FLASHAAR

Light efficiency:

88 Lumen/Watt

Light quality:

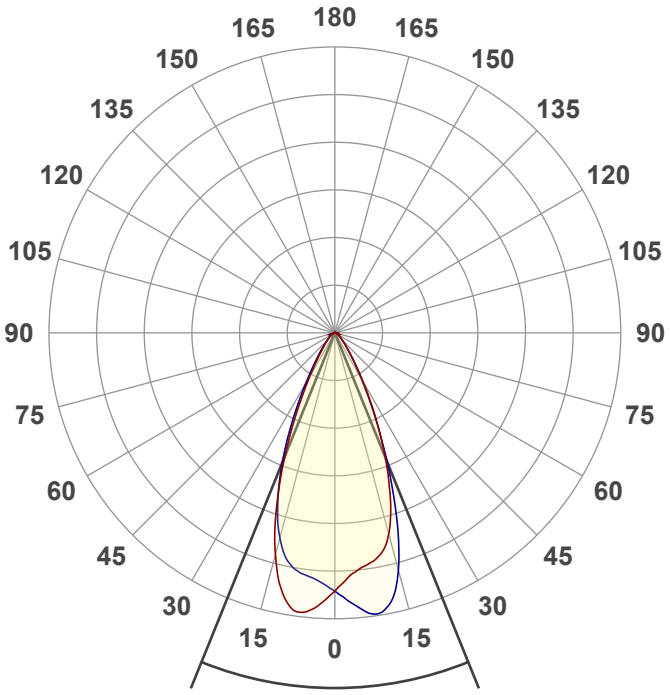
CRI: 0,0

Color temperature:

0 K

Output: 392 lm
Peak: 650 cd

Power: 4,5 W
PF: 1,0



Beam angle **44,1°**

CIE 1931
x: 0,168
y: 0,712

Product name:
F L-S O - 2-4 C -1 0 0-G-LSWT-W2

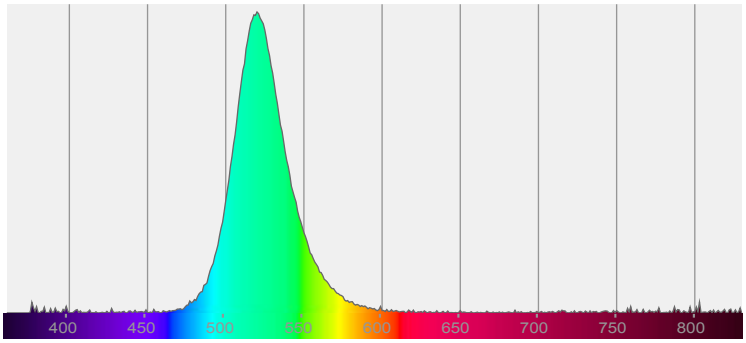
Item number:
F L / S O - 2 / 4 C / 1 0 0 / G /LSWT/W2

Date and time:
08.03.2019 14:48:41

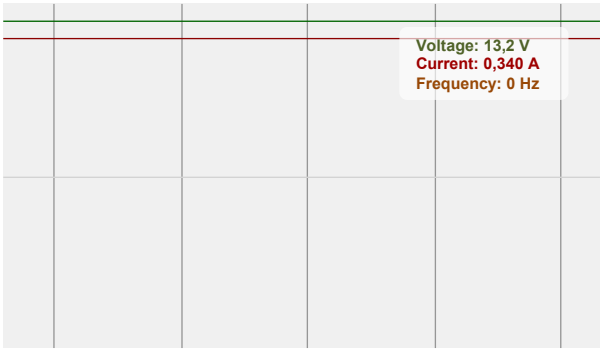
Description:

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

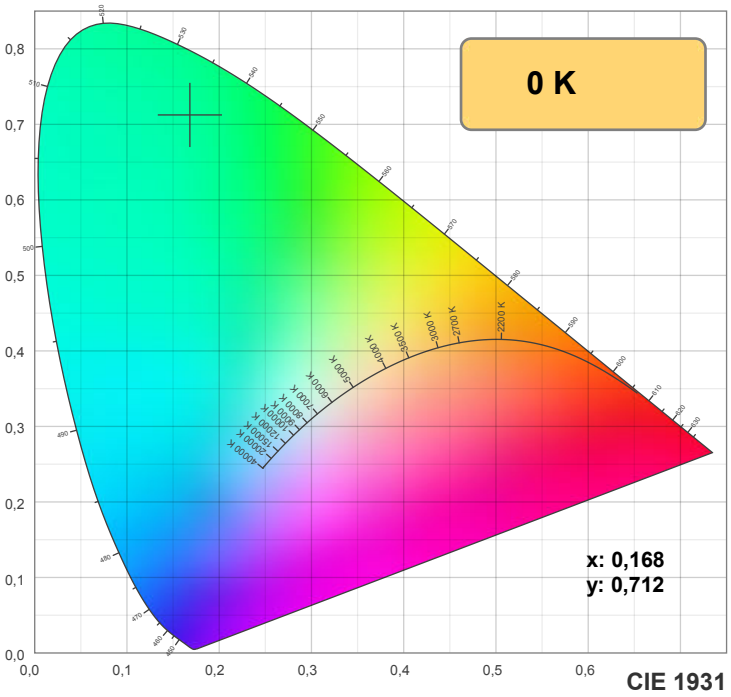
Spectra

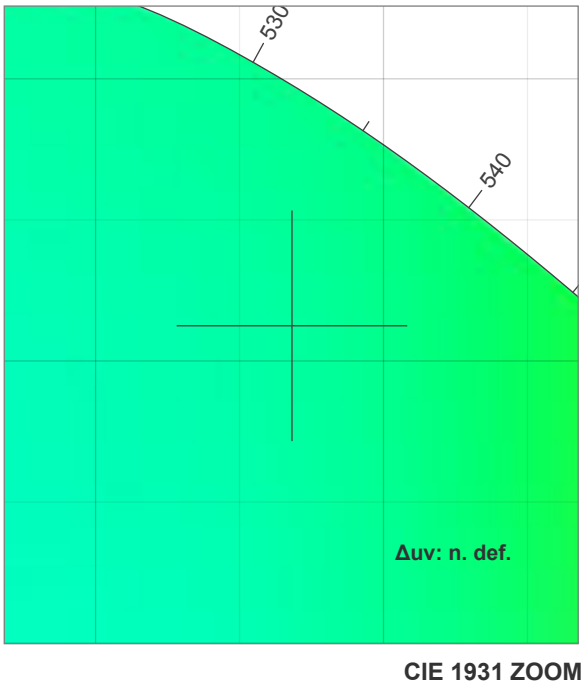


Power

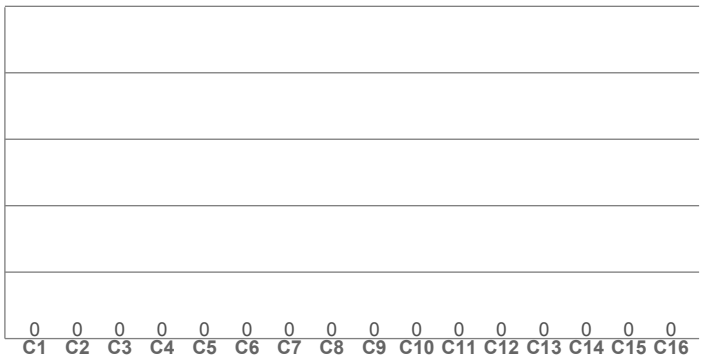


Color details

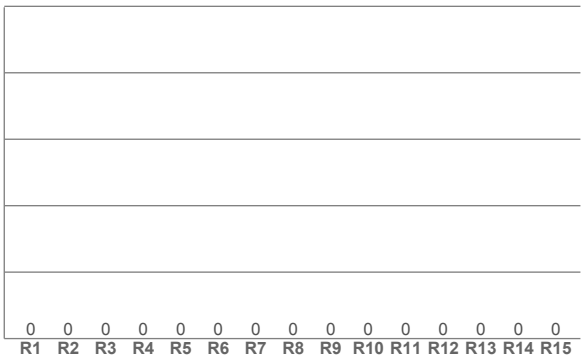




TM30: 0,0



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

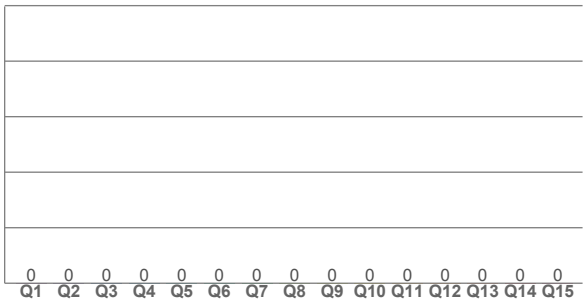
TM30 C values, 16 binned values out of total of 99 C values

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	0,168	0,712	0,060	0,381	n. def.

