Test report

Light measurement results

Print date 03-11-2026

Laboratory and Equipment

Test lab	Viso LabSpion - serial: 3331725735 sensor serial: 3532797498 - T
Spectrometer Manufacturer and Model	LabSpion – Type C, horizontal
Measurement date	02/11/2026

Measurement Conditions

Tested c-planes	72 planes – 5,00°
Tested gamma resolution	1,00°
Input Power	32,89 W

Tested Light Source

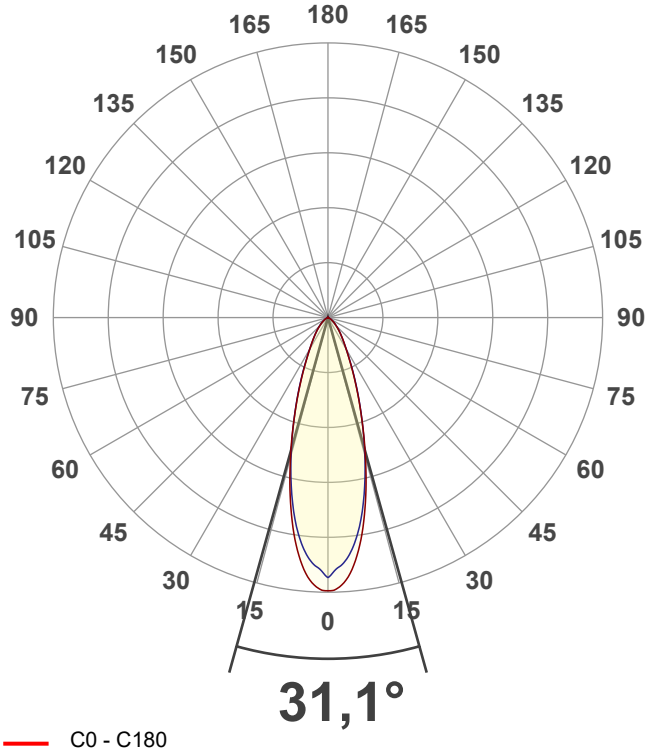
Luminaire	ZENIT 3500K 30D WHITE blx
Basic Luminous Shape	SPOT
Item No.	50010100353003
Manufacturer	ELECTRUM
Description	LED BRIDGELUX, 850mA \line Driver ELECTRUM
Dimensions, luminous surface	H/D = 0, W = 0, L = 6, Shape = SPOT
Dimensions, light source housing	H/D = 7,7, W = 0, L = 14,8

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)	4056 lm – 0,7148% / 99,29%
Efficiency	123,3 lm/W
Peak Intensity	9421 cd
Correlated Color Temperature, CCT	3500 K
Color Rendering Index	CRI 95,6 TM30Rf 91,2 TM30 Rg 105,3

Polar light distribution diagram

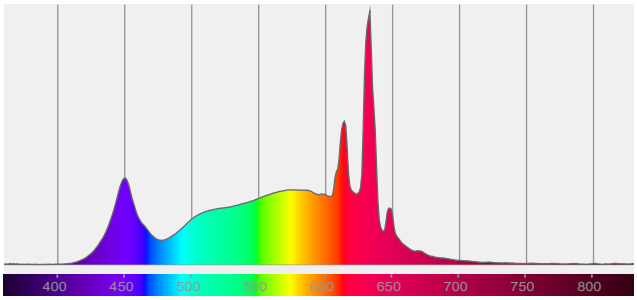
Unit: 0-100% of peak intensity



Product photo



Spectral power distribution



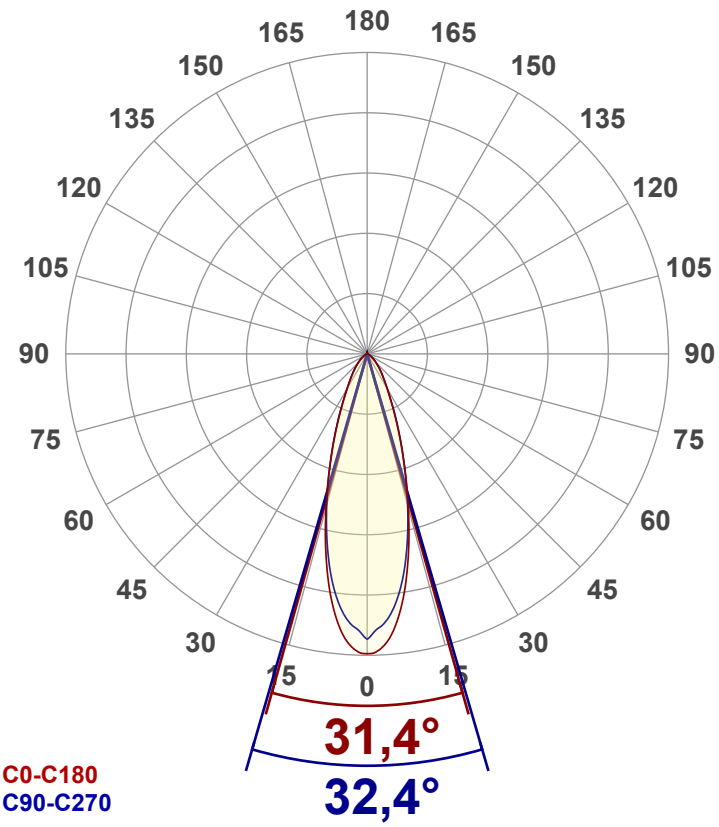
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Print date 03-11-2026

Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	4056 lm
Lumen Up% / Down%	0,7148% / 99,29%
Peak Intensity	9421 cd
Beam Angle (50%-FWHM)	31,1°

