Light efficiency:

142 Lumen/Watt

Light quality:

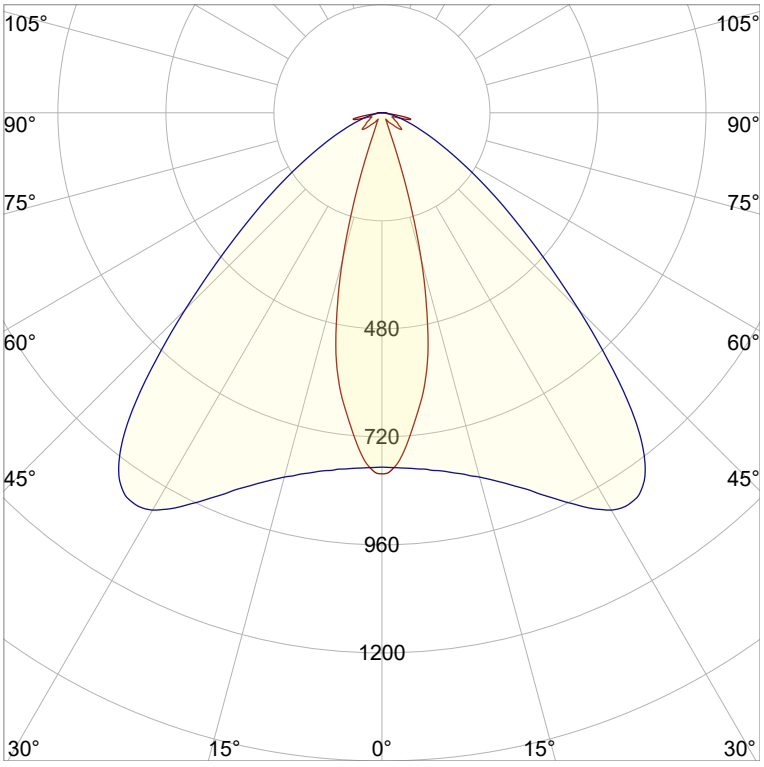
CRI: 82,3

Color temperature:

2775 K

Output: 681 lm
Peak: 1028 cd

Power: 4,8 W
PF: 1,0



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

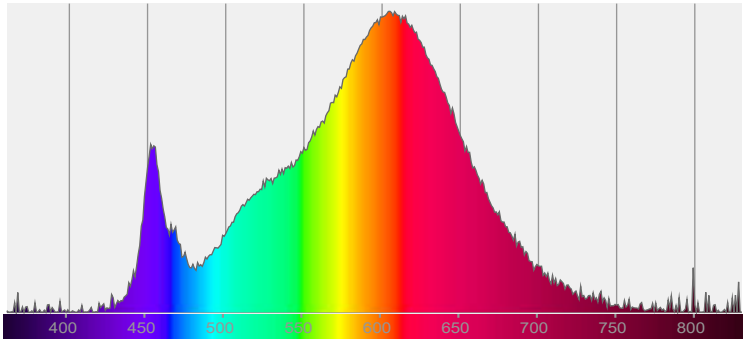
Item number:
NP/L1C/14C/G1/L1C/0510/827/L3T

Date and time:
21.06.2022 15:15:04

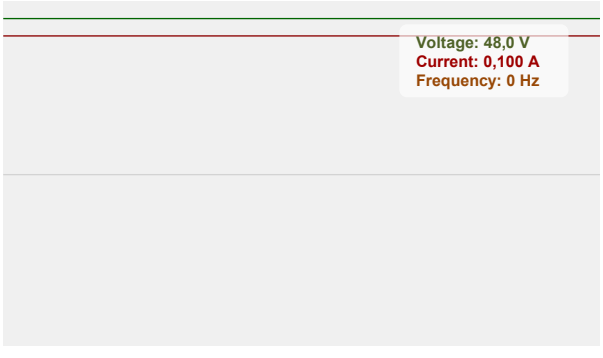
Description:
Rank: D60-AC-8GB
Tolerances:
Lumen +/-4%
Candela +/-2,5%
Colour Temp +/-35 Kelvin
CRI +/-0,7
Angular Resolution: 1 Degree Step
Last Calibration 20-09-2021
Tester: Peter Ulrich
Test Site: Lichtlabor
Gaustrasse 13
55411 Bingen am Rhein

