# Photometric Test Report

FL50-G2-XXX-3083-1040-INF-XXXXX-X

## Laboratory and Equipment

| | |
|---|---|
| Test lab | Viso LabSpion - serial: 2007279764 sensor |
| Spectrometer Manufacturer and Model | LabSpion – Type C, horizontal |
| Measurement serial number | PH-GVA-2025.Nov.28-6056-VO |
| Measurement date | 2025-11-28 |

## Measurement Conditions

| | |
|---|---|
| Tested c-planes | 36 planes – 10° |
| Tested gamma resolution | 0.5° |
| Input Power | 52.3 W |

## Electrical Data

| | |
|---|---|
| Input Power | 52.3 W |
| Input Voltage | 379 V DC |
| Input Current | 0.138 A |
| Power Factor | 1.0 |

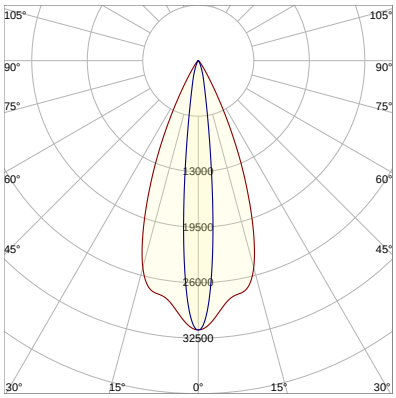
## Tested Light Source

| | |
|---|---|
| Product family | FL50-G2 |
| Luminaire configuration | FL50-G2-XXX-3083-1040-INF-XXXXX-X |
| Manufacturer | GVA Lighting.Inc. |
| Size (width x length x height) | 84 mm 0 mm x 250 mm |

## Main Light Measurement

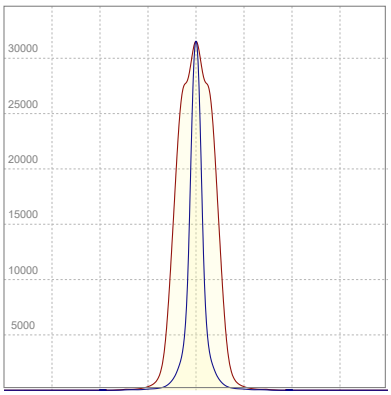
| | |
|---|---|
| Output – Total Lumen (Up% / Down%) | 6059 lm – 0% / 100% |
| Efficiency | 116 lm/W |
| Peak Intensity | 31548 cd |
| Correlated Color Temperature, CCT | 2977 K |
| Color Rendering Index | CRI 82.8 |
| Beam Angle (FWHM) \| C0/180 | 42° |
| Beam Angle (FWHM) \| C90/270 | 12.1° |
| Field Angle (10%) \| C0/180 | 60.7°Unit: 0-100% of peak intensity |
| Field Angle (10%) \| C90/270 | 26.5° |
| Optical Power | 18.2 mW |
| Peak Wavelength | 606 nm |
| Dominant Wavelength | 584 nm |

