

Test report

Light measurement results

Laboratory and Equipment

Test lab
Spectrometer Manufacturer and Model
Measurement date

Viso LightSpion - Seriennummer: 1435906163 Sensorseriennumm
LightSpion – Type C, horizontal
26.06.2026

Measurement Conditions

Tested c-planes
Tested gamma resolution
Input Power
Input RMS Voltage and Current

2 planes – 180.00°
7.50°
9.02 W
24 V – 0.38 A

Tested Light Source

Luminaire
Item No.
Manufacturer
Measured length
Dimension (Lamp w x h) | (Light w x h)
Description

FLEX STRIP HPL-800 9W MONO NW 1m 260506
AS08UL0908
awLed by audiowerk GmbH
1000mm
8mm x 1000mm | 3.5mm x 2.8mm
Charge: 260506

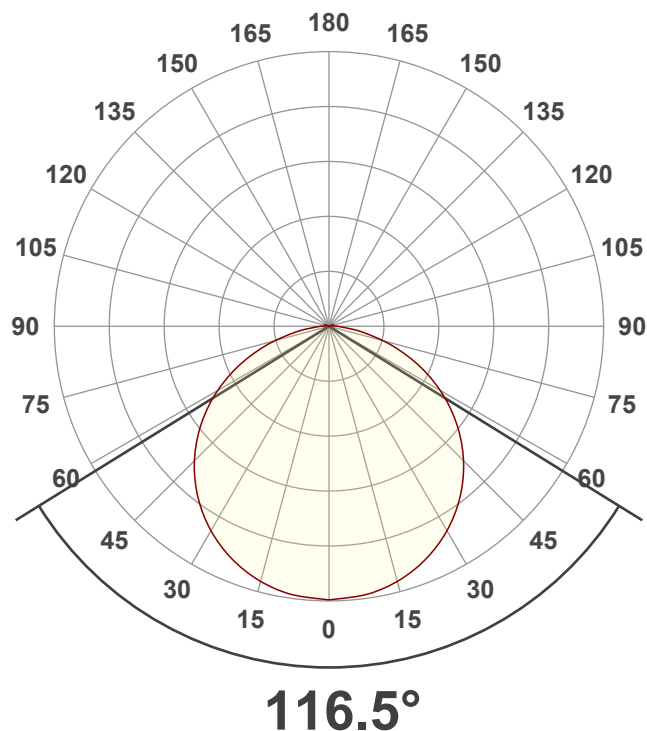
Main Light Measurement Results

Output – Total Lumen (Up% / Down%)
Efficiency
Peak Intensity
Correlated Color Temperature, CCT
Color Rendering Index
Ecodesign Energy Class

