

Light efficiency:



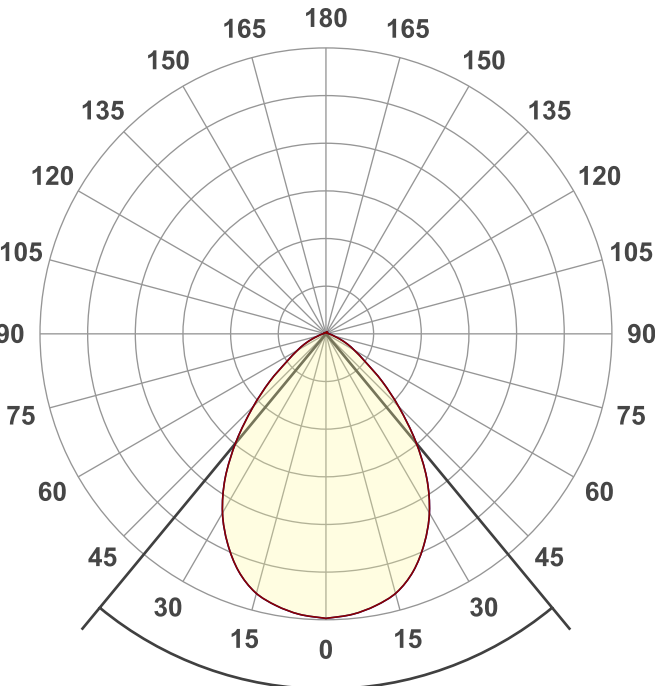
Light quality:



Color temperature:



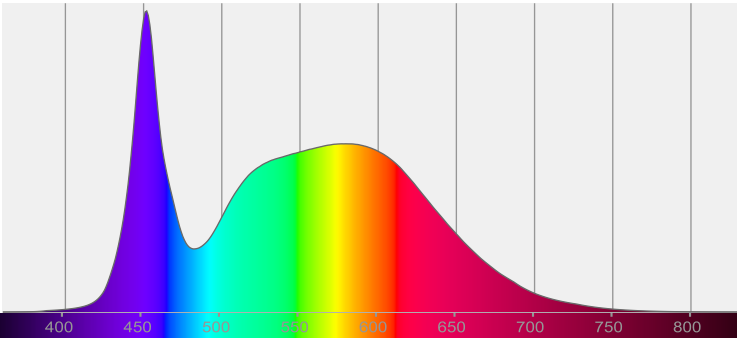
Output: 36811 lm
Peak: 21400 cd
Power: 312.8 W
PF: 1.0



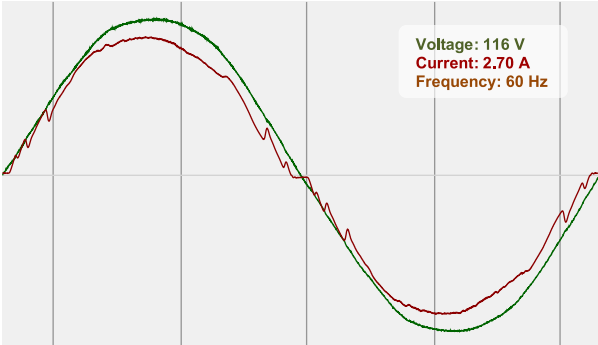
Product name:
HBUD-50K300W-PR
Date and time:
3/4/2019 3:15:13 PM



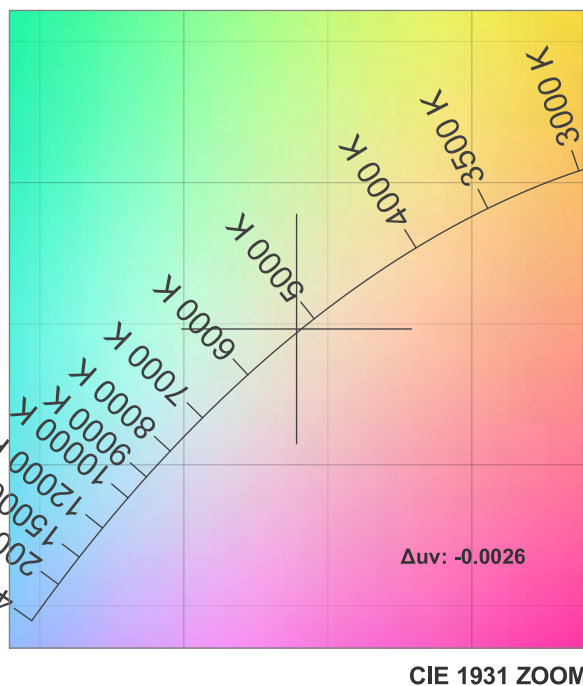
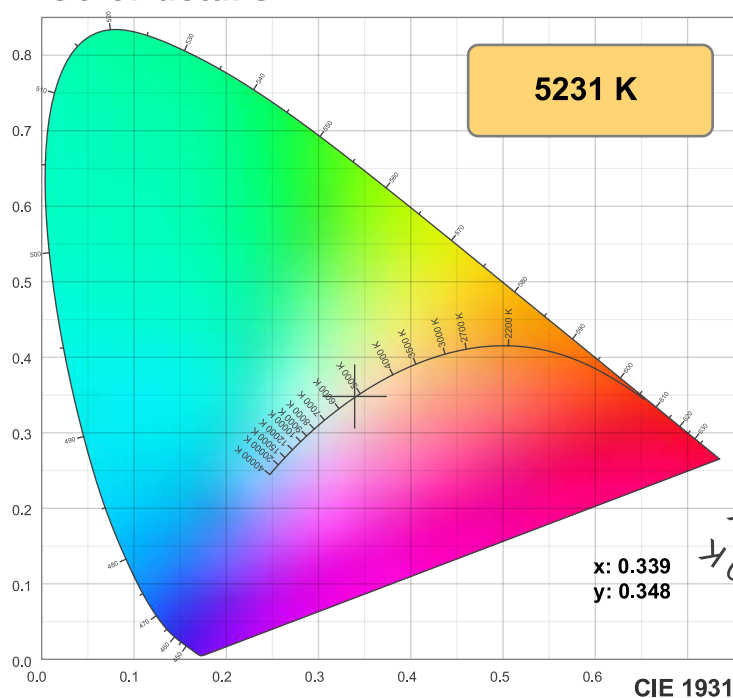
Spectra



