

Light efficiency:

55 Lumen/Watt

Light quality:

CRI: 84,5

Color temperature:

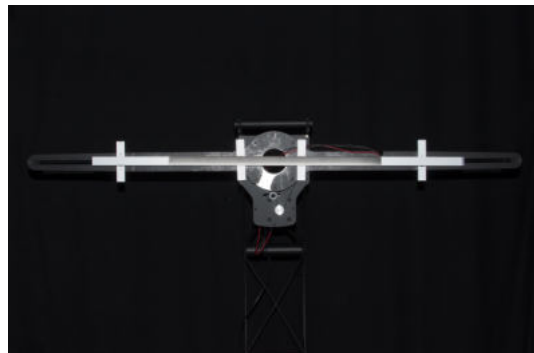
2730 K

Output: 262 lm

Peak: 108 cd

Power: 4,8 W

PF: 1,0



Product name:

Navigator-3_510mm_827_Cover-Square-Grey

Item number:

NP/L1C/14C/G1/L1C/0510/827/CSG

Date and time:

23.06.2022 09:18:13

Description:

Rank: D60-AC-8GB

Tolerances:

Lumen +/-4%

Candela +/-2,5%

Colour Temp +/-35 Kelvin

CRI +/-0,7

Angular Resolution: 1 Degree Step

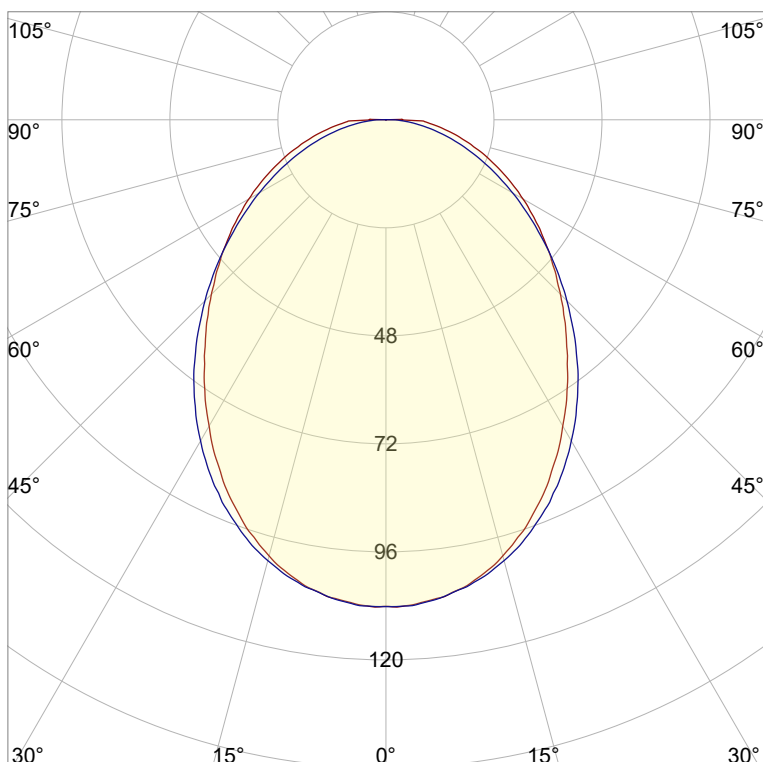
Last Calibration 20-09-2021