1638 lm – 1.265% / 98.74%
181.6 lm/W
539.1 cd
4000 K
CRI 95.0
C

Polar light distribution diagram

Unit: 0-100% of peak intensity



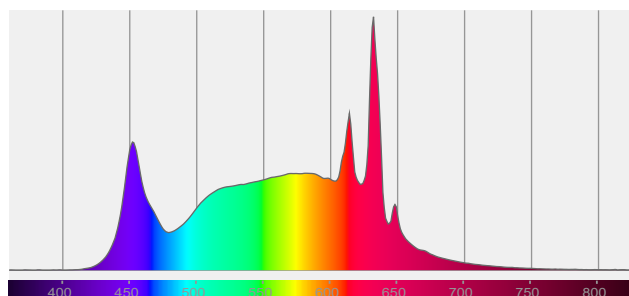
— C0 - C180
— C90 - C270

$\eta = 100\%$

Product photo



Spectral power distribution

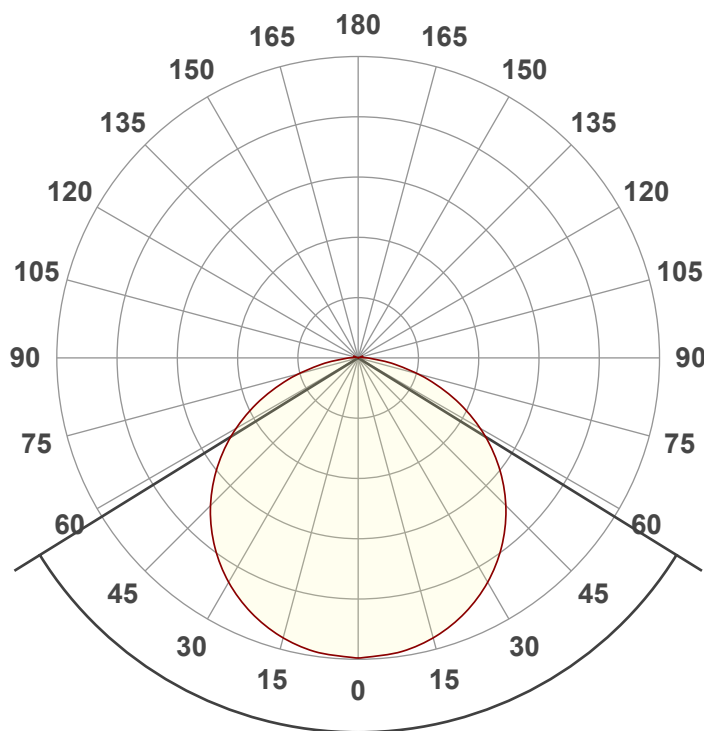


Test report

Light measurement results

Luminous Intensity diagram

Unit: 0-100% of peak intensity



C0-C180
C90-C270

116.5°

Main Values

Output (total Lumen)	1638 lm
Lumen Up% / Down%	1.265% / 98.74%
Peak Intensity	539.1 cd
Beam Angle (50%-FWHM)	116.5°

EU Ecodesign parameters

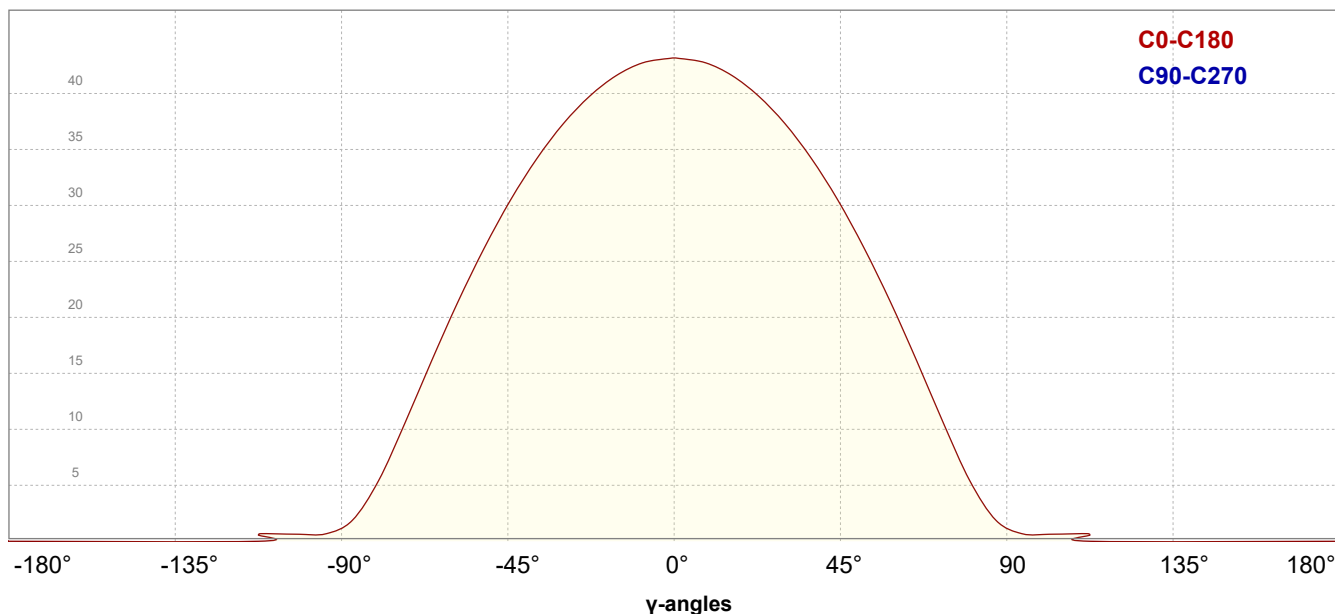
Directionality (DLS or NDLS)	NDLS
Ecodesign Useful Luminous Flux	1638 lm
Ecodesign Energy Class	C

Intensity Ratio

In 120° cone	76.46%
In 90° cone	51.44%

Linear distribution diagram

Intensity [cd]



C0-C180
C90-C270

Test report

Light measurement results

Color details

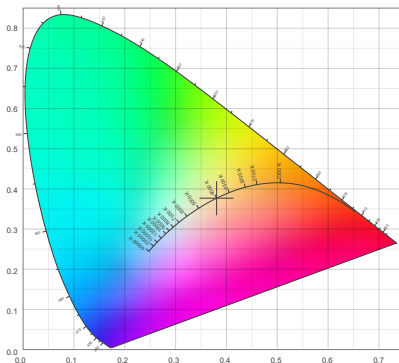
Correlated Color Temperature, Target
Correlated Color Temperature, Measured
Color Rendering Index
Color Rendering Index, R9 (red)
Color Rendering TM30-18

