



Light efficiency:

72 Lumen/Watt

Light quality:

CRI: 94,6

Color temperature:

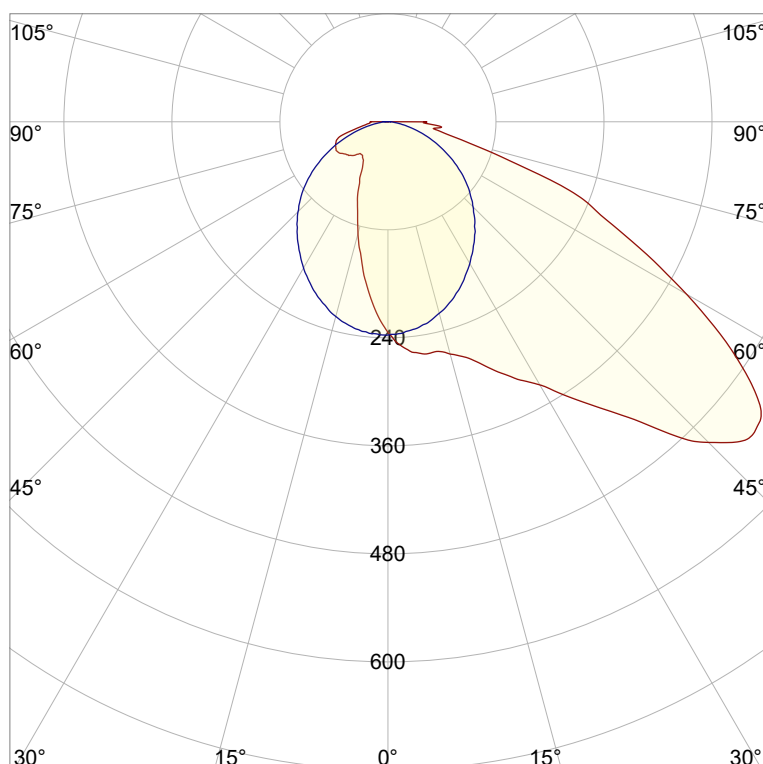
2730 K

Output: 829 lm

Peak: 534 cd

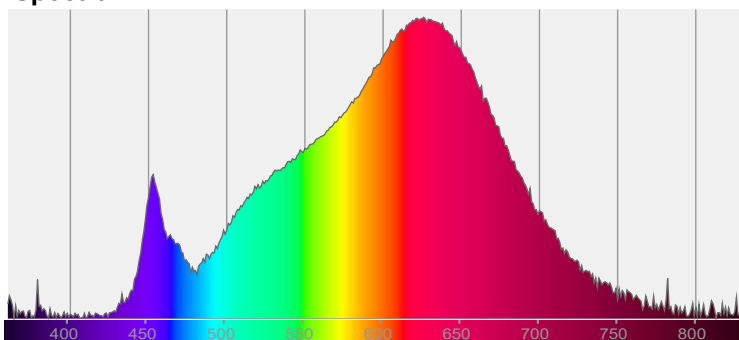
Power: 11,5 W

PF: 1,0



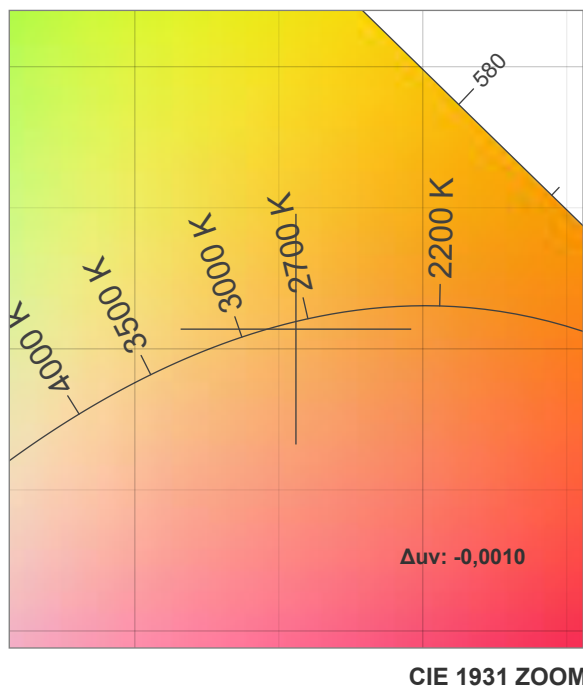
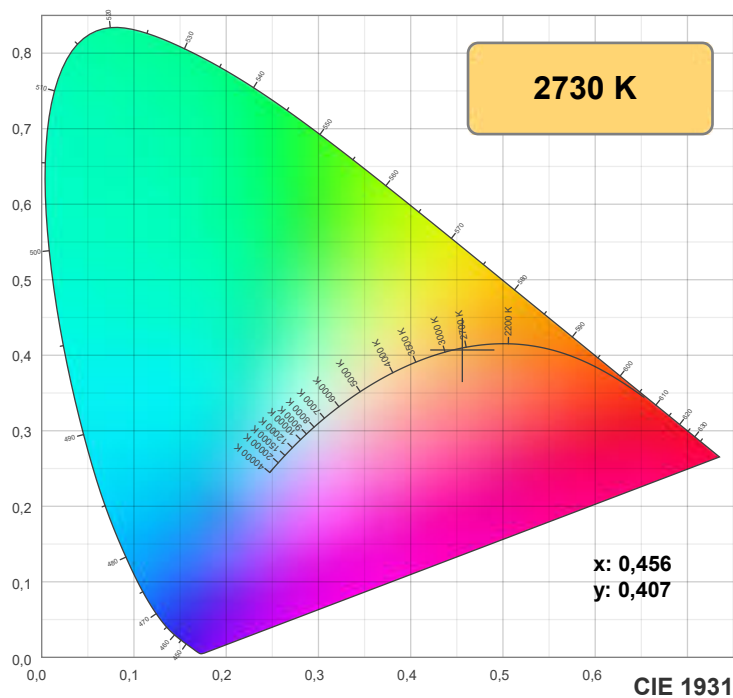
CIE 1931  
x: 0,456  
y: 0,407

Spectra

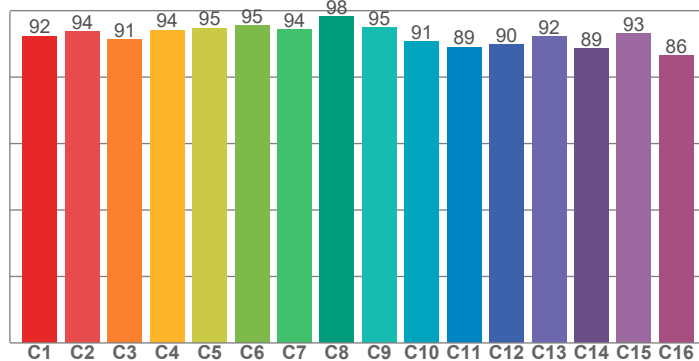


Power

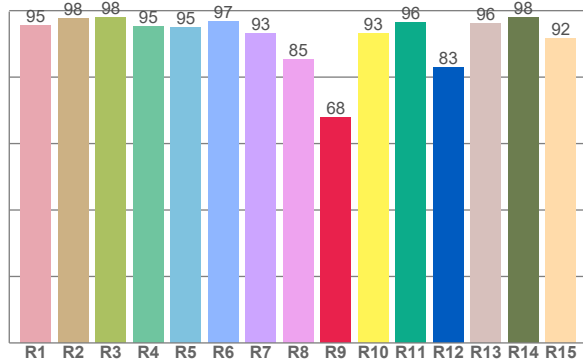
Voltage: 48,0 V  
Current: 0,240 A  
Frequency: 0 Hz



**TM30: 92,3**



**CRI: 94,6 (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
95,5	97,7	98,0	95,3	95,1	96,7	93,1	85,4	68,0	93,3	96,4	82,9	96,3	98,0	91,7

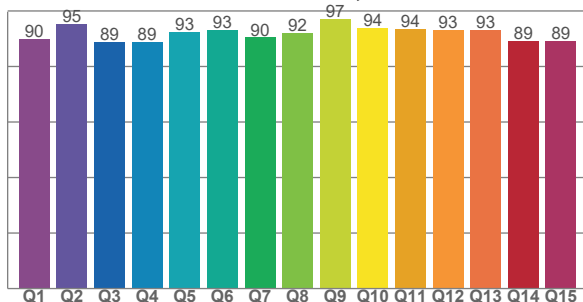
**TM30 C values, 16 binned values out of total of 99 C values**

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92,4	93,6	91,4	94,1	94,7	95,4	94,4	98,2	95,0	90,8	89,1	89,9	92,2	88,7	93,2	86,4

