

Photometric Data Sheet

Laboratory and Equipment

Test Lab
Spectrometer Manufacturer and Model
Measurement Date

Super Bright LEDs - St. Louis, Missouri
LabSpion – Type C, horizontal
2/20/2026

Measurement Conditions

Tested c-planes
Tested Gamma Resolution
Input Power

16 planes – 22.5°
3.75°
75.8 W

Tested Light Source

Luminaire
Basic Luminous Shape
Manufacturer
Description

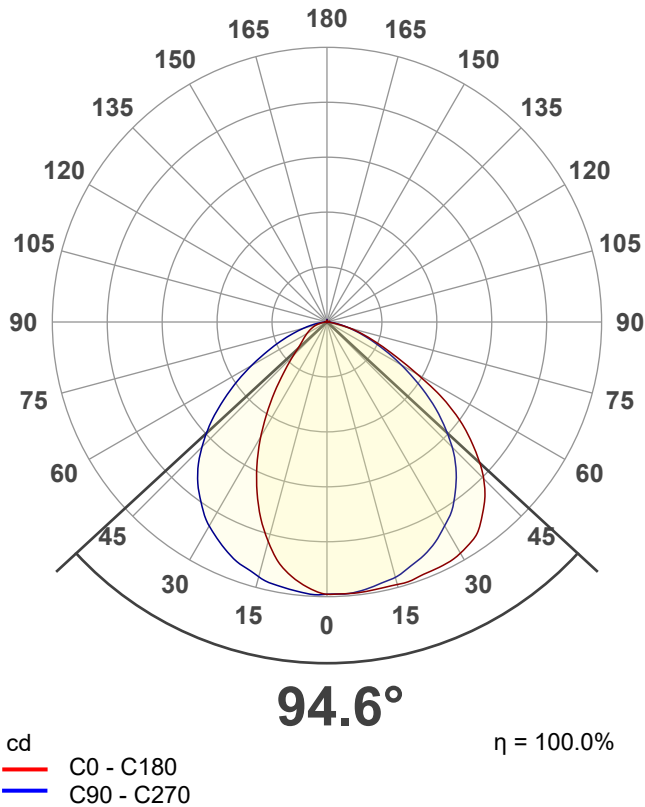
WPA-SW3B80W-H8DBR35 5000K
PANEL
Super Bright LEDs

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Peak Intensity
Correlated Color Temperature, CCT
Color Rendering Index
TM30
SDCM

11868 lm – 0.61% / 99.39%
157 lm/W
5248 cd
5232 K
CRI 72.0
73.0
3.9

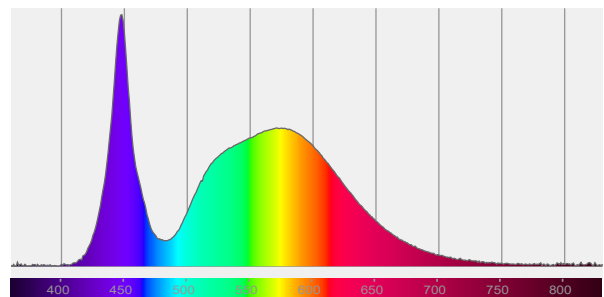
Polar Light Distribution Diagram



Product Photo



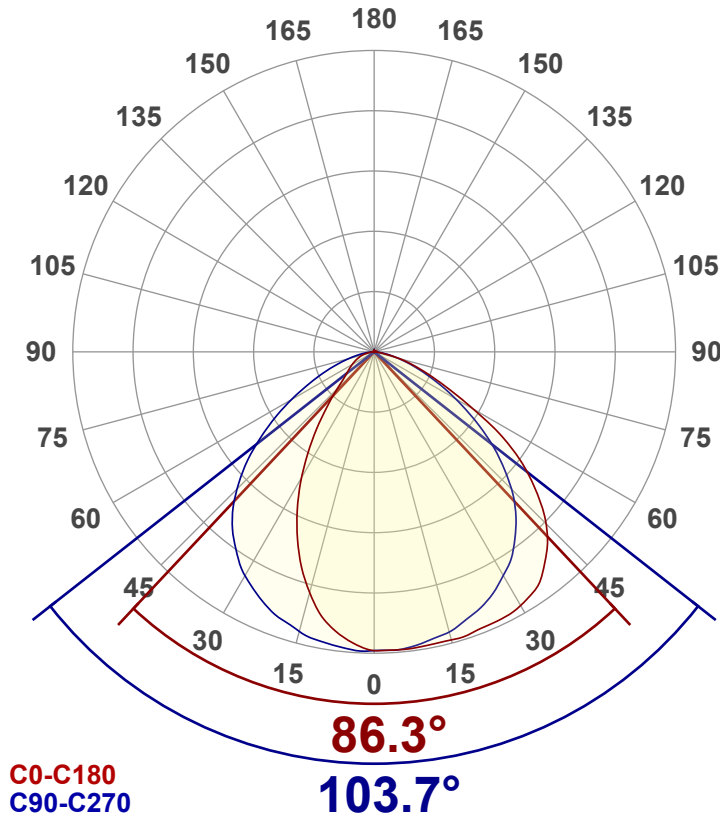
Spectral Power Distribution



Photometric Data Sheet

Luminous Intensity Diagram

Unit: 0-100% of peak intensity



Main Values

| | |
|-------------------------|----------------|
| Output (total Lumen) | 11868 lm |
| Lumen Up% / Down% | 0.61% / 99.39% |
| Peak Intensity | 5248 cd |
| Beam Angle (50%-FWHM) | 94.62° |
| Beam Angle - Horizontal | 103.7° |
| Beam Angle - Vertical | 86.3° |

Cut-off Angle

| | |
|--------------|--------|
| Average 2.5% | 162.2° |
|--------------|--------|