Polar Light Distribution Diagram
Unit: 0-100% of peak intensity

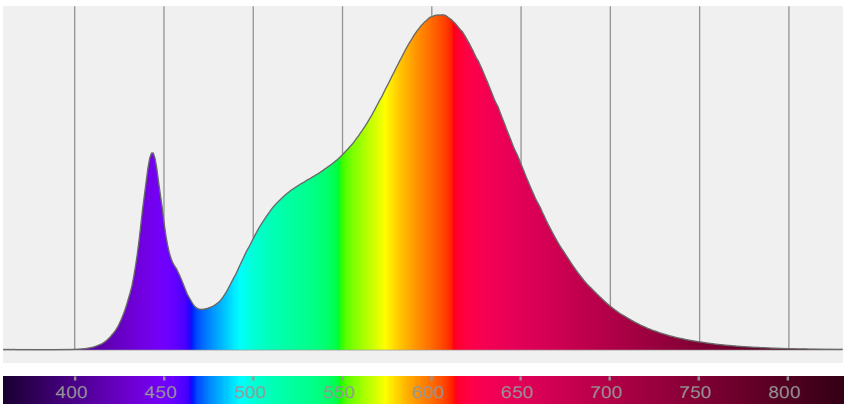



C0 - C180
C90 - C270
η = 100.0%

Linear distribution Diagram




Spectral Distribution




Color Temperature

2977 K

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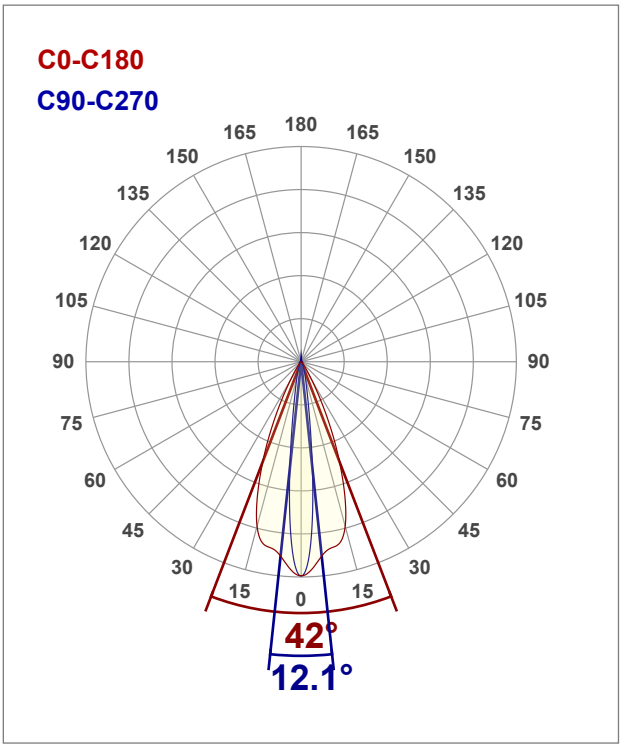
## Luminous Intensity diagram

Unit: 0-100% of peak intensity




## Main Values

| | |
|---|---|
| Output (total Lumen) | 6059 lm |
| Lumen Up% / Down% | 0% / 100% |
| Peak Intensity | 31548 cd |
| Beam Angle (50%-FWHM) | 21.53° |

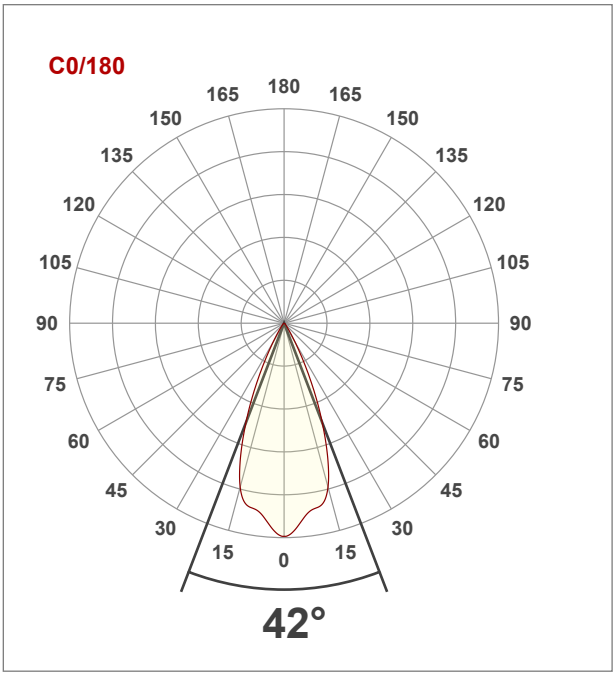
## EU Ecodesign parameters

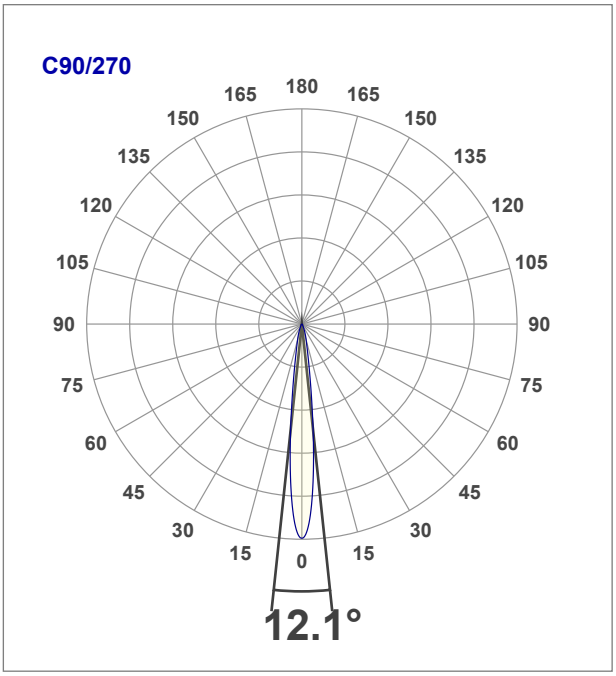
| | |
|---|---|
| Directionality (DLS or NDLS) | DLS |
| Ecodesign Useful Luminous | 5898 lm |
| Ecodesign Energy Class | E |

