Test report

Light measurement results

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Laboratory and Equipment

Test lab	Viso LightSpion - Seriennummer: 1435906163 Sensorseriennumn
Spectrometer Manufacturer and Model	LightSpion – Type C, horizontal
Measurement date	26.06.2026

Measurement Conditions

Tested c-planes	2 planes – 180.00°
Tested gamma resolution	7.50°
Input Power	8.944 W
Input RMS Voltage and Current	24 V – 0.37 A

Tested Light Source

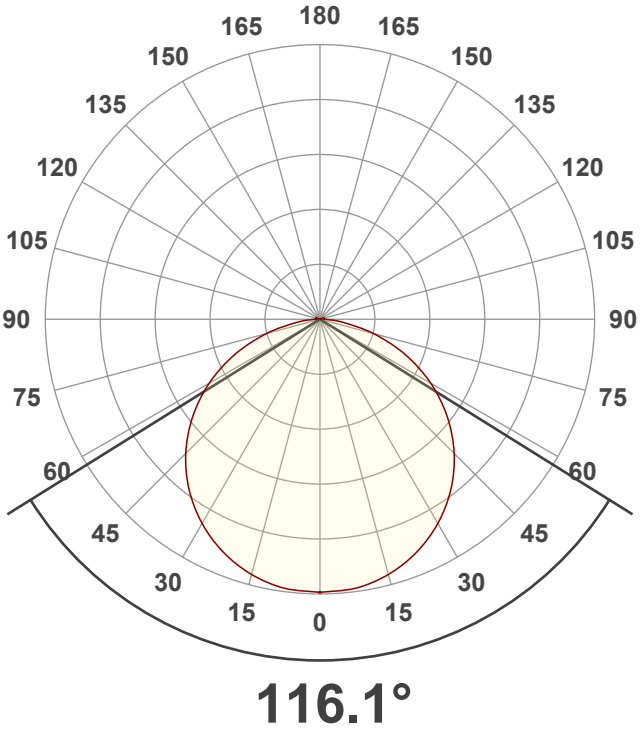
Luminaire	FLEX STRIP HPL-800 9W MONO WW 1m 260506
Item No.	AS08UL0906
Manufacturer	awLed by audiowerk GmbH
Measured length	1000mm
Dimension (Lamp w x h) | (Light w x h)	8mm x 1000mm | 3.5mm x 2.8mm
Description	Charge: 260506

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)	1539 lm – 1.251% / 98.75%
Efficiency	172.1 lm/W
Peak Intensity	509.8 cd
Correlated Color Temperature, CCT	3000 K
Color Rendering Index	CRI 92.9
Ecodesign Energy Class	D

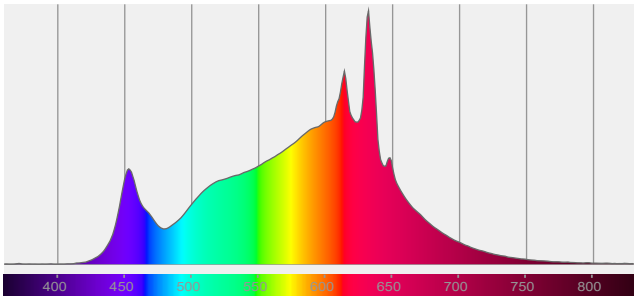
Polar light distribution diagram

Unit: 0-100% of peak intensity



Product photo

Spectral power distribution



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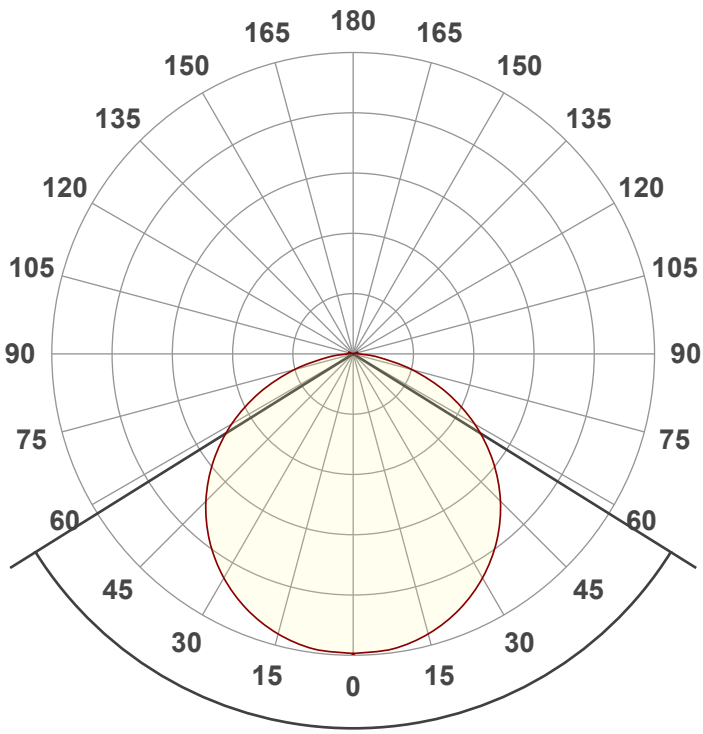
Luminous Intensity diagram