Power

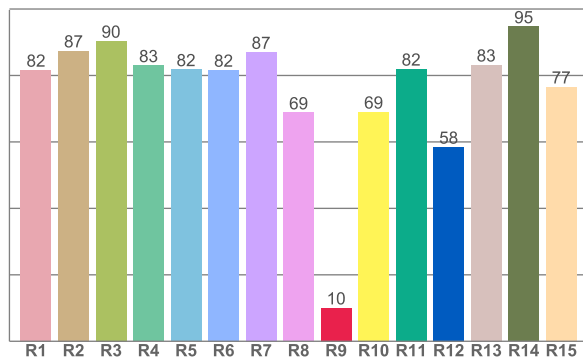
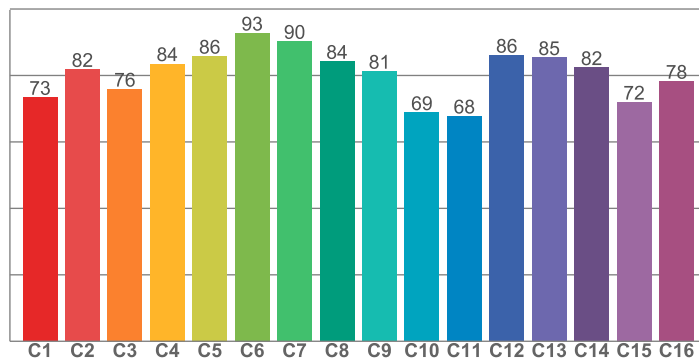


Color details



TM30: 80.4

CRI: 82.7 (R1-R8)



CRIR 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
81.6	87.4	90.4	83.0	81.8	81.6	87.0	68.8	10.1	69.0	81.9	58.5	83.2	94.7	76.6

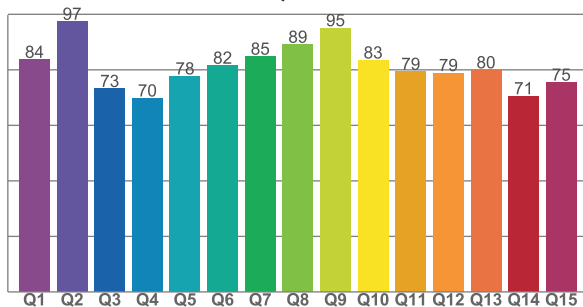
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
73.4	81.8	75.9	83.5	85.8	92.7	90.2	84.2	81.2	68.8	67.8	86.1	85.3	82.3	71.9	78.2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
83.6	97.4	73.2	69.7	77.7	81.5	84.8	89.1	95.0	83.4	79.3	78.9	79.9	70.5	75.4

CQS: 79.7



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
5231 K	82.7	10.1	80.4	95.1	79.7	0.339	0.348	0.209	0.321	-0.0026