CCT = 4000 K
CCT = 3900 K
CRI 95.0
R9 = 74.1
Rf 90.8
Rg 99.5

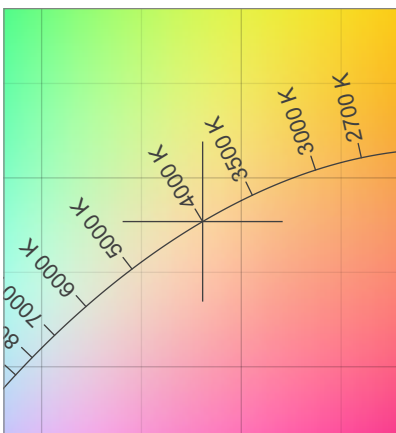
MacAdam Steps
Color deviation from BBL
Color coordinates CIE 1931
Color coordinate CIEs 1960
Color coordinate CIEs 1976
Color Quality Scale

SDCM = 2.3
Duv = 0.0001
(x;y) = (0.3806;0.3769)
(u;v) = (0.2252;0.3344)
(u';v') = (0.2252;0.5017)
CQS = 93.0

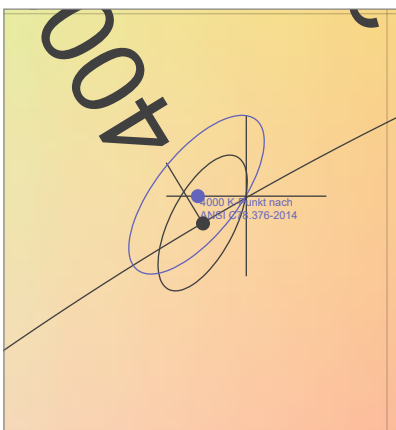
CIE 1931 Chromaticity diagram



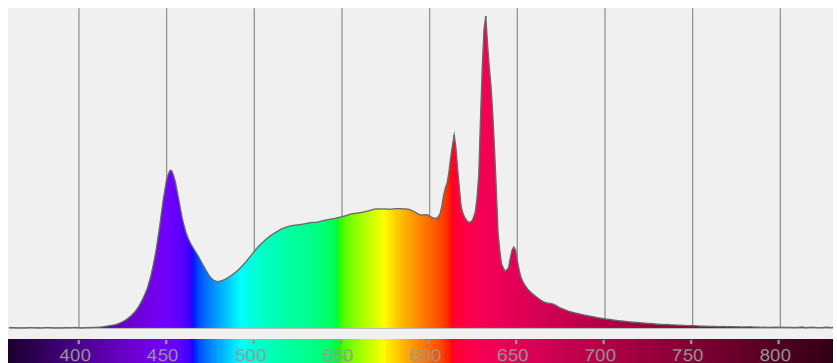
CIE 1931 Chromaticity - zoomed



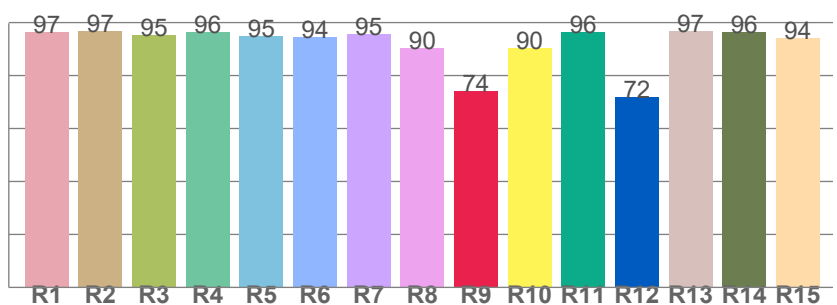
CIE 1931 Chromaticity - SDCM



Spectral power distribution



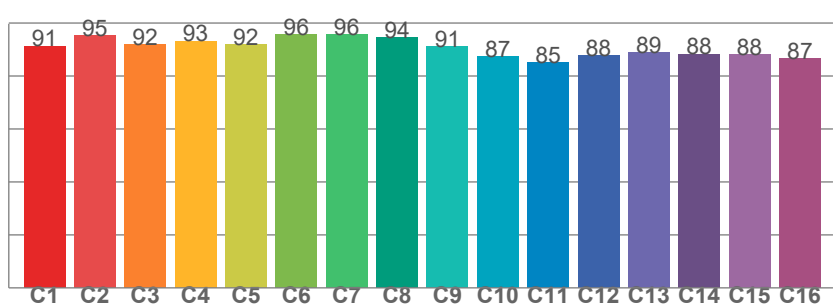
Color Rendering Index per reference color (CIE 1995)