## Intensity Ratio

| | |
|---|---|
| In 120° cone | 99.3% |
| In 90° cone | 97.3% |

## Angular Distribution



# Photometric Test Report

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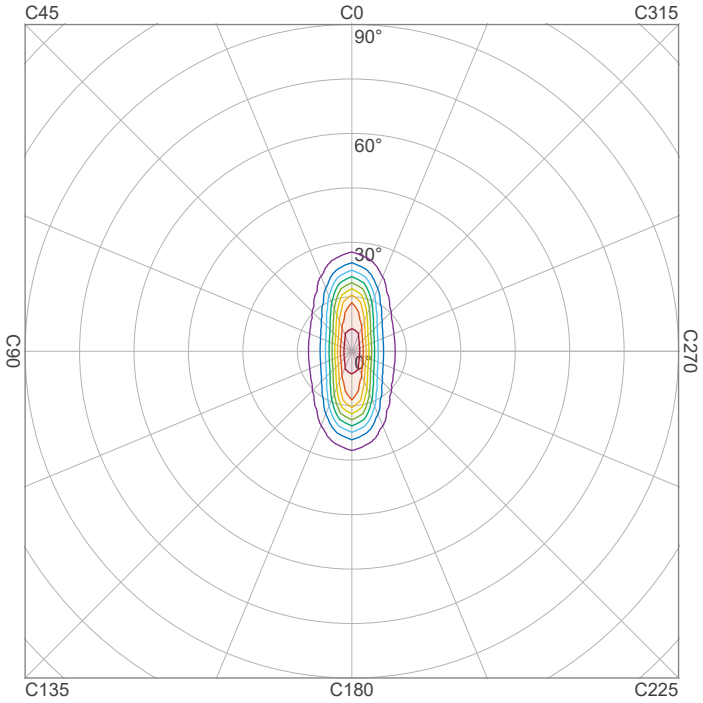
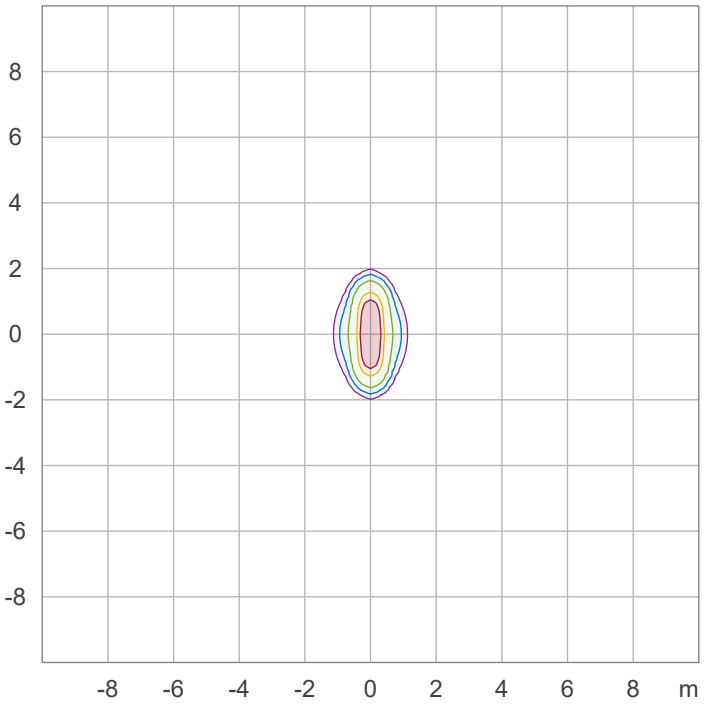
## Iso-intensity Diagram (Iso-candela)




| | |
|---|---|
| 90 % | 28373.4 cd |
| 80 % | 25220.8 cd |
| 70 % | 22068.2 cd |
| 60 % | 18915.6 cd |
| 50 % | 15763.0 cd |
| 40 % | 12610.4 cd |
| 30 % | 9457.8 cd |
| 20 % | 6305.2 cd |
| 10 % | 3152.6 cd |

Peak intensity: 31526.0 cd
Number of c-planes: 36

## Iso-illuminance Diagram (Iso-lux)




| | |
|---|---|
| 50.0 % | 1751.4 lx |
| 30.0 % | 1050.9 lx |
| 10.0 % | 350.3 lx |
| 5.0 % | 175.1 lx |
| 3.0 % | 105.1 lx |

