

# Test report

Print date 1/26/2026  
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  
1/8/2026  
bob

## Measurement Conditions

Tested c-planes  
Tested gamma resolution  
Input Power

12 planes - 30°  
5°  
1.8 W

## Tested Light Source

Luminaire  
Basic Luminous Shape  
Item No.  
Manufacturer  
Description

AD35241.827CFBKS-1  
SPOT  
Acolyte  
SIZE: D35MM Clear Flat Lens\line SAMPLE 1

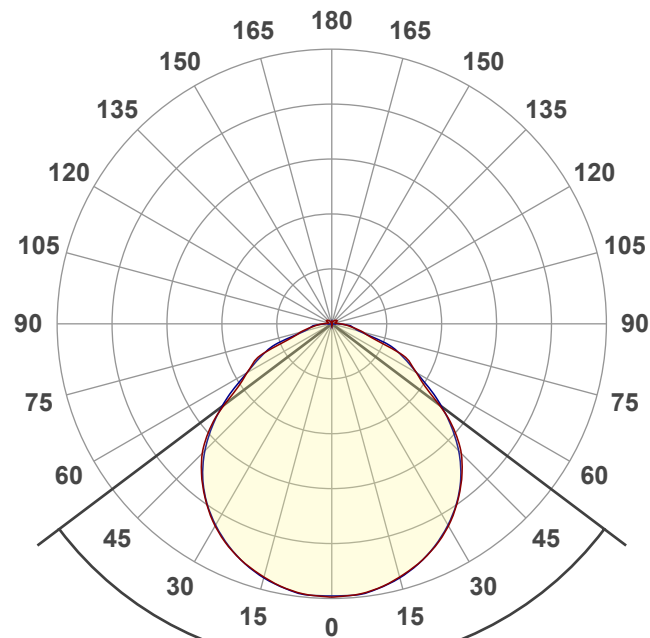
## Main Light Measurement Results

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

173 lm - 2.9% / 97.1%  
99 lm/W  
63.2 cd  
2756 K  
CRI 93.7  
585 nm  
631 nm

## Polar light distribution diagram

Unit: 0-100% of peak intensity



— C0 - C180  
— C90 - C270

$\eta = 100.0\%$

99 lm/W

2756 K

## Product photo



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## Color Parameters

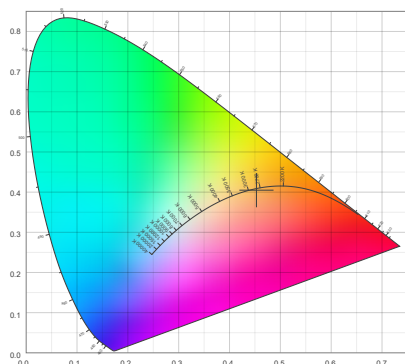
Correlated Color Temperature, Target  
Correlated Color Temperature, Measured  
Color Rendering Index  
Color Rendering Index, R9 (red)  
Color Rendering TM30-18

CCT = 2756 K  
CCT = 2756 K  
CRI 93.7  
R9 = 55.8  
Rf 91.9  
Rg 99.5

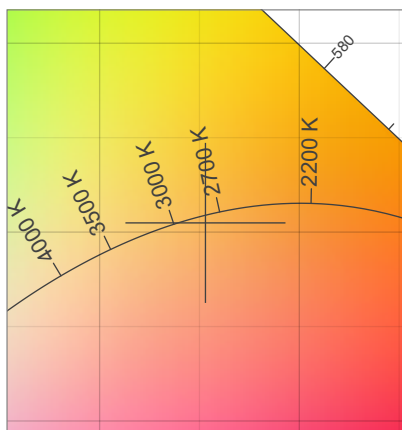
MacAdam Steps  
Color deviation from BBL  
Color coordinates CIE 1931  
Color coordinate CIEs 1960  
Color coordinate CIEs 1976  
Color Quality Scale

SDCM = n/a  
Duv = -0.0015  
(x;y) = (0.453;0.405)  
(u;v) = (0.261;0.349)  
(u';v') = (0.261;0.524)  
CQS = 91.1

