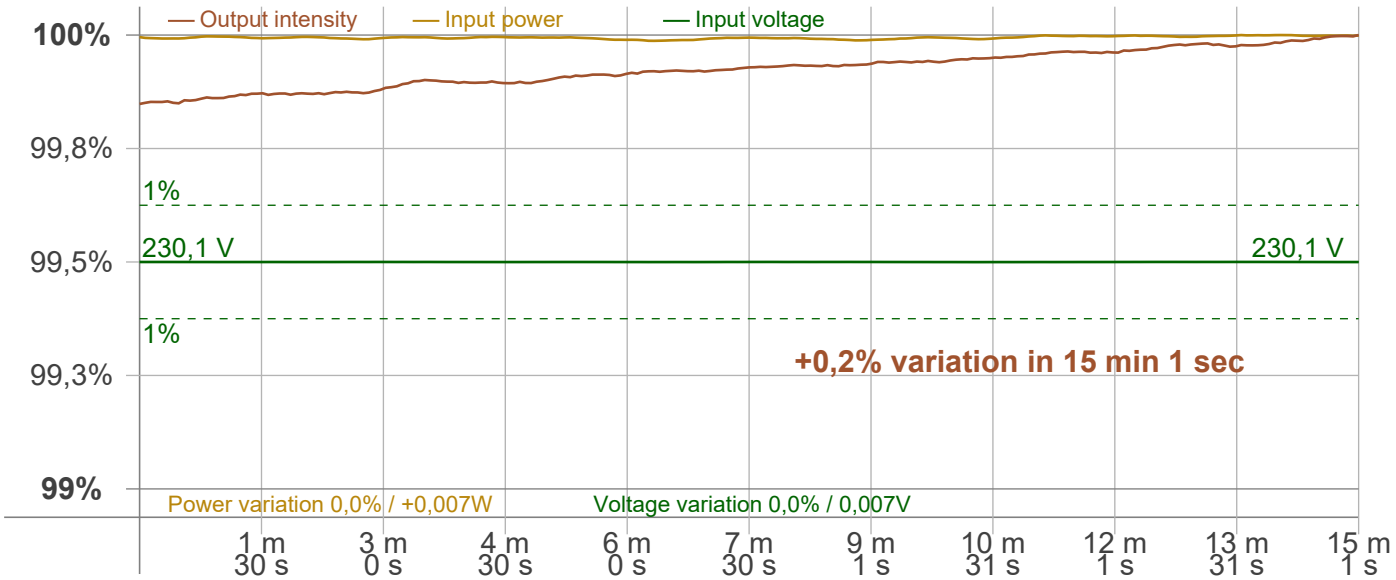
### Warmup Result

| | |
|---|---|
| Total warmup time | Lamp stabilized in 15 min 1 sec |
| Warmup variation | +0,2% |

### Output Change

| | |
|---|---|
| Output start | 6977 lm |
| Output change | +10 lm |
| Output end | 6986 lm |

### Stabilization Curve



# Light Measurement Report

Print date: 27-5-2025
Measurement date and time: 27-5-2025 14:00:01 – Measurement no. VFR-250527-1474-MS
Measurement tracking No. and Link: VT250527-000992
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 | 97,09 Hz |
| Percent Flicker | 0,21 % |
| Flicker index | 0 |

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

| | |
|---|---|
| PstLM value (F < 80 Hz) | 0,01 |
| SVM value (80 < F < 2000 Hz) | 0,01 |

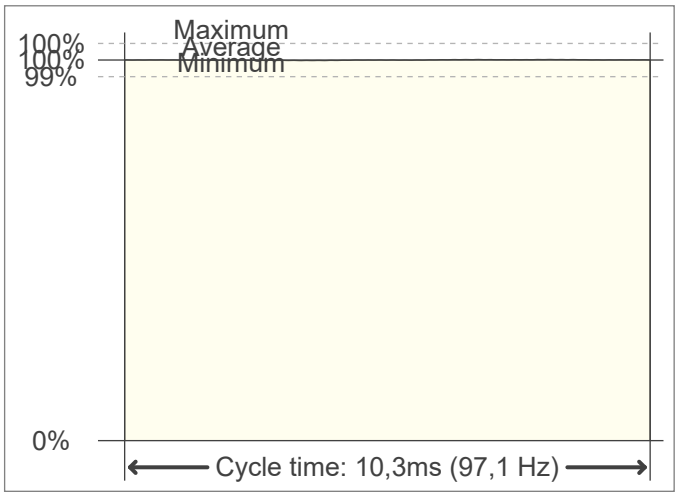
**Flicker indices according to California Energy Commission (CEC) 2016b**

| | |
|---|---|
| JA8/10 40 Hz | 0,01 % |
| JA8/10 90 Hz | 0,02 % |
| JA8/10 200 Hz | 0,15 % |
| JA8/10 400 Hz | 0,16 % |
| JA8/10 1000 Hz | 0,19 % |

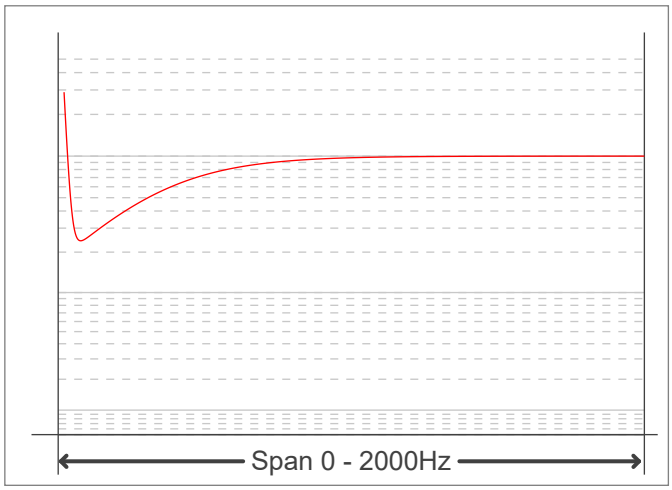
**Flicker indices according to Lighting Research Center (2015)**

| | |
|---|---|
| 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**