

Light efficiency:



Light quality:



Color temperature:

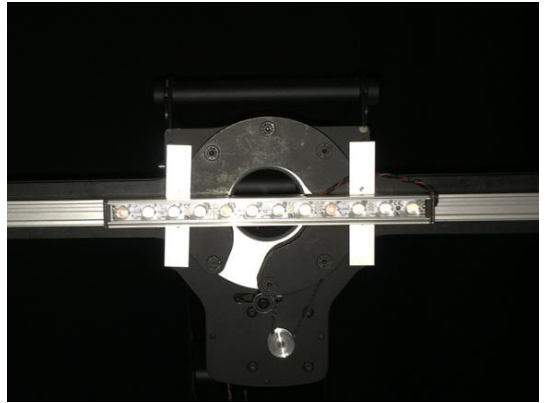


Output: 202 lm

Peak: 623 cd

Power: 6,2 W

PF: 0,79



Product name:

FLNP-F4CH-C-258-R-927-10774

Item number:

FLNP-F4CH-C-258-R-927-10774

Date and time:

18.02.2019 10:51:26

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

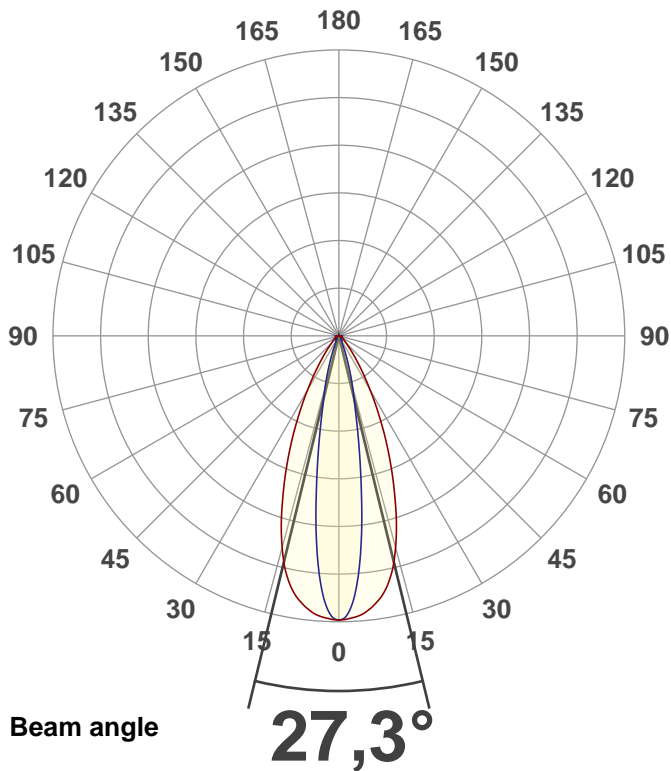
Master of Engineering

Pruefort:

Lichtlabor

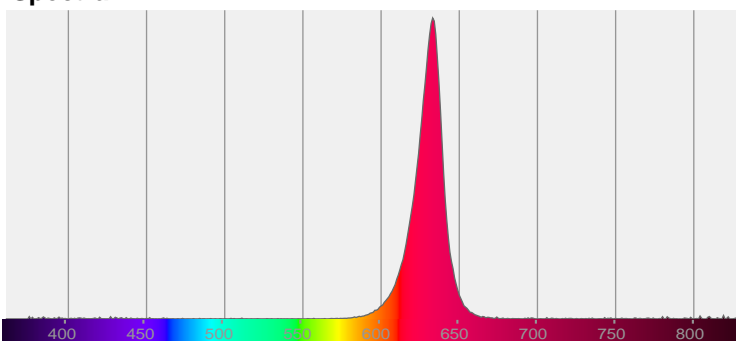
Gaustrasse13-15

55411 Bingen am Rhein

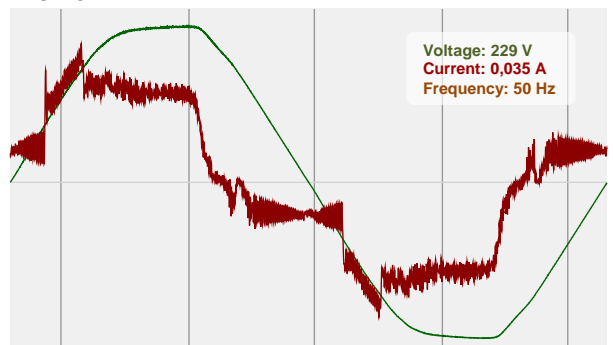


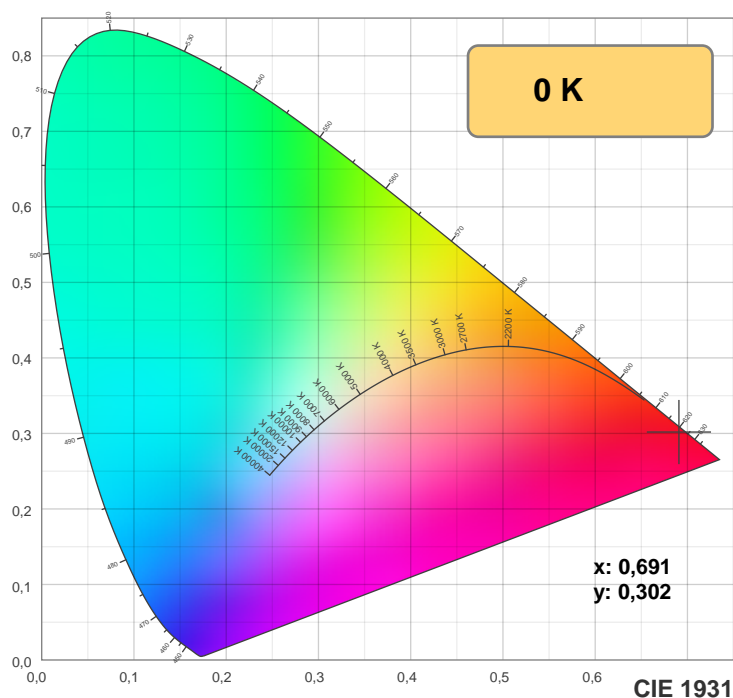
CIE 1931  
x: 0,691  
y: 0,302

Spectra



Power





TM30: 0,0



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

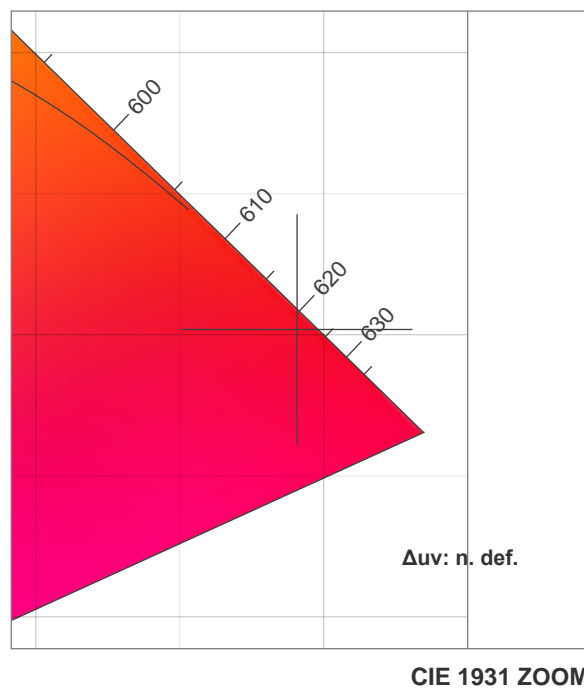
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

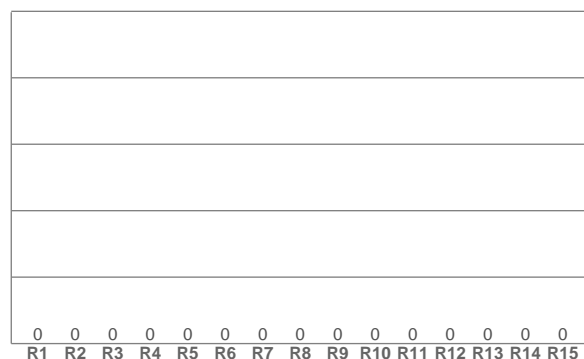
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

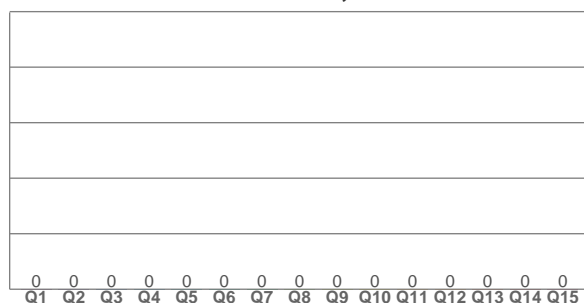
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	0,691	0,302	0,527	0,346	n. def.

