

Light efficiency:

44 Lumen/Watt

Light quality:

CRI: 0,0

Color temperature:

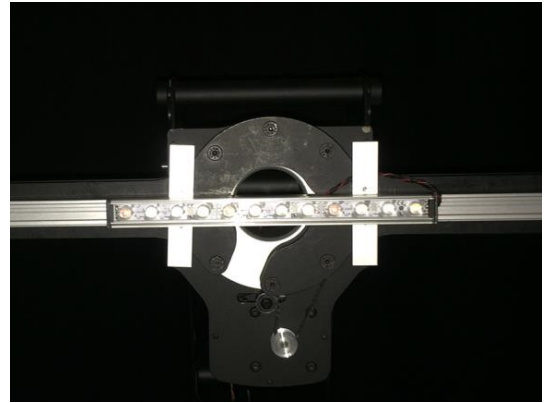
0 K

Output: 312 lm

Peak: 2767 cd

Power: 7,1 W

PF: 0,81



Product name:

FLNP-F4CH-C-258-G-927-10770

Item number:

FLNP-F4CH-C-258-G-927-10770

Date and time:

14.02.2019 15:24:57

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

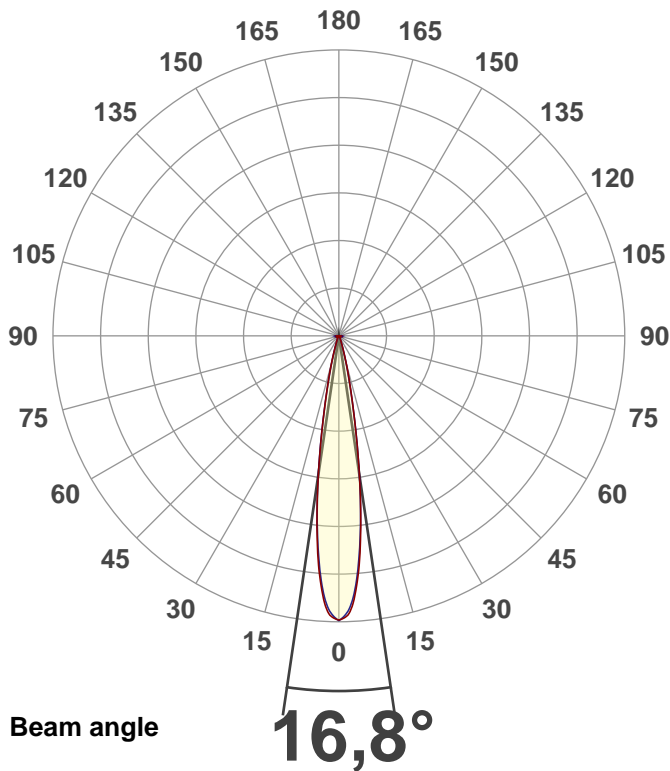
Master of Engineering

Pruefort:

Lichtlabor

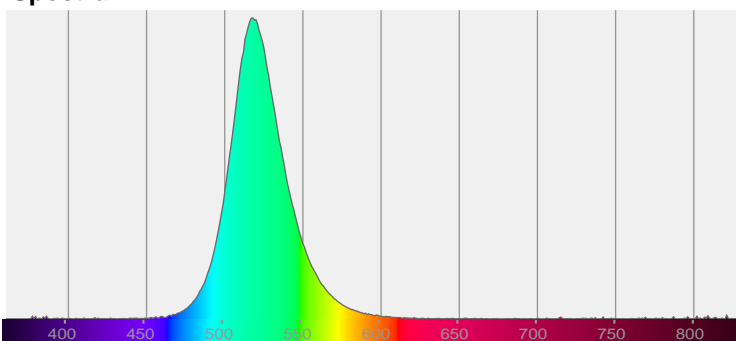
Gaustrasse13-15

55411 Bingen am Rhein

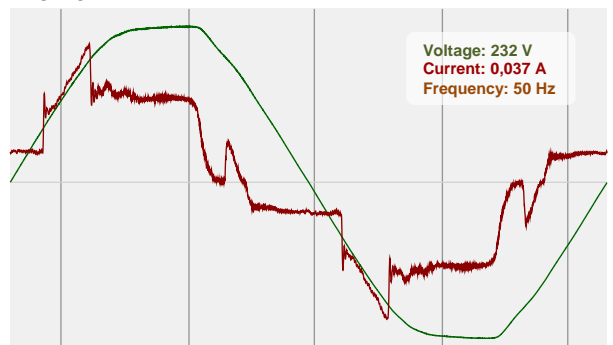


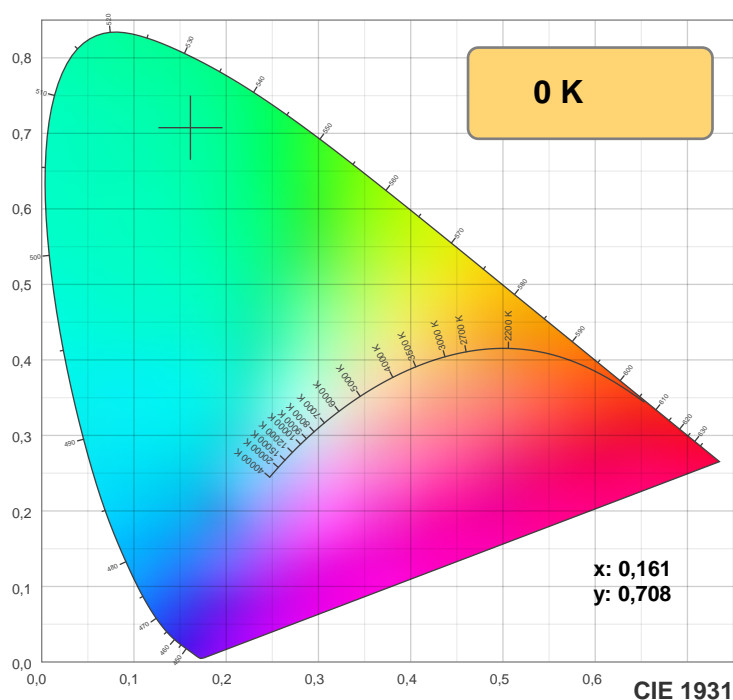
CIE 1931  
x: 0,161  
y: 0,708

Spectra



Power





TM30: 0,0



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

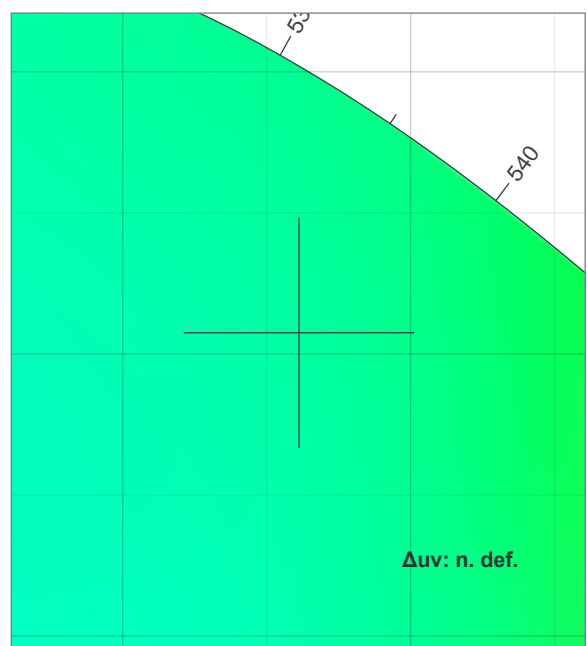
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

