

Light efficiency:

43 Lumen/Watt

Light quality:

CRI: 0,0

Color temperature:

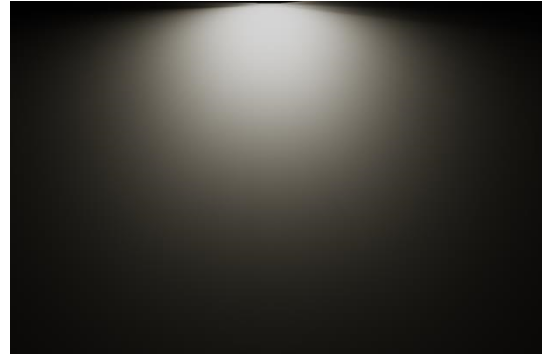
0 K

Output: 302 lm

Peak: 1037 cd

Power: 7,1 W

PF: 0,82



Product name:

FLNP-F4CH-C-258-G-927-10774

Item number:

FLNP-F4CH-C-258-G-927-10774

Date and time:

18.02.2019 15:42:17

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

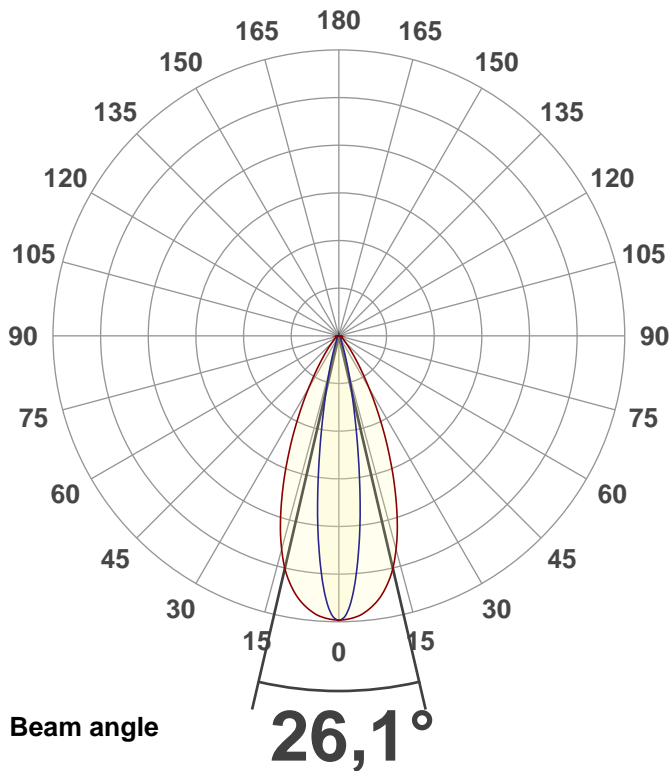
Master of Engineering

Pruefort:

Lichtlabor

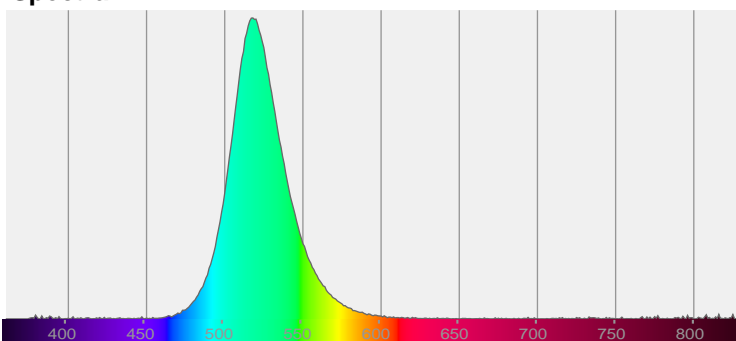
Gaustrasse13-15

55411 Bingen am Rhein

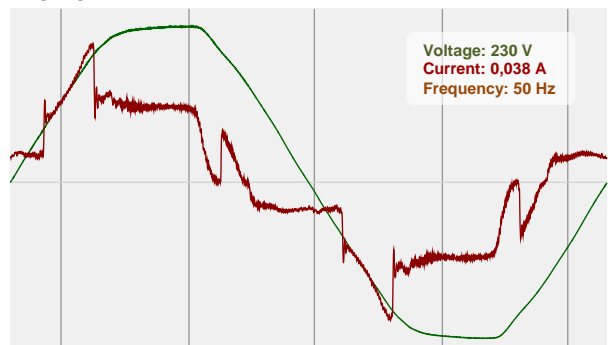


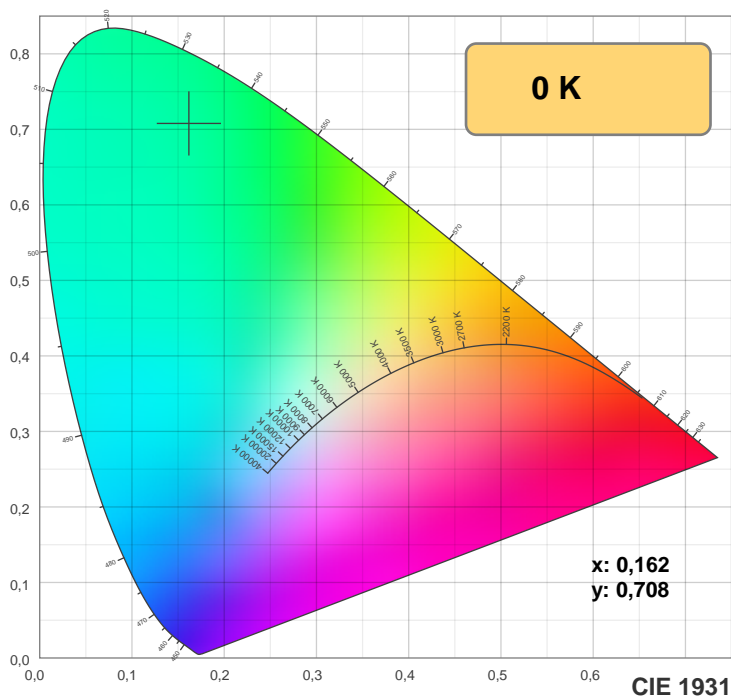
CIE 1931  
x: 0,162  
y: 0,708

Spectra

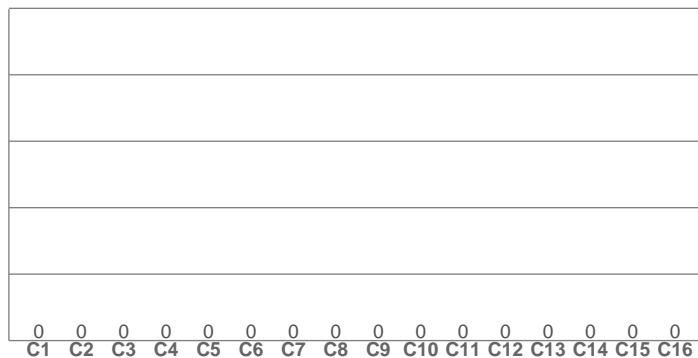


Power





TM30: 0,0



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

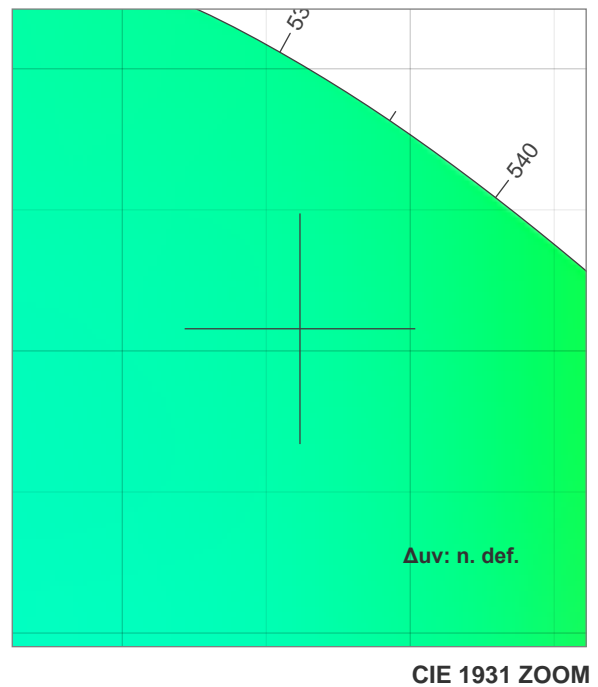
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

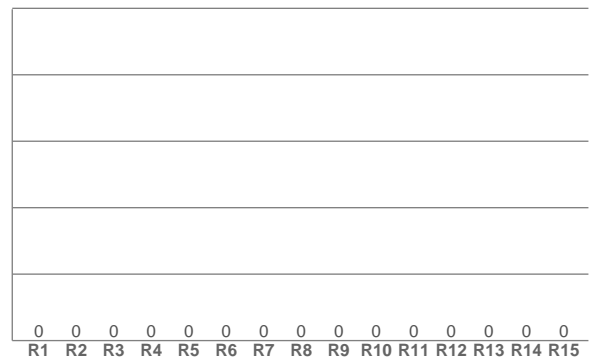
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