## TM30 details

**Rf 0,0**

Fidelity index Rf

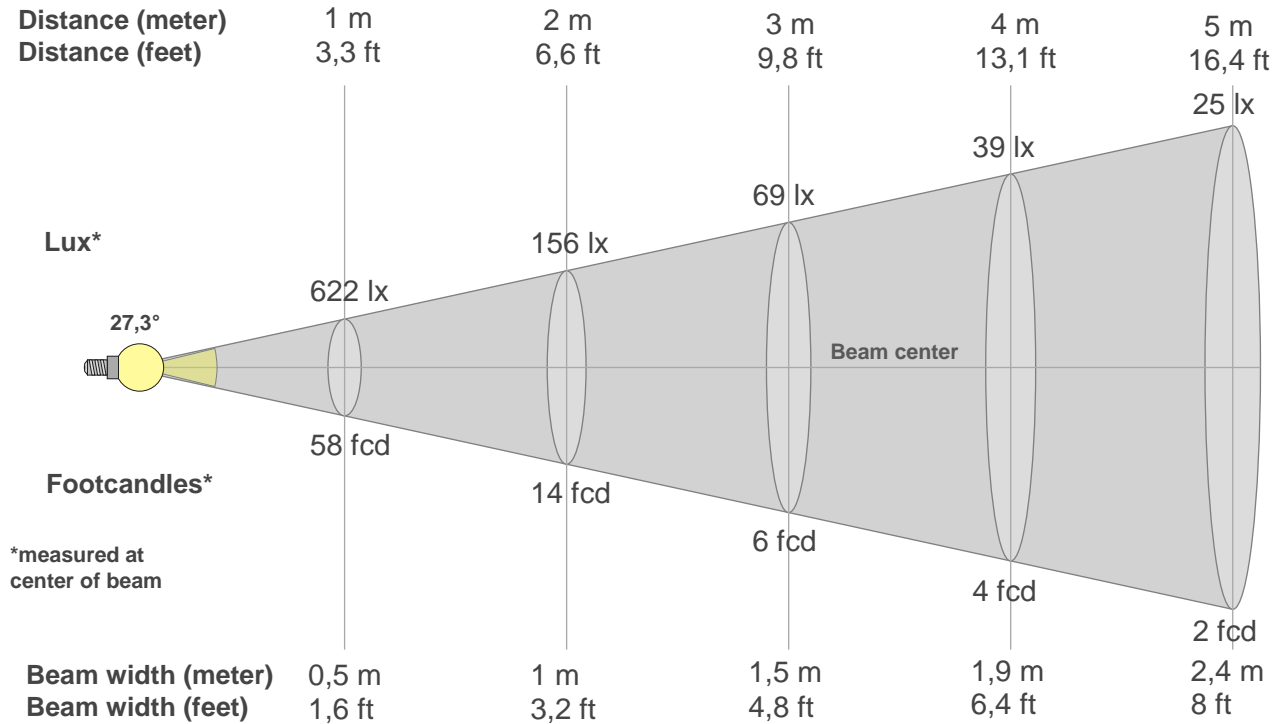
**Rg 0,0**

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
622lx	156lx	69lx	39lx	25lx	17lx	13lx	10lx	8lx	6lx	5lx	4lx	4lx	3lx	3lx	2lx	2lx	2lx	2lx	2lx
57,8fcd	14,4fcd	6,4fcd	3,6fcd	2,3fcd	1,6fcd	1,2fcd	0,9fcd	0,7fcd	0,6fcd	0,5fcd	0,4fcd	0,3fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd	0,1fcd

### 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°
622	620	615	605	590	571	542	503	456	405	353	303	256	212	173	138	109	85	66	52
100%	100%	99%	97%	95%	92%	87%	81%	73%	65%	57%	49%	41%	34%	28%	22%	18%	14%	11%	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°
622	606	551	464	357	261	183	133	100	70	47	31	20	15	12	11	10	9	8	8
100%	97%	89%	75%	57%	42%	29%	21%	16%	11%	8%	5%	3%	2%	2%	2%	2%	1%	1%	1%

