



PHOTOMETRIC LIGHT REPORT

**UFO | 120/160/200W |
170 Lm/W | 3-CCT |
70/85/115° | Dali**

Article number: 950-131



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Lighting



TRONIX



950-131 UFO | 120/160/200W | 170 Lm/W | 3-CCT | 70/85/115° | Dali

Introduction

Purpose of this Document

This document provides accurate and objective photometric data for Tronix Lighting item 950-131. 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 950-131 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 950-131 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.

950-131 UFO | 120/160/200W | 170 Lm/W | 3-CCT | 70/85/115° | Dali

Laboratory and equipment

Laboratory owner and location
Gonio spectrometer system and type
Spectrometer manufacturer and model

Flicker meter manufacturer and model
Oscilloscope manufacturer and model
Power meter manufacturer and model

Power source manufacturer and model

Datalogger Manufacturer and Model

Tronix Lighting BV. Uden. The Netherlands
Viso Systems Type C. horizontal
(Gonio) Ocean Optics STS VIS
(Sphere) Admesy HERA VIS 380–780nm
Viso Systems LabFlicker
Tektronix MDO3024 oscilloscope (4 Channels. 200 MHz)
Vitretek PA900 Precision Multi-Channel Harmonic Power Analyzer
(DC) Keithley Source Measure Unit SMU-2420 3A DC Source Meter
(AC) Chroma 61601 AC Source
Omega 8-Channel Thermocouple Thermometer/Data Logger

Measurement conditions gonio spectrometer

Number of C-planes and Resolution
 γ (gamma)-Resolution
Test Distance
Room Temperature and Humidity
Input Power. Power and Displacement Factors
Frequency of Input Power
Warm-up Time and Variation

2 planes – 180°
2.5°
1.81 m
22°C +/- 10% – RH 50% +/- 20%
185 W – PF 0.98 – DPF 0.98
50 Hz
Lamp stabilized in 15 min 3 sec --0.2%

Tested light source

Manufacturer and Order Code
Product Description

Tronix Lighting – 950-131
UFO | 120/160/200W | 170 Lm/W | 3-CCT | 70/85/115° | Dali

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Energy efficiency class
Peak Intensity and Beam Angle
Correlated Colour Temperature
Colour Shift. CIE duv
Colour Rendering Index
Colour Rendering TM30-18
Television Lighting Consistency Index
Flicker

31270 lm – 0.01% / 99.99%
169 lm/W
D
15767 cd – 88.3°
CCT = 4037 K
Duv -0.0043
CRI 86.2
 R_f 84.2 – R_g 94.4
TLCI = 74
SVM 0.01 – PstLM 0.06

