

Light efficiency:

86 Lumen/Watt

Light quality:

CRI: 95,7

Color temperature:

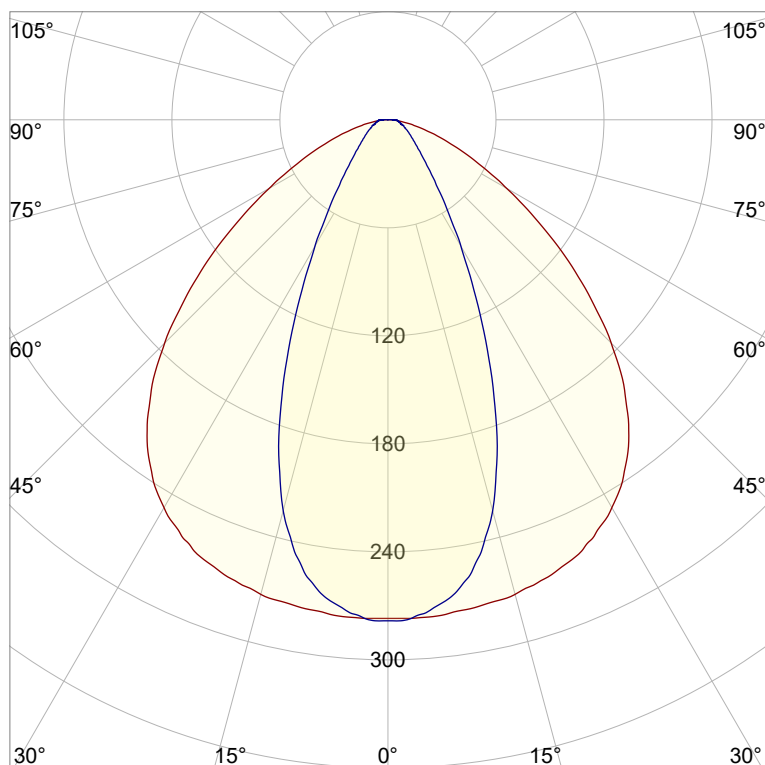
2757 K

Output: 389 lm

Peak: 278 cd

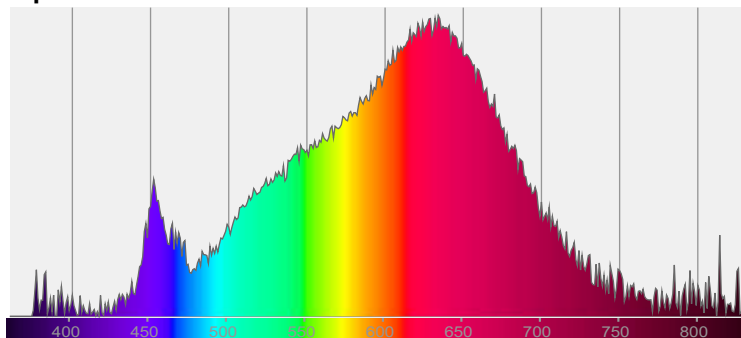
Power: 4,6 W

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-Frosted_Cover-Square-Frosted

Item number:

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

Date and time:

18.06.2020 08:57:15

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:

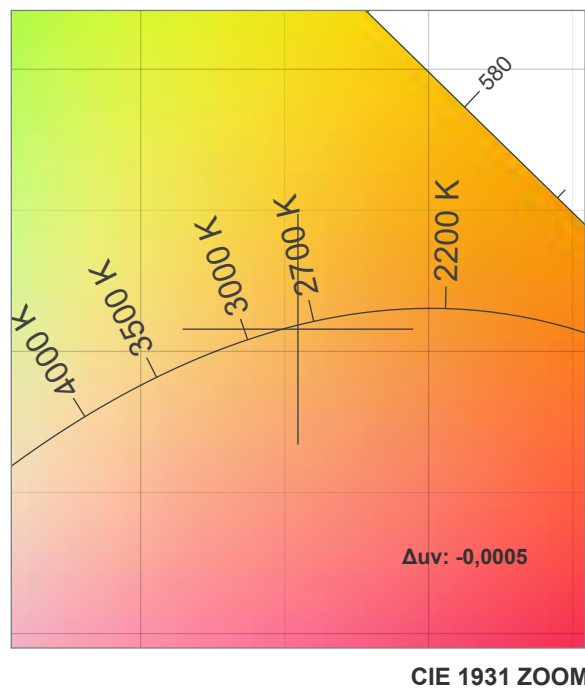
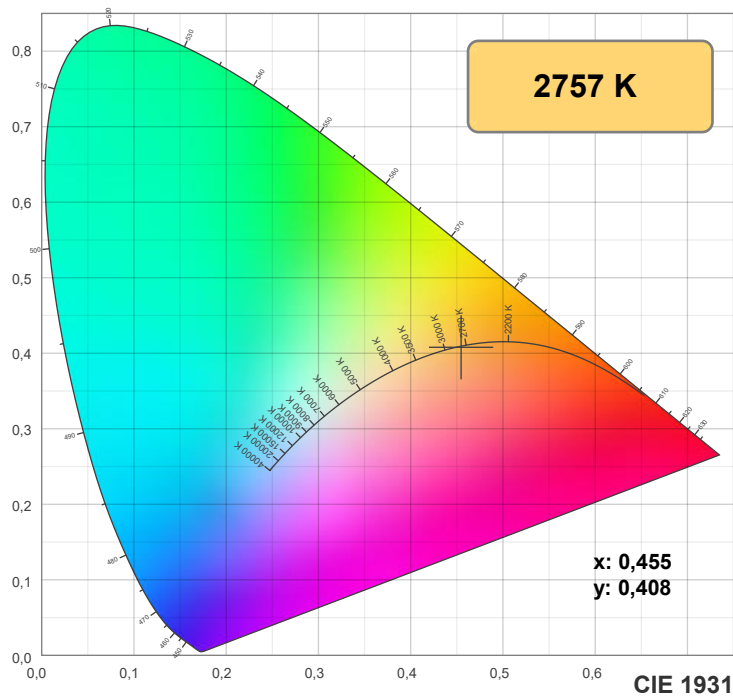
Peter Ulrich

Pruefort:

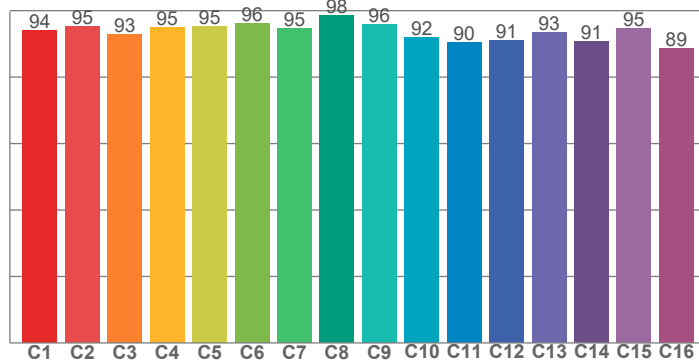
Lichtlabor

Gaustrasse13

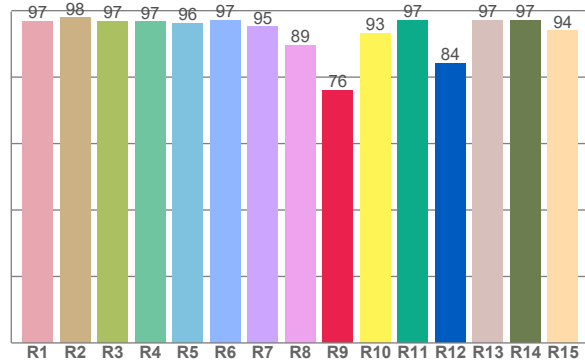
55411 Bingen am Rhein



TM30: 93,6



CRI: 95,7 (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
96,7	97,8	96,8	96,6	96,1	97,0	95,1	89,4	76,1	93,3	97,2	84,2	97,2	97,2	93,9

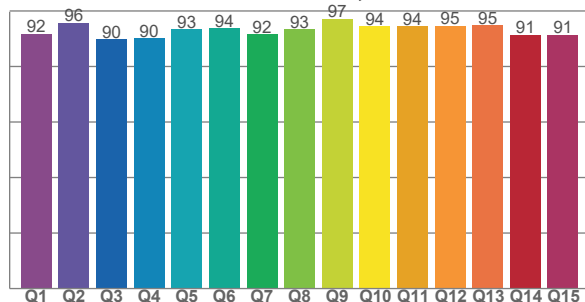
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
94,0	95,2	92,9	94,8	95,2	96,0	94,6	98,5	96,0	92,0	90,3	91,2	93,5	90,7	94,5	88,7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
91,7	95,8	89,7	90,1	93,4	93,7	91,6	93,4	97,2	94,4	94,4	94,6	94,8	91,5	91,4

CQS: 92,7



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
2757 K	95,7	76,1	93,6	100,4	92,7	0,455	0,408	0,260	0,350	-0,0005