Tester: Peter Ulrich

Test Site: Lichtlabor

Gaustrasse 13

55411 Bingen am Rhein

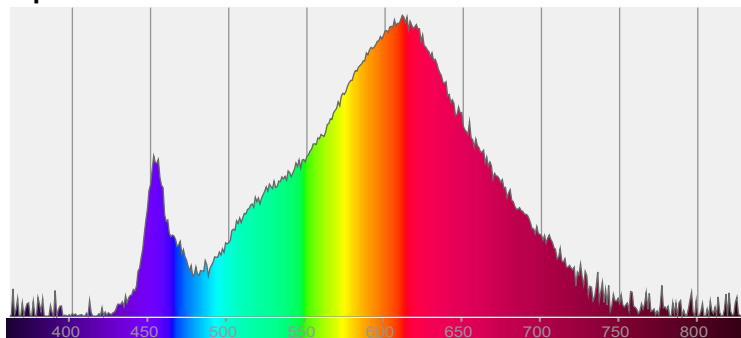


CIE 1931

x: 0,455

y: 0,406

Spectra

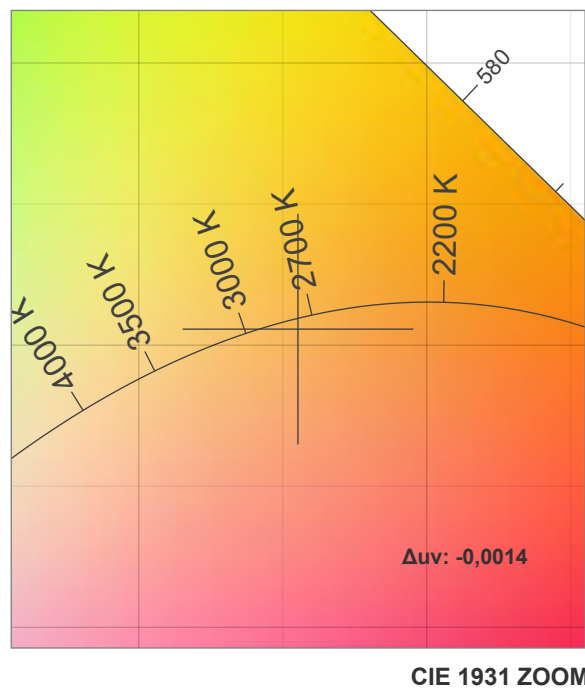
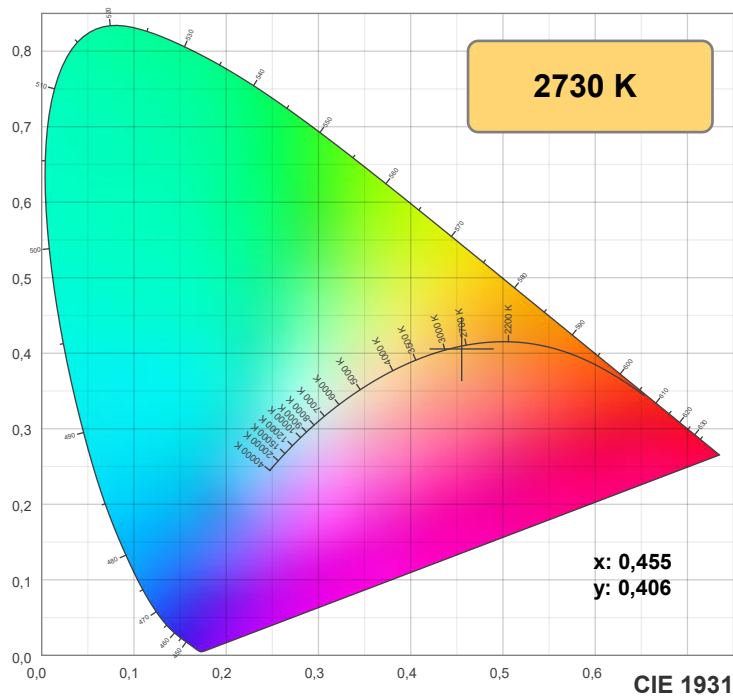


Power

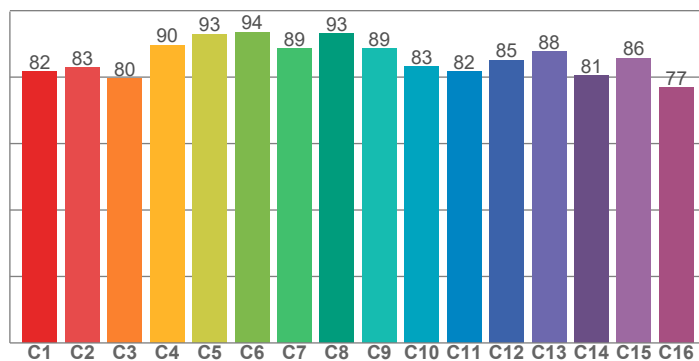
Voltage: 48,0 V

Current: 0,100 A

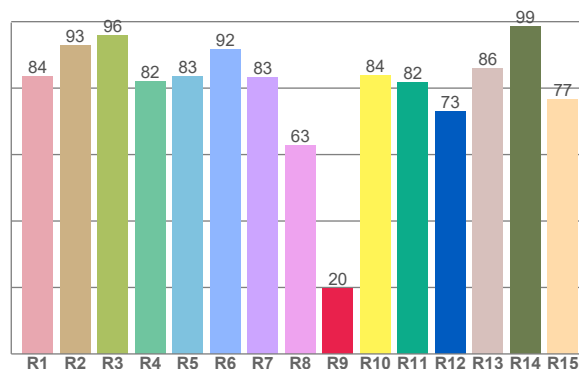
Frequency: 0 Hz



TM30: 85,4



CRI: 84,5 (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
83,6	92,9	95,9	82,2	83,4	91,6	83,3	62,6	19,7	83,8	81,8	73,1	85,9	98,7	76,7

