

Light Measurement Report

Print date: 28-11-2024

Measurement date and time: 28-11-2024 08:28:33 – Measurement no. VFR-241128-2228-MS

Measurement tracking No. and Link: [VT241128-007397](https://www.viso-systems.com/VT241128-007397)

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
 γ (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°
1,99 m
5,2 W – PF 0,78 – DPF 0,94
230 V – 0,029 A
50 Hz
Lamp stabilized in 15 min 2 sec – 2,0%

Tested Light Source

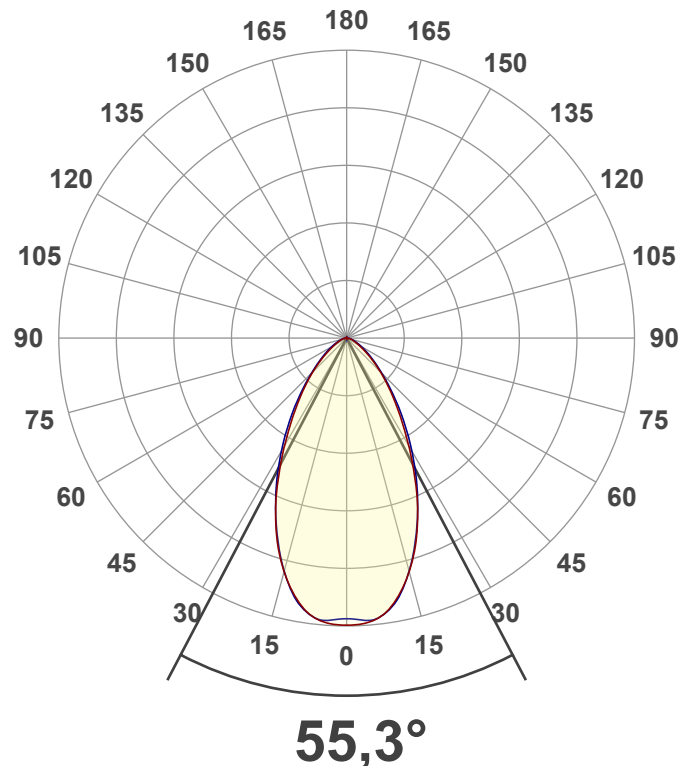
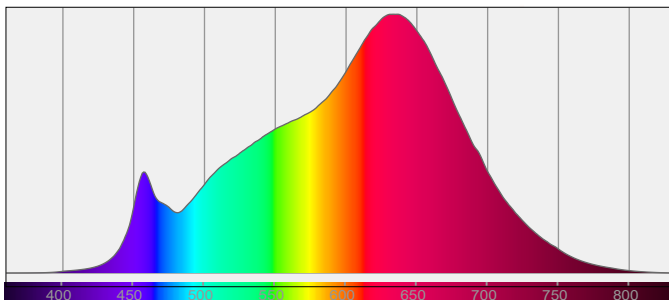
Product Name
Item No. and Manufacturer
Product Description (line 1)

800697-2700K
800697-2700K – Dutchfulfillment
GU10 SPOT | DIM | ZOOMABLE | 5W

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

301 lm – 0,55% / 99,45%
58 lm/W
284 cd – 55,3°
CCT = 2700 K / 2829 K
CRI 97,4
 R_f 93,3 – R_g 98,8
Duv 0,0003 – SDCM 5,3
SVM 0,04 – PstLM 0,07



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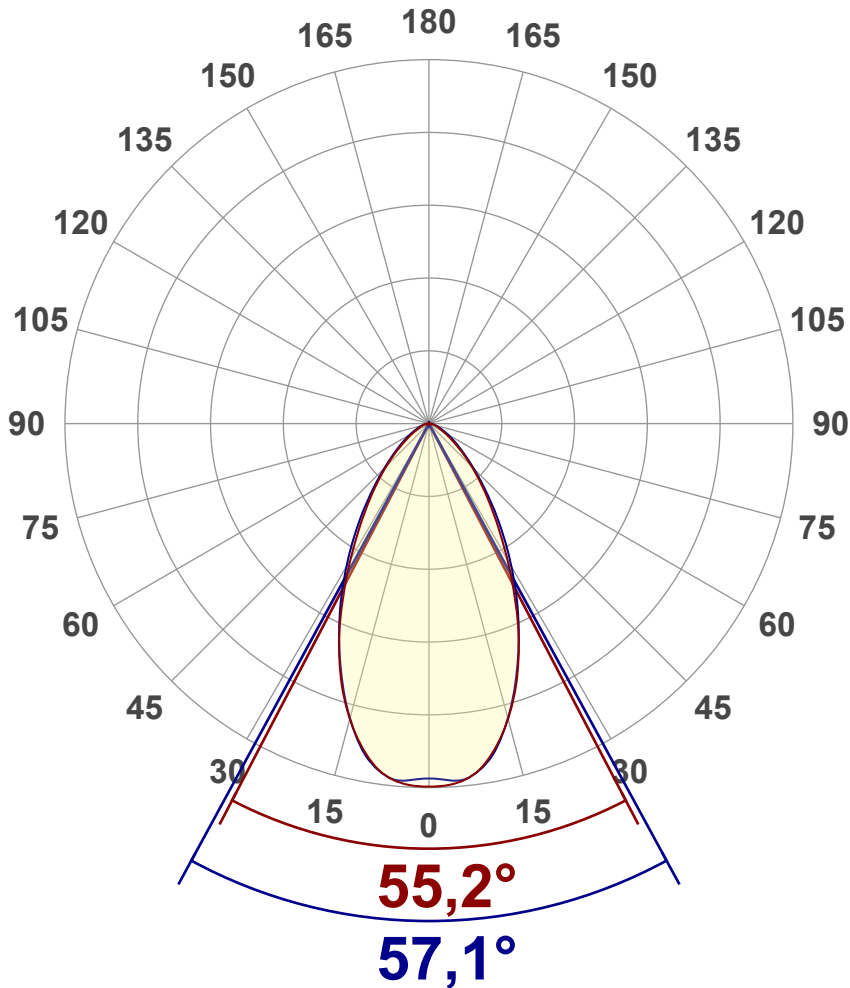
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Operator:



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

| | |
|----------------------|----------------|
| Output (total Lumen) | 301 lm |
| Lumen Up% / Down% | 0,55% / 99,45% |
| Peak Intensity | 284 cd |
| Beam Angle (50%) | 55,3° |
| Beam Angle (90%) | 57,1° |
| Beam Angle (10%) | 55,2° |

