

Light efficiency:

91 Lumen/Watt

Light quality:

CRI: 96,0

Color temperature:

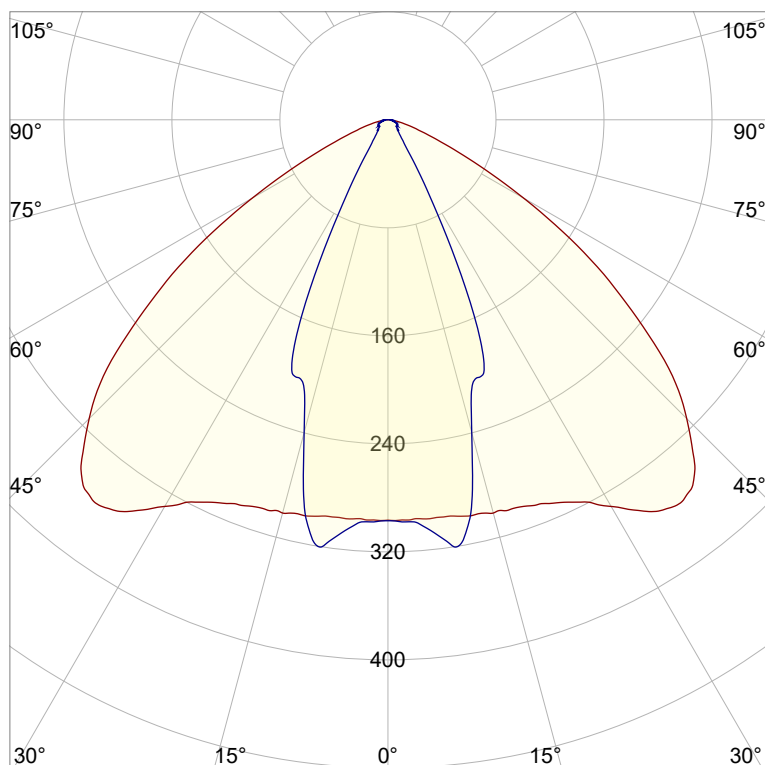
2761 K

Output: 393 lm

Peak: 357 cd

Power: 4,3 W

PF: 1,0



CIE 1931
x: 0,453
y: 0,406

Product name:

Horizon_510mm_927_Inlay-Lens-30-Grad-Transparent_Cover-Square-Transparent

Item number:

NNP/L/01A/0510//927/L3T/CST

Date and time:

17.06.2020 15:31:25

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

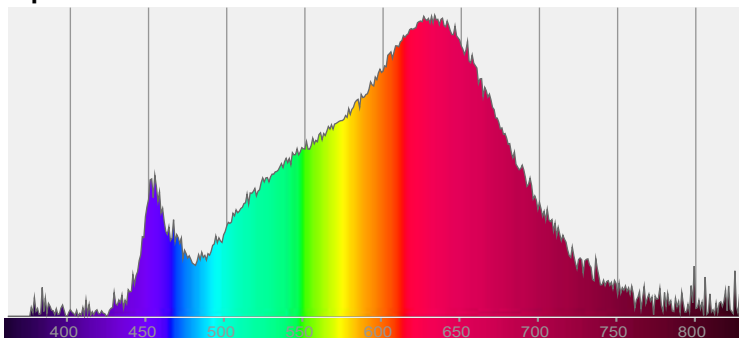
Pruefort:

Lichtlabor

Gaustrasse13

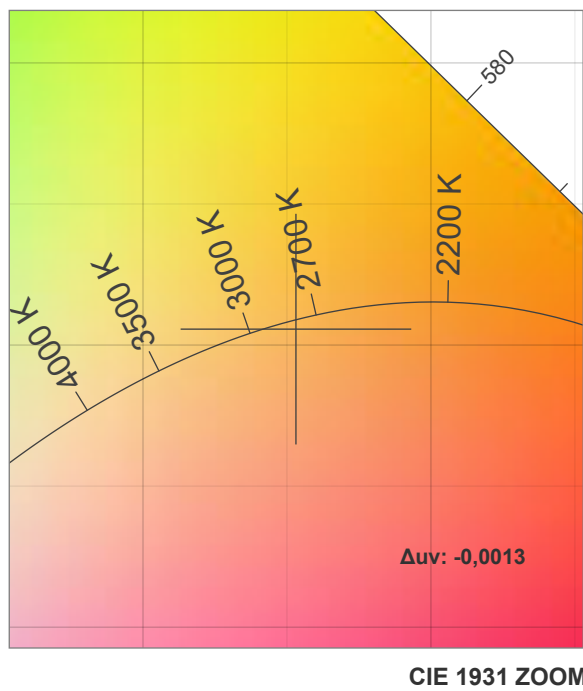
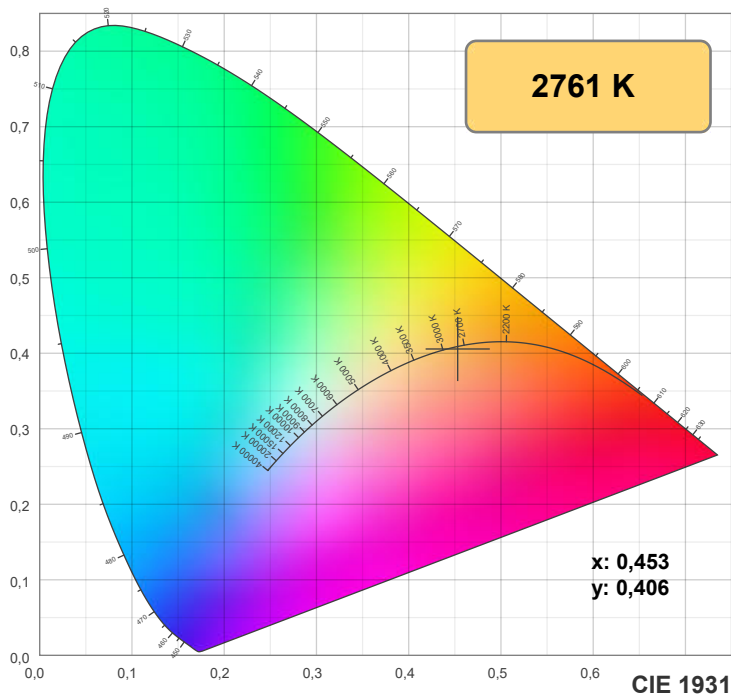
55411 Bingen am Rhein

Spectra

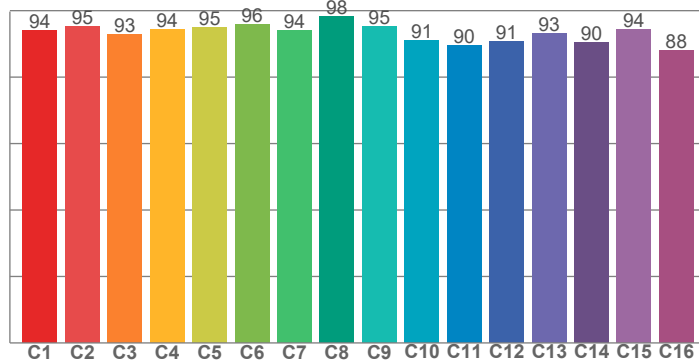


Power

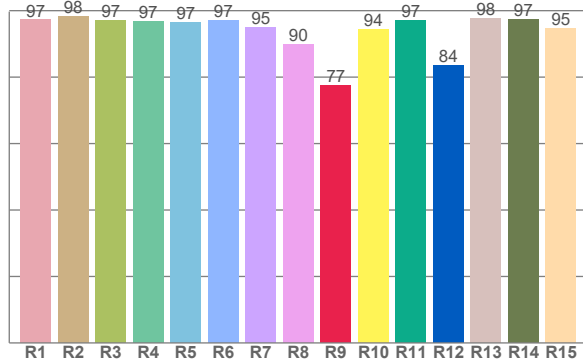
Voltage: 24,0 V
Current: 0,180 A
Frequency: 0 Hz



TM30: 93,2



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
97,2	98,4	97,1	96,7	96,6	97,0	94,9	89,8	77,5	94,3	97,1	83,7	97,8	97,3	94,7

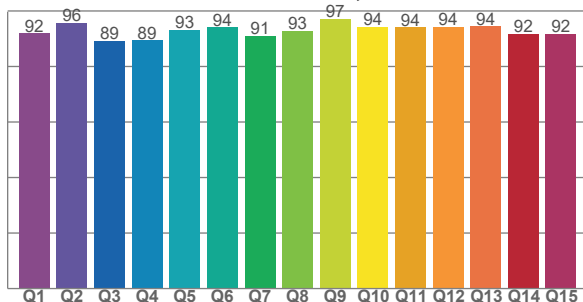
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
94,0	95,1	92,9	94,4	94,8	95,9	94,0	98,3	95,3	91,1	89,6	90,7	93,3	90,3	94,3	88,1

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
91,9	95,8	89,2	89,4	93,1	94,0	91,1	92,9	97,2	94,3	94,1	94,2	94,4	91,8	91,7

CQS: 92,6



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
2761 K	96,0	77,5	93,2	100,6	92,6	0,453	0,406	0,260	0,350	-0,0013

