# Prudential Lighting

Light measurement results

Print date 8/13/2026

## Laboratory and Equipment

| | |
|---|---|
| Test lab | Viso LabSpion - serial: 2435469709 sensor serial: 0895736217 - T |
| Spectrometer Manufacturer and Model | LabSpion – Type C, horizontal |
| Measurement date | 7/24/2026 |

**Measurement Conditions**

| | |
|---|---|
| Tested c-planes | 72 planes – 5.00° |
| Tested gamma resolution | 1.00° |
| Input Power | 23.19 W |

**Tested Light Source**

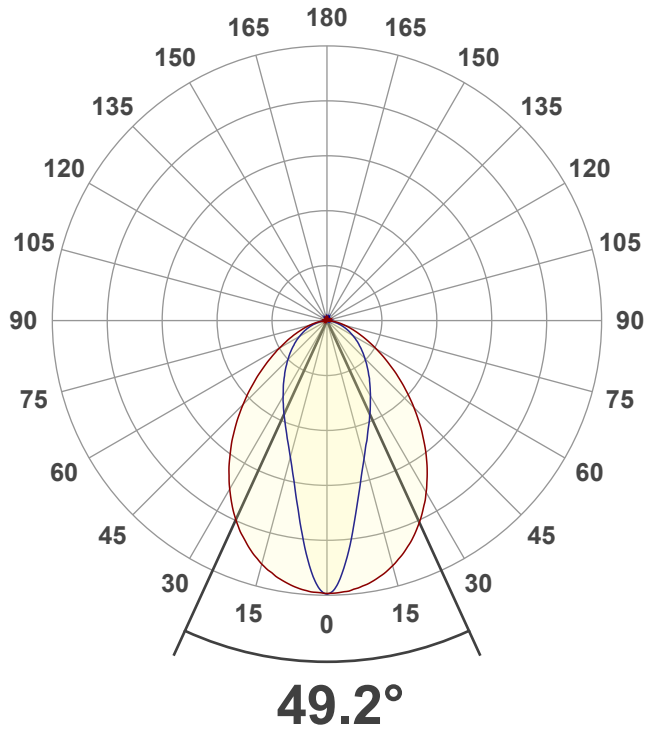
| | |
|---|---|
| Luminaire | BPRO2-LIN-FLSH-LED35-MO-04-MGZ-NU-SC-DM01 |
| Basic Luminous Shape | NONE |
| Item No. | |
| Manufacturer | Prudential Lighting |
| Description | |

**Main Light Measurement Results**

| | |
|---|---|
| Output – Total Lumen (Up% / Down%) | 2833 lm – 1.651% / 98.35% |
| Efficiency | 122.2 lm/W |
| Peak Intensity | 2178 cd |
| Correlated Color Temperature, CCT | 3427 K |
| Color Rendering Index | CRI 84.2 |

## Polar light distribution diagram

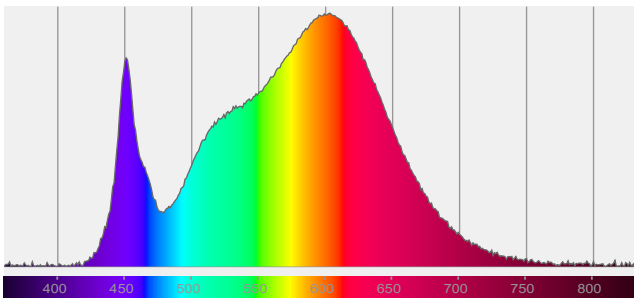
Unit: 0-100% of peak intensity




## Zonal Lumen Summary:

| VA/HA | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 2158 cd | 2158 cd | 2158 cd | 2158 cd | 2158 cd |
| 5° | 2143 cd | 2145 cd | 2055 cd | 1985 cd | 1865 cd |
| 15° | 2007 cd | 1800 cd | 1417 cd | 1235 cd | 1133 cd |
| 25° | 1743 cd | 1370 cd | 995.5 cd | 863.9 cd | 805.1 cd |
| 35° | 1378 cd | 1014 cd | 720.3 cd | 628 cd | 588.2 cd |
| 45° | 972.8 cd | 721.5 cd | 512.4 cd | 451.4 cd | 424.9 cd |
| 55° | 602.3 cd | 475.5 cd | 348.3 cd | 310.2 cd | 296.2 cd |
| 65° | 328.1 cd | 281.2 cd | 215.7 cd | 194.3 cd | 184.2 cd |
| 75° | 149.6 cd | 136.6 cd | 107.9 cd | 96.33 cd | 89.05 cd |
| 85° | 37.72 cd | 34.16 cd | 25.57 cd | 22.79 cd | 19.37 cd |
| 90° | 4.118 cd | 2.004 cd | 0.9819 cd | 0.9066 cd | 2.357 cd |

