

Light efficiency:

45 Lumen/Watt

Light quality:

CRI: 0,0

Color temperature:

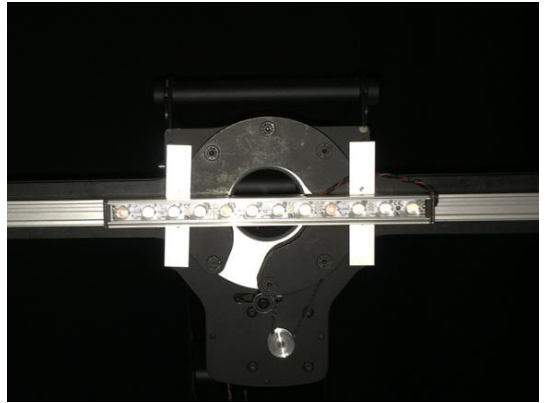
0 K

Output: 319 lm

Peak: 2334 cd

Power: 7,1 W

PF: 0,82



Product name:

FLNP-F4CH-C-258-G-927-10771

Item number:

FLNP-F4CH-C-258-G-927-10771

Date and time:

14.02.2019 09:46:31

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

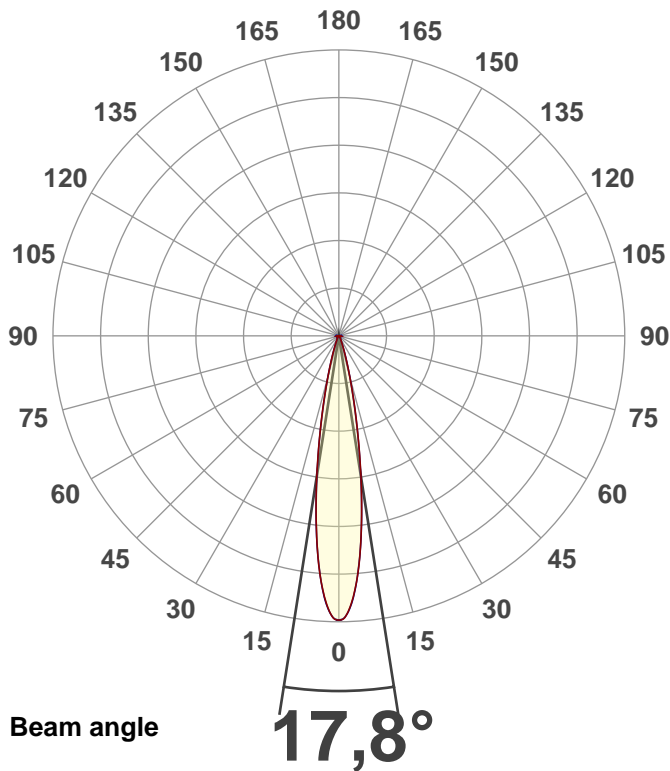
Master of Engineering

Pruefort:

Lichtlabor

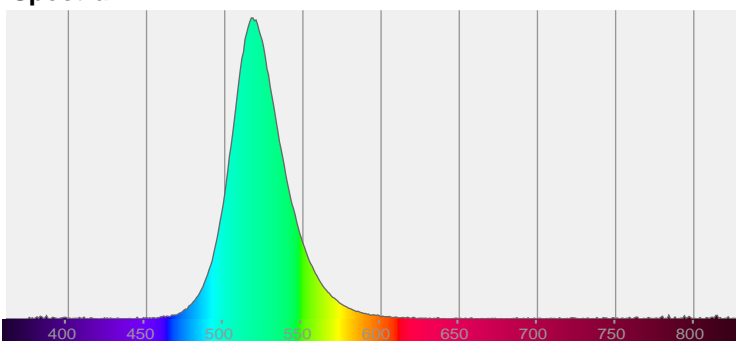
Gaustrasse13-15

55411 Bingen am Rhein

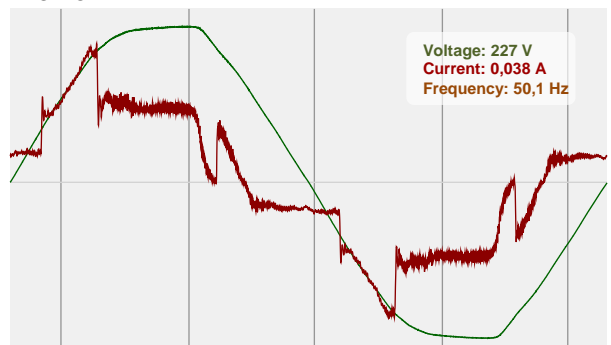


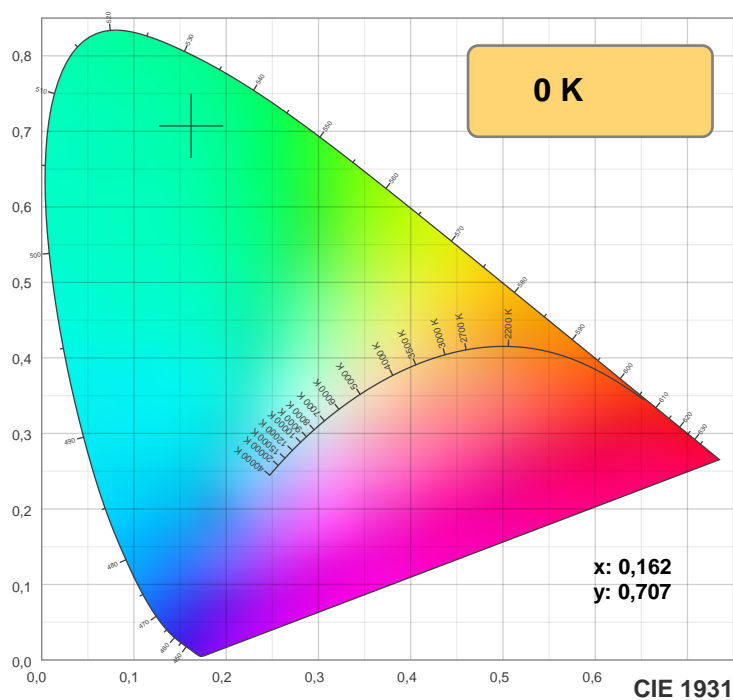
CIE 1931
x: 0,162
y: 0,707

Spectra

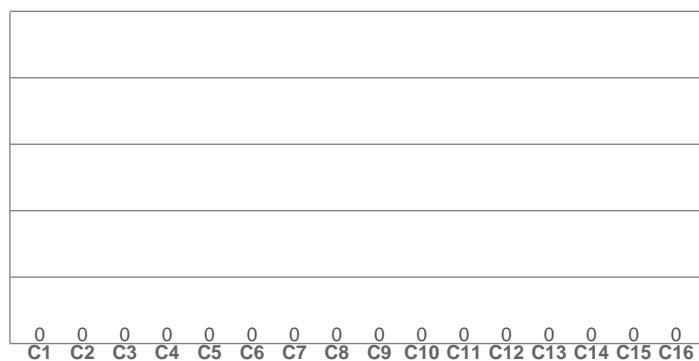


Power





TM30: 0,0



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

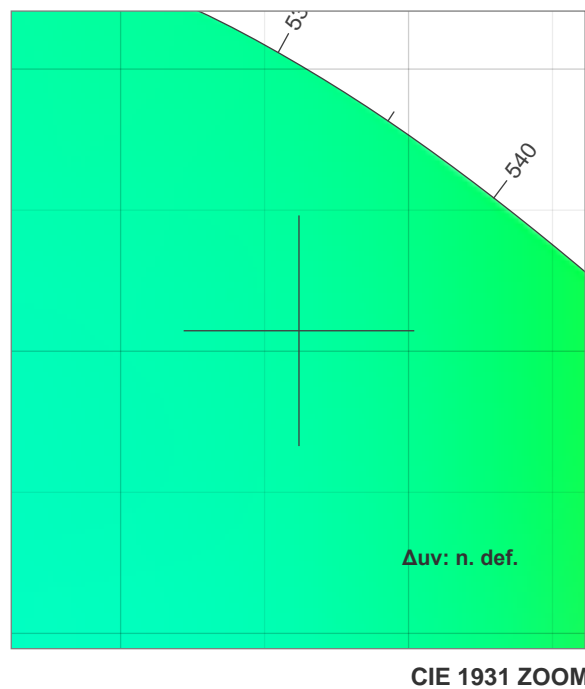
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

