Light efficiency:

74 Lumen/Watt

Light quality:

CRI: 92,5

Color temperature:

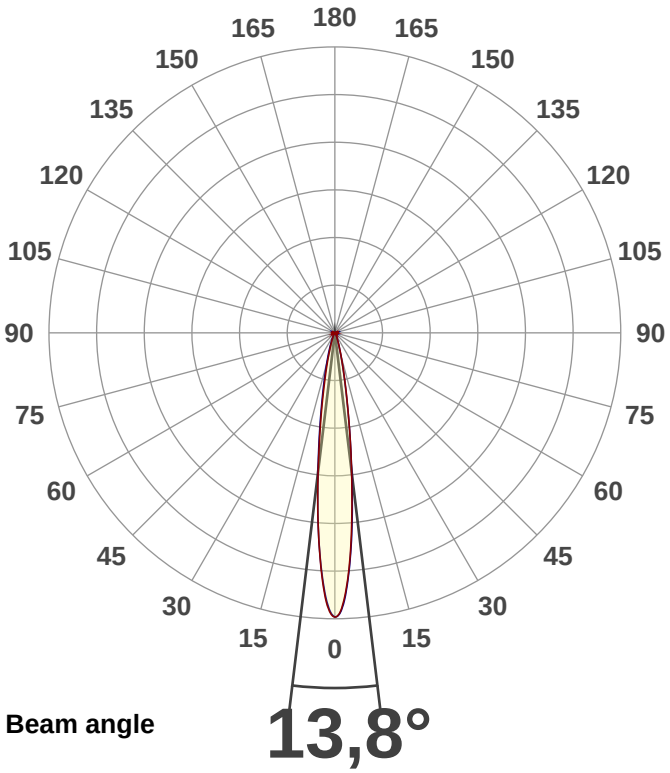
2744 K

Output: 335 lm

Peak: 3486 cd

Power: 4,5 W

PF: 1,0



Beam angle

13,8°

CIE 1931
x: 0,455
y: 0,406

Product name:
F L-S O - 2-4 C -1 0 0-W-LSTT-SS

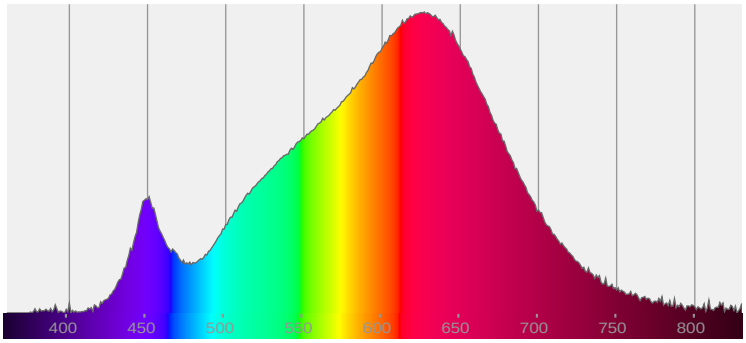
Item number:
F L / S O - 2 / 4 C / 1 0 0 / W /LSTT/SS

Date and time:
11.03.2019 09:54:25

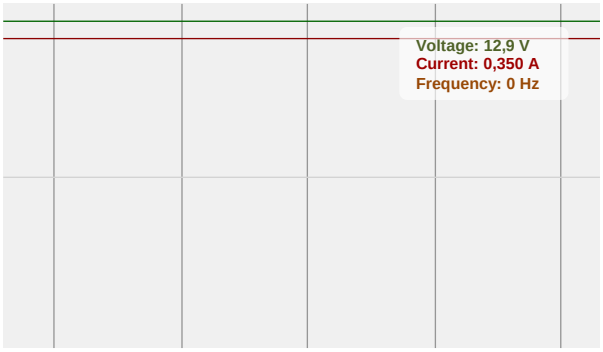
Description:

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

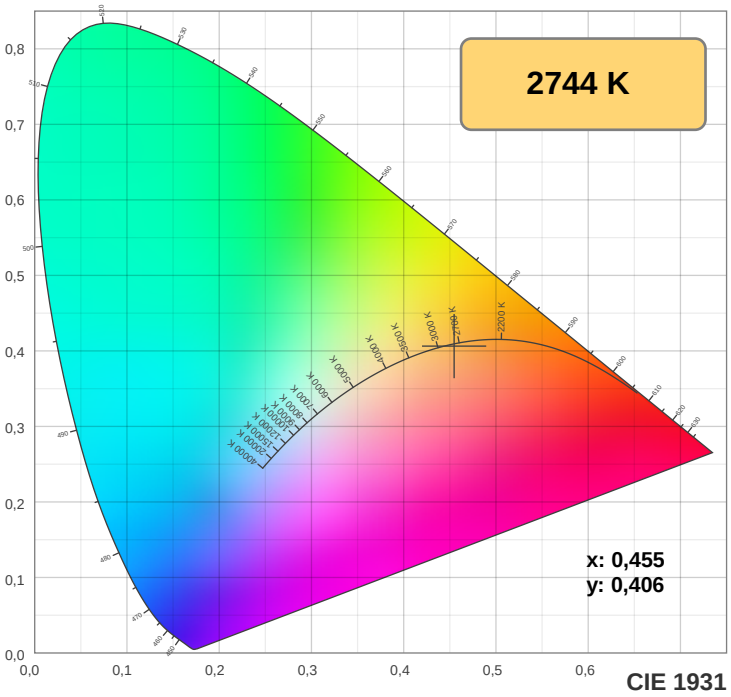


Power

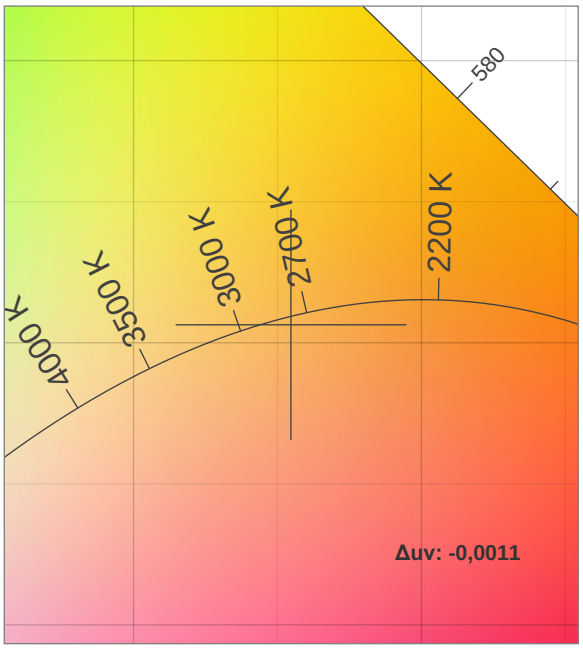


FLASHAAR

Color details

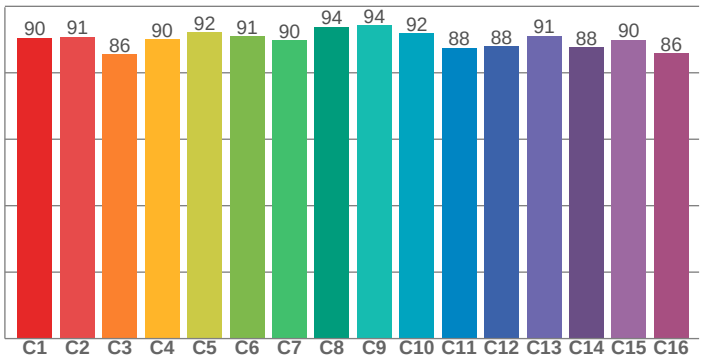


CIE 1931

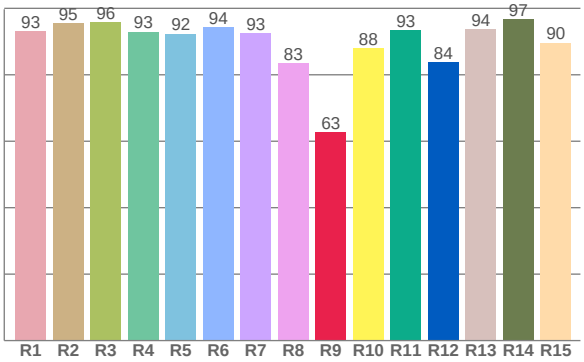


CIE 1931 ZOOM

TM30: 90,0



CRI: 92,5 (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
93,1	95,4	95,8	93,0	92,4	94,3	92,6	83,4	62,7	88,0	93,5	83,9	93,6	96,7	89,6

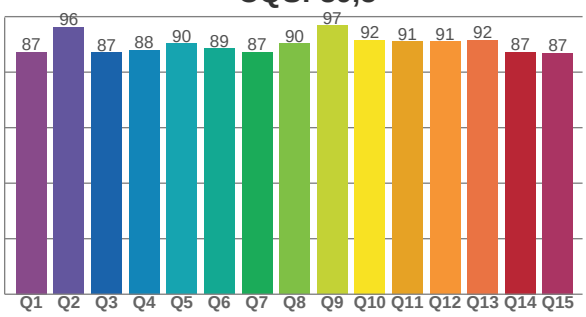
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
90,5	90,8	85,5	90,0	92,2	91,0	89,7	93,8	94,3	91,8	87,5	88,0	91,1	87,7	89,9	85,8

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87,3	96,1	87,1	88,0	90,3	88,6	87,2	90,3	96,8	91,6	91,1	91,0	91,6	87,3	87,0

CQS: 89,5



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
2744 K	92,5	62,7	90,0	101,5	89,5	0,455	0,406	0,261	0,350	-0,0011

TM30 details

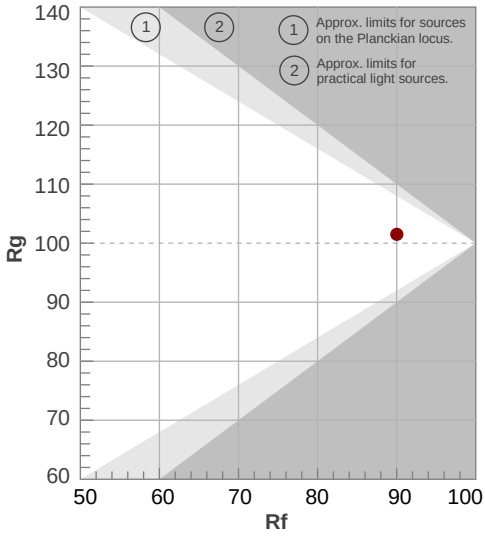
Rf 90,0

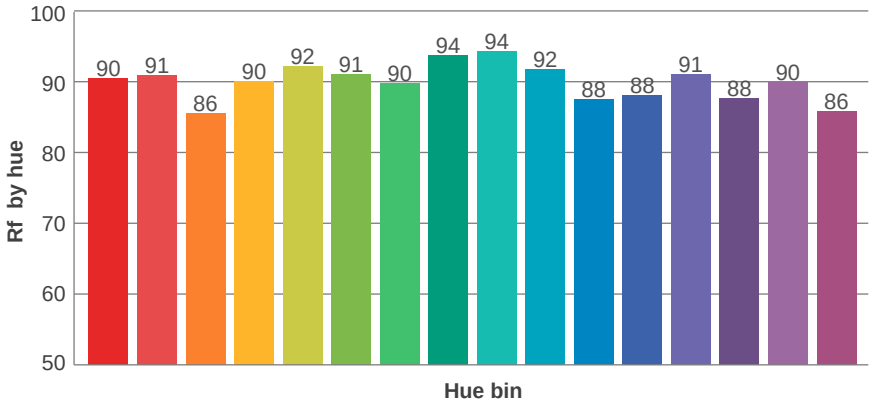
Fidelity index Rf

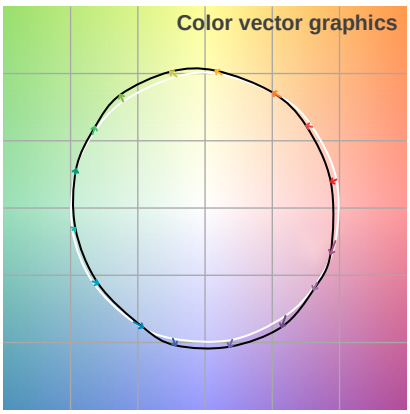
Rg 101,5

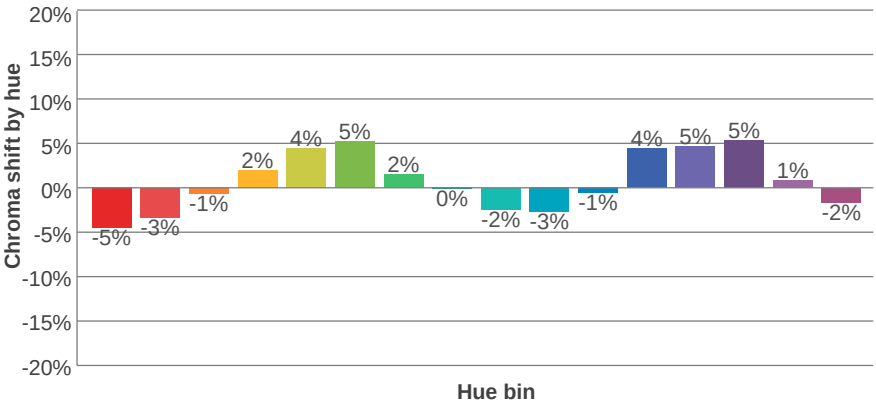
Gammut index Rg

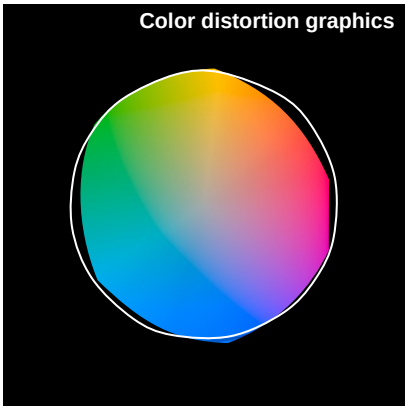
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	90	-5%	-1%
2	91	-3%	3%
3	86	-1%	7%
4	90	2%	5%
5	92	4%	4%
6	91	5%	-1%
7	90	2%	-6%
8	94	0%	-4%
9	94	-2%	-1%
10	92	-3%	4%
11	88	-1%	8%
12	88	4%	3%
13	91	5%	-3%
14	88	5%	-7%
15	90	1%	-6%
16	86	-2%	-10%