Field Angle

| | |
|-------------|--------|
| Average 10% | 137.3° |
|-------------|--------|

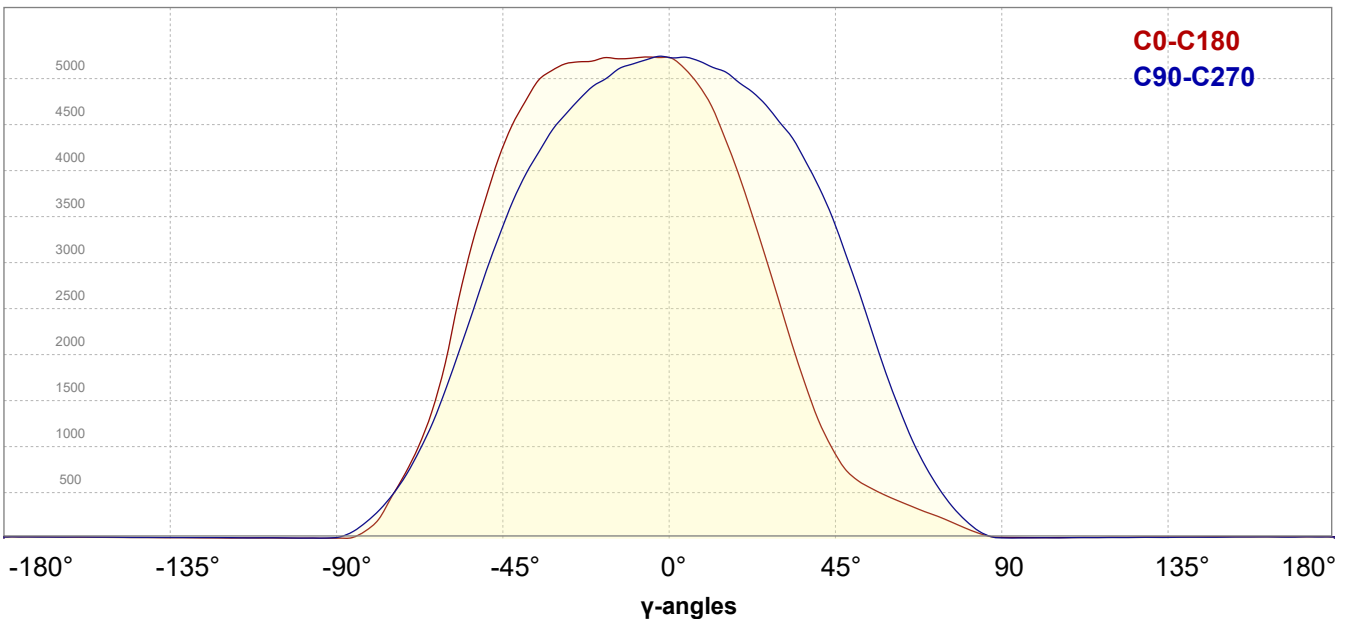
Intensity Ratio

| | |
|--------------|-------|
| In 120° cone | 85.6% |
| In 90° cone | 61.9% |

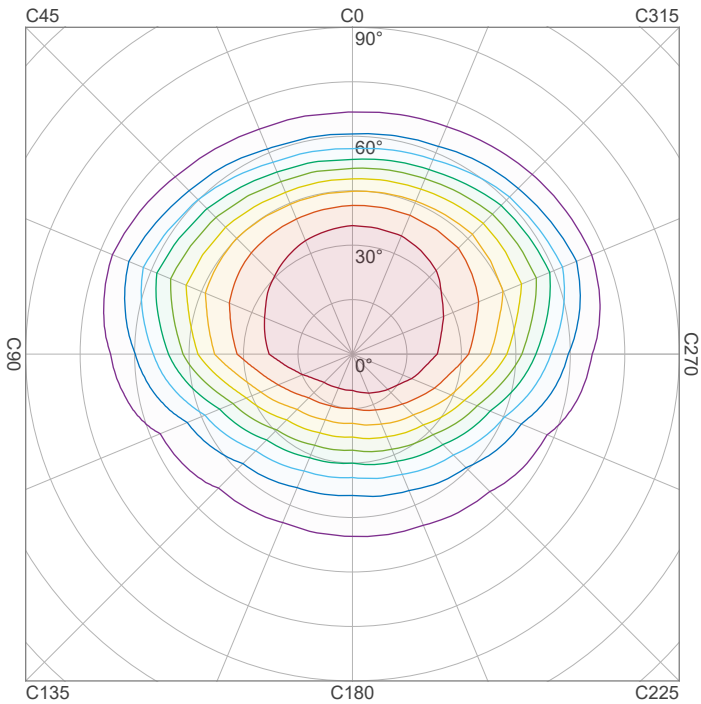
C0-C180
C90-C270

Linear Distribution Diagram

Intensity [cd]



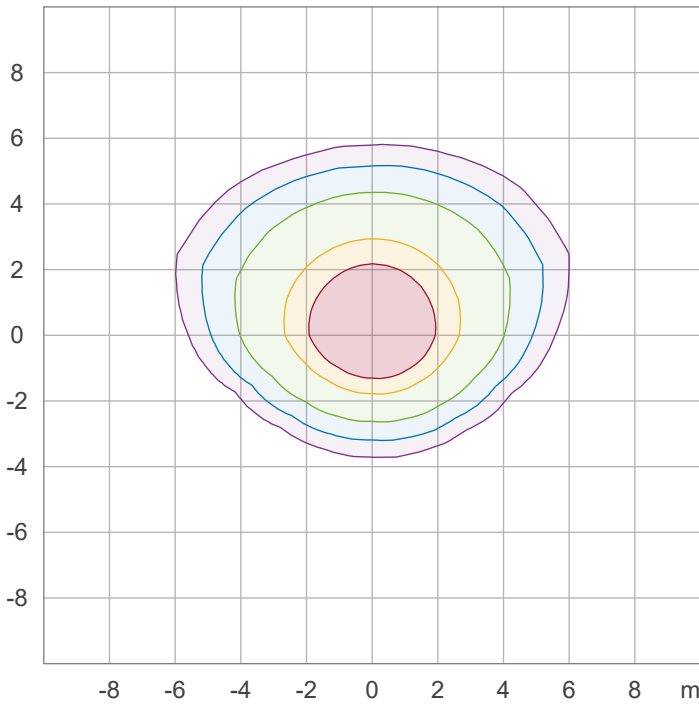
Iso-intensity Diagram (Iso-candela)



| | |
|------|-----------|
| 90 % | 4722.0 cd |
| 80 % | 4197.4 cd |
| 70 % | 3672.7 cd |
| 60 % | 3148.0 cd |
| 50 % | 2623.4 cd |
| 40 % | 2098.7 cd |
| 30 % | 1574.0 cd |
| 20 % | 1049.3 cd |
| 10 % | 524.7 cd |