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
96.6	96.8	95.1	96.4	95.1	94.5	95.5	90.3	74.1	90.4	96.2	71.9	96.6	96.3	94.0

TM30-18 Rf-values per hue bin

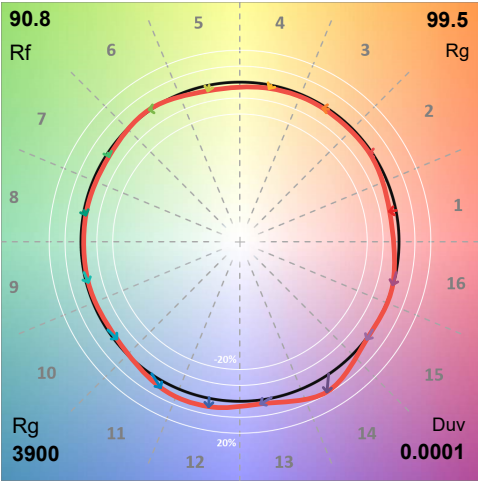


TM30-18 Rf-values per hue bin

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.3	95.3	91.9	93.2	92.0	95.6	95.5	94.5	91.0	87.4	85.1	87.7	88.8	88.3	88.2	86.5

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

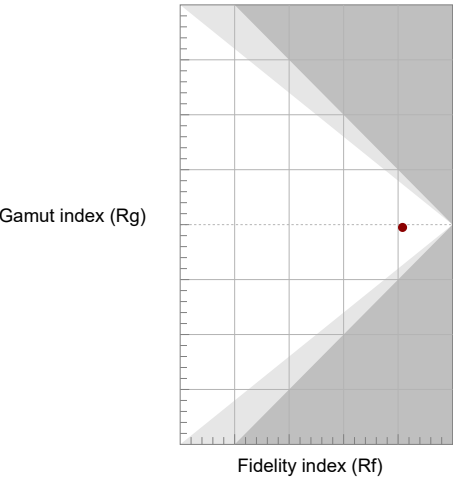
Color Vector Graphic



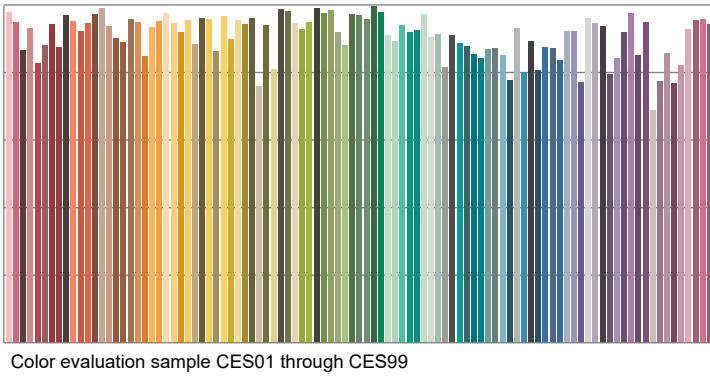
Color Distortion Graphic



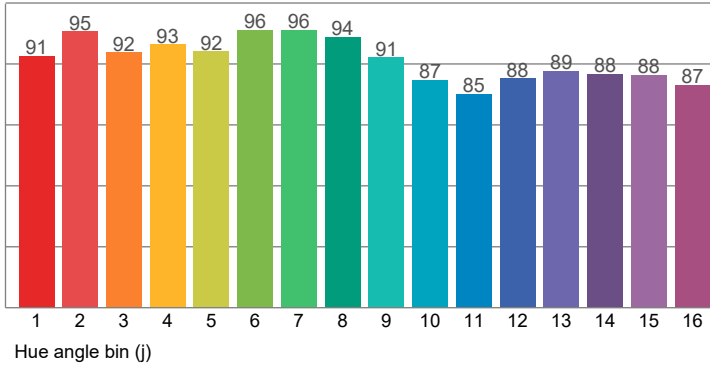
Gamut Index vs. Fidelity Index



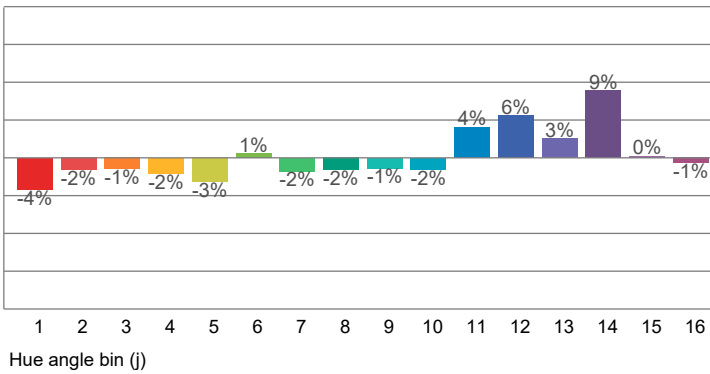
Color Rendition by Color Evaluation Sample (CES)



