

# Light Measurement Report

Print date: 22/05/2026

Measurement date and time: 19/05/2026 15:05:23 – Measurement no. VFR-260519-1515-MS

Measurement tracking No. and Link: [VT260519-006256](#)

Operator: LC



## 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 – 11/12/2024 – 3532797498

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

72 planes – 5°

1°

1,64 m

18,1 W – PF 0,86 – DPF 0,97

231 V – 0,091 A

50 Hz

Lamp stabilized in 15 min 3 sec – 2,0%

## Tested Light Source

Product Name

Item No. and Manufacturer

Product Description (line 1)

LUMIA SIMPLE 3000K 24D WHITE

08081100302403 – ELECTRUM

450mA

## 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

1941 lm – 0,1% / 99,9%

107 lm/W

7123 cd – 21,5°

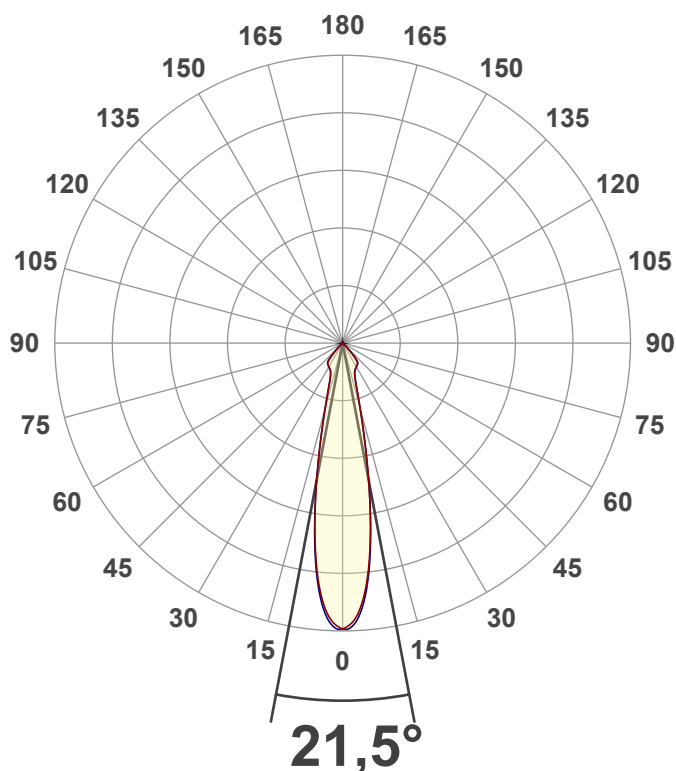
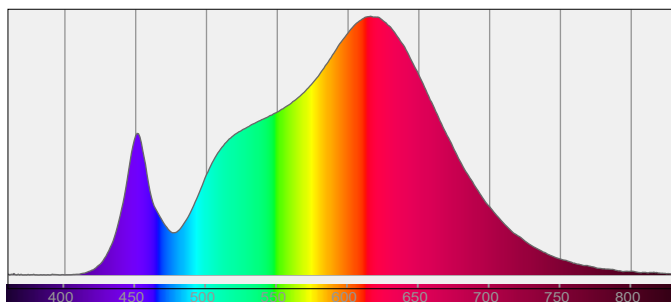
CCT = 3000 K / 3043 K

CRI 92,5

R<sub>f</sub> 91,7 – R<sub>g</sub> 100,3

Duv 0,0008 – SDCM 1,6

SVM 0,03 – PstLM 0,04



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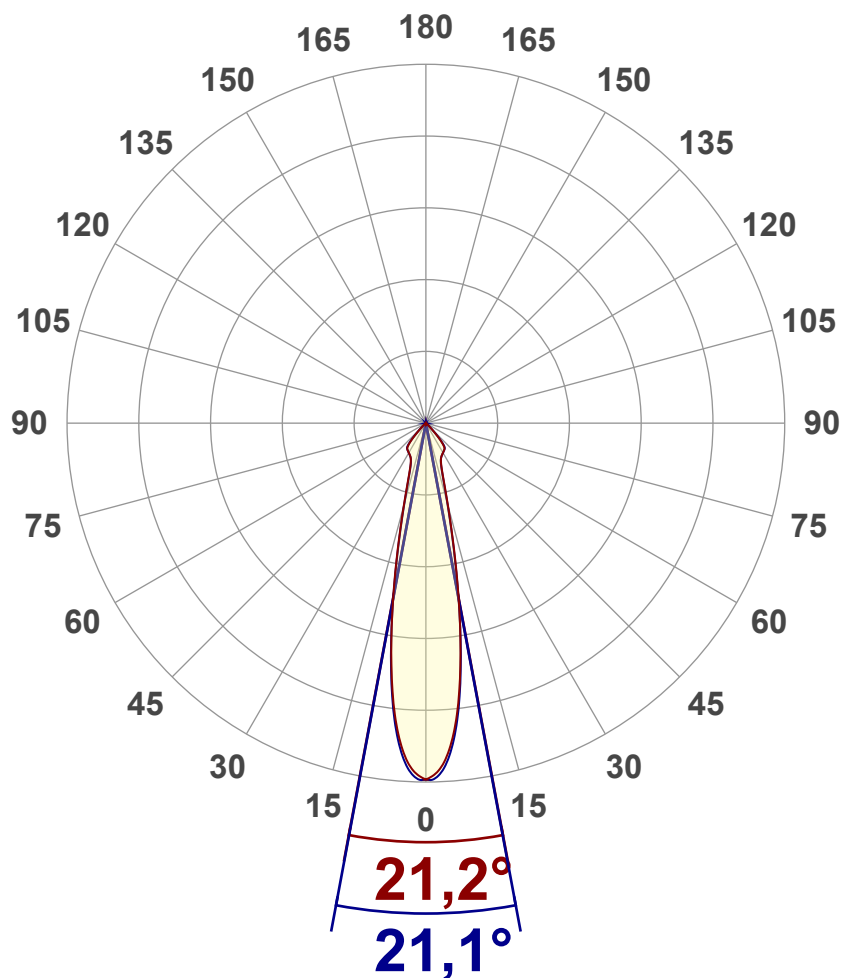
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## Luminous Intensity diagram

Unit: 0-100% of peak intensity



## Main Values

|                       |              |
|-----------------------|--------------|
| Output (total Lumen)  | 1941 lm      |
| Lumen Up% / Down%     | 0,1% / 99,9% |
| Peak Intensity        | 7123 cd      |
| Beam Angle (50%-FWHM) | 21,47°       |

## Cut-off Angle

|              |       |
|--------------|-------|
| Average 2,5% | 89,3° |
|--------------|-------|

## Field Angle

|             |       |
|-------------|-------|
| Average 10% | 59,2° |
|-------------|-------|

