

# Light Measurement Report

Print date: 22-5-2025

Measurement date and time: 22-5-2025 08:34:01 – Measurement no. VFR-250522-1362-MS

Measurement tracking No. and Link: [VT250522-002894](#)

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

28 planes – 12,86°  
5°  
10,39 m  
34,4 W – PF 0,97 – DPF 0,97  
230 V – 0,154 A  
50 Hz  
Lamp stabilized in 15 min 1 sec – 2,0%

## Tested Light Source

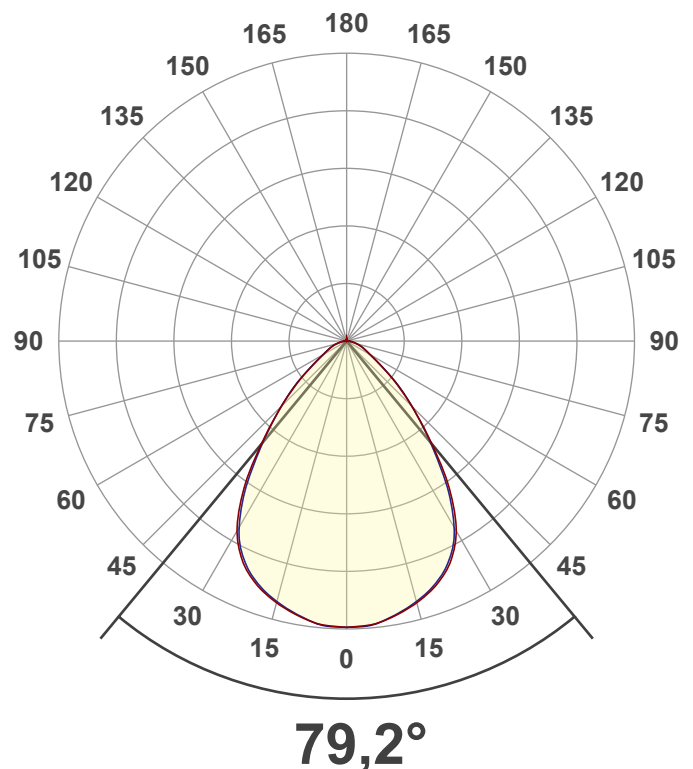
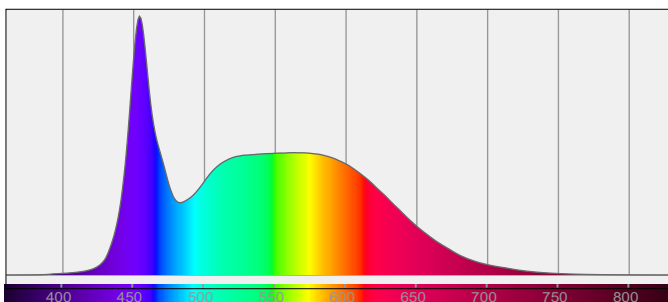
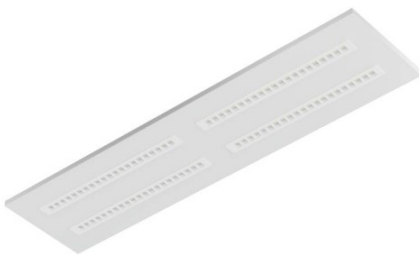
Product Name  
Item No. and Manufacturer  
Product Description (line 1)

811594-6500K-36W  
811594-6500K-36W – Dutchfulfillment  
LED LOUVRE PANEEL | NOVA | 120X30CM | 36W | CCT-SWITCH | WIT

## 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

4002 lm – 0,94% / 99,06%  
116 lm/W  
2359 cd – 79,2°  
CCT = 6500 K / 6162 K  
CRI 83,6  
 $R_f$  83,3 –  $R_g$  91,9  
Duv 0,0084 – SDCM 11,8  
SVM 0 – PstLM 0,01



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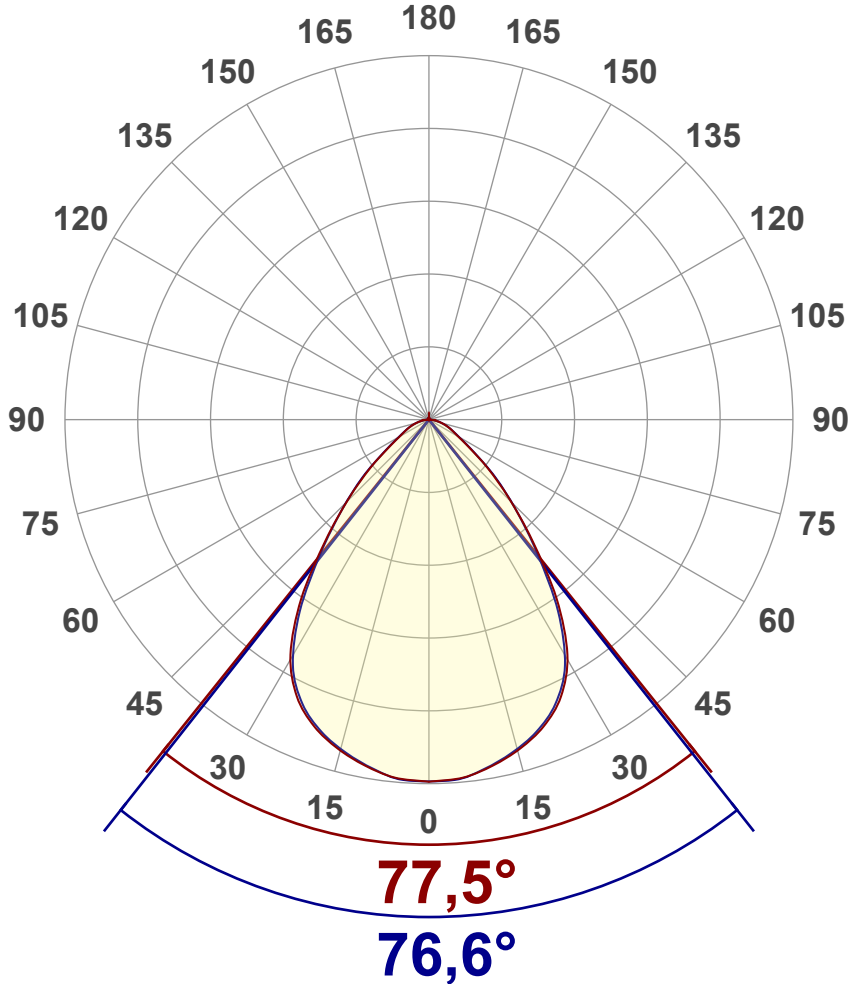
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## Luminous Intensity diagram