Peak intensity: 5246.7 cd
 Number of c-planes: 16

Iso-illuminance Diagram (Iso-lux)



| | |
|--------|----------|
| 50.0 % | 290.7 lx |
| 30.0 % | 174.4 lx |
| 10.0 % | 58.1 lx |
| 5.0 % | 29.1 lx |
| 3.0 % | 17.4 lx |

Peak illuminance: 581.3 lx
 Mounting height: 3.0 m
 Number of c-planes: 16

Photometric Data Sheet

Color Details

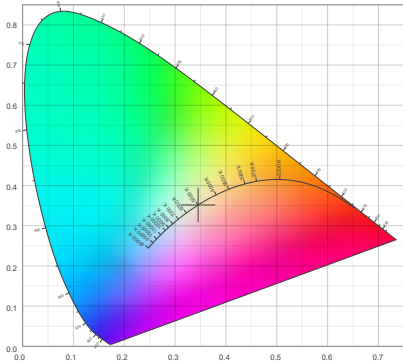
Correlated Color Temperature, Measured
 Color Rendering Index
 Color Rendering Index, R9 (red)
 Color Rendering TM30-18

CCT = 5232 K
 CRI 72.0
 R9 = -34.7
 Rf 73.0
 Rg 94.7

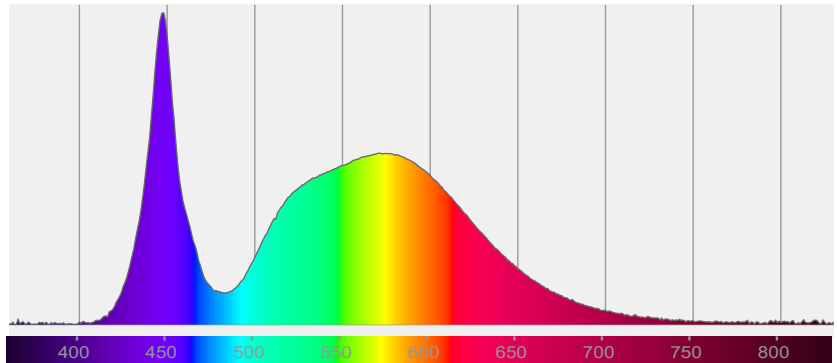
Color deviation from BBL
 Color coordinates CIE 1931
 Color coordinate CIEs 1960
 Color coordinate CIEs 1976
 Color Quality Scale

Duv = 0.0016
 (x;y) = (0.345;0.352)
 (u;v) = (0.211;0.323)
 (u';v') = (0.211;0.485)
 CQS = 69.9

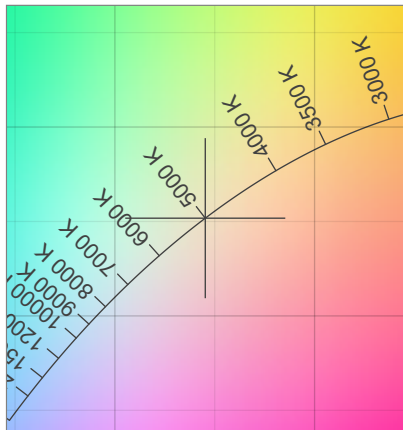
CIE 1931 Chromaticity Diagram



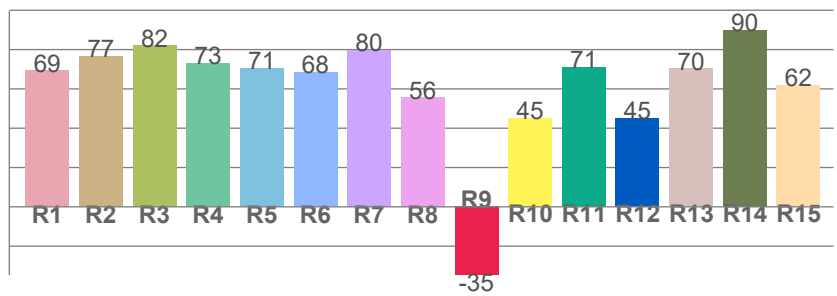
Spectral Power Distribution



CIE 1931 Chromaticity - Zoomed



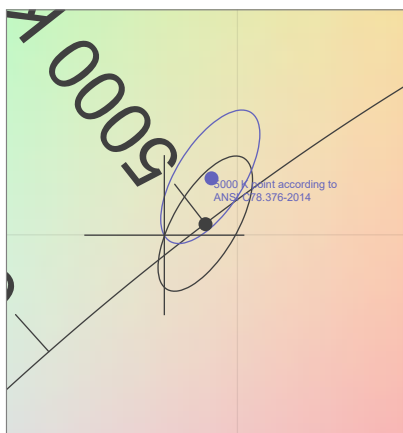
Color Rendering Index per Reference Color (CIE 1995)



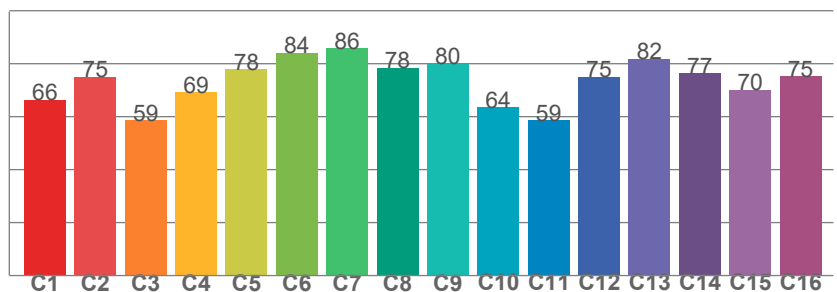
CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|
| 69.4 | 76.8 | 82.1 | 73.2 | 70.6 | 68.4 | 79.7 | 55.6 | -34.7 | 45.1 | 71.1 | 45.0 | 70.4 | 90.0 | 62.0 |

