

Test report

Print date 6/10/2026
Light measurement results



Laboratory and Equipment

Test lab
Spectrometer Manufacturer and Model
Measurement date
Operator

Viso LabSpion - serial: 1996407700 sensor serial: 1118720440 - Test lab
LabSpion - Type C, horizontal
6/2/2026
MW

Measurement Conditions

Tested c-planes
Tested gamma resolution
Input Power

12 planes - 30°
3°
4.9 W

Tested Light Source

Luminaire
Basic Luminous Shape
Item No.
Manufacturer
Description

Acolyte channel AS24R
PANEL
CHAS24RPCMSWS2203.030
GenLEDBrands
0.5m RB90SWS2203.030\line PC Frosted cover (Milky)

Main Light Measurement Results

Output - Total Lumen (Up% / Down%)
Efficiency
Peak Intensity
Correlated Color Temperature, CCT
Color Rendering Index
Dominant Wavelength
Peak Wavelength

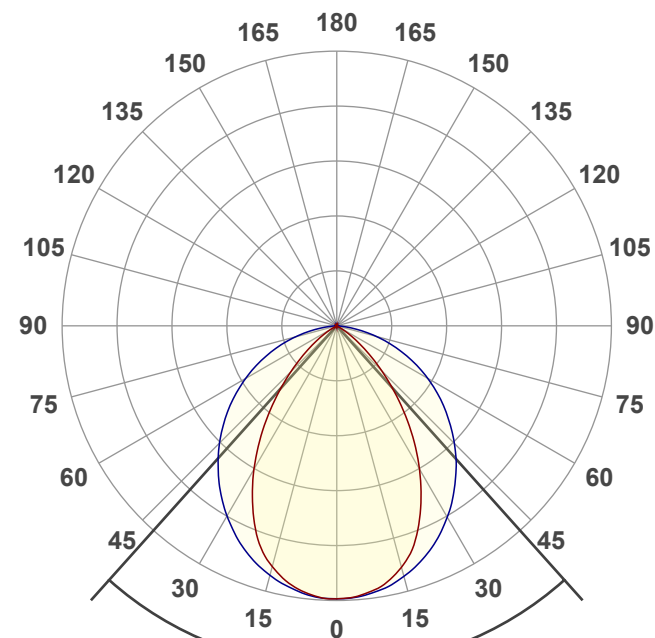
268 lm - 0.15% / 99.85%
55 lm/W
151 cd
2982 K
CRI 96.0
584 nm
619 nm

Lumen per length
Watt per length

535.29 lm/m 163.16 lm/ft
9.74 W/m 2.97 W/ft

Polar light distribution diagram

Unit: 0-100% of peak intensity



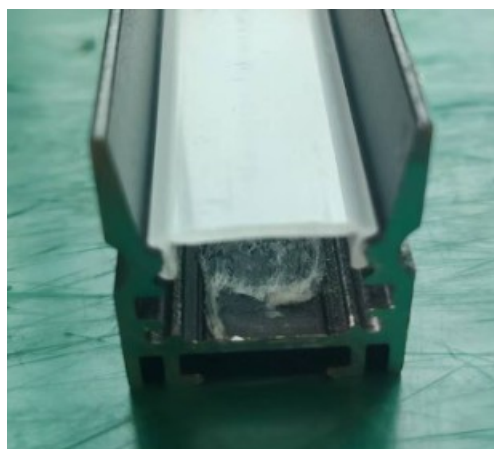
— C0 - C180
— C90 - C270

$\eta = 100.0\%$

55 lm/W

2982 K

Product photo



Test report

Print date 6/10/2026
Light measurement results



Color Parameters

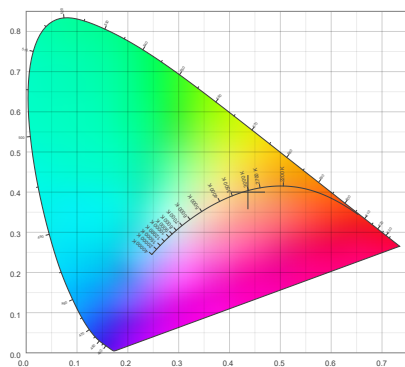
Correlated Color Temperature, Target
Correlated Color Temperature, Measured
Color Rendering Index
Color Rendering Index, R9 (red)
Color Rendering TM30-18

CCT = 2982 K
CCT = 2982 K
CRI 96.0
R9 = 70.7
Rf 91.7
Rg 100.5

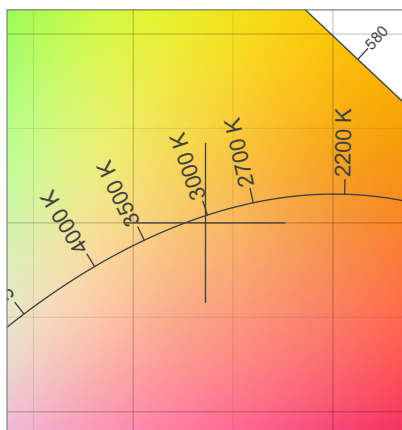
MacAdam Steps
Color deviation from BBL
Color coordinates CIE 1931
Color coordinate CIEs 1960
Color coordinate CIEs 1976
Color Quality Scale

SDCM = n/a
Duv = -0.0015
(x;y) = (0.436;0.400)
(u;v) = (0.252;0.346)
(u';v') = (0.252;0.520)
CQS = 92.5

