

Light efficiency:

92 Lumen/Watt

Light quality:

CRI: 0,0

Color temperature:

0 K

Output: 424 lm

Peak: 4331 cd

Power: 4,6 W

PF: 1,0



Product name:

F L-S O - 2-4 C -1 0 0-G-LSTT-SS

Item number:

F L / S O - 2 / 4 C / 1 0 0 / G /LSTT/SS

Date and time:

11.03.2019 10:49:40

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

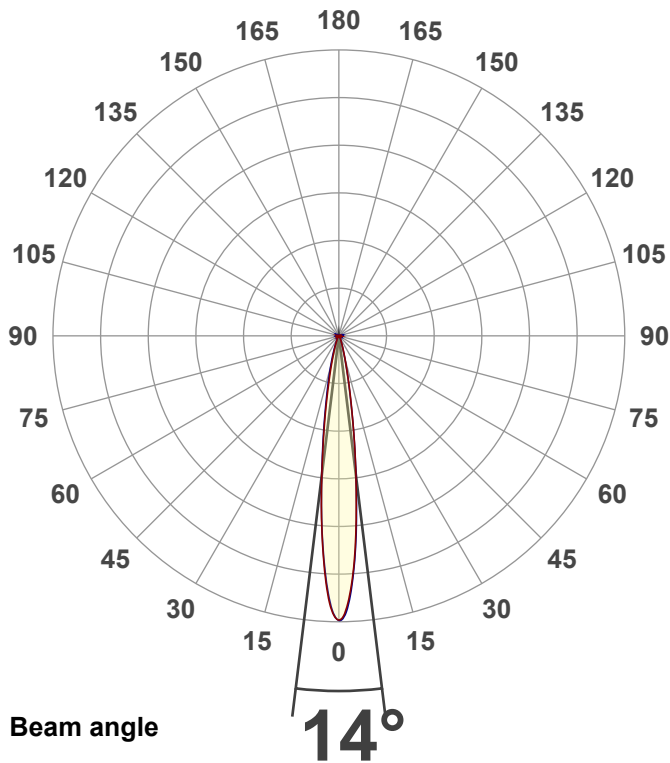
Master of Engineering

Pruefort:

Lichtlabor

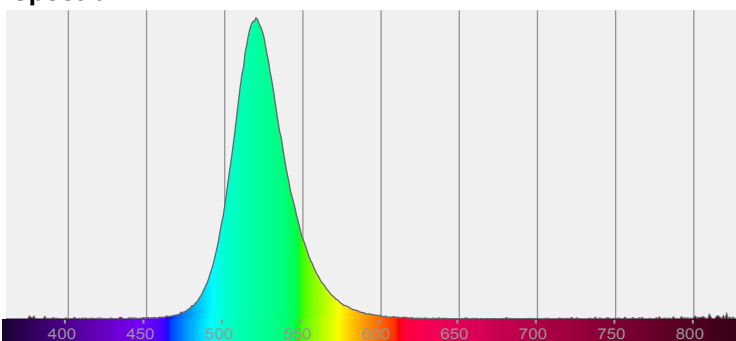
Gaustasse13-15

55411 Bingen am Rhein

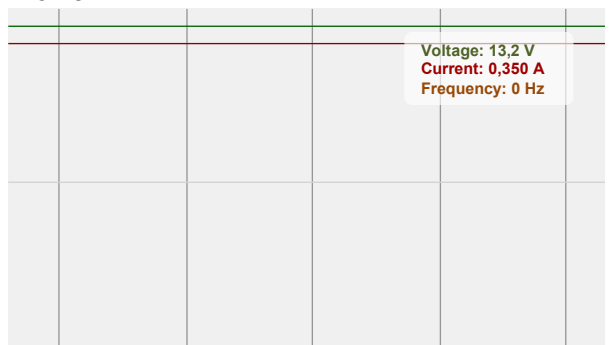


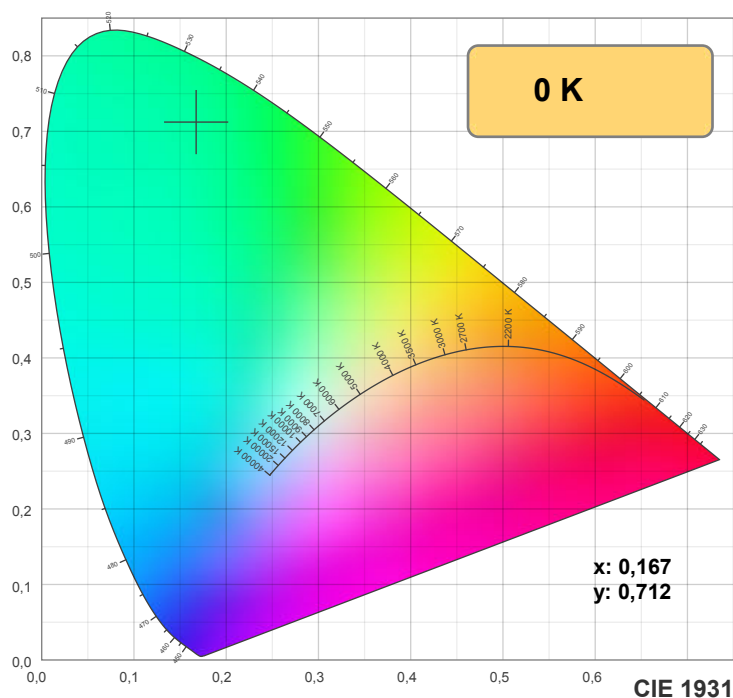
CIE 1931
x: 0,167
y: 0,712

Spectra

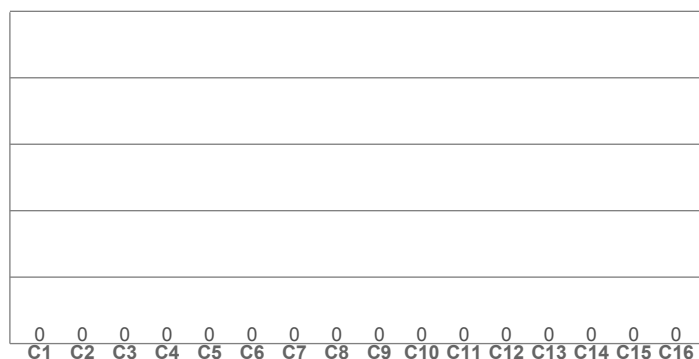


Power





TM30: 0,0



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

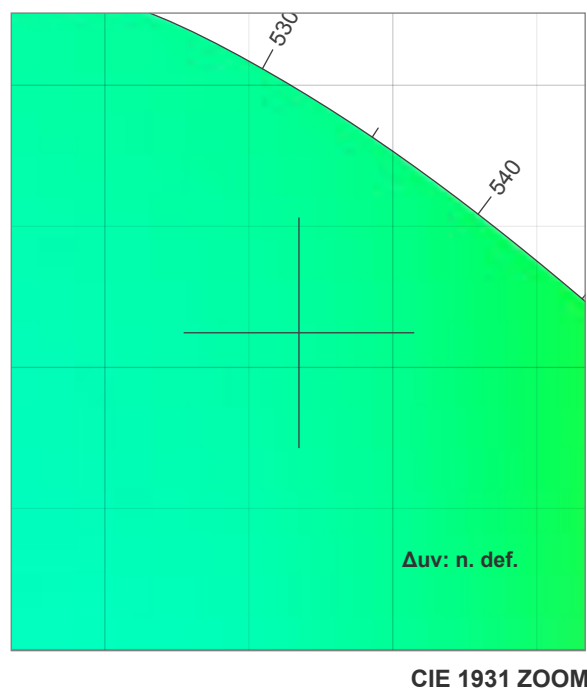
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

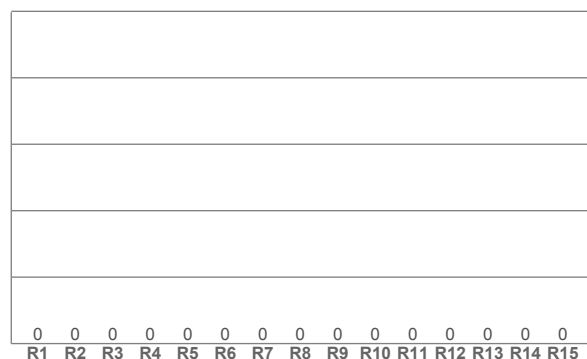
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