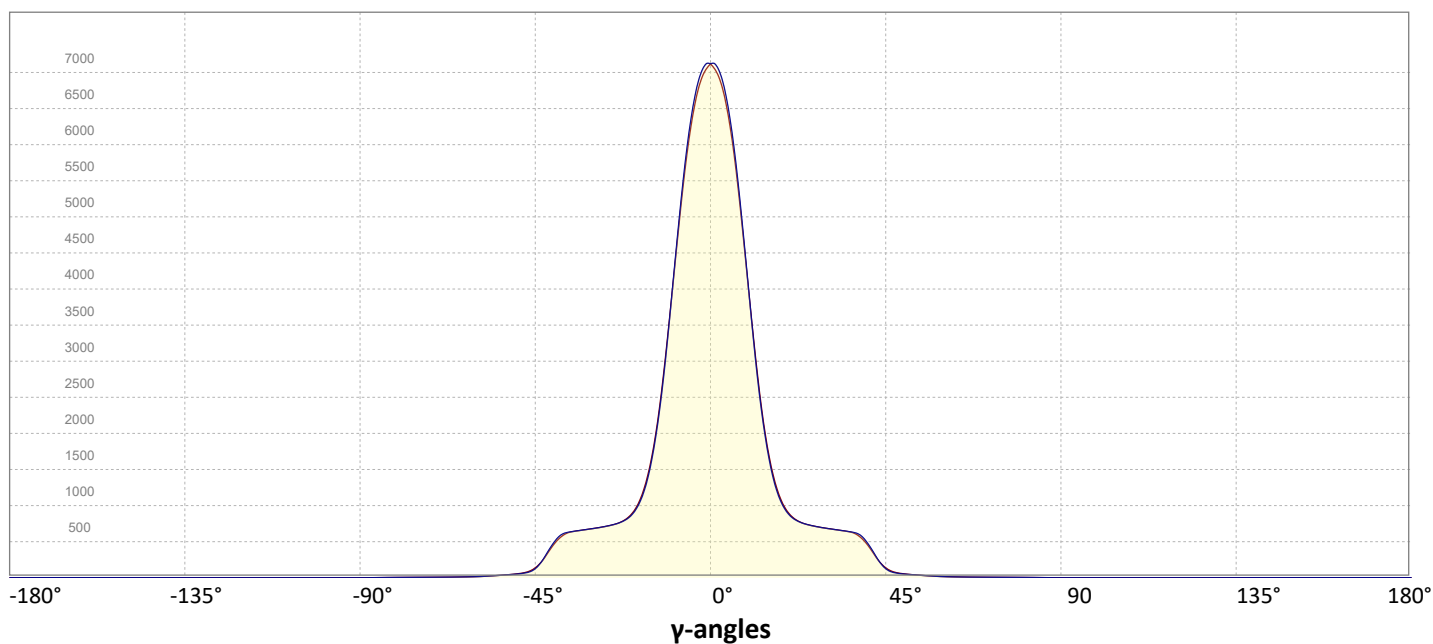
## Intensity Ratio

|              |       |
|--------------|-------|
| In 120° cone | 98,9% |
| In 90° cone  | 95,6% |

C000-C180

C090-C270

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

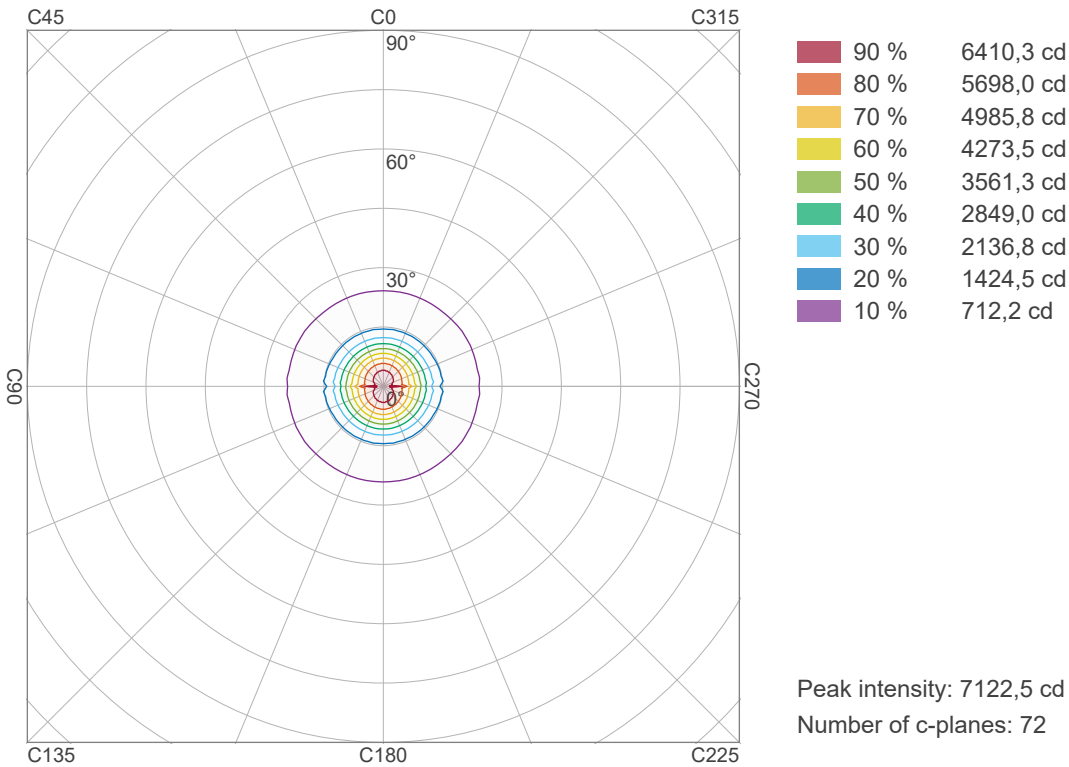


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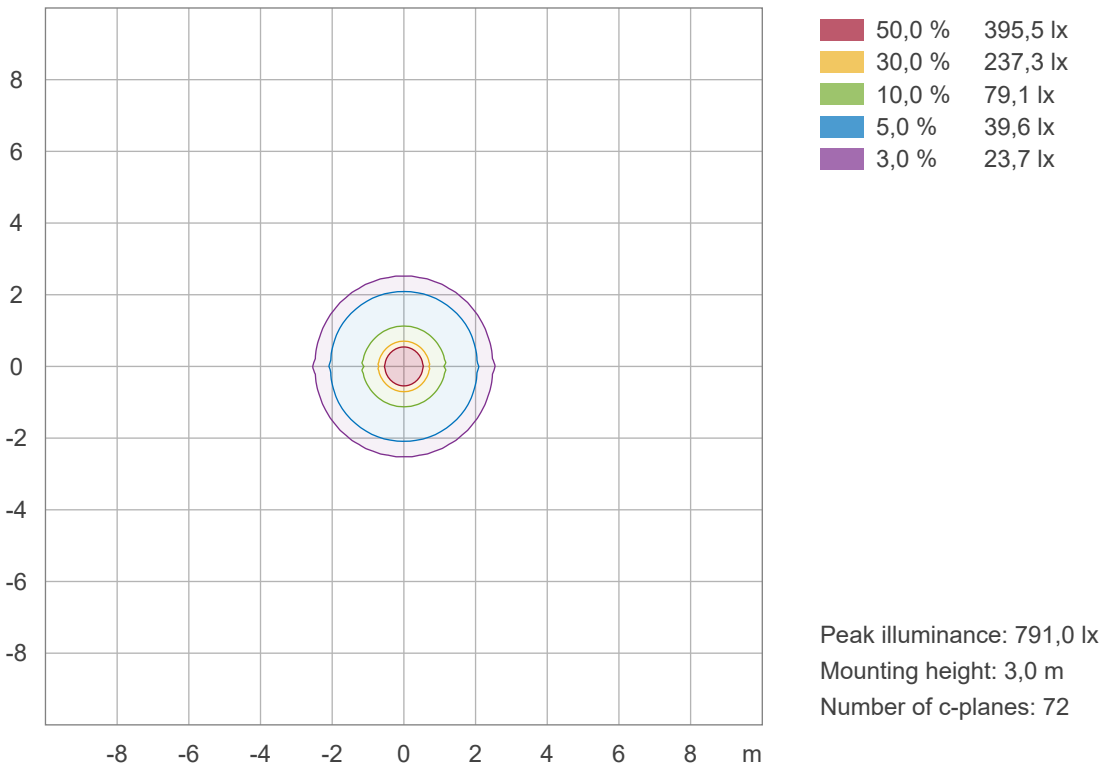
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## Iso-intensity Diagram (Iso-candela)