950-131 UFO | 120/160/200W | 170 lm/W | 3-CCT | 70/85/115° | Dali

Electrical measurement details

Input Power

RMS Input voltage feed. V_{RMS}

222 V

RMS Input current feed. I_{RMS}

0.852 A

Total input power

185 W

Frequency of input power

50 Hz

Power factor

0.98

Displacement power factor

0.98

Total harmonic distortion of the current

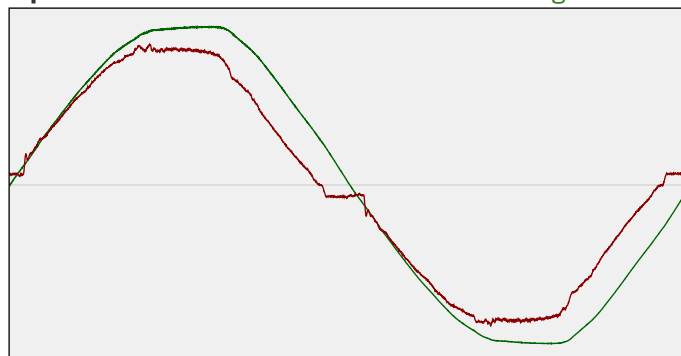
11.18%

Total harmonic distortion of the voltage

2.47%

Input Power Curve

Voltage - Current

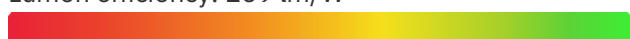


Efficiency

Radiated power efficiency: 53.1%



Lumen efficiency: 169 lm/W



Harmonics

3rd Harmonic

9.2%

5th Harmonic

5.4%

7th Harmonic

0.58%

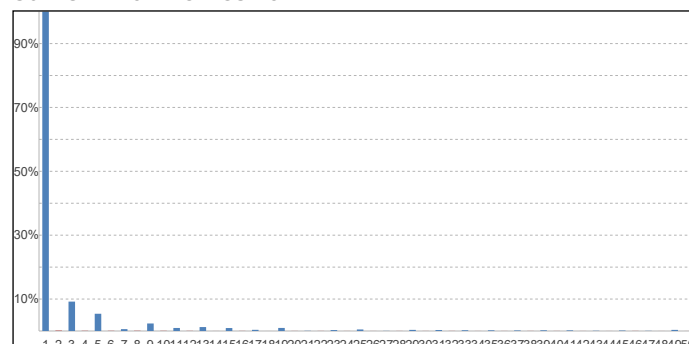
9th Harmonic

2.35%

11th Harmonic

0.95%

Current Harmonics %



Stabilization Details

Warm-up Conditions

Stable period

15 min CCT start

4029 K

Stable change max

2.0% CCT shift

+8 K

Minimum warm-up time

15 min CCT end

4037 K

Colour temperature change during warm-up

Warm-up Results

Total warmup time

Lamp stabilized in 15 min 3 sec

Output intensity change during warm-up

Output start

31318 lm

Warmup variation

-0.2%

Output change

-48 lm

Output end

31270 lm

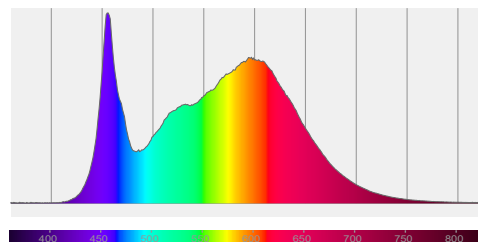
950-131 UFO | 120/160/200W | 170 Lm/W | 3-CCT | 70/85/115° | Dali

Colour measurement details

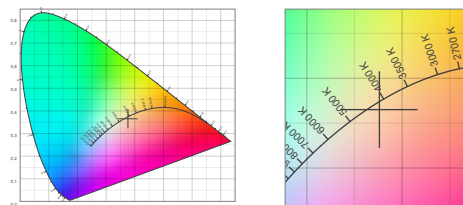
Total lumen output 31270 lm
 Correlated Colour Temperature 4037 K
 Colour coordinates CIE 1931 (x;y) = (0.376;0.365)
 Colour deviation from BBL Duv = -0.0043

TM30-18 Colour Fidelity Index R_f 84.2
 TM30-18 Colour Gamut Index R_g 94.4
 Colour Rendering Index (Ra) CRI 86.2
 Colour Rendering Index. (red component) R_9 = 23.5

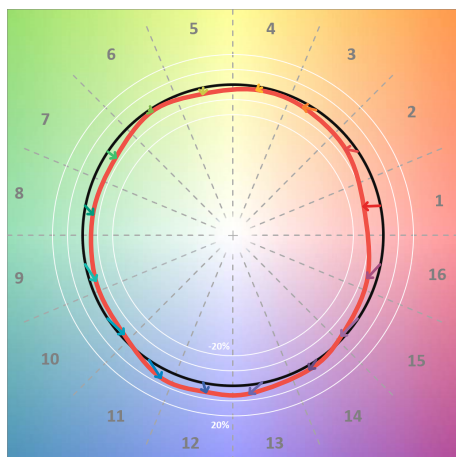
Colour Quality Scale CQS = 83.5
 Television Lighting Consistency Index TLCI = 74



