

Light efficiency:



Light quality:



Color temperature:



Output: 119 lm
Peak: 1966 cd
Power: 4,6 W
PF: 1,0



Product name:

F L-S O - 2-4 C -1 0 0-B-LSST-D

Item number:

F L / S O - 2 / 4 C / 1 0 0 / B/LSST/D

Date and time:

15.03.2019 09:32:45

Description:

HEIDI.D8°

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

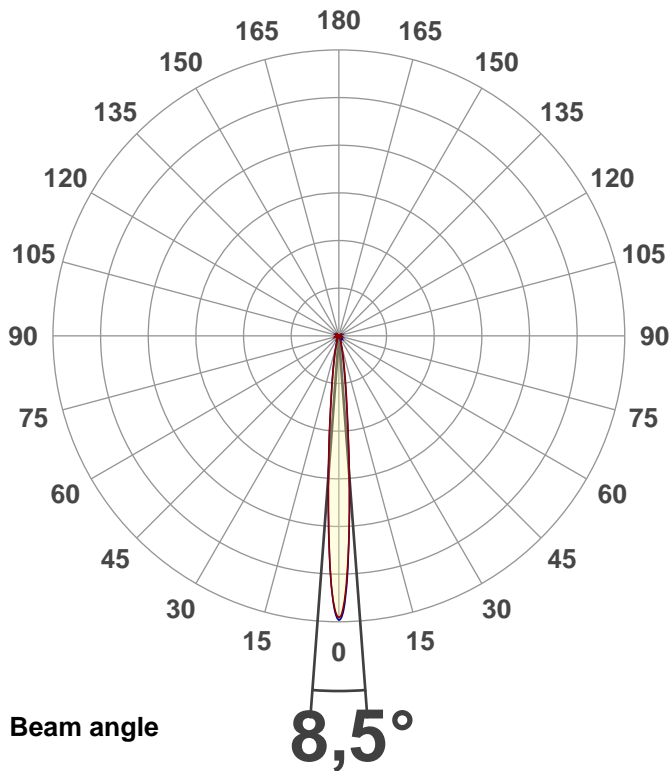
Master of Engineering

Pruefort:

Lichtlabor

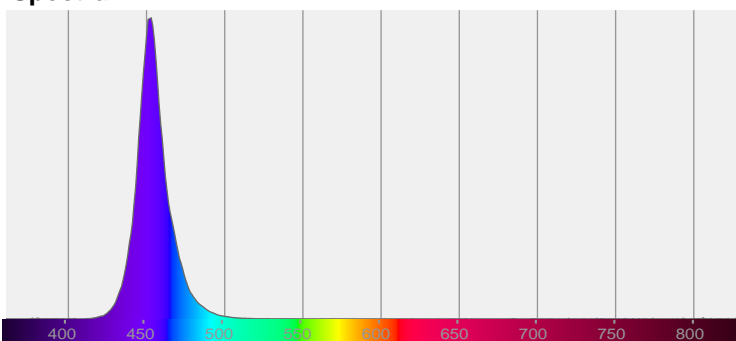
Gaustasse13-15

55411 Bingen am Rhein

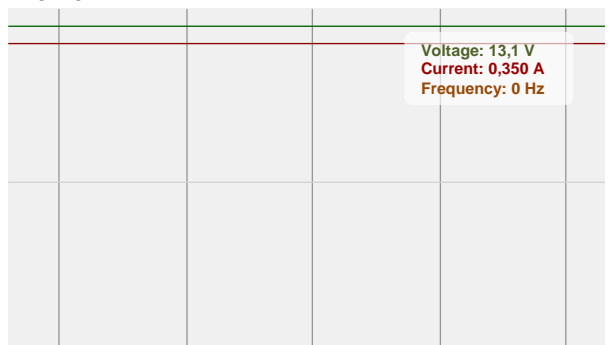


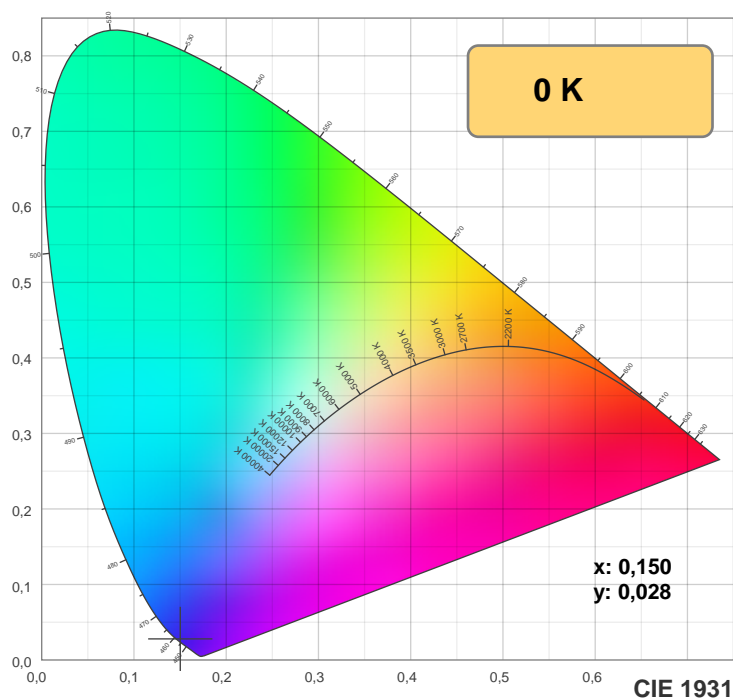
CIE 1931
x: 0,150
y: 0,028

Spectra



Power





TM30: 0,0



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

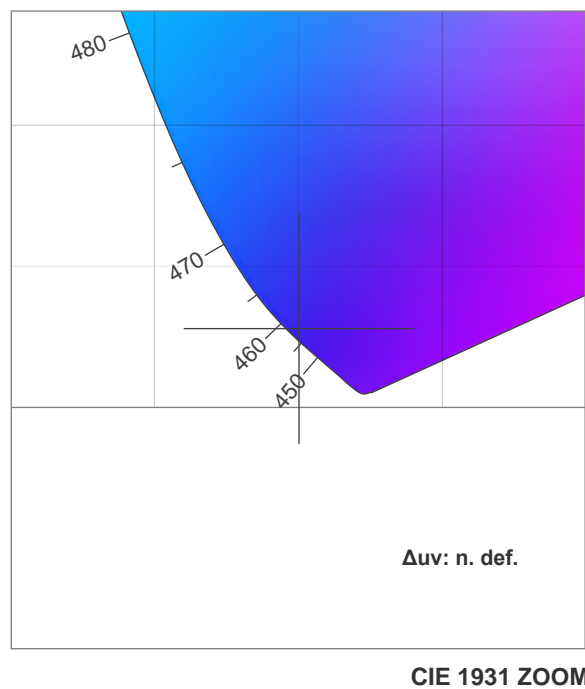
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

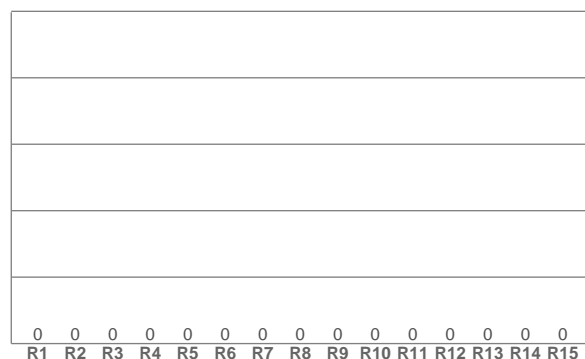
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

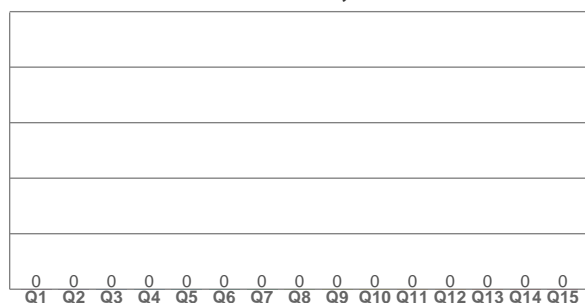
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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	0,150	0,028	0,198	0,055	n. def.