CIE 1931
x: 0,452
y: 0,405

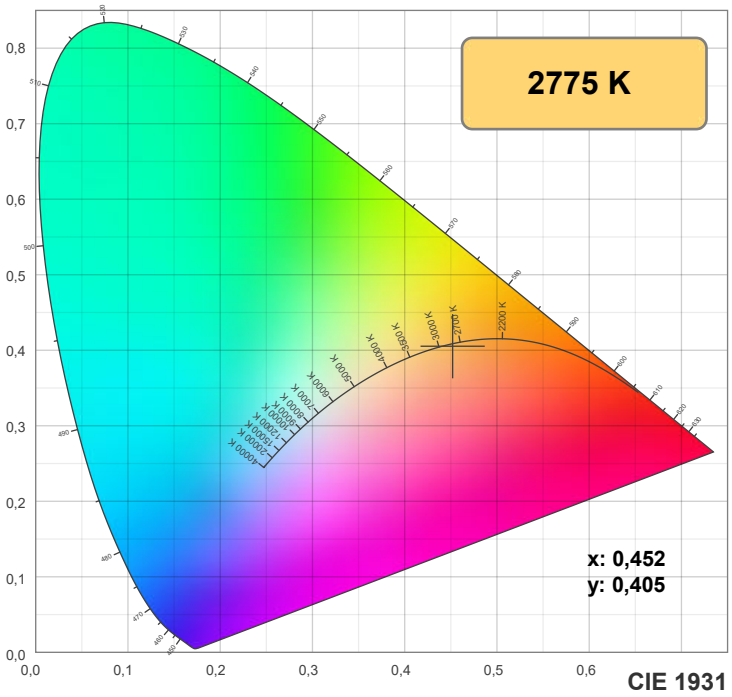
Spectra

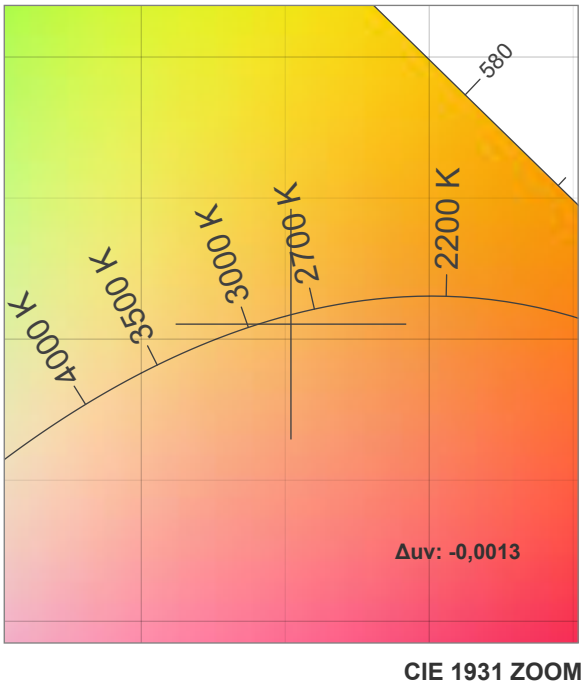


Power

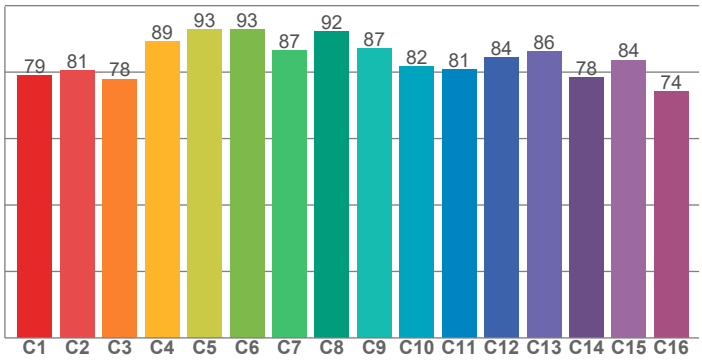


Color details

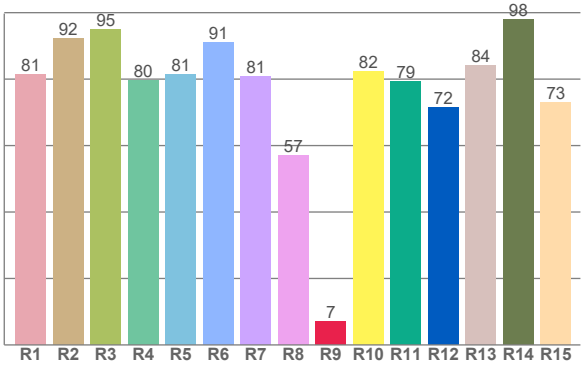




TM30: 84,0



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

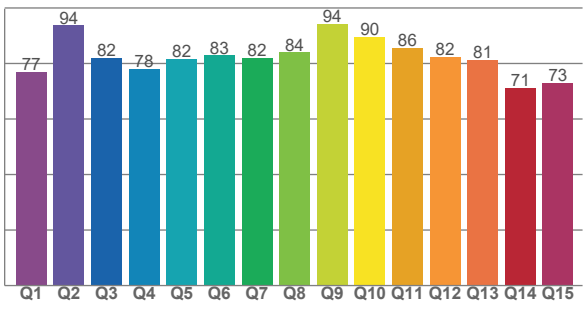
TM30 C values, 16 binned values out of total of 99 C values