TM30 details

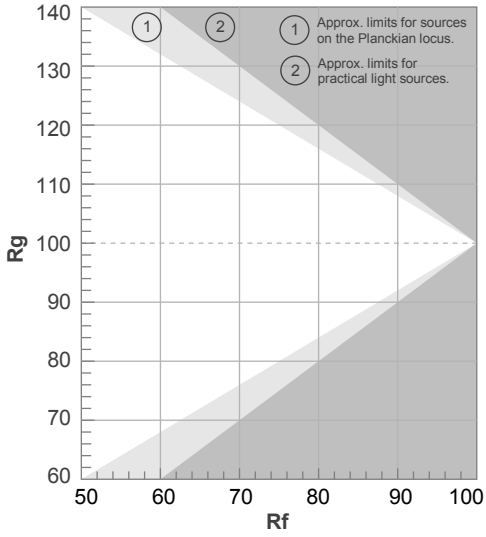
Rf 0,0

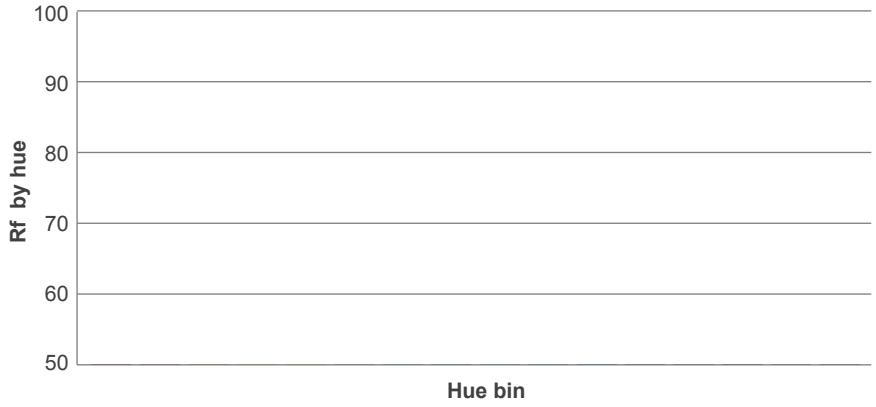
Fidelity index Rf

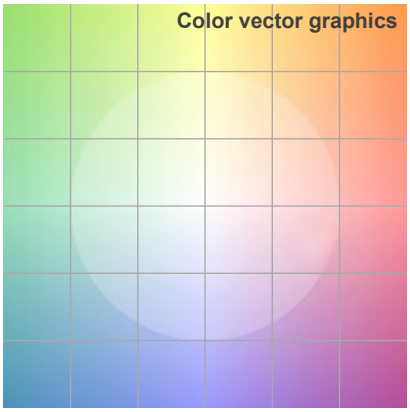
Rg 0,0

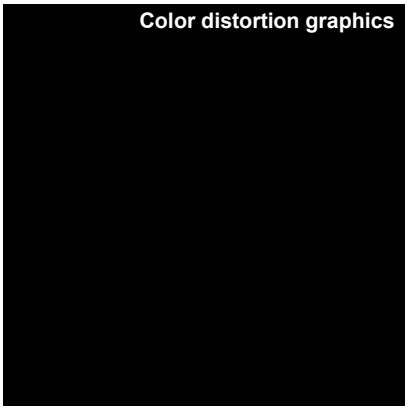
Gammut index Rg

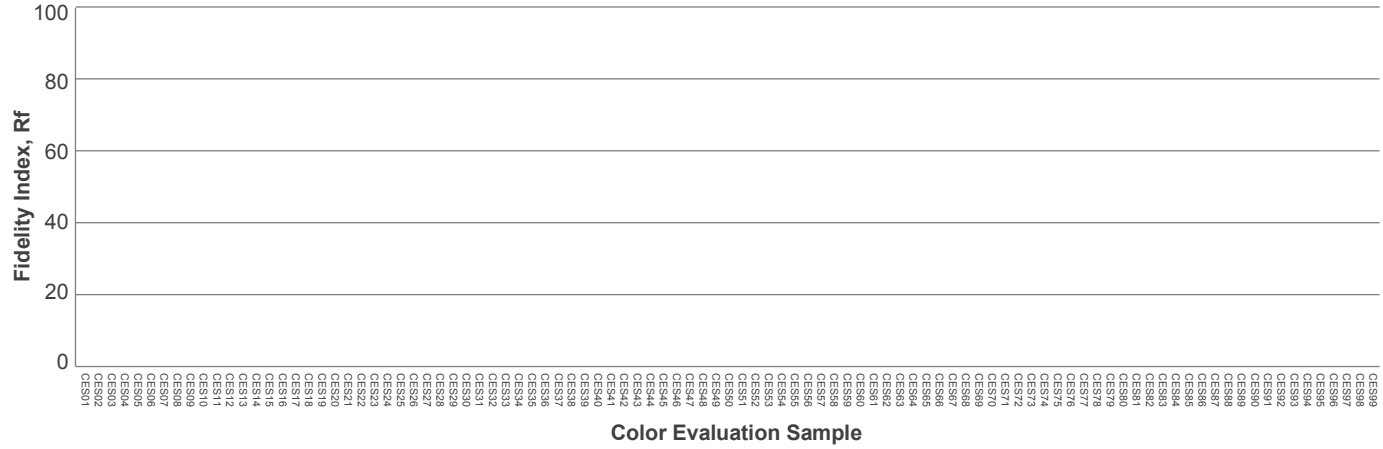
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	0	0%	0%
5	0	0%	0%
6	0	0%	0%
7	0	0%	0%
8	0	0%	0%
9	0	0%	0%
10	0	0%	0%
11	0	0%	0%
12	0	0%	0%
13	0	0%	0%
14	0	0%	0%
15	0	0%	0%
16	0	0%	0%