TM30 details

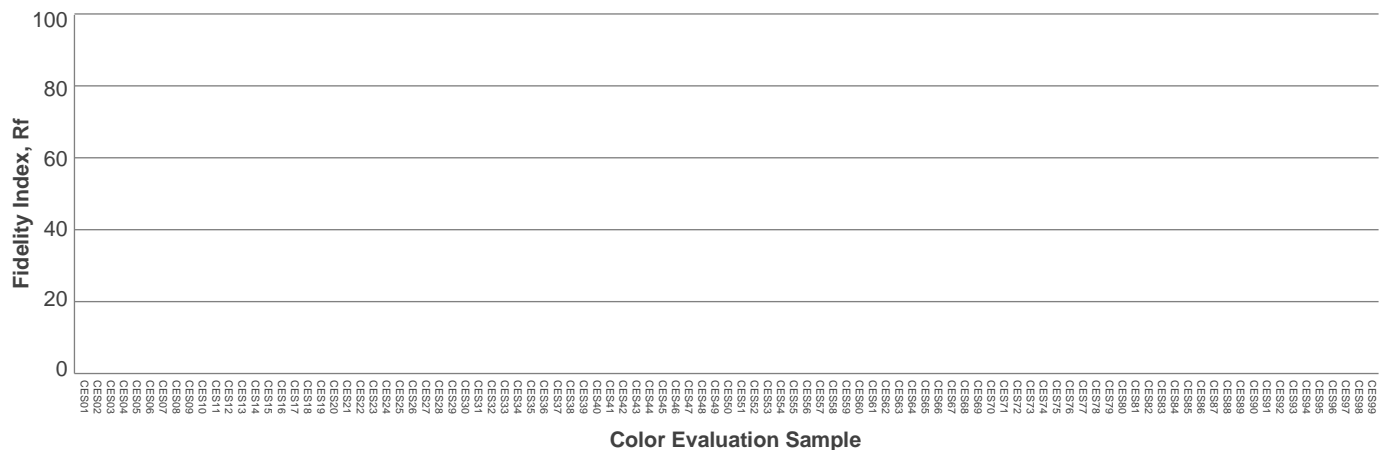
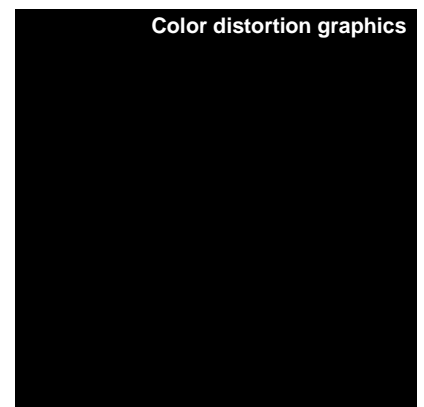
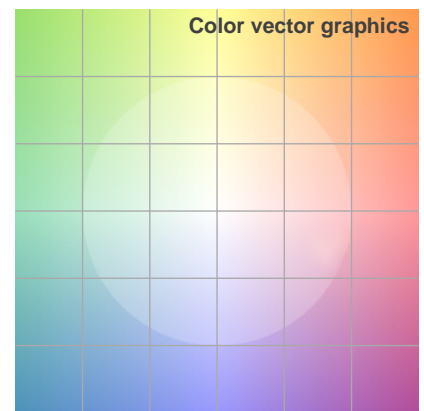
Rf 0,0