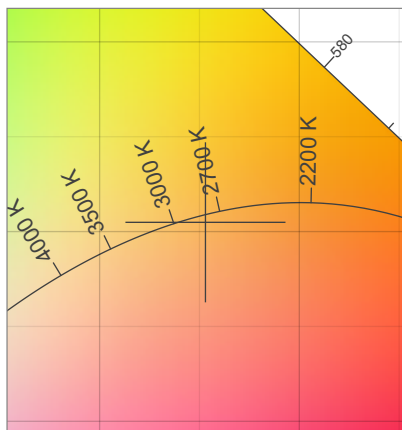
## CIE 1931 Chromaticity diagram



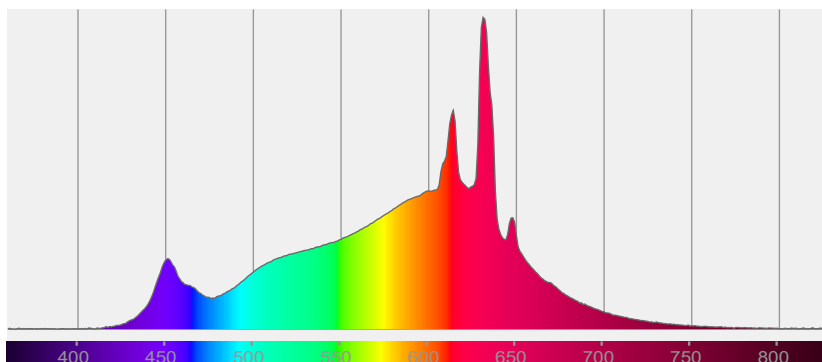
## CIE 1931 Chromaticity - zoomed



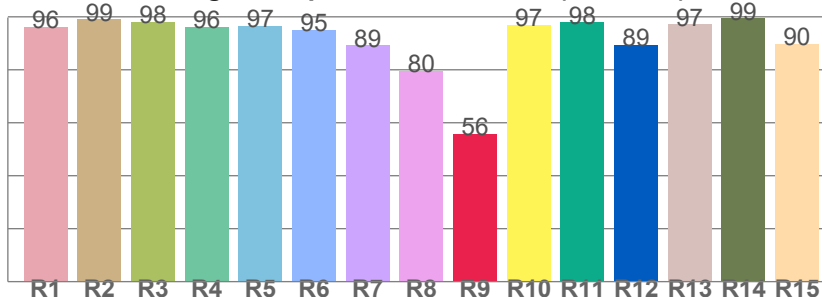
## CIE 1931 Chromaticity - SDCM



## Spectral power distribution



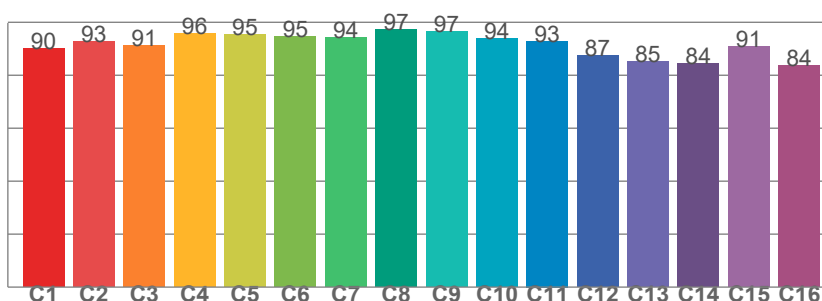
## Color Rendering Index per reference color (CIE 1995)



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
96.0	99.0	98.0	96.1	96.6	95.0	89.2	79.5	55.8	97.0	97.9	89.3	97.1	99.3	89.8

## 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
90.0	92.6	91.3	95.7	95.3	94.7	94.3	97.2	96.6	93.9	93.0	87.4	85.1	84.4	90.9	83.6

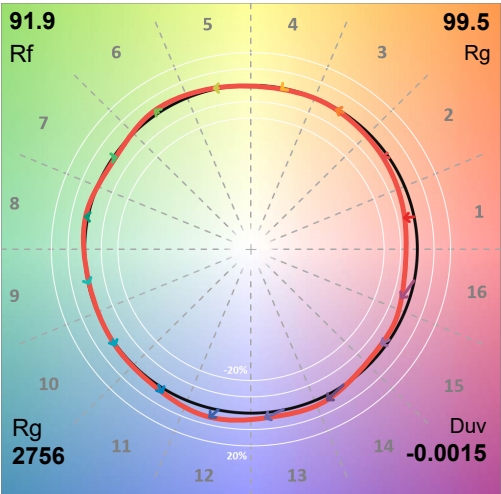
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## Color details - ANSI/IES TM-30-18 Color Rendition Report

Color Vector Graphic



Color Distortion Graphic

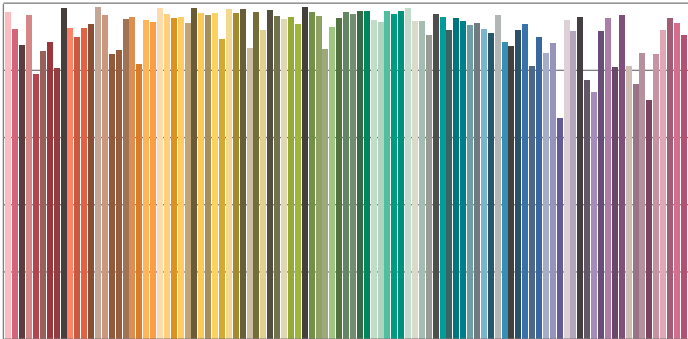


CIE x 0.453  
CIE y 0.453  
CIE u' 0.261  
CIE v' 0.524

**CIE 13.3-1995**

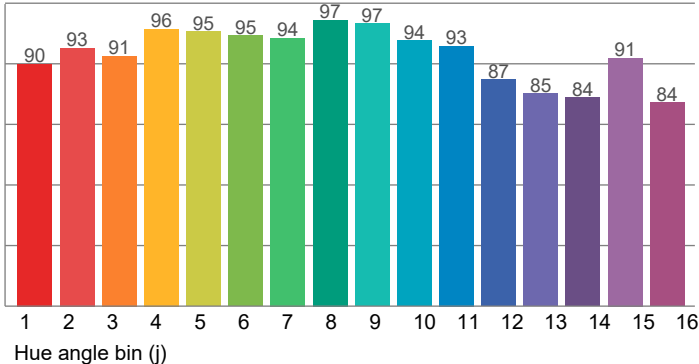
Ra 93.7  
R9 55.8

Color Rendition by Color Evaluation Sample (CES)