Unit: 0-100% of peak intensity



## Main Values

|                      |                |
|----------------------|----------------|
| Output (total Lumen) | 4002 lm        |
| Lumen Up% / Down%    | 0,94% / 99,06% |
| Peak Intensity       | 2359 cd        |
| Beam Angle (50%)     | 79,2°          |
| Beam Angle (90%)     | 76,6°          |
| Beam Angle (10%)     | 77,9°          |

## Cut-off Angle

|              |        |
|--------------|--------|
| Average 2,5% | 158,3° |
|--------------|--------|

## Field Angle

|             |        |
|-------------|--------|
| Average 10% | 121,6° |
|-------------|--------|

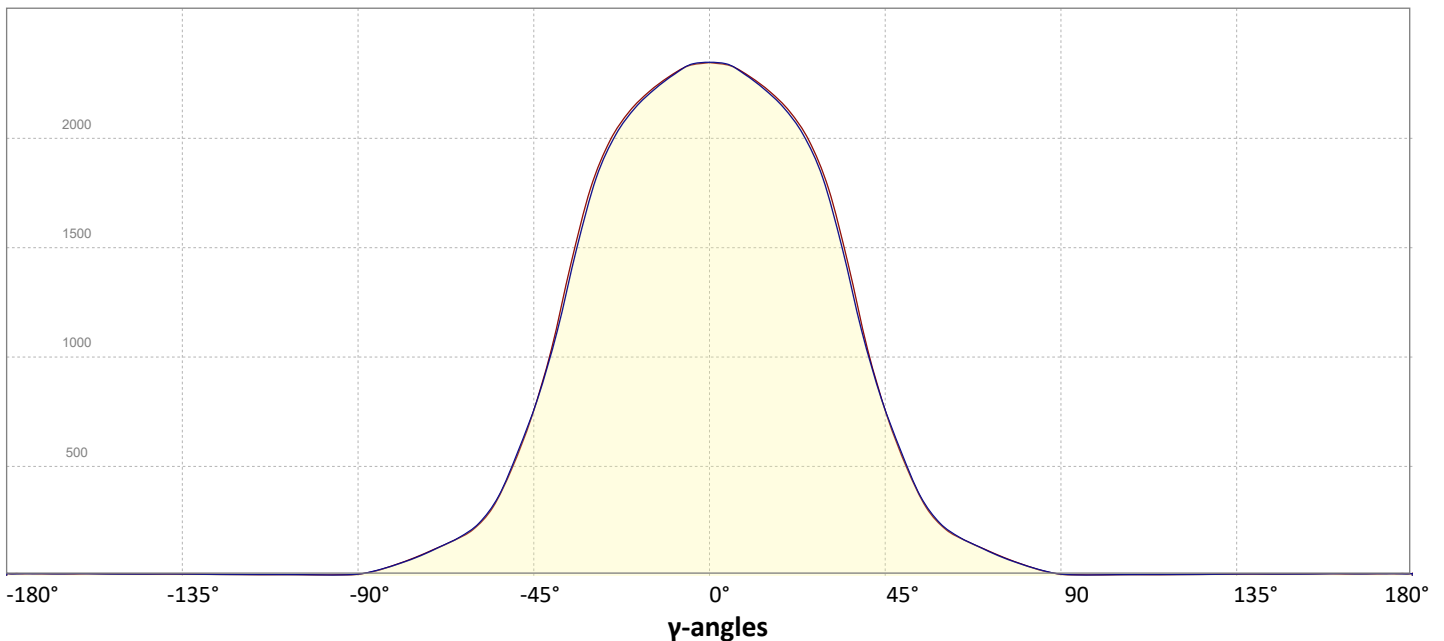
## Intensity Ratio

|              |       |
|--------------|-------|
| In 120° cone | 91,6% |
| In 90° cone  | 75,9% |

**C000-C180**

**C090-C270**

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



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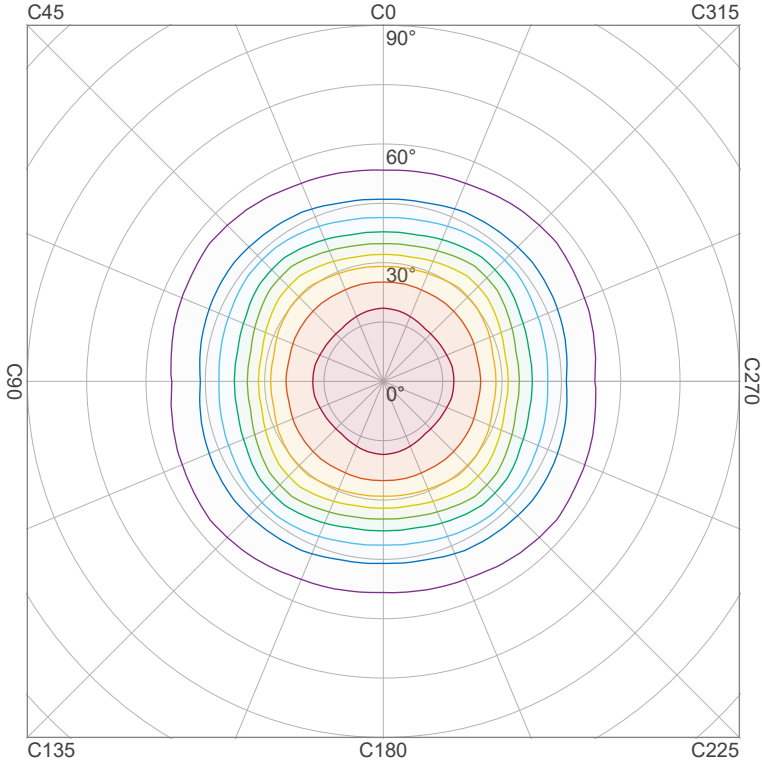
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Operator:



## Iso-intensity Diagram (Iso-candela)

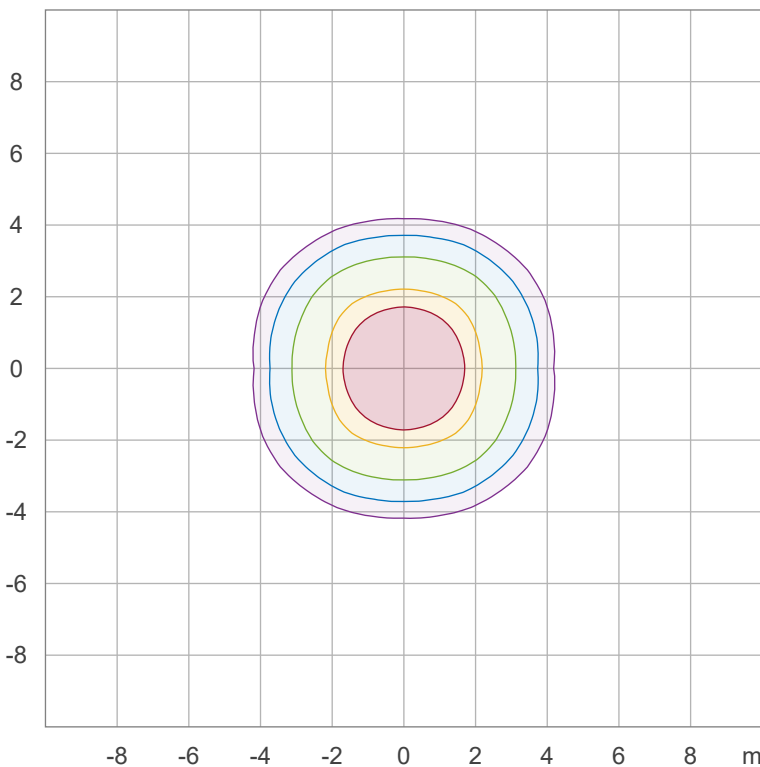


|      |           |
|------|-----------|
| 90 % | 2119,5 cd |
| 80 % | 1884,0 cd |
| 70 % | 1648,5 cd |
| 60 % | 1413,0 cd |
| 50 % | 1177,5 cd |
| 40 % | 942,0 cd  |
| 30 % | 706,5 cd  |
| 20 % | 471,0 cd  |
| 10 % | 235,5 cd  |

Peak intensity: 2355,0 cd

Number of c-planes: 28

## Iso-illuminance Diagram (Iso-lux)



|        |          |
|--------|----------|
| 50,0 % | 130,8 lx |
| 30,0 % | 78,5 lx  |
| 10,0 % | 26,2 lx  |
| 5,0 %  | 13,1 lx  |
| 3,0 %  | 7,8 lx   |

Peak illuminance: 261,6 lx

Mounting height: 3,0 m

Number of c-planes: 28

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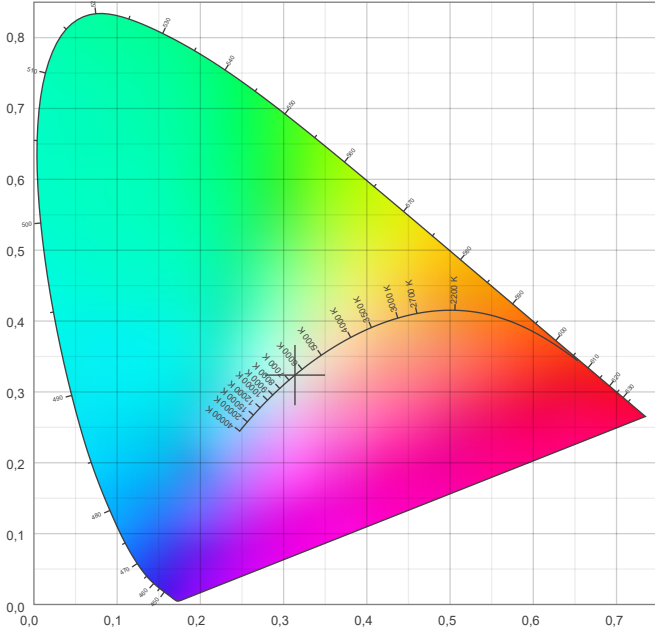


## Color details

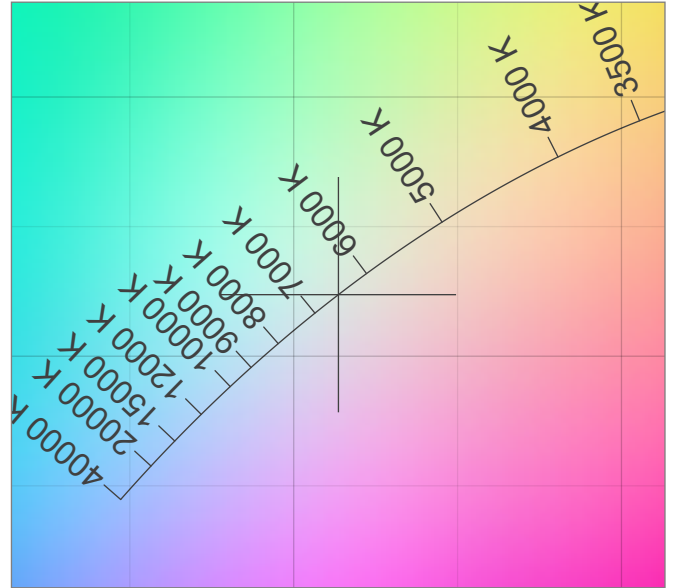
Correlated Color Temperature, Target CCT = 6500 K  
 Correlated Color Temperature, Measured CCT = 6162 K  
 Color Rendering Index CRI 83,6  
 Color Rendering Index, R9 (red component) R9 = 4,7  
 Color Rendering TM30-18 R<sub>f</sub> 83,3 – R<sub>g</sub> 91,9  
 Color Quality Scale CQS = 82,2

MacAdam Steps SDCM = 11,8  
 Color coordinates CIE 1931 (x;y) = (0,314;0,324)  
 Color coordinate CIEs 1960 (u;v) = (0,200;0,310)  
 Color deviation from BBL Duv = 0,0084  
 Color coordinate CIEs 1976 (CIELUV) (u';v') = (0,200;0,466)

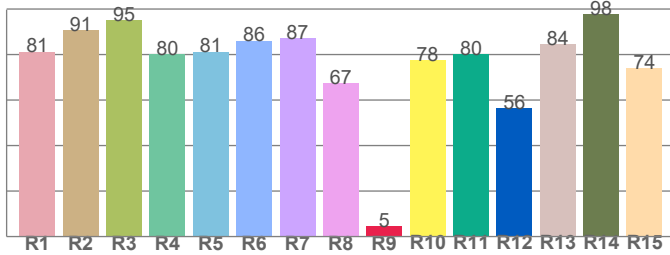
### CIE 1931



### CIE 1931 – zoomed on Planckian locus



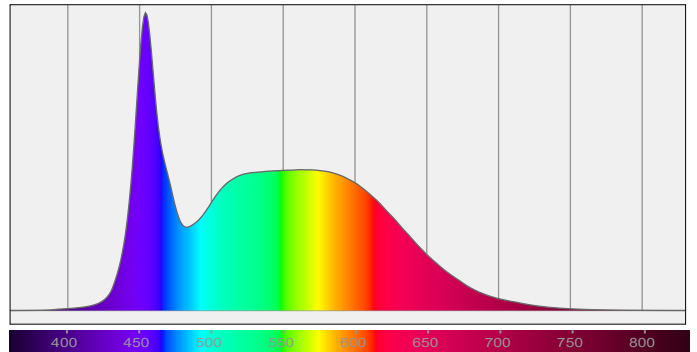
### Color Rendering Index per reference color (CIE 1995)



