

Light efficiency:



Light quality:



Color temperature:

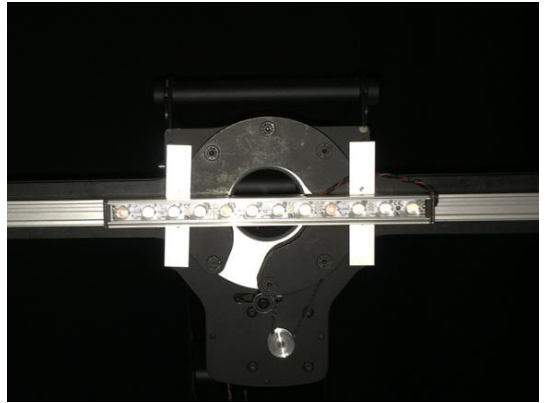


Output: 79,3 lm

Peak: 644 cd

Power: 7,1 W

PF: 0,81



Product name:

FLNP-F4CH-C-258-B-927-10770

Item number:

FLNP-F4CH-C-258-B-927-10770

Date and time:

14.02.2019 15:56:14

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

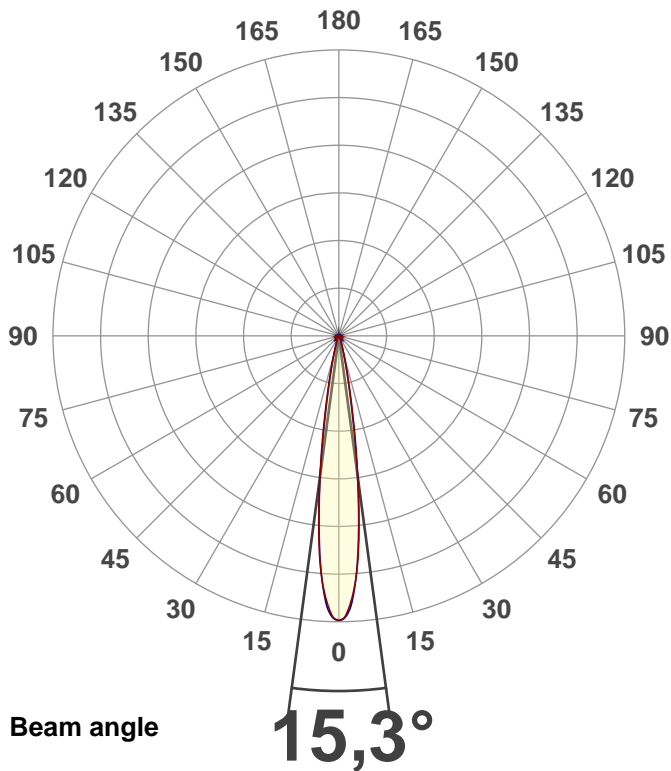
Master of Engineering

Pruefort:

Lichtlabor

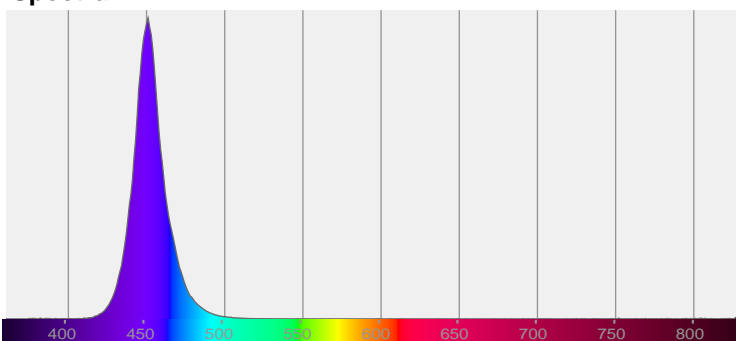
Gaustrasse13-15

55411 Bingen am Rhein

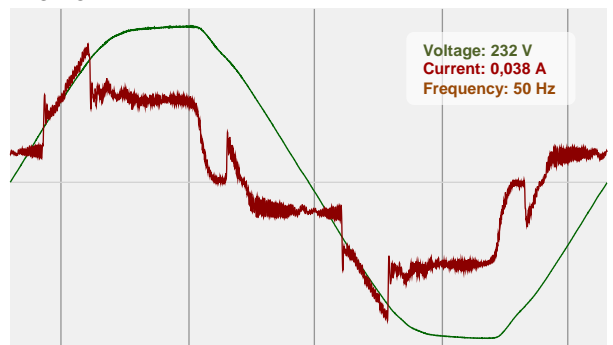


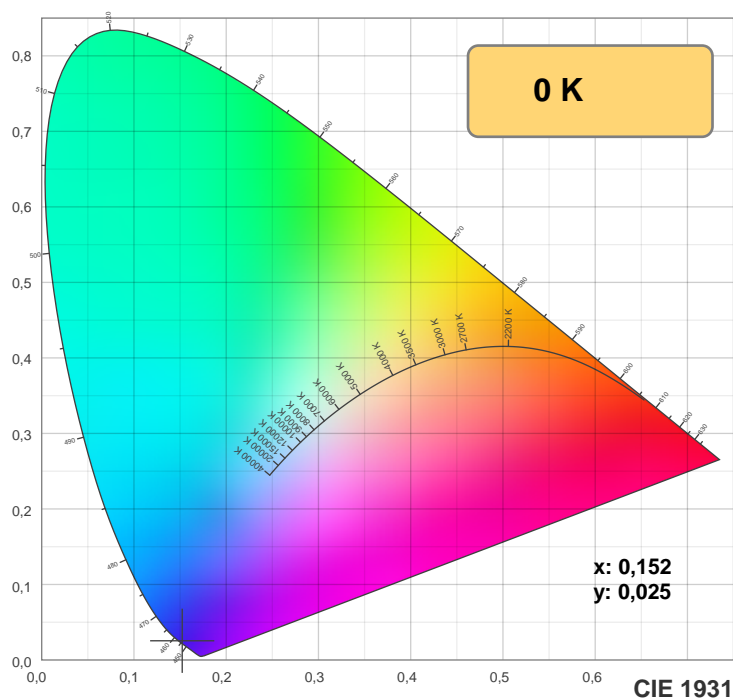
CIE 1931
x: 0,152
y: 0,025

Spectra

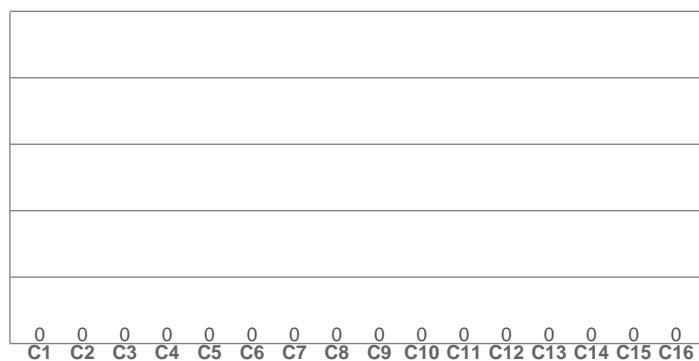


Power





TM30: 0,0



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

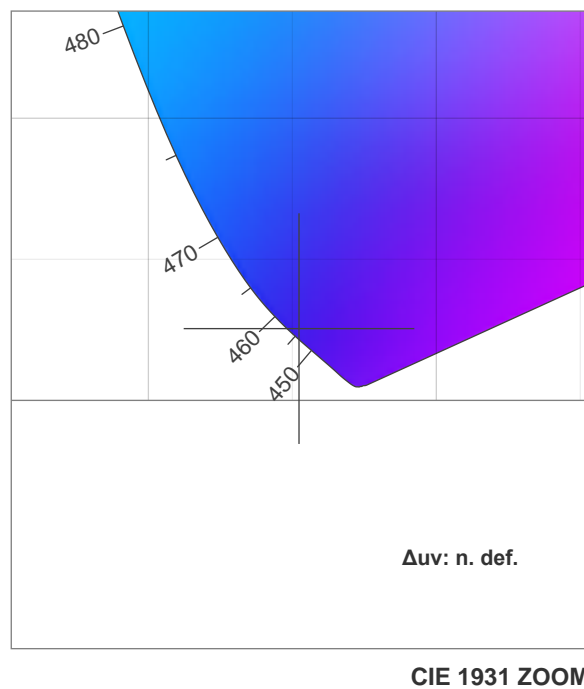
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

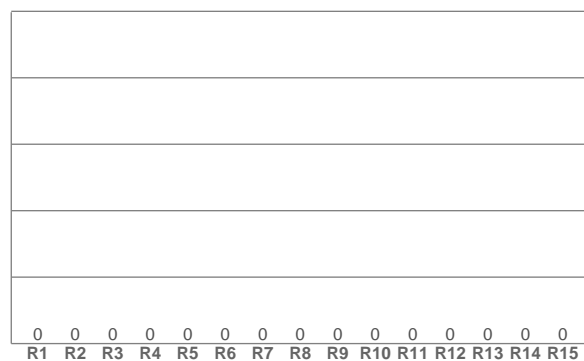
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