EU Ecodesign parameters

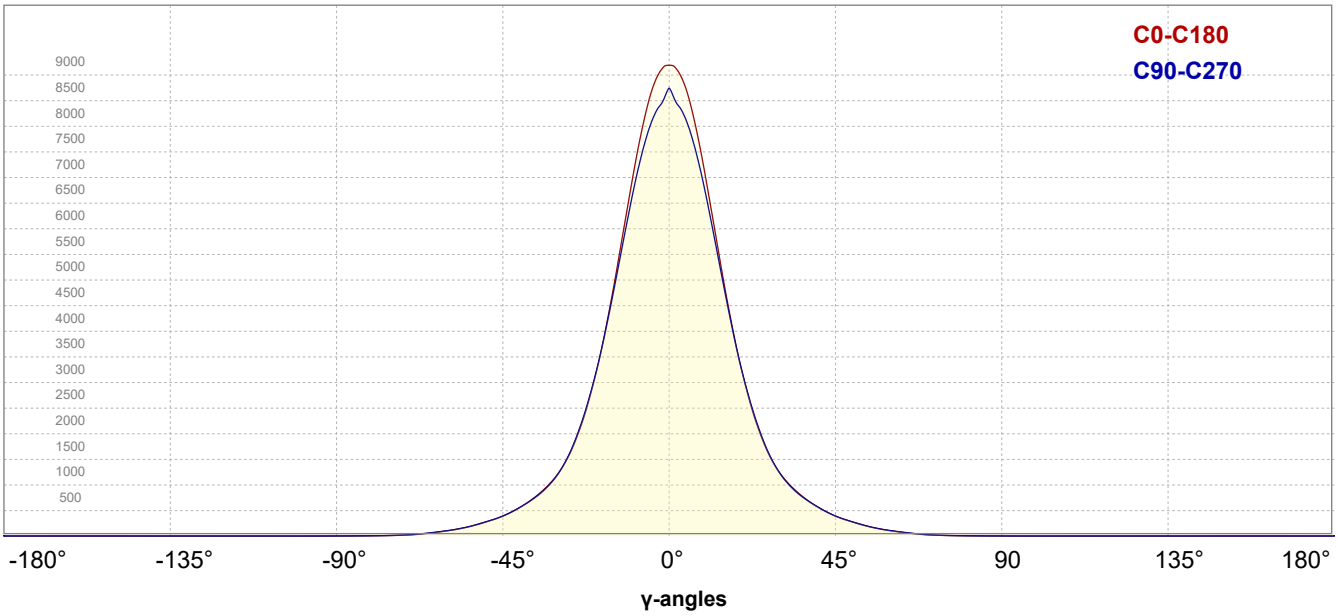
Directionality (DLS or NDLS)	DLS
Ecodesign Useful Luminous Flux	3650 lm
Ecodesign Energy Class	E

Intensity Ratio

In 120° cone	97,13%
In 90° cone	89,99%

Linear distribution diagram

Intensity [cd]

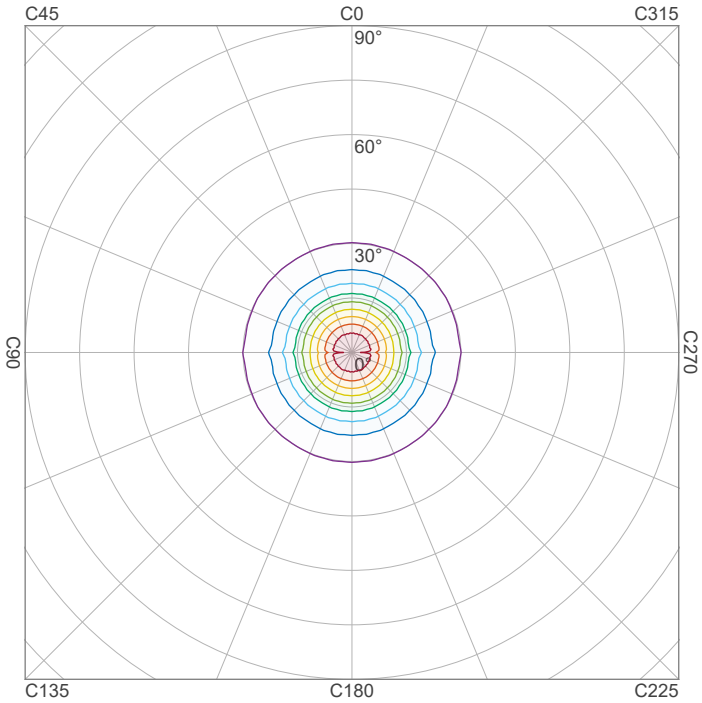


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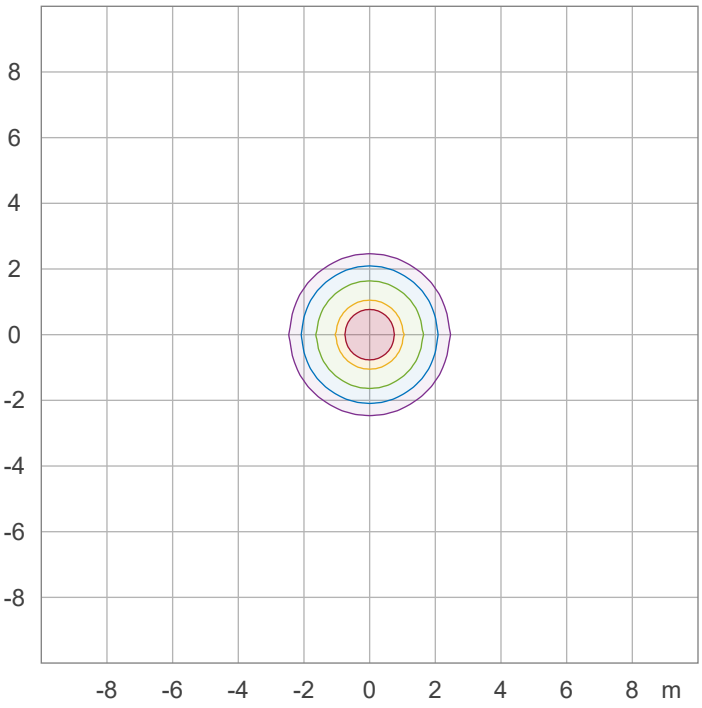
Iso-intensity Diagram (Iso-candela)