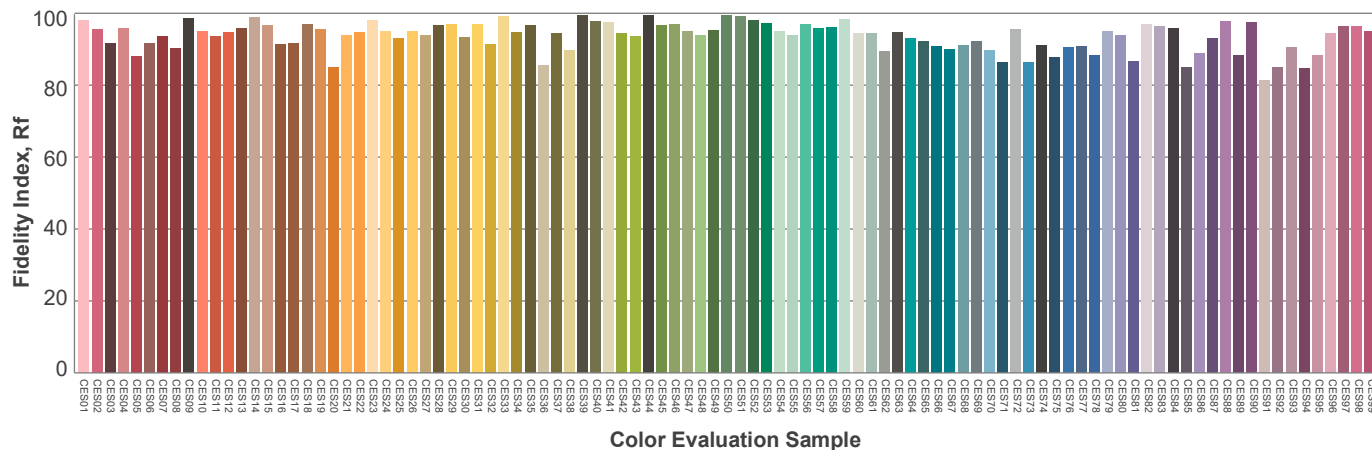
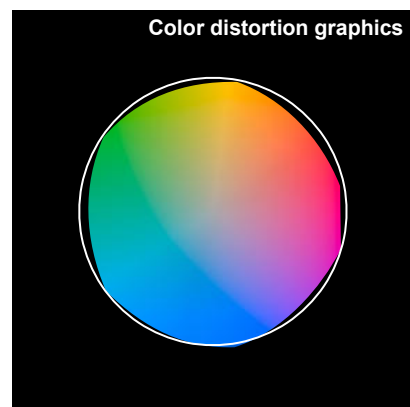
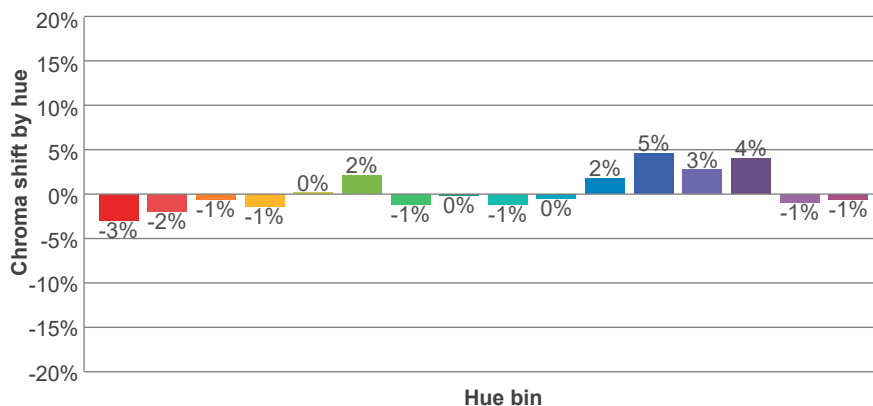
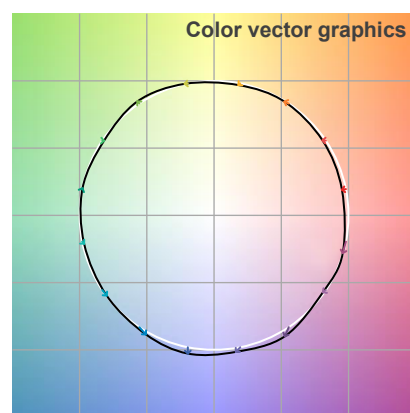
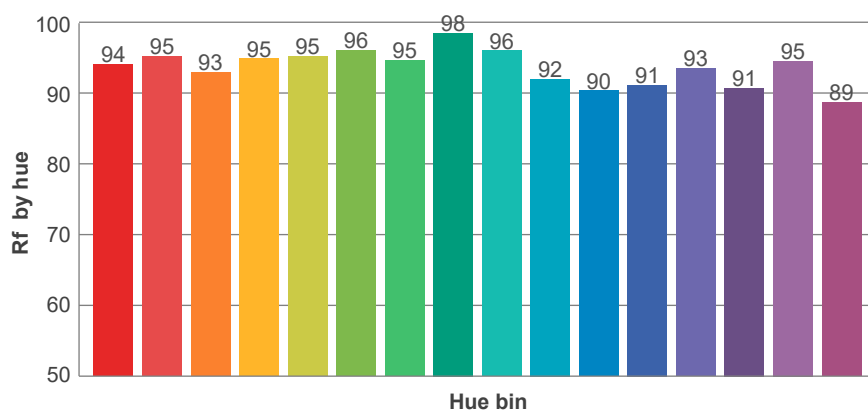
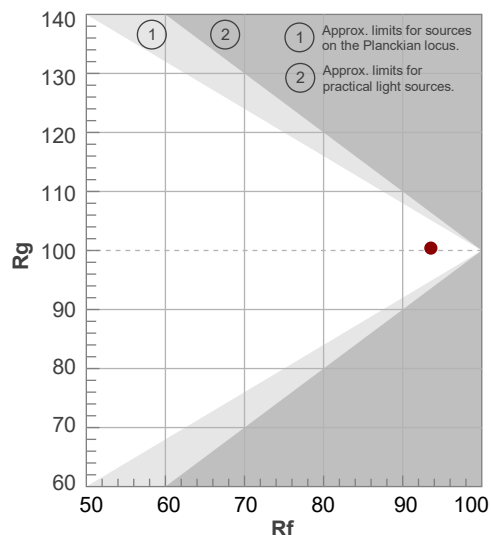
Rf 93,6

