

Light efficiency:

86 Lumen/Watt

Light quality:

CRI: 96,0

Color temperature:

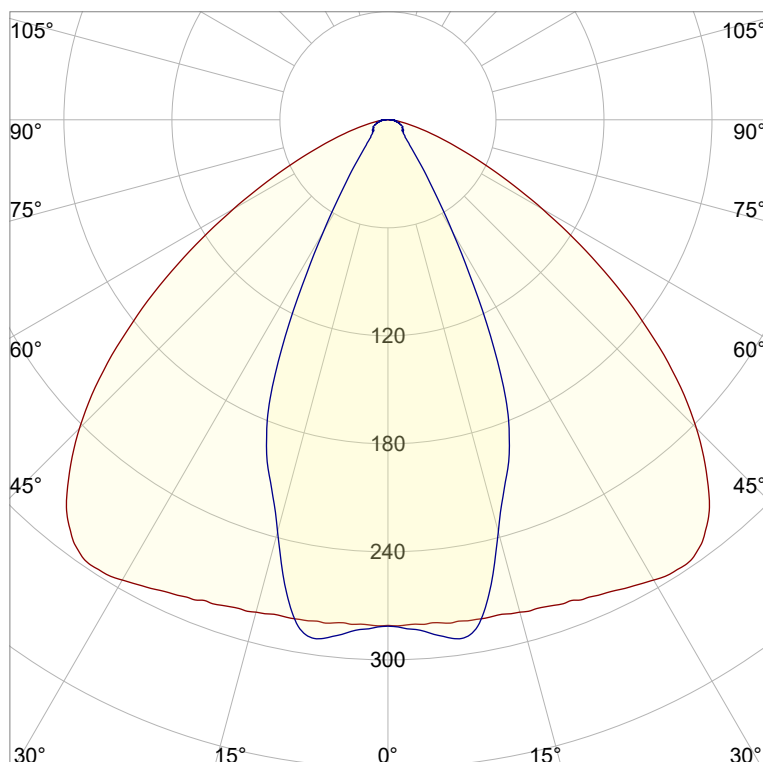
2753 K

Output: 391 lm

Peak: 297 cd

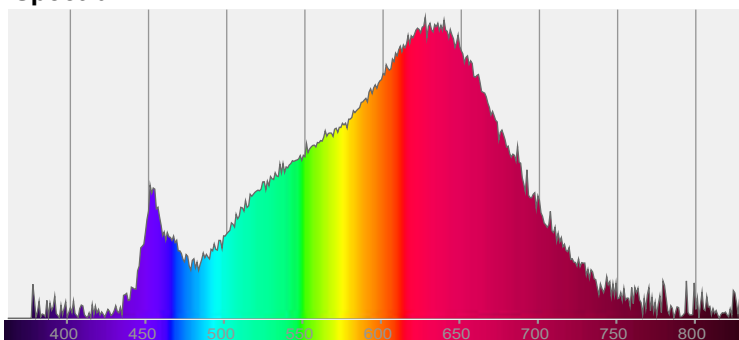
Power: 4,6 W

PF: 1,0



CIE 1931  
x: 0,455  
y: 0,409

Spectra



Power

Voltage: 24,0 V  
Current: 0,190 A  
Frequency: 0 Hz

Product name:

Horizon\_510mm\_927\_Inlay-Lens-30-  
Grad-Frosted\_Cover-Sqare-Transparent

Item number:

NNP/L/01A/0510//927/L3F/CST

Date and time:

17.06.2020 16:03:24

Description:

Rank: G08DW

Toleranzen:

Lumen +/-4%

Candela +/-2,5%

Colour Temp +/-35 K

CRI +/-0,7

Angular Resolution 1 Grad Step

Last Calibration 07.10.2025

Pruefer:

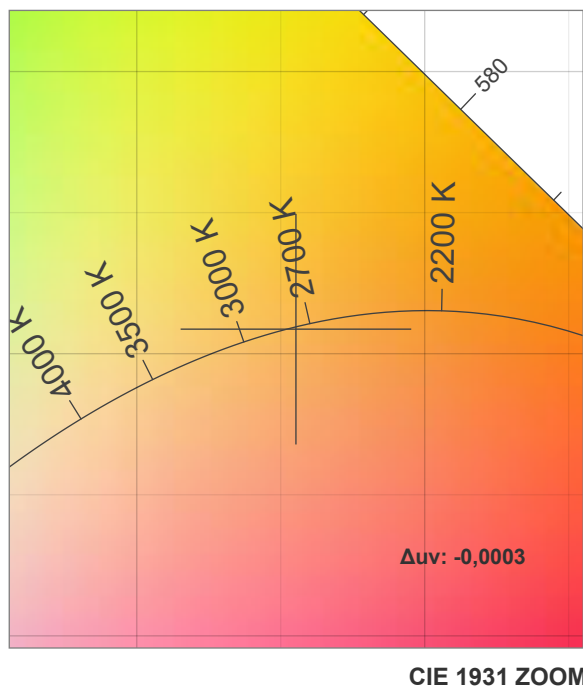
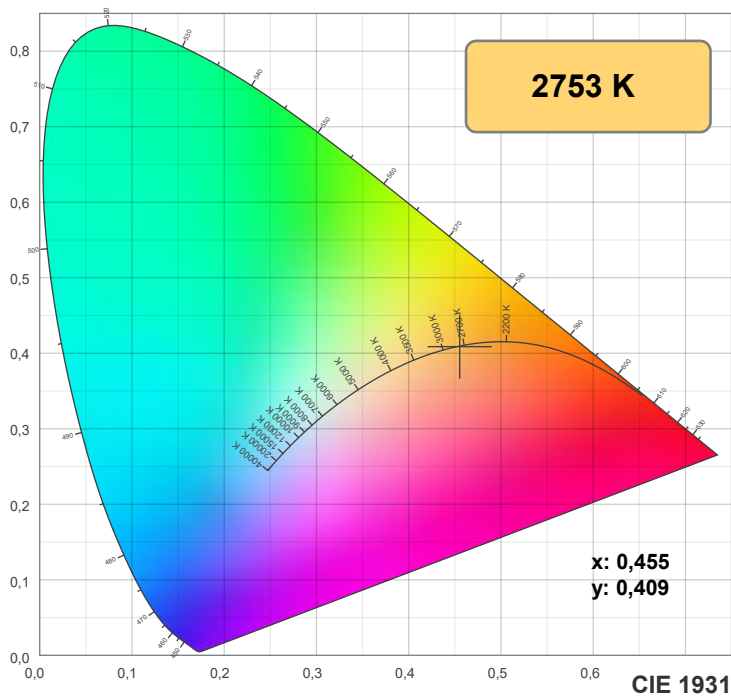
Peter Ulrich

Pruefort:

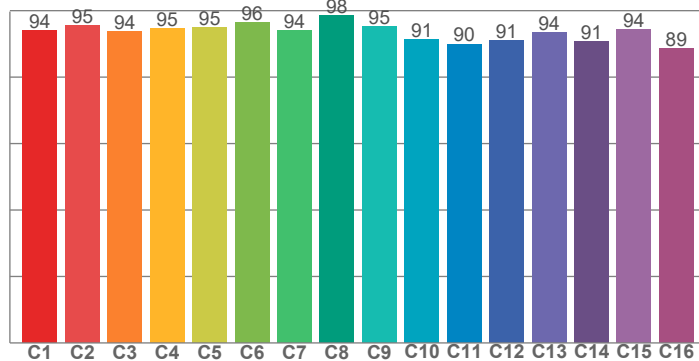
Lichtlabor

Gaustasse13

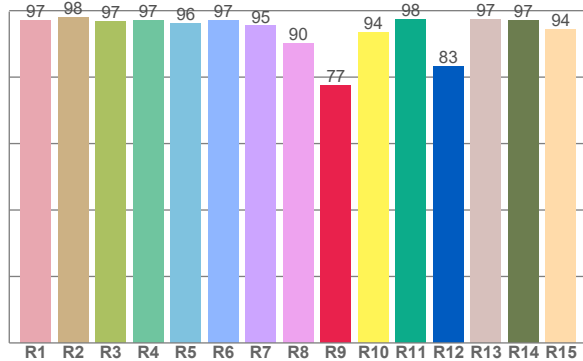
55411 Bingen am Rhein



**TM30: 93,5**



**CRI: 96,0 (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
97,1	98,0	96,8	97,0	96,3	97,1	95,4	90,1	77,4	93,5	97,5	83,3	97,5	97,1	94,2

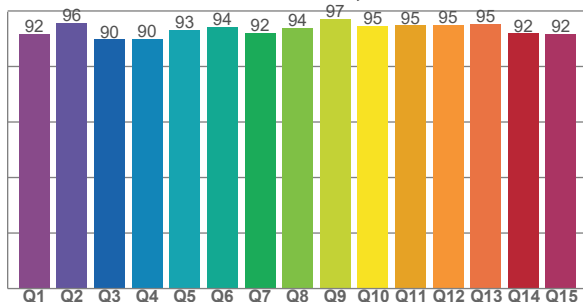
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
94,1	95,4	93,6	94,6	95,0	96,5	94,2	98,5	95,2	91,2	90,0	91,1	93,5	90,8	94,2	88,5

