

Light efficiency:



Light quality:



Color temperature:

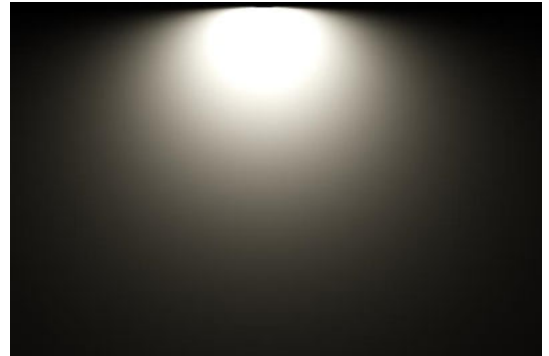


Output: 127 lm

Peak: 559 cd

Power: 4,4 W

PF: 1,0



Product name:

F L-S O - 2-4 C -1 0 0-B-LSOT-O

Item number:

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

Date and time:

19.03.2019 10:19:43

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

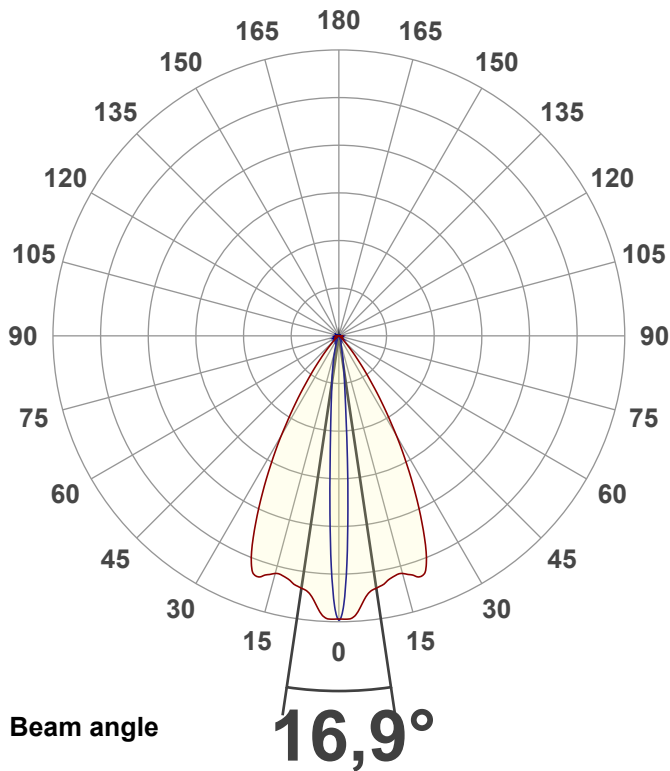
Master of Engineering

Pruefort:

Lichtlabor

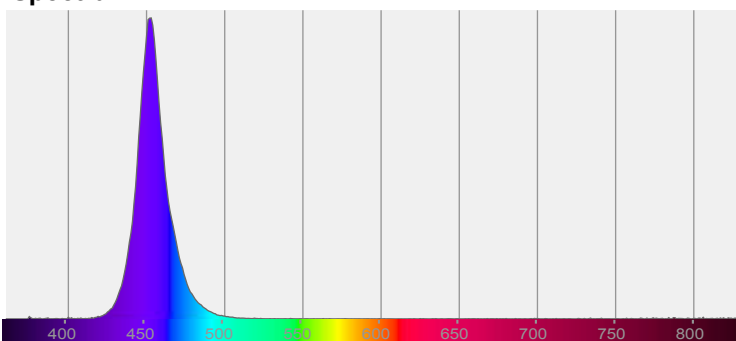
Gaustasse13-15

55411 Bingen am Rhein

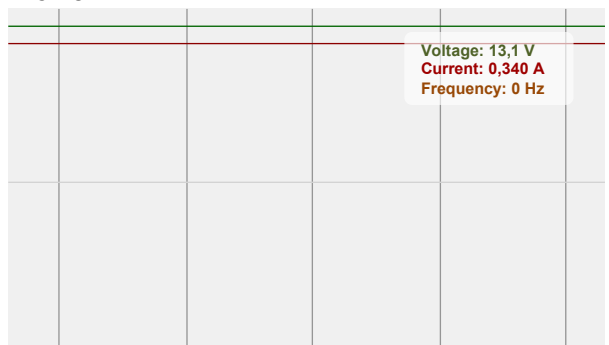


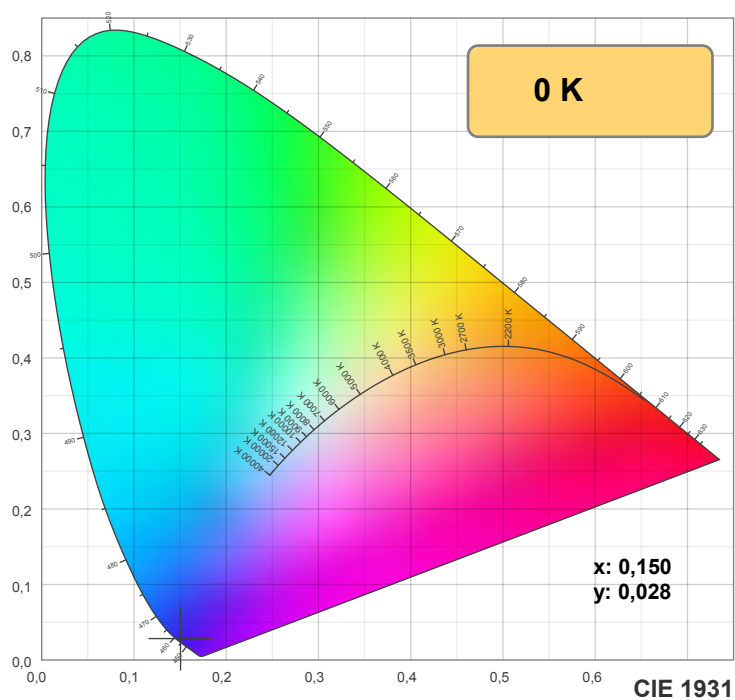
CIE 1931  
x: 0,150  
y: 0,028

Spectra

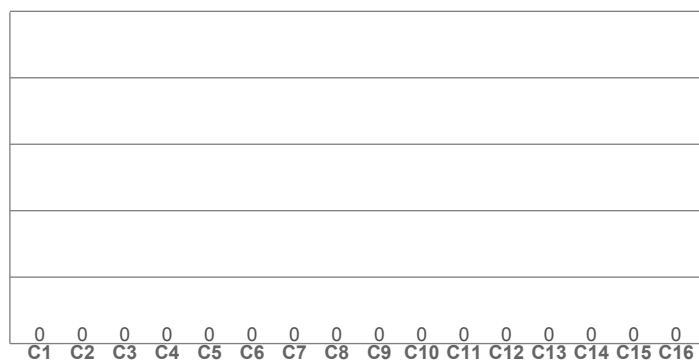


Power





TM30: 0,0



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

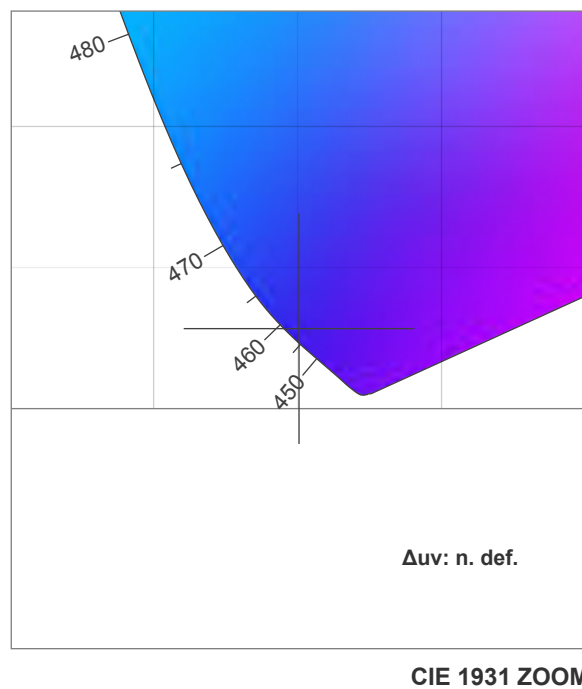
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

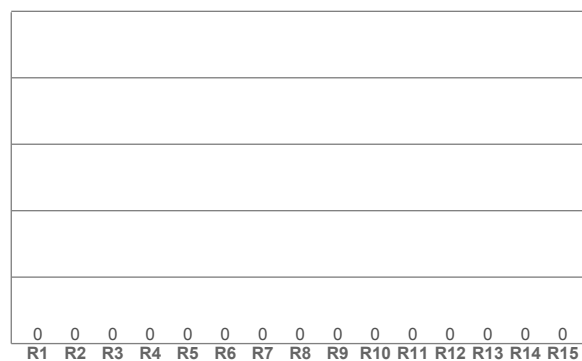
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

