

Light efficiency:



Light quality:



Color temperature:

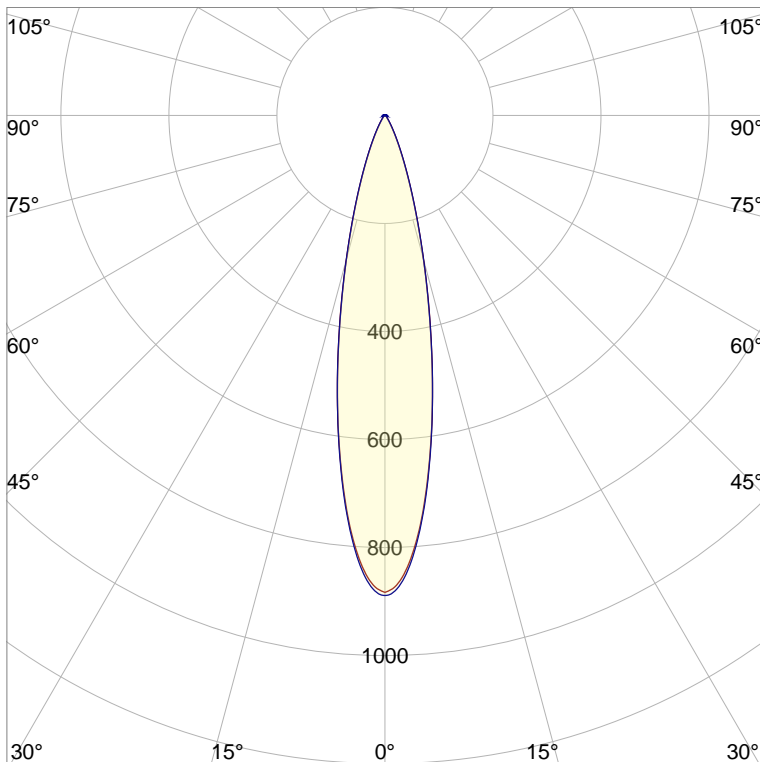
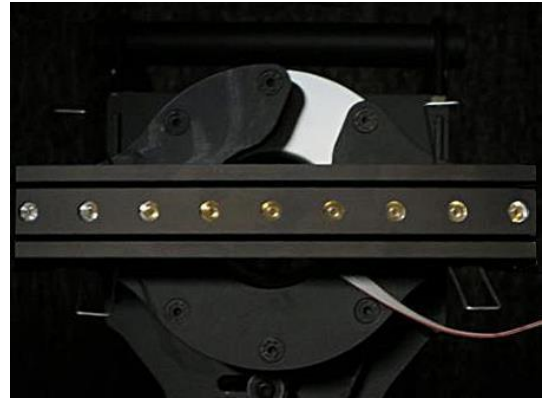


Output: 192 lm

Peak: 887 cd

Power: 7,0 W

PF: 0,82



CIE 1931  
x: 0,462  
y: 0,412

Product name:

**FLNP-F4C-C-258-W-927-10772-ALA**

Item number:

**FLNP-F4C-C-258-W-927-10772-ALA**

Date and time:

**12.02.2019 10:27:40**

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**

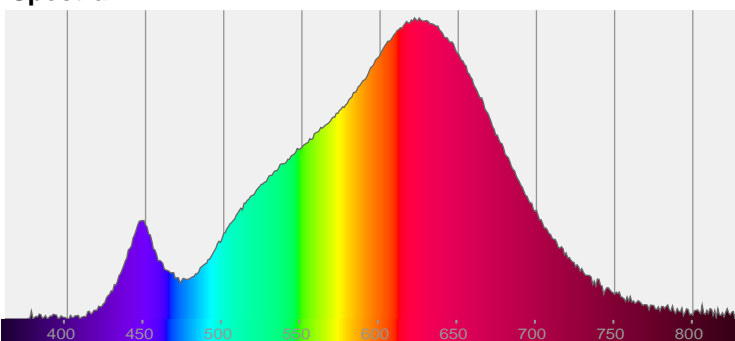
**Pruefort:**

**Lichtlabor**

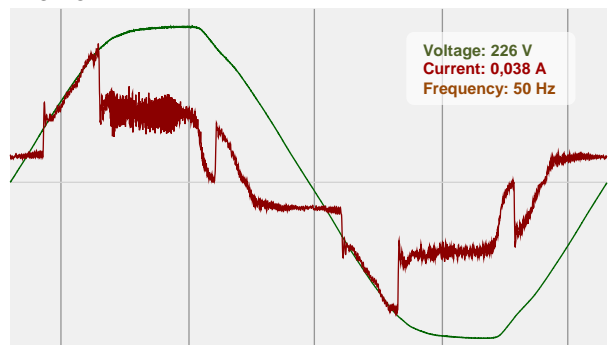
**Gaustasse13-15**

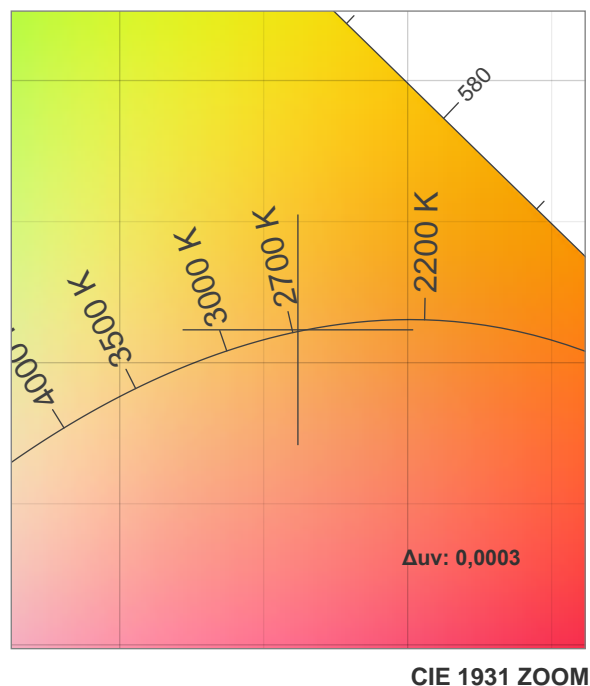
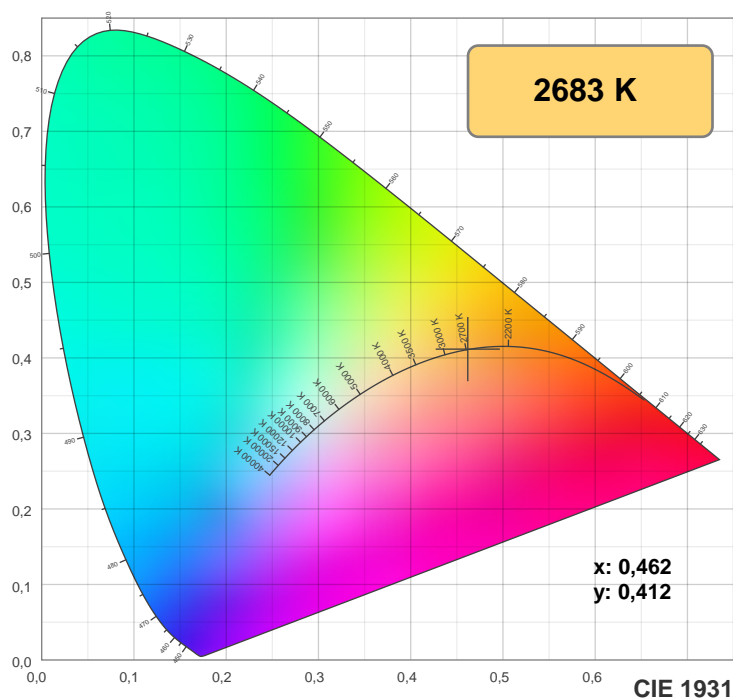
**55411 Bingen am Rhein**

Spectra

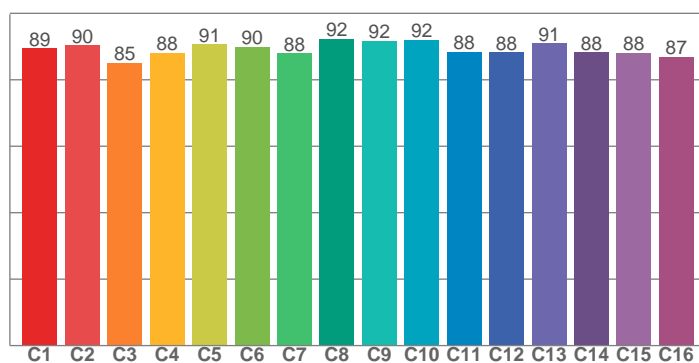


Power

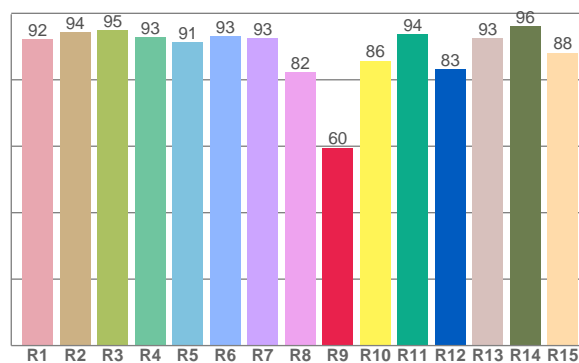




TM30: 89,3



CRI: 91,7 (R1-R8)



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
92,2	94,3	94,9	92,9	91,4	93,2	92,6	82,4	59,6	85,7	93,7	83,2	92,5	96,2	88,1

