Light efficiency:

60 Lumen/Watt

Light quality:

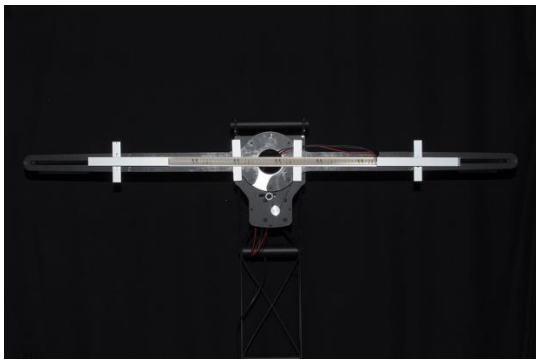
CRI: 33,8

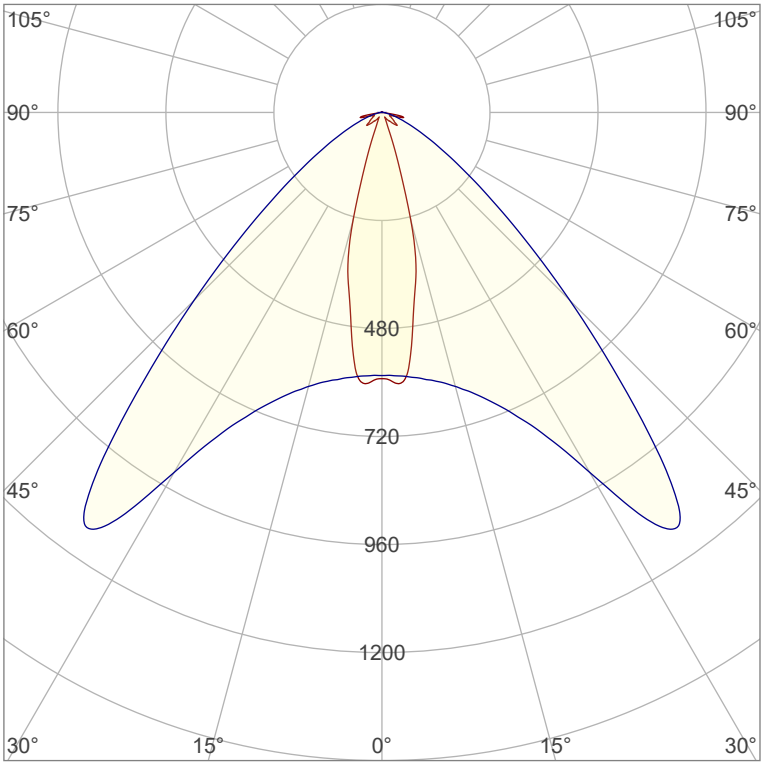
Color temperature:

11133 K

Output: 548 lm
Peak: 1129 cd

Power: 9,1 W
PF: 1,0





CIE 1931
x: 0,271
y: 0,289

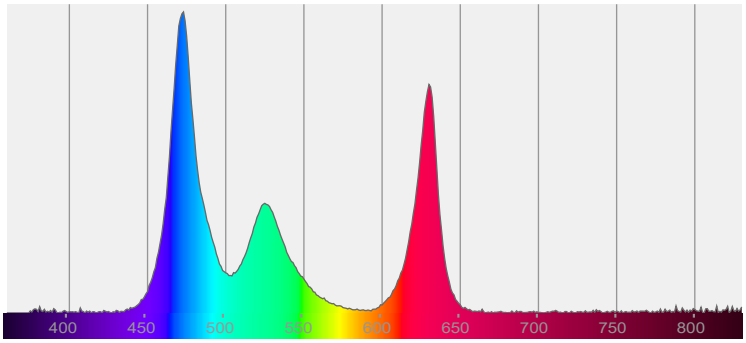
Product name:
Defiant-3_510mm_RGB_Lens-30°-Transparent

Item number:
NP/L3C/22C/0510/RGB/L3T

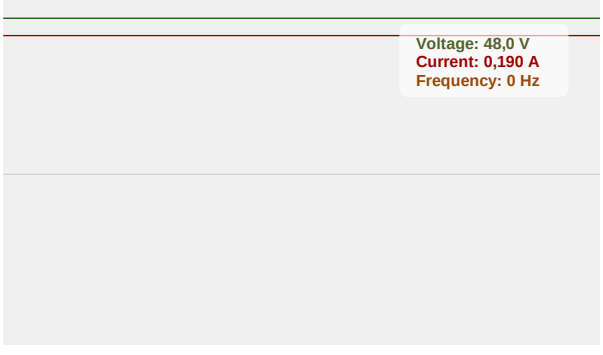
Date and time:
08.07.2020 08:55:49

Description:
Toleranzen:
Lumen +/-4%
Candela +/-2,5%
Colour Temp +/-35 K
CRI +/-0,7
Angular Resolution 1 Grad Step
Last Calibration 20.05.2020
Pruefer:
Peter Ulrich
Pruefort:
Lichtlabor
Gaustrasse 13
55411 Bingen am Rhein