### Intensities in 180° c-plane

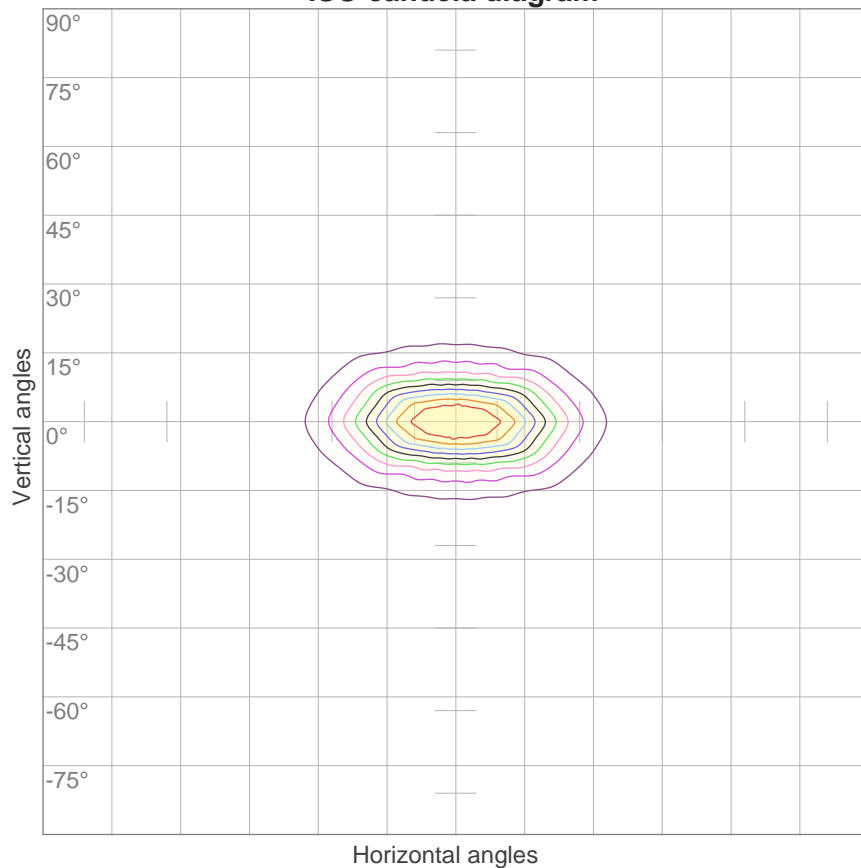
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
622	620	615	605	590	571	542	503	456	405	353	303	256	212	173	138	109	85	66	52
100%	100%	99%	97%	95%	92%	87%	81%	73%	65%	57%	49%	41%	34%	28%	22%	18%	14%	11%	8%

### 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°
622	606	551	464	357	261	183	133	100	70	47	31	20	15	12	11	10	9	8	8
100%	97%	89%	75%	57%	42%	29%	21%	16%	11%	8%	5%	3%	2%	2%	2%	2%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
27,3°	50,8°	71,6°	94,3%	89,0%

