

Light efficiency:

94 Lumen/Watt

Light quality:

CRI: 0,0

Color temperature:

0 K

Output: 431 lm

Peak: 1720 cd

Power: 4,6 W

PF: 1,0



Product name:

F L-S O - 2-4 C -1 0 0-G-LSLT-W

Item number:

F L / S O - 2 / 4 C / 1 0 0 / G / LSLT/W

Date and time:

12.03.2019 11:41:02

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

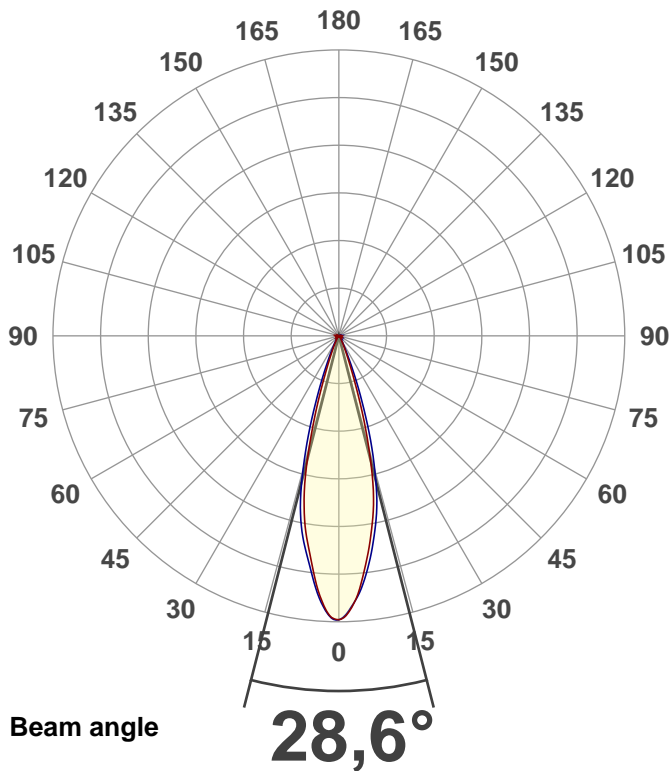
Master of Engineering

Pruefort:

Lichtlabor

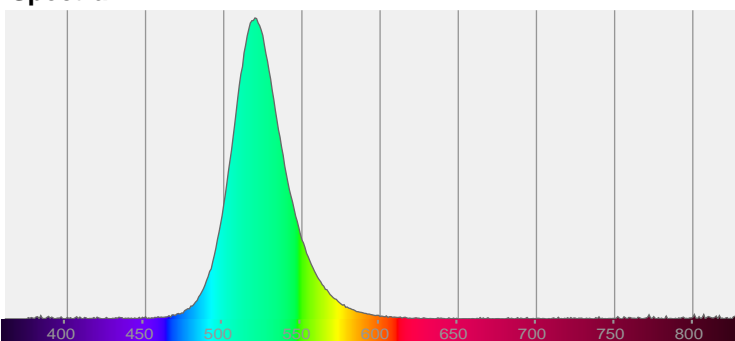
Gaustasse13-15

55411 Bingen am Rhein



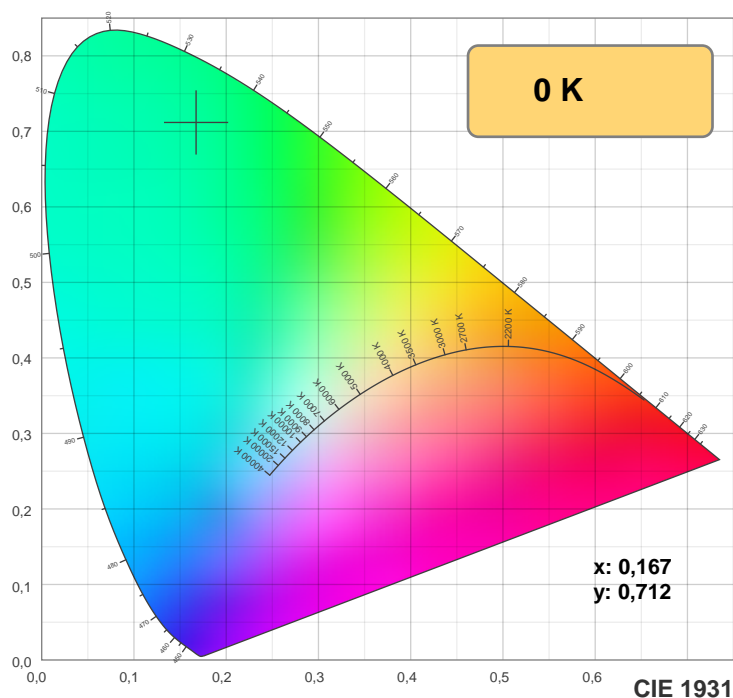
CIE 1931
x: 0,167
y: 0,712

Spectra



Power

Voltage: 13,2 V				
Current: 0,350 A				
Frequency: 0 Hz				



TM30: 0,0



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

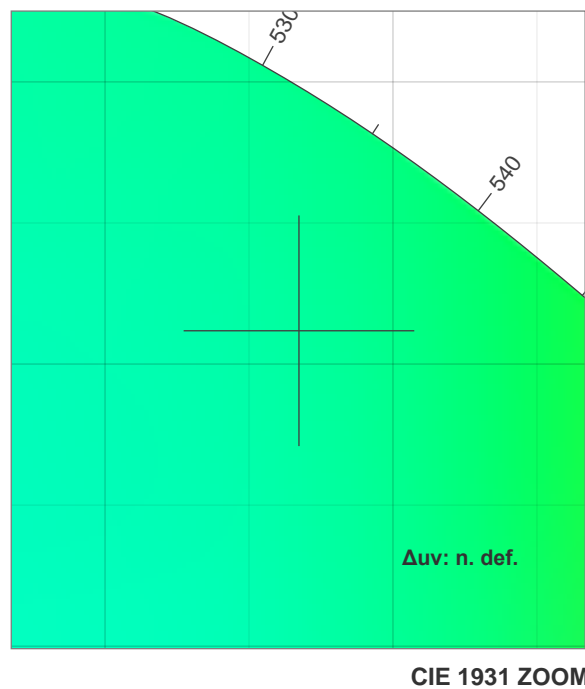
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

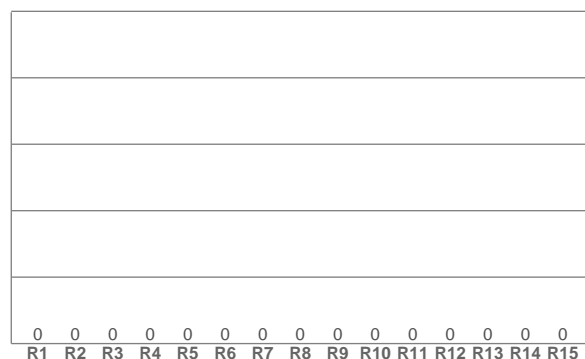
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

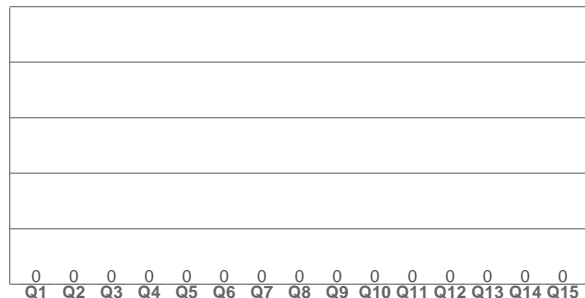
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	0,167	0,712	0,060	0,381	n. def.

