

Light efficiency:

86 Lumen/Watt

Light quality:

CRI: 93,3

Color temperature:

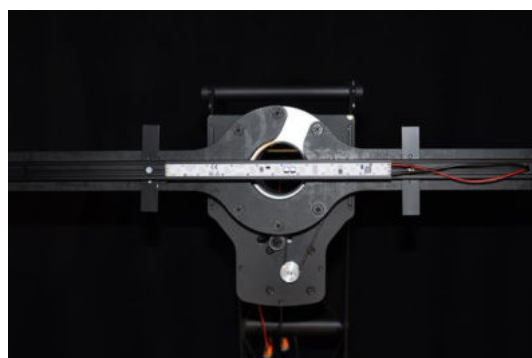
2994 K

Output: 535 lm

Peak: 1658 cd

Power: 6,2 W

PF: 1,0



Product name:

Focus-4-F1C-D0258-930-LSOT-10774

Item number:

FLNP-F1C-D0258-930-LSOT-10774

Date and time:

10.12.2020 11:56:54

Description:

Rank: P4-7D2

Bestromung: 220mA

Toleranzen:

Lumen +/-4%

Candela +/-2,5%

Colour Temp +/-35 Grad K

CRI +/-0,7

Angular Resolution 1 Grad Step

Last Calibration 20.05.2019

Abstand:248mm

Pruefer:

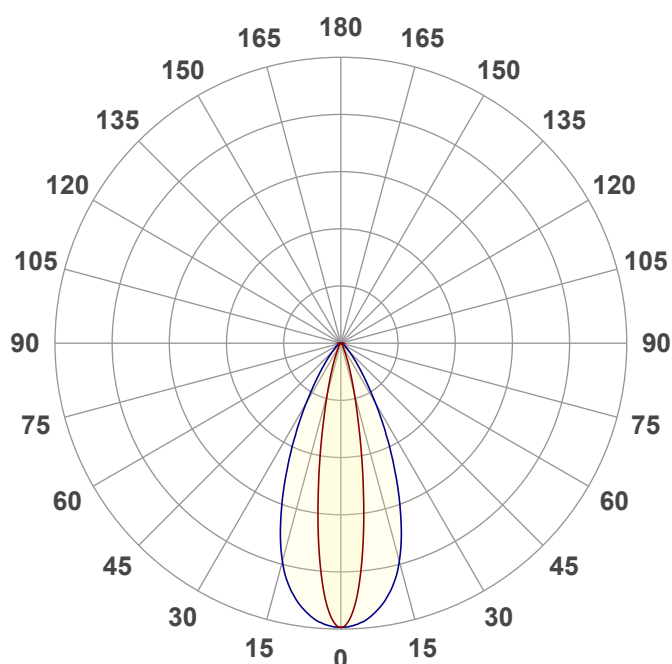
Peter Ulrich

Pruefort:

Lichtlabor

Gaustrasse13

55411 Bingen am Rhein

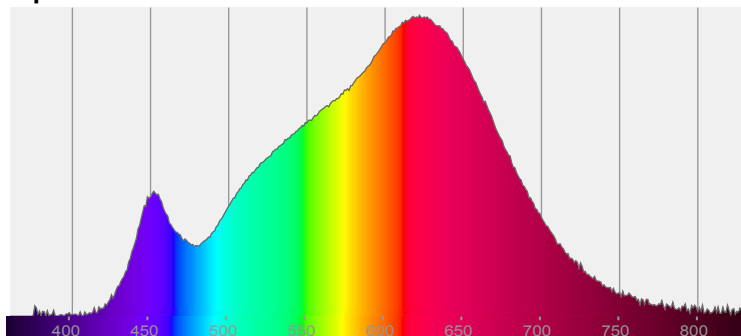


Beam angle 45,3 x 18,1

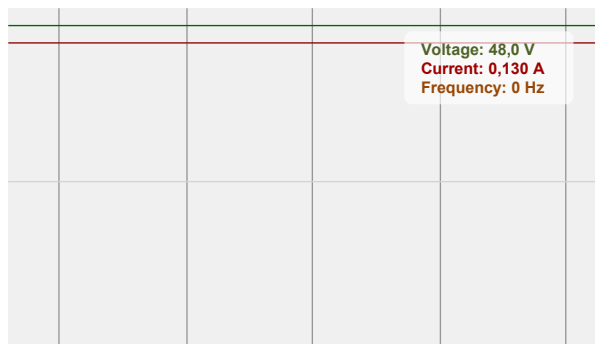


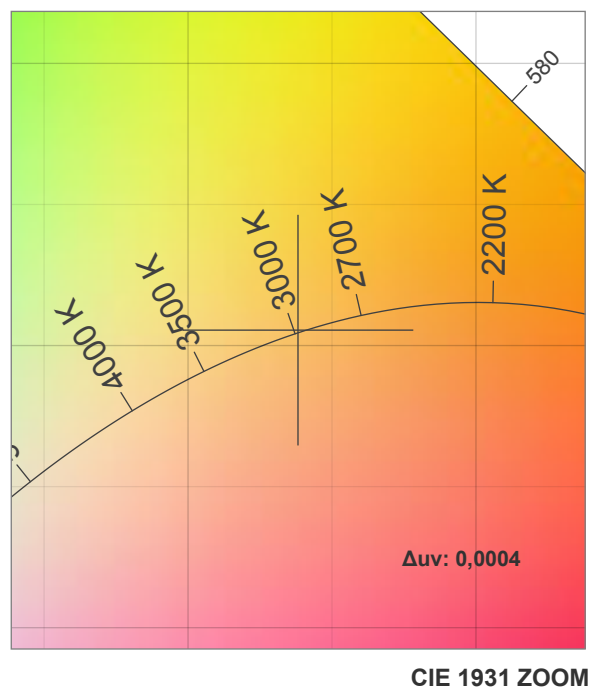
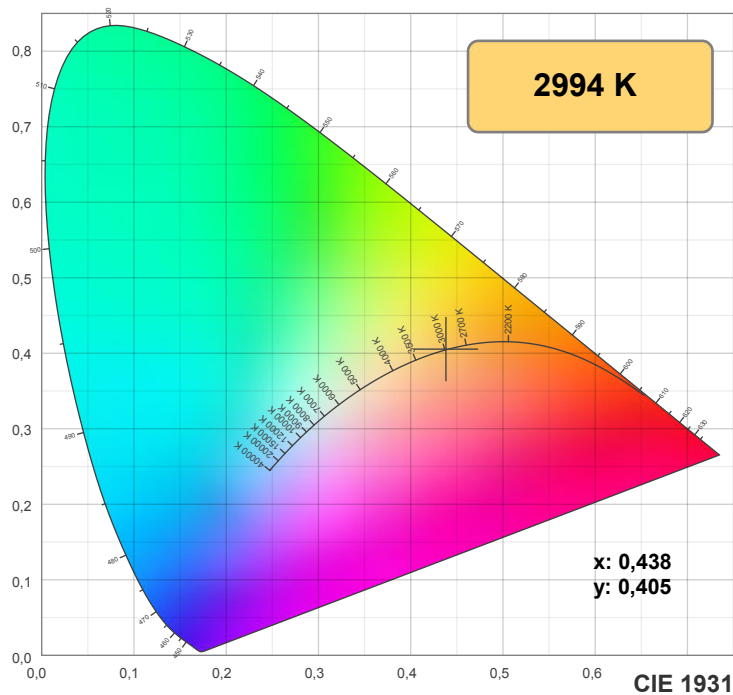
CIE 1931
x: 0,438
y: 0,405

Spectra

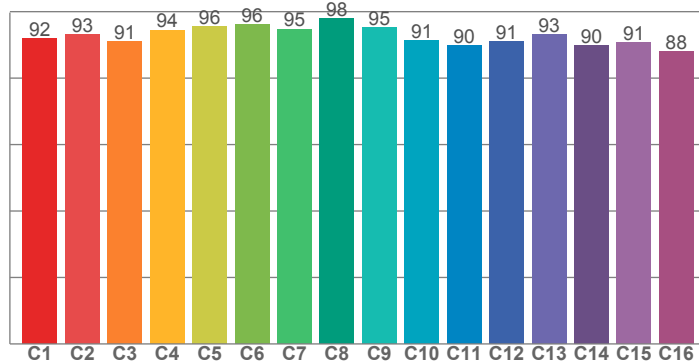


Power

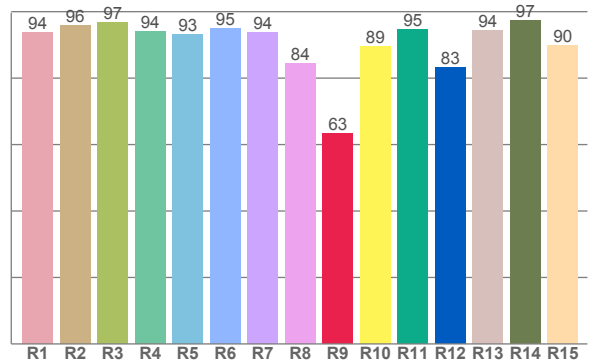




TM30: 92,7



CRI: 93,3 (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
93,6	96,0	96,9	94,1	93,1	95,1	93,6	84,4	63,4	89,4	94,6	83,2	94,2	97,5	89,9

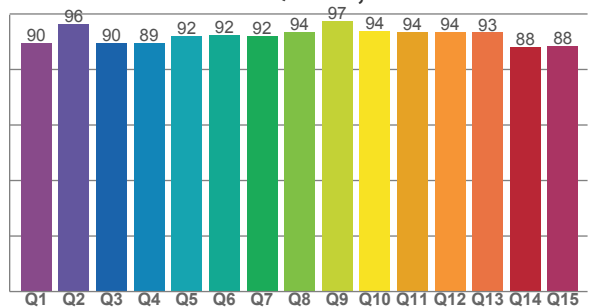
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91,9	93,2	91,0	94,4	95,5	96,2	94,8	97,9	95,3	91,3	89,7	91,0	93,2	89,7	90,7	88,1

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89,6	96,4	89,5	89,5	92,0	92,4	92,1	93,6	97,5	94,0	93,6	93,5	93,3	88,0	88,4

CQS: 91,7



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
2994 K	93,3	63,4	92,7	99,6	91,7	0,438	0,405	0,251	0,348	0,0004

