



PHOTOMETRIC LIGHT REPORT

**Floodlight |
25W/37.5W/50W |
100x60° | 3-CCT | light
sensor**

Article number: 146-370



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TRONIX



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Introduction

Purpose of this Document

This document provides accurate and objective photometric data for Tronix Lighting item 146-370. All information is based on actual measurements taken from standard production units. No modifications were made to enhance performance results. In some cases, minor adjustments—such as temporary removal of covers, cables, or mounting features—were necessary for testing purposes. These did not influence product performance.

Test Methodology

Testing was conducted using randomly selected, unopened samples from regular inventory. All tests comply with the LM-79-19 standard, the recognized method for photometric and electrical measurements of LED and OLED luminaires. This standard, an update of IES LM-79-2008, outlines environmental test conditions, stabilization procedures, measurement methods, and approved instruments. It uses absolute photometry, meaning results directly reflect the performance of the tested product, without comparison to rated lamp standards.

Product 146-370 was tested using:

- A photogoniometer to measure luminous intensity distribution at various angles
- An integrating sphere to determine total luminous flux and colour characteristics

Compliance & Certification

Item 146-370 meets the requirements of the following EU directives. Tronix Lighting certifies that all relevant tests were executed in accordance with the applicable standards, and the CE mark is applied accordingly:

- General Product Safety – Directive 2023/988/EC
- Low Voltage Directive (LVD) – Directive 2014/35/EU
- Electromagnetic Compatibility (EMC) – Directive 2004/108/EC
- Ecodesign – Directive 2009/125/EC
- RoHS 3 – Directive 2011/65/EU + Amendment 2015/863/EU

Recycling & Sustainability

Tronix Lighting is affiliated with national recycling systems for electrical and electronic waste. The luminaire is over 90% recyclable when disposed of as electronic waste at end of life. In addition, Tronix Lighting participates in national packaging recycling schemes, ensuring full compliance with both the WEEE and packaging directives.



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Laboratory and equipment

Laboratory owner and location	Tronix Lighting BV. Uden. The Netherlands
Gonio spectrometer system and type	Viso Systems Type C. horizontal
Spectrometer manufacturer and model	(Gonio) Ocean Optics STS VIS (Sphere) Admesy HERA VIS 380–780nm
Flicker meter manufacturer and model	Viso Systems LabFlicker
Oscilloscope manufacturer and model	Tektronix MDO3024 oscilloscope (4 Channels. 200 MHz)
Power meter manufacturer and model	Vitretek PA900 Precision Multi-Channel Harmonic Power Analyzer
Power source manufacturer and model	(DC) Keithley Source Measure Unit SMU-2420 3A DC Source Meter (AC) Chroma 61601 AC Source
Datalogger Manufacturer and Model	Omega 8-Channel Thermocouple Thermometer/Data Logger

Measurement conditions gonio spectrometer

Number of C-planes and Resolution	8 planes – 45°
γ (gamma)-Resolution	5°
Test Distance	1.81 m
Room Temperature and Humidity	22°C +/- 10% – RH 50% +/- 20%
Input Power. Power and Displacement Factors	49.9 W – PF 0.99 – DPF 0.99
Frequency of Input Power	50 Hz
Warm-up Time and Variation	Lamp stabilized in 15 min 1 sec --0.5%

Tested light source

Manufacturer and Order Code	Tronix Lighting – 146-370
Product Description	Floodlight 25W/37.5W/50W 100x60° 3-CCT light sensor

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)	7286 lm – 0.02% / 99.98%
Efficiency	146 lm/W
Energy efficiency class	D
Peak Intensity and Beam Angle	3960 cd – 85°
Correlated Colour Temperature	CCT = 3975 K
Colour Shift. CIE duv	Duv -0.0041
Colour Rendering Index	CRI 84.4
Colour Rendering TM30-18	R _f 83.5 – R _g 98.8
Television Lighting Consistency Index	TLCI = 67
Flicker	SVM 0.01 – PstLM 0.05



