HBUD2-50K500D-C2

Light efficiency:

135.8 Lumen/Watt

Light quality:

CRI: 82.7

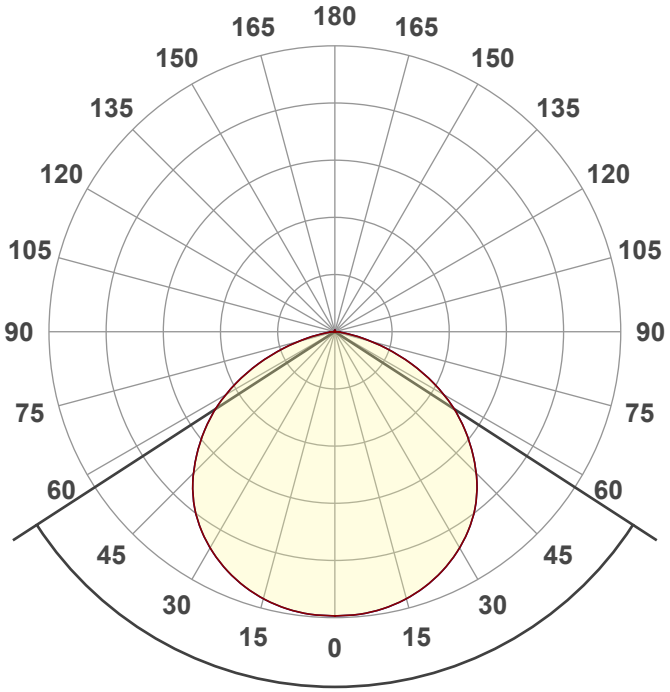
Color temperature:

5310 K

Output: 67903 lm

Peak: 23828 cd

Power: 500 W



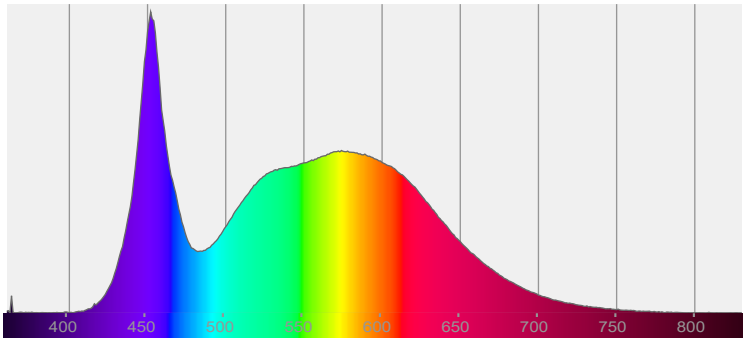
Beam angle **114.1°**

CIE 1931
x: 0.337
y: 0.343

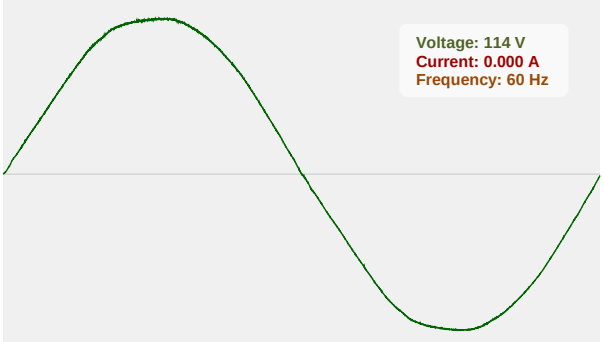
Product name:
HBUD2-50K500D-C2

Date and time:
6/16/2022 1:39:05 PM

Spectra

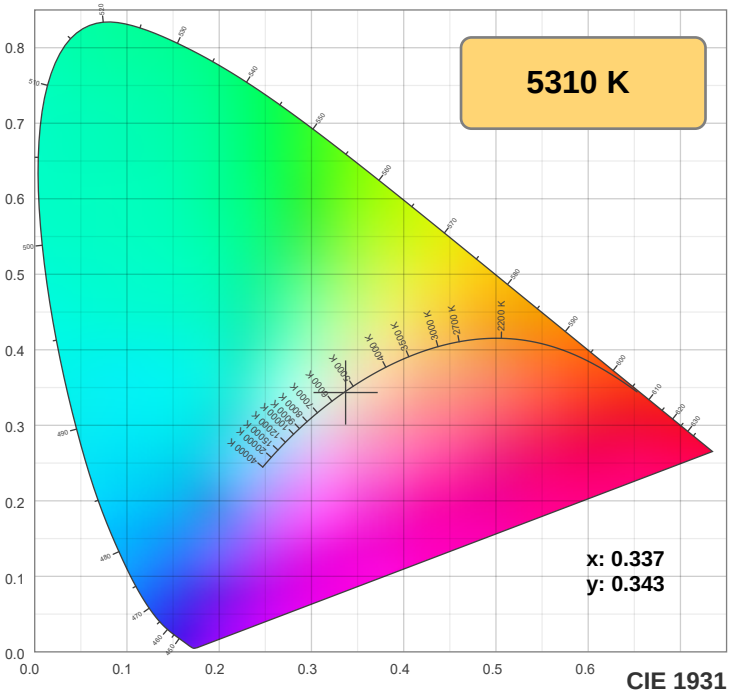


Power

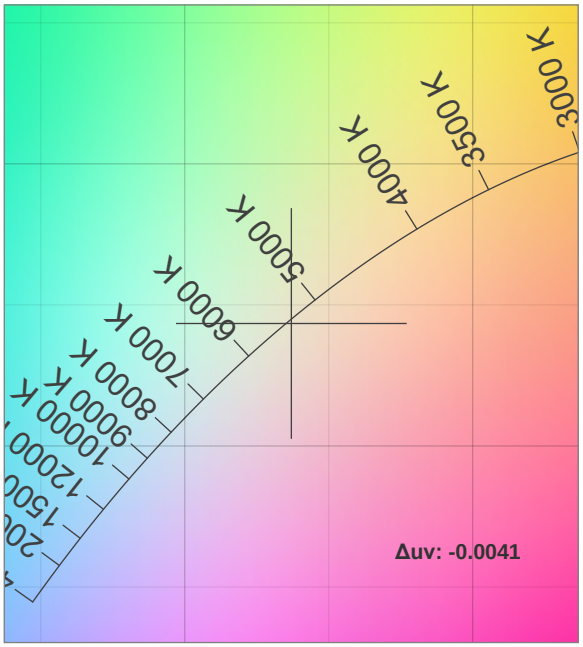


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Color Specifications

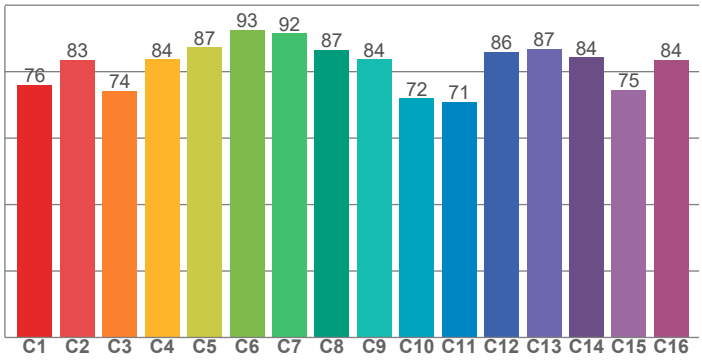


CIE 1931

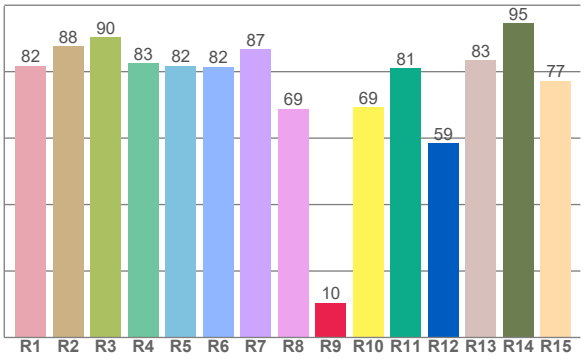


CIE 1931 ZOOM

TM30: 82.1



CRI: 82.7 (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
81.7	87.8	90.3	82.6	81.8	81.5	86.7	68.8	10.5	69.3	81.1	58.5	83.4	94.6	77.3

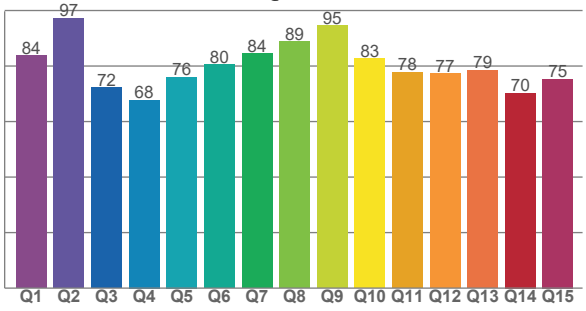
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
76.1	83.5	74.3	83.7	87.3	92.7	91.6	86.5	83.8	72.0	71.0	86.0	86.8	84.3	74.5	83.5

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
83.7	97.3	72.2	67.7	76.0	80.5	84.5	88.8	94.5	82.6	77.8	77.2	78.5	70.3	75.3

CQS: 78.9



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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
5310 K	82.7	10.5	82.1	96.0	78.9	0.337	0.343	0.209	0.320	-0.0041