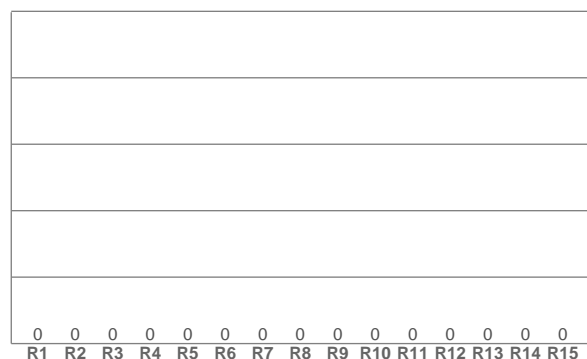
CQS Q values

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

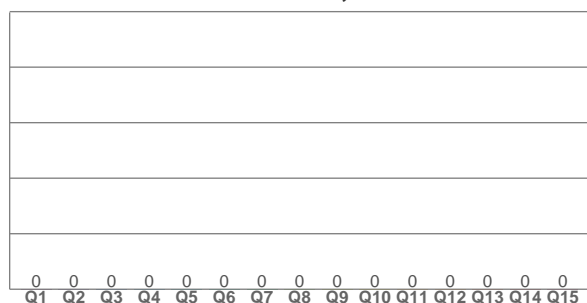


CIE 1931 ZOOM

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	0,161	0,708	0,058	0,380	n. def.