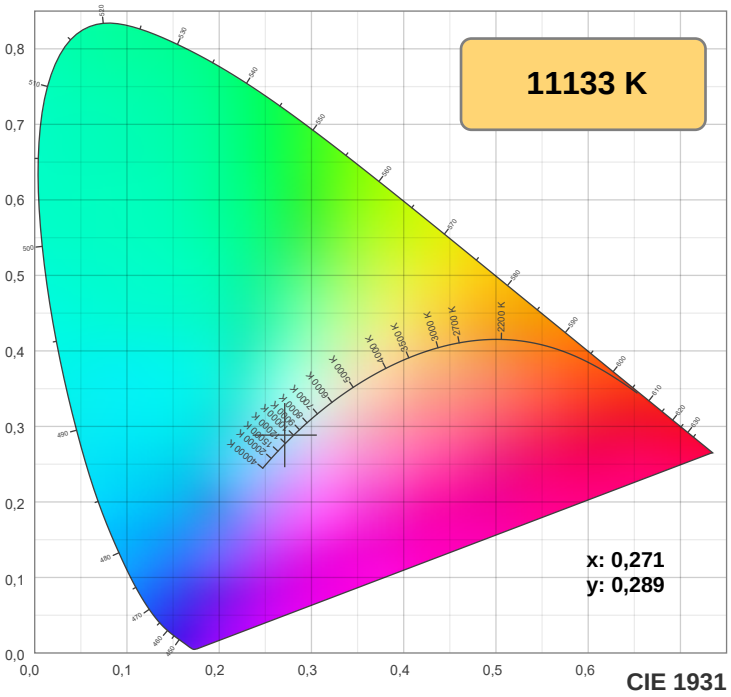
Spectra



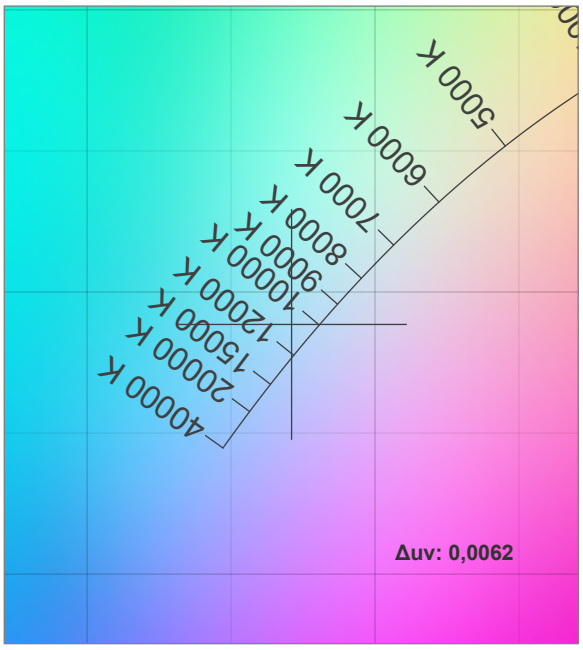
Power



Color details

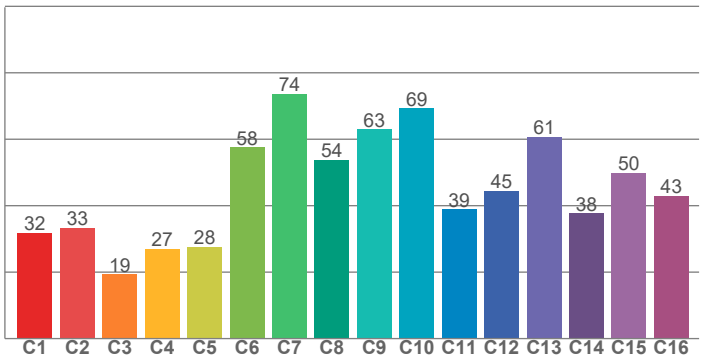


CIE 1931

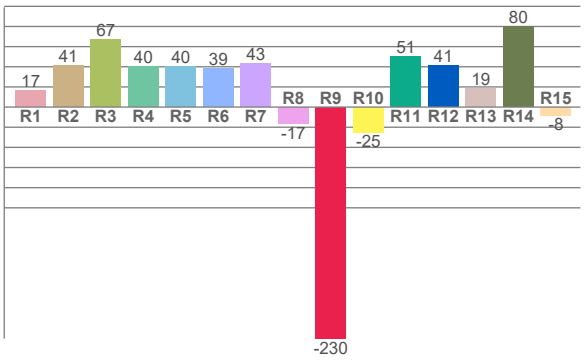


CIE 1931 ZOOM

TM30: 44,7



CRI: 33,8 (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
16,7	41,2	67,2	40,2	40,3	38,6	43,2	-16,7	-229,8	-24,8	50,5	40,9	18,7	80,0	-8,2