Local Color Fidelity (per hue bin)



Local Chroma Shift (per hue bin)



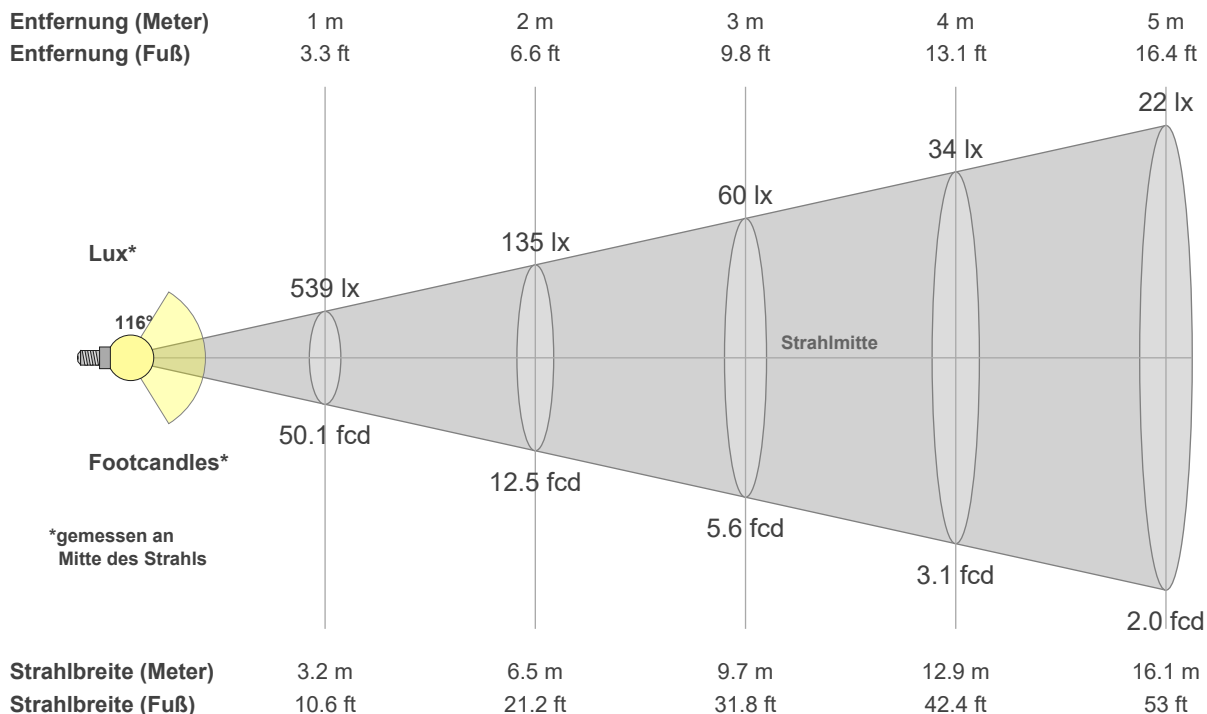
CIE x 0.3806
CIE y 0.3769
CIE u' 0.2252
CIE v' 0.5017