Fidelity index Rf

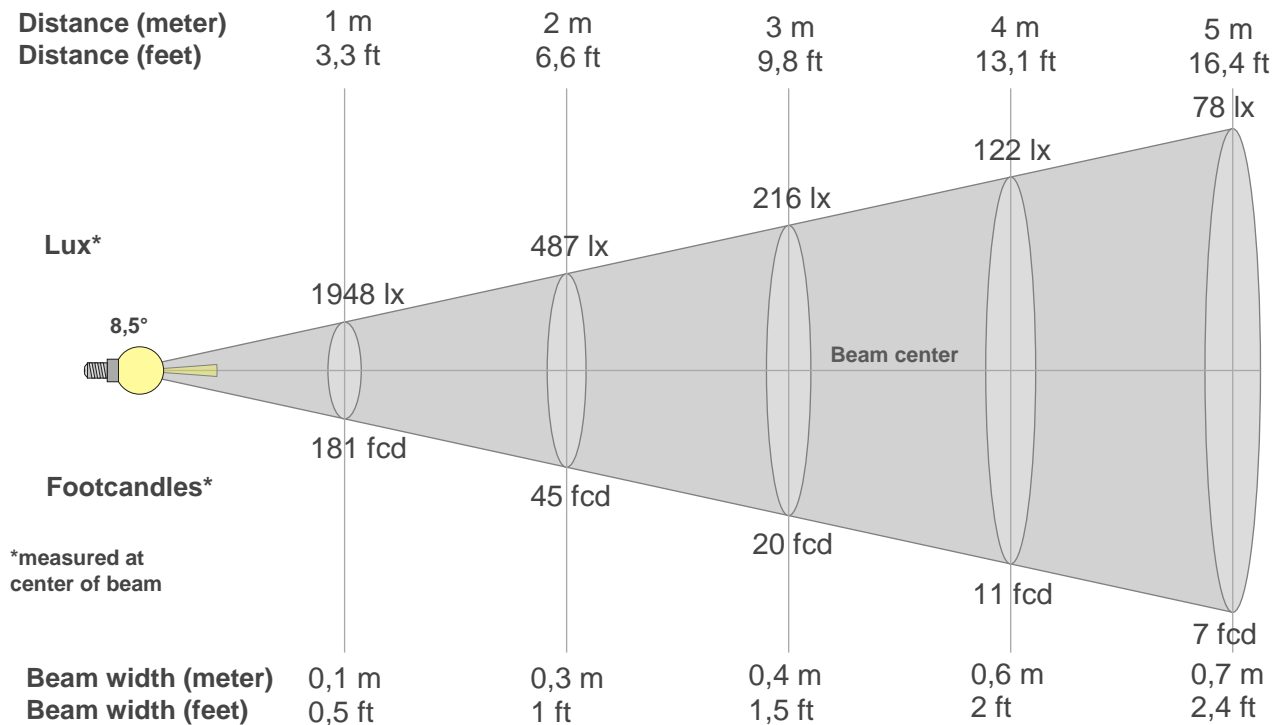
Rg 0,0

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
1948lx	487lx	216lx	122lx	78lx	54lx	40lx	30lx	24lx	19lx	16lx	14lx	12lx	10lx	9lx	8lx	7lx	6lx	5lx	5lx
180,9fcd	45,2fcd	20,1fcd	11,3fcd	7,2fcd	5fcd	3,7fcd	2,8fcd	2,2fcd	1,8fcd	1,5fcd	1,3fcd	1,1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,6fcd	0,5fcd	0,5fcd

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°
1948	1850	1634	1348	1053	785	578	439	340	264	209	170	139	112	92	75	63	53	45	38
100%	95%	84%	69%	54%	40%	30%	23%	17%	14%	11%	9%	7%	6%	5%	4%	3%	3%	2%	2%

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°
1948	1894	1671	1352	1045	765	546	396	296	221	170	132	104	85	69	58	50	43	38	33
100%	97%	86%	69%	54%	39%	28%	20%	15%	11%	9%	7%	5%	4%	4%	3%	3%	2%	2%	2%