Relative spectral power distribution



TM30 details

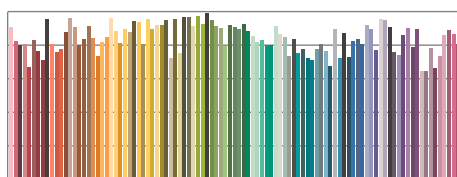


TM30 Colour vectors per hue bin

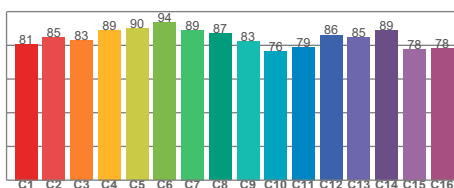


TM30 Colour distortion

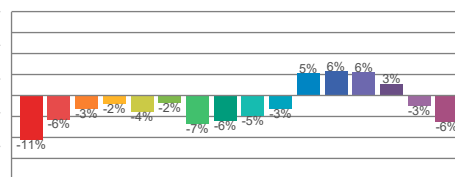
Hue Bin	R_f	Shifts (%)	
		Chroma	Hue
C1	81	-11%	2%
C2	85	-6%	6%
C3	83	-3%	8%
C4	89	-2%	3%
C5	90	-4%	1%
C6	94	-2%	-1%
C7	89	-7%	0%
C8	87	-6%	5%
C9	83	-5%	12%
C10	76	-3%	14%
C11	79	5%	13%
C12	86	6%	3%
C13	85	6%	-9%
C14	89	3%	-7%
C15	78	-3%	-15%
C16	78	-6%	-10%



TM30-18 R_f -values per reference colour

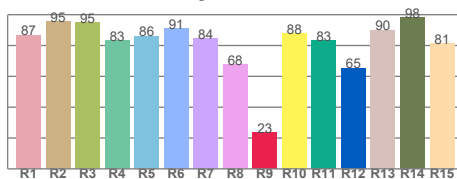


TM30-18 R_f -values per hue bin

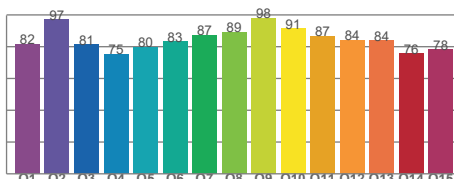


TM30 Chroma shift

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)

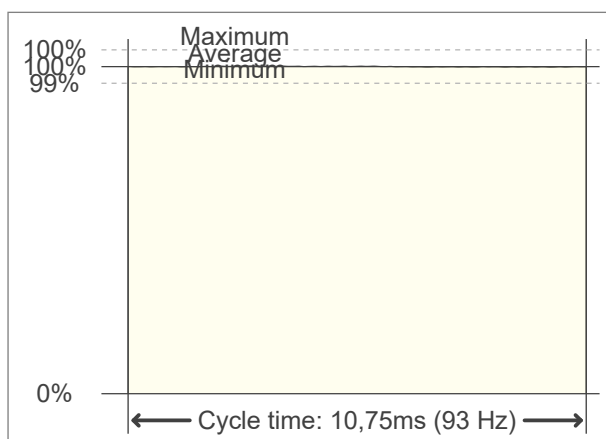
Flicker frequency	93.02 Hz
Percent flicker	0.28 %
Flicker index	0

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

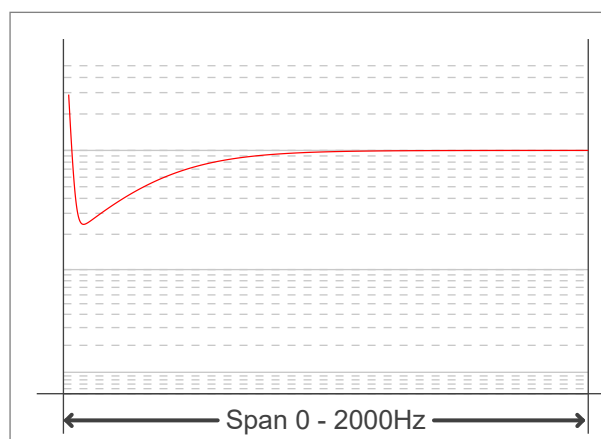
An LED luminaire is considered flicker-free if the SVM value is ≤ 0.4 and if the PstLM value is ≤ 1.0