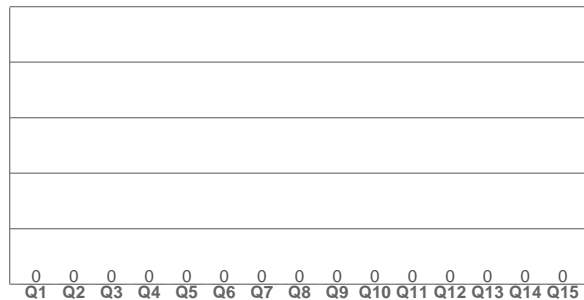
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	0,152	0,025	0,203	0,051	n. def.

TM30 details

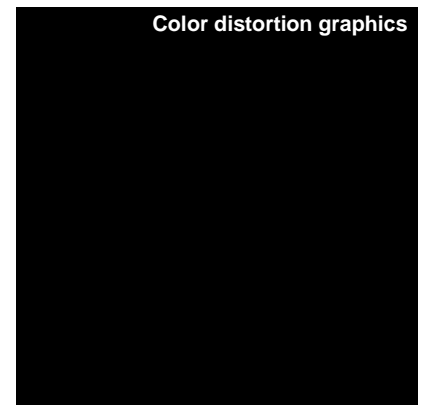
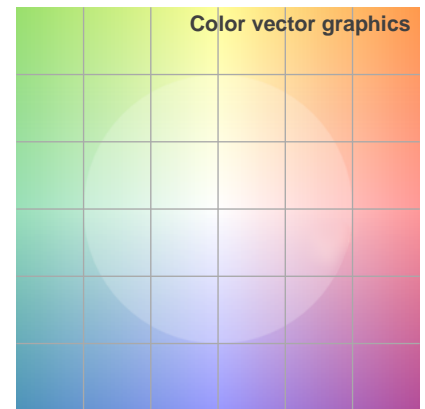
Rf 0,0