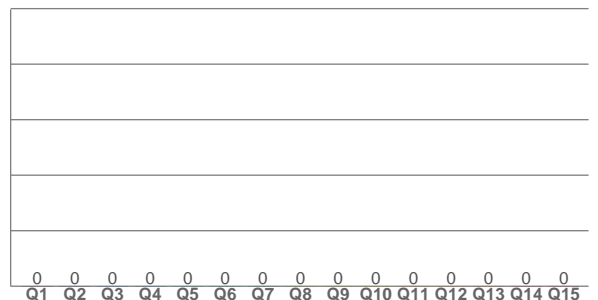
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	$\Delta uv$
0 K	0,0	0,0	0,0	0,0	0,0	0,162	0,708	0,058	0,380	n. def.

## TM30 details

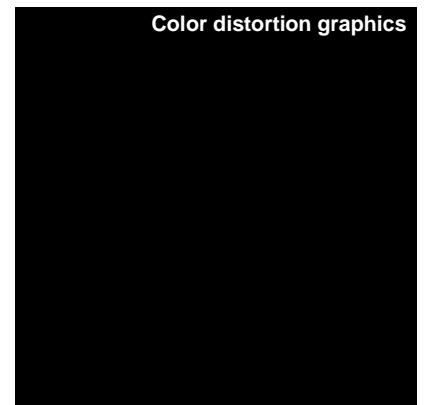
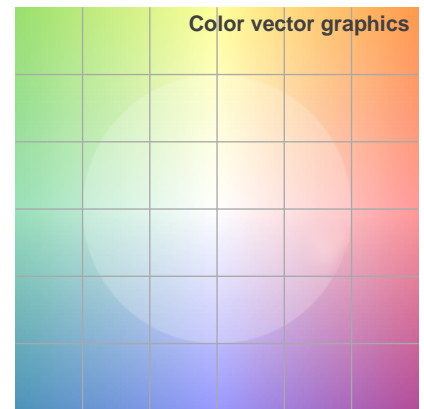
**Rf 0,0**