## Spectral power distribution



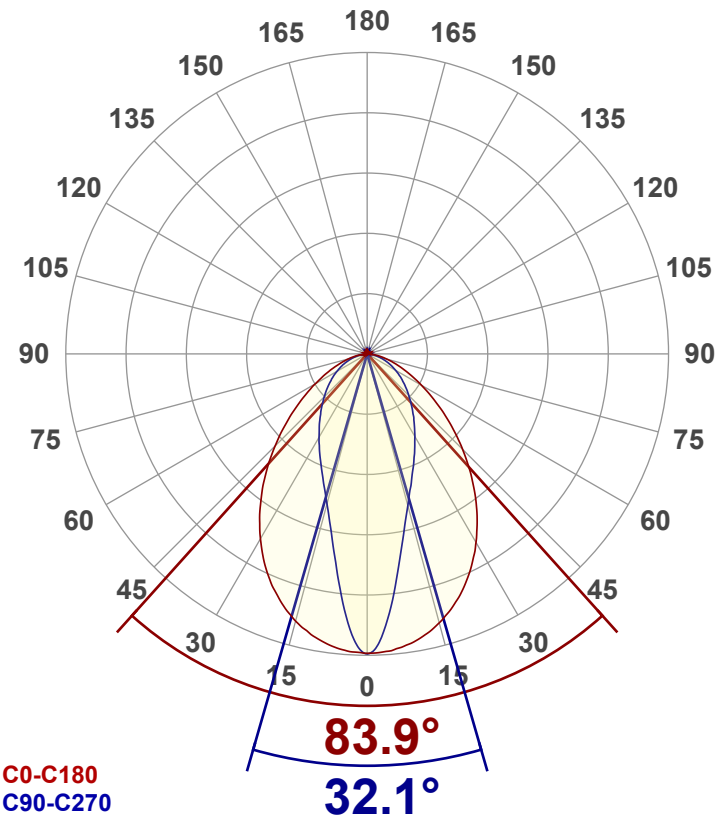
# Prudential Lighting

Light measurement results

Print date 8/13/2026

## Luminous Intensity diagram

Unit: 0-100% of peak intensity




## Main Values

| | |
|---|---|
| Output (total Lumen) | 2833 lm |
| Lumen Up% / Down% | 1.651% / 98.35% |
| Peak Intensity | 2178 cd |
| Beam Angle (50%-FWHM) | 49.2° |

## EU Ecodesign parameters

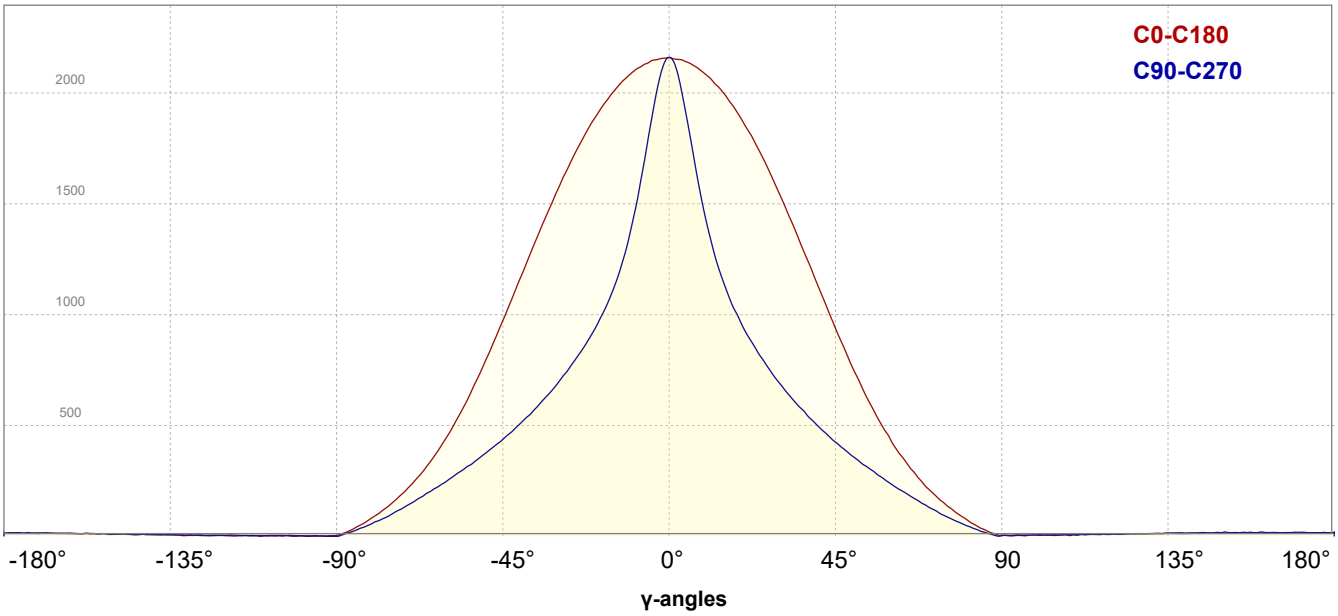
| | |
|---|---|
| Directionality (DLS or NDLS) | DLS |
| Ecodesign Useful Luminous Flux | 1834 lm |
| Ecodesign Energy Class | F |

## Intensity Ratio

| | |
|---|---|
| In 120° cone | 84.66% |
| In 90° cone | 64.75% |

## Linear distribution diagram

Intensity [cd]