T 314.743.3067

F 314.972.6202

email: commercial-sales@superbrightleds.com

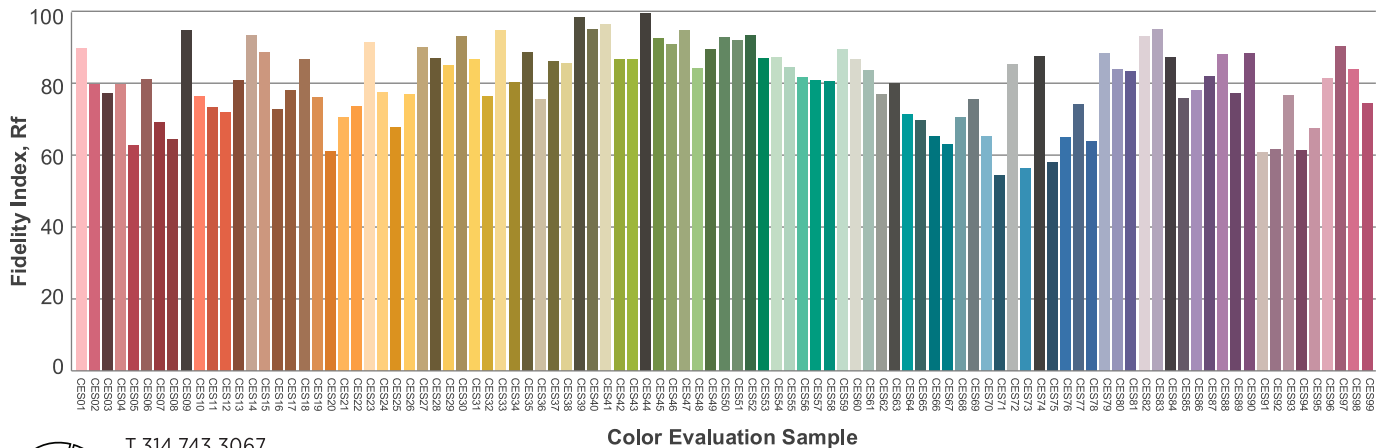
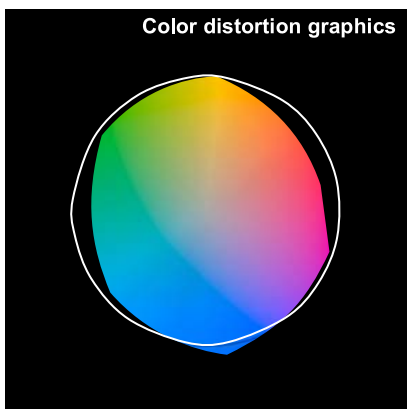
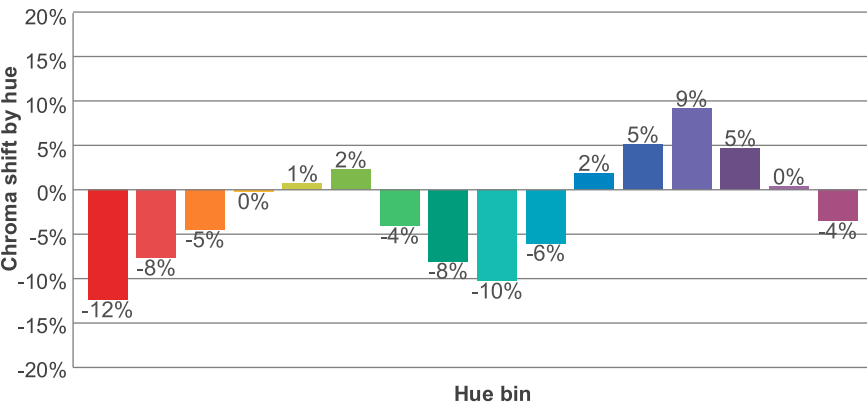
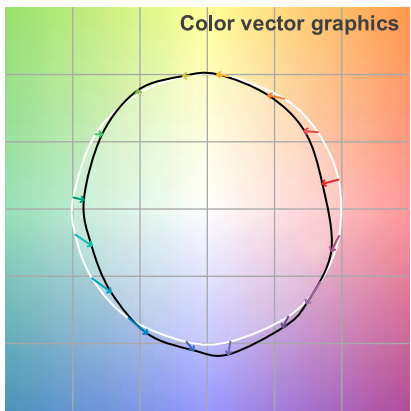
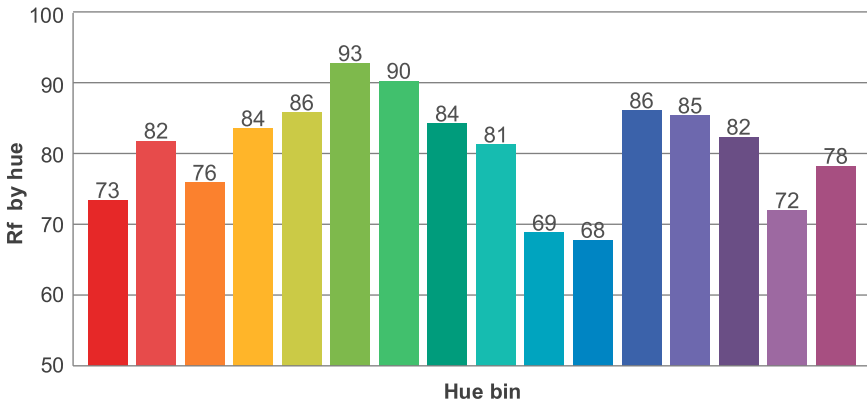
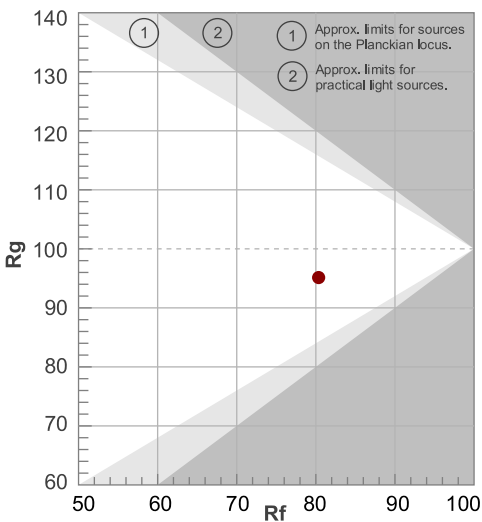
www.superbrightleds.com/

