

Light efficiency:



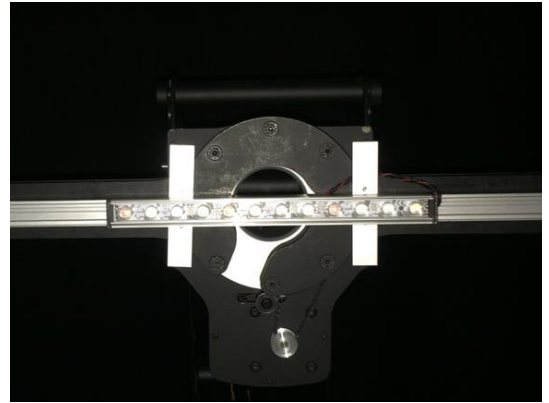
Light quality:



Color temperature:



Output: 212 lm
Peak: 1471 cd
Power: 6,2 W
PF: 0,79



Product name:

FLNP-F4CH-C-258-R-927-10770

Item number:

FLNP-F4CH-C-258-R-927-10770

Date and time:

14.02.2019 14:51:25

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

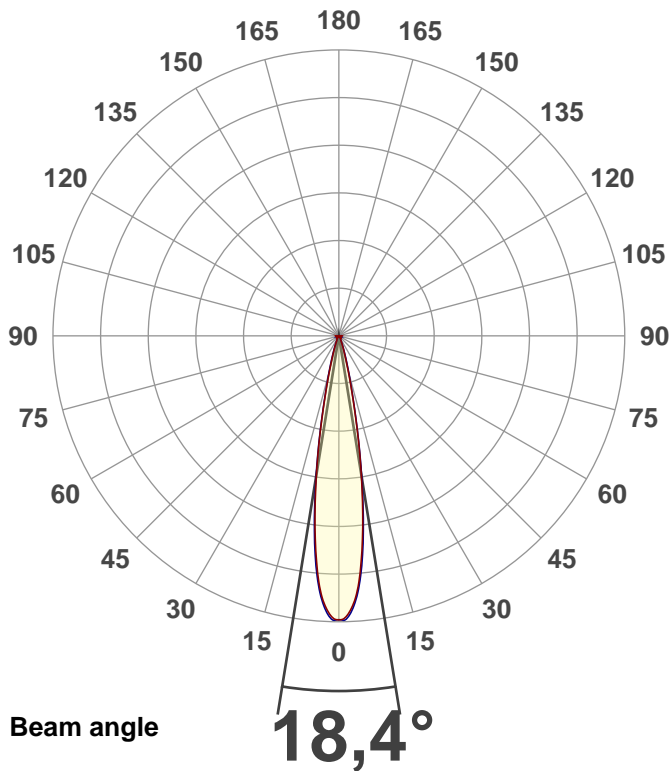
Master of Engineering

Pruefort:

Lichtlabor

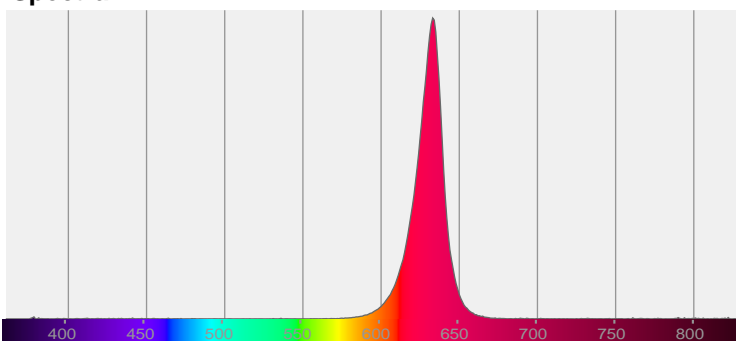
Gaustrasse13-15

55411 Bingen am Rhein

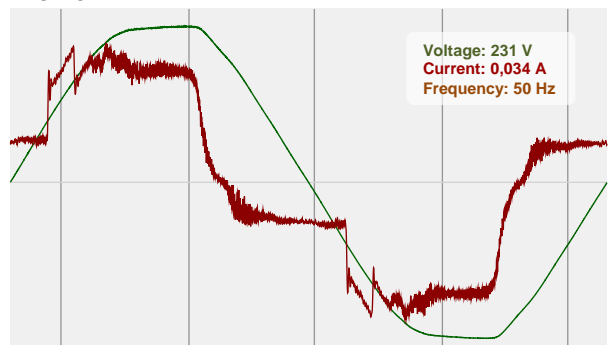


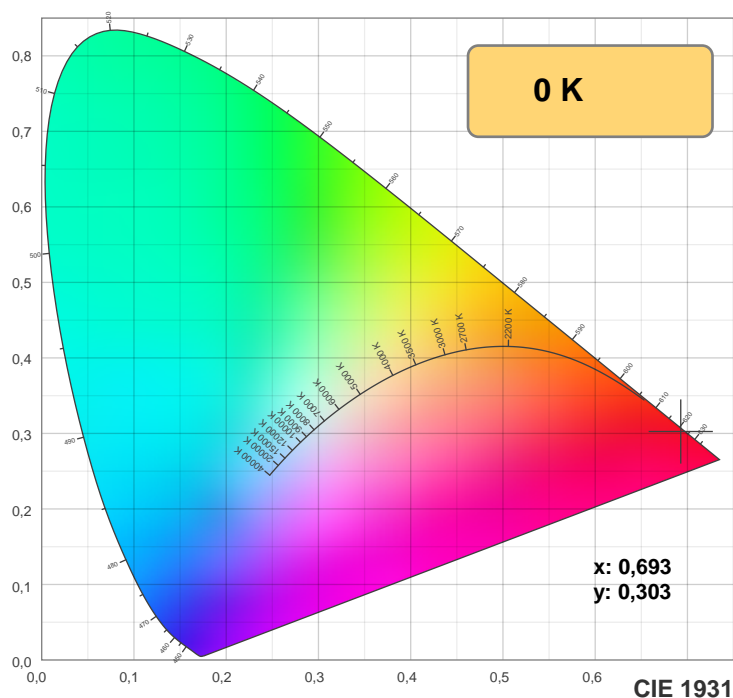
CIE 1931
x: 0,693
y: 0,303

Spectra



Power





TM30: 0,0



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

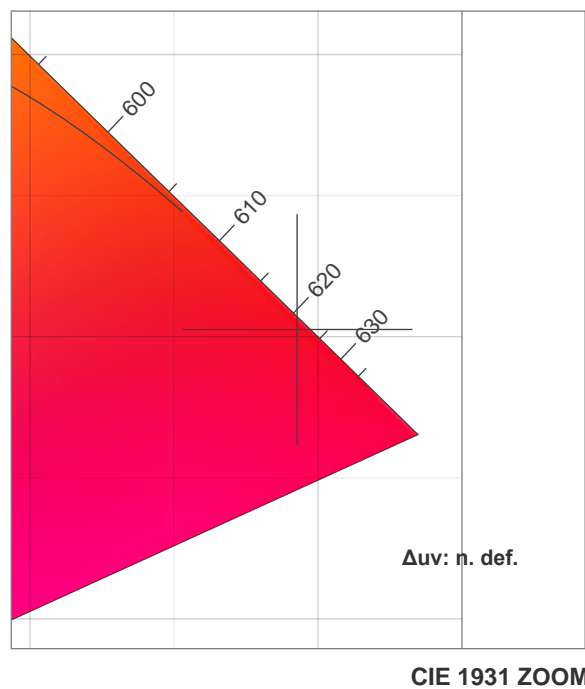
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

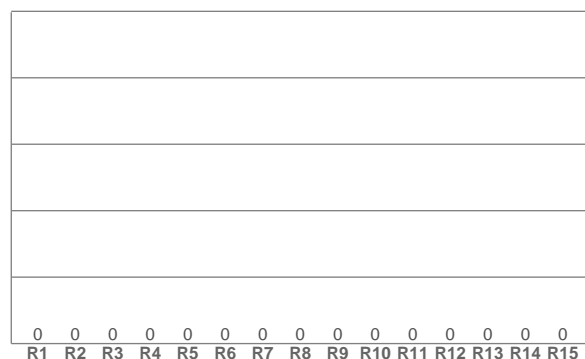
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

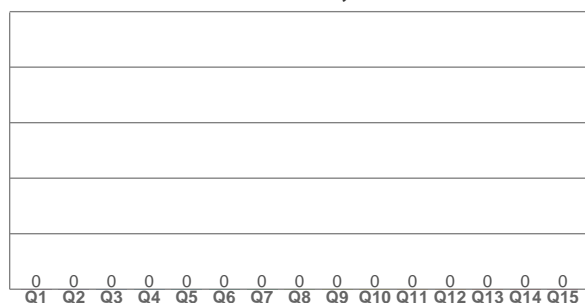
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	0,693	0,303	0,528	0,346	n. def.