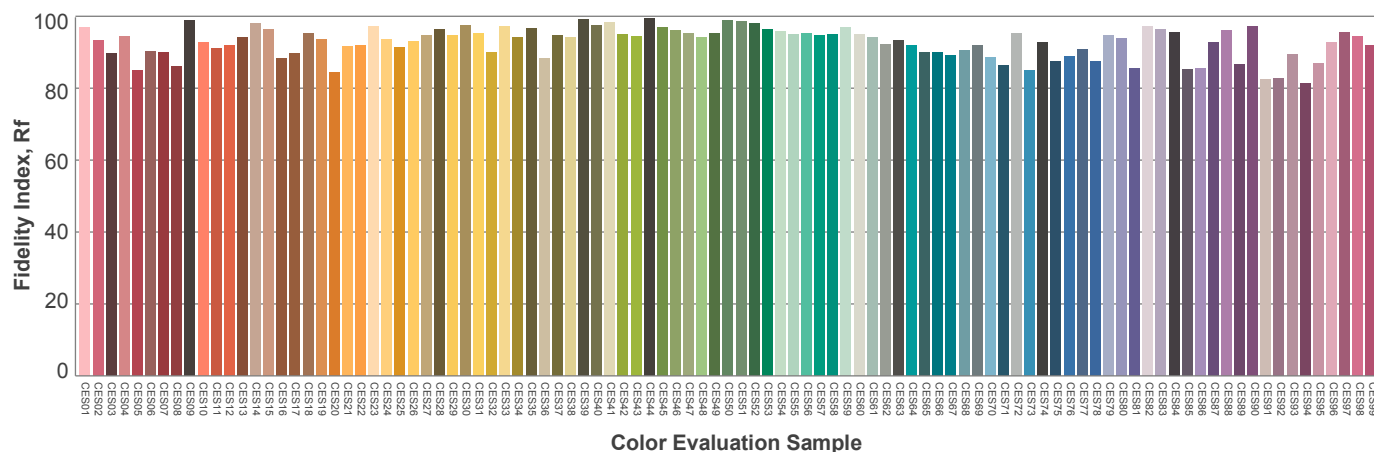
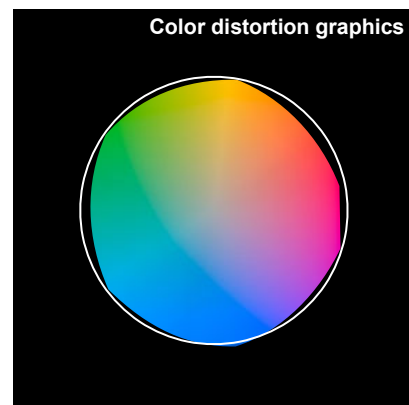
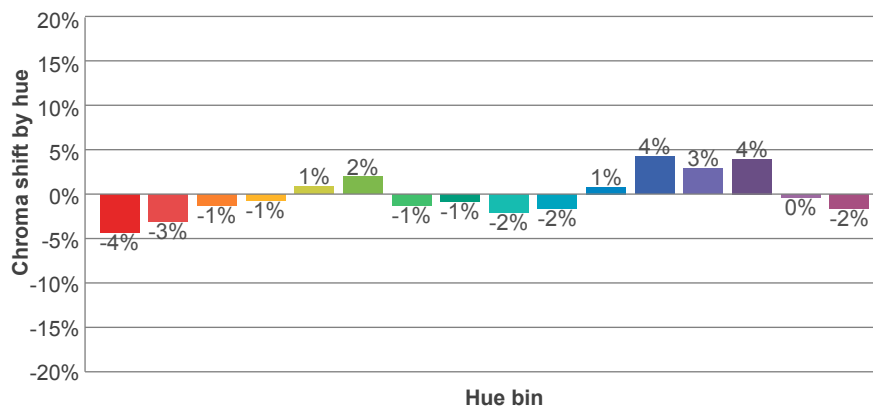
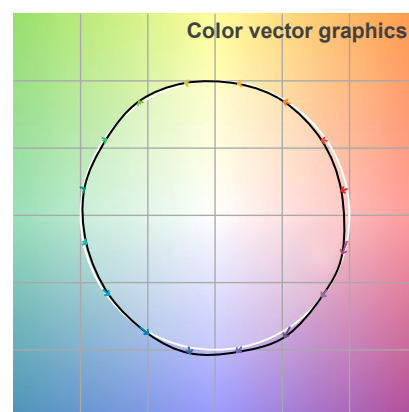
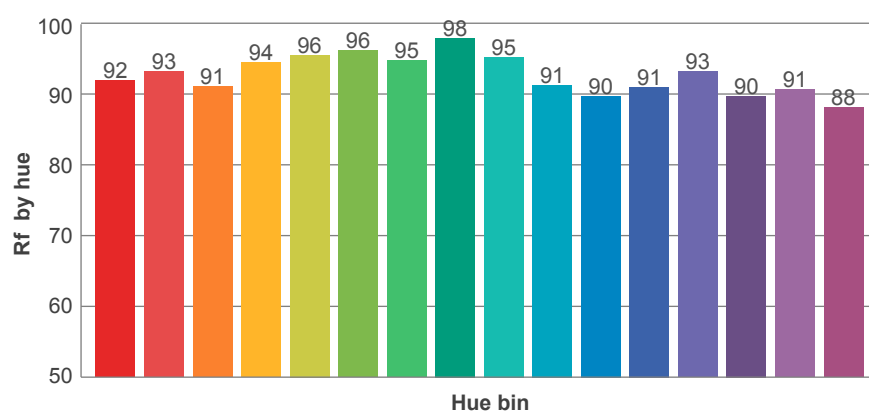
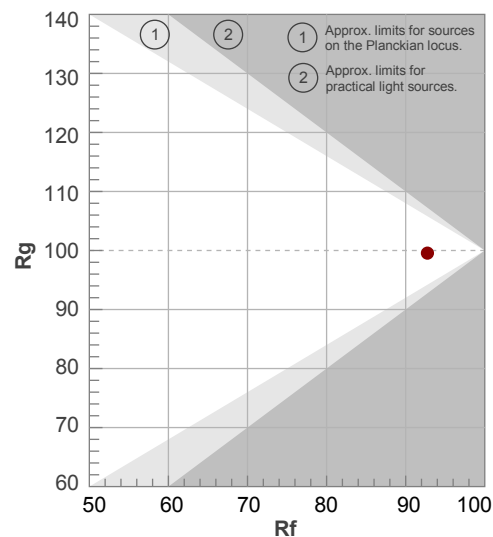
Rf 92,7