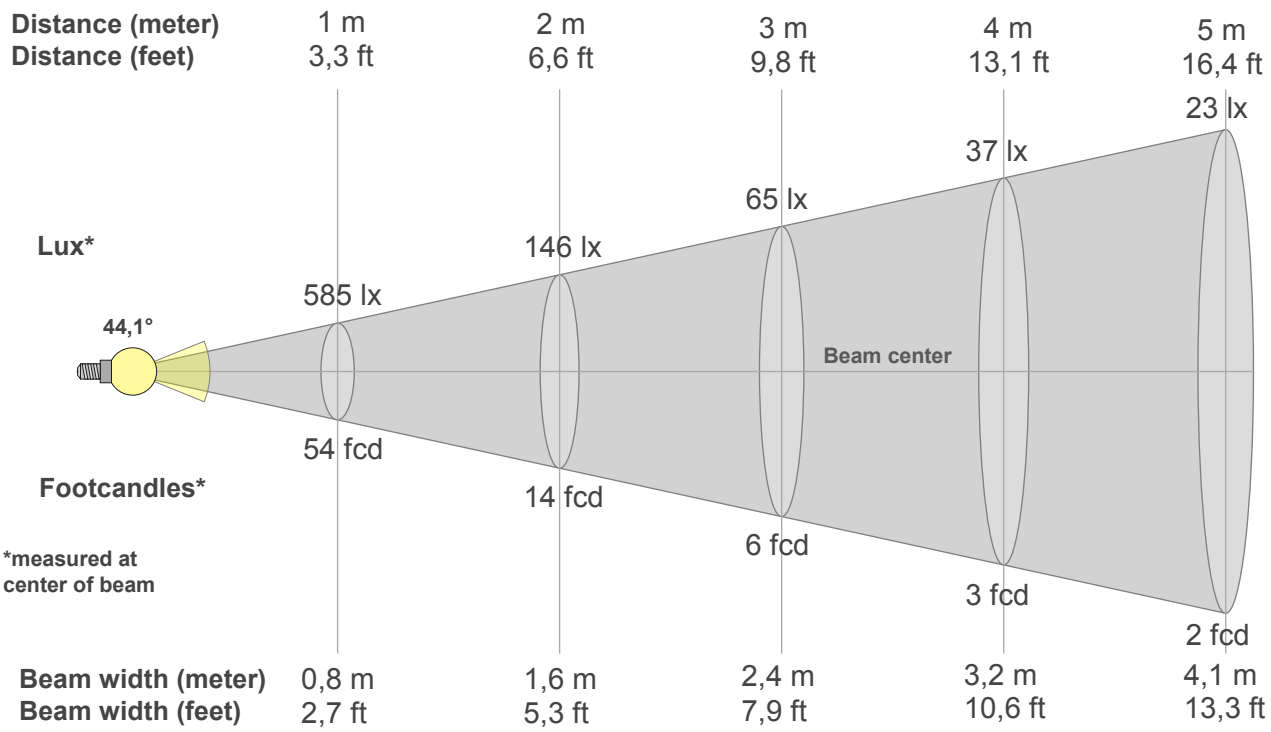






FLASHAAR

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
585lx	146lx	65lx	37lx	23lx	16lx	12lx	9lx	7lx	6lx	5lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx	2lx	1lx
54,4fcd	13,6fcd	6fcd	3,4fcd	2,2fcd	1,5fcd	1,1fcd	0,8fcd	0,7fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd	0,1fcd

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°
585	566	548	538	530	522	509	487	453	409	357	305	253	206	164	128	100	79	62	50
100%	97%	94%	92%	91%	89%	87%	83%	77%	70%	61%	52%	43%	35%	28%	22%	17%	13%	11%	9%

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°
585	600	617	633	643	639	620	582	527	459	387	318	254	201	155	121	93	72	57	46
100%	103%	105%	108%	110%	109%	106%	99%	90%	79%	66%	54%	43%	34%	27%	21%	16%	12%	10%	8%

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°
585	605	624	636	637	621	590	546	494	433	367	303	243	190	147	112	87	68	54	44
100%	103%	107%	109%	109%	106%	101%	93%	84%	74%	63%	52%	42%	33%	25%	19%	15%	12%	9%	8%

