

Light efficiency:

85 Lumen/Watt

Light quality:

CRI: 95,9

Color temperature:

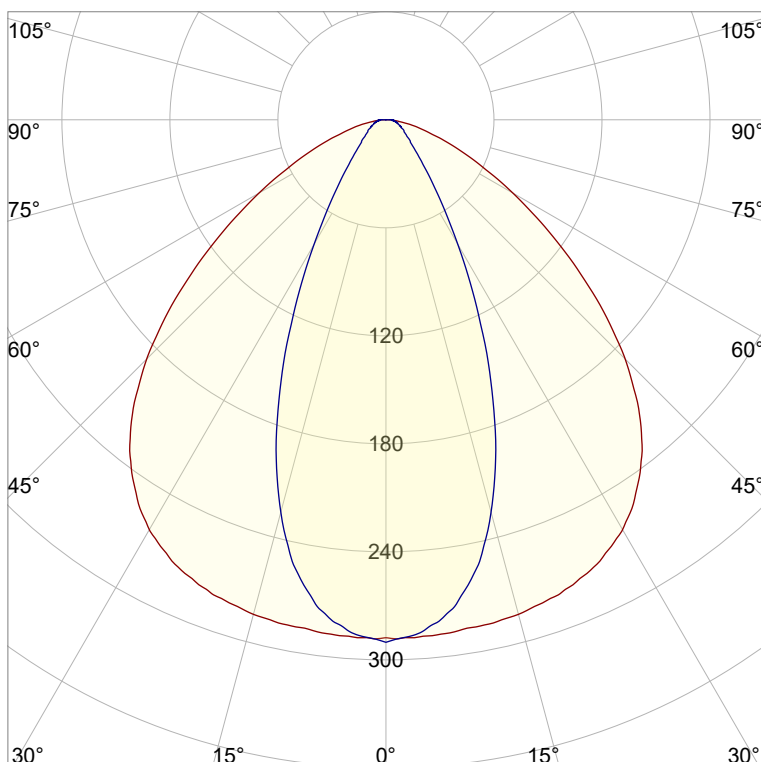
2756 K

Output: 389 lm

Peak: 290 cd

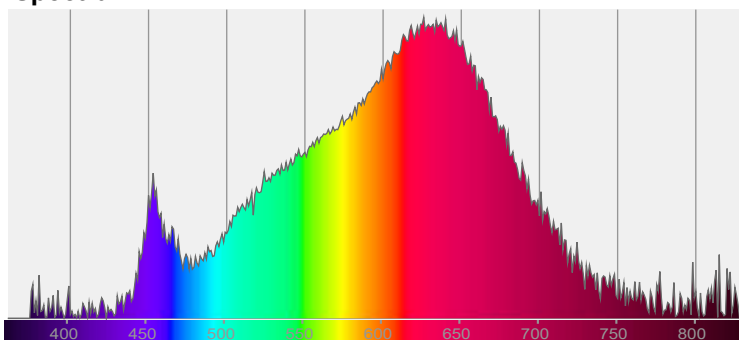
Power: 4,6 W

PF: 1,0



CIE 1931
x: 0,455
y: 0,408

Spectra



Power

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

Product name:

Horizon_510mm_927_Inlay-Lens-30-Grad-Transparent_Cover-Square-Frosted

Item number:

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

Date and time:

18.06.2020 09:43:46

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:

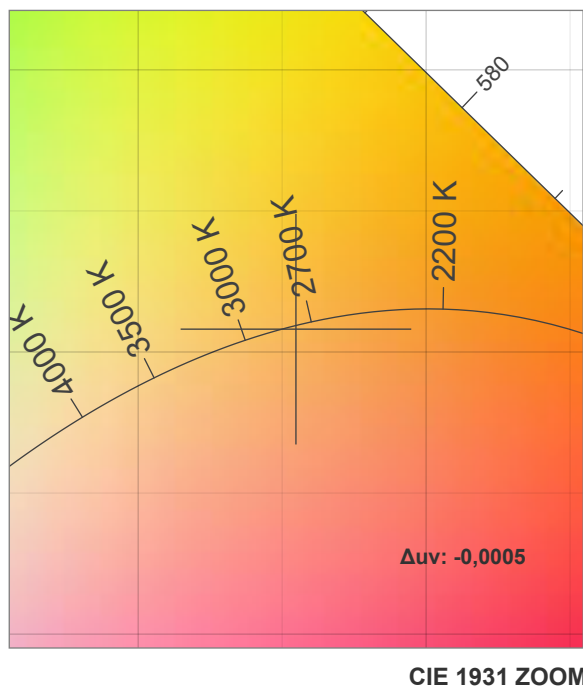
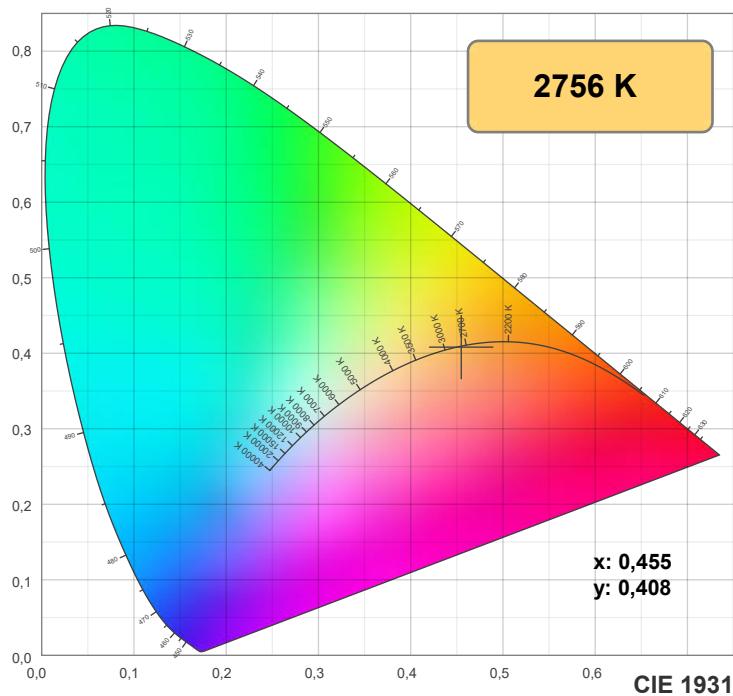
Peter Ulrich

Pruefort:

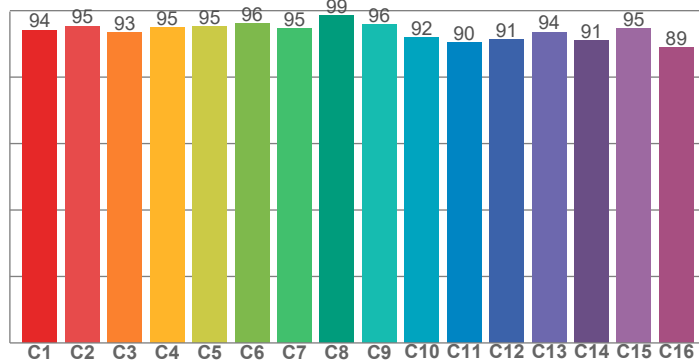
Lichtlabor

Gaustasse 13

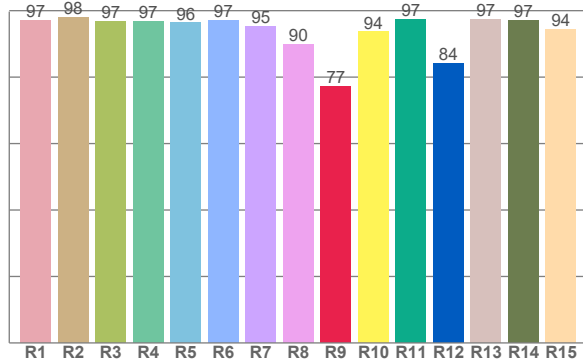
55411 Bingen am Rhein



TM30: 93,7



CRI: 95,9 (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
97,0	98,0	96,8	96,9	96,3	97,2	95,4	89,9	77,1	93,6	97,4	84,1	97,5	97,1	94,3

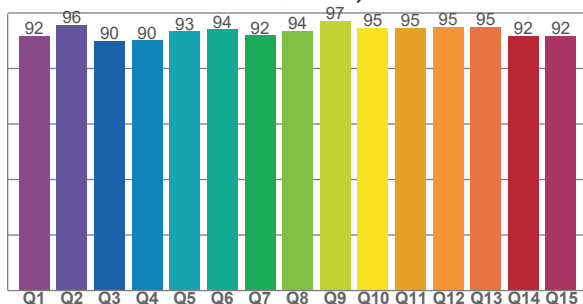
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
94,2	95,4	93,4	94,9	95,2	96,3	94,5	98,5	95,8	91,8	90,4	91,3	93,6	91,0	94,5	88,9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
91,9	95,8	89,9	90,1	93,4	94,1	92,0	93,6	97,1	94,6	94,6	94,9	95,0	91,8	91,7

CQS: 92,9



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
2756 K	95,9	77,1	93,7	100,3	92,9	0,455	0,408	0,260	0,350	-0,0005

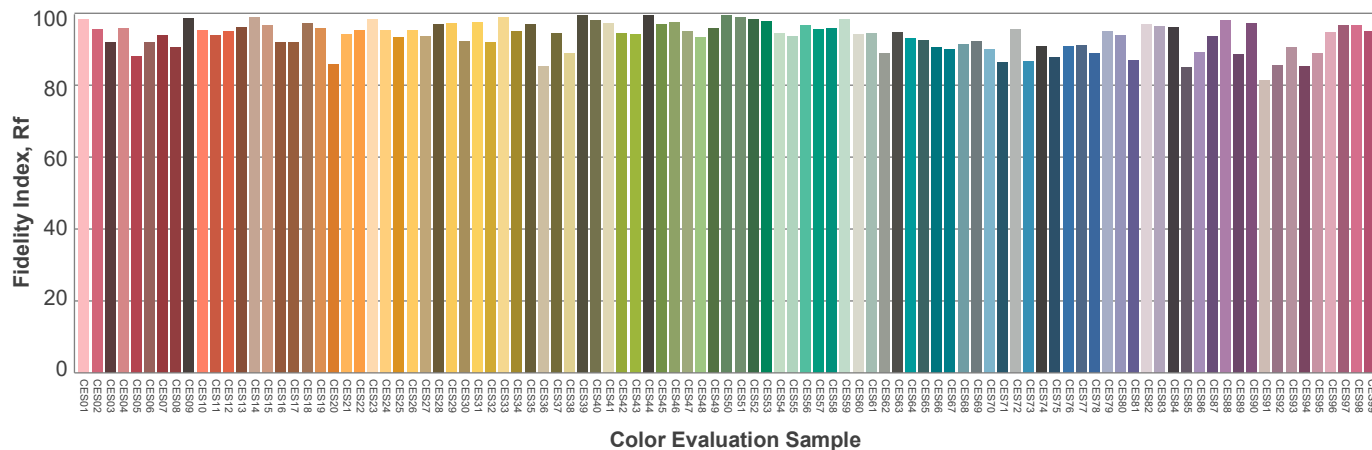
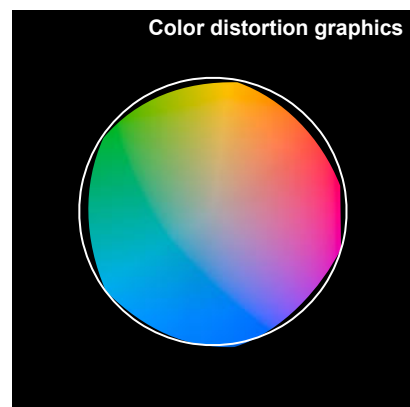
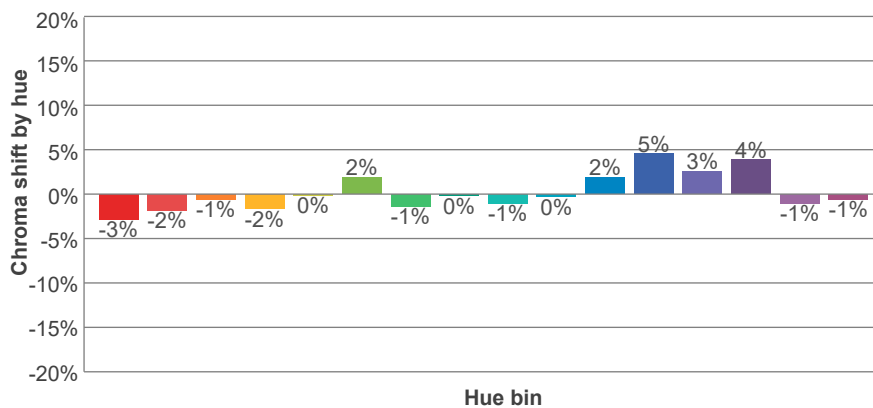
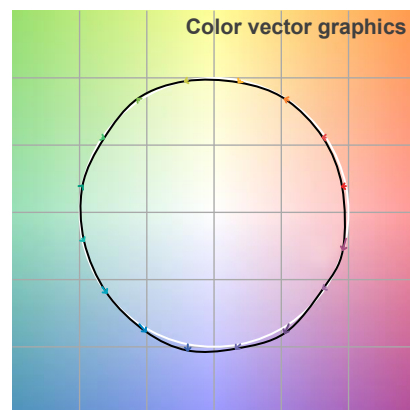
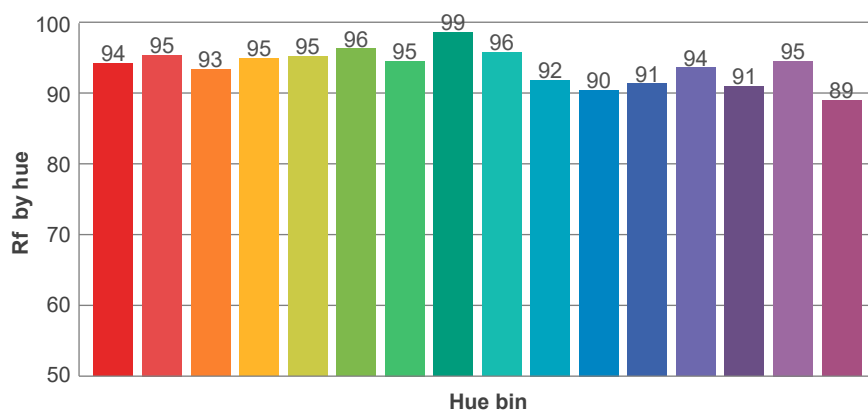
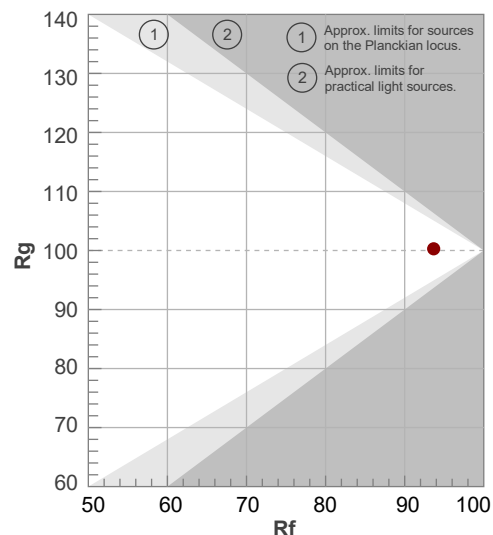
Rf 93,7

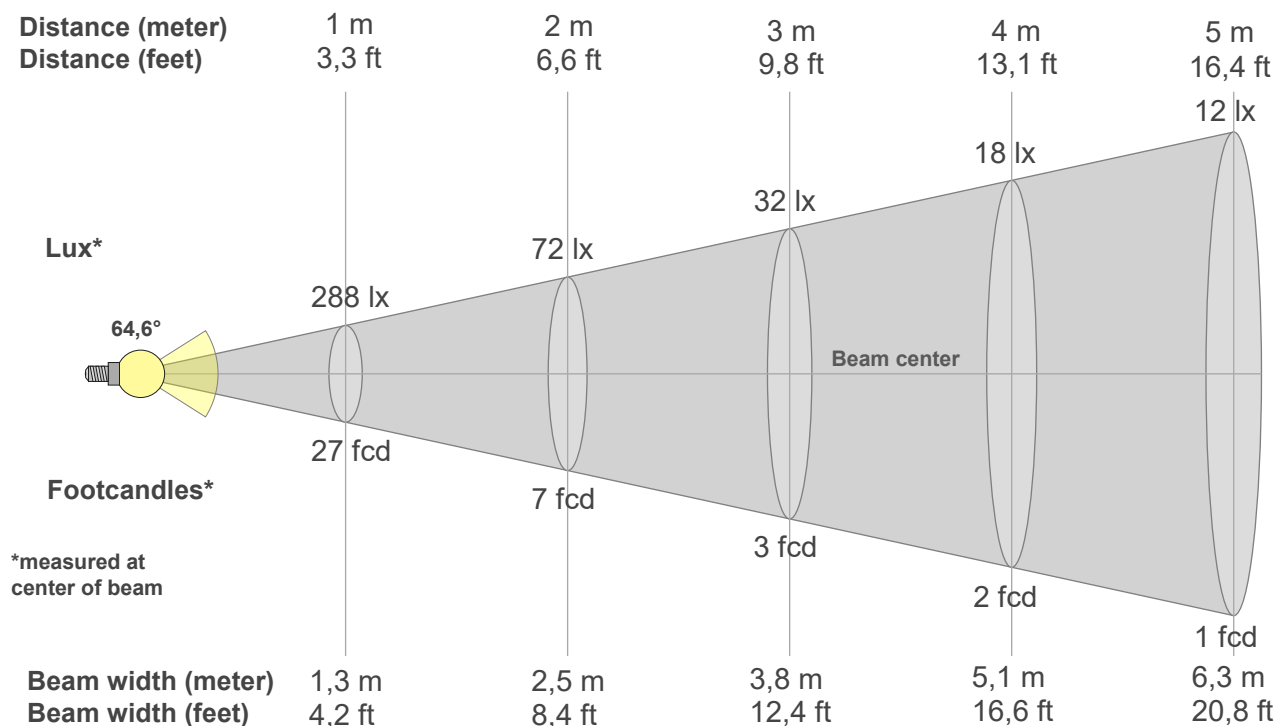
Fidelity index Rf

Rg 100,3

Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-3%	0%
2	95	-2%	1%
3	93	-1%	3%
4	95	-2%	1%
5	95	0%	2%
6	96	2%	0%
7	95	-1%	0%
8	99	0%	0%
9	96	-1%	2%
10	92	0%	5%
11	90	2%	7%
12	91	5%	1%
13	94	3%	-4%
14	91	4%	-6%
15	95	-1%	-2%
16	89	-1%	-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
288lx	72lx	32lx	18lx	12lx	8lx	6lx	5lx	4lx	3lx	2lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx
26,8fcd	6,7fcd	3fcd	1,7fcd	1,1fcd	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°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
288	288	286	284	281	274	263	245	220	188	151	114	81	55	36	21	11	5	1	1
100%	100%	99%	99%	97%	95%	91%	85%	76%	65%	52%	39%	28%	19%	12%	7%	4%	2%	0%	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°
288	282	263	226	176	124	80	50	32	22	17	13	11	9	7	7	5	4	2	2
100%	98%	91%	78%	61%	43%	28%	17%	11%	8%	6%	4%	4%	3%	3%	2%	2%	1%	1%	1%

Intensities in 180° c-plane

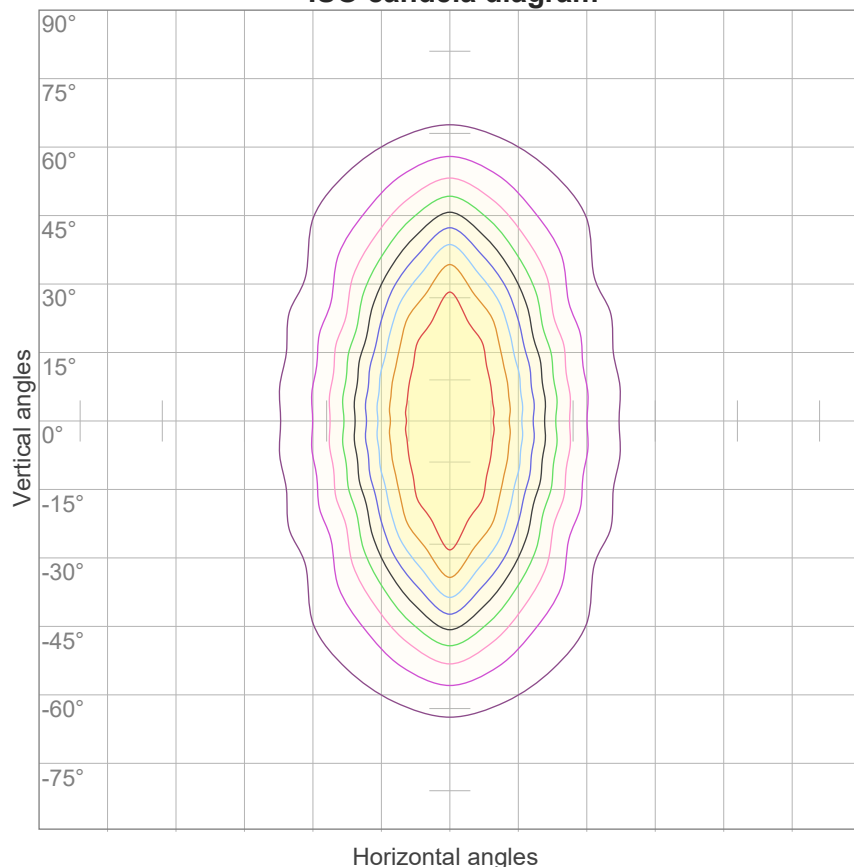
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
288	288	286	284	281	274	263	245	220	188	151	114	81	55	36	21	11	5	1	1
100%	100%	99%	99%	97%	95%	91%	85%	76%	65%	52%	39%	28%	19%	12%	7%	4%	2%	0%	0%

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°
288	282	263	226	176	124	80	50	32	22	17	13	11	9	7	7	5	4	2	2
100%	98%	91%	78%	61%	43%	28%	17%	11%	8%	6%	4%	4%	3%	3%	2%	2%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
64,6°	107,4°	153,5°	89,3%	74,0%

ISO candela diagram



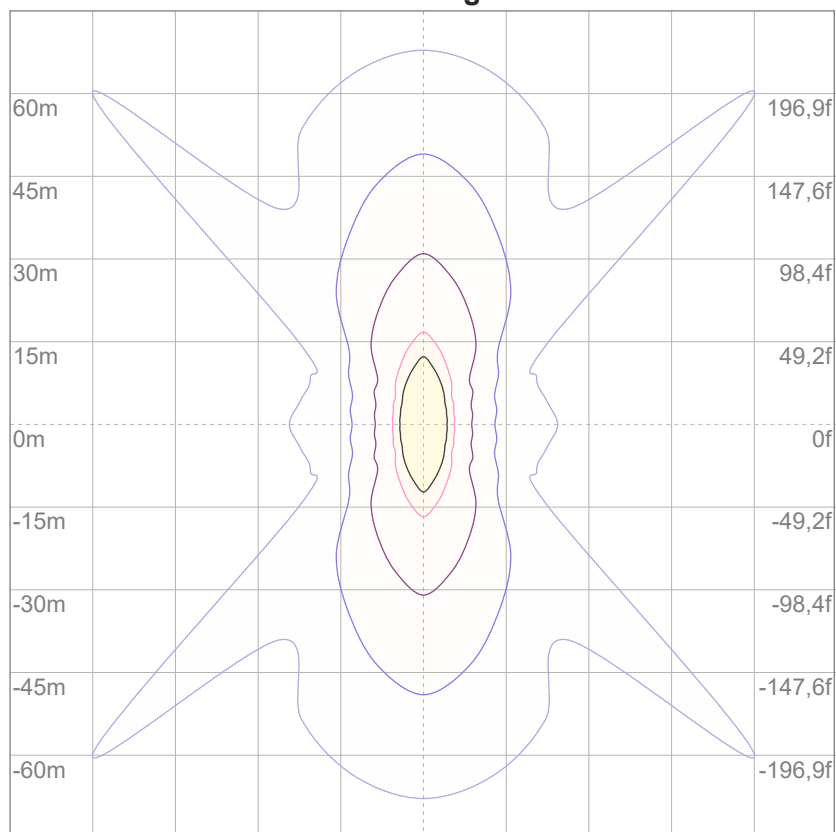
10%	29 cd
20%	58 cd
30%	87 cd
40%	115 cd
50%	144 cd
60%	173 cd
70%	202 cd
80%	231 cd
90%	260 cd

Conditions:

Number of c-planes: 16

Candela at center: 288 cd

ISO lux diagram



3%	86,5m lx
5%	0,144 lx
10%	0,288 lx
30%	0,865 lx
50%	1,44 lx

Conditions:

Number of c-planes: 16

Lux at center: 2,88 lx

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

Glare Evaluation According to UGR

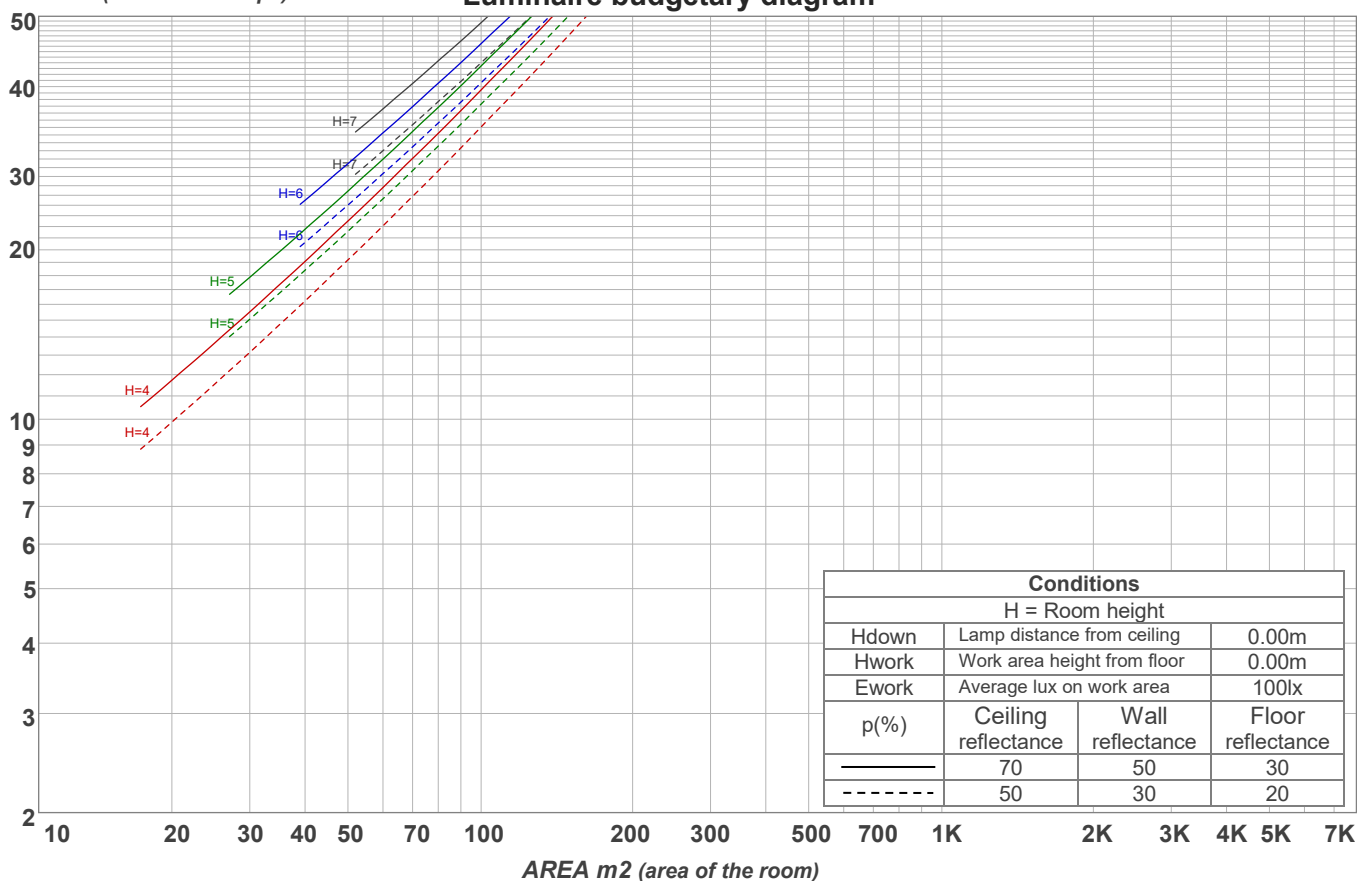
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	22,3	23,2	22,5	23,5	23,7	13,4	14,3	13,5	14,6	14,8
	3H	22,9	23,9	23,3	24,1	24,3	14,1	15,1	14,5	15,4	15,6
	4H	23,1	24,0	23,5	24,3	24,5	14,7	15,7	15,1	15,9	16,2
	6H	23,3	24,1	23,6	24,4	24,7	15,4	16,2	15,7	16,5	16,9
	8H	23,3	24,1	23,6	24,4	24,8	15,8	16,6	16,1	16,9	17,3
	12H	23,2	24,0	23,6	24,4	24,8	16,2	17,0	16,6	17,4	17,8
4H	2H	22,0	23,0	22,4	23,2	23,5	14,2	15,1	14,6	15,4	15,6
	3H	22,9	23,6	23,2	24,0	24,4	15,2	15,9	15,5	16,3	16,7
	4H	23,1	23,8	23,5	24,2	24,7	15,7	16,4	16,1	16,9	17,4
	6H	23,3	24,0	23,8	24,3	24,7	16,4	17,2	16,9	17,5	17,9
	8H	23,3	24,0	23,8	24,3	24,7	16,9	17,5	17,4	17,9	18,3
	12H	23,3	23,8	23,8	24,2	24,7	17,4	17,9	17,9	18,4	18,8
8H	4H	23,0	23,7	23,5	24,0	24,4	16,1	16,8	16,6	17,1	17,5
	6H	23,3	23,7	23,8	24,2	24,7	17,0	17,4	17,5	17,9	18,4
	8H	23,4	23,8	23,9	24,3	24,9	17,5	18,0	18,1	18,5	19,1
	12H	23,4	23,7	24,0	24,3	24,9	18,2	18,5	18,8	19,1	19,7
12H	4H	23,0	23,5	23,5	23,9	24,4	16,1	16,7	16,6	17,1	17,6
	6H	23,3	23,7	23,8	24,2	24,8	17,1	17,5	17,6	18,0	18,6
	8H	23,4	23,7	23,9	24,2	24,8	17,7	18,0	18,3	18,5	19,1
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,8 / -0,9					0,5 / -0,4				
S = 1.5H		2,1 / -2,0					0,9 / -0,5				
S = 2.0H		3,5 / -3,3					1,2 / -0,8				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 389 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	106	106	106	101	101	101	99
1	111	107	104	101	108	105	102	99	100	98	96	96	94	92	93	91	90	87
2	103	97	91	87	101	95	90	85	91	87	83	88	84	81	85	82	79	77
3	96	87	81	76	94	86	80	75	83	78	74	80	76	72	78	74	71	69
4	90	80	73	67	87	78	72	67	76	70	66	74	69	65	71	67	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	58	66	61	58	56
6	78	67	60	54	77	66	59	54	65	58	54	63	57	53	61	56	53	51
7	74	62	55	50	72	61	54	49	60	54	49	58	53	49	57	52	48	47
8	69	58	50	45	68	57	50	45	56	50	45	55	49	45	53	48	44	43
9	65	54	47	42	64	53	46	42	52	46	42	51	45	41	50	45	41	40
10	62	50	43	39	61	50	43	39	49	43	39	48	42	38	47	42	38	37

LAMPS (number of lamps)

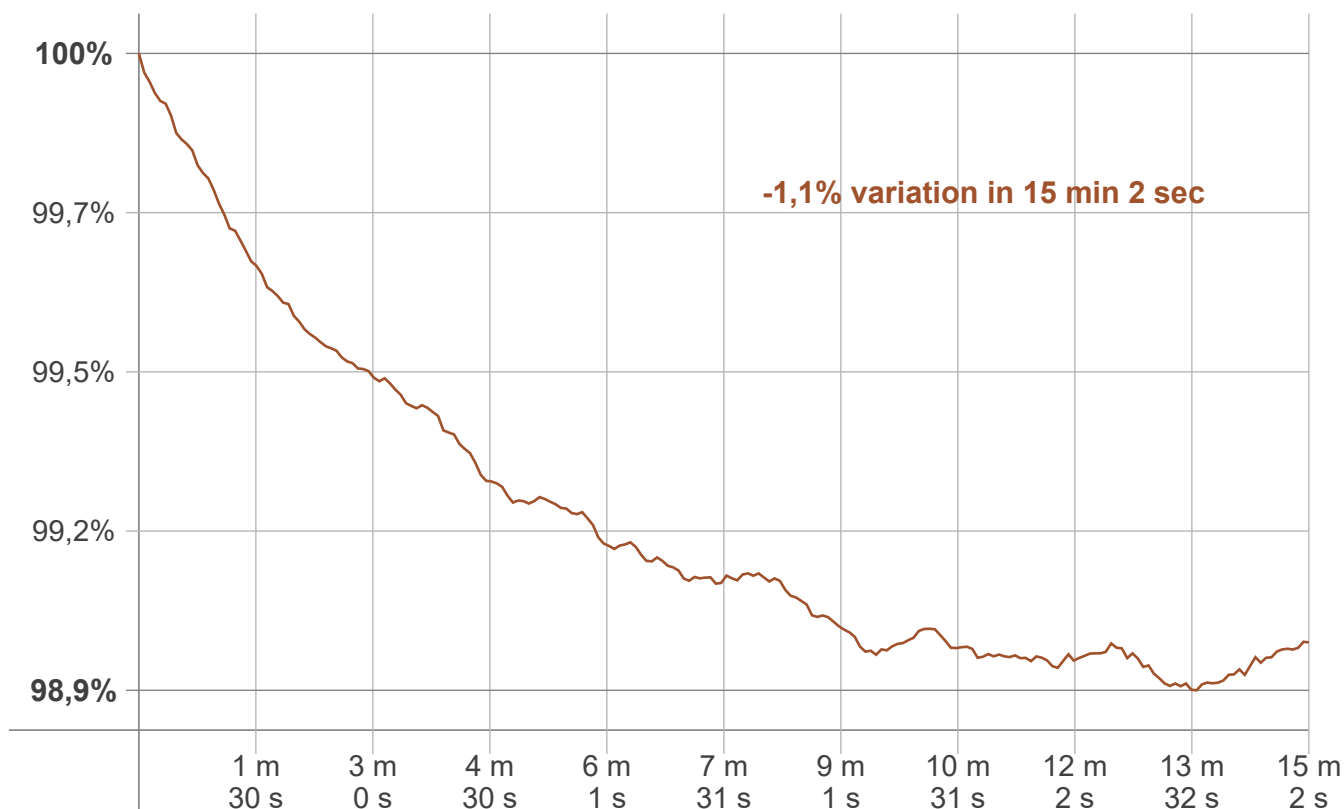
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
26,9 lm	70,9 lm	86,3 lm	74,3 lm	53,8 lm	35,1 lm	20,9 lm	11,2 lm	5,14 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
1,64 lm	0,787 lm	0,673 lm	0,609 lm	0,360 lm	0,195 lm	0,144 lm	0,088 lm	0,030 lm

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 15 min 2 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
2759 K	-3 K	2756 K

Output change

Output start	Output change	Output end
393 lm	-4 lm	389 lm