90 %	8395,6 cd
80 %	7462,8 cd
70 %	6529,9 cd
60 %	5597,1 cd
50 %	4664,2 cd
40 %	3731,4 cd
30 %	2798,5 cd
20 %	1865,7 cd
10 %	932,8 cd

Peak intensity: 9328,5 cd
Number of c-planes: 72

Iso-illuminance Diagram (Iso-lux)



50,0 %	518 lx
30,0 %	311 lx
10,0 %	104 lx
5,0 %	51,8 lx
3,0 %	31,1 lx

Peak illuminance: 1036 lx
Mounting height: 3 m
Number of c-planes: 72

Test report

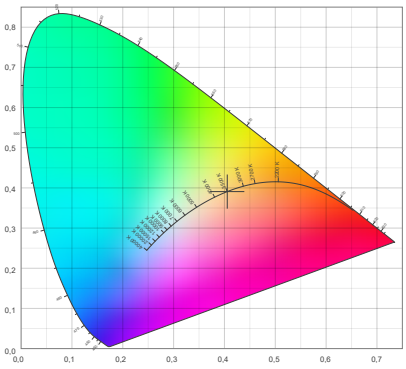
Light measurement results

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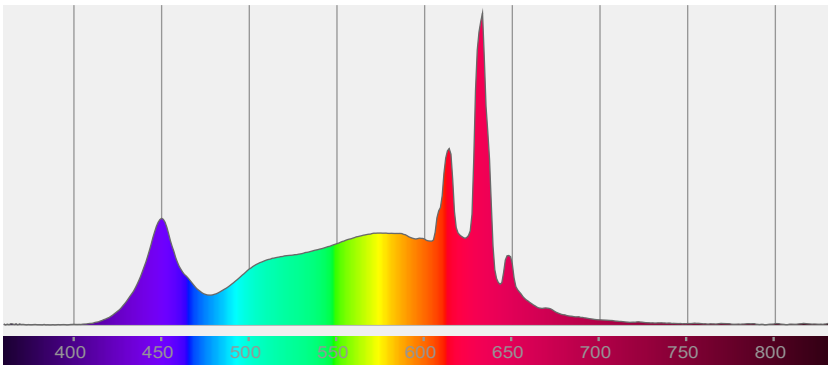
Color details

Correlated Color Temperature, Target	CCT = 3500 K	MacAdam Steps	SDCM = 6,7
Correlated Color Temperature, Measured	CCT = 3397 K	Color deviation from BBL	Duv = -0,0083
Color Rendering Index	CRI 95,6	Color coordinates CIE 1931	(x;y) = (0,4055;0,3908)
Color Rendering Index, R9 (red)	R9 = 90,0	Color coordinate CIEs 1960	(u;v) = (0,2358;0,3409)
Color Rendering TM30-18	Rf 91,2	Color coordinate CIEs 1976	(u';v') = (0,2358;0,5113)
	Rg 105,3	Color Quality Scale	CQS = 92,3

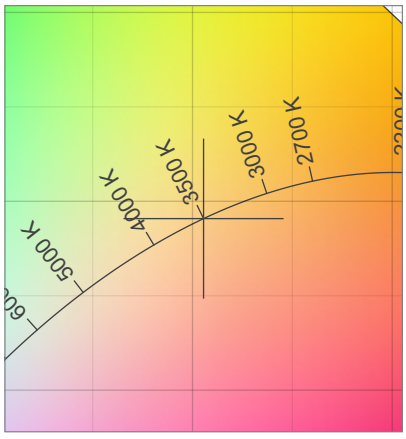
CIE 1931 Chromaticity diagram



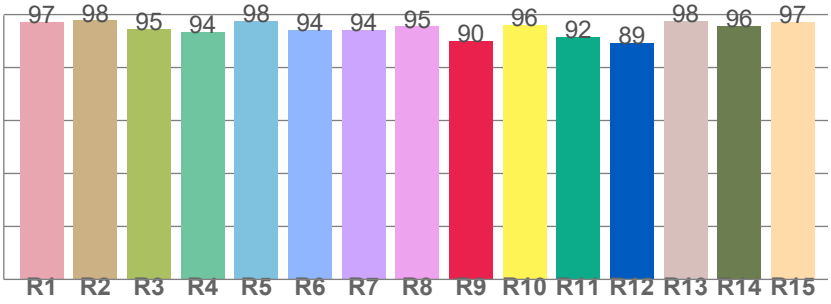
Spectral power distribution



CIE 1931 Chromaticity - zoomed



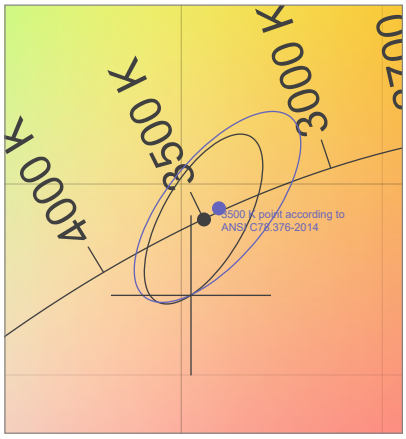
Color Rendering Index per reference color (CIE 1995)