ISO candela diagram



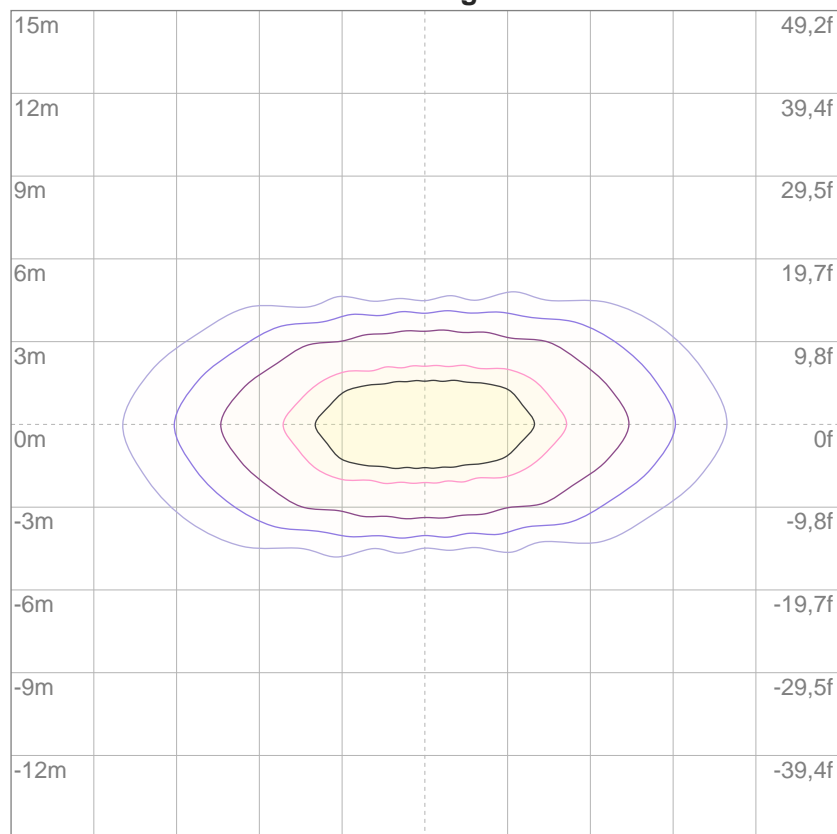
10%	62 cd
20%	124 cd
30%	187 cd
40%	249 cd
50%	311 cd
60%	373 cd
70%	435 cd
80%	498 cd
90%	560 cd

Conditions:

Number of c-planes: 16

Candela at center: 622 cd

ISO lux diagram



3%	0,187 lx
5%	0,311 lx
10%	0,622 lx
30%	1,87 lx
50%	3,11 lx

Conditions:

Number of c-planes: 16

Lux at center: 6,22 lx

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

## Glare Evaluation According to UGR

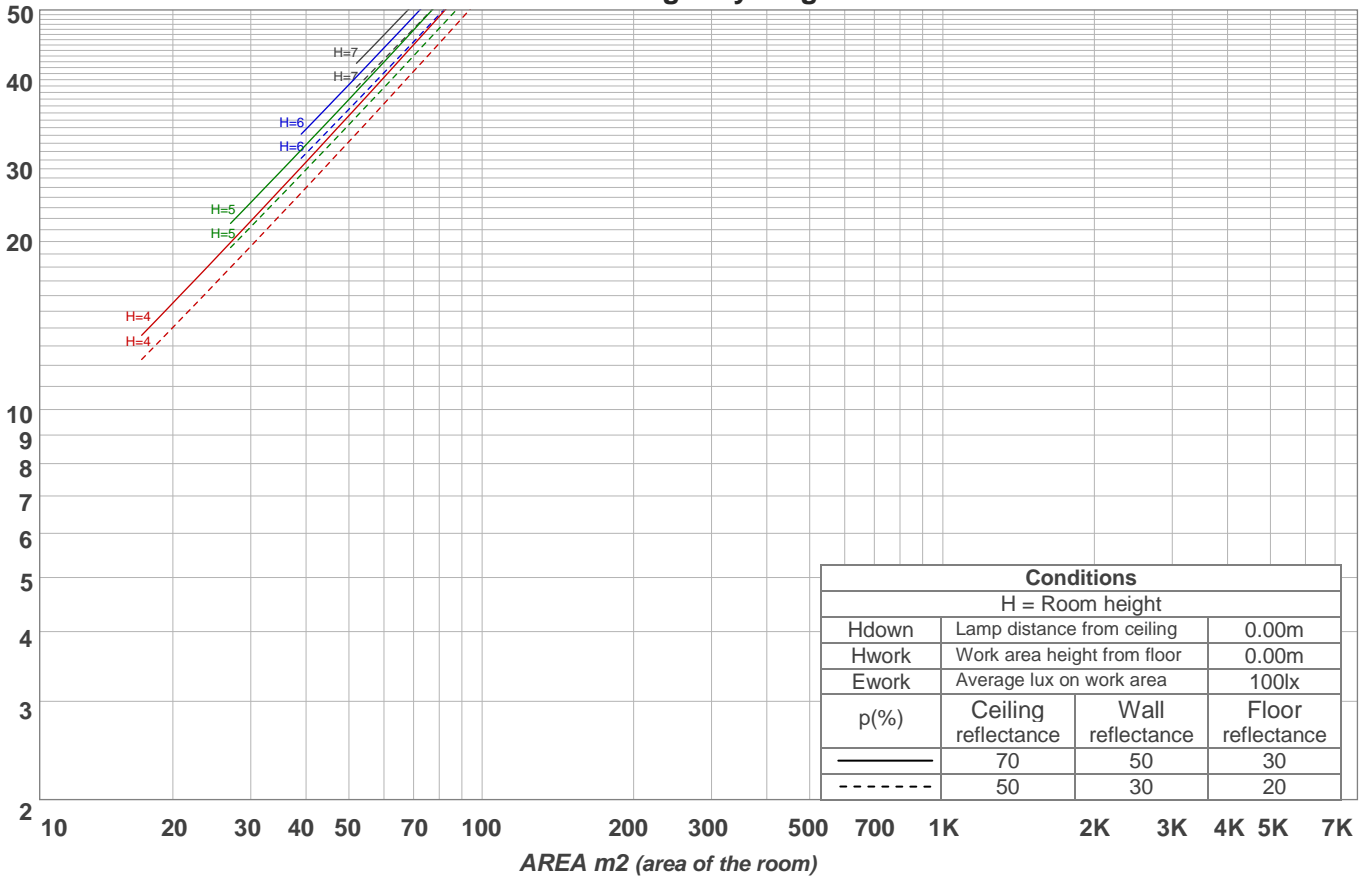
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X      Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	13,6	14,4	13,9	14,6	14,8	8,8	9,6	9,0	9,8	10,0
	3H	14,5	15,2	14,8	15,4	15,7	10,6	11,3	10,9	11,5	11,8
	4H	14,9	15,6	15,2	15,8	16,1	11,5	12,2	11,8	12,4	12,7
	6H	15,3	15,9	15,7	16,2	16,5	12,4	13,0	12,7	13,3	13,5
	8H	15,5	16,1	15,9	16,4	16,7	12,7	13,3	13,1	13,6	13,9
	12H	15,8	16,3	16,1	16,7	17,0	13,3	13,9	13,7	14,2	14,5
4H	2H	13,8	14,4	14,1	14,7	15,0	9,8	10,5	10,1	10,7	11,0
	3H	14,8	15,4	15,2	15,7	16,0	11,8	12,3	12,1	12,6	12,9
	4H	15,4	15,9	15,8	16,3	16,6	12,8	13,3	13,1	13,6	13,9
	6H	16,1	16,5	16,5	16,9	17,3	13,7	14,2	14,1	14,5	14,9
	8H	16,5	16,9	16,9	17,2	17,6	14,2	14,6	14,6	15,0	15,4
	12H	16,8	17,2	17,3	17,6	18,0	14,9	15,2	15,3	15,6	16,1
8H	4H	15,7	16,0	16,1	16,4	16,8	13,3	13,7	13,7	14,1	14,5
	6H	16,6	16,9	17,0	17,3	17,7	14,5	14,8	15,0	15,2	15,7
	8H	17,1	17,4	17,6	17,8	18,3	15,1	15,3	15,6	15,8	16,2
	12H	17,7	17,9	18,2	18,3	18,8	16,0	16,2	16,5	16,6	17,1
12H	4H	15,7	16,0	16,1	16,4	16,8	13,4	13,8	13,9	14,2	14,6
	6H	16,7	16,9	17,1	17,4	17,8	14,7	15,0	15,2	15,4	15,9
	8H	17,3	17,5	17,8	18,0	18,5	15,4	15,6	15,9	16,1	16,6
Variation of the observer position for the luminaire distance S											
S = 1,0H		+1,3 / -0,4					+0,1 / -0,1				
S = 1,5H		+2,7 / -0,7					+0,3 / -0,3				
S = 2,0H		+4,1 / -1,1					+0,5 / -0,7				
Standard table		BK05					BK08				
Correction summand		-0,6					-1,8				
Corrected glare indices referring to 202 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	101	101	101	99
1	113	110	108	105	111	108	106	104	104	102	100	100	99	97	96	95	94	92
2	108	103	99	96	106	101	98	94	98	95	92	95	92	90	92	90	88	87
3	103	97	92	88	101	95	91	87	93	89	86	90	87	84	88	85	83	81
4	98	91	86	82	97	90	85	82	88	84	81	86	82	80	84	81	79	77
5	94	87	81	77	93	86	81	77	84	79	76	82	78	75	81	77	75	73
6	91	82	77	73	89	82	77	73	80	76	72	79	75	72	77	74	71	70
7	87	79	73	70	86	78	73	69	77	72	69	76	72	69	74	71	68	67
8	84	75	70	66	83	75	70	66	74	69	66	73	69	66	72	68	65	64
9	81	72	67	64	80	72	67	64	71	66	63	70	66	63	69	66	63	62
10	78	70	65	61	77	69	64	61	68	64	61	68	64	61	67	63	61	59

LAMPS (number of lamps)

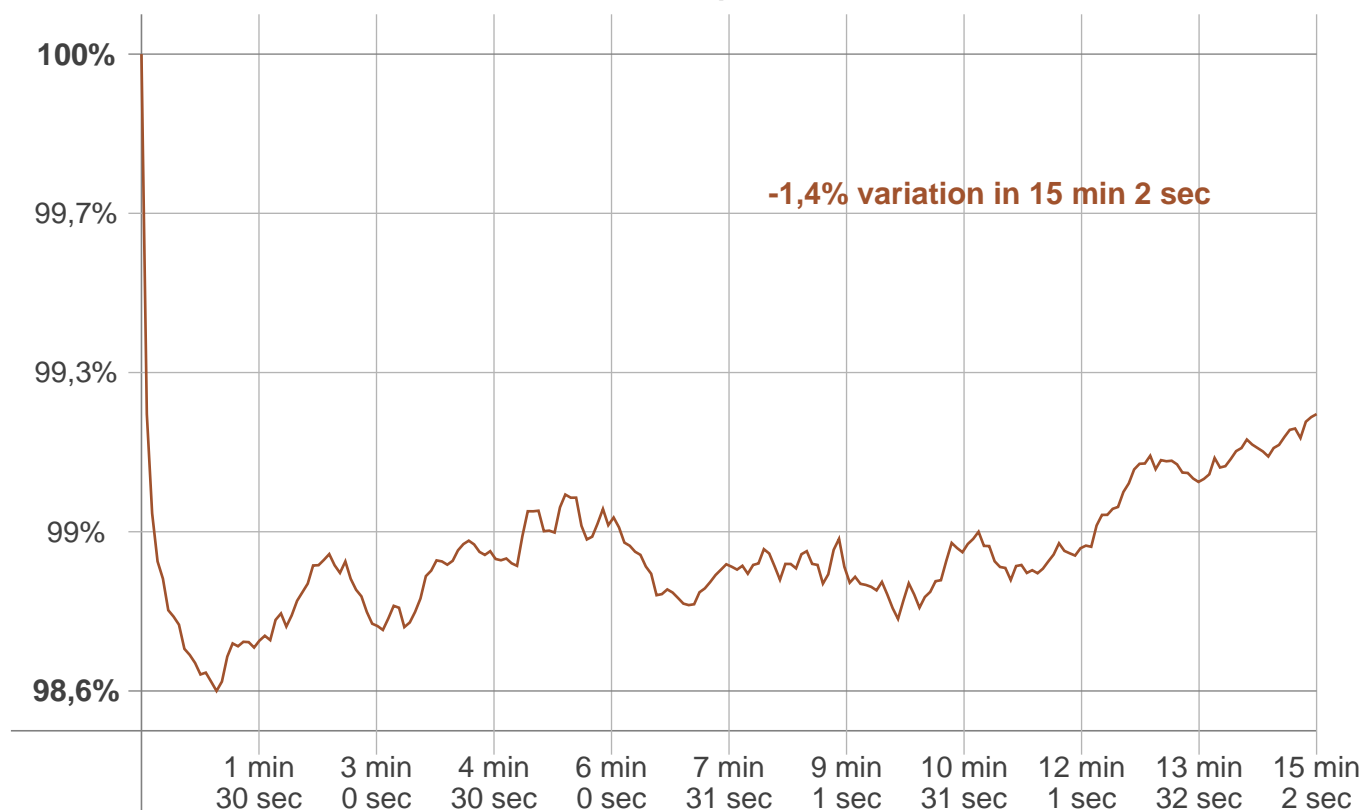
## Luminaire budgetary diagram



## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	70,9 lm	39,5 lm	16,5 lm	9,08 lm	6,68 lm	4,89 lm	3,30 lm	1,90 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,428 lm	0,304 lm	0,285 lm	0,257 lm	0,093 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
203 lm	-1 lm	202 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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