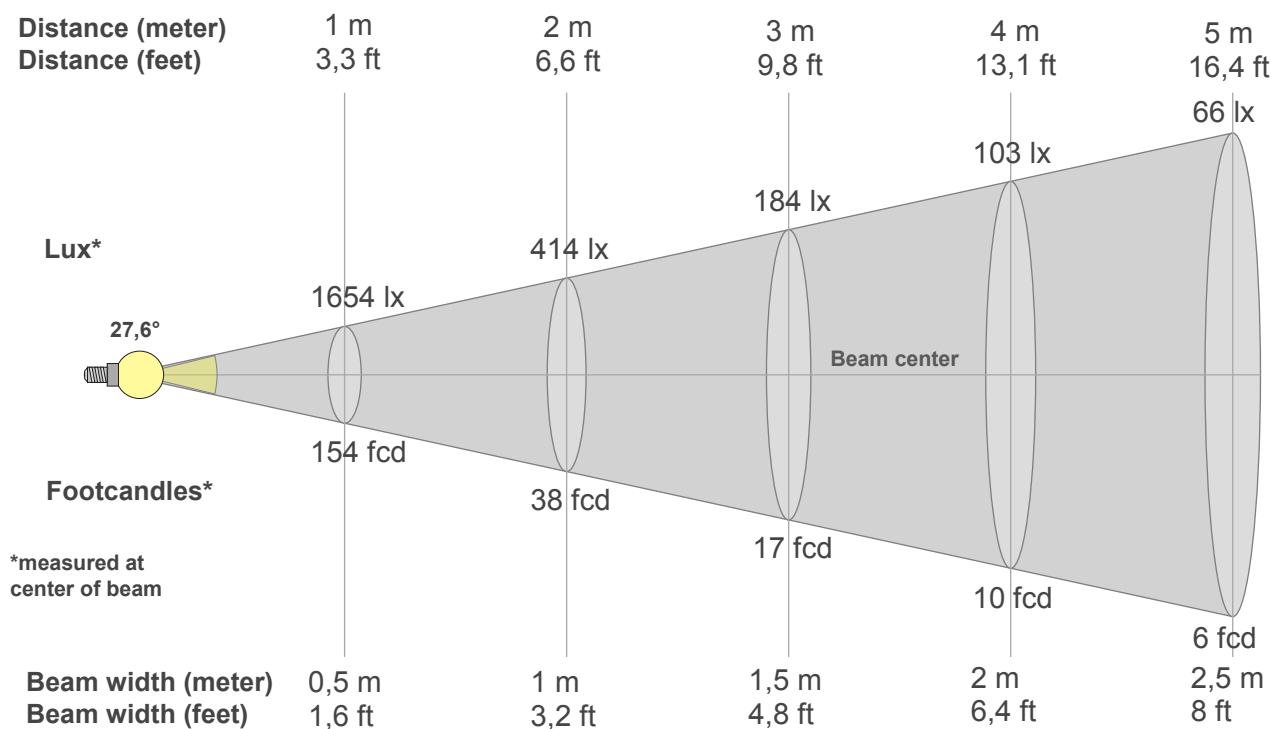
Fidelity index R_f

Rg 99,6

Gammut index Rg

		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	92	-4%	0%
2	93	-3%	2%
3	91	-1%	4%
4	94	-1%	2%
5	96	1%	3%
6	96	2%	0%
7	95	-1%	-2%
8	98	-1%	-1%
9	95	-2%	2%
10	91	-2%	5%
11	90	1%	8%
12	91	4%	2%
13	93	3%	-4%
14	90	4%	-7%
15	91	0%	-6%
16	88	-2%	-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
1654lx	414lx	184lx	103lx	66lx	46lx	34lx	26lx	20lx	17lx	14lx	11lx	10lx	8lx	7lx	6lx	6lx	5lx	5lx	4lx
153,7fc	38,4fcd	17,1fcd	9,6fcd	6,1fcd	4,3fcd	3,1fcd	2,4fcd	1,9fcd	1,5fcd	1,3fcd	1,1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd	0,5fcd	0,4fcd	0,4fcd

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°
1654	1597	1442	1213	957	715	510	360	254	180	126	88	62	45	35	30	26	22	20	19
100%	97%	87%	73%	58%	43%	31%	22%	15%	11%	8%	5%	4%	3%	2%	2%	2%	1%	1%	1%