Peak illuminance: 3502.9 lx
Mounting height: 3.0 m
Number of c-planes: 36

# Photometric Test Report

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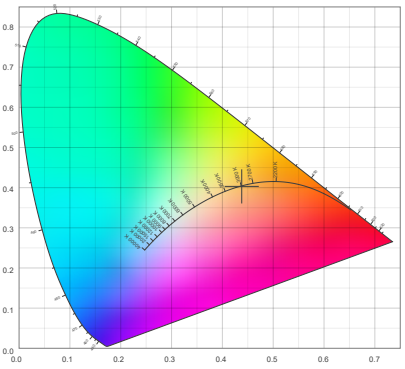
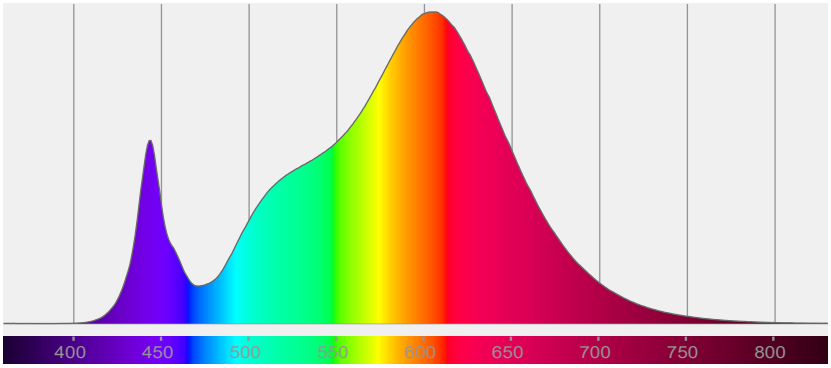
## Color details

| | | | |
|---|---|---|---|
| Correlated Color Temperature, Target | CCT = 2977 K | MacAdam Steps | SDCM = n/a |
| Correlated Color Temperature, Measured | CCT = 2977 K | Color deviation from BBL | Duv = -0.0005 |
| Color Rendering Index | CRI 82.8 | Color coordinates CIE 1931 | (x;y) = (0.438;0.403) |
| Color Rendering Index, R9 (red) | R9 = 4.2 | Color coordinate CIEs 1960 | (u;v) = (0.252;0.347) |
| Color Rendering TM30-18 | Rf 83.4 | Color coordinate CIEs 1976 | (u';v') = (0.252;0.521) |
| | Rg 98.8 | Color Quality Scale | CQS = 81.5 |

