

Light efficiency:

84 Lumen/Watt

Light quality:

CRI: 95,9

Color temperature:

2756 K

Output: 385 lm

Peak: 291 cd

Power: 4,6 W

PF: 1,0



Product name:

Horizon-0508-927-L3T-CSF

Item number:

FLNNP/L/01A0508/927/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 20.05.2020

Pruefer:

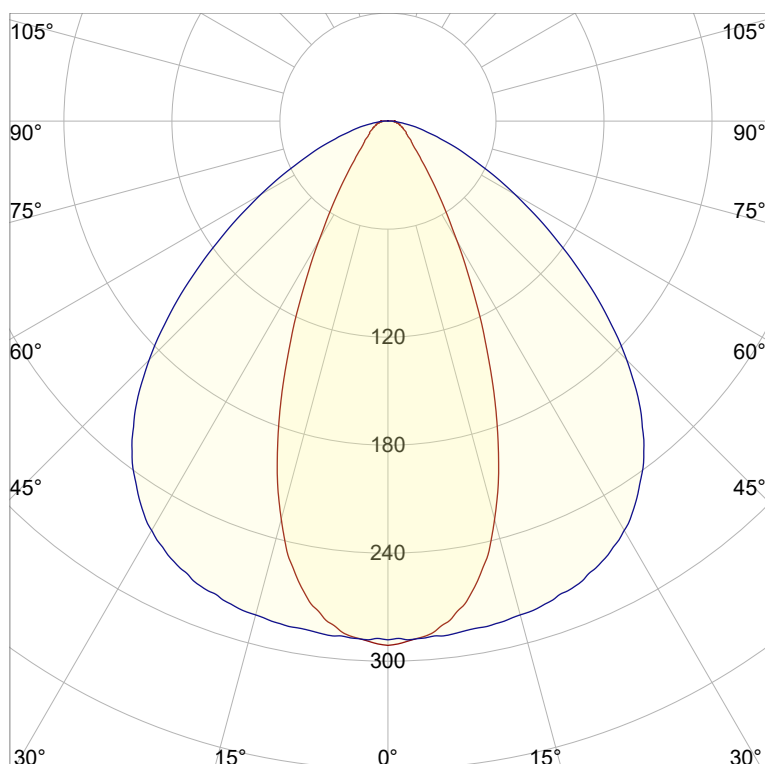
Peter Ulrich

Pruefort:

Lichtlabor

Gaustrasse 13

55411 Bingen am Rhein

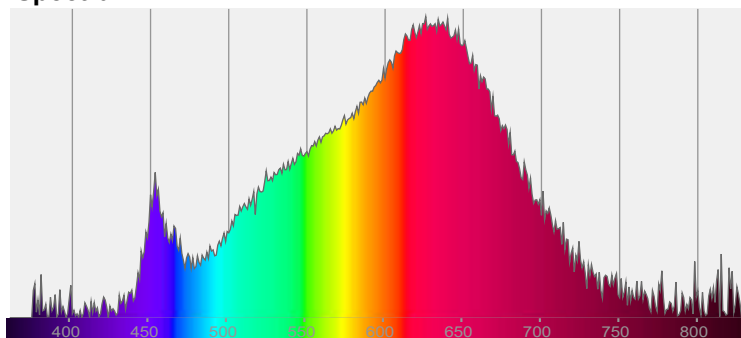


CIE 1931

x: 0,455

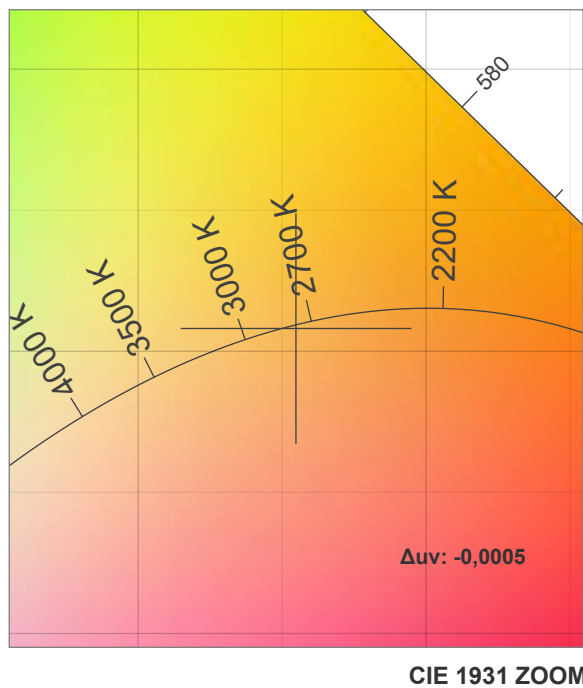
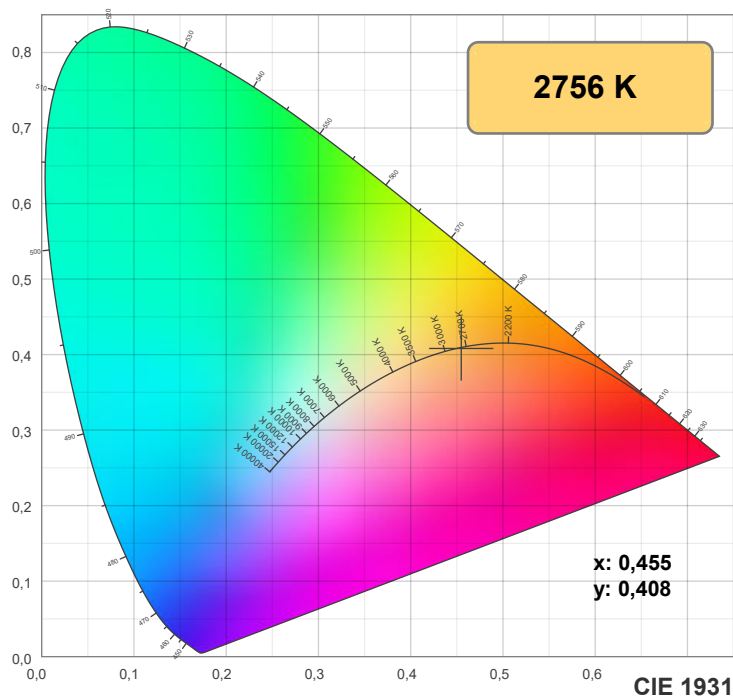
y: 0,408

Spectra

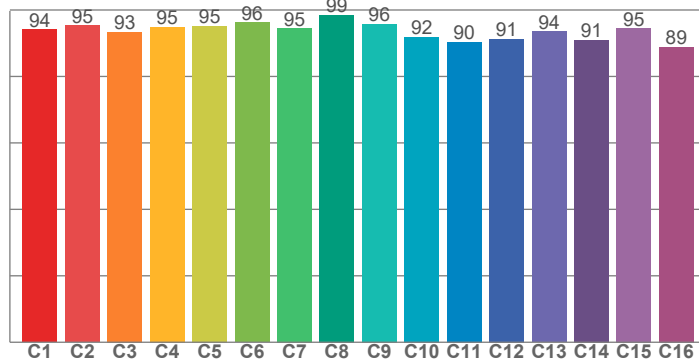


Power

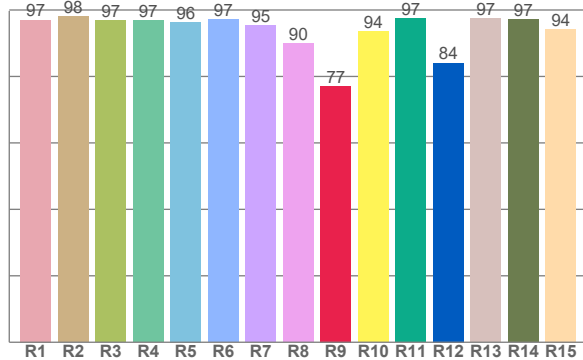
Voltage: 24,0 V
Current: 0,190 A
Frequency: 0 Hz



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

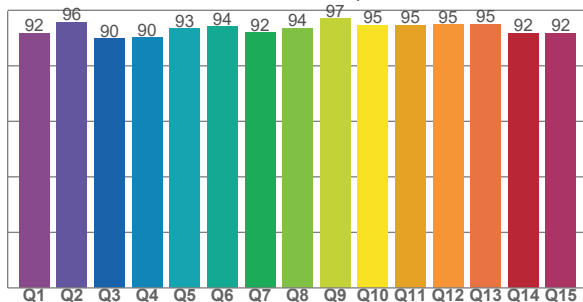
TM30 C values, 16 binned values out of total of 99 C values

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

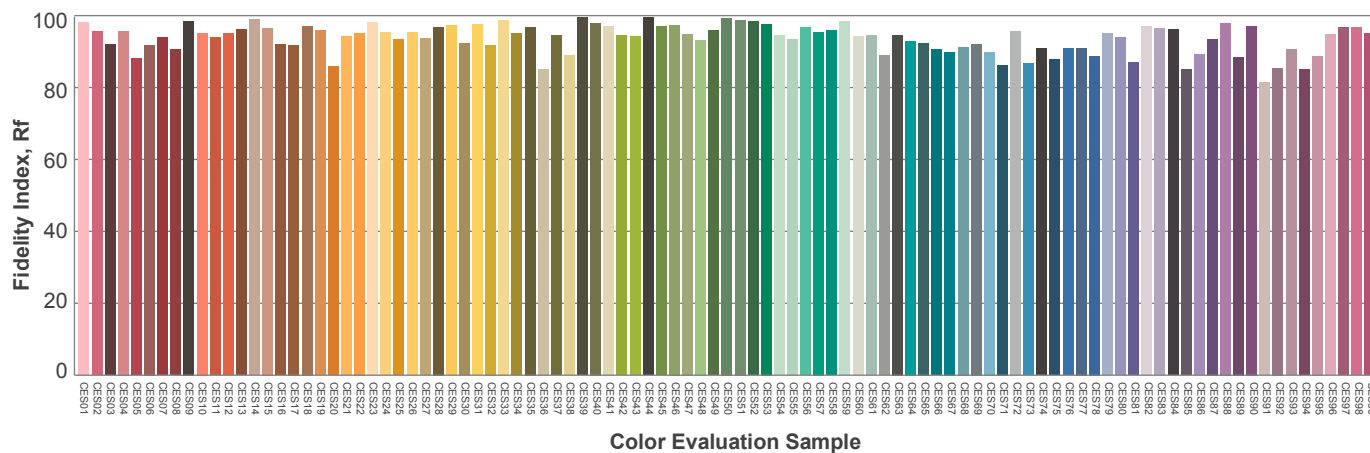
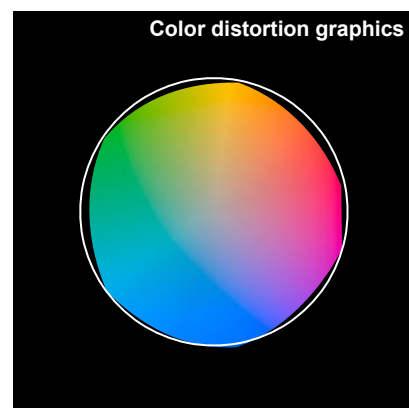
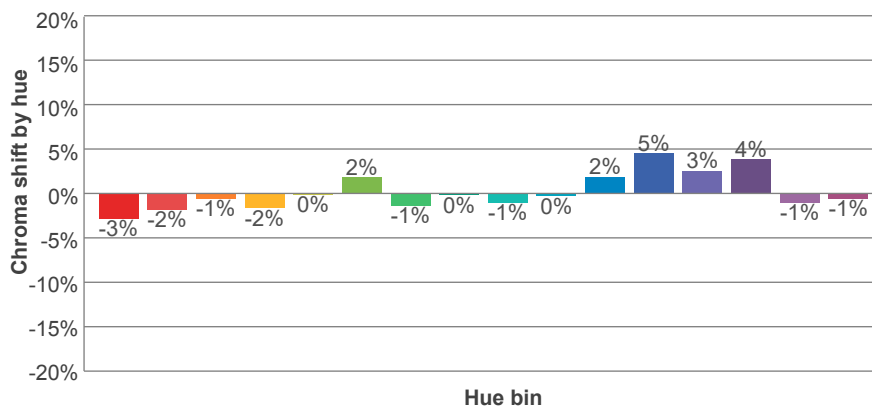
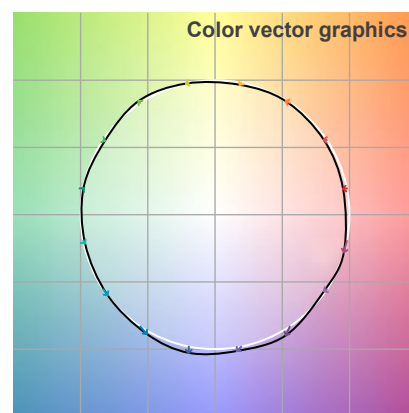
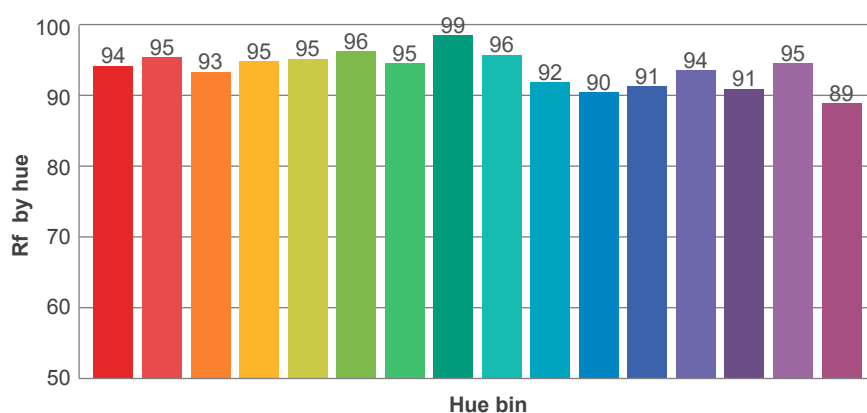
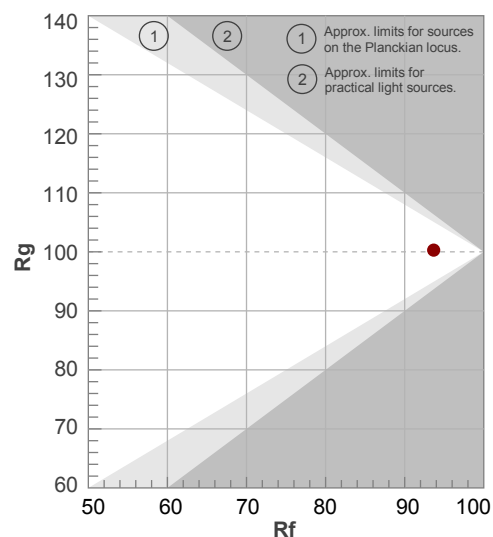
Rf 93,7

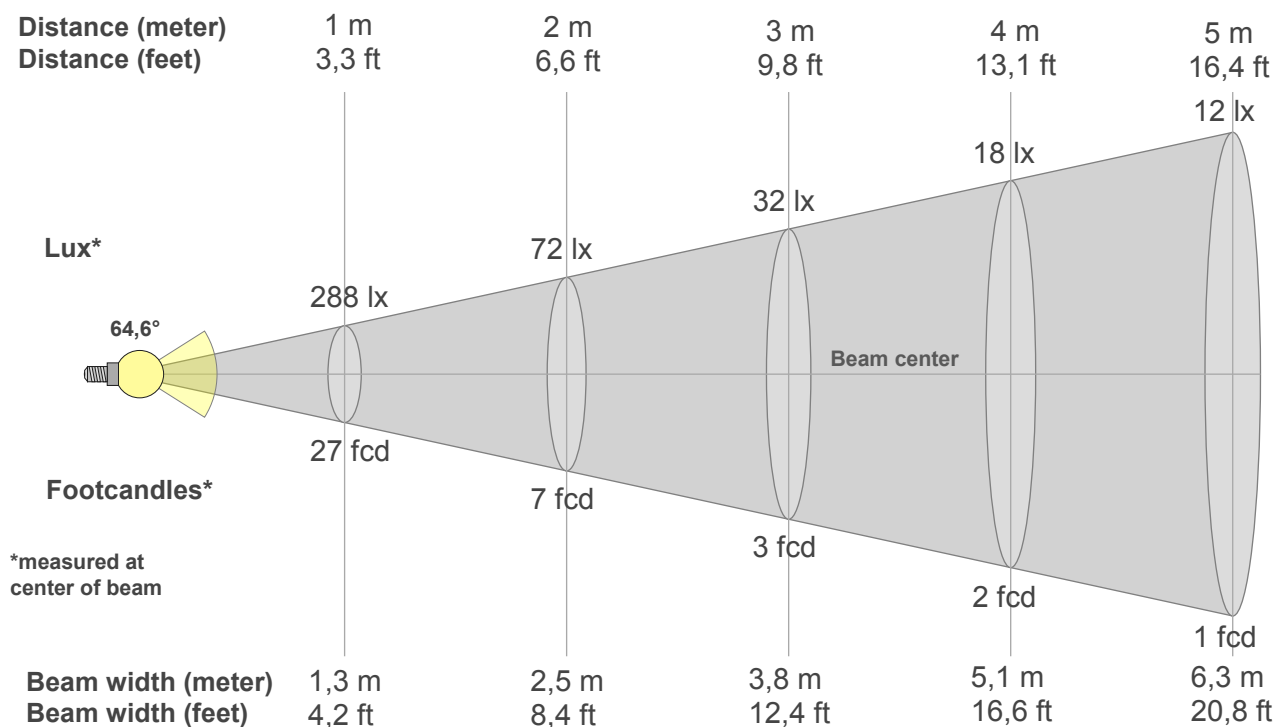
Fidelity index Rf

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	285	266	229	177	122	77	48	30	21	17	13	11	9	7	6	5	4	3	0
100%	99%	92%	79%	61%	42%	27%	17%	11%	7%	6%	4%	4%	3%	3%	2%	2%	1%	1%	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	287	286	284	280	274	262	244	220	188	151	113	82	55	36	21	12	5	1	0
100%	100%	99%	98%	97%	95%	91%	85%	76%	65%	52%	39%	28%	19%	12%	7%	4%	2%	0%	0%

Intensities in 180° c-plane

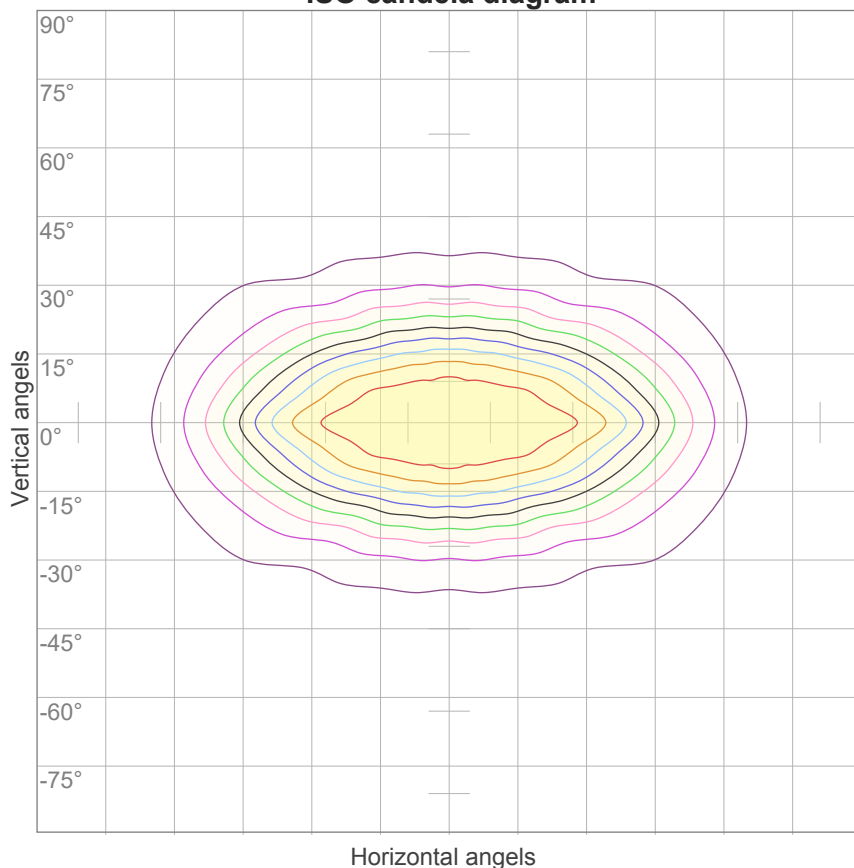
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
288	285	266	229	177	122	77	48	30	21	17	13	11	9	7	6	5	4	3	0
100%	99%	92%	79%	61%	42%	27%	17%	11%	7%	6%	4%	4%	3%	3%	2%	2%	1%	1%	0%

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	287	286	284	280	274	262	244	220	188	151	113	82	55	36	21	12	5	1	0
100%	100%	99%	98%	97%	95%	91%	85%	76%	65%	52%	39%	28%	19%	12%	7%	4%	2%	0%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
64,6°	107,7°	153,1°	90,2%	74,8%

ISO candela diagram



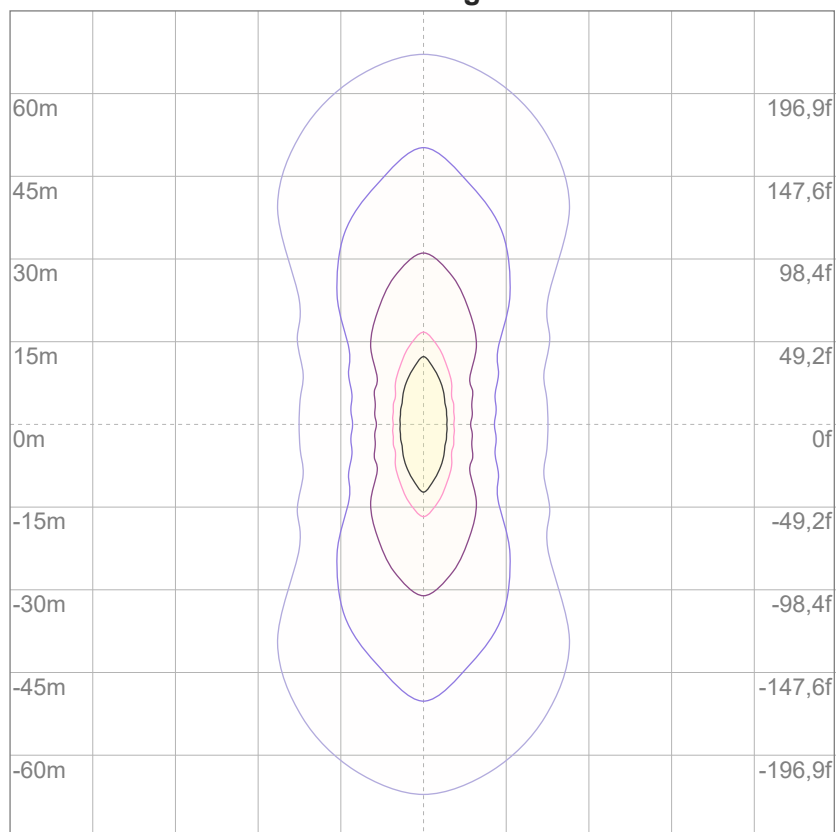
10%	29 cd
20%	58 cd
30%	87 cd
40%	115 cd
50%	144 cd
60%	173 cd
70%	202 cd
80%	231 cd
90%	260 cd

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

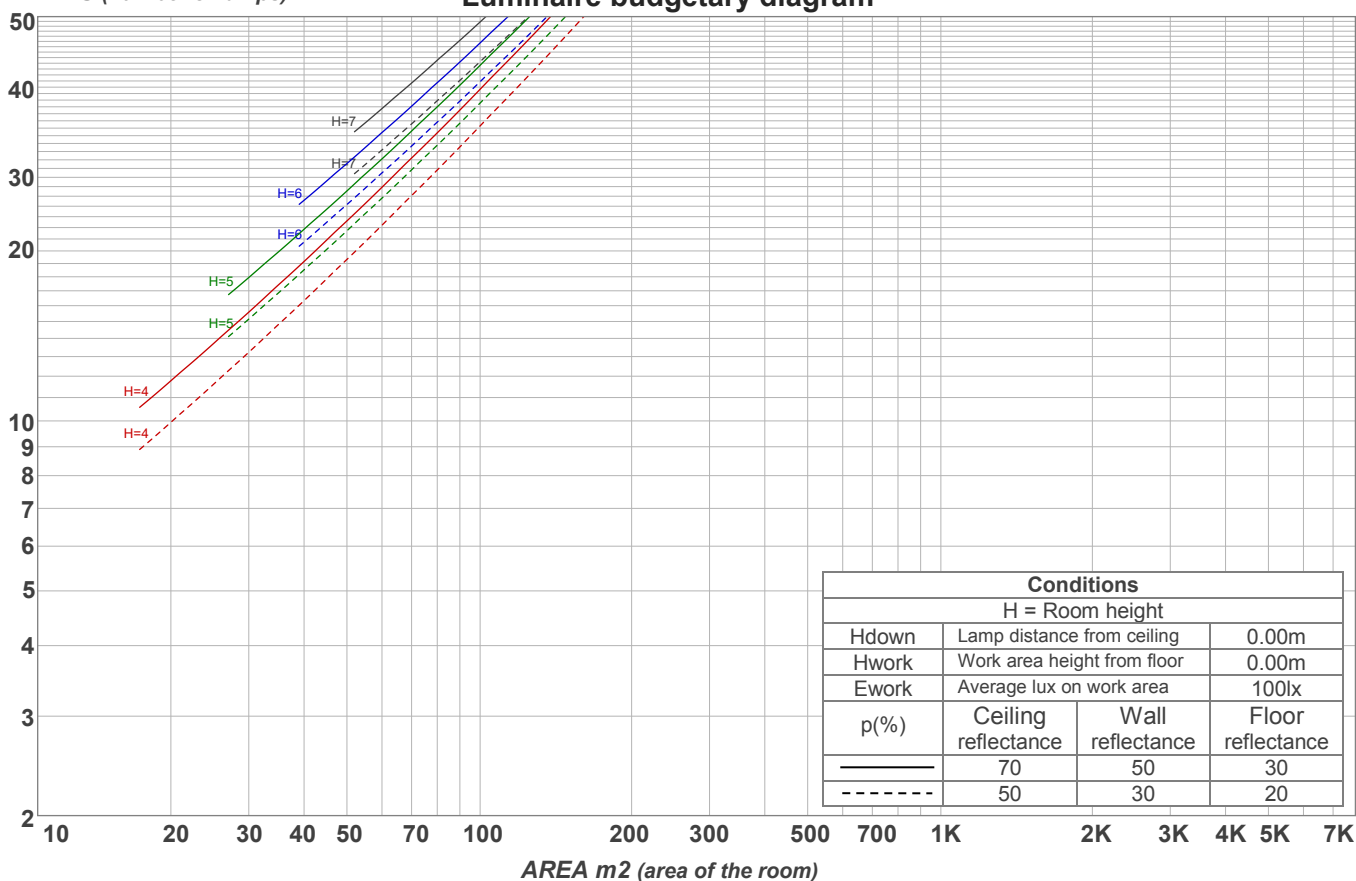
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	13,0	13,9	13,1	14,2	14,4	23,4	24,4	23,6	24,6	24,8
	3H	13,5	14,5	13,9	14,7	14,9	24,2	25,2	24,6	25,5	25,7
	4H	13,9	14,8	14,3	15,1	15,3	24,5	25,5	24,9	25,7	26,0
	6H	14,3	15,1	14,6	15,4	15,8	24,8	25,7	25,1	25,9	26,3
	8H	14,5	15,3	14,8	15,6	16,0	24,9	25,7	25,2	26,0	26,4
	12H	14,7	15,4	15,0	15,8	16,2	24,9	25,7	25,3	26,0	26,5
4H	2H	14,1	15,0	14,5	15,3	15,5	23,1	24,1	23,5	24,4	24,6
	3H	14,8	15,6	15,2	16,0	16,4	24,2	25,0	24,5	25,3	25,7
	4H	15,2	15,9	15,6	16,3	16,8	24,5	25,2	24,9	25,7	26,2
	6H	15,6	16,3	16,1	16,7	17,0	24,8	25,6	25,3	25,9	26,3
	8H	15,8	16,5	16,4	16,9	17,2	24,9	25,6	25,4	25,9	26,3
	12H	16,1	16,6	16,6	17,0	17,5	25,0	25,5	25,5	25,9	26,4
8H	4H	15,7	16,4	16,3	16,8	17,1	24,4	25,1	24,9	25,4	25,8
	6H	16,3	16,8	16,8	17,3	17,8	24,8	25,3	25,3	25,8	26,3
	8H	16,7	17,1	17,2	17,6	18,3	25,0	25,4	25,5	25,9	26,6
	12H	17,0	17,4	17,6	17,9	18,5	25,1	25,5	25,7	26,0	26,6
12H	4H	15,9	16,4	16,3	16,8	17,3	24,4	24,9	24,9	25,3	25,8
	6H	16,6	17,0	17,1	17,5	18,1	24,8	25,2	25,3	25,7	26,4
	8H	16,9	17,3	17,5	17,8	18,4	25,0	25,3	25,6	25,8	26,4
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,8 / -0,6					0,7 / -0,8				
S = 1.5H		1,2 / -0,9					1,9 / -1,8				
S = 2.0H		1,7 / -1,2					3,2 / -2,9				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 385 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	100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	94	92	90	88
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	63
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	57
6	79	68	60	55	77	67	60	54	65	59	54	63	58	54	62	57	53	51
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47
8	70	58	51	46	68	57	50	46	56	50	45	55	49	45	54	49	45	43
9	66	54	47	42	64	54	47	42	52	46	42	52	46	42	51	45	42	40
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37

LAMPS (number of lamps)

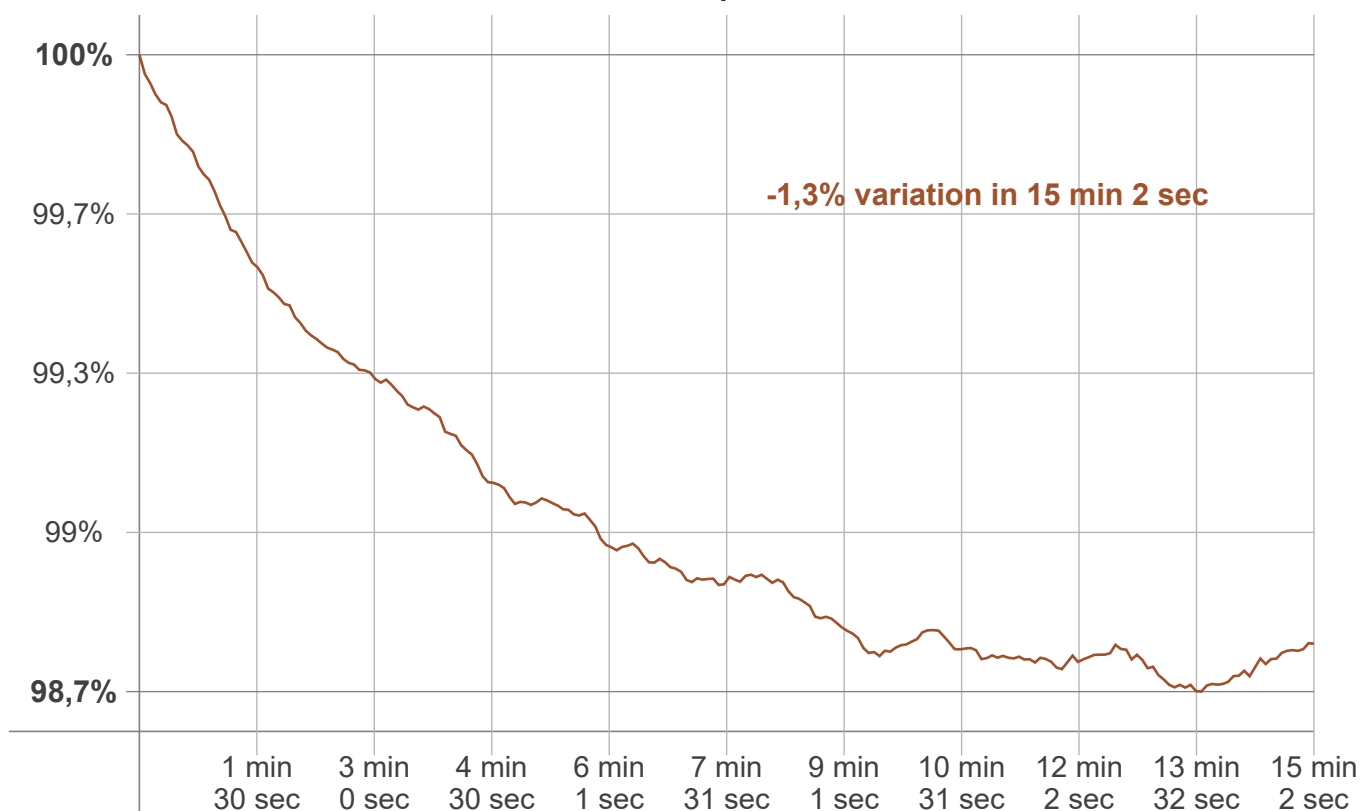
Luminaire budgetary diagram



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	86,1 lm	74,2 lm	53,8 lm	35,1 lm	20,9 lm	11,2 lm	5,34 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,011 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	-1,3%

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
389 lm	-4 lm	385 lm