

Test report

Print date 9/22/2026
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
9/15/2026
TL

Measurement Conditions

Tested c-planes
Tested gamma resolution
Input Power

12 planes - 30°
5°
4.7 W

Tested Light Source

Luminaire
Basic Luminous Shape
Item No.
Manufacturer
Description

FCOB-24V-D608-WW+CW-6500K
PANEL
Acolyte
SIZE:500*10MMline DC24V 608LEDS/M 10MM

Main Light Measurement Results

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

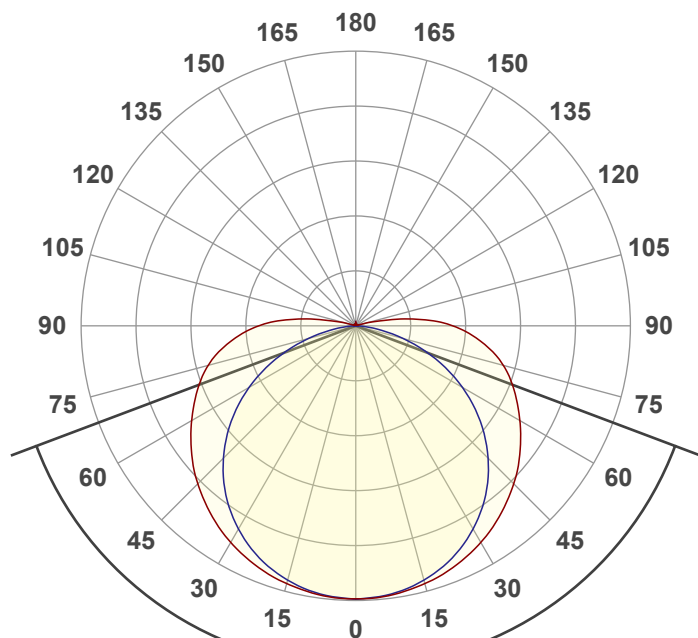
589 lm - 4.72% / 95.28%
125 lm/W
149 cd
6459 K
CRI 76.1
538 nm
448 nm

Lumen per length
Watt per length

1177.82 lm/m 359.00 lm/ft
9.41 W/m 2.87 W/ft

Polar light distribution diagram

Unit: 0-100% of peak intensity



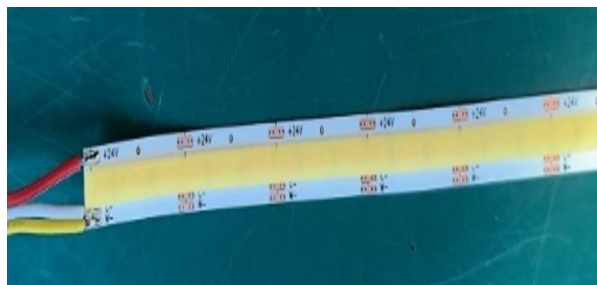
— C0 - C180
— C90 - C270

$\eta = 100.0\%$

125 lm/W

6459 K

Product photo



Test report

Print date 9/22/2026
Light measurement results



Color Parameters

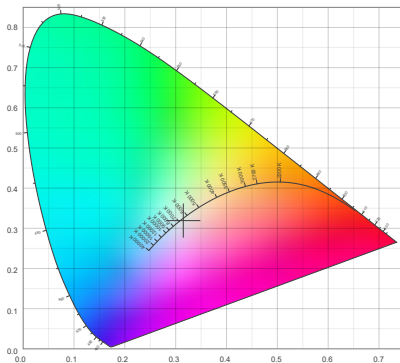
Correlated Color Temperature, Target
Correlated Color Temperature, Measured
Color Rendering Index
Color Rendering Index, R9 (red)
Color Rendering TM30-18

CCT = 6459 K
CCT = 6459 K
CRI 76.1
R9 = 4.5
Rf 73.7
Rg 98.2

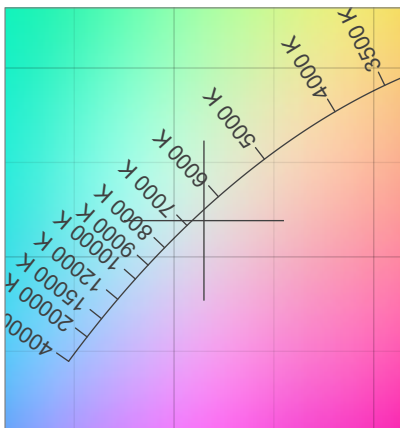
MacAdam Steps
Color deviation from BBL
Color coordinates CIE 1931
Color coordinate CIEs 1960
Color coordinate CIEs 1976
Color Quality Scale

SDCM = n/a
Duv = -0.0031
(x;y) = (0.315;0.319)
(u;v) = (0.203;0.309)
(u';v') = (0.203;0.463)
CQS = 72.3