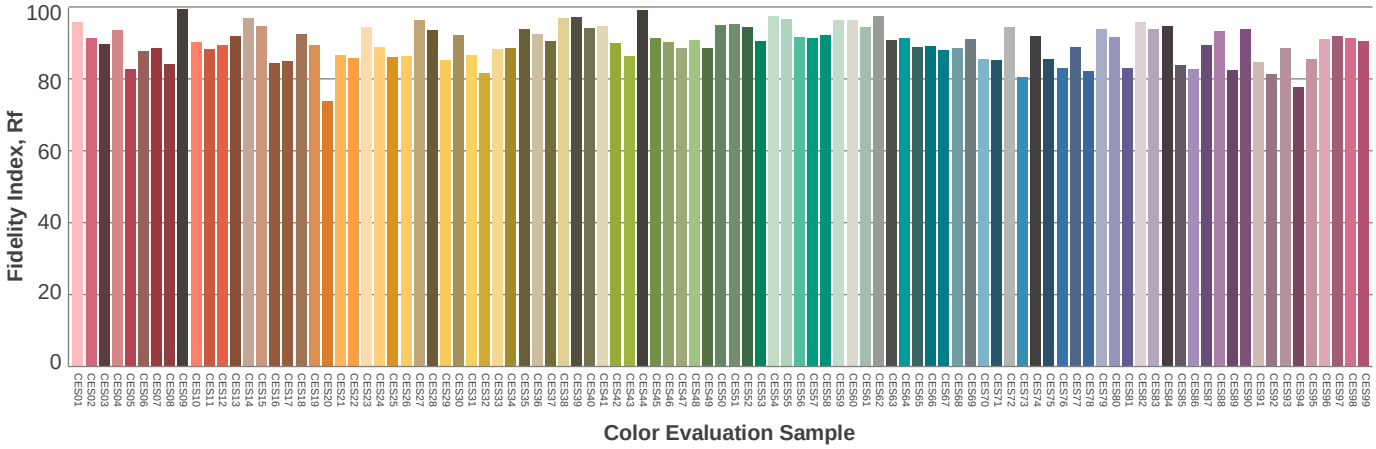












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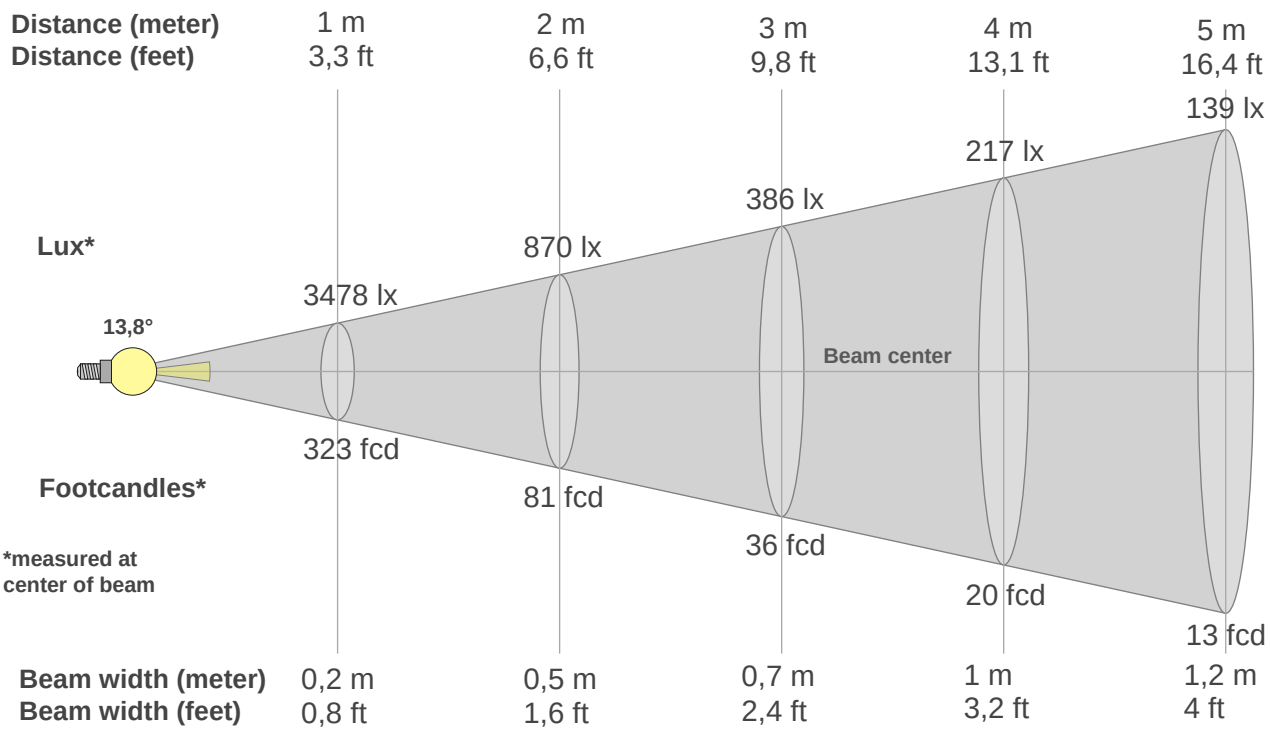
Beam details



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
3478lx	870lx	386lx	217lx	139lx	97lx	71lx	54lx	43lx	35lx	29lx	24lx	21lx	18lx	15lx	14lx	12lx	11lx	10lx	9lx
323,1fc	80,8fcd	35,9fcd	20,2fcd	12,9fcd	9fcd	6,6fcd	5fcd	4fcd	3,2fcd	2,7fcd	2,2fcd	1,9fcd	1,6fcd	1,4fcd	1,3fcd	1,1fcd	1fcd	0,9fcd	0,8fcd

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°
3478	3426	3261	3016	2713	2360	2003	1678	1379	1108	889	716	572	456	365	297	242	198	163	135
100%	98%	94%	87%	78%	68%	58%	48%	40%	32%	26%	21%	16%	13%	10%	9%	7%	6%	5%	4%

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°
3478	3439	3289	3040	2740	2402	2041	1685	1377	1104	869	683	545	434	343	276	224	185	153	126
100%	99%	95%	87%	79%	69%	59%	48%	40%	32%	25%	20%	16%	12%	10%	8%	6%	5%	4%	4%