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TM30 Report

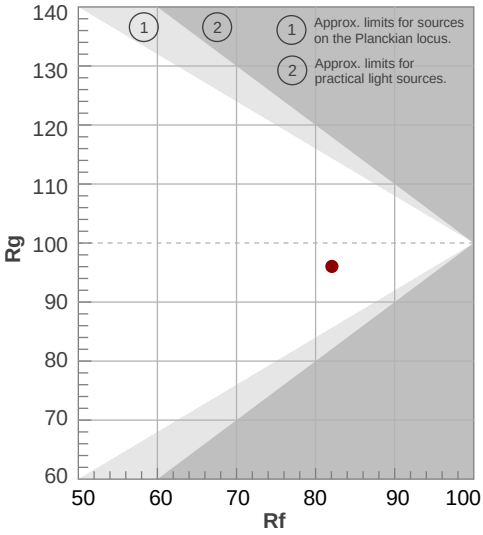
Rf 82.1

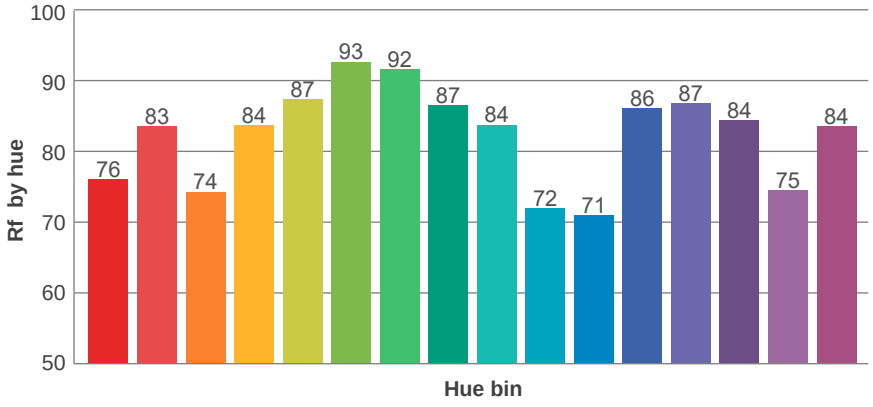
Fidelity index Rf

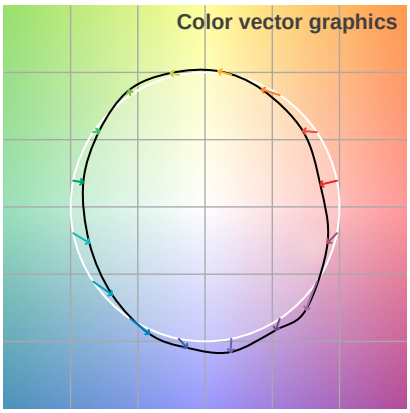
Rg 96.0

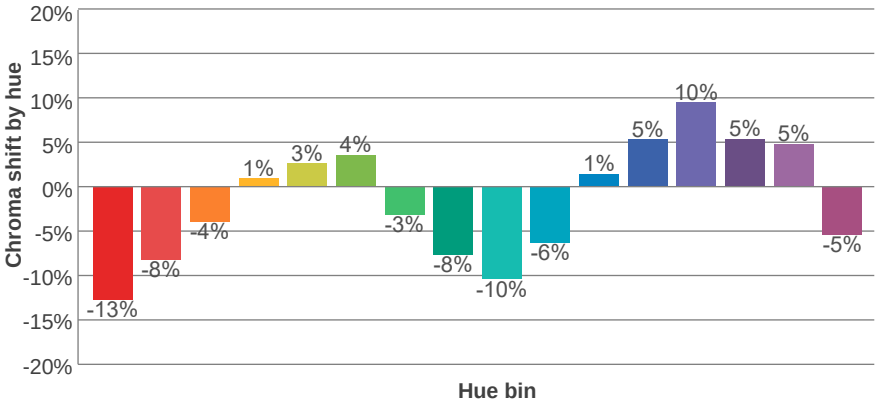
Gamut index Rg

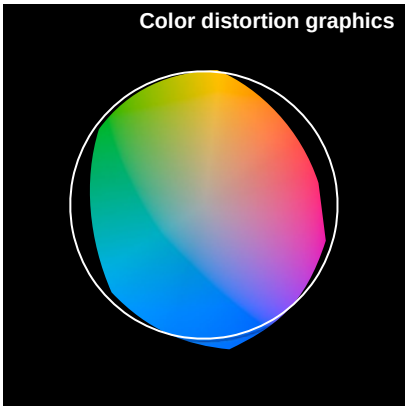
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	76	-13%	-1%
2	83	-8%	7%
3	74	-4%	13%
4	84	1%	10%
5	87	3%	6%
6	93	4%	-1%
7	92	-3%	-4%
8	87	-8%	0%
9	84	-10%	9%
10	72	-6%	16%
11	71	1%	18%
12	86	5%	7%
13	87	10%	-2%
14	84	5%	-7%
15	75	5%	-22%
16	84	-5%	-8%