CIE 1931 Chromaticity - SDCM



TM30-18 Rf-values per Hue Bin

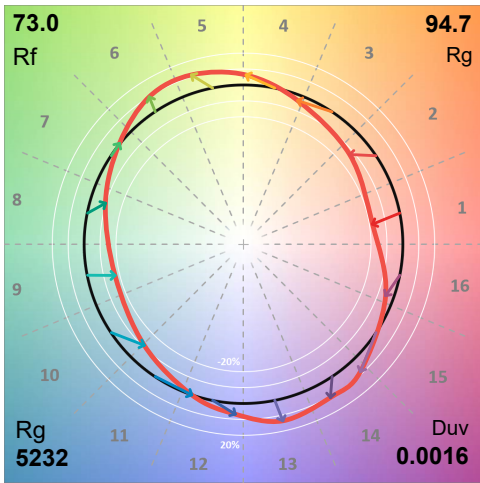


TM30-18 Rf-values per hue bin

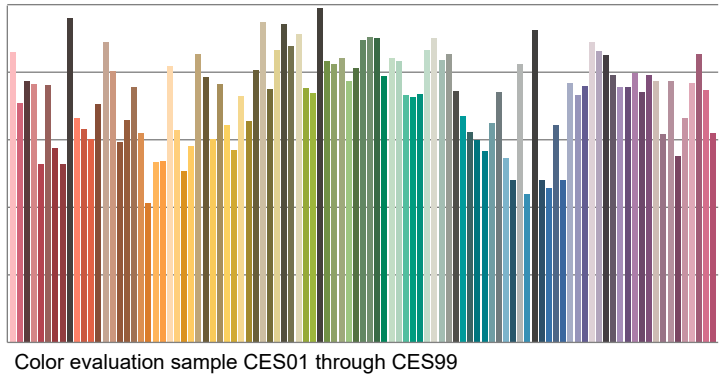
| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 66.3 | 75.1 | 58.7 | 69.3 | 77.9 | 84.1 | 85.7 | 78.5 | 80.0 | 63.5 | 58.6 | 75.1 | 81.9 | 76.5 | 70.1 | 75.3 |

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

Color Vector Graphic



Color Rendition by Color Evaluation Sample (CES)

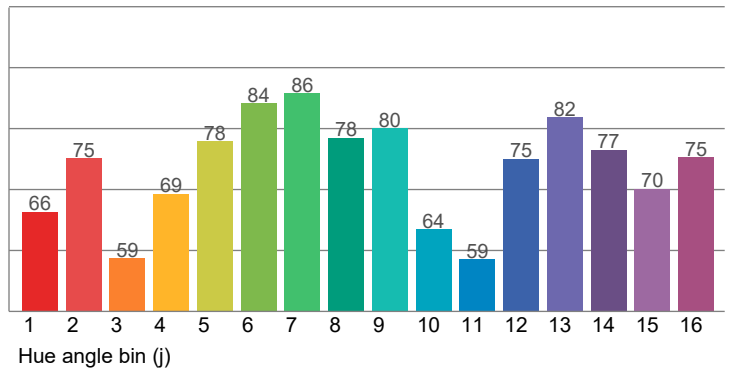


Color evaluation sample CES01 through CES99

Color Distortion Graphic

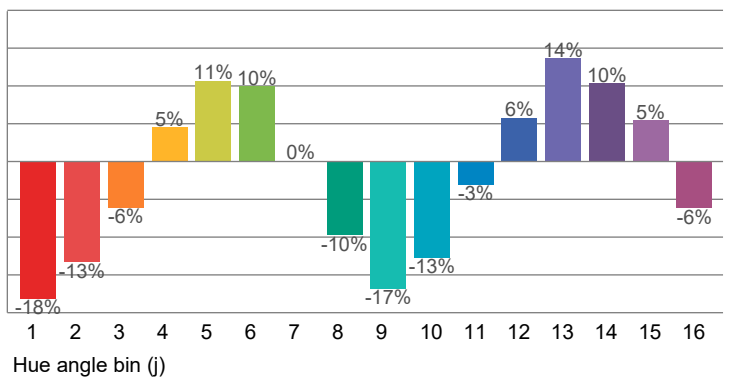


Local Color Fidelity (per hue bin)



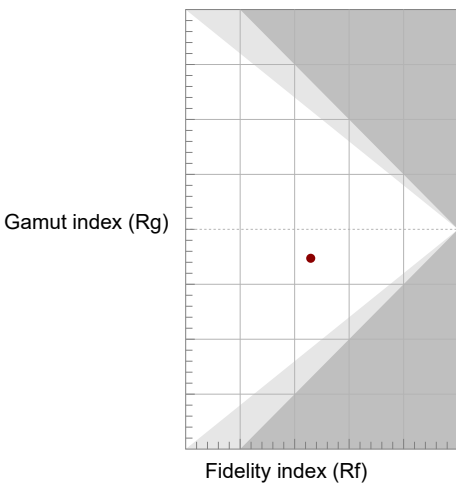
Hue angle bin (j)

Local Chroma Shift (per hue bin)



Hue angle bin (j)