PstLM value ($F < 80$ Hz)	0.06
SVM value ($80 < F < 2000$ Hz)	0.01

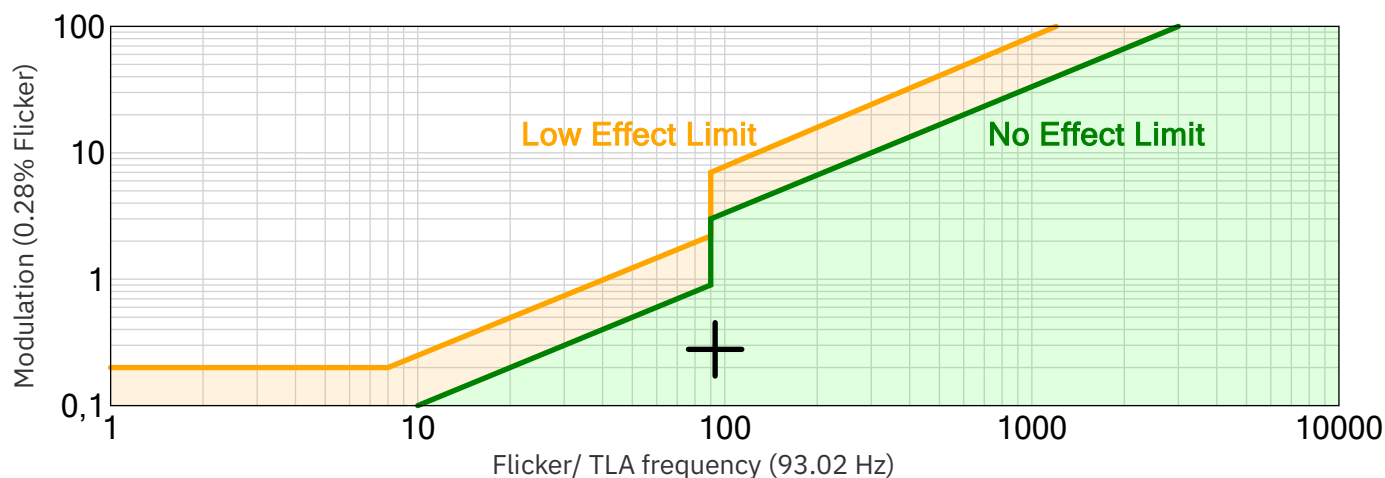
Flicker frame (one flicker period in time domain)



Flicker FFT (flicker curve in frequency domain)



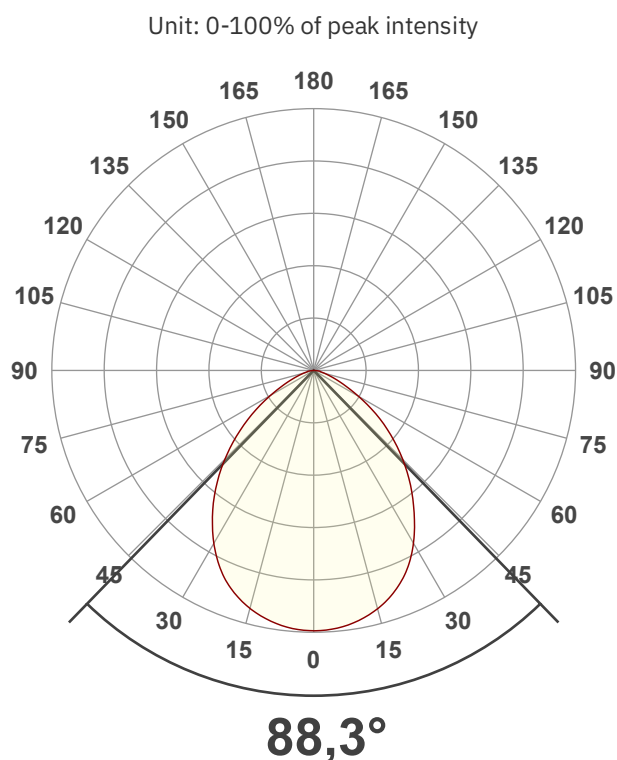
IEEE 1789-2015 Lighting Flicker Risk Zones



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Beam angle

Luminous Intensity diagram



Main Values

Output (total Lumen)	31270 lm
Lumen Up/Down	0.01% / 99.99%
Peak Intensity	15767 cd
Beam Angle (50%)	88.3°
Beam Angle (90%)	88.3°
Beam Angle (10%)	88.3°

Cut-off Angle

Average 2.5%	160.7°
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Field Angle

Average 10%	134.2°
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Intensity Ratio

