

Light Measurement Report

Print date: 23/06/2026

Measurement date and time: 23/06/2026 16:31:40 – Measurement no. VFR-260623-1631-MS

Measurement tracking No. and Link: [VT260623-001401](#)

Operator: LC



Laboratory and Equipment

Laboratory Owner and Location

Goniospectrometer System and Type

Sensor Name, Calibr. Date and Serial No.

Spectrometer Manufacturer and Model

Viso Systems, Copenhagen V, Denmark

LabSpion – Type C, horizontal

LabSensor Model2 – 11/12/2024 – 3532797498

Ibsen Photonics, Denmark – Freedom VIS (Custom Viso)

Measurement Conditions

Number of C-planes and Resolution

γ (gamma)-Resolution

Test Distance

Input Power, Power and Displ. Factors

Input RMS Voltage and Current

Frequency of Input Power

Warm-up Time and Variation

72 planes – 5°

1,5°

2,59 m

37,4 W – PF 0,96 – DPF 0,97

229 V – 0,170 A

50 Hz

Lamp stabilized in 19 min 21 sec – 2,0%

Tested Light Source

Product Name

Item No. and Manufacturer

Product Description (line 1)

PIVOT 3000K WALL WASHER BLACK

05920600307802 – ELECTRUM

900mA

Main Light Measurement Results

Output – Total Lumen (Up% / Down%)

Efficiency

Peak Intensity and Beam Angle

Correlated Color Temperature, Target/Measured

Color Rendering Index

Color Rendering TM30-18

Color Shift, CIE duv and MacAdam Steps

Flicker

2926 lm – 0,23% / 99,77%

78 lm/W

939 cd – 143,9°

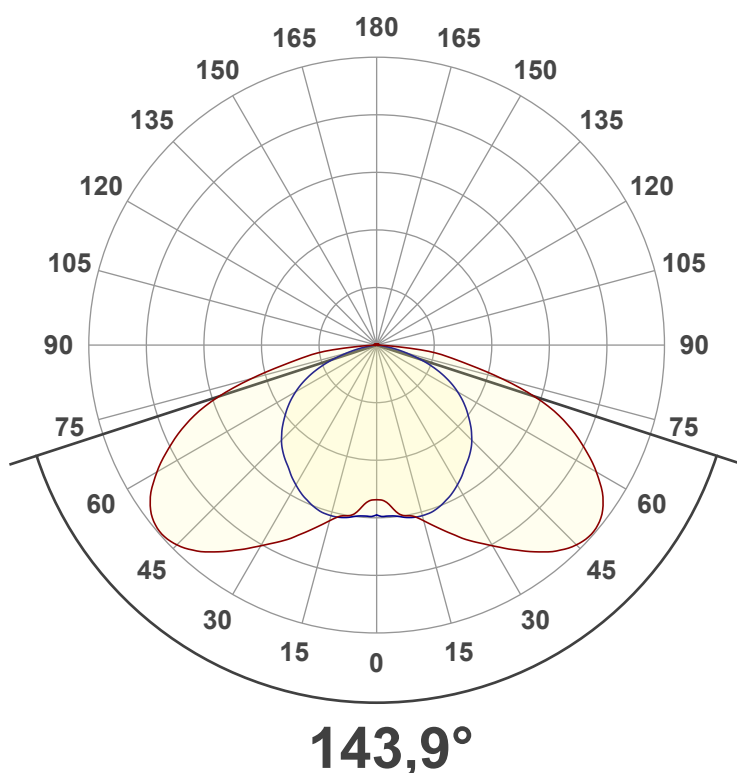
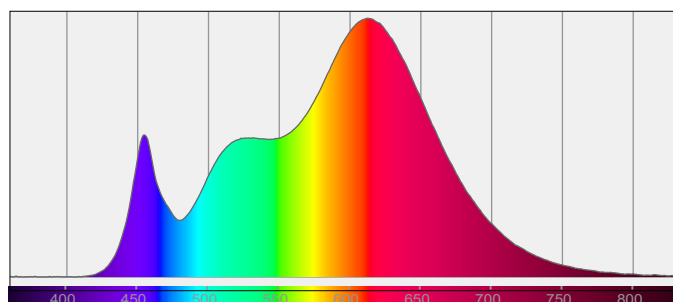
CCT = 3000 K / 2999 K

CRI 93,0

R_f 91,8 – R_g 99,1

Duv -0,0022 – SDCM 2,2

SVM 0,01 – PstLM 1,55



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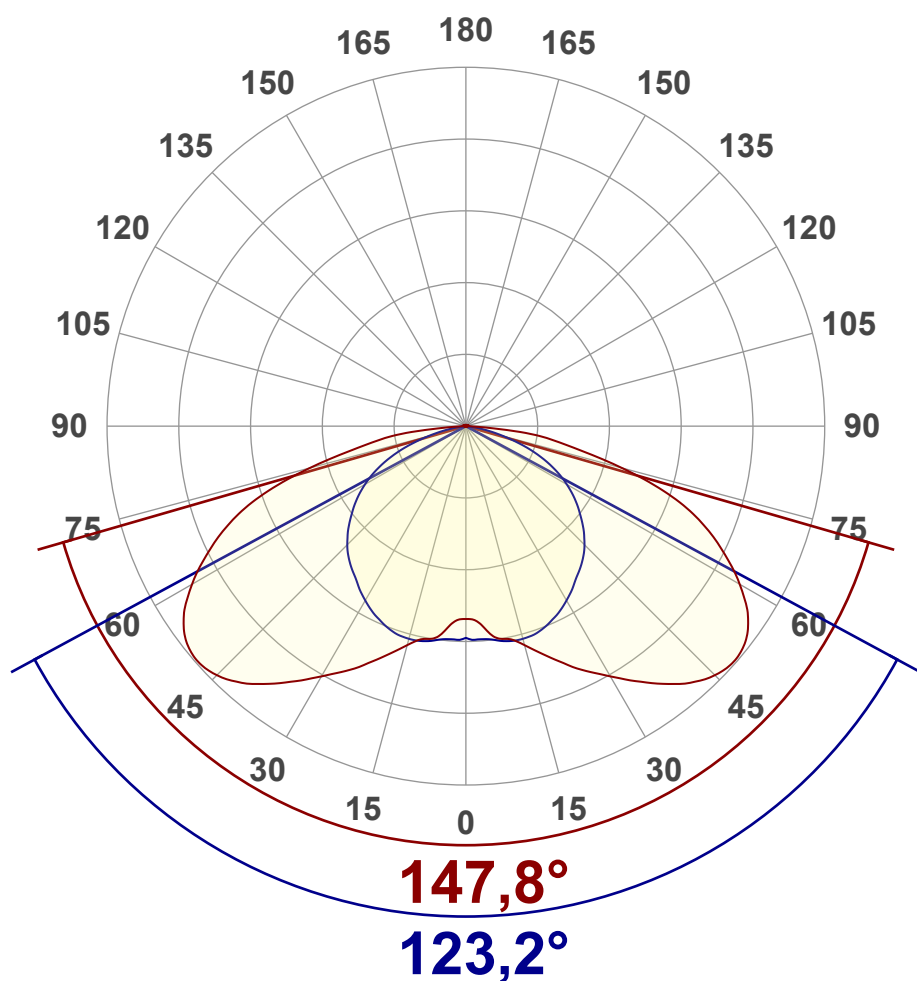
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Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