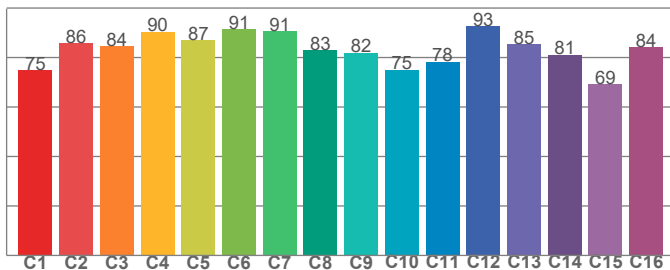
CRI R values, only R1-R8 are used to calculate final CRI value

| R1   | R2   | R3   | R4   | R5   | R6   | R7   | R8   | R9  | R10  | R11  | R12  | R13  | R14  | R15  |
|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|
| 81,2 | 90,6 | 95,0 | 80,2 | 81,1 | 86,1 | 87,2 | 67,3 | 4,7 | 77,5 | 80,1 | 56,3 | 84,4 | 97,6 | 74,1 |

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



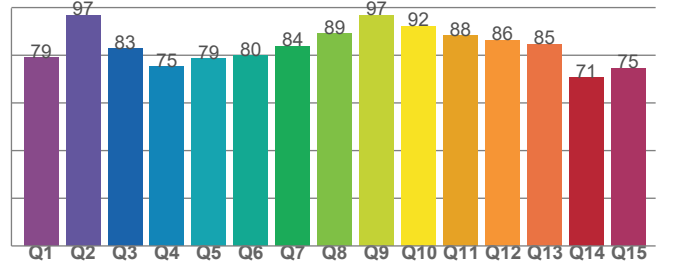
### TM30-18 R<sub>f</sub>-values per hue bin



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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 74,7 | 85,7 | 84,5 | 90,4 | 86,9 | 91,5 | 90,6 | 82,8 | 81,9 | 75,1 | 78,2 | 92,5 | 85,3 | 81,2 | 69,1 | 84,2 |

### Color Quality Scale by reference color



CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 78,9 | 96,7 | 82,7 | 75,2 | 78,5 | 79,8 | 83,9 | 89,1 | 96,7 | 92,2 | 88,2 | 86,4 | 84,7 | 70,5 | 74,5 |

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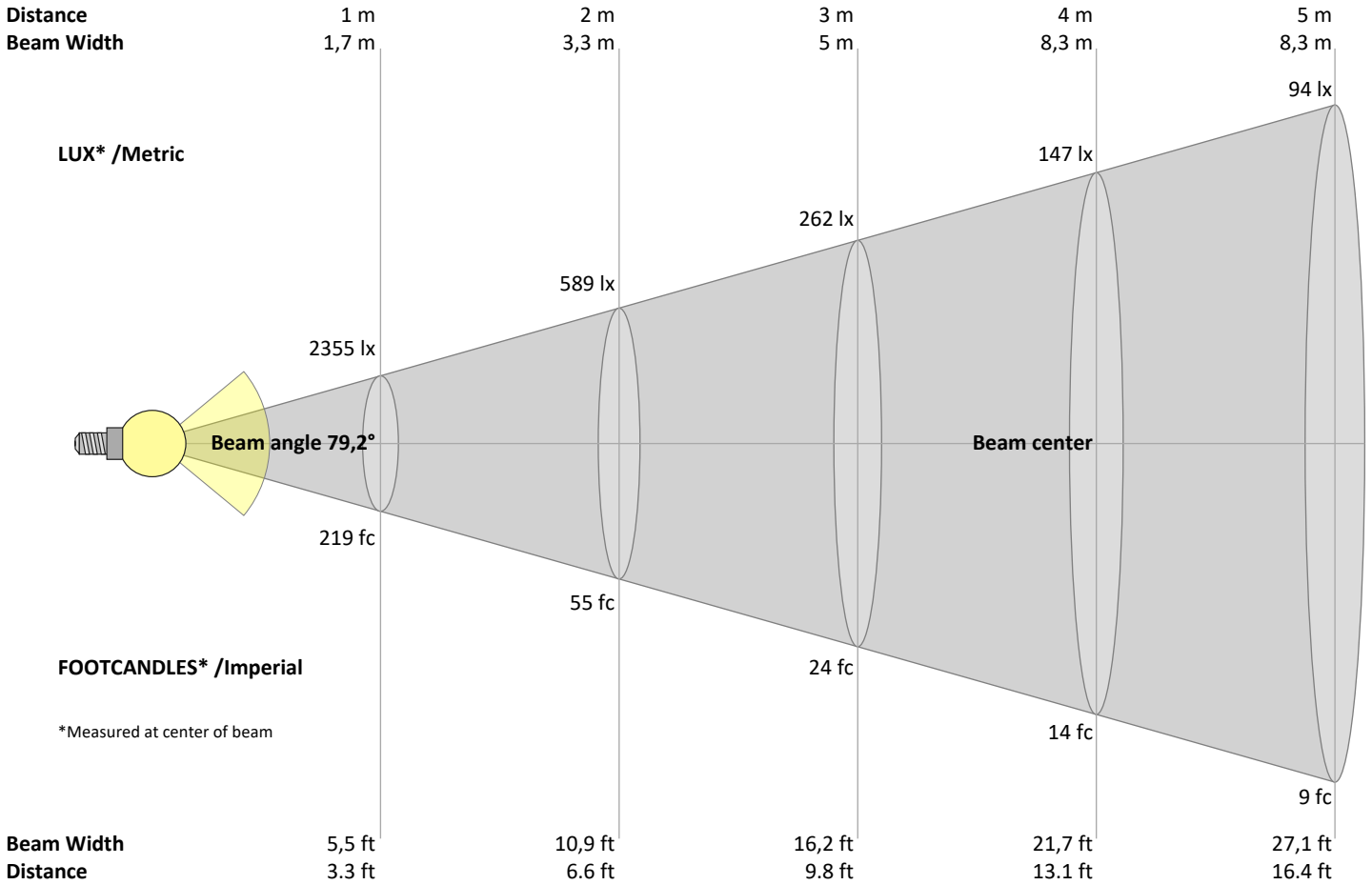
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Operator:



## 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  |
| 2355  | 589  | 262  | 147  | 94   | 65   | 48  | 37   | 29   | 24   | 19   | 16   | 14   | 12   | 10   | 9    | 8    | 7    | 7    | 6    | lux |
| 218,7 | 54,7 | 24,3 | 13,7 | 8,7  | 6,1  | 4,5 | 3,4  | 2,7  | 2,2  | 1,8  | 1,5  | 1,3  | 1,1  | 1    | 0,9  | 0,8  | 0,7  | 0,6  | 0,5  | 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        |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2355 | 2332 | 2285 | 2219 | 2132 | 2002 | 1791 | 1460 | 1073 | 759 | 518 | 330 | 222 | 166 | 125 | 87  | 53  | 25  | 7   | 4   | cd       |
| 100% | 99%  | 97%  | 94%  | 91%  | 85%  | 76%  | 62%  | 46%  | 32% | 22% | 14% | 9%  | 7%  | 5%  | 4%  | 2%  | 1%  | 0%  | 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        |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2355 | 2332 | 2279 | 2208 | 2115 | 1977 | 1754 | 1420 | 1056 | 762 | 529 | 339 | 228 | 167 | 124 | 85  | 53  | 26  | 8   | 4   | cd       |
| 100% | 99%  | 97%  | 94%  | 90%  | 84%  | 75%  | 60%  | 45%  | 32% | 22% | 14% | 10% | 7%  | 5%  | 4%  | 2%  | 1%  | 0%  | 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        |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2355 | 2332 | 2285 | 2219 | 2132 | 2002 | 1791 | 1460 | 1073 | 759 | 518 | 330 | 222 | 166 | 125 | 87  | 53  | 25  | 7   | 4   | cd       |
| 100% | 99%  | 97%  | 94%  | 91%  | 85%  | 76%  | 62%  | 46%  | 32% | 22% | 14% | 9%  | 7%  | 5%  | 4%  | 2%  | 1%  | 0%  | 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        |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 2355 | 2332 | 2279 | 2208 | 2115 | 1977 | 1754 | 1420 | 1056 | 762 | 529 | 339 | 228 | 167 | 124 | 85  | 53  | 26  | 8   | 4   | cd       |
| 100% | 99%  | 97%  | 94%  | 90%  | 84%  | 75%  | 60%  | 45%  | 32% | 22% | 14% | 10% | 7%  | 5%  | 4%  | 2%  | 1%  | 0%  | 0%  | of 0°val |

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Operator:



## 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        | 16,1   | 17,1 | 16,3 | 17,4 | 17,6 | 16,3   | 17,2 | 16,5 | 17,5 | 17,7 |
|                                     | 3H        | 16,4   | 17,4 | 16,8 | 17,7 | 17,9 | 16,6   | 17,6 | 17,0 | 17,9 | 18,1 |
|                                     | 4H        | 16,6   | 17,6 | 17,0 | 17,9 | 18,1 | 16,8   | 17,8 | 17,2 | 18,0 | 18,3 |
|                                     | 6H        | 16,8   | 17,7 | 17,2 | 18,0 | 18,4 | 17,0   | 17,8 | 17,3 | 18,1 | 18,5 |
|                                     | 8H        | 16,9   | 17,7 | 17,2 | 18,0 | 18,4 | 17,1   | 17,9 | 17,4 | 18,2 | 18,6 |
|                                     | 12H       | 16,9   | 17,7 | 17,3 | 18,0 | 18,5 | 17,1   | 17,9 | 17,5 | 18,2 | 18,7 |
| 4H                                  | 2H        | 16,2   | 17,2 | 16,6 | 17,4 | 17,7 | 16,3   | 17,3 | 16,8 | 17,6 | 17,8 |
|                                     | 3H        | 16,8   | 17,6 | 17,2 | 18,0 | 18,4 | 17,0   | 17,8 | 17,4 | 18,1 | 18,6 |
|                                     | 4H        | 17,1   | 17,8 | 17,5 | 18,2 | 18,7 | 17,2   | 17,9 | 17,7 | 18,4 | 18,9 |
|                                     | 6H        | 17,3   | 18,0 | 17,8 | 18,4 | 18,7 | 17,5   | 18,2 | 18,0 | 18,5 | 18,9 |
|                                     | 8H        | 17,4   | 18,0 | 17,9 | 18,4 | 18,8 | 17,6   | 18,2 | 18,1 | 18,6 | 19,0 |
|                                     | 12H       | 17,4   | 17,9 | 17,9 | 18,4 | 18,9 | 17,6   | 18,1 | 18,1 | 18,6 | 19,1 |
| 8H                                  | 4H        | 17,1   | 17,8 | 17,7 | 18,2 | 18,5 | 17,3   | 17,9 | 17,8 | 18,3 | 18,7 |
|                                     | 6H        | 17,5   | 18,0 | 18,0 | 18,4 | 19,0 | 17,7   | 18,1 | 18,2 | 18,6 | 19,1 |
|                                     | 8H        | 17,7   | 18,1 | 18,2 | 18,6 | 19,2 | 17,8   | 18,2 | 18,4 | 18,8 | 19,4 |
|                                     | 12H       | 17,8   | 18,1 | 18,4 | 18,6 | 19,2 | 18,0   | 18,3 | 18,6 | 18,8 | 19,4 |
| 12H                                 | 4H        | 17,1   | 17,6 | 17,6 | 18,1 | 18,6 | 17,3   | 17,8 | 17,8 | 18,2 | 18,7 |
|                                     | 6H        | 17,5   | 17,9 | 18,1 | 18,5 | 19,1 | 17,7   | 18,1 | 18,2 | 18,6 | 19,3 |
|                                     | 8H        | 17,7   | 18,0 | 18,3 | 18,5 | 19,2 | 17,9   | 18,2 | 18,5 | 18,7 | 19,3 |