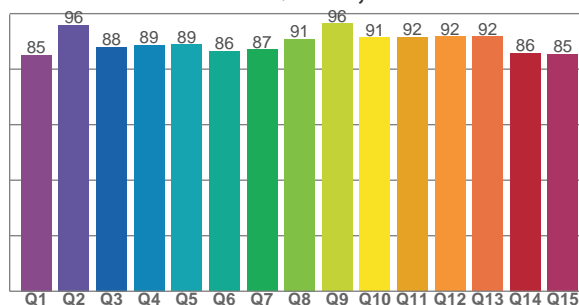
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
89,5	90,3	85,1	88,2	90,7	89,9	88,0	92,2	91,8	92,1	88,5	88,3	91,0	88,2	88,1	87,0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
85,2	95,9	88,0	88,8	88,9	86,4	87,0	90,8	96,4	91,4	91,6	91,7	91,8	85,9	85,4

CQS: 89,0



## 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
2683 K	91,7	59,6	89,3	101,6	89,0	0,462	0,412	0,263	0,352	0,0003

## TM30 details

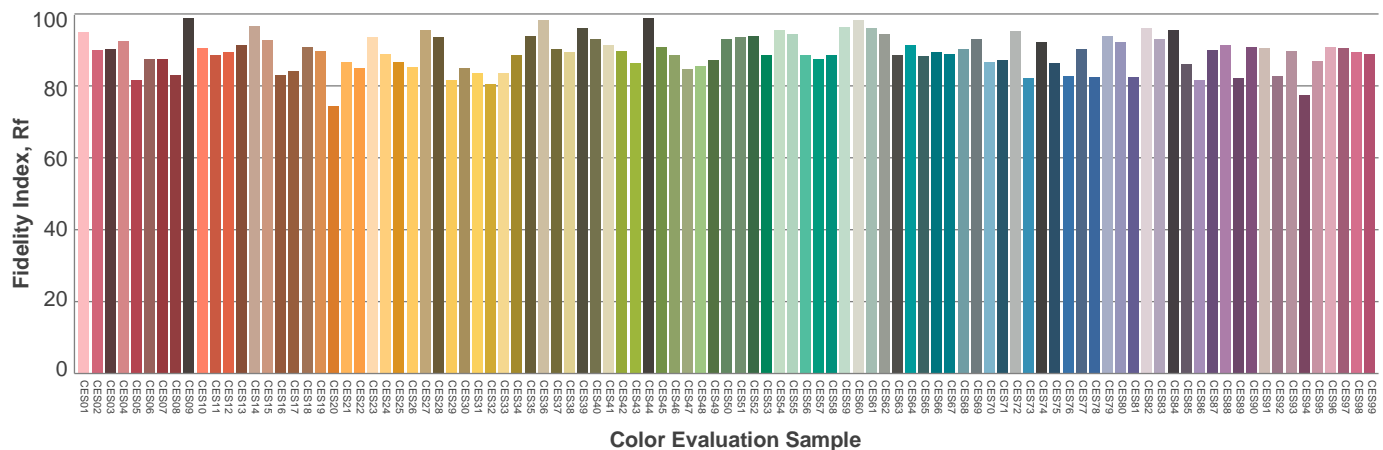
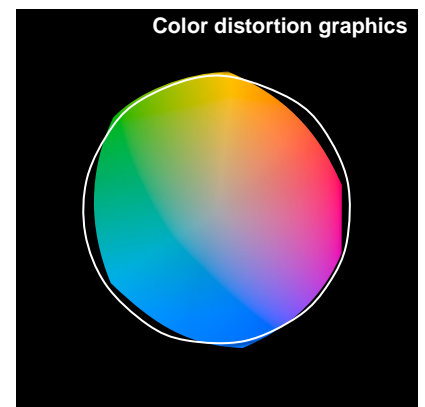
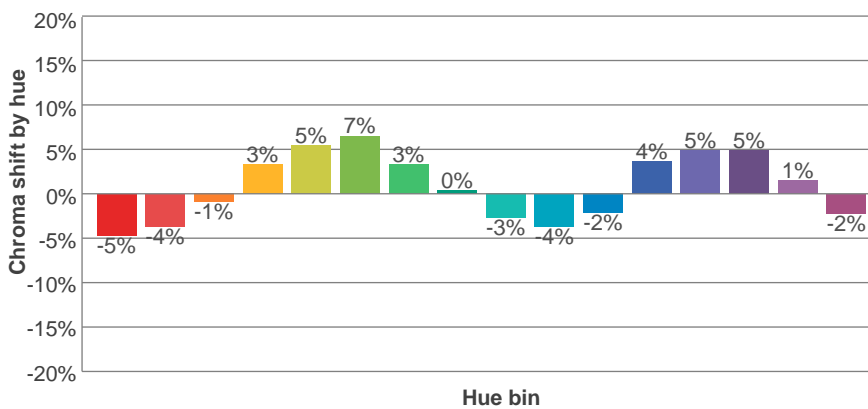
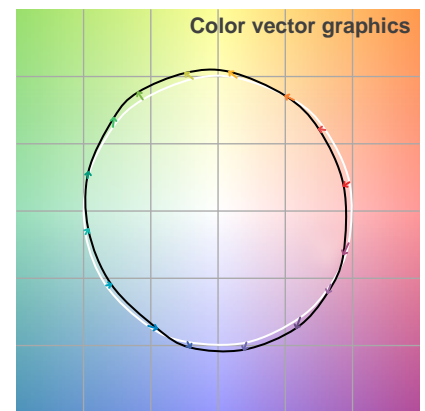
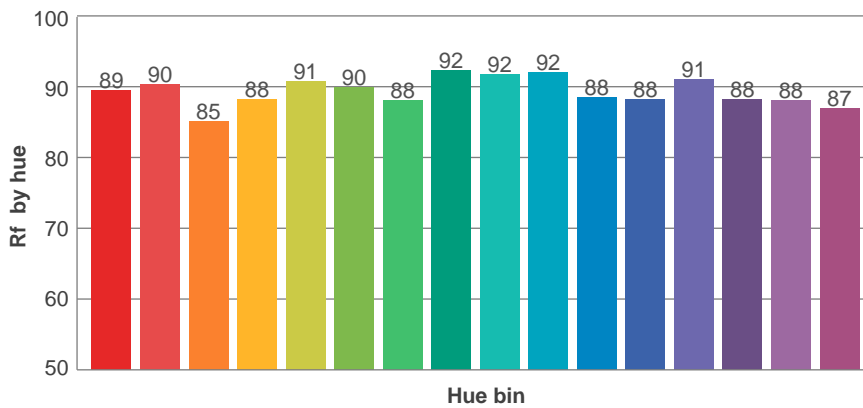
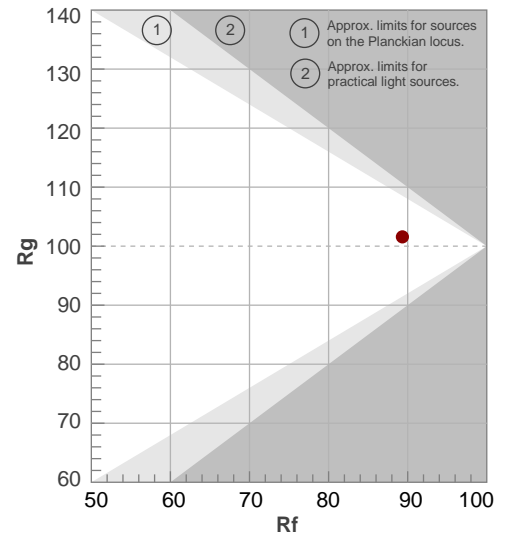
**Rf 89,3**