Unit: 0-100% of peak intensity



C0-C180
C90-C270

116.1°

Main Values

Output (total Lumen)	1539 lm
Lumen Up% / Down%	1.251% / 98.75%
Peak Intensity	509.8 cd
Beam Angle (50%-FWHM)	116.1°

EU Ecodesign parameters

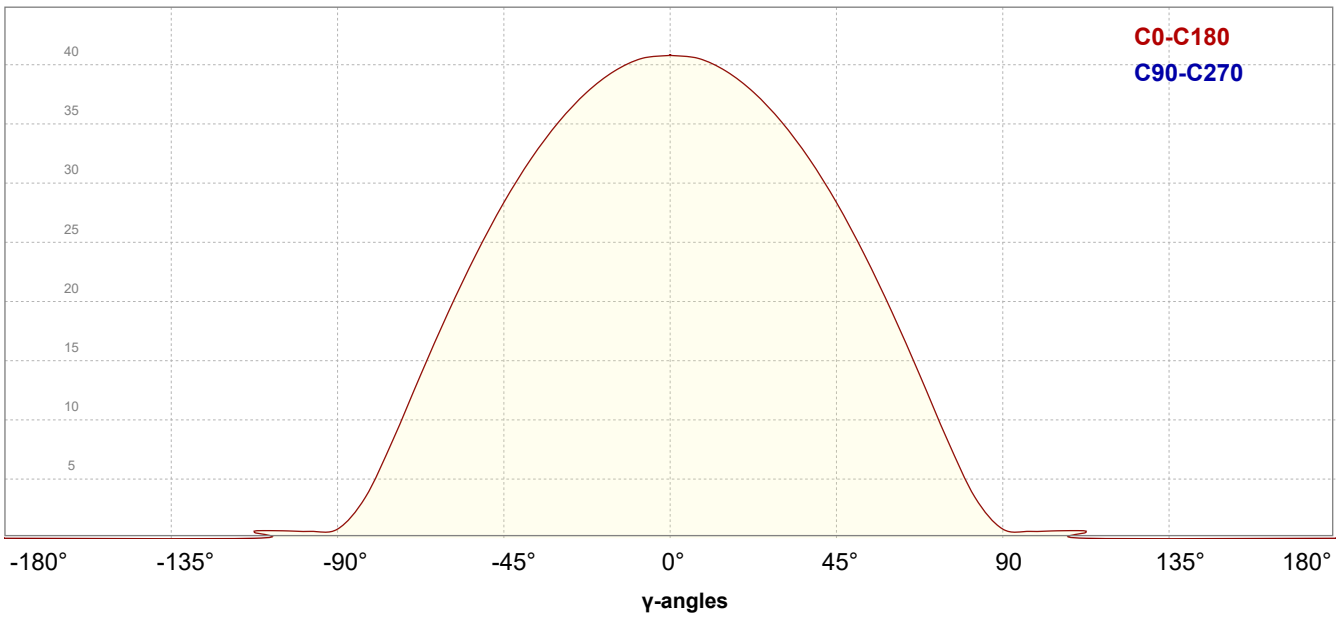
Directionality (DLS or NDLS)	NDLS
Ecodesign Useful Luminous Flux	1539 lm
Ecodesign Energy Class	D

Intensity Ratio

In 120° cone	76.72%
In 90° cone	51.69%

Linear distribution diagram

Intensity [cd]