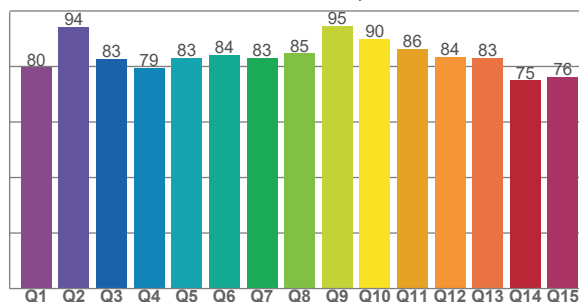
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81,7	82,8	79,6	89,6	93,0	93,6	88,6	93,2	88,6	83,1	81,7	85,1	87,7	80,5	85,7	76,9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
79,7	94,1	82,6	79,5	83,2	84,3	83,0	84,7	94,7	89,8	86,4	83,6	83,0	74,9	76,3

CQS: 82,9



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
2730 K	84,5	19,7	85,4	96,9	82,9	0,455	0,406	0,262	0,350	-0,0014

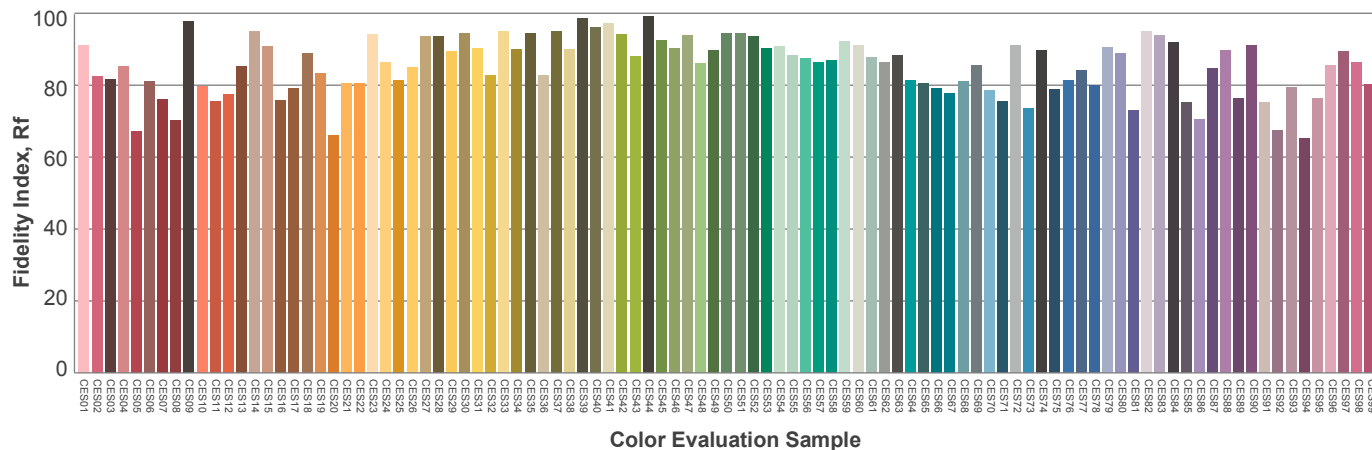
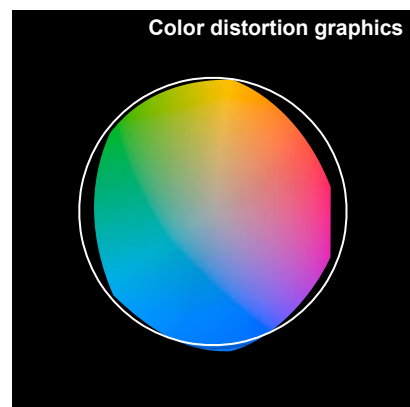
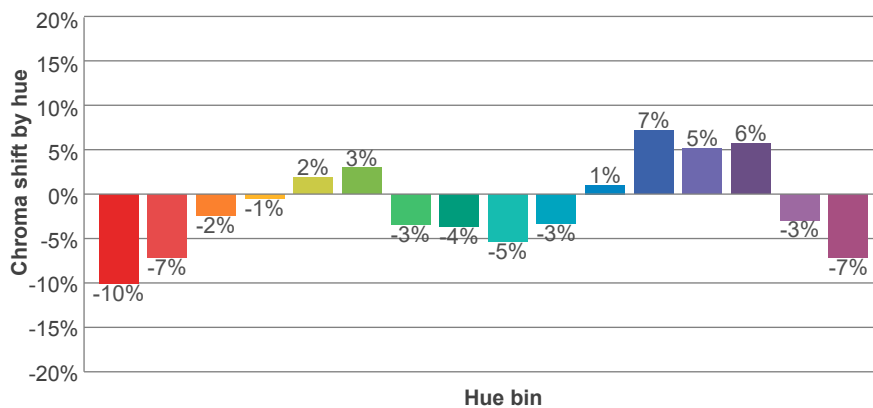
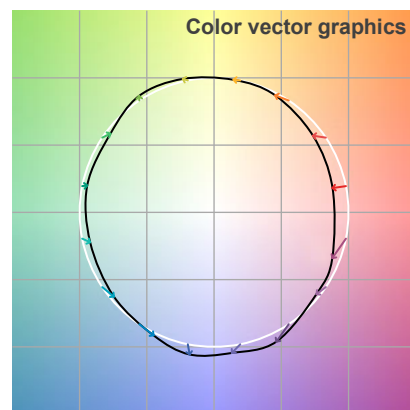
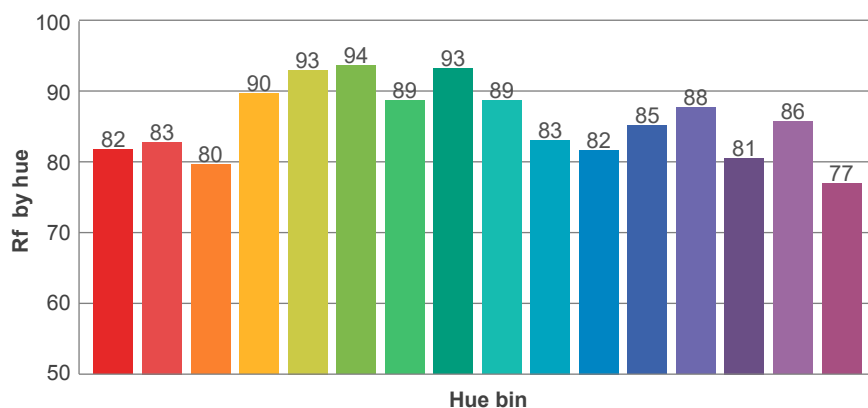
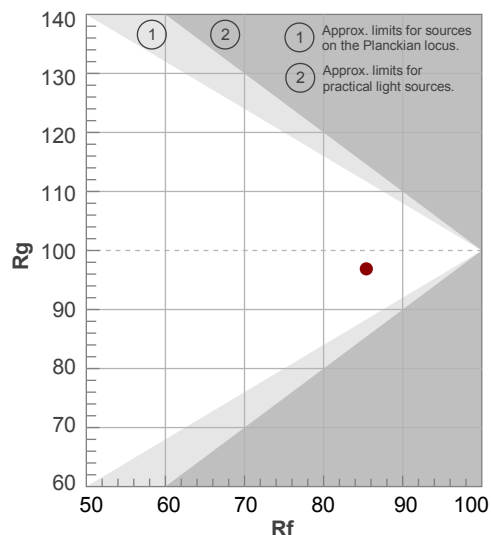
Rf 85,4