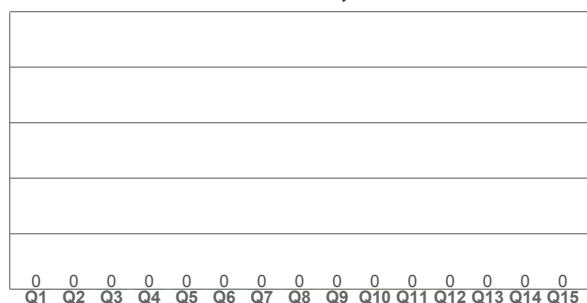
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



CRI: 0,0 (R1-R8)



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 deviation 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

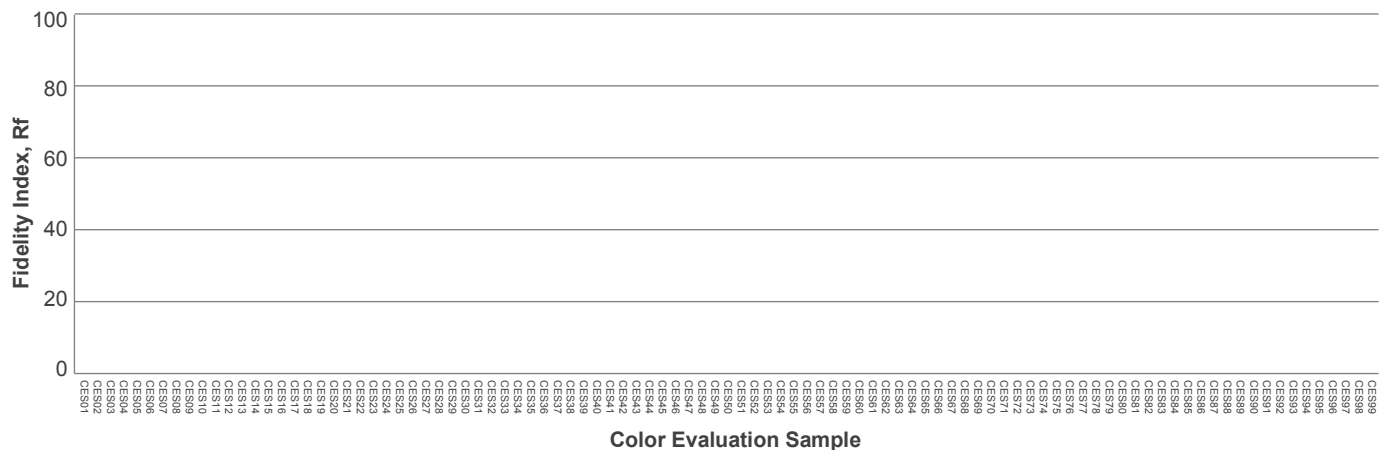
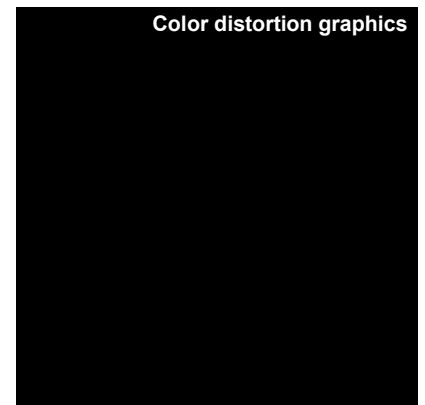
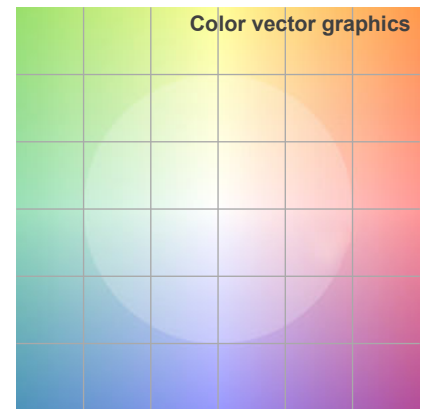
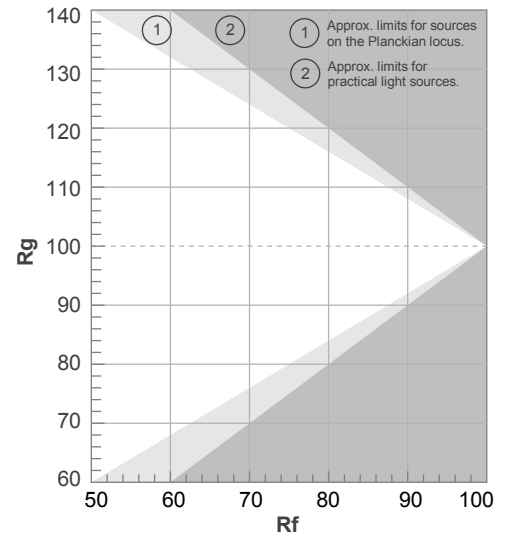
Rf 0,0