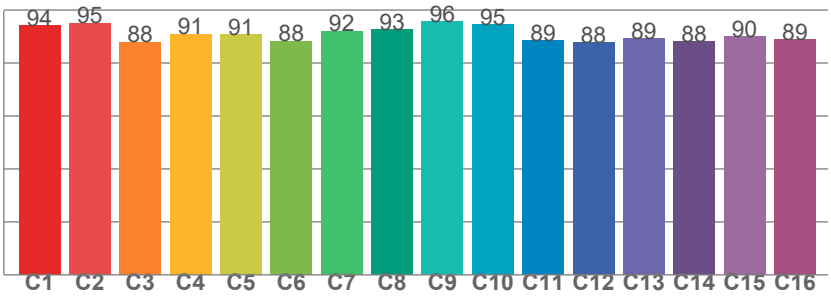
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
97,3	97,7	94,6	93,6	97,6	94,0	94,2	95,5	90,0	96,0	91,7	89,3	97,6	95,6	97,2

CIE 1931 Chromaticity - SDCM



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
94,1	95,1	87,9	91,0	90,9	88,3	92,1	92,6	95,6	94,6	88,5	87,9	89,2	88,1	89,9	89,0

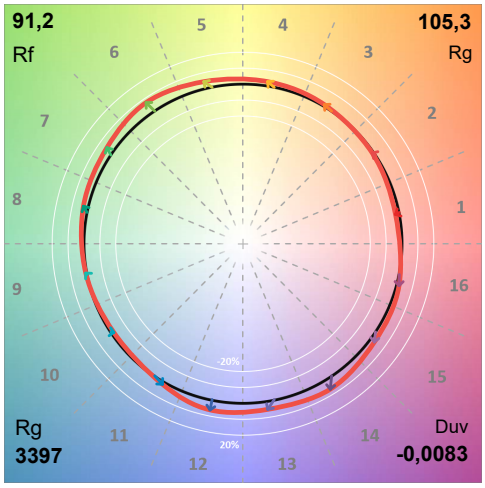
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Print date 03-11-2026

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

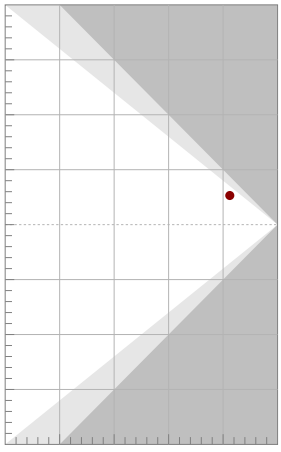
Color Vector Graphic



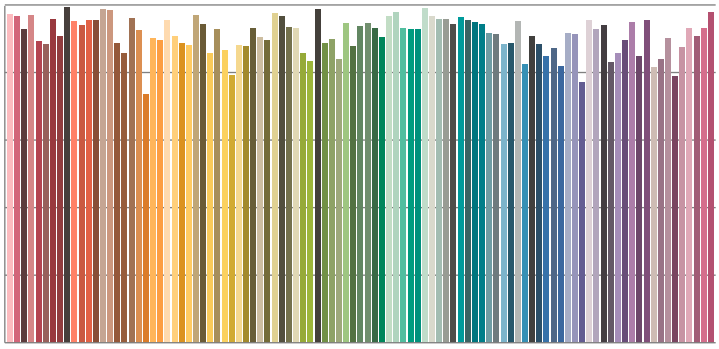
Color Distortion Graphic



Gamut Index vs. Fidelity Index

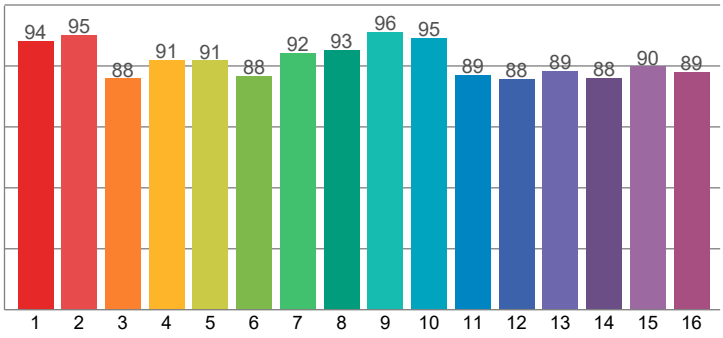


Color Rendition by Color Evaluation Sample (CES)

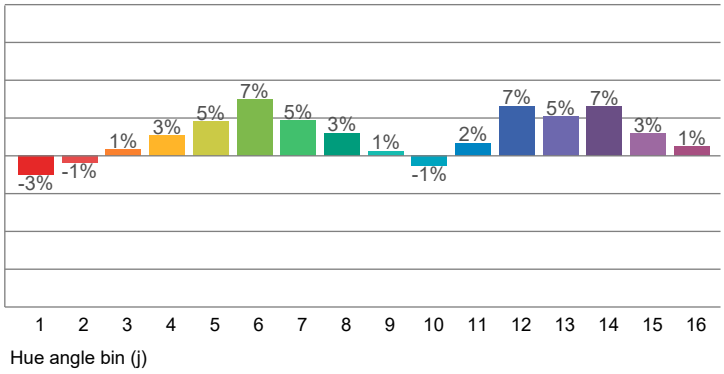


Color evaluation sample CES01 through CES99

Local Color Fidelity (per hue bin)