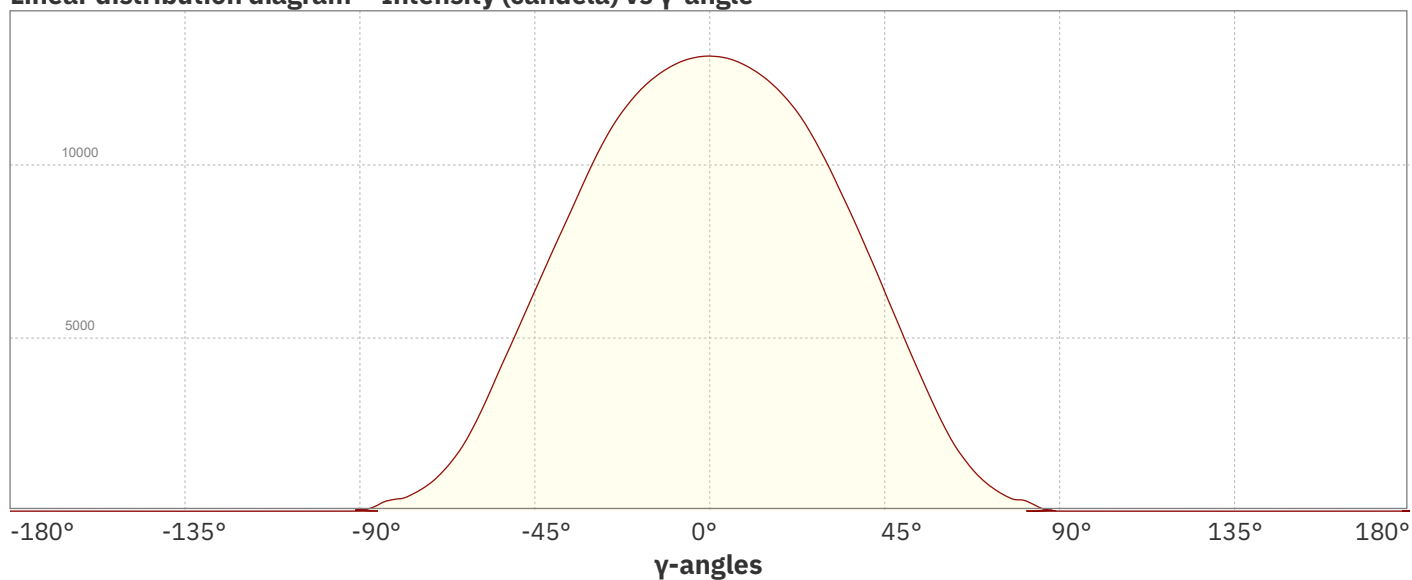
In 120° cone	90.7%
In 90° cone	69.0%

C planes

C000-C180

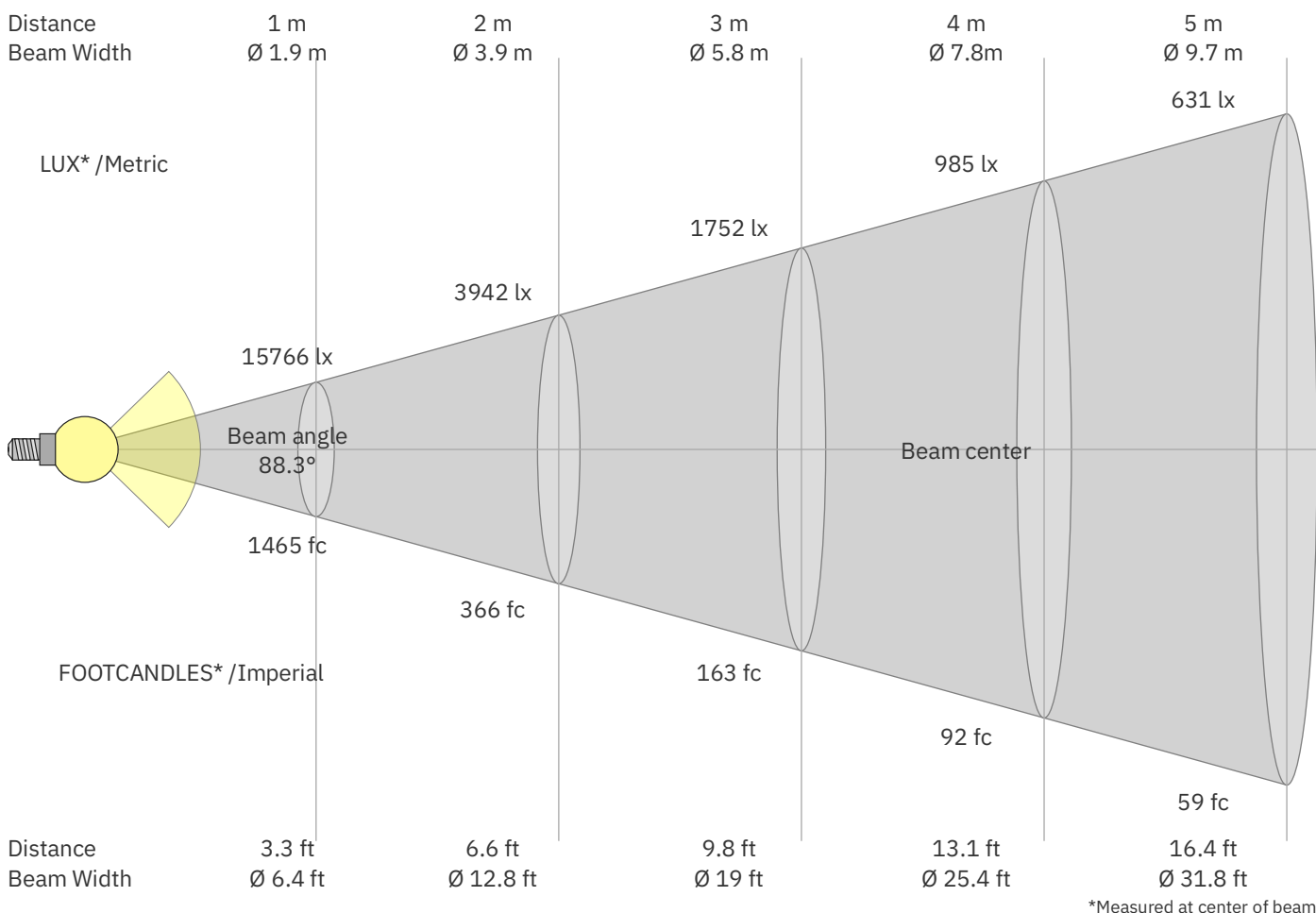
C090-C270

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



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Beam 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
15766	3942	1752	985	631	438	322	246	195	158	130	109	93	80	70	62	55	49	44	39	lux
1464.7	366.2	162.7	91.5	58.6	40.7	29.9	22.9	18.1	14.6	12.1	10.2	8.7	7.5	6.5	5.7	5.1	4.5	4.1	3.7	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
15.8k	15.7k	15.4k	14.9k	14.3k	13.3k	12.1k	10.6k	9.1k	7.6k	6.1k	4.6k	3.1k	2.0k	1.2k	0.7k	0.4k	0.2k	0.0k	0.0k	cd
100%	99%	98%	95%	90%	85%	77%	67%	58%	48%	39%	29%	20%	13%	8%	4%	3%	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
15.8k	15.7k	15.4k	14.9k	14.3k	13.3k	12.1k	10.6k	9.1k	7.6k	6.1k	4.6k	3.1k	2.0k	1.2k	0.7k	0.4k	0.2k	0.0k	0.0k	cd
100%	99%	98%	95%	90%	85%	77%	67%	58%	48%	39%	29%	20%	13%	8%	4%	3%	2%	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
15.8k	15.7k	15.4k	14.9k	14.2k	13.3k	12.1k	10.7k	9.2k	7.6k	6.0k	4.5k	3.0k	1.9k	1.1k	0.6k	0.4k	0.1k	0.0k	0.0k	cd
100%	99%	98%	95%	90%	84%	77%	68%	58%	48%	38%	28%	19%	12%	7%	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
15.8k	15.7k	15.4k	14.9k	14.2k	13.3k	12.1k	10.7k	9.2k	7.6k	6.0k	4.5k	3.0k	1.9k	1.1k	0.6k	0.4k	0.1k	0.0k	0.0k	cd
100%	99%	98%	95%	90%	84%	77%	68%	58%	48%	38%	28%	19%	12%	7%	4%	2%	1%	0%	0%	of 0°val

Document revision date: 3-8-2026 Measurement serial: VFR-260512-13299-SW

Light Planning – UGR table

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 above eye level										
X	Y	Viewed Crosswise (Viewing direction orthogonal to lamp length axis)					Viewed Endwise (Viewing direction parallel to lamp length axis)				
	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						

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	106	106	106	102	102	102	100	
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	49	47
7	71	58	50	45	69	58	50	45	56	49	44	55	49	44	53	48	44	42
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38
9	62	49	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	34
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32