Fidelity index Rf

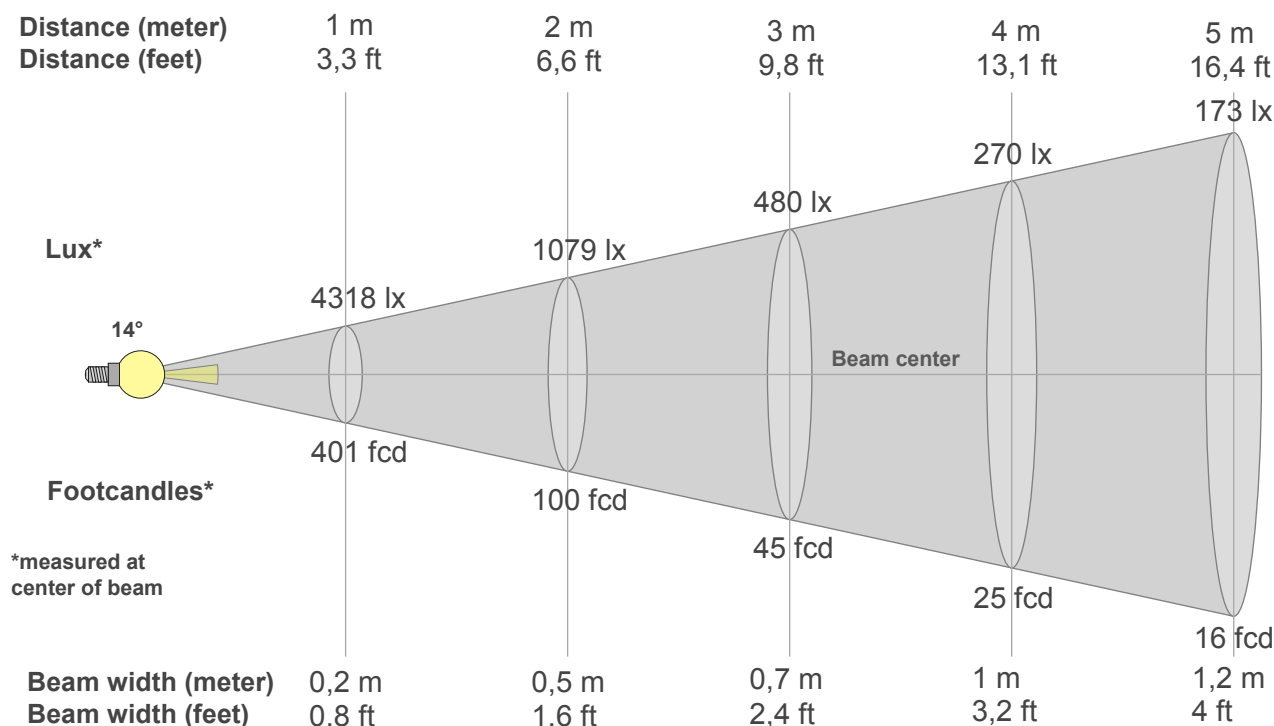
Rg 0,0

Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		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%



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
4318lx	1079lx	480lx	270lx	173lx	120lx	88lx	67lx	53lx	43lx	36lx	30lx	26lx	22lx	19lx	17lx	15lx	13lx	12lx	11lx
401,1fc	100,3fc	44,6fcd	25,1fcd	16fcd	11,1fcd	8,2fcd	6,3fcd	5fcd	4fcd	3,3fcd	2,8fcd	2,4fcd	2fcd	1,8fcd	1,6fcd	1,4fcd	1,2fcd	1,1fcd	1fcd

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°
4318	4255	4050	3757	3399	2977	2535	2131	1758	1413	1126	903	716	563	447	361	293	238	195	163
100%	99%	94%	87%	79%	69%	59%	49%	41%	33%	26%	21%	17%	13%	10%	8%	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°
4318	4270	4089	3796	3432	3018	2569	2135	1748	1402	1100	861	678	531	418	334	271	222	183	155
100%	99%	95%	88%	79%	70%	59%	49%	40%	32%	25%	20%	16%	12%	10%	8%	6%	5%	4%	4%