Local Chroma Shift (per hue bin)



CIE x	0,4055
CIE y	0,4055
CIE u'	0,2358
CIE v'	0,5113

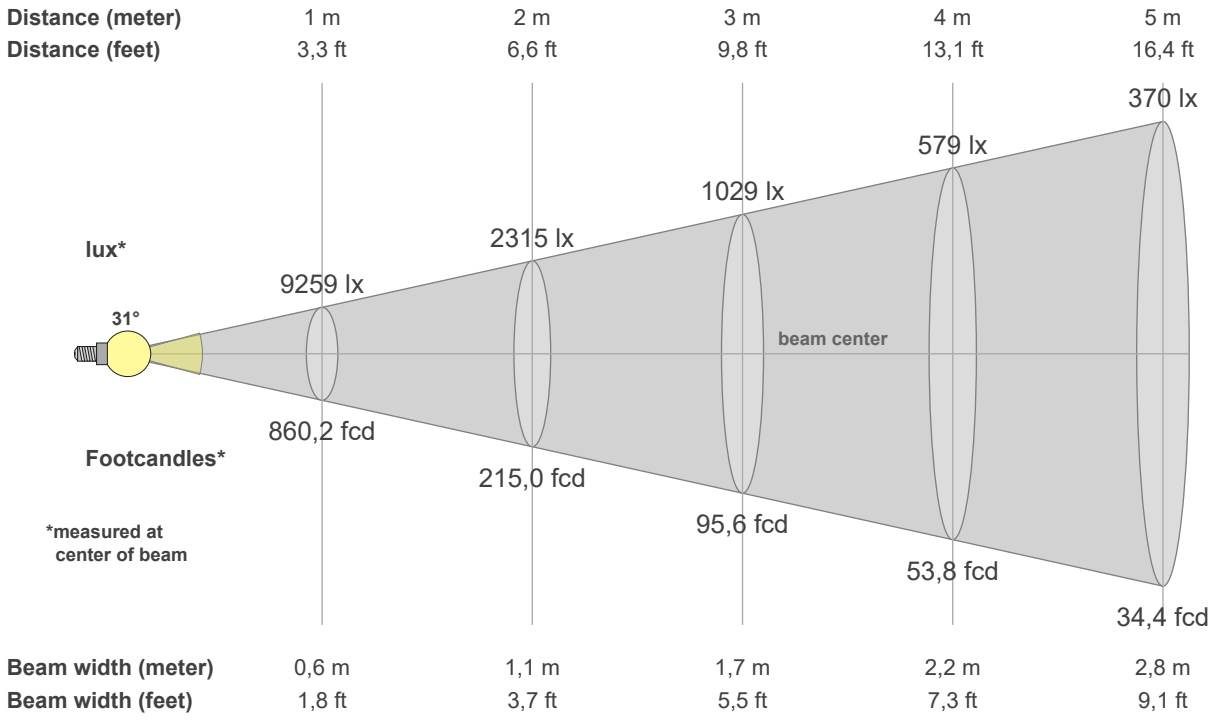
CIE	13.3-1995
Ra	95,6
R9	90,0

Test report

Light measurement results

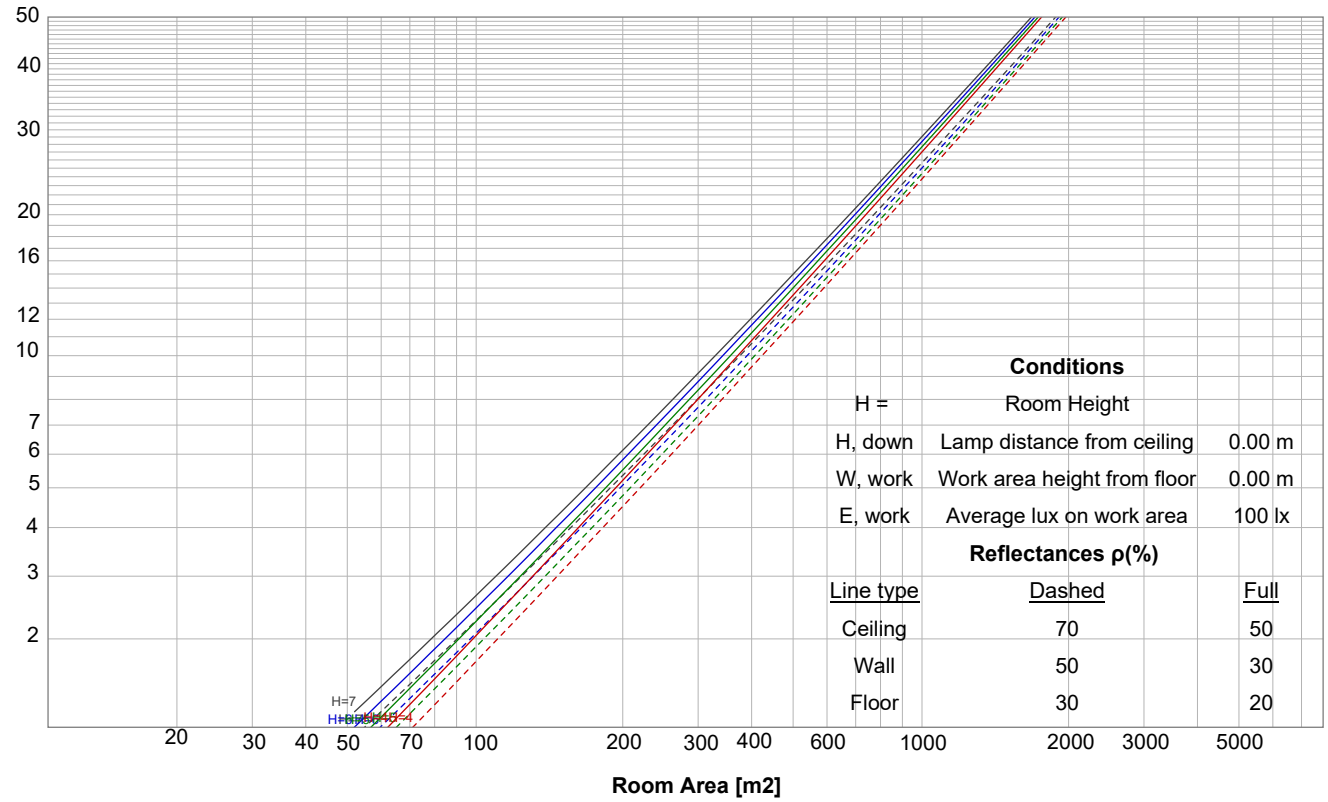
Print date 03-11-2026

Beam details



Luminaire budgetary diagram

LAMPS (number of lamps)



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
9259	2315	1029	579	370	257	189	145	114	93	77	64	55	47	41	36	32	29	26	23	lux
860,2	215	95,6	53,8	34,4	23,9	17,6	13,4	10,6	8,6	7,1	6	5,1	4,4	3,8	3,4	3	2,7	2,4	2,2	fc

Intensities in 0° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	γ
9259	9114	8839	8359	7711	6943	6116	5278	4483	3755	3123	2581	2125	1751	1457	1229	1051	906	782	674	cd
100%	98%	95%	90%	83%	75%	66%	57%	48%	41%	34%	28%	23%	19%	16%	13%	11%	10%	8%	7%	of 0°val

Intensities in 90° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	γ
9259	8454	8208	7815	7278	6627	5907	5163	4434	3747	3141	2616	2161	1777	1470	1226	1039	892	771	670	cd
100%	91%	89%	84%	79%	72%	64%	56%	48%	40%	34%	28%	23%	19%	16%	13%	11%	10%	8%	7%	of 0°val

Intensities in 180° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	γ
9259	9114	8839	8359	7711	6943	6116	5278	4483	3755	3123	2581	2125	1751	1457	1229	1051	906	782	674	cd
100%	98%	95%	90%	83%	75%	66%	57%	48%	41%	34%	28%	23%	19%	16%	13%	11%	10%	8%	7%	of 0°val

Intensities in 270° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	γ
9259	8454	8208	7815	7278	6627	5907	5163	4434	3747	3141	2616	2161	1777	1470	1226	1039	892	771	670	cd