**CQS Q values**

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89,8	95,4	88,7	88,9	92,5	93,0	90,5	92,0	97,2	93,9	93,5	93,1	93,0	89,1	89,2

**CQS: 91,5**



## 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
2730 K	94,6	68,0	92,3	100,2	91,5	0,456	0,407	0,262	0,350	-0,0010



## TM30 details



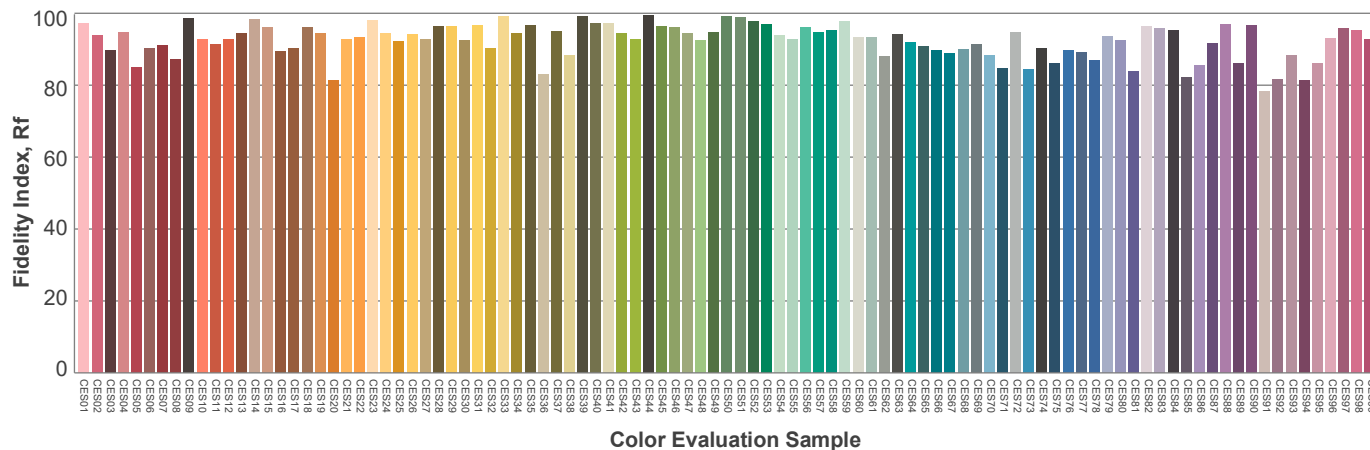
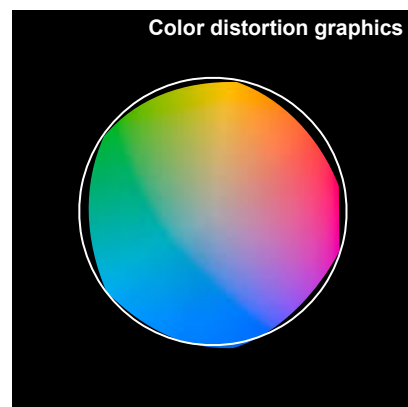
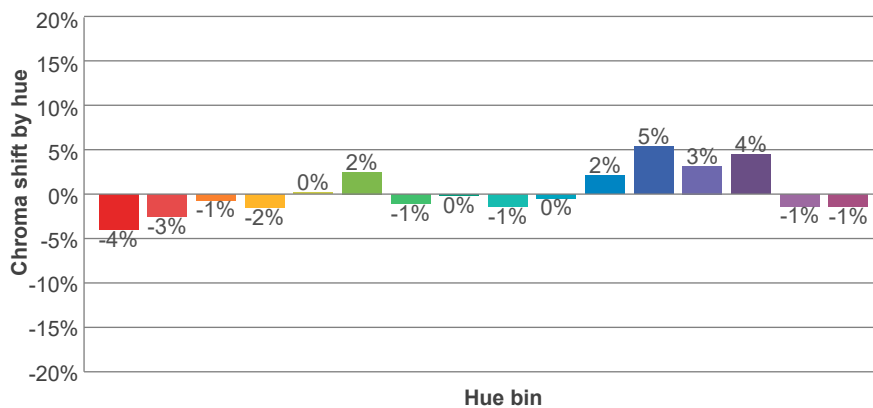
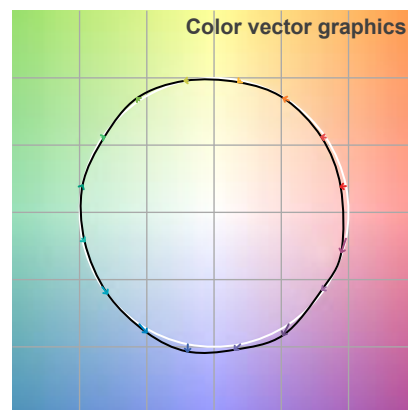
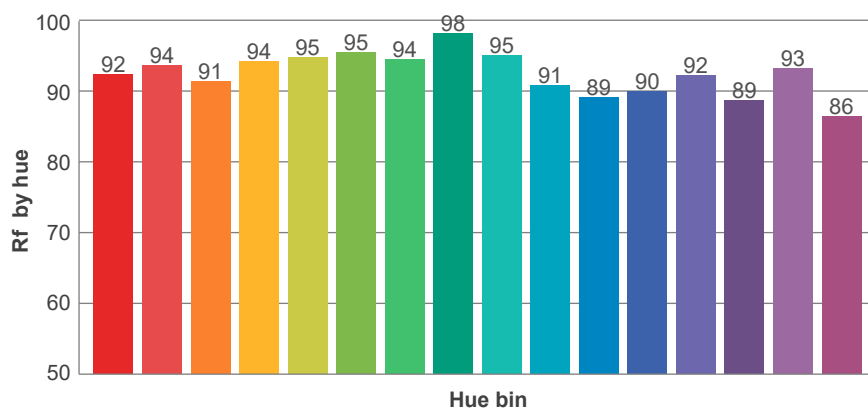
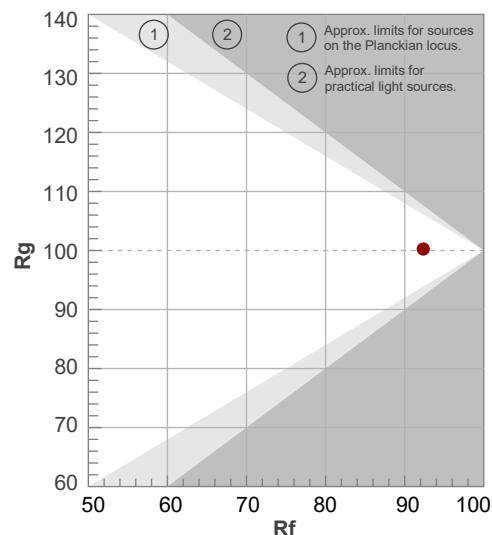
**Rf 92,3**