Intensities in 180° c-plane

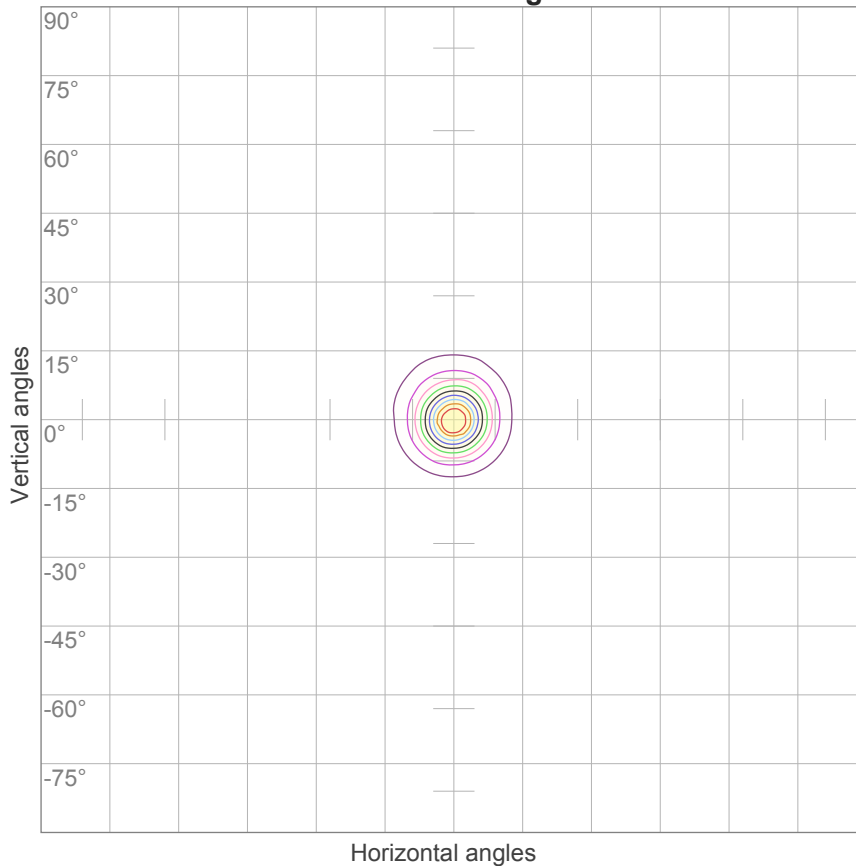
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
4318	4257	4069	3758	3373	2965	2550	2130	1748	1436	1167	933	748	607	492	399	323	266	222	183
100%	99%	94%	87%	78%	69%	59%	49%	40%	33%	27%	22%	17%	14%	11%	9%	7%	6%	5%	4%

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°
4318	4229	4015	3703	3337	2942	2531	2136	1794	1496	1235	1020	850	709	588	489	407	339	281	231
100%	98%	93%	86%	77%	68%	59%	49%	42%	35%	29%	24%	20%	16%	14%	11%	9%	8%	7%	5%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
14°	29,5°	44,4°	97,3%	94,7%