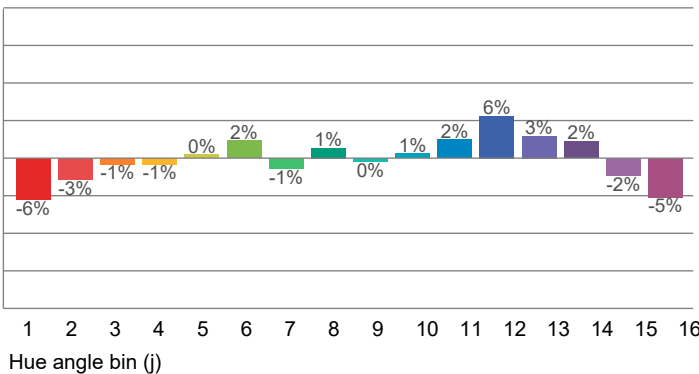


Color evaluation sample CES01 through CES99

Local Color Fidelity (per hue bin)



Local Chroma Shift (per hue bin)

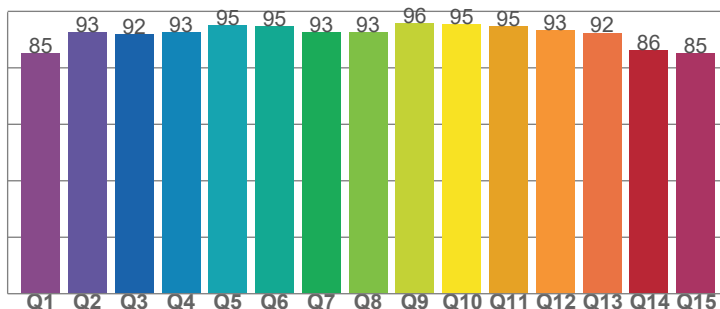


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## Color Rendering Index (CQS)



Q1	85.22	Q9	95.68
Q2	92.59	Q10	95.35
Q3	91.95	Q11	94.68
Q4	92.52	Q12	93.30
Q5	95.19	Q13	92.37
Q6	94.75	Q14	86.13
Q7	92.60	Q15	85.22
Q8	92.68	<b>CQS</b>	<b>91.07</b>

Hue Bin	Rf	Shifts (%)	
		Chroma	Hue
1	90	-6%	0%
2	93	-3%	3%
3	91	-1%	4%
4	96	-1%	1%
5	95	0%	2%
6	95	2%	1%
7	94	-1%	-1%
8	97	1%	0%
9	97	0%	2%
10	94	1%	3%
11	93	2%	4%
12	87	6%	-4%
13	85	3%	-11%
14	84	2%	-13%
15	91	-2%	-5%
16	84	-5%	-12%

**Rg 99.5**

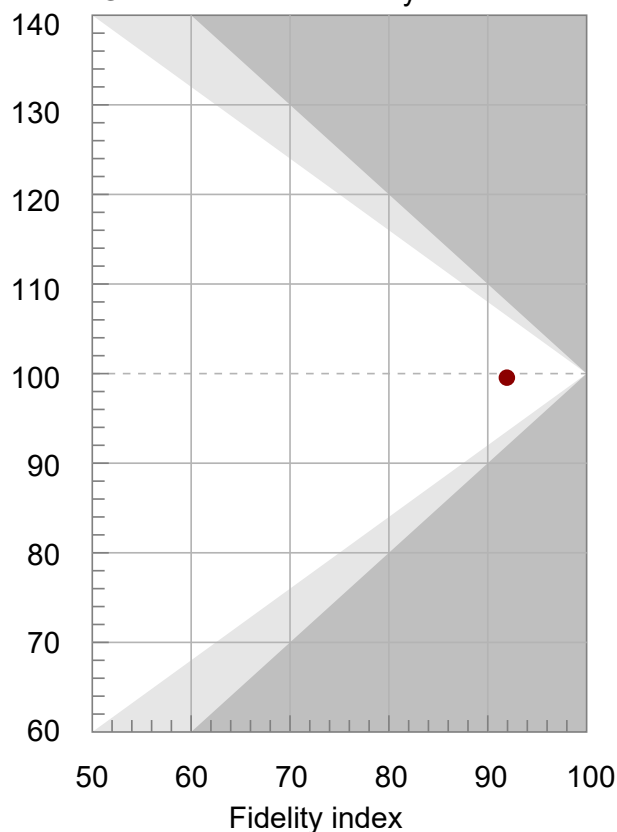
Gamut Index Rf

Gamut index

**Rf 91.9**

Fidelity Index Rf

## Gamut Index vs. Fidelity



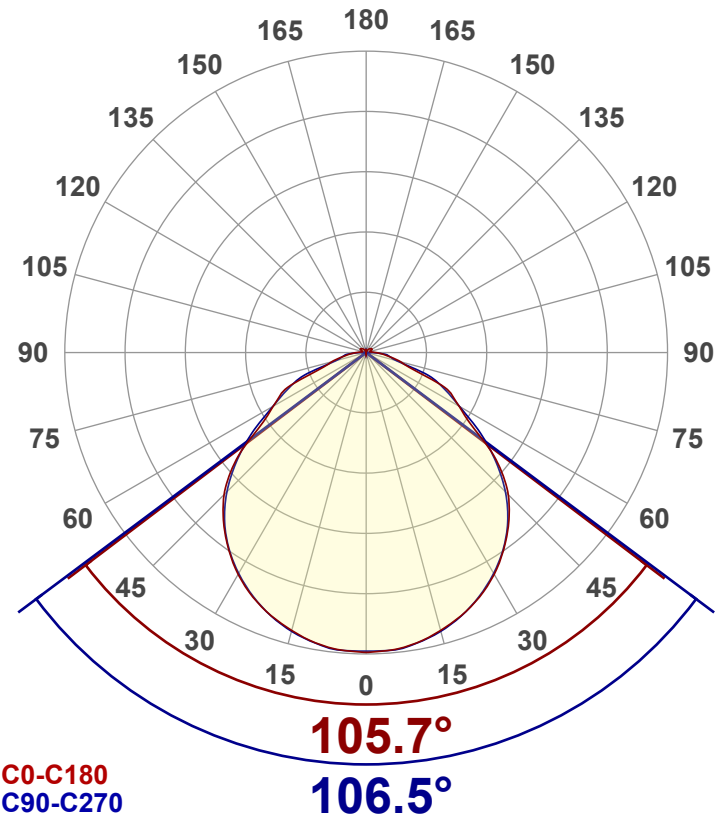
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## Luminous Intensity diagram