Cut-off Angle

| | |
|--------------|--------|
| Average 2,5% | 140,7° |
|--------------|--------|

Field Angle

| | |
|-------------|--------|
| Average 10% | 104,2° |
|-------------|--------|

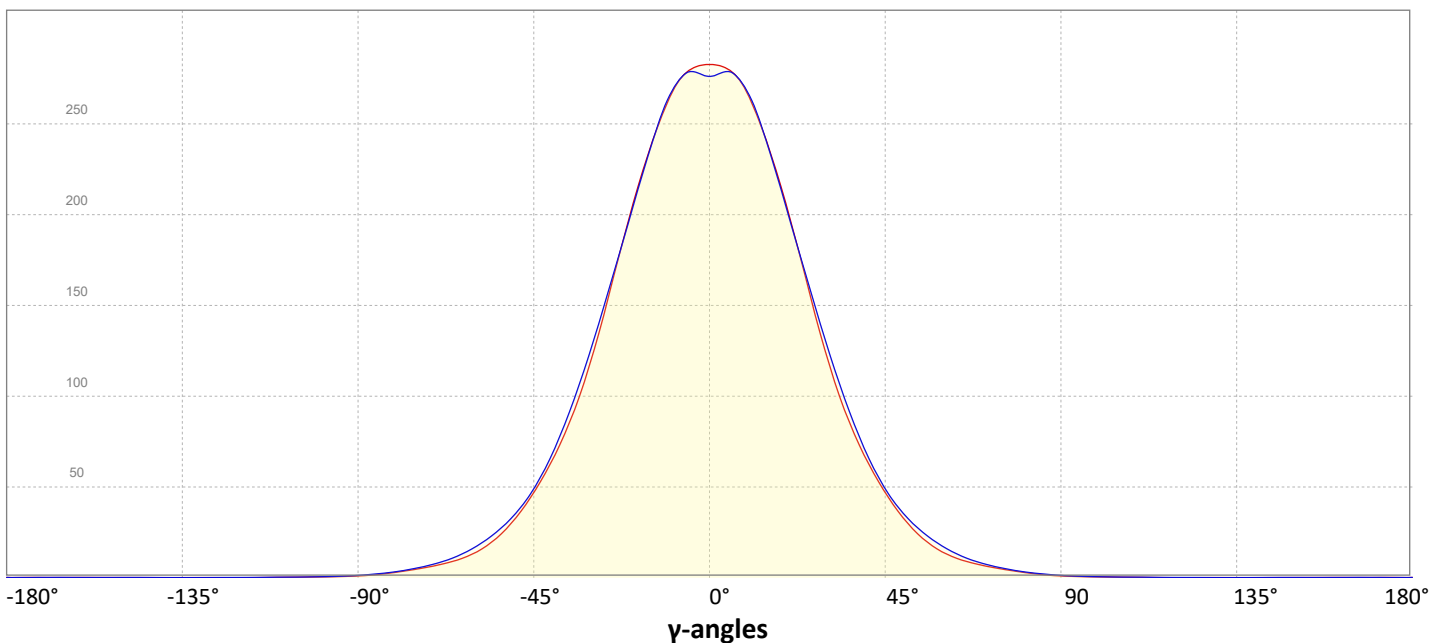
Intensity Ratio

| | |
|--------------|-------|
| In 120° cone | 93,5% |
| In 90° cone | 81,4% |

C000-C180

C090-C270

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



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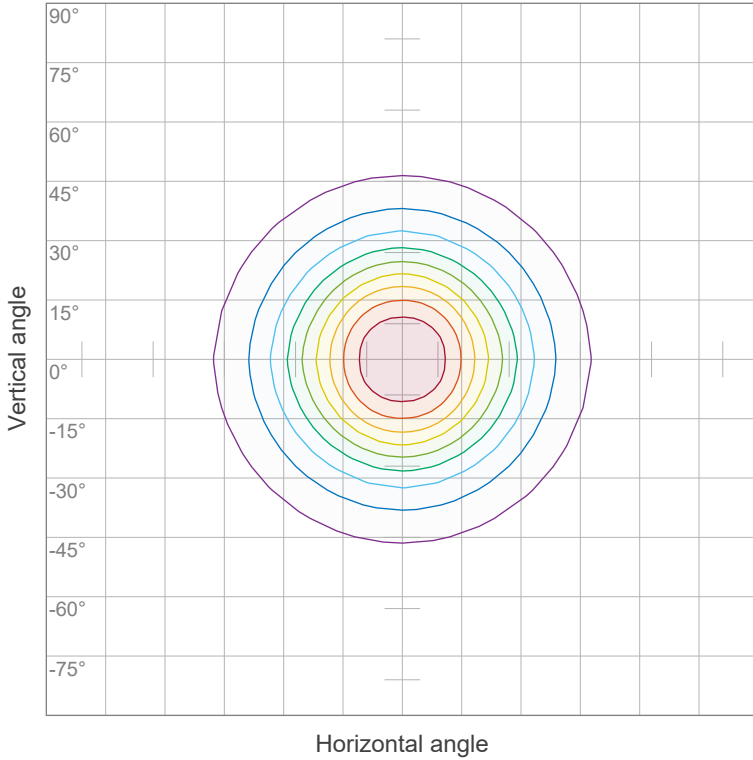
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Operator:



Iso-intensity Diagram (Iso-candela)