ISO candela diagram



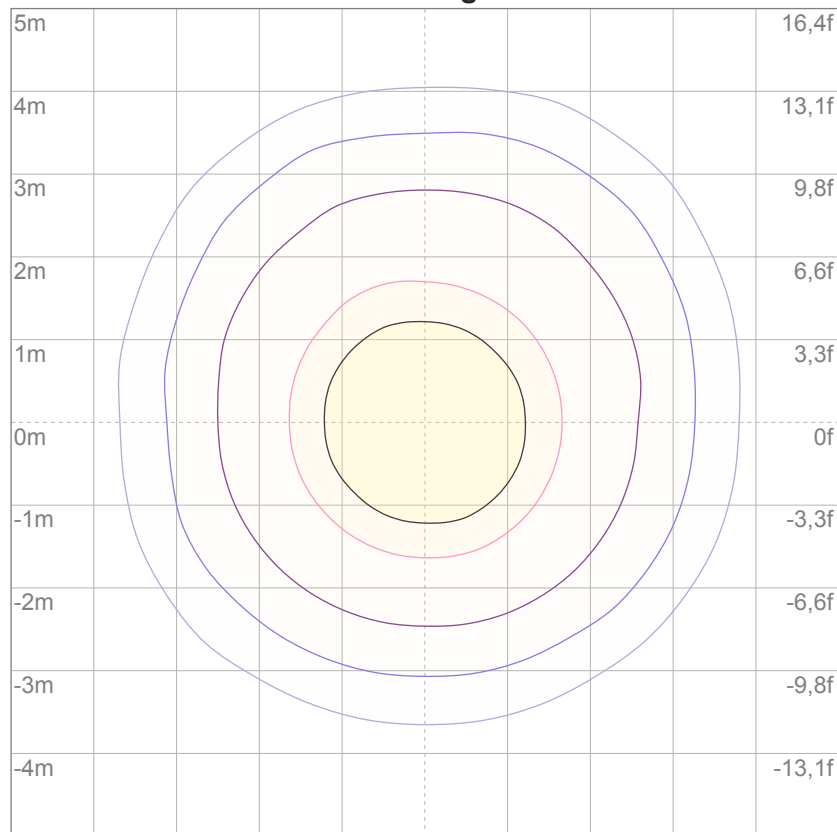
10%	432 cd
20%	864 cd
30%	1295 cd
40%	1727 cd
50%	2159 cd
60%	2591 cd
70%	3022 cd
80%	3454 cd
90%	3886 cd

Conditions:

Number of c-planes: 16

Candela at center: 4318 cd

ISO lux diagram



3%	1,30 lx
5%	2,16 lx
10%	4,32 lx
30%	13,0 lx
50%	21,6 lx

Conditions:

Number of c-planes: 16

Lux at center: 43,2 lx

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

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	6,5	7,2	6,8	7,4	7,6	6,3	7,0	6,6	7,2	7,4
	3H	8,2	8,8	8,4	9,0	9,3	8,1	8,7	8,4	9,0	9,2
	4H	9,2	9,8	9,5	10,1	10,3	9,1	9,7	9,4	10,0	10,2
	6H	10,2	10,7	10,5	11,0	11,3	10,1	10,7	10,4	10,9	11,2
	8H	10,7	11,2	11,0	11,5	11,8	10,6	11,2	11,0	11,4	11,7
	12H	11,1	11,6	11,4	11,9	12,2	11,1	11,7	11,5	12,0	12,3
4H	2H	7,1	7,7	7,4	8,0	8,3	7,0	7,6	7,3	7,8	8,1
	3H	9,0	9,5	9,4	9,8	10,1	8,9	9,4	9,3	9,7	10,1
	4H	10,2	10,7	10,6	11,0	11,3	10,1	10,6	10,5	10,9	11,3
	6H	11,3	11,7	11,7	12,1	12,5	11,3	11,7	11,7	12,0	12,4
	8H	12,0	12,3	12,4	12,7	13,1	11,9	12,2	12,3	12,6	13,0
	12H	12,5	12,7	12,9	13,1	13,6	12,6	12,9	13,0	13,3	13,7
8H	4H	10,6	10,9	11,0	11,3	11,7	10,5	10,8	10,9	11,2	11,6
	6H	11,9	12,2	12,4	12,6	13,0	11,9	12,1	12,3	12,5	13,0
	8H	12,7	12,9	13,2	13,4	13,8	12,6	12,9	13,1	13,3	13,8
	12H	13,4	13,5	13,9	14,0	14,5	13,5	13,7	14,0	14,1	14,6
12H	4H	10,6	10,9	11,1	11,3	11,7	10,6	10,9	11,0	11,3	11,7
	6H	12,1	12,3	12,5	12,7	13,2	12,0	12,2	12,5	12,7	13,1
	8H	12,9	13,1	13,4	13,6	14,1	12,9	13,0	13,4	13,5	14,0
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,2 / -0,2					+0,1 / -0,2				
S = 1,5H		+0,3 / -0,3					+0,2 / -0,4				
S = 2,0H		+0,6 / -0,6					+0,5 / -0,8				
Standard table		BK09					BK09				
Correction summand		-3,9					-4,0				
Corrected glare indices referring to 424 lm total luminous flux											