## Iso-illuminance Diagram (Iso-lux)



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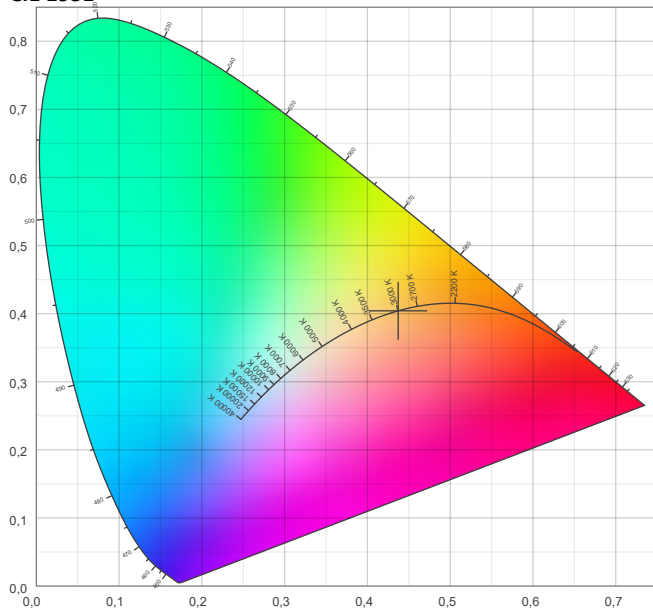


## Color details

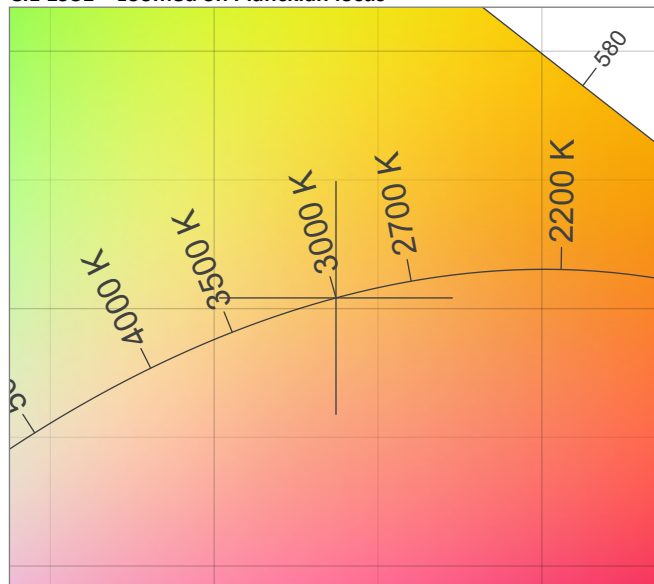
Correlated Color Temperature, Target CCT = 3000 K  
Correlated Color Temperature, Measured CCT = 3043 K  
Color Rendering Index CRI 92,5  
Color Rendering Index, R9 (red component) R9 = 54,1  
Color Rendering TM30-18  $R_f$  91,7 –  $R_g$  100,3  
Color Quality Scale CQS = 90,8

MacAdam Steps  
Color coordinates CIE 1931 (x;y) = (0,437;0,404)  
Color coordinate CIEs 1960 (u;v) = (0,251;0,348)  
Color deviation from BBL Duv = 0,0008  
Color coordinate CIEs 1976 (CIELUV) (u';v') = (0,251;0,521)

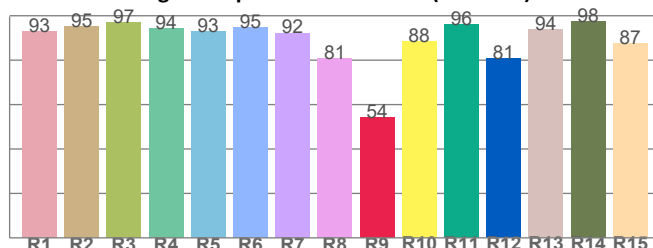
### CIE 1931



### CIE 1931 – zoomed on Planckian locus



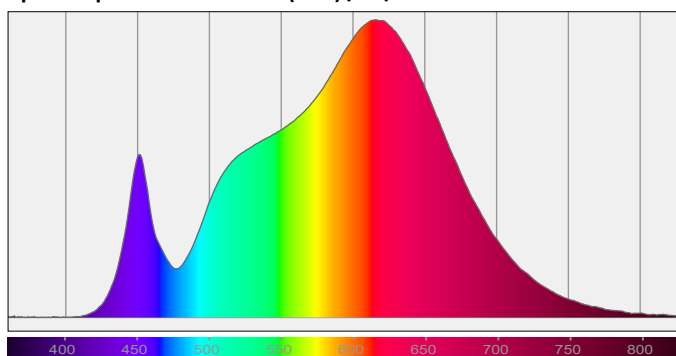
### Color Rendering Index per reference color (CIE 1995)



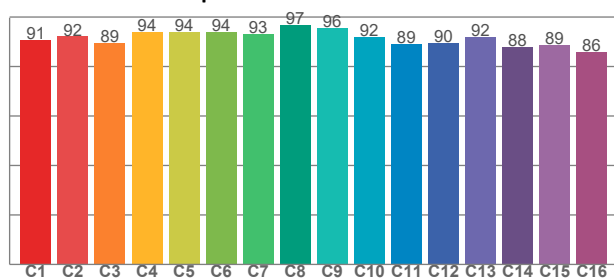
CRI R values, only R1-R8 are used to calculate final CRI value

| R1   | R2   | R3   | R4   | R5   | R6   | R7   | R8   | R9   | R10  | R11  | R12  | R13  | R14  | R15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 93,0 | 95,2 | 96,8 | 94,4 | 92,8 | 94,8 | 92,3 | 80,7 | 54,1 | 88,5 | 96,0 | 80,8 | 93,7 | 97,5 | 87,4 |