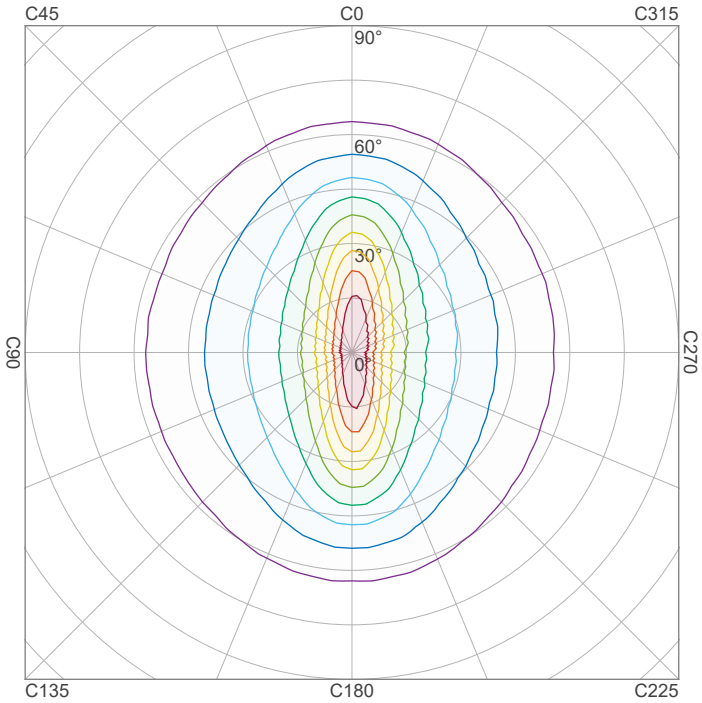


# Prudential Lighting

Light measurement results

Print date 8/13/2026

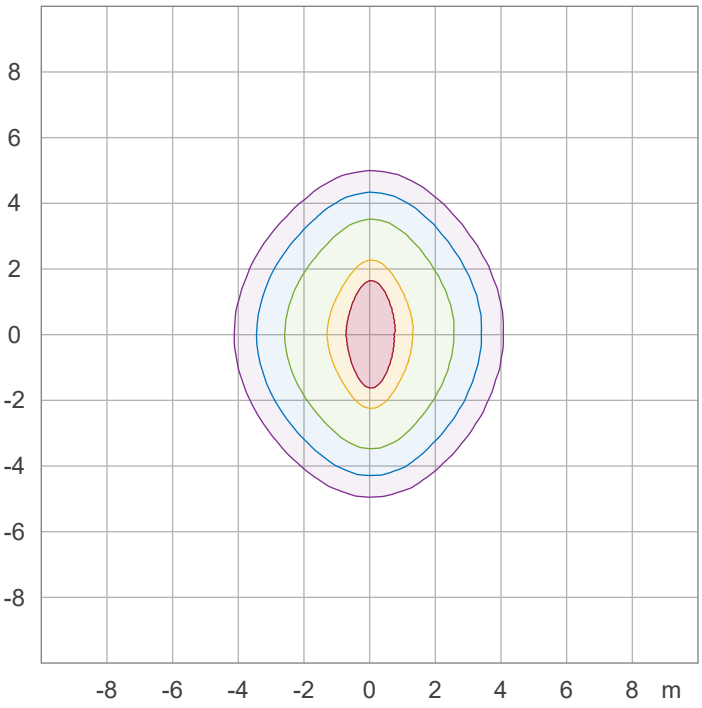
## Iso-intensity Diagram (Iso-candela)




| | |
|---|---|
| 90 % | 1960.0 cd |
| 80 % | 1742.2 cd |
| 70 % | 1524.5 cd |
| 60 % | 1306.7 cd |
| 50 % | 1088.9 cd |
| 40 % | 871.1 cd |
| 30 % | 653.3 cd |
| 20 % | 435.6 cd |
| 10 % | 217.8 cd |

Peak intensity: 2177.8 cd
Number of c-planes: 72

## Iso-illuminance Diagram (Iso-lux)




| | |
|---|---|
| 50.0 % | 121 lx |
| 30.0 % | 72.5 lx |
| 10.0 % | 24.2 lx |
| 5.0 % | 12.1 lx |
| 3.0 % | 7.25 lx |

Peak illuminance: 242 lx
Mounting height: 3 m
Number of c-planes: 72

# Prudential Lighting

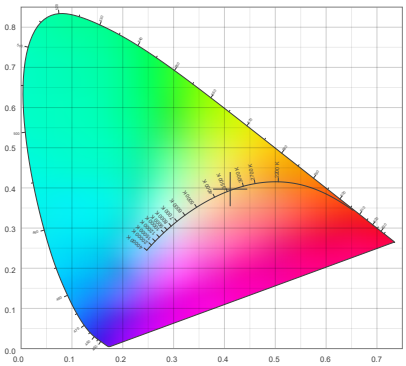
Light measurement results

Print date 8/13/2026

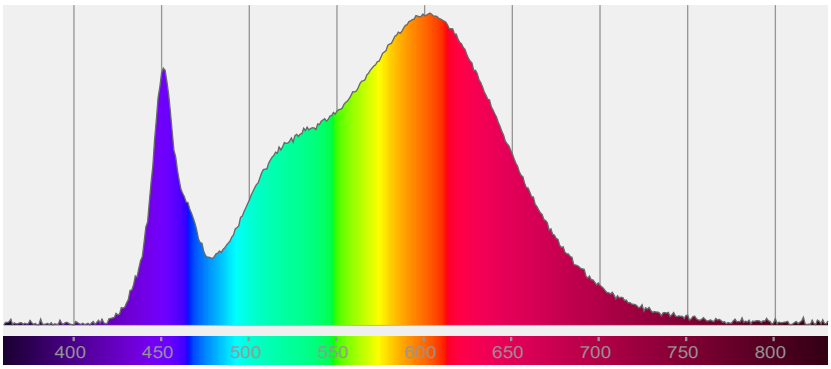
## Color details

| | | | |
|---|---|---|---|
| Correlated Color Temperature, Target | CCT = 3427 K | MacAdam Steps | SDCM = NaN |
| Correlated Color Temperature, Measured | CCT = 3427 K | Color deviation from BBL | Duv = 0.0014 |
| Color Rendering Index | CRI 84.2 | Color coordinates CIE 1931 | (x;y) = (0.4113;0.3970) |
| Color Rendering Index, R9 (red) | R9 = 10.8 | Color coordinate CIEs 1960 | (u;v) = (0.2370;0.3432) |
| Color Rendering TM30-18 | Rf 85.5 | Color coordinate CIEs 1976 | (u';v') = (0.2370;0.5147) |
| | Rg 95.9 | Color Quality Scale | CQS = 84.0 |