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
2775 K	82,3	7,0	84,0	95,5	81,3	0,452	0,405	0,260	0,349	-0,0013

TM30 details

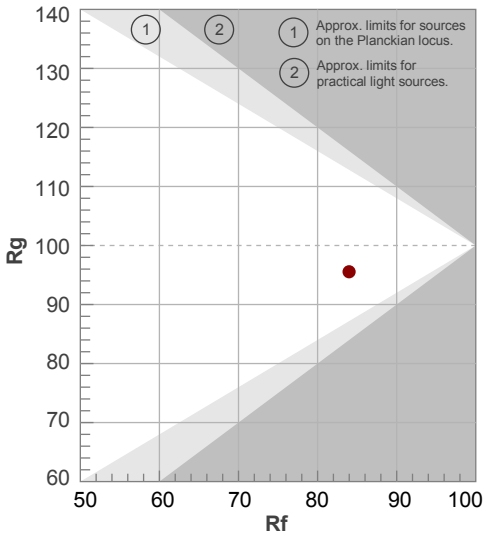
Rf 84,0

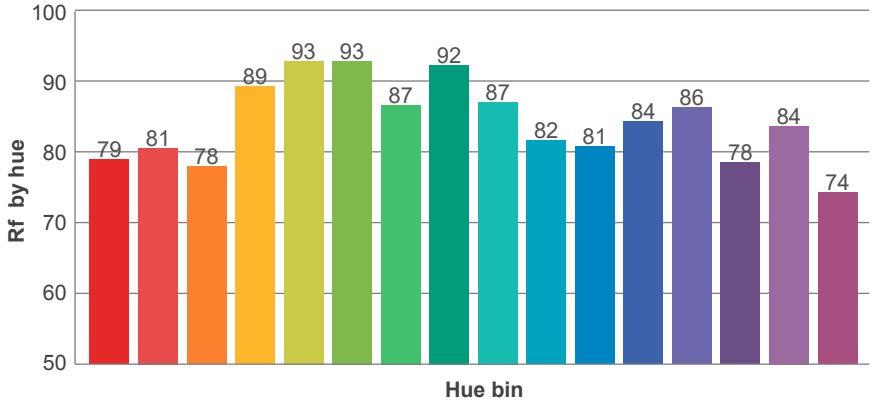
Fidelity index Rf

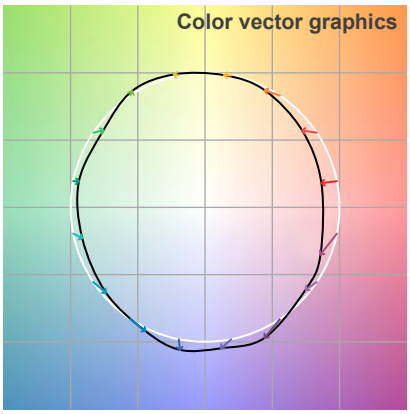
Rg 95,5

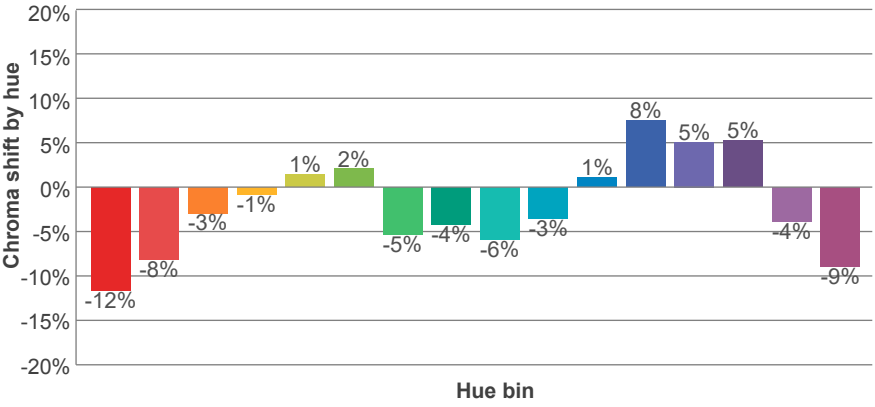
Gammut index Rg

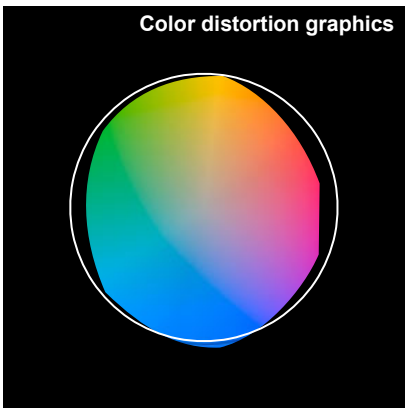
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	79	-12%	1%
2	81	-8%	7%
3	78	-3%	11%
4	89	-1%	5%
5	93	1%	3%
6	93	2%	-3%
7	87	-5%	-6%
8	92	-4%	-1%
9	87	-6%	5%
10	82	-3%	12%
11	81	1%	14%
12	84	8%	2%
13	86	5%	-9%
14	78	5%	-17%
15	84	-4%	-9%
16	74	-9%	-18%