Fidelity index Rf

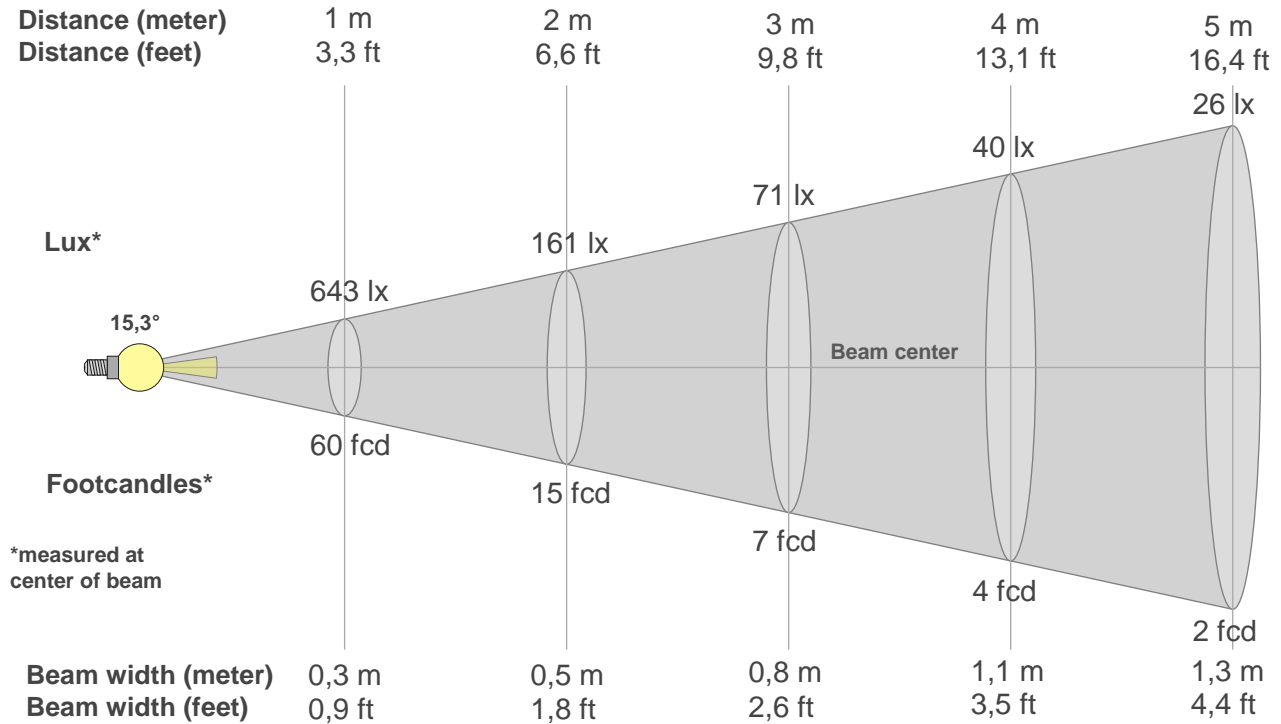
Rg 0,0

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
643lx	161lx	71lx	40lx	26lx	18lx	13lx	10lx	8lx	6lx	5lx	4lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx	2lx
59,8fcd	14,9fcd	6,6fcd	3,7fcd	2,4fcd	1,7fcd	1,2fcd	0,9fcd	0,7fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd	0,1fcd

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°
643	638	619	589	551	500	435	365	298	237	182	139	104	79	60	45	34	27	22	18
100%	99%	96%	92%	86%	78%	68%	57%	46%	37%	28%	22%	16%	12%	9%	7%	5%	4%	3%	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°
643	640	625	595	550	493	429	360	290	224	168	127	97	74	56	43	33	26	20	16
100%	99%	97%	92%	85%	77%	67%	56%	45%	35%	26%	20%	15%	11%	9%	7%	5%	4%	3%	3%

Intensities in 180° c-plane

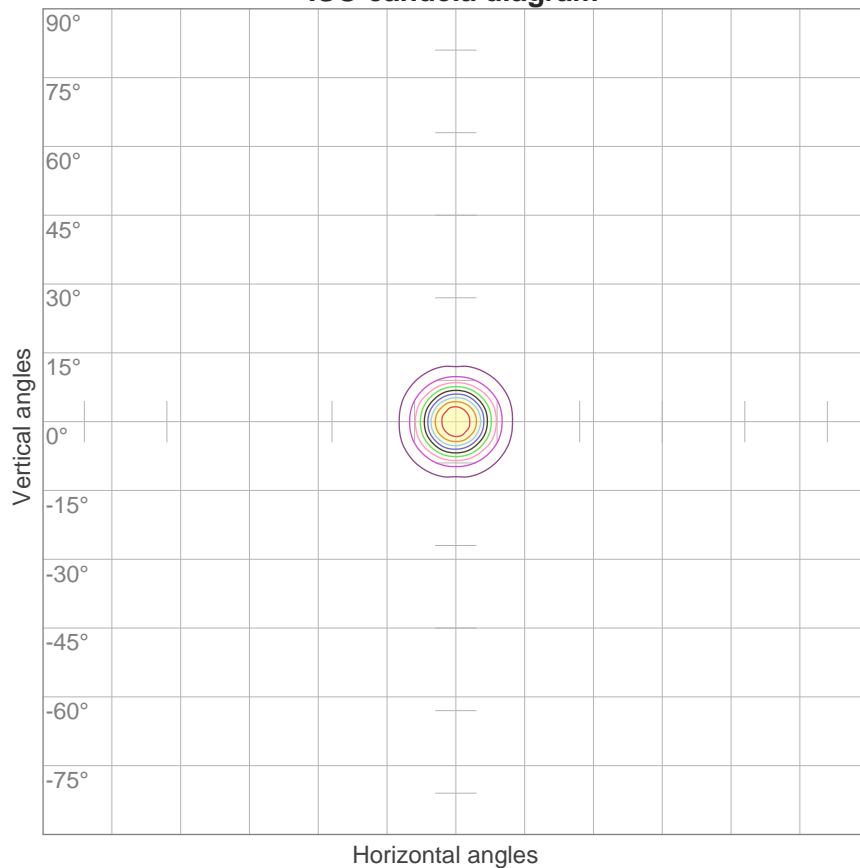
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
643	638	619	589	551	500	435	365	298	237	182	139	104	79	60	45	34	27	22	18
100%	99%	96%	92%	86%	78%	68%	57%	46%	37%	28%	22%	16%	12%	9%	7%	5%	4%	3%	3%

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°
643	640	625	595	550	493	429	360	290	224	168	127	97	74	56	43	33	26	20	16
100%	99%	97%	92%	85%	77%	67%	56%	45%	35%	26%	20%	15%	11%	9%	7%	5%	4%	3%	3%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
15,3°	27,7°	40,6°	84,1%	77,4%