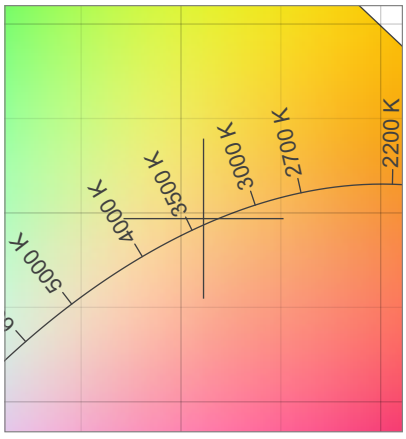
### CIE 1931 Chromaticity diagram



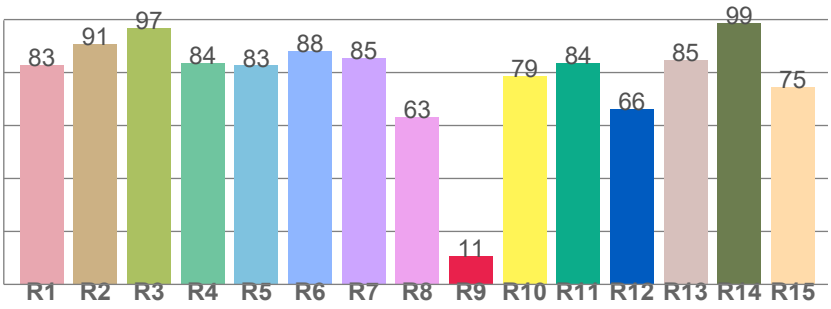
### Spectral power distribution




### CIE 1931 Chromaticity - zoomed



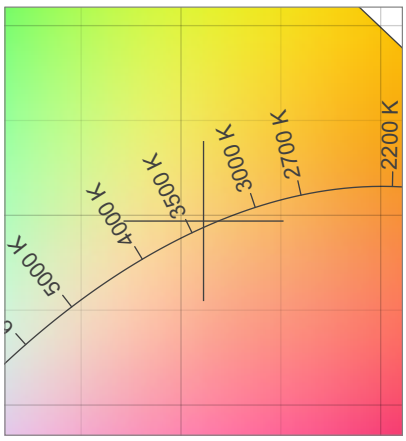

### Color Rendering Index per reference color (CIE 1995)



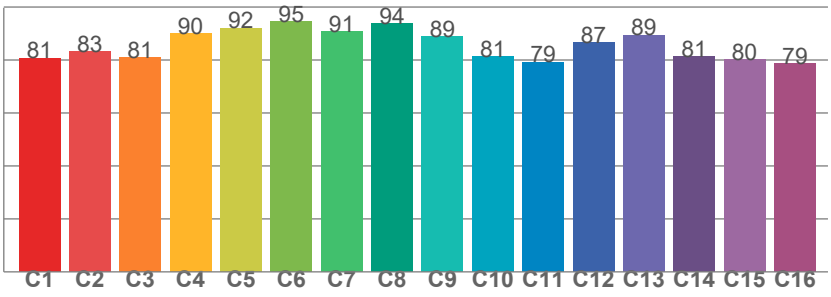

CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 82.7 | 90.7 | 97.0 | 83.5 | 82.6 | 88.2 | 85.4 | 63.2 | 10.8 | 78.5 | 83.7 | 66.1 | 84.7 | 98.6 | 74.6 |

### 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80.7 | 83.3 | 81.0 | 90.1 | 92.1 | 94.6 | 90.9 | 93.9 | 88.9 | 81.4 | 79.3 | 86.6 | 89.5 | 81.2 | 80.2 | 78.6 |

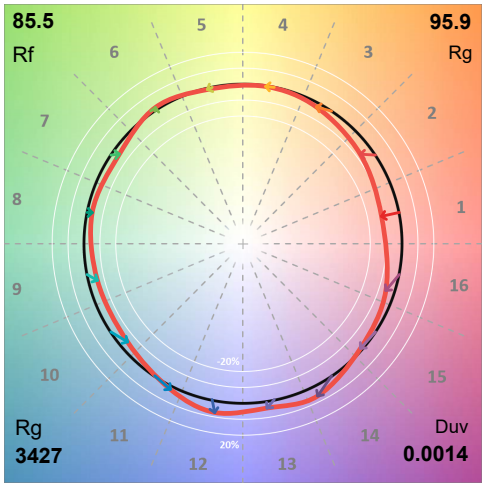
# Prudential Lighting

Light measurement results

Print date 8/13/2026

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

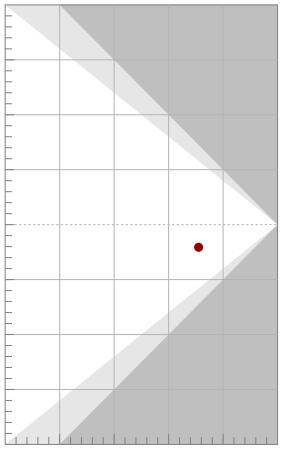
Color Vector Graphic



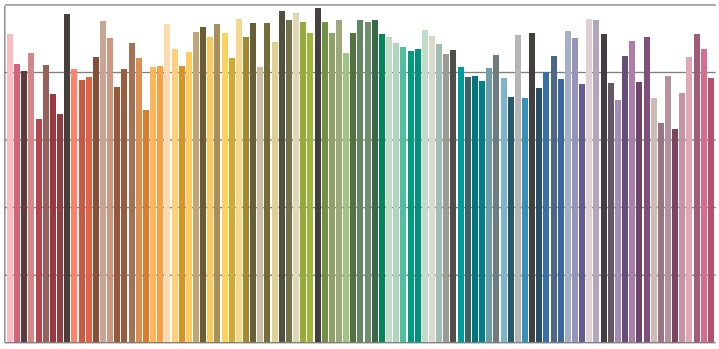

Color Distortion Graphic



Gamut Index vs. Fidelity Index

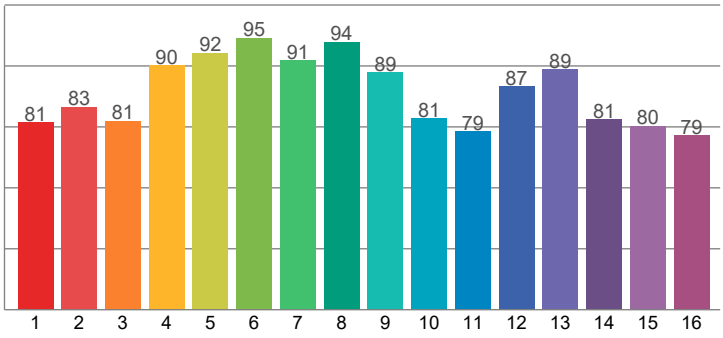



Color Rendition by Color Evaluation Sample (CES)