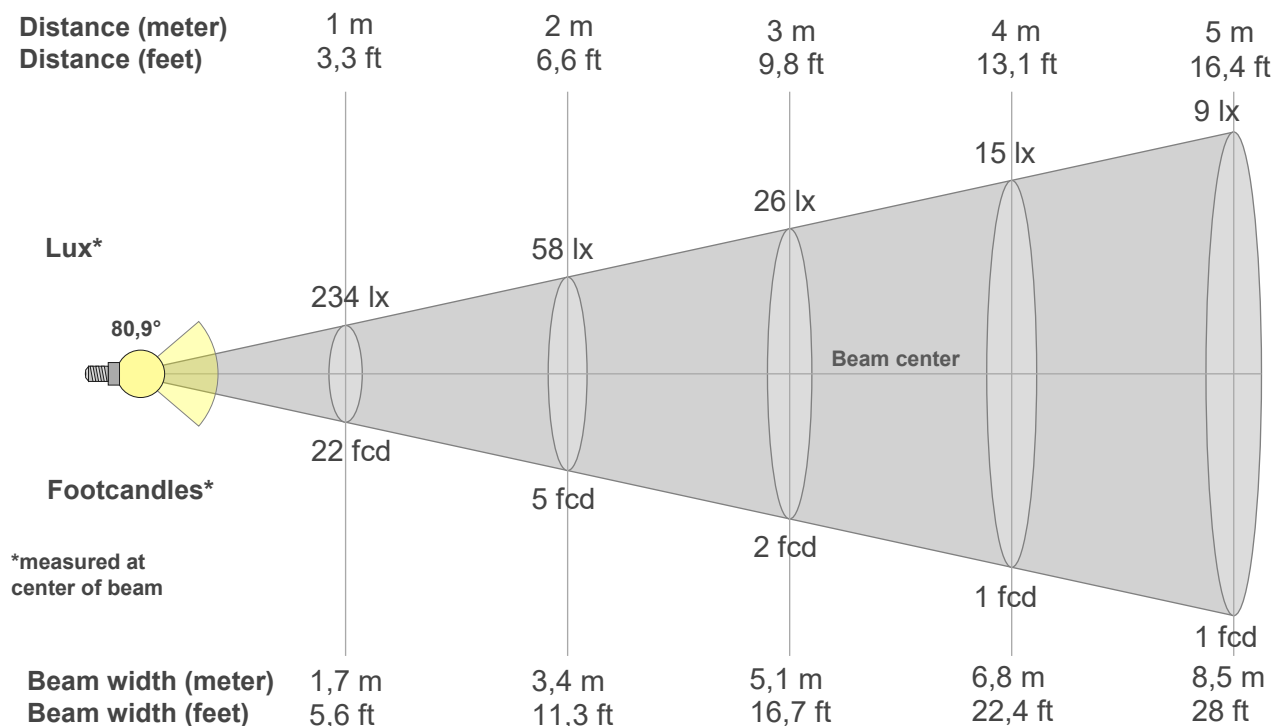
Fidelity index Rf

**Rg 100,2**

Gammut index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	92	-4%	0%
2	94	-3%	2%
3	91	-1%	4%
4	94	-2%	1%
5	95	0%	2%
6	95	2%	1%
7	94	-1%	-2%
8	98	0%	-1%
9	95	-1%	2%
10	91	0%	6%
11	89	2%	8%
12	90	5%	1%
13	92	3%	-5%
14	89	4%	-8%
15	93	-1%	-3%
16	86	-1%	-11%





## 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
234lx	58lx	26lx	15lx	9lx	6lx	5lx	4lx	3lx	2lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx
21,7fcd	5,4fcd	2,4fcd	1,4fcd	0,9fcd	0,6fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,2fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd

## Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
234	254	261	267	283	310	338	381	435	504	533	484	383	281	198	97	57	58	13	0
100%	109%	112%	114%	121%	133%	144%	163%	186%	215%	228%	207%	164%	120%	85%	42%	24%	25%	6%	0%

## Intensities in 90° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
234	234	229	220	210	197	182	166	150	134	118	100	81	62	44	28	15	6	3	0
100%	100%	98%	94%	90%	84%	78%	71%	64%	57%	50%	43%	35%	26%	19%	12%	6%	3%	1%	0%

## Intensities in 180° c-plane

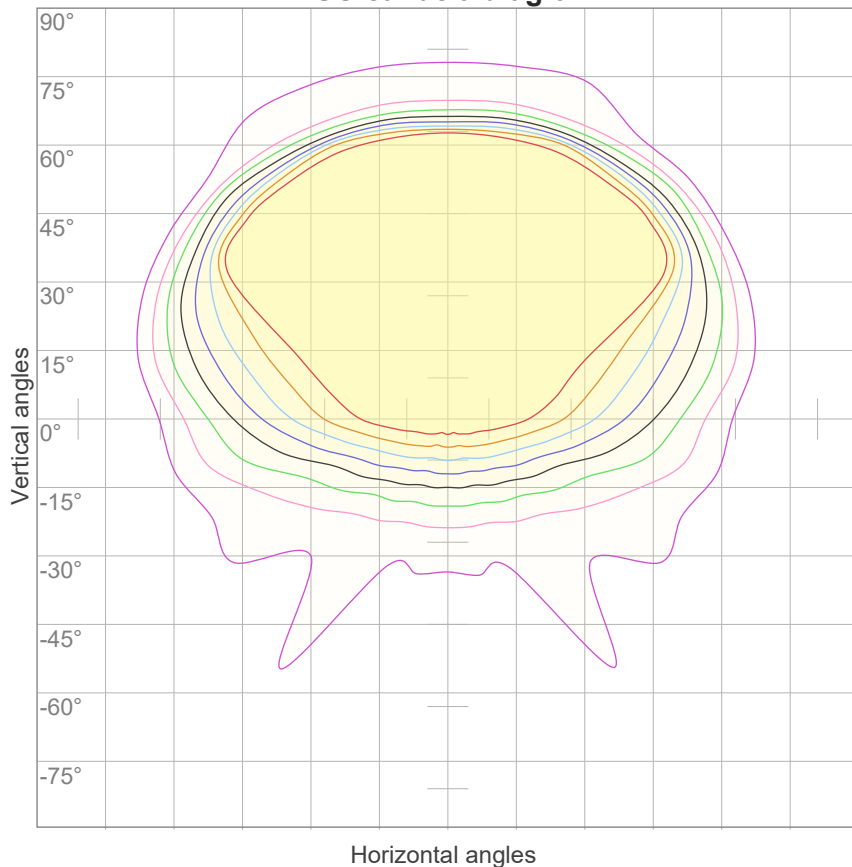
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
234	201	163	128	99	75	56	49	47	53	58	61	65	64	61	47	30	21	18	0
100%	86%	70%	55%	42%	32%	24%	21%	20%	22%	25%	26%	28%	27%	26%	20%	13%	9%	8%	0%

## Intensities in 270° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
234	236	231	224	213	201	187	172	157	141	125	106	87	67	48	31	17	7	1	0
100%	101%	99%	96%	91%	86%	80%	74%	67%	60%	53%	46%	37%	29%	21%	13%	7%	3%	0%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
80,9°	161,7°	178,9°	71,4%	41,9%

## ISO candela diagram



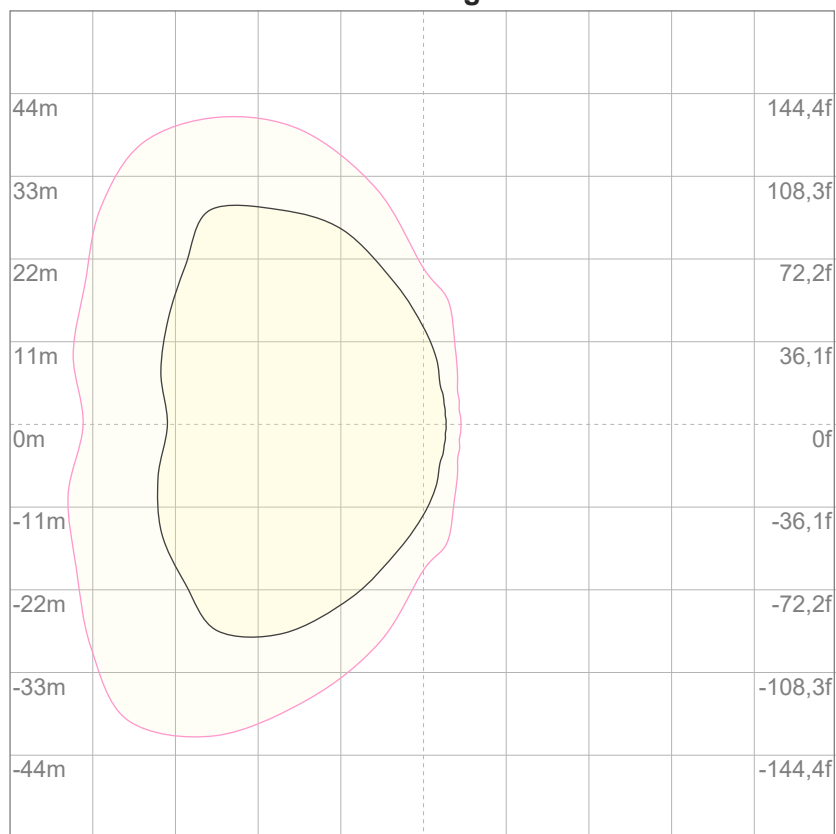
10%	23 cd
20%	47 cd
30%	70 cd
40%	94 cd
50%	117 cd
60%	140 cd
70%	164 cd
80%	187 cd
90%	210 cd

### Conditions:

Number of c-planes: 16

Candela at center: 234 cd

## ISO lux diagram



3%	70,2m lx
5%	0,117 lx
10%	0,234 lx
30%	0,702 lx
50%	1,17 lx

### Conditions:

Number of c-planes: 16

Lux at center: 2,34 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				
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Variation of the observer position for the luminaire distance S										
n/a	n/a					n/a				
n/a	n/a					n/a				
n/a	n/a					n/a				
Standard table	n/a					n/a				
Correction summand	n/a					n/a				
Corrected glare indices referring to 829 lm total luminous flux										

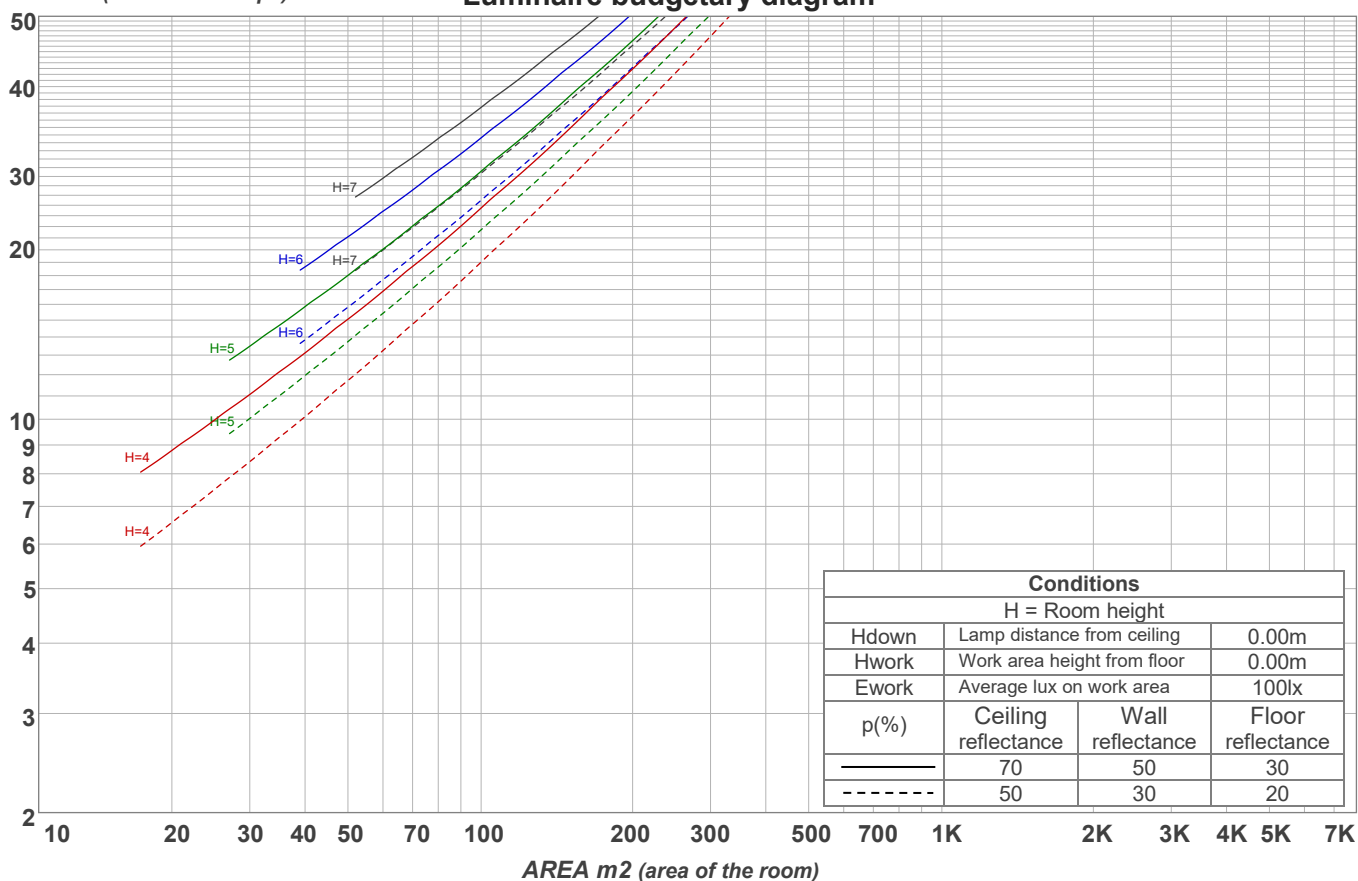
UGR data could not be calculated due to missing/wrong symmetry. Goto Edit->Photometric->Corrections and select Correct asymmetry.

## 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	107	102	97	92	104	99	95	91	95	91	88	91	88	85	87	85	82	80
2	96	87	79	73	93	85	78	72	81	75	70	78	73	68	75	71	67	65
3	87	75	66	59	84	73	65	58	70	63	57	67	61	56	65	59	55	53
4	79	65	56	48	76	64	55	48	61	54	47	59	52	47	57	51	46	44
5	72	58	48	41	70	57	47	40	54	46	40	52	45	39	50	44	39	37
6	66	51	42	35	64	50	41	35	49	40	34	47	40	34	45	39	34	31
7	61	46	37	30	59	45	36	30	44	36	30	42	35	30	41	34	29	27
8	56	42	33	27	55	41	33	26	40	32	26	39	31	26	37	31	26	24
9	53	38	30	24	51	38	29	24	36	29	23	35	28	23	34	28	23	21
10	49	35	27	21	48	35	27	21	34	26	21	33	26	21	32	25	21	19

LAMPS (number of lamps)

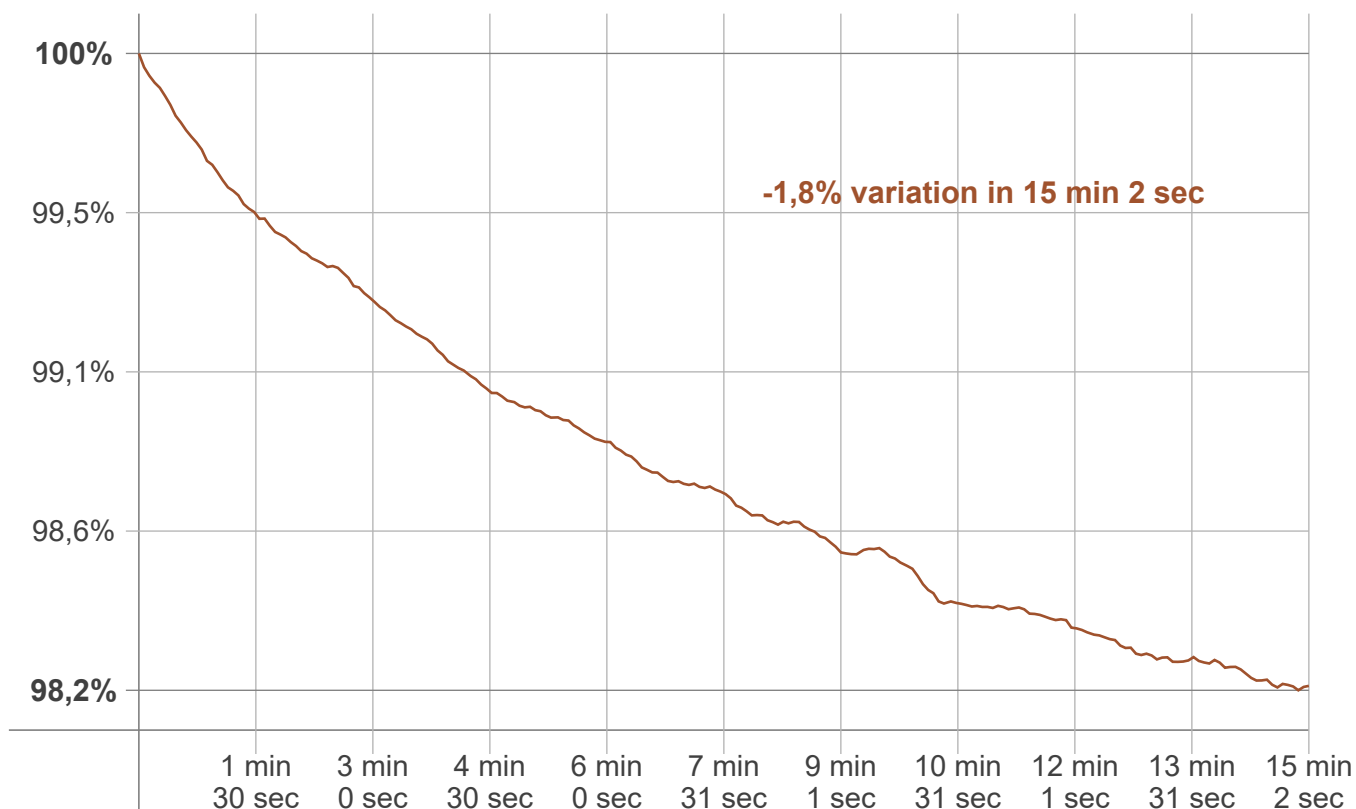
## Luminaire budgetary diagram



## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
21,6 lm	58,1 lm	86,4 lm	113 lm	147 lm	167 lm	134 lm	72,4 lm	30,3 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,055 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:	Lamp stabilized in 15 min 2 sec
Warmup variation	-1,8%

## Warmup conditions

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

## Color temperature change

CCT start	CCT change	CCT end
2736 K	-6 K	2730 K

## Output change

Output start	Output change	Output end
843 lm	-14 lm	829 lm