Light efficiency:

99 Lumen/Watt

Light quality:

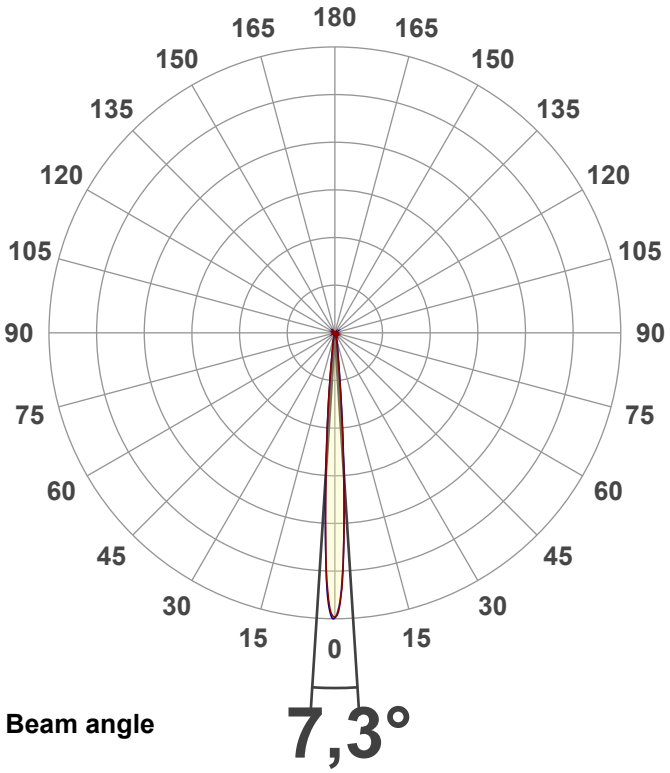
CRI: 0,0

Color temperature:

0 K

Output: 459 lm
Peak: 14925 cd

Power: 4,6 W
PF: 1,0



Beam angle

7,3°

CIE 1931
x: 0,167
y: 0,712

Product name:
F L-S O - 2-4 C -1 0 0-G-LSST-RS

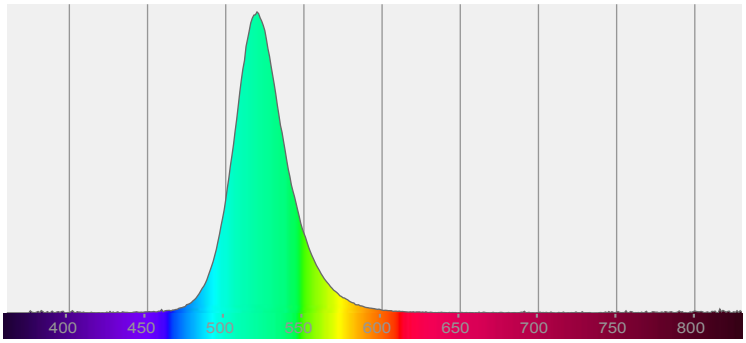
Item number:
F L / S O - 2 / 4 C / 1 0 0 / G /LSST/RS

Date and time:
03.04.2019 08:52:30

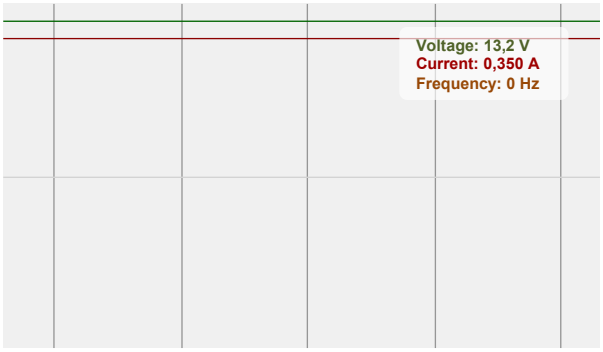
Description:

Toleranzen:
Lumen +/-4%
Candela +/-2,5%
Colour Temp +/-35 Grad K
CRI +/-0,7
Angular Resolution 1 Grad step
Last Calibration 06.06.2018
Pruefer:
Mourad Benzineb
Master of Engineering
Pruefort:
Lichtlabor
Gaustrasse13-15
55411 Bingen am Rhein