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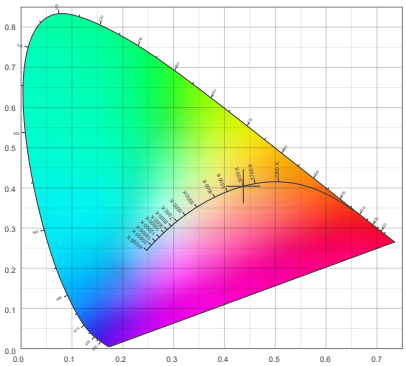
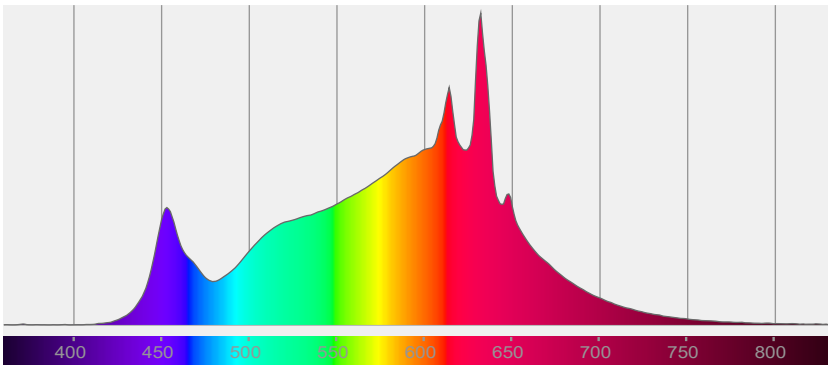
Color details

Correlated Color Temperature, Target	CCT = 3000 K	MacAdam Steps	SDCM = 1.5
Correlated Color Temperature, Measured	CCT = 3022 K	Color deviation from BBL	Duv = -0.0011
Color Rendering Index	CRI 92.9	Color coordinates CIE 1931	(x;y) = (0.4372;0.4042)
Color Rendering Index, R9 (red)	R9 = 53.0	Color coordinate CIEs 1960	(u;v) = (0.2507;0.3476)
Color Rendering TM30-18	Rf 90.6	Color coordinate CIEs 1976	(u';v') = (0.2507;0.5215)
	Rg 98.7	Color Quality Scale	CQS = 90.4

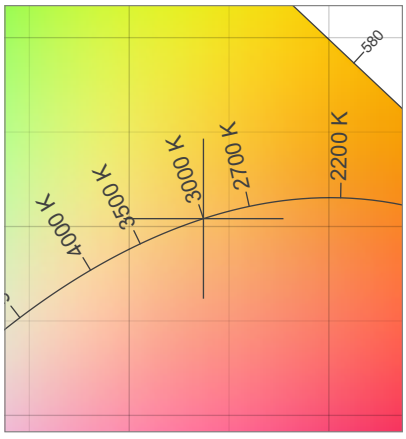
CIE 1931 Chromaticity diagram



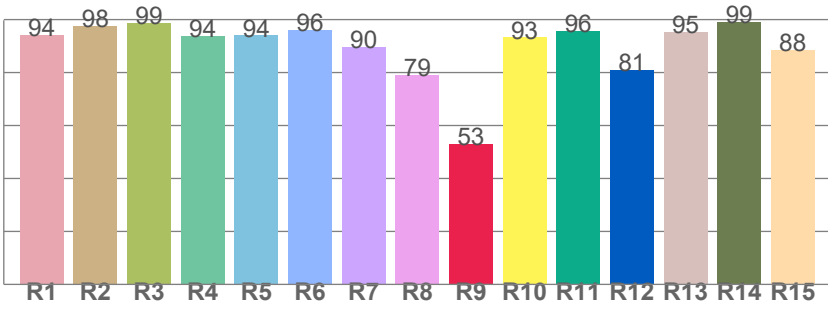
Spectral power distribution



CIE 1931 Chromaticity - zoomed



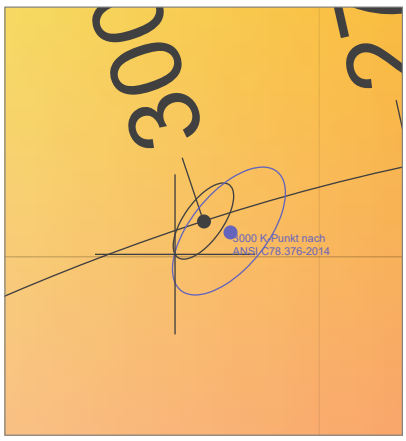
Color Rendering Index per reference color (CIE 1995)



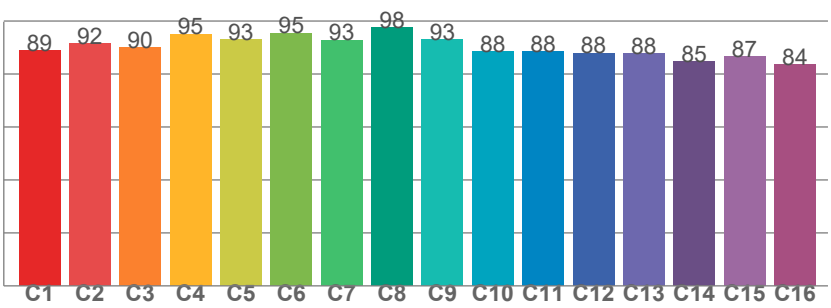
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
94.1	97.6	98.5	93.8	94.0	96.0	89.8	79.0	53.0	93.2	95.8	81.1	95.2	99.0	88.4