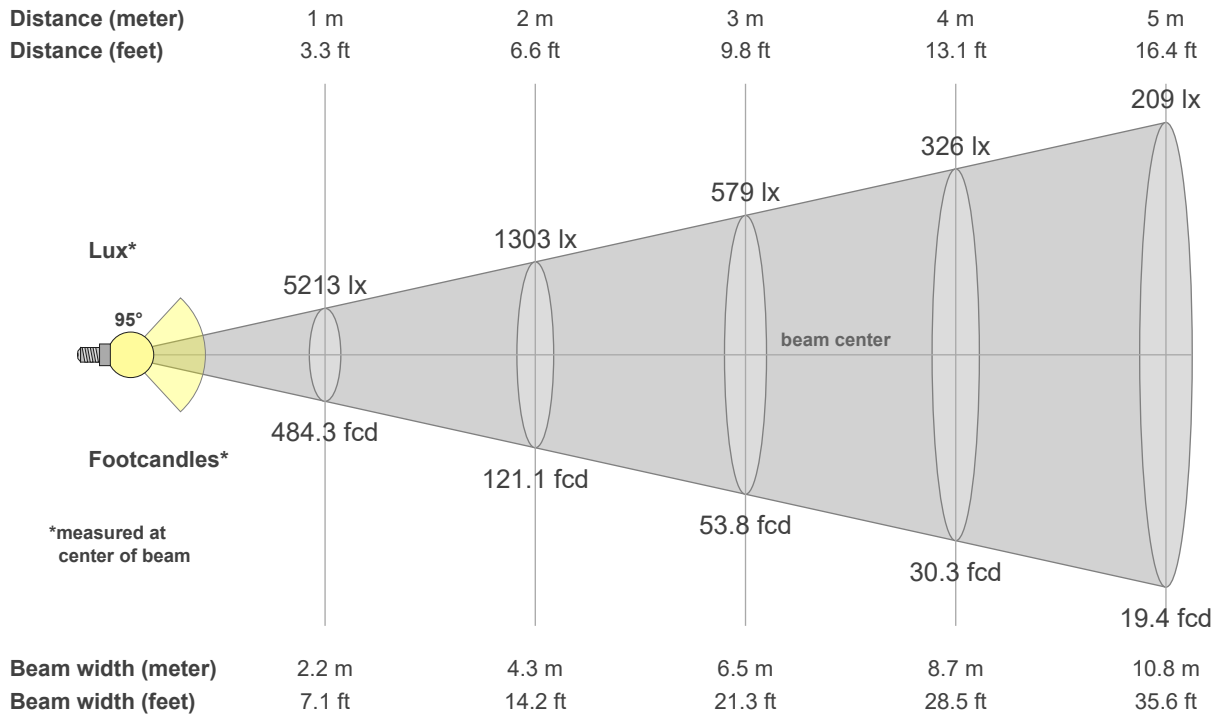
Gamut Index vs. Fidelity Index



x 0.345
y 0.345
u' 0.211
v' 0.485

| | |
|------------|------------------|
| CIE | 13.3-1995 |
| Ra | 72.0 |
| R9 | -34.7 |

Beam Details



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 |
| 5213 | 1303 | 579 | 326 | 209 | 145 | 106 | 81 | 64 | 52 | 43 | 36 | 31 | 27 | 23 | 20 | 18 | 16 | 14 | 13 | lux |
| 484.3 | 121.1 | 53.8 | 30.3 | 19.4 | 13.5 | 9.9 | 7.6 | 6 | 4.8 | 4 | 3.4 | 2.9 | 2.5 | 2.2 | 1.9 | 1.7 | 1.5 | 1.3 | 1.2 | fc |



Photometric Data Sheet

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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|----------|
| 5213 | 5232 | 5222 | 5219 | 5199 | 5179 | 5122 | 4992 | 4673 | 4246 | 3649 | 2925 | 2017 | 1296 | 823 | 460 | 160 | 26 | 5 | 4 | cd |
| 100% | 100% | 100% | 100% | 100% | 99% | 98% | 96% | 90% | 81% | 70% | 56% | 39% | 25% | 16% | 9% | 3% | 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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|----------|
| 5213 | 5227 | 5155 | 5074 | 4925 | 4758 | 4519 | 4237 | 3861 | 3398 | 2837 | 2236 | 1654 | 1146 | 743 | 436 | 206 | 60 | 10 | 7 | cd |
| 100% | 100% | 99% | 97% | 94% | 91% | 87% | 81% | 74% | 65% | 54% | 43% | 32% | 22% | 14% | 8% | 4% | 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 |
|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 5213 | 5071 | 4796 | 4361 | 3815 | 3196 | 2544 | 1898 | 1327 | 924 | 670 | 540 | 445 | 360 | 281 | 203 | 117 | 45 | 15 | 12 | cd |
| 100% | 97% | 92% | 84% | 73% | 61% | 49% | 36% | 25% | 18% | 13% | 10% | 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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|----------|
| 5213 | 5217 | 5156 | 5063 | 4931 | 4745 | 4518 | 4218 | 3859 | 3391 | 2847 | 2250 | 1675 | 1173 | 777 | 470 | 252 | 92 | 15 | 6 | cd |
| 100% | 100% | 99% | 97% | 95% | 91% | 87% | 81% | 74% | 65% | 55% | 43% | 32% | 23% | 15% | 9% | 5% | 2% | 0% | 0% | of 0°val |



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

IES Classification (Type I, II, III, IV, V) Type II
 Longitudinal Classification (Short, Medium, Long) Very Short
 Cutoff Classification Cutoff

Forward Light

| | | | |
|--------------------|--------|----|-------|
| Low (0-30°) | 2126.7 | lm | 17.9% |
| Medium (30-60°) | 4351.9 | lm | 36.7% |
| High (60-80°) | 1181.3 | lm | 10% |
| Very High (80-90°) | 57 | lm | 0.5% |

Back Light

| | | | |
|--------------------|--------|----|-------|
| Low (0-30°) | 1771.4 | lm | 14.9% |
| Medium (30-60°) | 1911 | lm | 16.1% |
| High (60-80°) | 368.1 | lm | 3.1% |
| Very High (80-90°) | 29 | lm | 0.2% |