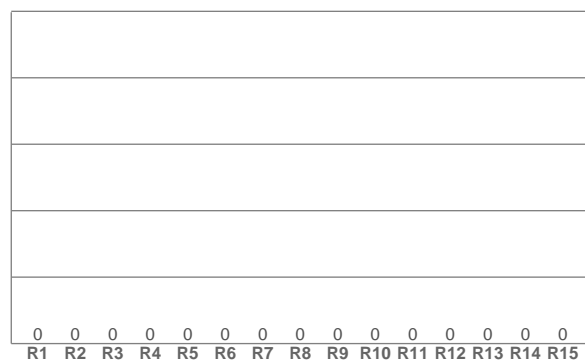
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

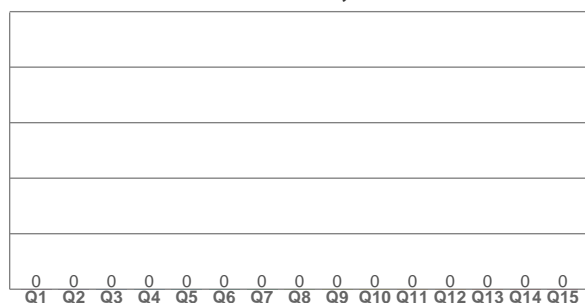
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	0,162	0,707	0,058	0,380	n. def.

TM30 details

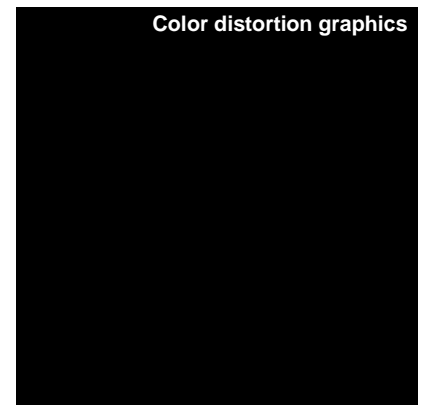
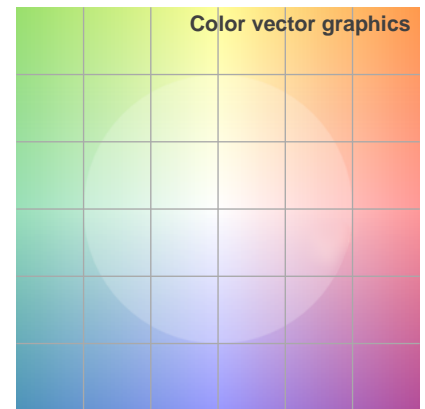
Rf 0,0