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
89.0	91.5	90.1	95.1	93.0	95.5	92.8	97.6	93.2	88.4	88.4	88.0	87.8	84.9	86.7	83.5

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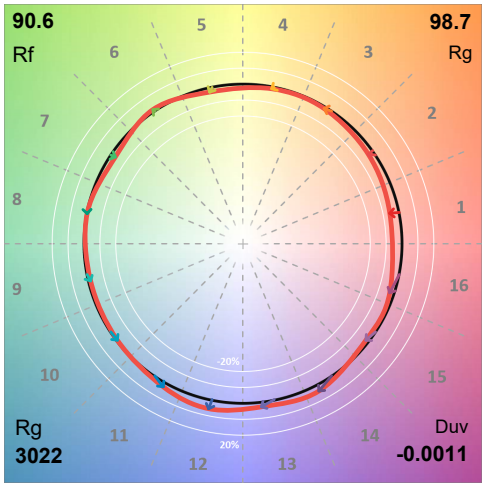
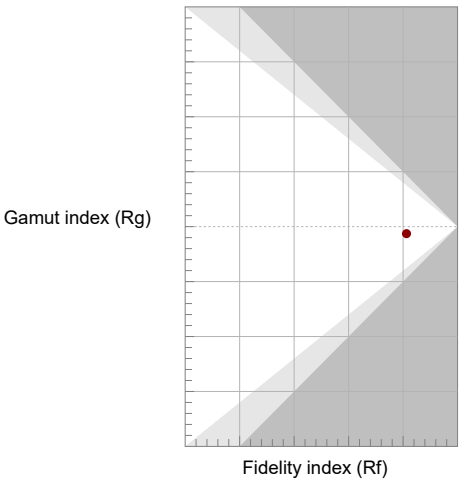
Color details - ANSI/IES TM-30-18 Color Rendition Report

Color Vector Graphic

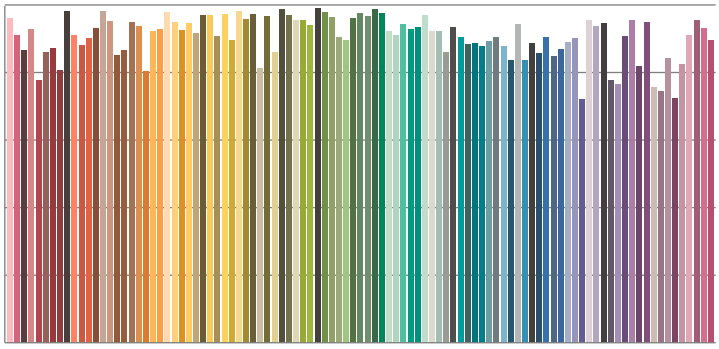


Color Distortion Graphic

Gamut Index vs. Fidelity Index

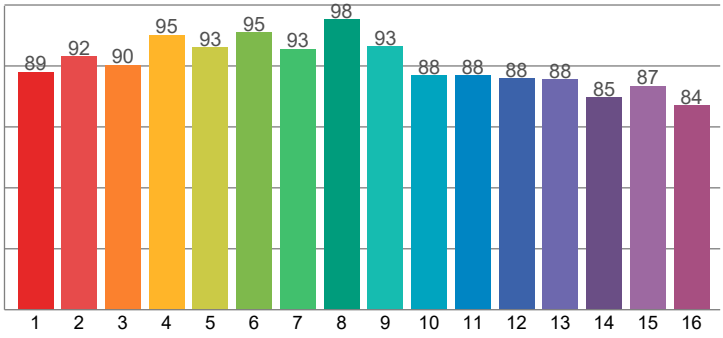


Color Rendition by Color Evaluation Sample (CES)

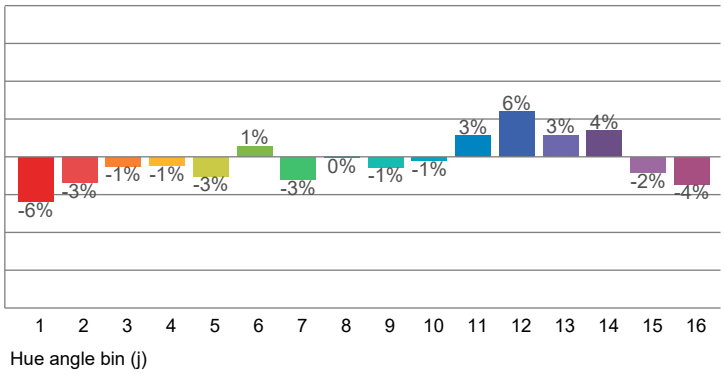


Color evaluation sample CES01 through CES99

Local Color Fidelity (per hue bin)