TM30 details

Rf 0,0

Fidelity index Rf

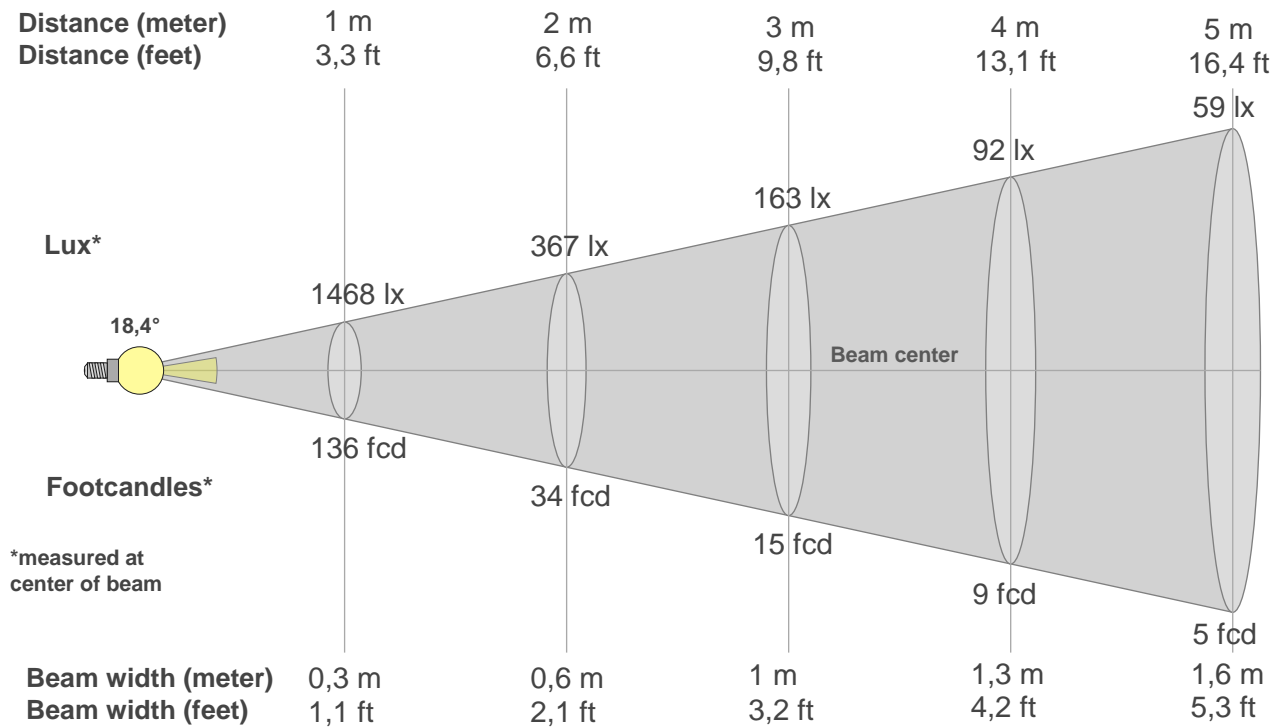
Rg 0,0

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
1468lx	367lx	163lx	92lx	59lx	41lx	30lx	23lx	18lx	15lx	12lx	10lx	9lx	7lx	7lx	6lx	5lx	5lx	4lx	4lx
136,4fcd	34,1fcd	15,2fcd	8,5fcd	5,5fcd	3,8fcd	2,8fcd	2,1fcd	1,7fcd	1,4fcd	1,1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd

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°
1468	1461	1435	1392	1329	1241	1131	1009	880	751	625	504	396	307	238	186	146	116	92	74
100%	100%	98%	95%	91%	85%	77%	69%	60%	51%	43%	34%	27%	21%	16%	13%	10%	8%	6%	5%