Fidelity index Rf

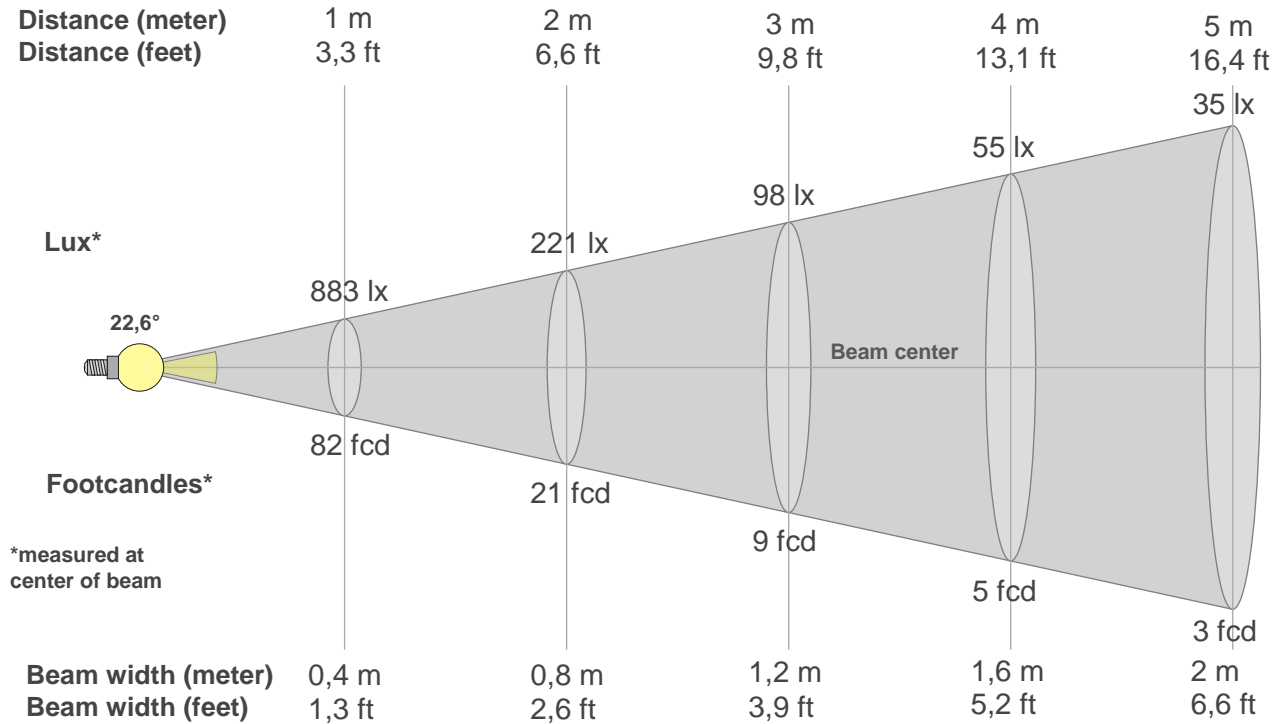
**Rg 101,6**

Gammut index Rg

(TM30_BIN_VALUES_START)			
		Graphic shifts (%)	
Hue Bin	R <sub>f</sub>	Chroma	Hue
1		%	%
2		%	%
3		%	%
4		%	%
5		%	%
6		%	%
7		%	%
8		%	%
9		%	%
10		%	%
11		%	%
12		%	%
13		%	%
14		%	%
15		%	%
16		%	%



## Beam details



### Beam intensities from 1-20m

m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx	lx
fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd	fcd

{BEAM\_INT\_TABLE\_END}

### 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°
883	858	798	712	611	507	406	316	240	179	132	96	69	50	36	26	19	14	11	9
100%	97%	90%	81%	69%	57%	46%	36%	27%	20%	15%	11%	8%	6%	4%	3%	2%	2%	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°
883	865	803	715	612	507	405	316	240	180	133	97	70	51	37	27	20	15	11	9
100%	98%	91%	81%	69%	57%	46%	36%	27%	20%	15%	11%	8%	6%	4%	3%	2%	2%	1%	1%

### Intensities in 180° c-plane

{INT\_TABLE\_180\_START}

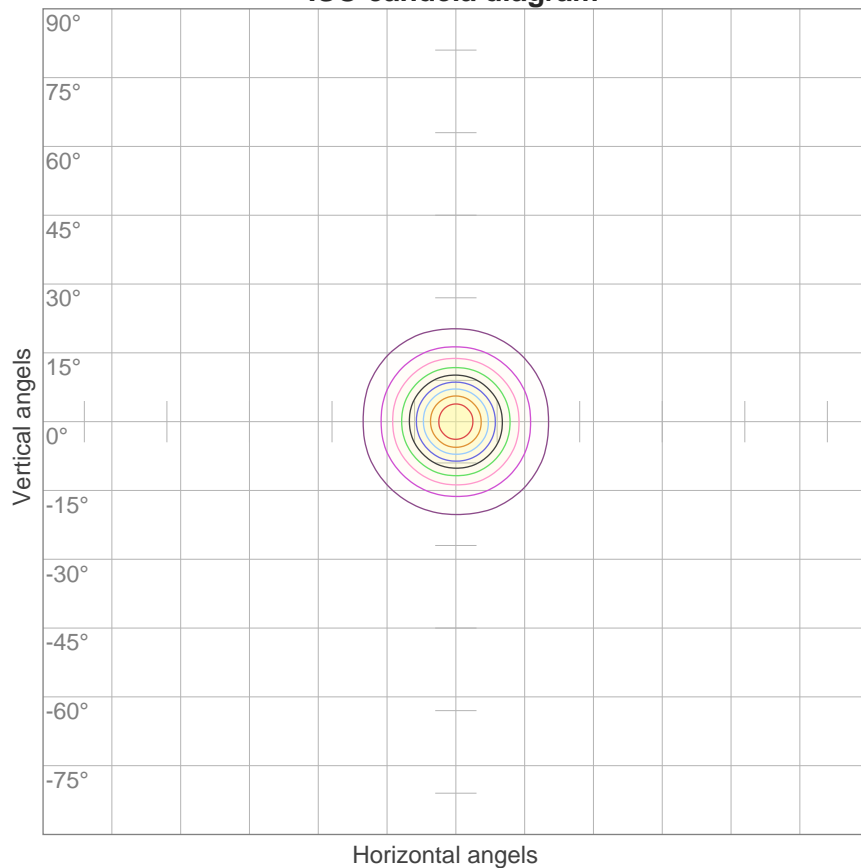
°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

### 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°
883	865	803	715	612	507	405	316	240	180	133	97	70	51	37	27	20	15	11	9
100%	98%	91%	81%	69%	57%	46%	36%	27%	20%	15%	11%	8%	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
22,6°	45,5°	62,8°	97,5%	95,4%

ISO candela diagram



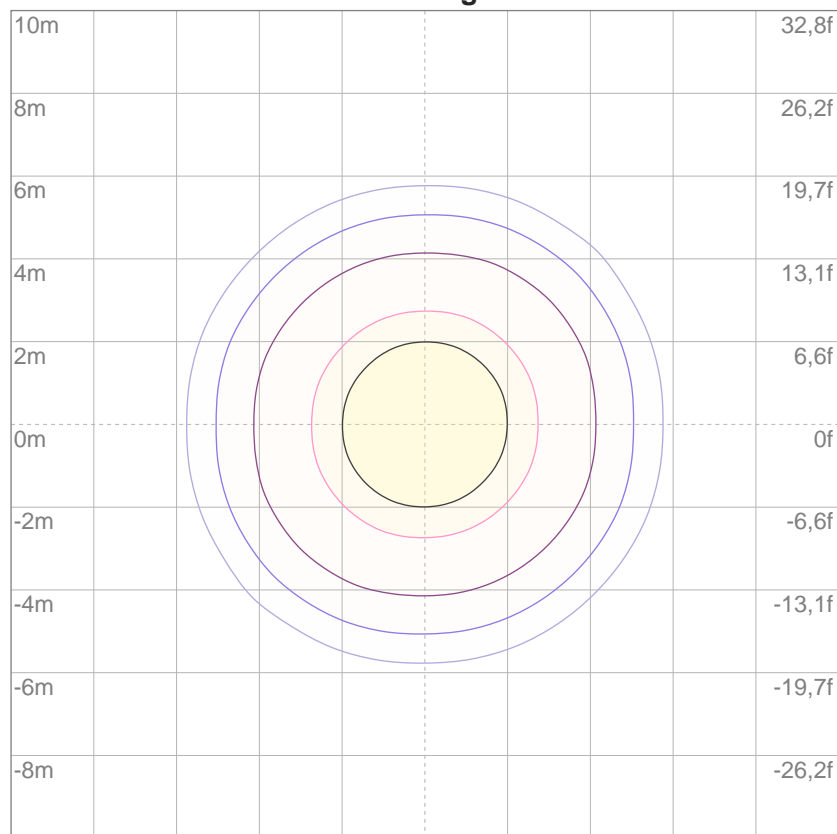
10%	88 cd
20%	177 cd
30%	265 cd
40%	353 cd
50%	441 cd
60%	530 cd
70%	618 cd
80%	706 cd
90%	794 cd

Conditions:

Number of c-planes: 16

Candela at center: 883 cd

ISO lux diagram



3%	0,265 lx
5%	0,441 lx
10%	0,883 lx
30%	2,65 lx
50%	4,41 lx

Conditions:

Number of c-planes: 16

Lux at center: 8,83 lx

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

## Glare Evaluation According to UGR

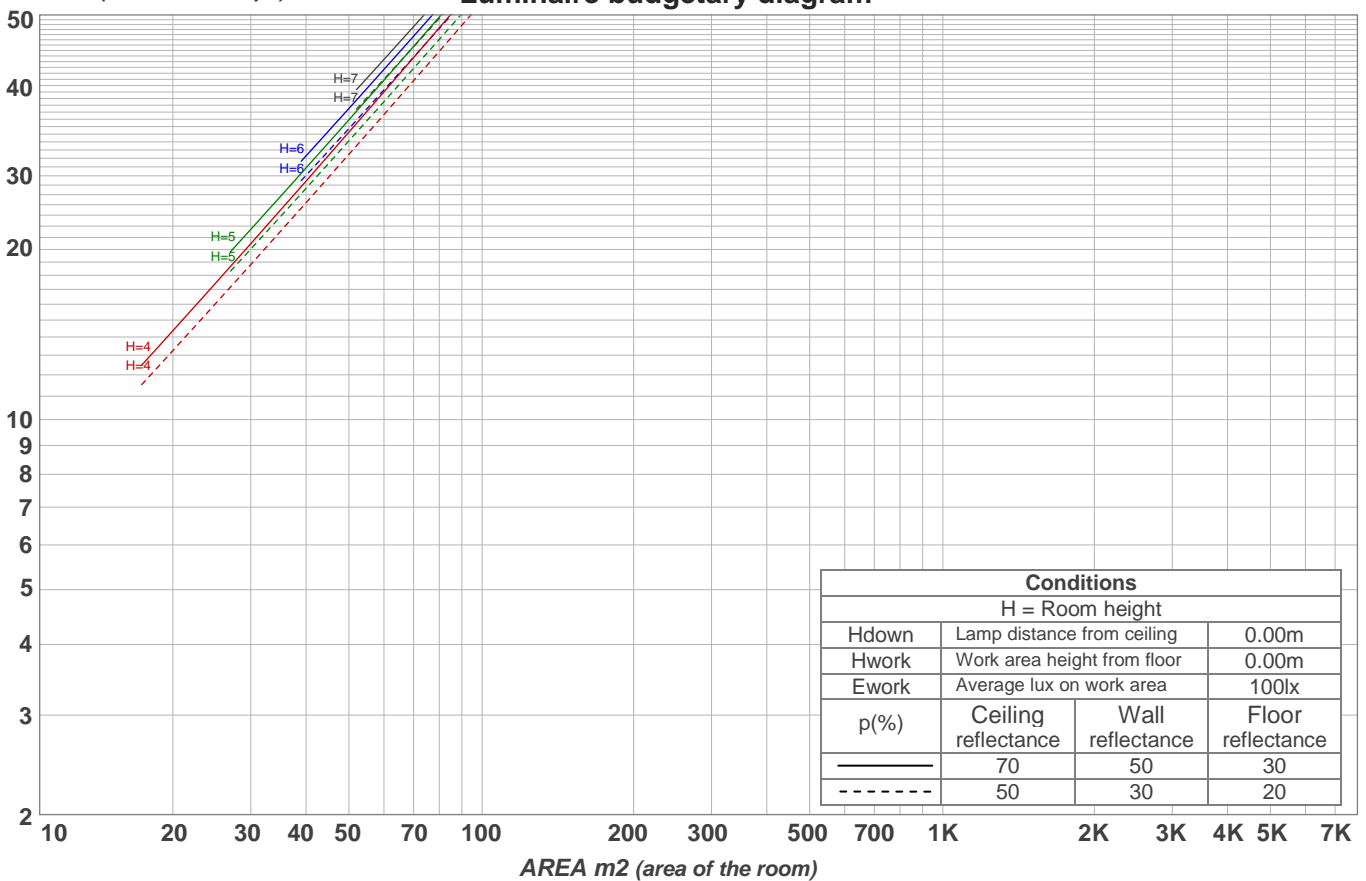
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X      Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	5,0	5,7	5,3	5,9	6,1	4,9	5,6	5,2	5,8	6,0
	3H	6,4	7,1	6,7	7,3	7,5	6,1	6,7	6,3	6,9	7,2
	4H	7,4	8,0	7,7	8,3	8,5	6,9	7,5	7,2	7,7	8,0
	6H	8,4	9,0	8,8	9,3	9,5	7,9	8,4	8,2	8,7	9,0
	8H	8,9	9,4	9,2	9,7	10,0	8,3	8,9	8,7	9,2	9,5
	12H	9,3	9,8	9,6	10,1	10,4	8,8	9,3	9,1	9,6	9,9
4H	2H	5,3	5,9	5,6	6,1	6,4	5,2	5,8	5,5	6,1	6,3
	3H	7,0	7,5	7,4	7,8	8,1	6,7	7,2	7,1	7,5	7,8
	4H	8,2	8,6	8,6	9,0	9,3	7,8	8,2	8,2	8,5	8,9
	6H	9,5	9,9	9,9	10,3	10,6	9,0	9,4	9,4	9,7	10,1
	8H	10,1	10,4	10,5	10,8	11,2	9,6	10,0	10,1	10,3	10,7
	12H	10,6	10,9	11,0	11,3	11,7	10,2	10,5	10,7	10,9	11,3
8H	4H	8,6	9,0	9,0	9,3	9,7	8,3	8,6	8,7	9,0	9,4
	6H	10,2	10,4	10,6	10,9	11,3	9,8	10,0	10,2	10,4	10,9
	8H	10,9	11,1	11,4	11,5	12,0	10,6	10,8	11,0	11,2	11,7
	12H	11,5	11,7	12,0	12,2	12,7	11,3	11,5	11,8	11,9	12,4
12H	4H	8,7	9,0	9,1	9,4	9,8	8,4	8,7	8,8	9,1	9,5
	6H	10,4	10,6	10,8	11,0	11,5	9,9	10,1	10,4	10,6	11,1
	8H	11,1	11,3	11,6	11,7	12,2	10,8	11,0	11,3	11,4	11,9
Variation of the observer position for the luminaire distance S											
S = 1,0H		+0,5 / -0,2					+0,5 / -0,3				
S = 1,5H		+1,1 / -0,4					+1,2 / -0,5				
S = 2,0H		+2,1 / -0,6					+2,2 / -0,6				
Standard table		BK08					BK08				
Correction summand		-6,4					-6,6				
Corrected glare indices referring to 192 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	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	98	98	97	95
2	110	106	103	100	108	104	101	99	101	99	97	98	96	94	95	94	92	91
3	106	101	97	94	104	100	96	93	97	94	92	95	92	90	93	90	89	87
4	103	97	92	89	101	96	92	88	93	90	87	92	89	86	90	87	85	84
5	99	93	88	85	98	92	88	85	90	87	84	89	85	83	87	84	82	81
6	96	89	85	81	95	89	84	81	87	83	81	86	83	80	85	82	80	78
7	93	86	82	78	92	86	81	78	84	81	78	83	80	77	82	79	77	76
8	90	83	79	76	89	83	79	76	82	78	75	81	77	75	80	77	75	74
9	88	81	76	73	87	80	76	73	79	76	73	79	75	73	78	75	73	72
10	85	78	74	71	85	78	74	71	77	73	71	77	73	71	76	73	71	70

LAMPS (number of lamps)

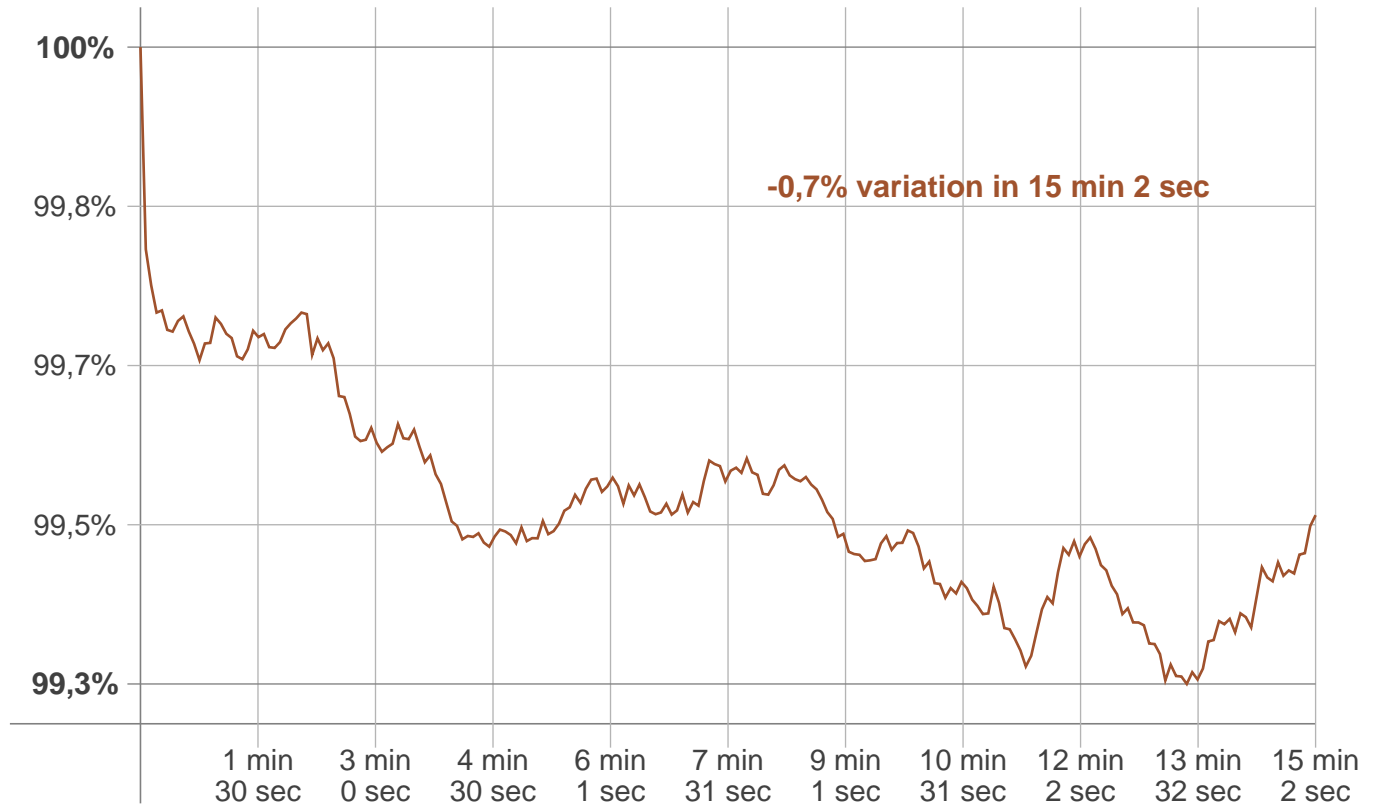
## Luminaire budgetary diagram



## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
64,1 lm	{LUM10-20}	{LUM20-30}	{LUM30-40}	{LUM40-50}	{LUM50-60}	{LUM60-70}	{LUM70-80}	{LUM80-90}
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
{LUM90-100}	{LUM100-110}	0,155 lm	{LUM120-130}	{LUM130-140}	{LUM140-150}	{LUM150-160}	{LUM160-170}	{LUM170-180}

Warmup curve



Warmup result

Warmup time:	15 min 2 sec
Warmup variation	-0,7%

Warmup conditions

Stable period:	15 min
Stable change max:	2,0%
Minimum time:	15 min

Color temperature change

CCT start	CCT change	CCT end
2686 K	{WU_CHNG_CCT} K	2683 K

Output change

Output start	Output change	Output end
192 lm	lm	192 lm