Fidelity index Rf

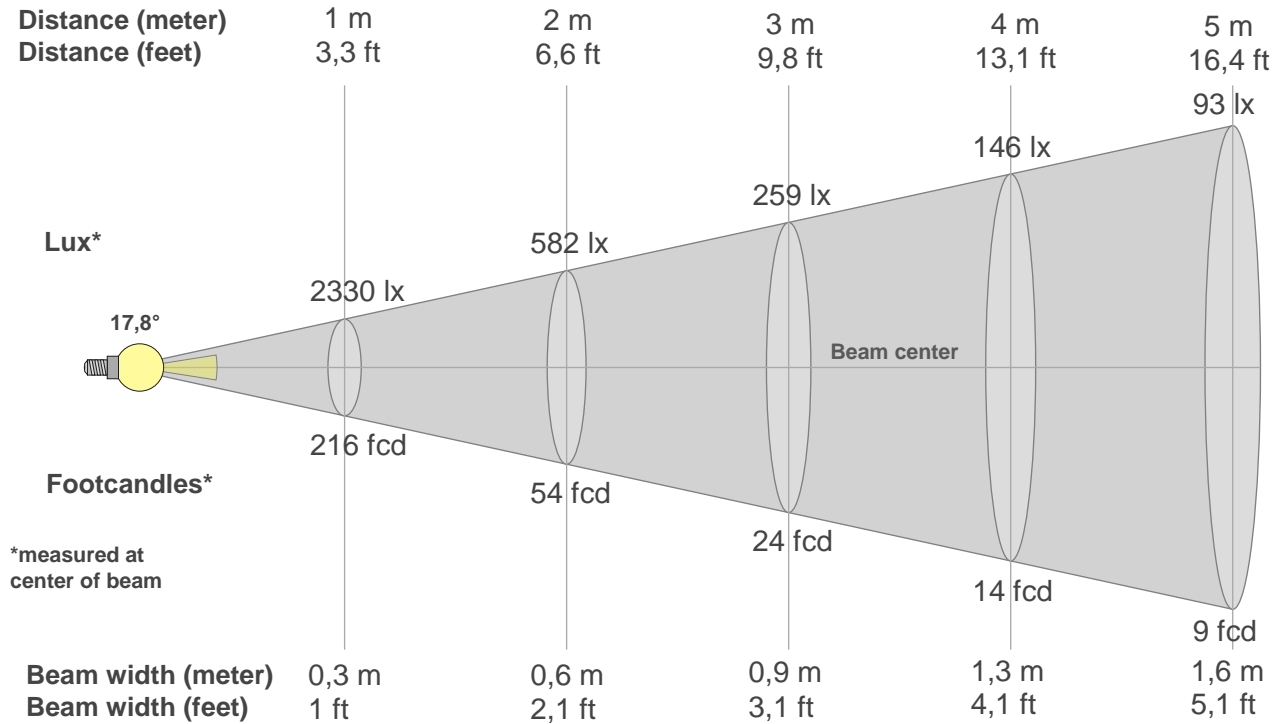
Rg 0,0

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
2330lx	582lx	259lx	146lx	93lx	65lx	48lx	36lx	29lx	23lx	19lx	16lx	14lx	12lx	10lx	9lx	8lx	7lx	6lx	6lx
216,5fc	54,1fcd	24,1fcd	13,5fcd	8,7fcd	6fcd	4,4fcd	3,4fcd	2,7fcd	2,2fcd	1,8fcd	1,5fcd	1,3fcd	1,1fcd	1fcd	0,8fcd	0,7fcd	0,7fcd	0,6fcd	0,5fcd

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°
2330	2313	2254	2157	2034	1885	1711	1525	1339	1154	974	811	669	543	433	345	275	218	172	136
100%	99%	97%	93%	87%	81%	73%	65%	57%	50%	42%	35%	29%	23%	19%	15%	12%	9%	7%	6%

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°
2330	2315	2259	2166	2037	1882	1712	1525	1331	1141	965	803	655	530	428	343	272	215	171	136
100%	99%	97%	93%	87%	81%	73%	65%	57%	49%	41%	34%	28%	23%	18%	15%	12%	9%	7%	6%