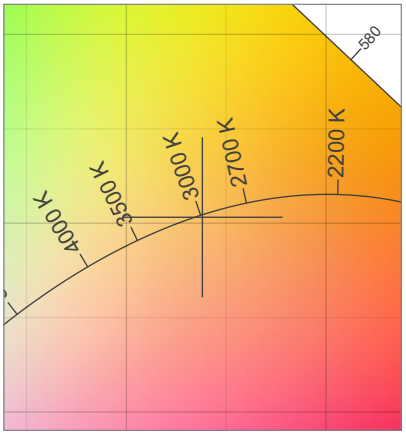
### CIE 1931 Chromaticity diagram



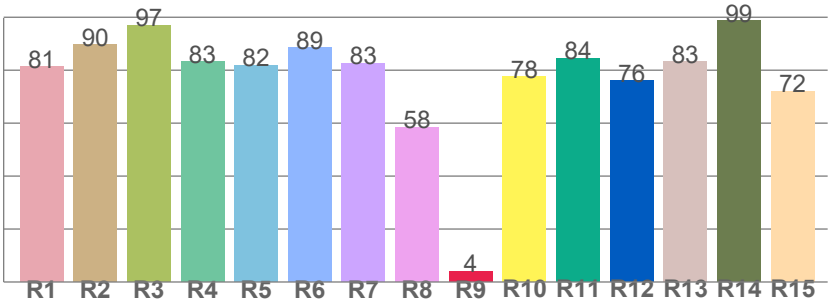
### Spectral power distribution




### CIE 1931 Chromaticity - zoomed



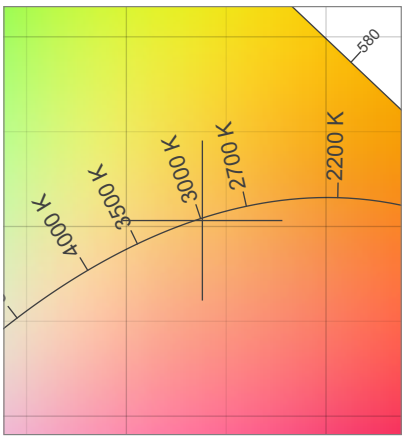

### Color Rendering Index per reference color (CIE 1995)



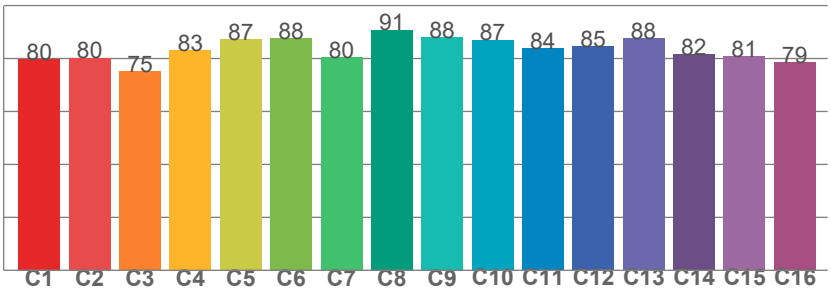

CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81.3 | 89.7 | 97.0 | 83.1 | 81.8 | 88.6 | 82.7 | 58.5 | 4.2 | 77.5 | 84.5 | 76.0 | 83.2 | 98.6 | 72.1 |

### CIE 1931 Chromaticity - SDCM




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




TM30-18 Rf-values per hue bin

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79.7 | 80.3 | 75.1 | 83.1 | 87.4 | 87.8 | 80.3 | 90.9 | 88.2 | 87.1 | 83.8 | 84.7 | 87.6 | 81.6 | 80.9 | 78.7 |

# Photometric Test Report

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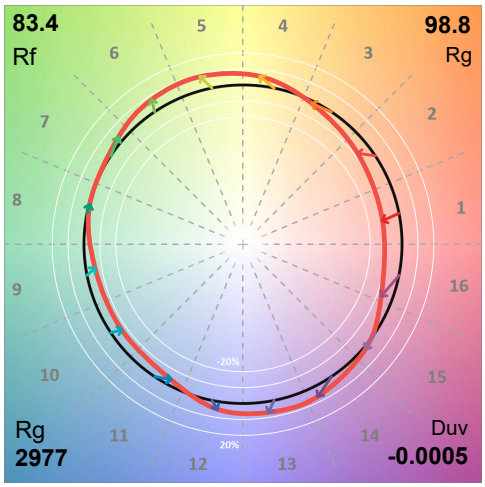
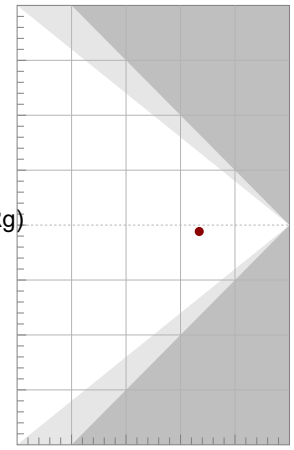
## Color details - ANSI/IES TM-30-18 Color Rendition Report

Color Vector Graphic




Color Distortion Graphic

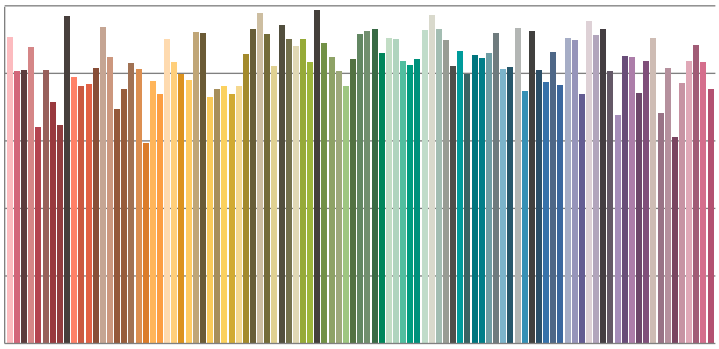
Gamut Index vs. Fidelity Index



Gamut index (Rg)

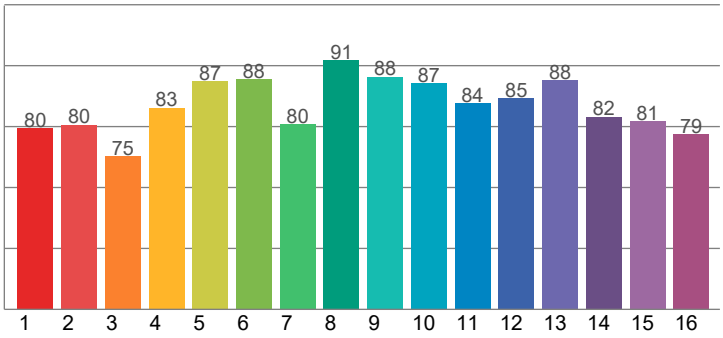
Fidelity index (Rf)

Color Rendition by Color Evaluation Sample (CES)