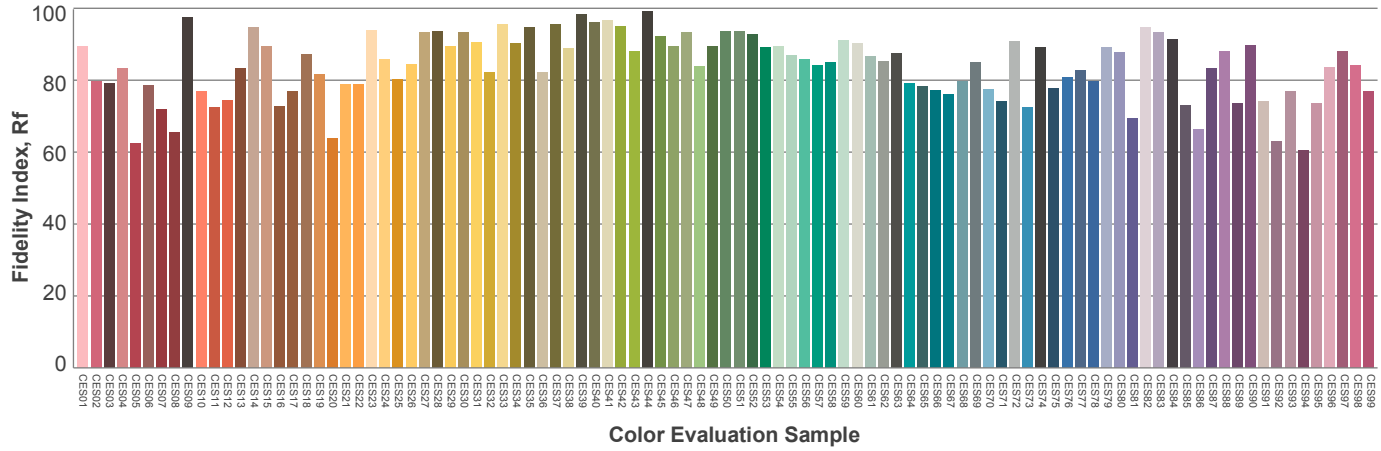




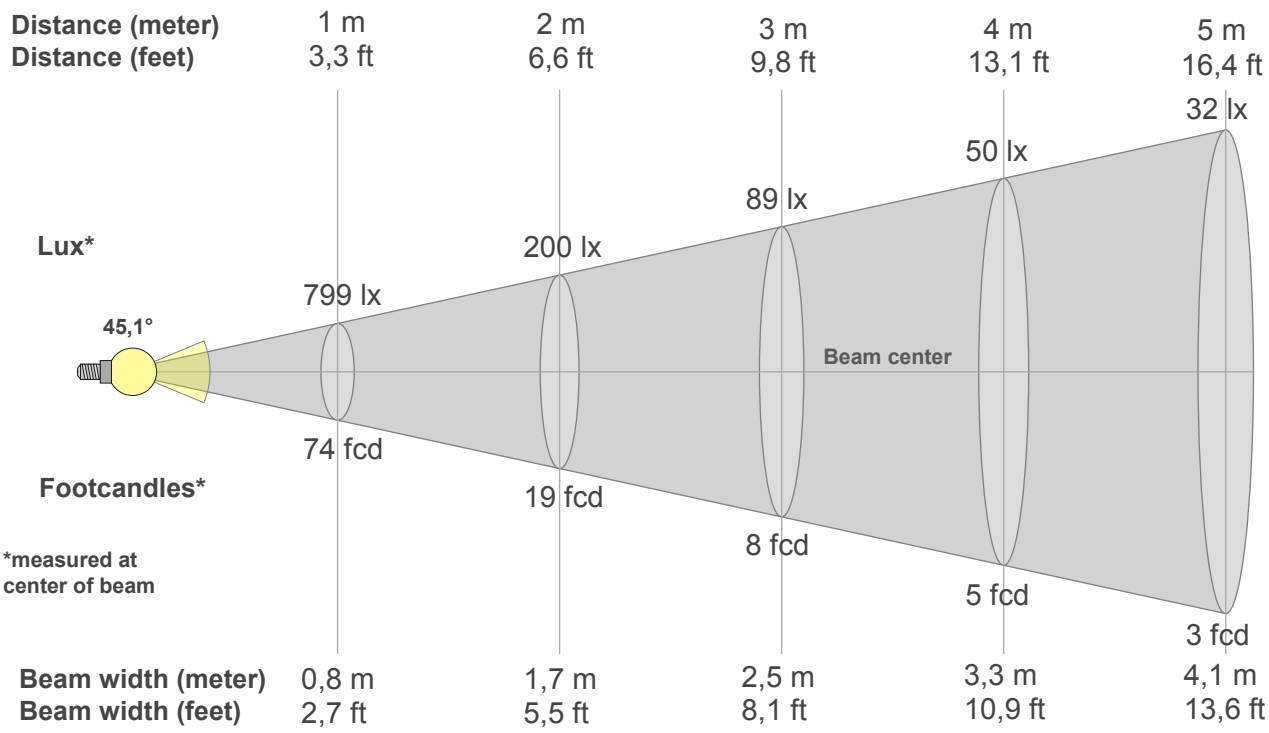








Beam details



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
799lx	200lx	89lx	50lx	32lx	22lx	16lx	12lx	10lx	8lx	7lx	6lx	5lx	4lx	4lx	3lx	3lx	2lx	2lx	2lx
74,3fcd	18,6fcd	8,3fcd	4,6fcd	3fcd	2,1fcd	1,5fcd	1,2fcd	0,9fcd	0,7fcd	0,6fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,3fcd	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°