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°
3478	3421	3259	2999	2686	2352	2015	1678	1372	1123	912	730	588	480	390	316	256	211	174	145
100%	98%	94%	86%	77%	68%	58%	48%	39%	32%	26%	21%	17%	14%	11%	9%	7%	6%	5%	4%

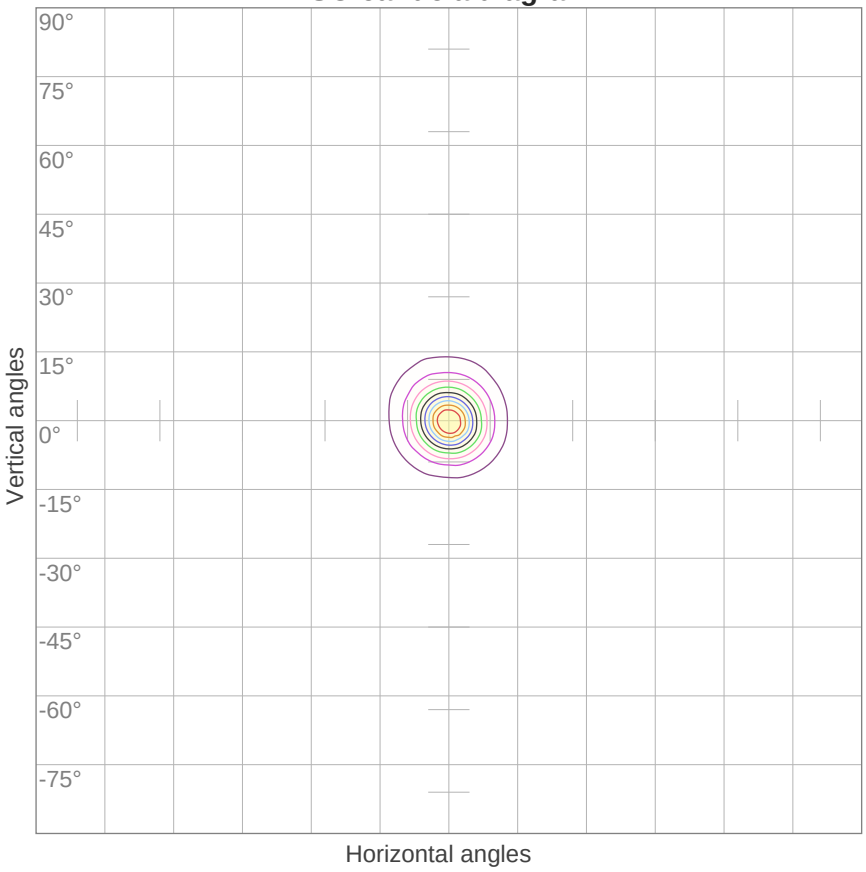
Intensities in 270° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
3478	3408	3233	2975	2678	2352	2008	1692	1420	1180	972	805	669	557	461	383	319	267	221	184
100%	98%	93%	86%	77%	68%	58%	49%	41%	34%	28%	23%	19%	16%	13%	11%	9%	8%	6%	5%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
13,8°	**29,5°**	**44,5°**	**97,7%**	**95,5%**

ISO Diagrams

ISO candela diagram



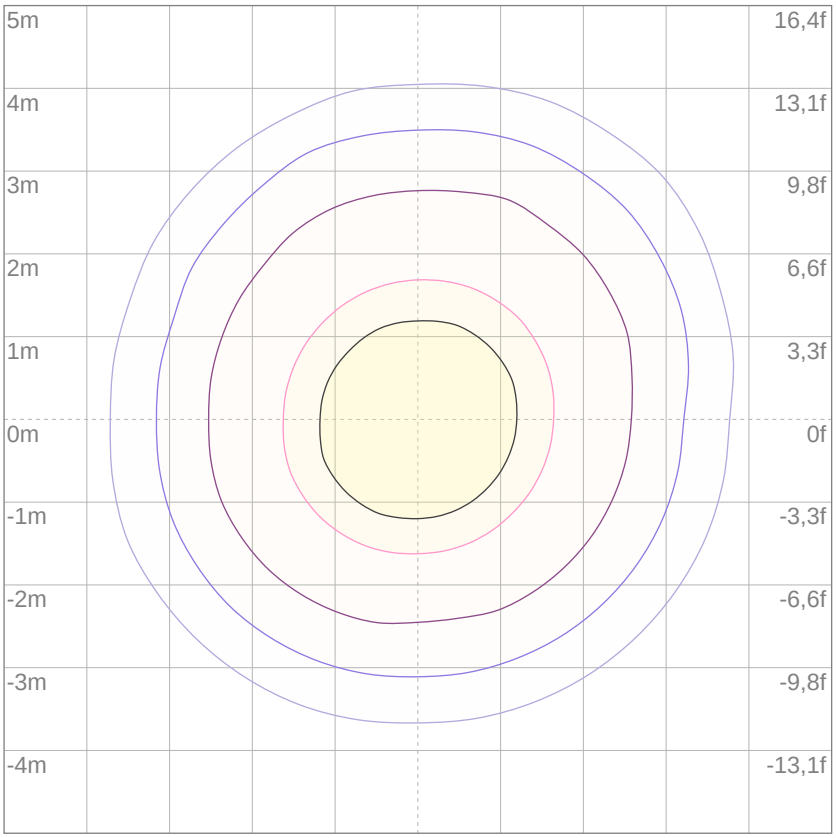
10%	348 cd
20%	696 cd
30%	1043 cd
40%	1391 cd
50%	1739 cd
60%	2087 cd
70%	2435 cd
80%	2783 cd
90%	3130 cd

Conditions:

Number of c-planes: 16

Candela at center: 3478 cd

ISO lux diagram



Mounting height: 10 meters (33 feet)

3%	1,04 lx
5%	1,74 lx
10%	3,48 lx
30%	10,4 lx
50%	17,4 lx

Conditions:

Number of c-planes: 16

Lux at center: 34,8 lx

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

UGR

Glare Evaluation According to UGR

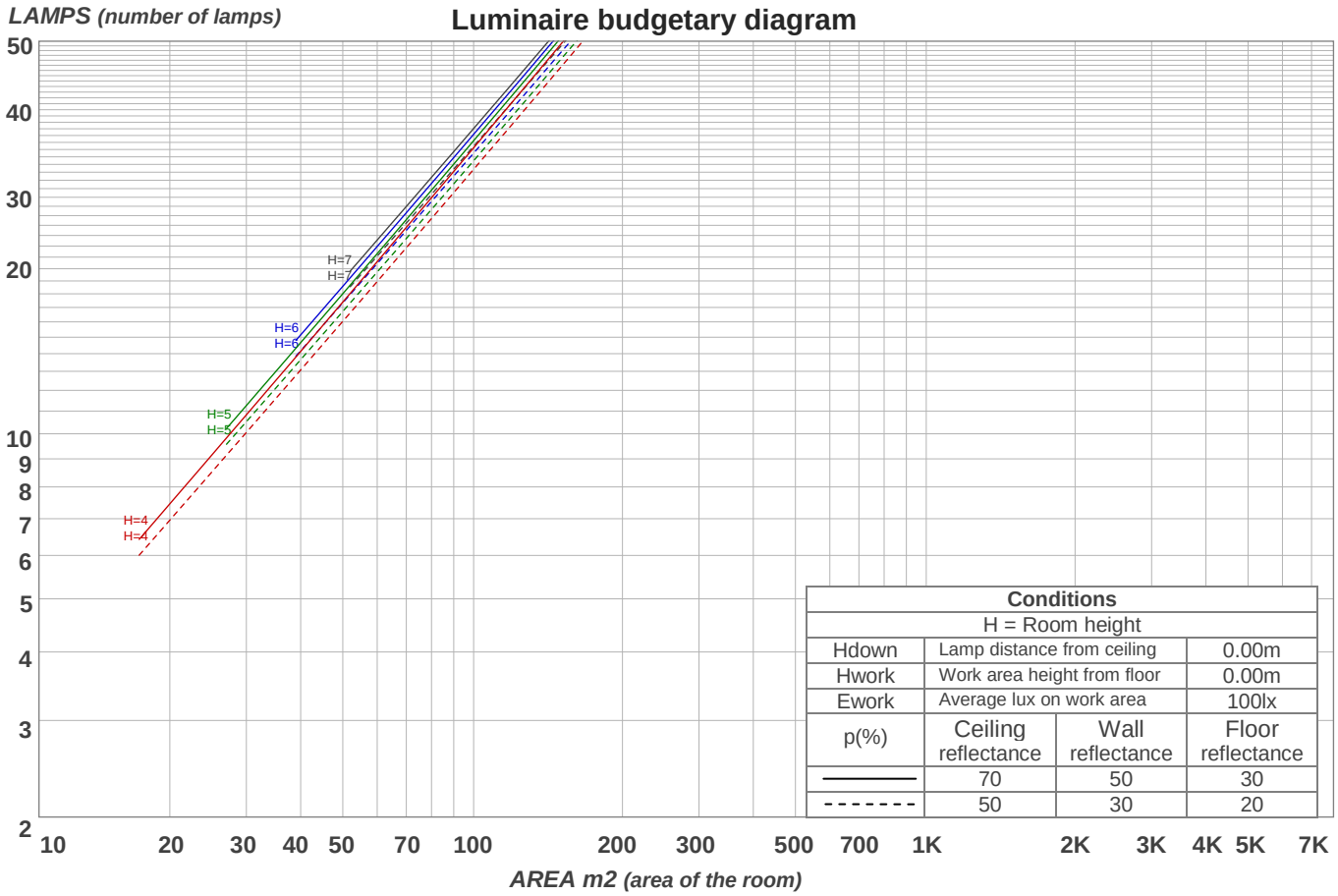
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	4,6	5,3	4,9	5,5	5,7	4,4	5,1	4,7	5,3	5,5
	3H	6,0	6,6	6,2	6,8	7,1	5,8	6,5	6,1	6,7	7,0
	4H	6,9	7,5	7,2	7,7	8,0	6,8	7,4	7,1	7,7	7,9
	6H	7,8	8,3	8,1	8,6	8,9	7,7	8,2	8,0	8,5	8,8
	8H	8,4	8,9	8,7	9,2	9,5	8,4	8,9	8,7	9,2	9,5
	12H	9,2	9,7	9,6	10,0	10,4	9,3	9,8	9,6	10,1	10,4
4H	2H	5,2	5,8	5,5	6,1	6,3	5,0	5,6	5,3	5,9	6,1
	3H	6,8	7,3	7,2	7,6	7,9	6,7	7,2	7,0	7,5	7,8
	4H	7,9	8,3	8,3	8,7	9,0	7,9	8,3	8,2	8,6	9,0
	6H	8,9	9,3	9,3	9,7	10,0	8,9	9,3	9,3	9,7	10,0
	8H	9,7	10,0	10,1	10,4	10,8	9,7	10,0	10,1	10,4	10,8
	12H	10,7	11,0	11,1	11,4	11,8	10,7	11,0	11,2	11,4	11,8
8H	4H	8,3	8,6	8,7	9,0	9,4	8,2	8,6	8,7	9,0	9,4
	6H	9,6	9,8	10,0	10,2	10,7	9,6	9,8	10,0	10,2	10,7
	8H	10,5	10,7	11,0	11,2	11,6	10,5	10,7	10,9	11,1	11,6
	12H	11,8	12,0	12,3	12,4	12,9	11,7	11,9	12,2	12,3	12,8
12H	4H	8,4	8,6	8,8	9,0	9,5	8,3	8,6	8,8	9,0	9,4
	6H	9,7	9,9	10,2	10,4	10,9	9,8	10,0	10,2	10,4	10,9
	8H	10,8	11,0	11,3	11,5	12,0	10,8	10,9	11,2	11,4	11,9
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,2 / -0,2					+0,2 / -0,3				
S = 1,5H		+0,4 / -0,5					+0,4 / -0,5				
S = 2,0H		+0,7 / -0,8					+0,8 / -0,8				
Standard table		BK09					BK09				
Correction summand		-6,0					-6,0				
Corrected glare indices referring to 335 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	113	111	109	113	111	109	107	107	105	104	103	102	101	100	99	98	96
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93
3	108	103	100	97	106	102	99	96	100	97	95	97	95	93	95	93	92	91
4	105	100	96	93	103	99	95	92	97	94	91	95	92	90	93	91	89	88
5	102	97	93	90	101	96	92	89	94	91	89	93	90	88	91	89	87	86
6	100	94	90	87	98	93	89	87	92	89	86	91	88	86	89	87	85	84
7	97	91	87	85	96	91	87	85	90	87	84	89	86	84	88	85	83	82
8	95	89	85	83	94	89	85	83	88	85	82	87	84	82	86	84	82	81
9	93	87	84	81	92	87	83	81	86	83	81	85	82	80	85	82	80	79
10	91	85	82	79	91	85	82	79	84	81	79	84	81	79	83	81	79	78

Luminaire budgetary diagram



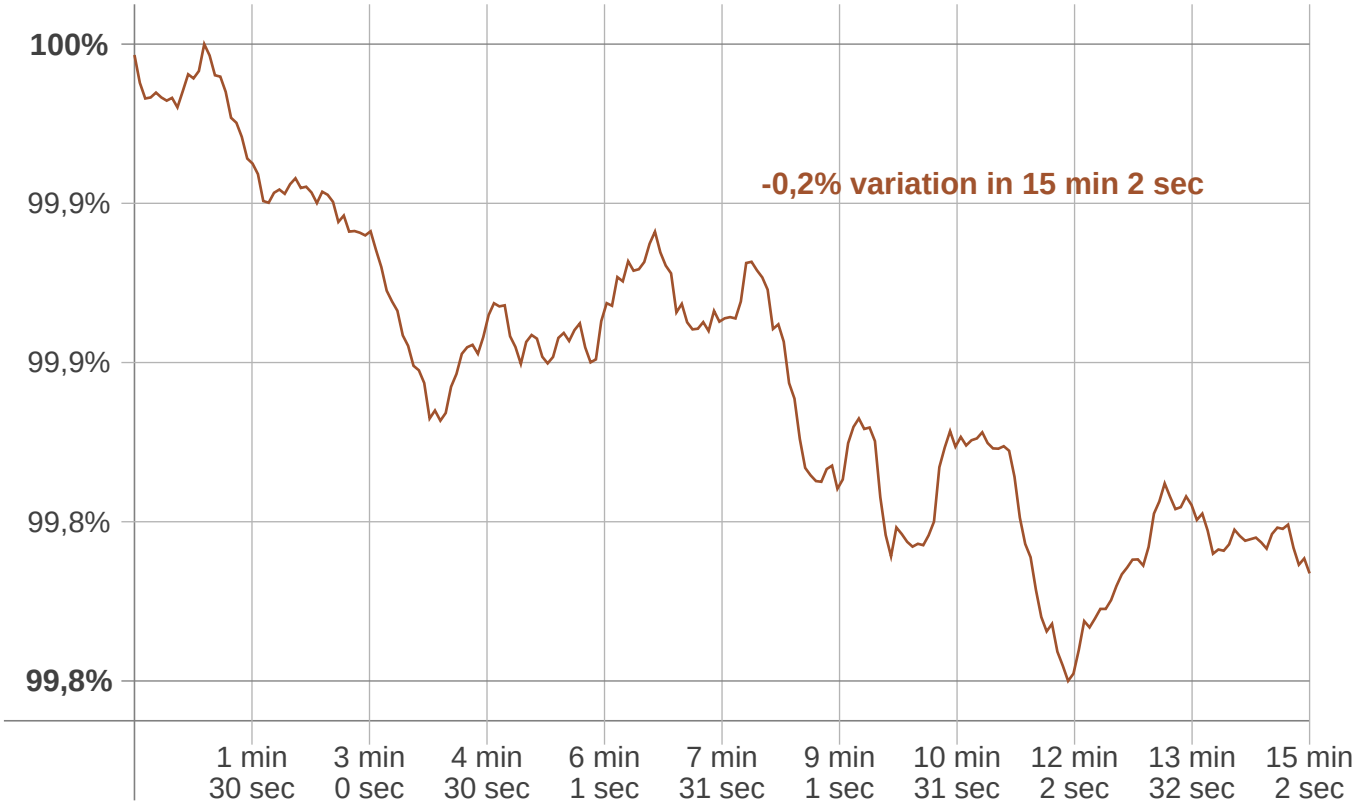
Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	100 lm	28,3 lm	11,2 lm	6,57 lm	4,49 lm	3,34 lm	2,48 lm	1,76 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,086 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	**-0,2%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
2746 K	-2 K	2744 K

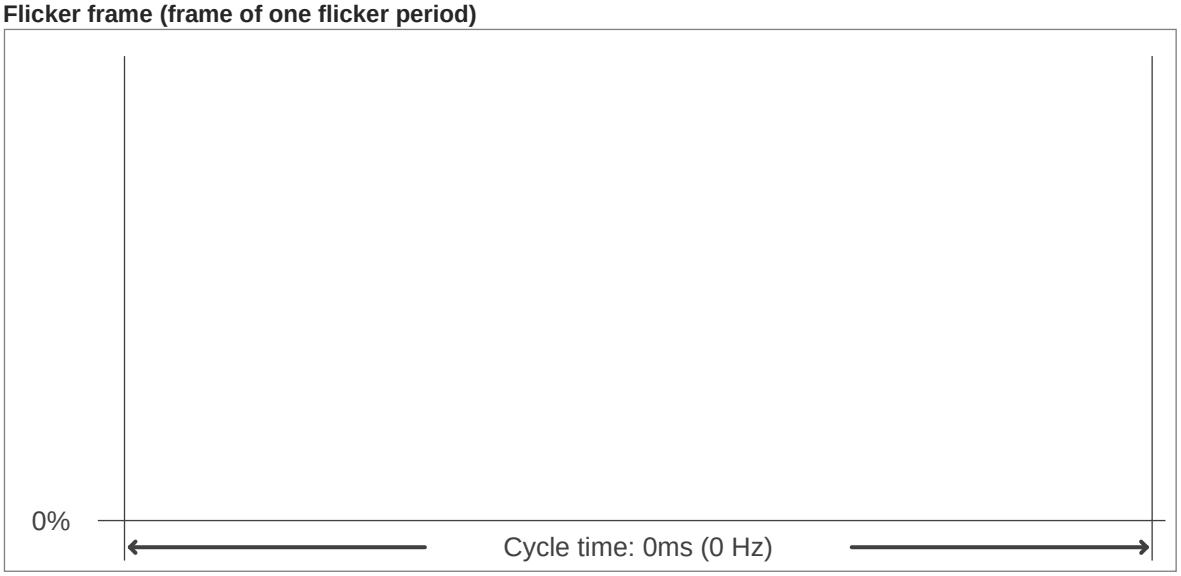
Output change

Output start	Output change	Output end
335 lm	lm	335 lm

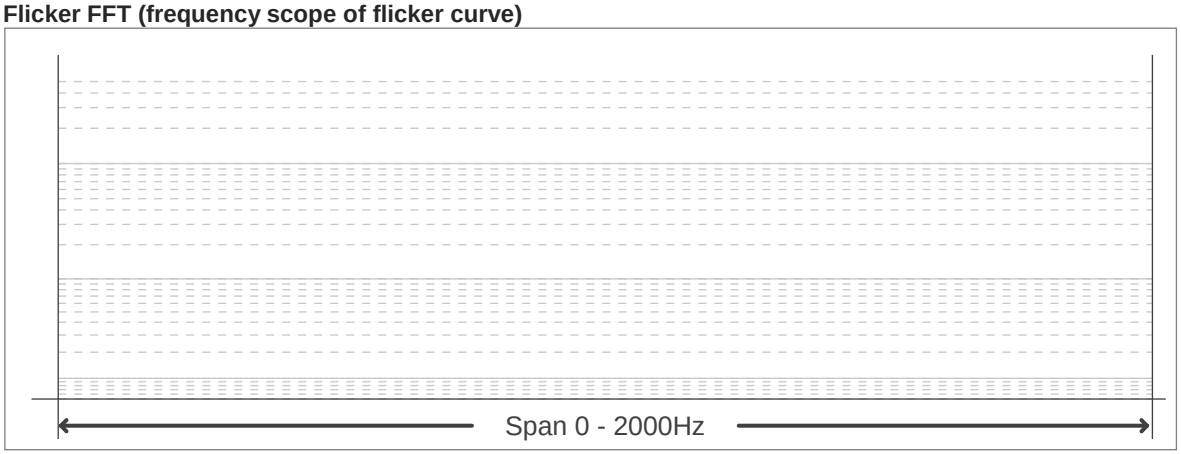
Flicker

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**