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Electrical measurement details

Input Power

RMS Input voltage feed. V_{RMS}	230 V
RMS Input current feed. I_{RMS}	0.220 A
Total input power	49.9 W
Frequency of input power	50 Hz
Power factor	0.99
Displacement power factor	0.99
Total harmonic distortion of the current	4.73%
Total harmonic distortion of the voltage	2.42%

Input Power Curve

Voltage - Current



Efficiency

Radiated power efficiency: 45.1%



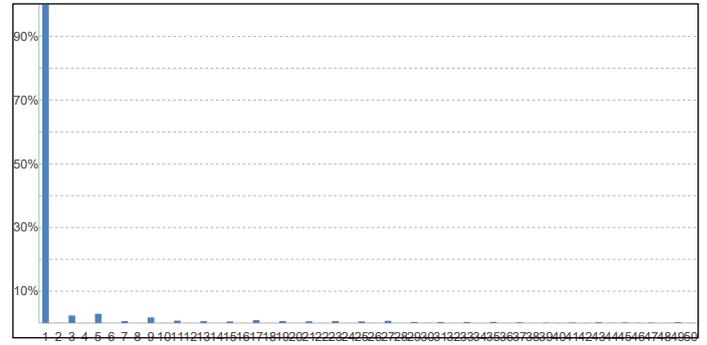
Lumen efficiency: 146 lm/W



Harmonics

3rd Harmonic	2.37%
5th Harmonic	2.92%
7th Harmonic	0.63%
9th Harmonic	1.76%
11th Harmonic	0.76%

Current Harmonics %



Stabilization Details

Warm-up Conditions

Stable period	15 min
Stable change max	2.0%
Minimum warm-up time	15 min

Colour temperature change during warm-up

CCT start	3974 K
CCT shift	+1 K
CCT end	3975 K

Warm-up Results

Total warmup time	Lamp stabilized in 15 min 1 sec
Warmup variation	-0.5%

Output intensity change during warm-up

Output start	7323 lm
Output change	-37 lm
Output end	7286 lm



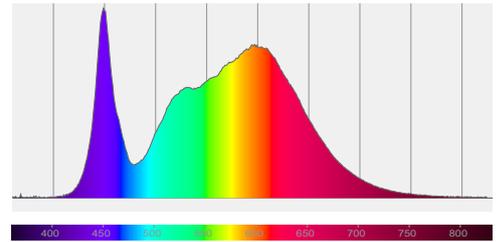
146-370 Floodlight | 25W/37.5W/50W | 100x60° | 3-CCT | light sensor

Colour measurement details

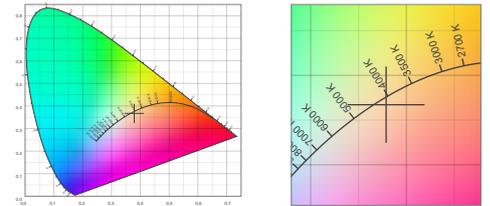
Total lumen output 7286 lm
 Correlated Colour Temperature 3975 K
 Colour coordinates CIE 1931 (x,y) = (0.379;0.367)
 Colour deviation from BBL Duv = -0.0041

TM30-18 Colour Fidelity Index R_f 83.5
 TM30-18 Colour Gamut Index R_g 98.8
 Colour Rendering Index (Ra) CRI 84.4
 Colour Rendering Index. (red component) $R_9 = 17.3$

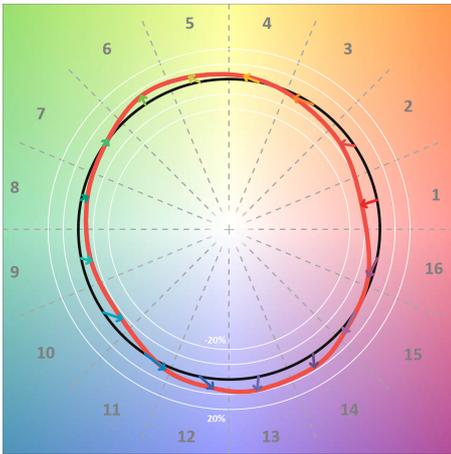
Colour Quality Scale CQS = 82.0
 Television Lighting Consistency Index TLCI = 67