Fidelity index Rf

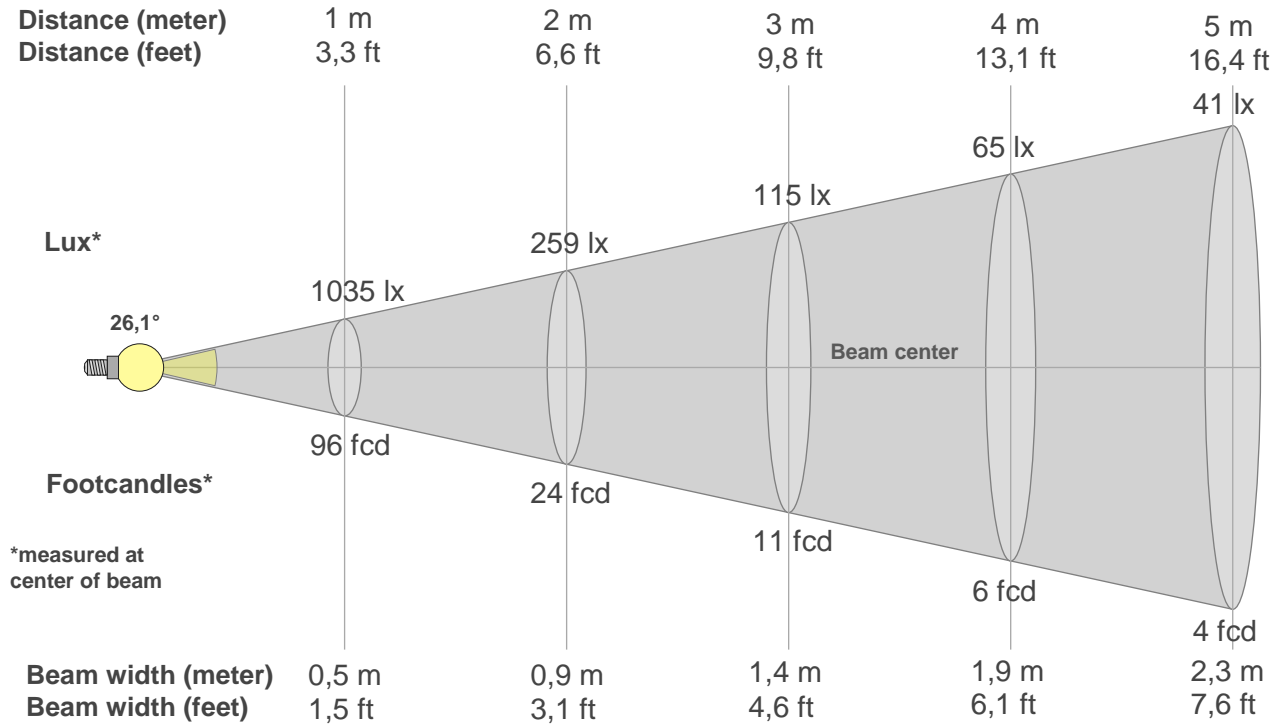
**Rg 0,0**

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
1035lx	259lx	115lx	65lx	41lx	29lx	21lx	16lx	13lx	10lx	9lx	7lx	6lx	5lx	5lx	4lx	4lx	3lx	3lx	3lx
96,2fcd	24fcd	10,7fcd	6fcd	3,8fcd	2,7fcd	2fcd	1,5fcd	1,2fcd	1fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,3fcd	0,2fcd

### 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°
1035	1033	1024	1006	981	945	900	841	769	687	599	512	429	351	282	222	172	133	103	80
100%	100%	99%	97%	95%	91%	87%	81%	74%	66%	58%	49%	41%	34%	27%	21%	17%	13%	10%	8%

### 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°
1035	997	883	725	547	383	254	170	112	74	49	33	26	21	18	16	14	12	12	11
100%	96%	85%	70%	53%	37%	25%	16%	11%	7%	5%	3%	2%	2%	2%	2%	1%	1%	1%	1%

### Intensities in 180° c-plane

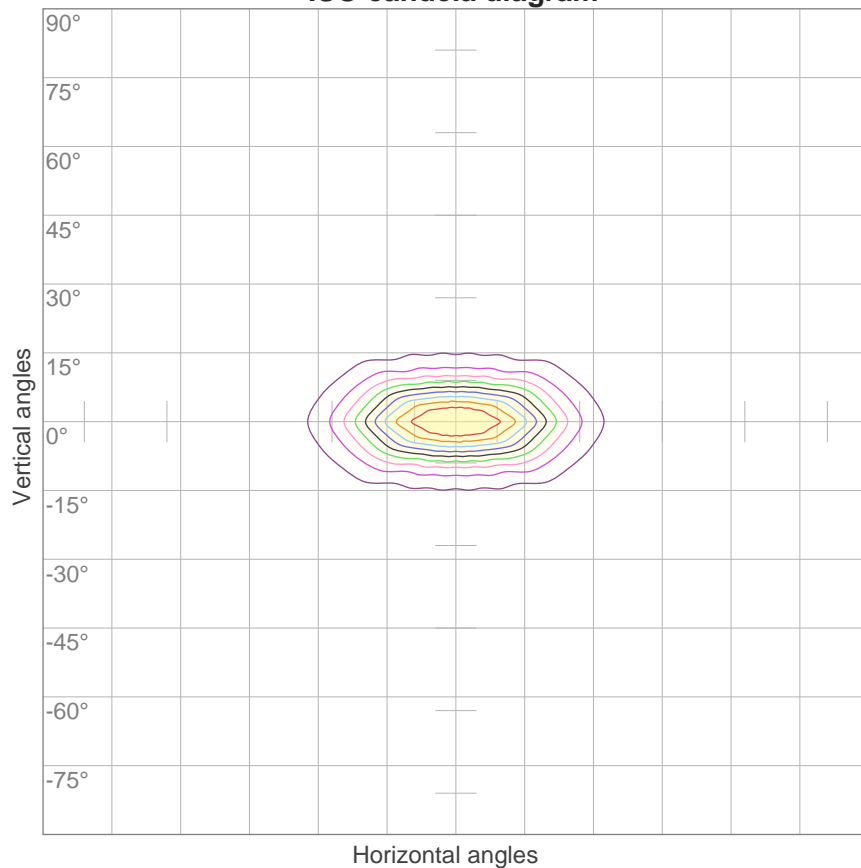
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1035	1033	1024	1006	981	945	900	841	769	687	599	512	429	351	282	222	172	133	103	80
100%	100%	99%	97%	95%	91%	87%	81%	74%	66%	58%	49%	41%	34%	27%	21%	17%	13%	10%	8%

### 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°
1035	997	883	725	547	383	254	170	112	74	49	33	26	21	18	16	14	12	12	11
100%	96%	85%	70%	53%	37%	25%	16%	11%	7%	5%	3%	2%	2%	2%	2%	1%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
26,1°	47,2°	66,6°	95,8%	90,6%

ISO candela diagram



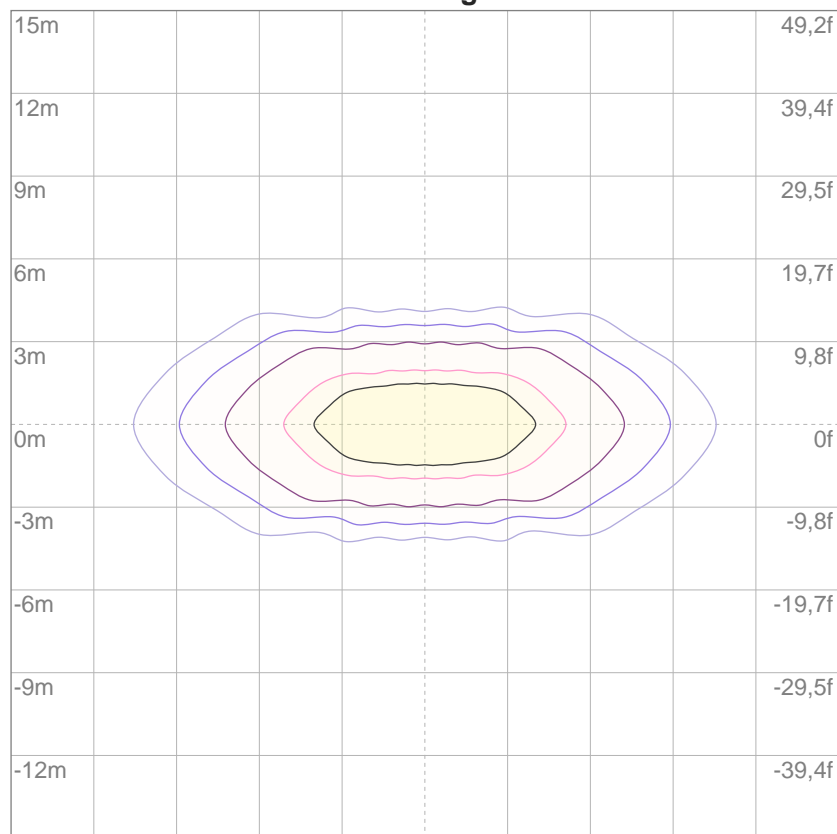
10%	104 cd
20%	207 cd
30%	311 cd
40%	414 cd
50%	518 cd
60%	621 cd
70%	725 cd
80%	828 cd
90%	932 cd

Conditions:

Number of c-planes: 16

Candela at center: 1035 cd

ISO lux diagram



3%	0,311 lx
5%	0,518 lx
10%	1,04 lx
30%	3,11 lx
50%	5,18 lx

Conditions:

Number of c-planes: 16

Lux at center: 10,4 lx

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

## Glare Evaluation According to UGR

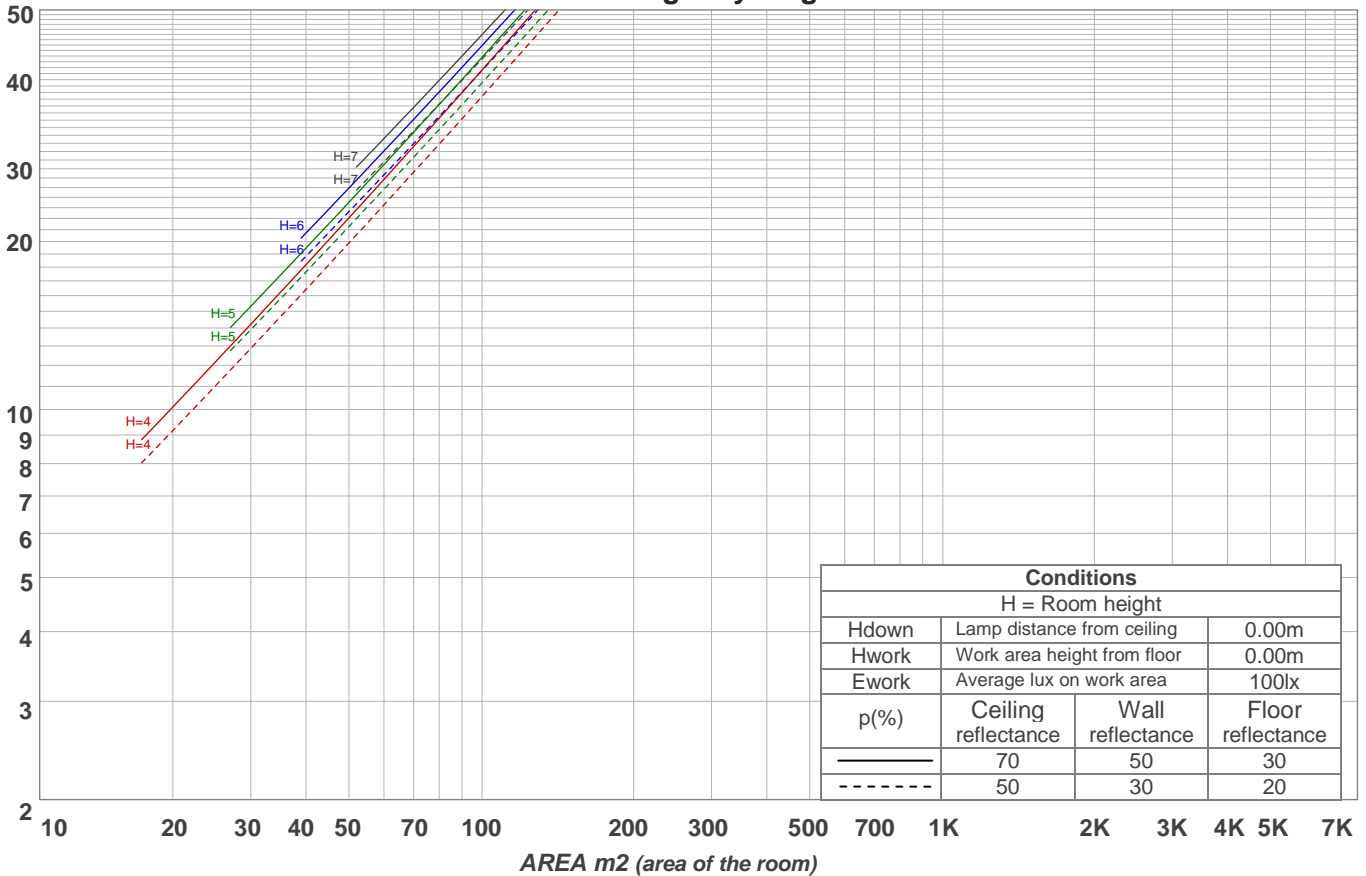
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X      Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	14,9	15,7	15,2	15,9	16,1	9,8	10,5	10,0	10,7	10,9
	3H	15,6	16,3	15,9	16,6	16,8	11,1	11,8	11,4	12,1	12,3
	4H	15,9	16,6	16,3	16,9	17,1	11,8	12,4	12,1	12,7	12,9
	6H	16,1	16,7	16,5	17,0	17,3	12,2	12,8	12,5	13,1	13,4
	8H	16,2	16,8	16,5	17,1	17,4	12,4	13,0	12,7	13,3	13,6
	12H	16,3	16,8	16,6	17,1	17,4	12,6	13,1	12,9	13,4	13,7
4H	2H	15,0	15,6	15,3	15,9	16,2	10,7	11,4	11,0	11,6	11,9
	3H	15,9	16,5	16,3	16,8	17,1	12,2	12,8	12,6	13,1	13,4
	4H	16,4	16,8	16,7	17,2	17,5	12,9	13,4	13,3	13,7	14,1
	6H	16,7	17,1	17,1	17,5	17,8	13,5	13,9	13,9	14,3	14,6
	8H	16,8	17,2	17,2	17,6	18,0	13,7	14,1	14,1	14,4	14,9
	12H	17,0	17,3	17,4	17,7	18,1	13,9	14,3	14,4	14,7	15,1
8H	4H	16,4	16,8	16,9	17,2	17,6	13,3	13,7	13,8	14,1	14,5
	6H	16,9	17,2	17,4	17,6	18,1	14,0	14,3	14,5	14,7	15,2
	8H	17,2	17,4	17,6	17,8	18,3	14,3	14,6	14,8	15,0	15,5
	12H	17,4	17,6	17,9	18,1	18,6	14,7	14,9	15,1	15,3	15,8
12H	4H	16,4	16,7	16,9	17,1	17,6	13,4	13,7	13,8	14,1	14,5
	6H	16,9	17,2	17,4	17,6	18,1	14,2	14,4	14,6	14,8	15,3
	8H	17,2	17,4	17,7	17,9	18,4	14,5	14,7	15,0	15,2	15,7
Variation of the observer position for the luminaire distance S											
S = 1,0H		+2,0 / -0,7					+0,1 / -0,1				
S = 1,5H		+3,7 / -1,1					+0,3 / -0,4				
S = 2,0H		+5,3 / -1,6					+0,6 / -0,8				
Standard table		BK03					BK06				
Correction summand		-0,9					-3,0				
Corrected glare indices referring to 302 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	114	111	108	106	111	109	107	105	105	103	101	101	99	98	97	96	95	94
2	108	104	100	97	106	102	99	96	99	96	94	96	94	91	93	91	90	88
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	85	83
4	99	93	87	84	98	91	87	83	89	85	82	87	84	81	85	83	80	79
5	95	88	83	79	94	87	82	78	85	81	78	84	80	77	82	79	76	75
6	92	84	79	75	90	83	78	74	82	77	74	80	76	73	79	76	73	72
7	88	80	75	71	87	80	75	71	78	74	71	77	73	70	76	73	70	69
8	85	77	72	68	84	76	71	68	75	71	68	74	70	67	73	70	67	66
9	82	74	69	65	81	73	69	65	73	68	65	72	68	65	71	67	65	64
10	79	71	66	63	79	71	66	63	70	66	63	69	65	63	69	65	62	61

LAMPS (number of lamps)

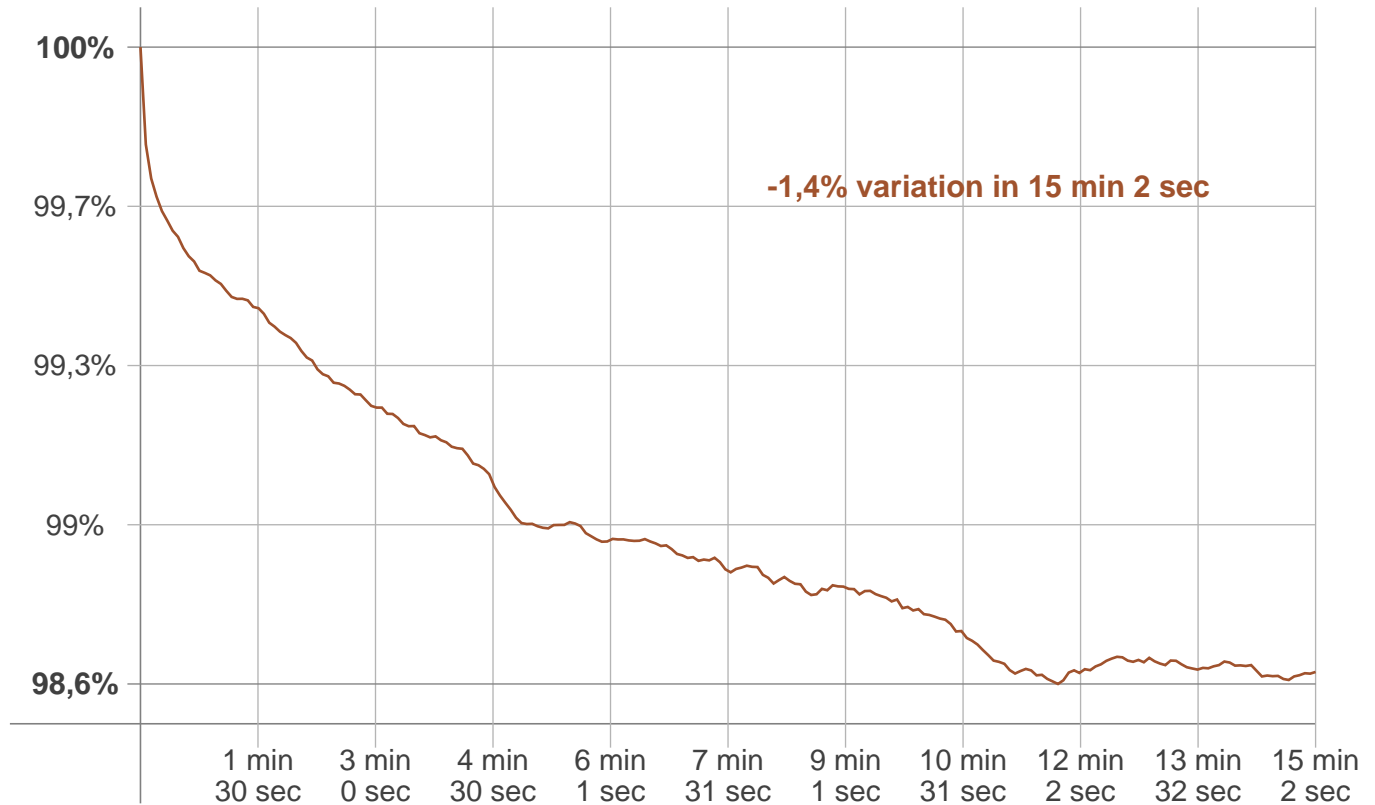
## Luminaire budgetary diagram



## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	107 lm	57,8 lm	23,8 lm	13,0 lm	9,75 lm	6,62 lm	3,68 lm	1,47 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,277 lm	0,204 lm	0,191 lm	0,173 lm	0,065 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	-1,4%