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°
1468	1470	1450	1407	1346	1263	1158	1036	902	765	634	511	401	314	249	200	160	128	103	83
100%	100%	99%	96%	92%	86%	79%	71%	61%	52%	43%	35%	27%	21%	17%	14%	11%	9%	7%	6%

Intensities in 180° c-plane

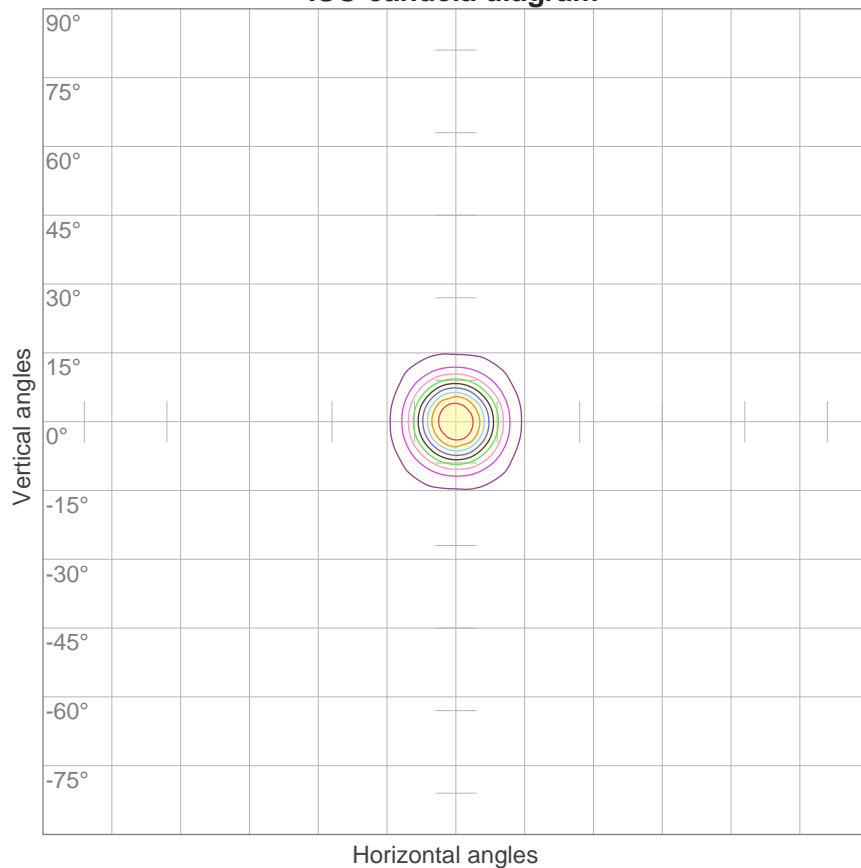
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
1468	1461	1435	1392	1329	1241	1131	1009	880	751	625	504	396	307	238	186	146	116	92	74
100%	100%	98%	95%	91%	85%	77%	69%	60%	51%	43%	34%	27%	21%	16%	13%	10%	8%	6%	5%

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°
1468	1470	1450	1407	1346	1263	1158	1036	902	765	634	511	401	314	249	200	160	128	103	83
100%	100%	99%	96%	92%	86%	79%	71%	61%	52%	43%	35%	27%	21%	17%	14%	11%	9%	7%	6%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18,4°	33,2°	47,6°	92,7%	88,4%

ISO candela diagram



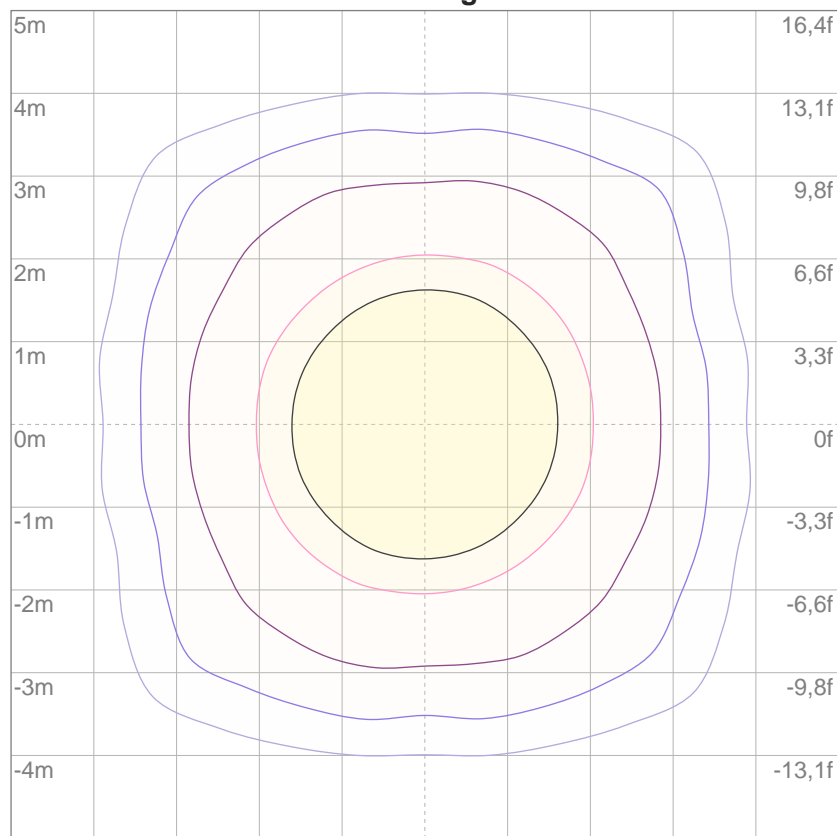
10%	147 cd
20%	294 cd
30%	440 cd
40%	587 cd
50%	734 cd
60%	881 cd
70%	1028 cd
80%	1174 cd
90%	1321 cd

Conditions:

Number of c-planes: 16

Candela at center: 1468 cd

ISO lux diagram



3%	0,440 lx
5%	0,734 lx
10%	1,47 lx
30%	4,40 lx
50%	7,34 lx

Conditions:

Number of c-planes: 16

Lux at center: 14,7 lx

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

Glare Evaluation According to UGR

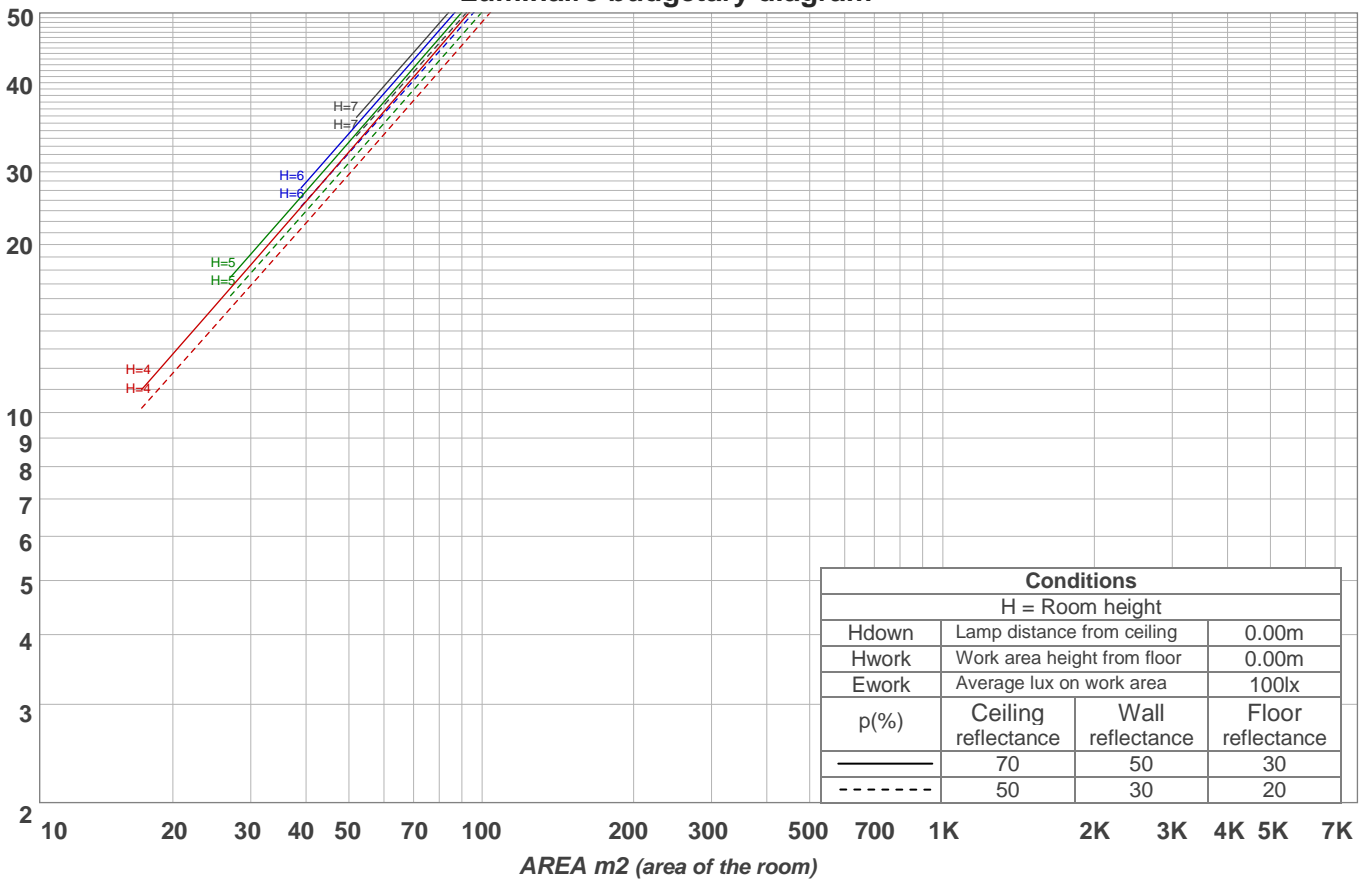
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	10,3	11,1	10,6	11,3	11,5	9,5	10,2	9,7	10,4	10,6
	3H	12,4	13,1	12,7	13,4	13,6	11,6	12,3	11,9	12,5	12,8
	4H	13,3	14,0	13,6	14,2	14,5	12,7	13,4	13,0	13,6	13,9
	6H	14,2	14,8	14,5	15,1	15,4	13,8	14,4	14,1	14,7	15,0
	8H	14,6	15,2	15,0	15,5	15,8	14,4	15,0	14,8	15,3	15,6
	12H	15,3	15,9	15,7	16,2	16,5	15,1	15,7	15,5	16,0	16,3
4H	2H	11,1	11,7	11,4	12,0	12,3	10,4	11,1	10,7	11,4	11,6
	3H	13,4	13,9	13,7	14,2	14,6	12,7	13,3	13,1	13,6	13,9
	4H	14,4	14,9	14,8	15,3	15,6	14,1	14,6	14,5	14,9	15,3
	6H	15,5	15,9	15,9	16,3	16,7	15,3	15,7	15,7	16,1	16,5
	8H	16,1	16,5	16,5	16,9	17,3	16,0	16,4	16,4	16,8	17,2
	12H	17,0	17,3	17,4	17,7	18,1	16,8	17,2	17,3	17,6	18,0
8H	4H	14,9	15,3	15,4	15,7	16,1	14,6	15,0	15,1	15,4	15,8
	6H	16,3	16,6	16,7	17,0	17,4	16,1	16,4	16,5	16,8	17,3
	8H	17,1	17,3	17,5	17,8	18,2	17,0	17,3	17,5	17,7	18,2
	12H	18,2	18,4	18,7	18,9	19,4	18,1	18,3	18,5	18,7	19,2
12H	4H	15,0	15,4	15,5	15,8	16,2	14,7	15,1	15,2	15,5	15,9
	6H	16,5	16,7	16,9	17,2	17,6	16,3	16,6	16,8	17,0	17,5
	8H	17,3	17,6	17,8	18,0	18,5	17,3	17,5	17,8	18,0	18,5
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 / -0,2					+0,3 / -0,2				
S = 2,0H		+0,4 / -0,5					+0,4 / -0,5				
Standard table		BK09					BK10				
Correction summand		0,4					0,6				
Corrected glare indices referring to 212 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	110	110	110	105	105	105	101	101	101	98
1	113	111	109	106	111	109	106	105	104	103	101	100	99	98	97	96	95	93
2	109	105	101	98	107	103	100	97	99	97	95	96	94	92	93	92	90	89
3	105	100	96	92	103	98	94	91	95	92	90	93	90	88	91	88	87	85
4	102	96	91	88	100	94	90	87	92	89	86	90	87	85	88	86	84	82
5	99	92	87	84	97	91	87	84	89	86	83	87	84	82	86	83	81	80
6	96	89	84	81	94	88	84	81	87	83	80	85	82	80	84	81	79	78
7	93	86	82	79	92	86	81	78	84	81	78	83	80	77	82	79	77	76
8	91	84	80	77	90	83	79	76	82	79	76	81	78	76	80	77	75	74
9	89	82	78	75	88	81	77	75	80	77	74	80	76	74	79	76	74	73
10	87	80	76	73	86	80	76	73	79	75	73	78	75	73	77	74	72	71

LAMPS (number of lamps)

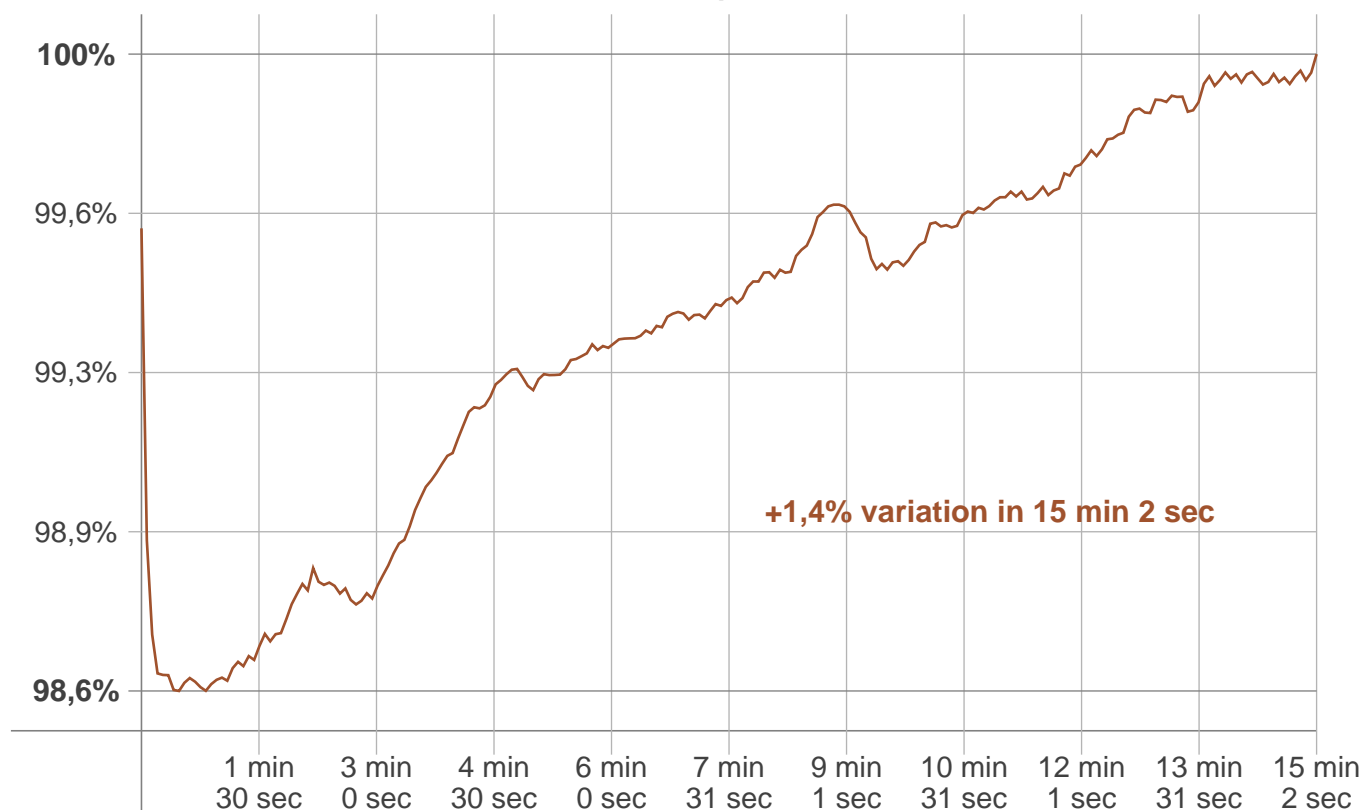
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	64,0 lm	15,5 lm	6,83 lm	6,07 lm	6,23 lm	5,36 lm	4,05 lm	2,75 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,877 lm	0,774 lm	0,726 lm	0,657 lm	0,252 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
213 lm	1m	212 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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