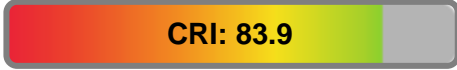


Light efficiency:



Output: 18986 lm

Light quality:



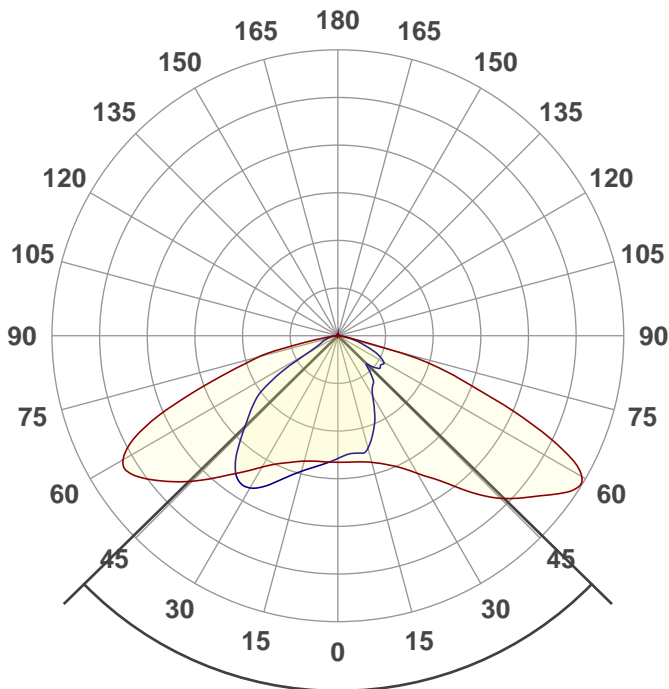
Peak: 9861 cd

Color temperature:



Power: 150.7 W

PF: 1.0



Product name:

ALD-50K15W-C-BRC3 Type II-M

Date and time:

4/10/2019 2:17:37 PM

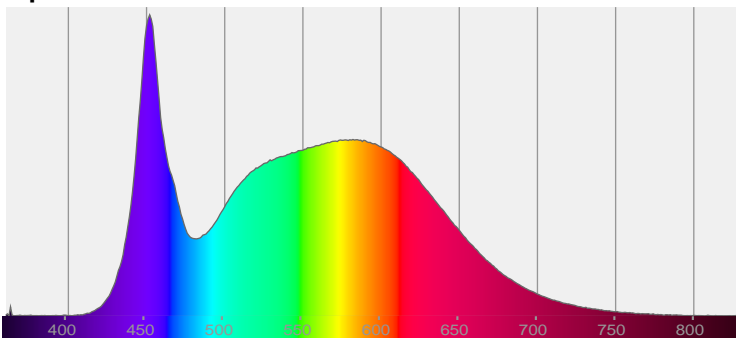
Beam angle

91.2°

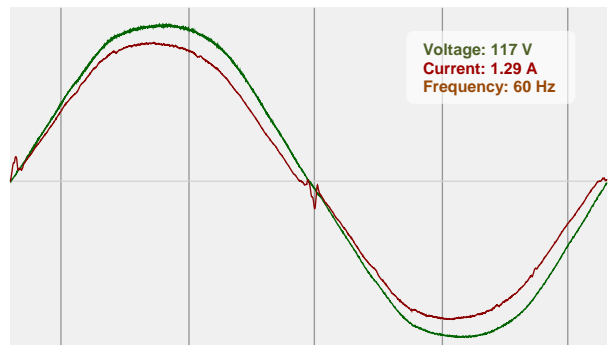


CIE 1931  
x: 0.343  
y: 0.356

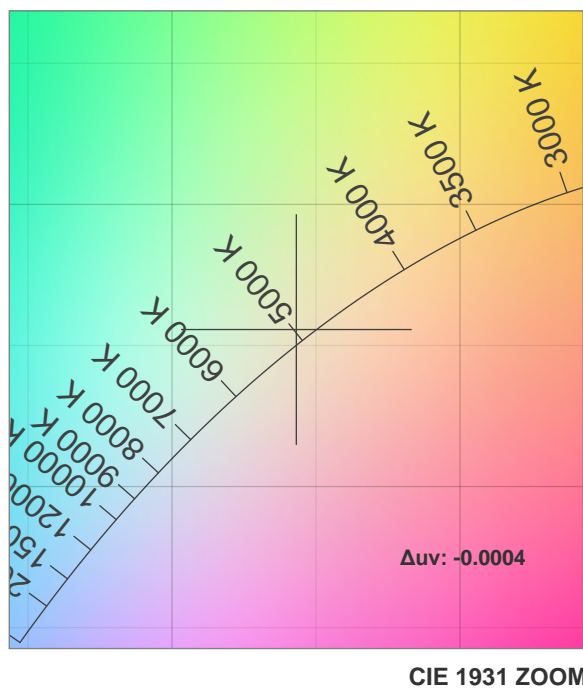
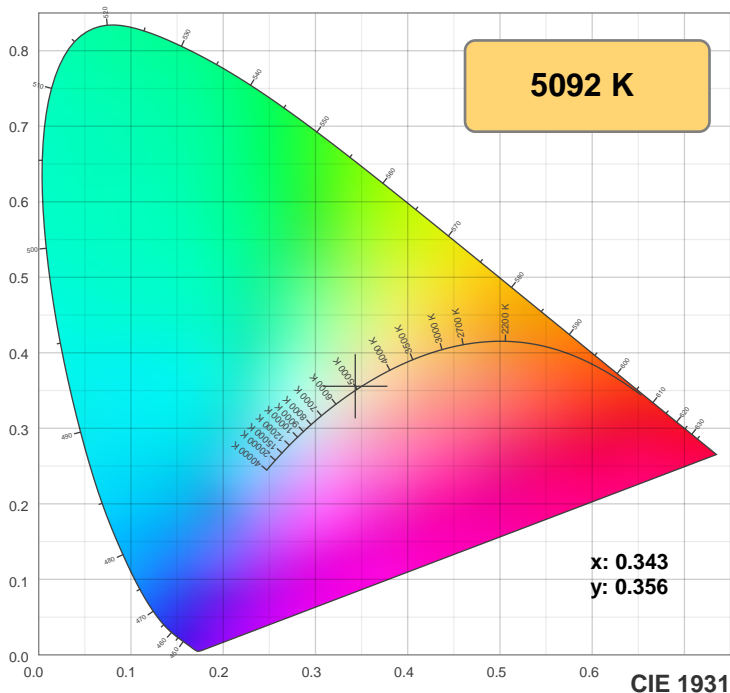
Spectra



Power

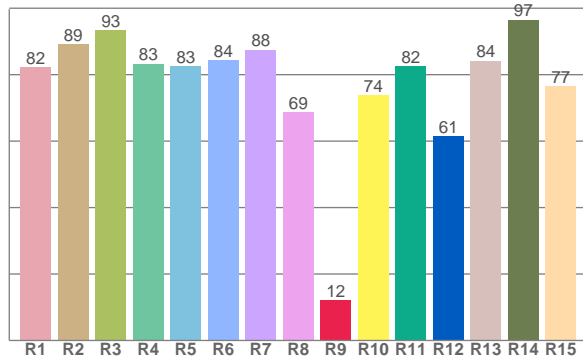
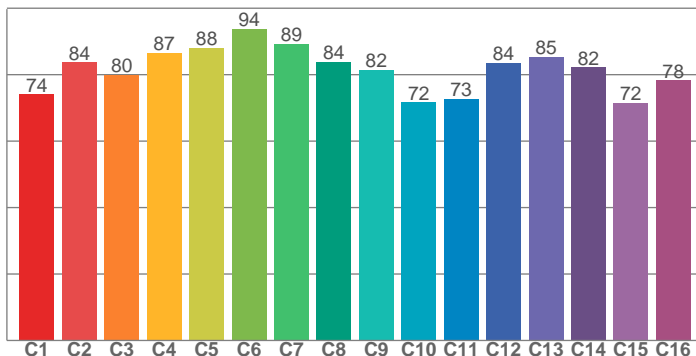