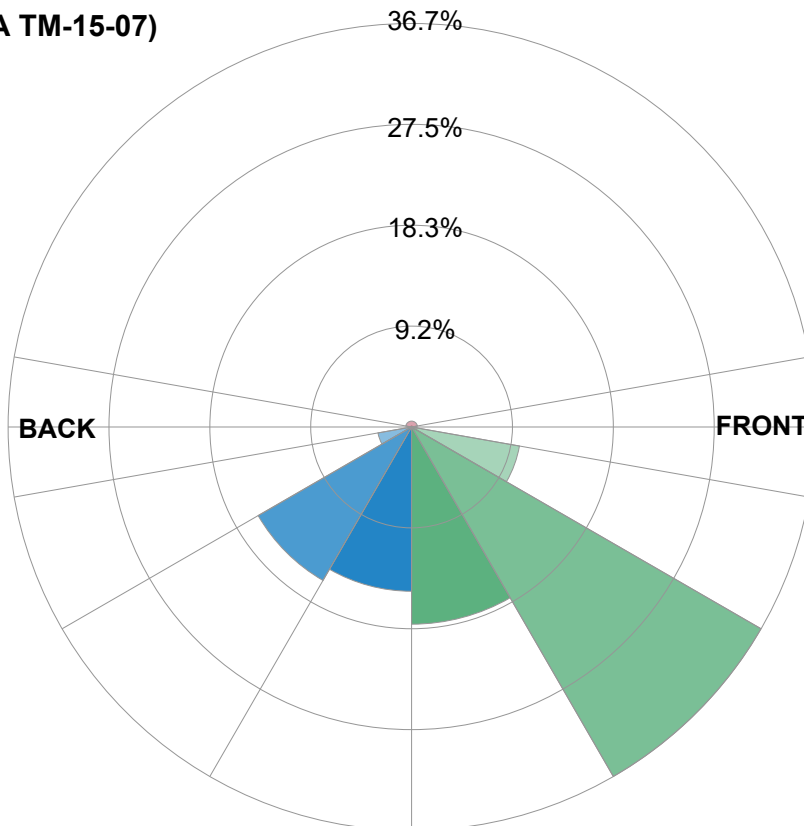
Uplight

| | | | |
|-----------------|------|----|------|
| Low (90-100°) | 8.8 | lm | 0.1% |
| High (100-180°) | 63.6 | lm | 0.5% |