Output (total Lumen)	2926 lm
Lumen Up% / Down%	0,23% / 99,77%
Peak Intensity	939 cd
Beam Angle (50%-FWHM)	143,94°

Cut-off Angle

Average 2,5%	175,1°
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Field Angle

Average 10%	168,7°
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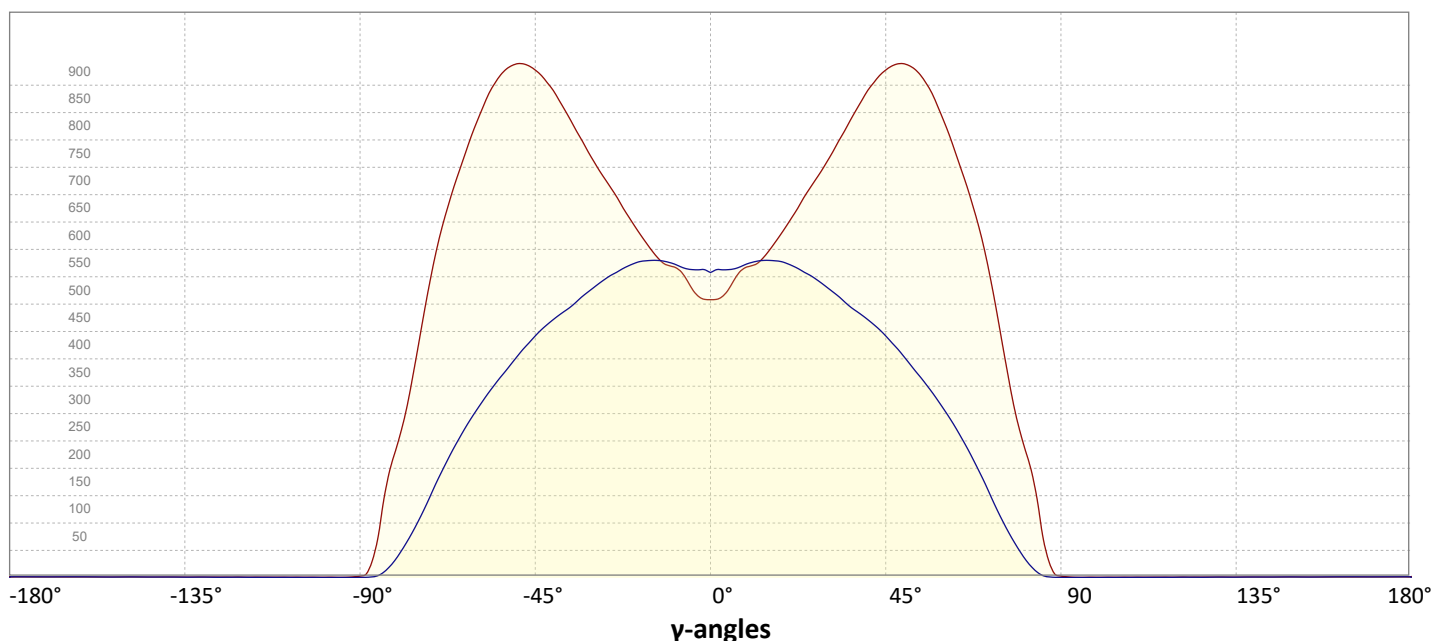
Intensity Ratio