Unit: 0-100% of peak intensity



## Main Values

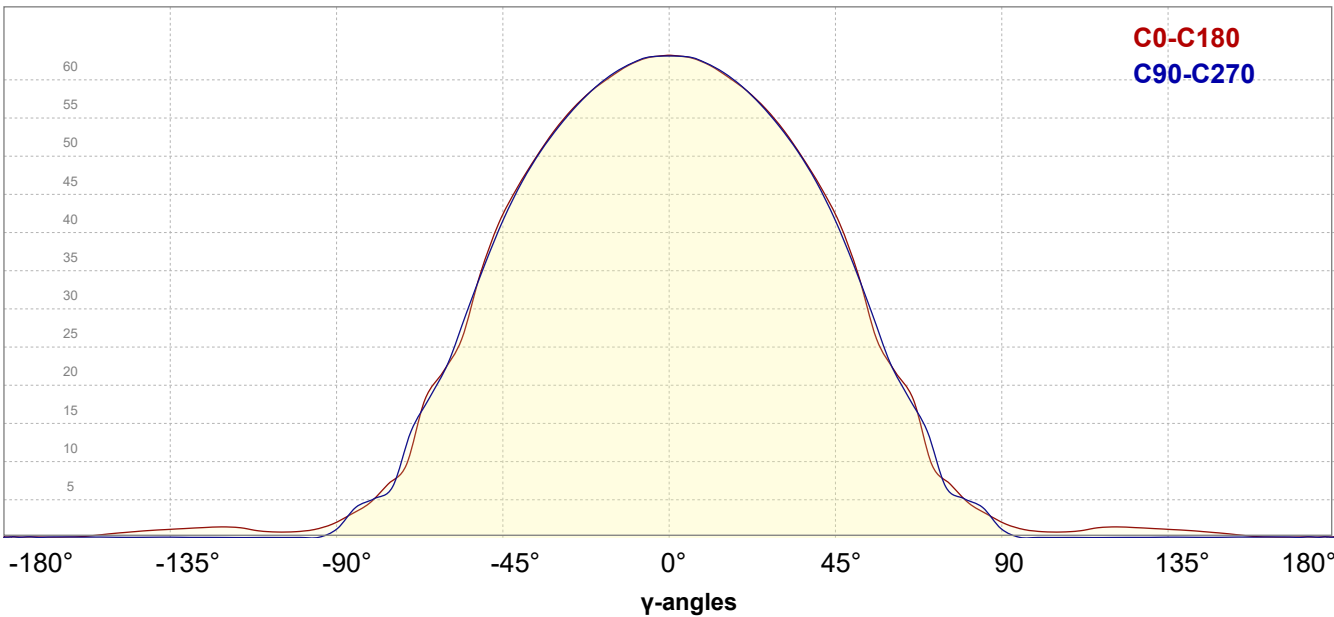
Output (total Lumen)	173 lm
Lumen Up% / Down%	2.9% / 97.1%
Peak Intensity	63.2 cd
Beam Angle (50%-FWHM)	106.03°
Field Angle (10%-FWHM)	153.28°
Cutoff Angle (2.5%-FWHM)	{c_ANG/0.00}°

## Intensity Ratios

In 120° cone	4947.2
In 90° cone	1507.9

## Linear distribution diagram

Intensity [cd]