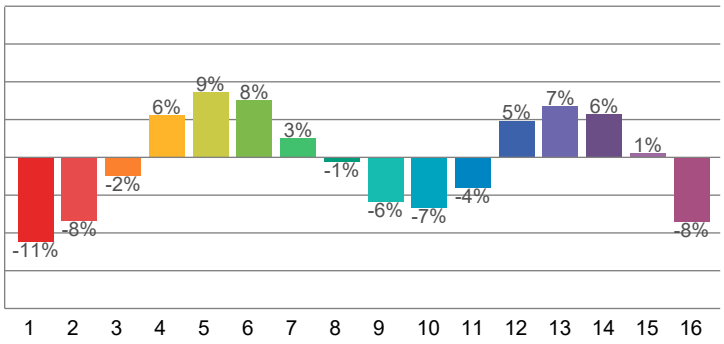
Color evaluation sample CES01 through CES99

Local Color Fidelity (per hue bin)




Hue angle bin (j)

Local Chroma Shift (per hue bin)




Hue angle bin (j)

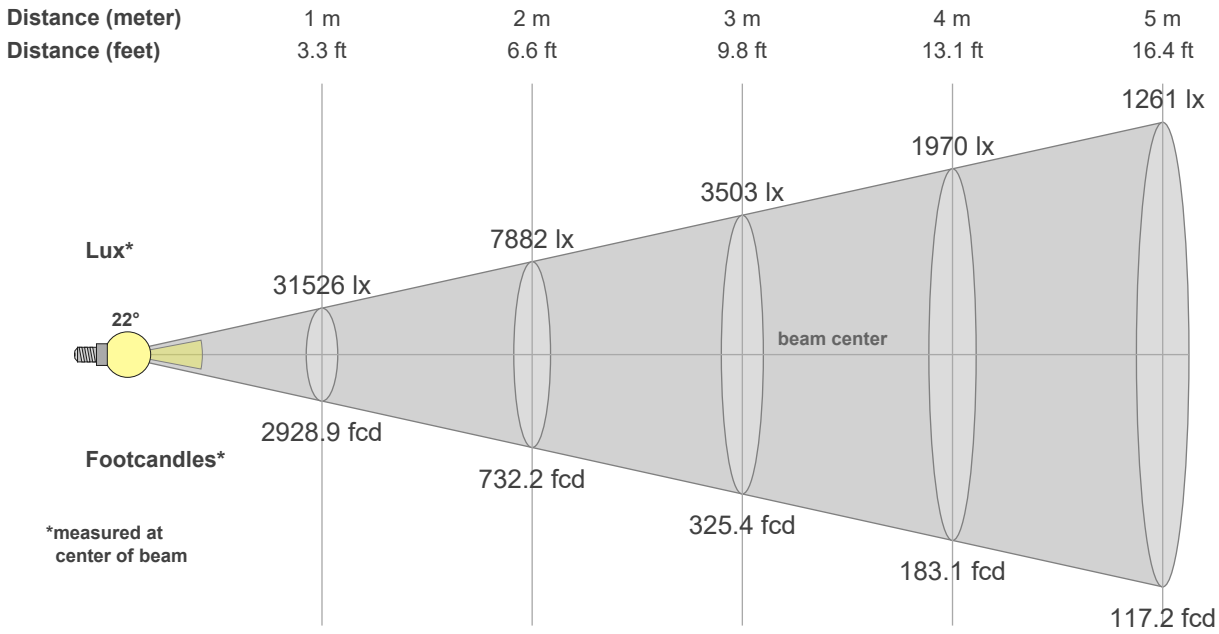
| | |
|---|---|
| CIE x | 0.438 |
| CIE y | 0.438 |
| CIE u' | 0.252 |
| CIE v' | 0.521 |

| CIE | 13.3-1995 |
|---|---|
| Ra | 82.8 |
| R9 | 4.2 |

# Photometric Test Report

FL50-G2-XXX-3083-1040-INF-XXXXX-X

## Beam details



# Photometric Test Report

FL50-G2-XXX-3083-1040-INF-XXXXX-X

## Intensity 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 |
| 31526 | 7882 | 3503 | 1970 | 1261 | 876 | 643 | 493 | 389 | 315 | 261 | 219 | 187 | 161 | 140 | 123 | 109 | 97 | 87 | 79 | lux |
| 2928.9 | 732.2 | 325.4 | 183.1 | 117.2 | 81.4 | 59.8 | 45.8 | 36.2 | 29.3 | 24.2 | 20.3 | 17.3 | 14.9 | 13 | 11.4 | 10.1 | 9 | 8.1 | 7.3 | fc |