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



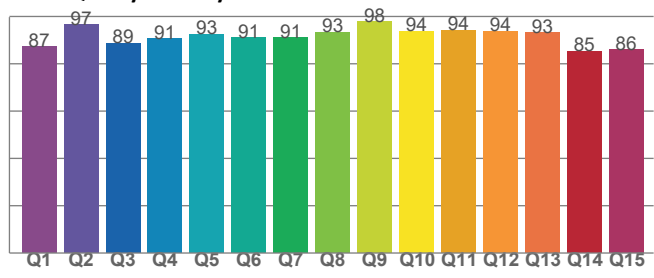
### TM30-18 Rf-values per hue bin



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  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 90,6 | 92,1 | 89,4 | 94,0 | 93,9 | 94,1 | 93,2 | 96,9 | 95,6 | 91,9 | 89,0 | 89,6 | 92,0 | 87,7 | 88,8 | 85,9 |

### Color Quality Scale by reference color



CQS Q values

| Q1   | Q2   | Q3   | Q4   | Q5   | Q6   | Q7   | Q8   | Q9   | Q10  | Q11  | Q12  | Q13  | Q14  | Q15  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 87,3 | 96,5 | 88,6 | 90,5 | 92,5 | 91,1 | 90,9 | 93,4 | 97,7 | 93,8 | 94,2 | 93,7 | 93,0 | 85,3 | 85,9 |

## Beam Details

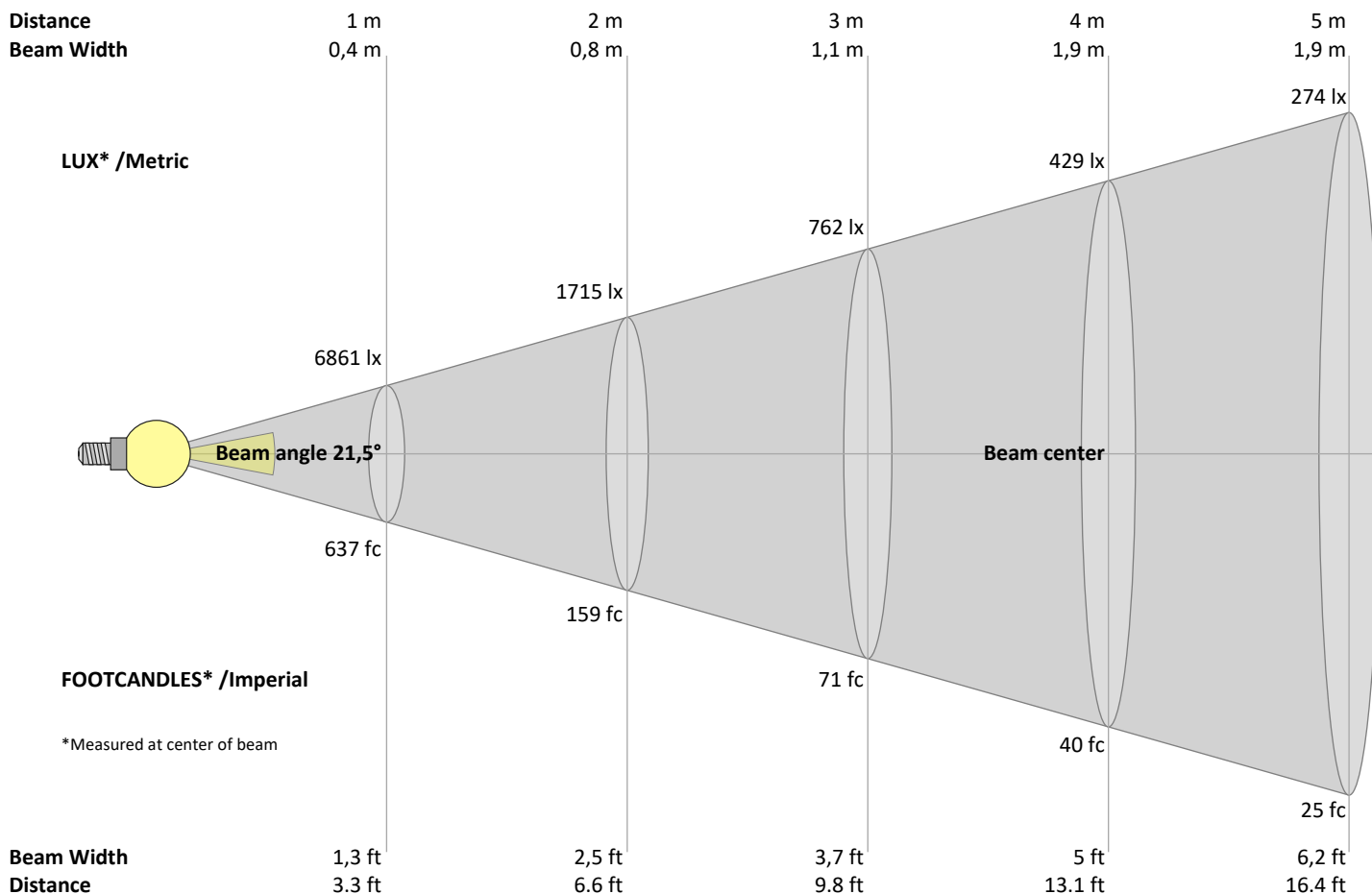
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## Beam intensities from 1 – 20 m

| 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  |
| 6861  | 1715  | 762  | 429  | 274  | 191  | 140 | 107  | 85   | 69   | 57   | 48   | 41   | 35   | 30   | 27   | 24   | 21   | 19   | 17   | lux |
| 637,4 | 159,3 | 70,8 | 39,8 | 25,5 | 17,7 | 13  | 10   | 7,9  | 6,4  | 5,3  | 4,4  | 3,8  | 3,3  | 2,8  | 2,5  | 2,2  | 2    | 1,8  | 1,6  | fc  |

## Intensities in 0° c-plane

| 0°   | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | γ        |
|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 6861 | 6952 | 6557 | 5882 | 4935 | 3871 | 2848 | 2016 | 1446 | 1095 | 902 | 802 | 751 | 722 | 701 | 683 | 667 | 651 | 633 | 581 | cd       |
| 100% | 101% | 96%  | 86%  | 72%  | 56%  | 42%  | 29%  | 21%  | 16%  | 13% | 12% | 11% | 11% | 10% | 10% | 10% | 9%  | 9%  | 8%  | of 0°val |

## Intensities in 90° c-plane

| 0°   | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | γ        |
|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 6861 | 7047 | 6668 | 5973 | 4992 | 3873 | 2801 | 1975 | 1403 | 1065 | 884 | 796 | 750 | 722 | 701 | 683 | 667 | 652 | 635 | 606 | cd       |
| 100% | 103% | 97%  | 87%  | 73%  | 56%  | 41%  | 29%  | 20%  | 16%  | 13% | 12% | 11% | 11% | 10% | 10% | 10% | 10% | 9%  | 9%  | of 0°val |