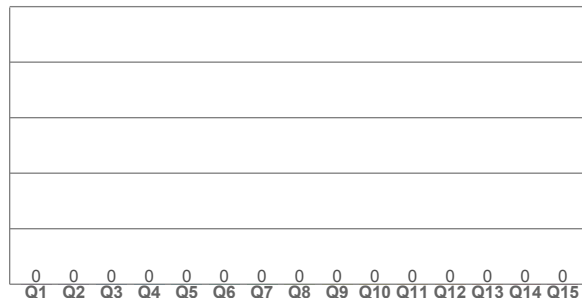
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



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
<b>0 K</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,0</b>	<b>0,150</b>	<b>0,028</b>	<b>0,198</b>	<b>0,056</b>	<b>n. def.</b>

## TM30 details

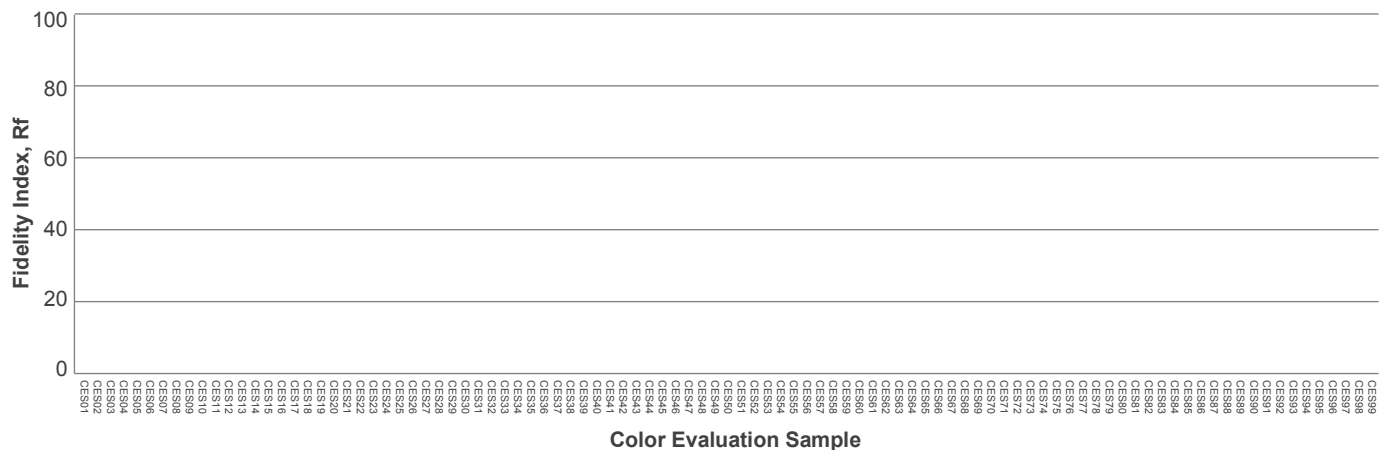
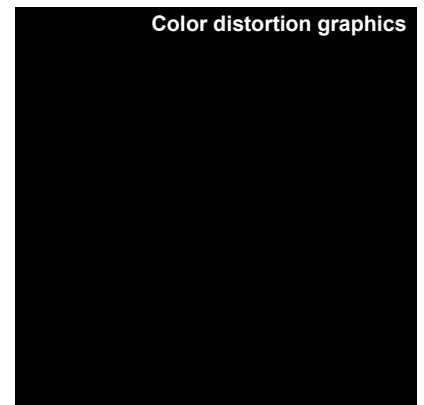
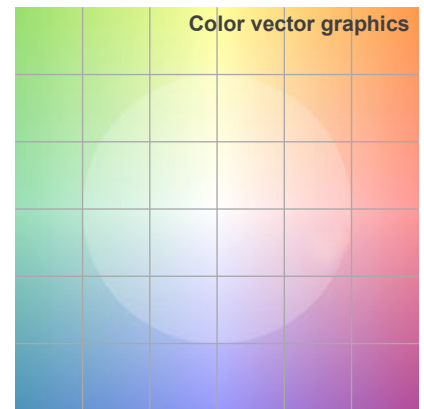
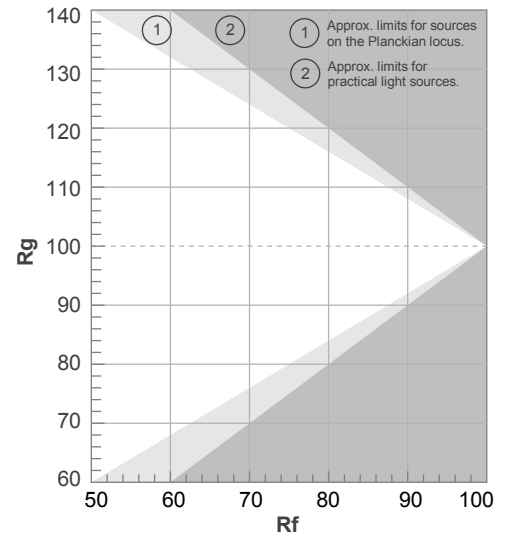
**Rf 0,0**