## TM30 details

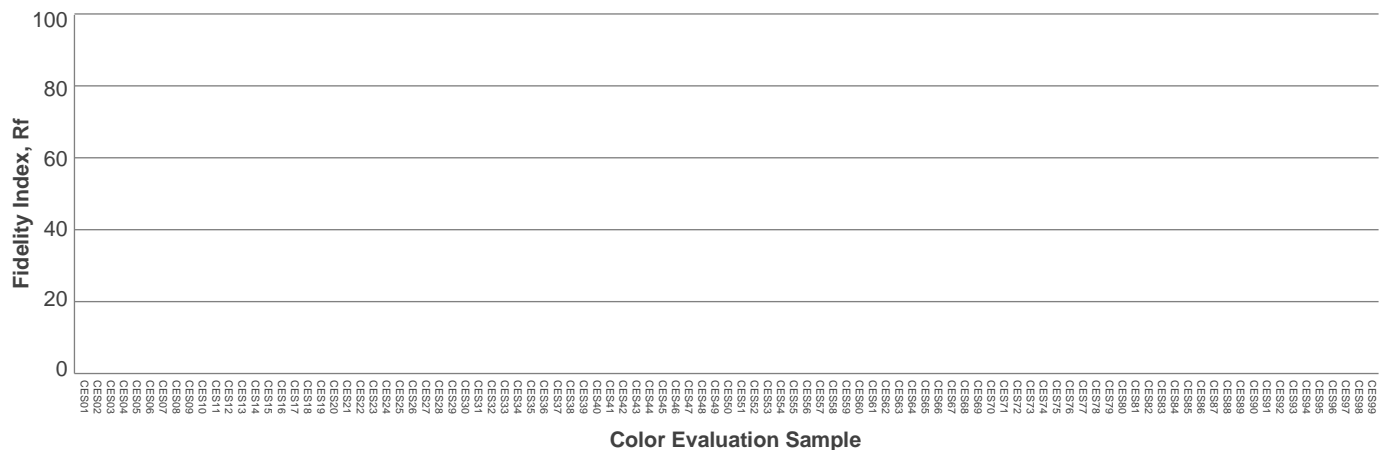
**Rf 0,0**

Fidelity index Rf

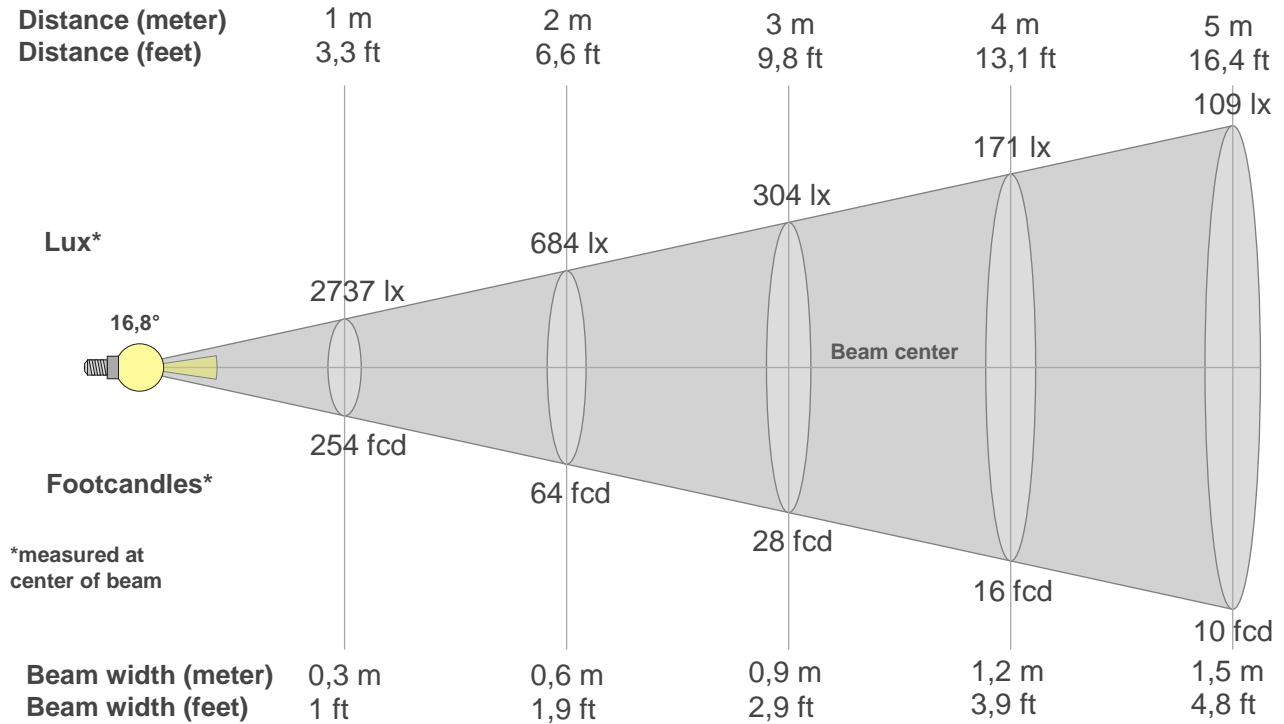
**Rg 0,0**

Gammut index Rg

Hue Bin	R <sub>f</sub>	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
2737lx	684lx	304lx	171lx	109lx	76lx	56lx	43lx	34lx	27lx	23lx	19lx	16lx	14lx	12lx	11lx	9lx	8lx	8lx	7lx
254,3fcd	63,6fcd	28,3fcd	15,9fcd	10,2fcd	7,1fcd	5,2fcd	4fcd	3,1fcd	2,5fcd	2,1fcd	1,8fcd	1,5fcd	1,3fcd	1,1fcd	1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd

### 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°
2737	2734	2694	2597	2436	2242	2000	1738	1468	1202	957	751	587	460	360	276	207	155	118	91
100%	100%	98%	95%	89%	82%	73%	64%	54%	44%	35%	27%	21%	17%	13%	10%	8%	6%	4%	3%

### 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°
2737	2717	2657	2551	2394	2193	1965	1721	1461	1204	962	746	575	440	338	259	197	149	115	88
100%	99%	97%	93%	87%	80%	72%	63%	53%	44%	35%	27%	21%	16%	12%	9%	7%	5%	4%	3%