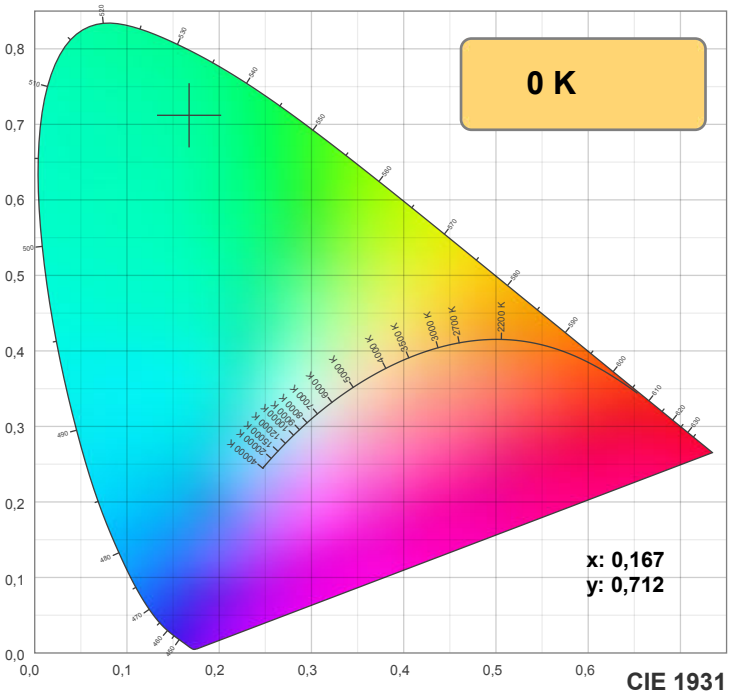
Spectra

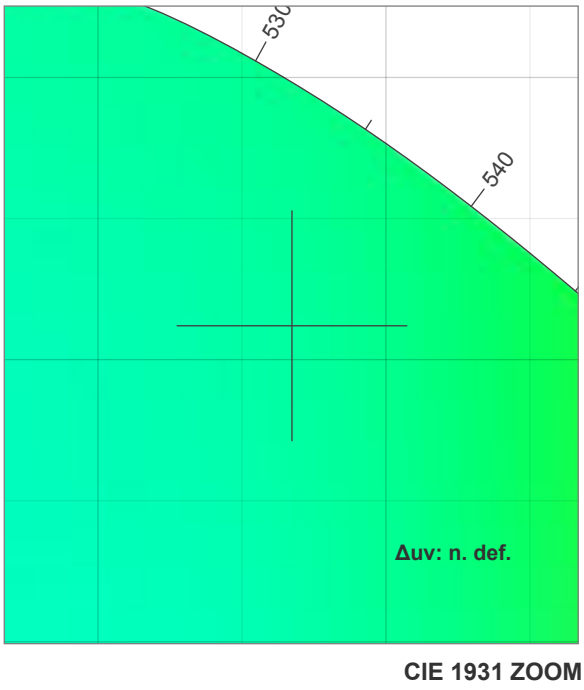


Power

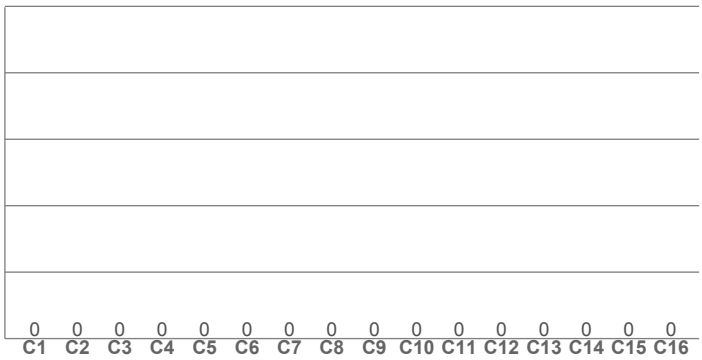


Color details

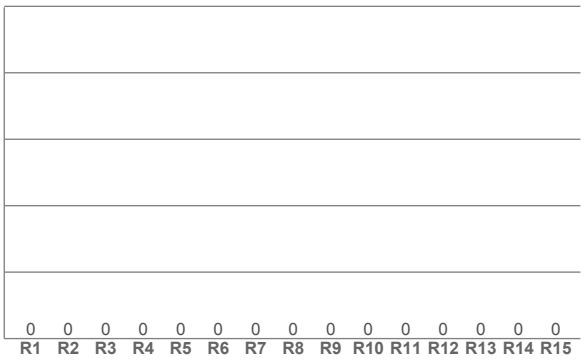




TM30: 0,0



CRI: 0,0 (R1-R8)



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
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

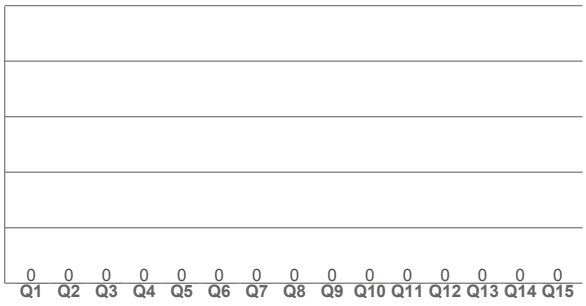
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS: 0,0



Color parameters

Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
0 K	0,0	0,0	0,0	0,0	0,0	0,167	0,712	0,060	0,381	n. def.