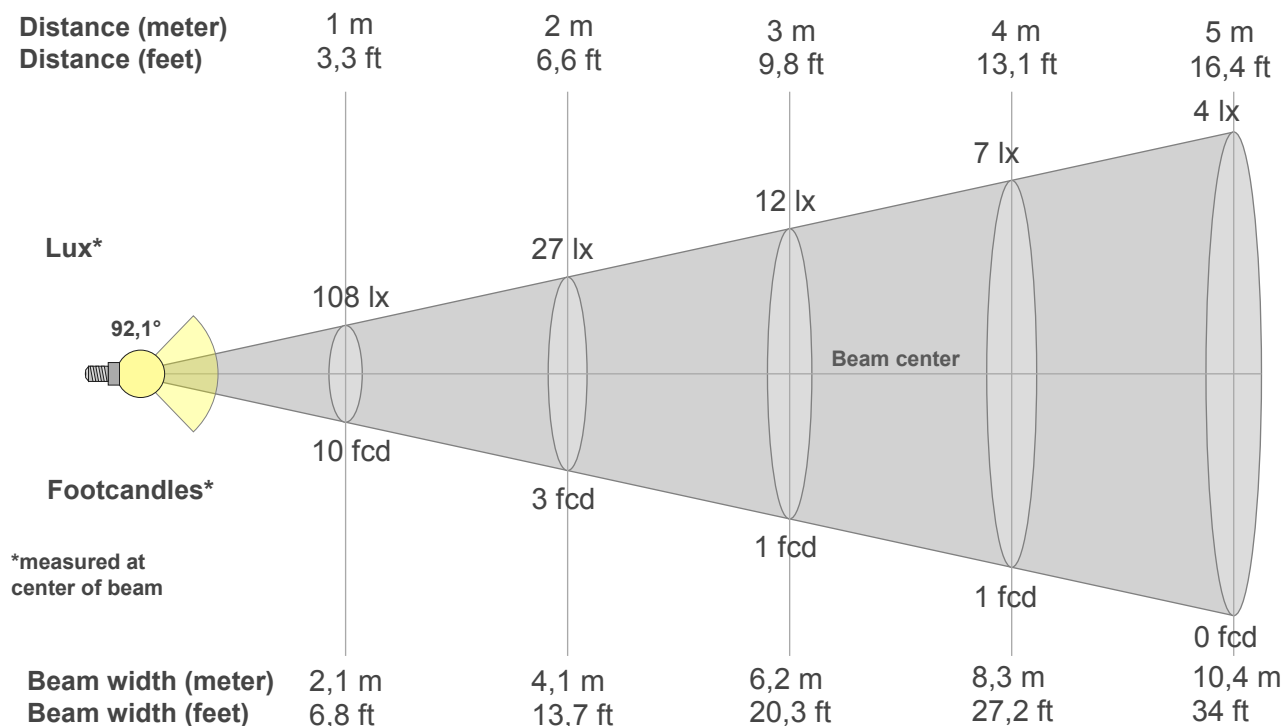
Fidelity index Rf

Rg 96,9

Gamut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	82	-10%	1%
2	83	-7%	7%
3	80	-2%	10%
4	90	-1%	5%
5	93	2%	3%
6	94	3%	-2%
7	89	-3%	-6%
8	93	-4%	-1%
9	89	-5%	4%
10	83	-3%	11%
11	82	1%	13%
12	85	7%	3%
13	88	5%	-7%
14	81	6%	-15%
15	86	-3%	-8%
16	77	-7%	-16%





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
108lx	27lx	12lx	7lx	4lx	3lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	0lx	0lx	0lx	0lx	0lx	0lx
10,1fcd	2,5fcd	1,1fcd	0,6fcd	0,4fcd	0,3fcd	0,2fcd	0,2fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0fcd	0fcd	0fcd	0fcd	0fcd	0fcd

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°
108	107	105	100	94	87	79	70	62	55	48	41	35	29	24	18	14	10	4	0
100%	99%	97%	93%	87%	80%	73%	65%	58%	51%	44%	38%	32%	27%	22%	17%	13%	9%	3%	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°
108	107	105	101	96	90	82	74	66	57	48	40	33	26	19	14	9	5	1	1
100%	99%	97%	94%	89%	83%	76%	69%	61%	53%	45%	37%	30%	24%	18%	13%	8%	4%	1%	1%

Intensities in 180° c-plane

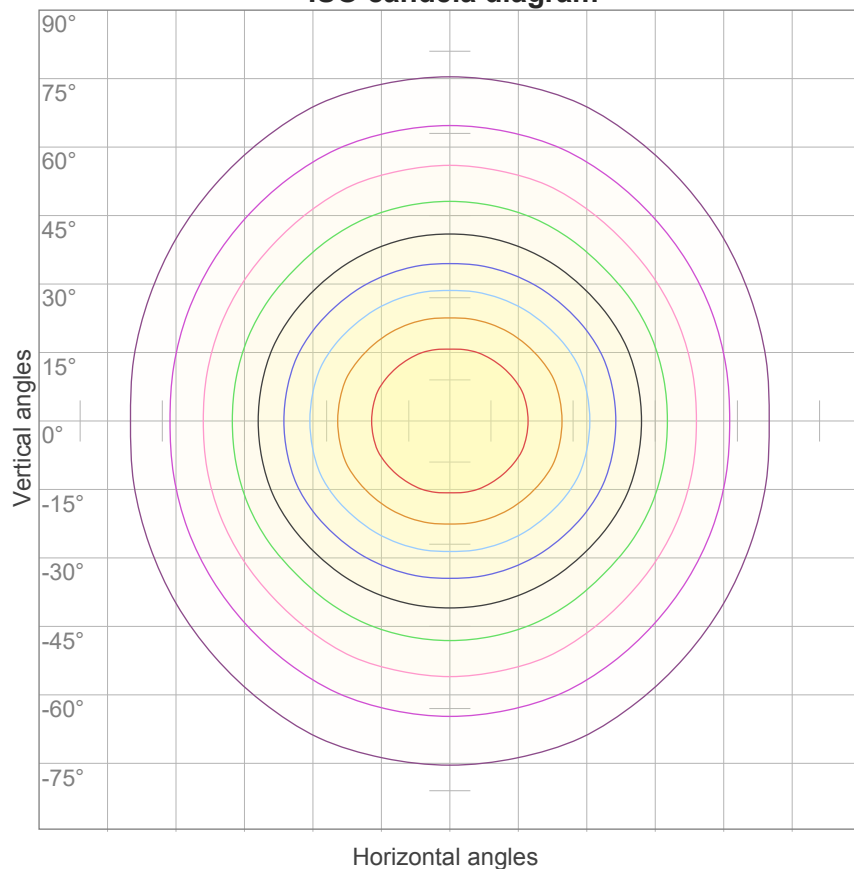
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
108	107	105	100	94	87	79	70	62	55	48	41	35	29	24	18	14	10	4	0
100%	99%	97%	93%	87%	80%	73%	65%	58%	51%	44%	38%	32%	27%	22%	17%	13%	9%	3%	0%

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°
108	107	105	101	96	90	82	74	66	57	48	40	33	26	19	14	9	5	1	1
100%	99%	97%	94%	89%	83%	76%	69%	61%	53%	45%	37%	30%	24%	18%	13%	8%	4%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
92,1°	162,3°	202,4°	77,9%	56,0%

ISO candela diagram



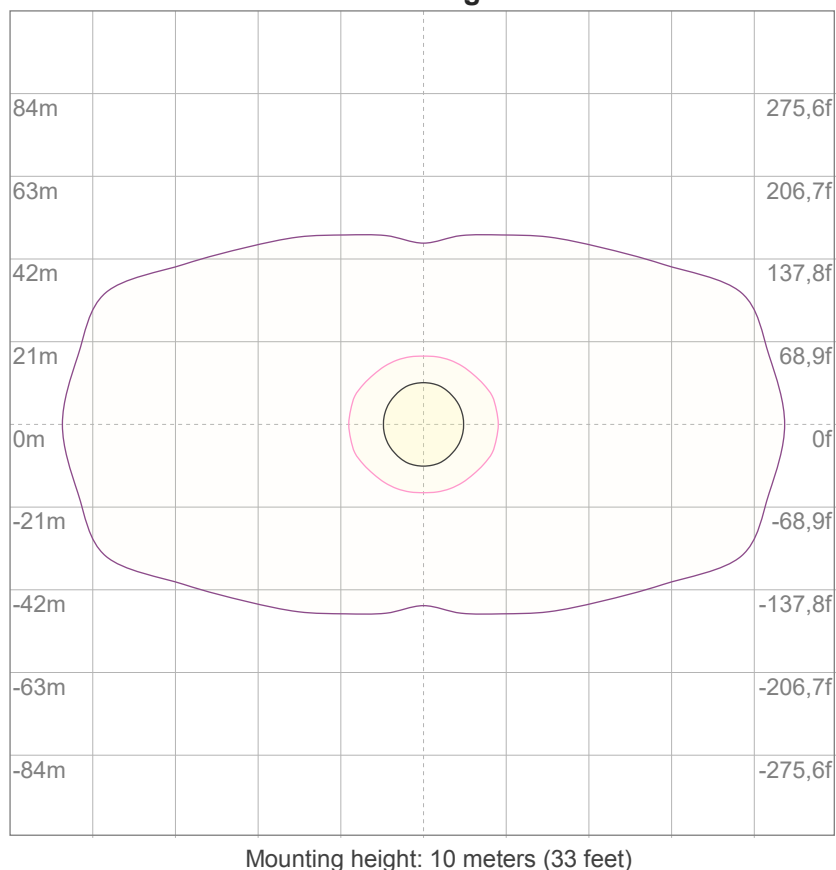
10%	11 cd
20%	22 cd
30%	32 cd
40%	43 cd
50%	54 cd
60%	65 cd
70%	76 cd
80%	87 cd
90%	97 cd

Conditions:

Number of c-planes: 16

Candela at center: 108 cd

ISO lux diagram



3%	32,5m lx
5%	54,1m lx
10%	0,108 lx
30%	0,325 lx
50%	0,541 lx

Conditions:

Number of c-planes: 16

Lux at center: 1,08 lx

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

Glare Evaluation According to UGR

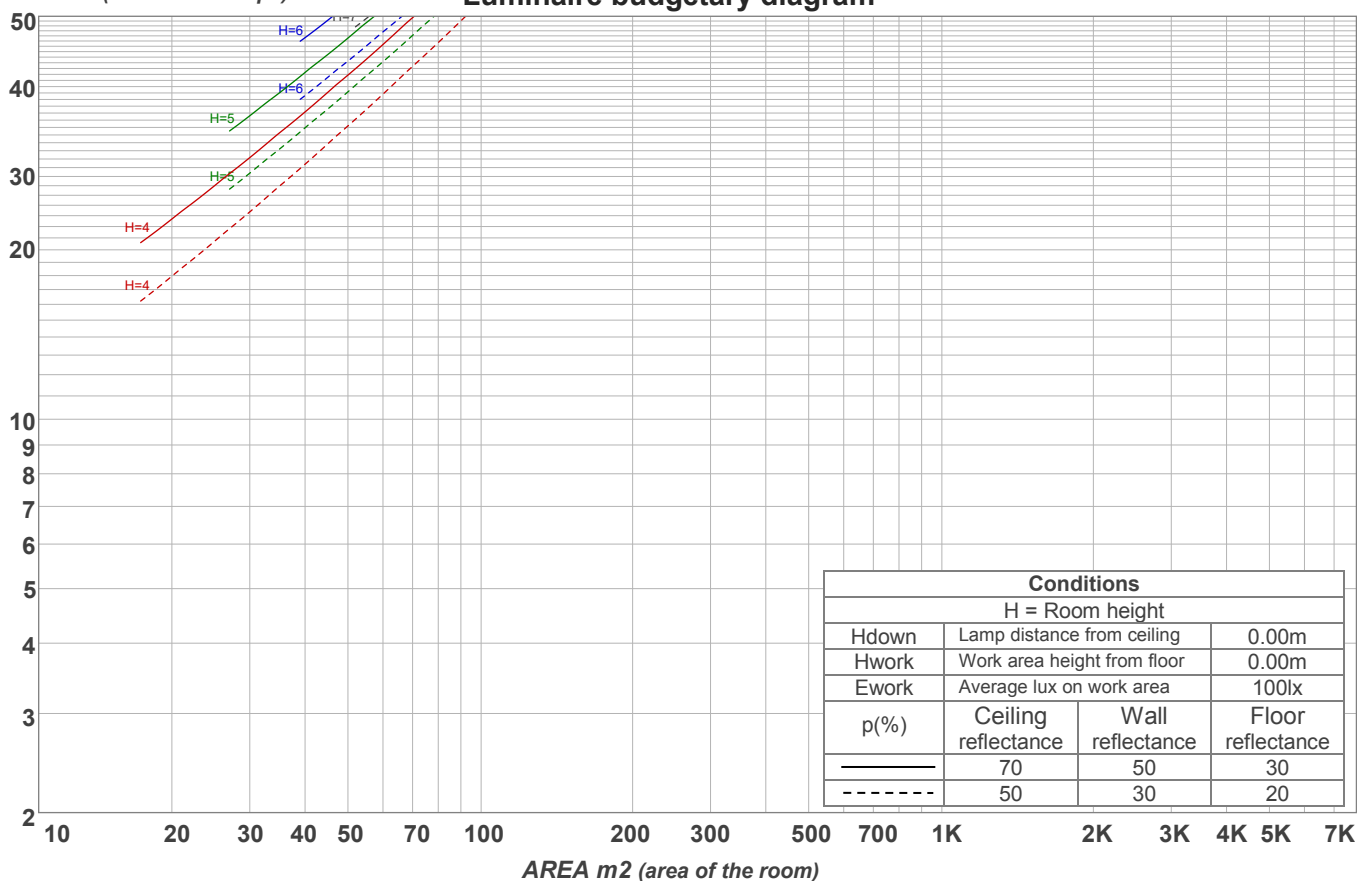
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	17,0	18,2	17,2	18,5	18,7	17,8	19,0	18,1	19,3	19,5
	3H	18,2	19,4	18,6	19,7	19,9	19,0	20,3	19,5	20,6	20,8
	4H	18,7	19,9	19,2	20,2	20,5	19,6	20,8	20,0	21,1	21,3
	6H	19,3	20,3	19,6	20,6	21,0	20,1	21,2	20,4	21,4	21,8
	8H	19,4	20,5	19,8	20,8	21,2	20,3	21,3	20,6	21,6	22,0
	12H	19,6	20,6	20,0	20,9	21,4	20,4	21,4	20,7	21,7	22,1
4H	2H	17,5	18,7	17,9	18,9	19,2	18,2	19,4	18,6	19,6	19,9
	3H	19,0	20,0	19,4	20,3	20,8	19,7	20,7	20,1	21,0	21,5
	4H	19,6	20,5	20,1	21,0	21,5	20,3	21,2	20,8	21,6	22,2
	6H	20,2	21,1	20,7	21,5	21,8	20,9	21,7	21,4	22,1	22,5
	8H	20,5	21,3	21,0	21,7	22,0	21,1	21,9	21,6	22,2	22,6
	12H	20,7	21,4	21,2	21,8	22,3	21,2	21,9	21,7	22,3	22,8
8H	4H	19,9	20,7	20,4	21,1	21,5	20,5	21,3	21,0	21,7	22,1
	6H	20,7	21,3	21,2	21,8	22,3	21,2	21,8	21,7	22,3	22,8
	8H	21,1	21,6	21,6	22,1	22,7	21,5	22,1	22,0	22,6	23,2
	12H	21,4	21,8	22,0	22,3	22,9	21,8	22,2	22,3	22,7	23,3
12H	4H	19,9	20,6	20,4	21,0	21,5	20,5	21,2	21,0	21,6	22,1
	6H	20,8	21,3	21,3	21,8	22,5	21,3	21,8	21,8	22,3	23,0
	8H	21,2	21,6	21,7	22,1	22,7	21,6	22,1	22,2	22,6	23,2
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,1 / -0,1					0,1 / -0,1				
S = 1.5H		0,2 / -0,3					0,3 / -0,4				
S = 2.0H		0,4 / -0,6					0,7 / -0,8				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 262 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	108	103	99	95	105	101	97	93	96	93	90	92	89	87	88	86	84	82
2	99	90	84	78	96	88	82	77	85	79	75	81	77	73	78	74	71	69
3	90	80	72	65	88	78	71	65	75	69	63	72	66	62	69	65	61	58
4	83	71	63	56	80	70	62	55	67	60	54	64	58	54	62	57	53	50
5	76	64	55	49	74	63	54	48	60	53	48	58	52	47	56	51	46	44
6	71	58	49	43	69	57	49	43	55	47	42	53	46	41	51	45	41	39
7	66	53	44	38	64	52	44	38	50	43	37	48	42	37	47	41	37	35
8	61	48	40	34	60	47	40	34	46	39	34	45	38	33	43	37	33	31
9	58	44	36	31	56	44	36	31	42	35	31	41	35	30	40	34	30	28
10	54	41	33	28	53	41	33	28	39	33	28	38	32	28	37	32	27	26