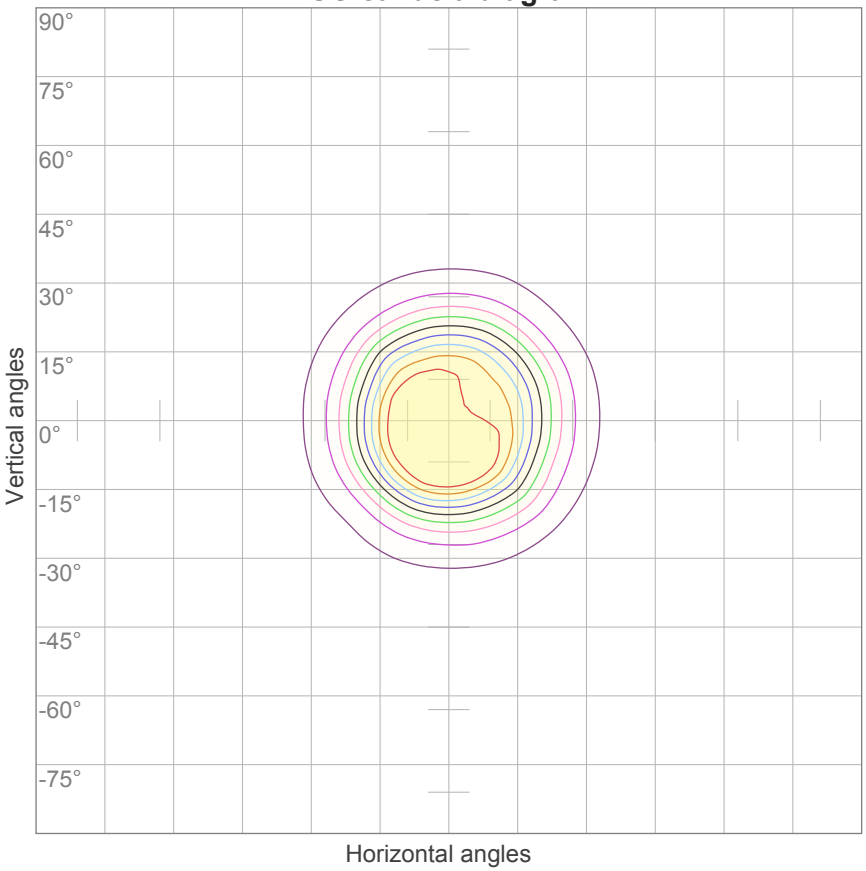
Intensities in 270° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
585	573	562	556	550	541	525	498	463	420	371	319	266	215	169	131	102	81	64	52
100%	98%	96%	95%	94%	92%	90%	85%	79%	72%	63%	54%	45%	37%	29%	22%	18%	14%	11%	9%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
44,1°	71,2°	103,3°	96,8%	91,6%

ISO Diagrams

ISO candela diagram



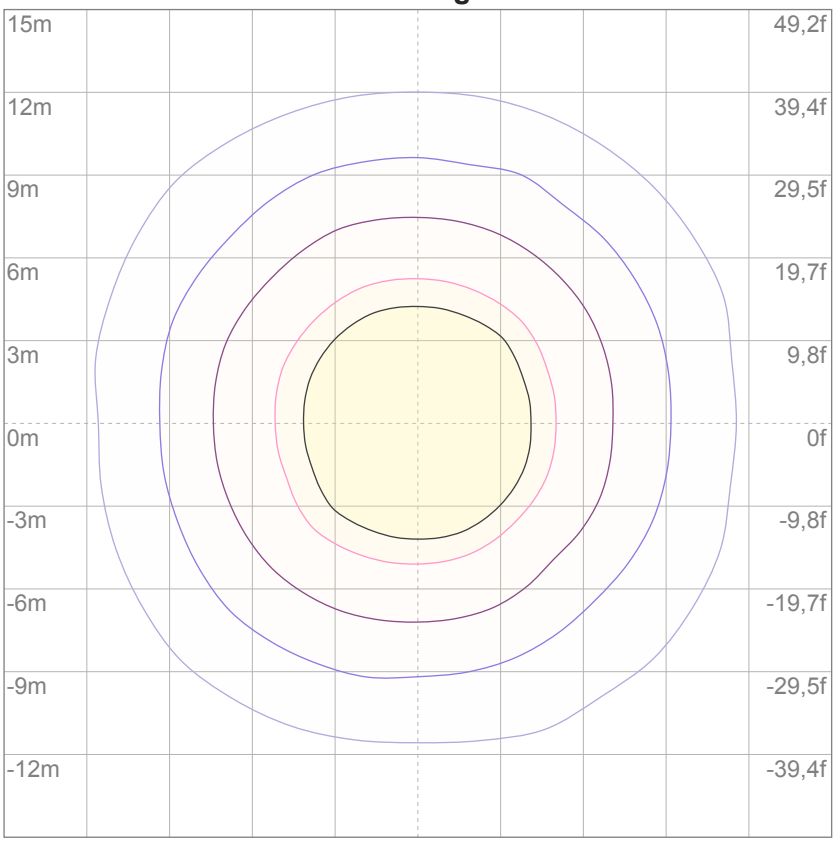
10%	59 cd
20%	117 cd
30%	176 cd
40%	234 cd
50%	293 cd
60%	351 cd
70%	410 cd
80%	468 cd
90%	527 cd

Conditions:

Number of c-planes: 16

Candela at center: 585 cd

ISO lux diagram



3%	0,176 lx
5%	0,293 lx
10%	0,585 lx
30%	1,76 lx
50%	2,93 lx

Conditions:

Number of c-planes: 16

Lux at center: 5,85 lx

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

UGR

Glare Evaluation According to UGR

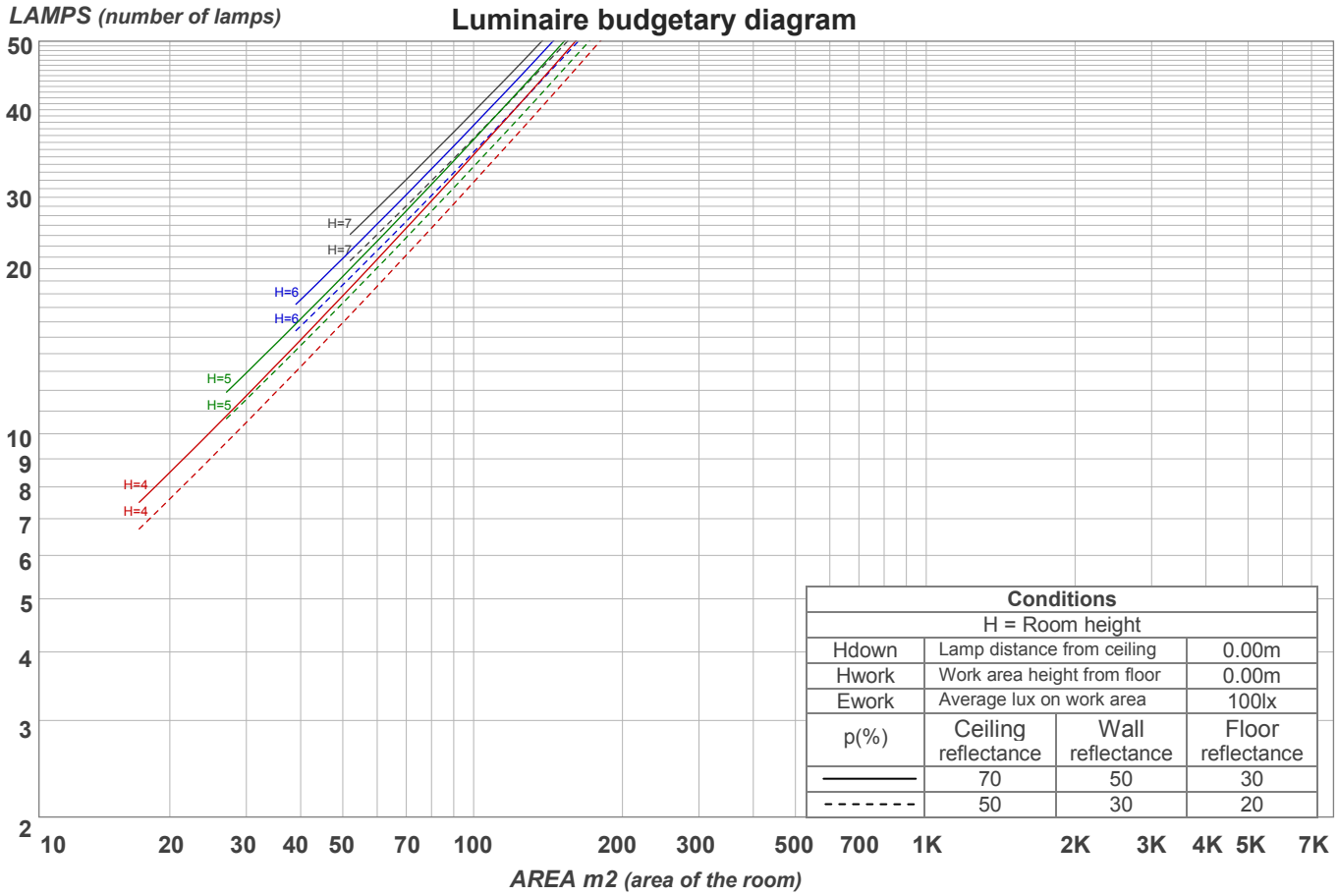
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	12,1	12,8	12,3	13,0	13,2	11,8	12,5	12,0	12,7	12,9
	3H	12,6	13,3	12,9	13,6	13,8	12,3	13,0	12,6	13,3	13,5
	4H	13,0	13,6	13,3	13,9	14,1	12,7	13,3	13,0	13,6	13,8
	6H	13,2	13,8	13,6	14,1	14,4	13,0	13,6	13,3	13,9	14,2
	8H	13,4	14,0	13,7	14,3	14,6	13,2	13,8	13,5	14,1	14,4
	12H	13,5	14,1	13,9	14,4	14,7	13,3	13,9	13,7	14,2	14,5
4H	2H	12,3	12,9	12,6	13,2	13,4	12,0	12,6	12,3	12,9	13,1
	3H	13,0	13,5	13,3	13,8	14,2	12,7	13,3	13,1	13,6	13,9
	4H	13,4	13,9	13,8	14,3	14,6	13,2	13,7	13,6	14,0	14,3
	6H	13,9	14,3	14,3	14,6	15,0	13,7	14,1	14,1	14,4	14,8
	8H	14,1	14,5	14,5	14,9	15,3	13,9	14,3	14,3	14,7	15,1
	12H	14,4	14,7	14,8	15,1	15,5	14,1	14,4	14,6	14,8	15,3
8H	4H	13,6	13,9	14,0	14,3	14,7	13,3	13,7	13,7	14,0	14,4
	6H	14,1	14,4	14,6	14,8	15,3	13,9	14,2	14,4	14,6	15,1
	8H	14,5	14,7	14,9	15,1	15,6	14,3	14,5	14,7	14,9	15,4
	12H	14,8	15,0	15,3	15,5	16,0	14,6	14,8	15,1	15,2	15,7
12H	4H	13,6	13,9	14,0	14,3	14,7	13,3	13,6	13,7	14,0	14,4
	6H	14,2	14,4	14,6	14,8	15,3	14,0	14,2	14,4	14,6	15,1
	8H	14,6	14,7	15,0	15,2	15,7	14,4	14,5	14,8	15,0	15,5
Variation of the observer position for the luminaire distance S											
S = 1,0H		+1,3 / -0,8					+1,2 / -0,8				
S = 1,5H		+2,8 / -1,3					+2,6 / -1,3				
S = 2,0H		+4,3 / -1,8					+4,1 / -1,7				
Standard table		BK04					BK04				
Correction summand		-3,2					-3,5				
Corrected glare indices referring to 392 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	113	110	108	106	111	108	106	104	104	102	101	101	99	98	97	96	95	93
2	108	103	99	95	106	101	97	94	98	95	92	95	92	90	92	90	88	87
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	87	85	83	81
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76
5	93	85	79	75	92	84	79	75	82	78	74	81	77	73	79	76	73	71
6	89	80	75	70	87	80	74	70	78	73	70	77	72	69	75	72	69	67
7	85	76	70	66	84	75	70	66	74	69	66	73	69	65	72	68	65	64
8	81	72	67	63	80	72	66	62	71	66	62	70	65	62	69	65	62	60
9	78	69	63	59	77	68	63	59	67	62	59	66	62	59	66	62	59	57
10	75	66	60	56	74	65	60	56	64	60	56	64	59	56	63	59	56	55

Luminaire budgetary diagram



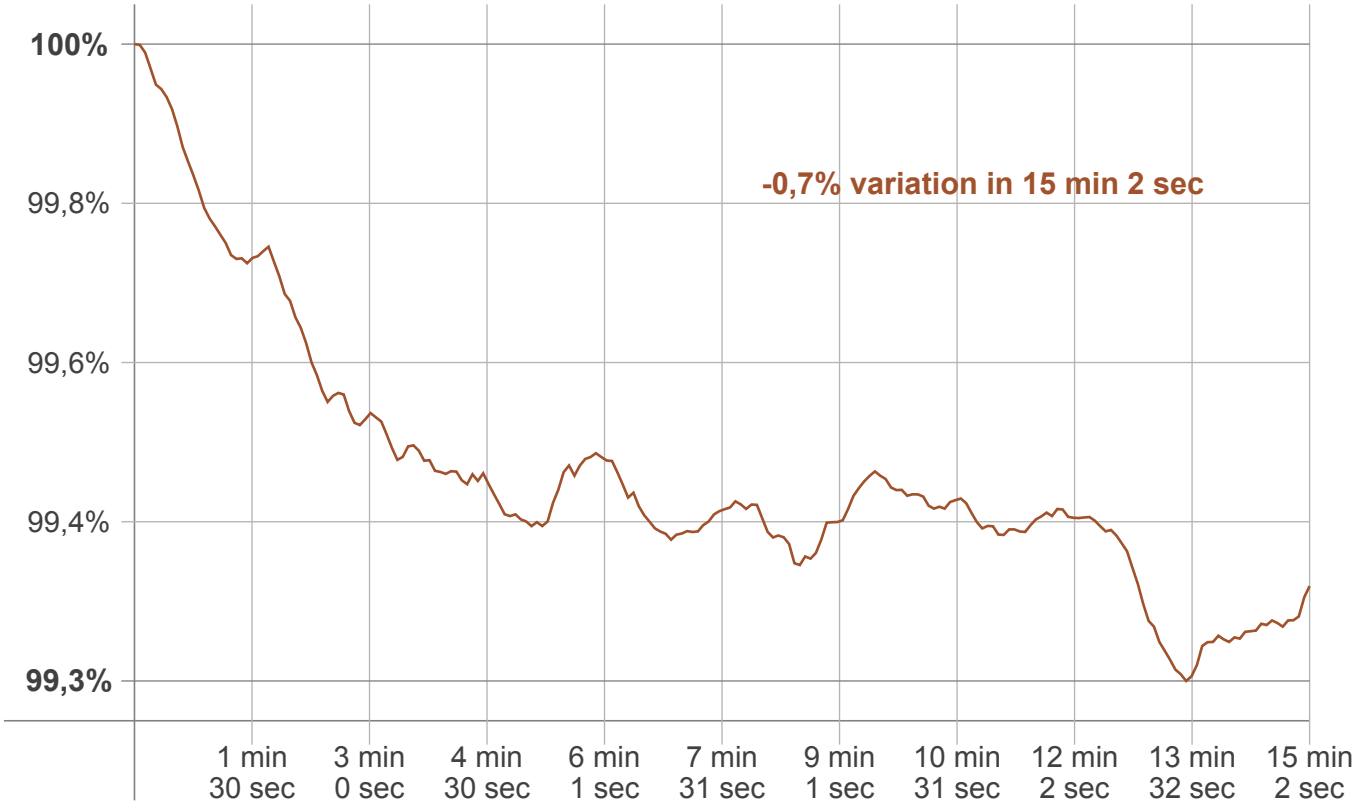
Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	139 lm	108 lm	44,8 lm	20,4 lm	11,8 lm	6,93 lm	3,82 lm	1,73 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,041 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 2 sec**
Warmup variation	**-0,7%**

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**

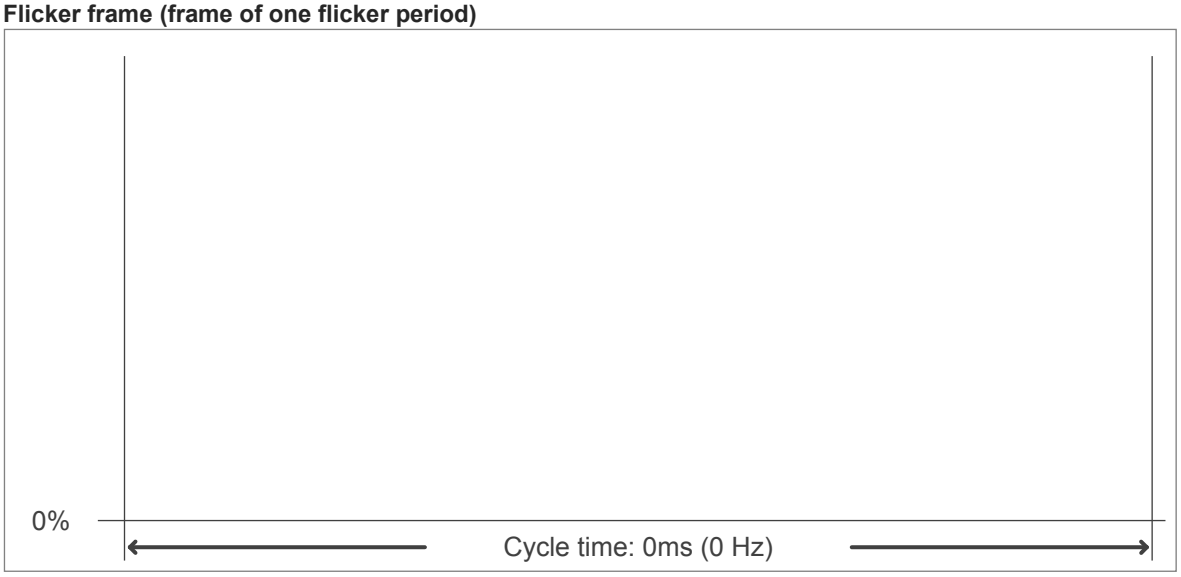
Output change

Output start	Output change	Output end
394 lm	**-2 lm**	**392 lm**

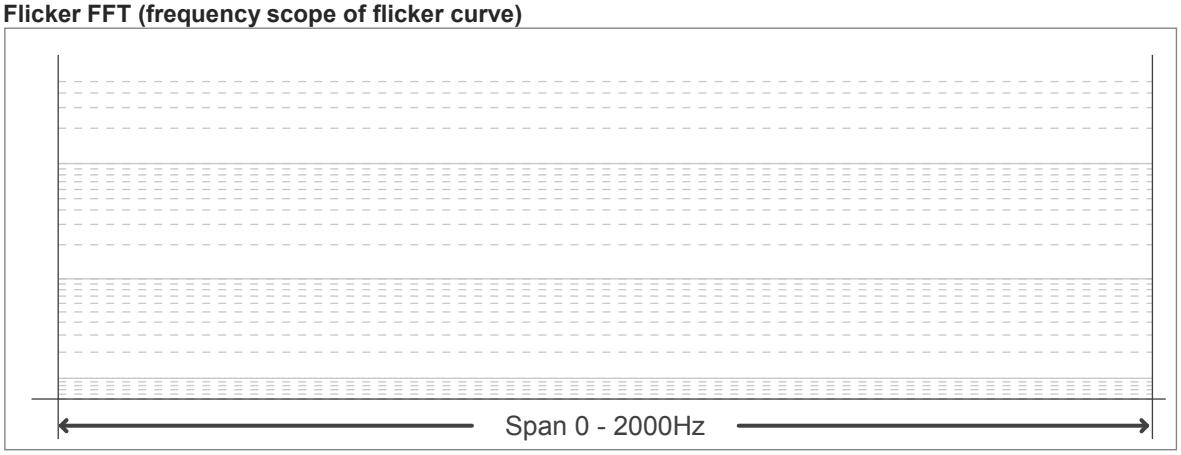
Flicker

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**