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
91,8	95,7	89,8	89,9	93,2	94,3	92,2	93,8	97,0	94,7	94,8	95,1	95,2	91,9	91,8

**CQS: 93,0**



## 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
2753 K	96,0	77,4	93,5	100,1	93,0	0,455	0,409	0,260	0,351	-0,0003

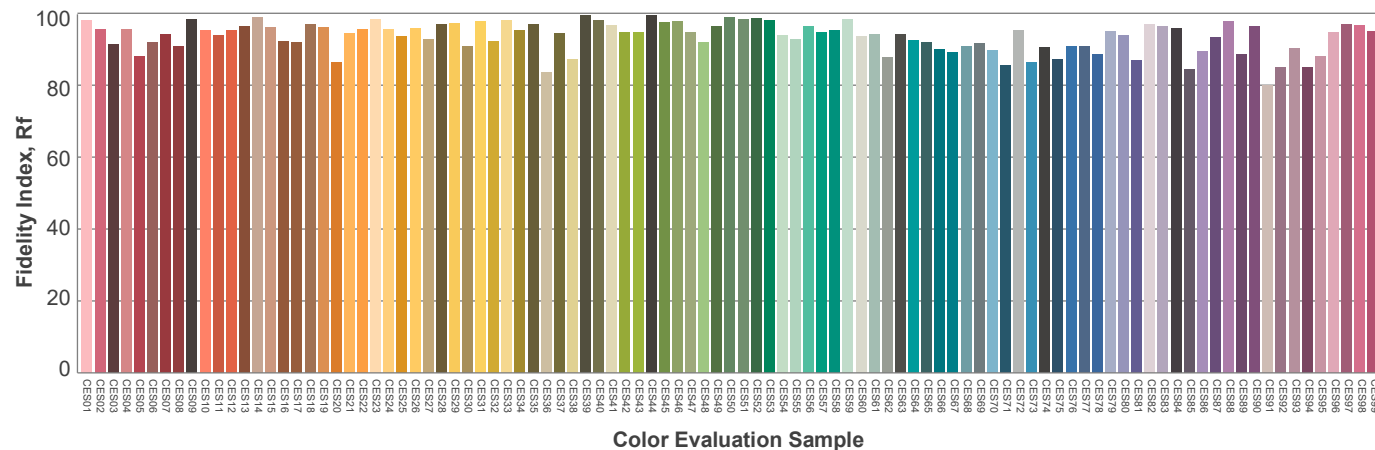
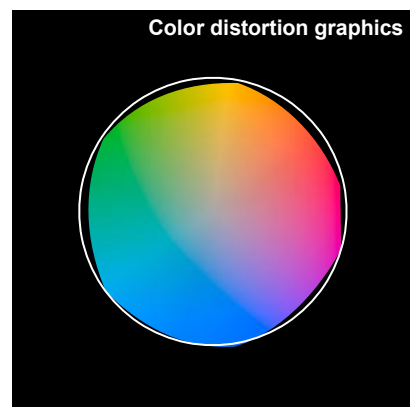
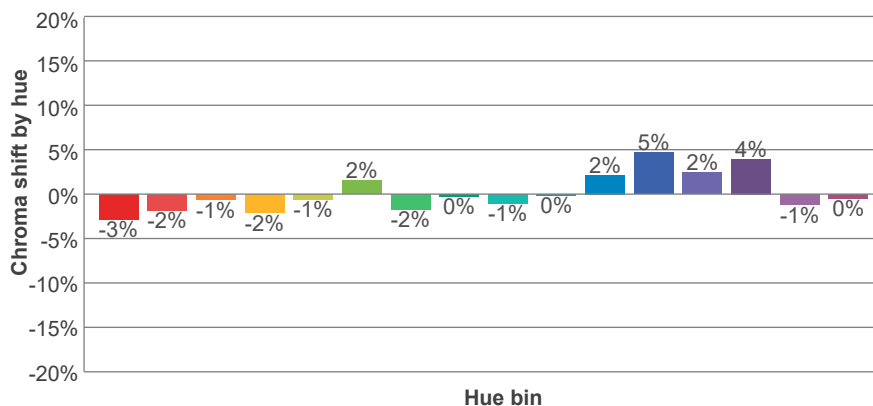
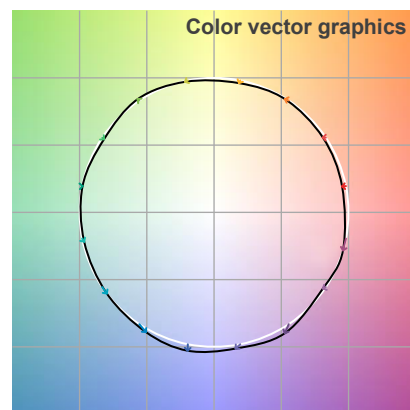
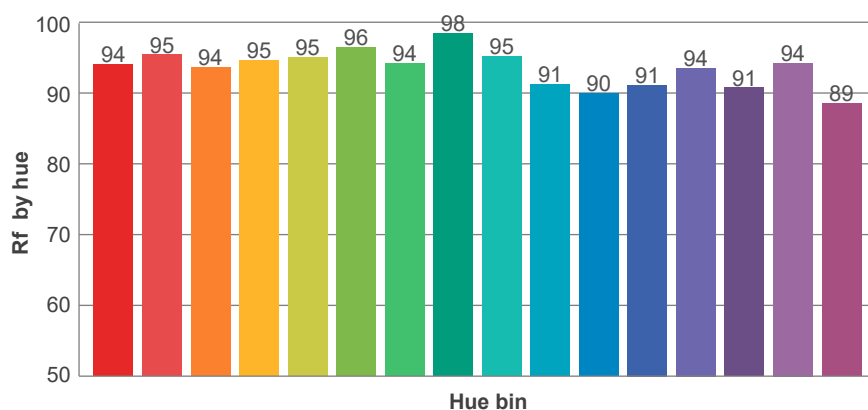
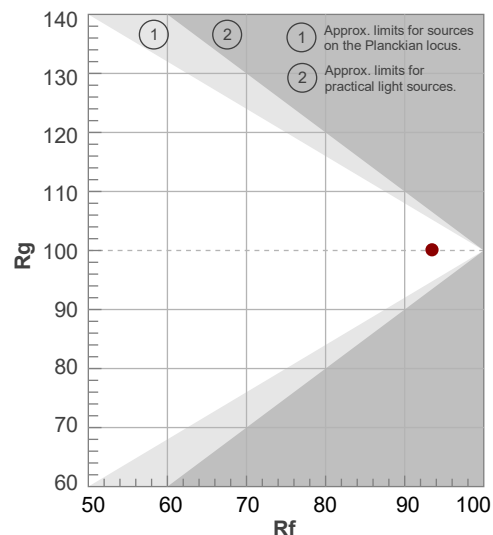
**Rf 93,5**

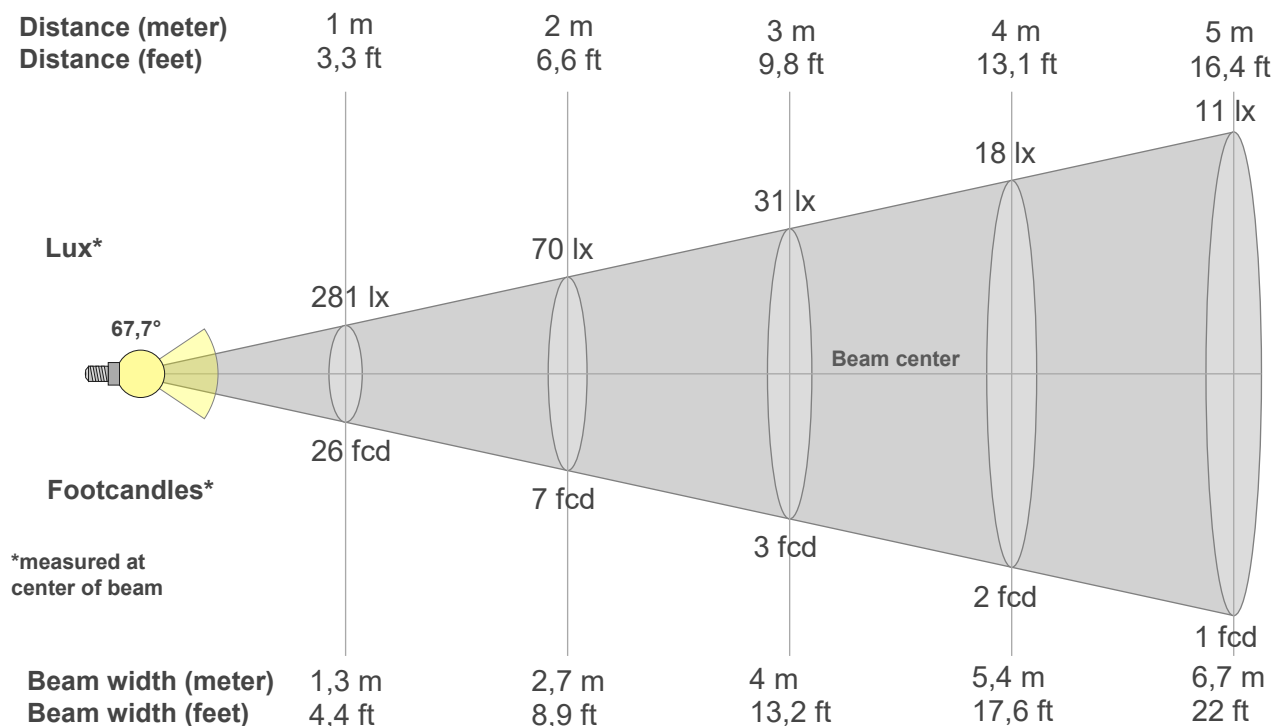
Fidelity index Rf

**Rg 100,1**

Gammut index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	94	-3%	0%
2	95	-2%	1%
3	94	-1%	3%
4	95	-2%	1%
5	95	-1%	2%
6	96	2%	1%
7	94	-2%	0%
8	98	0%	0%
9	95	-1%	3%
10	91	0%	6%
11	90	2%	7%
12	91	5%	1%
13	94	2%	-4%
14	91	4%	-6%
15	94	-1%	-2%
16	89	0%	-9%





## 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
281lx	70lx	31lx	18lx	11lx	8lx	6lx	4lx	3lx	3lx	2lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx
26,1fcd	6,5fcd	2,9fcd	1,6fcd	1fcd	0,7fcd	0,5fcd	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

## 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°
281	281	281	281	281	282	282	283	284	284	286	287	289	291	293	295	297	297	294	287
100%	100%	100%	100%	100%	100%	100%	101%	101%	101%	102%	102%	103%	103%	104%	105%	106%	106%	105%	102%

## 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°
281	283	285	288	291	286	270	248	227	211	197	179	153	124	95	72	54	41	32	25
100%	101%	101%	103%	103%	102%	96%	88%	81%	75%	70%	64%	54%	44%	34%	25%	19%	15%	11%	9%

## Intensities in 180° c-plane

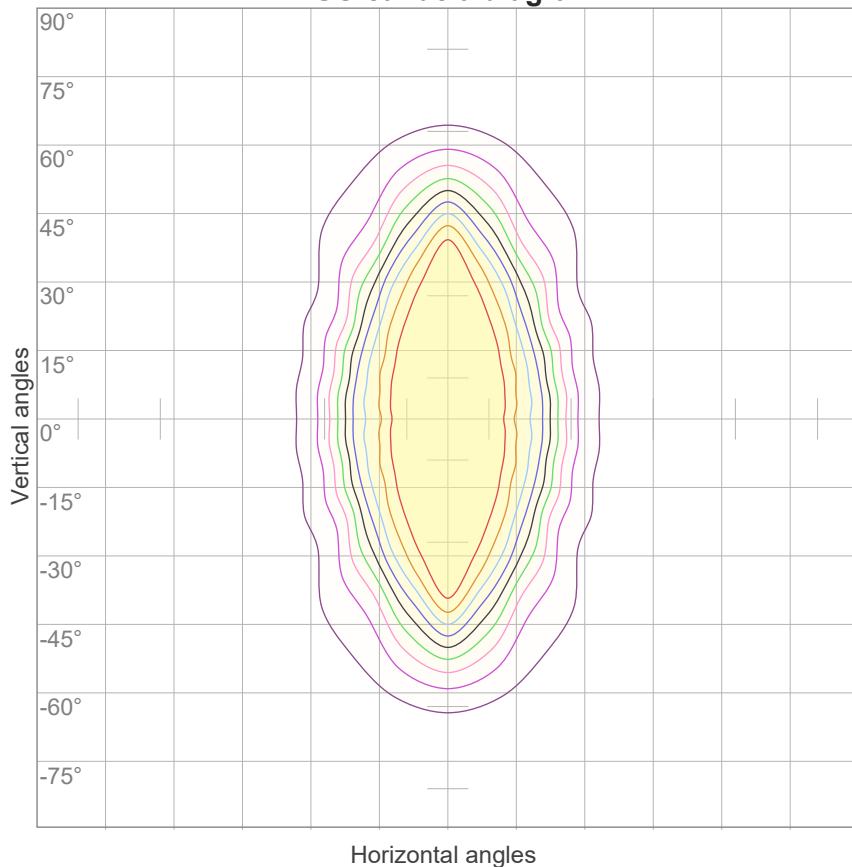
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
281	281	281	281	281	282	282	283	284	284	286	287	289	291	293	295	297	297	294	287
100%	100%	100%	100%	100%	100%	100%	101%	101%	101%	102%	102%	103%	103%	104%	105%	106%	106%	105%	102%

## 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°
281	283	285	288	291	286	270	248	227	211	197	179	153	124	95	72	54	41	32	25
100%	101%	101%	103%	103%	102%	96%	88%	81%	75%	70%	64%	54%	44%	34%	25%	19%	15%	11%	9%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
67,7°	98,9°	143,2°	91,7%	77,4%

### ISO candela diagram



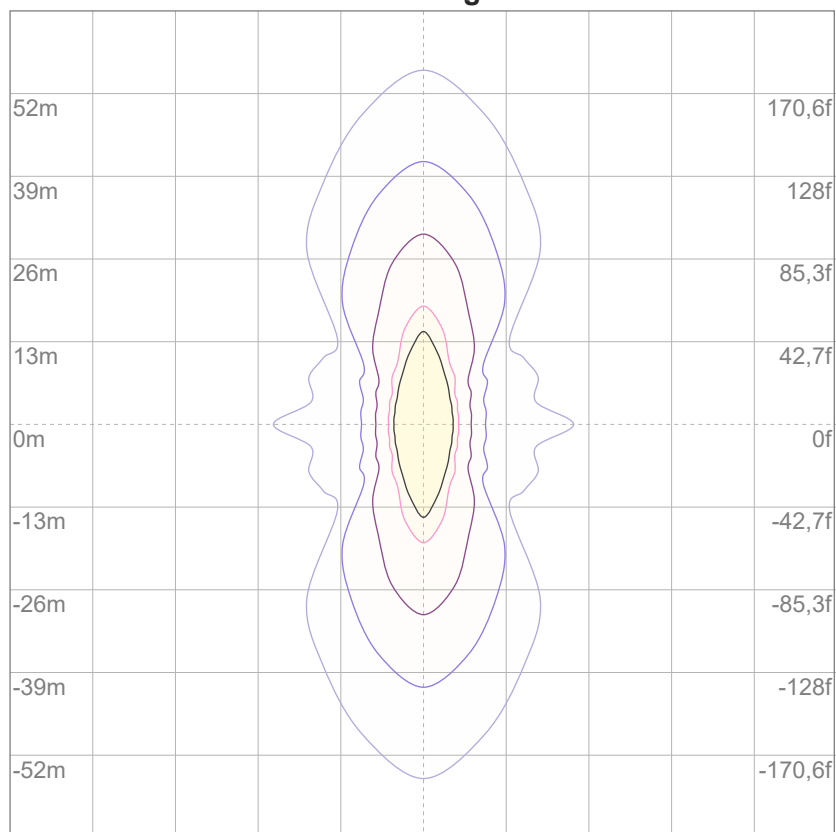
10%	28 cd
20%	56 cd
30%	84 cd
40%	112 cd
50%	141 cd
60%	169 cd
70%	197 cd
80%	225 cd
90%	253 cd

#### Conditions:

Number of c-planes: 16

Candela at center: 281 cd

### ISO lux diagram



3%	84,3m lx
5%	0,141 lx
10%	0,281 lx
30%	0,843 lx
50%	1,41 lx

#### Conditions:

Number of c-planes: 16

Lux at center: 2,81 lx

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

### Glare Evaluation According to UGR

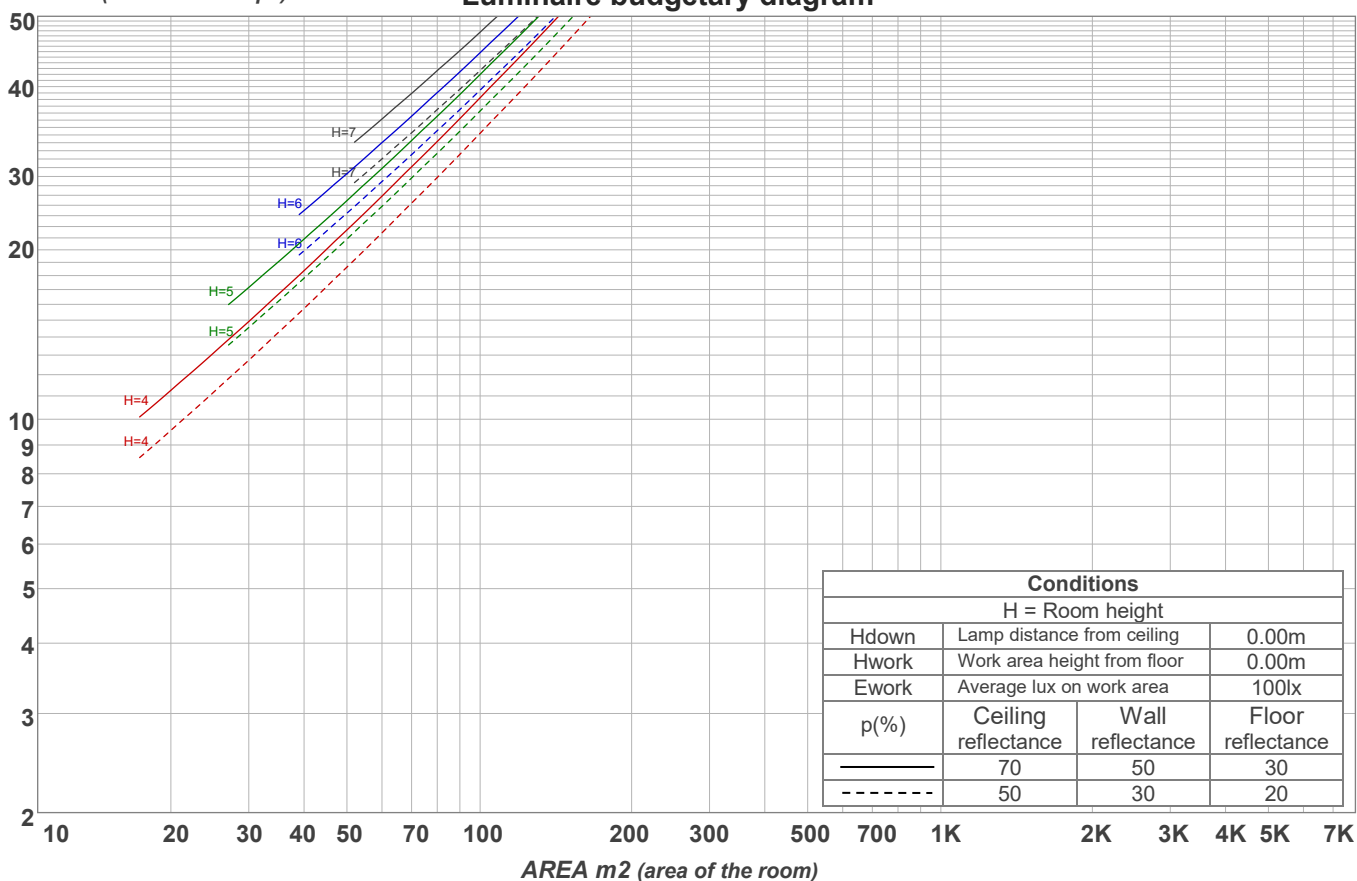
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X      Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	22,9	23,8	23,1	24,1	24,3	11,2	12,1	11,3	12,3	12,5
	3H	23,3	24,3	23,7	24,5	24,7	12,5	13,4	12,9	13,7	13,9
	4H	23,4	24,3	23,8	24,6	24,8	13,2	14,2	13,6	14,4	14,6
	6H	23,5	24,3	23,8	24,6	24,9	14,0	14,8	14,3	15,1	15,4
	8H	23,5	24,2	23,8	24,5	24,9	14,4	15,1	14,7	15,5	15,9
	12H	23,4	24,2	23,8	24,5	24,9	14,9	15,6	15,2	16,0	16,4
4H	2H	22,6	23,5	23,0	23,8	24,0	12,0	12,9	12,4	13,1	13,4
	3H	23,2	23,9	23,6	24,3	24,7	13,4	14,1	13,7	14,5	14,9
	4H	23,3	24,0	23,7	24,4	24,9	14,1	14,8	14,5	15,2	15,7
	6H	23,3	24,0	23,8	24,3	24,7	14,8	15,5	15,3	15,9	16,2
	8H	23,3	23,9	23,8	24,3	24,7	15,3	15,9	15,8	16,3	16,7
	12H	23,3	23,8	23,8	24,2	24,7	15,9	16,4	16,4	16,8	17,3
8H	4H	23,2	23,8	23,7	24,1	24,5	14,3	14,9	14,8	15,3	15,7
	6H	23,2	23,7	23,8	24,2	24,7	15,2	15,7	15,7	16,1	16,7
	8H	23,3	23,7	23,8	24,2	24,8	15,8	16,2	16,3	16,7	17,3
	12H	23,3	23,6	23,9	24,1	24,7	16,5	16,8	17,0	17,3	17,9
12H	4H	23,1	23,6	23,6	24,0	24,5	14,3	14,8	14,8	15,2	15,7
	6H	23,3	23,6	23,8	24,1	24,8	15,3	15,7	15,8	16,2	16,8
	8H	23,2	23,6	23,8	24,1	24,7	15,8	16,2	16,4	16,7	17,3
Variation of the observer position for the luminaire distance S											
S = 1.0H		1,3 / -1,7					0,6 / -0,4				
S = 1.5H		3,1 / -3,7					1,2 / -0,5				
S = 2.0H		4,7 / -5,5					1,5 / -0,8				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 391 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	99
1	111	108	105	102	109	106	103	100	101	99	97	97	95	94	94	92	91	89
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79
3	97	89	83	77	95	87	81	77	84	80	75	82	78	74	79	76	73	71
4	91	81	74	69	89	80	73	68	78	72	68	75	71	67	73	69	66	64
5	85	75	67	62	83	74	67	62	72	66	61	70	64	60	68	63	60	58
6	80	69	61	56	78	68	61	56	66	60	56	65	59	55	63	58	55	53
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	48
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45
9	67	55	48	44	65	55	48	44	54	48	43	53	47	43	52	47	43	41
10	63	52	45	40	62	51	45	40	50	44	40	49	44	40	49	44	40	38

LAMPS (number of lamps)

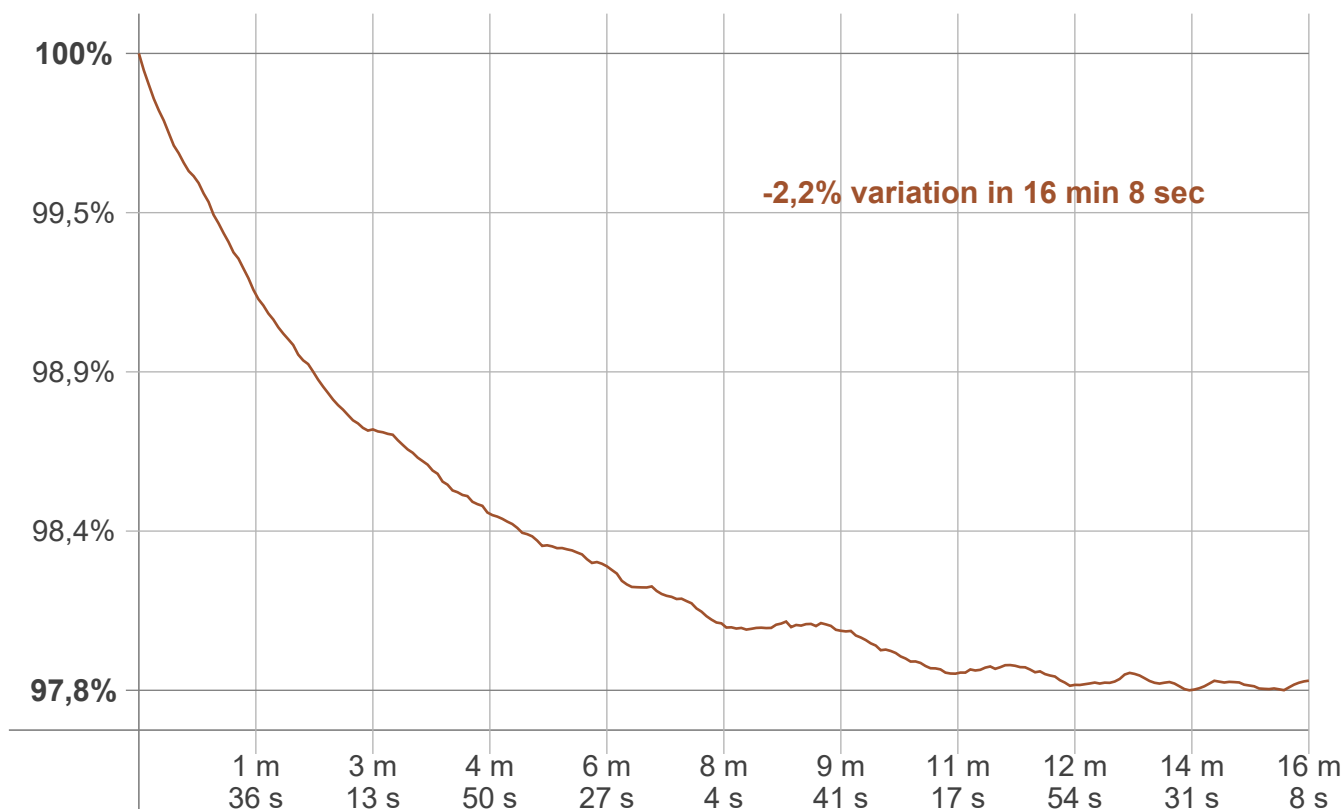
Luminaire budgetary diagram



## Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
27,3 lm	75,6 lm	94,0 lm	76,8 lm	52,5 lm	32,8 lm	18,2 lm	8,42 lm	3,42 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
1,01 lm	0,297 lm	0,239 lm	0,216 lm	0,186 lm	0,151 lm	0,111 lm	0,068 lm	0,023 lm

## Warmup curve



## Warmup result

Warmup time:	Lamp stabilized in 16 min 8 sec
Warmup variation	-2,2%

## Warmup conditions

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

## Color temperature change

CCT start	CCT change	CCT end
2758 K	-5 K	2753 K

## Output change

Output start	Output change	Output end
401 lm	-10 lm	391 lm