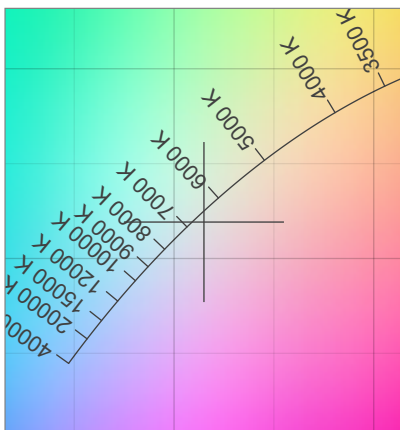
CIE 1931 Chromaticity diagram



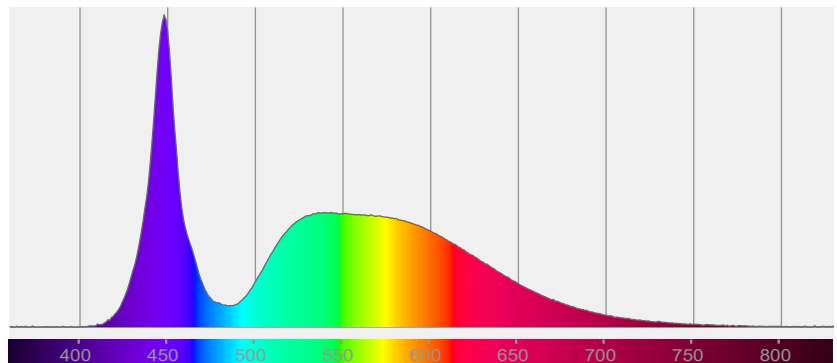
CIE 1931 Chromaticity - zoomed



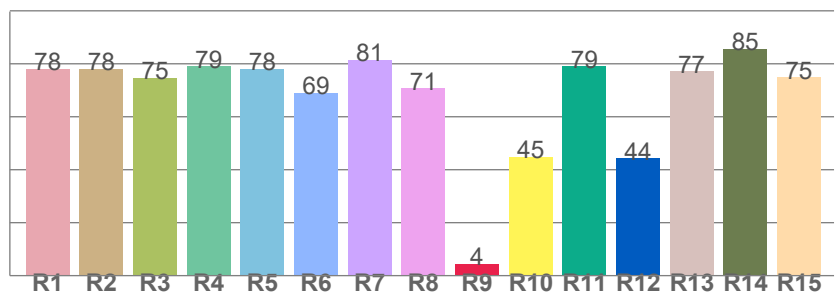
CIE 1931 Chromaticity - SDCM



Spectral power distribution



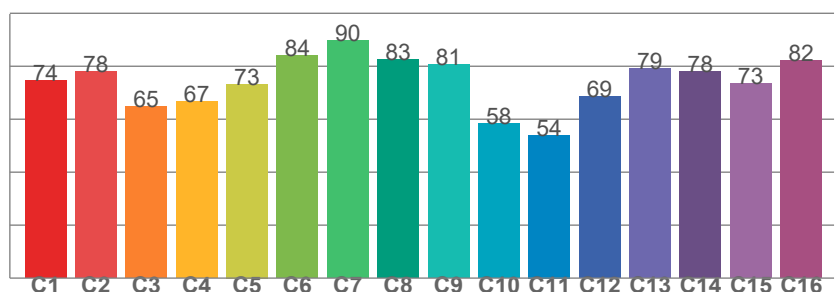
Color Rendering Index per reference color (CIE 1995)



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
78.1	77.9	74.6	79.0	78.0	69.1	81.3	70.7	4.5	44.9	79.0	44.3	77.1	85.4	74.9

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
74.5	78.1	64.8	66.8	73.3	84.2	89.8	82.6	80.6	58.3	54.0	68.7	79.1	77.9	73.5	82.3

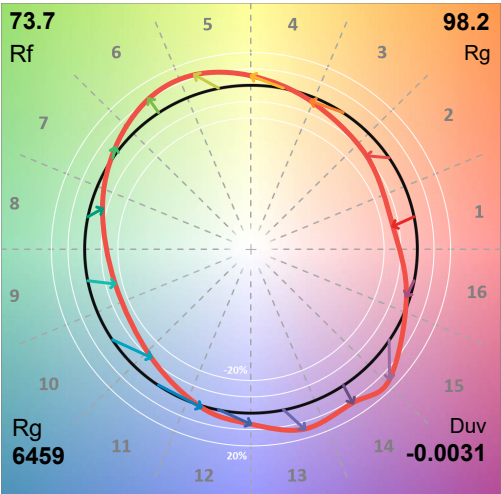
Test report

Print date 9/22/2026
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Color details - ANSI/IES TM-30-18 Color Rendition Report

Color Vector Graphic



Color Distortion Graphic

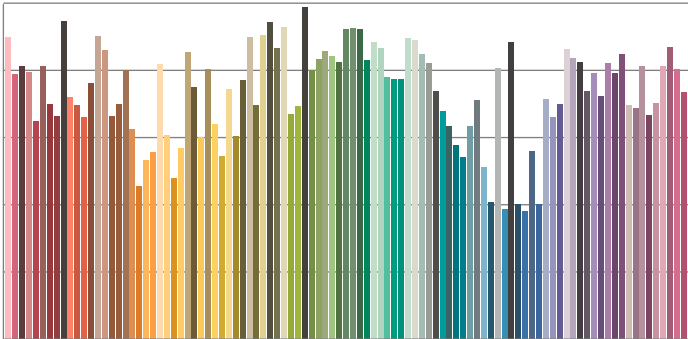


CIE x 0.315
CIE y 0.315
CIE u' 0.203
CIE v' 0.463

CIE 13.3-1995

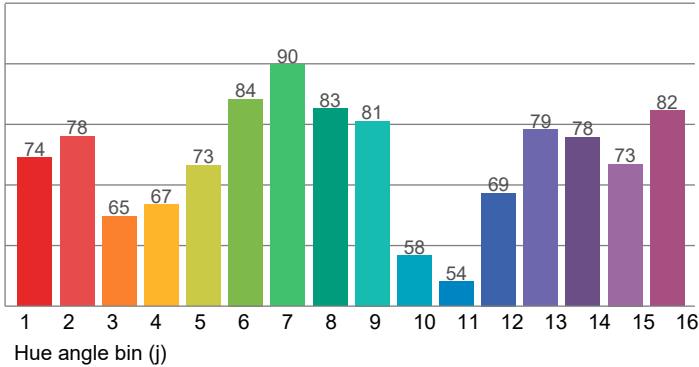
Ra 76.1
R9 4.5

Color Rendition by Color Evaluation Sample (CES)

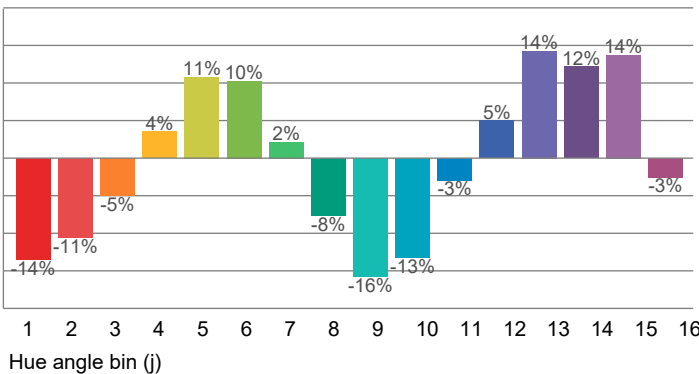


Color evaluation sample CES01 through CES99

Local Color Fidelity (per hue bin)