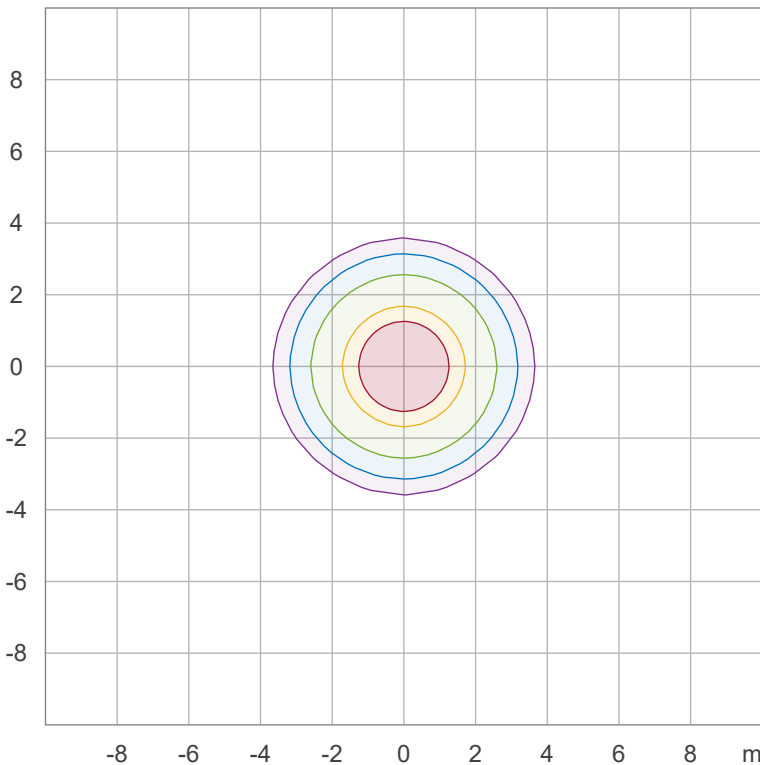


| | |
|------|----------|
| 90 % | 255,2 cd |
| 80 % | 226,9 cd |
| 70 % | 198,5 cd |
| 60 % | 170,2 cd |
| 50 % | 141,8 cd |
| 40 % | 113,4 cd |
| 30 % | 85,1 cd |
| 20 % | 56,7 cd |
| 10 % | 28,4 cd |

Peak intensity: 283,6 cd

Number of c-planes: 12

Iso-illuminance Diagram (Iso-lux)



| | |
|--------|---------|
| 50,0 % | 15,7 lx |
| 30,0 % | 9,4 lx |
| 10,0 % | 3,1 lx |
| 5,0 % | 1,6 lx |
| 3,0 % | 0,9 lx |

Peak illuminance: 31,5 lx

Mounting height: 3,0 m

Number of c-planes: 12

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Operator:

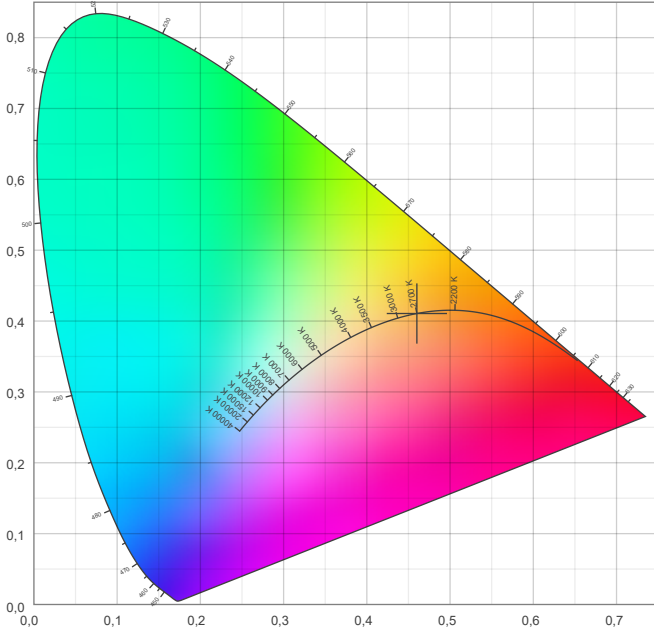


Color details

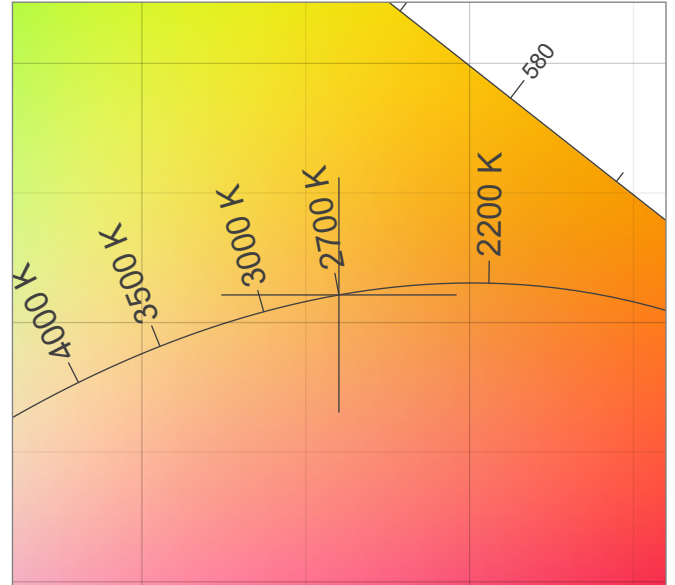
Correlated Color Temperature, Target CCT = 2700 K
 Correlated Color Temperature, Measured CCT = 2829 K
 Color Rendering Index CRI 97,4
 Color Rendering Index, R9 (red component) R9 = 94,7
 Color Rendering TM30-18 R_f 93,3 – R_g 98,8
 Color Quality Scale CQS = 94,9

MacAdam Steps SDCM = 5,3
 Color coordinates CIE 1931 (x;y) = (0,460;0,411)
 Color coordinate CIEs 1960 (u;v) = (0,263;0,352)
 Color deviation from BBL Duv = 0,0003
 Color coordinate CIEs 1976 (CIELUV) (u';v') = (0,263;0,527)

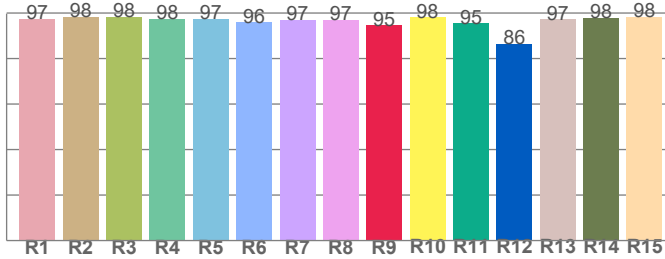
CIE 1931



CIE 1931 – zoomed on Planckian locus



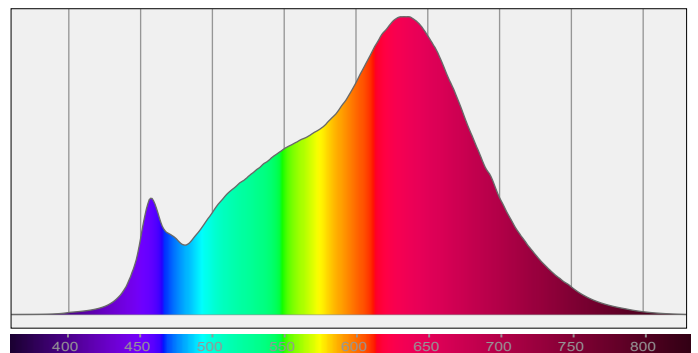
Color Rendering Index per reference color (CIE 1995)