Fidelity index Rf

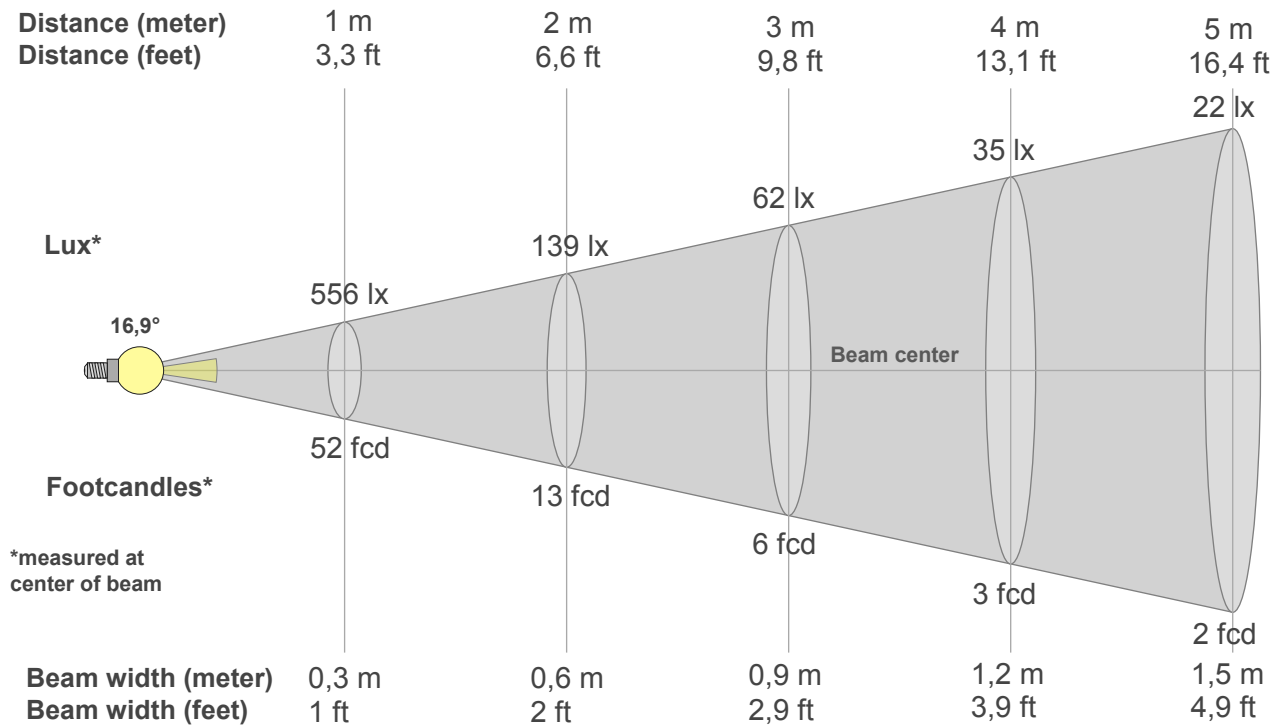
**Rg 0,0**

Gammut index Rg

Hue Bin	R <sub>f</sub>	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
556lx	139lx	62lx	35lx	22lx	15lx	11lx	9lx	7lx	6lx	5lx	4lx	3lx	3lx	2lx	2lx	2lx	2lx	2lx	1lx
51,6fcd	12,9fcd	5,7fcd	3,2fcd	2,1fcd	1,4fcd	1,1fcd	0,8fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd	0,1fcd	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°
556	556	556	552	542	528	515	506	502	499	496	491	487	484	482	483	487	491	497	499
100%	100%	100%	99%	98%	95%	93%	91%	90%	90%	89%	88%	88%	87%	87%	87%	88%	88%	89%	90%

### 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°
556	529	449	340	240	163	118	90	73	56	44	34	27	22	19	17	16	14	13	11
100%	95%	81%	61%	43%	29%	21%	16%	13%	10%	8%	6%	5%	4%	3%	3%	3%	3%	2%	2%

### Intensities in 180° c-plane

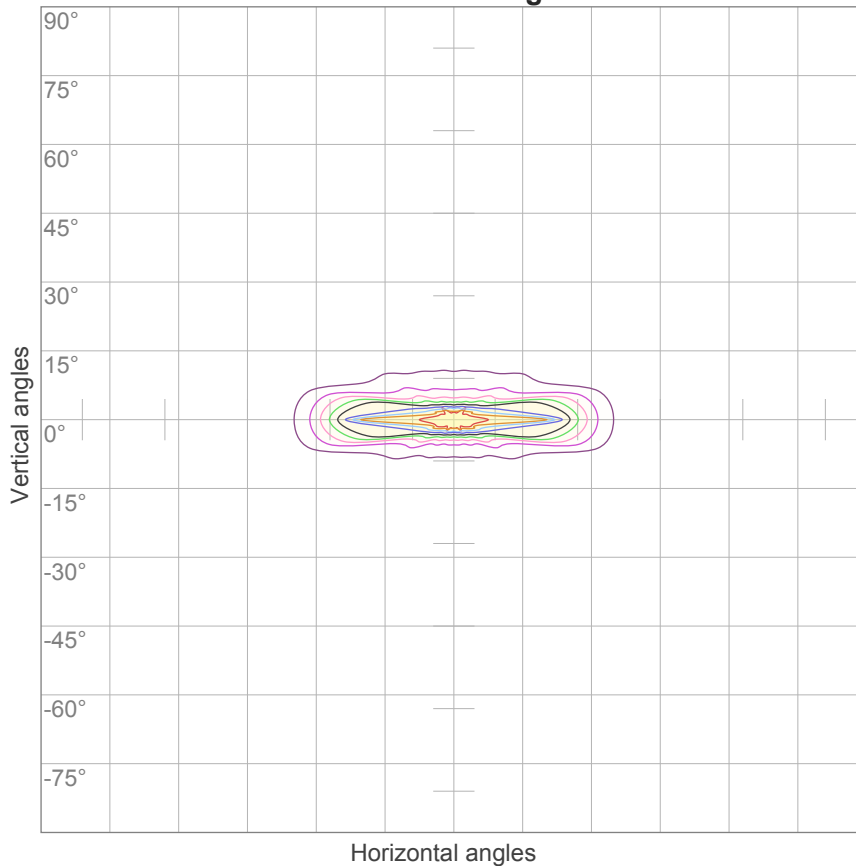
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
556	556	556	552	542	528	515	506	502	499	496	491	487	484	482	483	487	491	497	499
100%	100%	100%	99%	98%	95%	93%	91%	90%	90%	89%	88%	88%	87%	87%	87%	88%	88%	89%	90%

### 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°
556	523	441	337	247	187	148	120	100	86	74	62	54	46	38	31	26	22	18	15
100%	94%	79%	61%	44%	34%	27%	22%	18%	15%	13%	11%	10%	8%	7%	6%	5%	4%	3%	3%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
16,9°	36,1°	55,1°	88,4%	82,4%

ISO candela diagram



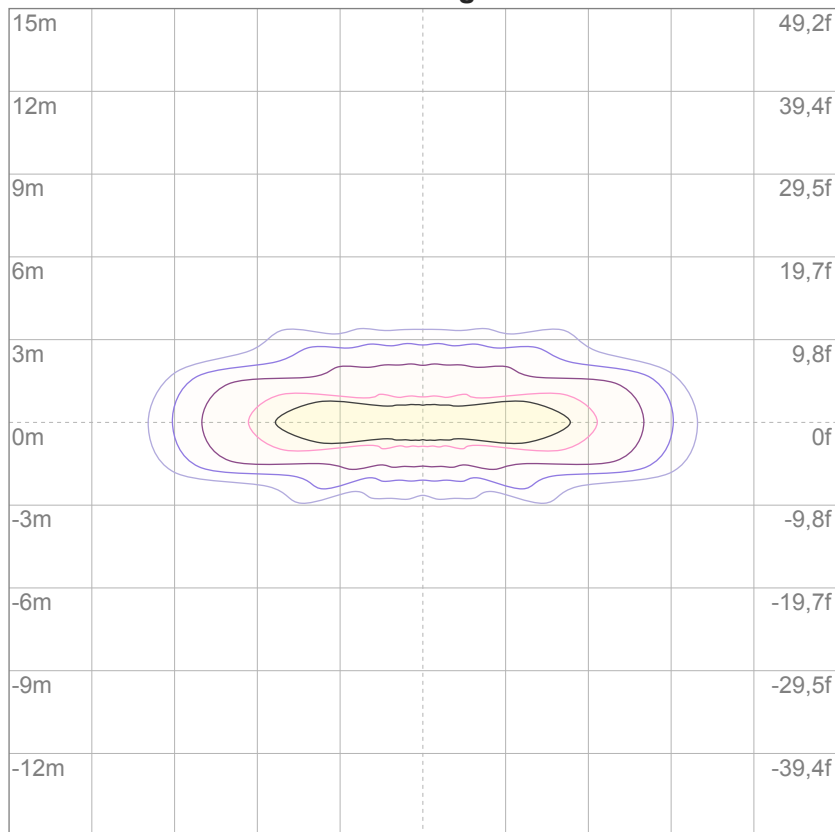
10%	56 cd
20%	111 cd
30%	167 cd
40%	222 cd
50%	278 cd
60%	333 cd
70%	389 cd
80%	444 cd
90%	500 cd

Conditions:

Number of c-planes: 16

Candela at center: 556 cd

ISO lux diagram



3%	0,167 lx
5%	0,278 lx
10%	0,556 lx
30%	1,67 lx
50%	2,78 lx

Conditions:

Number of c-planes: 16

Lux at center: 5,56 lx

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

## Glare Evaluation According to UGR

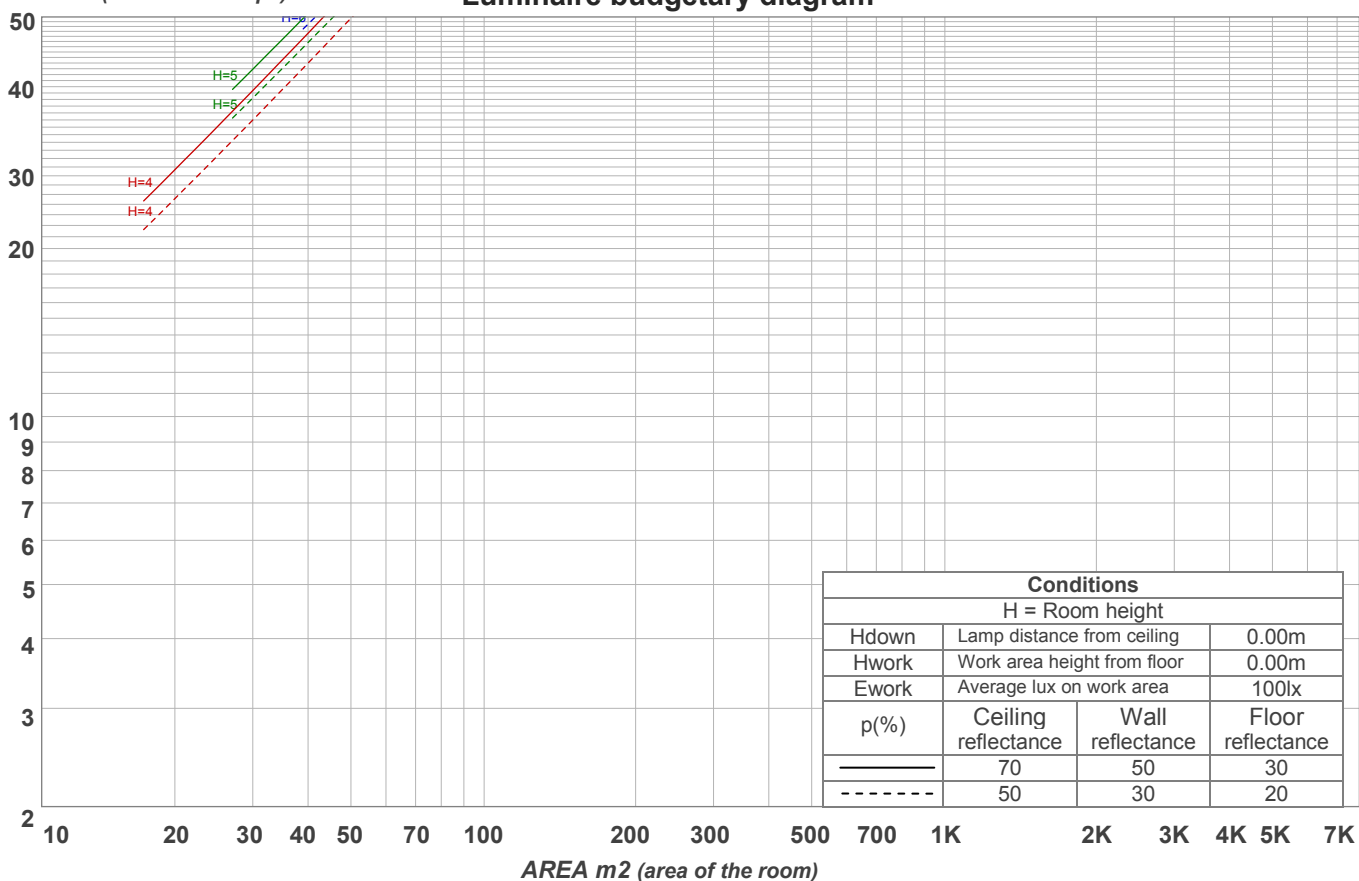
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X      Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	12,5	13,4	12,8	13,6	13,8	7,9	8,7	8,1	8,9	9,1
	3H	13,7	14,5	14,0	14,7	15,0	10,9	11,7	11,2	11,9	12,1
	4H	14,6	15,4	14,9	15,6	15,9	12,5	13,2	12,8	13,5	13,8
	6H	15,8	16,5	16,1	16,8	17,0	14,2	14,9	14,6	15,2	15,5
	8H	16,7	17,4	17,1	17,7	18,0	15,3	16,0	15,6	16,3	16,6
	12H	17,5	18,1	17,8	18,4	18,8	16,5	17,2	16,9	17,5	17,8
4H	2H	12,7	13,5	13,0	13,7	14,0	9,0	9,8	9,4	10,1	10,3
	3H	14,2	14,9	14,6	15,2	15,5	12,2	12,9	12,6	13,2	13,5
	4H	15,5	16,0	15,8	16,4	16,7	14,0	14,6	14,4	14,9	15,3
	6H	17,0	17,5	17,4	17,8	18,2	16,0	16,5	16,4	16,9	17,3
	8H	18,1	18,6	18,6	19,0	19,4	17,1	17,6	17,5	18,0	18,4
	12H	19,0	19,4	19,5	19,8	20,3	18,5	18,9	18,9	19,3	19,7
8H	4H	16,0	16,5	16,4	16,8	17,2	14,9	15,3	15,3	15,7	16,1
	6H	17,9	18,2	18,3	18,6	19,1	17,2	17,6	17,7	18,0	18,5
	8H	19,2	19,5	19,7	19,9	20,4	18,4	18,7	18,9	19,2	19,6
	12H	20,2	20,5	20,7	20,9	21,4	19,9	20,2	20,4	20,6	21,1
12H	4H	16,2	16,6	16,6	17,0	17,4	15,1	15,5	15,5	15,9	16,3
	6H	18,1	18,4	18,6	18,9	19,4	17,5	17,9	18,0	18,3	18,8
	8H	19,5	19,8	20,0	20,2	20,7	18,8	19,1	19,3	19,5	20,0
Variation of the observer position for the luminaire distance S											
S = 1,0H		+1,0 / -0,3					+0,2 / -0,2				
S = 1,5H		+2,0 / -0,4					+0,3 / -0,4				
S = 2,0H		+3,2 / -0,7					+0,5 / -0,9				
Standard table		---					---				
Correction summand		---					---				
Corrected glare indices referring to 127 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	108	105	102	109	106	103	100	101	99	97	97	95	94	93	92	91	89
2	105	99	95	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81
3	100	92	87	82	97	91	86	81	88	84	80	85	82	78	83	80	77	75
4	95	86	80	76	93	85	79	75	83	78	74	81	76	73	78	75	72	70
5	90	81	75	70	88	80	74	70	78	73	69	76	72	69	75	71	68	66
6	86	77	71	66	84	76	70	66	74	69	65	73	68	65	71	67	64	63
7	82	73	67	62	81	72	66	62	71	66	62	69	65	61	68	64	61	60
8	79	69	63	59	78	69	63	59	67	62	59	66	62	58	65	61	58	57
9	76	66	60	56	75	66	60	56	65	60	56	64	59	56	63	59	55	54
10	73	63	58	54	72	63	57	54	62	57	54	61	57	53	60	56	53	52

LAMPS (number of lamps)

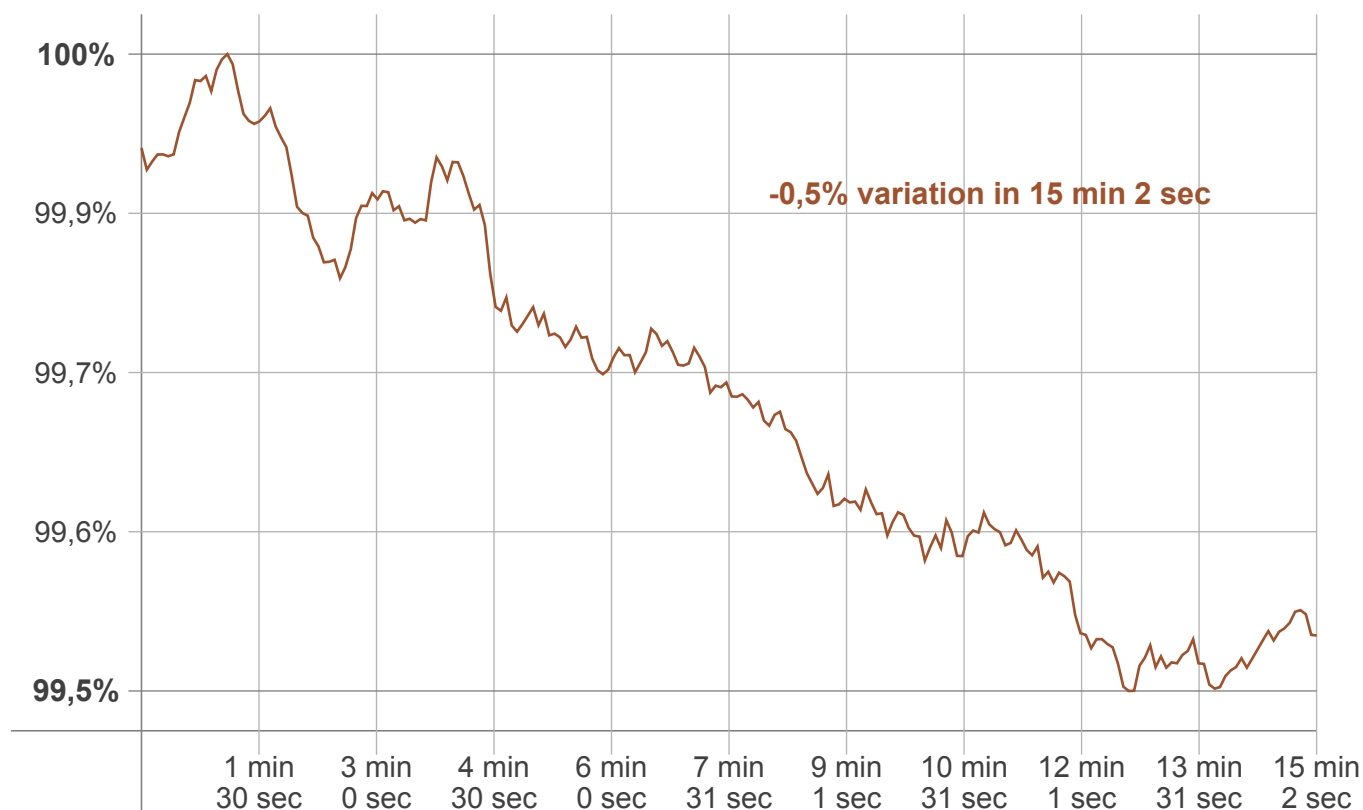
## Luminaire budgetary diagram



## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	32,8 lm	28,8 lm	13,9 lm	5,93 lm	5,00 lm	4,97 lm	4,84 lm	3,34 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,933 lm	0,647 lm	0,045 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	-0,5%

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
127 lm	lm	127 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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