Local Chroma Shift (per hue bin)

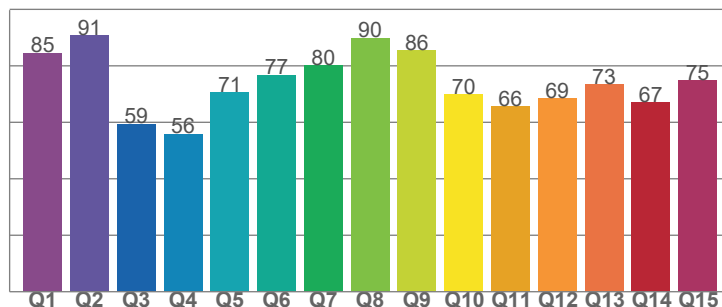


Test report

Print date 9/22/2026
Light measurement results



Color Rendering Index (CQS)



Q1	84.60	Q9	85.57
Q2	90.71	Q10	69.98
Q3	59.49	Q11	65.73
Q4	55.96	Q12	68.58
Q5	70.72	Q13	73.37
Q6	76.82	Q14	67.13
Q7	80.18	Q15	74.82
Q8	89.90	CQS	72.32

Hue Bin	Rf	Shifts (%)	Hue
1	74	-14%	-3%
2	78	-11%	9%
3	65	-5%	20%
4	67	4%	20%
5	73	11%	12%
6	84	10%	0%
7	90	2%	-6%
8	83	-8%	-7%
9	81	-16%	5%
10	58	-13%	22%
11	54	-3%	29%
12	69	5%	21%
13	79	14%	10%
14	78	12%	-1%
15	73	14%	-20%
16	82	-3%	-10%