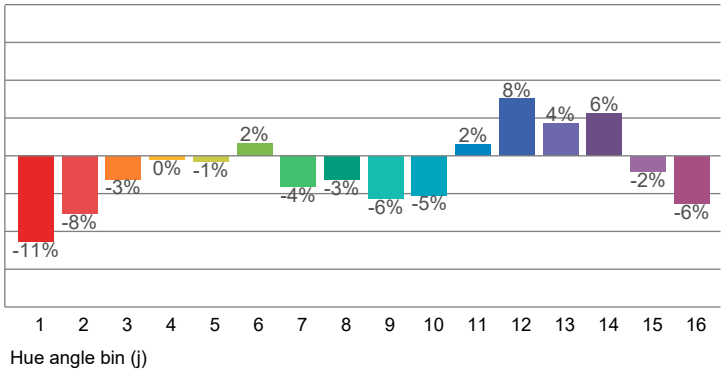


Color evaluation sample CES01 through CES99

Local Color Fidelity (per hue bin)




Local Chroma Shift (per hue bin)




| | |
|---|---|
| CIE x | 0.4113 |
| CIE y | 0.4113 |
| CIE u' | 0.2370 |
| CIE v' | 0.5147 |

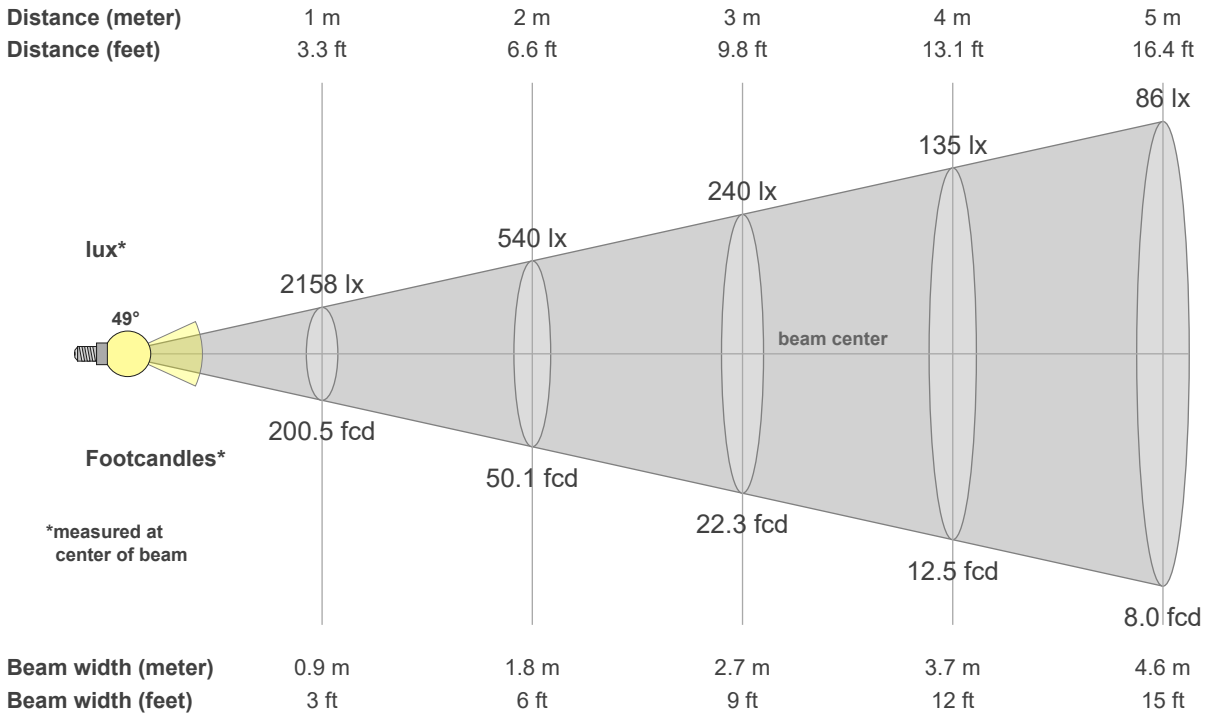
| CIE | 13.3-1995 |
|---|---|
| Ra | 84.2 |
| R9 | 10.8 |