TM30 details

Rf 0,0

Fidelity index Rf

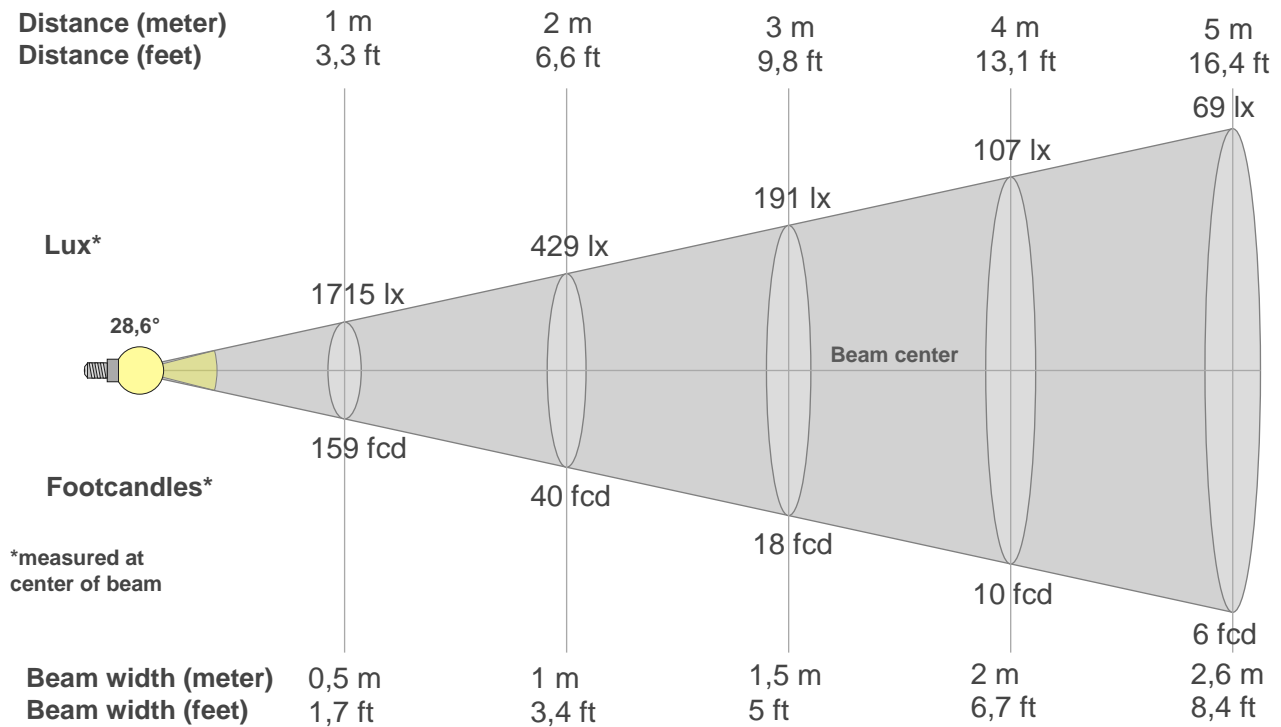
Rg 0,0

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
1715lx	429lx	191lx	107lx	69lx	48lx	35lx	27lx	21lx	17lx	14lx	12lx	10lx	9lx	8lx	7lx	6lx	5lx	5lx	4lx
159,3fc	39,8fcd	17,7fcd	10fcd	6,4fcd	4,4fcd	3,3fcd	2,5fcd	2fcd	1,6fcd	1,3fcd	1,1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd

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°
1715	1673	1578	1441	1301	1158	1008	807	589	382	233	144	93	64	46	33	26	19	16	14
100%	98%	92%	84%	76%	68%	59%	47%	34%	22%	14%	8%	5%	4%	3%	2%	2%	1%	1%	1%

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°
1715	1665	1584	1481	1359	1228	1095	931	745	550	373	235	141	85	55	38	28	21	17	14
100%	97%	92%	86%	79%	72%	64%	54%	43%	32%	22%	14%	8%	5%	3%	2%	2%	1%	1%	1%