TM30 details

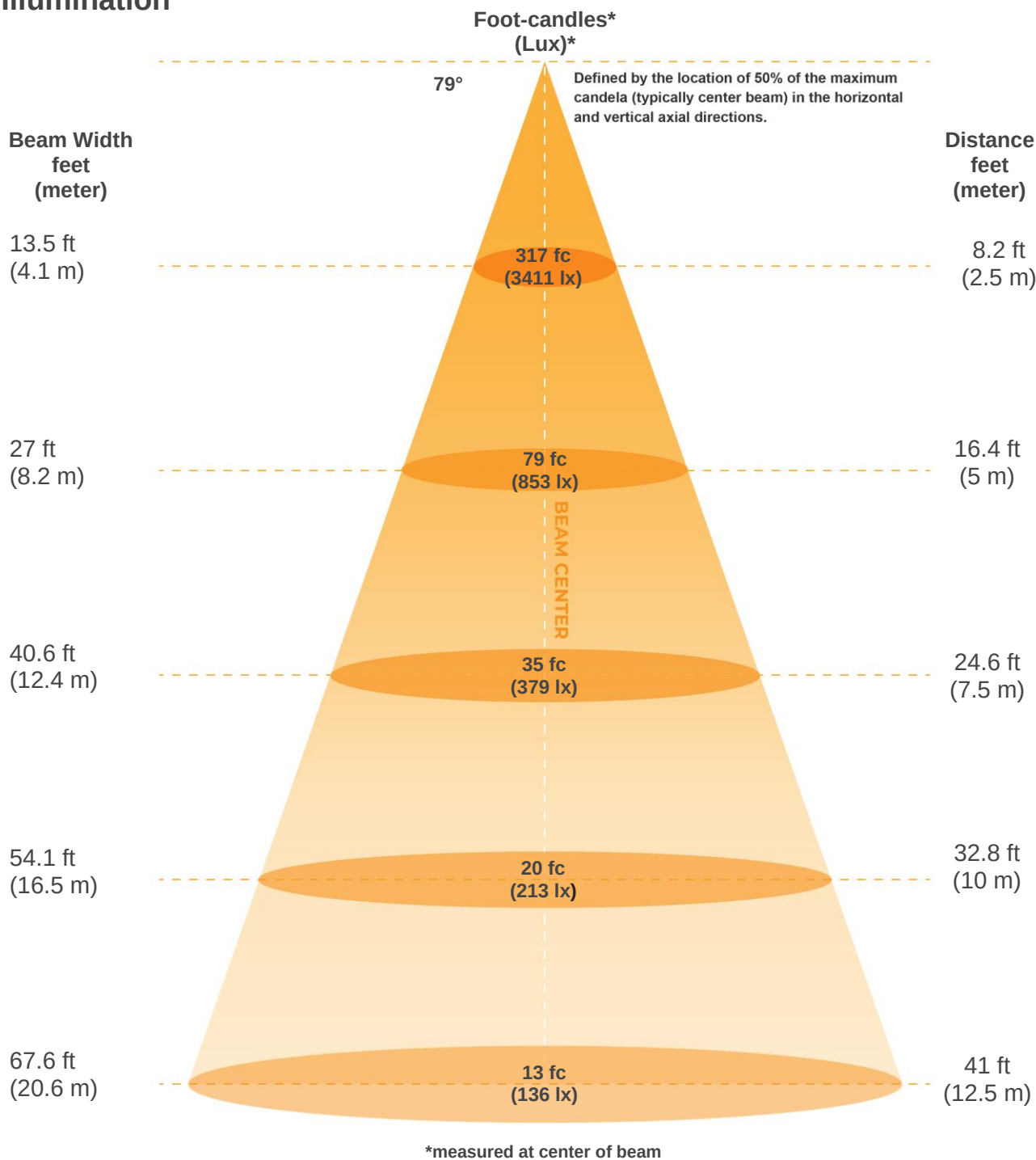
Rf 80.4

Rg 95.1
Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	73	-12%	-1%
2	82	-8%	6%
3	76	-5%	11%
4	84	0%	8%
5	86	1%	5%
6	93	2%	-1%
7	90	-4%	-3%
8	84	-8%	0%
9	81	-10%	10%
10	69	-6%	16%
11	68	2%	18%
12	86	5%	6%
13	85	9%	-3%
14	82	5%	-8%
15	72	0%	-19%
16	78	-4%	-12%



Illumination



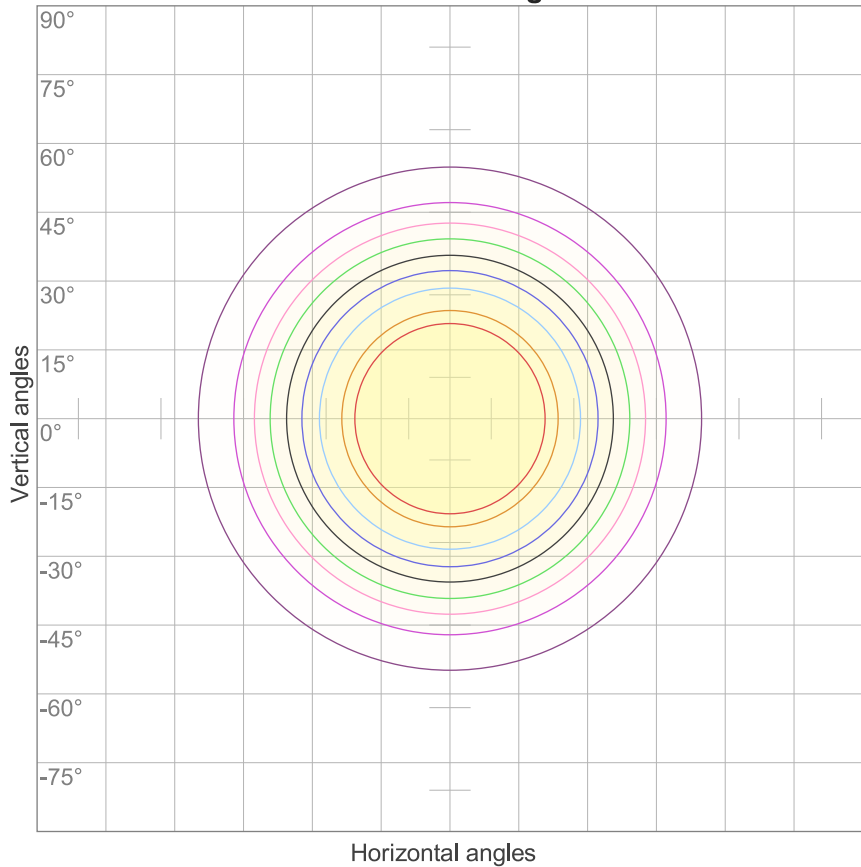
Beam intensities from 1-20m

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
21321lx	5330lx	2369lx	1333lx	853lx	592lx	435lx	333lx	263lx	213lx	176lx	148lx	126lx	109lx	95lx	83lx	74lx	66lx	59lx	53lx
1980.7fcd	495.2fcd	220.1fcd	123.8fcd	79.2fcd	55fcd	40.4fcd	30.9fcd	24.5fcd	19.8fcd	16.4fcd	13.8fcd	11.7fcd	10.1fcd	8.8fcd	7.7fcd	6.9fcd	6.1fcd	5.5fcd	5fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
79°	124.6°	154.6°	90.2%	74.0%



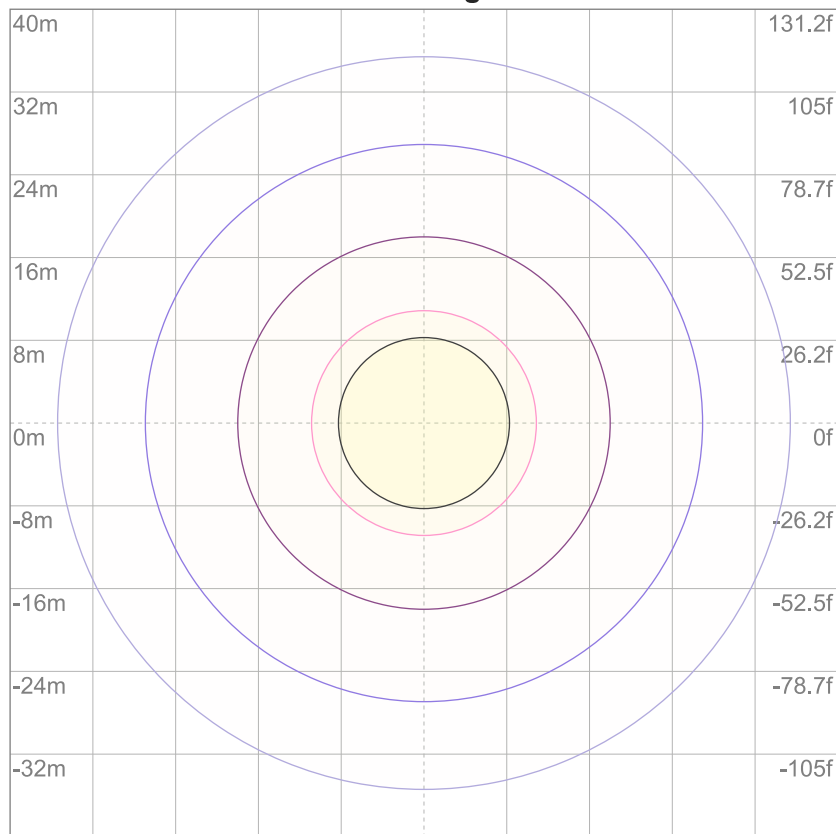
ISO Diagrams ISO candela diagram



10%	2140 cd
20%	4280 cd
30%	6420 cd
40%	8560 cd
50%	10700 cd
60%	12840 cd
70%	14980 cd
80%	17120 cd
90%	19260 cd

Conditions:
Number of c-planes: 16
Candela at center: 21400 cd

ISO lux diagram



3%	6.42 lx
5%	10.7 lx
10%	21.4 lx
30%	64.2 lx
50%	107 lx

Conditions:
Number of c-planes: 16
Lux at center: 214 lx

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



UGR

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	35.7	36.7	36.0	36.9	37.2	35.7	36.7	36.0	36.9	37.2
	3H	36.1	37.0	36.4	37.3	37.6	36.1	37.0	36.4	37.3	37.6
	4H	36.2	37.0	36.5	37.3	37.7	36.2	37.0	36.5	37.3	37.7
	6H	36.3	37.1	36.7	37.4	37.7	36.3	37.1	36.7	37.4	37.7
	8H	36.3	37.1	36.7	37.4	37.8	36.3	37.1	36.7	37.4	37.8
	12H	36.4	37.1	36.8	37.5	37.9	36.4	37.1	36.8	37.5	37.9
4H	2H	35.8	36.7	36.2	37.0	37.3	35.8	36.7	36.2	37.0	37.3
	3H	36.4	37.1	36.8	37.4	37.8	36.4	37.1	36.8	37.4	37.8
	4H	36.5	37.2	37.0	37.6	38.0	36.5	37.2	37.0	37.6	38.0
	6H	36.7	37.3	37.2	37.7	38.1	36.7	37.3	37.2	37.7	38.1
	8H	36.9	37.3	37.3	37.8	38.2	36.9	37.3	37.3	37.8	38.2
	12H	37.0	37.4	37.5	37.9	38.4	37.0	37.4	37.5	37.9	38.4
8H	4H	36.6	37.1	37.0	37.5	38.0	36.6	37.1	37.0	37.5	38.0
	6H	36.9	37.3	37.4	37.7	38.2	36.9	37.3	37.4	37.7	38.2
	8H	37.1	37.4	37.6	37.9	38.4	37.1	37.4	37.6	37.9	38.4
	12H	37.3	37.6	37.8	38.1	38.6	37.3	37.6	37.8	38.1	38.6
12H	4H	36.6	37.0	37.0	37.5	37.9	36.6	37.0	37.0	37.5	37.9
	6H	36.9	37.2	37.4	37.7	38.2	36.9	37.2	37.4	37.7	38.2
	8H	37.1	37.4	37.6	37.9	38.5	37.1	37.4	37.6	37.9	38.5
Variation of the observer position for the luminaire distance S											
S = 1.0H		+0.5 / -0.9					+0.5 / -0.9				
S = 1.5H		+1.2 / -1.6					+1.2 / -1.6				
S = 2.0H		+2.4 / -2.3					+2.4 / -2.3				
Standard table		BK02					BK02				
Correction summand		19.2					19.2				
Corrected glare indices referring to 36811 lm total luminous flux											



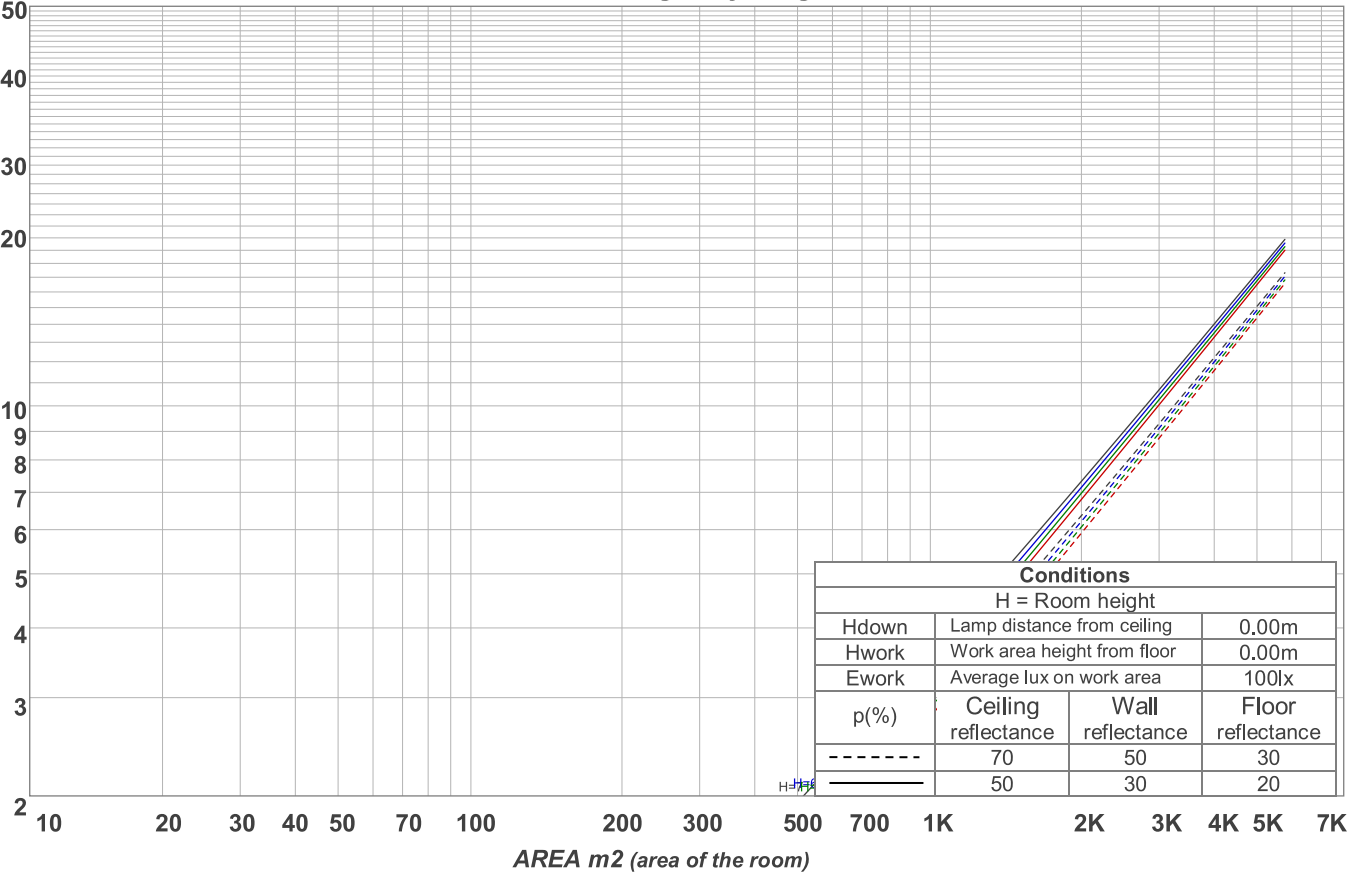
Light planning

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	118	118	118	118	115	115	115	115	110	110	110	105	105	105	100	100	100	98
1	111	107	104	101	108	105	102	99	100	98	95	96	94	92	92	90	89	87
2	103	96	91	86	100	94	89	85	91	87	83	87	84	81	84	81	79	77
3	96	87	81	75	93	85	79	75	82	77	73	79	75	72	77	73	70	68
4	89	79	72	66	87	78	71	66	75	69	65	73	68	64	70	66	63	61
5	83	72	65	59	81	71	64	59	69	63	58	67	61	57	65	60	56	54
6	77	66	58	53	76	65	58	53	63	57	52	61	56	52	60	55	51	49
7	72	61	53	48	71	60	53	48	58	52	47	57	51	47	55	50	46	45
8	68	56	49	44	66	55	48	43	54	48	43	53	47	43	51	46	42	41
9	64	52	45	40	63	51	45	40	50	44	40	49	43	39	48	43	39	37
10	60	48	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	34

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°
2012 lm	5669 lm	8003 lm	8165 lm	6006 lm	3322 lm	1708 lm	714 lm	351 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
197 lm	160 lm	146 lm	123 lm	89.6 lm	63.8 lm	43.7 lm	27.2 lm	9.76 lm

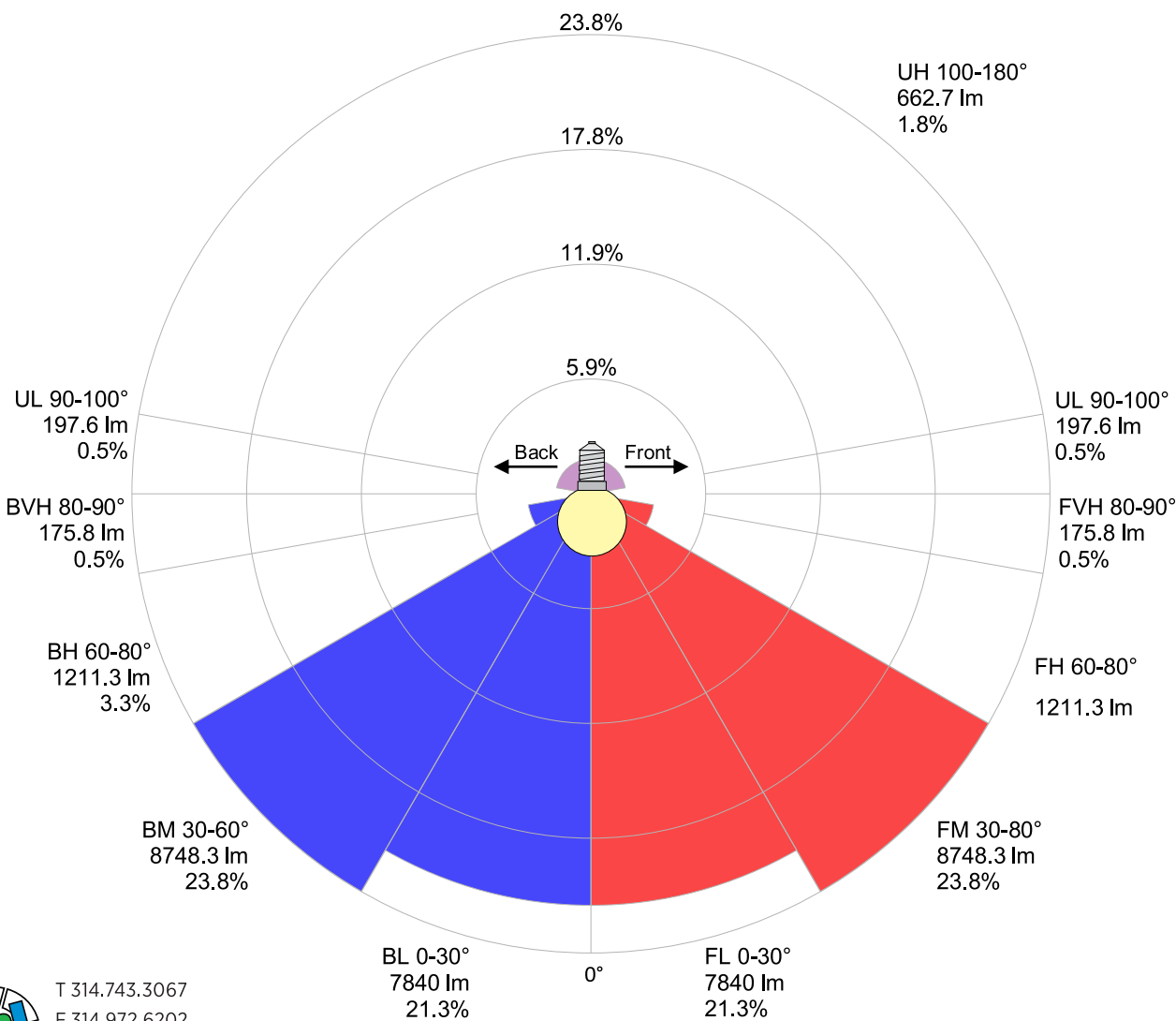


Road report

LCS table

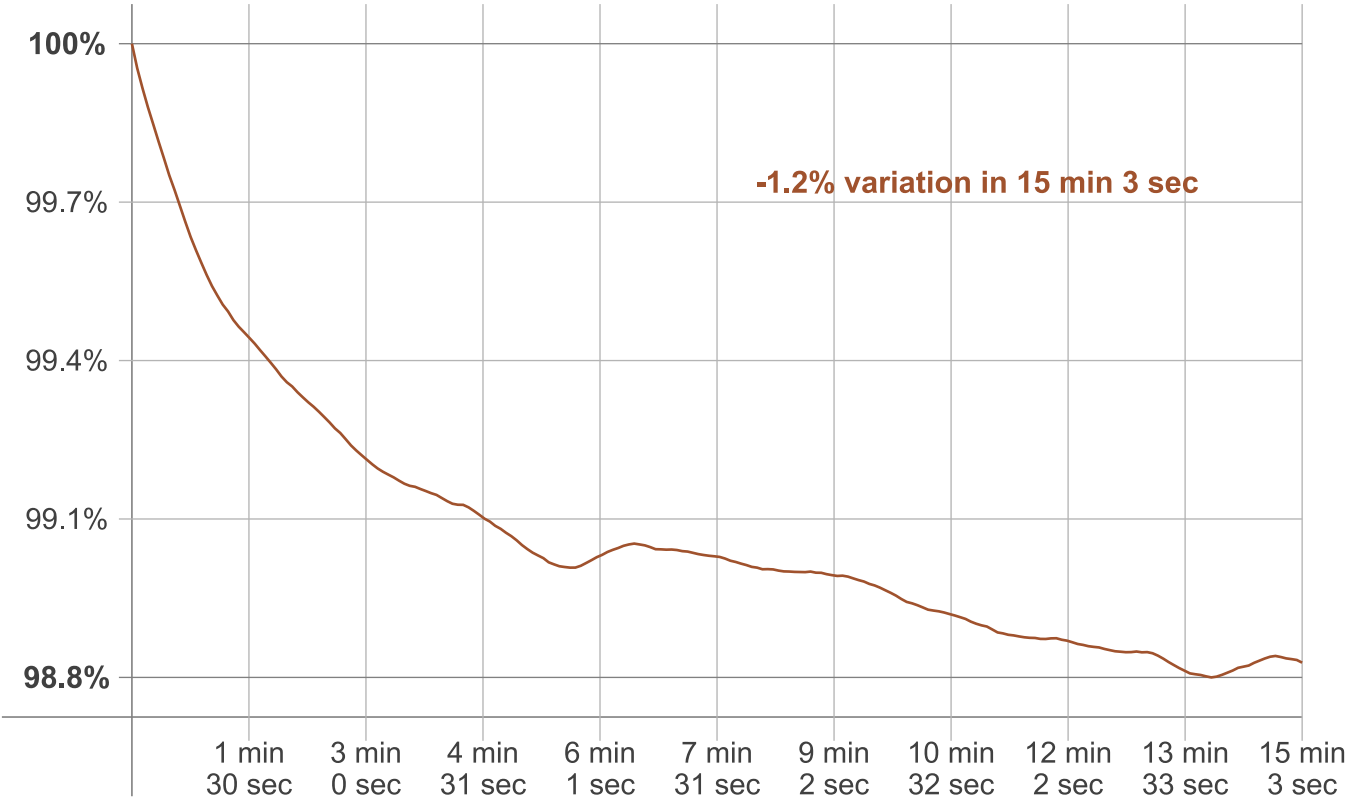
BUG rating:	B5 U4 G2	
Forward light	Lumens	Lumens %
Low(0-30):	7840	21.3%
Medium(30-60):	8748.3	23.8%
High(60-80):	1211.3	3.3%
Very high(80-90):	175.8	0.5%
Back light		
Low(0-30):	7840	21.3%
Medium(30-60):	8748.3	23.8%
High(60-80):	1211.3	3.3%
Very high(80-90):	175.8	0.5%
Uplight		
Low(90-100):	197.6	0.5%
High(100-180):	662.7	1.8%

LCS graph



Stabilization

Warmup curve



Warmup result

Warmup time:	15 min 3 sec
Warmup variation	-1.2%

Warmup conditions

Stable period:	15 min
Stable change max:	2.0%
Minimum time:	15 min

Color temperature change

CCT start	CCT change	CCT end
5210 K	+21 K	5231 K

Output change

Output start	Output change	Output end
37210 lm	-399 lm	36811 lm

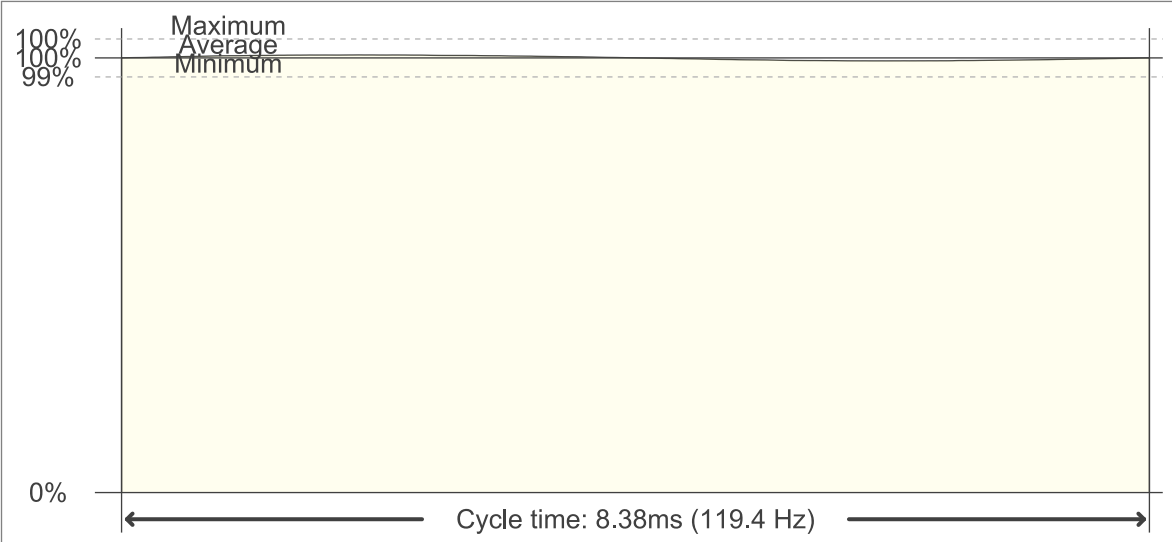


Flicker

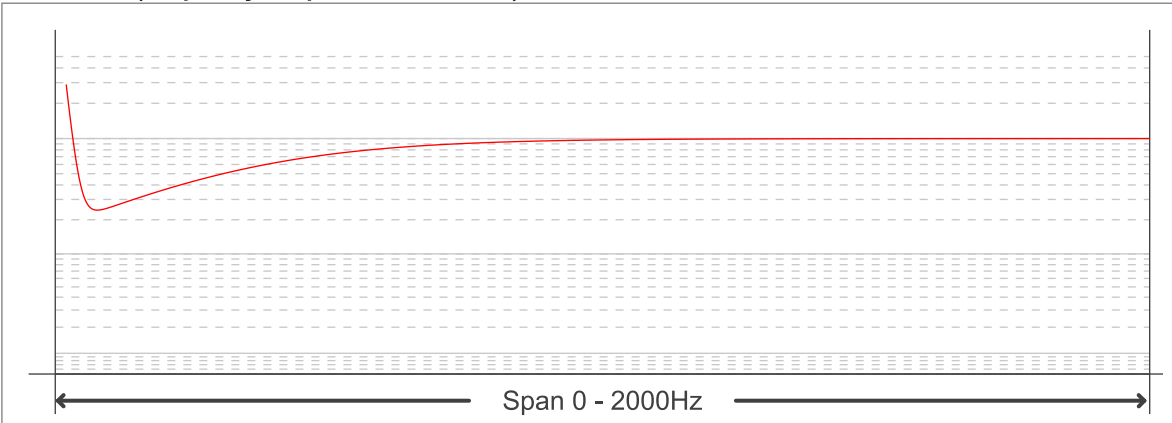
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	119.4 Hz
Flicker index:	0
Flicker percentage:	0.71 %
SVM: (Visual flicker)	0.02

Flicker conditions:

Sample rate:	40000 samples/second
--------------	----------------------