## Intensities in 180° c-plane

| 0°   | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | γ        |
|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 6861 | 6952 | 6557 | 5882 | 4935 | 3871 | 2848 | 2016 | 1446 | 1095 | 902 | 802 | 751 | 722 | 701 | 683 | 667 | 651 | 633 | 581 | cd       |
| 100% | 101% | 96%  | 86%  | 72%  | 56%  | 42%  | 29%  | 21%  | 16%  | 13% | 12% | 11% | 11% | 10% | 10% | 10% | 9%  | 9%  | 8%  | of 0°val |

## Intensities in 270° c-plane

| 0°   | 2°   | 4°   | 6°   | 8°   | 10°  | 12°  | 14°  | 16°  | 18°  | 20° | 22° | 24° | 26° | 28° | 30° | 32° | 34° | 36° | 38° | γ        |
|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 6861 | 7047 | 6668 | 5973 | 4992 | 3873 | 2801 | 1975 | 1403 | 1065 | 884 | 796 | 750 | 722 | 701 | 683 | 667 | 652 | 635 | 606 | cd       |
| 100% | 103% | 97%  | 87%  | 73%  | 56%  | 41%  | 29%  | 20%  | 16%  | 13% | 12% | 11% | 11% | 10% | 10% | 10% | 10% | 9%  | 9%  | of 0°val |

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## Light Planning – UGR table

Corrected, 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<br>above eye level                               |     |     |                                                    |      |      |      |      |                                                  |      |      |      |      |
| X                                                                    |     | Y   | Viewed Crosswise                                   |      |      |      |      | Viewed Endwise                                   |      |      |      |      |
|                                                                      |     |     | (Viewing direction orthogonal to lamp length axis) |      |      |      |      | (Viewing direction parallel to lamp length axis) |      |      |      |      |
| 2H                                                                   | 2H  | 2H  | 21,0                                               | 21,6 | 21,1 | 21,8 | 22,0 | 21,1                                             | 21,7 | 21,2 | 21,9 | 22,1 |
|                                                                      |     | 3H  | 20,7                                               | 21,4 | 21,1 | 21,7 | 21,8 | 20,8                                             | 21,5 | 21,2 | 21,7 | 21,9 |
|                                                                      |     | 4H  | 20,7                                               | 21,4 | 21,1 | 21,6 | 21,8 | 20,8                                             | 21,5 | 21,2 | 21,7 | 21,9 |
|                                                                      |     | 6H  | 20,7                                               | 21,3 | 21,0 | 21,6 | 21,9 | 20,8                                             | 21,4 | 21,1 | 21,7 | 22,0 |
|                                                                      |     | 8H  | 20,7                                               | 21,2 | 21,0 | 21,6 | 22,0 | 20,8                                             | 21,3 | 21,1 | 21,6 | 22,0 |
|                                                                      |     | 12H | 20,6                                               | 21,2 | 21,0 | 21,5 | 22,0 | 20,7                                             | 21,3 | 21,1 | 21,6 | 22,0 |
| 4H                                                                   | 4H  | 2H  | 20,6                                               | 21,3 | 21,0 | 21,6 | 21,8 | 20,7                                             | 21,4 | 21,1 | 21,7 | 21,9 |
|                                                                      |     | 3H  | 20,6                                               | 21,1 | 20,9 | 21,5 | 21,9 | 20,7                                             | 21,2 | 21,0 | 21,6 | 22,0 |
|                                                                      |     | 4H  | 20,5                                               | 21,0 | 20,9 | 21,4 | 21,9 | 20,6                                             | 21,1 | 21,0 | 21,5 | 22,0 |
|                                                                      |     | 6H  | 20,5                                               | 21,0 | 21,0 | 21,3 | 21,7 | 20,6                                             | 21,1 | 21,1 | 21,4 | 21,8 |
|                                                                      |     | 8H  | 20,5                                               | 21,0 | 21,0 | 21,3 | 21,7 | 20,5                                             | 21,0 | 21,0 | 21,4 | 21,7 |
|                                                                      |     | 12H | 20,4                                               | 20,8 | 20,9 | 21,2 | 21,7 | 20,5                                             | 20,9 | 21,0 | 21,3 | 21,7 |
| 8H                                                                   | 8H  | 4H  | 20,4                                               | 20,9 | 20,9 | 21,2 | 21,6 | 20,5                                             | 21,0 | 21,0 | 21,3 | 21,7 |
|                                                                      |     | 6H  | 20,4                                               | 20,7 | 20,9 | 21,2 | 21,7 | 20,5                                             | 20,8 | 21,0 | 21,3 | 21,8 |
|                                                                      |     | 8H  | 20,5                                               | 20,7 | 21,0 | 21,2 | 21,9 | 20,5                                             | 20,8 | 21,0 | 21,3 | 21,9 |
|                                                                      |     | 12H | 20,5                                               | 20,7 | 21,0 | 21,2 | 21,8 | 20,5                                             | 20,7 | 21,1 | 21,2 | 21,8 |
| 12H                                                                  | 12H | 4H  | 20,3                                               | 20,7 | 20,8 | 21,1 | 21,6 | 20,4                                             | 20,8 | 20,9 | 21,2 | 21,7 |
|                                                                      |     | 6H  | 20,4                                               | 20,7 | 20,9 | 21,2 | 21,8 | 20,5                                             | 20,8 | 21,0 | 21,3 | 21,9 |
|                                                                      |     | 8H  | 20,4                                               | 20,6 | 21,0 | 21,2 | 21,8 | 20,5                                             | 20,7 | 21,1 | 21,2 | 21,8 |
| Variations with the observer position for the luminaire spacings, S: |     |     |                                                    |      |      |      |      |                                                  |      |      |      |      |
| S = 1.0H                                                             |     |     | 2,9 / -6,1                                         |      |      |      |      | 2,8 / -6,3                                       |      |      |      |      |
| S = 1.5H                                                             |     |     | 5,2 / -7,3                                         |      |      |      |      | 5,1 / -7,5                                       |      |      |      |      |
| S = 2.0H                                                             |     |     | 7,2 / -7,6                                         |      |      |      |      | 7,0 / -7,9                                       |      |      |      |      |