Intensities in 180° c-plane

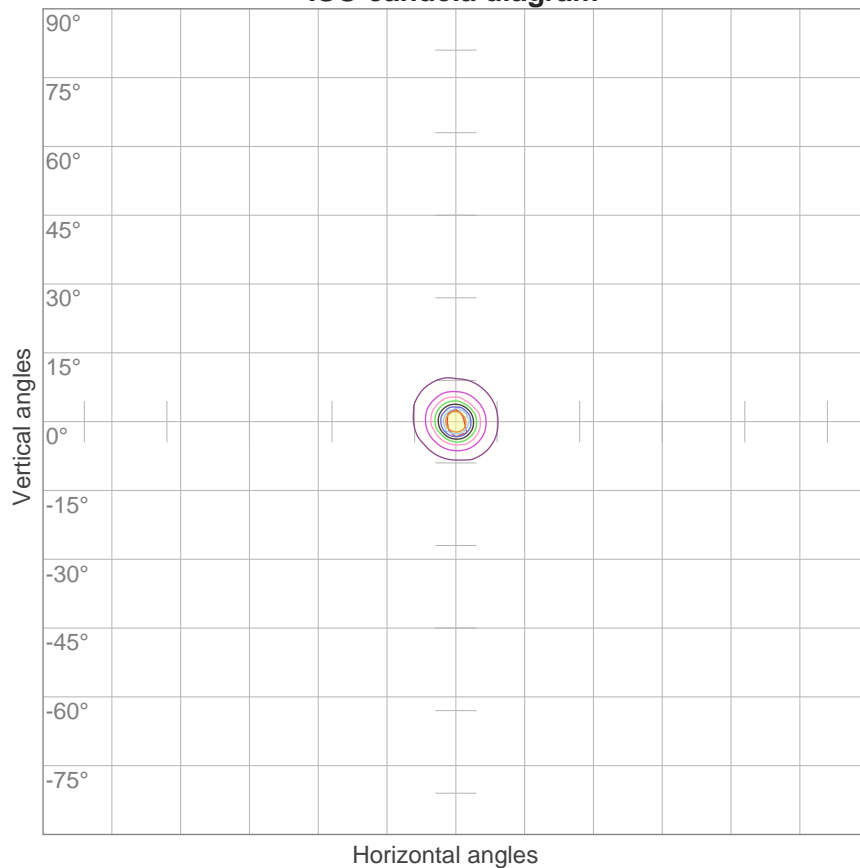
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
1948	1852	1644	1351	1052	800	599	447	341	267	211	169	136	110	90	73	61	51	44	40
100%	95%	84%	69%	54%	41%	31%	23%	17%	14%	11%	9%	7%	6%	5%	4%	3%	3%	2%	2%

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°
1948	1878	1651	1338	1040	786	580	436	344	275	221	180	148	124	102	86	72	60	49	43
100%	96%	85%	69%	53%	40%	30%	22%	18%	14%	11%	9%	8%	6%	5%	4%	4%	3%	3%	2%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
8,5°	20,6°	35,4°	88,5%	82,5%

ISO candela diagram



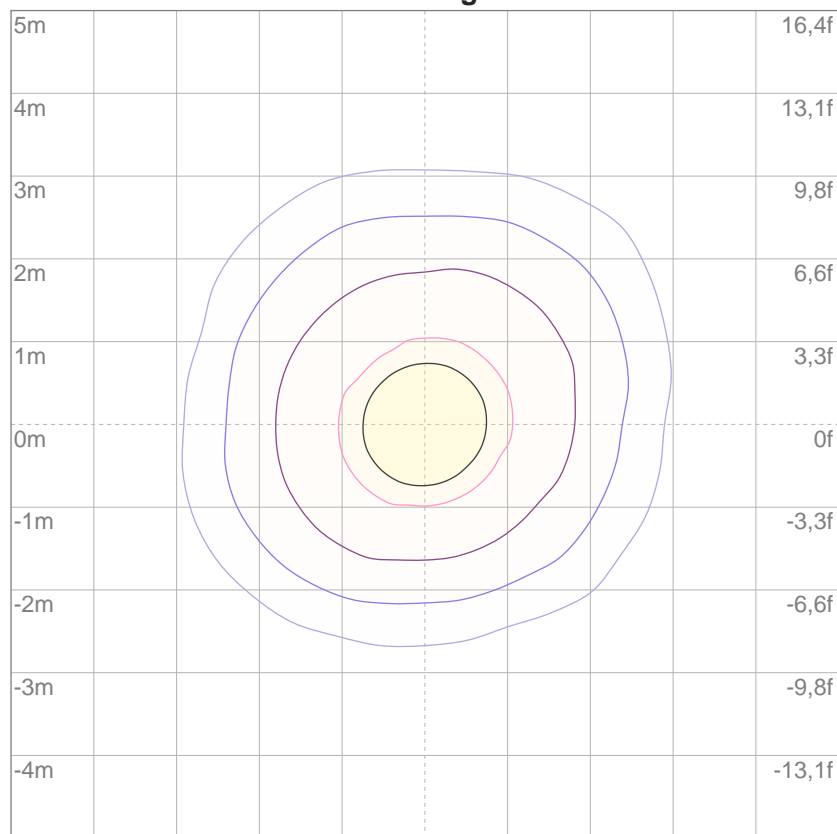
10%	195 cd
20%	390 cd
30%	584 cd
40%	779 cd
50%	974 cd
60%	1169 cd
70%	1363 cd
80%	1558 cd
90%	1753 cd