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

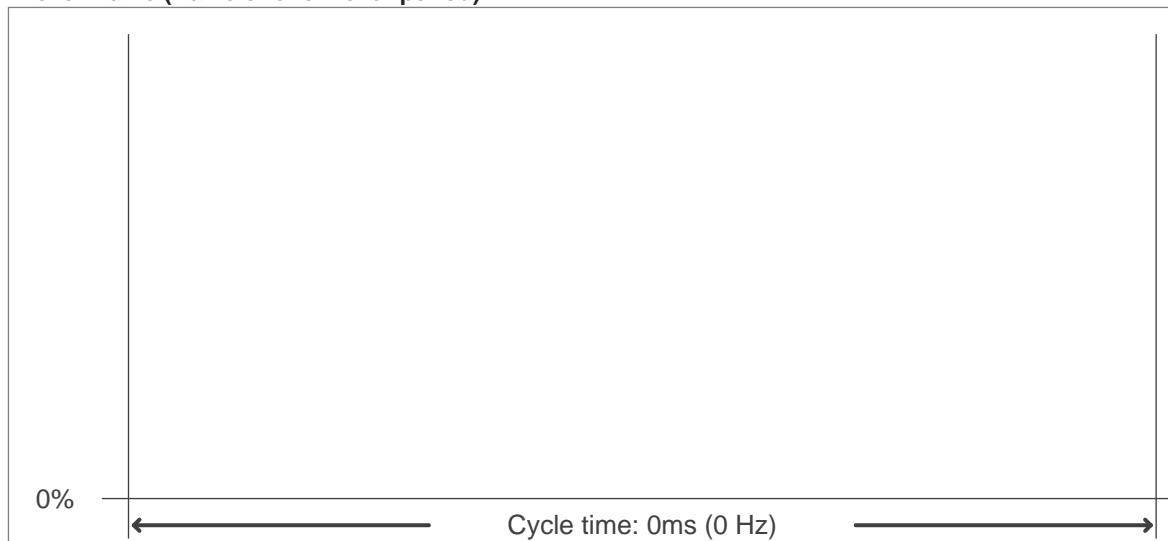
Output start	Output change	Output end
304 lm	-2 lm	302 lm



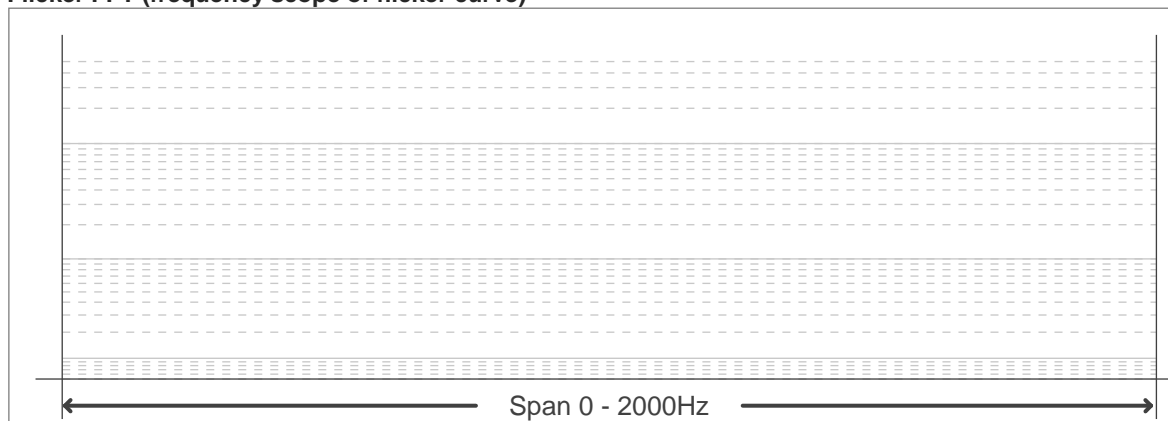
## Flicker curve (complete sampled flicker signal)



## 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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