

Light efficiency:

97 Lumen/Watt

Light quality:

CRI: 0,0

Color temperature:

0 K

Output: 298 lm

Peak: 1311 cd

Power: 3,1 W

PF: 1,0



Product name:

F L-S O - 2-4 C -1 0 0-R-LSOT-O

Item number:

F L / S O - 2 / 4 C / 1 0 0 / R/LSOT/O

Date and time:

18.03.2019 11:01:20

Description:

HEIDI.D8°

Toleranzen:

Lumen +/-4%

Candela +/-2,5%

Colour Temp +/-35 Grad K

CRI +/-0,7

Angular Resolution 1 Grad step

Last Calibration 06.06.2018

Pruefer:

Mourad Benzineb

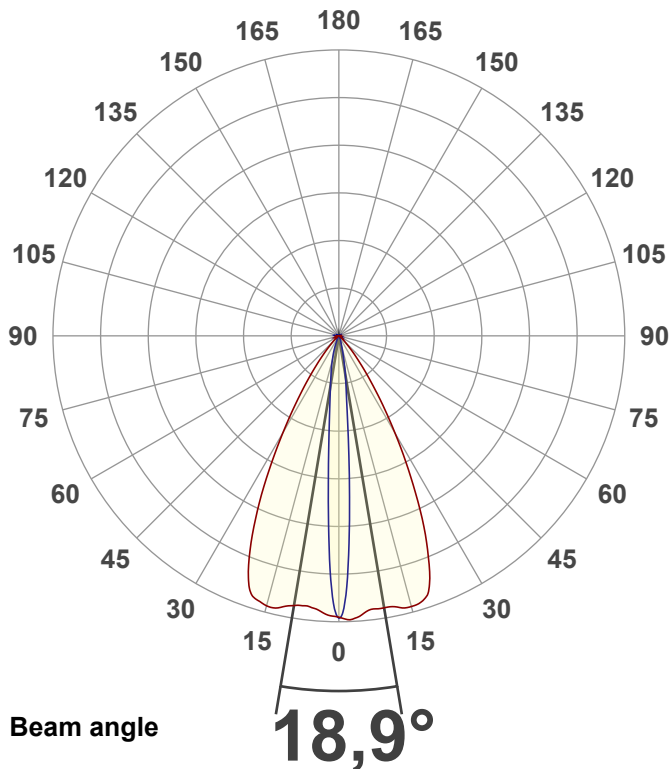
Master of Engineering

Pruefort:

Lichtlabor

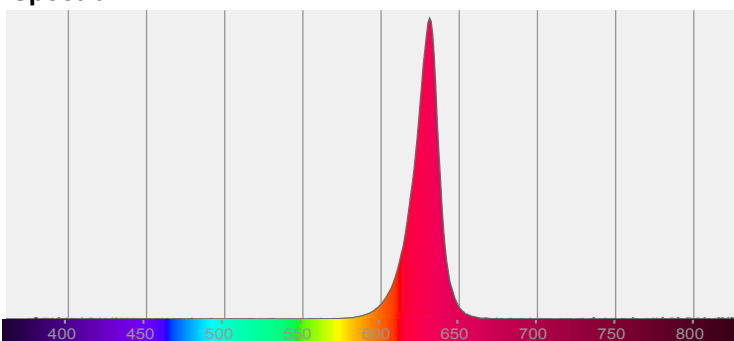
Gaustasse13-15

55411 Bingen am Rhein

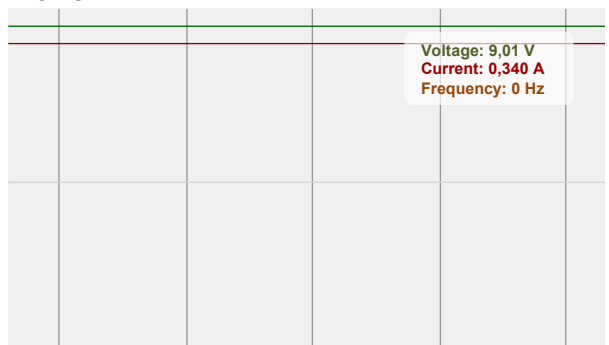


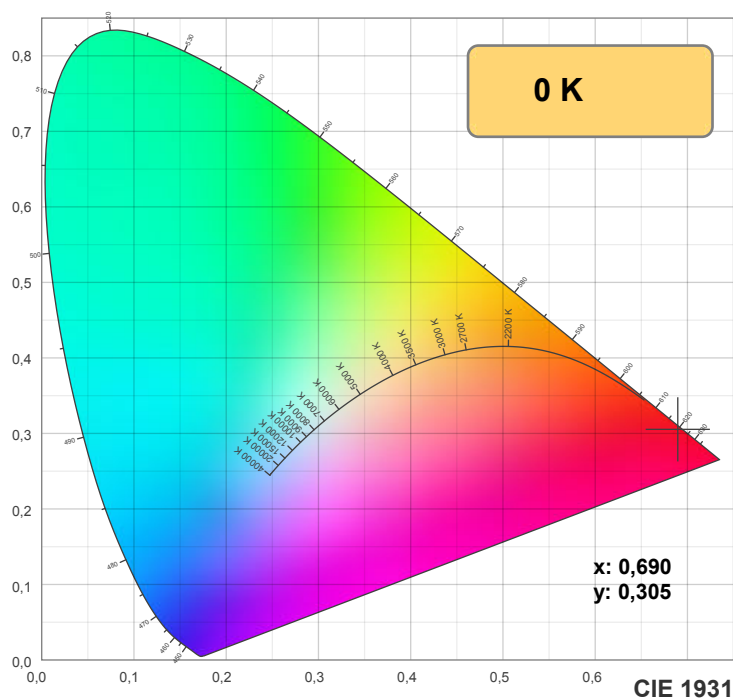
CIE 1931
x: 0,690
y: 0,305

Spectra

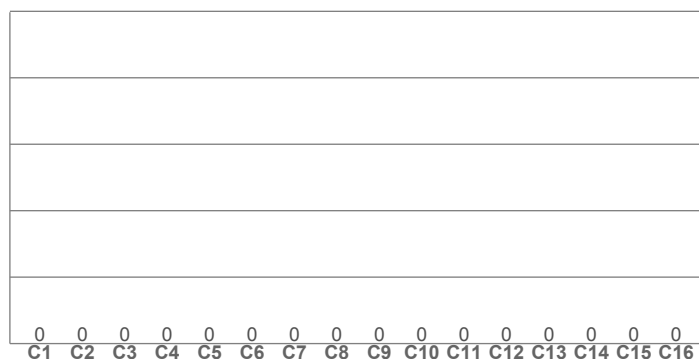


Power





TM30: 0,0



CRI R values, only R1-R8 are used to calculate final CRI value

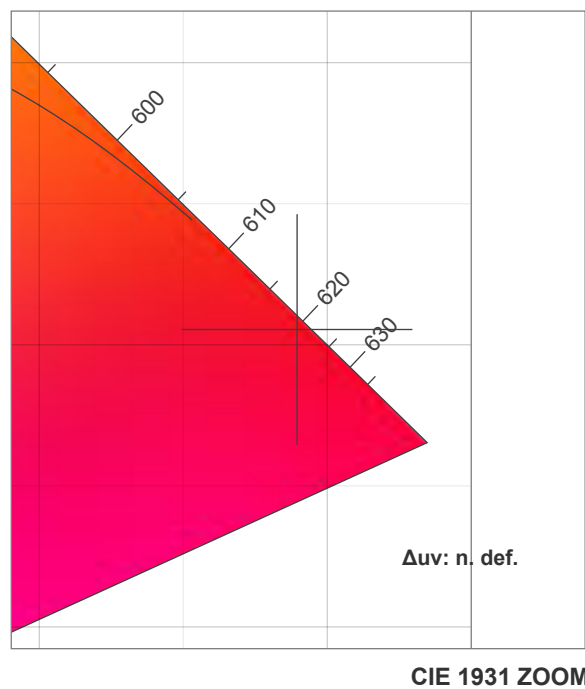
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

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

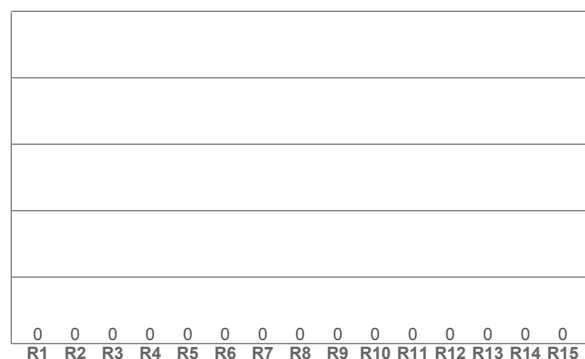
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

CQS Q values

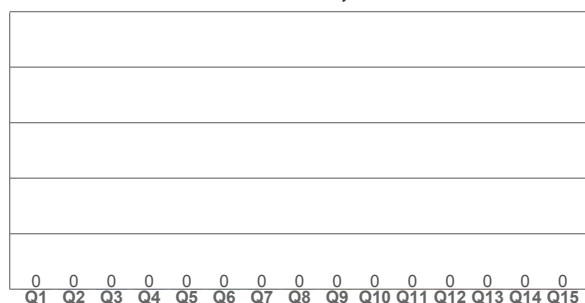
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0



CRI: 0,0 (R1-R8)



CQS: 0,0



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
0 K	0,0	0,0	0,0	0,0	0,0	0,690	0,305	0,522	0,347	n. def.