100%	91%	89%	84%	79%	72%	64%	56%	48%	40%	34%	28%	23%	19%	16%	13%	11%	10%	8%	7%	of 0°val

UGR Table

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

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		**Viewed Crosswise**					**Viewed Endwise**				
H = mouting height above eye level		(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
X	**Y**										
2H	2H	25,7	26,3	25,8	26,6	26,8	25,6	26,2	25,7	26,4	26,6
	3H	25,6	26,4	26,0	26,6	26,8	25,5	26,2	25,8	26,4	26,6
	4H	25,6	26,3	26,0	26,5	26,8	25,4	26,2	25,8	26,4	26,6
	6H	25,6	26,2	25,9	26,5	26,9	25,5	26,1	25,8	26,4	26,7
	8H	25,6	26,2	25,9	26,5	26,9	25,4	26,0	25,8	26,3	26,7
	12H	25,5	26,1	25,9	26,5	26,9	25,4	26,0	25,8	26,3	26,8
4H	2H	25,6	26,3	26,0	26,5	26,8	25,4	26,1	25,8	26,4	26,6
	3H	25,7	26,3	26,1	26,6	27,1	25,6	26,1	25,9	26,5	26,9
	4H	25,6	26,1	26,0	26,6	27,1	25,5	26,0	25,9	26,4	27,0
	6H	25,6	26,2	26,1	26,5	26,9	25,5	26,0	26,0	26,4	26,7
	8H	25,6	26,1	26,1	26,4	26,8	25,4	26,0	26,0	26,3	26,7
	12H	25,5	25,9	26,1	26,4	26,8	25,4	25,8	25,9	26,2	26,7
8H	4H	25,5	26,0	26,0	26,4	26,8	25,4	25,9	25,9	26,2	26,6
	6H	25,5	25,9	26,0	26,3	26,9	25,4	25,8	25,9	26,2	26,8
	8H	25,6	25,9	26,1	26,4	27,0	25,5	25,7	26,0	26,3	26,9
	12H	25,6	25,8	26,2	26,3	26,9	25,5	25,7	26,1	26,2	26,8
12H	4H	25,5	25,9	26,0	26,3	26,7	25,3	25,7	25,8	26,1	26,6
	6H	25,5	25,8	26,1	26,3	27,0	25,4	25,7	25,9	26,2	26,9
	8H	25,5	25,8	26,1	26,3	26,9	25,4	25,6	26,0	26,2	26,8
Variations with the observer position for the luminaire spacings, S:											
S = 1.0H		1,7 / -1,9					1,6 / -1,8				
S = 1.5H		3,4 / -3,5					3,3 / -3,6				
S = 2.0H		5,1 / -5,4					4,9 / -5,6				