ISO candela diagram



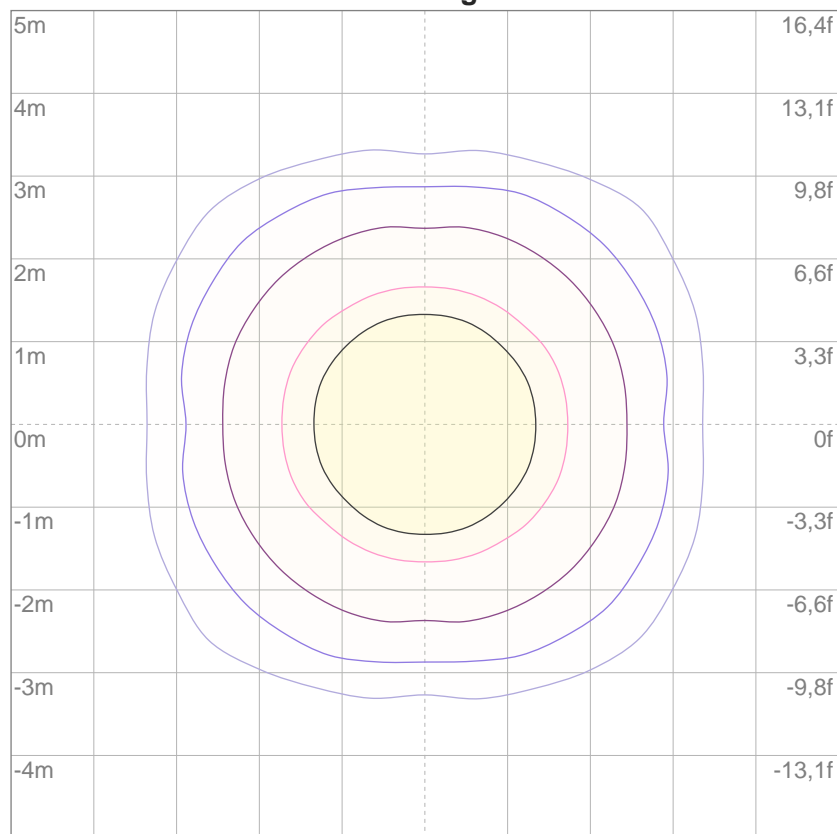
10%	64 cd
20%	129 cd
30%	193 cd
40%	257 cd
50%	322 cd
60%	386 cd
70%	450 cd
80%	515 cd
90%	579 cd

Conditions:

Number of c-planes: 16

Candela at center: 643 cd

ISO lux diagram



3%	0,193 lx
5%	0,322 lx
10%	0,643 lx
30%	1,93 lx
50%	3,22 lx

Conditions:

Number of c-planes: 16

Lux at center: 6,43 lx

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

Glare Evaluation According to UGR

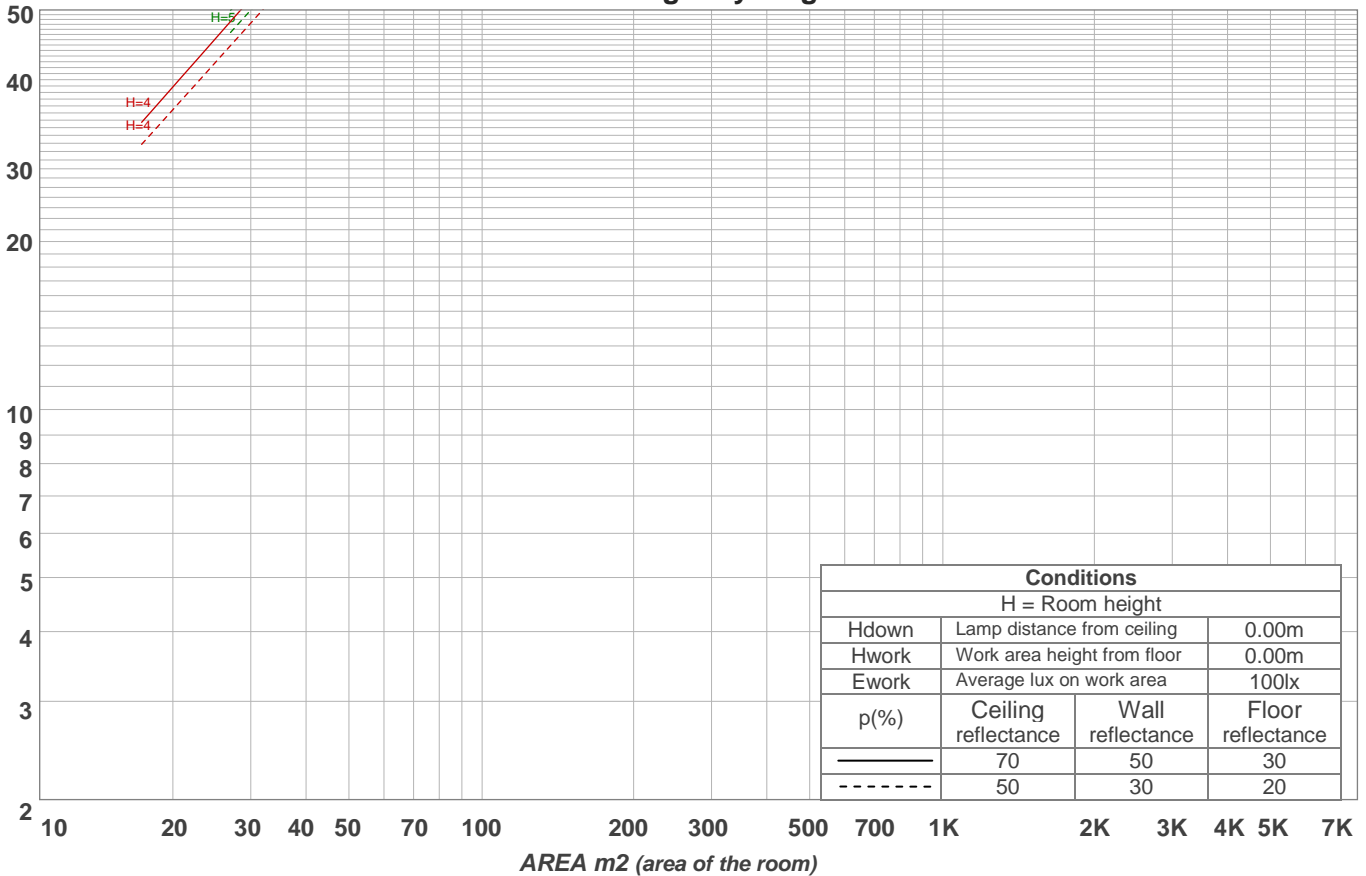
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	10,1	11,0	10,4	11,2	11,4	9,6	10,5	9,9	10,7	10,9
	3H	12,7	13,6	13,0	13,8	14,1	12,1	12,9	12,4	13,2	13,4
	4H	13,9	14,7	14,2	15,0	15,3	13,6	14,5	14,0	14,7	15,0
	6H	15,4	16,1	15,7	16,4	16,7	15,6	16,4	15,9	16,6	16,9
	8H	16,3	17,0	16,6	17,3	17,6	16,4	17,2	16,8	17,5	17,8
	12H	17,3	18,0	17,7	18,3	18,7	17,8	18,5	18,1	18,8	19,1
4H	2H	11,1	11,9	11,4	12,2	12,4	10,8	11,6	11,1	11,8	12,1
	3H	14,0	14,7	14,3	15,0	15,3	13,4	14,1	13,8	14,4	14,8
	4H	15,3	15,9	15,7	16,2	16,6	15,1	15,7	15,5	16,1	16,4
	6H	17,1	17,6	17,5	18,0	18,4	17,3	17,8	17,7	18,2	18,6
	8H	18,1	18,6	18,5	18,9	19,4	18,2	18,7	18,6	19,1	19,5
	12H	19,2	19,7	19,7	20,1	20,5	19,6	20,0	20,0	20,4	20,9
8H	4H	15,9	16,4	16,4	16,8	17,2	15,8	16,3	16,3	16,7	17,1
	6H	18,1	18,5	18,5	18,9	19,4	18,3	18,7	18,8	19,1	19,6
	8H	19,3	19,7	19,8	20,1	20,6	19,5	19,8	19,9	20,3	20,7
	12H	20,8	21,1	21,2	21,5	22,0	20,9	21,2	21,4	21,7	22,2
12H	4H	16,2	16,6	16,6	17,0	17,4	16,0	16,5	16,5	16,9	17,3
	6H	18,4	18,8	18,9	19,2	19,7	18,6	19,0	19,1	19,4	19,9
	8H	19,8	20,1	20,3	20,6	21,1	19,9	20,2	20,4	20,7	21,2
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,1 / -0,2					+0,1 / -0,2				
S = 1,5H		+0,4 / -0,3					+0,3 / -0,3				
S = 2,0H		+0,3 / -0,4					+0,6 / -0,6				
Standard table		BK12					BK12				
Correction summand		3,3					3,4				
Corrected glare indices referring to 79,3 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	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	96
1	111	108	105	102	108	105	102	100	100	98	96	96	94	92	92	90	89	87
2	106	100	96	92	103	98	94	91	94	91	88	91	88	86	87	85	83	81
3	101	94	89	85	99	93	88	84	89	86	82	86	83	81	84	81	79	77
4	97	90	84	80	95	88	83	80	86	81	78	83	80	77	81	78	76	74
5	94	86	80	76	92	85	80	76	82	78	75	80	77	74	79	75	73	71
6	91	83	77	74	89	82	77	73	80	75	72	78	74	71	76	73	71	69
7	88	80	75	71	86	79	74	71	77	73	70	76	72	69	75	71	69	68
8	85	78	73	69	84	77	72	69	75	71	68	74	70	68	73	70	67	66
9	83	75	71	67	82	75	70	67	74	70	67	73	69	66	72	68	66	65
10	81	74	69	66	80	73	69	66	72	68	65	71	68	65	70	67	65	64