Intensities in 180° c-plane

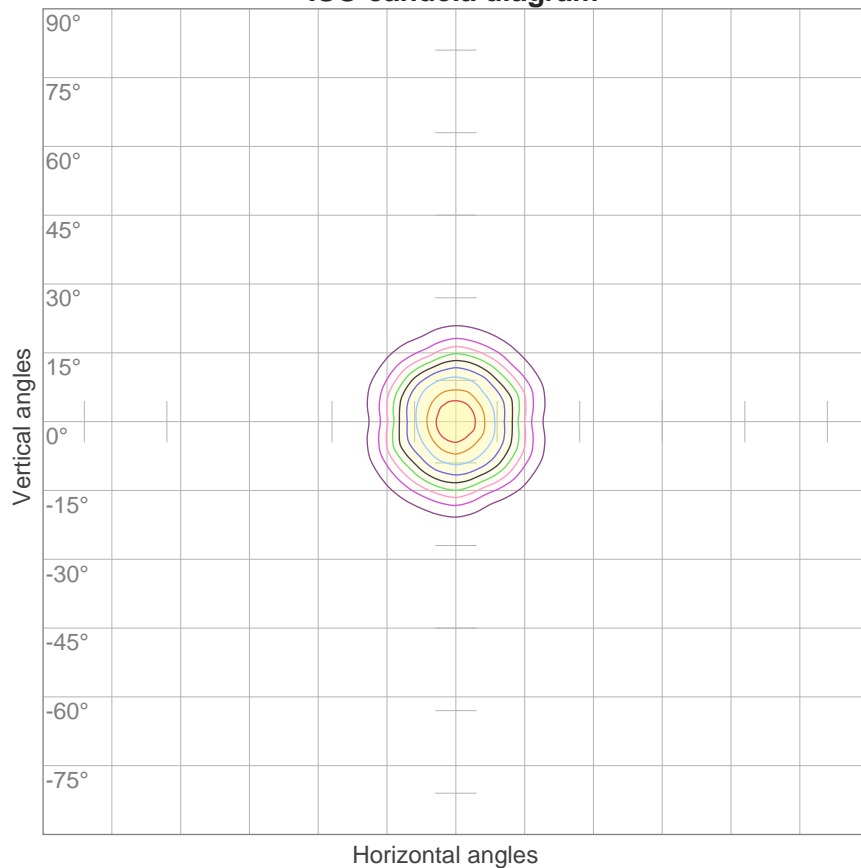
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1715	1686	1585	1446	1303	1171	1009	804	575	375	227	142	92	63	45	33	25	19	16	13
100%	98%	92%	84%	76%	68%	59%	47%	34%	22%	13%	8%	5%	4%	3%	2%	1%	1%	1%	1%

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°
1715	1691	1604	1482	1357	1244	1112	938	733	533	359	235	152	101	70	50	37	28	22	17
100%	99%	94%	86%	79%	73%	65%	55%	43%	31%	21%	14%	9%	6%	4%	3%	2%	2%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
28,6°	45°	59,1°	97,5%	95,4%

ISO candela diagram



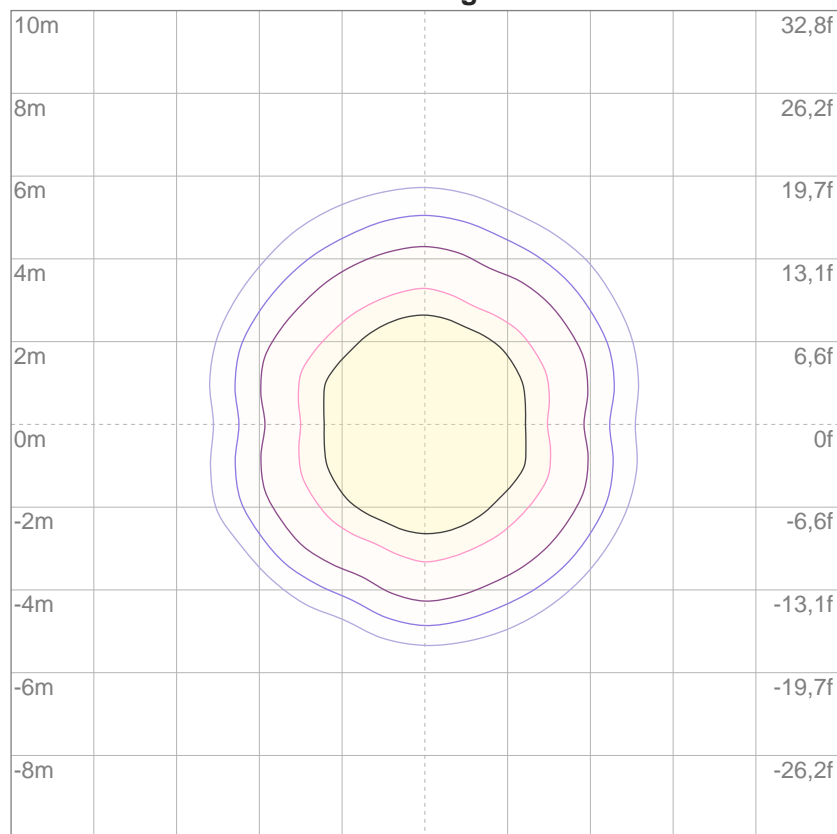
10%	171 cd
20%	343 cd
30%	514 cd
40%	686 cd
50%	857 cd
60%	1029 cd
70%	1200 cd
80%	1372 cd
90%	1543 cd