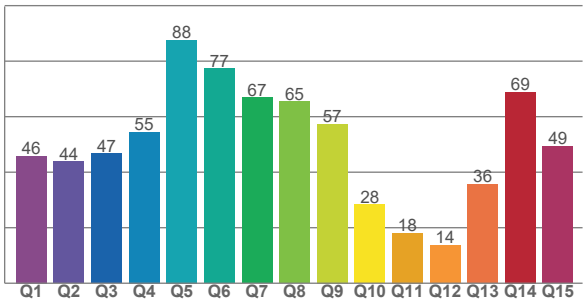
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
31,9	33,4	19,3	27,0	27,5	57,5	73,7	53,9	63,0	69,3	38,9	44,5	60,8	37,7	49,9	42,9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
45,9	43,9	46,8	54,5	87,7	77,3	66,8	65,4	57,4	28,4	18,1	13,7	35,6	68,9	49,3

CQS: 46,1



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
11133 K	33,8	-229,8	44,7	88,7	46,1	0,271	0,289	0,183	0,292	0,0062

TM30 details

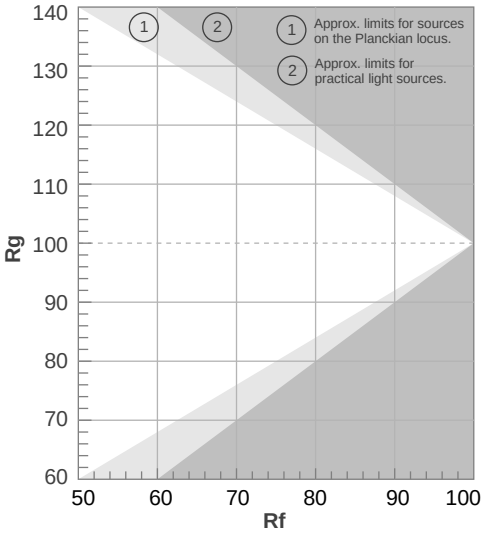
Rf 44,7

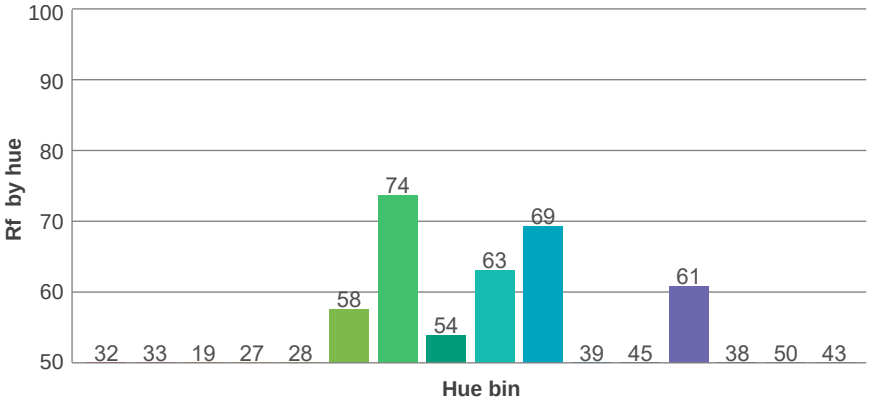
Fidelity index Rf

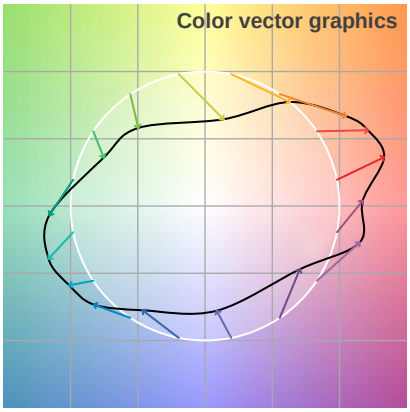
Rg 88,7

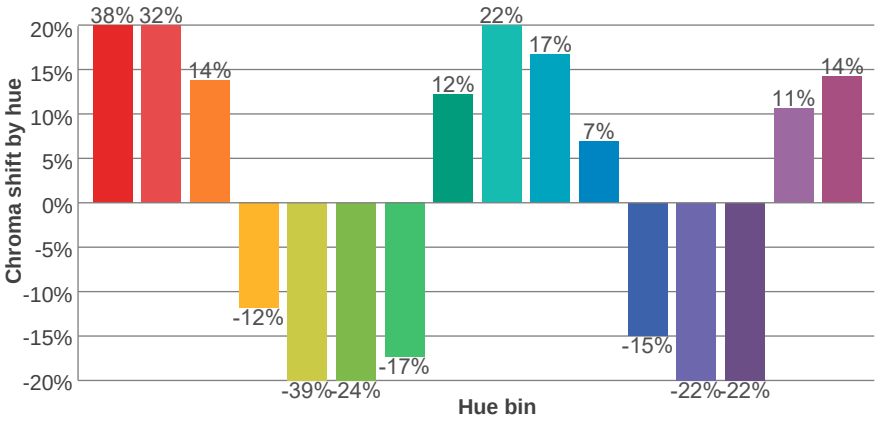
Gammut index Rg

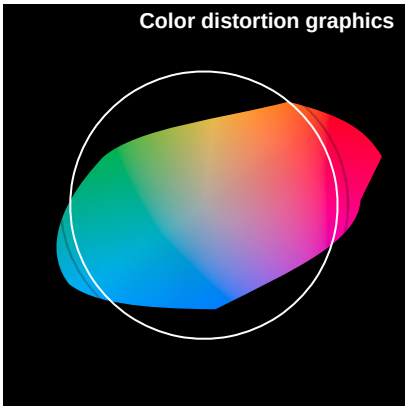
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	32	38%	10%
2	33	32%	-20%
3	19	14%	-50%
4	27	-12%	-47%
5	28	-39%	-26%
6	58	-24%	9%
7	74	-17%	12%
8	54	12%	29%
9	63	22%	16%
10	69	17%	-7%
11	39	7%	-28%
12	45	-15%	-30%
13	61	-22%	-7%
14	38	-22%	32%
15	50	11%	41%
16	43	14%	27%