### Intensities in 180° c-plane

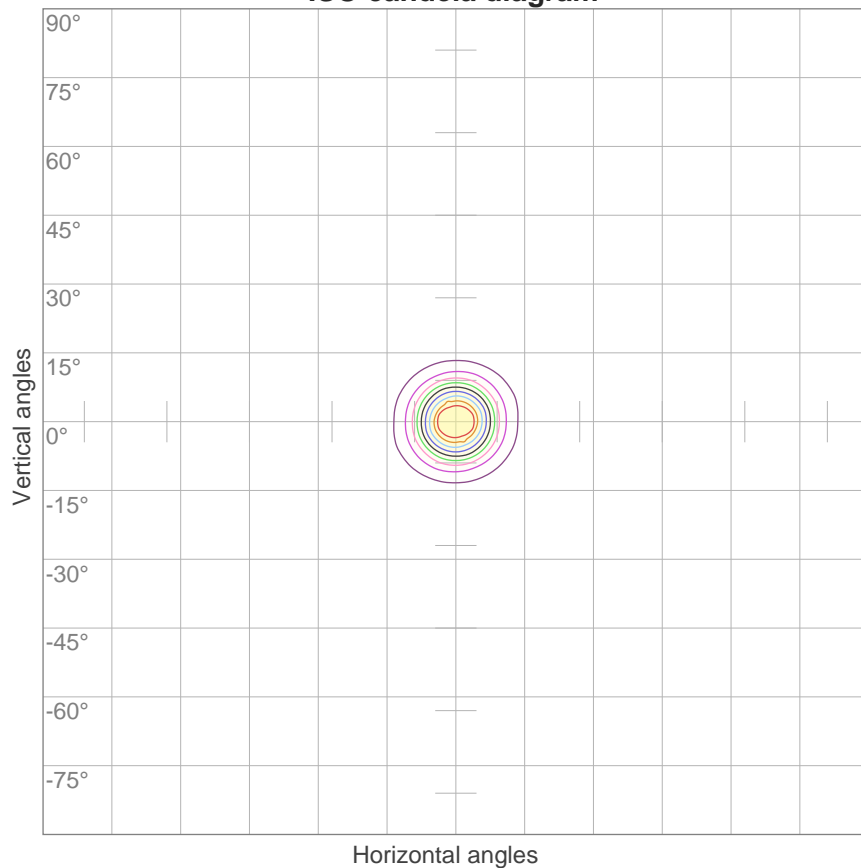
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
2737	2734	2694	2597	2436	2242	2000	1738	1468	1202	957	751	587	460	360	276	207	155	118	91
100%	100%	98%	95%	89%	82%	73%	64%	54%	44%	35%	27%	21%	17%	13%	10%	8%	6%	4%	3%

### 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°
2737	2717	2657	2551	2394	2193	1965	1721	1461	1204	962	746	575	440	338	259	197	149	115	88
100%	99%	97%	93%	87%	80%	72%	63%	53%	44%	35%	27%	21%	16%	12%	9%	7%	5%	4%	3%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
16,8°	30,4°	42,3°	96,2%	92,7%

ISO candela diagram



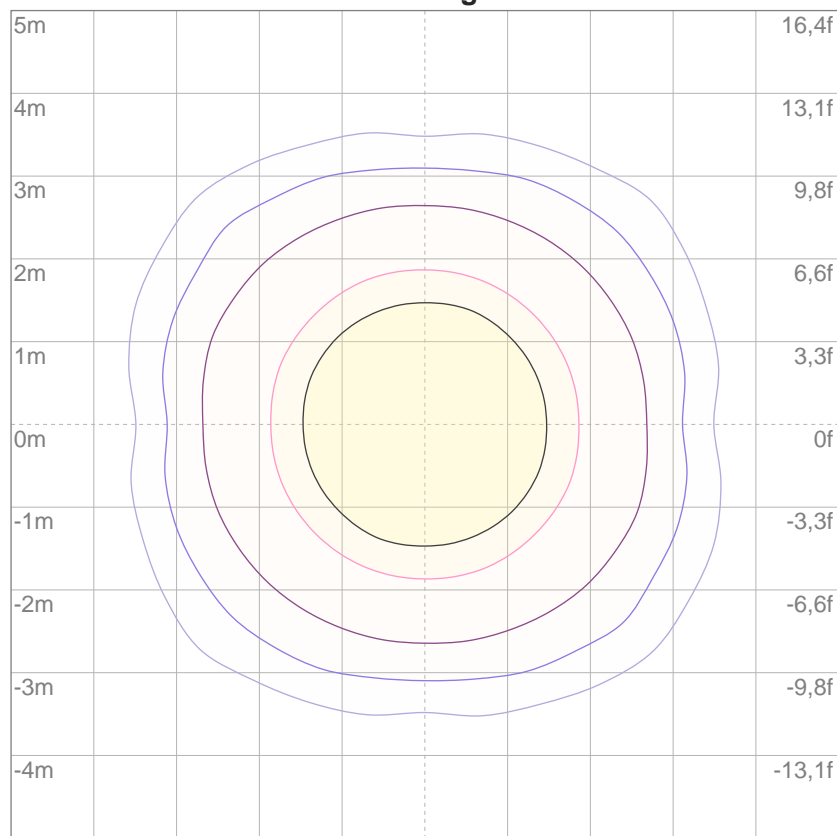
10%	274 cd
20%	547 cd
30%	821 cd
40%	1095 cd
50%	1368 cd
60%	1642 cd
70%	1916 cd
80%	2189 cd
90%	2463 cd

Conditions:

Number of c-planes: 16

Candela at center: 2737 cd

ISO lux diagram



3%	0,821 lx
5%	1,37 lx
10%	2,74 lx
30%	8,21 lx
50%	13,7 lx

Conditions:

Number of c-planes: 16

Lux at center: 27,4 lx

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

## Glare Evaluation According to UGR

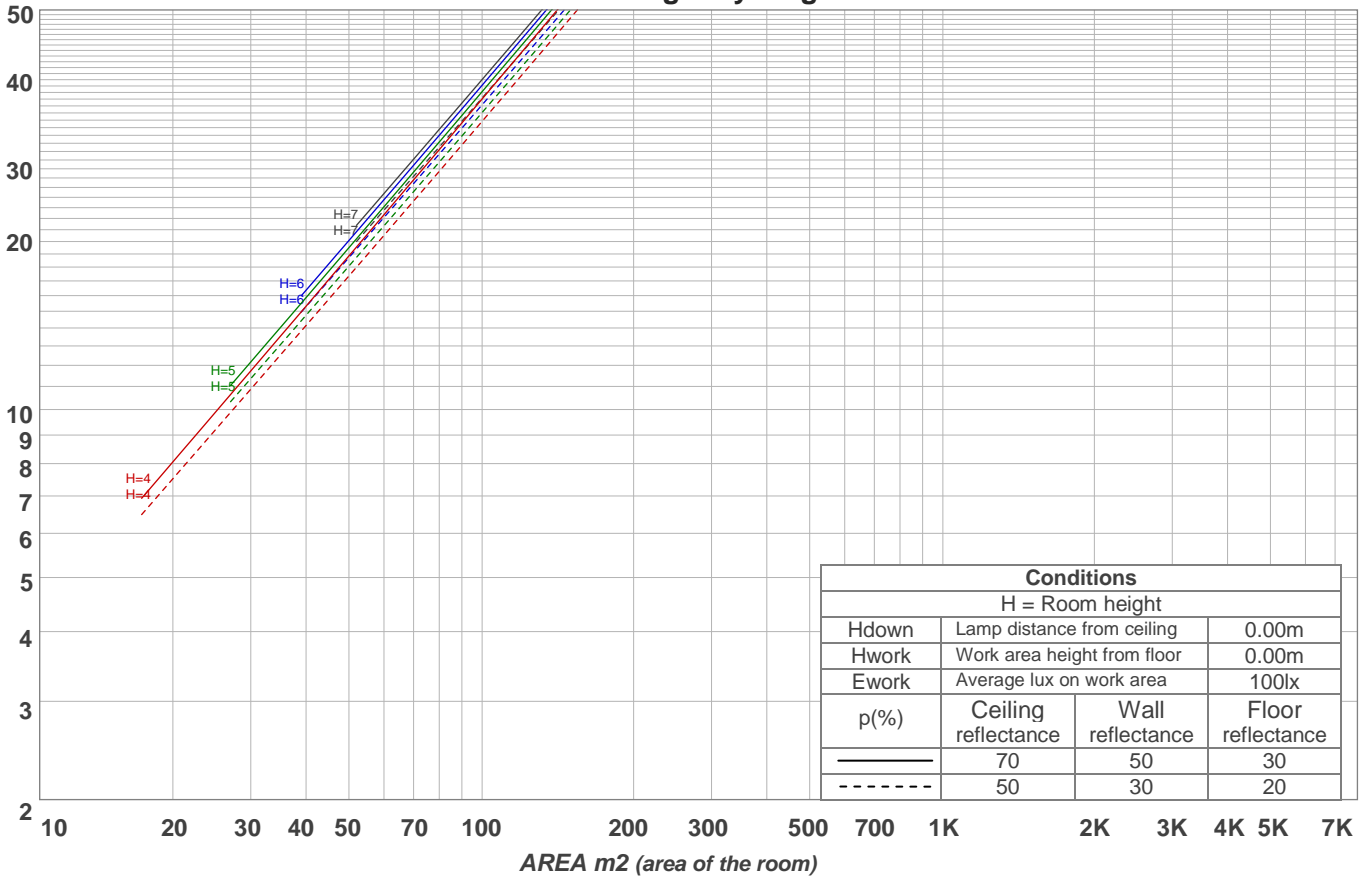
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X      Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	10,6	11,4	10,9	11,6	11,8	8,5	9,3	8,8	9,5	9,7
	3H	12,5	13,1	12,7	13,4	13,6	10,2	10,9	10,5	11,1	11,3
	4H	13,0	13,7	13,3	13,9	14,2	10,9	11,6	11,3	11,8	12,1
	6H	13,4	14,0	13,7	14,3	14,6	11,6	12,2	12,0	12,5	12,8
	8H	13,6	14,1	13,9	14,4	14,7	11,9	12,4	12,2	12,7	13,0
	12H	13,8	14,4	14,2	14,7	15,0	12,2	12,7	12,5	13,0	13,3
4H	2H	11,1	11,8	11,4	12,0	12,3	9,5	10,2	9,8	10,4	10,7
	3H	13,1	13,7	13,5	14,0	14,3	11,3	11,9	11,7	12,2	12,5
	4H	13,9	14,3	14,3	14,7	15,0	12,2	12,7	12,6	13,0	13,4
	6H	14,5	14,8	14,9	15,2	15,6	13,0	13,4	13,4	13,7	14,1
	8H	14,7	15,1	15,1	15,4	15,8	13,3	13,7	13,7	14,0	14,4
	12H	15,0	15,3	15,5	15,7	16,2	13,7	14,0	14,1	14,4	14,8
8H	4H	14,1	14,5	14,5	14,9	15,3	12,7	13,0	13,1	13,4	13,8
	6H	14,9	15,1	15,3	15,6	16,0	13,6	13,9	14,0	14,3	14,7
	8H	15,2	15,5	15,7	15,9	16,4	14,1	14,3	14,5	14,7	15,2
	12H	15,7	15,9	16,2	16,4	16,9	14,5	14,7	15,0	15,2	15,7
12H	4H	14,1	14,4	14,6	14,8	15,3	12,7	13,0	13,2	13,4	13,9
	6H	14,9	15,2	15,4	15,6	16,1	13,7	13,9	14,2	14,4	14,8
	8H	15,4	15,6	15,9	16,0	16,5	14,2	14,4	14,7	14,9	15,4
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,1 / -0,1					+0,1 / -0,1				
S = 1,5H		+0,2 / -0,3					+0,3 / -0,3				
S = 2,0H		+0,8 / -0,5					+0,5 / -0,7				
Standard table		BK06					BK07				
Correction summand		-2,2					-3,2				
Corrected glare indices referring to 312 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	100
1	115	112	110	109	112	110	108	107	106	105	103	103	101	100	99	98	97	96
2	111	107	104	101	109	105	102	100	102	100	98	99	97	96	97	95	94	92
3	107	103	99	96	106	101	98	95	99	96	94	96	94	92	94	92	91	90
4	104	99	95	92	103	98	94	91	96	93	90	94	91	89	92	90	88	87
5	102	96	92	89	100	95	91	88	93	90	88	92	89	87	90	88	86	85
6	99	93	89	86	98	92	89	86	91	88	85	90	87	85	89	86	84	83
7	97	91	87	84	96	90	86	84	89	86	83	88	85	83	87	84	82	81
8	95	89	85	82	94	88	84	82	87	84	82	86	83	81	85	83	81	80
9	93	87	83	80	92	86	83	80	86	82	80	85	82	80	84	81	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)