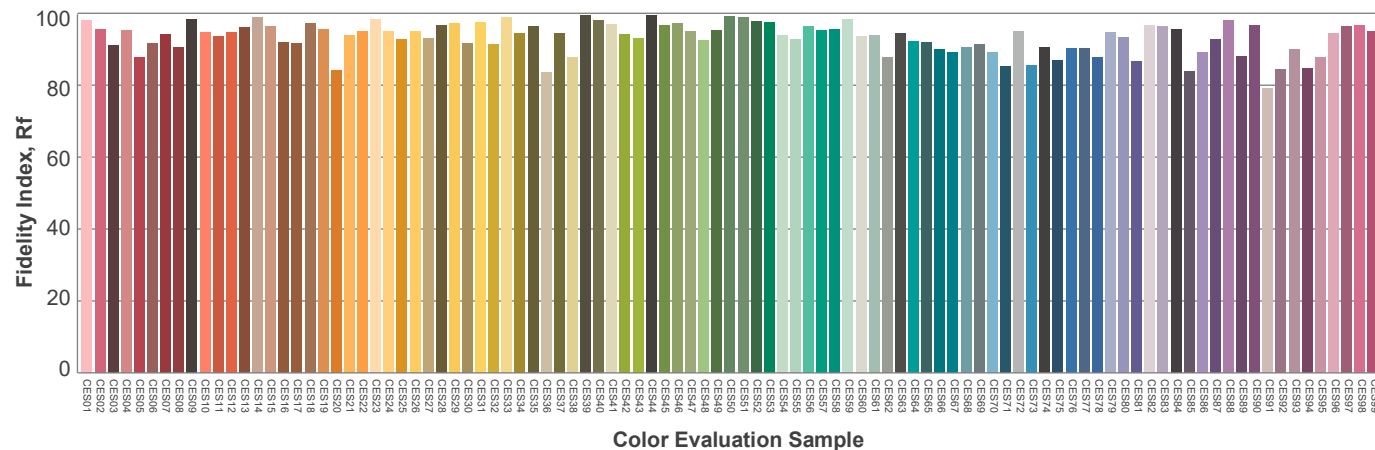
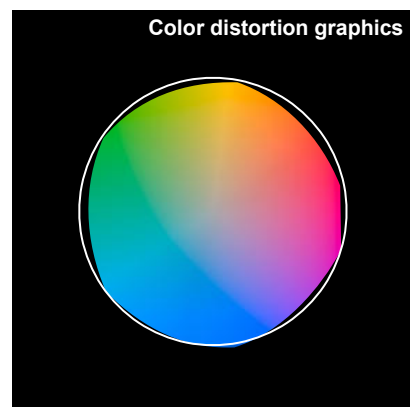
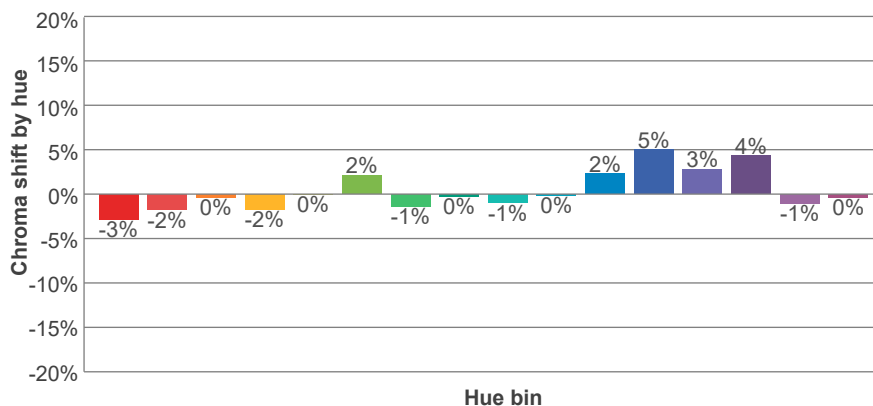
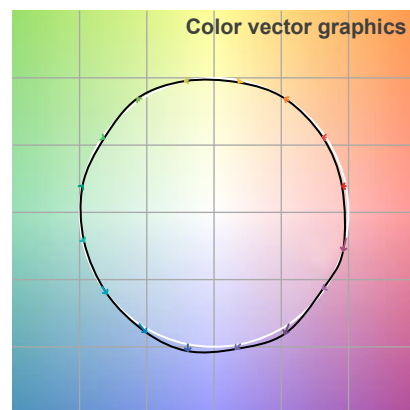
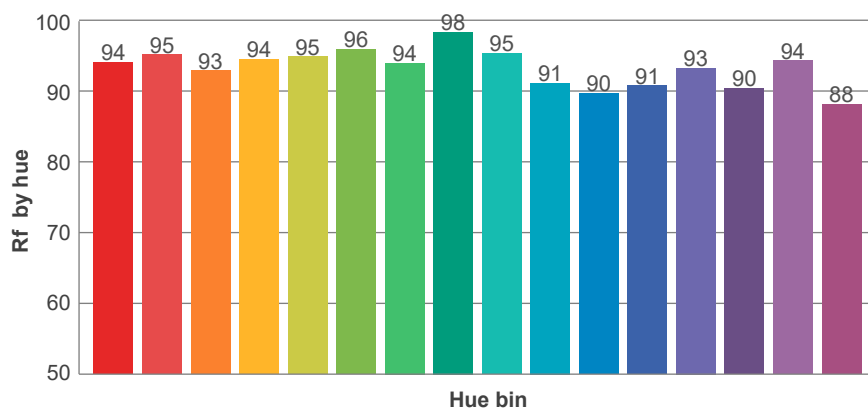
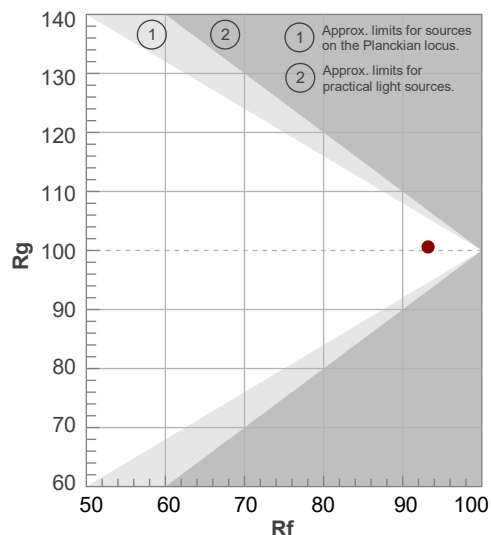
Rf 93,2