Conditions:

Number of c-planes: 16

Candela at center: 1948 cd

ISO lux diagram



3%	0,584 lx
5%	0,974 lx
10%	1,95 lx
30%	5,84 lx
50%	9,74 lx

Conditions:

Number of c-planes: 16

Lux at center: 19,5 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	8,2	9,0	8,4	9,2	9,4	8,1	9,0	8,4	9,2	9,4
	3H	11,3	12,1	11,5	12,3	12,5	11,1	11,9	11,4	12,1	12,4
	4H	12,9	13,7	13,2	13,9	14,2	13,0	13,7	13,3	14,0	14,3
	6H	14,9	15,6	15,3	15,9	16,2	14,7	15,4	15,0	15,7	16,0
	8H	15,8	16,5	16,2	16,8	17,1	15,6	16,3	16,0	16,6	16,9
	12H	17,0	17,6	17,3	17,9	18,3	16,9	17,5	17,2	17,8	18,1
4H	2H	9,3	10,0	9,6	10,3	10,6	9,4	10,1	9,7	10,4	10,7
	3H	12,4	13,1	12,8	13,4	13,7	12,3	13,0	12,7	13,3	13,6
	4H	14,3	14,9	14,7	15,2	15,6	14,3	14,9	14,7	15,2	15,6
	6H	16,6	17,1	17,0	17,5	17,9	16,2	16,7	16,6	17,0	17,4
	8H	17,6	18,1	18,1	18,5	18,9	17,2	17,7	17,7	18,1	18,5
	12H	18,8	19,2	19,2	19,6	20,1	18,7	19,1	19,1	19,5	19,9
8H	4H	15,1	15,5	15,5	15,9	16,3	15,0	15,5	15,5	15,9	16,3
	6H	17,7	18,1	18,2	18,5	19,0	17,2	17,6	17,7	18,0	18,4
	8H	18,9	19,2	19,4	19,7	20,2	18,4	18,7	18,9	19,2	19,7
	12H	20,2	20,4	20,7	20,9	21,4	20,1	20,4	20,6	20,9	21,4
12H	4H	15,3	15,7	15,8	16,1	16,6	15,3	15,7	15,7	16,1	16,5
	6H	18,1	18,4	18,5	18,8	19,3	17,5	17,9	18,0	18,3	18,8
	8H	19,3	19,6	19,8	20,1	20,6	18,9	19,2	19,4	19,6	20,1
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 / -0,2					+0,3 / -0,4				
S = 2,0H		+0,4 / -0,6					+0,6 / -0,7				
Standard table		---					---				
Correction summand		---					---				
Corrected glare indices referring to 119 lm total luminous flux											