## 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                                                                              | 114 | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 105 | 103 | 102 | 101 | 100 | 99  | 98  | 97  | 96  | 94  |
| 2                                                                              | 109 | 104 | 100 | 97  | 106 | 102 | 99  | 96  | 99  | 96  | 94  | 96  | 94  | 92  | 93  | 92  | 90  | 88  |
| 3                                                                              | 104 | 98  | 93  | 89  | 102 | 96  | 92  | 89  | 94  | 90  | 87  | 91  | 88  | 86  | 89  | 87  | 85  | 83  |
| 4                                                                              | 99  | 92  | 87  | 83  | 97  | 91  | 86  | 83  | 89  | 85  | 82  | 87  | 83  | 81  | 85  | 82  | 80  | 78  |
| 5                                                                              | 95  | 87  | 82  | 78  | 93  | 86  | 81  | 77  | 84  | 80  | 77  | 83  | 79  | 76  | 81  | 78  | 75  | 74  |
| 6                                                                              | 91  | 83  | 77  | 73  | 89  | 82  | 77  | 73  | 80  | 76  | 72  | 79  | 75  | 72  | 78  | 74  | 71  | 70  |
| 7                                                                              | 87  | 78  | 73  | 69  | 86  | 78  | 73  | 69  | 77  | 72  | 69  | 75  | 71  | 68  | 74  | 71  | 68  | 67  |
| 8                                                                              | 83  | 75  | 69  | 66  | 82  | 74  | 69  | 66  | 73  | 69  | 65  | 72  | 68  | 65  | 71  | 68  | 65  | 64  |
| 9                                                                              | 80  | 72  | 66  | 63  | 79  | 71  | 66  | 63  | 70  | 66  | 62  | 69  | 65  | 62  | 69  | 65  | 62  | 61  |
| 10                                                                             | 77  | 69  | 63  | 60  | 76  | 68  | 63  | 60  | 67  | 63  | 60  | 67  | 62  | 60  | 66  | 62  | 59  | 58  |

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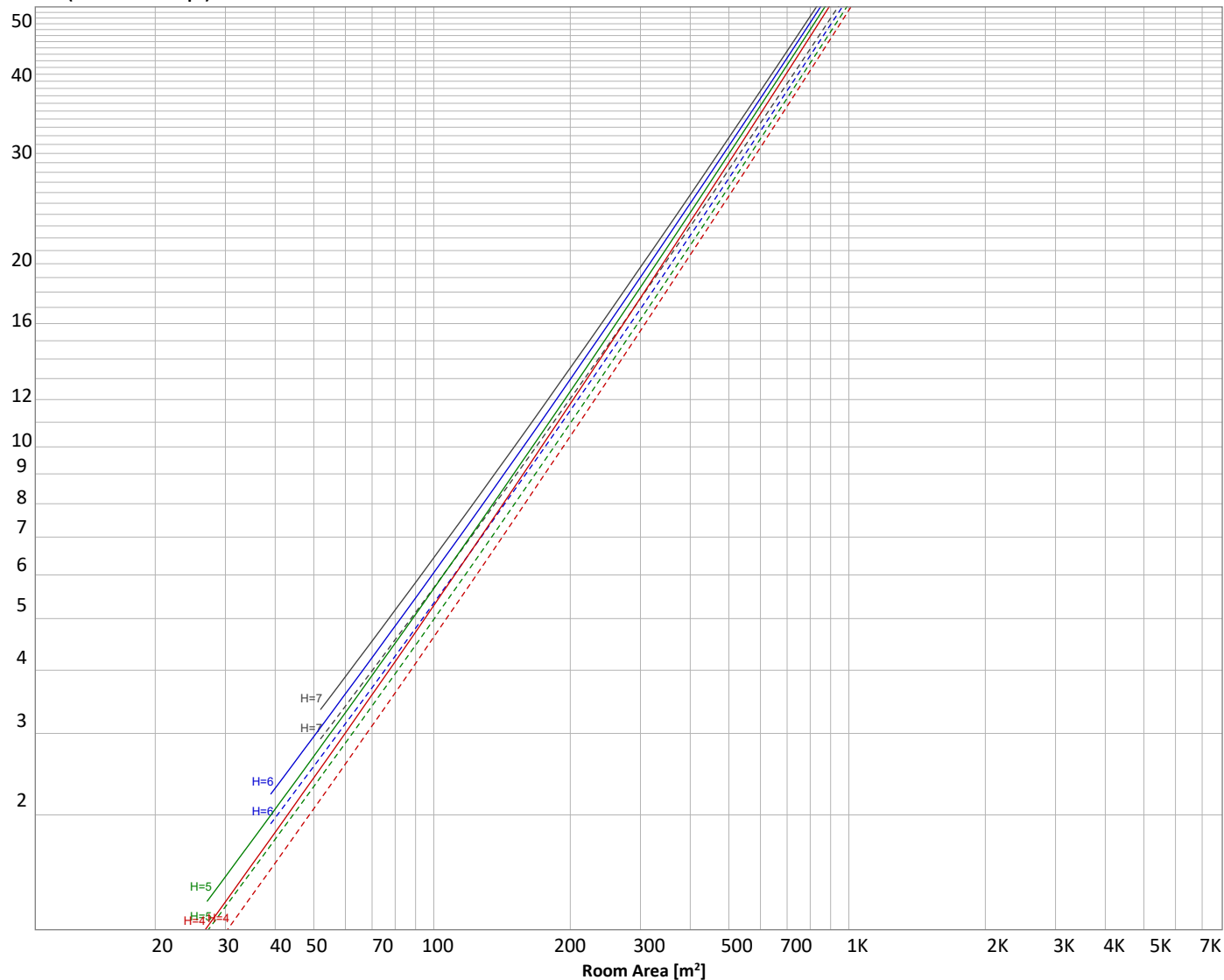
Operator: LC



## Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



### Conditions

|                                                   |                |           |                     |                   |
|---------------------------------------------------|----------------|-----------|---------------------|-------------------|
| H = Room height                                   | Flux = 1941 lm | p(%)      |                     |                   |
| H <sub>down</sub> = Lamp distance from ceiling =  | 0.00 m         | Line type | Ceiling reflectance | Wall reflectance  |
| H <sub>work</sub> = Work area height from floor = | 0.00 m         | -----     | 70                  | 50                |
| E <sub>work</sub> = Average lux on work area =    | 100 lx         | -----     | 50                  | 30                |
|                                                   |                |           |                     | Floor reflectance |
|                                                   |                |           |                     | 20                |

## Zonal Lumen Summary

|          |           |           |           |           |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 0°-10°   | 10°-20°   | 20°-30°   | 30°-40°   | 40°-50°   | 50°-60°   | 60°-70°   | 70°-80°   | 80°-90°   |
| 503 lm   | 508 lm    | 347 lm    | 386 lm    | 147 lm    | 28,0 lm   | 10,6 lm   | 6,68 lm   | 2,60 lm   |
| 90°-100° | 100°-110° | 110°-120° | 120°-130° | 130°-140° | 140°-150° | 150°-160° | 160°-170° | 170°-180° |
| 0,057 lm | 0,031 lm  | 0,069 lm  | 0,150 lm  | 0,271 lm  | 0,450 lm  | 0,499 lm  | 0,354 lm  | 0,097 lm  |