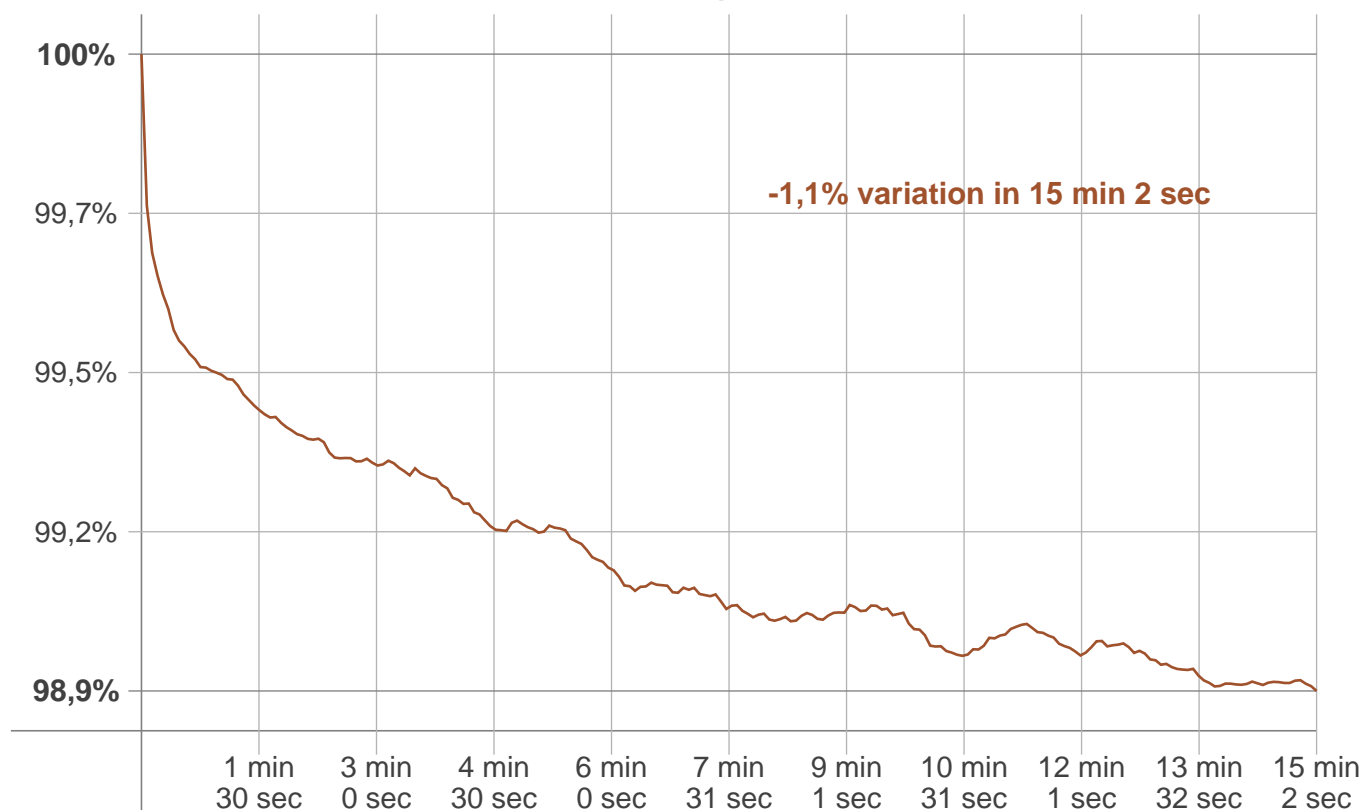
## Luminaire budgetary diagram



## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	90,4 lm	17,9 lm	8,59 lm	7,33 lm	7,43 lm	5,93 lm	3,53 lm	1,62 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,199 lm	0,139 lm	0,131 lm	0,118 lm	0,049 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	-1,1%

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
314 lm	-2 lm	312 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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