Light efficiency:

136 Lumen/Watt

Light quality:

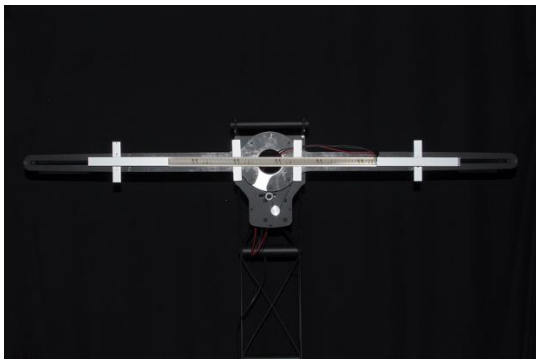
CRI: 82,3

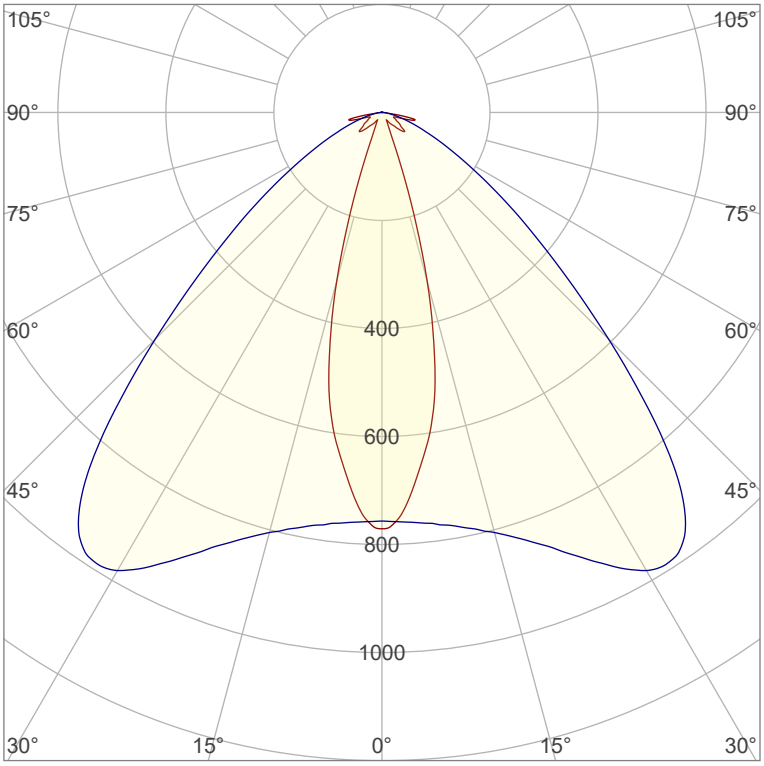
Color temperature:

2700 K

Output: 654 lm
Peak: 988 cd

Power: 4,8 W
PF: 1,0





Product name:
Navigator-3_510mm_827_Lens-30°-Transparent

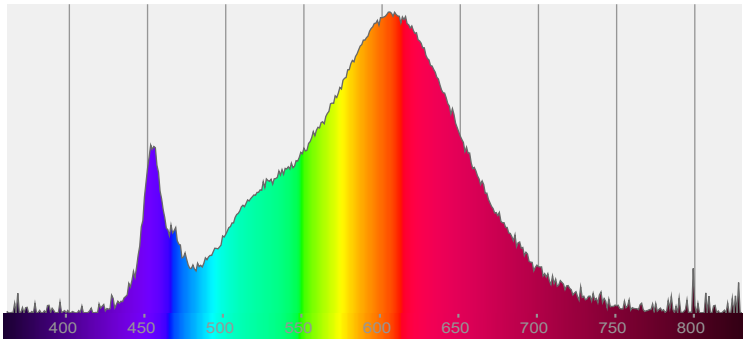
Item number:
NP/L1C/14C/0510/827/L3T

Date and time:
21.06.2022 15:15:04

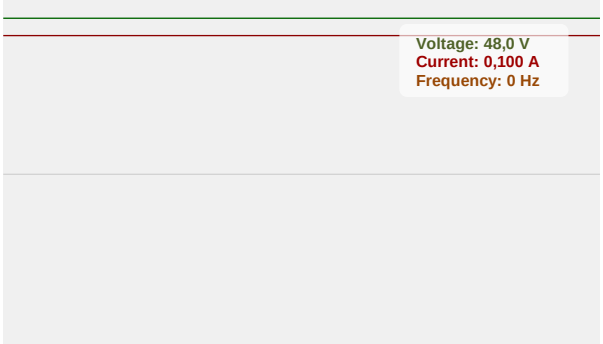
Description:
Tolerances:
Lumen +/-4%
Candela +/-2,5%
Colour Temp +/-35 Kelvin
CRI +/-0,7
Angular Resolution: 1 Degree Step
Last Calibration 20-09-2021
Tester: Peter Ulrich
Test Site: Lichtlabor
Gaustrasse 13
55411 Bingen am Rhein

CIE 1931
x: 0,460
y: 0,411

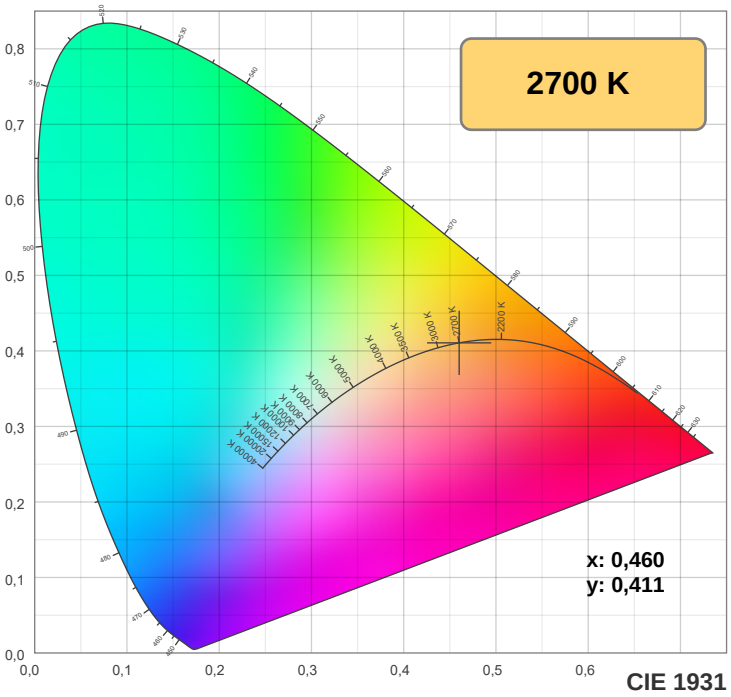
Spectra



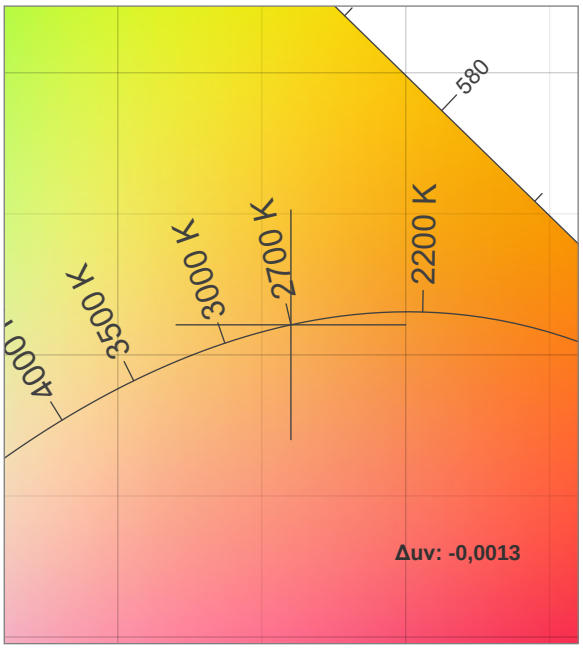
Power



Color details

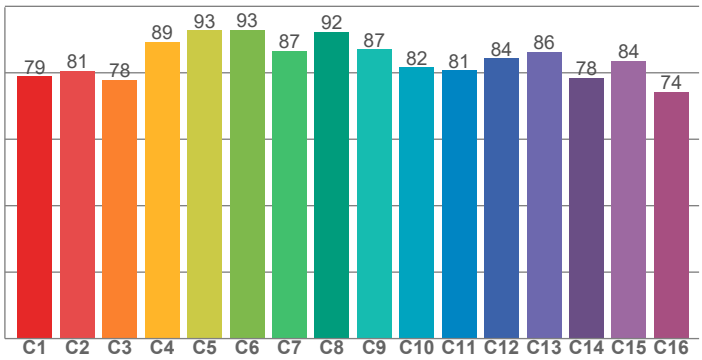


CIE 1931

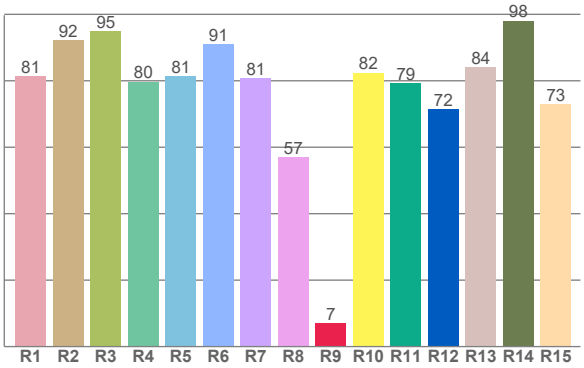


CIE 1931 ZOOM

TM30: 84,0



CRI: 82,3 (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
81,3	92,2	94,8	79,7	81,3	91,0	80,8	57,0	7,0	82,4	79,3	71,5	84,1	98,1	73,0

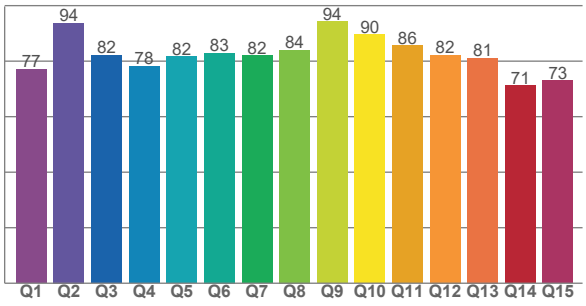
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79,0	80,5	77,9	89,2	92,8	92,9	86,6	92,3	87,1	81,6	80,7	84,3	86,3	78,5	83,7	74,2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
77,1	93,7	82,1	78,1	81,7	82,9	82,1	84,0	94,2	89,5	85,6	82,2	81,2	71,2	73,0

CQS: 81,3



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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2700 K	82,3	7,0	84,0	95,5	81,3	0,460	0,411	0,263	0,352	-0,0013

TM30 details

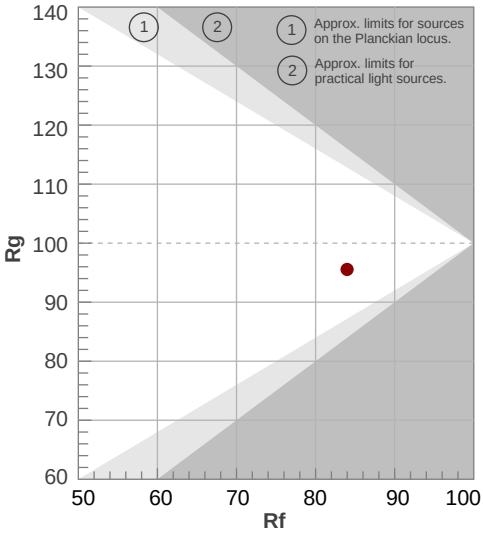
Rf 84,0

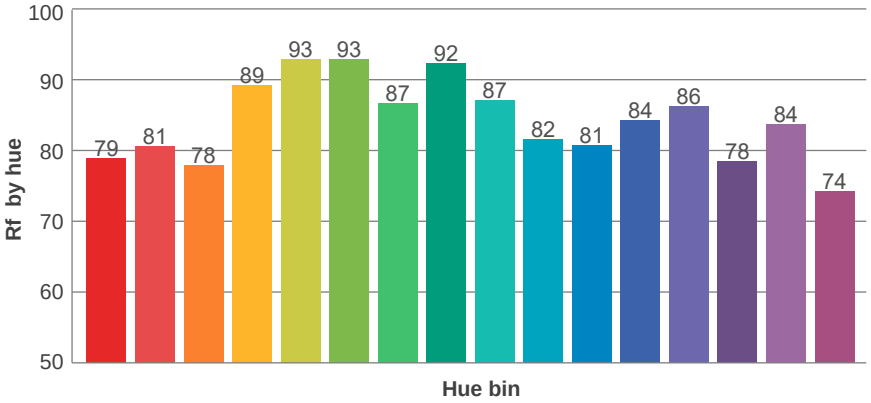
Fidelity index Rf

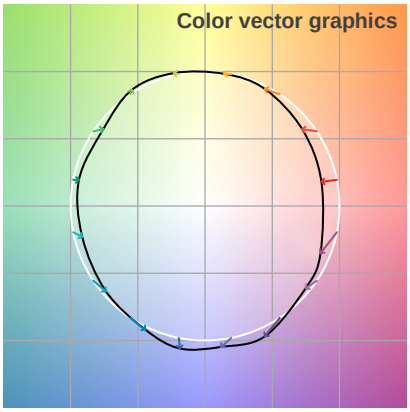
Rg 95,5

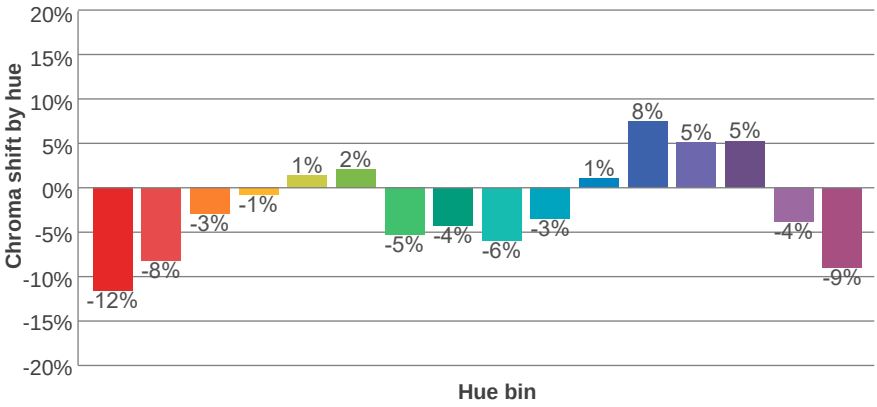
Gammut index Rg

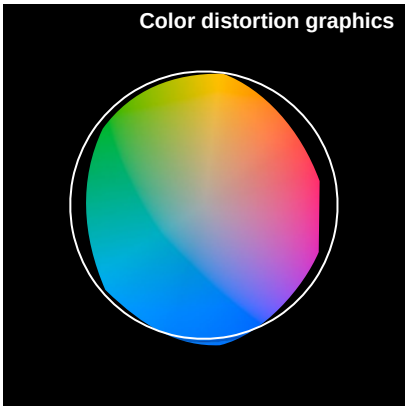
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	79	-12%	1%
2	81	-8%	7%
3	78	-3%	11%
4	89	-1%	5%
5	93	1%	3%
6	93	2%	-3%
7	87	-5%	-6%
8	92	-4%	-1%
9	87	-6%	5%
10	82	-3%	12%
11	81	1%	14%
12	84	8%	2%
13	86	5%	-9%
14	78	5%	-17%
15	84	-4%	-9%
16	74	-9%	-18%

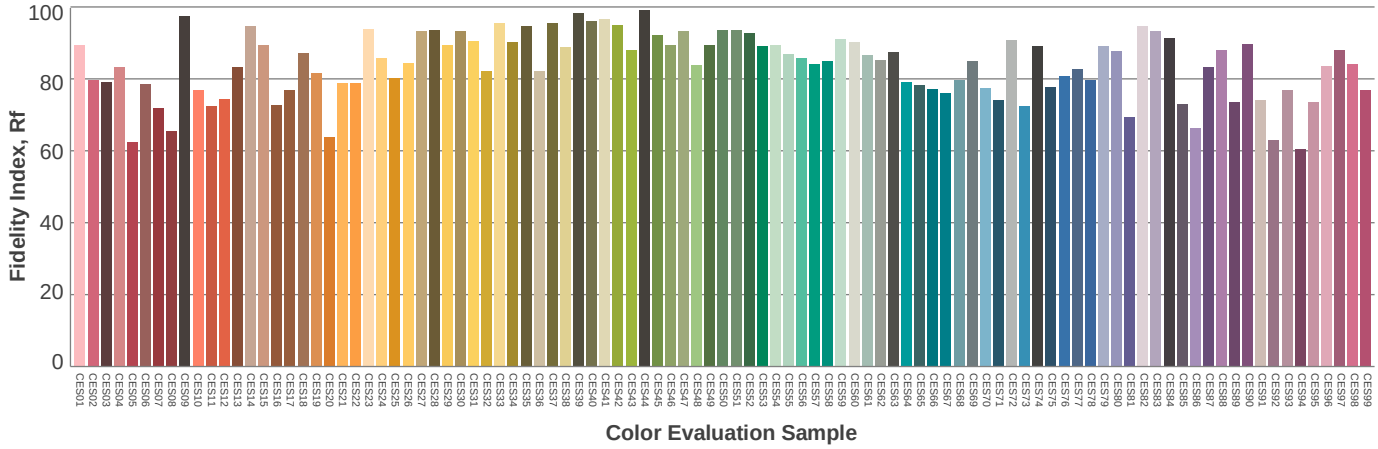




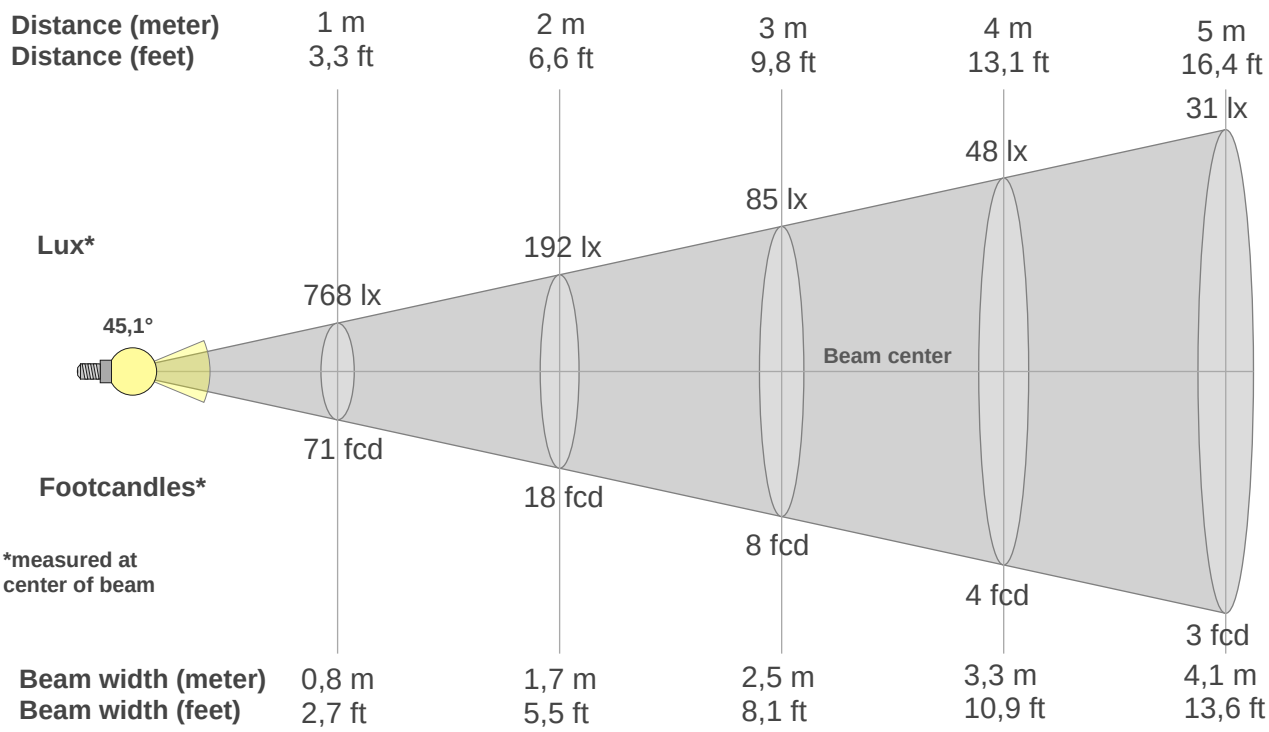








Beam details



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
768lx	192lx	85lx	48lx	31lx	21lx	16lx	12lx	9lx	8lx	6lx	5lx	5lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx
71,4fcd	17,8fcd	7,9fcd	4,5fcd	2,9fcd	2fcd	1,5fcd	1,1fcd	0,9fcd	0,7fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd

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°
768	757	717	664	613	552	470	375	270	171	92	49	33	25	20	17	17	20	24	27
100%	98%	93%	86%	80%	72%	61%	49%	35%	22%	12%	6%	4%	3%	3%	2%	2%	3%	3%	4%

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°
768	758	761	765	771	777	787	799	813	830	850	874	901	929	957	979	988	982	955	903
100%	99%	99%	100%	100%	101%	102%	104%	106%	108%	111%	114%	117%	121%	125%	127%	129%	128%	124%	118%

Intensities in 180° c-plane

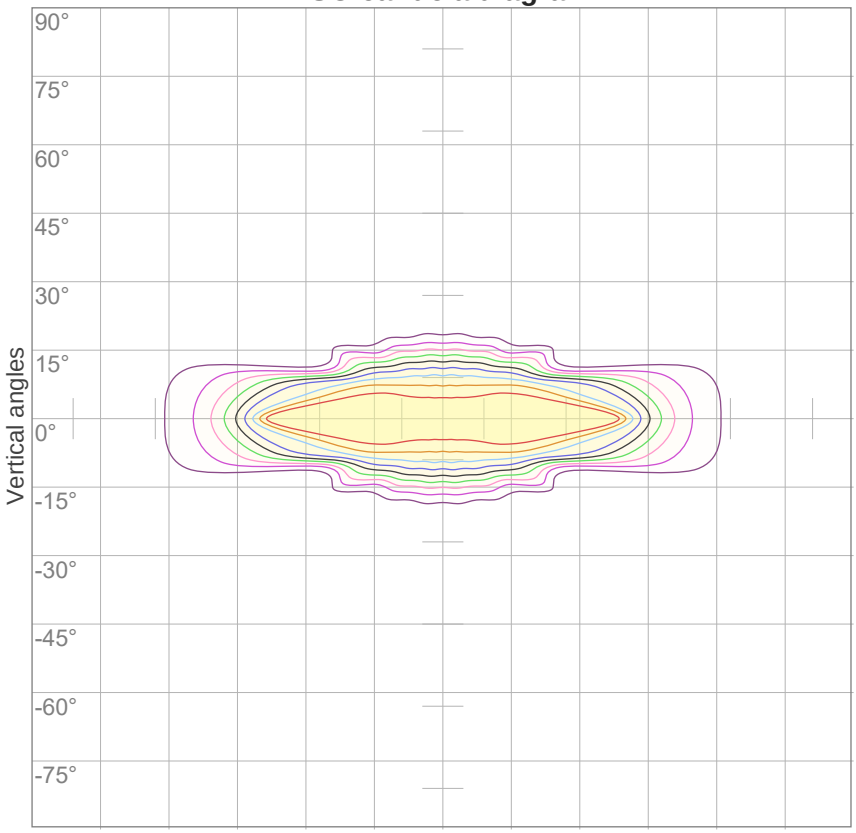
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
768	757	717	664	613	552	470	375	270	171	92	49	33	25	20	17	17	20	24	27
100%	98%	93%	86%	80%	72%	61%	49%	35%	22%	12%	6%	4%	3%	3%	2%	2%	3%	3%	4%

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°
768	758	761	765	771	777	787	799	813	830	850	874	901	929	957	979	988	982	955	903
100%	99%	99%	100%	100%	101%	102%	104%	106%	108%	111%	114%	117%	121%	125%	127%	129%	128%	124%	118%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
45,1°	**61,5°**	**159,5°**	**87,0%**	**72,1%**

ISO candela diagram



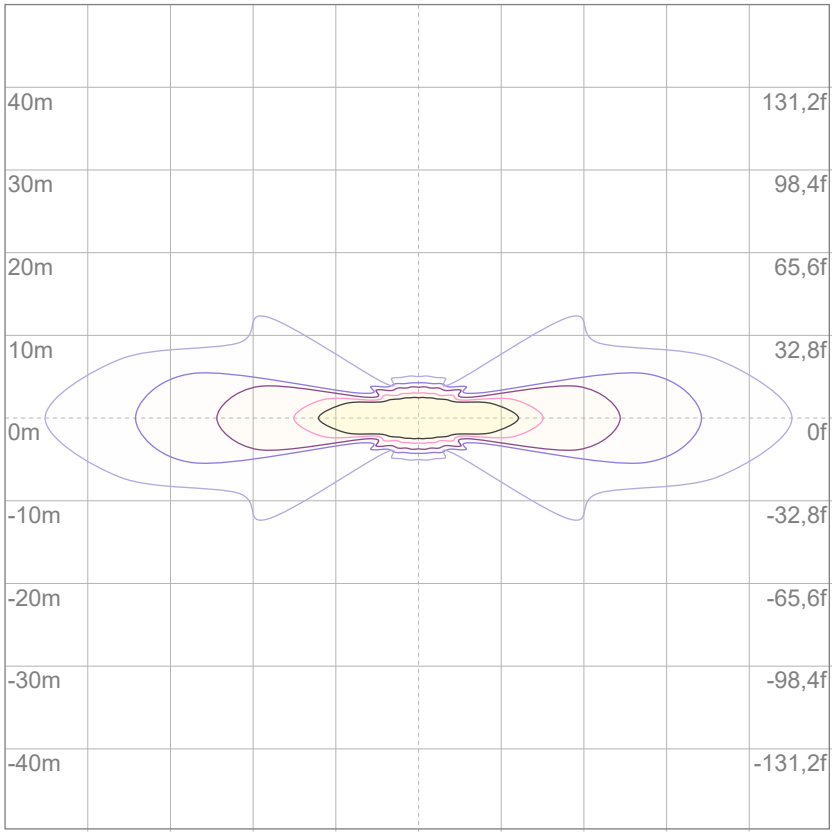
10%	77 cd
20%	154 cd
30%	230 cd
40%	307 cd
50%	384 cd
60%	461 cd
70%	538 cd
80%	615 cd
90%	691 cd

Conditions:

Number of c-planes: 16

Candela at center: 768 cd

ISO lux diagram



3%	0,230 lx
5%	0,384 lx
10%	0,768 lx
30%	2,30 lx
50%	3,84 lx

Conditions:

Number of c-planes: 16

Lux at center: 7,68 lx

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

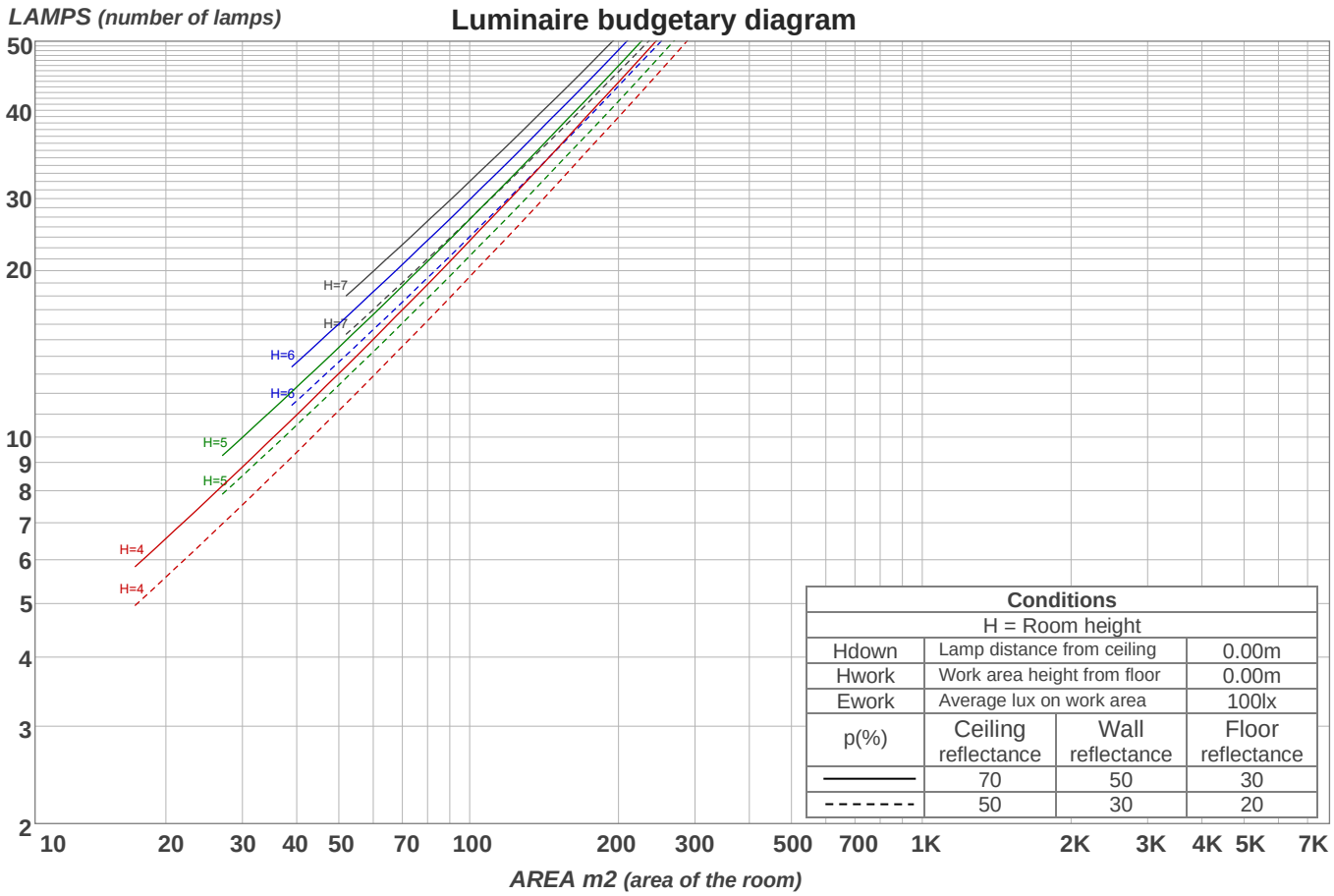
Glare Evaluation According to UGR

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	12,8	13,7	12,9	13,9	14,1	23,8	24,7	24,0	25,0	25,2
	3H	14,2	15,2	14,6	15,4	15,6	24,2	25,2	24,6	25,5	25,6
	4H	16,8	17,7	17,2	18,0	18,2	24,4	25,3	24,8	25,6	25,8
	6H	19,8	20,7	20,1	21,0	21,3	24,5	25,3	24,8	25,6	26,0
	8H	20,1	20,9	20,4	21,2	21,6	24,5	25,3	24,8	25,6	26,0
	12H	20,1	20,9	20,4	21,2	21,6	24,5	25,3	24,8	25,6	26,1
4H	2H	13,2	14,2	13,6	14,4	14,7	23,5	24,4	23,9	24,7	24,9
	3H	15,0	15,8	15,4	16,1	16,6	24,1	24,9	24,4	25,2	25,6
	4H	17,8	18,6	18,3	19,0	19,5	24,2	24,9	24,6	25,3	25,9
	6H	21,2	21,9	21,7	22,3	22,6	24,3	25,0	24,8	25,4	25,7
	8H	21,5	22,2	22,0	22,6	22,9	24,3	25,0	24,8	25,4	25,7
	12H	21,5	22,1	22,0	22,5	23,0	24,3	24,9	24,8	25,3	25,8
8H	4H	18,2	18,9	18,7	19,2	19,6	24,1	24,8	24,6	25,1	25,5
	6H	21,9	22,3	22,4	22,8	23,3	24,3	24,8	24,8	25,3	25,8
	8H	22,4	22,8	22,9	23,3	24,0	24,4	24,8	24,9	25,4	26,0
	12H	22,4	22,8	23,0	23,3	23,9	24,5	24,8	25,0	25,3	25,9
12H	4H	18,2	18,8	18,7	19,2	19,7	24,1	24,7	24,6	25,1	25,6
	6H	22,0	22,4	22,5	22,9	23,6	24,4	24,8	24,9	25,3	26,0
	8H	22,5	22,9	23,1	23,4	24,0	24,5	24,9	25,1	25,4	26,0
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,0 / -0,1					2,2 / -2,7				
S = 1.5H		0,2 / -0,1					4,1 / -4,0				
S = 2.0H		0,2 / -0,3					5,8 / -4,9				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 654 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	101	101	101	99
1	110	106	103	100	108	104	101	98	100	97	95	96	94	92	92	90	89	87
2	103	96	91	86	100	94	89	85	91	86	83	87	84	81	84	81	79	77
3	96	88	81	76	94	86	80	75	83	78	74	80	76	72	78	74	71	69
4	90	80	73	68	88	79	72	67	76	71	66	74	69	65	72	68	64	62
5	84	74	67	61	82	73	66	61	71	65	60	69	64	60	67	62	59	57
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	52
7	75	64	57	52	73	63	56	51	62	55	51	60	55	51	59	54	50	49
8	71	60	53	48	70	59	52	48	58	52	47	57	51	47	55	51	47	45
9	67	56	49	45	66	56	49	45	55	49	44	53	48	44	52	48	44	42
10	64	53	46	42	63	53	46	42	52	46	42	51	45	41	50	45	41	40

Luminaire budgetary diagram

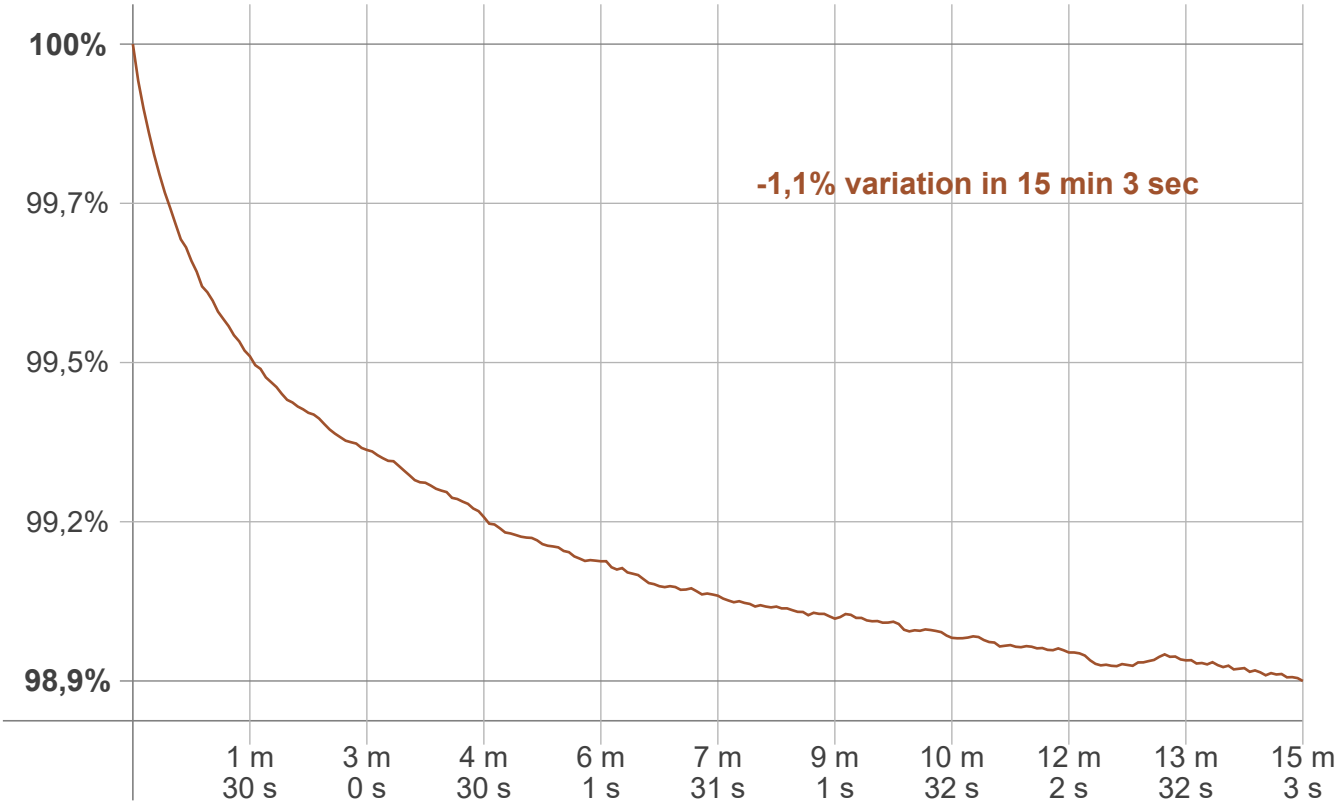


Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
67,2 lm	146 lm	122 lm	93,6 lm	80,3 lm	59,4 lm	34,2 lm	28,0 lm	14,2 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
3,33 lm	1,16 lm	1,06 lm	0,961 lm	0,767 lm	0,585 lm	0,431 lm	0,264 lm	0,089 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
2697 K	+3 K	2700 K

Output change

Output start	Output change	Output end
662 lm	-8 lm	654 lm