Conditions:

Number of c-planes: 16

Candela at center: 1715 cd

ISO lux diagram



3%	0,514 lx
5%	0,857 lx
10%	1,71 lx
30%	5,14 lx
50%	8,57 lx

Conditions:

Number of c-planes: 16

Lux at center: 17,1 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	5,7	6,3	5,9	6,5	6,7	5,6	6,3	5,9	6,5	6,7
	3H	7,6	8,2	7,8	8,4	8,7	7,7	8,3	7,9	8,5	8,8
	4H	8,6	9,2	8,9	9,4	9,7	8,6	9,2	8,9	9,4	9,7
	6H	9,5	10,1	9,9	10,4	10,7	9,4	10,0	9,7	10,2	10,5
	8H	9,9	10,5	10,3	10,7	11,0	9,9	10,4	10,2	10,7	11,0
	12H	10,4	10,9	10,7	11,2	11,5	10,3	10,8	10,6	11,1	11,4
4H	2H	6,5	7,1	6,8	7,3	7,6	6,3	6,9	6,6	7,2	7,4
	3H	8,5	9,1	8,9	9,4	9,7	8,5	9,0	8,9	9,3	9,6
	4H	9,7	10,1	10,0	10,4	10,8	9,6	10,0	10,0	10,4	10,7
	6H	10,8	11,1	11,2	11,5	11,9	10,6	10,9	11,0	11,3	11,7
	8H	11,2	11,6	11,7	11,9	12,3	11,1	11,4	11,5	11,8	12,2
	12H	11,8	12,1	12,3	12,5	12,9	11,6	11,9	12,1	12,3	12,7
8H	4H	10,0	10,3	10,4	10,7	11,1	9,9	10,2	10,3	10,6	11,0
	6H	11,3	11,6	11,8	12,0	12,4	11,1	11,4	11,6	11,8	12,3
	8H	12,0	12,2	12,4	12,6	13,1	11,8	12,0	12,3	12,5	12,9
	12H	12,8	13,0	13,3	13,4	13,9	12,5	12,7	13,0	13,1	13,6
12H	4H	10,1	10,4	10,5	10,8	11,2	10,0	10,3	10,4	10,7	11,1
	6H	11,5	11,7	11,9	12,1	12,6	11,3	11,5	11,8	11,9	12,4
	8H	12,2	12,4	12,7	12,8	13,3	12,0	12,2	12,5	12,6	13,1
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,2 / -0,2					+0,2 / -0,1				
S = 1,5H		+0,3 / -0,3					+0,4 / -0,4				
S = 2,0H		+0,5 / -0,8					+0,6 / -0,4				
Standard table		BK09					BK08				
Correction summand		-4,6					-5,2				
Corrected glare indices referring to 431 lm total luminous flux											