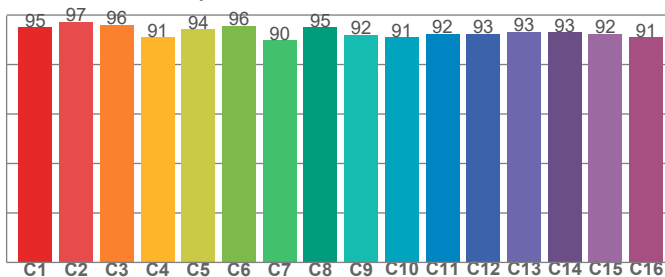
CRI R values, only R1-R8 are used to calculate final CRI value

| | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
| 97,5 | 98,4 | 98,3 | 97,5 | 97,4 | 95,9 | 97,0 | 97,0 | 94,7 | 98,2 | 95,4 | 86,5 | 97,4 | 97,8 | 98,3 |

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



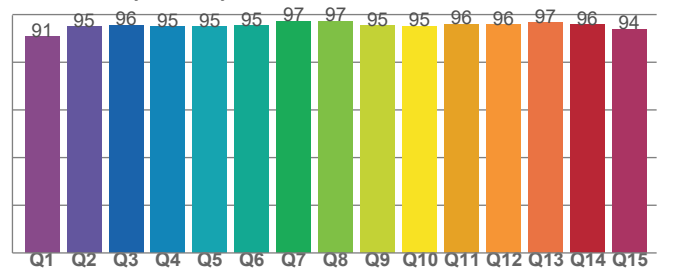
TM30-18 R_f-values per hue bin



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 |
| 94,9 | 97,2 | 96,0 | 91,0 | 94,2 | 95,6 | 89,8 | 95,0 | 92,0 | 91,0 | 92,4 | 92,5 | 93,2 | 93,1 | 92,5 | 91,1 |

Color Quality Scale by reference color



CQS Q values

| | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
| 90,8 | 94,9 | 95,5 | 94,9 | 94,9 | 95,3 | 97,2 | 97,3 | 95,4 | 95,1 | 95,9 | 95,8 | 96,5 | 95,7 | 93,9 |

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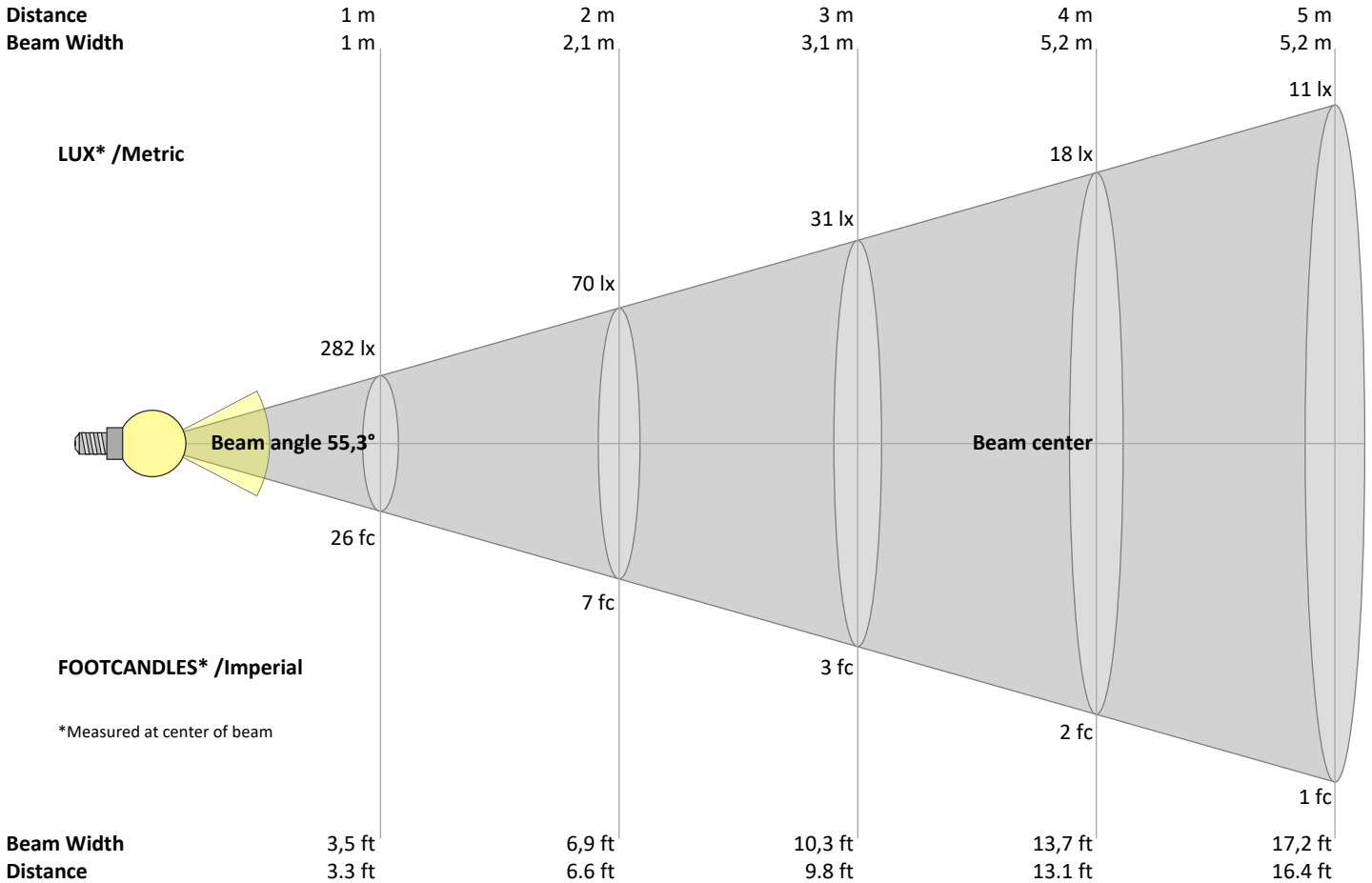
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Operator:



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 |
| 282 | 70 | 31 | 18 | 11 | 8 | 6 | 4 | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | lux |
| 26,2 | 6,5 | 2,9 | 1,6 | 1 | 0,7 | 0,5 | 0,4 | 0,3 | 0,3 | 0,2 | 0,2 | 0,2 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 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 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 282 | 278 | 264 | 237 | 202 | 162 | 123 | 91 | 66 | 47 | 32 | 21 | 14 | 10 | 7 | 5 | 3 | 2 | 1 | 1 | cd |
| 100% | 99% | 94% | 84% | 72% | 58% | 44% | 32% | 24% | 17% | 11% | 8% | 5% | 3% | 2% | 2% | 1% | 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 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 282 | 278 | 265 | 237 | 201 | 164 | 129 | 97 | 70 | 49 | 35 | 25 | 17 | 12 | 8 | 5 | 3 | 2 | 1 | 1 | cd |
| 100% | 99% | 94% | 84% | 71% | 58% | 46% | 34% | 25% | 18% | 12% | 9% | 6% | 4% | 3% | 2% | 1% | 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 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 282 | 278 | 264 | 237 | 202 | 162 | 123 | 91 | 66 | 47 | 32 | 21 | 14 | 10 | 7 | 5 | 3 | 2 | 1 | 1 | cd |
| 100% | 99% | 94% | 84% | 72% | 58% | 44% | 32% | 24% | 17% | 11% | 8% | 5% | 3% | 2% | 2% | 1% | 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 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 282 | 278 | 265 | 237 | 201 | 164 | 129 | 97 | 70 | 49 | 35 | 25 | 17 | 12 | 8 | 5 | 3 | 2 | 1 | 1 | cd |
| 100% | 99% | 94% | 84% | 71% | 58% | 46% | 34% | 25% | 18% | 12% | 9% | 6% | 4% | 3% | 2% | 1% | 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 | 21,1 | 21,9 | 21,3 | 22,2 | 22,4 | 21,5 | 22,4 | 21,7 | 22,6 | 22,9 |
| | 3H | 21,2 | 22,2 | 21,6 | 22,4 | 22,6 | 21,7 | 22,7 | 22,1 | 22,9 | 23,1 |
| | 4H | 21,4 | 22,2 | 21,8 | 22,5 | 22,8 | 21,9 | 22,7 | 22,3 | 23,0 | 23,3 |
| | 6H | 21,5 | 22,2 | 21,8 | 22,5 | 22,9 | 22,0 | 22,8 | 22,3 | 23,1 | 23,4 |
| | 8H | 21,5 | 22,2 | 21,8 | 22,6 | 23,0 | 22,0 | 22,7 | 22,3 | 23,1 | 23,5 |
| | 12H | 21,5 | 22,2 | 21,8 | 22,5 | 23,0 | 22,0 | 22,7 | 22,4 | 23,1 | 23,5 |
| 4H | 2H | 21,1 | 22,0 | 21,5 | 22,2 | 22,5 | 21,5 | 22,4 | 21,9 | 22,6 | 22,9 |
| | 3H | 21,5 | 22,2 | 21,9 | 22,6 | 23,0 | 22,0 | 22,7 | 22,4 | 23,1 | 23,5 |
| | 4H | 21,6 | 22,3 | 22,1 | 22,7 | 23,3 | 22,1 | 22,8 | 22,5 | 23,2 | 23,7 |
| | 6H | 21,8 | 22,4 | 22,3 | 22,8 | 23,2 | 22,2 | 22,9 | 22,8 | 23,3 | 23,6 |
| | 8H | 21,8 | 22,4 | 22,3 | 22,8 | 23,2 | 22,3 | 22,9 | 22,8 | 23,2 | 23,6 |
| | 12H | 21,8 | 22,3 | 22,3 | 22,7 | 23,2 | 22,3 | 22,8 | 22,8 | 23,2 | 23,7 |
| 8H | 4H | 21,7 | 22,3 | 22,2 | 22,6 | 23,0 | 22,1 | 22,7 | 22,6 | 23,1 | 23,4 |
| | 6H | 21,9 | 22,3 | 22,4 | 22,8 | 23,3 | 22,3 | 22,8 | 22,8 | 23,2 | 23,8 |
| | 8H | 22,0 | 22,3 | 22,5 | 22,9 | 23,5 | 22,5 | 22,8 | 23,0 | 23,3 | 24,0 |
| | 12H | 22,0 | 22,3 | 22,6 | 22,9 | 23,5 | 22,5 | 22,8 | 23,1 | 23,3 | 23,9 |
| 12H | 4H | 21,6 | 22,1 | 22,1 | 22,5 | 23,0 | 22,1 | 22,6 | 22,6 | 23,0 | 23,4 |
| | 6H | 21,9 | 22,3 | 22,4 | 22,8 | 23,4 | 22,4 | 22,7 | 22,9 | 23,2 | 23,9 |
| | 8H | 22,0 | 22,3 | 22,6 | 22,8 | 23,4 | 22,4 | 22,7 | 23,0 | 23,3 | 23,9 |

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

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

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 | 106 | 106 | 106 | 102 | 102 | 102 | 99 | | |
| 1 | 112 | 108 | 105 | 103 | 109 | 106 | 103 | 101 | 102 | 100 | 98 | 98 | 96 | 95 | 95 | 93 | 92 | 90 | |
| 2 | 105 | 99 | 94 | 90 | 103 | 97 | 93 | 89 | 94 | 90 | 87 | 91 | 88 | 85 | 88 | 85 | 83 | 81 | |
| 3 | 98 | 91 | 85 | 80 | 96 | 89 | 84 | 79 | 86 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 | |
| 4 | 92 | 83 | 77 | 72 | 90 | 82 | 76 | 71 | 80 | 75 | 70 | 78 | 73 | 69 | 76 | 72 | 69 | 67 | |
| 5 | 87 | 77 | 70 | 65 | 85 | 76 | 70 | 65 | 74 | 68 | 64 | 72 | 67 | 63 | 70 | 66 | 63 | 61 | |
| 6 | 82 | 71 | 64 | 59 | 80 | 71 | 64 | 59 | 69 | 63 | 59 | 67 | 62 | 58 | 66 | 61 | 58 | 56 | |
| 7 | 77 | 66 | 60 | 55 | 76 | 66 | 59 | 55 | 64 | 58 | 54 | 63 | 58 | 54 | 62 | 57 | 53 | 52 | |
| 8 | 73 | 62 | 55 | 51 | 72 | 61 | 55 | 50 | 60 | 54 | 50 | 59 | 54 | 50 | 58 | 53 | 50 | 48 | |
| 9 | 69 | 58 | 52 | 47 | 68 | 58 | 51 | 47 | 57 | 51 | 47 | 56 | 50 | 47 | 55 | 50 | 46 | 45 | |
| 10 | 66 | 55 | 48 | 44 | 64 | 54 | 48 | 44 | 53 | 48 | 44 | 52 | 47 | 44 | 52 | 47 | 43 | 42 | |

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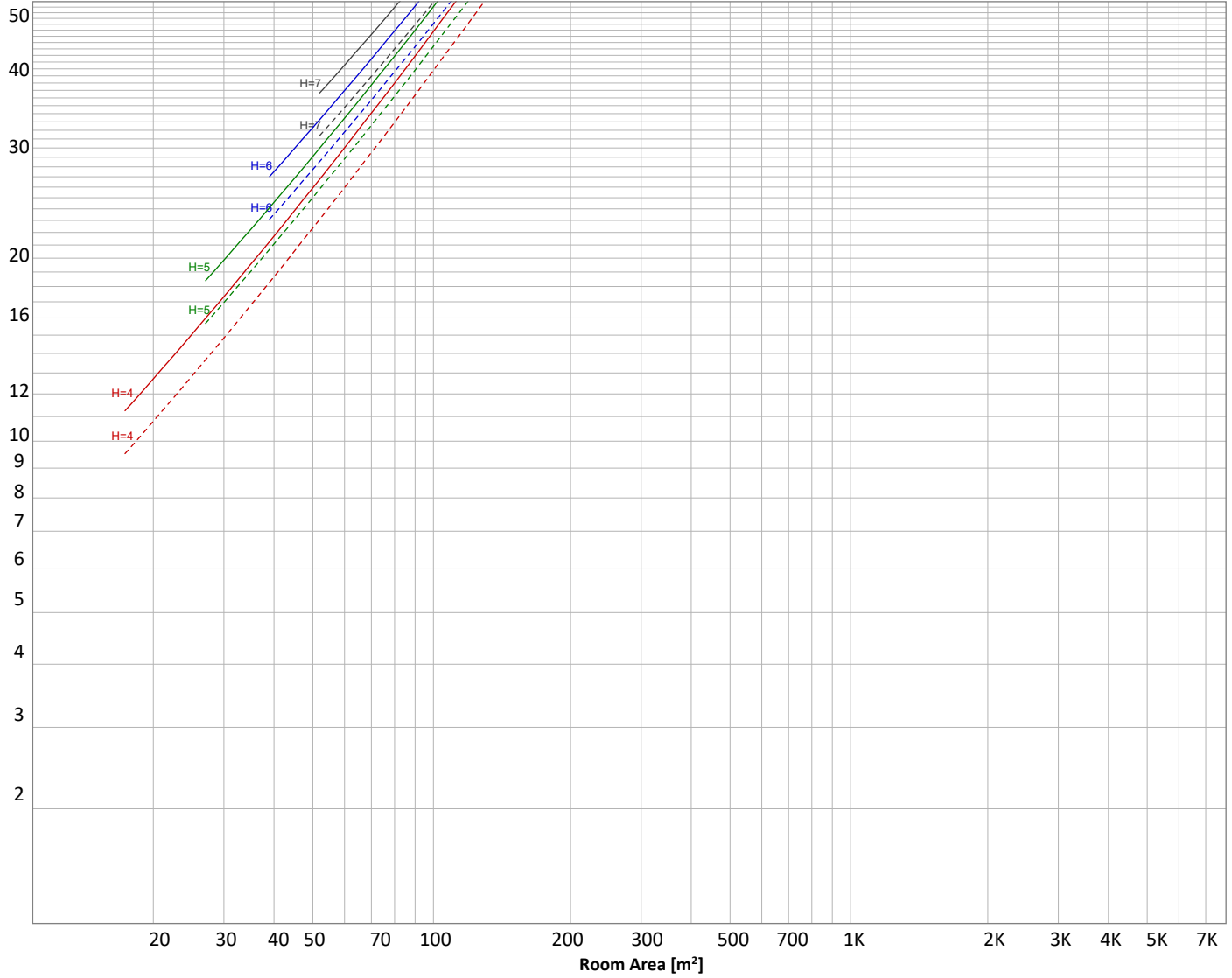
Operator:



Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



Conditions

| | | | | | |
|---|---------------|-----------|---------------------|--------------------------|-------------------|
| H = Room height | Flux = 301 lm | | | | |
| H _{down} = Lamp distance from ceiling = | 0.00 m | Line type | Ceiling reflectance | ρ(%) 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° |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 26,3 lm | 66,3 lm | 73,8 lm | 57,7 lm | 37,0 lm | 20,3 lm | 10,5 lm | 5,33 lm | 2,13 lm |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0,761 lm | 0,362 lm | 0,180 lm | 0,099 lm | 0,071 lm | 0,073 lm | 0,061 lm | 0,041 lm | 0,013 lm |

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Operator:



Outdoor Light Planning

Lumen per Zone

| Zone (γ) | Lumen | % Total |
|----------|-----------------|---------|
| 0-10° | {LUM00-10} lm | #VALUE! |
| 10-20° | {LUM10-20} lm | #VALUE! |
| 20-30° | {LUM20-30} lm | #VALUE! |
| 30-40° | {LUM30-40} lm | #VALUE! |
| 40-50° | {LUM40-50} lm | #VALUE! |
| 50-60° | {LUM50-60} lm | #VALUE! |
| 60-70° | {LUM60-70} lm | #VALUE! |
| 70-80° | {LUM70-80} lm | #VALUE! |
| 80-90° | {LUM80-90} lm | #VALUE! |
| 90-100° | {LUM90-100} lm | #VALUE! |
| 100-110° | {LUM100-110} lm | #VALUE! |
| 110-120° | {LUM110-120} lm | #VALUE! |
| 120-130° | {LUM120-130} lm | #VALUE! |
| 130-140° | {LUM130-140} lm | #VALUE! |
| 140-150° | {LUM140-150} lm | #VALUE! |
| 150-160° | {LUM150-160} lm | #VALUE! |
| 160-170° | {LUM160-170} lm | #VALUE! |
| 170-180° | {LUM170-180} lm | #VALUE! |
| Total | 0 lm | #VALUE! |

Intensity peaks

| | |
|----------------|------------|
| Max intensity | {PEAK} cd |
| Intensity, 90° | {INT90} cd |
| Intensity, 0° | {INT0} cd |

Zonal Lumen summary

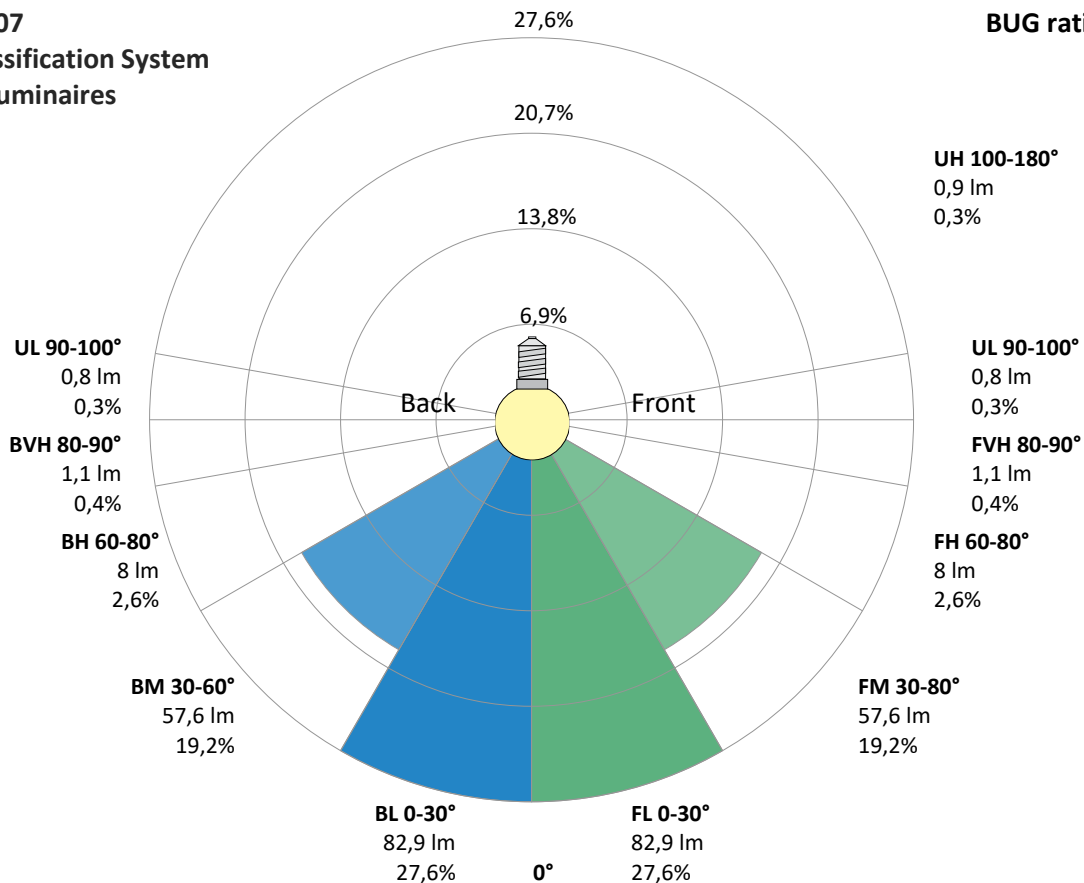
| Zone (γ) | Lumen | % Total |
|----------|----------------|---------|
| 0-30° | {LUM00-30} lm | #VALUE! |
| 0-40° | {LUM00-40} lm | #VALUE! |
| 0-60° | {LUM00-60} lm | #VALUE! |
| 60-90° | {LUM60-90} lm | #VALUE! |
| 70-100° | {LUM70-100} lm | #VALUE! |
| 90-120° | {LUM90-120} lm | #VALUE! |
| 0-90° | {LUM00-90} lm | #VALUE! |
| 90-180° | {LUM90-180} lm | #VALUE! |
| 0-180° | {LUM00-180} lm | #VALUE! |

BUG rating

| | Lumen | % Total |
|----------------------|-----------|---------|
| Forward light | | |
| Low(0-30°) | {BUG0} lm | #VALUE! |
| Medium(30-60°) | {BUG1} lm | #VALUE! |
| High(60-80°) | {BUG2} lm | #VALUE! |
| Very high(80-90°) | {BUG3} lm | #VALUE! |
| Back light | | |
| Low(0-30°) | {BUG4} lm | #VALUE! |
| Medium(30-60°) | {BUG5} lm | #VALUE! |
| High(60-80°) | {BUG6} lm | #VALUE! |
| Very high(80-90°) | {BUG7} lm | #VALUE! |
| Uplight | | |
| Low(90-100°) | {BUG8} lm | #VALUE! |
| High(100-180°) | {BUG9} lm | #VALUE! |

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

BUG rating B0 U1 G0



Light Measurement Report

Print date: 28-11-2024

Measurement date and time: 28-11-2024 08:28:33 – Measurement no. VFR-241128-2228-MS

Measurement tracking No. and Link: [VT241128-007397](https://www.viso-systems.com/VT241128-007397)

Operator:

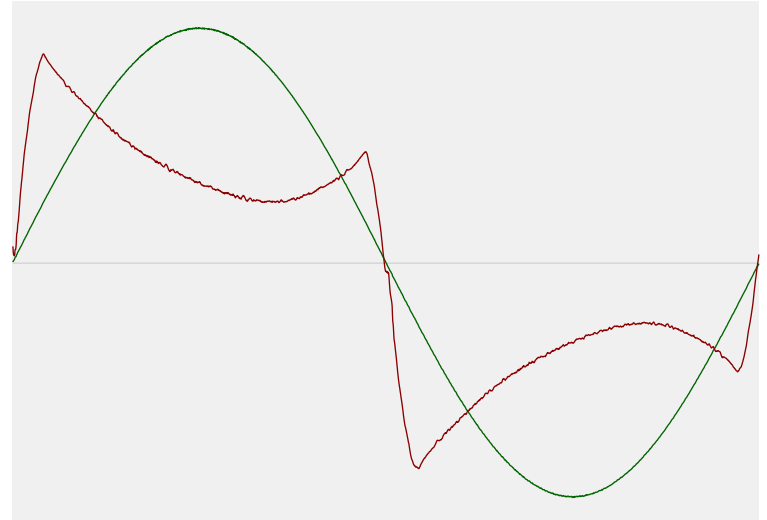


Power Details

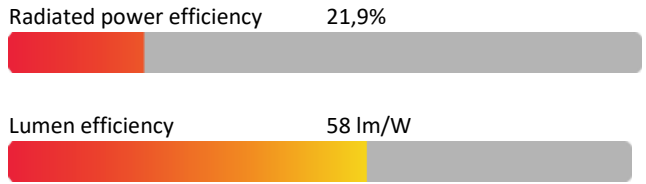
Input Power

| | |
|---|---------|
| Power feed to light source | 5,2 W |
| Frequency of input power | 50 Hz |
| RMS Input voltage feed, V_{RMS} | 230 V |
| RMS Input current feed, I_{RMS} | 0,029 A |
| Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$ | 6,69 VA |
| Displacement factor of AC power feed | 0,94 |
| Power factor of AC current feed | 0,78 |
| Total harmonic distortion of the current | 66,33% |
| 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 | 2725 K |
| CCT shift | -25 K |
| CCT end | 2700 K |

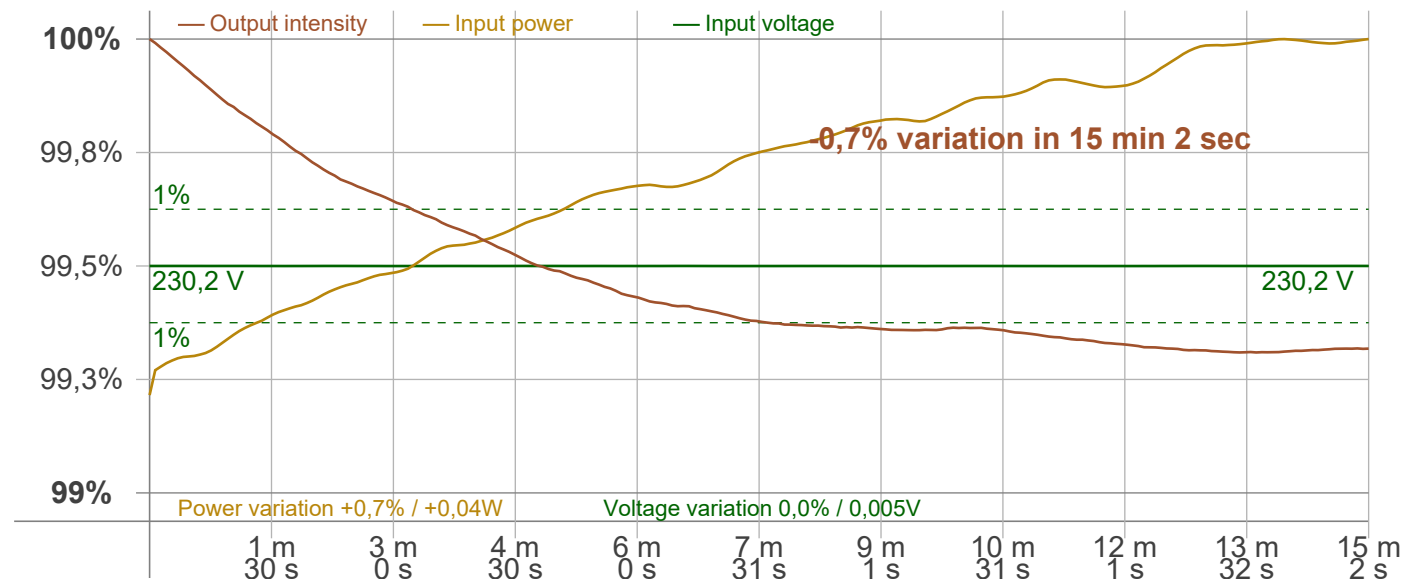
Warmup Result

| | |
|-------------------|---------------------------------|
| Total warmup time | Lamp stabilized in 15 min 2 sec |
| Warmup variation | -0,7% |

Output Change

| | |
|---------------|--------|
| Output start | 303 lm |
| Output change | -2 lm |
| Output end | 301 lm |

Stabilization Curve



Light Measurement Report

Print date: 28-11-2024

Measurement date and time: 28-11-2024 08:28:33 – Measurement no. VFR-241128-2228-MS

Measurement tracking No. and Link: [VT241128-007397](https://www.viso-systems.com/VT241128-007397)

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: 99,01 Hz
 Percent Flicker: 1,21 %
 Flicker index: 0

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

JA8/10 40 Hz: 0,11 %
 JA8/10 90 Hz: 0,11 %
 JA8/10 200 Hz: 1,15 %
 JA8/10 400 Hz: 1,21 %
 JA8/10 1000 Hz: 1,21 %

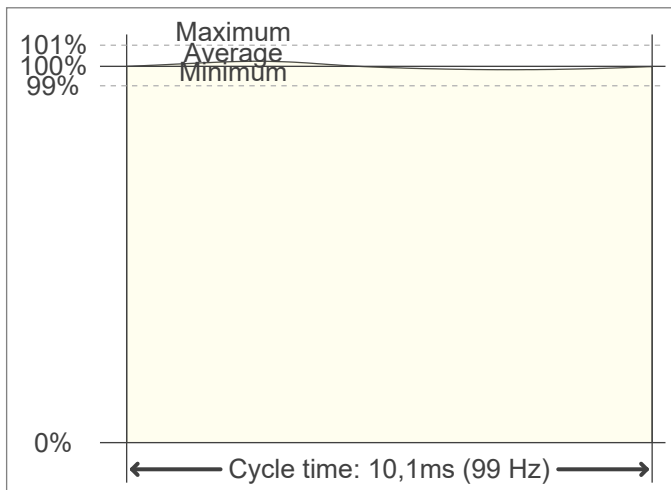
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

PstLM value (F < 80 Hz): 0,07
 SVM value (80 < F < 2000 Hz): 0,04

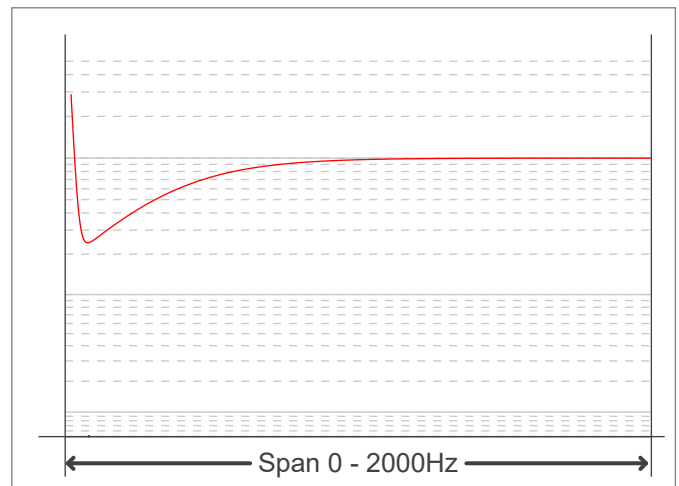
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp: 0,06

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



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot