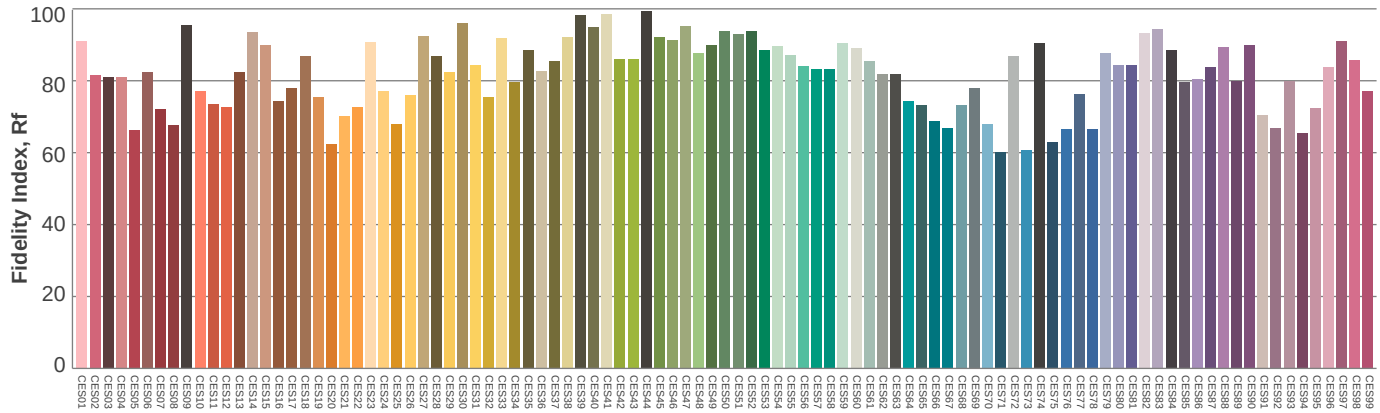






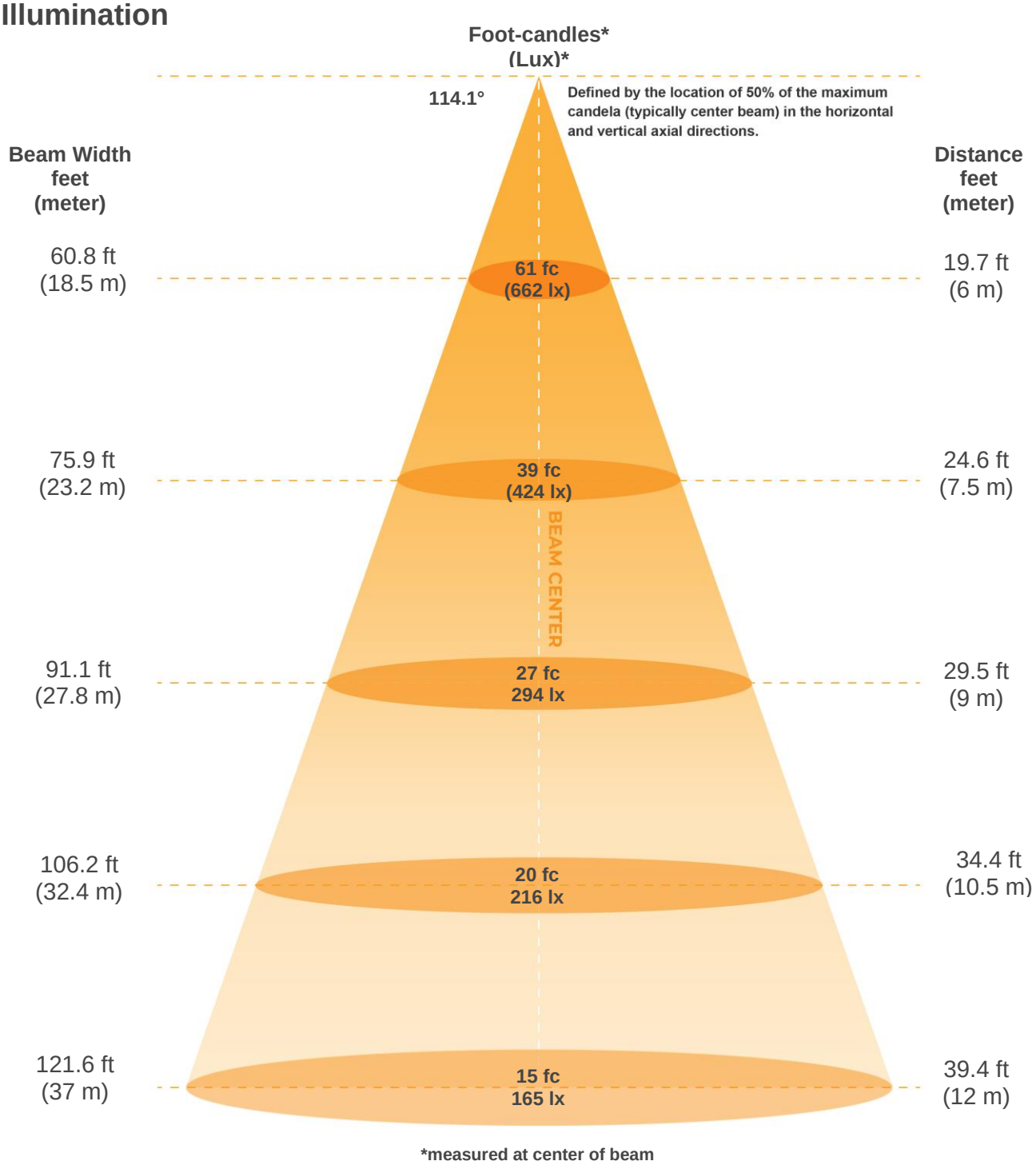






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Illumination



Beam intensities from 1-20m

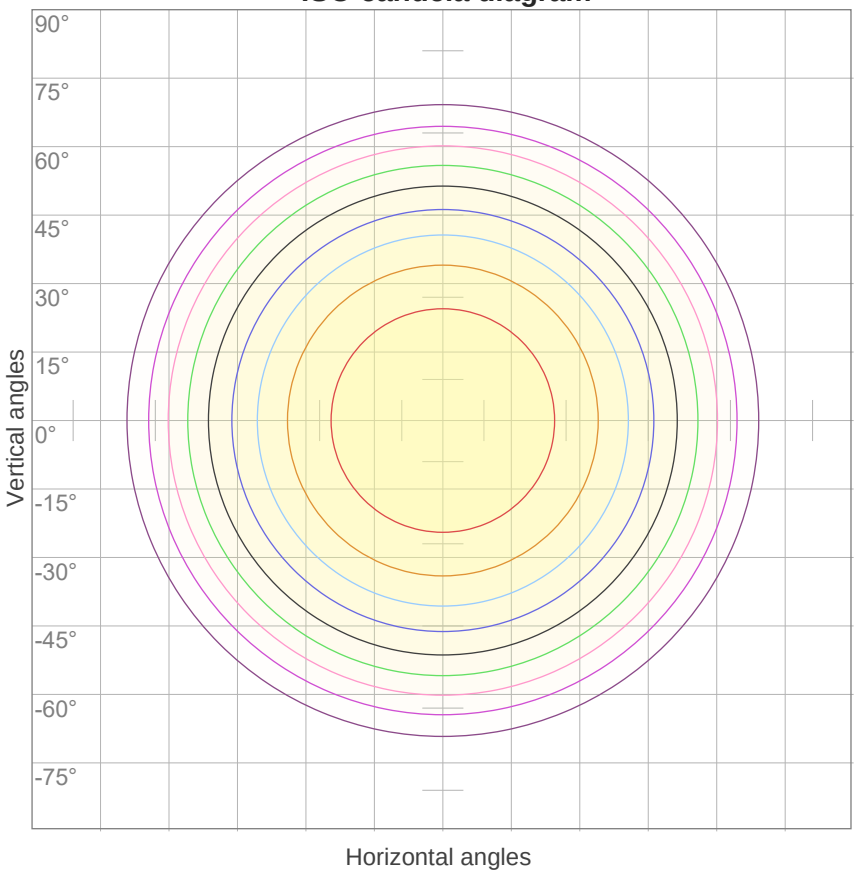
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
23828lx	5957lx	2648lx	1489lx	953lx	662lx	486lx	372lx	294lx	238lx	197lx	165lx	141lx	122lx	106lx	93lx	82lx	74lx	66lx	60lx
2213.7f	553.4fc	246fcd	138.4fc	88.5fcd	61.5fcd	45.2fcd	34.6fcd	27.3fcd	22.1fcd	18.3fcd	15.4fcd	13.1fcd	11.3fcd	9.8fcd	8.6fcd	7.7fcd	6.8fcd	6.1fcd	5.5fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
114.1°	**153.8°**	**167.2°**	**82.0%**	**55.7%**

