# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
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

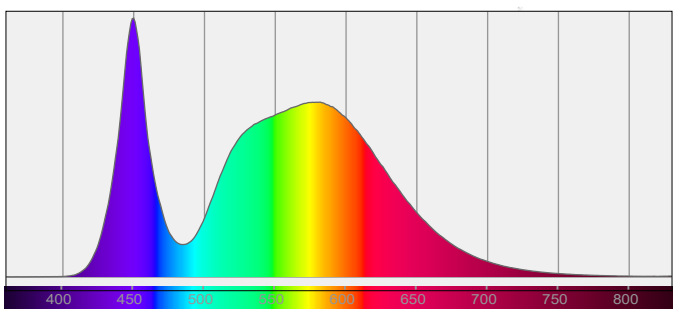
| | |
|---|---|
| Number of C-planes and Resolution | 24 planes – 15° |
| γ (gamma)-Resolution | 5° |
| Test Distance | 2,64 m |
| Input Power, Power and Displ. Factors | 178,6 W – PF 0,99 – DPF 0,99 |
| Input RMS Voltage and Current | 230 V – 0,788 A |
| Frequency of Input Power | 50 Hz |
| Warm-up Time and Variation | Lamp stabilized in 15 min 1 sec – 2,0% |

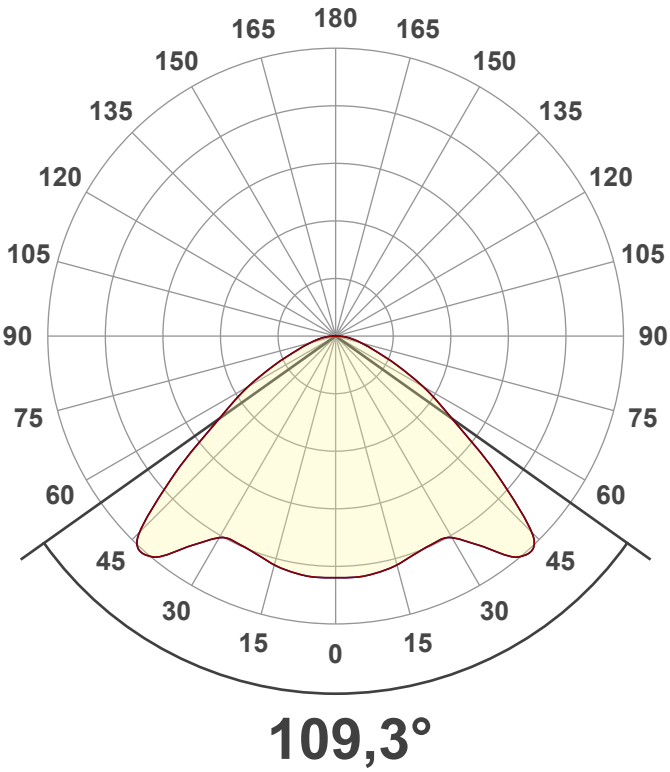
## Tested Light Source

| | |
|---|---|
| Product Name | 812737-5000K-200W |
| Item No. and Manufacturer | 812737-5000K-200W – Dutchfulfillment |
| Product Description (line 1) | LED HIGHBAY ARGOS \| 0-10V \| 200W/150W/120W \| 120° \| CCT SWITCH |

## Main Light Measurement Results

| | |
|---|---|
| Output – Total Lumen (Up% / Down%) | 27228 lm – 0,2% / 99,8% |
| Efficiency | 152 lm/W |
| Peak Intensity and Beam Angle | 9740 cd – 109,3° |
| Correlated Color Temperature, Target/Measured | CCT = 5000 K / 4861 K |
| Color Rendering Index | CRI 73,3 |
| Color Rendering TM30-18 | $R_f$ 74,3 – $R_g$ 94,7 |
| Color Shift, CIE duv and MacAdam Steps | Duv 0,0017 – SDCM 2,8 |
| Flicker | SVM 0,01 – PstLM 0,09 |

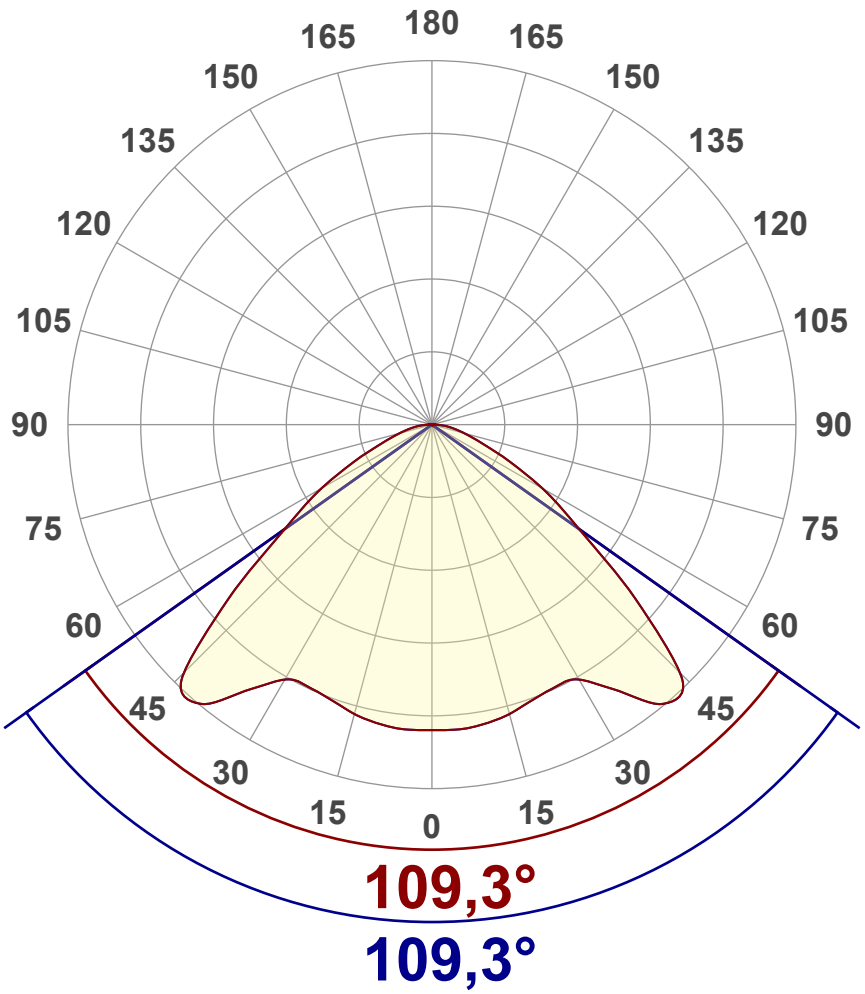


# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
Operator:

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




## Main Values

| | |
|---|---|
| Output (total Lumen) | 27228 lm |
| Lumen Up% / Down% | 0,2% / 99,8% |
| Peak Intensity | 9740 cd |
| Beam Angle (50%) | 109,3° |
| Beam Angle (90%) | 109,3° |
| Beam Angle (10%) | 109,3° |

## Cut-off Angle

| | |
|---|---|
| Average 2,5% | 173,4° |

## Field Angle

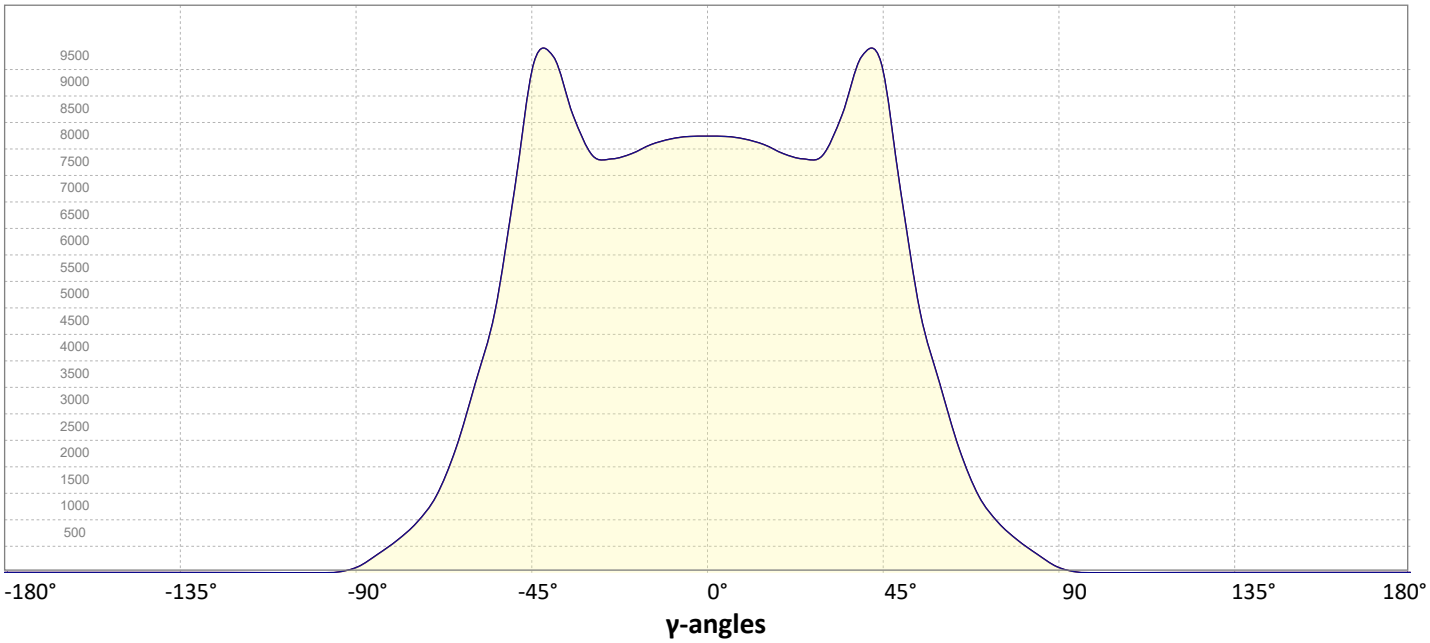
| | |
|---|---|
| Average 10% | 148,4° |

## Intensity Ratio

| | |
|---|---|
| In 120° cone | 86,5% |
| In 90° cone | 58,2% |

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

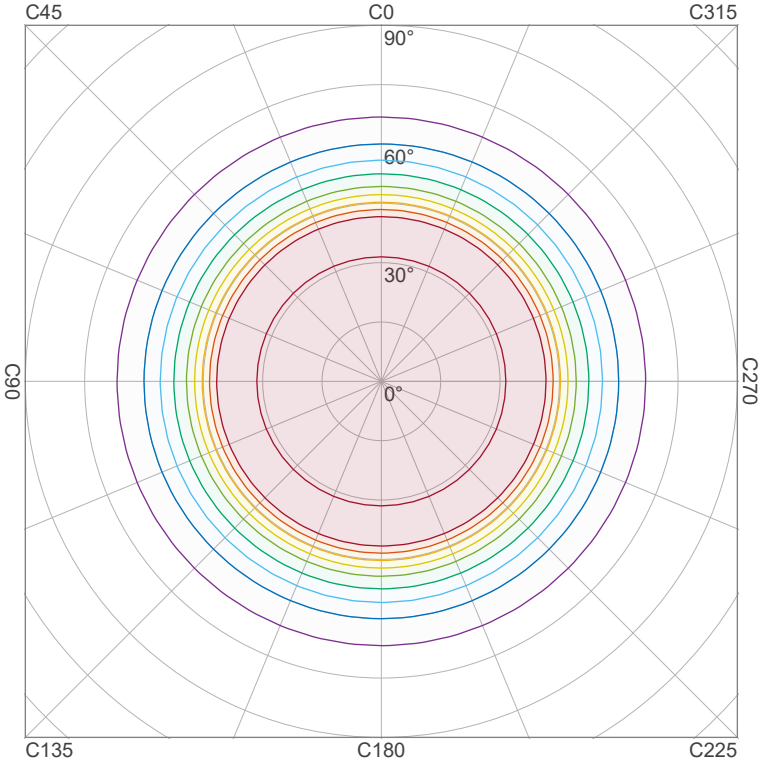
**Linear distribution diagram** - Intensity (candela) vs γ-angle



# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
Operator:

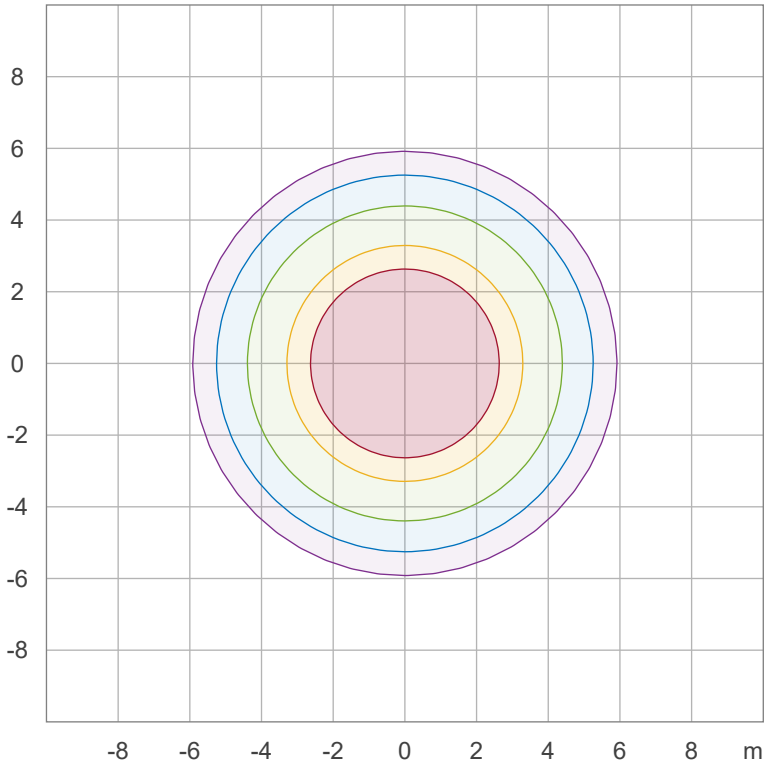
## Iso-intensity Diagram (Iso-candela)




| | | |
|---|---|---|
| | 90 % | 8754,6 cd |
| | 80 % | 7781,8 cd |
| | 70 % | 6809,1 cd |
| | 60 % | 5836,4 cd |
| | 50 % | 4863,7 cd |
| | 40 % | 3890,9 cd |
| | 30 % | 2918,2 cd |
| | 20 % | 1945,5 cd |
| | 10 % | 972,7 cd |

Peak intensity: 9727,3 cd
Number of c-planes: 24

## Iso-illuminance Diagram (Iso-lux)




| | | |
|---|---|---|
| | 50,0 % | 457,6 lx |
| | 30,0 % | 274,5 lx |
| | 10,0 % | 91,5 lx |
| | 5,0 % | 45,8 lx |
| | 3,0 % | 27,5 lx |

Peak illuminance: 915,1 lx
Mounting height: 3,0 m
Number of c-planes: 24

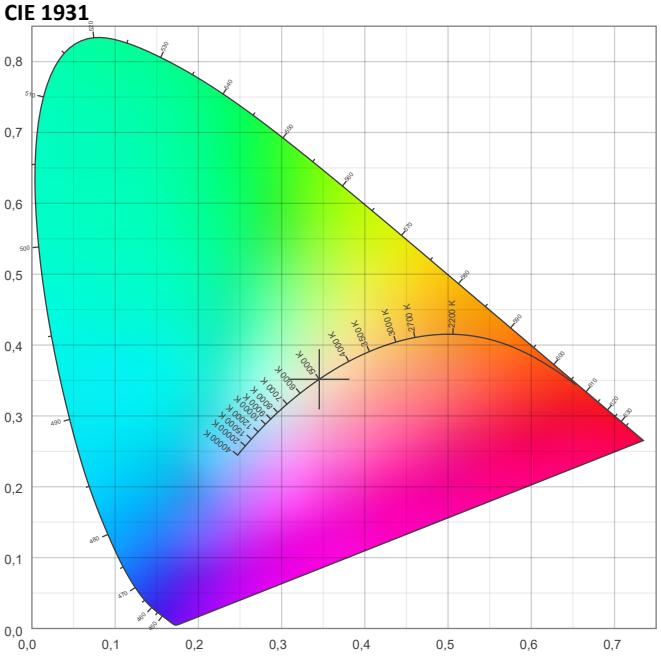
# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
Operator:

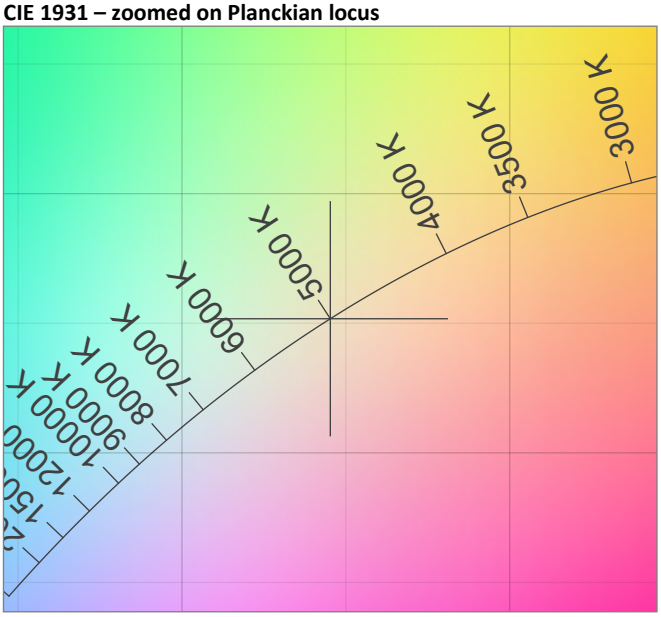
## Color details

| | |
|---|---|
| Correlated Color Temperature, Target | CCT = 5000 K |
| Correlated Color Temperature, Measured | CCT = 4861 K |
| Color Rendering Index | CRI 73,3 |
| Color Rendering Index, R9 (red component) | R9 = -26,4 |
| Color Rendering TM30-18 | $R_f$ 74,3 – $R_g$ 94,7 |
| Color Quality Scale | CQS = 72,3 |
| MacAdam Steps | SDCM = 2,8 |
| 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 = 0,0017 |
| Color coordinate CIEs 1976 (CIELUV) | (u';v') = (0,211;0,485) |

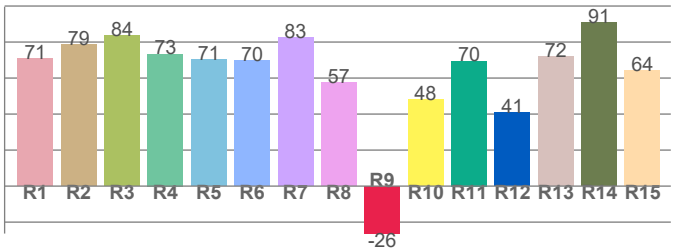
**CIE 1931**



**CIE 1931 – zoomed on Planckian locus**



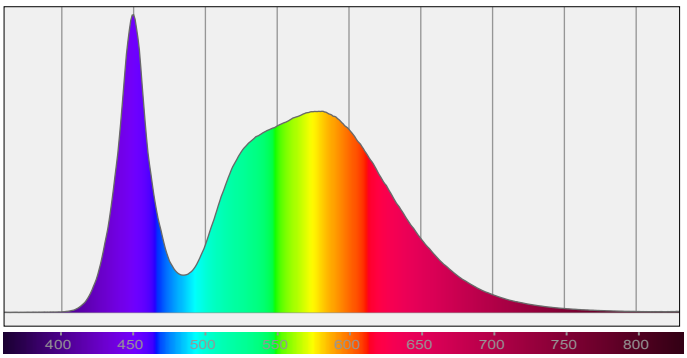

**Color Rendering Index per reference color (CIE 1995)**



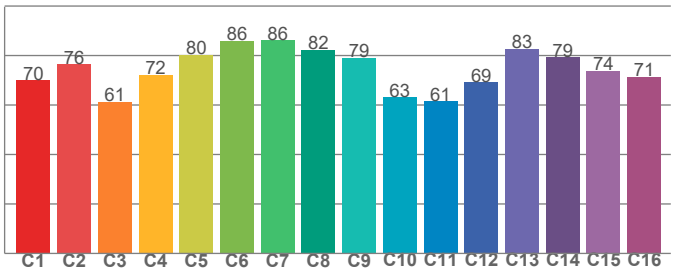

CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70,7 | 78,7 | 83,7 | 73,4 | 70,5 | 69,8 | 82,6 | 57,3 | -26,4 | 48,3 | 69,5 | 41,0 | 72,1 | 90,8 | 64,0 |

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



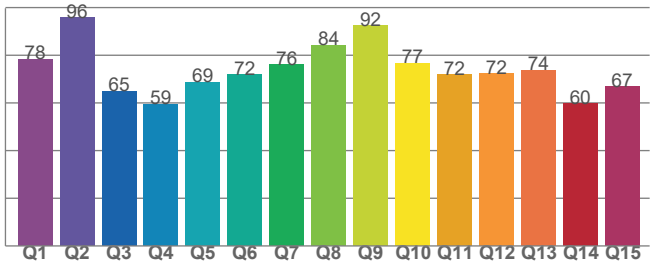

**TM30-18 Rf-values per hue bin**




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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 69,9 | 76,4 | 61,3 | 72,2 | 80,3 | 86,0 | 86,2 | 82,4 | 79,0 | 63,0 | 61,4 | 69,1 | 82,8 | 79,3 | 73,8 | 71,5 |

**Color Quality Scale by reference color**



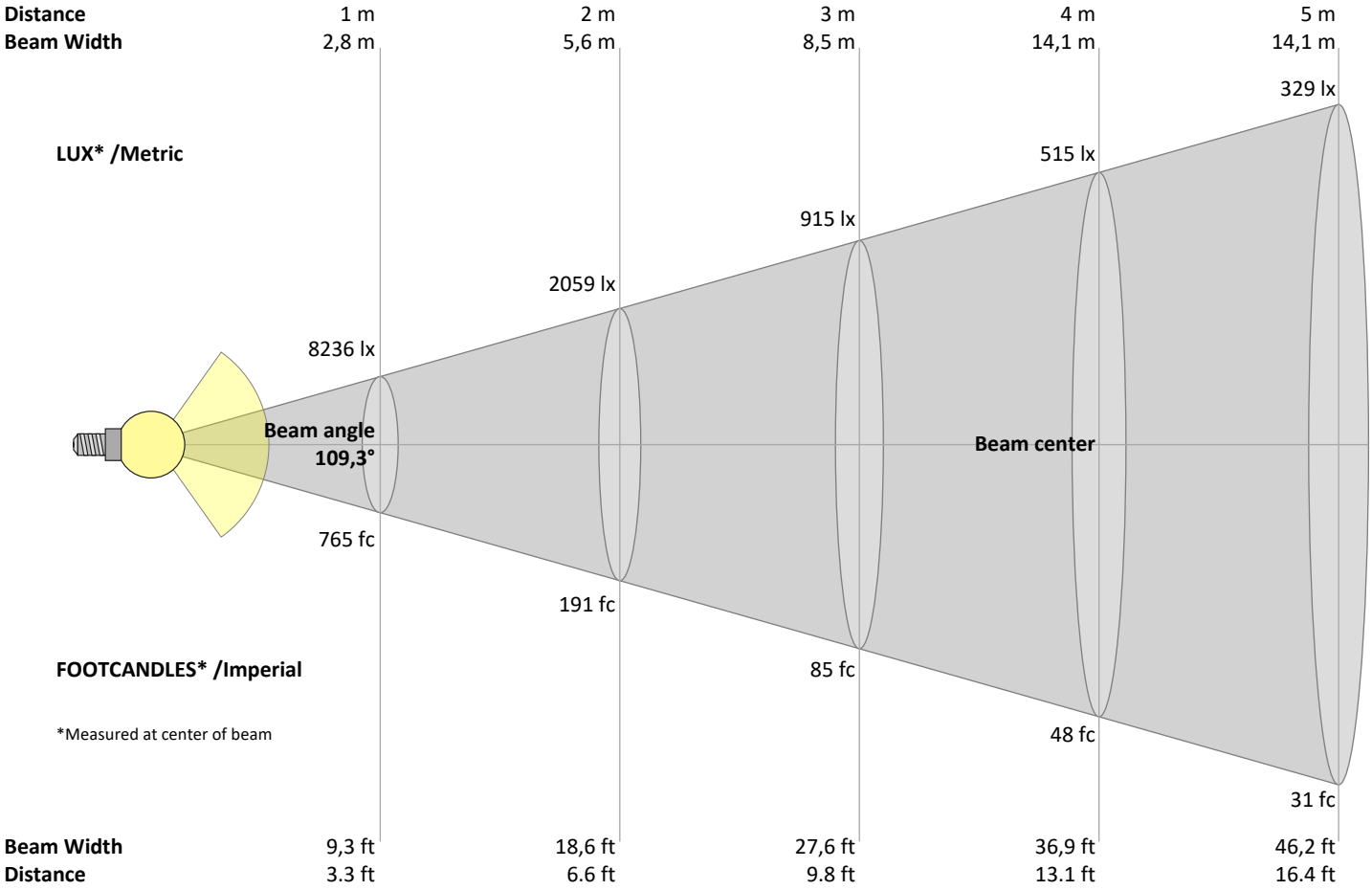

CQS Q values

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 78,3 | 95,7 | 64,9 | 59,4 | 68,7 | 71,9 | 75,9 | 84,1 | 92,4 | 76,7 | 71,8 | 72,3 | 73,7 | 59,7 | 66,7 |

# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
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 |
| 8236 | 2059 | 915 | 515 | 329 | 229 | 168 | 129 | 102 | 82 | 68 | 57 | 49 | 42 | 37 | 32 | 28 | 25 | 23 | 21 | lux |
| 765,2 | 191,3 | 85 | 47,8 | 30,6 | 21,3 | 15,6 | 12 | 9,4 | 7,7 | 6,3 | 5,3 | 4,5 | 3,9 | 3,4 | 3 | 2,6 | 2,4 | 2,1 | 1,9 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8236 | 8231 | 8176 | 8064 | 7899 | 7819 | 7959 | 8760 | 9727 | 9361 | 6955 | 4773 | 3442 | 2243 | 1395 | 911 | 584 | 323 | 104 | 14 | cd |
| 100% | 100% | 99% | 98% | 96% | 95% | 97% | 106% | 118% | 114% | 84% | 58% | 42% | 27% | 17% | 11% | 7% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8236 | 8231 | 8176 | 8064 | 7899 | 7819 | 7959 | 8760 | 9727 | 9361 | 6955 | 4773 | 3442 | 2243 | 1395 | 911 | 584 | 323 | 104 | 14 | cd |
| 100% | 100% | 99% | 98% | 96% | 95% | 97% | 106% | 118% | 114% | 84% | 58% | 42% | 27% | 17% | 11% | 7% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8236 | 8231 | 8176 | 8064 | 7899 | 7819 | 7959 | 8760 | 9727 | 9361 | 6955 | 4773 | 3442 | 2243 | 1395 | 911 | 584 | 323 | 104 | 14 | cd |
| 100% | 100% | 99% | 98% | 96% | 95% | 97% | 106% | 118% | 114% | 84% | 58% | 42% | 27% | 17% | 11% | 7% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8236 | 8231 | 8176 | 8064 | 7899 | 7819 | 7959 | 8760 | 9727 | 9361 | 6955 | 4773 | 3442 | 2243 | 1395 | 911 | 584 | 323 | 104 | 14 | cd |
| 100% | 100% | 99% | 98% | 96% | 95% | 97% | 106% | 118% | 114% | 84% | 58% | 42% | 27% | 17% | 11% | 7% | 4% | 1% | 0% | of 0°val |

# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
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 | 33,8 | 35,0 | 34,1 | 35,3 | 35,5 | 33,8 | 35,0 | 34,1 | 35,3 | 35,5 |
| | 3H | 34,3 | 35,5 | 34,7 | 35,8 | 36,0 | 34,3 | 35,5 | 34,7 | 35,8 | 36,0 |
| | 4H | 34,5 | 35,6 | 34,9 | 35,9 | 36,1 | 34,5 | 35,6 | 34,9 | 35,9 | 36,1 |
| | 6H | 34,7 | 35,7 | 35,0 | 35,9 | 36,3 | 34,7 | 35,7 | 35,0 | 35,9 | 36,3 |
| | 8H | 34,7 | 35,7 | 35,1 | 36,0 | 36,4 | 34,7 | 35,7 | 35,1 | 36,0 | 36,4 |
| | 12H | 34,8 | 35,7 | 35,1 | 36,0 | 36,5 | 34,8 | 35,7 | 35,1 | 36,0 | 36,5 |
| 4H | 2H | 34,0 | 35,2 | 34,4 | 35,5 | 35,7 | 34,0 | 35,2 | 34,4 | 35,5 | 35,7 |
| | 3H | 34,7 | 35,7 | 35,1 | 36,0 | 36,5 | 34,7 | 35,7 | 35,1 | 36,0 | 36,5 |
| | 4H | 34,9 | 35,8 | 35,4 | 36,2 | 36,8 | 34,9 | 35,8 | 35,4 | 36,2 | 36,8 |
| | 6H | 35,2 | 36,0 | 35,7 | 36,4 | 36,7 | 35,2 | 36,0 | 35,7 | 36,4 | 36,7 |
| | 8H | 35,3 | 36,0 | 35,8 | 36,4 | 36,8 | 35,3 | 36,0 | 35,8 | 36,4 | 36,8 |
| | 12H | 35,4 | 36,0 | 35,9 | 36,4 | 36,9 | 35,4 | 36,0 | 35,9 | 36,4 | 36,9 |
| 8H | 4H | 35,0 | 35,8 | 35,5 | 36,1 | 36,5 | 35,0 | 35,8 | 35,5 | 36,1 | 36,5 |
| | 6H | 35,4 | 35,9 | 35,9 | 36,4 | 37,0 | 35,4 | 35,9 | 35,9 | 36,4 | 37,0 |
| | 8H | 35,6 | 36,1 | 36,1 | 36,6 | 37,2 | 35,6 | 36,1 | 36,1 | 36,6 | 37,2 |
| | 12H | 35,8 | 36,2 | 36,3 | 36,7 | 37,3 | 35,8 | 36,2 | 36,3 | 36,7 | 37,3 |
| 12H | 4H | 35,0 | 35,6 | 35,5 | 36,0 | 36,5 | 35,0 | 35,6 | 35,5 | 36,0 | 36,5 |
| | 6H | 35,4 | 35,9 | 35,9 | 36,4 | 37,1 | 35,4 | 35,9 | 35,9 | 36,4 | 37,1 |
| | 8H | 35,6 | 36,0 | 36,2 | 36,5 | 37,2 | 35,6 | 36,0 | 36,2 | 36,5 | 37,2 |

| **Variations with the observer position for the luminaire spacings, S:** | | |
|---|---|---|
| S = 1.0H | 0,4 / -0,4 | 0,4 / -0,4 |
| S = 1.5H | 0,9 / -1,0 | 0,9 / -1,0 |
| S = 2.0H | 1,8 / -1,8 | 1,8 / -1,8 |

## 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 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 92 | 90 | 91 | 89 | 88 | 85 |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 77 | 74 | 72 |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 74 | 69 | 65 | 72 | 67 | 64 | 61 |
| 4 | 84 | 72 | 64 | 57 | 82 | 71 | 63 | 57 | 68 | 62 | 56 | 66 | 60 | 55 | 64 | 59 | 55 | 52 |
| 5 | 77 | 64 | 56 | 49 | 75 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 49 | 43 | 55 | 48 | 42 | 53 | 47 | 42 | 52 | 46 | 41 | 39 |
| 7 | 66 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 32 | 30 |
| 9 | 57 | 43 | 35 | 29 | 55 | 43 | 35 | 29 | 41 | 34 | 29 | 40 | 34 | 29 | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 26 | 52 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |

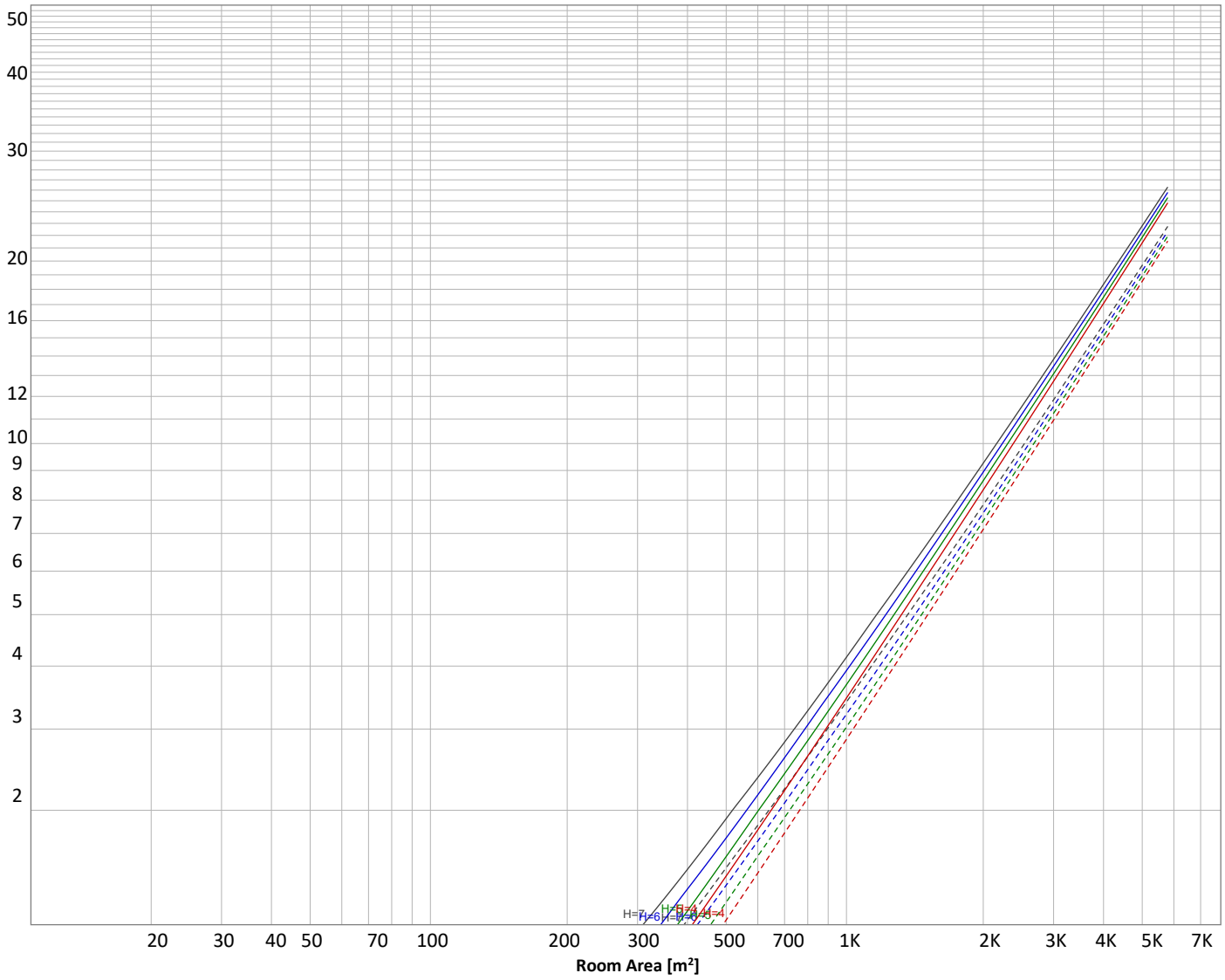
# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
Operator:

## Luminaire budgetary diagram

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

**LAMPS (number of lamps)**




**Conditions**

| | | | | | |
|---|---|---|---|---|---|
| H = Room height | Flux = 27228 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° |
|---|---|---|---|---|---|---|---|---|
| 784 lm | 2277 lm | 3634 lm | 5572 lm | 6866 lm | 4411 lm | 2277 lm | 994 lm | 358 lm |

| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
|---|---|---|---|---|---|---|---|---|
| 33,0 lm | 1,62 lm | 3,02 lm | 4,04 lm | 4,02 lm | 3,51 lm | 2,68 lm | 1,69 lm | 0,579 lm |

# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
Operator:

## Outdoor Light Planning

### Lumen per Zone

| Zone (γ) | Lumen | % Total |
|---|---|---|
| 0-10° | 784 lm | 2,9% |
| 10-20° | 2277 lm | 8,4% |
| 20-30° | 3634 lm | 13,3% |
| 30-40° | 5572 lm | 20,5% |
| 40-50° | 6866 lm | 25,2% |
| 50-60° | 4411 lm | 16,2% |
| 60-70° | 2277 lm | 8,4% |
| 70-80° | 994 lm | 3,7% |
| 80-90° | 358 lm | 1,3% |
| 90-100° | 33 lm | 0,1% |
| 100-110° | 2 lm | 0,0% |
| 110-120° | 3 lm | 0,0% |
| 120-130° | 4 lm | 0,0% |
| 130-140° | 4 lm | 0,0% |
| 140-150° | 4 lm | 0,0% |
| 150-160° | 3 lm | 0,0% |
| 160-170° | 2 lm | 0,0% |
| 170-180° | 1 lm | 0,0% |
| Total | 27228 lm | 100,0% |

### Intensity peaks

| | |
|---|---|
| Max intensity | 9740 cd |
| Intensity, 90° | 104 cd |
| Intensity, 0° | 8236 cd |

### Zonal Lumen summary

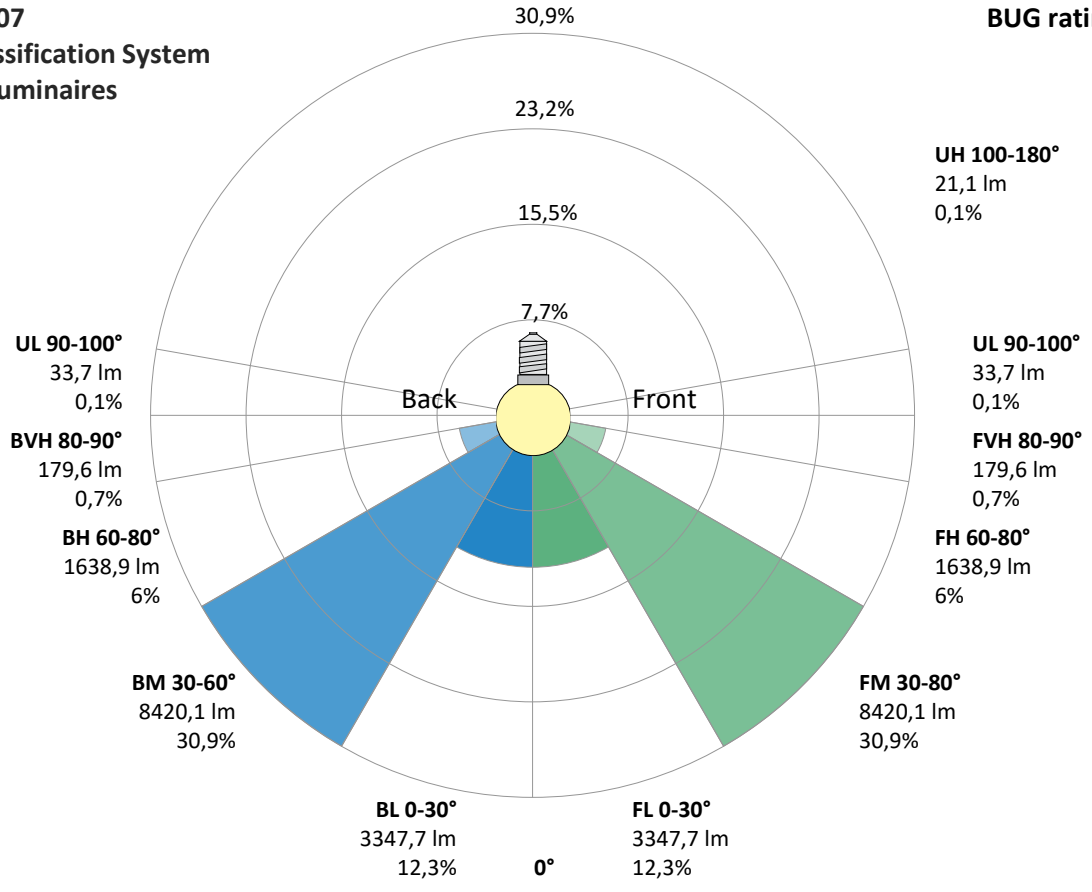
| Zone (γ) | Lumen | % Total |
|---|---|---|
| 0-30° | 6695 lm | 24,6% |
| 0-40° | 12267 lm | 45,1% |
| 0-60° | 23544 lm | 86,5% |
| 60-90° | 3630 lm | 13,3% |
| 70-100° | 1386 lm | 5,1% |
| 90-120° | 38 lm | 0,1% |
| 0-90° | 27173 lm | 99,8% |
| 90-180° | 54 lm | 0,2% |
| 0-180° | 27228 lm | 100,0% |

### BUG rating

| | Lumen | % Total |
|---|---|---|
| **Forward light** | | |
| Low(0-30°) | 3348 lm | 12,3% |
| Medium(30-60°) | 8420 lm | 30,9% |
| High(60-80°) | 1639 lm | 6,0% |
| Very high(80-90°) | 180 lm | 0,7% |
| **Back light** | | |
| Low(0-30°) | 3348 lm | 12,3% |
| Medium(30-60°) | 8420 lm | 30,9% |
| High(60-80°) | 1639 lm | 6,0% |
| Very high(80-90°) | 180 lm | 0,7% |
| **Uplight** | | |
| Low(90-100°) | 34 lm | 0,1% |
| High(100-180°) | 21 lm | 0,1% |

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

**BUG rating B4 U2 G2**



# Light Measurement Report

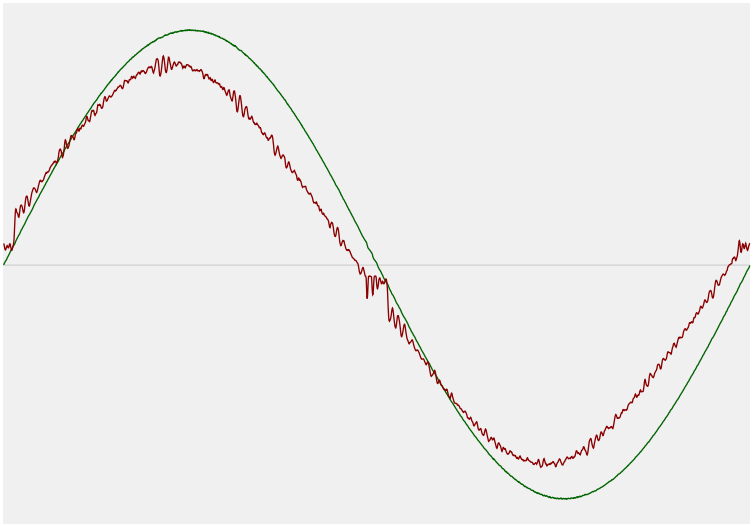
Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
Operator:

## Power Details

### Input Power

| | |
|---|---|
| Power feed to light source | 178,6 W |
| Frequency of input power | 50 Hz |
| RMS Input voltage feed, $V_{RMS}$ | 230 V |
| RMS Input current feed, $I_{RMS}$ | 0,788 A |
| Volt-Ampere or apparent power = $V_{RMS}$*$I_{RMS}$ | 181,16 VA |
| Displacement factor of AC power feed | 0,99 |
| Power factor of AC current feed | 0,99 |
| Total harmonic distortion of the current | 4,31% |
| Total harmonic distortion of the voltage | 0,08% |

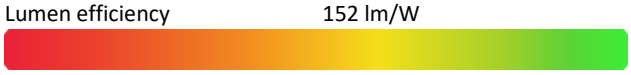
### Input Power Curve



### Efficiency

Radiated power efficiency 44,9%

Lumen efficiency 152 lm/W



## Stabilization Details

### Warmup Conditions

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

### Color Temperature Change

| | |
|---|---|
| CCT start | 4999 K |
| CCT shift | +1 K |
| CCT end | 5000 K |

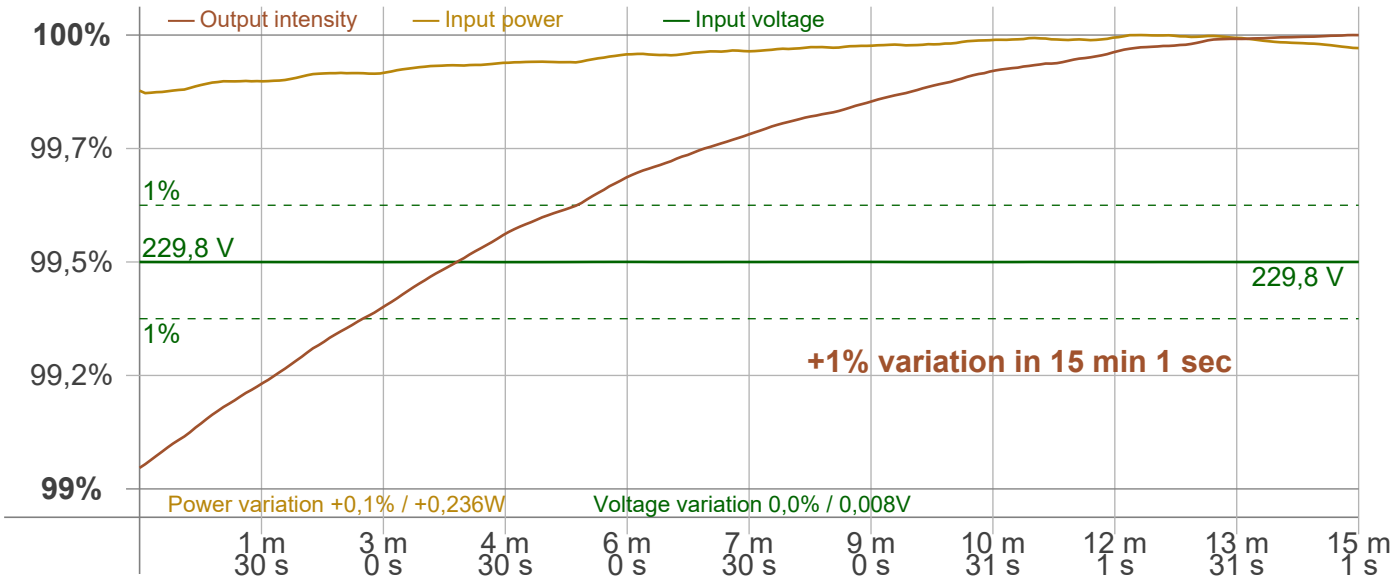
### Warmup Result

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

### Output Change

| | |
|---|---|
| Output start | 26953 lm |
| Output change | +275 lm |
| Output end | 27228 lm |

### Stabilization Curve



# Light Measurement Report

Print date: 25-9-2025
Measurement date and time: 25-9-2025 10:13:08 – Measurement no. VFR-250925-3350-MS
Measurement tracking No. and Link: VT250925-001502
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 | 101,52 Hz |
| Percent Flicker | 0,46 % |
| Flicker index | 0 |

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

| | |
|---|---|
| JA8/10 40 Hz | 0,18 % |
| JA8/10 90 Hz | 0,19 % |
| JA8/10 200 Hz | 0,33 % |
| JA8/10 400 Hz | 0,33 % |
| JA8/10 1000 Hz | 0,45 % |

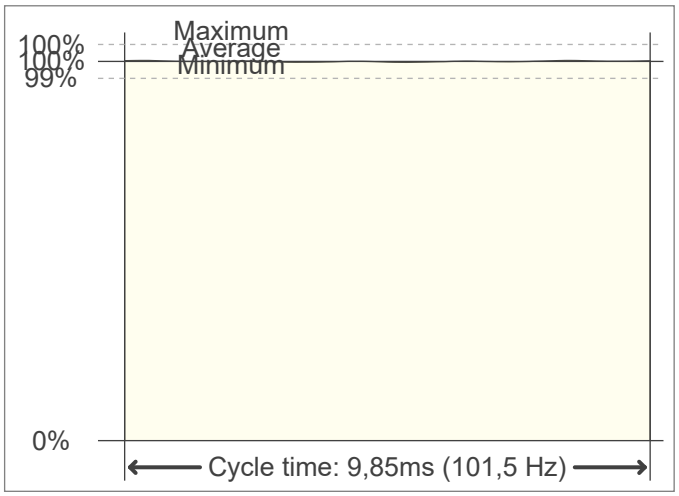
**TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)**

| | |
|---|---|
| PstLM value (F < 80 Hz) | 0,09 |
| SVM value (80 < F < 2000 Hz) | 0,01 |

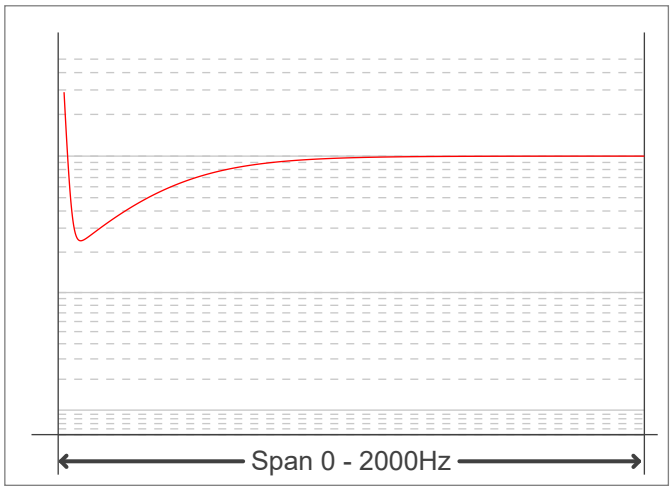
**Flicker indices according to Lighting Research Center (2015)**

| | |
|---|---|
| Perception metric, Assist Mp | 0,04 |

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




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




**IEEE 1789 Frequency/modulation plot**