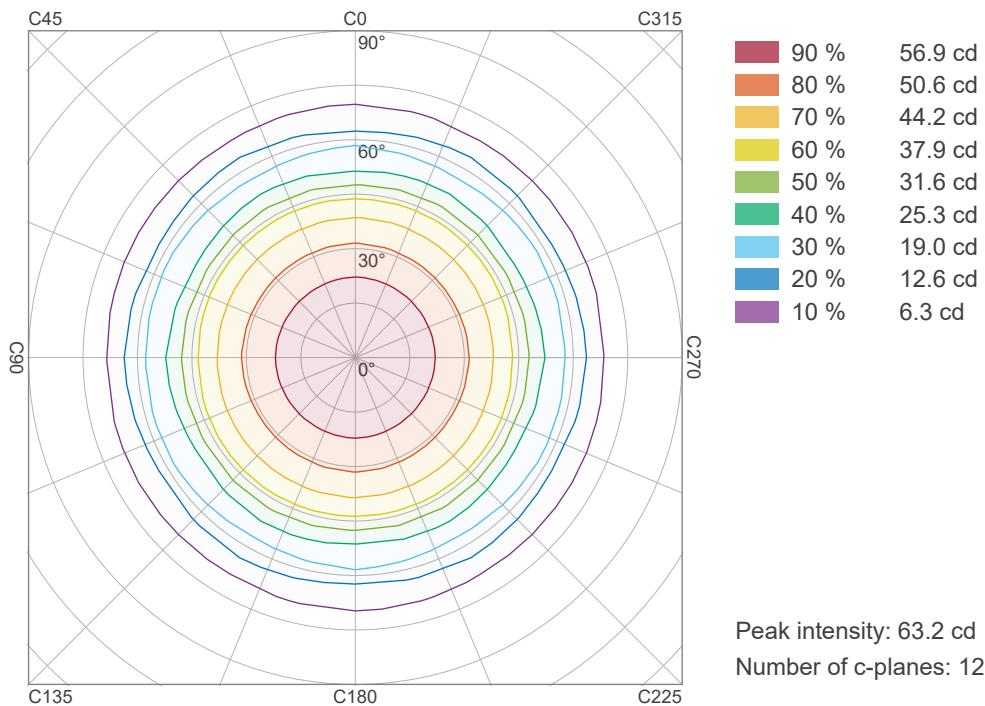


# Test report

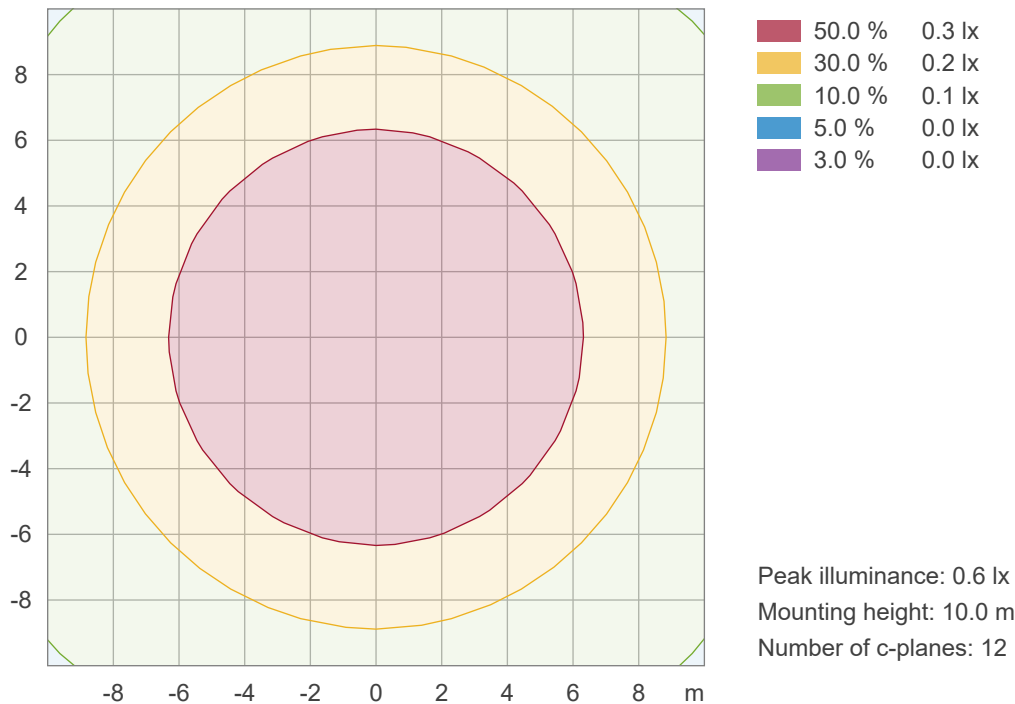
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## Iso-intensity Diagram (Iso-candela)