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ISO Diagrams

ISO candela diagram



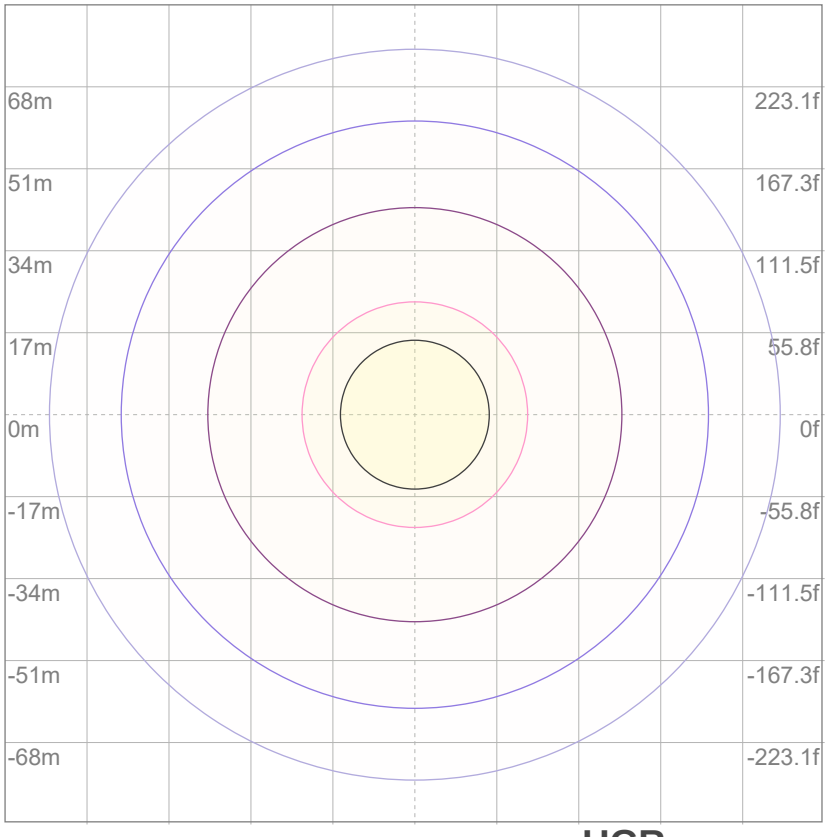
10%	2383 cd
20%	4766 cd
30%	7149 cd
40%	9531 cd
50%	11914 cd
60%	14297 cd
70%	16680 cd
80%	19063 cd
90%	21446 cd

Conditions:

Number of c-planes: 16

Candela at center: 23828 cd

ISO lux diagram



3%	7.15 lx
5%	11.9 lx
10%	23.8 lx
30%	71.5 lx
50%	119 lx

Conditions:

Number of c-planes: 16

Lux at center: 238 lx

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

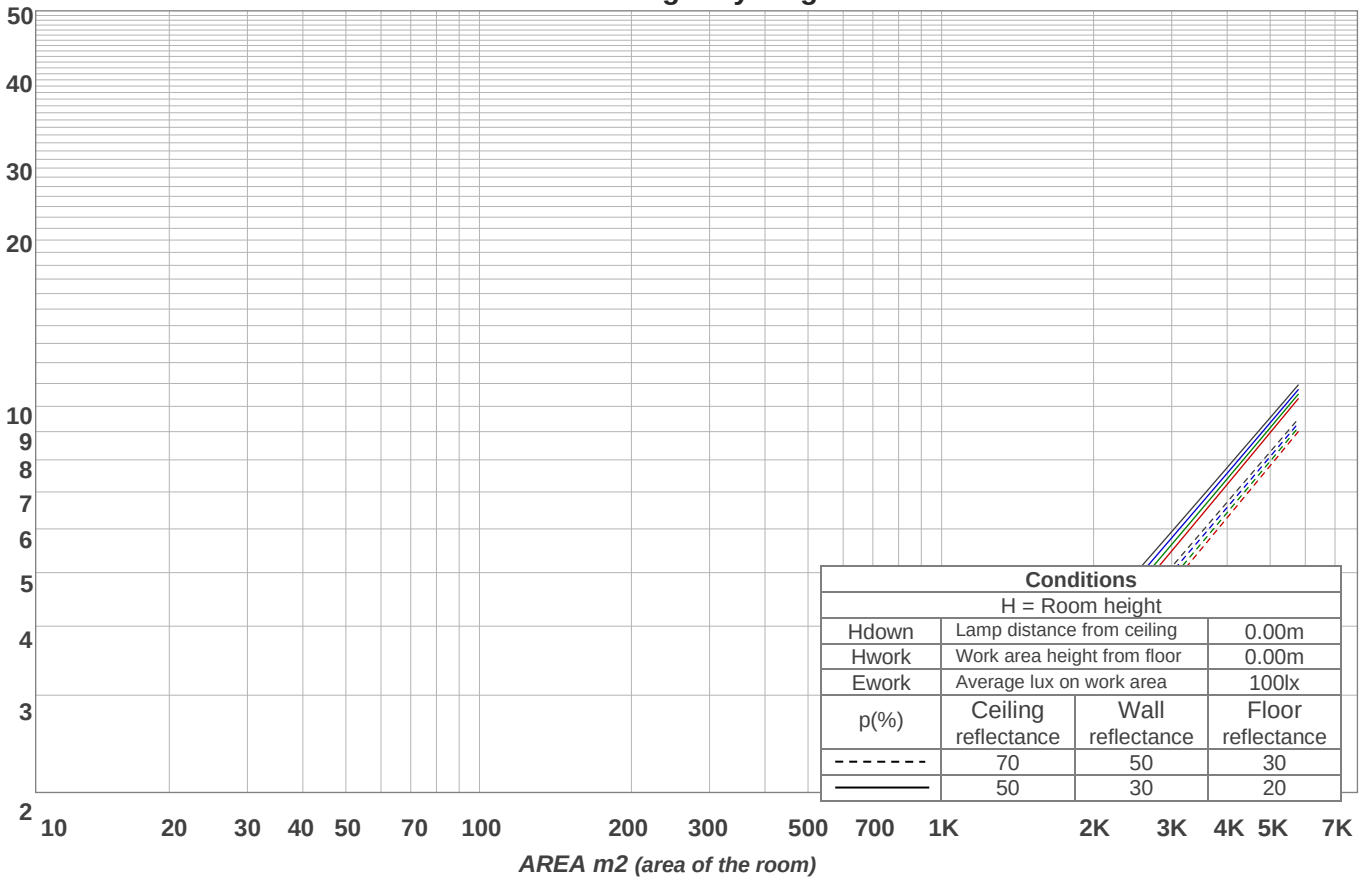
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Light Planning

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	99
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	76	73	71
3	91	81	73	67	89	79	72	66	76	70	65	73	68	64	71	66	62	60
4	83	72	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	51
5	77	64	55	49	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	51	45	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31
9	57	44	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
2262 lm	6542 lm	10074 lm	12388 lm	12928 lm	11472 lm	7961 lm	3415 lm	486 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
39.9 lm	44.8 lm	52.2 lm	55.4 lm	55.7 lm	51.2 lm	41.2 lm	26.7 lm	9.30 lm

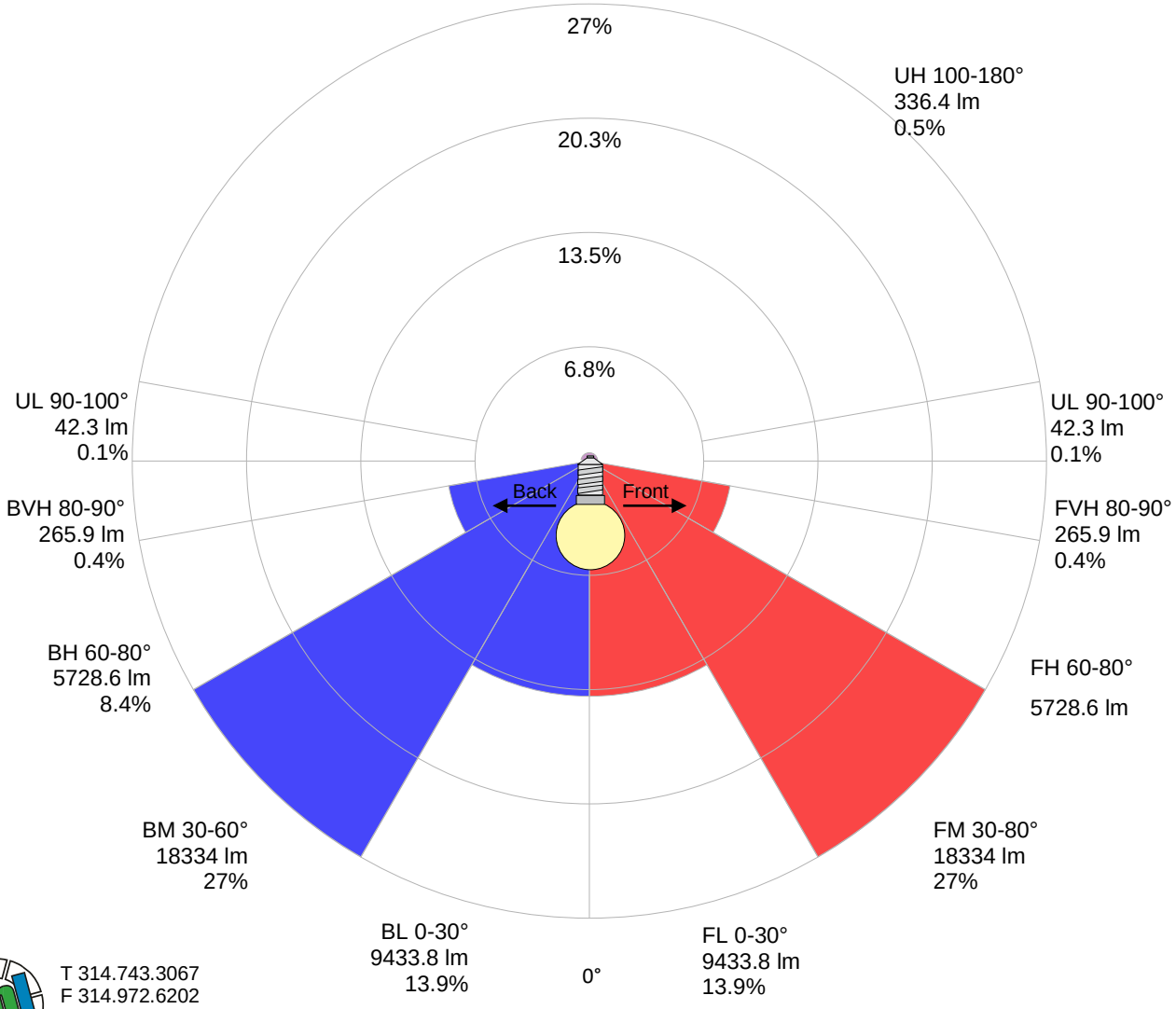
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Road Report

LCS table

BUG rating:	B5 U3 G3	
Forward light	Lumens	Lumens %
Low(0-30):	9433.8	13.9%
Medium(30-60):	18334	27%
High(60-80):	5728.6	8.4%
Very high(80-90):	265.9	0.4%
Back light		
Low(0-30):	9433.8	13.9%
Medium(30-60):	18334	27%
High(60-80):	5728.6	8.4%
Very high(80-90):	265.9	0.4%
Uplight		
Low(90-100):	42.3	0.1%
High(100-180):	336.4	0.5%

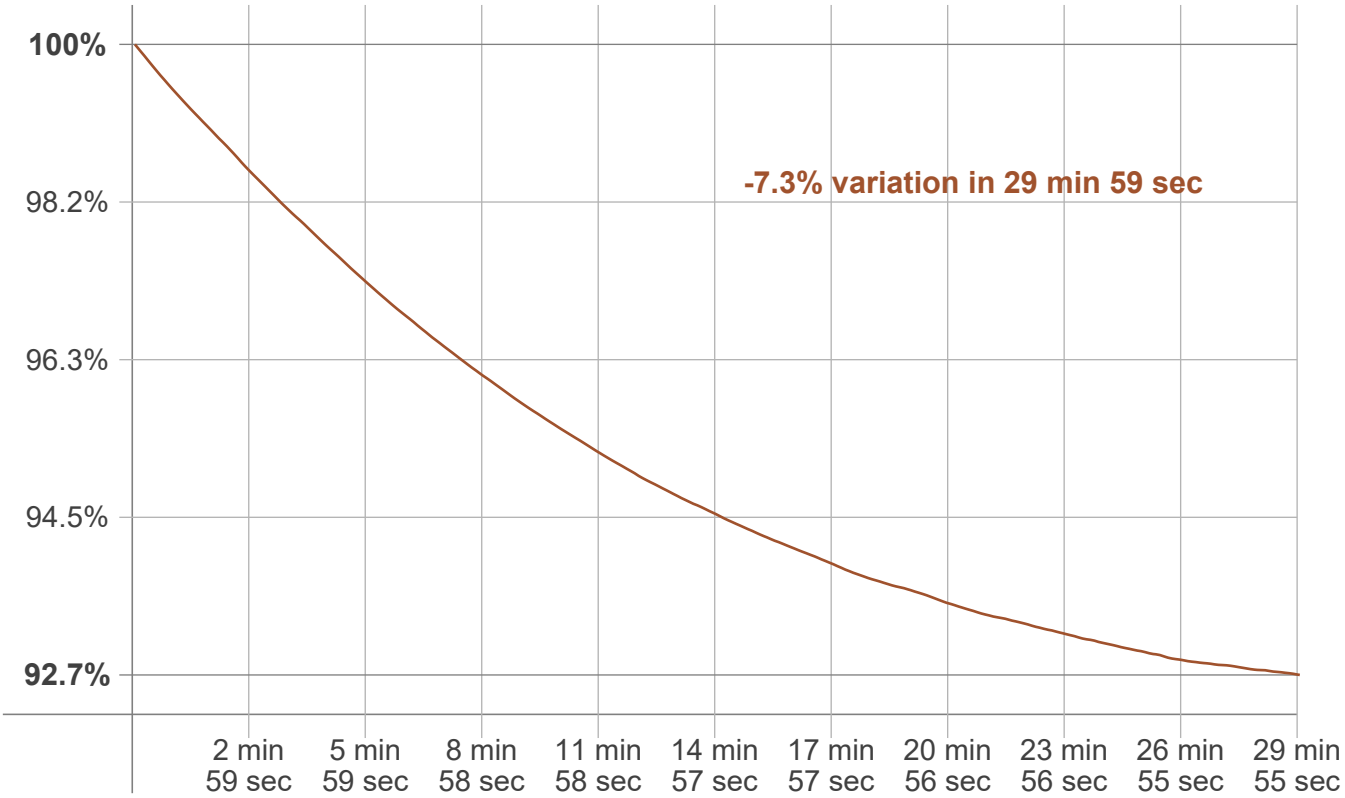
LCS graph



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Stabilization

Warmup curve



Warmup result

Warmup time:	**Lamp stabilized in 29 min 59 sec**
Warmup variation	**-7.4%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
5125 K	+185 K	5310 K