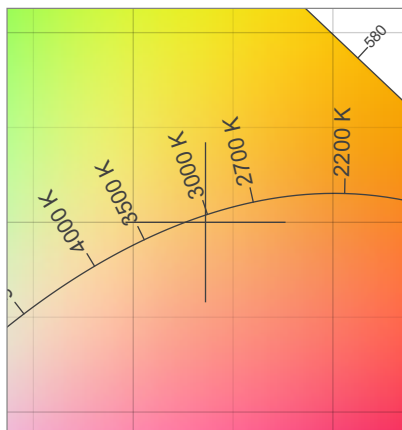
CIE 1931 Chromaticity diagram



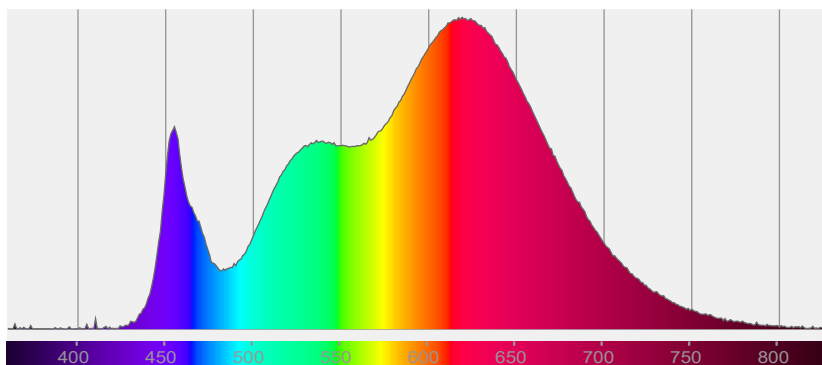
CIE 1931 Chromaticity - zoomed



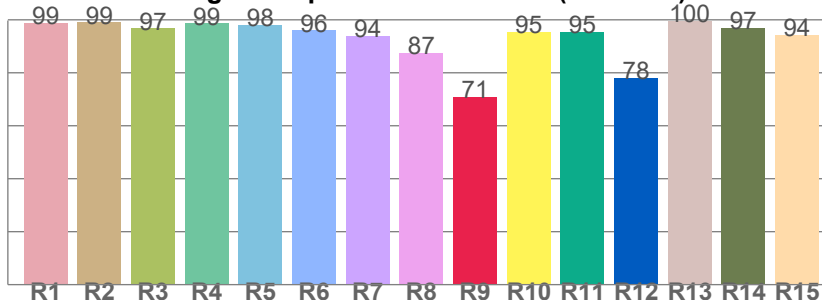
CIE 1931 Chromaticity - SDCM



Spectral power distribution



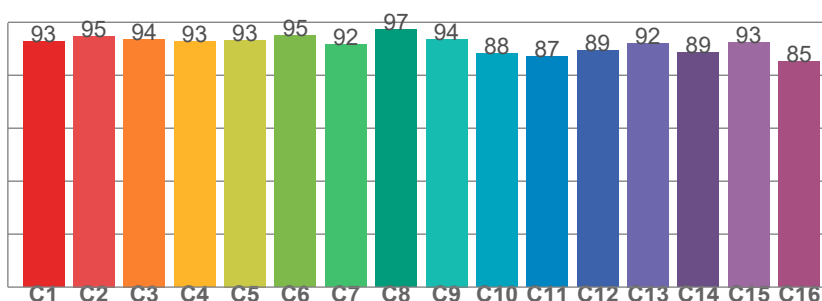
Color Rendering Index per reference color (CIE 1995)



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
98.8	99.0	96.7	98.6	97.9	96.0	93.8	87.4	70.7	95.5	95.4	77.9	99.5	96.8	94.2

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
92.7	94.8	93.7	92.8	93.3	95.0	91.6	97.4	93.7	88.2	87.2	89.2	92.1	88.5	92.6	85.1

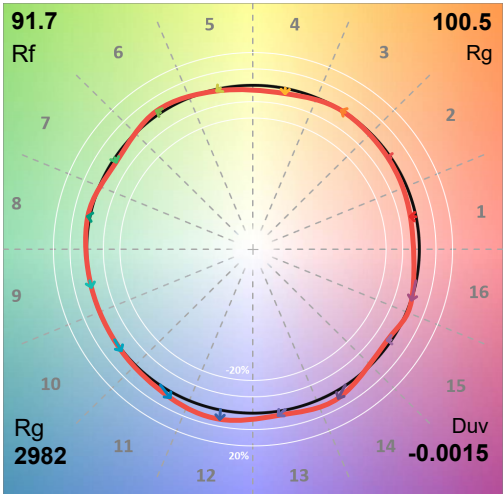
Test report

Print date 6/10/2026
Light measurement results



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

Color Vector Graphic



Color Distortion Graphic

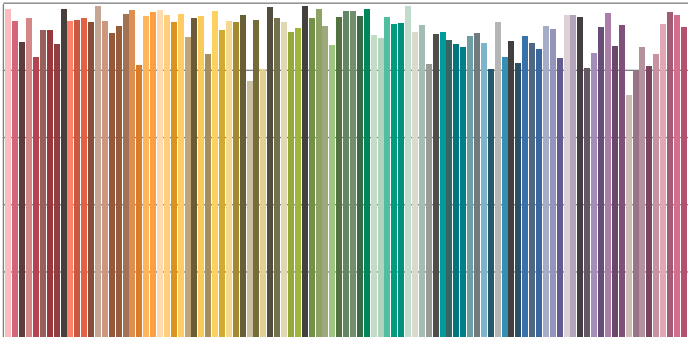


CIE x 0.436
CIE y 0.436
CIE u' 0.252
CIE v' 0.520

CIE 13.3-1995

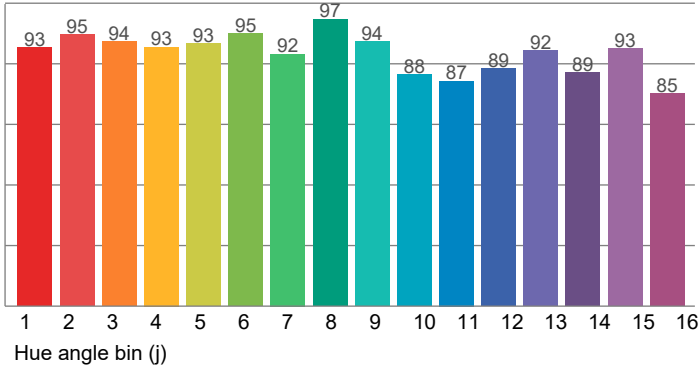
Ra 96.0
R9 70.7

Color Rendition by Color Evaluation Sample (CES)

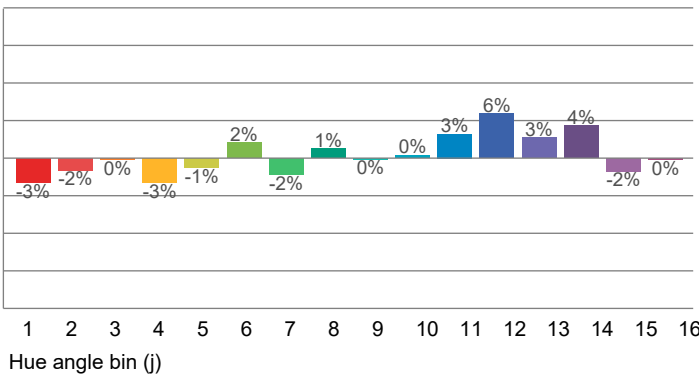


Color evaluation sample CES01 through CES99

Local Color Fidelity (per hue bin)



Local Chroma Shift (per hue bin)

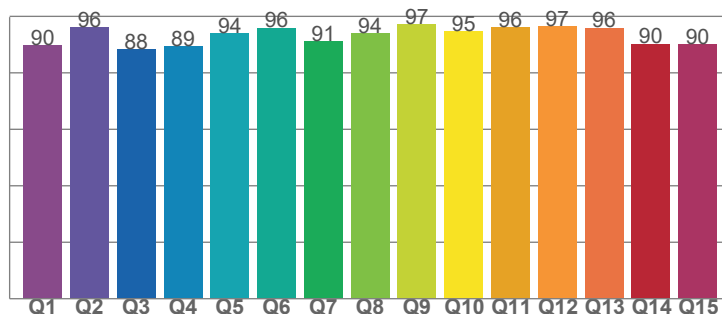


Test report

Print date 6/10/2026
Light measurement results



Color Rendering Index (CQS)



Q1	89.82	Q9	97.18
Q2	96.03	Q10	94.66
Q3	88.22	Q11	96.11
Q4	89.35	Q12	96.55
Q5	93.97	Q13	95.96
Q6	95.94	Q14	90.26
Q7	91.25	Q15	90.17
Q8	93.91	CQS	92.47

Hue Bin	Rf	Shifts (%)	
		Chroma	Hue
1	93	-3%	1%
2	95	-2%	1%
3	94	0%	3%
4	93	-3%	-1%
5	93	-1%	2%
6	95	2%	1%
7	92	-2%	2%
8	97	1%	0%
9	94	0%	4%
10	88	0%	8%
11	87	3%	9%
12	89	6%	1%
13	92	3%	-5%
14	89	4%	-8%
15	93	-2%	-1%
16	85	0%	-12%

Rg 100.5

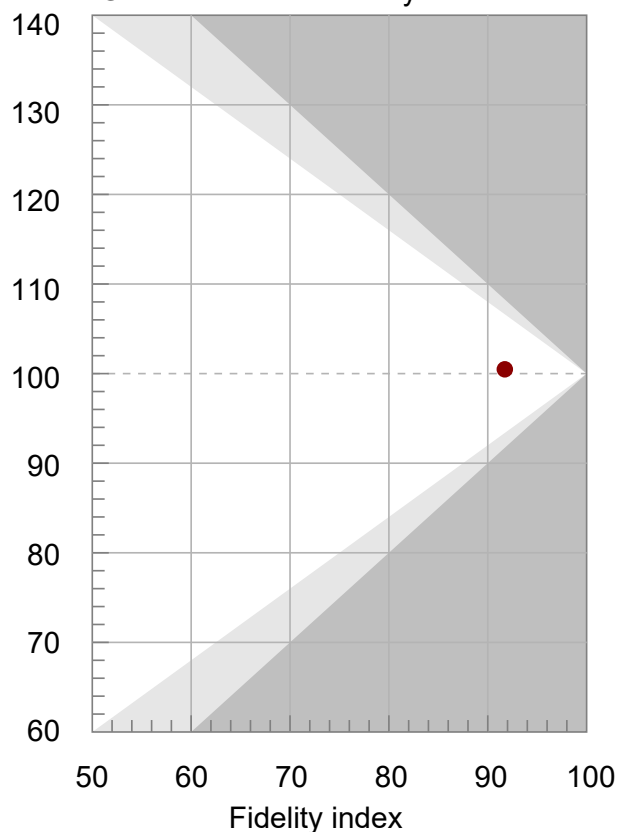
Gamut Index Rf

Gamut index

Rf 91.7

Fidelity Index Rf

Gamut Index vs. Fidelity



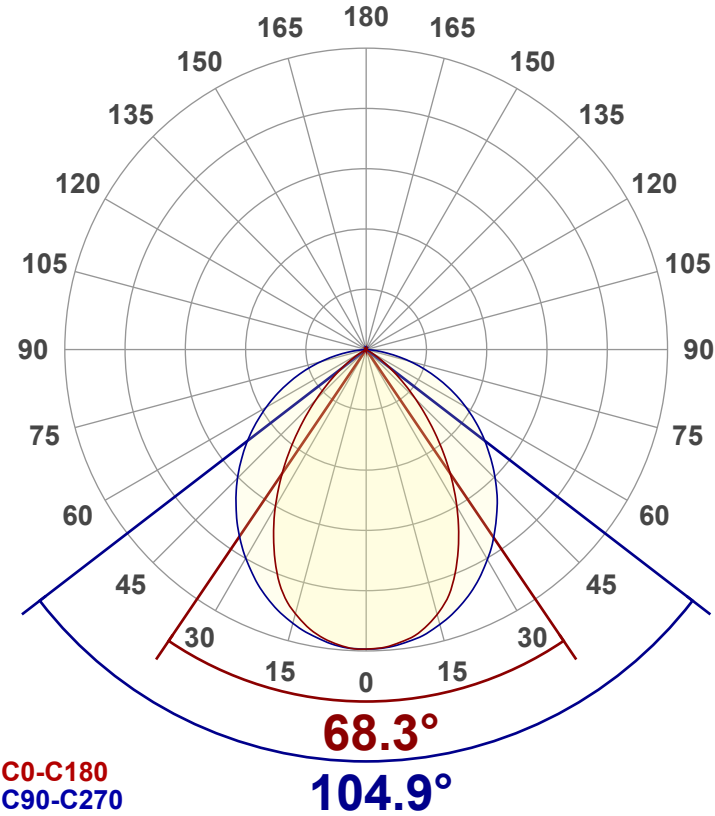
Test report

Print date 6/10/2026
Light measurement results



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

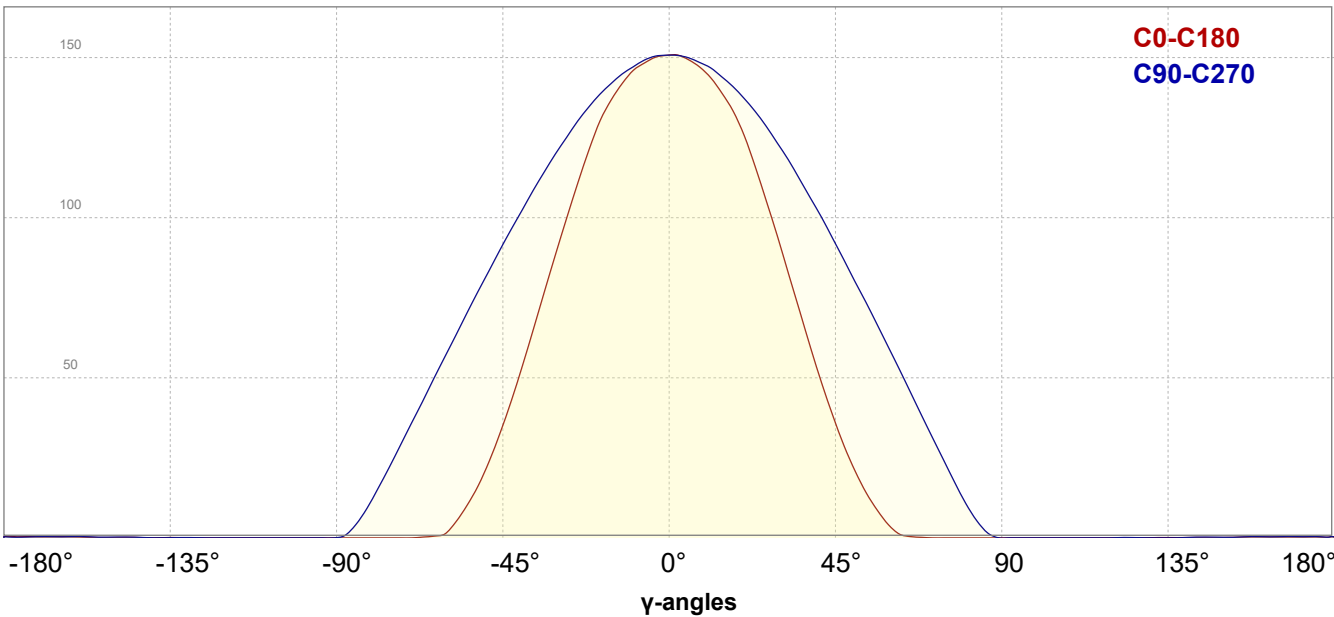
Output (total Lumen)	268 lm
Lumen Up% / Down%	0.15% / 99.85%
Peak Intensity	151 cd
Beam Angle (50%-FWHM)	83.70°
Field Angle (10%-FWHM)	125.71°
Cutoff Angle (2.5%-FWHM)	{c_ANG/0.00}°

Intensity Ratios

In 120° cone	535.3
In 90° cone	163.2

Linear distribution diagram

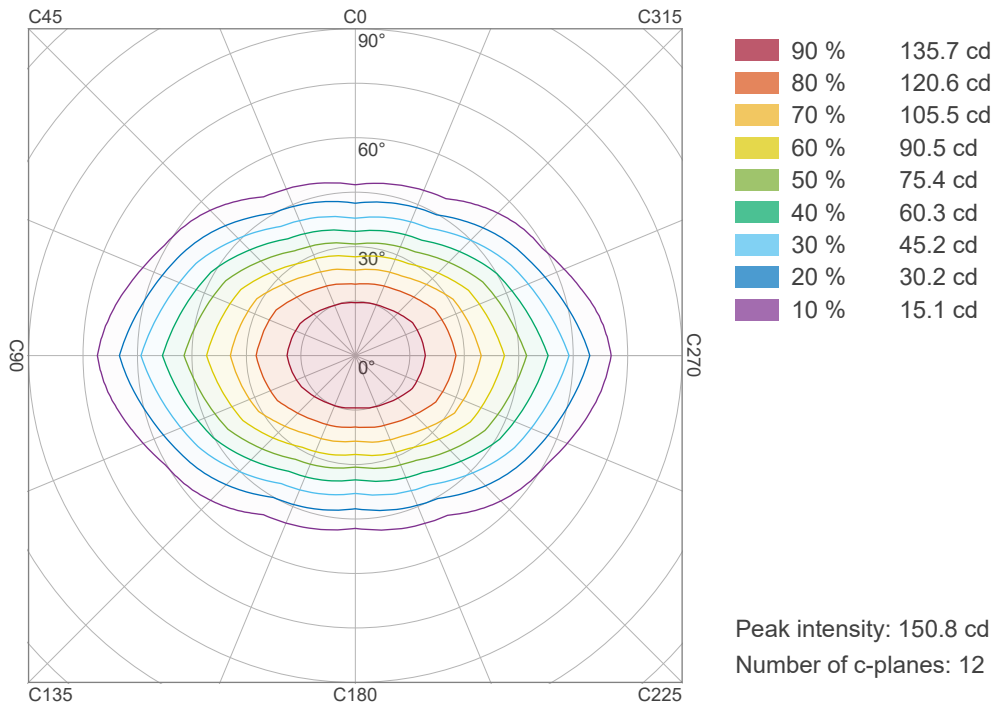
Intensity [cd]



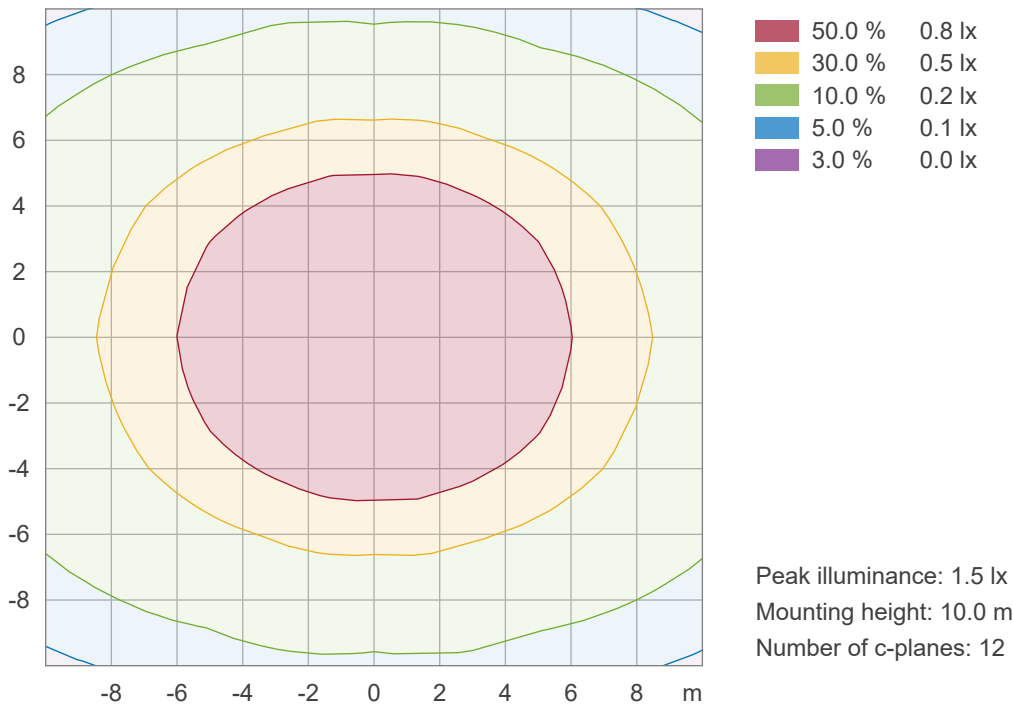
Test report

Print date 6/10/2026
Light measurement results

Iso-intensity Diagram (Iso-candela)



Iso-illuminance Diagram (Iso-lux)

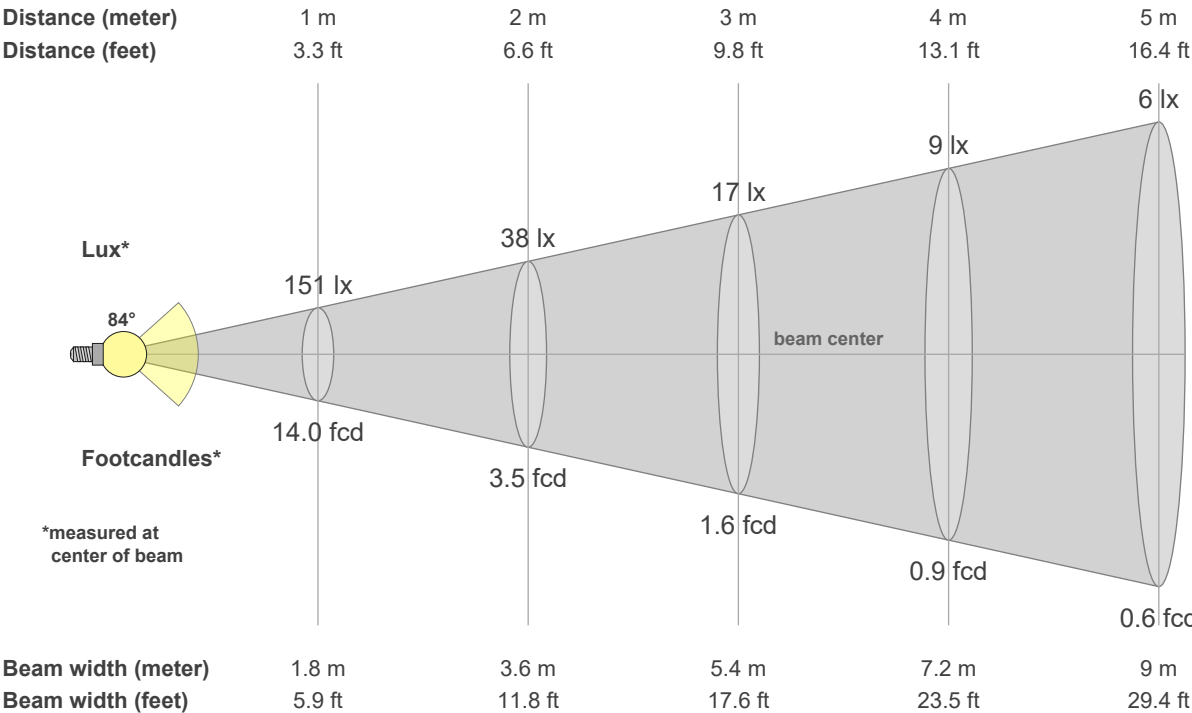


Test report

Print date 6/10/2026
Light measurement results

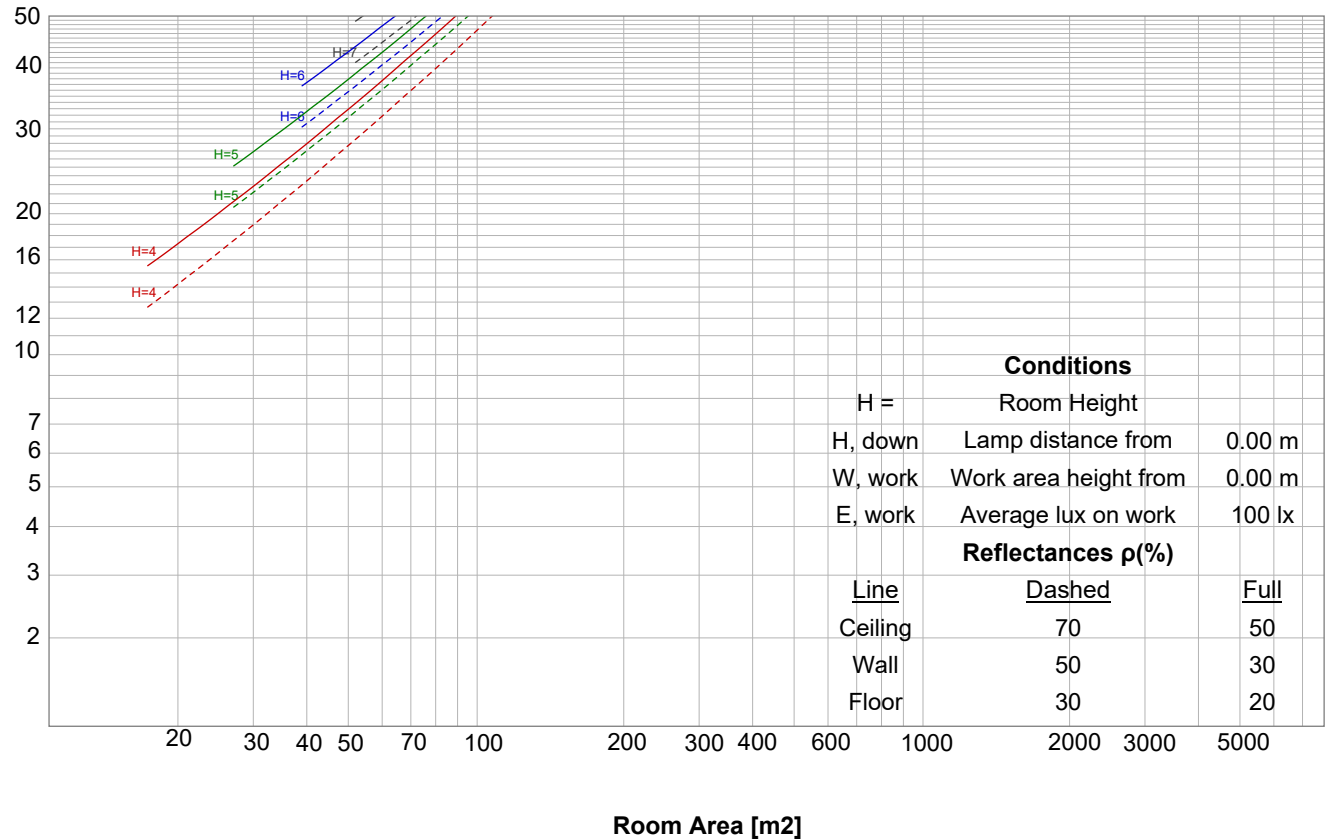


Beam details



Luminaire budgetary diagram

LAMPS (number of lamps)



Test report

Print date 6/10/2026
Light measurement results



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
151	38	17	9	6	4	3	2	2	2	1	1	1	1	1	1	1	0	0	0	lux
14	3.5	1.6	0.9	0.6	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	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
151	149	146	138	126	110	91	72	53	35	21	10	2	0	0	0	0	0	0	0	cd
100%	99%	97%	92%	84%	73%	61%	48%	35%	23%	14%	6%	1%	0%	0%	0%	0%	0%	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
151	150	147	143	138	130	122	113	103	92	81	70	58	46	34	23	11	3	0	0	cd
100%	100%	98%	95%	91%	87%	81%	75%	68%	61%	54%	46%	38%	31%	23%	15%	8%	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
151	149	145	138	126	110	91	72	53	36	22	11	3	0	0	0	0	0	0	0	cd
100%	99%	96%	91%	84%	73%	61%	48%	35%	24%	14%	7%	2%	0%	0%	0%	0%	0%	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
151	150	147	143	137	130	121	112	102	92	81	70	58	47	35	24	13	4	0	0	cd
100%	99%	97%	95%	91%	86%	80%	74%	68%	61%	54%	46%	39%	31%	23%	16%	9%	3%	0%	0%	of 0°val

Test report

Print date 6/10/2026
Light measurement results



IESNA TM-15-07 LUMINAIARE CLASSIFICATION SYSTEM FOR OUTDOOR

Forward Light

Low (0-30°)	54.6	lm	20.4%
Medium (30-60°)	68.4	lm	25.6%
High (60-80°)	9.9	lm	3.7%
Very High (80-90°)	0.4	lm	0.1%

Back Light

Low (0-30°)	54.5	lm	20.4%
Medium (30-60°)	68.8	lm	25.7%
High (60-80°)	10.3	lm	3.8%
Very High (80-90°)	0.4	lm	0.1%

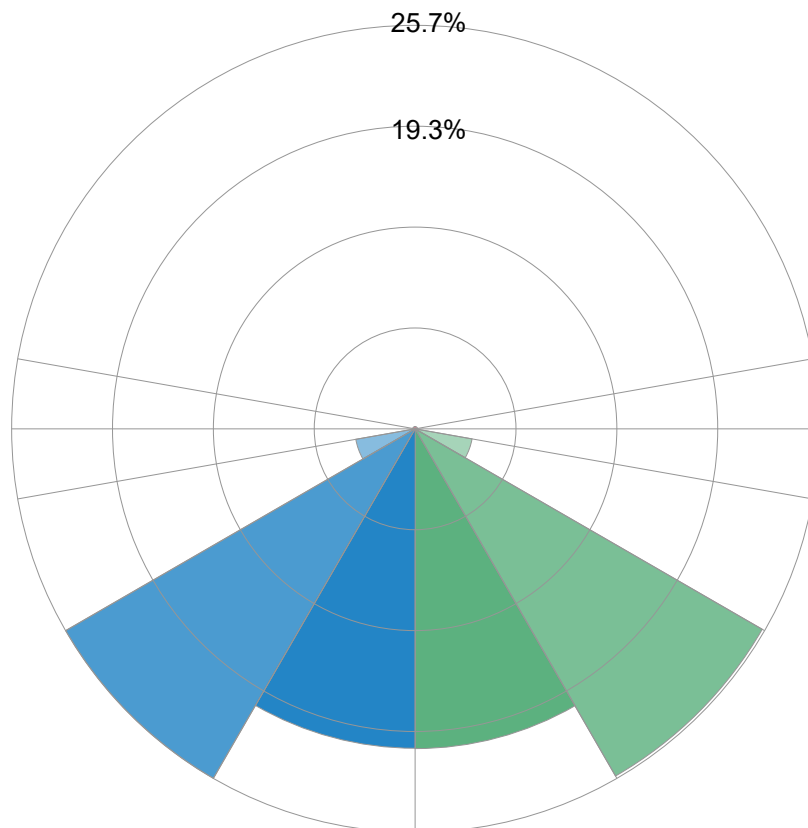
Uplight

Low (90-100°)	0	lm	0%
High (100-180°)	0.4	lm	0.2%

Total

Sum	267.6	lm	100%
------------	--------------	-----------	-------------

BUG RATING B0 U0 G0



Test report

Print date 6/10/2026
Light measurement results

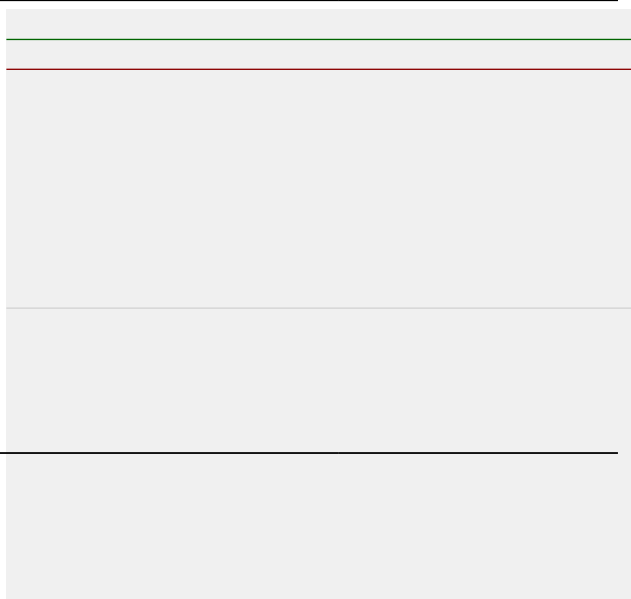


Power details

Input power

Frequency of input power	0 Hz
Power feed to light source	4.9 W
RMS Input voltage feed V,RMS	24.0 V
RMS Input current feed I,RMS	0.203 A
Volt-Amp or apparent power =	4.87 VA
Displacement factor of AC power feed	0.0
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 18.9%

Lumen efficiency 55 lm/W

Stabilization details

Warmup Conditions

Stable period	3 min
Stable change max	500.0%
Minimum time	3 min

Color Temperature Change

CCT start	2982 K
CCT shift	0 K
CCT end	2982 K

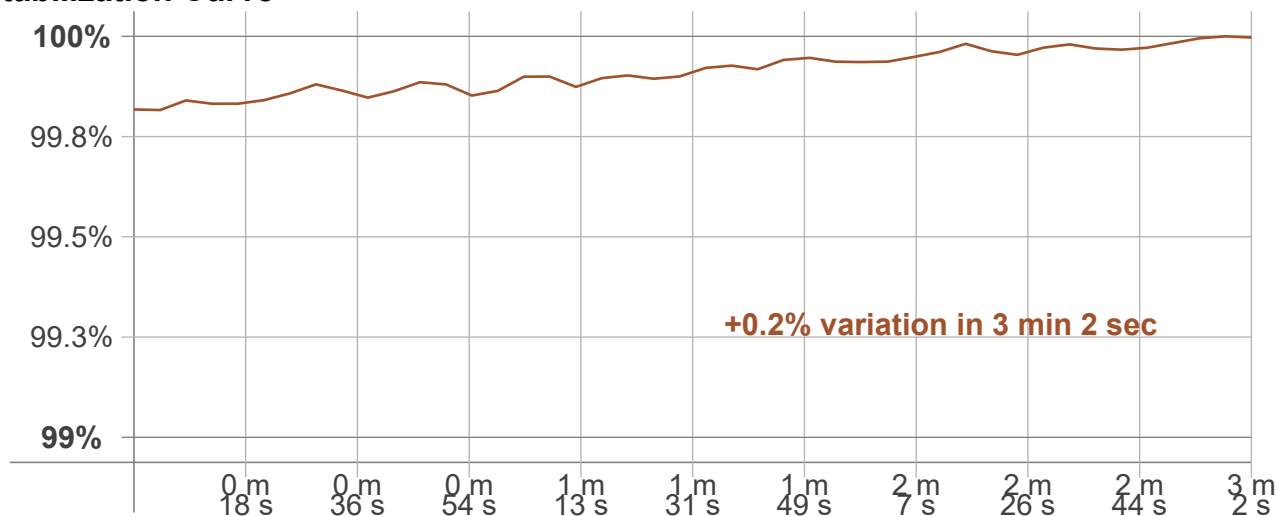
Warmup Result

Total warmup time	Lamp stabilized in 3
Warmup variation	+0.2%

Output Change

Output start	267 lm
Output change	+ 1m
Output end	268 lm

Stabilization Curve



Test report

Print date 6/10/2026
Light measurement results



Flicker TLA details

Flicker Meter Type	Viso Systems LabFlicker
Frequency of input power	0 Hz
Flicker/TLA sample rate	n/a samples/s

Measurement time	
PstLM	180 sec.
All other indices	1,5 sec,

Flicker indices according to Illuminating Engineering Society

Flicker frequency	n/a Hz
Percent Flicker	n/a %
Flicker index	n/a

Flicker indices according to California Energy Commission (CEC)

JA8/10 40 Hz	n/a %
JA8/10 90 Hz	n/a %
JA8/10 200 Hz	n/a %
JA8/10 400 Hz	n/a %
JA8/10 1000 Hz	n/a %

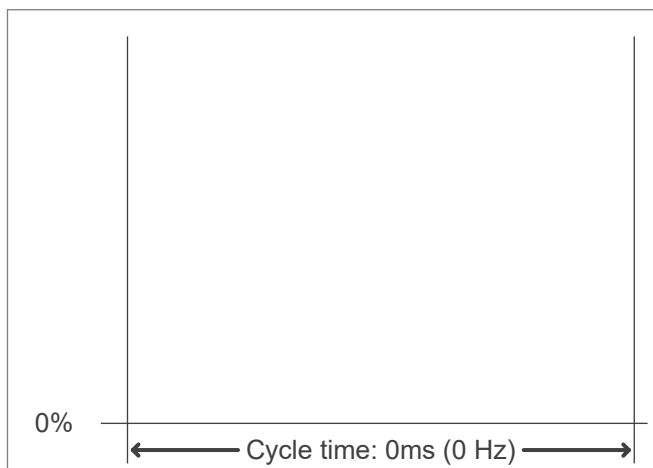
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC

PstLM value ($F < 80$ Hz)	n/a
SVM value ($80 < F < 2000$ Hz)	n/a

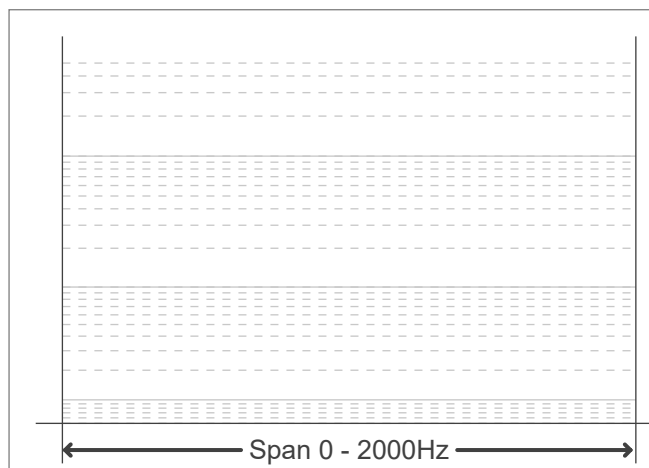
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp	n/a
------------------------------	-----

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



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot

