

Light efficiency:



Light quality:



Color temperature:

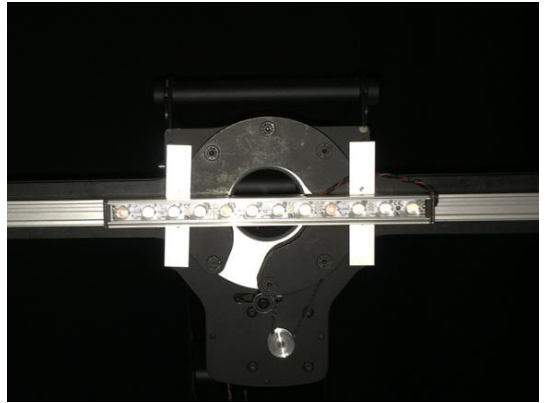


Output: 65,0 lm

Peak: 94,7 cd

Power: 7,1 W

PF: 0,82



Product name:

FLNP-F4CH-C-258-B-927-10773

Item number:

FLNP-F4CH-C-258-B-927-10773

Date and time:

14.02.2019 16:48:20

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

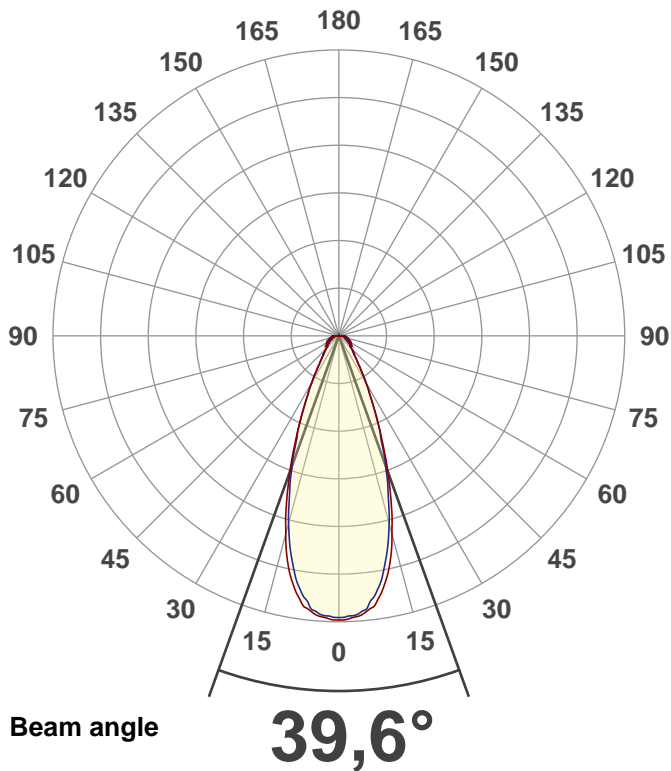
Master of Engineering

Pruefort:

Lichtlabor

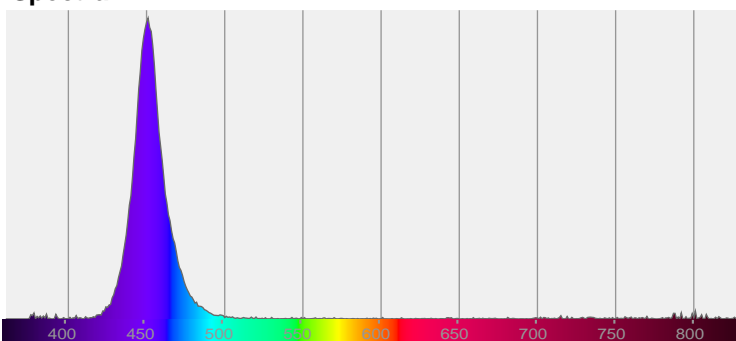
Gaustrasse13-15

55411 Bingen am Rhein

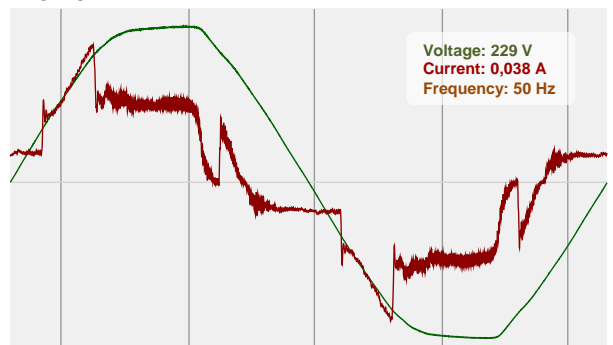


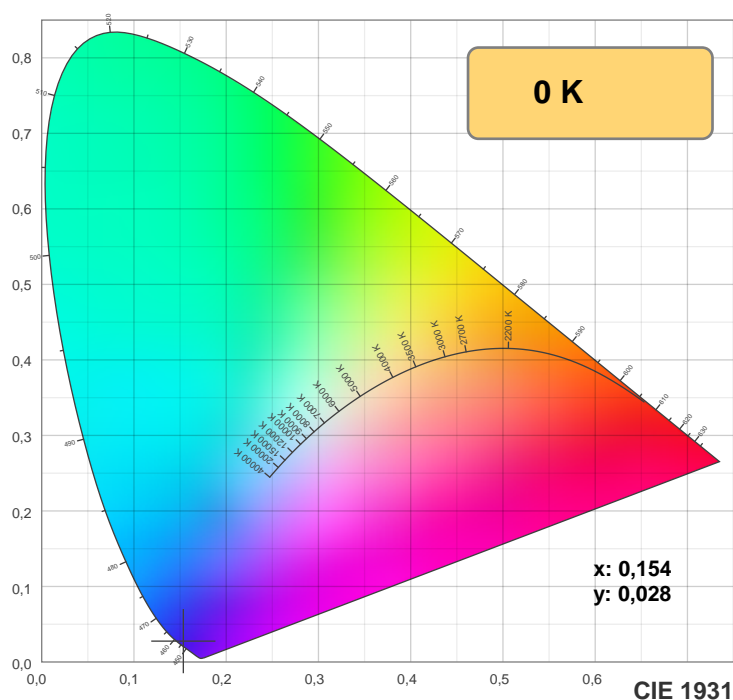
CIE 1931
x: 0,154
y: 0,028

Spectra



Power





TM30: 0,0



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

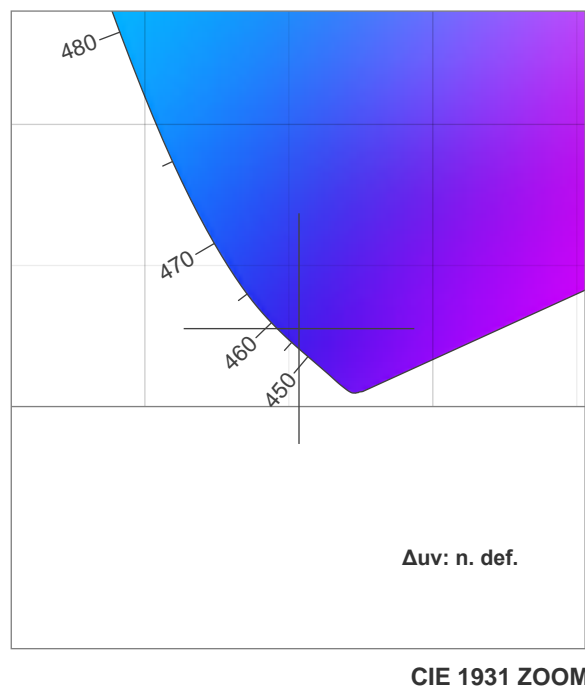
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

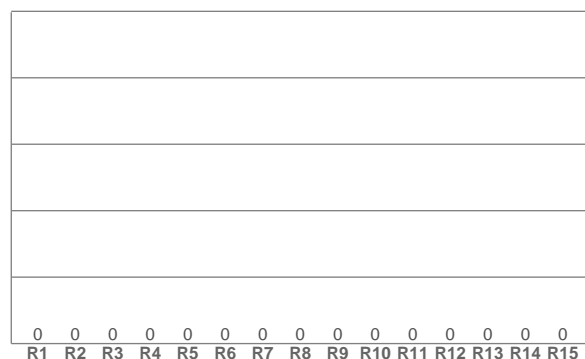
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

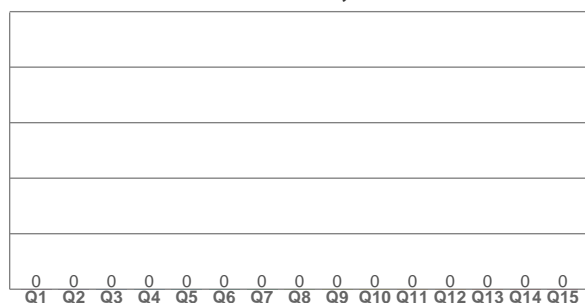
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	0,154	0,028	0,203	0,055	n. def.

TM30 details

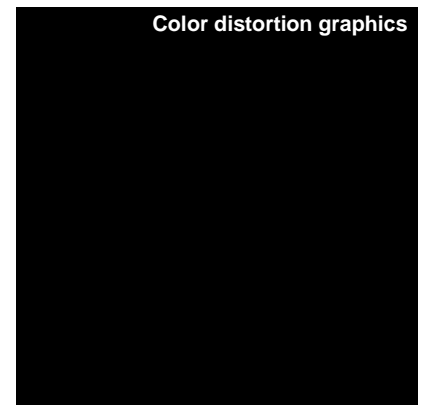
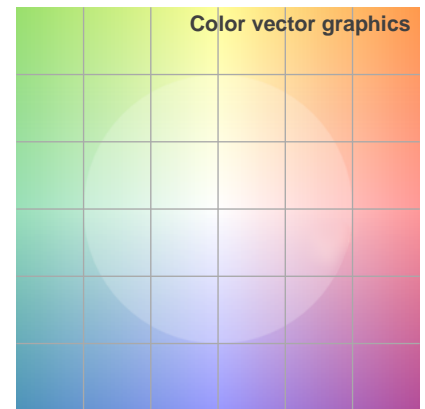
Rf 0,0

Fidelity index Rf

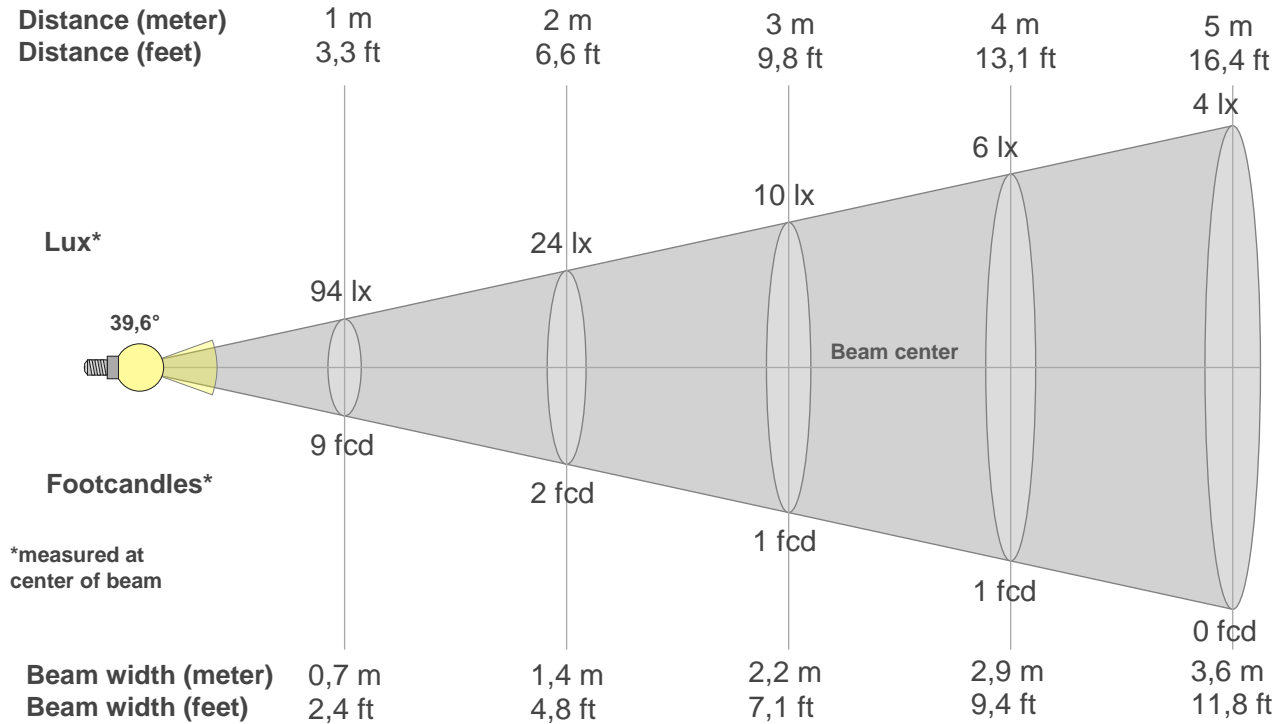
Rg 0,0

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
94lx	24lx	10lx	6lx	4lx	3lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	0lx	0lx	0lx	0lx	0lx	0lx	0lx
8,7fcd	2,2fcd	1fcd	0,5fcd	0,3fcd	0,2fcd	0,2fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0fcd	0fcd	0fcd	0fcd	0fcd	0fcd	0fcd

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°
94,1	94,0	93,3	91,7	89,4	85,0	79,4	72,4	64,1	55,6	47,3	39,3	32,4	26,4	21,7	18,0	14,9	12,6	10,5	8,9
100%	100%	99%	97%	95%	90%	84%	77%	68%	59%	50%	42%	34%	28%	23%	19%	16%	13%	11%	9%

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°
94,1	93,1	92,5	90,6	86,7	81,9	75,4	68,3	60,5	52,6	45,2	37,9	32,1	26,4	21,7	18,2	14,9	12,0	10,3	8,8
100%	99%	98%	96%	92%	87%	80%	73%	64%	56%	48%	40%	34%	28%	23%	19%	16%	13%	11%	9%

Intensities in 180° c-plane

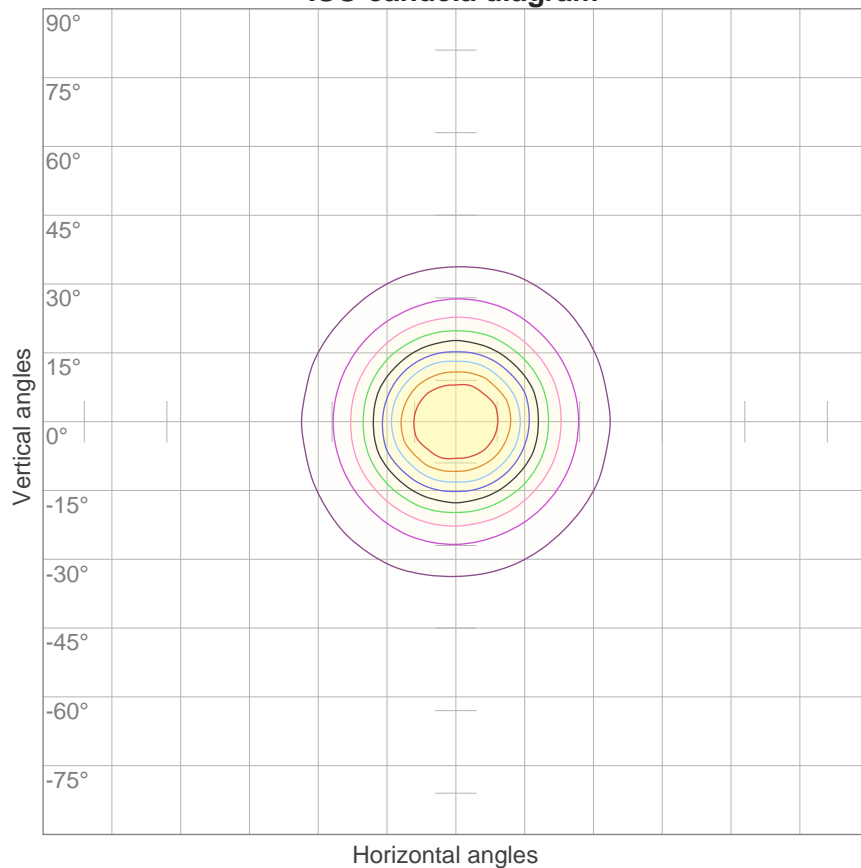
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
94,1	94,0	93,3	91,7	89,4	85,0	79,4	72,4	64,1	55,6	47,3	39,3	32,4	26,4	21,7	18,0	14,9	12,6	10,5	8,9
100%	100%	99%	97%	95%	90%	84%	77%	68%	59%	50%	42%	34%	28%	23%	19%	16%	13%	11%	9%

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°
94,1	93,1	92,5	90,6	86,7	81,9	75,4	68,3	60,5	52,6	45,2	37,9	32,1	26,4	21,7	18,2	14,9	12,0	10,3	8,8
100%	99%	98%	96%	92%	87%	80%	73%	64%	56%	48%	40%	34%	28%	23%	19%	16%	13%	11%	9%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
39,6°	74,7°	155,6°	86,4%	77,3%

ISO candela diagram



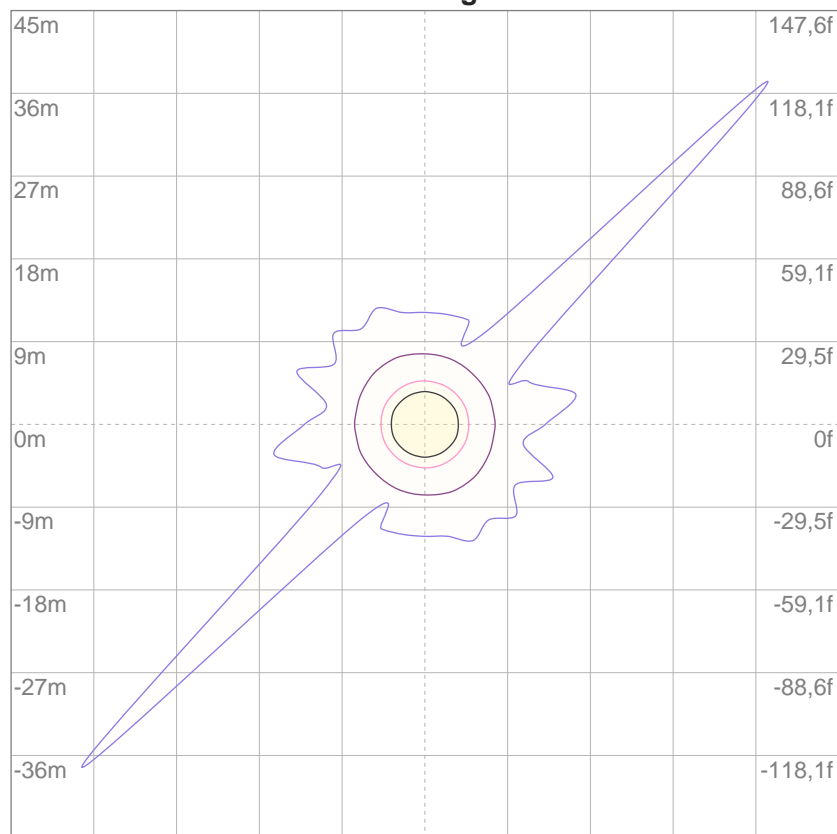
10%	9 cd
20%	19 cd
30%	28 cd
40%	38 cd
50%	47 cd
60%	56 cd
70%	66 cd
80%	75 cd
90%	85 cd

Conditions:

Number of c-planes: 16

Candela at center: 94 cd

ISO lux diagram



3%	28,2m lx
5%	47,0m lx
10%	94,1m lx
30%	0,282 lx
50%	0,470 lx

Conditions:

Number of c-planes: 16

Lux at center: 0,941 lx

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

Glare Evaluation According to UGR

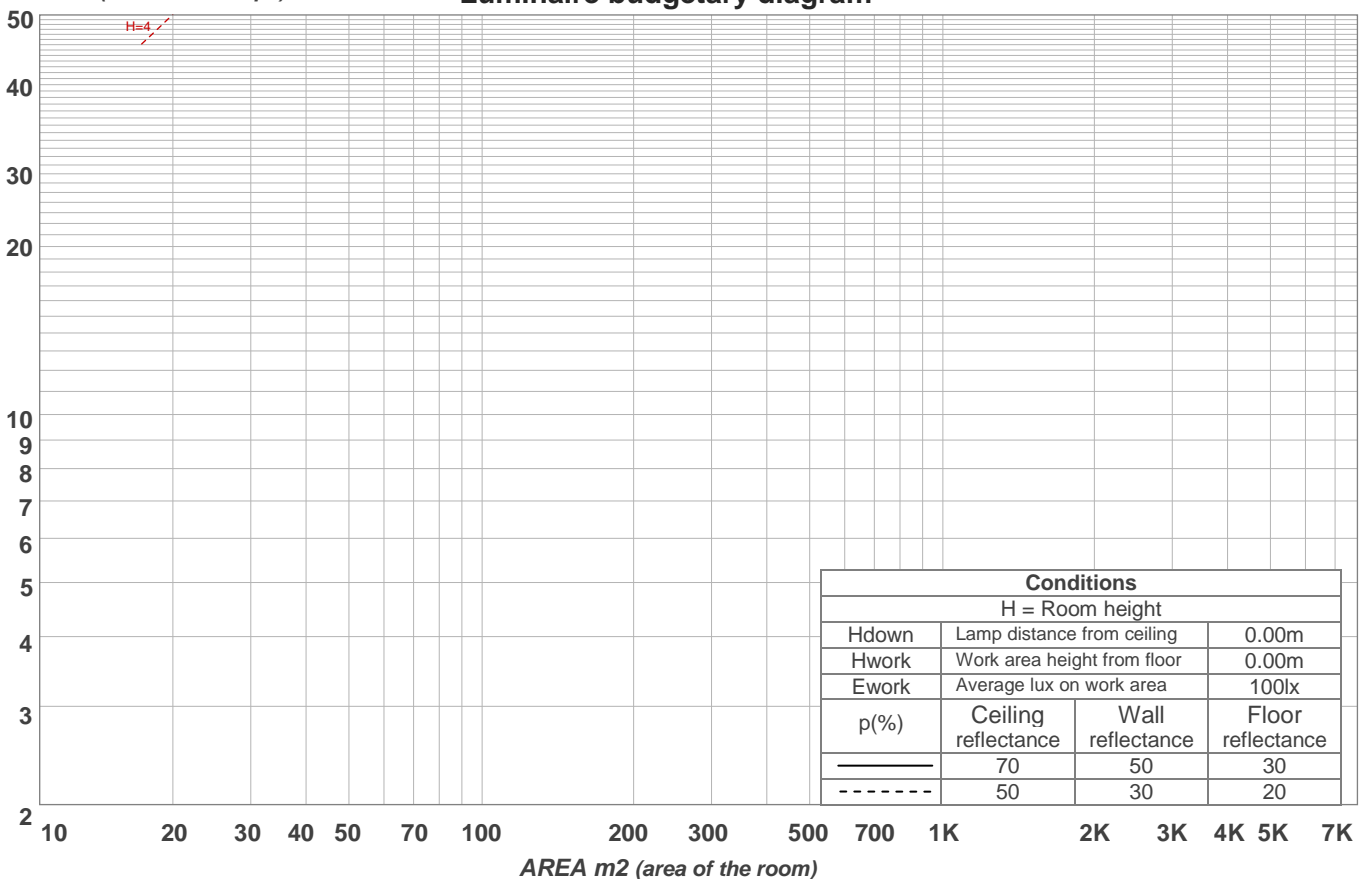
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	11,2	12,1	11,5	12,3	12,6	10,7	11,6	10,9	11,8	12,0
	3H	13,6	14,4	13,9	14,7	14,9	12,6	13,4	12,9	13,7	13,9
	4H	14,6	15,4	14,9	15,6	15,9	13,7	14,5	14,0	14,7	15,0
	6H	15,4	16,2	15,8	16,5	16,8	14,7	15,5	15,1	15,8	16,1
	8H	15,9	16,7	16,3	17,0	17,3	15,4	16,2	15,8	16,5	16,8
	12H	16,5	17,2	16,8	17,5	17,8	16,3	17,0	16,6	17,3	17,6
4H	2H	11,9	12,8	12,2	13,0	13,3	11,5	12,3	11,8	12,6	12,9
	3H	14,6	15,3	14,9	15,6	15,9	13,7	14,4	14,1	14,7	15,0
	4H	15,8	16,4	16,2	16,8	17,1	15,0	15,6	15,4	15,9	16,3
	6H	16,8	17,4	17,3	17,8	18,2	16,2	16,8	16,7	17,2	17,6
	8H	17,5	18,0	17,9	18,3	18,7	17,0	17,5	17,5	17,9	18,3
	12H	18,1	18,5	18,5	19,0	19,4	18,0	18,4	18,4	18,8	19,3
8H	4H	16,3	16,8	16,7	17,2	17,6	15,6	16,1	16,1	16,5	16,9
	6H	17,6	18,0	18,1	18,4	18,9	17,2	17,6	17,6	18,0	18,4
	8H	18,4	18,8	18,9	19,2	19,7	18,1	18,4	18,6	18,9	19,4
	12H	19,3	19,6	19,7	20,0	20,5	19,2	19,5	19,7	20,0	20,5
12H	4H	16,4	16,8	16,8	17,2	17,7	15,8	16,2	16,2	16,6	17,0
	6H	17,8	18,2	18,3	18,6	19,1	17,4	17,8	17,9	18,2	18,7
	8H	18,7	19,0	19,2	19,5	20,0	18,4	18,7	18,9	19,2	19,7
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					+0,2 / -0,3				
S = 2,0H		+0,3 / -0,5					+0,3 / -0,4				
Standard table		BK10					BK10				
Correction summand		2,1					1,7				
Corrected glare indices referring to 65,0 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	99
1	111	107	104	100	108	105	101	99	100	98	95	96	94	92	92	91	89	87
2	104	98	92	88	101	96	91	87	92	88	85	89	85	83	86	83	81	79
3	98	90	84	79	95	88	82	78	85	80	76	82	78	75	80	77	74	72
4	92	83	77	72	90	82	76	71	79	74	70	77	73	69	75	71	68	66
5	87	78	71	66	85	76	70	65	74	69	65	72	68	64	71	67	63	62
6	83	73	66	61	81	72	65	61	70	64	60	68	63	60	67	63	59	57
7	79	68	62	57	77	68	61	57	66	61	56	65	60	56	63	59	56	54
8	75	65	58	54	74	64	58	53	63	57	53	61	56	53	60	56	52	51
9	72	61	55	51	70	61	55	50	60	54	50	59	54	50	58	53	50	48
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	50	47	46

LAMPS (number of lamps)

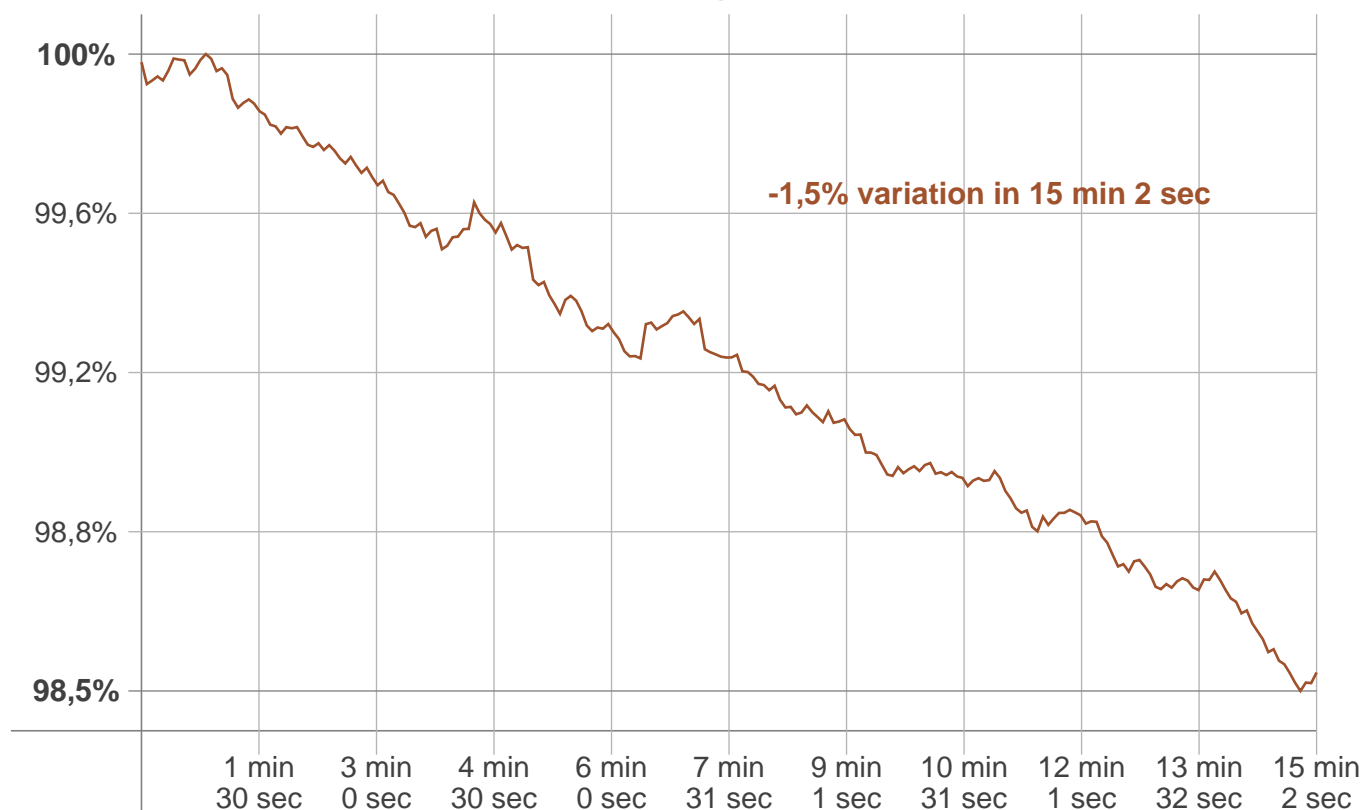
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	18,1 lm	13,7 lm	7,35 lm	4,66 lm	3,79 lm	3,45 lm	2,67 lm	1,75 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,333 lm	0,205 lm	0,193 lm	0,174 lm	0,070 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	-1,5%

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
65,7 lm	-0,7 lm	65,0 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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