### Intensities in 0° c-plane

| 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | 10° | 11° | 12° | 13° | 14° | 15° | 16° | 17° | 18° | 19° | γ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.5K | 31.4K | 31.1K | 30.6K | 30.0K | 29.4K | 28.8K | 28.3K | 28.0K | 27.8K | 27.7K | 27.6K | 27.3K | 26.8K | 26.1K | 25.1K | 23.9K | 22.4K | 20.9K | 19.2K | cd |
| 100% | 100% | 99% | 97% | 95% | 93% | 91% | 90% | 89% | 88% | 88% | 87% | 87% | 85% | 83% | 80% | 76% | 71% | 66% | 61% | of 0°val |

### Intensities in 90° c-plane

| 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | 10° | 11° | 12° | 13° | 14° | 15° | 16° | 17° | 18° | 19° | γ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.5K | 31.0K | 29.4K | 26.8K | 23.5K | 19.7K | 15.9K | 12.4K | 9.5K | 7.4K | 5.8K | 4.7K | 3.9K | 3.3K | 2.8K | 2.5K | 2.2K | 1.9K | 1.7K | 1.4K | cd |
| 100% | 98% | 93% | 85% | 75% | 63% | 50% | 39% | 30% | 23% | 19% | 15% | 12% | 10% | 9% | 8% | 7% | 6% | 5% | 5% | of 0°val |

### Intensities in 180° c-plane

| 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | 10° | 11° | 12° | 13° | 14° | 15° | 16° | 17° | 18° | 19° | γ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.5K | 31.4K | 31.1K | 30.6K | 30.0K | 29.4K | 28.8K | 28.3K | 28.0K | 27.8K | 27.7K | 27.6K | 27.3K | 26.8K | 26.1K | 25.1K | 23.9K | 22.4K | 20.9K | 19.2K | cd |
| 100% | 100% | 99% | 97% | 95% | 93% | 91% | 90% | 89% | 88% | 88% | 87% | 87% | 85% | 83% | 80% | 76% | 71% | 66% | 61% | of 0°val |

### Intensities in 270° c-plane

| 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | 10° | 11° | 12° | 13° | 14° | 15° | 16° | 17° | 18° | 19° | γ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.5K | 31.0K | 29.4K | 26.8K | 23.5K | 19.7K | 15.9K | 12.4K | 9.5K | 7.4K | 5.8K | 4.7K | 3.9K | 3.3K | 2.8K | 2.5K | 2.2K | 1.9K | 1.7K | 1.4K | cd |
| 100% | 98% | 93% | 85% | 75% | 63% | 50% | 39% | 30% | 23% | 19% | 15% | 12% | 10% | 9% | 8% | 7% | 6% | 5% | 5% | of 0°val |

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FL50-G2-XXX-3083-1040-INF-XXXXX-X

## Power details

| Input power | |
|---|---|
| Frequency of input power | 0 Hz |
| Power feed to light source | 52.3 W |
| RMS Input voltage feed V,RMS | 379 V |
| RMS Input current feed I,RMS | 0.138 A |
| Volt-Amp or apparent power = V,RMS*I,RMS | 52.3 VA |
| Displacement factor of AC power feed | 0.7 |
| Power factor of AC current feed | 1.0 |
| Total harmonic distortion of the current | 0% |
| Total harmonic distortion of the voltage | 0% |