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

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

## 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 | 101 | 101 | 101 | 99 |
| 1                   | 111  | 107 | 104 | 101 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 92  | 90  | 88 |
| 2                   | 103  | 97  | 92  | 87  | 101 | 95  | 90  | 86  | 91  | 87  | 84  | 88  | 85  | 82  | 85  | 82  | 80  | 78 |
| 3                   | 96   | 88  | 81  | 76  | 94  | 86  | 80  | 75  | 83  | 78  | 74  | 80  | 76  | 73  | 78  | 74  | 71  | 69 |
| 4                   | 90   | 80  | 73  | 67  | 87  | 78  | 72  | 67  | 76  | 70  | 66  | 74  | 69  | 65  | 72  | 67  | 64  | 62 |
| 5                   | 83   | 73  | 65  | 60  | 82  | 72  | 65  | 59  | 70  | 63  | 59  | 68  | 62  | 58  | 66  | 61  | 57  | 56 |
| 6                   | 78   | 67  | 59  | 54  | 76  | 66  | 59  | 53  | 64  | 58  | 53  | 62  | 57  | 52  | 61  | 56  | 52  | 50 |
| 7                   | 73   | 61  | 54  | 49  | 71  | 61  | 53  | 48  | 59  | 53  | 48  | 58  | 52  | 48  | 56  | 51  | 47  | 46 |
| 8                   | 69   | 57  | 49  | 44  | 67  | 56  | 49  | 44  | 55  | 48  | 44  | 54  | 48  | 44  | 52  | 47  | 43  | 42 |
| 9                   | 64   | 53  | 45  | 41  | 63  | 52  | 45  | 40  | 51  | 45  | 40  | 50  | 44  | 40  | 49  | 44  | 40  | 38 |
| 10                  | 61   | 49  | 42  | 37  | 60  | 48  | 42  | 37  | 47  | 41  | 37  | 47  | 41  | 37  | 46  | 40  | 37  | 35 |

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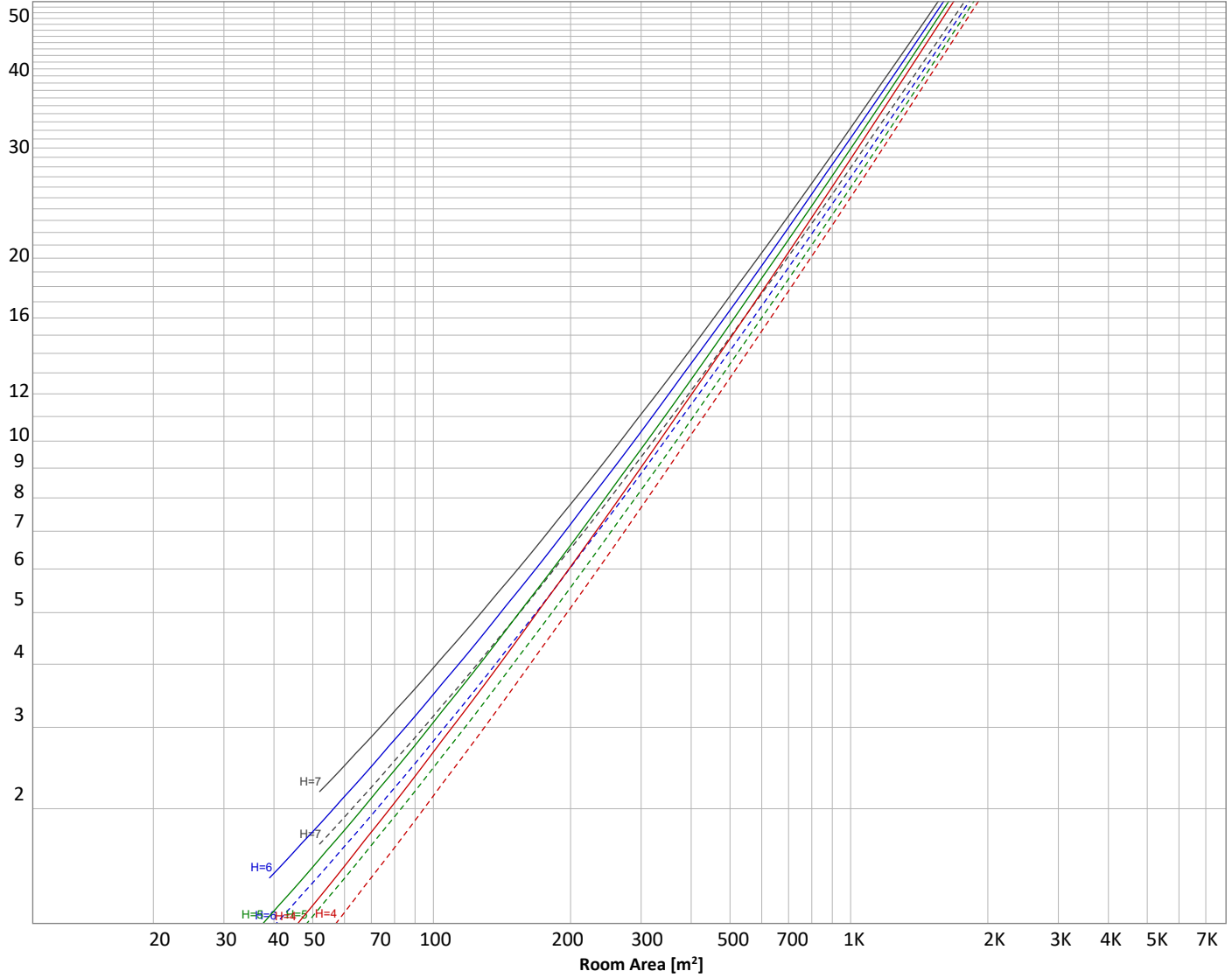
Operator:



## Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



### Conditions

|   |                |            |                     |                  |                   |
|---|----------------|------------|---------------------|------------------|-------------------|
| H = Room height                                   | Flux = 4002 lm | $\rho(\%)$ |                     |                  |                   |
| H <sub>down</sub> = Lamp distance from ceiling =  | 0.00 m         | Line type  | Ceiling reflectance | 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°   |
| 221 lm   | 621 lm    | 908 lm    | 928 lm    | 640 lm    | 348 lm    | 177 lm    | 93,2 lm   | 29,1 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 4,77 lm  | 4,87 lm   | 5,12 lm   | 5,40 lm   | 5,46 lm   | 4,79 lm   | 3,78 lm   | 2,49 lm   | 0,874 lm  |

# Light Measurement Report

Print date: 22-5-2025

Measurement date and time: 22-5-2025 08:34:01 – Measurement no. VFR-250522-1362-MS

Measurement tracking No. and Link: [VT250522-002894](https://www.viso-systems.com/VT250522-002894)

Operator:



## Outdoor Light Planning

### Lumen per Zone

| Zone (γ)     | Lumen          | % Total       |
|--------------|----------------|---------------|
| 0-10°        | 221 lm         | 5,5%          |
| 10-20°       | 621 lm         | 15,5%         |
| 20-30°       | 908 lm         | 22,7%         |
| 30-40°       | 928 lm         | 23,2%         |
| 40-50°       | 640 lm         | 16,0%         |
| 50-60°       | 348 lm         | 8,7%          |
| 60-70°       | 177 lm         | 4,4%          |
| 70-80°       | 93 lm          | 2,3%          |
| 80-90°       | 29 lm          | 0,7%          |
| 90-100°      | 5 lm           | 0,1%          |
| 100-110°     | 5 lm           | 0,1%          |
| 110-120°     | 5 lm           | 0,1%          |
| 120-130°     | 5 lm           | 0,1%          |
| 130-140°     | 5 lm           | 0,1%          |
| 140-150°     | 5 lm           | 0,1%          |
| 150-160°     | 4 lm           | 0,1%          |
| 160-170°     | 2 lm           | 0,1%          |
| 170-180°     | 1 lm           | 0,0%          |
| <b>Total</b> | <b>4002 lm</b> | <b>100,0%</b> |

### Intensity peaks

|                |         |
|----------------|---------|
| Max intensity  | 2359 cd |
| Intensity, 90° | 7 cd    |
| Intensity, 0°  | 2355 cd |

### Zonal Lumen summary

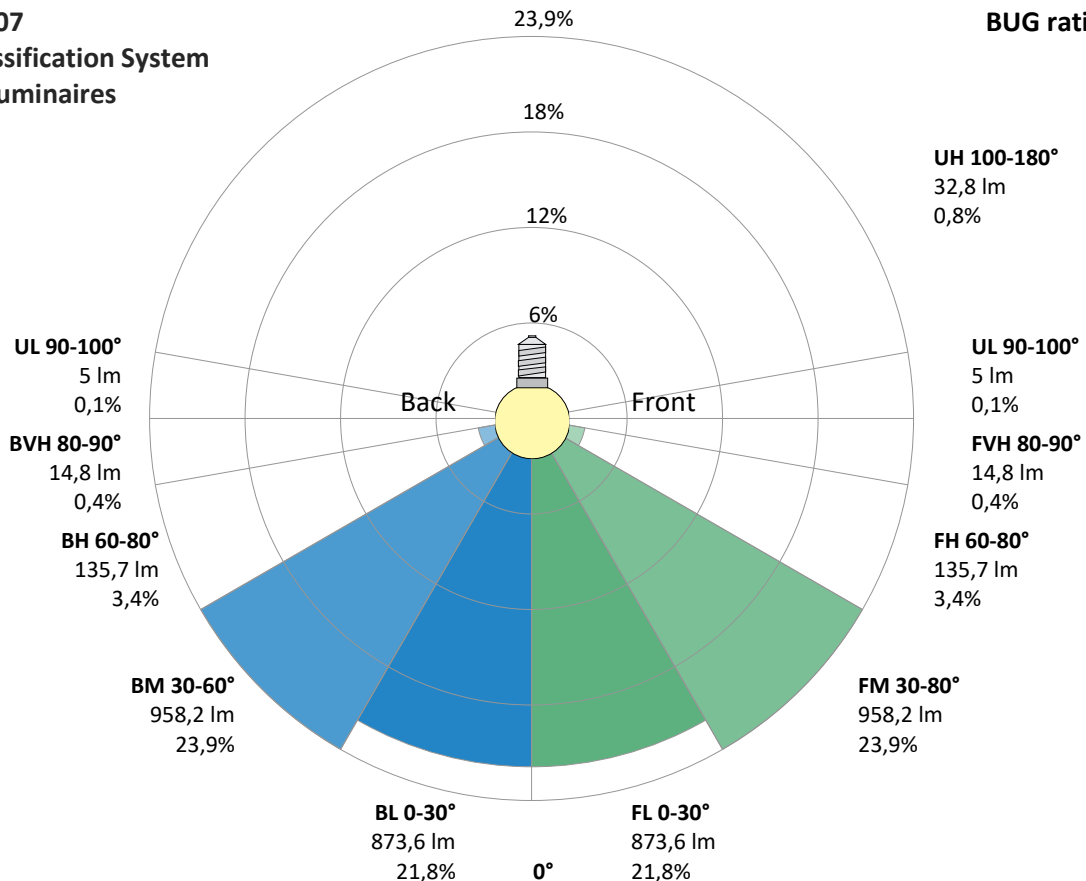
| Zone (γ) | Lumen   | % Total |
|----------|---------|---------|
| 0-30°    | 1750 lm | 43,7%   |
| 0-40°    | 2678 lm | 66,9%   |
| 0-60°    | 3665 lm | 91,6%   |
| 60-90°   | 300 lm  | 7,5%    |
| 70-100°  | 127 lm  | 3,2%    |
| 90-120°  | 15 lm   | 0,4%    |
| 0-90°    | 3965 lm | 99,1%   |
| 90-180°  | 38 lm   | 0,9%    |
| 0-180°   | 4002 lm | 100,0%  |

### BUG rating

|                      | Lumen  | % Total |
|----------------------|--------|---------|
| <b>Forward light</b> |        |         |
| Low(0-30°)           | 874 lm | 21,8%   |
| Medium(30-60°)       | 958 lm | 23,9%   |
| High(60-80°)         | 136 lm | 3,4%    |
| Very high(80-90°)    | 15 lm  | 0,4%    |
| <b>Back light</b>    |        |         |
| Low(0-30°)           | 874 lm | 21,8%   |
| Medium(30-60°)       | 958 lm | 23,9%   |
| High(60-80°)         | 136 lm | 3,4%    |
| Very high(80-90°)    | 15 lm  | 0,4%    |
| <b>Uplight</b>       |        |         |
| Low(90-100°)         | 5 lm   | 0,1%    |
| High(100-180°)       | 33 lm  | 0,8%    |

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

**BUG rating B2 U2 G1**



# Light Measurement Report

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Measurement date and time: 22-5-2025 08:34:01 – Measurement no. VFR-250522-1362-MS

Measurement tracking No. and Link: [VT250522-002894](#)

Operator:

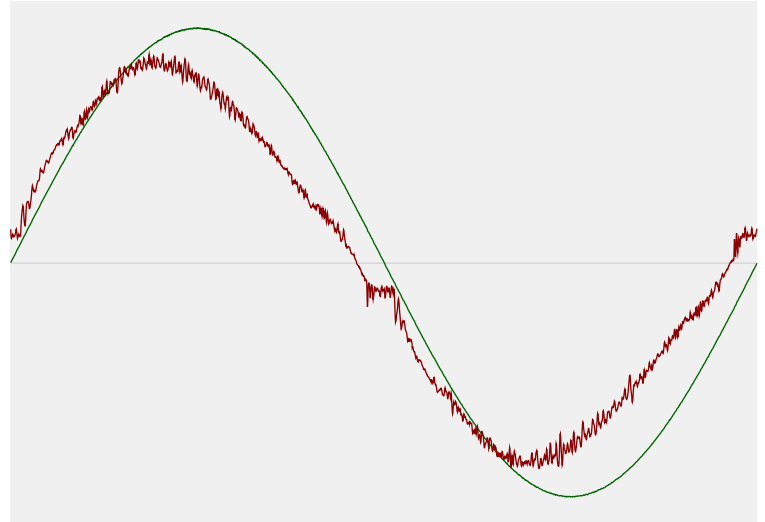


## Power Details

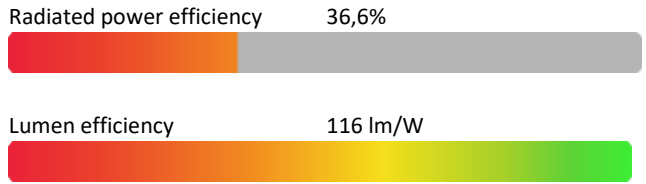
### Input Power

|   |          |
|---|----------|
| Power feed to light source                          | 34,4 W   |
| Frequency of input power                            | 50 Hz    |
| RMS Input voltage feed, $V_{RMS}$                   | 230 V    |
| RMS Input current feed, $I_{RMS}$                   | 0,154 A  |
| Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$ | 35,36 VA |
| Displacement factor of AC power feed                | 0,97     |
| Power factor of AC current feed                     | 0,97     |
| Total harmonic distortion of the current            | 6,77%    |
| Total harmonic distortion of the voltage            | 0,07%    |

### 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 | 6439 K |
| CCT shift | +61 K  |
| CCT end   | 6500 K |

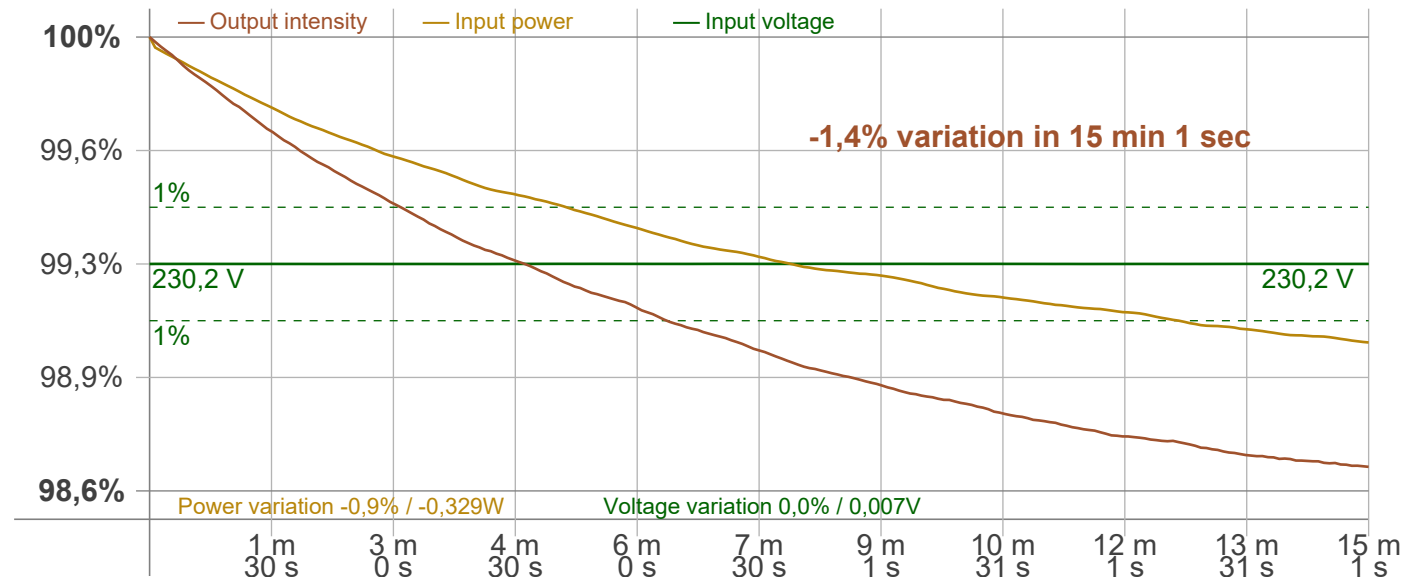
### Warmup Result

|                   |                                 |
|-------------------|---------------------------------|
| Total warmup time | Lamp stabilized in 15 min 1 sec |
| Warmup variation  | -1,4%                           |

### Output Change

|               |         |
|---------------|---------|
| Output start  | 4058 lm |
| Output change | -55 lm  |
| Output end    | 4002 lm |

### Stabilization Curve



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Measurement tracking No. and Link: [VT250522-002894](#)

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: 98,04 Hz  
 Percent Flicker: 0,08 %  
 Flicker index: 0

### 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: 0,07 %  
 JA8/10 400 Hz: 0,08 %  
 JA8/10 1000 Hz: 0,08 %

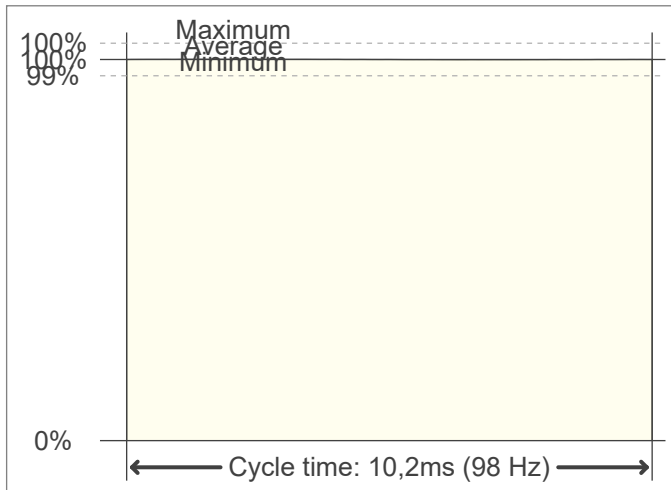
### TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

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

### 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