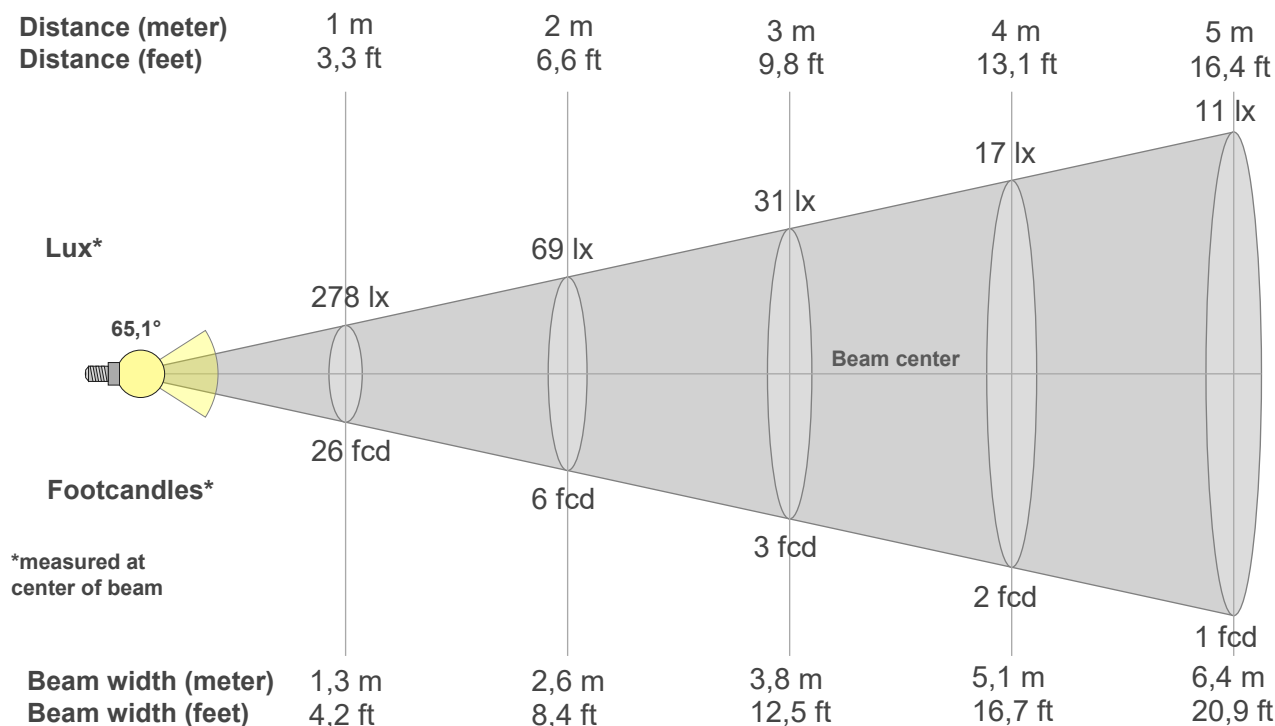
Fidelity index Rf

Rg 100,4

Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	94	-3%	0%
2	95	-2%	2%
3	93	-1%	3%
4	95	-1%	1%
5	95	0%	2%
6	96	2%	0%
7	95	-1%	-1%
8	98	0%	-1%
9	96	-1%	2%
10	92	0%	5%
11	90	2%	7%
12	91	5%	1%
13	93	3%	-4%
14	91	4%	-6%
15	95	-1%	-3%
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
278lx	69lx	31lx	17lx	11lx	8lx	6lx	4lx	3lx	3lx	2lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx
25,8fcd	6,4fcd	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°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
278	277	275	273	268	261	249	231	206	175	141	106	76	53	34	21	11	5	1	1
100%	100%	99%	98%	97%	94%	90%	83%	74%	63%	51%	38%	27%	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°
278	273	258	225	175	123	81	53	35	25	19	16	13	11	8	7	6	5	3	0
100%	98%	93%	81%	63%	44%	29%	19%	13%	9%	7%	6%	5%	4%	3%	3%	2%	2%	1%	0%

Intensities in 180° c-plane

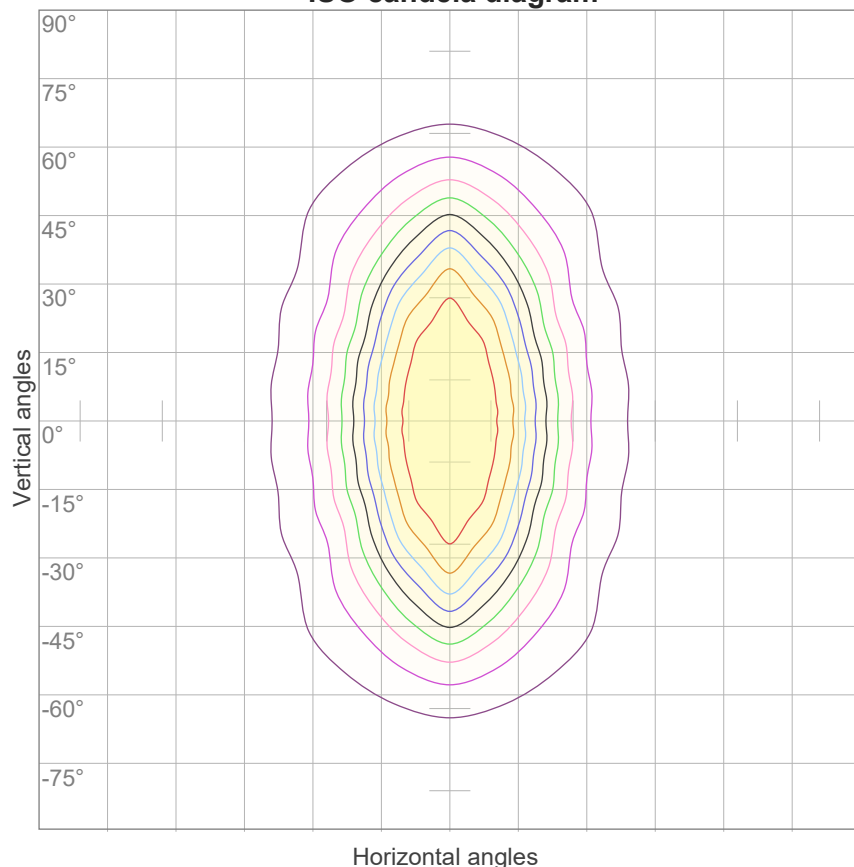
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
278	277	275	273	268	261	249	231	206	175	141	106	76	53	34	21	11	5	1	1
100%	100%	99%	98%	97%	94%	90%	83%	74%	63%	51%	38%	27%	19%	12%	7%	4%	2%	0%	0%

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°
278	273	258	225	175	123	81	53	35	25	19	16	13	11	8	7	6	5	3	0
100%	98%	93%	81%	63%	44%	29%	19%	13%	9%	7%	6%	5%	4%	3%	3%	2%	2%	1%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
65,1°	111°	160,1°	87,9%	72,4%

ISO candela diagram



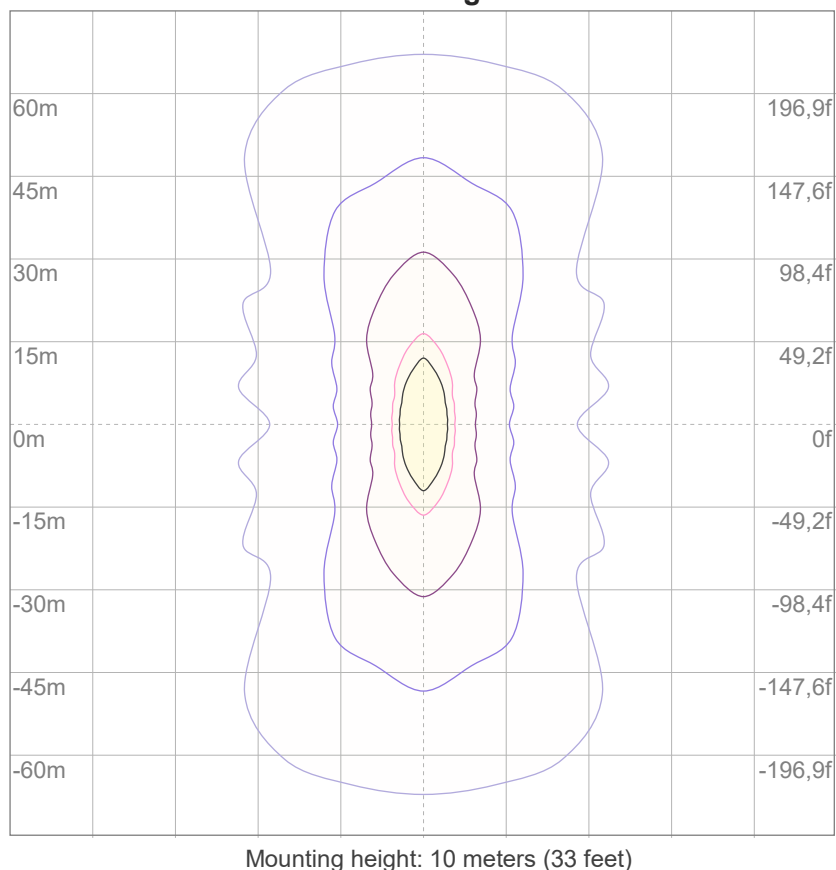
10%	28 cd
20%	56 cd
30%	83 cd
40%	111 cd
50%	139 cd
60%	167 cd
70%	194 cd
80%	222 cd
90%	250 cd

Conditions:

Number of c-planes: 16

Candela at center: 278 cd

ISO lux diagram



3%	83,3m lx
5%	0,139 lx
10%	0,278 lx
30%	0,833 lx
50%	1,39 lx

Conditions:

Number of c-planes: 16

Lux at center: 2,78 lx

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

Glare Evaluation According to UGR

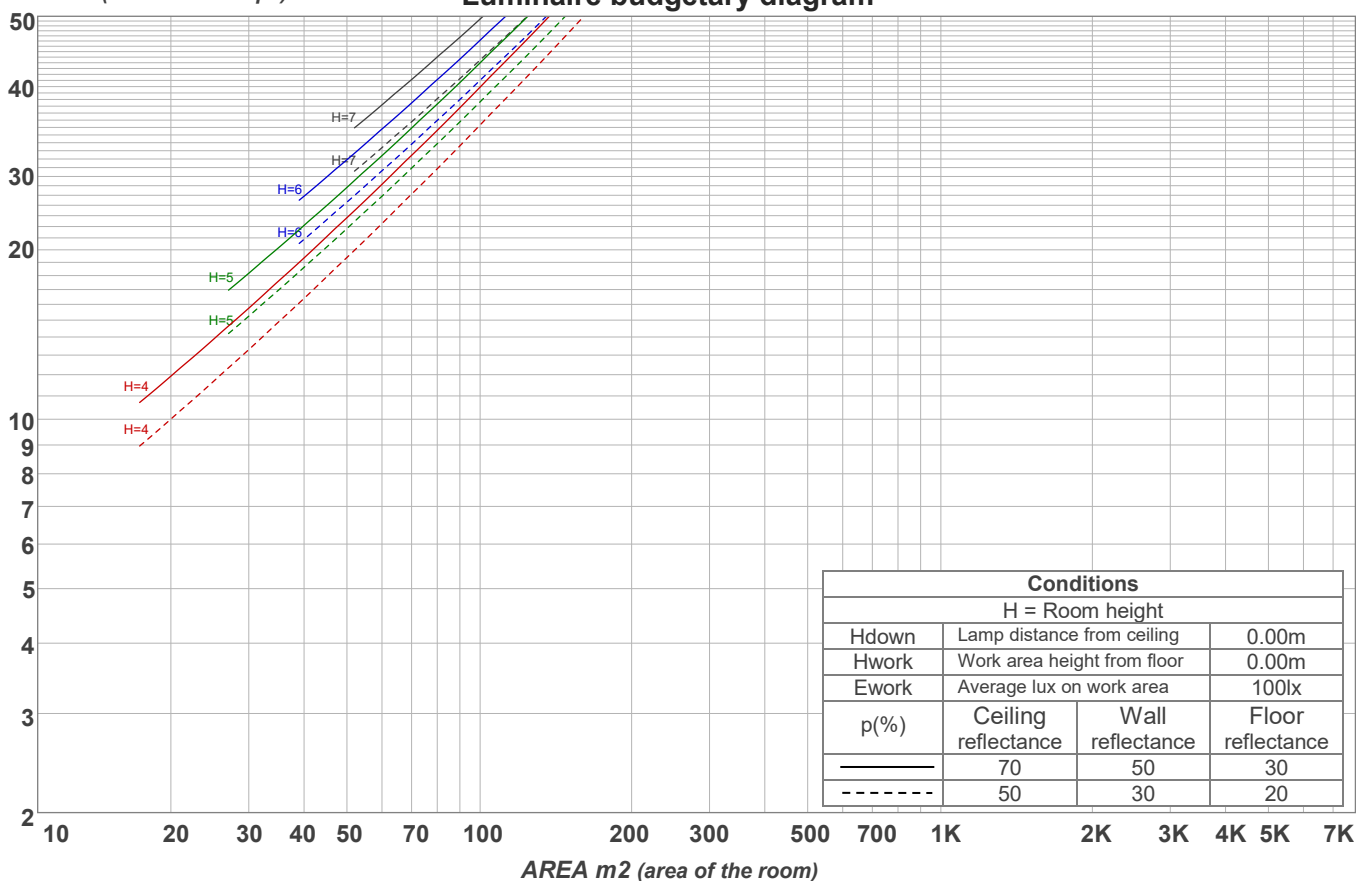
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	22,1	23,0	22,2	23,3	23,5	14,1	15,1	14,3	15,4	15,6
	3H	22,7	23,7	23,1	23,9	24,1	15,0	16,0	15,4	16,3	16,5
	4H	22,9	23,9	23,3	24,1	24,4	15,6	16,6	16,0	16,8	17,1
	6H	23,1	23,9	23,4	24,2	24,6	16,4	17,3	16,7	17,5	17,9
	8H	23,1	23,9	23,4	24,2	24,6	16,8	17,7	17,2	18,0	18,4
	12H	23,1	23,9	23,4	24,2	24,6	17,4	18,2	17,7	18,5	18,9
4H	2H	21,8	22,8	22,2	23,1	23,3	14,9	15,9	15,3	16,2	16,4
	3H	22,7	23,5	23,1	23,9	24,3	16,0	16,8	16,4	17,2	17,6
	4H	23,0	23,7	23,4	24,1	24,6	16,6	17,4	17,1	17,8	18,3
	6H	23,1	23,9	23,6	24,2	24,6	17,5	18,2	18,0	18,5	18,9
	8H	23,2	23,9	23,7	24,2	24,6	18,0	18,6	18,5	19,0	19,3
	12H	23,2	23,7	23,7	24,2	24,6	18,6	19,1	19,1	19,5	20,0
8H	4H	22,9	23,6	23,4	23,9	24,3	17,0	17,7	17,5	18,0	18,4
	6H	23,2	23,7	23,7	24,1	24,7	18,0	18,5	18,5	18,9	19,5
	8H	23,3	23,7	23,8	24,2	24,9	18,6	19,0	19,1	19,5	20,2
	12H	23,3	23,7	23,9	24,2	24,8	19,4	19,7	19,9	20,2	20,8
12H	4H	22,9	23,4	23,4	23,8	24,3	17,0	17,6	17,5	18,0	18,5
	6H	23,2	23,6	23,7	24,1	24,8	18,1	18,5	18,6	19,0	19,7
	8H	23,3	23,6	23,9	24,1	24,8	18,8	19,1	19,3	19,6	20,2
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,7 / -0,8					0,3 / -0,3				
S = 1.5H		1,9 / -1,8					0,7 / -0,4				
S = 2.0H		3,2 / -2,8					0,9 / -0,7				
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	105	105	105	100	100	100	98
1	110	107	103	100	108	104	101	98	100	97	95	96	94	92	92	90	89	87
2	103	96	90	86	100	94	89	85	90	86	82	87	83	80	84	81	78	76
3	95	87	80	75	93	85	79	74	82	77	73	79	75	71	77	73	70	68
4	89	79	72	66	87	78	71	66	75	69	65	73	68	64	71	66	63	61
5	83	72	65	59	81	71	64	59	69	63	58	67	62	57	65	60	57	55
6	78	67	59	54	76	66	58	53	64	57	53	62	56	52	60	55	52	50
7	73	61	54	49	71	61	54	49	59	53	48	58	52	48	56	51	47	46
8	69	57	50	45	67	56	49	45	55	49	44	54	48	44	52	47	44	42
9	65	53	46	41	63	53	46	41	51	45	41	50	45	41	49	44	40	39
10	61	50	43	38	60	49	43	38	48	42	38	47	42	38	46	41	37	36

LAMPS (number of lamps)

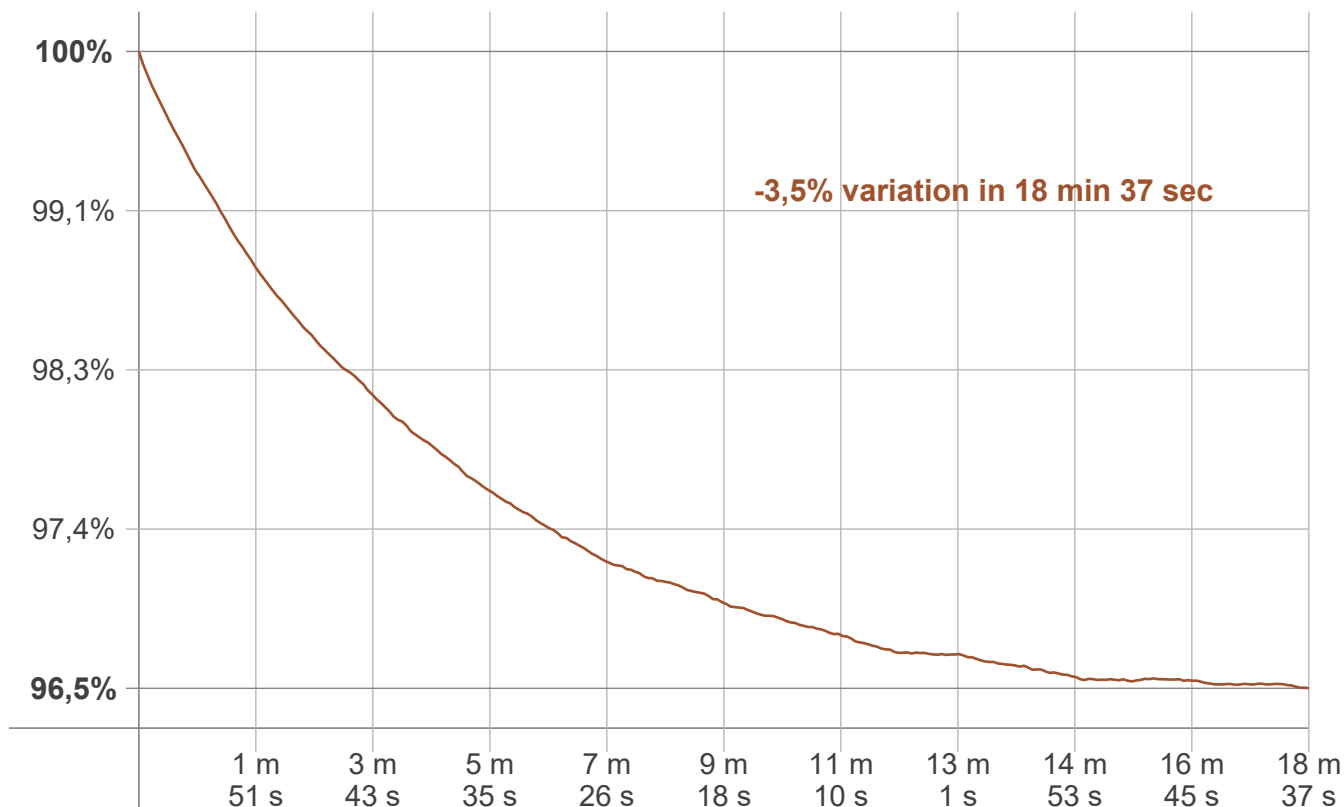
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
26,0 lm	69,2 lm	84,2 lm	73,1 lm	53,9 lm	36,0 lm	22,0 lm	12,2 lm	5,59 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
1,60 lm	1,52 lm	1,07 lm	0,904 lm	0,721 lm	0,547 lm	0,403 lm	0,247 lm	0,083 lm

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 18 min 37 sec
Warmup variation	-3,5%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
2767 K	-10 K	2757 K

Output change

Output start	Output change	Output end
404 lm	-15 lm	389 lm