LAMPS (number of lamps)

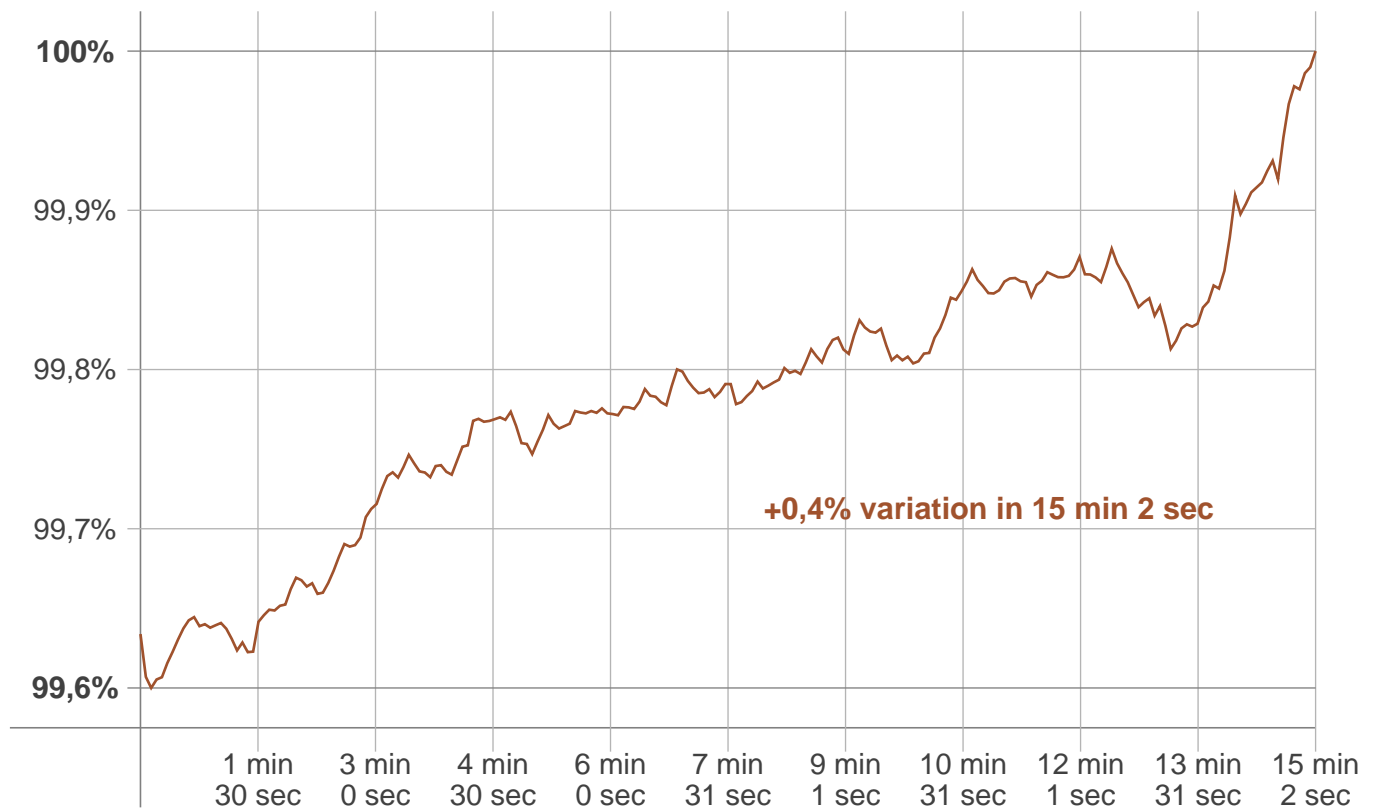
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	15,9 lm	4,36 lm	3,26 lm	3,37 lm	3,56 lm	3,46 lm	3,08 lm	2,79 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,847 lm	0,779 lm	0,731 lm	0,661 lm	0,273 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	+0,4%