TM30 details

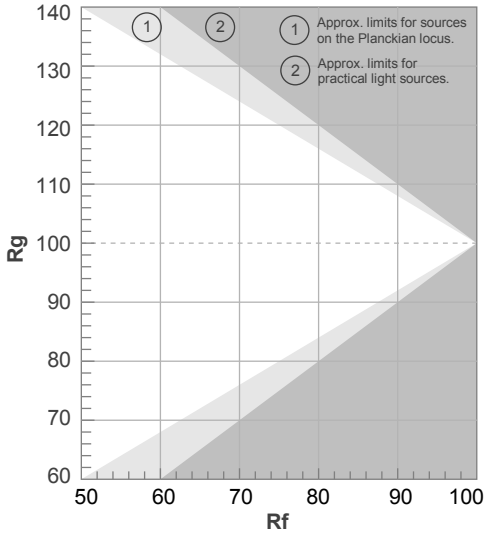
Rf 0,0

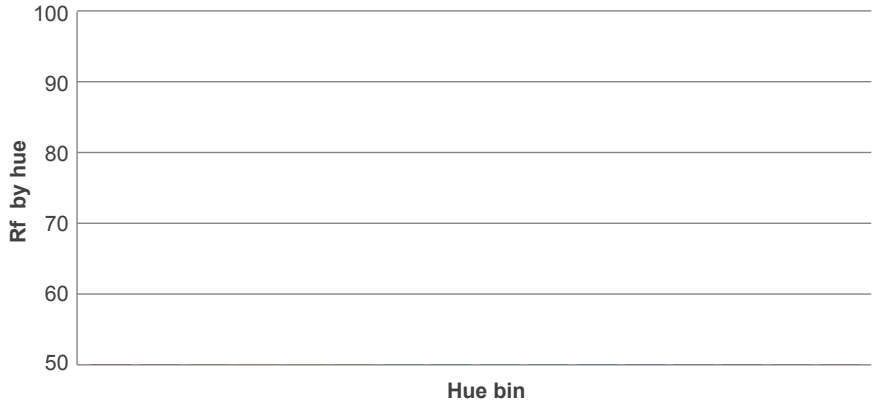
Fidelity index Rf

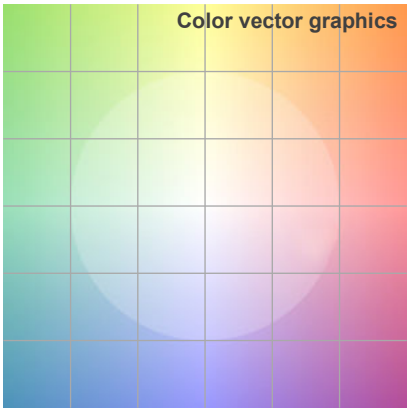
Rg 0,0

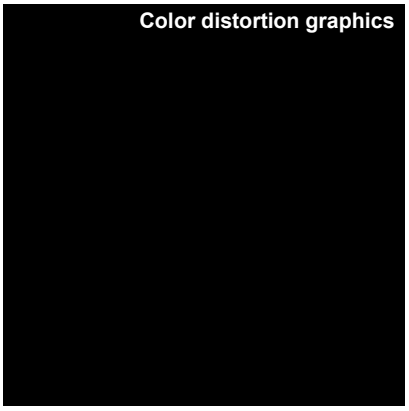
Gammut index Rg

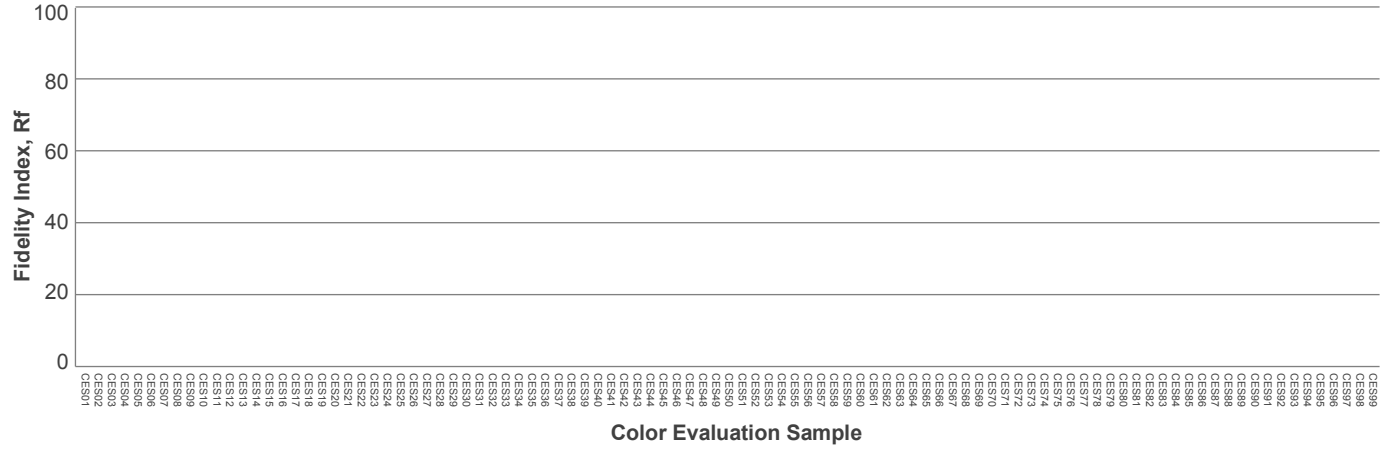
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	0	0%	0%
5	0	0%	0%
6	0	0%	0%
7	0	0%	0%
8	0	0%	0%
9	0	0%	0%
10	0	0%	0%
11	0	0%	0%
12	0	0%	0%
13	0	0%	0%
14	0	0%	0%
15	0	0%	0%
16	0	0%	0%