LAMPS (number of lamps)

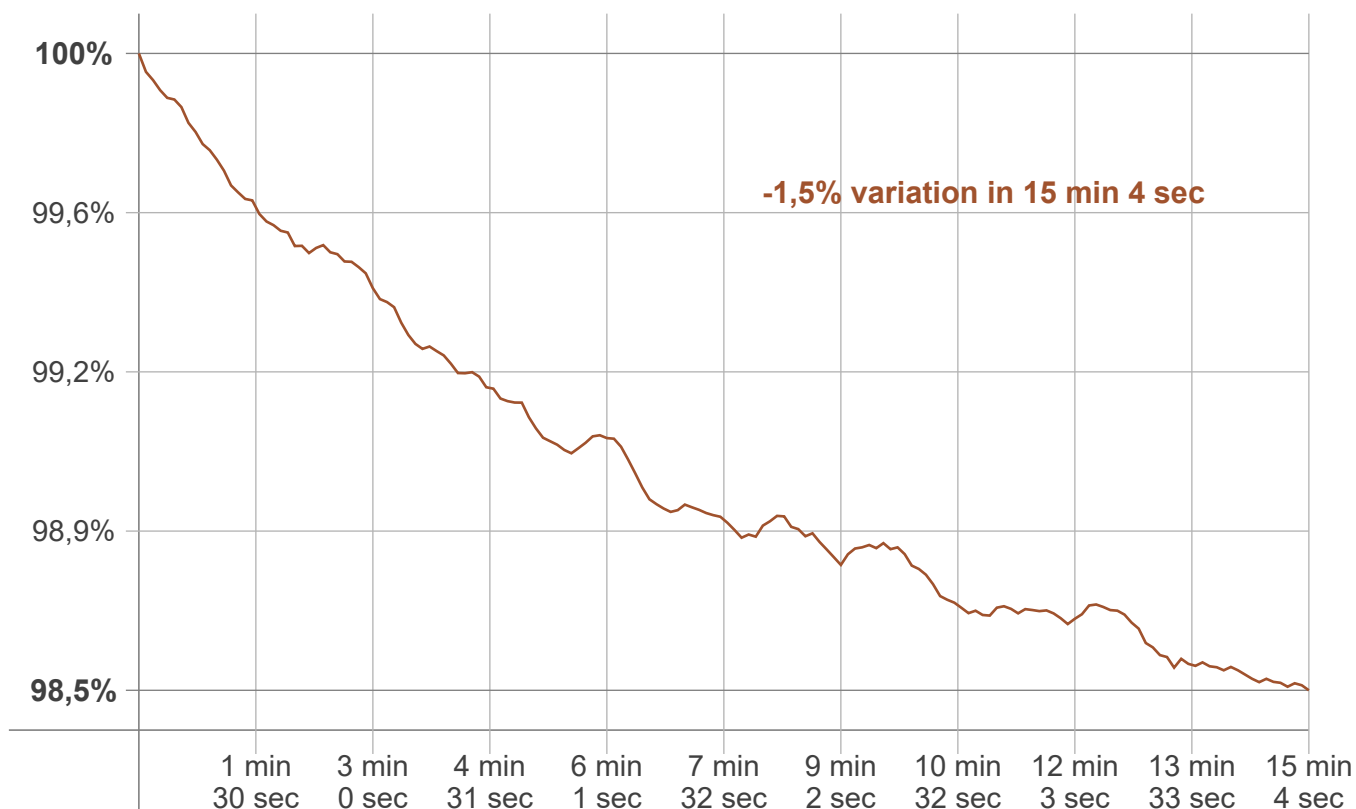
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
10,2 lm	28,4 lm	40,7 lm	45,3 lm	43,1 lm	36,4 lm	27,3 lm	17,4 lm	8,16 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
1,93 lm	0,765 lm	0,648 lm	0,586 lm	0,456 lm	0,336 lm	0,247 lm	0,152 lm	0,051 lm

Warmup curve



Warmup result

Warmup time:	Lamp stabilized in 15 min 4 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
2730 K	0 K	2730 K

Output change

Output start	Output change	Output end
265 lm	-3 lm	262 lm