Intensities in 180° c-plane

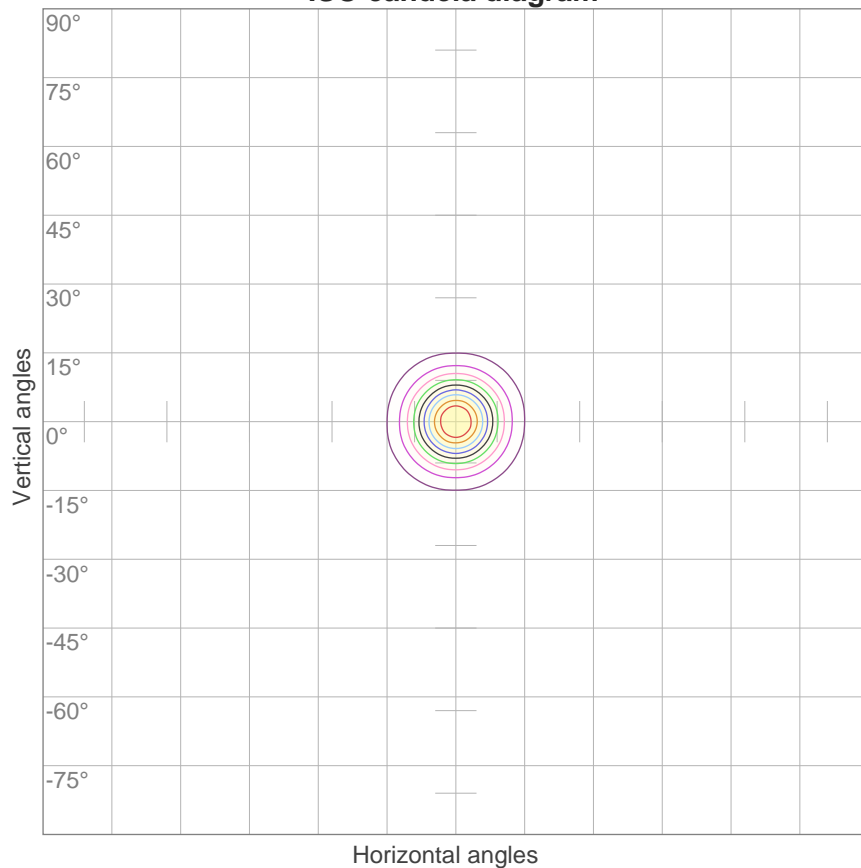
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
2330	2313	2254	2157	2034	1885	1711	1525	1339	1154	974	811	669	543	433	345	275	218	172	136
100%	99%	97%	93%	87%	81%	73%	65%	57%	50%	42%	35%	29%	23%	19%	15%	12%	9%	7%	6%

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°
2330	2315	2259	2166	2037	1882	1712	1525	1331	1141	965	803	655	530	428	343	272	215	171	136
100%	99%	97%	93%	87%	81%	73%	65%	57%	49%	41%	34%	28%	23%	18%	15%	12%	9%	7%	6%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
17,8°	33,9°	47,3°	95,6%	92,1%

ISO candela diagram



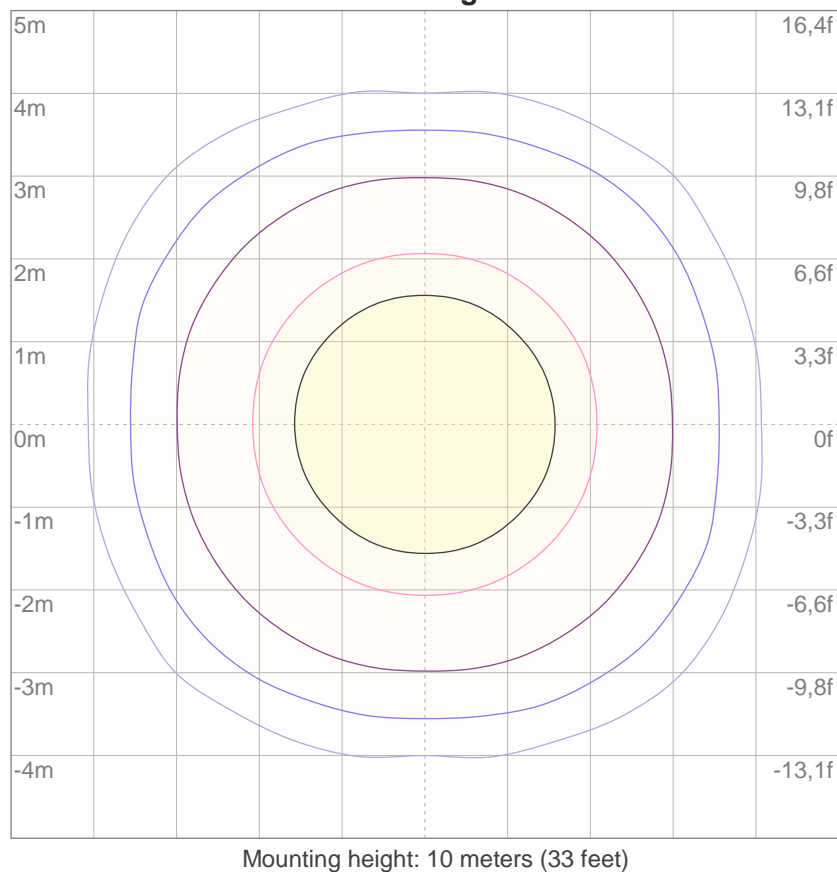
10%	233 cd
20%	466 cd
30%	699 cd
40%	932 cd
50%	1165 cd
60%	1398 cd
70%	1631 cd
80%	1864 cd
90%	2097 cd