## Color Specifications



**TM30: 82.0**

**CRI: 83.9 (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
82.2	89.2	93.3	83.3	82.5	84.3	87.6	68.7	12.2	73.8	82.5	61.5	84.3	96.5	76.6

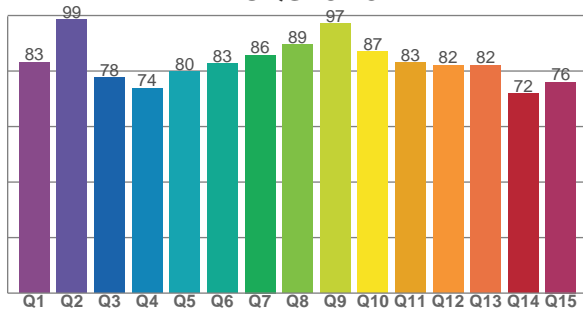
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
74.1	83.7	79.9	86.6	88.0	93.8	89.3	83.8	81.5	71.6	72.7	83.5	85.4	82.2	71.6	78.3

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
83.1	98.6	77.6	73.8	79.8	82.7	85.7	89.4	97.0	87.1	83.1	82.0	82.1	71.8	76.1

**CQS: 81.8**



## 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 division from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
5092 K	83.9	12.2	82.0	94.2	81.8	0.343	0.356	0.209	0.324	-0.0004