## Iso-illuminance Diagram (Iso-lux)

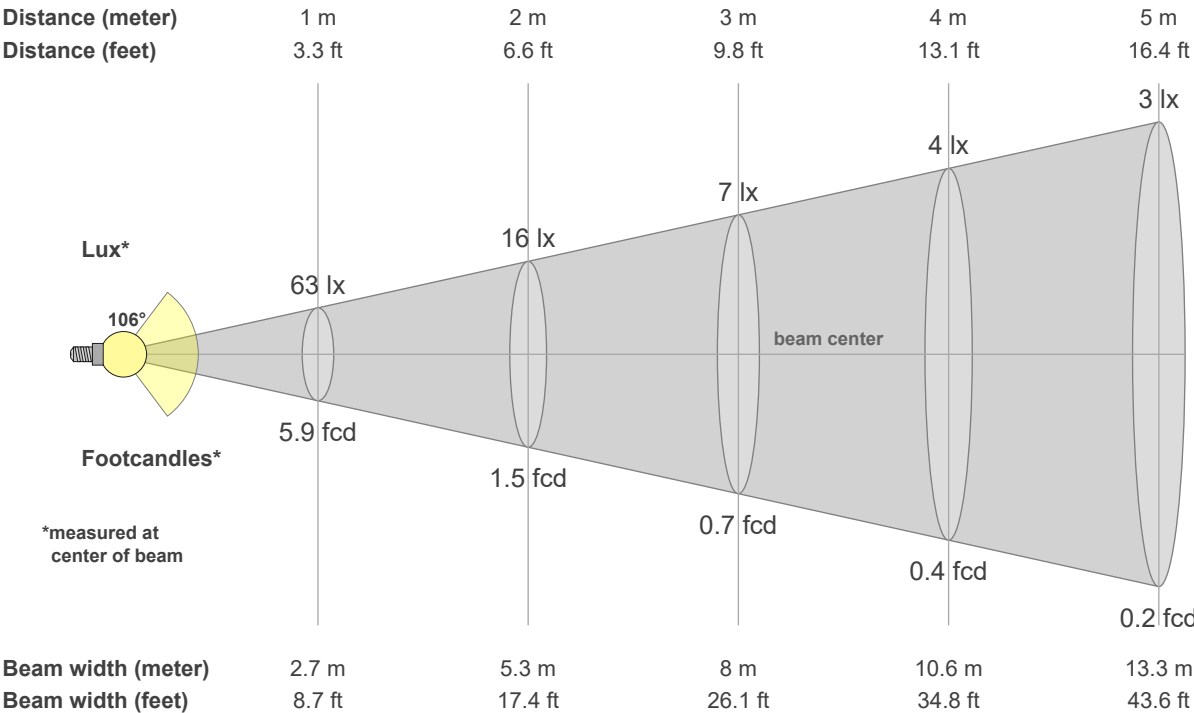


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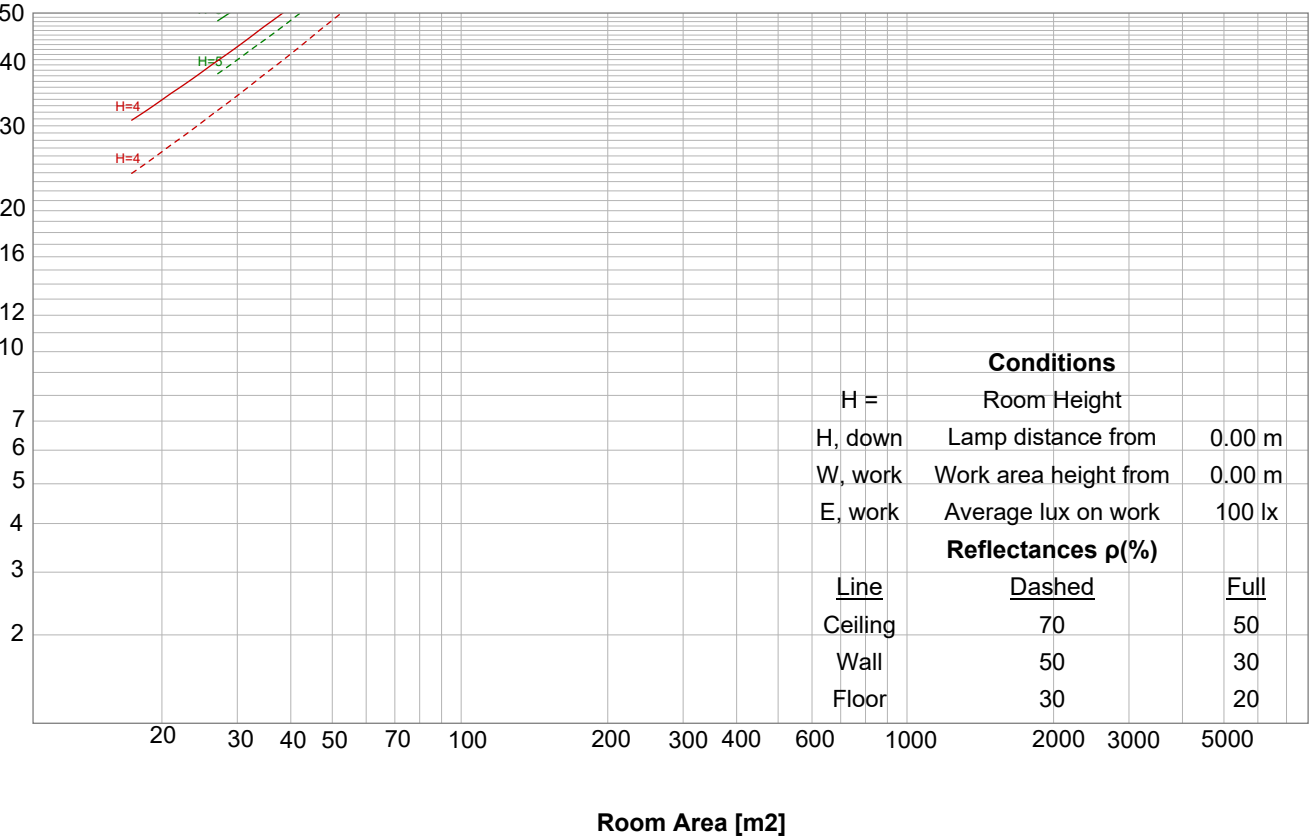


## Beam details



## Luminaire budgetary diagram

LAMPS (number of lamps)



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## 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
63	16	7	4	3	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	lux
5.9	1.5	0.7	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0	0	0	0	0	0	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
63.2	62.9	62.1	60.7	58.9	56.7	54.0	50.6	46.7	42.2	36.0	27.9	22.7	18.9	11.4	7.6	5.1	3.4	2.1	1.2	cd
100%	100%	98%	96%	93%	90%	85%	80%	74%	67%	57%	44%	36%	30%	18%	12%	8%	5%	3%	2%	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
63.2	63.0	62.2	60.9	59.0	56.6	53.8	50.5	46.4	41.5	35.7	29.3	22.7	18.2	13.7	6.6	5.1	3.9	1.2	0.1	cd
100%	100%	98%	96%	93%	90%	85%	80%	74%	66%	56%	46%	36%	29%	22%	11%	8%	6%	2%	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
63.2	62.9	62.1	60.7	58.9	56.7	54.0	50.6	46.7	42.2	36.0	27.9	22.7	18.9	11.4	7.6	5.1	3.4	2.1	1.2	cd
100%	100%	98%	96%	93%	90%	85%	80%	74%	67%	57%	44%	36%	30%	18%	12%	8%	5%	3%	2%	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
63.2	63.0	62.2	60.9	59.0	56.6	53.8	50.5	46.4	41.5	35.7	29.3	22.7	18.2	13.7	6.6	5.1	3.9	1.2	0.1	cd
100%	100%	98%	96%	93%	90%	85%	80%	74%	66%	56%	46%	36%	29%	22%	11%	8%	6%	2%	0%	of 0°val