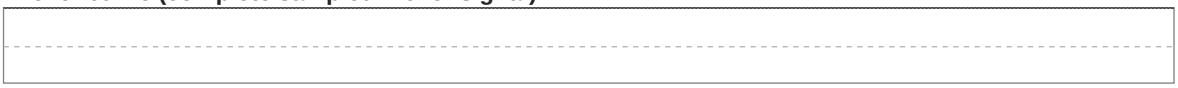
Output change

Output start	Output change	Output end
73230 lm	-5327 lm	67903 lm

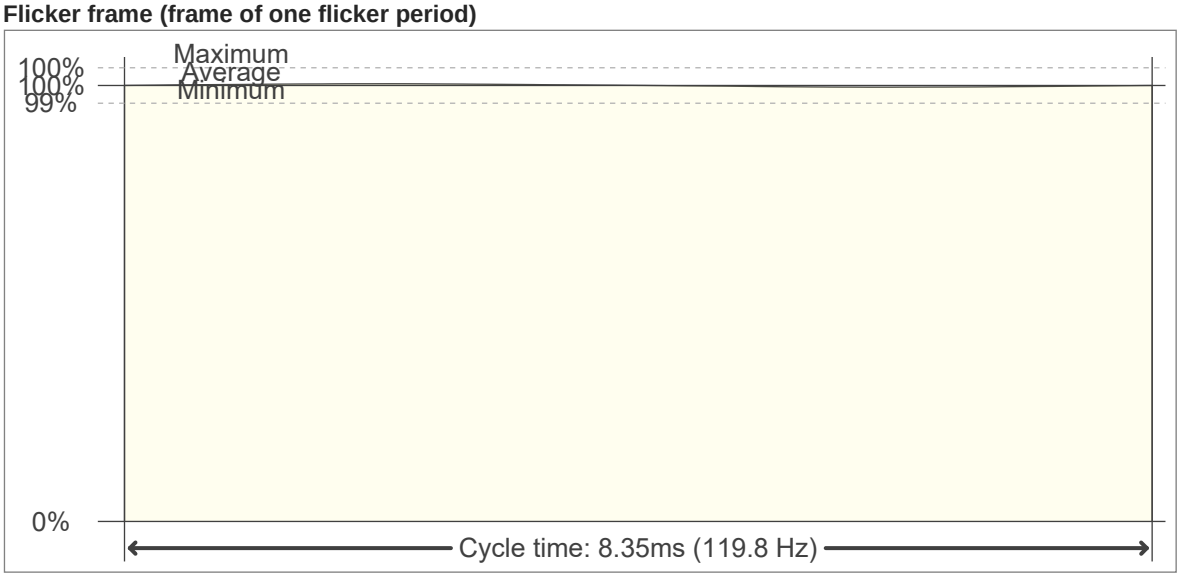
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Flicker Specifications

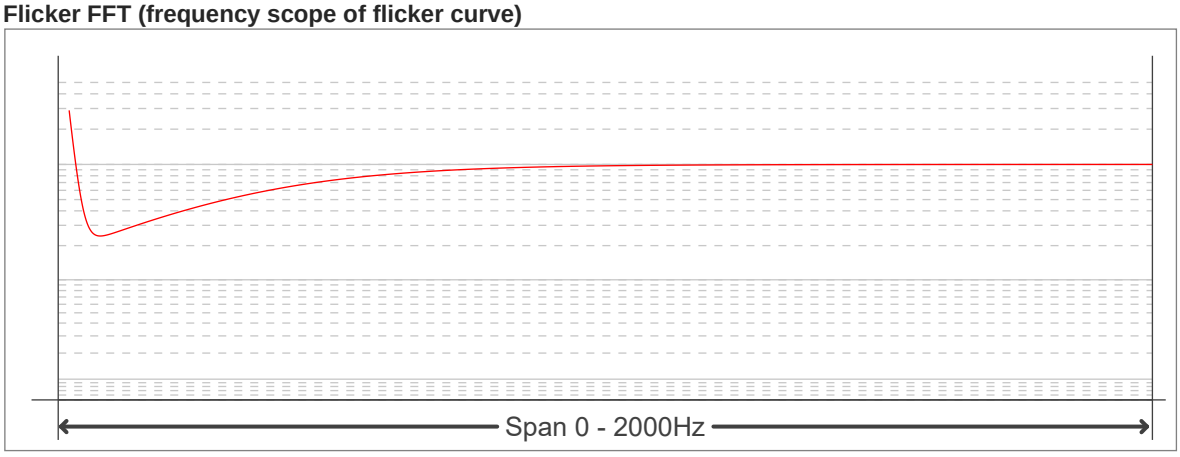
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	**119.76 Hz**
Flicker index:	**0**
Flicker percentage:	**0.41 %**
SVM: (Visual flicker)	**0.01**

Flicker conditions:

Sample rate:	**20000 samples/second**

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