TM30 details

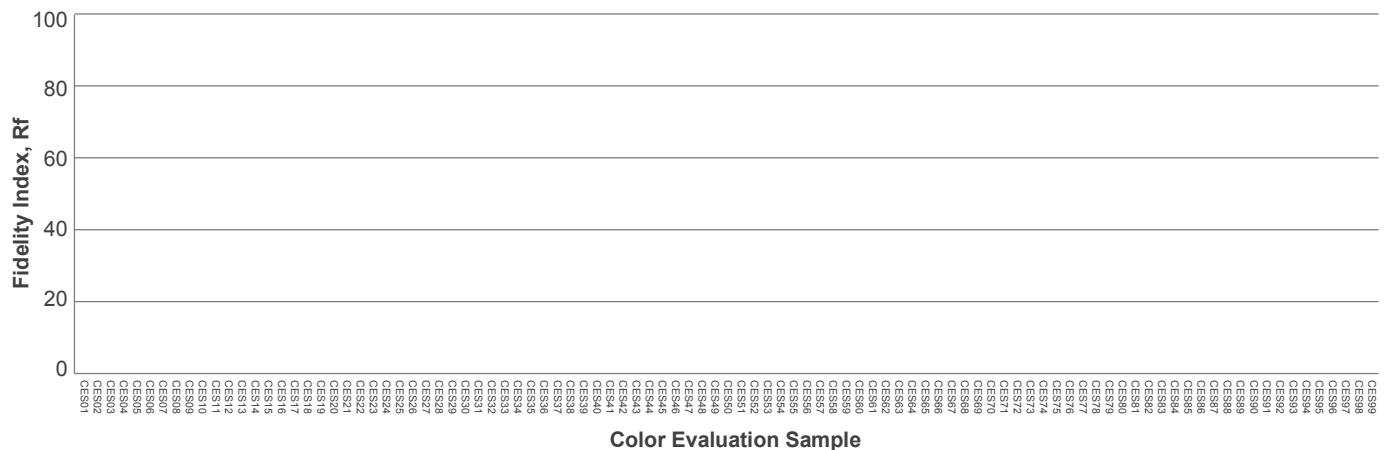
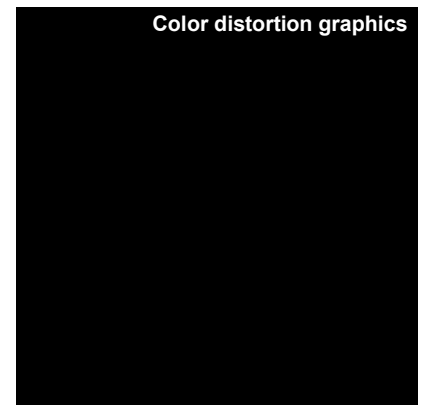
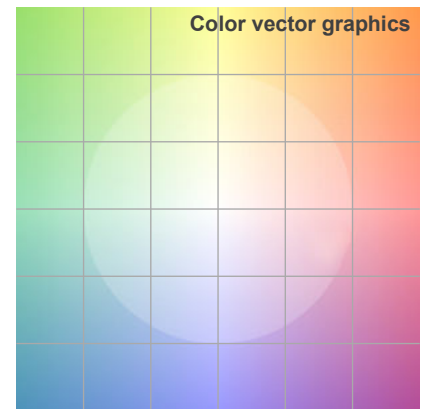
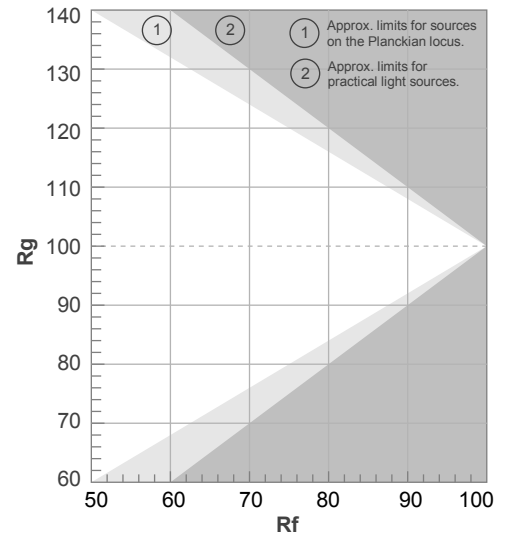
Rf 0,0

Fidelity index Rf

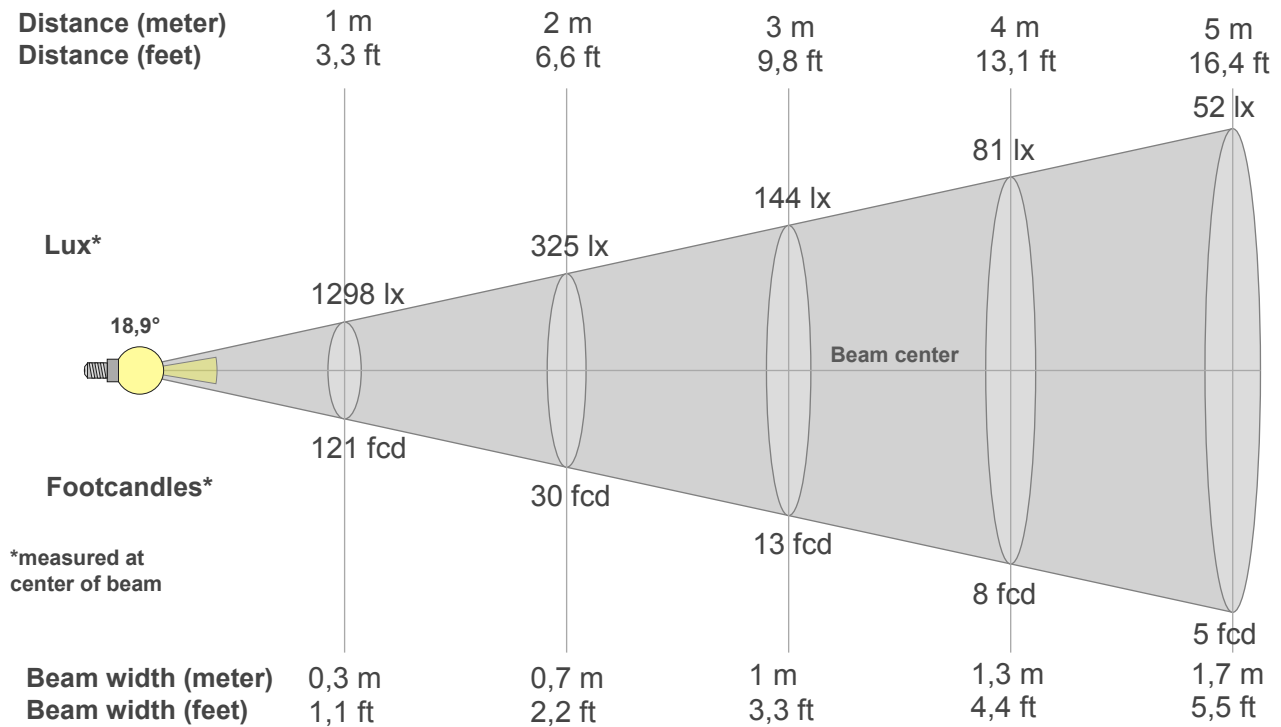
Rg 0,0

Gammut index Rg

Hue Bin	R_f	Graphic shifts (%)	
		Chroma	Hue
1	0	0%	0%
2	0	0%	0%
3	0	0%	0%
4	0	0%	0%
5	0	0%	0%
6	0	0%	0%
7	0	0%	0%
8	0	0%	0%
9	0	0%	0%
10	0	0%	0%
11	0	0%	0%
12	0	0%	0%
13	0	0%	0%
14	0	0%	0%
15	0	0%	0%
16	0	0%	0%



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
1298lx	325lx	144lx	81lx	52lx	36lx	26lx	20lx	16lx	13lx	11lx	9lx	8lx	7lx	6lx	5lx	4lx	4lx	4lx	3lx
120,6fc	30,2fcd	13,4fcd	7,5fcd	4,8fcd	3,4fcd	2,5fcd	1,9fcd	1,5fcd	1,2fcd	1fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd

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°
1298	1310	1299	1276	1272	1272	1279	1292	1292	1277	1222	1103	965	807	657	519	400	299	220	157
100%	101%	100%	98%	98%	98%	99%	100%	99%	98%	94%	85%	74%	62%	51%	40%	31%	23%	17%	12%

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°
1298	1120	705	383	240	162	106	68	43	31	24	18	14	13	11	10	9	7	7	7
100%	86%	54%	29%	18%	13%	8%	5%	3%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%

Intensities in 180° c-plane

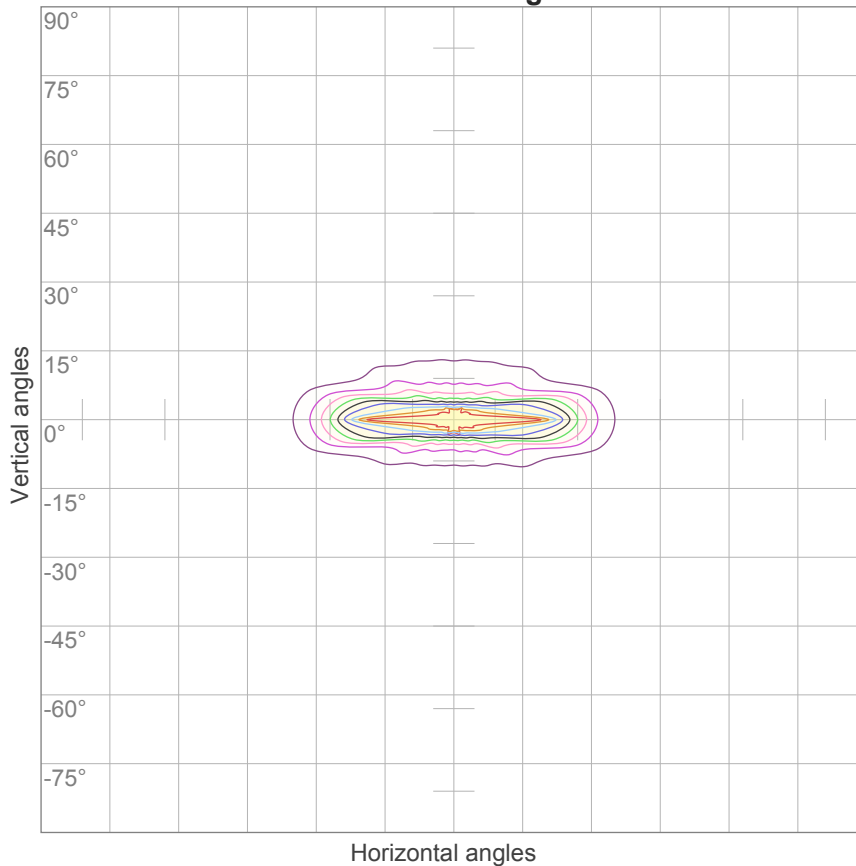
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1298	1290	1272	1259	1257	1264	1280	1291	1283	1268	1214	1104	963	813	658	517	396	298	218	155
100%	99%	98%	97%	97%	97%	99%	99%	99%	98%	94%	85%	74%	63%	51%	40%	31%	23%	17%	12%

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°
1298	1104	699	429	293	219	172	134	100	74	49	29	18	13	11	10	9	7	7	7
100%	85%	54%	33%	23%	17%	13%	10%	8%	6%	4%	2%	1%	1%	1%	1%	1%	1%	1%	1%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18,9°	40,4°	58,2°	95,9%	92,4%

ISO candela diagram



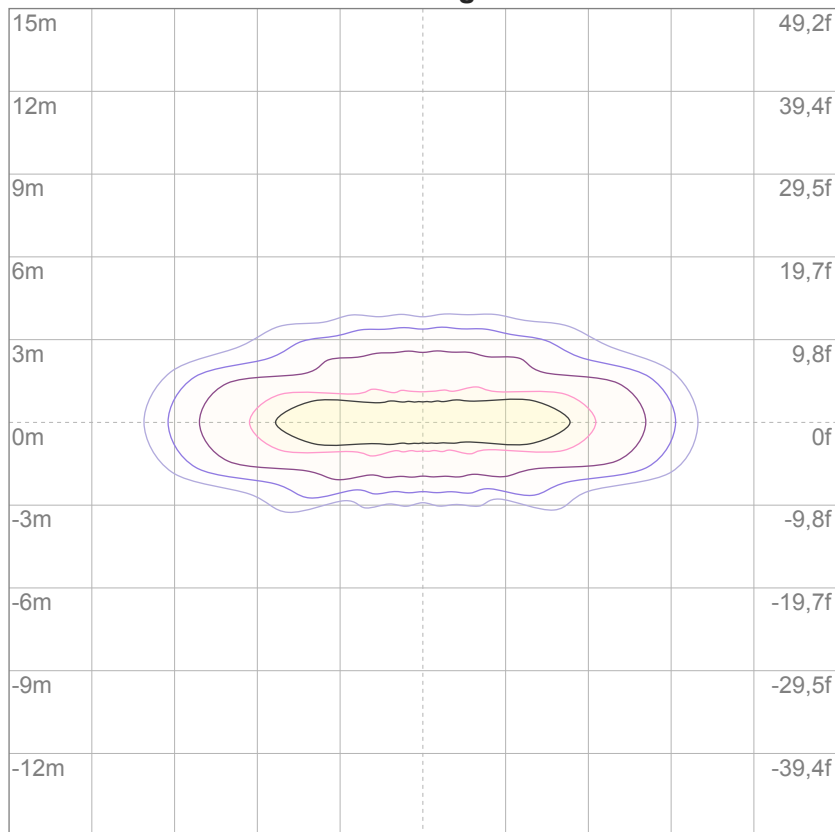
10%	130 cd
20%	260 cd
30%	389 cd
40%	519 cd
50%	649 cd
60%	779 cd
70%	909 cd
80%	1039 cd
90%	1168 cd

Conditions:

Number of c-planes: 16

Candela at center: 1298 cd

ISO lux diagram



3%	0,389 lx
5%	0,649 lx
10%	1,30 lx
30%	3,89 lx
50%	6,49 lx

Conditions:

Number of c-planes: 16

Lux at center: 13,0 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	14,8	15,5	15,0	15,7	15,9	5,6	6,3	5,8	6,5	6,7
	3H	15,1	15,8	15,4	16,0	16,3	8,0	8,7	8,3	8,9	9,2
	4H	15,3	16,0	15,7	16,2	16,5	9,3	9,9	9,6	10,2	10,5
	6H	15,6	16,2	15,9	16,5	16,7	10,6	11,2	11,0	11,5	11,8
	8H	15,7	16,3	16,0	16,6	16,9	11,2	11,8	11,5	12,1	12,4
	12H	15,9	16,4	16,2	16,7	17,1	11,9	12,4	12,2	12,7	13,0
4H	2H	14,7	15,3	15,0	15,6	15,8	6,8	7,5	7,1	7,7	8,0
	3H	15,1	15,7	15,5	16,0	16,3	9,4	9,9	9,7	10,2	10,5
	4H	15,5	16,0	15,9	16,3	16,6	10,8	11,2	11,1	11,6	11,9
	6H	15,9	16,3	16,3	16,7	17,0	12,2	12,6	12,6	12,9	13,3
	8H	16,1	16,5	16,5	16,8	17,2	12,8	13,2	13,2	13,5	13,9
	12H	16,4	16,7	16,8	17,1	17,5	13,5	13,8	14,0	14,2	14,7
8H	4H	15,6	15,9	16,0	16,3	16,7	11,4	11,8	11,9	12,2	12,6
	6H	16,2	16,4	16,6	16,8	17,3	13,1	13,4	13,5	13,8	14,2
	8H	16,4	16,7	16,9	17,1	17,6	13,8	14,0	14,2	14,4	14,9
	12H	16,8	17,0	17,3	17,5	17,9	14,7	14,8	15,1	15,3	15,8
12H	4H	15,6	15,9	16,0	16,3	16,7	11,6	11,9	12,0	12,3	12,7
	6H	16,2	16,4	16,7	16,9	17,4	13,3	13,5	13,8	14,0	14,4
	8H	16,6	16,7	17,0	17,2	17,7	14,0	14,2	14,5	14,7	15,2
Variation of the observer position for the luminaire distance S											
S = 1,0H		+3,9 / -1,7					+0,2 / -0,1				
S = 1,5H		+6,4 / -2,0					+0,3 / -0,4				
S = 2,0H		+8,3 / -2,5					+0,4 / -0,9				
Standard table		BK03					BK11				
Correction summand		-1,5					-2,4				
Corrected glare indices referring to 298 lm total luminous flux											

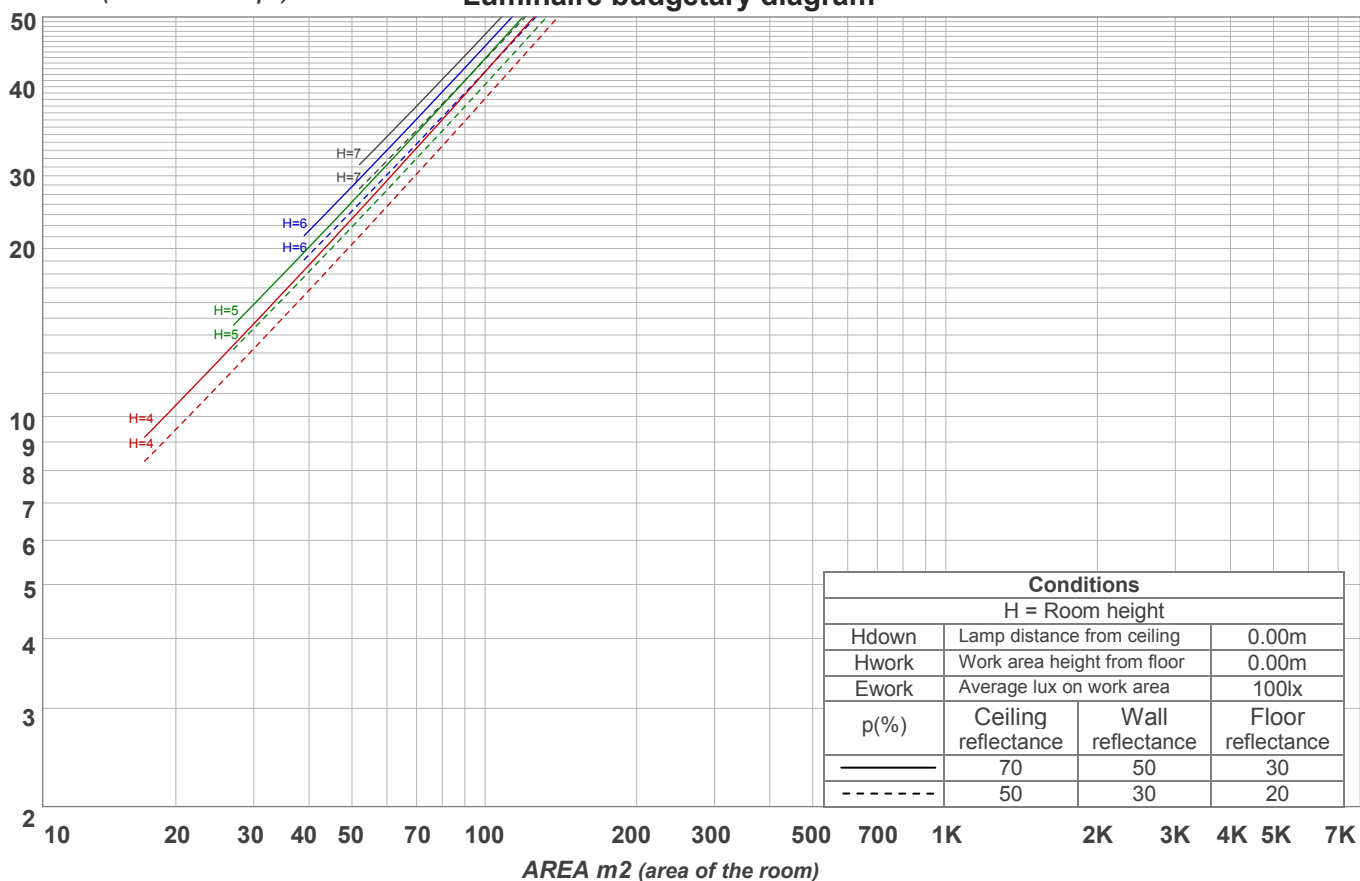
UGR data could be incorrect as lamp output is not symmetrical. Goto Edit->Photometric->Corrections and select Correct asymmetry.