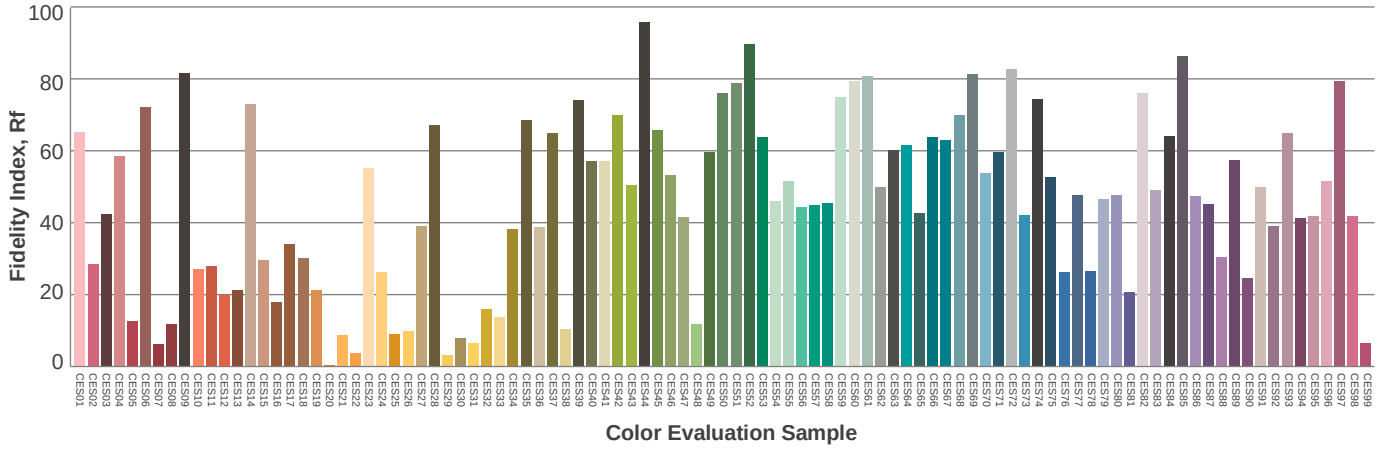




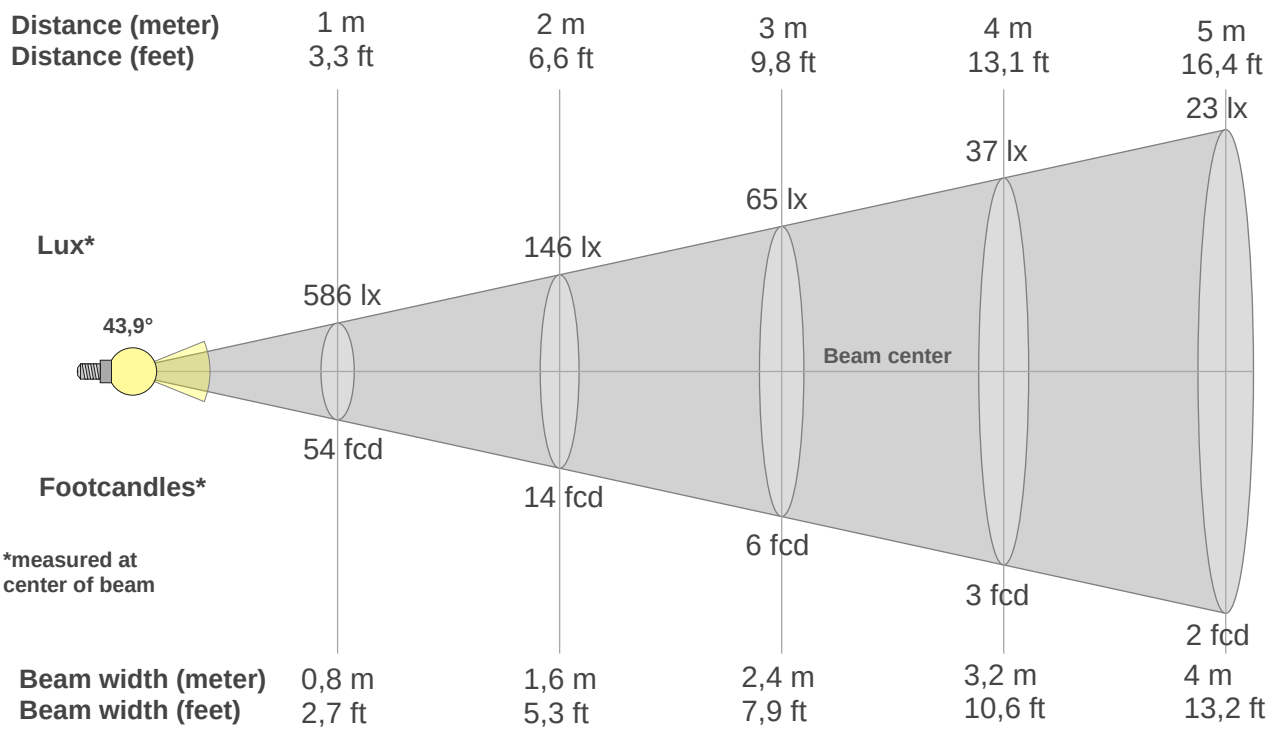








Beam details



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
586lx	146lx	65lx	37lx	23lx	16lx	12lx	9lx	7lx	6lx	5lx	4lx	3lx	3lx	3lx	2lx	2lx	2lx	2lx	1lx
54,4fcd	13,6fcd	6fcd	3,4fcd	2,2fcd	1,5fcd	1,1fcd	0,9fcd	0,7fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd	0,2fcd	0,1fcd

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°
586	597	602	569	489	417	364	294	195	116	67	37	26	20	16	13	13	16	19	22