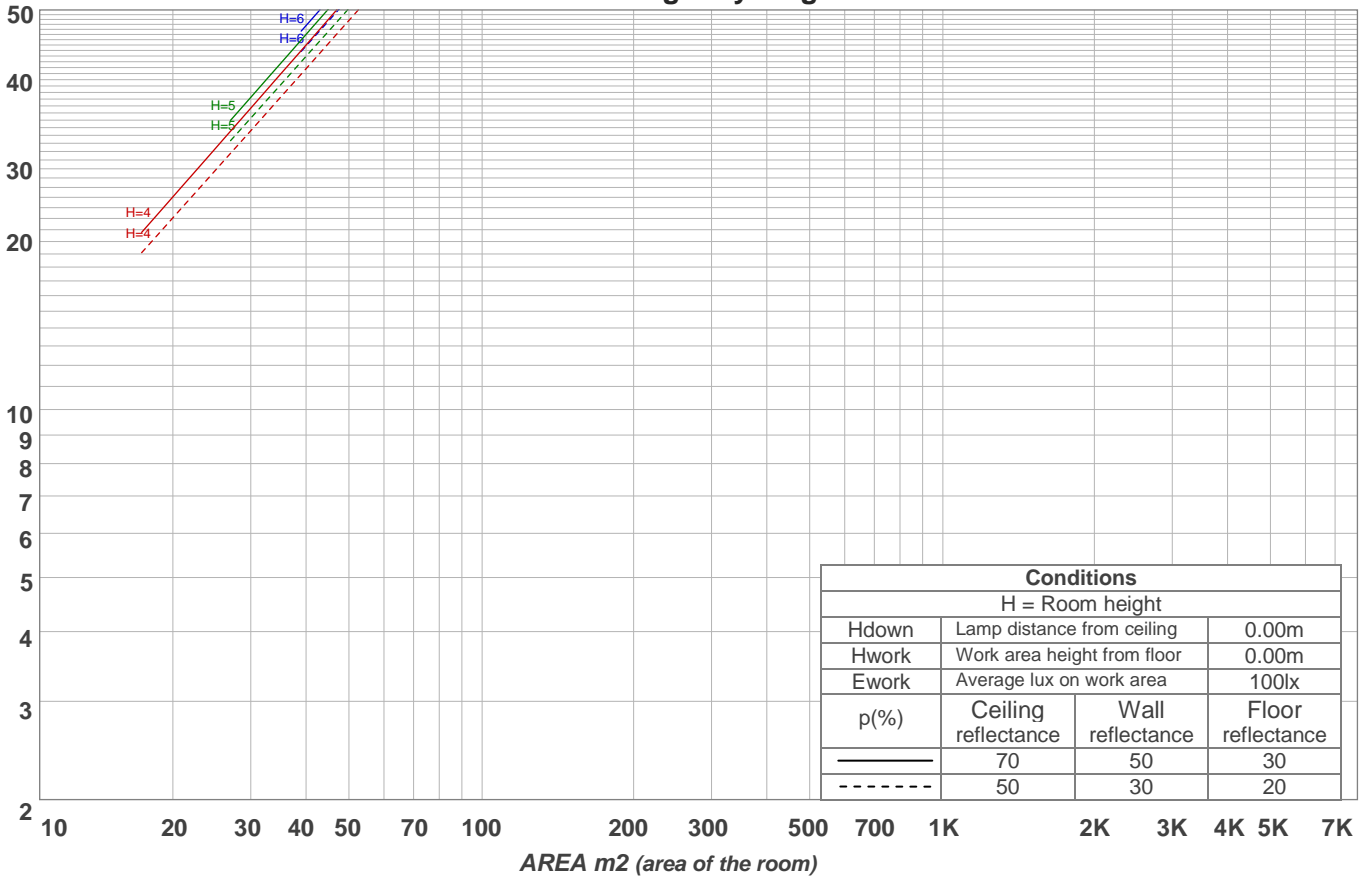
UGR data could be incorrect as lamp output is not symmetrical. Goto Edit->Photometric->Corrections and select Correct asymmetry.