# Prudential Lighting

Light measurement results

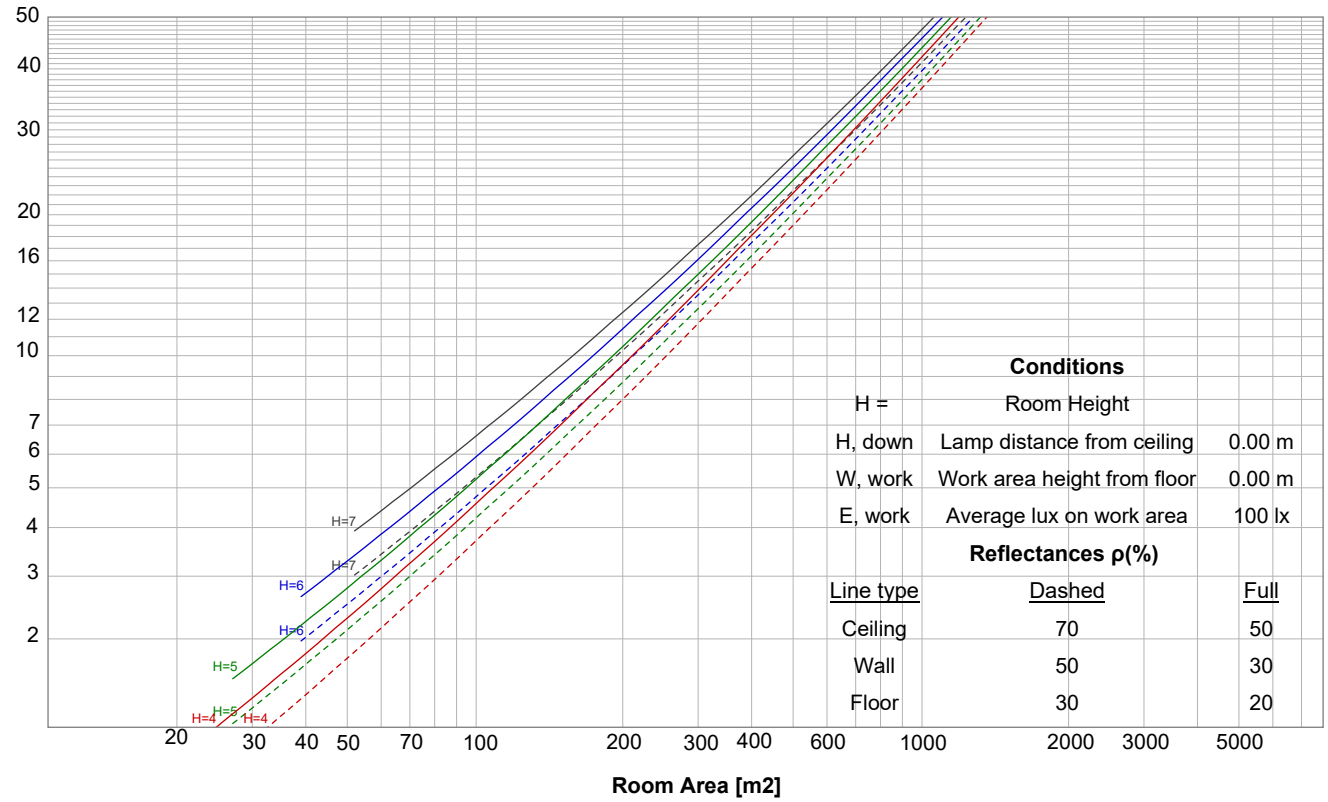
Print date 8/13/2026

## Beam details




## Luminaire budgetary diagram

**LAMPS (number of lamps)**



## 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 |
| 2158 | 540 | 240 | 135 | 86 | 60 | 44 | 34 | 27 | 22 | 18 | 15 | 13 | 11 | 10 | 8 | 7 | 7 | 6 | 5 | lux |
| 200.5 | 50.1 | 22.3 | 12.5 | 8 | 5.6 | 4.1 | 3.1 | 2.5 | 2 | 1.7 | 1.4 | 1.2 | 1 | 0.9 | 0.8 | 0.7 | 0.6 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2158 | 2143 | 2092 | 2007 | 1890 | 1743 | 1569 | 1378 | 1175 | 973 | 780 | 602 | 452 | 328 | 229 | 150 | 88 | 38 | 4 | 1 | cd |
| 100% | 99% | 97% | 93% | 88% | 81% | 73% | 64% | 54% | 45% | 36% | 28% | 21% | 15% | 11% | 7% | 4% | 2% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2158 | 1865 | 1424 | 1133 | 943 | 805 | 688 | 588 | 502 | 425 | 357 | 296 | 236 | 184 | 134 | 89 | 51 | 19 | 2 | 4 | cd |
| 100% | 86% | 66% | 52% | 44% | 37% | 32% | 27% | 23% | 20% | 17% | 14% | 11% | 9% | 6% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2158 | 2138 | 2082 | 1994 | 1869 | 1719 | 1539 | 1343 | 1141 | 938 | 748 | 579 | 433 | 313 | 216 | 141 | 81 | 32 | 5 | 6 | cd |
| 100% | 99% | 96% | 92% | 87% | 80% | 71% | 62% | 53% | 43% | 35% | 27% | 20% | 15% | 10% | 7% | 4% | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2158 | 1858 | 1411 | 1120 | 939 | 806 | 694 | 598 | 513 | 437 | 371 | 310 | 251 | 199 | 147 | 100 | 61 | 26 | 0 | 1 | cd |
| 100% | 86% | 65% | 52% | 43% | 37% | 32% | 28% | 24% | 20% | 17% | 14% | 12% | 9% | 7% | 5% | 3% | 1% | 0% | 0% | of 0°val |

# Prudential Lighting

Light measurement results

Print date 8/13/2026

## UGR Table

*Corrected, comprehensive UGR table according to 117-1995, S/H ratio=0.25*

| **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** | | **Viewed Crosswise** | | | | | **Viewed Endwise** | | | | |
| H = mouting height above eye level | | (Viewing direction orthogonal to lamp length axis) | | | | | (Viewing direction parallel to lamp length axis) | | | | |
| **X** | **Y** | | | | | | | | | | |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Variations with the observer position for the luminaire spacings, S: | | | | | | | | | | | |
| n/a | | n/a | | | | | n/a | | | | |
| n/a | | n/a | | | | | n/a | | | | |
| n/a | | n/a | | | | | n/a | | | | |

UGR data could not be calculated due to missing light source dimensions. Go to Edit -> Photometric -> Dimensions and set the source dimensions.

## 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 | 20 |
| RCR | (Room Cavity Ratio) | | | | Room values are expressed as percentage of Lumen delivered to the task surface | | | | | | | | | | | | | |
| 0 | 118.7 | 118.7 | 118.7 | 118.7 | 115.7 | 115.7 | 115.7 | 115.7 | 110.2 | 110.2 | 110.2 | 105.2 | 105.2 | 105.2 | 100.5 | 100.5 | 100.5 | 98.3 |
| 1 | 109.9 | 105.8 | 102.1 | 98.7 | 107.1 | 103.4 | 100.0 | 97.0 | 98.9 | 96.1 | 93.6 | 94.7 | 92.5 | 90.5 | 90.9 | 89.2 | 87.5 | 85.4 |
| 2 | 101.3 | 94.1 | 88.1 | 83.1 | 98.7 | 92.1 | 86.7 | 82.0 | 88.4 | 83.8 | 79.9 | 85.0 | 81.2 | 77.9 | 81.8 | 78.7 | 76.0 | 73.9 |
| 3 | 93.5 | 84.2 | 77.0 | 71.3 | 91.0 | 82.6 | 75.9 | 70.6 | 79.5 | 73.8 | 69.2 | 76.6 | 71.8 | 67.8 | 73.9 | 69.9 | 66.5 | 64.4 |
| 4 | 86.6 | 75.9 | 68.1 | 62.1 | 84.3 | 74.5 | 67.3 | 61.6 | 71.9 | 65.6 | 60.7 | 69.5 | 64.1 | 59.7 | 67.2 | 62.6 | 58.8 | 56.7 |
| 5 | 80.4 | 68.9 | 60.8 | 54.9 | 78.3 | 67.7 | 60.2 | 54.5 | 65.5 | 58.9 | 53.8 | 63.5 | 57.7 | 53.1 | 61.5 | 56.5 | 52.5 | 50.5 |
| 6 | 74.9 | 62.9 | 54.8 | 49.1 | 73.0 | 61.9 | 54.3 | 48.8 | 60.0 | 53.3 | 48.3 | 58.3 | 52.3 | 47.7 | 56.6 | 51.4 | 47.2 | 45.3 |
| 7 | 70.1 | 57.8 | 49.8 | 44.3 | 68.3 | 56.9 | 49.4 | 44.0 | 55.3 | 48.6 | 43.6 | 53.8 | 47.8 | 43.2 | 52.4 | 47.0 | 42.9 | 41.0 |
| 8 | 65.7 | 53.4 | 45.6 | 40.3 | 64.1 | 52.6 | 45.2 | 40.1 | 51.2 | 44.5 | 39.8 | 49.9 | 43.9 | 39.5 | 48.7 | 43.2 | 39.2 | 37.4 |
| 9 | 61.8 | 49.5 | 42.0 | 36.9 | 60.4 | 48.9 | 41.7 | 36.8 | 47.7 | 41.1 | 36.5 | 46.5 | 40.5 | 36.3 | 45.4 | 40.0 | 36.0 | 34.3 |
| 10 | 58.3 | 46.1 | 38.8 | 34.0 | 57.0 | 45.6 | 38.6 | 33.9 | 44.5 | 38.1 | 33.7 | 43.5 | 37.6 | 33.5 | 42.6 | 37.2 | 33.3 | 31.7 |

# Prudential Lighting

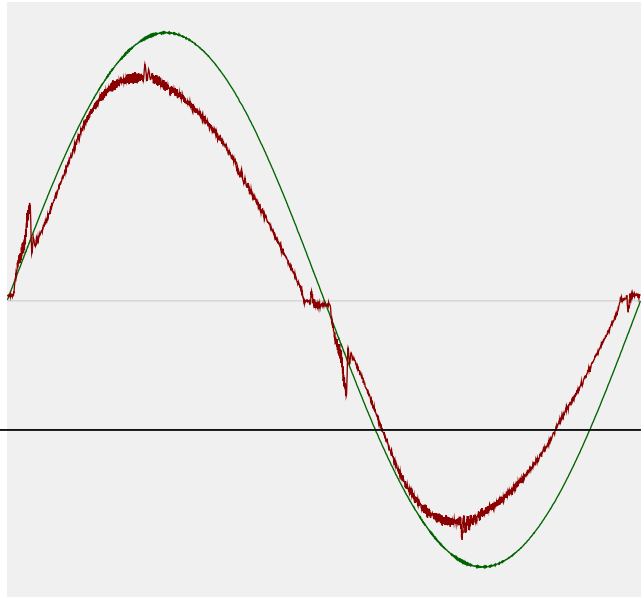
Light measurement results

Print date 8/13/2026

## Power details

| Input power | |
|---|---|
| Frequency of input power | 60.0 Hz |
| Power feed to light source | 23.19 W |
| RMS Input voltage feed V,RMS | 120 V |
| RMS Input current feed I,RMS | 0.20 A |
| Volt-Amp or apparent power = V,RMS*I,RMS | 23.5 VA |
| Displacement factor of AC power feed | 0.99 |
| Power factor of AC current feed | 0.99 |
| Total harmonic distortion of the current | 8.409% |
| Total harmonic distortion of the voltage | 0.0851% |