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	118,9	118,9	118,9	118,9	116,0	116,0	116,0	116,0	110,7	110,7	110,7	105,9	105,9	105,9	101,4	101,4	101,4	99,3
1	113,3	110,5	108,0	105,8	110,8	108,3	106,1	104,1	104,1	102,4	100,7	100,3	98,9	97,6	96,8	95,7	94,7	92,8
2	107,8	102,9	98,9	95,6	105,5	101,2	97,5	94,4	97,8	94,8	92,3	94,7	92,3	90,2	91,9	89,9	88,2	86,5
3	102,5	96,2	91,3	87,4	100,5	94,8	90,3	86,7	92,1	88,3	85,2	89,6	86,4	83,8	87,2	84,6	82,4	80,8
4	97,6	90,3	84,9	80,8	95,8	89,1	84,1	80,2	86,9	82,6	79,2	84,8	81,2	78,2	82,9	79,8	77,2	75,7
5	93,1	85,0	79,3	75,2	91,4	84,0	78,7	74,8	82,2	77,6	74,1	80,5	76,5	73,4	78,8	75,4	72,7	71,2
6	88,9	80,3	74,6	70,4	87,4	79,5	74,1	70,2	77,9	73,2	69,6	76,5	72,3	69,1	75,1	71,5	68,6	67,2
7	85,0	76,1	70,4	66,3	83,6	75,4	70,0	66,1	74,1	69,3	65,7	72,9	68,6	65,4	71,7	67,9	65,0	63,6
8	81,4	72,3	66,7	62,8	80,1	71,7	66,4	62,6	70,6	65,8	62,3	69,6	65,2	62,0	68,6	64,6	61,7	60,4
9	78,0	68,9	63,4	59,6	76,9	68,4	63,1	59,5	67,4	62,6	59,2	66,5	62,1	59,0	65,7	61,7	58,8	57,5
10	74,9	65,8	60,4	56,8	73,9	65,4	60,2	56,7	64,6	59,8	56,5	63,8	59,4	56,3	63,0	59,0	56,1	54,9

Test report

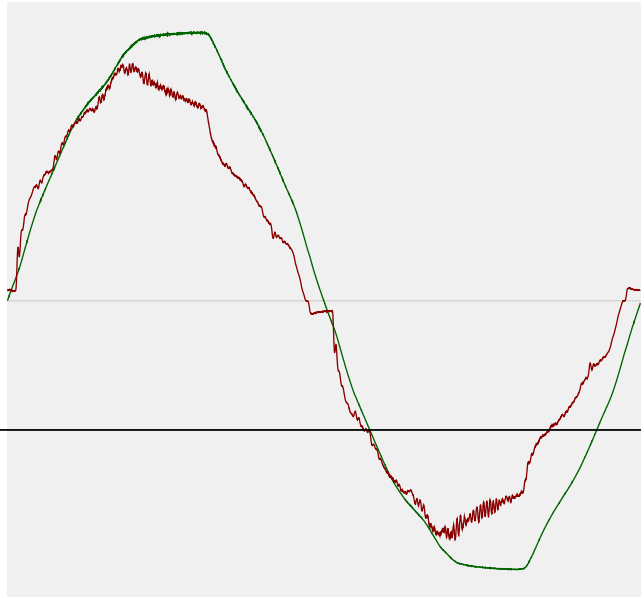
Light measurement results

Print date 03-11-2026

Power details

Input power	
Frequency of input power	50,0 Hz
Power feed to light source	32,89 W
RMS Input voltage feed V,RMS	227,7 V
RMS Input current feed I,RMS	0,15 A
Volt-Amp or apparent power = V,RMS*I,RMS	33,6 VA
Displacement factor of AC power feed	0,98
Power factor of AC current feed	0,98
Total harmonic distortion of the current	8,016%
Total harmonic distortion of the voltage	3,987%

Input power curve



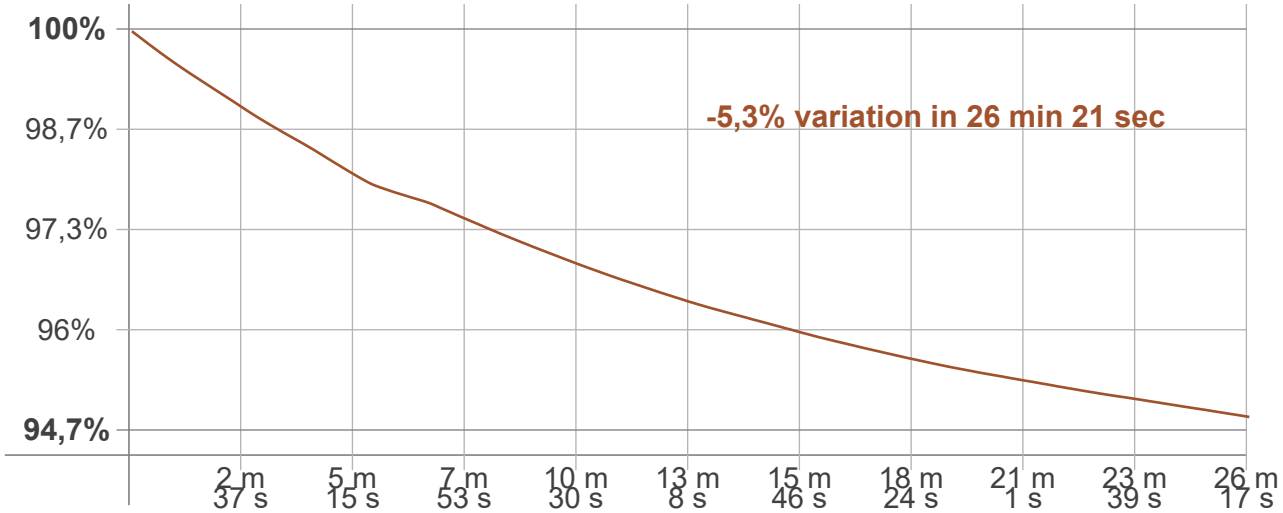
Efficiency

Radiated power efficiency	38,09
Lumen efficiency	123,3 lm/W

Stabilization details

Warmup Conditions		Color Temperature Change	
Stable period	15 min	CCT start	3612 K
Stable change max	2%	CCT shift	-112 K
Minimum time	15 min	CCT end	3500 K
Warmup Result		**Output Change**	
Total warmup time	Lamp stabilized in :	Output start	4282 lm
Warmup variation	-5,3381%	Output change	-226,5 lm
		Output end	4056 lm

Stabilization Curve



Flicker TLA details

Flicker Meter Type	Viso Systems LabFlicker
Frequency of input power	50,0 Hz
Flicker/TLA sample rate	20,0 samples/s

Measurement time

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

Flicker indices according to Illuminating Engineering Society (IES)

Flicker frequency	99,0 Hz
Percent Flicker	0,5675 %
Flicker index	0,0

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

PstLM value (F < 80 Hz)	0,04
SVM value (80 < F < 2000 Hz)	0,01

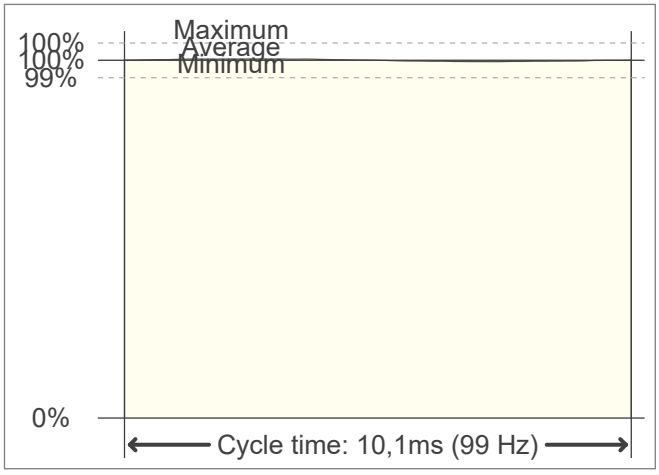
Flicker indices according to California Energy Commission (CEC) 2016b

JA8/10 40 Hz	0,0831 %
JA8/10 90 Hz	0,1401 %
JA8/10 200 Hz	0,5031 %
JA8/10 400 Hz	0,5125 %
JA8/10 1000 Hz	0,5705 %

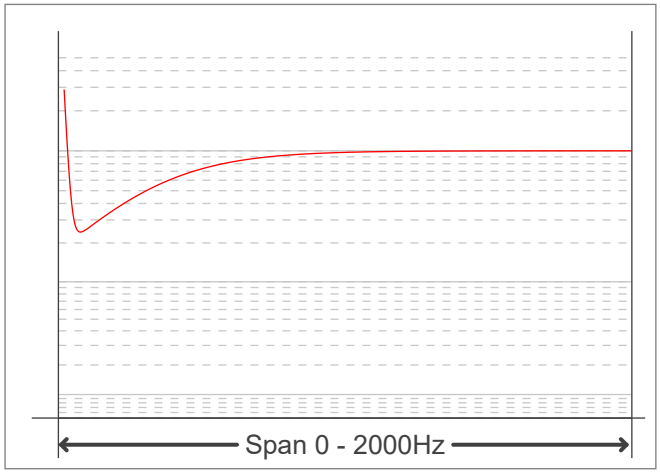
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp	0,03

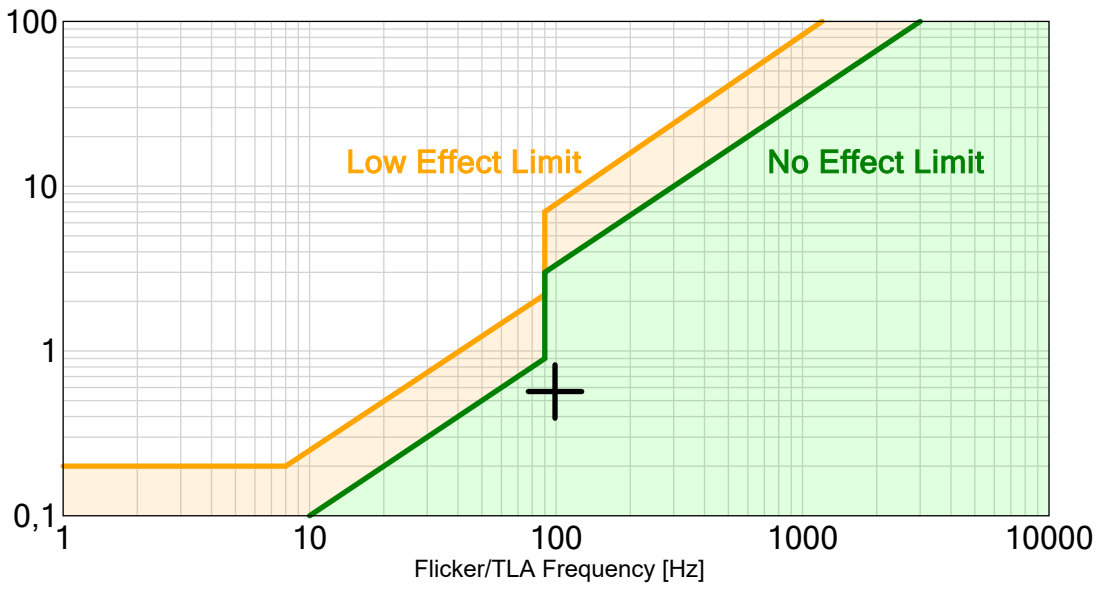
Flicker frame (frame of one flicker period in time domain)



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot



Modulation (=% flicker)