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## IESNA TM-15-07 LUMINAIARE CLASSIFICATION SYSTEM FOR OUTDOOR

### Forward Light

Low (0-30°)	24.6	lm	14.2%
Medium (30-60°)	44.6	lm	25.8%
High (60-80°)	12.9	lm	7.5%
Very High (80-90°)	1.9	lm	1.1%

### Back Light

Low (0-30°)	24.6	lm	14.2%
Medium (30-60°)	44.6	lm	25.8%
High (60-80°)	12.9	lm	7.5%
Very High (80-90°)	1.9	lm	1.1%

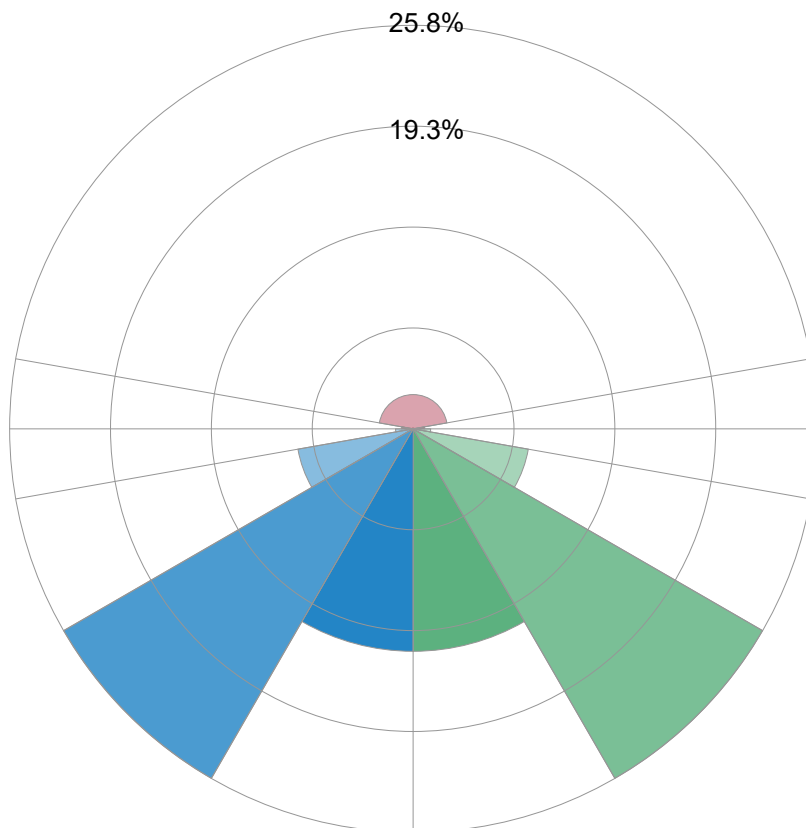
### Uplight

Low (90-100°)	1.3	lm	0.7%
High (100-180°)	3.8	lm	2.2%

Total

<b>Sum</b>	<b>173.2</b>	<b>lm</b>	<b>100%</b>
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### BUG RATING B0 U1 G0



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## UGR Table

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

Reflectances			$\rho$ Ceiling	70	70	50	50	30	70	70	50	50	30
			$\rho$ Walls	50	30	50	30	30	50	30	50	30	30
			$\rho$ 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		22.9	24.0	23.2	24.4	24.7	22.9	24.0	23.1	24.4	24.6	
	3H		23.6	24.8	24.0	25.1	25.3	23.6	24.8	24.1	25.1	25.4	
	4H		23.8	24.9	24.2	25.2	25.5	23.8	24.9	24.2	25.2	25.5	
	6H		23.9	24.9	24.3	25.2	25.7	23.9	24.9	24.3	25.2	25.7	
	8H		23.9	24.9	24.3	25.2	25.7	23.9	24.9	24.3	25.3	25.7	
	12H		23.9	24.9	24.3	25.2	25.7	24.0	24.9	24.4	25.3	25.8	
4H	2H		23.2	24.3	23.6	24.6	24.9	23.2	24.3	23.6	24.6	24.9	
	3H		24.2	25.1	24.6	25.5	26.0	24.1	25.1	24.6	25.5	26.0	
	4H		24.3	25.2	24.8	25.6	26.2	24.3	25.2	24.8	25.6	26.2	
	6H		24.5	25.3	25.0	25.7	26.1	24.5	25.3	25.0	25.7	26.1	
	8H		24.5	25.3	25.1	25.7	26.1	24.5	25.3	25.1	25.7	26.1	
	12H		24.6	25.2	25.1	25.7	26.2	24.6	25.2	25.1	25.7	26.2	
8H	4H		24.4	25.1	24.9	25.5	26.0	24.4	25.1	24.9	25.5	26.0	
	6H		24.6	25.2	25.2	25.7	26.3	24.6	25.2	25.2	25.7	26.3	
	8H		24.8	25.2	25.3	25.8	26.5	24.8	25.2	25.3	25.8	26.5	
	12H		24.8	25.2	25.5	25.8	26.5	24.9	25.3	25.5	25.8	26.5	
12H	4H		24.3	25.0	24.9	25.4	26.0	24.3	24.9	24.9	25.4	25.9	
	6H		24.7	25.1	25.2	25.7	26.4	24.6	25.1	25.2	25.7	26.4	
	8H		24.8	25.2	25.4	25.7	26.4	24.8	25.2	25.4	25.7	26.4	
Variations with the observer position for the luminaire spacings, S:													
S = 1.0H			0.2 / -0.3						0.2 / -0.3				
S = 1.5H			0.6 / -0.9						0.5 / -0.8				
S = 2.0H			1.3 / -1.4						1.3 / -1.6				

## 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	118.4	118.4	118.4	118.4	115.3	115.3	115.3	115.3	109.5	109.5	109.5	104.2	104.2	104.2	99.4	99.4	99.4	97.1
1	108.5	103.9	99.8	96.1	105.5	101.4	97.6	94.2	96.6	93.5	90.7	92.2	89.7	87.4	88.2	86.2	84.4	82.1
2	99.1	91.2	84.7	79.1	96.3	89.1	83.1	78.0	85.1	80.1	75.7	81.4	77.2	73.6	78.0	74.6	71.5	69.3
3	90.7	80.5	72.7	66.4	88.0	78.7	71.5	65.6	75.4	69.2	64.1	72.3	67.0	62.6	69.4	65.0	61.2	59.0
4	83.2	71.6	63.1	56.6	80.7	70.1	62.2	56.1	67.2	60.4	55.0	64.6	58.7	53.9	62.1	57.1	52.9	50.7
5	76.6	64.1	55.4	49.0	74.4	62.9	54.7	48.6	60.4	53.3	47.8	58.2	51.9	47.0	56.1	50.6	46.2	44.1
6	70.8	57.8	49.1	42.9	68.8	56.7	48.5	42.6	54.7	47.4	42.0	52.7	46.3	41.4	50.9	45.2	40.8	38.7
7	65.7	52.5	43.9	37.9	63.8	51.6	43.4	37.7	49.8	42.5	37.2	48.1	41.6	36.8	46.5	40.7	36.3	34.3
8	61.2	47.9	39.6	33.9	59.5	47.1	39.2	33.7	45.6	38.4	33.3	44.1	37.7	32.9	42.7	36.9	32.6	30.7
9	57.2	44.0	35.9	30.5	55.6	43.3	35.6	30.3	41.9	34.9	30.0	40.7	34.3	29.7	39.5	33.7	29.4	27.6
10	53.6	40.6	32.8	27.7	52.2	40.0	32.5	27.5	38.8	32.0	27.3	37.7	31.4	27.0	36.6	30.9	26.8	25.0

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## Power details

### Input power

Frequency of input power	0 Hz
Power feed to light source	1.8 W
RMS Input voltage feed V,RMS	24.0 V
RMS Input current feed I,RMS	0.073 A
Volt-Amp or apparent power =	1.75 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	30.4%
Lumen efficiency	99 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	2756 K

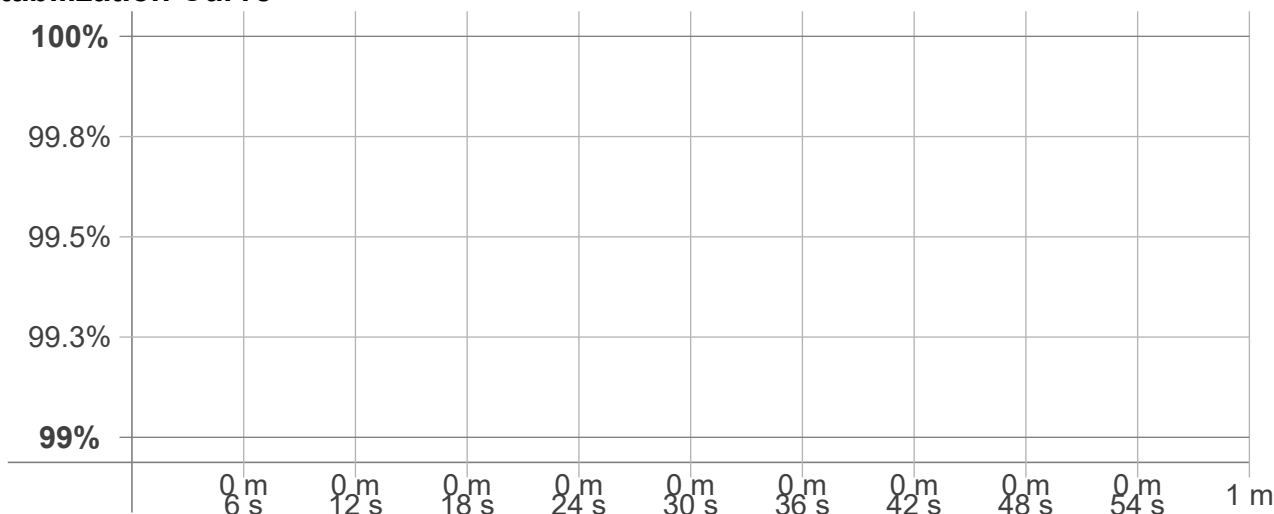
### Warmup Result

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

### Output Change

Output start	n/a lm
Output change	n/a lm
Output end	173 lm

## Stabilization Curve



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## 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