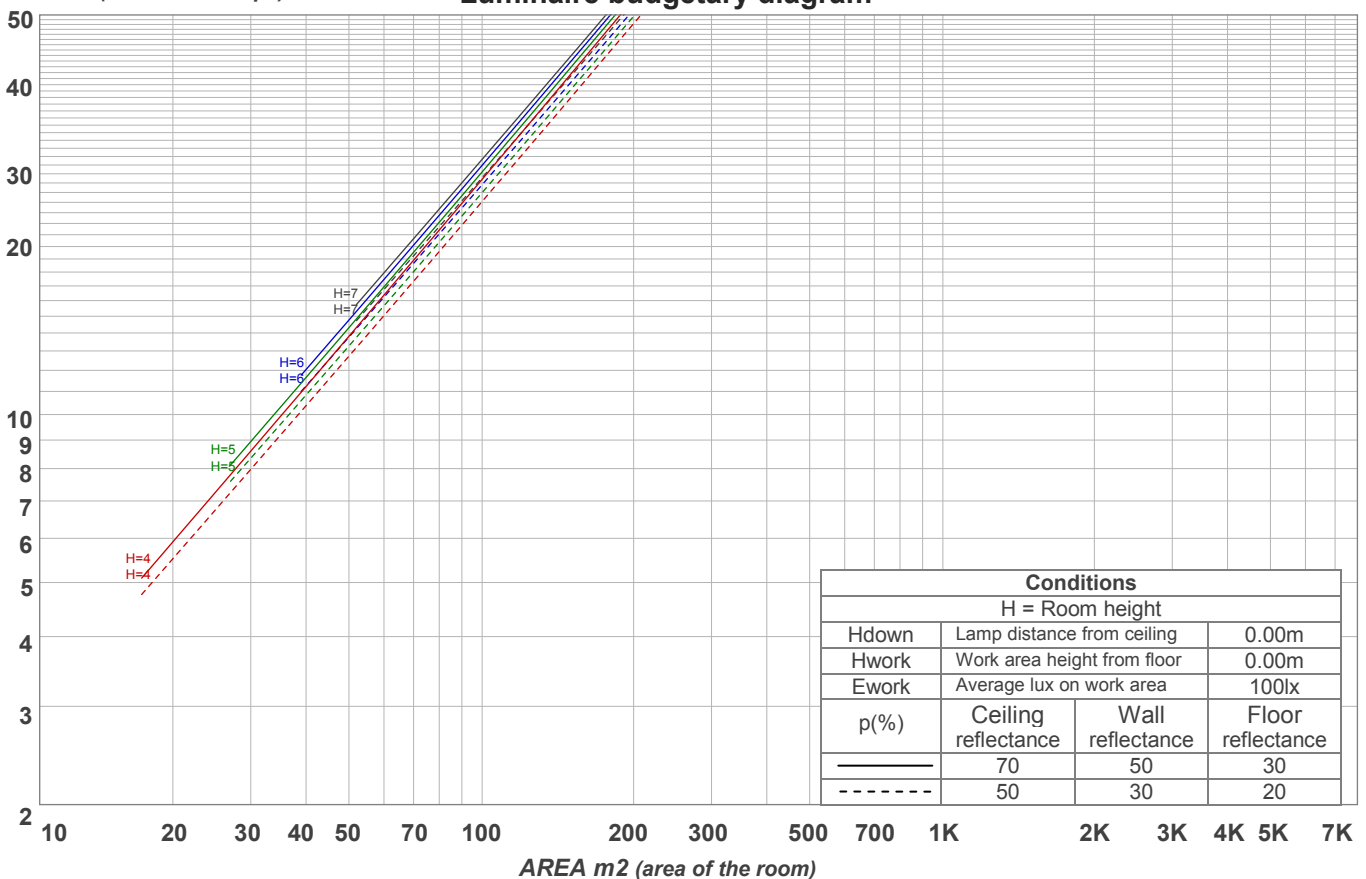
UGR data could be incorrect as lamp output is not symmetrical. Goto Edit->Photometric->Corrections and select Correct asymmetry.