Rg 98.2

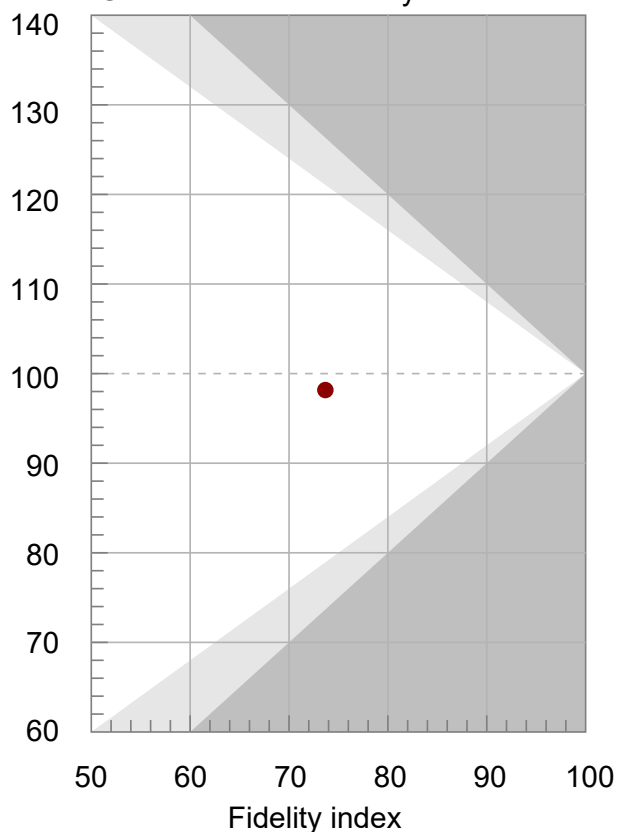
Gamut Index Rf

Gamut index

Rf 73.7

Fidelity Index Rf

Gamut Index vs. Fidelity



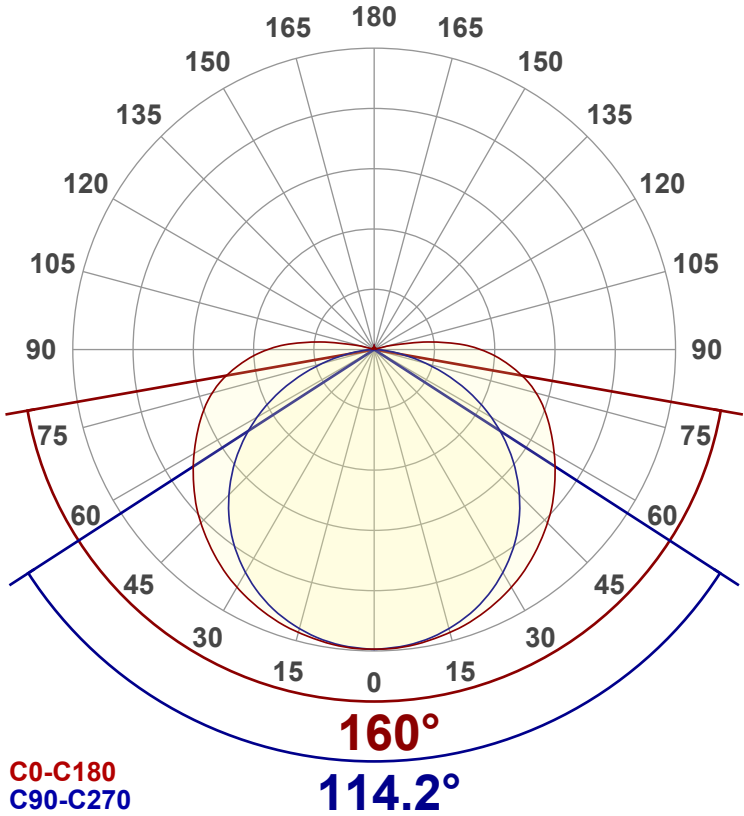
Test report

Print date 9/22/2026
Light measurement results



Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

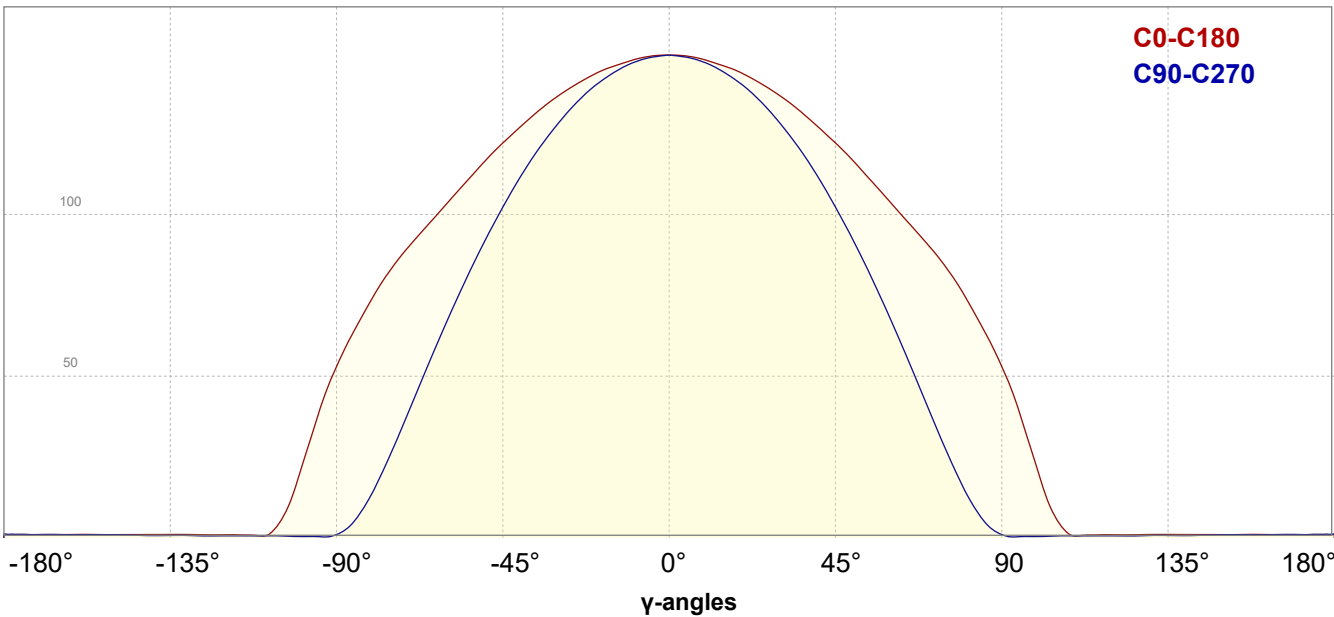
Output (total Lumen)	589 lm
Lumen Up% / Down%	4.72% / 95.28%
Peak Intensity	149 cd
Beam Angle (50%-FWHM)	138.76°
Field Angle (10%-FWHM)	188.22°
Cutoff Angle (2.5%-FWHM)	{c_ANG/0.00}°

Intensity Ratios

In 120° cone	1177.8
In 90° cone	359.0

Linear distribution diagram

Intensity [cd]

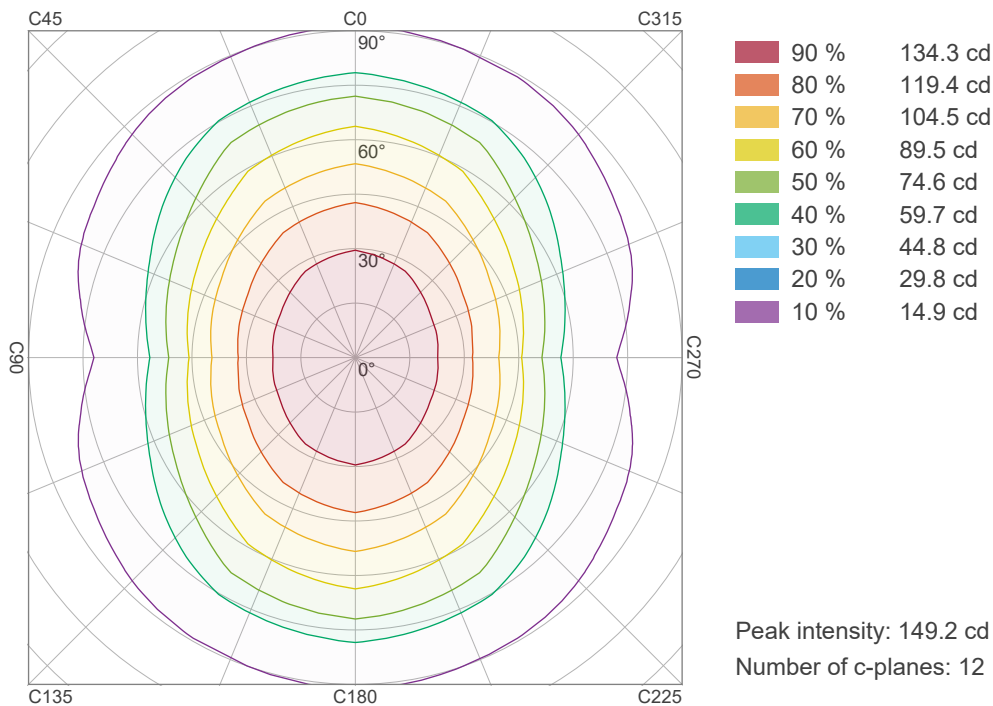


Test report

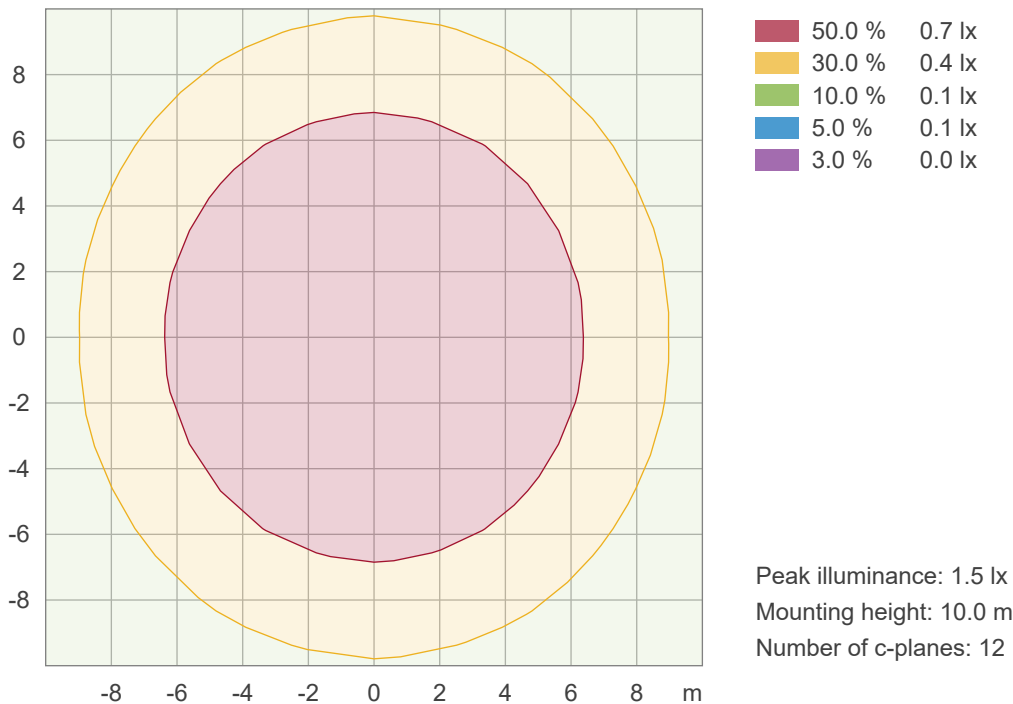
Print date 9/22/2026
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Iso-intensity Diagram (Iso-candela)



Iso-illuminance Diagram (Iso-lux)

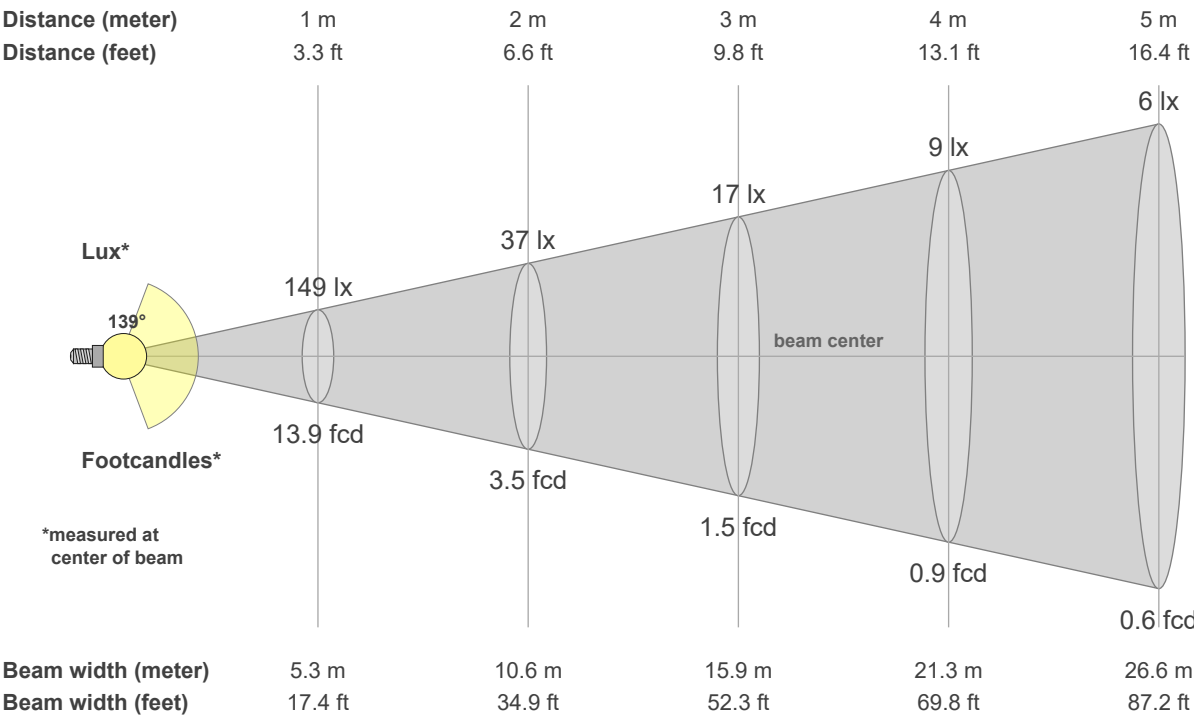


Test report

Print date 9/22/2026
Light measurement results

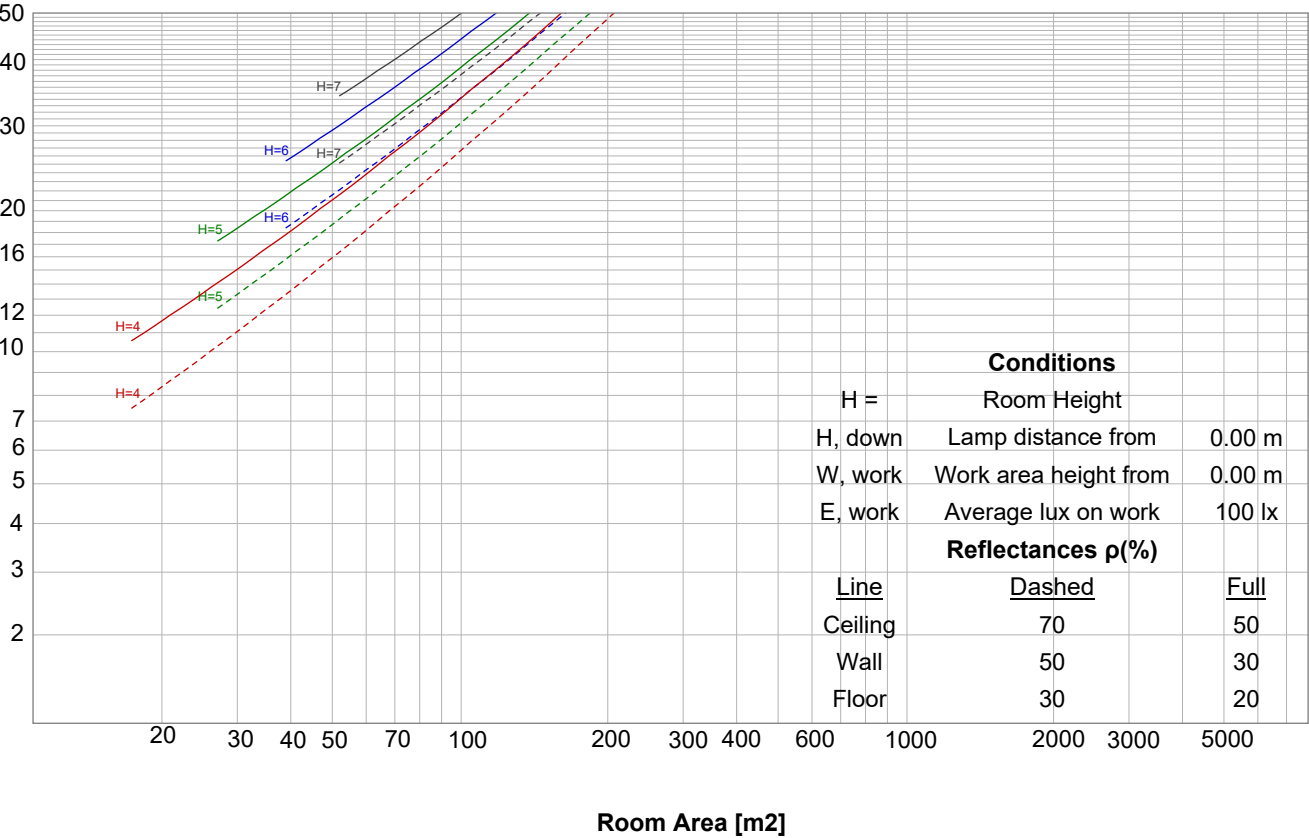


Beam details



Luminaire budgetary diagram

LAMPS (number of lamps)



Test report

Print date 9/22/2026
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
149	37	17	9	6	4	3	2	2	1	1	1	1	1	1	1	1	0	0	0	lux
13.9	3.5	1.5	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°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
149	148	145	139	131	122	111	100	88	73	53	24	1	1	1	1	1	1	1	1	cd
100%	99%	97%	93%	88%	82%	75%	67%	59%	49%	35%	16%	1%	1%	1%	1%	1%	1%	1%	1%	of 0°val

Intensities in 90° c-plane

0°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
149	147	141	132	119	102	82	59	35	13	1	0	1	1	1	1	1	1	1	1	cd
100%	99%	95%	89%	80%	68%	55%	40%	23%	8%	1%	0%	0%	0%	0%	1%	1%	1%	1%	1%	of 0°val

Intensities in 180° c-plane

0°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
149	148	145	139	131	122	111	100	88	73	53	24	1	1	1	1	1	1	1	1	cd
100%	99%	97%	93%	88%	82%	75%	67%	59%	49%	35%	16%	1%	1%	1%	1%	1%	1%	1%	1%	of 0°val

Intensities in 270° c-plane

0°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
149	147	141	132	119	102	82	59	35	13	1	0	1	1	1	1	1	1	1	1	cd
100%	99%	95%	89%	80%	68%	55%	40%	23%	8%	1%	0%	0%	0%	0%	1%	1%	1%	1%	1%	of 0°val

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Print date 9/22/2026
Light measurement results



IESNA TM-15-07 LUMINAIARE CLASSIFICATION SYSTEM FOR OUTDOOR

Forward Light

Low (0-30°)	59.2	lm	10.1%
Medium (30-60°)	126.7	lm	21.5%
High (60-80°)	71.9	lm	12.2%
Very High (80-90°)	22.8	lm	3.9%

Back Light

Low (0-30°)	59.2	lm	10.1%
Medium (30-60°)	126.7	lm	21.5%
High (60-80°)	71.9	lm	12.2%
Very High (80-90°)	22.8	lm	3.9%