Local Chroma Shift (per hue bin)



CIE x	0.4372
CIE y	0.4042
CIE u'	0.2507
CIE v'	0.5215

CIE	13.3-1995
Ra	92.9
R9	53.0

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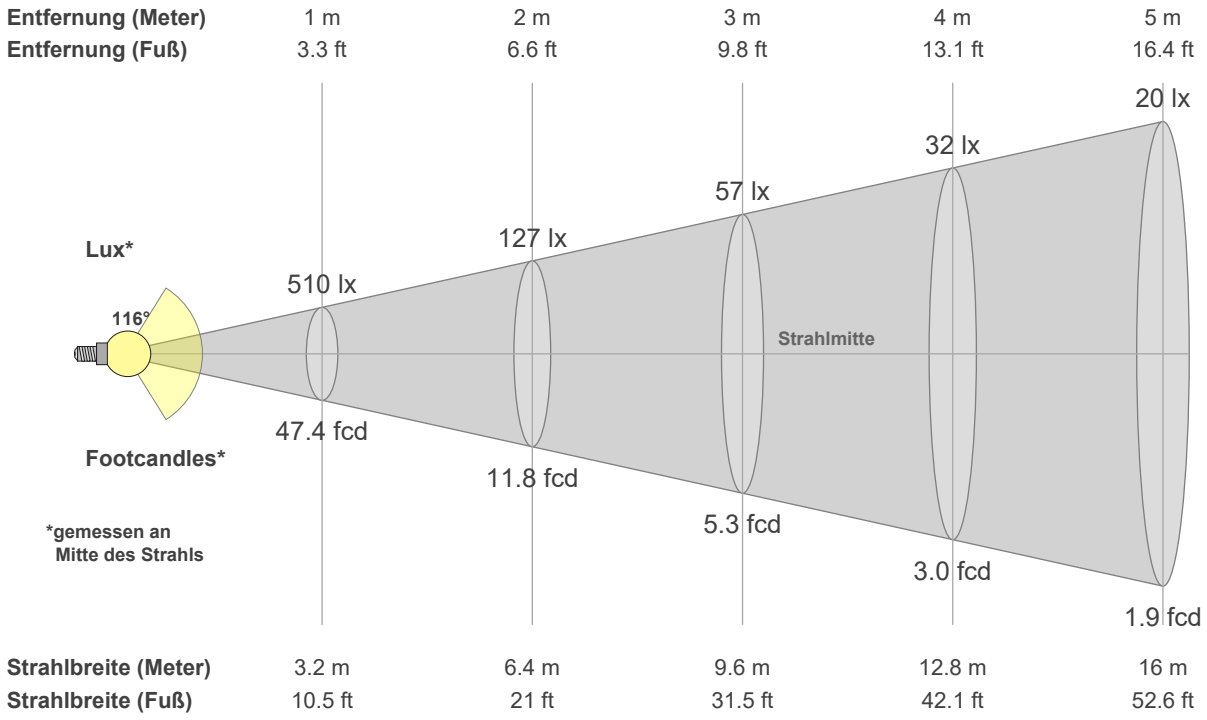
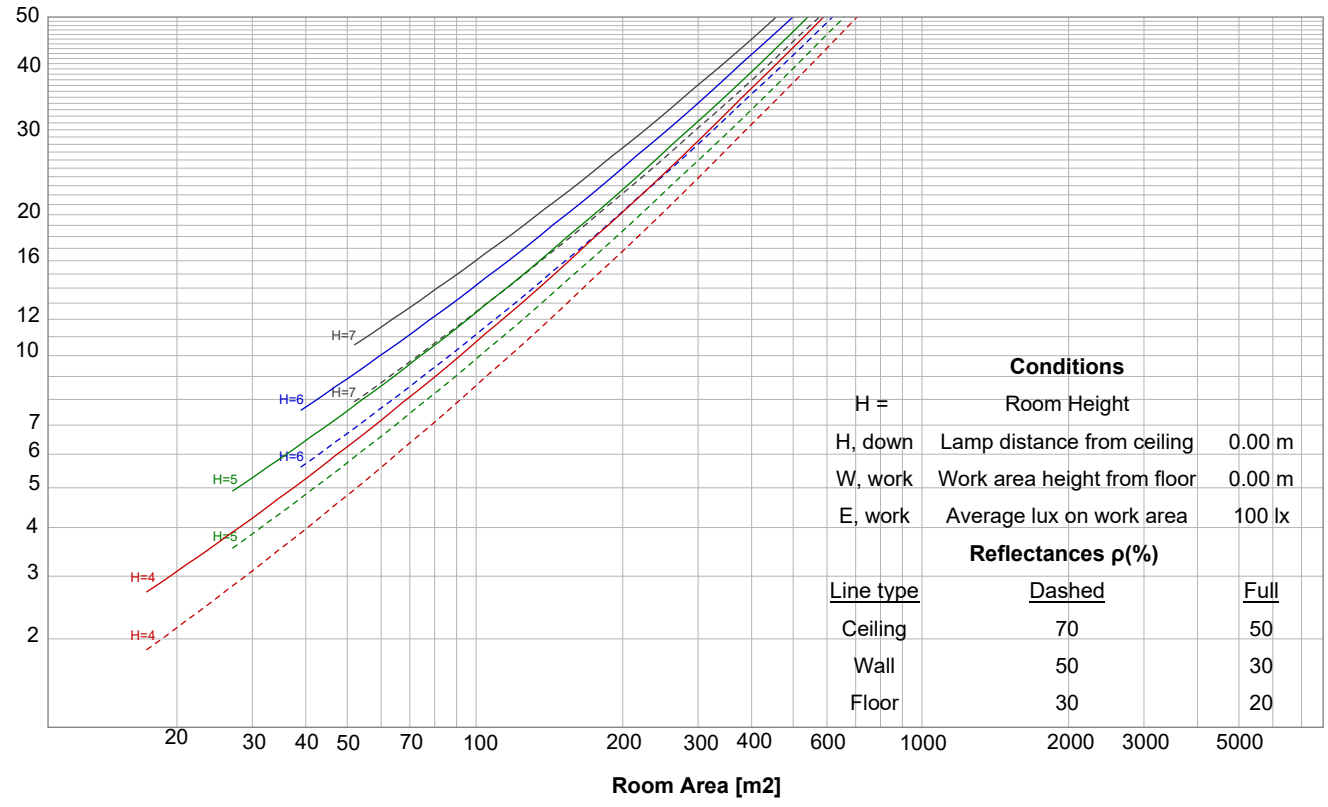
Beam details