CIE 13.3-1995
Ra 95.0
R9 74.1

Test report

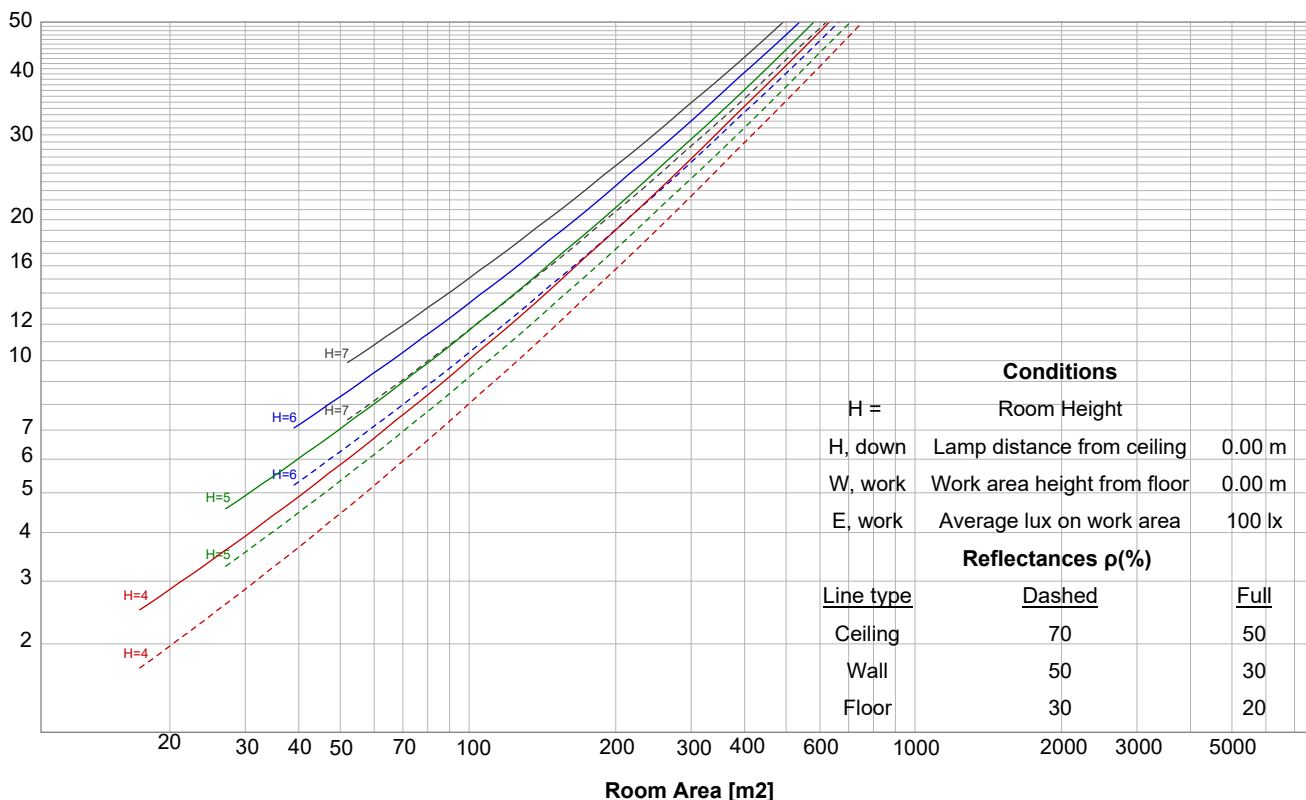
Light measurement results

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
539	135	60	34	22	15	11	8	7	5	4	4	3	3	2	2	2	2	1	1	lux
50.1	12.5	5.6	3.1	2	1.4	1	0.8	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	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
539	537	531	521	506	488	466	439	409	376	338	297	253	207	159	113	68	36	17	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	63%	55%	47%	38%	30%	21%	13%	7%	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
539	537	531	521	506	488	466	439	409	376	338	297	253	207	159	113	68	36	17	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	63%	55%	47%	38%	30%	21%	13%	7%	3%	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
539	537	531	521	506	488	466	439	409	376	338	297	253	207	159	113	68	36	17	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	63%	55%	47%	38%	30%	21%	13%	7%	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
539	537	531	521	506	488	466	439	409	376	338	297	253	207	159	113	68	36	17	8	cd
100%	100%	99%	97%	94%	90%	86%	81%	76%	70%	63%	55%	47%	38%	30%	21%	13%	7%	3%	2%	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 = mounting height above eye level			(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
	X	Y										
2H	2H		27.4	28.6	27.7	29.0	29.2	28.9	30.1	29.2	30.5	30.7
	3H		28.5	29.7	28.9	30.1	30.3	30.4	31.7	30.9	32.0	32.2
	4H		28.9	30.1	29.3	30.4	30.7	31.1	32.3	31.5	32.6	32.9
	6H		29.2	30.3	29.5	30.6	31.0	31.6	32.7	32.0	33.0	33.4
	8H		29.2	30.3	29.6	30.6	31.0	31.8	32.8	32.2	33.2	33.6
	12H		29.3	30.3	29.6	30.6	31.1	32.0	33.0	32.4	33.3	33.8
4H	2H		28.0	29.2	28.4	29.5	29.8	29.2	30.4	29.7	30.7	31.0
	3H		29.4	30.4	29.8	30.7	31.2	31.0	32.0	31.4	32.4	32.8
	4H		29.8	30.7	30.3	31.2	31.7	31.6	32.6	32.1	33.0	33.6
	6H		30.1	31.0	30.6	31.4	31.8	32.2	33.1	32.8	33.5	33.9
	8H		30.2	31.0	30.7	31.4	31.8	32.5	33.3	33.0	33.7	34.1
	12H		30.2	30.9	30.8	31.4	31.9	32.7	33.3	33.2	33.8	34.3
8H	4H		30.0	30.8	30.6	31.2	31.7	31.7	32.6	32.3	33.0	33.4
	6H		30.5	31.1	31.0	31.6	32.2	32.4	33.1	33.0	33.6	34.1
	8H		30.6	31.2	31.2	31.7	32.4	32.7	33.3	33.3	33.8	34.5
	12H		30.7	31.2	31.3	31.7	32.4	33.0	33.5	33.6	34.0	34.6
12H	4H		30.0	30.7	30.6	31.2	31.7	31.7	32.4	32.2	32.9	33.4
	6H		30.5	31.1	31.1	31.6	32.3	32.5	33.0	33.0	33.6	34.2
	8H		30.7	31.2	31.3	31.7	32.3	32.7	33.2	33.3	33.7	34.4
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 / -0.4					0.3 / -0.4				
S = 2.0H			0.6 / -0.9					0.8 / -0.9				

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	105.4	105.4	105.4	100.9	100.9	100.9	98.7
1	108.0	103.1	98.6	94.6	105.2	100.7	96.6	93.0	96.2	92.8	89.8	92.0	89.3	86.8	88.2	86.0	84.0	81.8
2	98.0	89.6	82.5	76.6	95.2	87.5	81.1	75.6	83.8	78.3	73.7	80.3	75.7	71.8	77.0	73.3	70.0	67.7
3	89.2	78.4	70.1	63.4	86.6	76.7	69.0	62.8	73.5	66.9	61.5	70.6	65.0	60.2	67.8	63.1	59.0	56.7
4	81.5	69.3	60.3	53.5	79.1	67.9	59.5	53.1	65.2	57.9	52.2	62.7	56.4	51.3	60.4	54.9	50.5	48.2
5	74.9	61.8	52.7	45.9	72.7	60.6	52.0	45.6	58.3	50.7	44.9	56.2	49.5	44.3	54.2	48.4	43.7	41.5
6	69.1	55.5	46.5	39.9	67.1	54.5	45.9	39.7	52.6	44.9	39.2	50.7	44.0	38.8	49.0	43.0	38.3	36.2
7	64.0	50.3	41.4	35.2	62.2	49.4	41.0	35.0	47.7	40.2	34.6	46.2	39.4	34.3	44.7	38.6	33.9	31.9
8	59.5	45.8	37.2	31.3	57.9	45.1	36.9	31.2	43.6	36.2	30.9	42.3	35.5	30.6	41.0	34.9	30.3	28.4
9	55.6	42.0	33.7	28.1	54.1	41.4	33.4	28.0	40.1	32.8	27.8	38.9	32.3	27.5	37.8	31.8	27.3	25.5
10	52.1	38.7	30.7	25.4	50.7	38.2	30.5	25.3	37.1	30.0	25.2	36.0	29.6	25.0	35.1	29.1	24.8	23.0

Test report

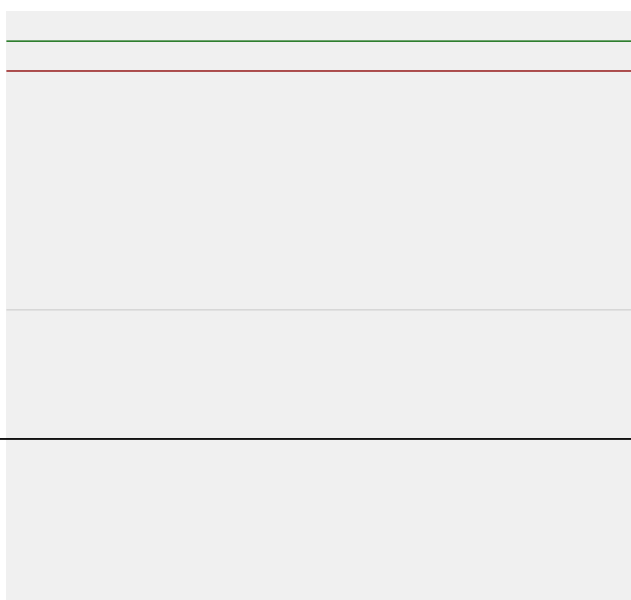
Light measurement results

Power details

Input power

Frequency of input power	0.0 Hz
Power feed to light source	9.02 W
RMS Input voltage feed V,RMS	24 V
RMS Input current feed I,RMS	0.38 A
Volt-Amp or apparent power = V,RMS*I,RMS	9.0 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 54.77

Lumen efficiency 181.6 lm/W

Stabilization details

Warmup Conditions

Stable period	3 Min
Stable change max	5%
Minimum time	3 Min

Color Temperature Change

CCT start	4004 K
CCT shift	-4 K
CCT end	4000 K

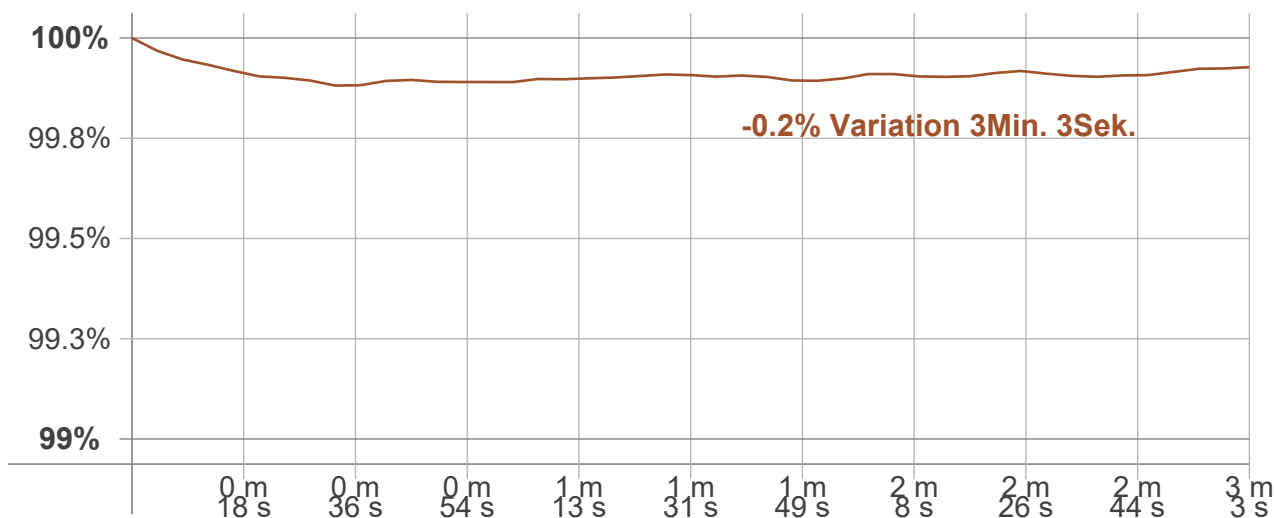
Warmup Result

Total warmup time	Lampe stabilisiert in
Warmup variation	-0.1502%

Output Change

Output start	1639 lm
Output change	-0.9102 lm
Output end	1638 lm

Stabilization Curve



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

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 %

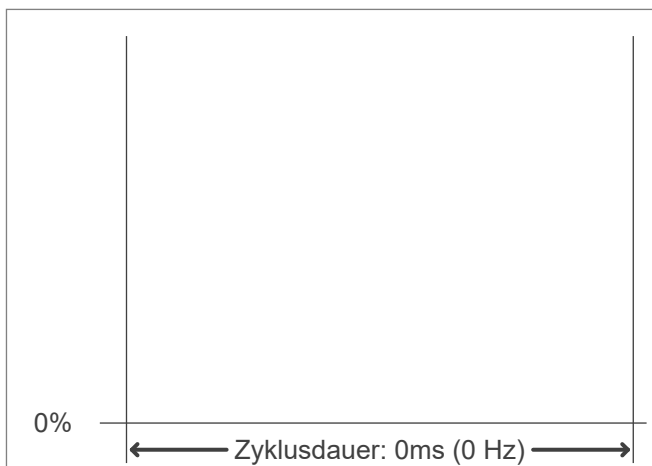
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)

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

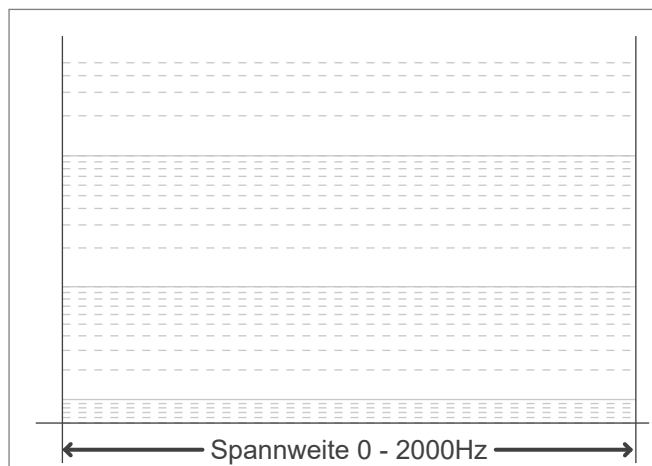
Flicker indices according to Lighting Research Center (2015)

Perception metric, Assist Mp	NaN
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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