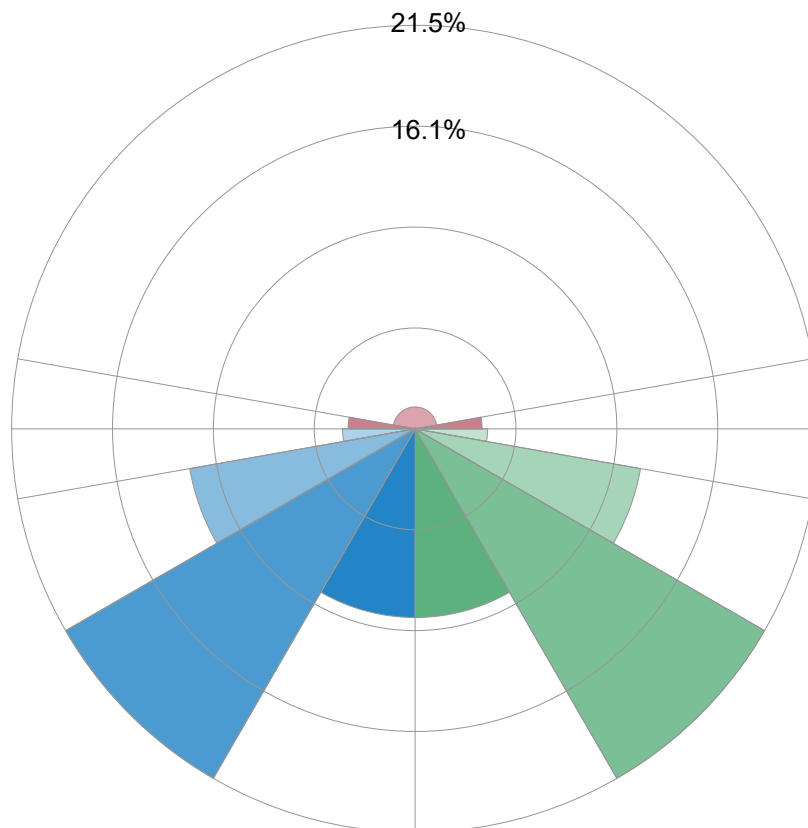
Uplight

Low (90-100°)	21	lm	3.6%
High (100-180°)	6.9	lm	1.2%

Total

Sum	588.9	lm	100%
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BUG RATING B0 U2 G1



Test report

Print date 9/22/2026
Light measurement results



UGR Table

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

Reflectances			70	70	50	50	30	70	70	50	50	30
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 = mounting height above eye level			(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
X	Y											
2H	2H		24.4	25.7	24.7	26.1	26.4	23.3	24.6	23.7	25.0	25.4
	3H		26.7	28.1	27.2	28.5	28.8	24.9	26.2	25.4	26.6	26.9
	4H		28.0	29.3	28.5	29.7	30.0	25.5	26.8	26.0	27.2	27.6
	6H		29.3	30.5	29.7	30.8	31.3	26.1	27.2	26.4	27.6	28.1
	8H		29.9	31.0	30.3	31.4	31.9	26.2	27.3	26.6	27.7	28.2
	12H		30.5	31.6	30.9	32.0	32.5	26.3	27.4	26.7	27.8	28.3
4H	2H		25.1	26.4	25.5	26.7	27.1	24.3	25.6	24.7	25.9	26.3
	3H		27.8	28.9	28.2	29.3	29.8	26.2	27.3	26.7	27.7	28.3
	4H		29.1	30.2	29.6	30.6	31.3	27.0	28.1	27.5	28.5	29.2
	6H		30.6	31.5	31.1	32.0	32.5	27.7	28.7	28.2	29.1	29.6
	8H		31.3	32.1	31.8	32.6	33.1	27.9	28.8	28.5	29.3	29.7
	12H		31.9	32.7	32.5	33.2	33.8	28.1	28.8	28.6	29.3	29.9
8H	4H		29.5	30.4	30.1	30.9	31.4	27.8	28.7	28.4	29.2	29.6
	6H		31.3	32.0	31.8	32.5	33.2	28.8	29.5	29.4	30.1	30.7
	8H		32.1	32.8	32.7	33.4	34.1	29.3	29.9	29.8	30.5	31.2
	12H		33.0	33.6	33.6	34.1	34.8	29.6	30.1	30.2	30.7	31.4
12H	4H		29.6	30.4	30.1	30.9	31.4	28.0	28.8	28.6	29.3	29.9
	6H		31.4	32.0	32.0	32.6	33.4	29.2	29.8	29.8	30.4	31.1
	8H		32.4	32.9	33.0	33.5	34.2	29.7	30.3	30.4	30.9	31.5
Variations with the observer position for the luminaire spacings, S:												
S = 1.0H			0.1 / 0.0					0.1 / -0.1				
S = 1.5H			0.1 / -0.1					0.1 / -0.2				
S = 2.0H			0.1 / -0.1					0.2 / -0.4				

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	117.9	117.9	117.9	117.9	114.6	114.6	114.6	114.6	108.5	108.5	108.5	102.9	102.9	102.9	97.7	97.7	97.7	95.3
1	104.4	98.2	92.7	87.7	101.0	95.4	90.4	85.8	90.1	86.0	82.2	85.3	81.9	78.8	80.8	78.1	75.6	72.9
2	93.6	83.8	75.7	68.8	90.3	81.4	73.9	67.6	76.9	70.7	65.3	72.8	67.6	63.0	69.0	64.7	60.9	58.2
3	84.6	72.6	63.2	55.8	81.5	70.5	61.9	55.0	66.7	59.4	53.3	63.2	57.0	51.7	60.0	54.7	50.2	47.6
4	77.0	63.7	53.9	46.4	74.2	62.0	52.8	45.8	58.7	50.9	44.6	55.7	49.0	43.5	53.0	47.1	42.3	39.8
5	70.5	56.5	46.7	39.4	68.0	55.0	45.8	39.0	52.3	44.2	38.1	49.7	42.7	37.2	47.3	41.2	36.3	33.9
6	65.0	50.6	40.9	34.0	62.6	49.3	40.3	33.7	47.0	39.0	33.0	44.8	37.7	32.3	42.7	36.5	31.6	29.3
7	60.1	45.7	36.3	29.8	58.0	44.6	35.8	29.5	42.6	34.7	28.9	40.7	33.6	28.4	38.9	32.6	27.8	25.6
8	55.9	41.5	32.5	26.4	53.9	40.6	32.1	26.1	38.9	31.2	25.7	37.2	30.3	25.2	35.6	29.4	24.7	22.7
9	52.1	38.0	29.4	23.6	50.4	37.2	29.0	23.4	35.7	28.2	23.0	34.2	27.5	22.6	32.9	26.7	22.2	20.2
10	48.8	35.0	26.7	21.2	47.2	34.3	26.4	21.1	33.0	25.7	20.7	31.7	25.1	20.4	30.5	24.5	20.1	18.2