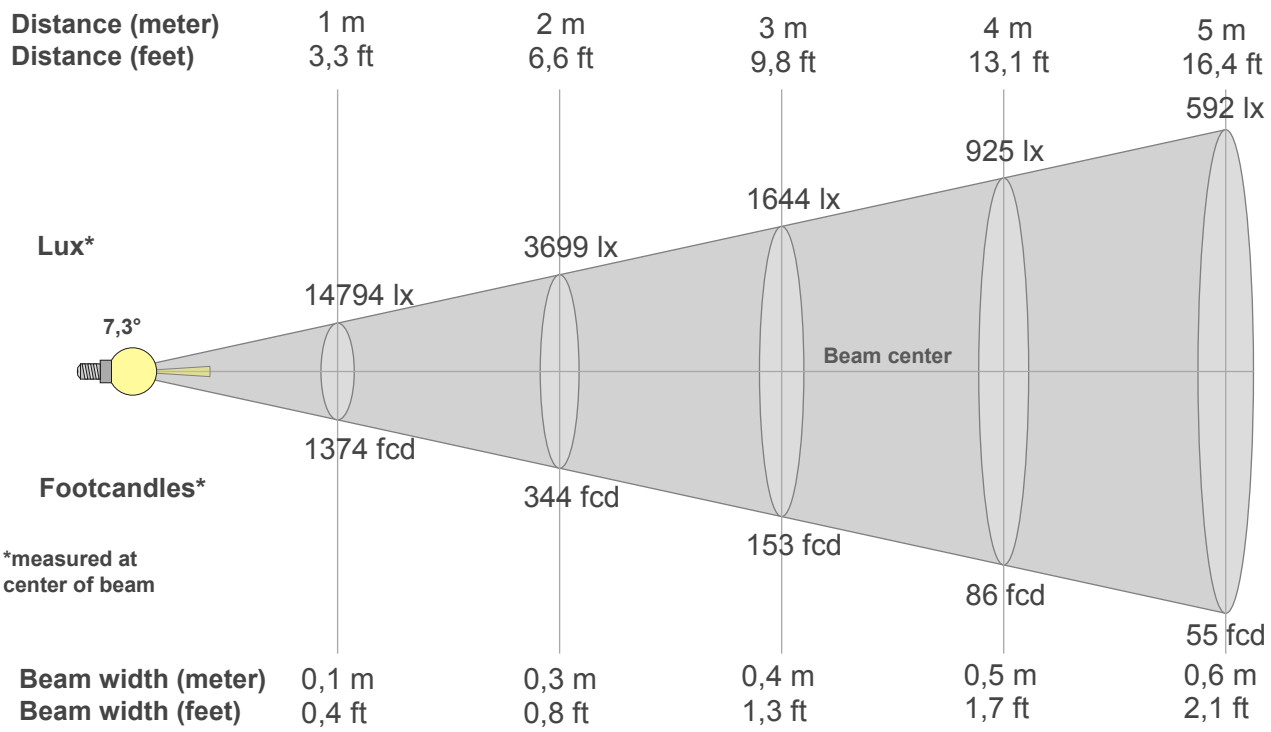






FLASHAAR

Beam details



Beam intensities from 1-20m

1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3,3ft	6,6ft	9,8ft	13,1ft	16,4ft	19,7ft	23ft	26,2ft	29,5ft	32,8ft	36,1ft	39,4ft	42,7ft	45,9ft	49,2ft	52,5ft	55,8ft	59,1ft	62,3ft	65,6ft
14794lx	3699lx	1644lx	925lx	592lx	411lx	302lx	231lx	183lx	148lx	122lx	103lx	88lx	75lx	66lx	58lx	51lx	46lx	41lx	37lx
1374,4f	343,6fc	152,7fc	85,9fcd	55fcd	38,2fcd	28fcd	21,5fcd	17fcd	13,7fcd	11,4fcd	9,5fcd	8,1fcd	7fcd	6,1fcd	5,4fcd	4,8fcd	4,2fcd	3,8fcd	3,4fcd

Intensities in 0° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
14,8K	14,2K	12,3K	9,2K	6,3K	4,0K	2,4K	1,5K	1,1K	0,8K	0,7K	0,5K	0,4K	0,4K	0,3K	0,2K	0,2K	0,1K	0,1K	0,1K
100%	96%	83%	62%	43%	27%	16%	10%	7%	6%	4%	4%	3%	2%	2%	2%	1%	1%	1%	1%

Intensities in 90° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
14,8K	14,0K	12,1K	9,2K	6,5K	4,2K	2,6K	1,8K	1,3K	1,0K	0,9K	0,7K	0,7K	0,6K	0,5K	0,4K	0,3K	0,3K	0,2K	0,2K
100%	95%	82%	62%	44%	28%	18%	12%	9%	7%	6%	5%	4%	4%	3%	3%	2%	2%	1%	1%

Intensities in 180° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
14,8K	14,4K	12,5K	9,3K	6,2K	4,1K	2,5K	1,5K	1,0K	0,8K	0,6K	0,5K	0,4K	0,3K	0,3K	0,2K	0,2K	0,1K	0,1K	0,1K
100%	97%	85%	63%	42%	28%	17%	10%	7%	5%	4%	3%	3%	2%	2%	1%	1%	1%	1%	1%