100%	102%	103%	97%	84%	71%	62%	50%	33%	20%	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°
586	585	587	591	596	603	612	624	638	656	678	705	740	782	841	924	1026	1110	1124	1042
100%	100%	100%	101%	102%	103%	104%	106%	109%	112%	116%	120%	126%	133%	144%	158%	175%	190%	192%	178%

Intensities in 180° c-plane

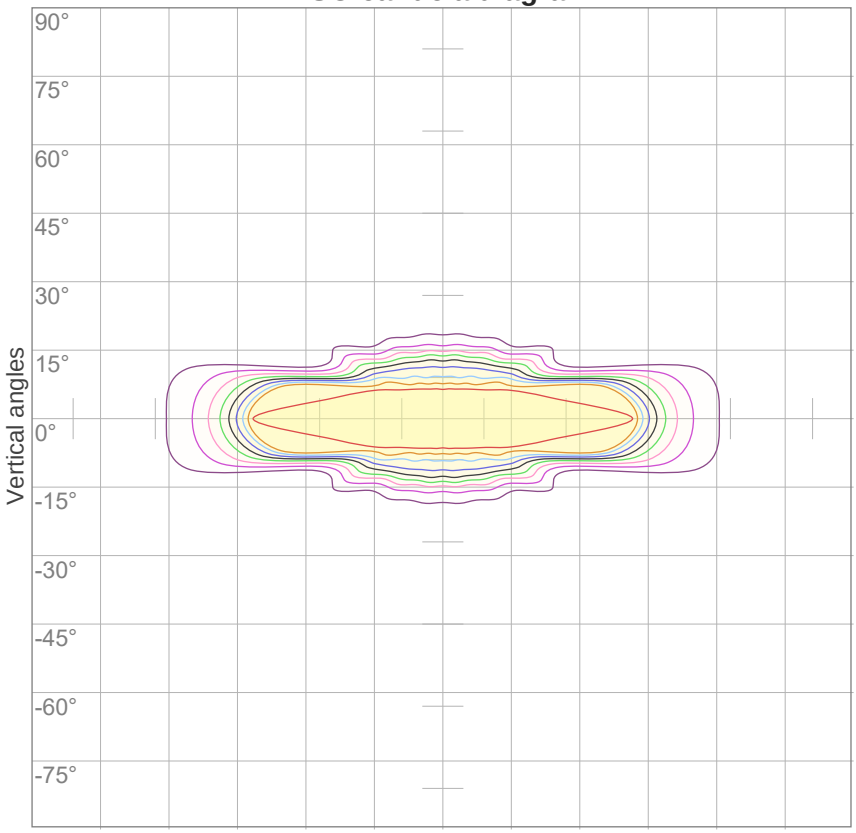
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
586	597	602	569	489	417	364	294	195	116	67	37	26	20	16	13	13	16	19	22
100%	102%	103%	97%	84%	71%	62%	50%	33%	20%	12%	6%	4%	3%	3%	2%	2%	3%	3%	4%