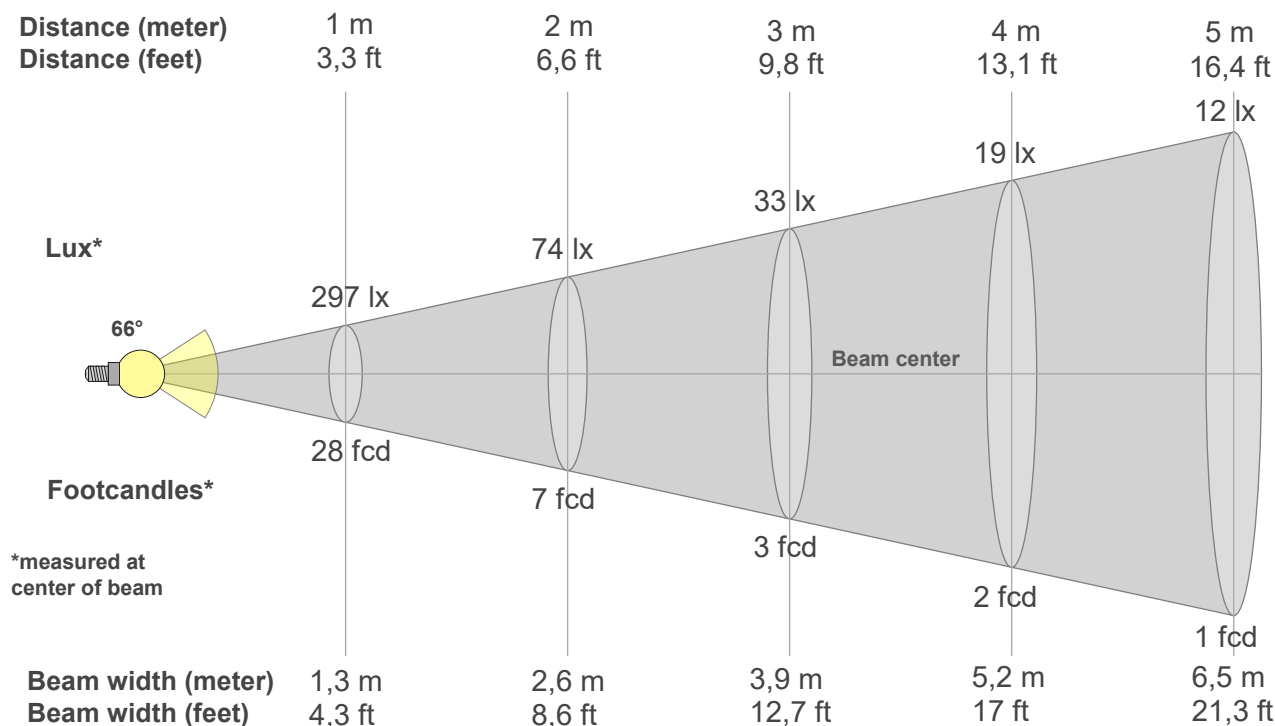
Fidelity index Rf

Rg 100,6

Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-3%	0%
2	95	-2%	2%
3	93	0%	3%
4	94	-2%	1%
5	95	0%	2%
6	96	2%	0%
7	94	-1%	0%
8	98	0%	-1%
9	95	-1%	2%
10	91	0%	6%
11	90	2%	8%
12	91	5%	1%
13	93	3%	-4%
14	90	4%	-6%
15	94	-1%	-2%
16	88	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
297lx	74lx	33lx	19lx	12lx	8lx	6lx	5lx	4lx	3lx	2lx	2lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx
27,6fcd	6,9fcd	3,1fcd	1,7fcd	1,1fcd	0,8fcd	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

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°
297	297	296	297	297	298	300	300	301	302	304	307	310	315	321	331	341	350	355	356
100%	100%	100%	100%	100%	101%	101%	101%	102%	102%	103%	103%	105%	106%	108%	111%	115%	118%	120%	120%