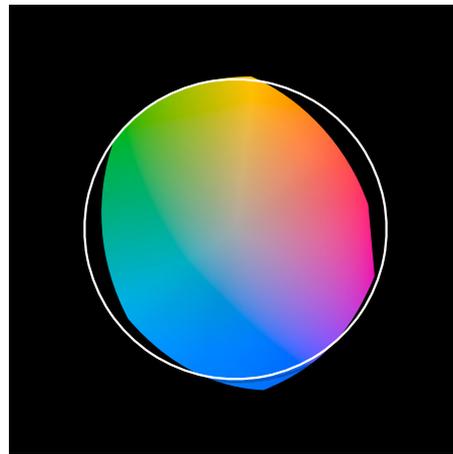
Relative spectral power distribution



TM30 details

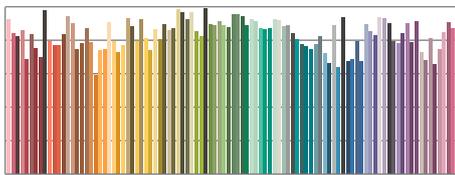


TM30 Colour vectors per hue bin

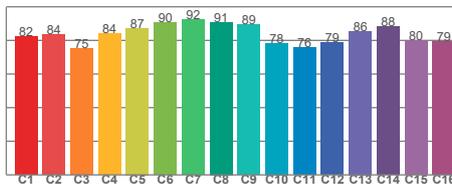


TM30 Colour distortion

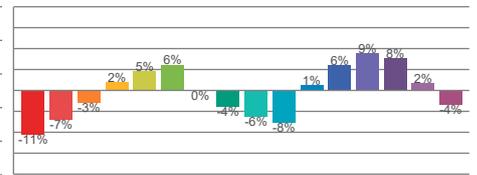
Hue Bin	R_f	Shifts (%)	
		Chroma	Hue
C1	82	-11%	-1%
C2	84	-7%	6%
C3	75	-3%	13%
C4	84	2%	10%
C5	87	5%	6%
C6	90	6%	-1%
C7	92	0%	-5%
C8	91	-4%	-3%
C9	89	-6%	3%
C10	78	-8%	10%
C11	76	1%	16%
C12	79	6%	10%
C13	86	9%	-3%
C14	88	8%	-4%
C15	80	2%	-15%
C16	79	-4%	-13%



TM30-18 R_f -values per reference colour

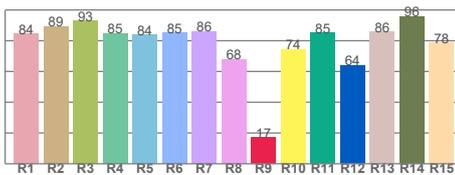


TM30-18 R_f -values per hue bin

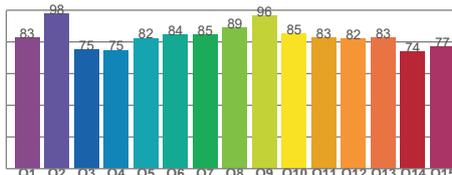


TM30 Chroma shift

Colour Quality details



Colour Rendering Index



Colour Quality Scale



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Flicker / temporal light artefacts details

Measurement conditions

Flicker meter type	Viso Systems LabFlicker
Flicker/TLA sample rate	20000 samples/s
Measurement time	5x 180 seconds (15 minutes) for PstLM. 1.2 sec for all other indices

Flicker indices according to Illuminating Engineering Society (IES)