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

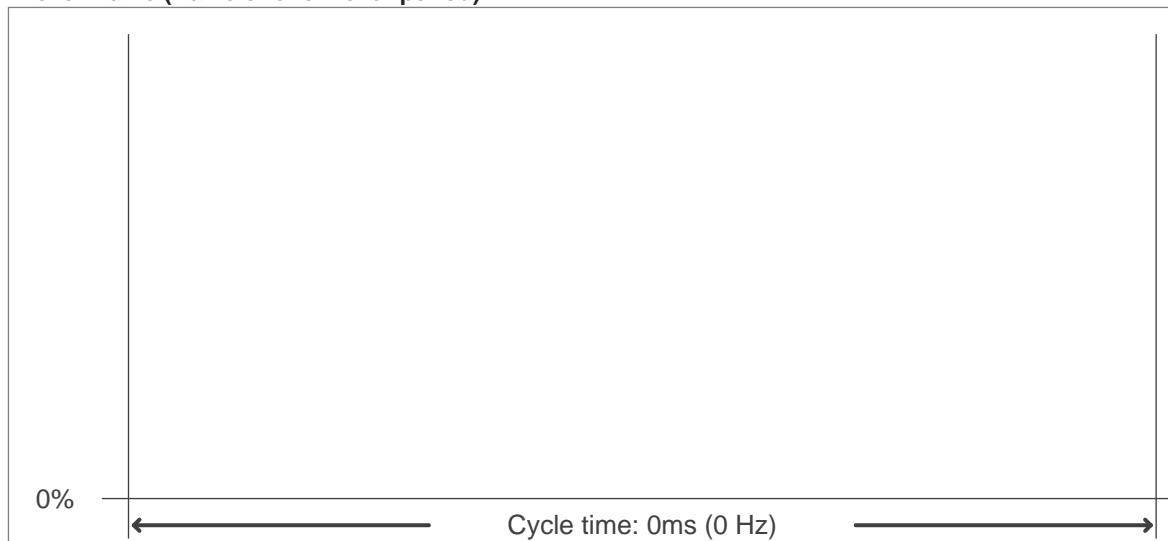
Output change

Output start	Output change	Output end
79,1 lm	+0,1 lm	79,3 lm

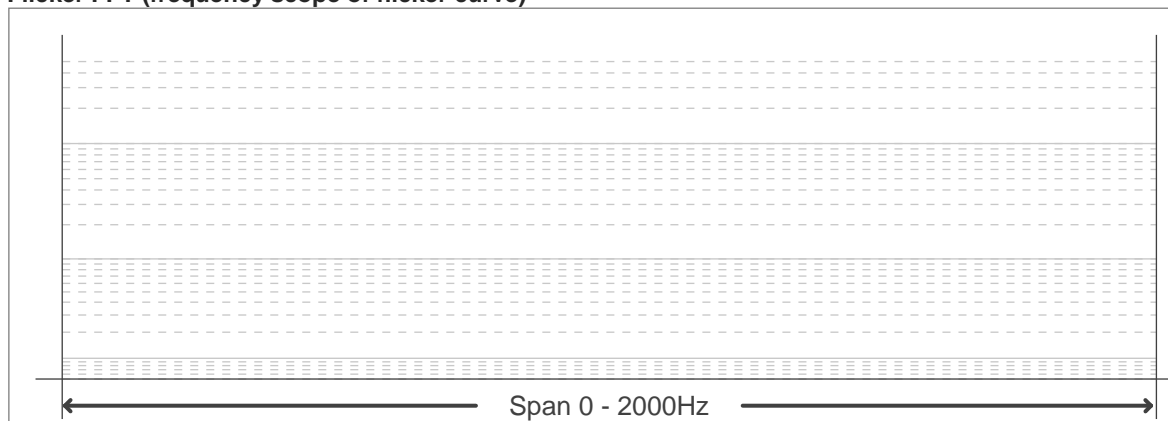
Flicker curve (complete sampled flicker signal)



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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