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°
297	298	299	306	315	317	296	258	224	205	202	188	153	111	75	51	33	23	18	15
100%	100%	101%	103%	106%	107%	100%	87%	76%	69%	68%	63%	52%	38%	25%	17%	11%	8%	6%	5%

Intensities in 180° c-plane

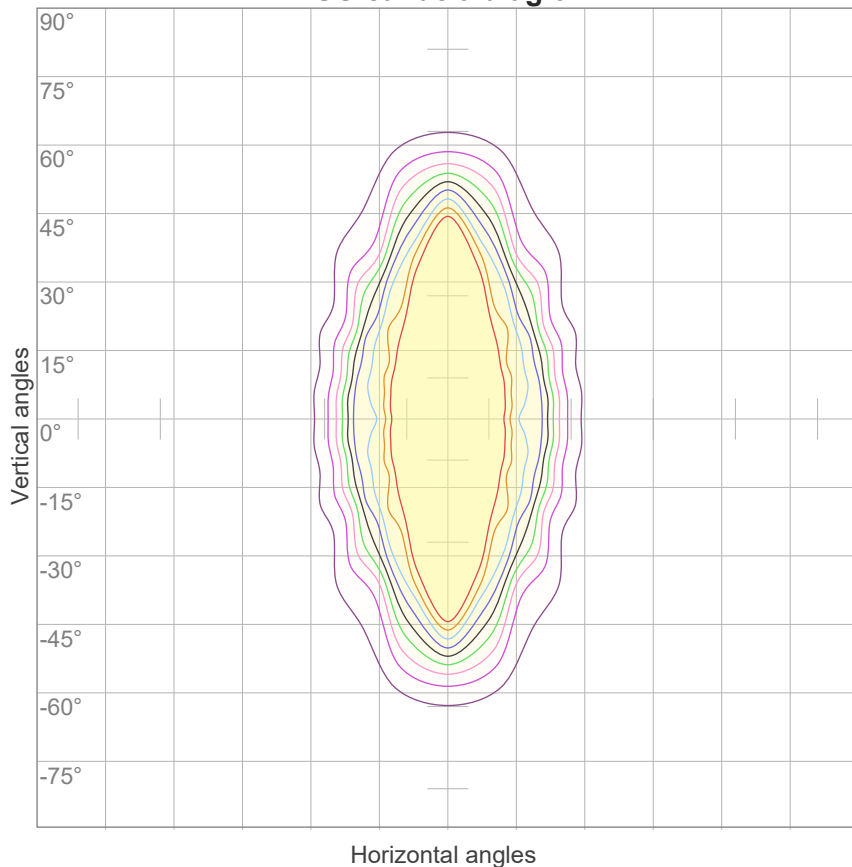
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
297	297	296	297	297	298	300	300	301	302	304	307	310	315	321	331	341	350	355	356
100%	100%	100%	100%	100%	101%	101%	101%	102%	102%	103%	103%	105%	106%	108%	111%	115%	118%	120%	120%

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°
297	298	299	306	315	317	296	258	224	205	202	188	153	111	75	51	33	23	18	15
100%	100%	101%	103%	106%	107%	100%	87%	76%	69%	68%	63%	52%	38%	25%	17%	11%	8%	6%	5%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
66°	88°	126,5°	93,1%	79,1%

ISO candela diagram



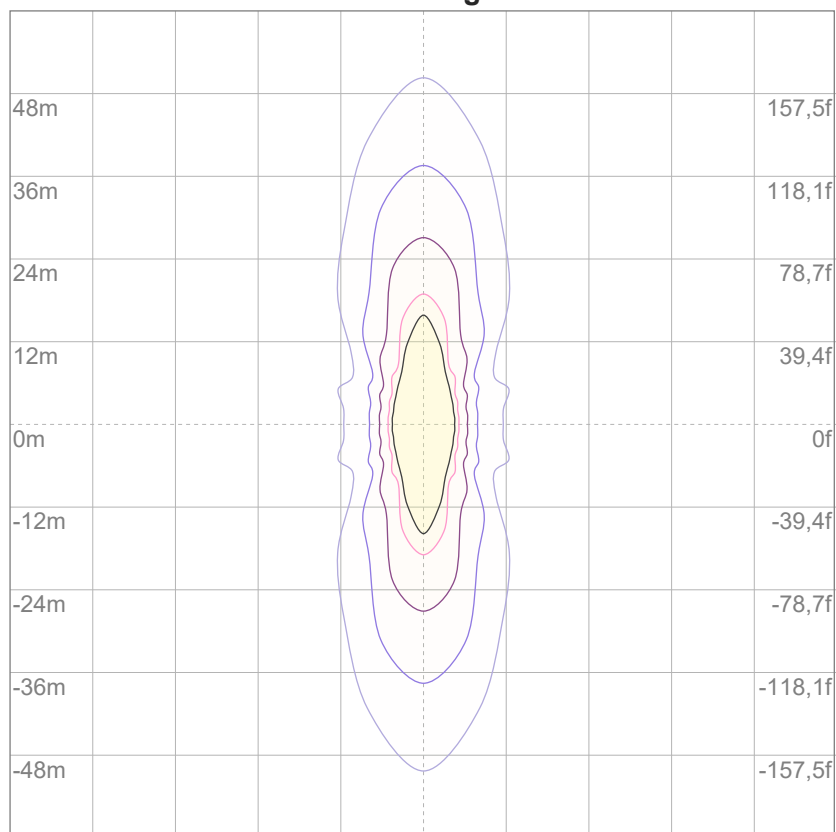
10%	30 cd
20%	59 cd
30%	89 cd
40%	119 cd
50%	148 cd
60%	178 cd
70%	208 cd
80%	237 cd
90%	267 cd

Conditions:

Number of c-planes: 16

Candela at center: 297 cd

ISO lux diagram



3%	89,0m lx
5%	0,148 lx
10%	0,297 lx
30%	0,890 lx
50%	1,48 lx

Conditions:

Number of c-planes: 16

Lux at center: 2,97 lx

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

Glare Evaluation According to UGR

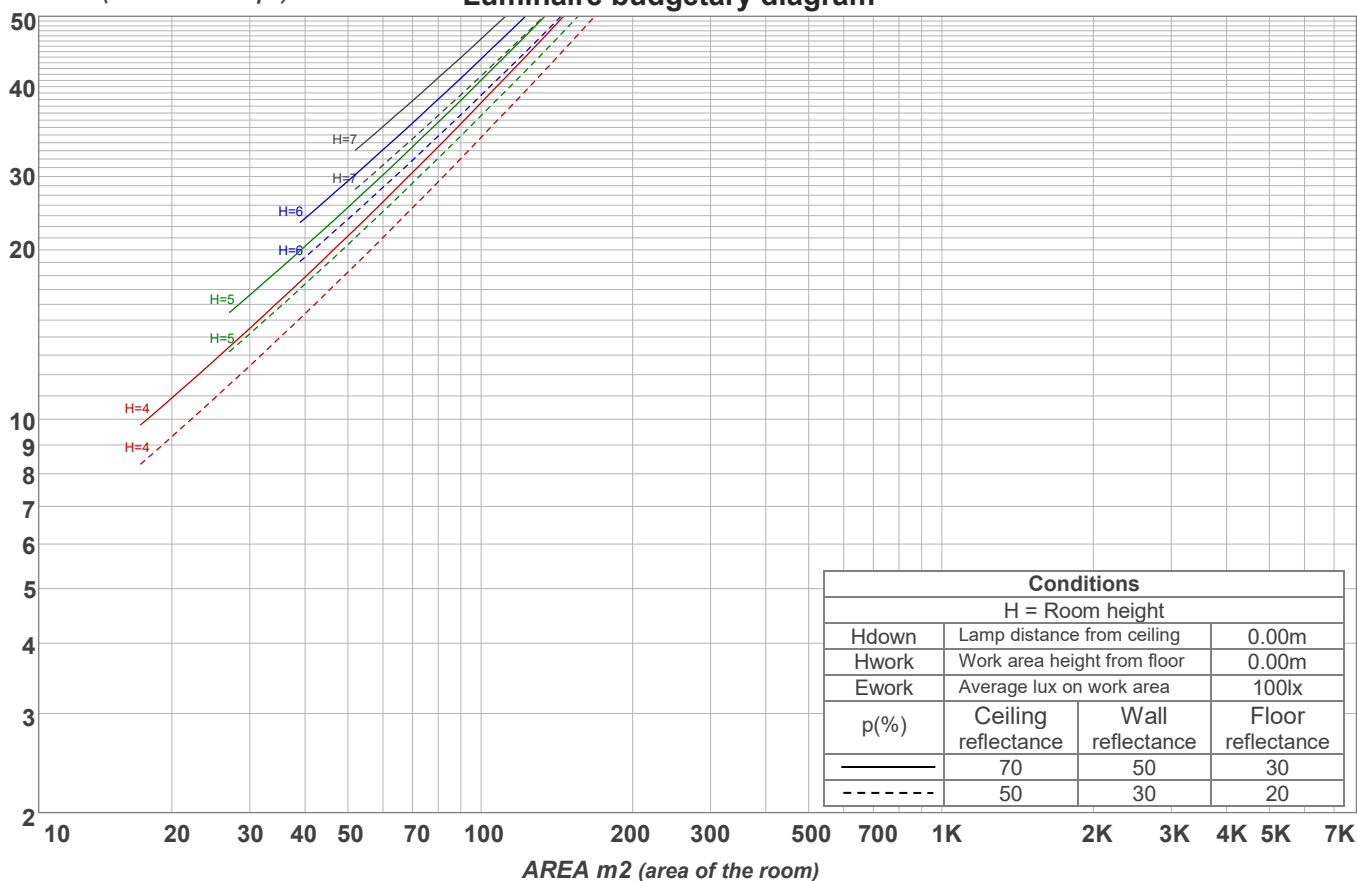
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	23,6	24,5	23,8	24,7	24,9	8,9	9,8	9,1	10,0	10,2
	3H	23,7	24,7	24,1	24,9	25,1	10,6	11,6	11,0	11,8	12,0
	4H	23,8	24,7	24,2	24,9	25,2	11,5	12,4	11,9	12,7	12,9
	6H	23,8	24,6	24,1	24,9	25,2	12,5	13,3	12,8	13,6	14,0
	8H	23,8	24,5	24,1	24,8	25,2	13,0	13,7	13,3	14,0	14,4
	12H	23,7	24,5	24,1	24,8	25,2	13,5	14,3	13,9	14,6	15,0
4H	2H	23,2	24,2	23,6	24,4	24,7	9,6	10,5	10,0	10,7	11,0
	3H	23,6	24,3	23,9	24,6	25,1	11,4	12,2	11,8	12,5	12,9
	4H	23,6	24,2	24,0	24,6	25,2	12,3	13,0	12,7	13,4	13,9
	6H	23,6	24,2	24,1	24,6	24,9	13,3	14,0	13,8	14,4	14,7
	8H	23,5	24,2	24,0	24,5	24,9	13,8	14,5	14,4	14,8	15,2
	12H	23,5	24,0	24,0	24,4	24,9	14,5	15,0	15,0	15,4	15,9
8H	4H	23,4	24,1	23,9	24,4	24,8	12,5	13,1	13,0	13,5	13,9
	6H	23,5	23,9	24,0	24,4	24,9	13,7	14,1	14,2	14,6	15,1
	8H	23,5	23,9	24,0	24,4	25,0	14,3	14,7	14,8	15,2	15,8
	12H	23,5	23,8	24,1	24,3	24,9	15,2	15,5	15,8	16,0	16,6
12H	4H	23,4	23,9	23,9	24,3	24,8	12,5	13,0	13,0	13,4	13,9
	6H	23,5	23,8	24,0	24,4	25,0	13,8	14,1	14,3	14,6	15,3
	8H	23,5	23,8	24,0	24,3	24,9	14,4	14,7	15,0	15,2	15,8
Variation of the observer position for the luminaire distance S											
S = 1.0H		1,7 / -2,8					0,4 / -0,3				
S = 1.5H		4,0 / -6,1					0,8 / -0,3				
S = 2.0H		5,8 / -7,6					0,9 / -0,6				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 393 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	112	108	105	102	109	106	103	101	102	99	97	98	96	94	94	93	91	89
2	104	98	93	89	102	97	92	88	93	89	86	90	87	84	87	84	82	80
3	98	90	84	79	95	88	83	78	85	81	77	83	79	75	80	77	74	72
4	91	82	75	70	89	81	75	70	79	73	69	76	72	68	74	70	67	65
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	59
6	81	70	63	58	79	69	62	57	67	61	57	66	60	56	64	60	56	54
7	76	65	58	53	74	64	57	53	63	57	52	61	56	52	60	55	52	50
8	72	60	53	49	70	60	53	48	59	53	48	57	52	48	56	51	48	46
9	68	56	50	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43
10	64	53	46	42	63	52	46	42	52	46	42	51	45	41	50	45	41	40

LAMPS (number of lamps)

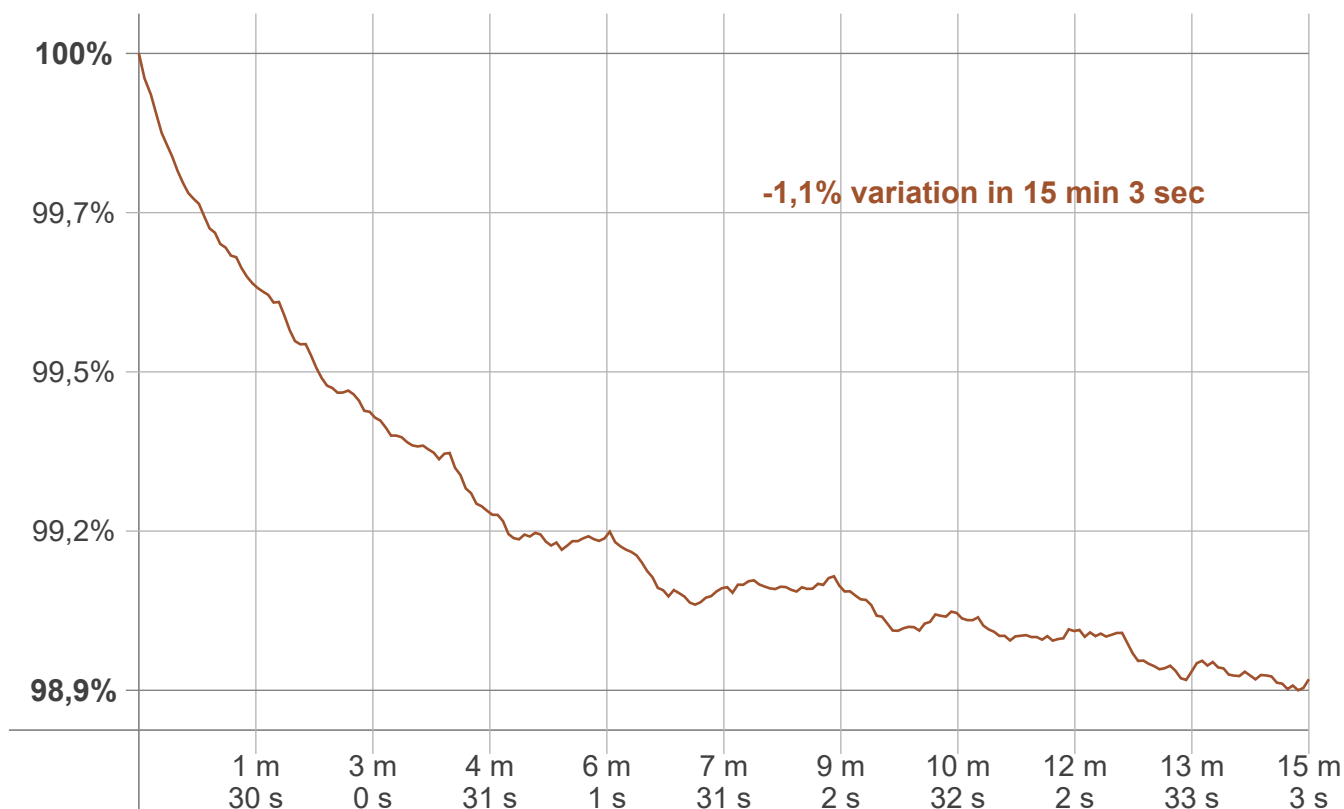
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
28,9 lm	80,5 lm	97,2 lm	75,6 lm	51,7 lm	31,7 lm	15,2 lm	6,75 lm	2,98 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,852 lm	0,368 lm	0,308 lm	0,279 lm	0,192 lm	0,129 lm	0,095 lm	0,058 lm	0,020 lm

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 15 min 3 sec
Warmup variation	-1,1%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
2761 K	0 K	2761 K

Output change

Output start	Output change	Output end
397 lm	-5 lm	393 lm