In 120° cone	68,9%
In 90° cone	39,7%

C000-C180

C090-C270

Linear distribution diagram - Intensity (candela) vs γ-angle



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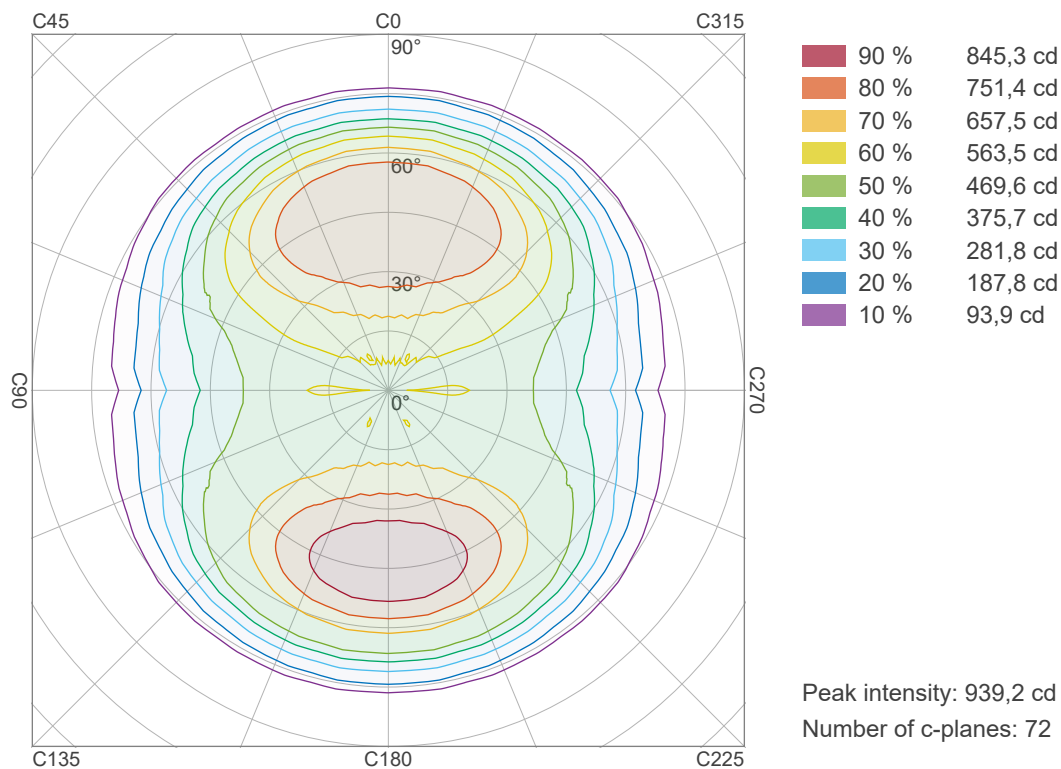
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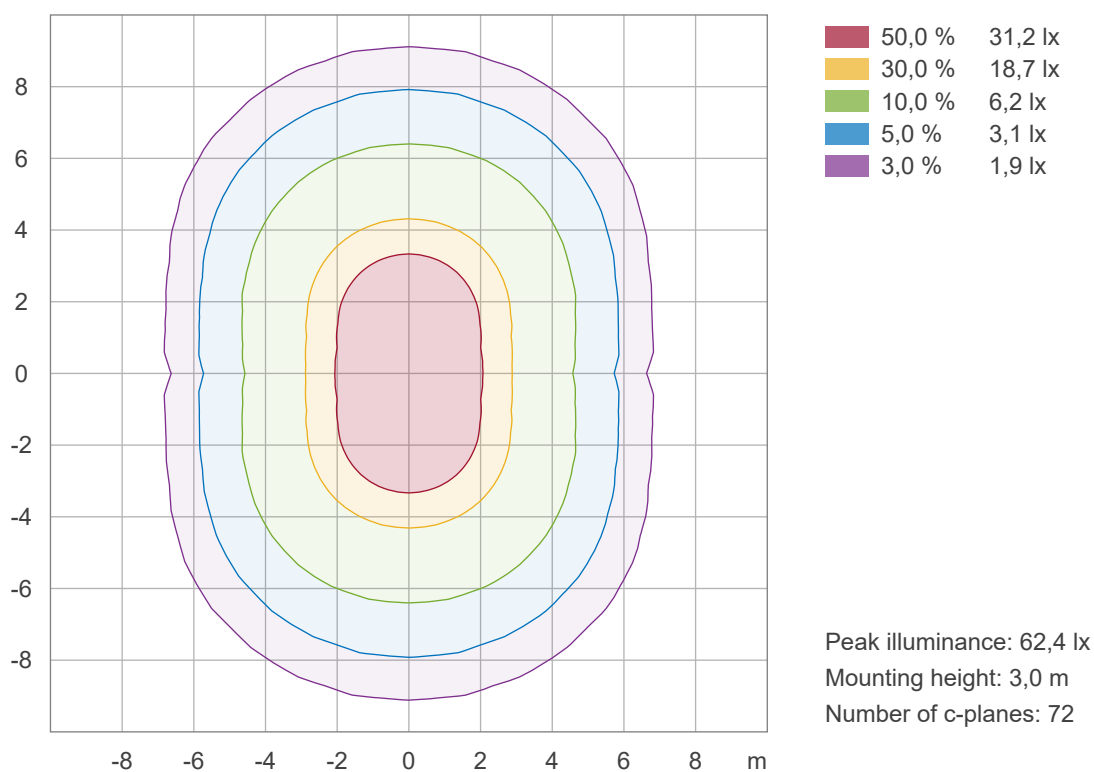
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Iso-intensity Diagram (Iso-candela)



Iso-illuminance Diagram (Iso-lux)



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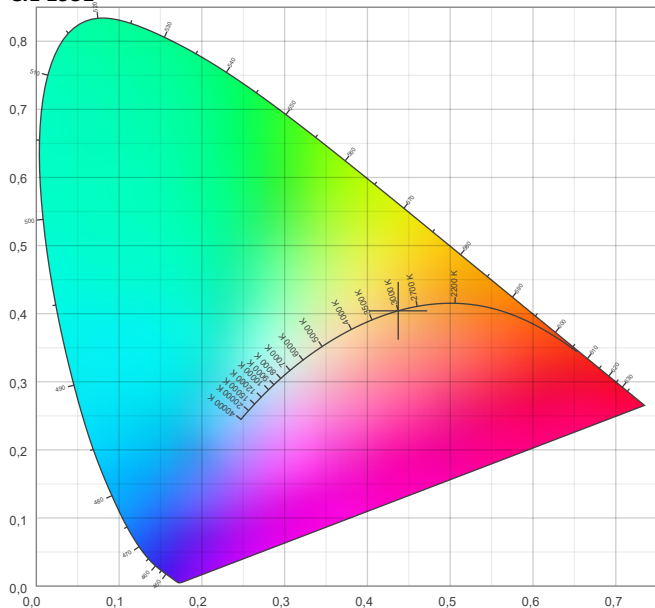


Color details

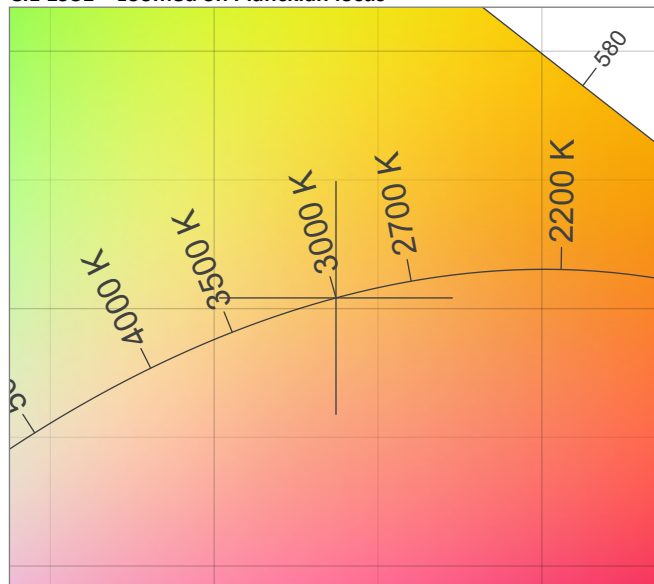
Correlated Color Temperature, Target CCT = 3000 K
Correlated Color Temperature, Measured CCT = 2999 K
Color Rendering Index CRI 93,0
Color Rendering Index, R9 (red component) R9 = 51,4
Color Rendering TM30-18 R_f 91,8 – R_g 99,1
Color Quality Scale CQS = 91,4

MacAdam Steps
Color coordinates CIE 1931 (x;y) = (0,437;0,404)
Color coordinate CIEs 1960 (u;v) = (0,251;0,348)
Color deviation from BBL Duv = -0,0022
Color coordinate CIEs 1976 (CIELUV) (u';v') = (0,251;0,521)

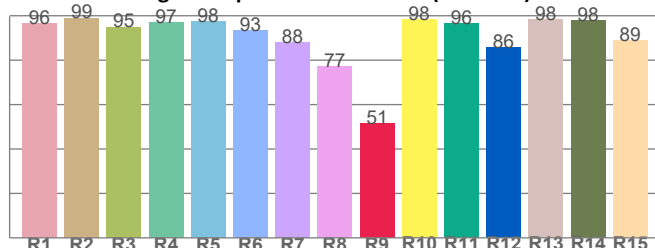
CIE 1931



CIE 1931 – zoomed on Planckian locus



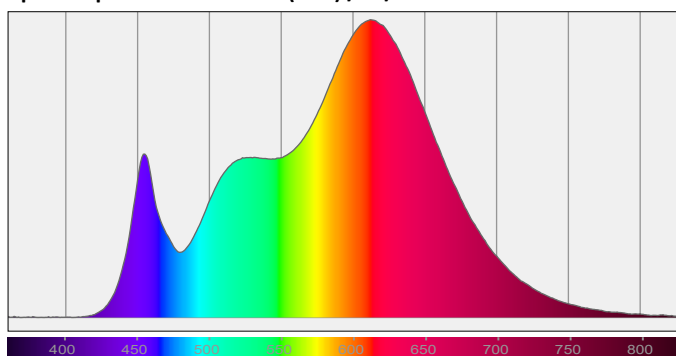
Color Rendering Index per reference color (CIE 1995)



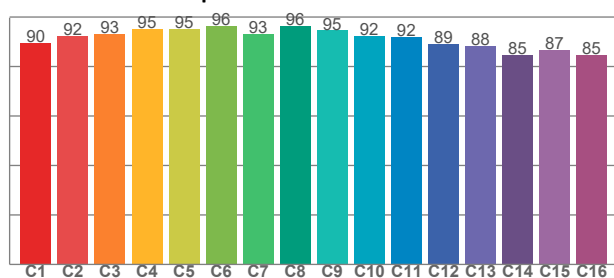
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
96,4	99,0	95,0	97,0	97,5	93,4	88,1	77,3	51,4	98,5	96,4	85,7	98,3	98,0	88,7

Spectral power distribution (SPD) / W/nm – 0-100%



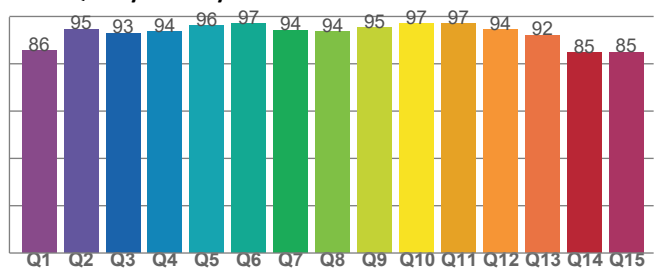
TM30-18 R_f-values per hue bin



TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
89,5	92,4	93,1	95,3	95,2	96,2	93,1	96,4	94,5	92,4	91,7	89,0	88,2	84,8	86,5	84,5

Color Quality Scale by reference color



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85,6	94,6	92,9	93,6	96,1	97,0	94,1	93,5	95,2	97,0	96,9	94,3	92,1	84,6	84,8

Beam Details

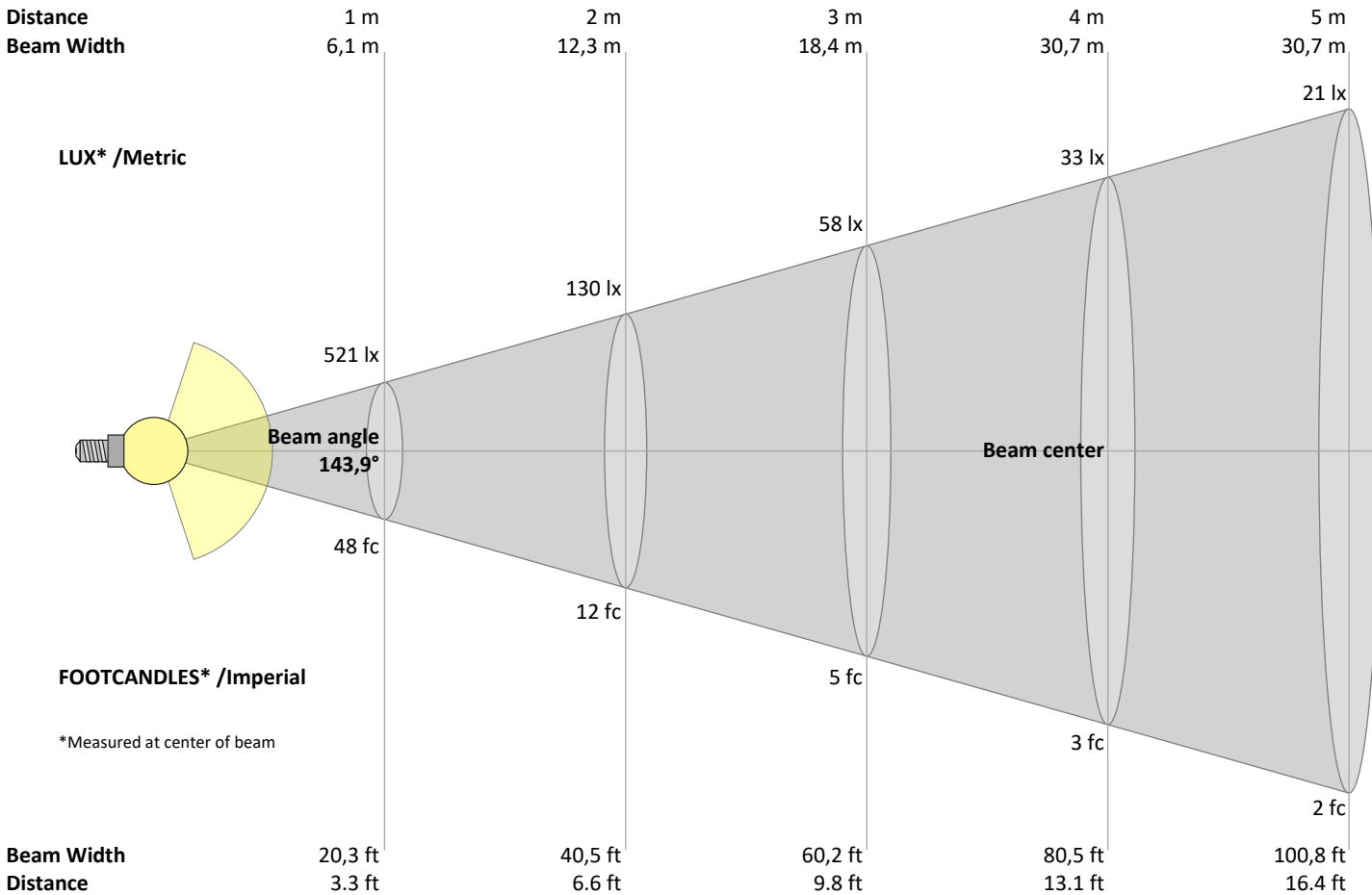
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Beam intensities from 1 – 20 m

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
521	130	58	33	21	14	11	8	6	5	4	4	3	3	2	2	2	2	1	1	lux
48,4	12,1	5,4	3	1,9	1,3	1	0,8	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
521	531	569	597	648	706	761	824	886	928	938	907	833	733	609	425	254	91	3	1	cd
100%	102%	109%	115%	124%	136%	146%	158%	170%	178%	180%	174%	160%	141%	117%	82%	49%	18%	1%	0%	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
521	563	575	580	573	555	530	501	474	442	401	357	307	249	180	104	43	6	1	1	cd
100%	108%	110%	111%	110%	107%	102%	96%	91%	85%	77%	68%	59%	48%	34%	20%	8%	1%	0%	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
521	531	569	597	648	706	761	824	886	928	938	907	833	733	609	425	254	91	3	1	cd
100%	102%	109%	115%	124%	136%	146%	158%	170%	178%	180%	174%	160%	141%	117%	82%	49%	18%	1%	0%	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
521	563	575	580	573	555	530	501	474	442	401	357	307	249	180	104	43	6	1	1	cd
100%	108%	110%	111%	110%	107%	102%	96%	91%	85%	77%	68%	59%	48%	34%	20%	8%	1%	0%	0%	of 0°val

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Light Planning – UGR table

Corrected, comprehensive UGR table according to 117-1995

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												
H = mounting height above eye level												
X	Y		Viewed Crosswise					Viewed Endwise				
			(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
2H	2H	2H	27,9	29,3	28,2	29,6	29,9	23,4	24,8	23,7	25,1	25,3
		3H	30,2	31,6	30,6	31,9	32,1	24,7	26,2	25,2	26,5	26,7
		4H	31,1	32,4	31,5	32,7	33,0	25,2	26,6	25,6	26,9	27,1
		6H	31,7	32,9	32,1	33,2	33,6	25,5	26,7	25,8	27,0	27,4
		8H	32,0	33,1	32,3	33,4	33,9	25,5	26,7	25,9	27,0	27,4
		12H	32,1	33,2	32,4	33,5	34,0	25,5	26,6	25,9	27,0	27,4
4H	4H	2H	28,4	29,7	28,8	30,0	30,3	25,2	26,6	25,7	26,9	27,2
		3H	31,0	32,1	31,4	32,5	32,9	26,8	28,0	27,2	28,3	28,8
		4H	32,0	33,0	32,4	33,4	34,0	27,3	28,3	27,8	28,8	29,3
		6H	32,7	33,7	33,2	34,1	34,5	27,6	28,6	28,1	28,9	29,3
		8H	33,0	33,9	33,5	34,3	34,7	27,6	28,5	28,2	28,9	29,3
		12H	33,2	33,9	33,7	34,4	34,9	27,7	28,4	28,2	28,8	29,3
8H	8H	4H	32,2	33,1	32,7	33,4	33,8	28,3	29,2	28,8	29,6	29,9
		6H	33,1	33,8	33,6	34,3	34,8	28,8	29,5	29,3	29,9	30,5
		8H	33,5	34,1	34,0	34,6	35,3	28,9	29,5	29,4	30,0	30,7
		12H	33,8	34,3	34,3	34,8	35,4	28,9	29,5	29,5	30,0	30,6
12H	12H	4H	32,2	32,9	32,7	33,3	33,8	28,4	29,2	28,9	29,6	30,1
		6H	33,1	33,8	33,7	34,3	34,9	29,0	29,6	29,5	30,2	30,8
		8H	33,6	34,1	34,2	34,6	35,2	29,2	29,7	29,8	30,2	30,9
Variations with the observer position for the luminaire spacings, S:												
S = 1.0H			0,1 / -0,1					0,1 / -0,1				
S = 1.5H			0,1 / -0,1					0,2 / -0,3				
S = 2.0H			0,3 / -0,3					0,6 / -0,8				