Test report

Print date 9/22/2026
Light measurement results

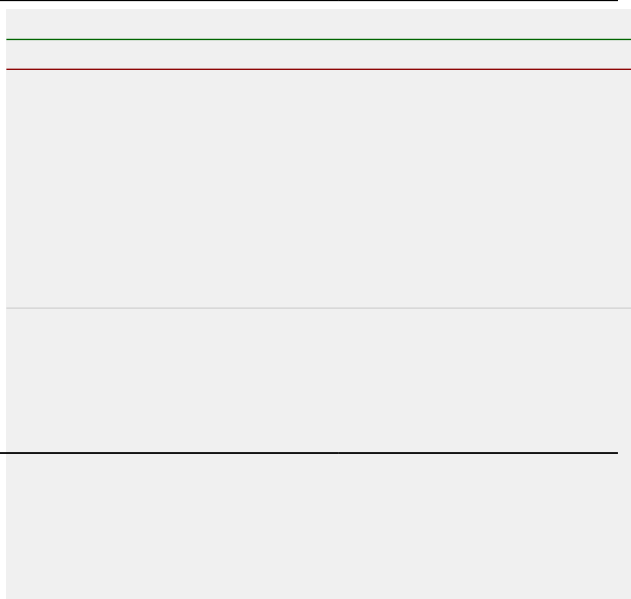


Power details

Input power

Frequency of input power	0 Hz
Power feed to light source	4.7 W
RMS Input voltage feed V,RMS	24.0 V
RMS Input current feed I,RMS	0.196 A
Volt-Amp or apparent power =	4.7 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 40.2%

Lumen efficiency 125 lm/W

Stabilization details

Warmup Conditions

Stable period	n/a
Stable change max	n/a%
Minimum time	n/a

Color Temperature Change

CCT start	n/a K
CCT shift	n/a K
CCT end	6459 K

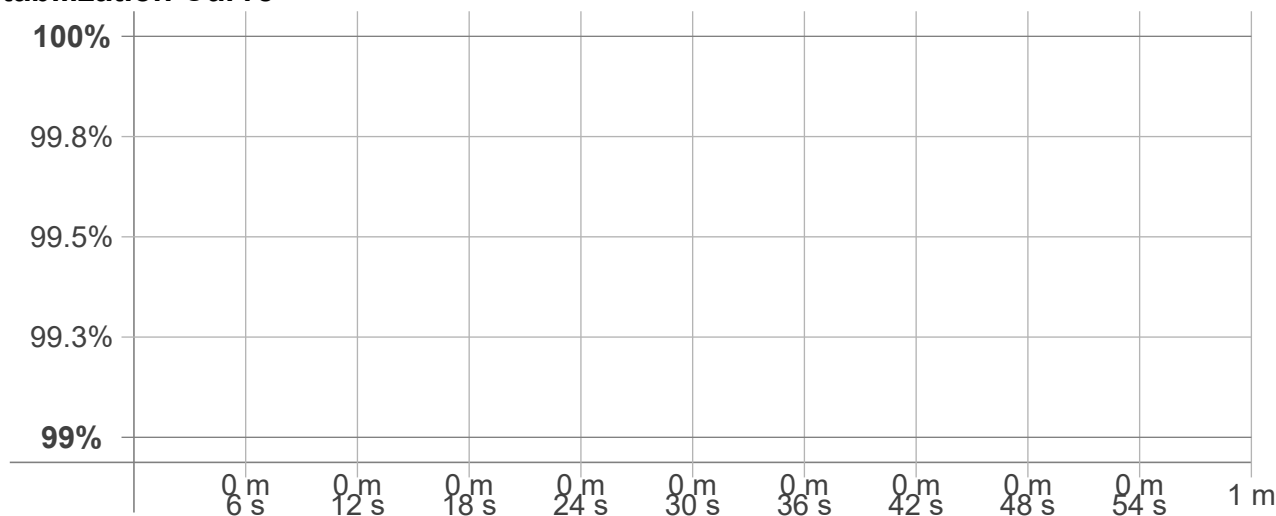
Warmup Result

Total warmup time	n/a
Warmup variation	n/a%

Output Change

Output start	n/a lm
Output change	n/a lm
Output end	589 lm

Stabilization Curve



Test report

Print date 9/22/2026
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 %

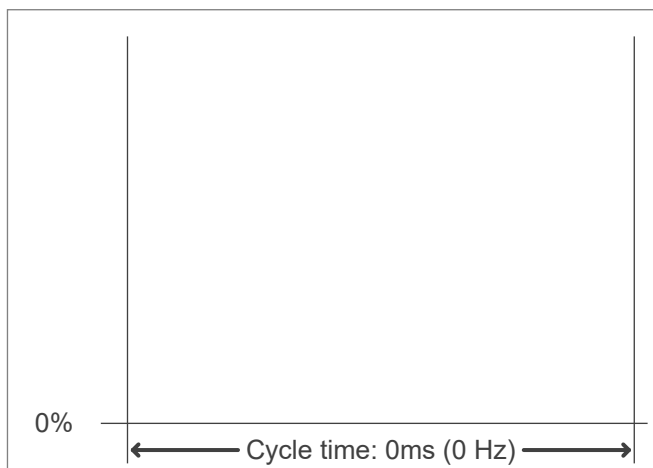
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC

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

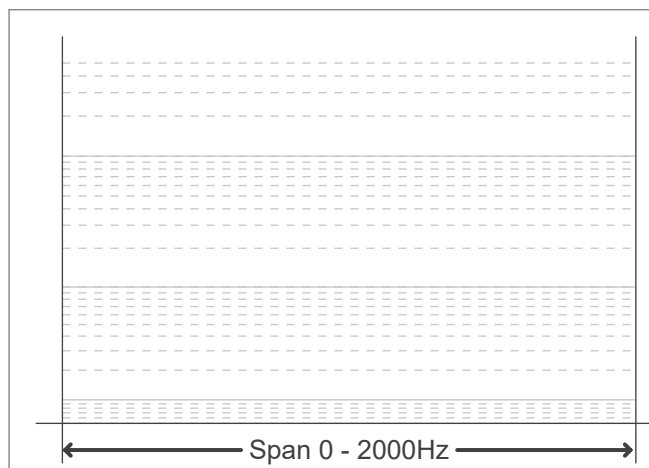
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp	n/a
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Flicker frame (frame of one flicker period in time domain)



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot