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
510	127	57	32	20	14	10	8	6	5	4	4	3	3	2	2	2	2	1	1	lux
47.4	11.8	5.3	3	1.9	1.3	1	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	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
510	508	502	493	479	461	440	414	386	354	318	280	239	195	150	104	63	32	10	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	62%	55%	47%	38%	29%	20%	12%	6%	2%	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
510	508	502	493	479	461	440	414	386	354	318	280	239	195	150	104	63	32	10	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	62%	55%	47%	38%	29%	20%	12%	6%	2%	2%	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
510	508	502	493	479	461	440	414	386	354	318	280	239	195	150	104	63	32	10	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	62%	55%	47%	38%	29%	20%	12%	6%	2%	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
510	508	502	493	479	461	440	414	386	354	318	280	239	195	150	104	63	32	10	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	62%	55%	47%	38%	29%	20%	12%	6%	2%	2%	of 0°val

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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	27.2	28.4	27.5	28.8	29.0	28.7	29.9	29.0	30.3	30.5
	3H	28.3	29.6	28.7	29.9	30.1	30.2	31.5	30.7	31.8	32.0
	4H	28.7	29.9	29.1	30.2	30.5	30.9	32.1	31.3	32.4	32.6
	6H	29.0	30.0	29.3	30.3	30.7	31.4	32.4	31.7	32.7	33.1
	8H	29.0	30.0	29.4	30.3	30.8	31.5	32.5	31.9	32.9	33.3
	12H	29.0	30.0	29.4	30.3	30.8	31.6	32.6	32.0	33.0	33.4
4H	2H	27.8	29.0	28.3	29.3	29.6	29.0	30.2	29.5	30.5	30.8
	3H	29.2	30.2	29.6	30.5	31.0	30.8	31.8	31.2	32.1	32.6
	4H	29.6	30.5	30.0	30.9	31.5	31.4	32.4	31.9	32.8	33.3
	6H	29.9	30.7	30.4	31.1	31.5	32.0	32.9	32.5	33.2	33.6
	8H	29.9	30.7	30.5	31.1	31.5	32.1	32.9	32.7	33.3	33.8
	12H	30.0	30.6	30.5	31.1	31.6	32.3	33.0	32.8	33.4	33.9
8H	4H	29.8	30.6	30.3	31.0	31.4	31.5	32.3	32.0	32.7	33.1
	6H	30.2	30.8	30.7	31.3	31.9	32.1	32.8	32.7	33.3	33.8
	8H	30.3	30.9	30.9	31.4	32.1	32.4	32.9	32.9	33.5	34.1
	12H	30.4	30.9	31.0	31.4	32.0	32.6	33.0	33.2	33.6	34.2
12H	4H	29.8	30.5	30.3	30.9	31.4	31.5	32.2	32.0	32.6	33.1
	6H	30.3	30.8	30.8	31.4	32.0	32.2	32.7	32.7	33.3	33.9
	8H	30.4	30.9	31.0	31.4	32.0	32.4	32.9	33.0	33.4	34.0

Variations with the observer position for the luminaire spacings, S:		
S = 1.0H	0.1 / -0.2	0.1 / -0.1
S = 1.5H	0.3 / -0.5	0.4 / -0.4
S = 2.0H	0.6 / -0.9	0.9 / -1.0

UGR-Daten konnten aufgrund fehlender/falscher Symmetrie nicht berechnet werden. Gehen Sie zu Bearbeiten -> Photometrisch -> Korrekturen und wählen Sie Asymmetrie korrigieren (UGR für asymmetrische Verteilungen nicht definiert)..

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	118.7	118.7	118.7	118.7	115.8	115.8	115.8	115.8	110.4	110.4	110.4	105.5	105.5	105.5	100.9	100.9	100.9	98.7
1	108.2	103.3	98.9	94.9	105.3	100.9	96.9	93.3	96.4	93.1	90.1	92.2	89.6	87.1	88.4	86.3	84.3	82.1
2	98.2	89.7	82.8	76.9	95.4	87.7	81.3	75.9	84.0	78.6	73.9	80.5	76.0	72.0	77.3	73.5	70.2	68.0
3	89.3	78.6	70.3	63.6	86.7	76.9	69.2	63.0	73.7	67.1	61.7	70.8	65.2	60.4	68.0	63.3	59.2	57.0
4	81.7	69.5	60.5	53.7	79.2	68.0	59.7	53.3	65.3	58.1	52.4	62.8	56.6	51.5	60.5	55.1	50.7	48.4
5	75.0	61.9	52.8	46.1	72.8	60.7	52.2	45.8	58.5	50.9	45.1	56.3	49.7	44.5	54.3	48.6	43.9	41.7
6	69.2	55.7	46.6	40.1	67.2	54.7	46.1	39.9	52.7	45.1	39.4	50.9	44.1	38.9	49.2	43.2	38.5	36.4
7	64.1	50.4	41.5	35.3	62.3	49.5	41.1	35.1	47.9	40.3	34.8	46.3	39.5	34.4	44.8	38.7	34.1	32.1
8	59.6	45.9	37.3	31.4	58.0	45.2	37.0	31.3	43.8	36.3	31.0	42.4	35.7	30.7	41.1	35.0	30.5	28.5
9	55.7	42.1	33.8	28.2	54.2	41.5	33.5	28.1	40.2	33.0	27.9	39.1	32.4	27.7	37.9	31.9	27.5	25.6
10	52.2	38.8	30.9	25.5	50.8	38.3	30.6	25.5	37.2	30.1	25.3	36.2	29.7	25.1	35.2	29.2	24.9	23.1

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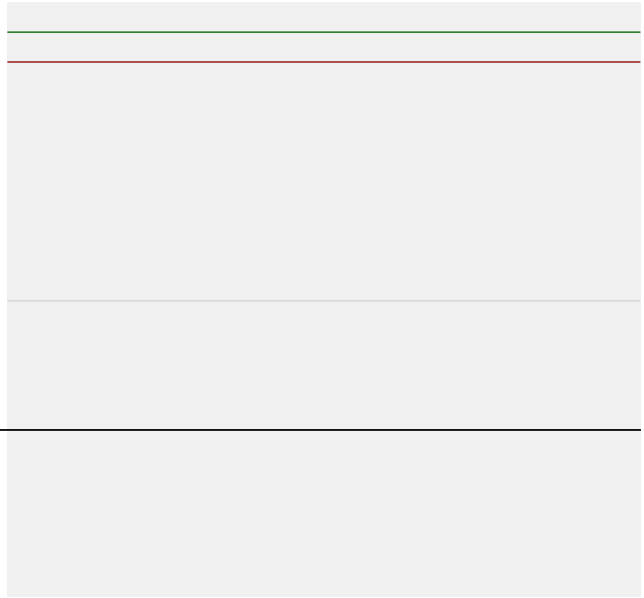
Power details

Input power	
Frequency of input power	0.0 Hz
Power feed to light source	8.944 W
RMS Input voltage feed V,RMS	24 V
RMS Input current feed I,RMS	0.37 A
Volt-Amp or apparent power = V,RMS*I,RMS	8.9 VA
Displacement factor of AC power feed	0.00
Power factor of AC current feed	1.00
Total harmonic distortion of the current	0%
Total harmonic distortion of the voltage	0%

Input power curve



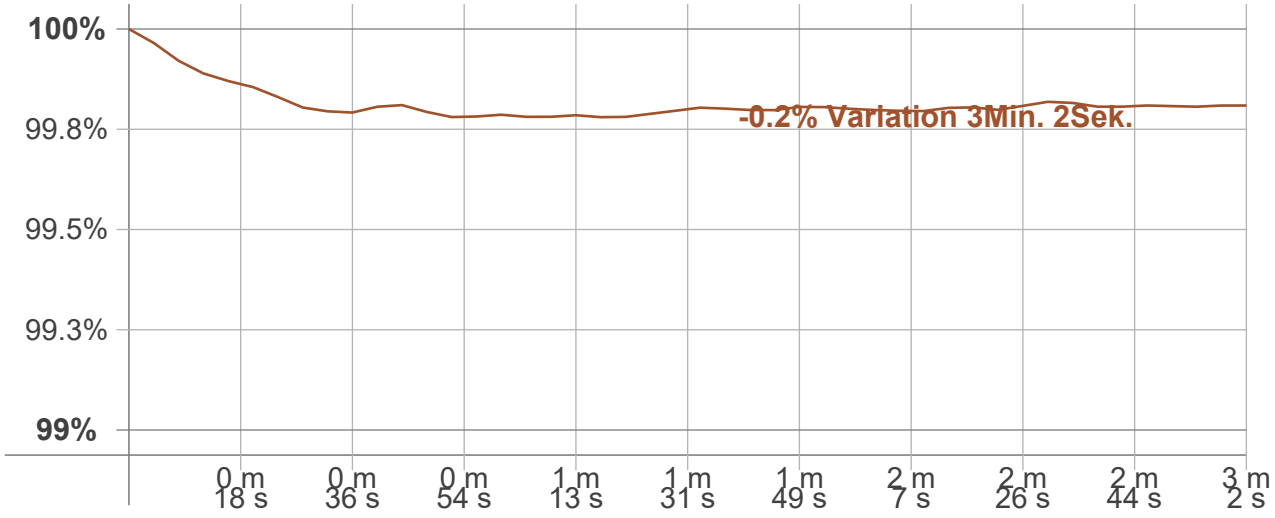
Efficiency

Radiated power efficiency	53.41
Lumen efficiency	172.1 lm/W

Stabilization details

Warmup Conditions		Color Temperature Change	
Stable period	3 Min	CCT start	3001 K
Stable change max	5%	CCT shift	-1 K
Minimum time	3 Min	CCT end	3000 K
Warmup Result		**Output Change**	
Total warmup time	Lampe stabilisiert i	Output start	1542 lm
Warmup variation	-0.243%	Output change	-2.1941 lm
		Output end	1539 lm

Stabilization Curve



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Flicker TLA details

Flicker Meter Type	Viso Systems LabFlicker
Frequency of input power	0.0 Hz
Flicker/TLA sample rate	NaN samples/s

Measurement time

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

Flicker indices according to Illuminating Engineering Society (IES)

Flicker frequency	NaN Hz
Percent Flicker	NaN %
Flicker index	NaN

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

PstLM value (F < 80 Hz)	NaN
SVM value (80 < F < 2000 Hz)	NaN

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

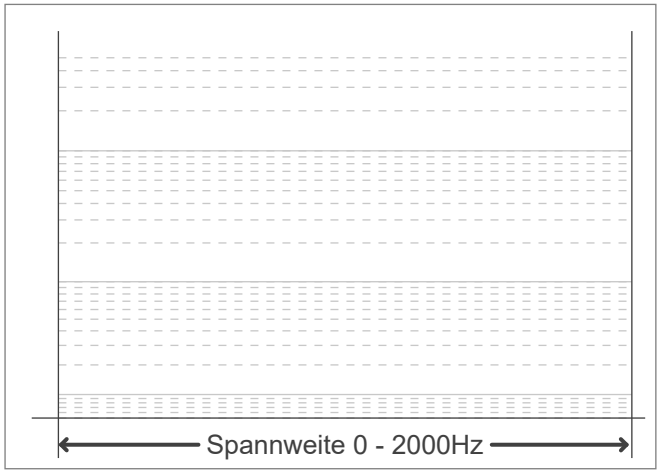
JA8/10 40 Hz	NaN %
JA8/10 90 Hz	NaN %
JA8/10 200 Hz	NaN %
JA8/10 400 Hz	NaN %
JA8/10 1000 Hz	NaN %

Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp	NaN

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

Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot