



Light efficiency:

119 Lumen/Watt

Light quality:

CRI: 82,4

Color temperature:

2764 K

Output: 512 lm

Peak: 796 cd

Power: 4,3 W

PF: 1,0



Product name:

Navigator-3_510mm_827_Inlay-Lens-30-Grad

Item number:

NP/L1C/14C/0510/827/IL3F

Date and time:

25.07.2025 10:31:37

Description:

Rank: D60-AC-8GB

Tolerances:

Lumen +/-4%

Candela +/-2,5%

Colour Temp +/-35 Kelvin

CRI +/-0,7

Angular Resolution: 1 Degree Step

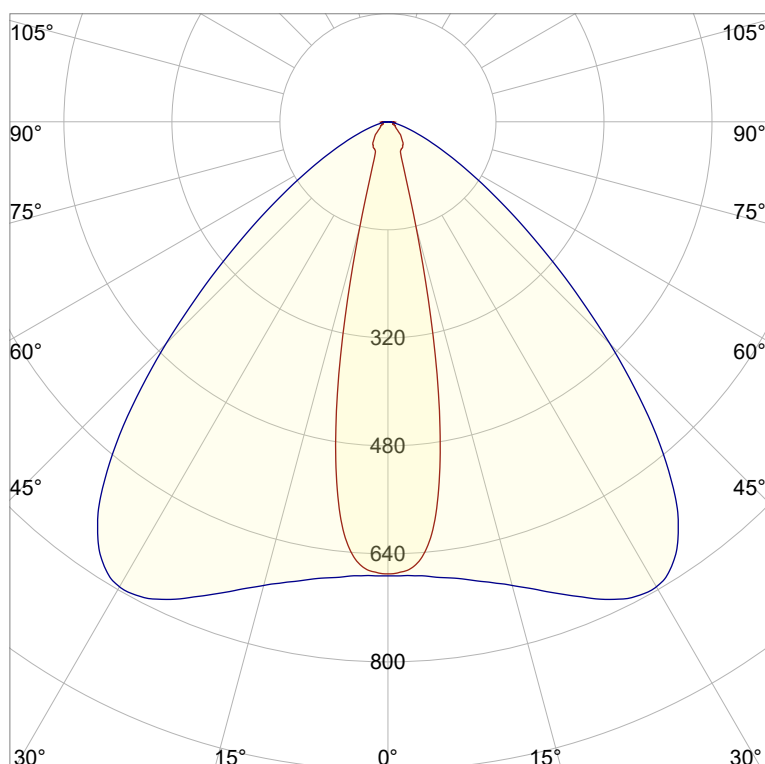
Last Calibration 13.10.2023

Tester: Peter Ulrich

Test Site: Lichtlabor

Gaustrasse 13

55411 Bingen am Rhein

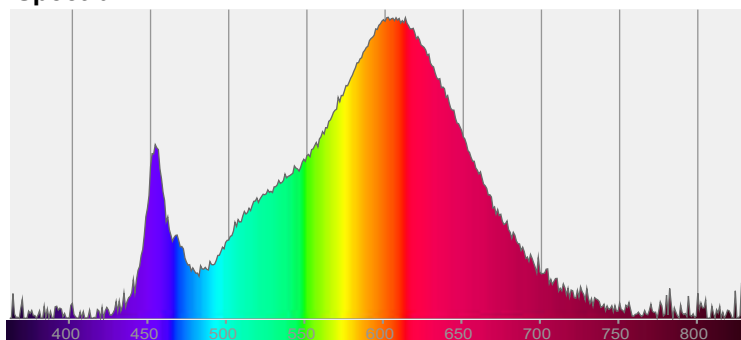


CIE 1931

x: 0,451

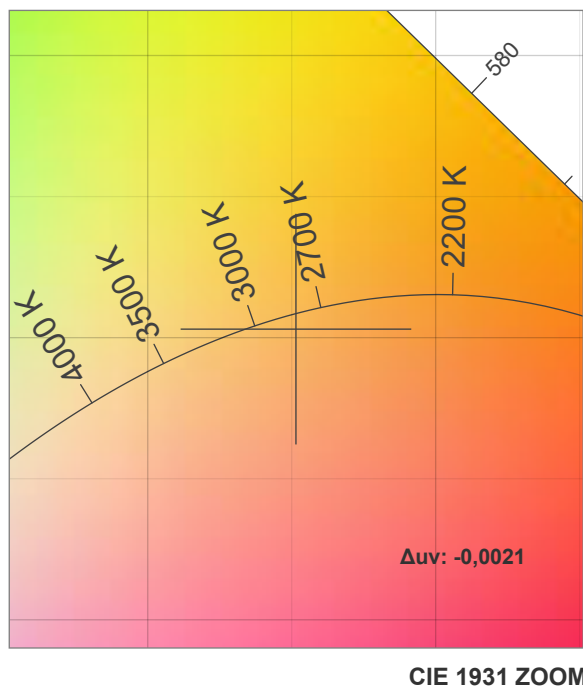
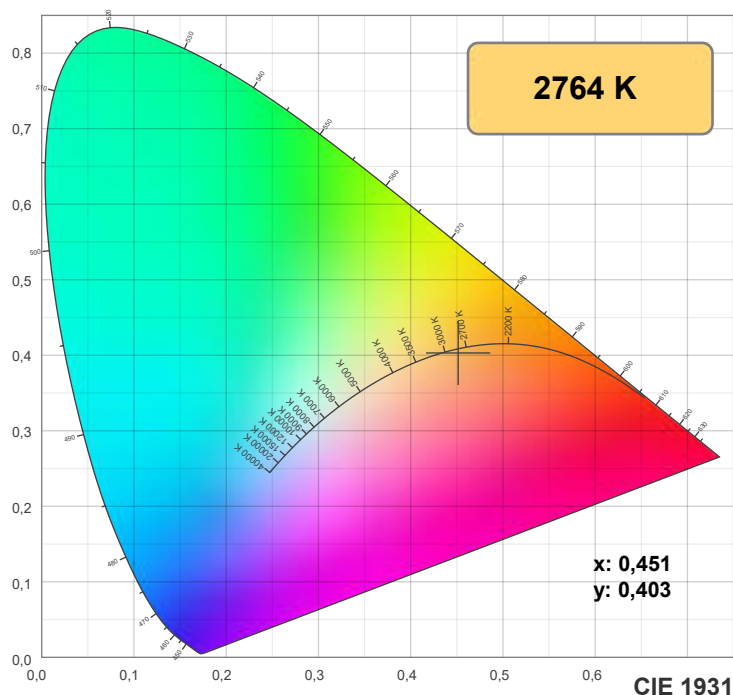
y: 0,403

Spectra



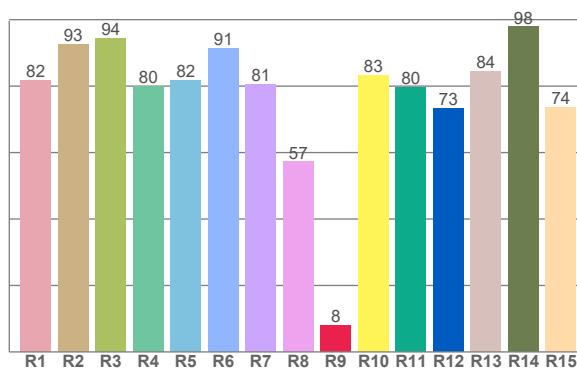
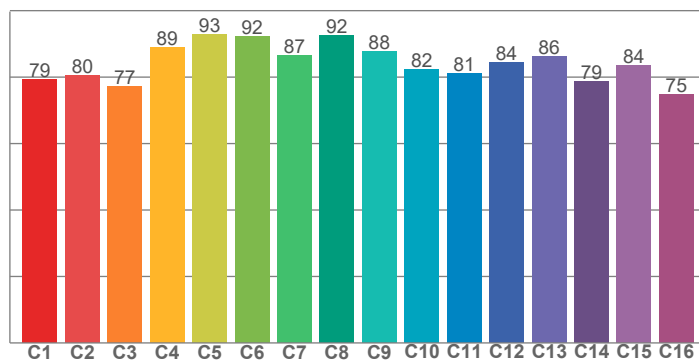
Power

Voltage: 48,0 V
Current: 0,090 A
Frequency: 0 Hz



TM30: 84,1

CRI: 82,4 (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
81,6	92,6	94,5	79,9	81,8	91,5	80,5	57,2	8,1	83,3	79,7	73,3	84,5	97,9	73,6

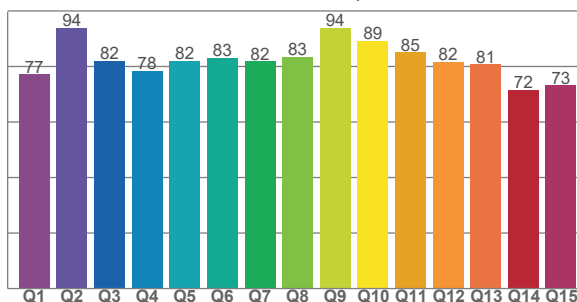
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79,3	80,5	77,3	89,0	92,7	92,3	86,6	92,4	87,8	82,4	81,1	84,3	86,3	78,7	83,6	74,7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
77,1	93,8	82,0	78,3	82,0	83,1	81,8	83,4	94,0	89,2	85,1	81,6	80,8	71,5	73,1

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 deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2764 K	82,4	8,1	84,1	96,1	81,3	0,451	0,403	0,260	0,349	-0,0021



TM30 details



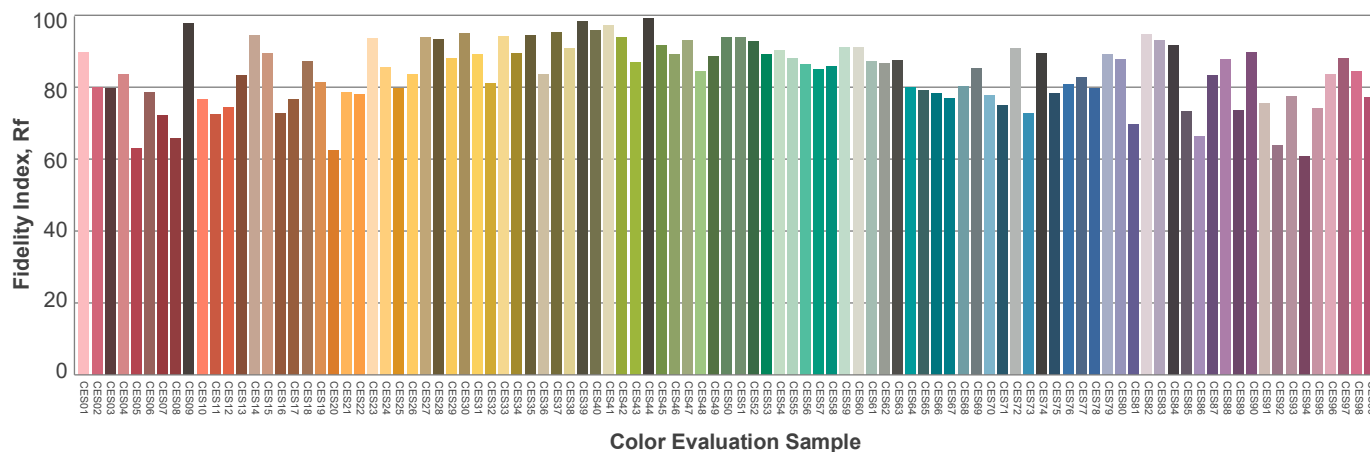
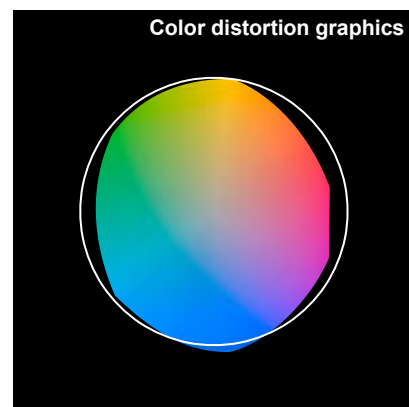
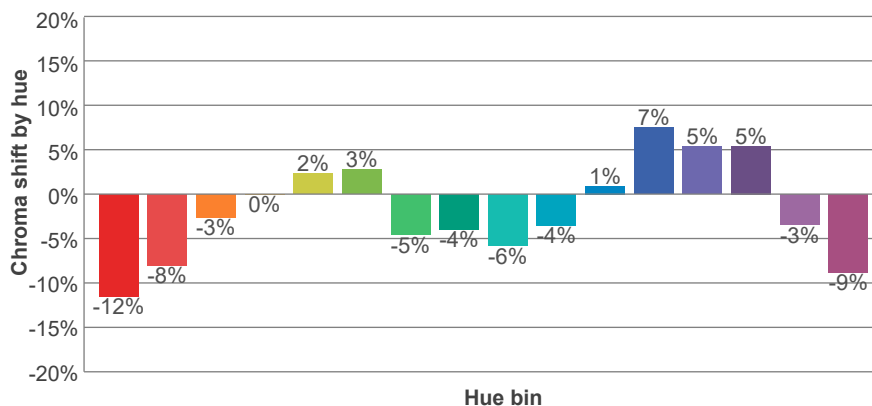
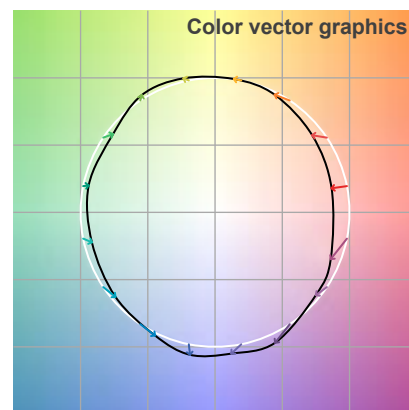
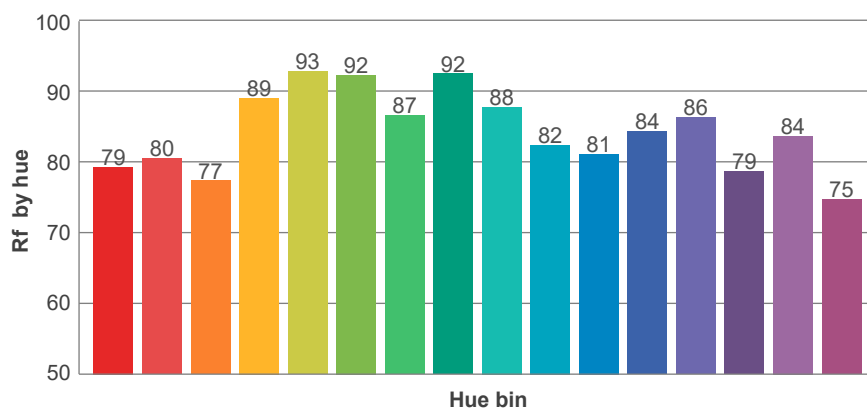
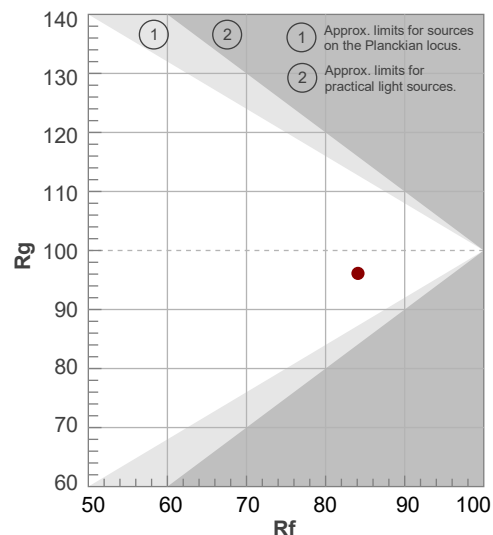
Rf 84,1

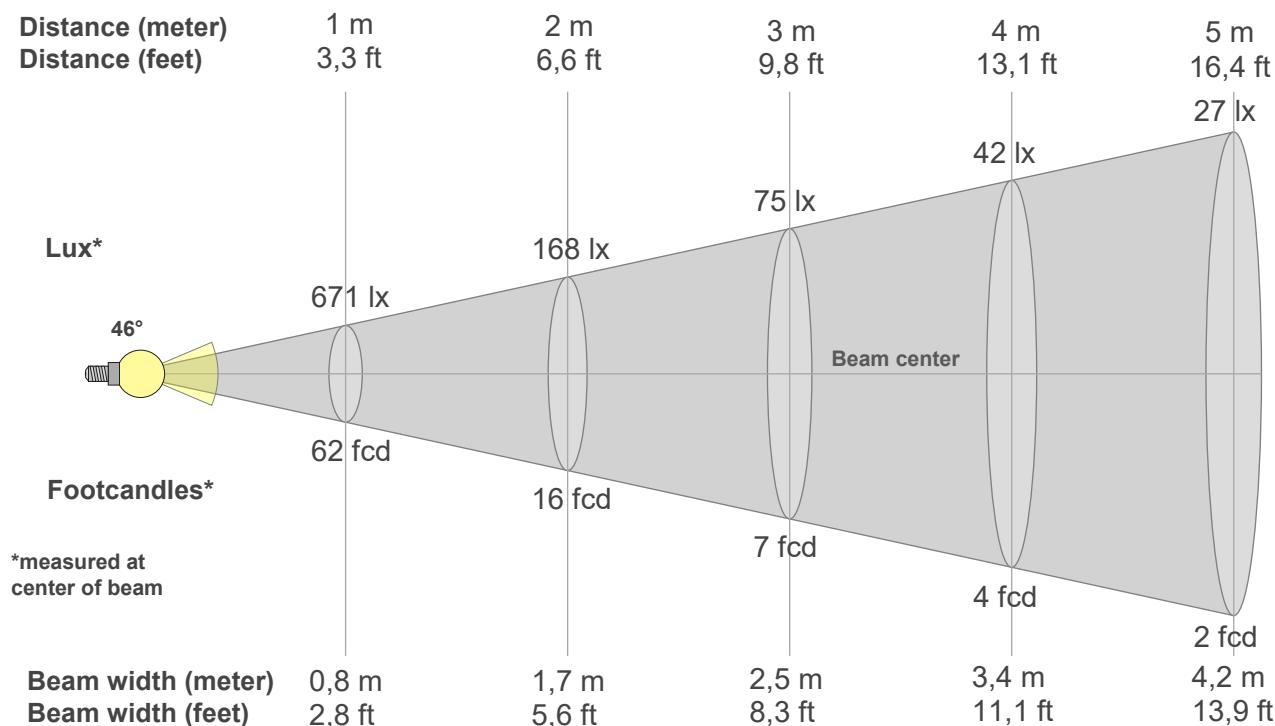
Fidelity index Rf

Rg 96,1

Gamut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	79	-12%	1%
2	80	-8%	8%
3	77	-3%	12%
4	89	0%	6%
5	93	2%	4%
6	92	3%	-3%
7	87	-5%	-6%
8	92	-4%	-1%
9	88	-6%	4%
10	82	-4%	11%
11	81	1%	14%
12	84	7%	2%
13	86	5%	-9%
14	79	5%	-17%
15	84	-3%	-9%
16	75	-9%	-17%





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
671lx	168lx	75lx	42lx	27lx	19lx	14lx	10lx	8lx	7lx	6lx	5lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx	2lx
62,3fcd	15,6fcd	6,9fcd	3,9fcd	2,5fcd	1,7fcd	1,3fcd	1fcd	0,8fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	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°
671	666	653	615	543	440	319	204	126	83	61	50	47	45	44	44	41	40	38	34
100%	99%	97%	92%	81%	66%	48%	30%	19%	12%	9%	7%	7%	7%	7%	6%	6%	6%	6%	5%

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°
671	673	674	678	682	689	697	706	717	730	744	759	774	786	794	795	786	765	731	685
100%	100%	100%	101%	102%	103%	104%	105%	107%	109%	111%	113%	115%	117%	118%	119%	117%	114%	109%	102%

Intensities in 180° c-plane

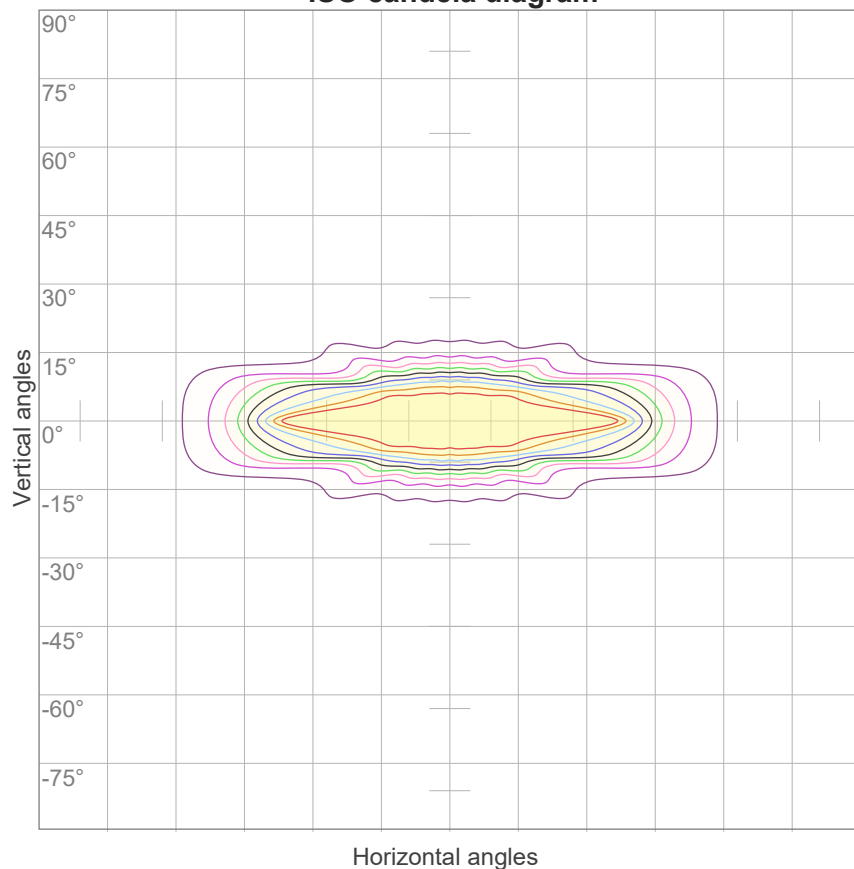
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
671	666	653	615	543	440	319	204	126	83	61	50	47	45	44	44	41	40	38	34
100%	99%	97%	92%	81%	66%	48%	30%	19%	12%	9%	7%	7%	7%	7%	6%	6%	6%	6%	5%

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°
671	673	674	678	682	689	697	706	717	730	744	759	774	786	794	795	786	765	731	685
100%	100%	100%	101%	102%	103%	104%	105%	107%	109%	111%	113%	115%	117%	118%	119%	117%	114%	109%	102%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
46°	69,6°	131,3°	90,3%	76,5%

ISO candela diagram



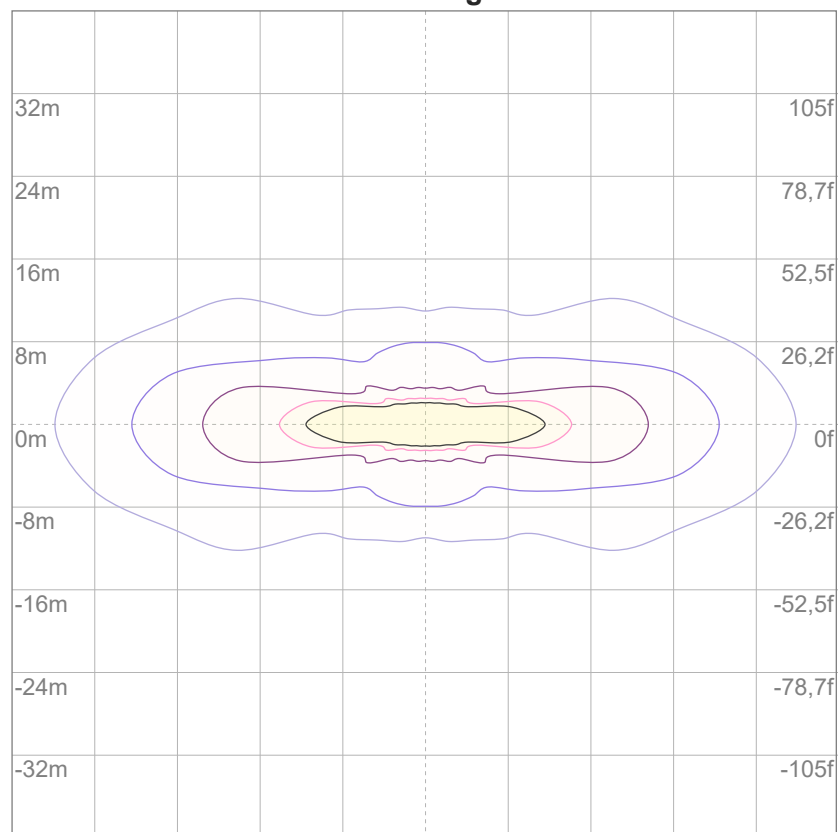
10%	67 cd
20%	134 cd
30%	201 cd
40%	268 cd
50%	335 cd
60%	402 cd
70%	470 cd
80%	537 cd
90%	604 cd

Conditions:

Number of c-planes: 16

Candela at center: 671 cd

ISO lux diagram



3%	0,201 lx
5%	0,335 lx
10%	0,671 lx
30%	2,01 lx
50%	3,35 lx

Conditions:

Number of c-planes: 16

Lux at center: 6,71 lx

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

Glare Evaluation According to UGR

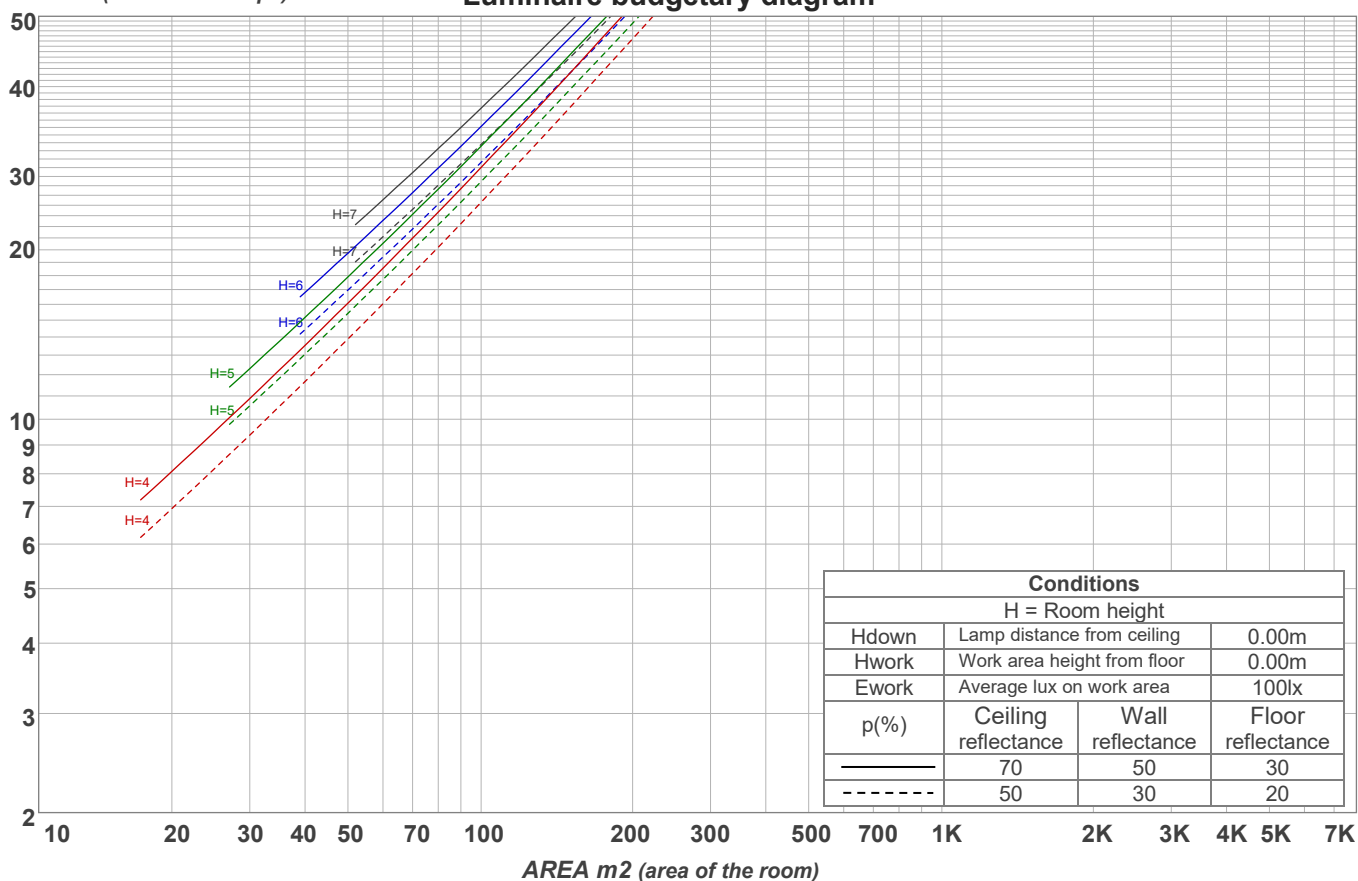
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	8,3	9,2	8,5	9,4	9,6	22,9	23,7	23,0	24,0	24,2
	3H	9,0	9,9	9,4	10,2	10,4	23,1	24,1	23,5	24,3	24,5
	4H	9,6	10,5	10,0	10,8	11,0	23,2	24,1	23,6	24,4	24,6
	6H	10,6	11,4	10,9	11,6	12,0	23,3	24,1	23,6	24,4	24,8
	8H	11,2	11,9	11,5	12,2	12,6	23,3	24,1	23,6	24,4	24,8
	12H	11,8	12,5	12,2	12,9	13,3	23,3	24,0	23,6	24,3	24,8
4H	2H	9,6	10,5	10,0	10,7	11,0	22,5	23,5	22,9	23,7	24,0
	3H	10,5	11,3	10,9	11,6	12,0	23,0	23,8	23,4	24,1	24,5
	4H	11,1	11,8	11,5	12,2	12,7	23,1	23,8	23,5	24,2	24,7
	6H	12,1	12,8	12,6	13,1	13,5	23,1	23,8	23,6	24,2	24,5
	8H	12,7	13,3	13,2	13,7	14,1	23,1	23,8	23,6	24,1	24,5
	12H	13,4	13,9	13,9	14,3	14,8	23,1	23,6	23,6	24,0	24,5
8H	4H	11,8	12,4	12,3	12,8	13,2	23,0	23,6	23,5	24,0	24,3
	6H	13,0	13,4	13,5	13,9	14,4	23,1	23,5	23,6	24,0	24,5
	8H	13,8	14,2	14,3	14,7	15,3	23,1	23,5	23,7	24,0	24,7
	12H	14,7	15,0	15,2	15,5	16,1	23,2	23,5	23,7	24,0	24,6
12H	4H	11,9	12,4	12,4	12,9	13,3	22,9	23,4	23,4	23,8	24,3
	6H	13,3	13,6	13,8	14,2	14,8	23,1	23,5	23,6	24,0	24,6
	8H	14,1	14,4	14,7	14,9	15,6	23,1	23,4	23,7	23,9	24,5
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,2 / -0,2					2,3 / -3,2				
S = 1.5H		0,3 / -0,3					4,4 / -4,6				
S = 2.0H		0,4 / -0,6					6,1 / -5,5				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 512 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	111	108	104	101	108	105	102	100	101	98	96	97	95	93	93	92	90	88
2	104	98	93	88	102	96	91	87	92	88	85	89	86	83	86	83	81	79
3	97	89	83	78	95	88	82	78	85	80	76	82	78	75	80	76	73	71
4	91	82	75	70	89	81	75	70	78	73	69	76	71	68	74	70	67	65
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	59
6	81	71	63	58	79	70	63	58	68	62	58	66	61	57	65	60	57	55
7	77	66	59	54	75	65	58	54	63	58	53	62	57	53	61	56	52	51
8	72	62	55	50	71	61	54	50	60	54	50	58	53	49	57	52	49	47
9	69	58	51	47	68	57	51	47	56	50	46	55	50	46	54	49	46	44
10	65	55	48	44	64	54	48	44	53	47	44	52	47	43	51	47	43	42

LAMPS (number of lamps)

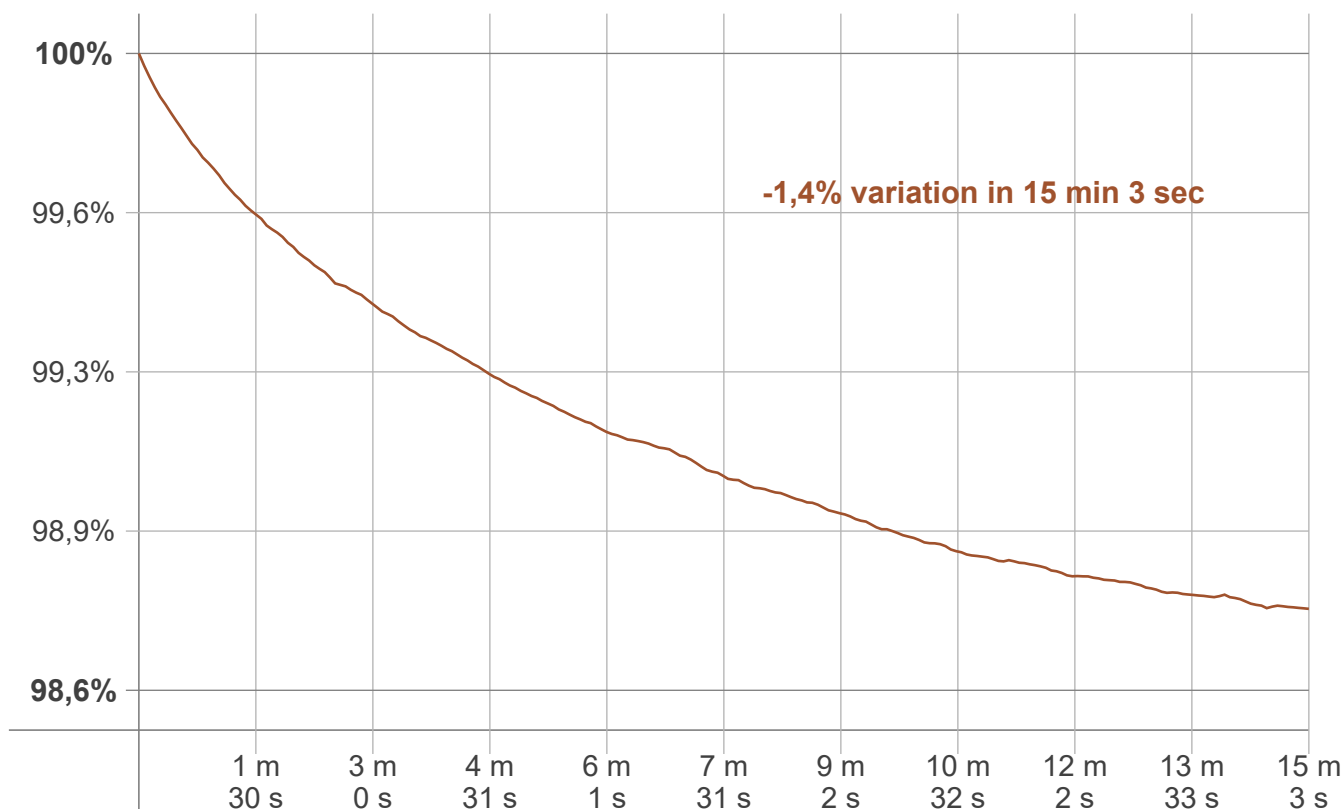
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
58,9 lm	113 lm	96,1 lm	87,1 lm	67,0 lm	40,6 lm	22,6 lm	12,1 lm	7,64 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
2,18 lm	1,26 lm	0,568 lm	0,514 lm	0,398 lm	0,292 lm	0,215 lm	0,132 lm	1,57 lm

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 15 min 3 sec
Warmup variation	-1,4%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
2762 K	+2 K	2764 K

Output change

Output start	Output change	Output end
519 lm	-7 lm	512 lm