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	101	101	101	99
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	95	94	93	91
2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	85
3	103	96	92	88	101	95	91	87	92	89	86	90	87	84	87	85	83	81
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	79	78
5	96	88	83	79	94	87	83	79	85	81	78	84	80	77	82	79	77	75
6	93	85	80	76	91	84	80	76	83	79	76	81	78	75	80	77	74	73
7	90	82	77	74	89	82	77	74	81	76	73	79	76	73	78	75	73	71
8	88	80	75	72	87	80	75	72	78	74	72	77	74	71	77	73	71	70
9	86	78	73	70	85	78	73	70	77	73	70	76	72	70	75	72	69	68
10	84	76	72	69	83	76	72	69	75	71	68	74	71	68	74	70	68	67

LAMPS (number of lamps)

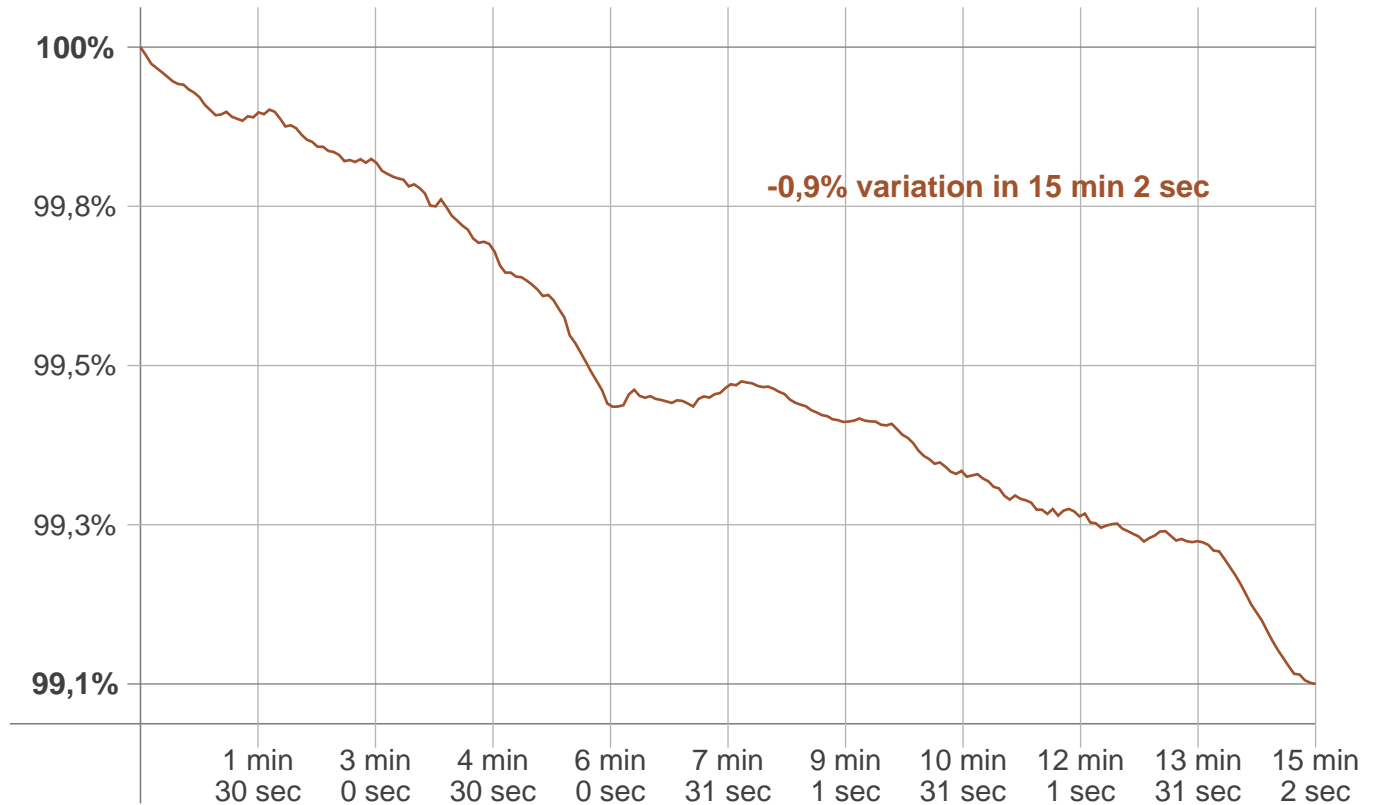
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	23,6 lm	9,19 lm	5,66 lm	4,91 lm	4,68 lm	4,65 lm	4,57 lm	3,42 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
1,12 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	-0,9%

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
120 lm	-1 lm	119 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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