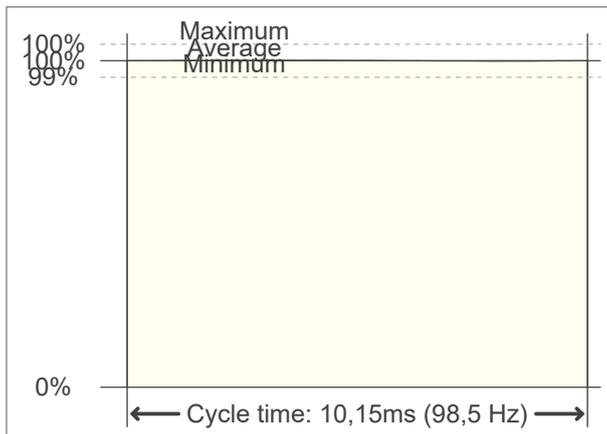
Flicker frequency	98.52 Hz
Percent flicker	0.23 %
Flicker index	0

TLA indices (according IEC TR 61547-1. EN 61000-3-3 and EN 61000-4-15)

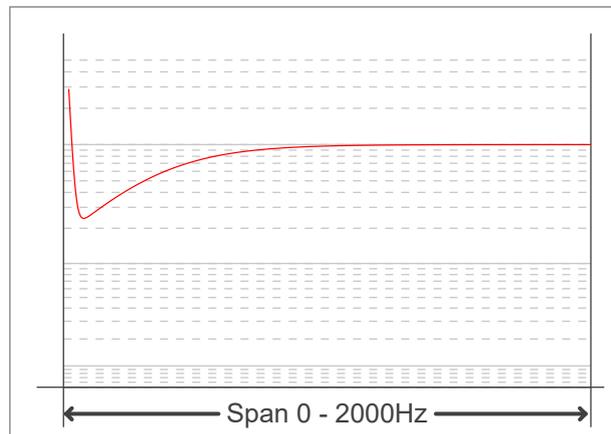
An LED luminaire is considered flicker-free if the SVM value is ≤ 0.4 and if the PstLM value is ≤ 1.0

PstLM value (F < 80 Hz)	0.05
SVM value (80 < F < 2000 Hz)	0.01

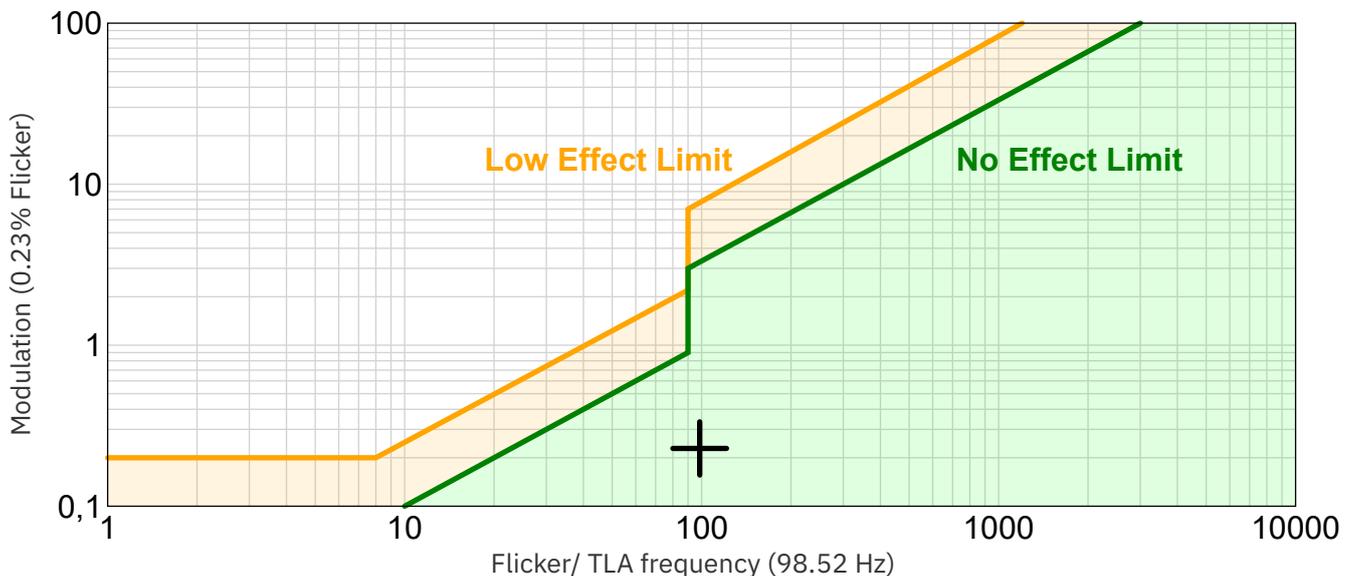
Flicker frame (one flicker period in time domain)



Flicker FFT (flicker curve in frequency domain)



IEEE 1789-2015 Lighting Flicker Risk Zones



Document revision date: 19-8-2025 Measurement serial: VFR-250724-10533-SW

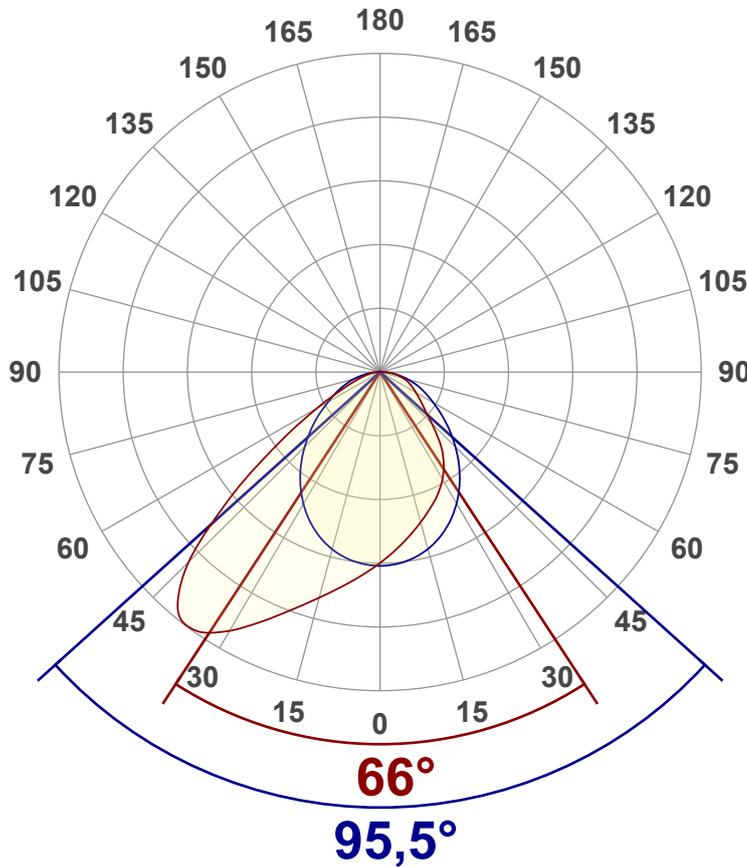


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Beam angle

Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	7286 lm
Lumen Up/Down	0.02% / 99.98%
Peak Intensity	3960 cd
Beam Angle (50%)	85°
Beam Angle (90%)	95.5°
Beam Angle (10%)	66°

Cut-off Angle

Average 2.5%	176.3°
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Field Angle

Average 10%	149.3°
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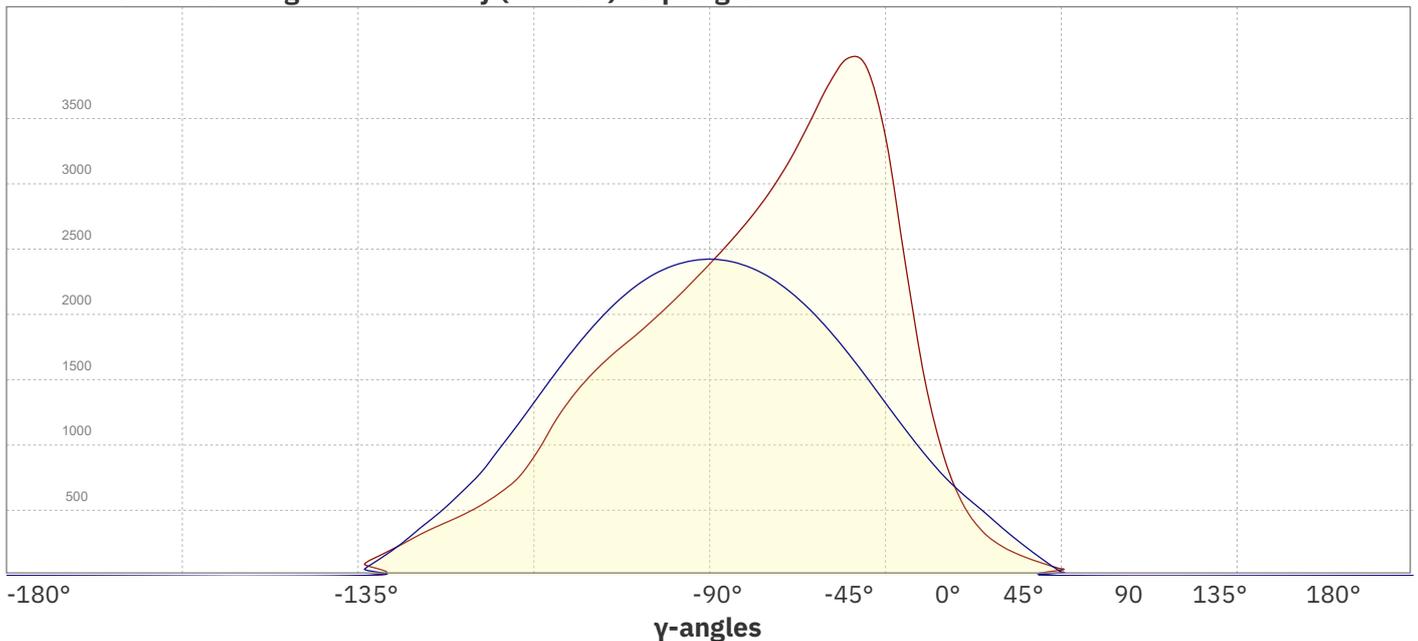
Intensity Ratio

In 120° cone	83.0%
In 90° cone	56.7%

C planes

- C000-C180
- C090-C270

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

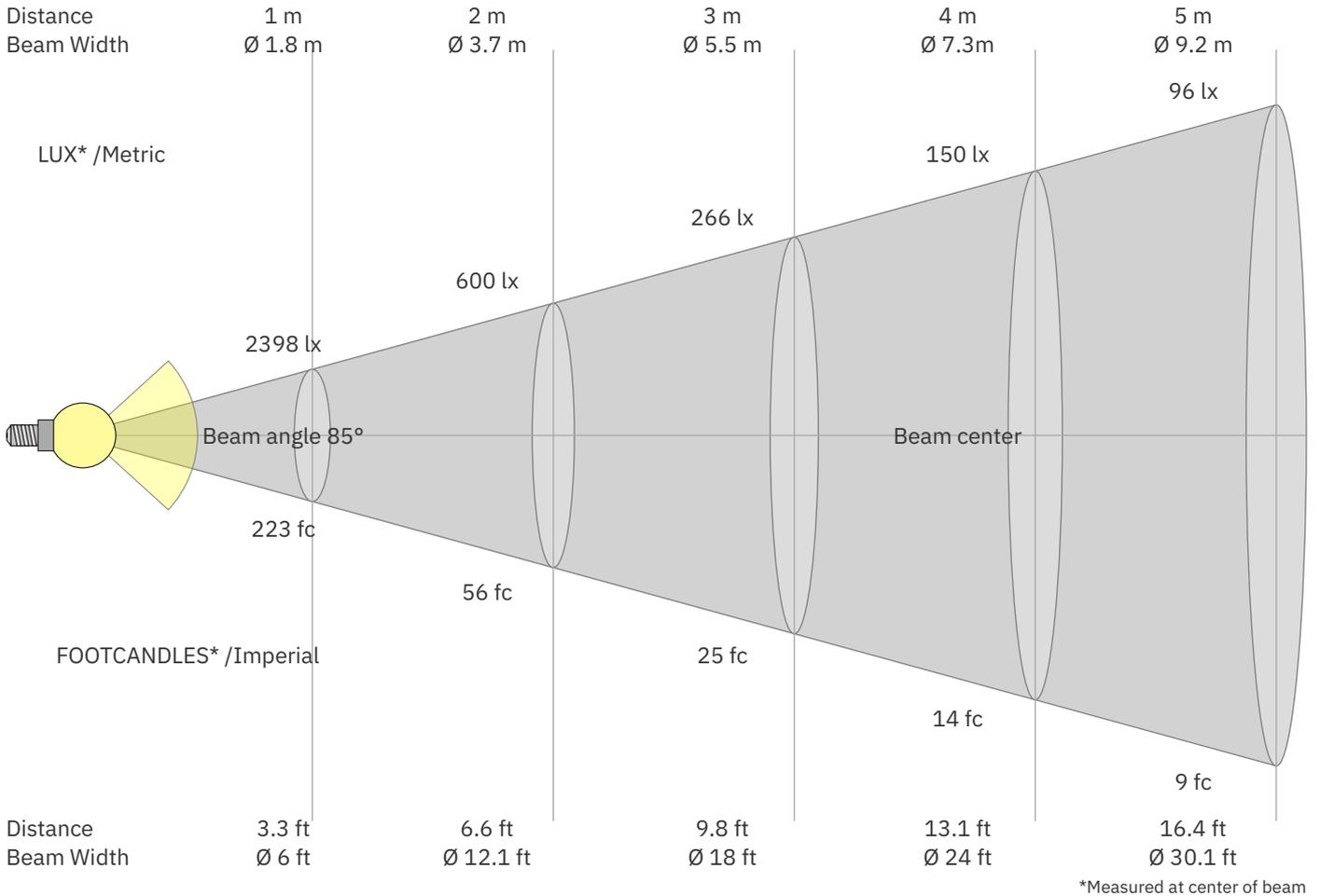


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Beam Details



*Measured at center of beam

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
2398	600	266	150	96	67	49	37	30	24	20	17	14	12	11	9	8	7	7	6	lux
222.8	55.7	24.8	13.9	8.9	6.2	4.5	3.5	2.8	2.2	1.8	1.5	1.3	1.1	1	0.9	0.8	0.7	0.6	0.6	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
2398	2232	2083	1944	1814	1688	1545	1373	1157	913	726	608	515	440	373	300	221	144	0	0	cd
100%	93%	87%	81%	76%	70%	64%	57%	48%	38%	30%	25%	21%	18%	16%	13%	9%	6%	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
2398	2406	2362	2289	2185	2054	1896	1718	1524	1321	1122	932	760	618	493	362	241	128	31	0	cd
100%	100%	98%	95%	91%	86%	79%	72%	64%	55%	47%	39%	32%	26%	21%	15%	10%	5%	1%	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
2398	2549	2724	2922	3157	3436	3734	3949	3894	3353	2404	1510	906	538	334	221	150	96	51	0	cd
100%	106%	114%	122%	132%	143%	156%	165%	162%	140%	100%	63%	38%	22%	14%	9%	6%	4%	2%	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
2398	2406	2364	2292	2189	2058	1901	1723	1528	1324	1121	926	745	597	462	341	221	117	0	0	cd
100%	100%	99%	96%	91%	86%	79%	72%	64%	55%	47%	39%	31%	25%	19%	14%	9%	5%	0%	0%	of 0°val

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