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°
1654	1648	1631	1604	1563	1511	1446	1364	1260	1138	1005	871	741	615	504	405	317	250	196	155
100%	100%	99%	97%	94%	91%	87%	82%	76%	69%	61%	53%	45%	37%	30%	24%	19%	15%	12%	9%

Intensities in 180° c-plane

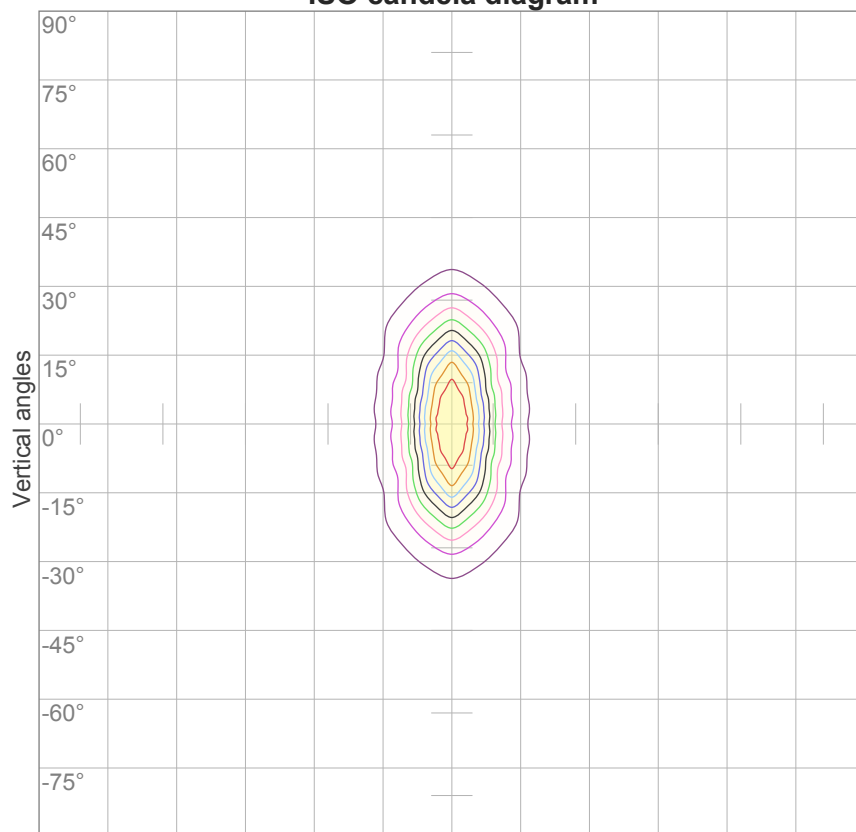
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1654	1597	1442	1213	957	715	510	360	254	180	126	88	62	45	35	30	26	22	20	19
100%	97%	87%	73%	58%	43%	31%	22%	15%	11%	8%	5%	4%	3%	2%	2%	2%	1%	1%	1%

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°
1654	1648	1631	1604	1563	1511	1446	1364	1260	1138	1005	871	741	615	504	405	317	250	196	155
100%	100%	99%	97%	94%	91%	87%	82%	76%	69%	61%	53%	45%	37%	30%	24%	19%	15%	12%	9%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
27,6°	51,4°	72,6°	96,2%	91,4%

ISO candela diagram



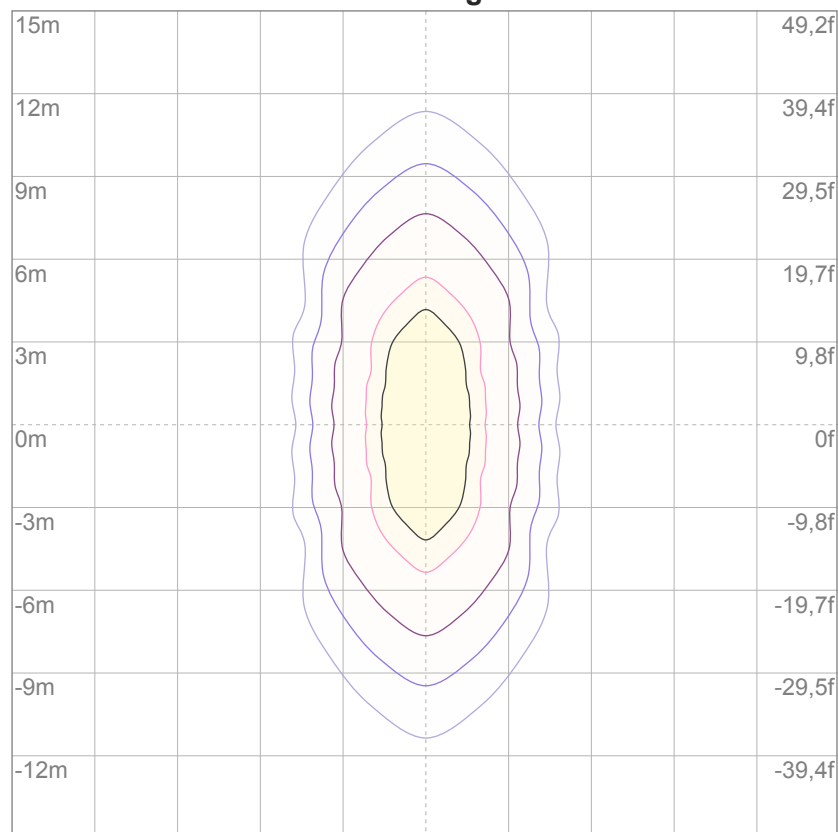
10%	165 cd
20%	331 cd
30%	496 cd
40%	662 cd
50%	827 cd
60%	993 cd
70%	1158 cd
80%	1323 cd
90%	1489 cd

Conditions:

Number of c-planes: 16

Candela at center: 1654 cd

ISO lux diagram



3%	0,496 lx
5%	0,827 lx
10%	1,65 lx
30%	4,96 lx
50%	8,27 lx

Conditions:

Number of c-planes: 16

Lux at center: 16,5 lx

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

Mounting height: 10 meters (33 feet)

Glare Evaluation According to UGR

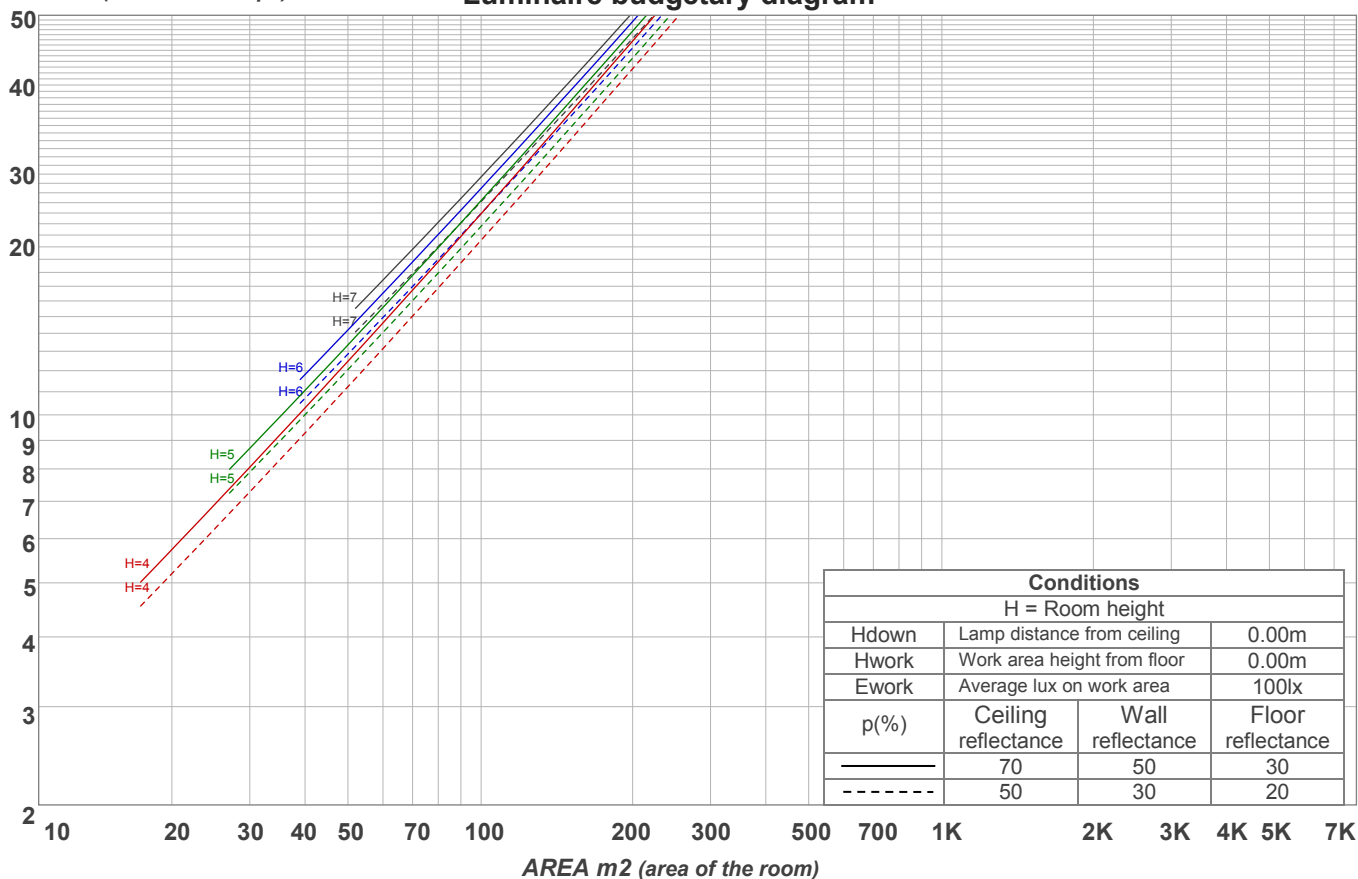
p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	10,0	10,6	10,1	10,8	11,0	17,9	18,5	18,0	18,7	18,9
	3H	10,9	11,6	11,2	11,8	12,0	18,2	18,9	18,5	19,1	19,3
	4H	11,2	11,9	11,6	12,1	12,4	18,3	19,0	18,7	19,3	19,5
	6H	11,5	12,1	11,8	12,3	12,7	18,5	19,1	18,8	19,4	19,8
	8H	11,5	12,1	11,8	12,4	12,8	18,6	19,1	18,9	19,4	19,8
	12H	11,5	12,1	11,9	12,4	12,9	18,6	19,1	18,9	19,5	19,9
4H	2H	10,8	11,5	11,2	11,7	12,0	17,7	18,4	18,1	18,6	18,8
	3H	12,0	12,5	12,3	12,9	13,3	18,2	18,7	18,5	19,1	19,5
	4H	12,3	12,8	12,7	13,2	13,7	18,4	18,9	18,8	19,3	19,8
	6H	12,5	13,1	13,0	13,4	13,8	18,6	19,1	19,1	19,5	19,8
	8H	12,6	13,1	13,1	13,4	13,8	18,6	19,1	19,2	19,5	19,9
	12H	12,6	13,0	13,1	13,4	13,9	18,7	19,1	19,2	19,5	19,9
8H	4H	12,6	13,1	13,1	13,4	13,8	18,3	18,8	18,8	19,1	19,5
	6H	12,9	13,3	13,4	13,7	14,2	18,6	18,9	19,1	19,4	19,9
	8H	13,1	13,3	13,6	13,9	14,5	18,7	19,0	19,3	19,5	20,2
	12H	13,2	13,4	13,7	13,9	14,5	18,8	19,1	19,4	19,6	20,2
12H	4H	12,6	13,0	13,1	13,4	13,8	18,2	18,6	18,7	19,0	19,5
	6H	13,0	13,3	13,5	13,8	14,4	18,6	18,9	19,1	19,4	20,0
	8H	13,2	13,4	13,7	13,9	14,5	18,7	18,9	19,3	19,4	20,0
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,3 / -0,4					3,2 / -1,7				
S = 1.5H		0,4 / -0,6					5,3 / -2,4				
S = 2.0H		0,7 / -1,2					7,1 / -3,2				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 535 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	114	111	108	106	111	109	107	105	105	103	101	101	99	98	97	96	95	94
2	108	104	100	97	106	102	99	96	99	96	93	96	93	91	93	91	90	88
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	84	83
4	99	92	87	83	97	91	87	83	89	85	82	87	84	81	85	82	80	79
5	95	88	82	78	94	87	82	78	85	81	77	83	80	77	82	79	76	75
6	91	83	78	74	90	83	78	74	81	77	73	80	76	73	79	75	72	71
7	88	80	74	71	87	79	74	70	78	73	70	77	73	70	76	72	69	68
8	85	76	71	67	83	76	71	67	75	70	67	74	70	67	73	69	66	65
9	82	73	68	65	81	73	68	64	72	67	64	71	67	64	70	67	64	63
10	79	70	65	62	78	70	65	62	69	65	62	68	64	62	68	64	61	60

LAMPS (number of lamps)

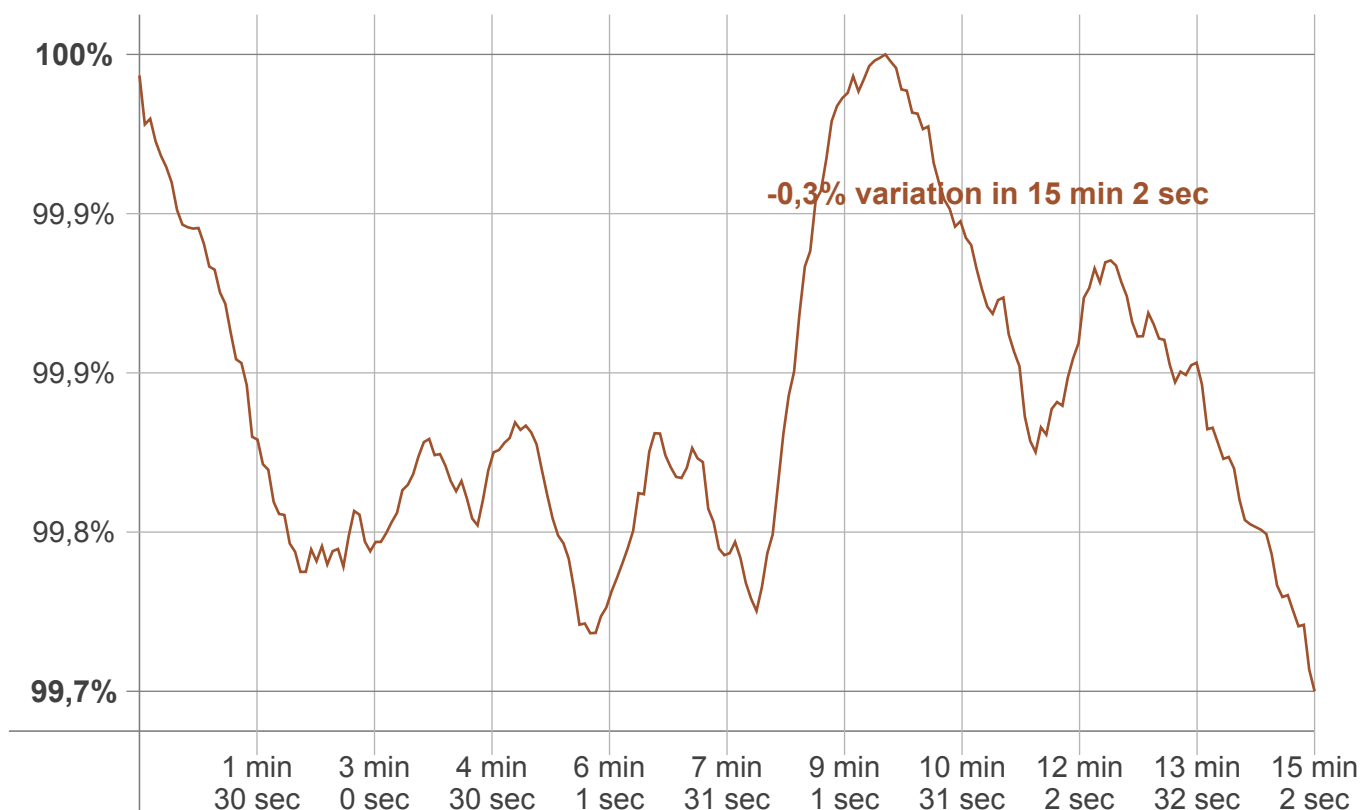
Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
127 lm	190 lm	112 lm	47,2 lm	23,6 lm	15,6 lm	10,4 lm	5,65 lm	2,24 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,615 lm	0,286 lm	0,249 lm	0,225 lm	0,172 lm	0,125 lm	0,092 lm	0,056 lm	0,019 lm

Warmup curve



Warmup result

Warmup time:	15 min 2 sec
Warmup variation	-0,3%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
2995 K	-1 K	2994 K

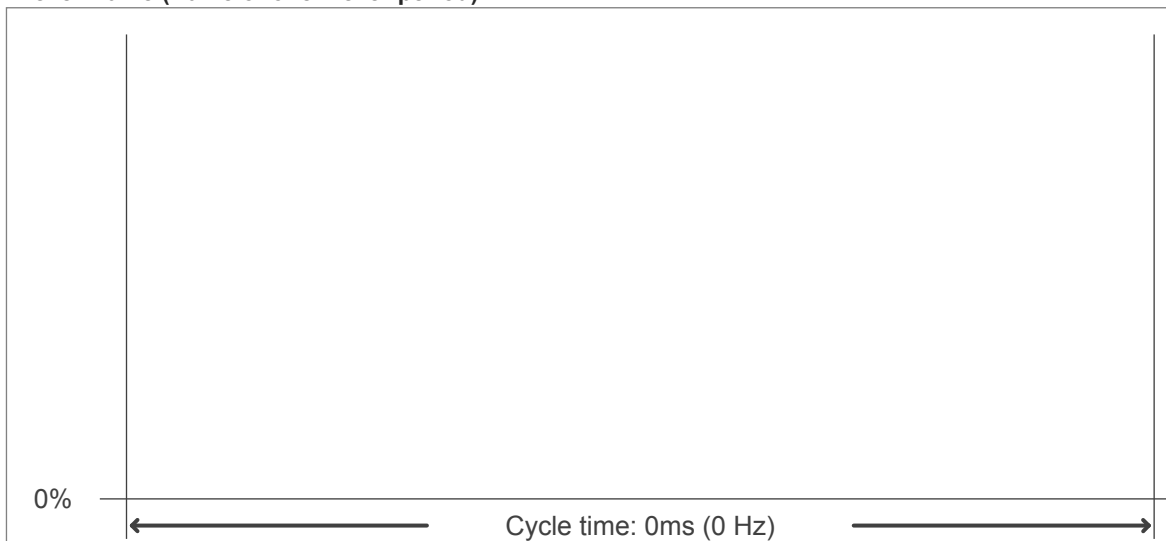
Output change

Output start	Output change	Output end
536 lm	-1 lm	535 lm

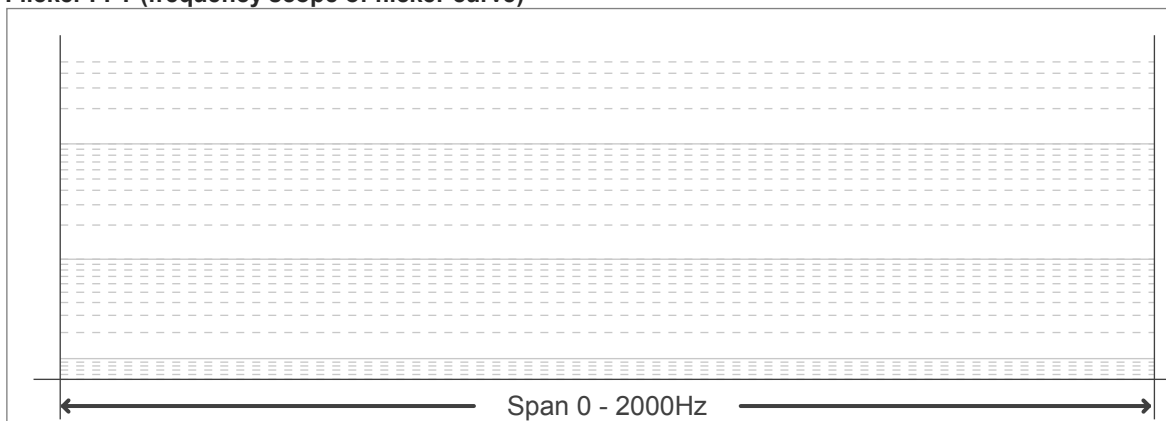
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	n/a Hz
Flicker index:	n/a
Flicker percentage:	n/a %
SVM: (Visual flicker)	n/a

Flicker conditions:

Sample rate:	60.000 samples/second
---------------------	------------------------------