**Input power curve**

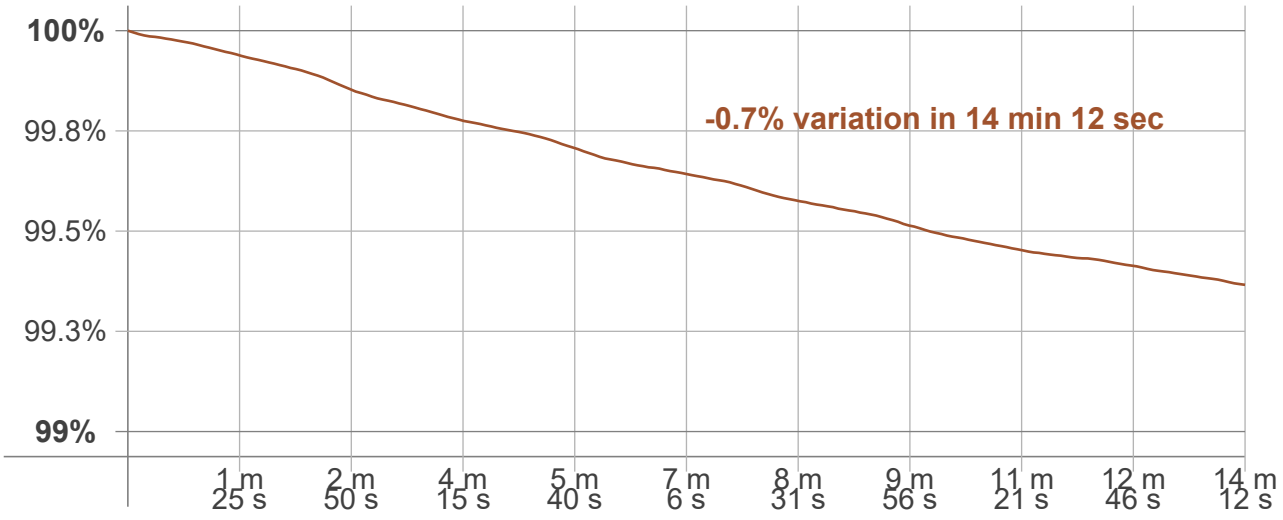
### Efficiency

| | |
|---|---|
| Radiated power efficiency | 34.7% |
| Lumen efficiency | 116 lm/W |

## Stabilization details

| Warmup Conditions | | Color Temperature Change | |
|---|---|---|---|
| Stable period | 15 min | CCT start | 2976 K |
| Stable change max | 2.0% | CCT shift | +1 K |
| Minimum time | 15 min | CCT end | 2977 K |
| **Warmup Result** | | **Output Change** | |
| Total warmup time | Not completed | Output start | 6098 lm |
| Warmup variation | -0.7% | Output change | -39 lm |
| | | Output end | 6059 lm |

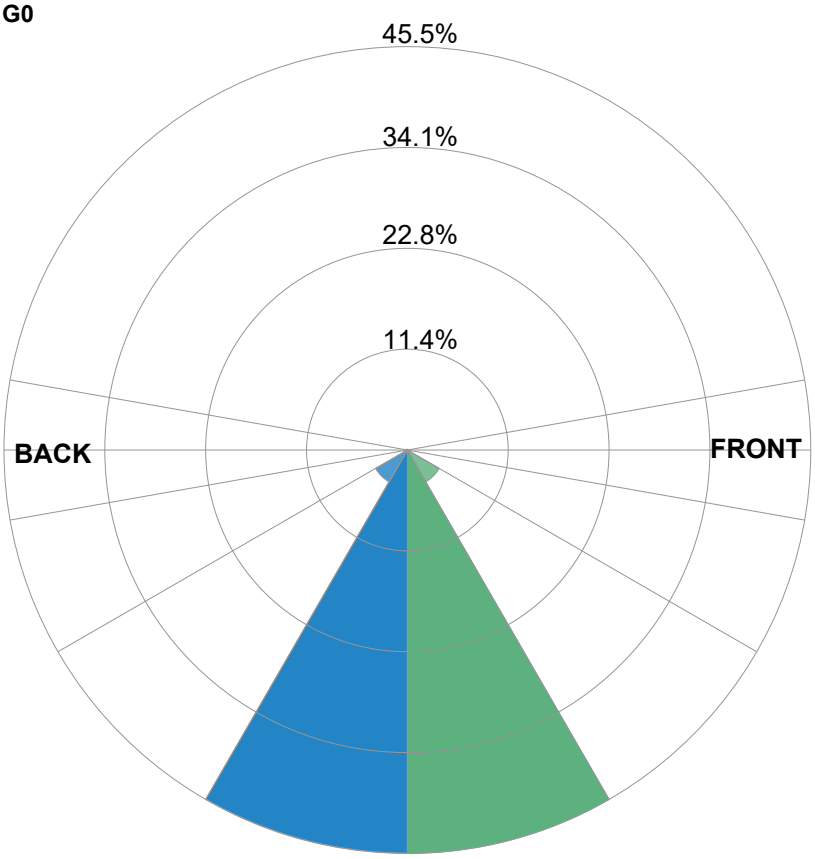
## Stabilization Curve



# Photometric Test Report

FL50-G2-XXX-3083-1040-INF-XXXXX-X

## IESNA TM-15-07 LUMINIARE CLASSIFICATION SYSTEM FOR OUTDOOR LUMINAIRES

| | | | |
|---|---|---|---|
| **Forward Light** | | | |
| Low (0-30°) | 2758.1 | lm | 45.5% |
| Medium (30-60°) | 251.2 | lm | 4.1% |
| High (60-80°) | 21.4 | lm | 0.4% |
| Very High (80-90°) | 0 | lm | 0% |
| **Back Light** | | | |
| Low (0-30°) | 2755.9 | lm | 45.5% |
| Medium (30-60°) | 251.2 | lm | 4.1% |
| High (60-80°) | 21.4 | lm | 0.4% |
| Very High (80-90°) | 0 | lm | 0% |
| **Uplight** | | | |
| Low (90-100°) | 0 | lm | 0% |
| High (100-180°) | 0 | lm | 0% |
| Total | | | |
| **Sum** | 6059.3 | lm | 100% |

**BUG RATING B4 U0 G0**