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°
586	585	587	591	596	603	612	624	638	656	678	705	740	782	841	924	1026	1110	1124	1042
100%	100%	100%	101%	102%	103%	104%	106%	109%	112%	116%	120%	126%	133%	144%	158%	175%	190%	192%	178%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
43,9°	**60,1°**	**157,5°**	**88,0%**	**73,2%**

ISO candela diagram



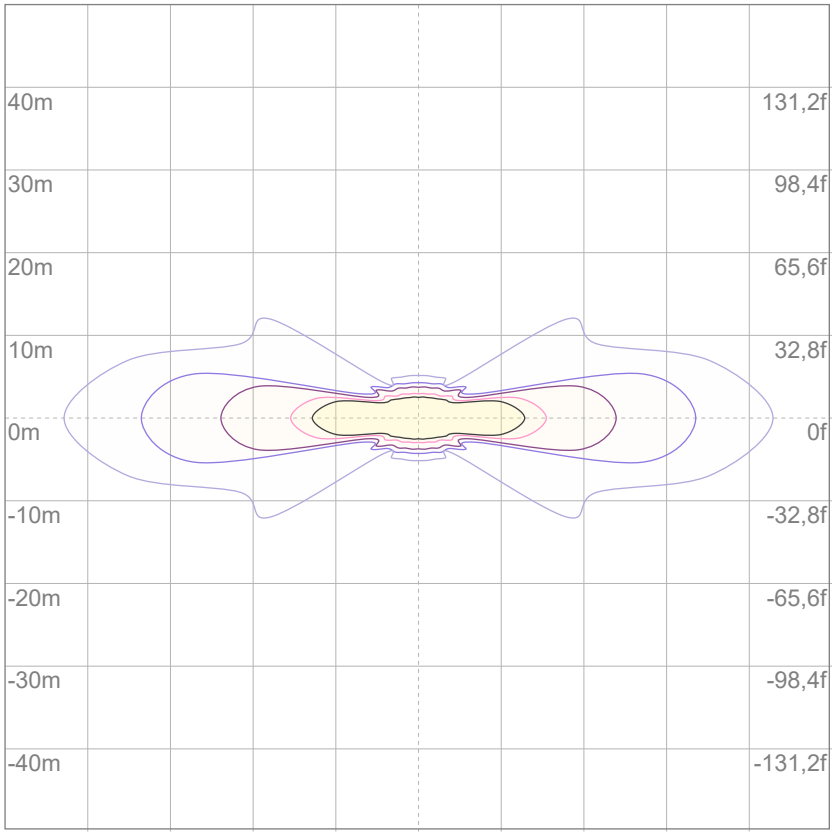
10%	59 cd
20%	117 cd
30%	176 cd
40%	234 cd
50%	293 cd
60%	351 cd
70%	410 cd
80%	469 cd
90%	527 cd

Conditions:

Number of c-planes: 16

Candela at center: 586 cd

ISO lux diagram



Mounting height: 10 meters (33 feet)

3%	0,176 lx
5%	0,293 lx
10%	0,586 lx
30%	1,76 lx
50%	2,93 lx

Conditions:

Number of c-planes: 16

Lux at center: 5,86 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	11,6	12,5	11,8	12,8	13,0	23,8	24,7	24,0	25,0	25,2
	3H	13,0	14,0	13,4	14,3	14,5	24,0	25,0	24,4	25,2	25,4
	4H	15,5	16,5	15,9	16,7	17,0	24,1	25,1	24,5	25,3	25,5
	6H	18,8	19,6	19,1	19,9	20,2	24,2	25,0	24,5	25,3	25,7
	8H	19,0	19,8	19,3	20,1	20,5	24,2	25,0	24,5	25,3	25,7
	12H	19,0	19,8	19,3	20,1	20,5	24,1	24,9	24,5	25,3	25,7
4H	2H	12,1	13,0	12,5	13,3	13,5	23,5	24,5	23,9	24,7	25,0
	3H	13,8	14,6	14,2	14,9	15,4	23,9	24,6	24,2	25,0	25,4
	4H	16,5	17,3	17,0	17,7	18,2	23,9	24,6	24,3	25,0	25,6
	6H	20,1	20,9	20,6	21,2	21,6	23,9	24,7	24,4	25,0	25,4
	8H	20,5	21,1	21,0	21,5	21,9	24,0	24,6	24,5	25,0	25,3
	12H	20,5	21,0	21,0	21,4	21,9	23,9	24,5	24,4	24,9	25,4
8H	4H	16,9	17,5	17,4	17,9	18,3	23,8	24,5	24,3	24,8	25,2
	6H	20,8	21,3	21,3	21,8	22,3	23,9	24,4	24,4	24,9	25,4
	8H	21,3	21,8	21,9	22,3	22,9	24,0	24,4	24,5	24,9	25,6
	12H	21,4	21,7	22,0	22,2	22,8	24,0	24,4	24,6	24,9	25,5
12H	4H	16,9	17,5	17,4	17,9	18,3	23,8	24,3	24,3	24,8	25,2
	6H	21,0	21,4	21,5	21,9	22,5	24,0	24,4	24,5	24,9	25,6
	8H	21,5	21,9	22,1	22,4	23,0	24,1	24,4	24,7	24,9	25,5