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	112	110	109	107	106	105	104	103	102	101	99	99	98	96
2	111	107	104	102	109	106	103	101	103	100	98	100	98	96	97	96	94	93
3	108	103	99	96	106	102	98	96	99	96	94	97	95	93	95	93	91	90
4	105	99	95	92	103	98	95	92	96	93	91	94	92	90	93	91	89	88
5	102	96	92	89	100	95	92	89	94	90	88	92	89	87	91	88	87	85
6	99	93	89	86	98	93	89	86	91	88	86	90	87	85	89	87	85	84
7	97	91	87	84	96	90	87	84	89	86	84	88	85	83	87	85	83	82
8	95	89	85	82	94	88	85	82	87	84	82	86	84	81	86	83	81	80
9	93	87	83	80	92	86	83	80	86	82	80	85	82	80	84	82	80	79
10	91	85	81	79	90	85	81	79	84	81	79	83	80	78	83	80	78	77

LAMPS (number of lamps)

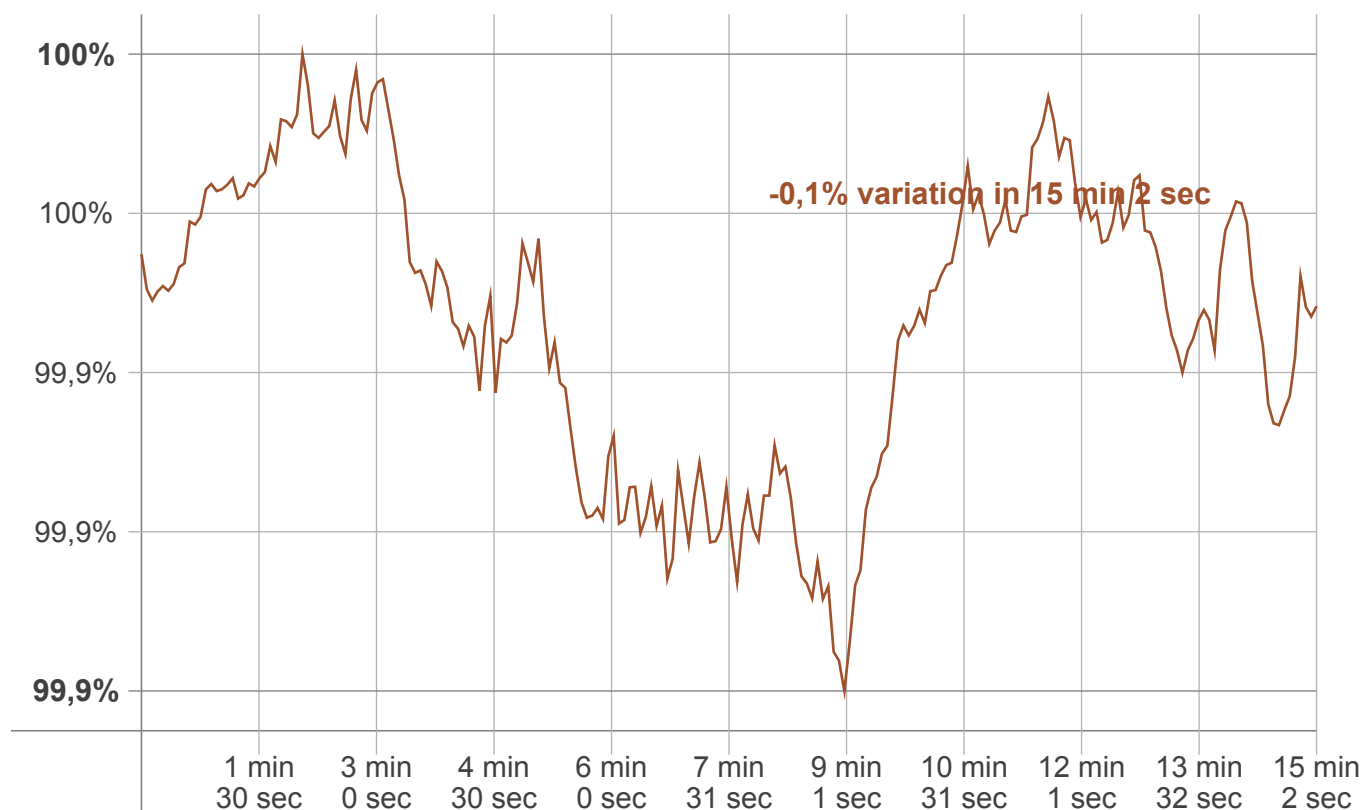
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	125 lm	35,2 lm	14,3 lm	8,87 lm	6,73 lm	5,31 lm	3,81 lm	2,33 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,118 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

Warmup curve



Warmup result

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

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
424 lm	lm	424 lm

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
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