799	787	746	691	638	575	489	390	281	178	96	51	34	26	21	17	18	20	25	28
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°
799	789	791	796	802	809	819	832	846	864	885	910	937	966	996	1019	1028	1022	994	940
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

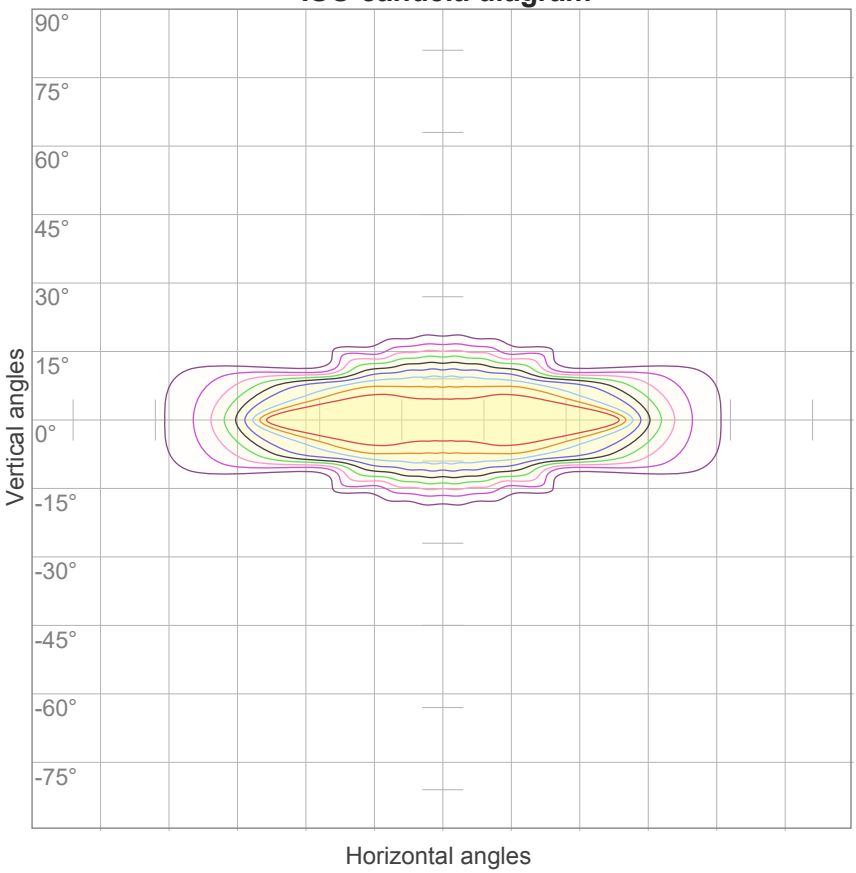
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
799	787	746	691	638	575	489	390	281	178	96	51	34	26	21	17	18	20	25	28
100%	98%	93%	86%	80%	72%	61%	49%	35%	22%	12%	6%	4%	3%	3%	2%	2%	3%	3%	4%