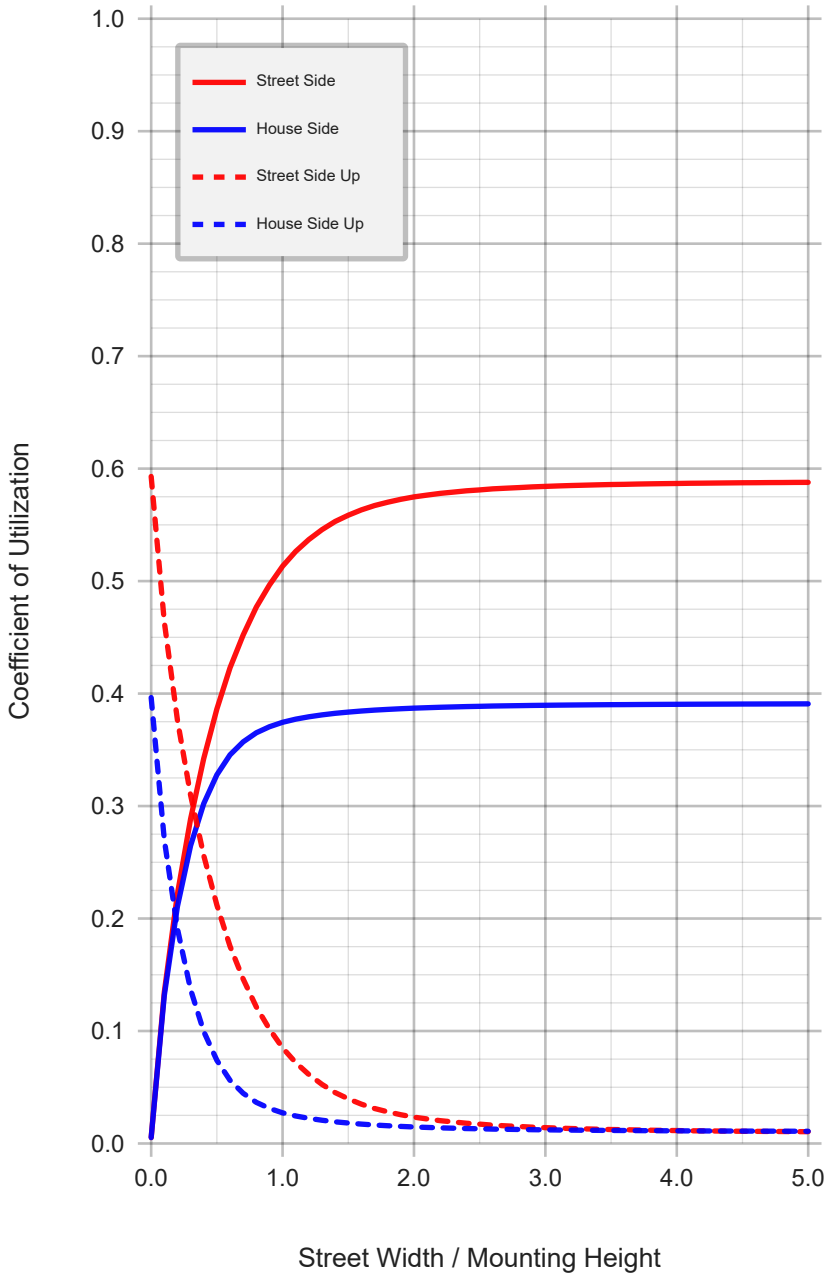
Total

Sum 11867.7 lm 100%

**BUG Rating (IESNA TM-15-07)
B3 U3 G1**

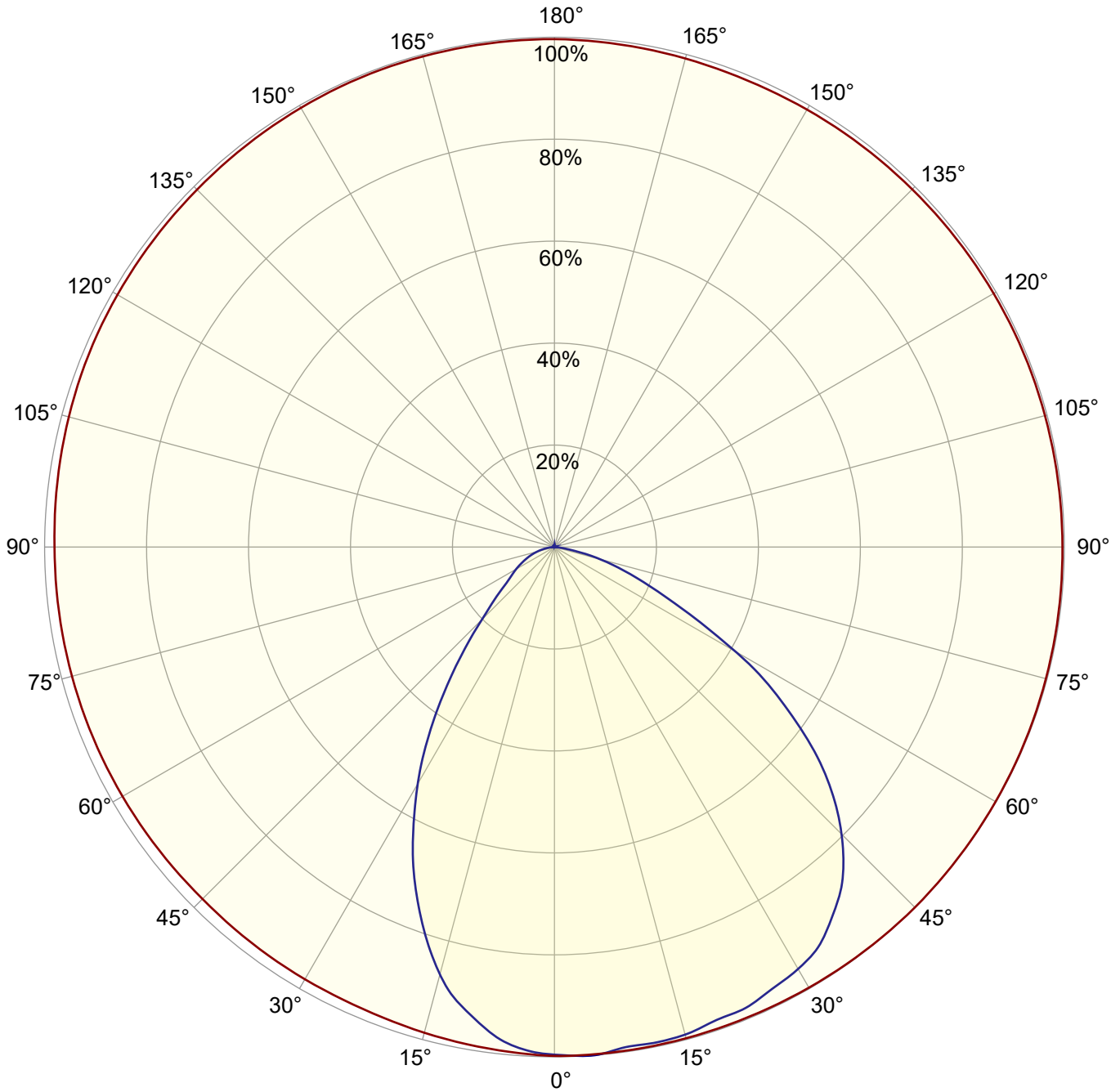


Photometric Data Sheet



| | Flux | Percent of lamp |
|----------------------|-------------|-----------------|
| Downward Street Side | 7716.97 lm | 65.03% |
| Downward House Side | 4079.56 lm | 34.38% |
| Downward Total | 11796.53 lm | 99.40% |
| Upward Total | 72.34 lm | 0.61% |
| Total Flux | 11867.69 lm | 100% |

Polar Graph - Peak Values



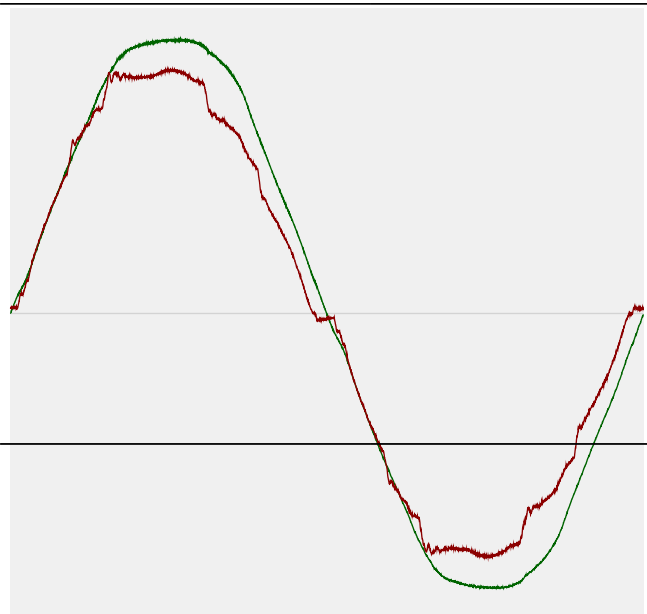
| | |
|---|----------------------------|
| Maximum intensity | 5247.8 cd |
| Max. located at horizontal, vertical angles | 338H 4V deg. |
| Through max.intensity [cd] | Peak plane: C22.5 - C202.5 |
| Horizontal cone through vertical angle | 4V |

Power Details

Input power

| | |
|--|----------|
| Frequency of input power | 60 Hz |
| Power feed to light source | 75.8 W |
| RMS Input voltage feed V,RMS | 120 V |
| RMS Input current feed I,RMS | 0.635 A |
| Volt-Amp or apparent power = V,RMS*I,RMS | 76.21 VA |
| Displacement factor of AC power feed | 1.0 |
| Power factor of AC current feed | 0.99 |
| Total harmonic distortion of the current | 6.17% |
| Total harmonic distortion of the voltage | 2.63% |

Input power curve



Efficiency

Radiated power efficiency 46.7%



Lumen efficiency 157 lm/W



Stabilization details

Warmup Conditions

| | |
|-------------------|--------|
| Stable period | 15 min |
| Stable change max | 2.0% |
| Minimum time | 15 min |

Color Temperature Change

| | |
|-----------|--------|
| CCT start | 4964 K |
| CCT end | 5232 K |

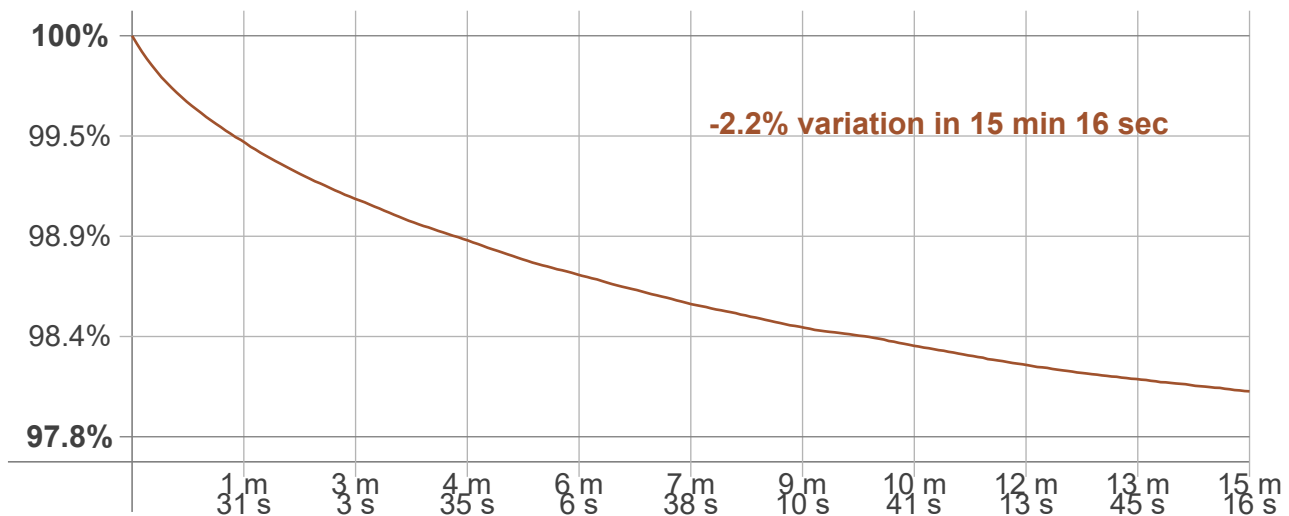
Warmup Result

| | |
|-------------------|-----------------|
| Total warmup time | Lamp stabilized |
| Warmup variation | -2.2% |

Output Change

| | |
|---------------|----------|
| Output start | 12116 lm |
| Output change | -248 lm |
| Output end | 11868 lm |

Stabilization Curve



Flicker T TLA Details

| | |
|--------------------------|-------------------------|
| Flicker Meter Type | Viso Systems LabFlicker |
| Frequency of input power | 60 Hz |
| Flicker/TLA sample rate | 20000 samples/s |

| | |
|-------------------------|----------|
| Measurement time | |
| PstLM | 180 sec. |
| All other indices | 1.5 sec. |

Flicker indices according to Illuminating Engineering Society

| | |
|-------------------|-----------|
| Flicker frequency | 119.76 Hz |
| Percent Flicker | 29.93 % |
| Flicker index | 0.09 |

Flicker indices according to California Energy Commission (CEC)

| | |
|----------------|---------|
| JA8/10 40 Hz | 0.5 % |
| JA8/10 90 Hz | 1.42 % |
| JA8/10 200 Hz | 29.76 % |
| JA8/10 400 Hz | 30.09 % |
| JA8/10 1000 Hz | 29.9 % |

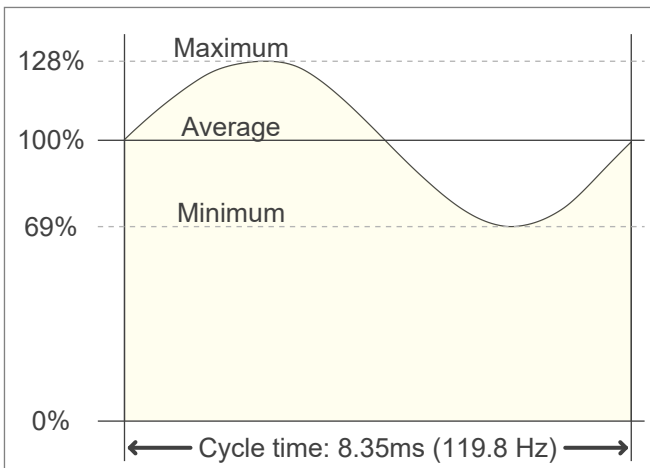
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC

| | |
|------------------------------|------|
| PstLM value (F < 80 Hz) | 0.1 |
| SVM value (80 < F < 2000 Hz) | 1.06 |

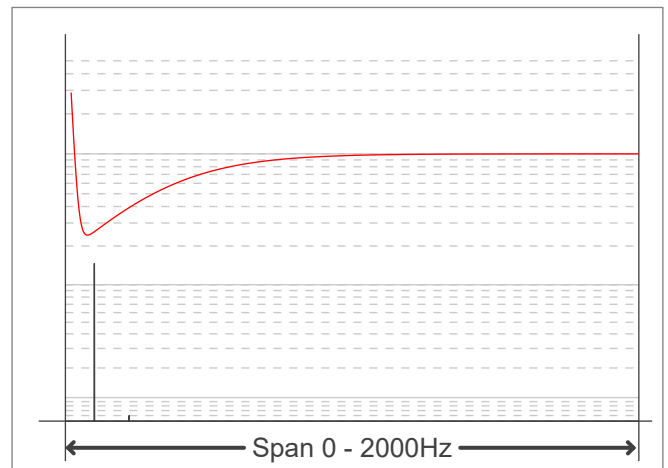
Flicker indices according to Lighting Research Center (2015)

| | |
|------------------------------|-----|
| Perception metric, Assist Mp | 0.1 |
|------------------------------|-----|

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



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation Plot