**Input power curve**



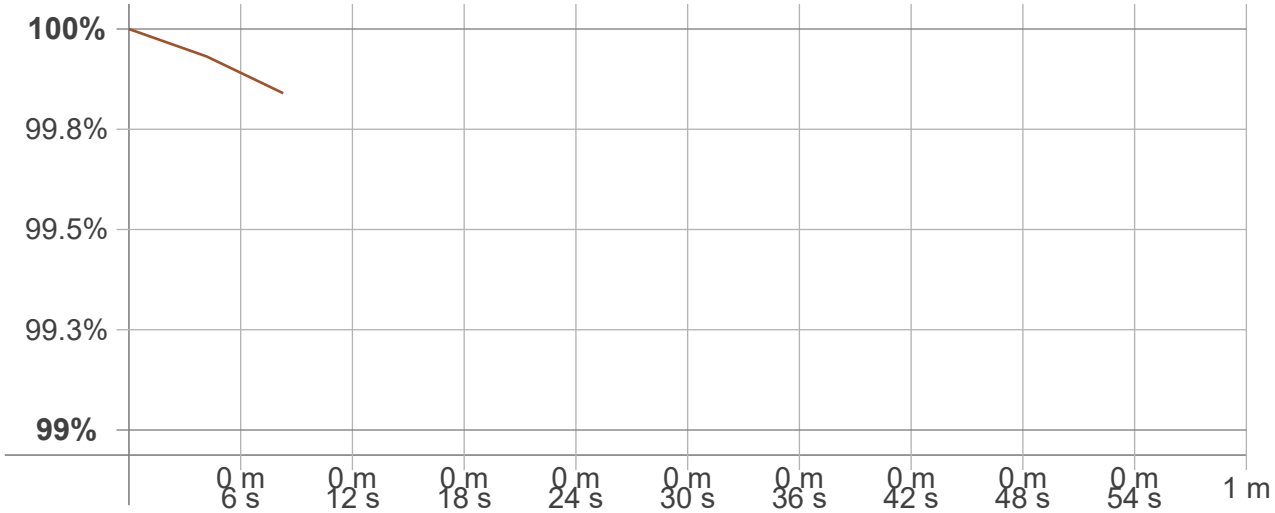
### Efficiency

| | |
|---|---|
| Radiated power efficiency | 36.51 |
| Lumen efficiency | 122.2 lm/W |

## Stabilization details

| Warmup Conditions | | Color Temperature Change | |
|---|---|---|---|
| Stable period | 15 min | CCT start | 3428 K |
| Stable change max | 1% | CCT shift | -1 K |
| Minimum time | 15 min | CCT end | 3427 K |
| **Warmup Result** | | **Output Change** | |
| Total warmup time | Not completed | Output start | 2837 lm |
| Warmup variation | -0.1601% | Output change | -4.5427 lm |
| | | Output end | 2833 lm |

## Stabilization Curve



# Prudential Lighting



## Flicker TLA details

| | |
|---|---|
| Flicker Meter Type | Viso Systems LabFlicker |
| Frequency of input power | 60.0 Hz |
| Flicker/TLA sample rate | NaN samples/s |

**Measurement time**

| | |
|---|---|
| PstLM | 180 sec. |
| All other indices | 1,5 sec, |

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

| | |
|---|---|
| Flicker frequency | NaN Hz |
| Percent Flicker | NaN % |
| Flicker index | NaN |

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

| | |
|---|---|
| PstLM value (F < 80 Hz) | NaN |
| SVM value (80 < F < 2000 Hz) | NaN |

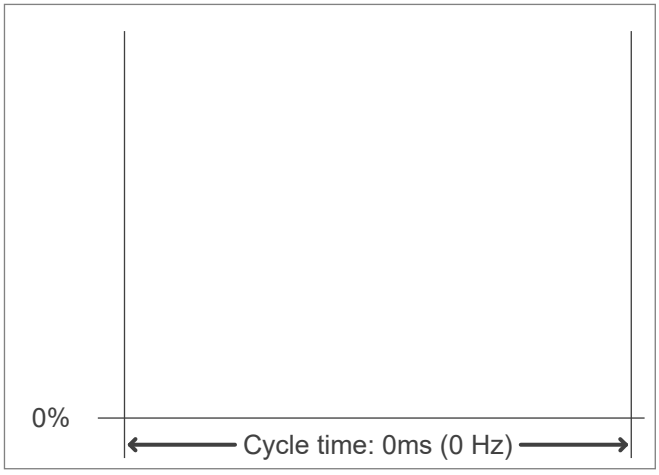
**Flicker indices according to California Energy Commission (CEC) 2016b**

| | |
|---|---|
| JA8/10 40 Hz | NaN % |
| JA8/10 90 Hz | NaN % |
| JA8/10 200 Hz | NaN % |
| JA8/10 400 Hz | NaN % |
| JA8/10 1000 Hz | NaN % |

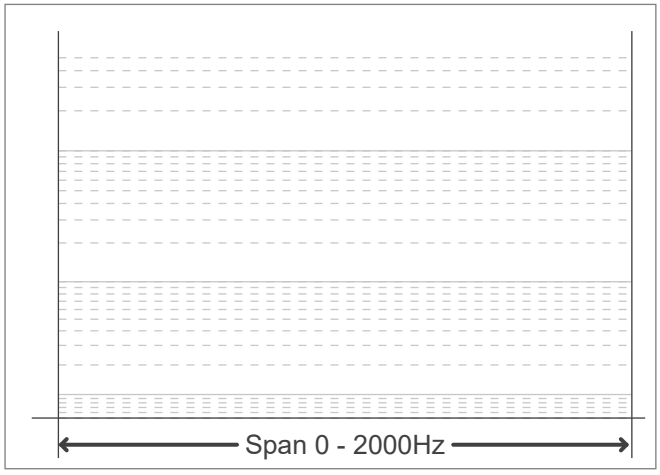
**Flicker indices according to Lighting Research Center (2015)**

| | |
|---|---|
| Perception metric, Assist Mp | NaN |

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




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




**IEEE 1789 Frequency/modulation plot**