Variation of the observer position for the luminaire distance S		
S = 1.0H	0,1 / 0,0	2,9 / -3,6
S = 1.5H	0,2 / -0,1	5,2 / -4,9
S = 2.0H	0,2 / -0,3	7,0 / -5,8
Standard table	n/a	n/a
Correction summand	n/a	n/a

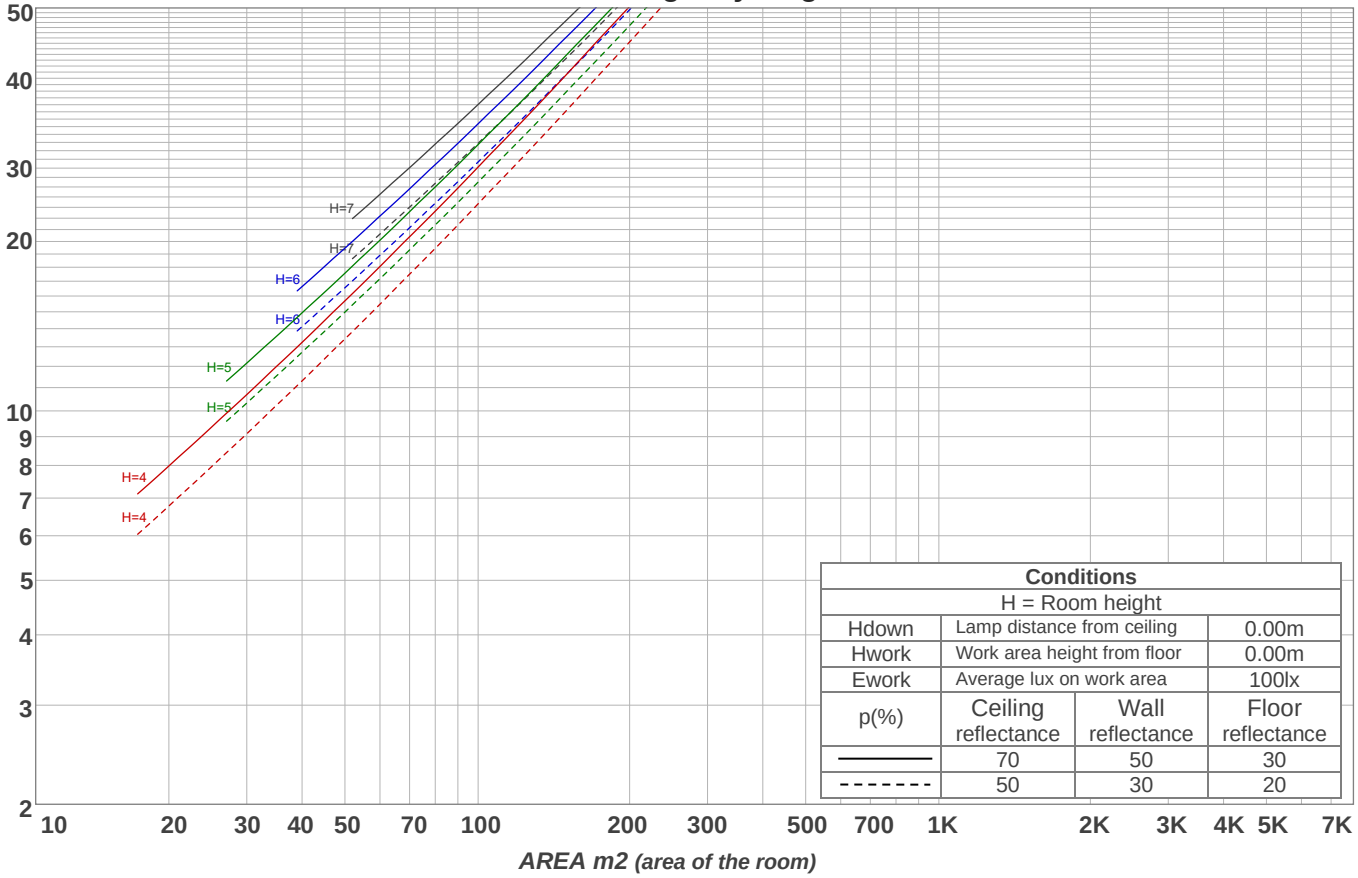
Corrected glare indices referring to 548 lm total luminous flux