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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93
2	108	104	100	96	106	102	98	95	99	96	93	96	93	91	93	91	89	88
3	103	97	93	89	101	96	92	88	93	90	87	91	88	85	89	86	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	81	85	82	80	78
5	95	87	82	78	93	86	81	78	85	80	77	83	79	76	81	78	76	74
6	91	83	78	74	90	82	77	73	81	76	73	79	75	72	78	75	72	71
7	87	79	74	70	86	79	73	70	77	73	69	76	72	69	75	71	69	67
8	84	76	70	67	83	75	70	67	74	70	66	73	69	66	72	69	66	65
9	81	73	67	64	80	72	67	64	71	67	64	70	66	63	70	66	63	62
10	78	70	65	61	77	69	64	61	69	64	61	68	64	61	67	63	61	60

LAMPS (number of lamps)

Luminaire budgetary diagram

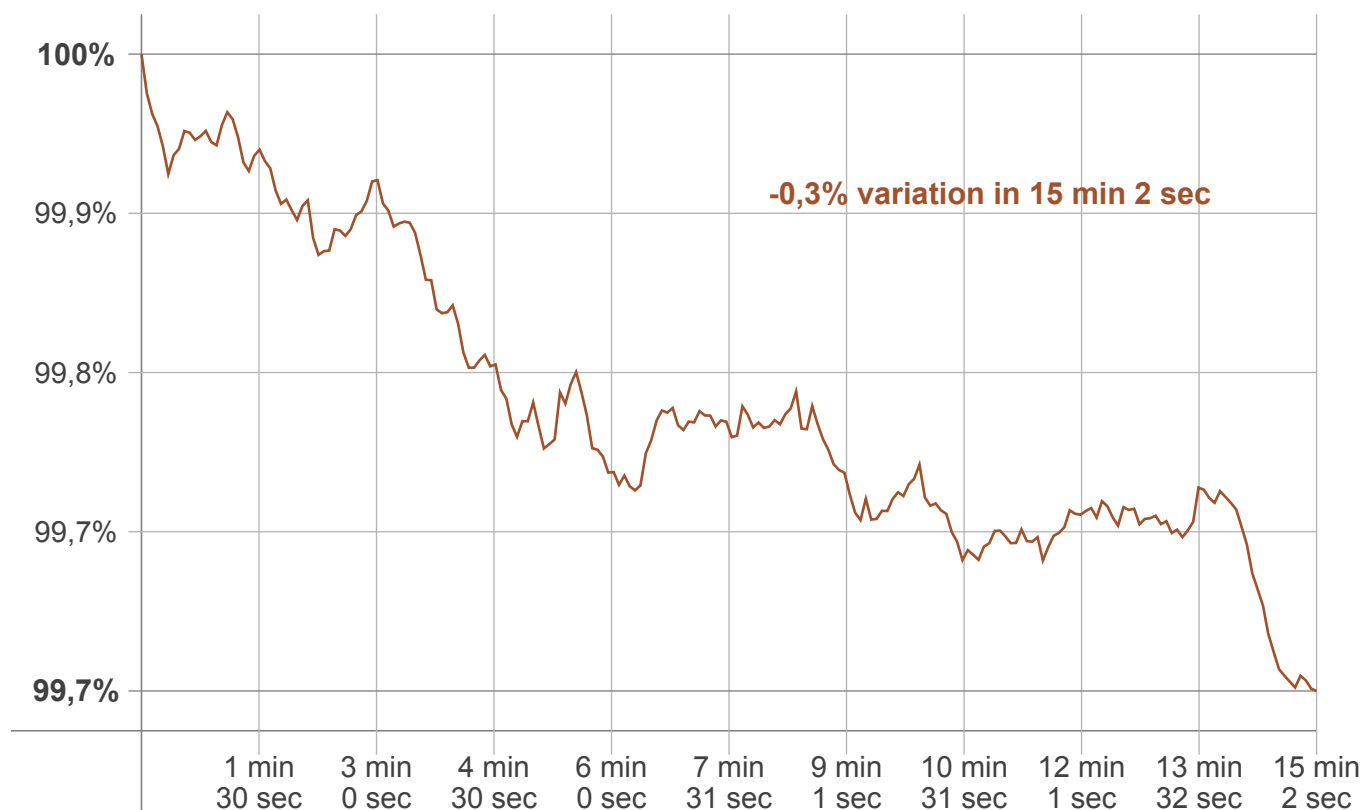


Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	95,2 lm	72,9 lm	31,0 lm	10,4 lm	6,36 lm	5,39 lm	4,07 lm	2,13 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,656 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm	0,000 lm

Stabilization

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
0 K	0 K	0 K

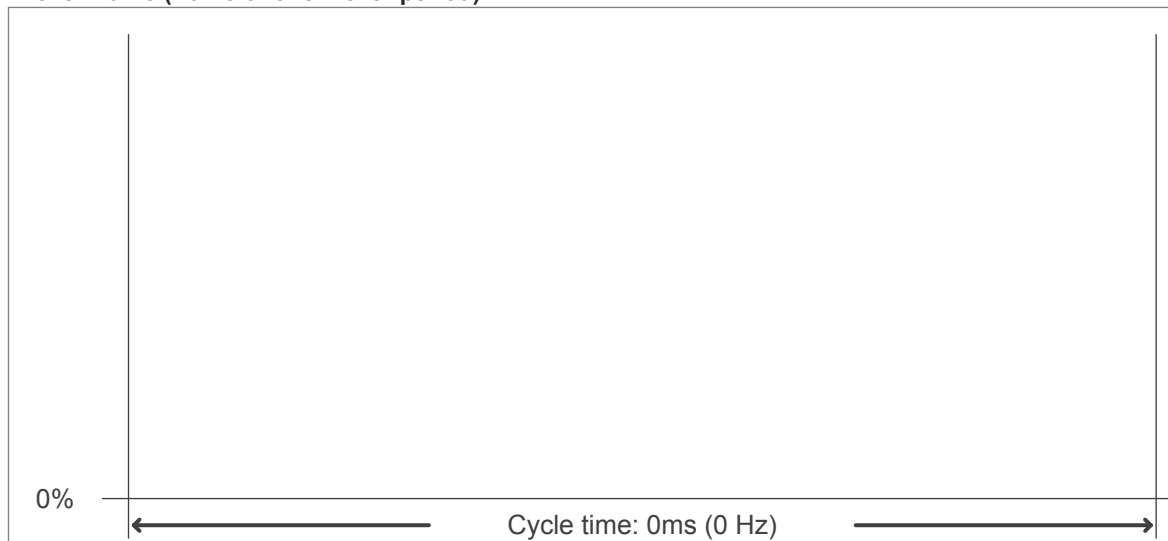
Output change

Output start	Output change	Output end
298 lm	-1 lm	298 lm

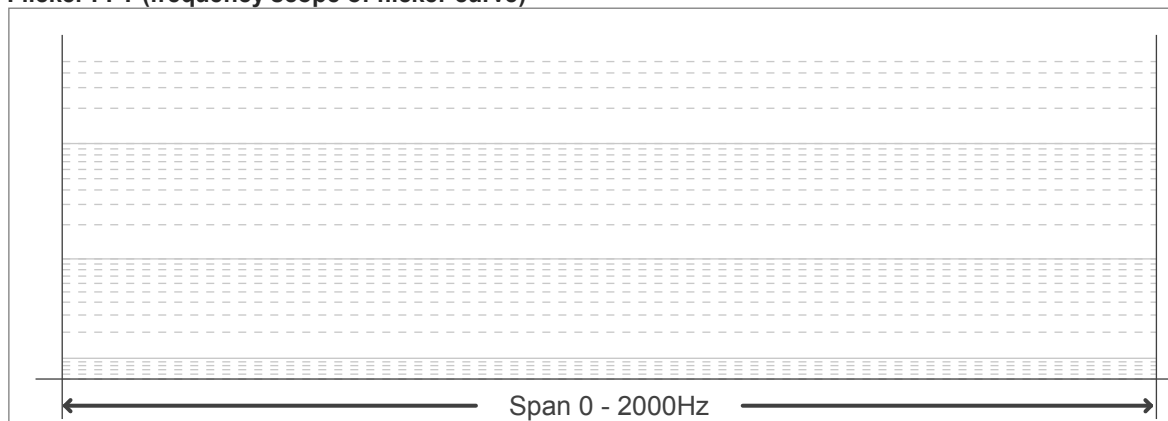
Flicker curve (complete sampled flicker signal)



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
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