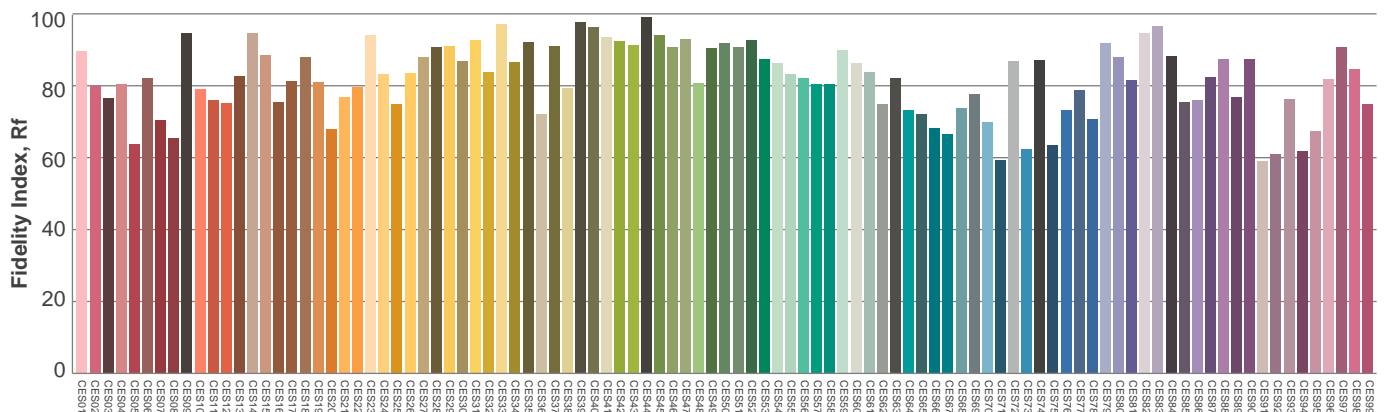
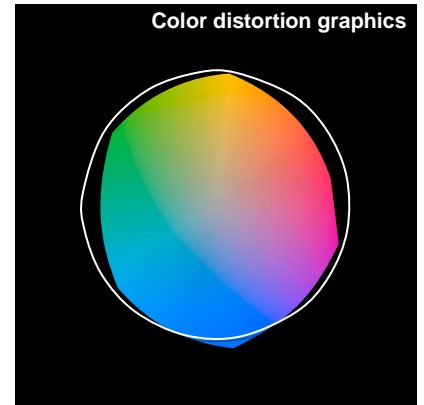
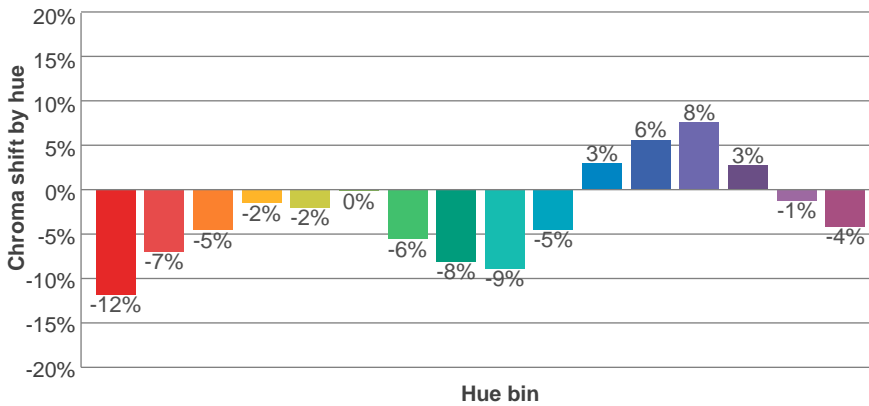
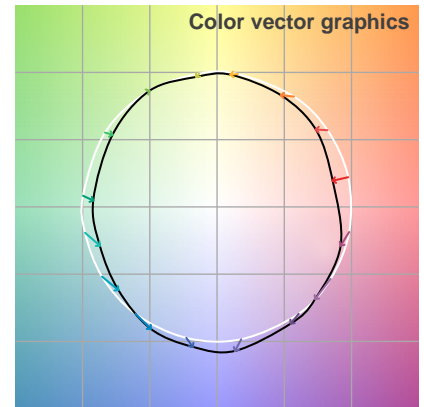
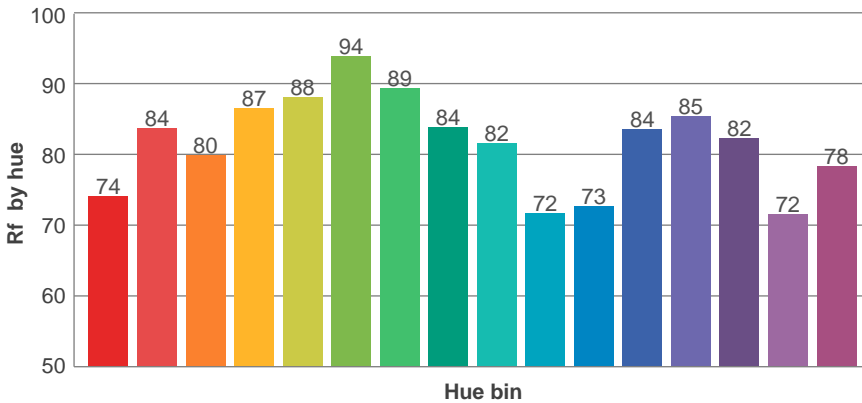
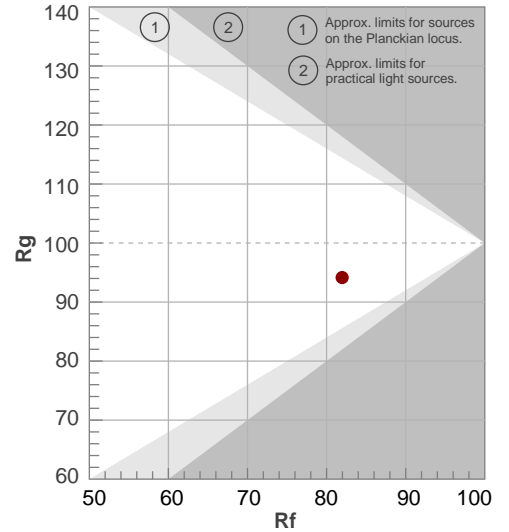


## TM30 Report

**Rf 82.0**  
Fidelity index Rf

**Rg 94.2**  
Gammut index Rg

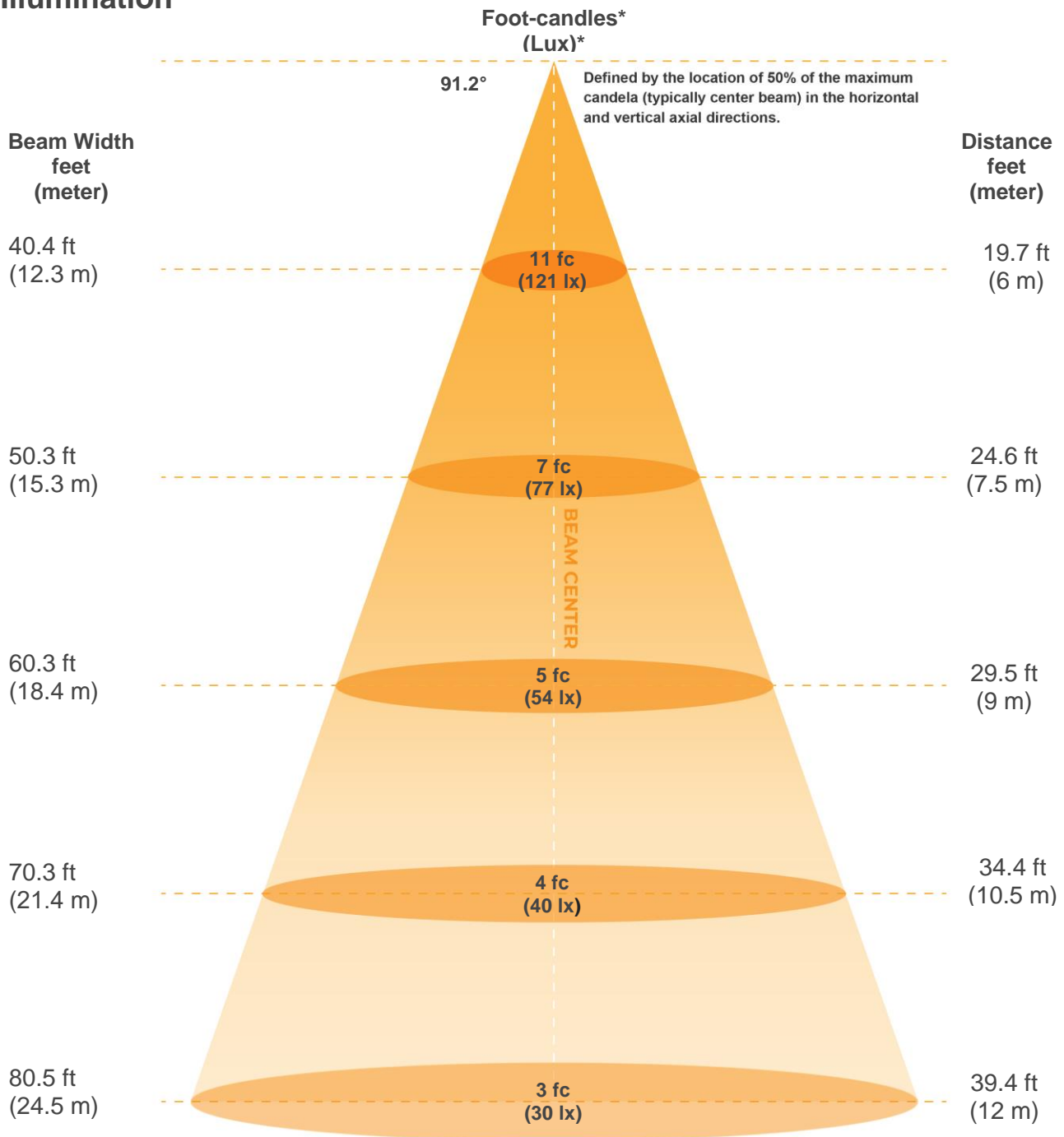
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	74	-12%	0%
2	84	-7%	5%
3	80	-5%	9%
4	87	-2%	5%
5	88	-2%	3%
6	94	0%	-1%
7	89	-6%	-2%
8	84	-8%	2%
9	82	-9%	12%
10	72	-5%	15%
11	73	3%	16%
12	84	6%	6%
13	85	8%	-6%
14	82	3%	-9%
15	72	-1%	-19%
16	78	-4%	-11%



Color Evaluation Sample



## Illumination



\*measured at center of beam

### Beam intensities from 1-20m

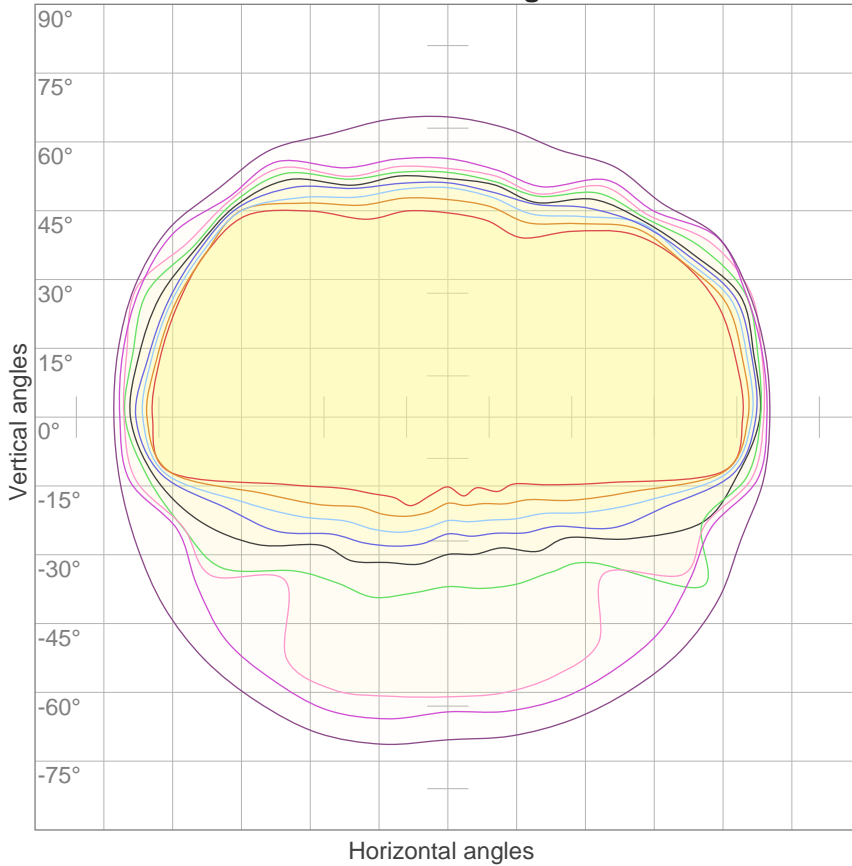
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
4358lx	1090lx	484lx	272lx	174lx	121lx	89lx	68lx	54lx	44lx	36lx	30lx	26lx	22lx	19lx	17lx	15lx	13lx	12lx	11lx
404.9fc	101.2fc	45fcd	25.3fcd	16.2fcd	11.2fcd	8.3fcd	6.3fcd	5fcd	4fcd	3.3fcd	2.8fcd	2.4fcd	2.1fcd	1.8fcd	1.6fcd	1.4fcd	1.2fcd	1.1fcd	1fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
<b>91.2°</b>	<b>148.6°</b>	<b>167.8°</b>	<b>76.4%</b>	<b>46.4%</b>



ISO Diagrams

ISO candela diagram



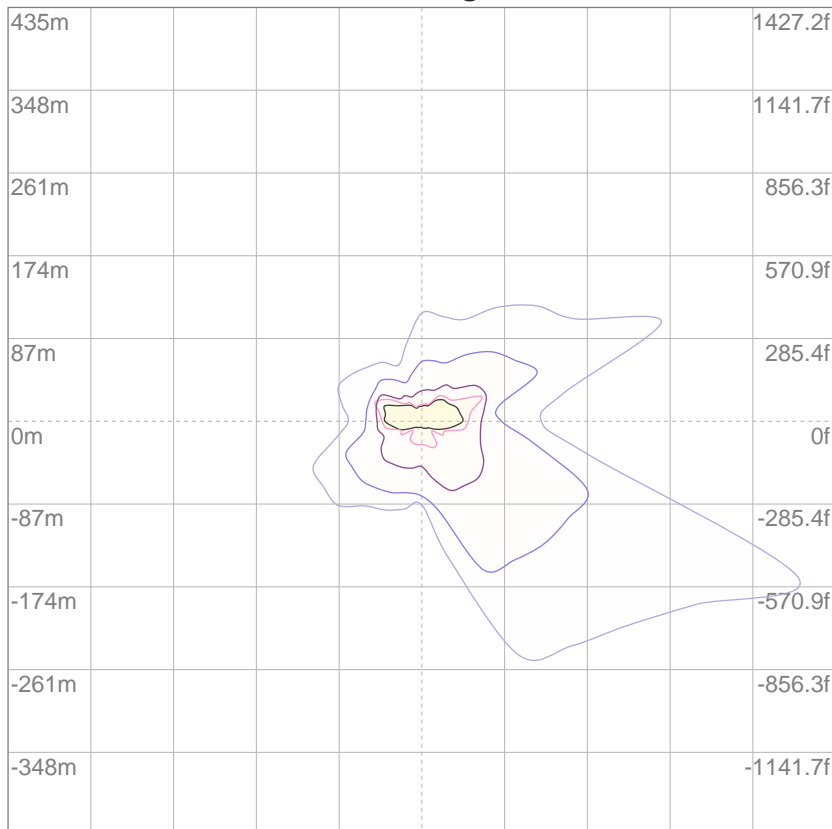
10%	436 cd
20%	872 cd
30%	1307 cd
40%	1743 cd
50%	2179 cd
60%	2615 cd
70%	3051 cd
80%	3487 cd
90%	3922 cd

Conditions:

Number of c-planes: 16

Candela at center: 4358 cd

ISO lux diagram



3%	1.31 lx
5%	2.18 lx
10%	4.36 lx
30%	13.1 lx
50%	21.8 lx

Conditions:

Number of c-planes: 16

Lux at center: 43.6 lx

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

Mounting height: 10 meters (33 feet)