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	0
RCR			(RCR: Room Cavity Ratio)			Room Values are expressed as percentage of Lumen delivered to the task surface												
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	107	101	96	92	104	99	94	90	94	91	87	90	87	84	87	84	82	80
2	95	86	78	71	93	84	77	71	80	74	69	77	72	67	74	69	66	63
3	86	74	64	57	83	72	63	56	69	61	55	66	60	54	63	58	53	51
4	78	64	54	46	75	63	53	46	60	52	45	57	50	45	55	49	44	42
5	71	56	46	39	68	55	46	38	53	44	38	51	43	37	49	42	37	35
6	65	50	40	33	62	49	39	33	47	39	32	45	38	32	43	37	32	29
7	59	45	35	28	58	44	35	28	42	34	28	41	33	28	39	32	27	25
8	55	40	31	25	53	40	31	25	38	30	24	37	29	24	35	29	24	22
9	51	37	28	22	50	36	27	22	35	27	21	34	26	21	32	26	21	19
10	48	33	25	19	46	33	25	19	32	24	19	31	24	19	30	23	19	17

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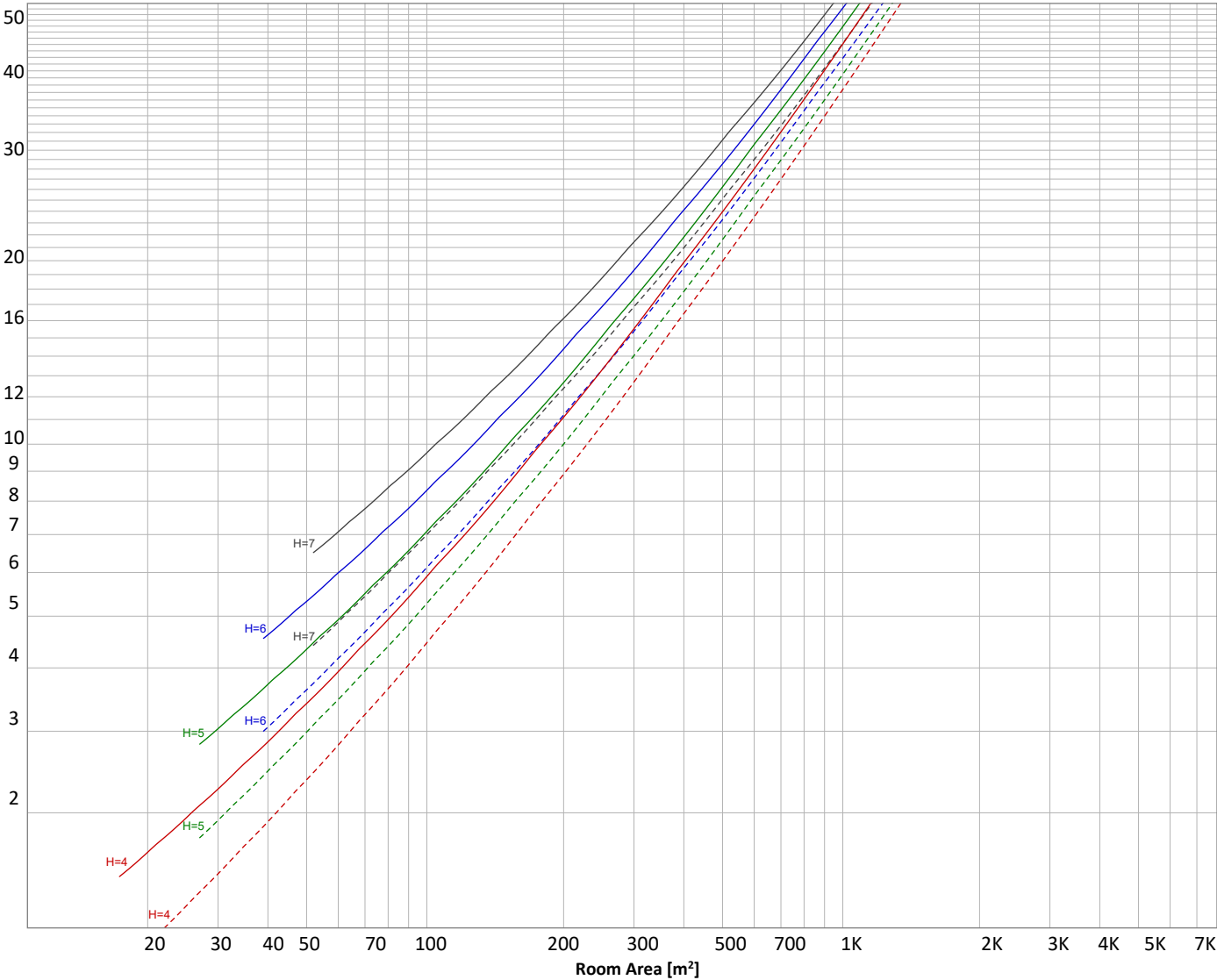
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Luminaire budgetary diagram

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



Conditions

H = Room height	Flux = 2926 lm	p(%)		
H _{down} = Lamp distance from ceiling =	0.00 m	Line type	Ceiling reflectance	Wall reflectance
H _{work} = Work area height from floor =	0.00 m	-----	70	50
E _{work} = Average lux on work area =	100 lx	-----	50	30
				Floor reflectance
				20

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
51,8 lm	162 lm	285 lm	413 lm	525 lm	578 lm	511 lm	313 lm	80,4 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
1,13 lm	0,914 lm	0,983 lm	0,973 lm	0,896 lm	0,760 lm	0,600 lm	0,382 lm	0,131 lm

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Outdoor Light Planning

Lumen per Zone

Zone (γ)	Lumen	% Total
0-10°	52 lm	1,8%
10-20°	162 lm	5,5%
20-30°	285 lm	9,7%
30-40°	413 lm	14,1%
40-50°	525 lm	18,0%
50-60°	578 lm	19,7%
60-70°	511 lm	17,5%
70-80°	313 lm	10,7%
80-90°	80 lm	2,7%
90-100°	1 lm	0,0%
100-110°	1 lm	0,0%
110-120°	1 lm	0,0%
120-130°	1 lm	0,0%
130-140°	1 lm	0,0%
140-150°	1 lm	0,0%
150-160°	1 lm	0,0%
160-170°	0 lm	0,0%
170-180°	0 lm	0,0%
Total	2926 lm	100,0%

Intensity peaks

Max intensity	939 cd
Intensity, 90°	3 cd
Intensity, 0°	521 cd

Zonal Lumen summary

Zone (γ)	Lumen	% Total
0-30°	499 lm	17,0%
0-40°	912 lm	31,2%
0-60°	2015 lm	68,9%
60-90°	904 lm	30,9%
70-100°	395 lm	13,5%
90-120°	3 lm	0,1%
0-90°	2919 lm	99,8%
90-180°	7 lm	0,2%
0-180°	2926 lm	100,0%

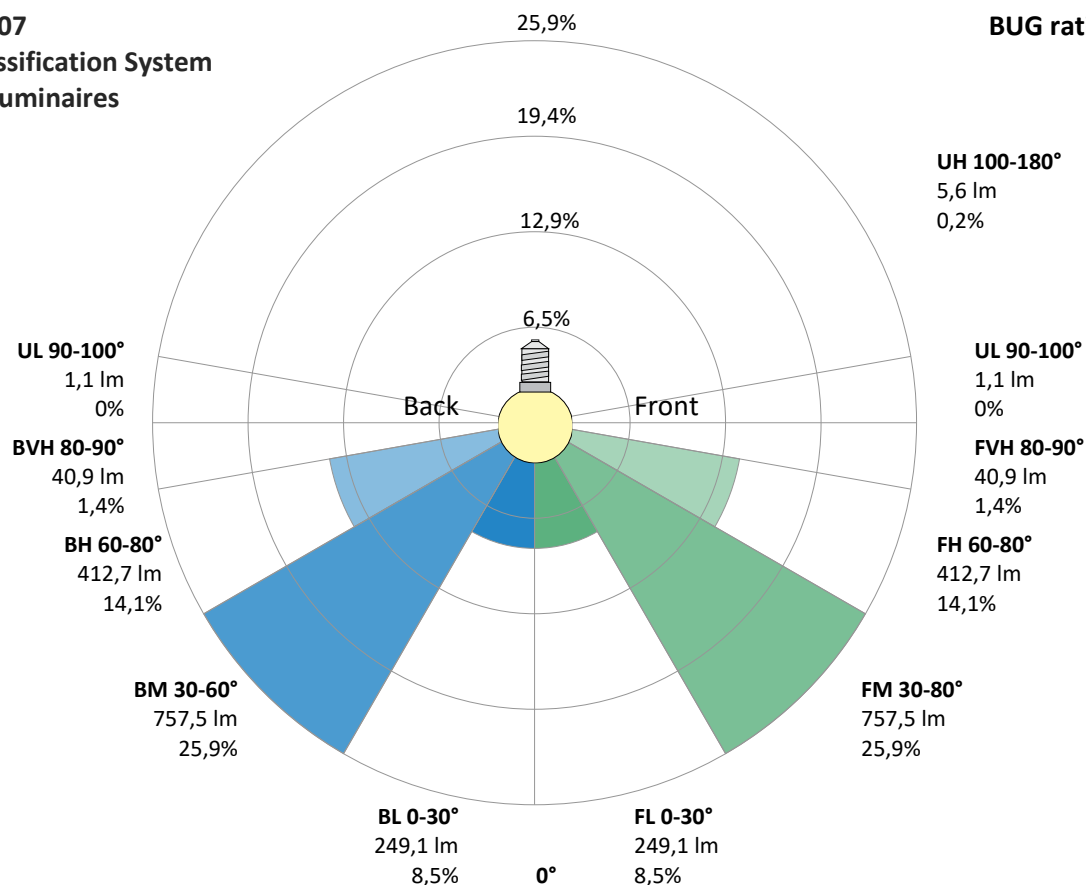
BUG rating

	Lumen	% Total
Forward light		
Low(0-30°)	249 lm	8,5%
Medium(30-60°)	757 lm	25,9%
High(60-80°)	413 lm	14,1%
Very high(80-90°)	41 lm	1,4%
Back light		
Low(0-30°)	249 lm	8,5%
Medium(30-60°)	757 lm	25,9%
High(60-80°)	413 lm	14,1%
Very high(80-90°)	41 lm	1,4%
Uplight		
Low(90-100°)	1 lm	0,0%
High(100-180°)	6 lm	0,2%

IESNA TM-15-07

Luminaire Classification System For Outdoor Luminaires

BUG rating B1 U1 G1



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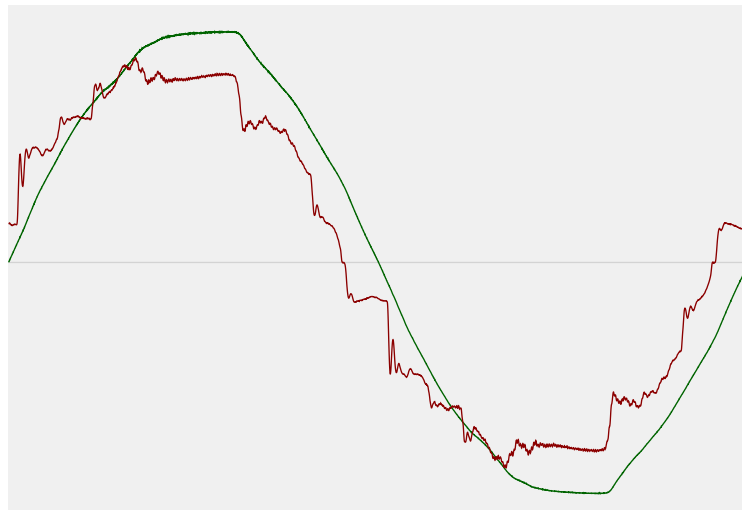


Power Details

Input Power

Power feed to light source	37,4 W
Frequency of input power	50 Hz
RMS Input voltage feed, V_{RMS}	229 V
RMS Input current feed, I_{RMS}	0,170 A
Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$	38,97 VA
Displacement factor of AC power feed	0,97
Power factor of AC current feed	0,96
Total harmonic distortion of the current	9,86%
Total harmonic distortion of the voltage	3,12%