Conditions:

Number of c-planes: 16

Candela at center: 2330 cd

ISO lux diagram



3%	0,699 lx
5%	1,16 lx
10%	2,33 lx
30%	6,99 lx
50%	11,6 lx

Conditions:

Number of c-planes: 16

Lux at center: 23,3 lx

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

Glare Evaluation According to UGR

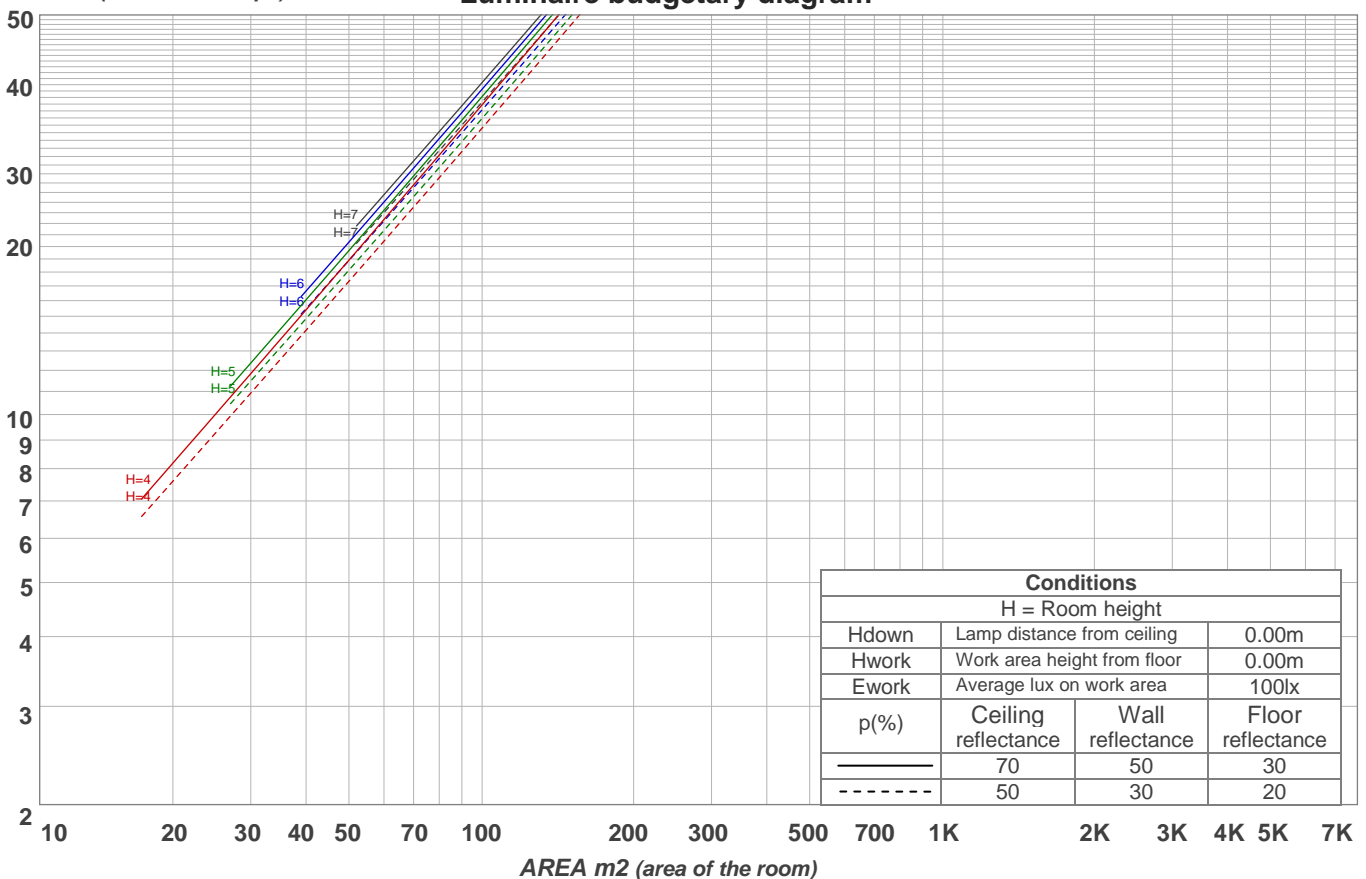
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	10,7	11,4	10,9	11,6	11,8	8,8	9,5	9,0	9,7	9,9
	3H	12,7	13,3	12,9	13,6	13,8	10,6	11,3	10,9	11,6	11,8
	4H	13,3	13,9	13,6	14,2	14,4	11,5	12,2	11,8	12,4	12,7
	6H	13,8	14,4	14,1	14,6	14,9	12,2	12,8	12,6	13,1	13,4
	8H	14,0	14,6	14,3	14,9	15,2	12,5	13,1	12,9	13,4	13,7
	12H	14,3	14,8	14,6	15,1	15,4	12,9	13,4	13,2	13,7	14,0
4H	2H	11,2	11,8	11,5	12,1	12,4	9,8	10,4	10,1	10,7	10,9
	3H	13,4	13,9	13,8	14,2	14,6	11,8	12,3	12,1	12,6	12,9
	4H	14,2	14,7	14,6	15,0	15,4	12,8	13,3	13,2	13,6	14,0
	6H	14,9	15,3	15,3	15,6	16,0	13,7	14,1	14,1	14,4	14,8
	8H	15,2	15,6	15,6	16,0	16,4	14,0	14,4	14,4	14,8	15,2
	12H	15,6	15,9	16,0	16,3	16,7	14,5	14,8	14,9	15,2	15,6
8H	4H	14,5	14,9	14,9	15,3	15,7	13,3	13,7	13,7	14,1	14,5
	6H	15,4	15,7	15,8	16,1	16,5	14,4	14,7	14,9	15,1	15,5
	8H	15,9	16,1	16,4	16,6	17,0	14,9	15,1	15,3	15,5	16,0
	12H	16,4	16,6	16,9	17,1	17,6	15,5	15,7	16,0	16,1	16,6
12H	4H	14,6	14,9	15,0	15,3	15,7	13,4	13,7	13,8	14,1	14,5
	6H	15,5	15,7	16,0	16,2	16,6	14,6	14,8	15,0	15,2	15,7
	8H	16,1	16,3	16,6	16,8	17,3	15,1	15,3	15,6	15,8	16,3
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,1 / -0,1					+0,1 / -0,2				
S = 1,5H		+0,2 / -0,2					+0,3 / -0,4				
S = 2,0H		+0,5 / -0,3					+0,4 / -0,7				
Standard table		BK07					BK08				
Correction summand		-1,3					-2,1				
Corrected glare indices referring to 319 lm total luminous flux											

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	99
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	98	97	97	95
2	110	106	103	100	108	104	102	99	101	99	97	98	96	95	96	94	93	91
3	106	101	98	94	105	100	97	94	98	95	92	95	93	91	93	91	89	88
4	103	97	93	90	102	96	93	90	94	91	88	92	90	87	91	88	86	85
5	100	94	90	87	99	93	89	86	91	88	85	90	87	85	88	86	84	83
6	97	91	87	84	96	90	86	83	89	85	83	88	85	82	86	84	82	81
7	95	88	84	81	94	88	84	81	87	83	81	86	82	80	85	82	80	79
8	93	86	82	79	92	86	82	79	85	81	79	84	81	78	83	80	78	77
9	91	84	80	77	90	84	80	77	83	79	77	82	79	77	81	78	76	75
10	89	82	78	76	88	82	78	75	81	78	75	80	77	75	80	77	75	74