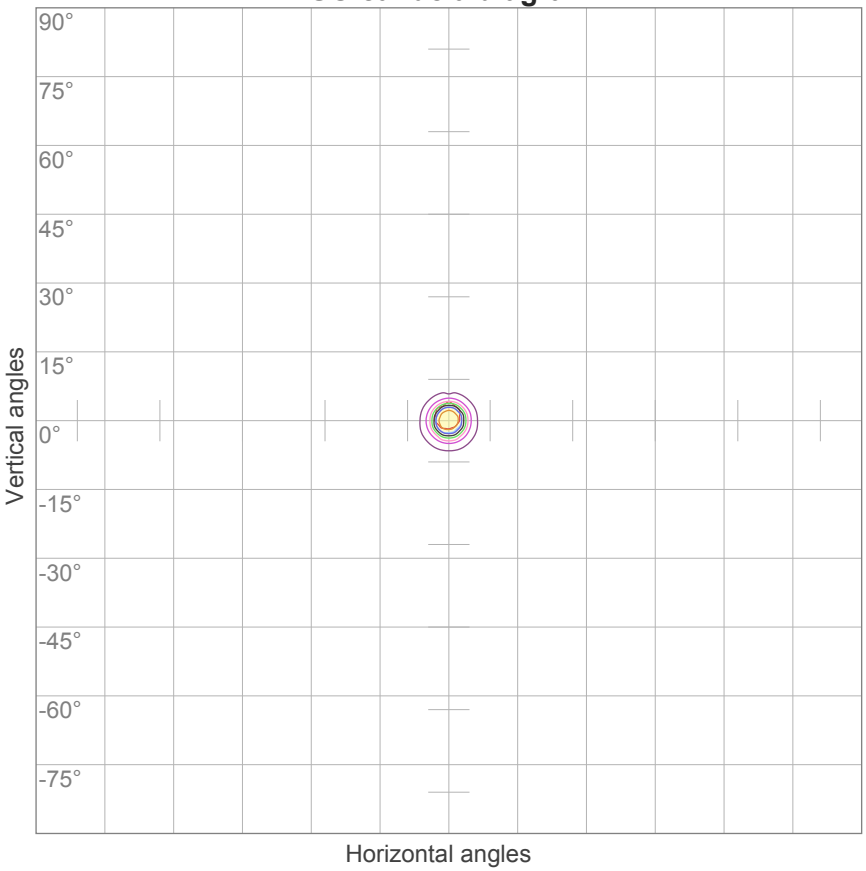
Intensities in 270° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
14,8K	14,5K	12,6K	9,5K	6,5K	4,1K	2,4K	1,4K	0,9K	0,6K	0,5K	0,4K	0,3K	0,2K	0,2K	0,2K	0,1K	0,1K	0,1K	0,1K
100%	98%	85%	64%	44%	28%	16%	9%	6%	4%	3%	3%	2%	2%	1%	1%	1%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
7,3°	14,5°	26,6°	95,0%	92,1%

ISO Diagrams

ISO candela diagram



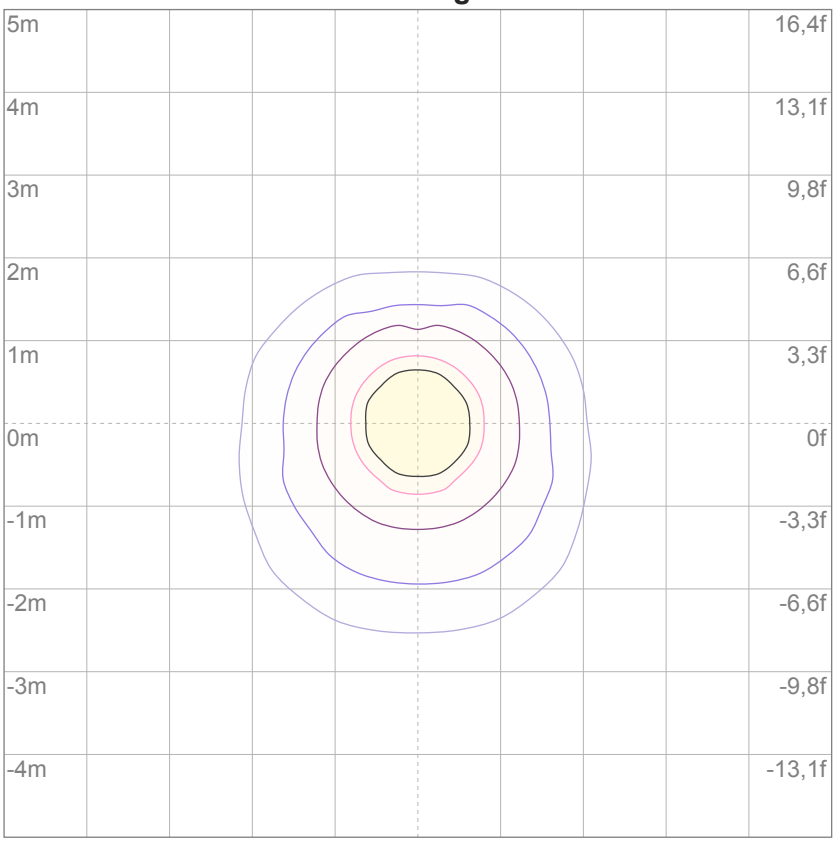
10%	1479 cd
20%	2959 cd
30%	4438 cd
40%	5918 cd
50%	7397 cd
60%	8877 cd
70%	10356 cd
80%	11835 cd
90%	13315 cd

Conditions:

Number of c-planes: 16

Candela at center: 14794 cd

ISO lux diagram



3%	4,44 lx
5%	7,40 lx
10%	14,8 lx
30%	44,4 lx
50%	74,0 lx

Conditions:

Number of c-planes: 16

Lux at center: 148 lx

Lux distribution on a surface when lamp is mounted at 10 meters from the surface.

UGR

Glare Evaluation According to UGR

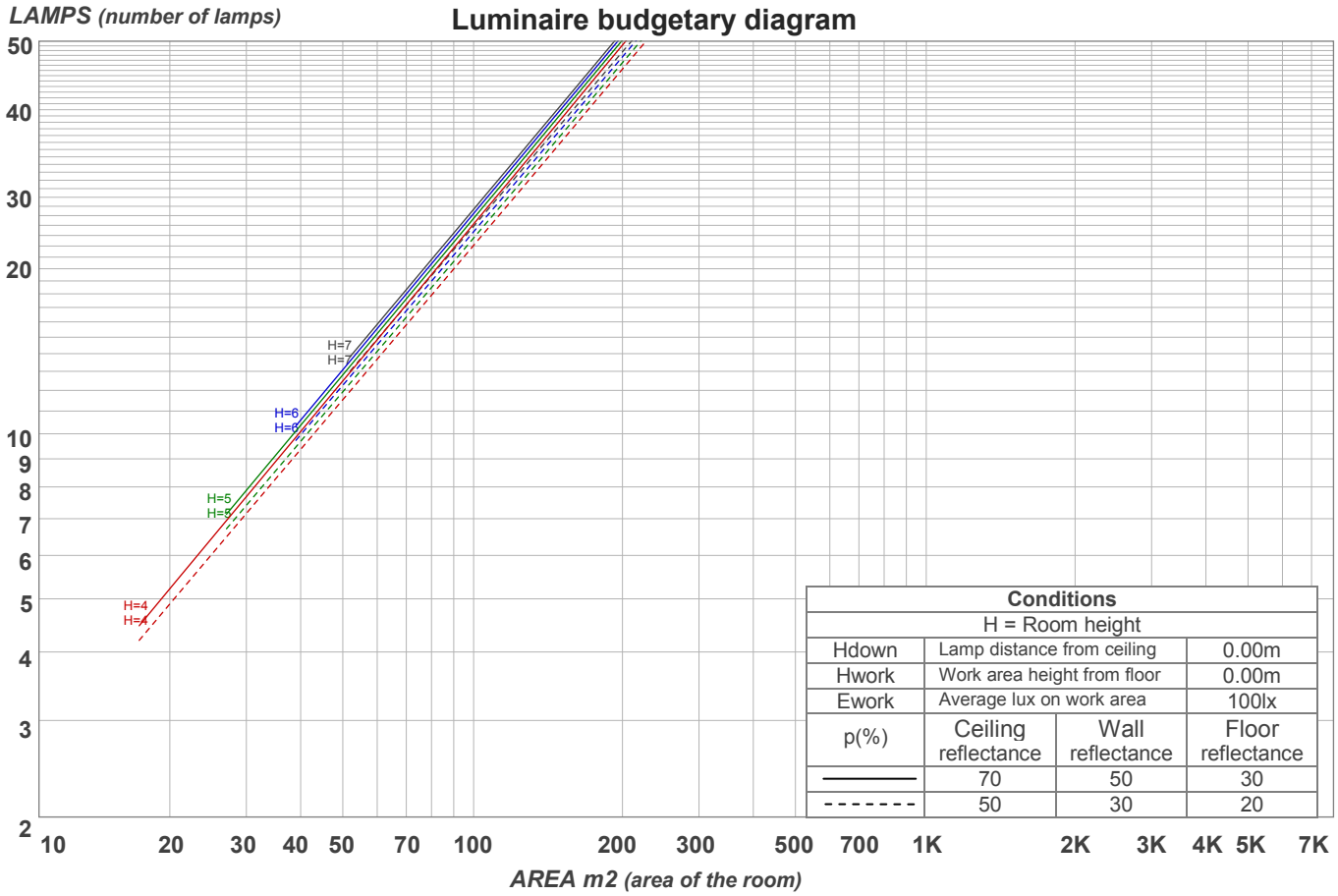
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	8,3	9,0	8,5	9,2	9,4	8,2	8,9	8,4	9,1	9,3
	3H	10,8	11,5	11,1	11,7	11,9	10,5	11,1	10,7	11,4	11,6
	4H	12,2	12,8	12,5	13,1	13,4	11,7	12,4	12,0	12,6	12,9
	6H	13,7	14,3	14,0	14,6	14,9	13,2	13,8	13,5	14,1	14,4
	8H	14,7	15,3	15,0	15,6	15,9	14,0	14,6	14,3	14,9	15,2
	12H	15,5	16,1	15,9	16,4	16,7	15,1	15,6	15,4	15,9	16,2
4H	2H	9,1	9,8	9,4	10,0	10,3	9,1	9,7	9,4	10,0	10,2
	3H	12,1	12,6	12,4	12,9	13,2	11,7	12,2	12,0	12,5	12,8
	4H	13,8	14,3	14,2	14,6	14,9	13,0	13,5	13,4	13,8	14,2
	6H	15,5	15,9	15,9	16,2	16,6	14,7	15,1	15,1	15,5	15,9
	8H	16,5	16,9	16,9	17,3	17,7	15,7	16,0	16,1	16,4	16,8
	12H	17,5	17,8	17,9	18,2	18,6	16,9	17,2	17,3	17,6	18,0
8H	4H	14,4	14,7	14,8	15,1	15,5	13,7	14,0	14,1	14,4	14,8
	6H	16,3	16,6	16,8	17,0	17,5	15,7	16,0	16,2	16,4	16,9
	8H	17,7	17,9	18,1	18,3	18,8	16,9	17,1	17,4	17,6	18,1
	12H	18,9	19,1	19,4	19,6	20,1	18,4	18,6	18,8	19,0	19,5
12H	4H	14,5	14,8	14,9	15,2	15,6	13,8	14,1	14,3	14,5	15,0
	6H	16,6	16,8	17,0	17,2	17,7	16,0	16,2	16,5	16,7	17,1
	8H	18,0	18,2	18,5	18,7	19,2	17,3	17,5	17,8	18,0	18,5
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,1 / -0,2					+0,2 / -0,2				
S = 1,5H		+0,2 / -0,3					+0,3 / -0,3				
S = 2,0H		+0,5 / -0,7					+0,4 / -0,6				
Standard table		BK12					BK12				
Correction summand		1,4					0,9				
Corrected glare indices referring to 459 lm total luminous flux											

UGR data could be incorrect as lamp output is not symmetrical. Goto Edit->Photometric->Corrections and select Correct asymmetry.

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 Lumens 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	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	96
2	111	107	104	101	109	106	103	100	102	100	98	99	98	96	97	95	94	93
3	108	103	100	97	106	102	99	96	99	97	95	97	95	93	95	93	92	90
4	105	100	96	93	104	99	95	93	97	94	92	95	93	91	93	91	90	89
5	103	97	93	91	101	96	93	90	95	92	90	93	91	89	92	90	88	87
6	101	95	91	89	100	94	91	88	93	90	88	92	89	87	91	88	87	86
7	99	93	89	87	98	93	89	87	92	88	86	91	88	86	90	87	85	85
8	97	91	88	85	96	91	88	85	90	87	85	89	87	85	89	86	84	84
9	96	90	87	84	95	90	86	84	89	86	84	88	86	84	88	85	83	83
10	94	89	85	83	94	88	85	83	88	85	83	87	85	83	87	84	83	82

Luminaire budgetary diagram



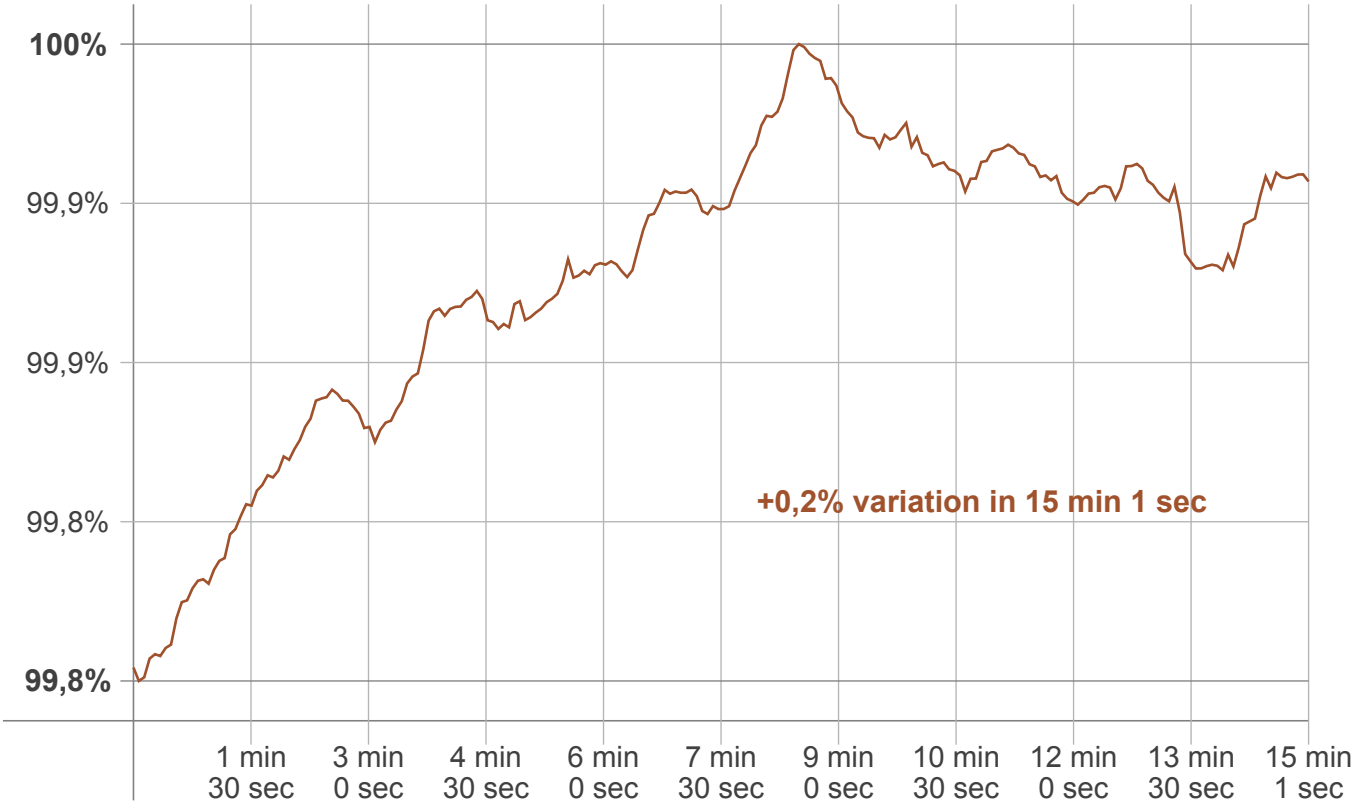
Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	79,1 lm	20,7 lm	10,3 lm	9,26 lm	8,79 lm	8,57 lm	7,43 lm	6,49 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,348 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm

Stabilization

Warmup curve



Warmup result

Warmup time:	**15 min 1 sec**
Warmup variation	**+0,2%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
0 K	0 K	0 K

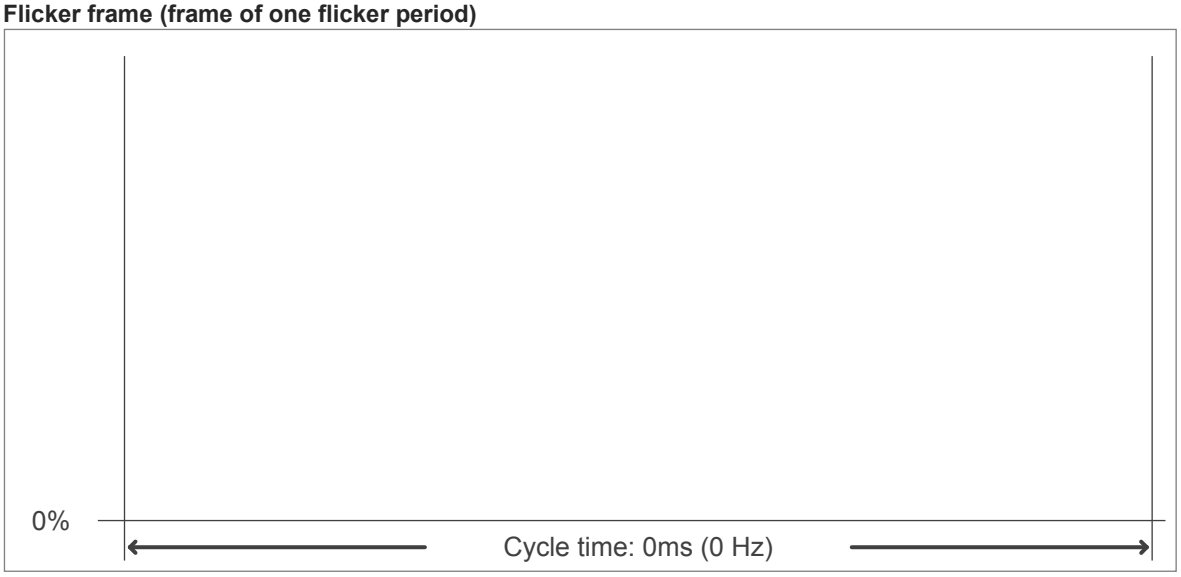
Output change

Output start	Output change	Output end
458 lm	+ lm	459 lm

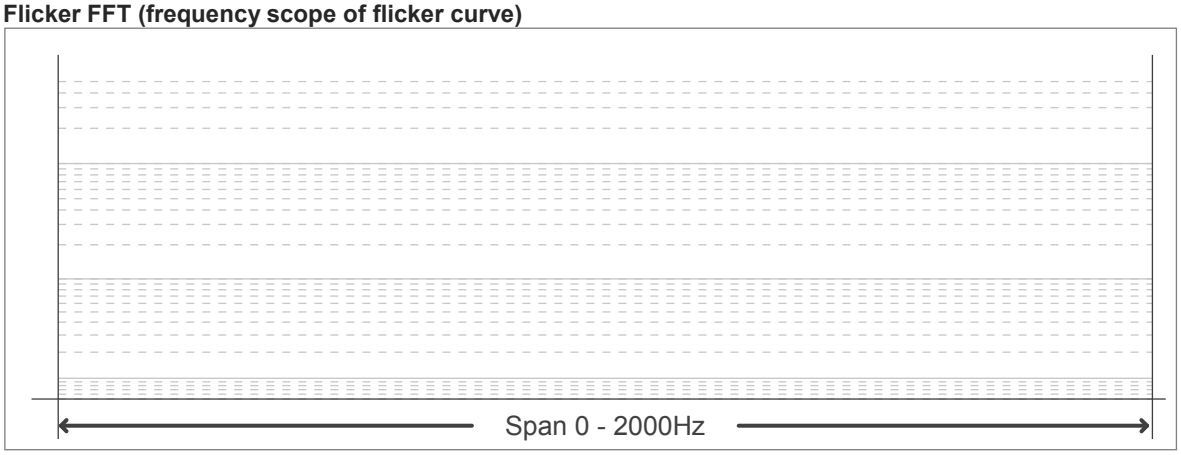
Flicker

Flicker curve (complete sampled flicker signal)

Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	**n/a Hz**
Flicker index:	**n/a**
Flicker percentage:	**n/a %**
SVM: (Visual flicker)	**n/a**

Flicker conditions:

Sample rate:	**60.000 samples/second**