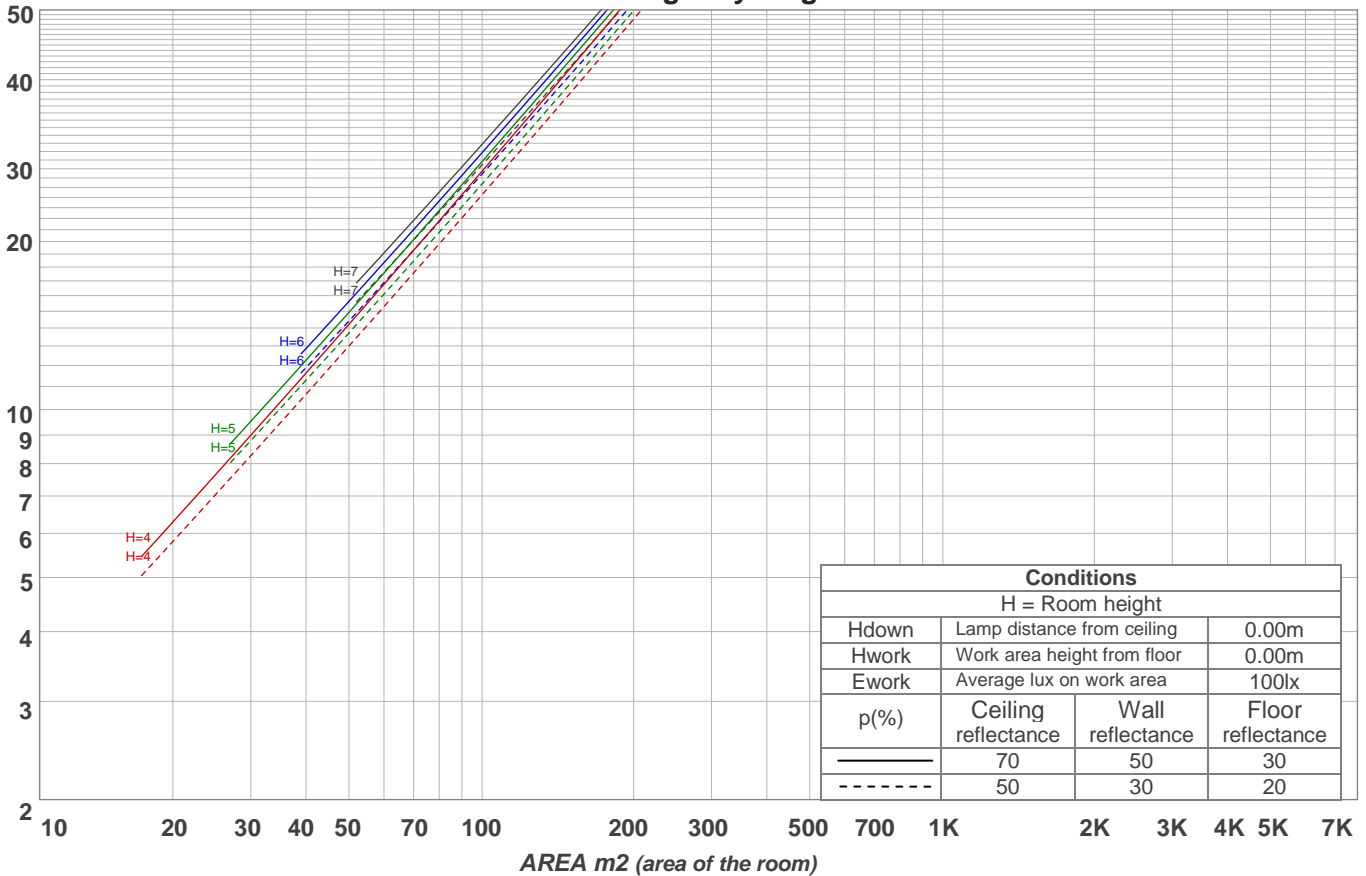
UGR data could be incorrect as lamp output is not symmetrical. Goto Edit->Photometric->Corrections and select Correct asymmetry.

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	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	103	100	108	104	101	99	101	99	97	98	96	95	96	94	93	91
3	106	101	97	94	104	100	96	93	97	94	92	95	93	90	93	91	89	88
4	103	97	93	89	101	96	92	89	94	90	88	92	89	87	90	88	86	85
5	99	93	89	85	98	92	88	85	91	87	84	89	86	84	88	85	83	82
6	96	90	85	82	95	89	85	82	88	84	81	86	83	81	85	82	80	79
7	93	87	82	79	92	86	82	79	85	81	78	84	80	78	83	80	78	77
8	91	84	79	76	90	83	79	76	82	79	76	81	78	76	81	78	75	74
9	88	81	77	74	87	81	77	74	80	76	74	79	76	73	78	75	73	72
10	86	79	75	72	85	78	74	72	78	74	72	77	74	71	76	73	71	70

LAMPS (number of lamps)

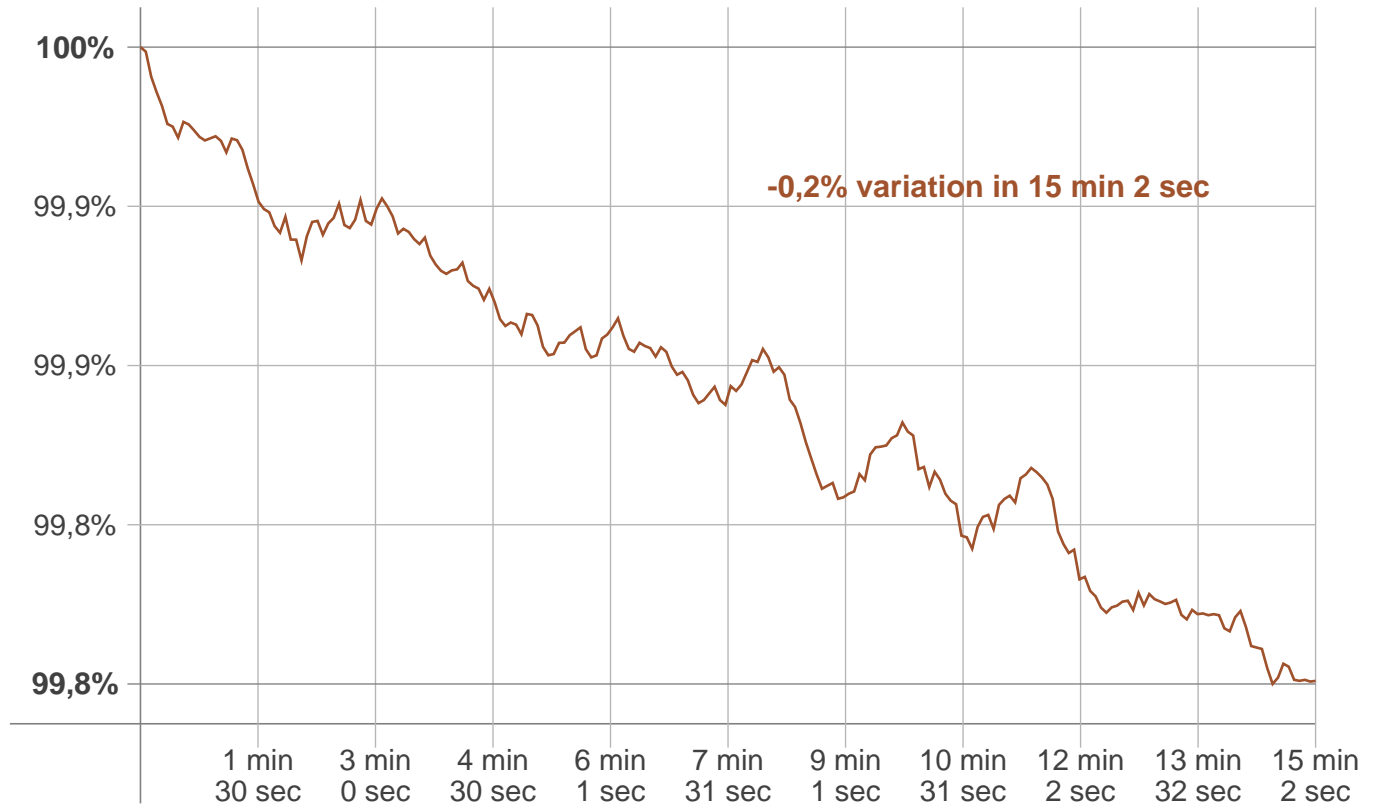
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	205 lm	53,6 lm	13,8 lm	7,25 lm	5,87 lm	5,17 lm	3,53 lm	2,11 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,073 lm	0,000 lm	0,000 lm	0,000 lm	0,000 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	-0,2%

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
432 lm	-1 lm	431 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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