LAMPS (number of lamps)

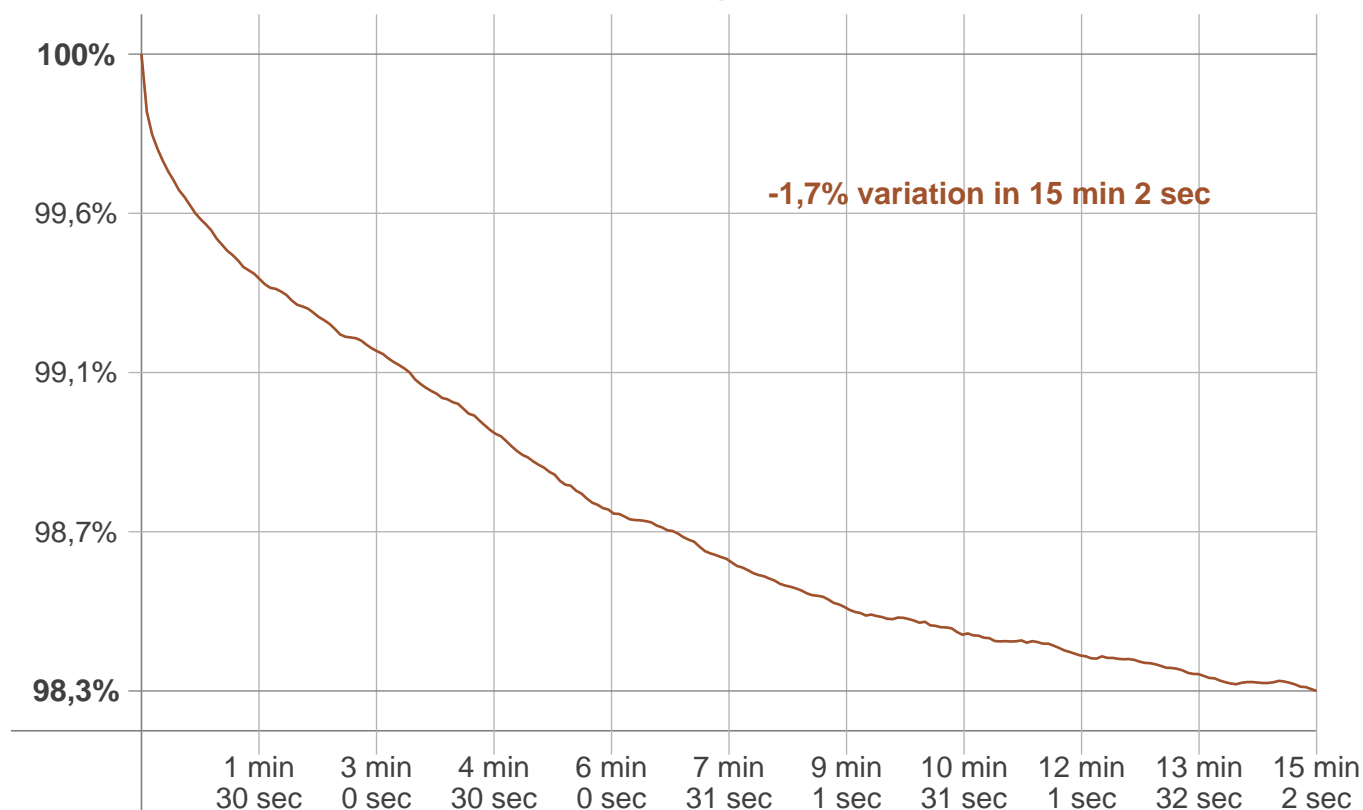
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	106 lm	24,2 lm	10,4 lm	7,93 lm	7,49 lm	6,17 lm	3,93 lm	2,03 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,495 lm	0,404 lm	0,379 lm	0,342 lm	0,134 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	-1,7%

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
323 lm	-4 lm	319 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
--------------	-----------------------