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	107	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	87	83	87	84	81	84	82	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	66	61	82	73	66	61	70	64	60	69	63	59	67	62	58	57
6	79	68	61	56	77	67	60	55	65	59	55	64	58	54	62	57	54	52
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	58	53	50	48
8	70	59	52	47	69	58	52	47	57	51	47	56	50	46	55	50	46	44
9	67	55	49	44	65	55	48	44	54	48	43	53	47	43	52	47	43	41
10	63	52	45	41	62	52	45	41	51	45	41	50	44	40	49	44	40	39

Luminaire budgetary diagram

LAMPS (number of lamps)



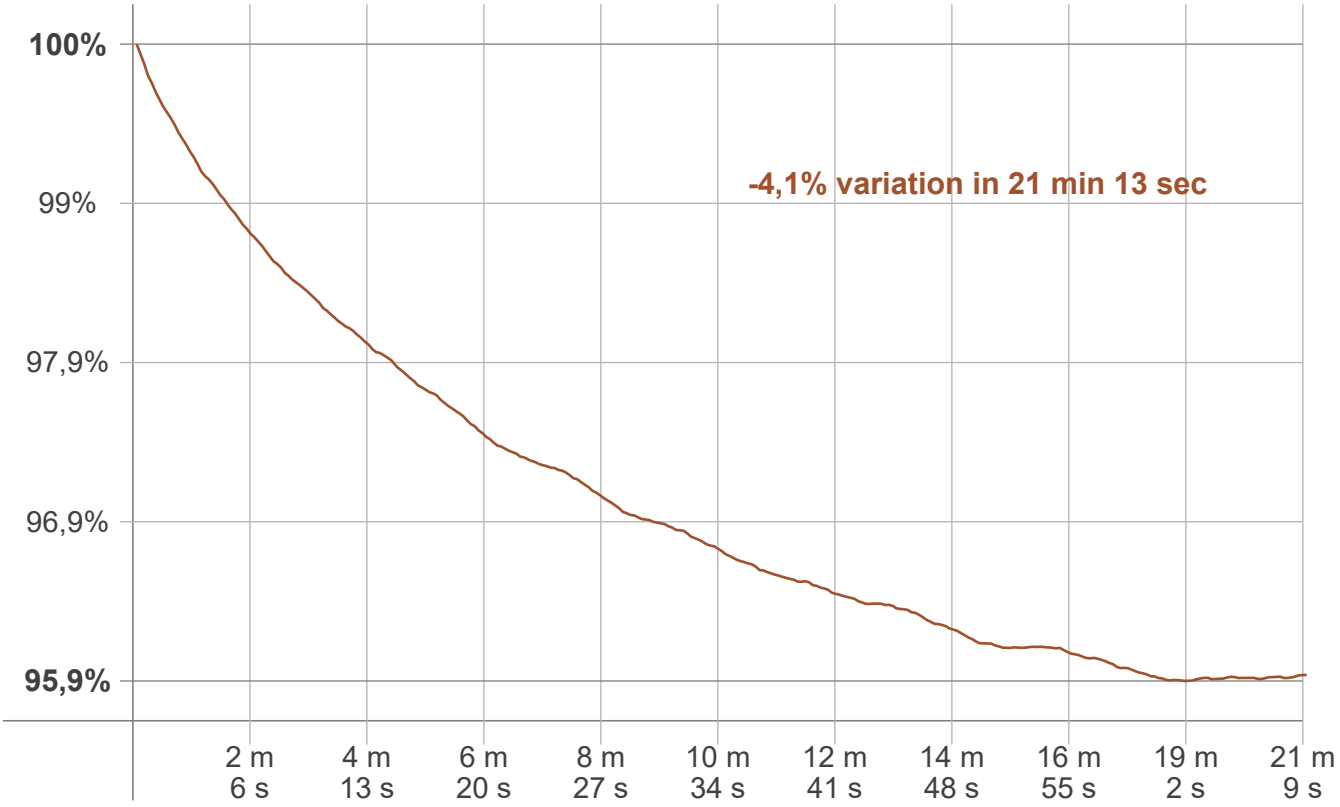
Conditions			
H = Room height			
Hdown	Lamp distance from ceiling		0.00m
Hwork	Work area height from floor		0.00m
Ework	Average lux on work area		100lx
p(%)	Ceiling reflectance	Wall reflectance	Floor reflectance
———	70	50	30
- - - - - - -	50	30	20

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
54,3 lm	114 lm	94,3 lm	96,8 lm	74,9 lm	47,8 lm	26,2 lm	21,2 lm	11,4 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
2,01 lm	1,73 lm	1,61 lm	0,784 lm	0,330 lm	0,234 lm	0,172 lm	0,106 lm	0,036 lm

Warmup curve



Warmup result

Warmup time:	**Lamp stabilized in 21 min 13 sec**
Warmup variation	**-4,2%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
10424 K	+709 K	11133 K

Output change

Output start	Output change	Output end
575 lm	-27 lm	548 lm