Input Power Curve



Efficiency

Radiated power efficiency 25,9%



Lumen efficiency 78 lm/W



Stabilization Details

Warmup Conditions

Stable period	15 min
Stable change max	2,0%
Minimum time	15 min

Color Temperature Change

CCT start	3004 K
CCT shift	-4 K
CCT end	3000 K

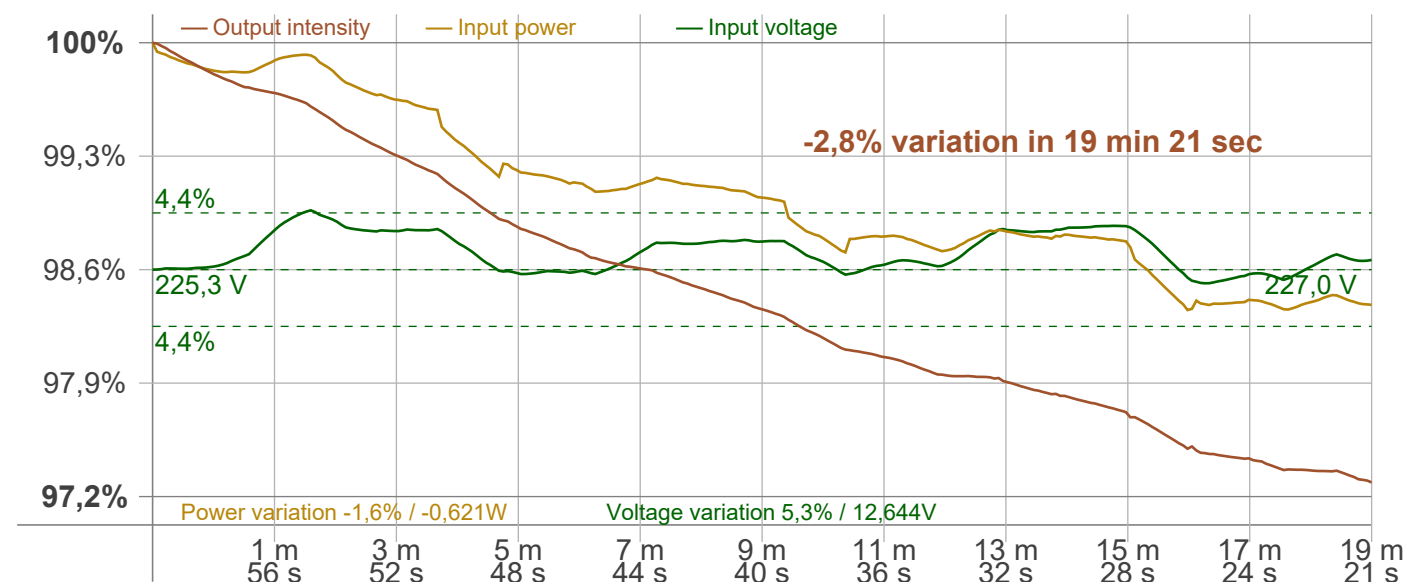
Warmup Result

Total warmup time	Lamp stabilized in 19 min 21 sec
Warmup variation	-2,8%

Output Change

Output start	3005 lm
Output change	-79 lm
Output end	2926 lm

Stabilization Curve



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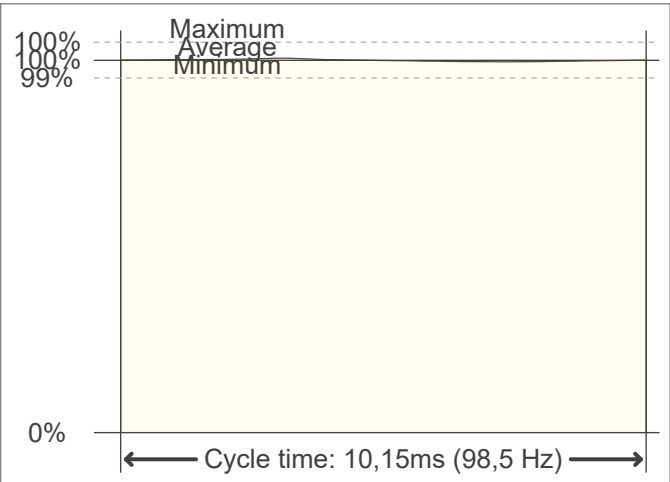
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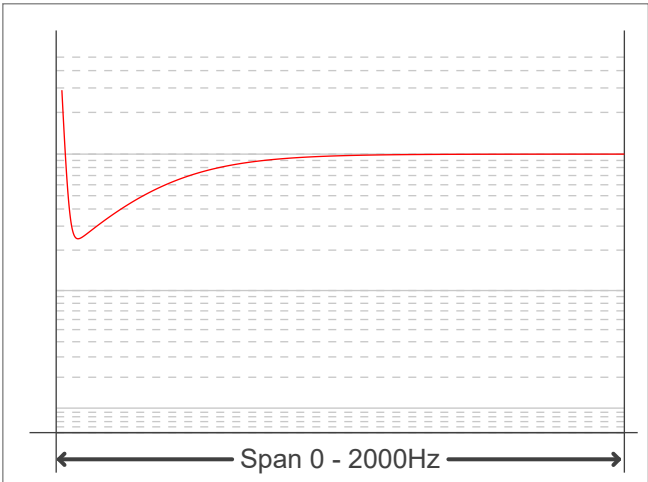
Flicker /TLA details

Flicker Meter Type	Viso Systems LabFlicker	Measurement time	
Frequency of input power	50 Hz	PstLM	180 sec
Flicker/TLA sample rate	20000 samples/s	All other indices	1,2 sec
Flicker indices according to Illuminating Engineering Society (IES)		Flicker indices according to California Energy Commission (CEC) 2016b	
Flicker frequency	98,52 Hz	JA8/10 40 Hz	0,16 %
Percent Flicker	0,71 %	JA8/10 90 Hz	0,17 %
Flicker index	0	JA8/10 200 Hz	0,56 %
		JA8/10 400 Hz	0,65 %
		JA8/10 1000 Hz	0,71 %
TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)		Flicker indices according to Lighting Research Center (2015)	
PstLM value (F < 80 Hz)	1,55	Perception metric, Assist Mp	0,03
SVM value (80 < F < 2000 Hz)	0,01		

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



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/modulation plot