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## Outdoor Light Planning

### Lumen per Zone

| Zone (γ)     | Lumen          | % Total       |
|--------------|----------------|---------------|
| 0-10°        | 503 lm         | 25,9%         |
| 10-20°       | 508 lm         | 26,2%         |
| 20-30°       | 347 lm         | 17,9%         |
| 30-40°       | 386 lm         | 19,9%         |
| 40-50°       | 147 lm         | 7,6%          |
| 50-60°       | 28 lm          | 1,4%          |
| 60-70°       | 11 lm          | 0,5%          |
| 70-80°       | 7 lm           | 0,3%          |
| 80-90°       | 3 lm           | 0,1%          |
| 90-100°      | 0 lm           | 0,0%          |
| 100-110°     | 0 lm           | 0,0%          |
| 110-120°     | 0 lm           | 0,0%          |
| 120-130°     | 0 lm           | 0,0%          |
| 130-140°     | 0 lm           | 0,0%          |
| 140-150°     | 0 lm           | 0,0%          |
| 150-160°     | 0 lm           | 0,0%          |
| 160-170°     | 0 lm           | 0,0%          |
| 170-180°     | 0 lm           | 0,0%          |
| <b>Total</b> | <b>1941 lm</b> | <b>100,0%</b> |

### Intensity peaks

|                |         |
|----------------|---------|
| Max intensity  | 7123 cd |
| Intensity, 90° | 1 cd    |
| Intensity, 0°  | 6861 cd |

### Zonal Lumen summary

| Zone (γ) | Lumen   | % Total |
|----------|---------|---------|
| 0-30°    | 1358 lm | 70,0%   |
| 0-40°    | 1744 lm | 89,9%   |
| 0-60°    | 1919 lm | 98,9%   |
| 60-90°   | 20 lm   | 1,0%    |
| 70-100°  | 9 lm    | 0,5%    |
| 90-120°  | 0 lm    | 0,0%    |
| 0-90°    | 1939 lm | 99,9%   |
| 90-180°  | 2 lm    | 0,1%    |
| 0-180°   | 1941 lm | 100,0%  |

### BUG rating

|                      | Lumen  | % Total |
|----------------------|--------|---------|
| <b>Forward light</b> |        |         |
| Low(0-30°)           | 678 lm | 34,9%   |
| Medium(30-60°)       | 280 lm | 14,4%   |
| High(60-80°)         | 9 lm   | 0,4%    |
| Very high(80-90°)    | 1 lm   | 0,1%    |
| <b>Back light</b>    |        |         |
| Low(0-30°)           | 678 lm | 34,9%   |
| Medium(30-60°)       | 280 lm | 14,4%   |
| High(60-80°)         | 9 lm   | 0,4%    |
| Very high(80-90°)    | 1 lm   | 0,1%    |

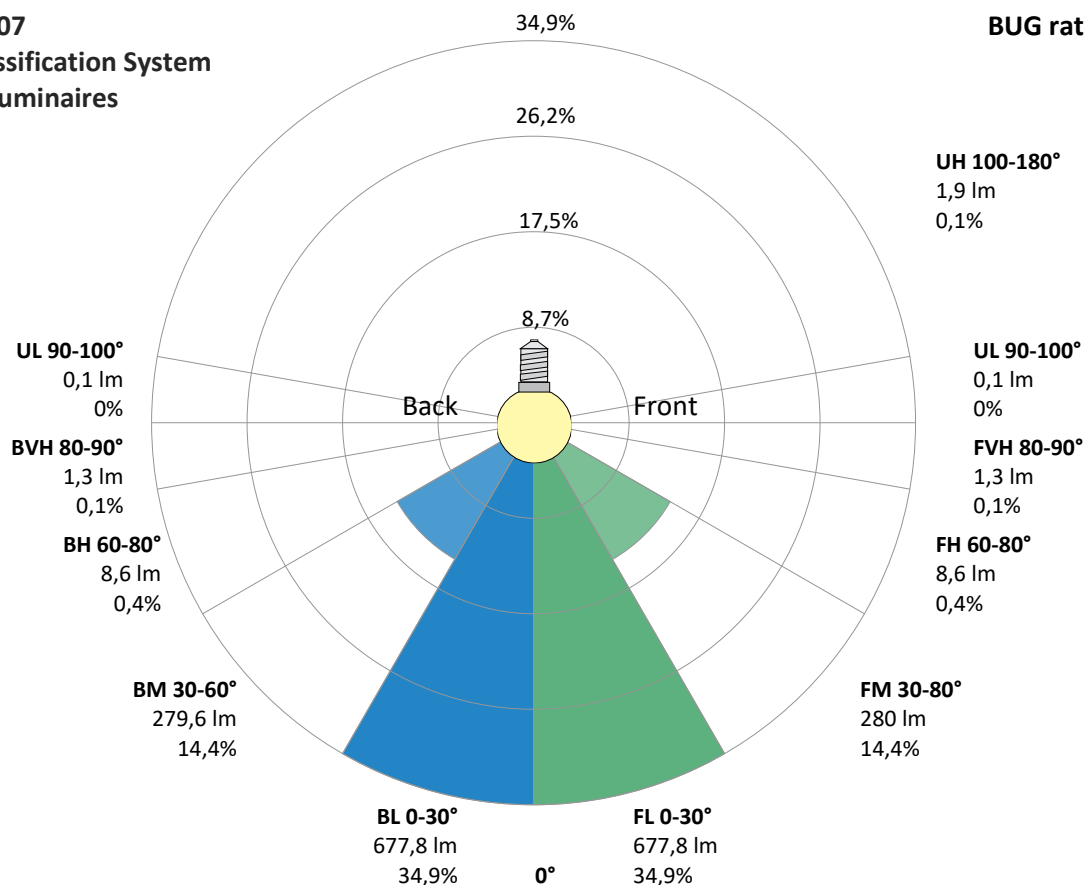
### Uplight

|                |      |      |
|----------------|------|------|
| Low(90-100°)   | 0 lm | 0,0% |
| High(100-180°) | 2 lm | 0,1% |

## IESNA TM-15-07

### Luminaire Classification System For Outdoor Luminaires

### BUG rating B2 U1 G0



# Light Measurement Report

Print date: 22/05/2026

Measurement date and time: 19/05/2026 15:05:23 – Measurement no. VFR-260519-1515-MS

Measurement tracking No. and Link: [VT260519-006256](#)

Operator: LC

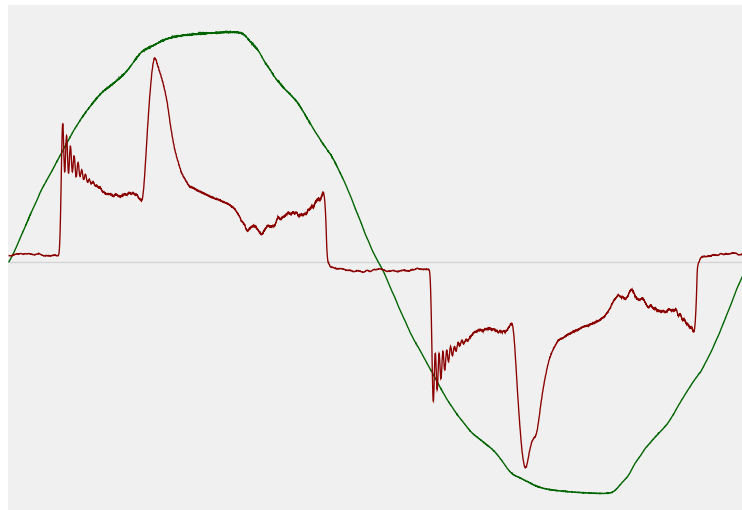


## Power Details

### Input Power

|                                                     |          |
|-----------------------------------------------------|----------|
| Power feed to light source                          | 18,1 W   |
| Frequency of input power                            | 50 Hz    |
| RMS Input voltage feed, $V_{RMS}$                   | 231 V    |
| RMS Input current feed, $I_{RMS}$                   | 0,091 A  |
| Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$ | 21,12 VA |
| Displacement factor of AC power feed                | 0,97     |
| Power factor of AC current feed                     | 0,86     |
| Total harmonic distortion of the current            | 49,14%   |
| Total harmonic distortion of the voltage            | 4,06%    |

### Input Power Curve



### Efficiency

Radiated power efficiency 35,8%



Lumen efficiency 107 lm/W



## Stabilization Details

### Warmup Conditions

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

### Color Temperature Change

|           |        |
|-----------|--------|
| CCT start | 2999 K |
| CCT shift | +1 K   |
| CCT end   | 3000 K |

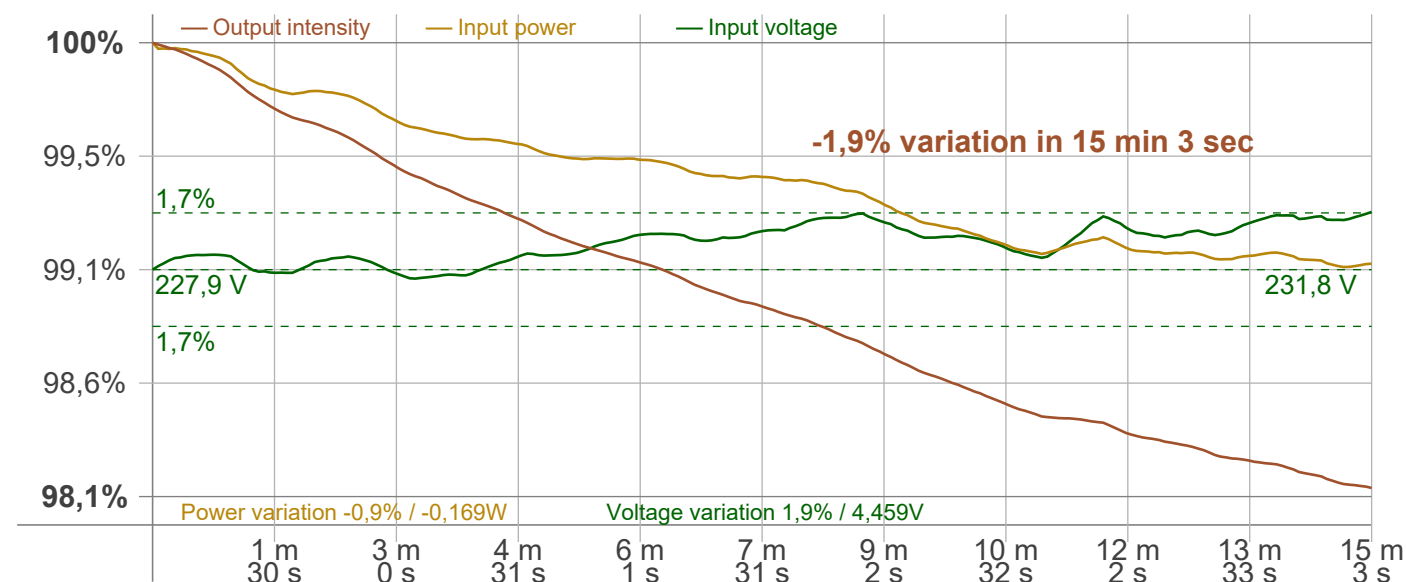
### Warmup Result

|                   |                                 |
|-------------------|---------------------------------|
| Total warmup time | Lamp stabilized in 15 min 3 sec |
| Warmup variation  | -1,9%                           |

### Output Change

|               |         |
|---------------|---------|
| Output start  | 1977 lm |
| Output change | -36 lm  |
| Output end    | 1941 lm |

### Stabilization Curve



# Light Measurement Report

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Measurement date and time: 19/05/2026 15:05:23 – Measurement no. VFR-260519-1515-MS

Measurement tracking No. and Link: [VT260519-006256](#)

Operator: LC



## Flicker /TLA details

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

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

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

Flicker frequency 100 Hz  
Percent Flicker 0,87 %  
Flicker index 0

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

JA8/10 40 Hz 0,08 %  
JA8/10 90 Hz 0,25 %  
JA8/10 200 Hz 0,88 %  
JA8/10 400 Hz 0,86 %  
JA8/10 1000 Hz 0,86 %

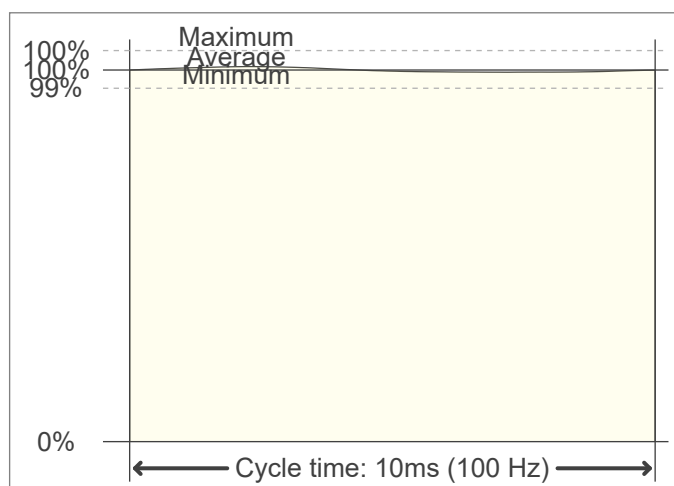
### TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

PstLM value ( $F < 80$  Hz) 0,04  
SVM value ( $80 < F < 2000$  Hz) 0,03

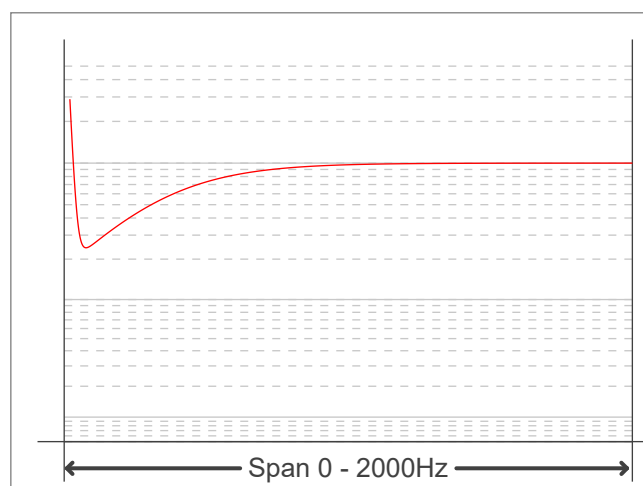
### Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp 0,03

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



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



### IEEE 1789 Frequency/modulation plot