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°
799	789	791	796	802	809	819	832	846	864	885	910	937	966	996	1019	1028	1022	994	940
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



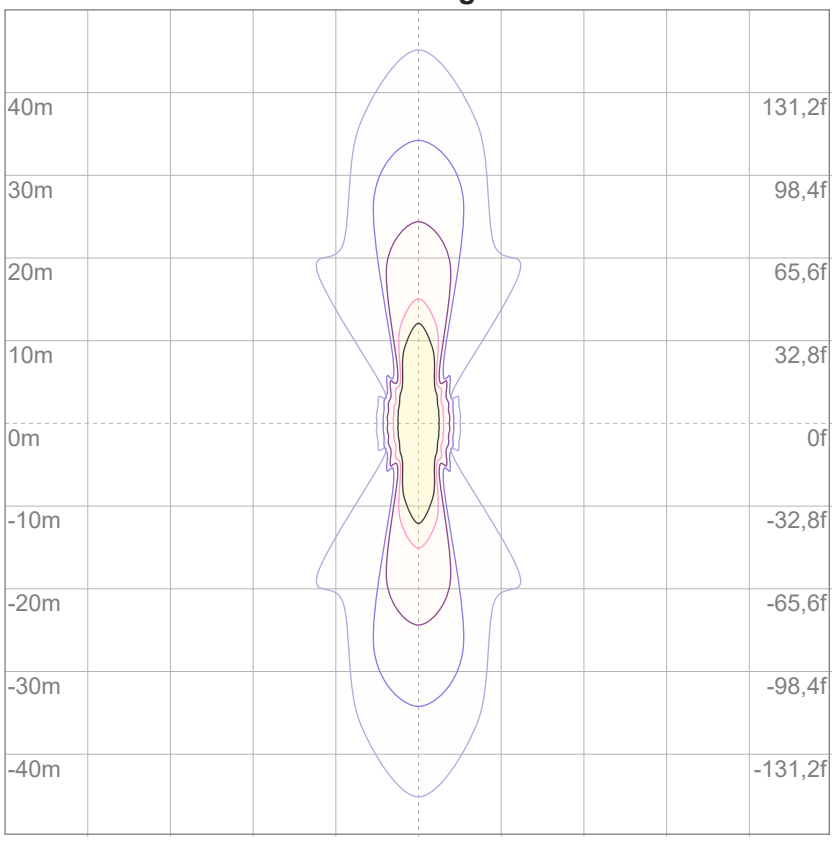
10%	80 cd
20%	160 cd
30%	240 cd
40%	320 cd
50%	400 cd
60%	480 cd
70%	560 cd
80%	640 cd
90%	720 cd

Conditions:

Number of c-planes: 16

Candela at center: 799 cd

ISO lux diagram



3%	0,240 lx
5%	0,400 lx
10%	0,799 lx
30%	2,40 lx
50%	4,00 lx

Conditions:

Number of c-planes: 16

Lux at center: 7,99 lx

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

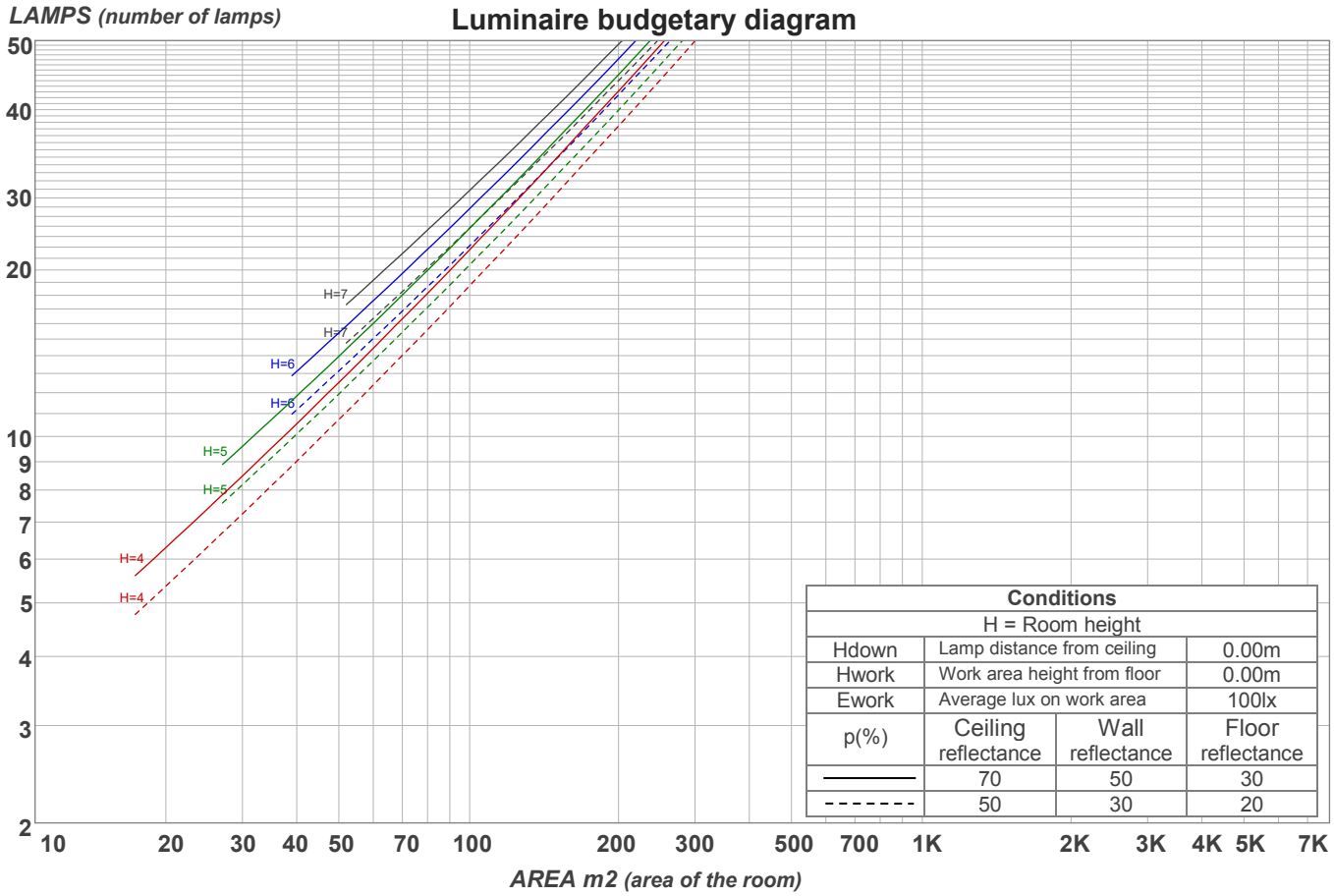
Glare Evaluation According to UGR

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	12,9	13,8	13,1	14,1	14,3	23,9	24,8	24,1	25,1	25,3
	3H	14,3	15,3	14,7	15,6	15,7	24,3	25,3	24,7	25,6	25,8
	4H	16,9	17,9	17,3	18,1	18,4	24,5	25,5	24,9	25,7	26,0
	6H	20,0	20,8	20,3	21,1	21,5	24,7	25,5	25,0	25,8	26,1
	8H	20,2	21,0	20,6	21,4	21,8	24,6	25,5	25,0	25,8	26,2
	12H	20,2	21,0	20,6	21,3	21,8	24,6	25,4	25,0	25,8	26,2
4H	2H	13,4	14,3	13,8	14,6	14,8	23,6	24,6	24,0	24,8	25,1
	3H	15,1	15,9	15,5	16,3	16,7	24,2	25,0	24,6	25,3	25,8
	4H	18,0	18,7	18,4	19,1	19,7	24,3	25,1	24,8	25,5	26,0
	6H	21,3	22,1	21,8	22,4	22,8	24,4	25,2	24,9	25,5	25,9
	8H	21,7	22,3	22,2	22,7	23,1	24,5	25,1	25,0	25,5	25,9
	12H	21,7	22,2	22,2	22,6	23,1	24,5	25,0	25,0	25,4	25,9
8H	4H	18,3	19,0	18,9	19,4	19,7	24,3	24,9	24,8	25,3	25,7
	6H	22,0	22,5	22,5	22,9	23,5	24,5	24,9	25,0	25,4	25,9
	8H	22,5	22,9	23,0	23,5	24,1	24,6	25,0	25,1	25,5	26,1
	12H	22,6	22,9	23,1	23,4	24,0	24,6	25,0	25,2	25,5	26,1
12H	4H	18,4	18,9	18,9	19,3	19,8	24,3	24,8	24,8	25,2	25,7
	6H	22,1	22,5	22,6	23,1	23,7	24,6	25,0	25,1	25,5	26,1
	8H	22,7	23,0	23,2	23,5	24,1	24,6	25,0	25,2	25,5	26,1
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 681 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

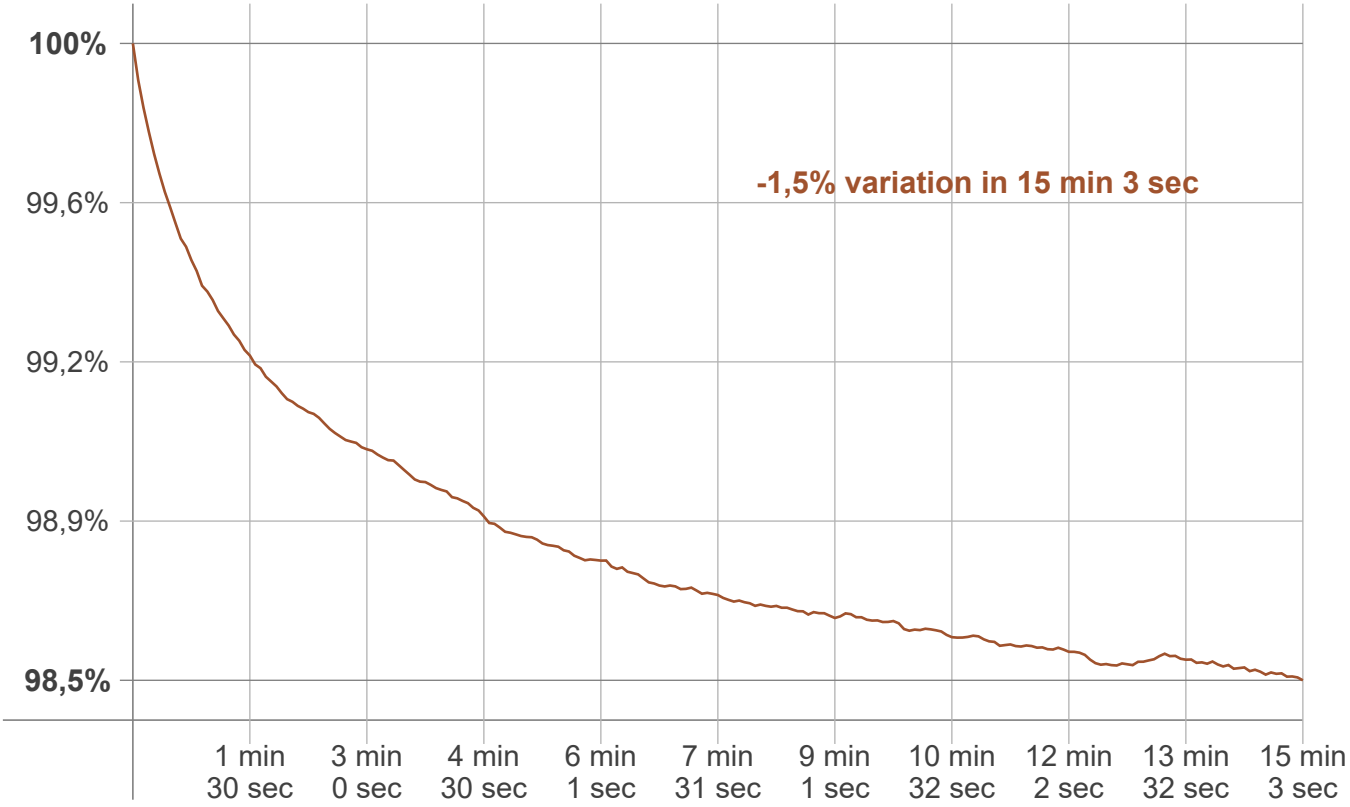


Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
69,9 lm	152 lm	127 lm	97,4 lm	83,6 lm	61,8 lm	35,6 lm	29,1 lm	14,7 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
3,46 lm	1,20 lm	1,11 lm	1,00 lm	0,798 lm	0,608 lm	0,448 lm	0,274 lm	0,092 lm

Warmup curve



Warmup result

Warmup time:	**Lamp stabilized in 15 min 3 sec**
Warmup variation	**-1,5%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
2772 K	+3 K	2775 K

Output change

Output start	Output change	Output end
689 lm	-9 lm	681 lm