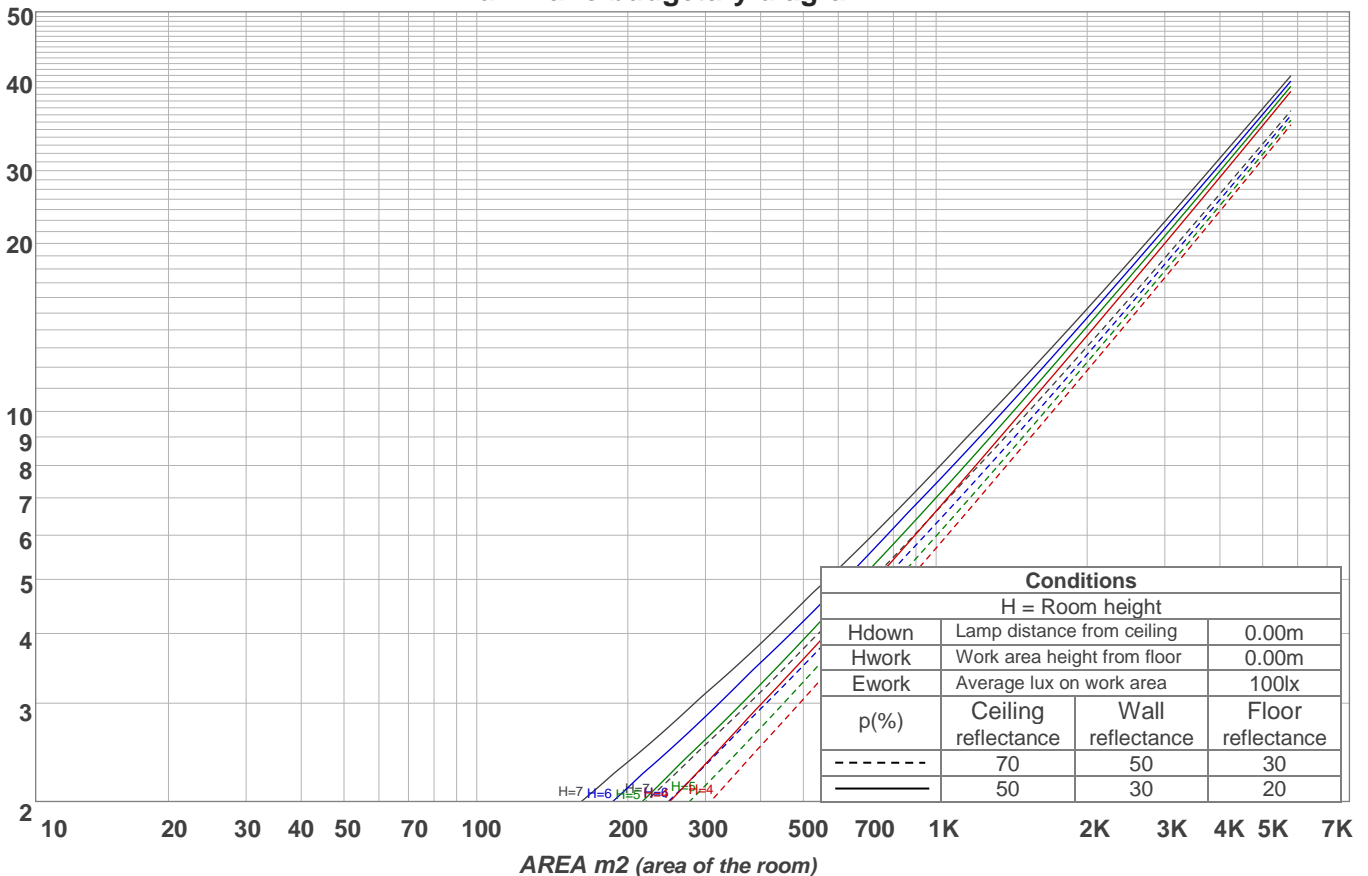
## Light Planning

### 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	20	0
<b>RCR</b>	<b>(RCR: Room Cavity Ratio)</b>																		
	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	108	104	99	95	106	101	97	94	97	94	91	93	90	88	89	87	85	83	
2	98	89	82	76	95	87	81	75	84	78	73	80	76	72	77	73	70	68	
3	88	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56	
4	80	68	58	51	78	66	58	51	64	56	50	61	55	49	59	53	49	46	
5	73	60	50	43	71	58	50	43	56	48	42	54	47	42	52	46	41	39	
6	67	53	44	37	65	52	43	37	50	42	36	48	41	36	47	41	36	33	
7	62	48	38	32	60	47	38	32	45	37	32	44	37	31	42	36	31	29	
8	57	43	34	28	56	42	34	28	41	33	28	40	33	27	38	32	27	25	
9	53	39	31	25	52	39	30	25	37	30	25	36	29	24	35	29	24	22	
10	50	36	28	22	48	35	27	22	34	27	22	33	27	22	32	26	22	20	

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°
418 lm	1281 lm	2203 lm	3104 lm	3680 lm	3819 lm	3050 lm	1191 lm	193 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
6.88 lm	5.01 lm	6.04 lm	6.65 lm	6.81 lm	6.20 lm	4.84 lm	3.15 lm	1.08 lm

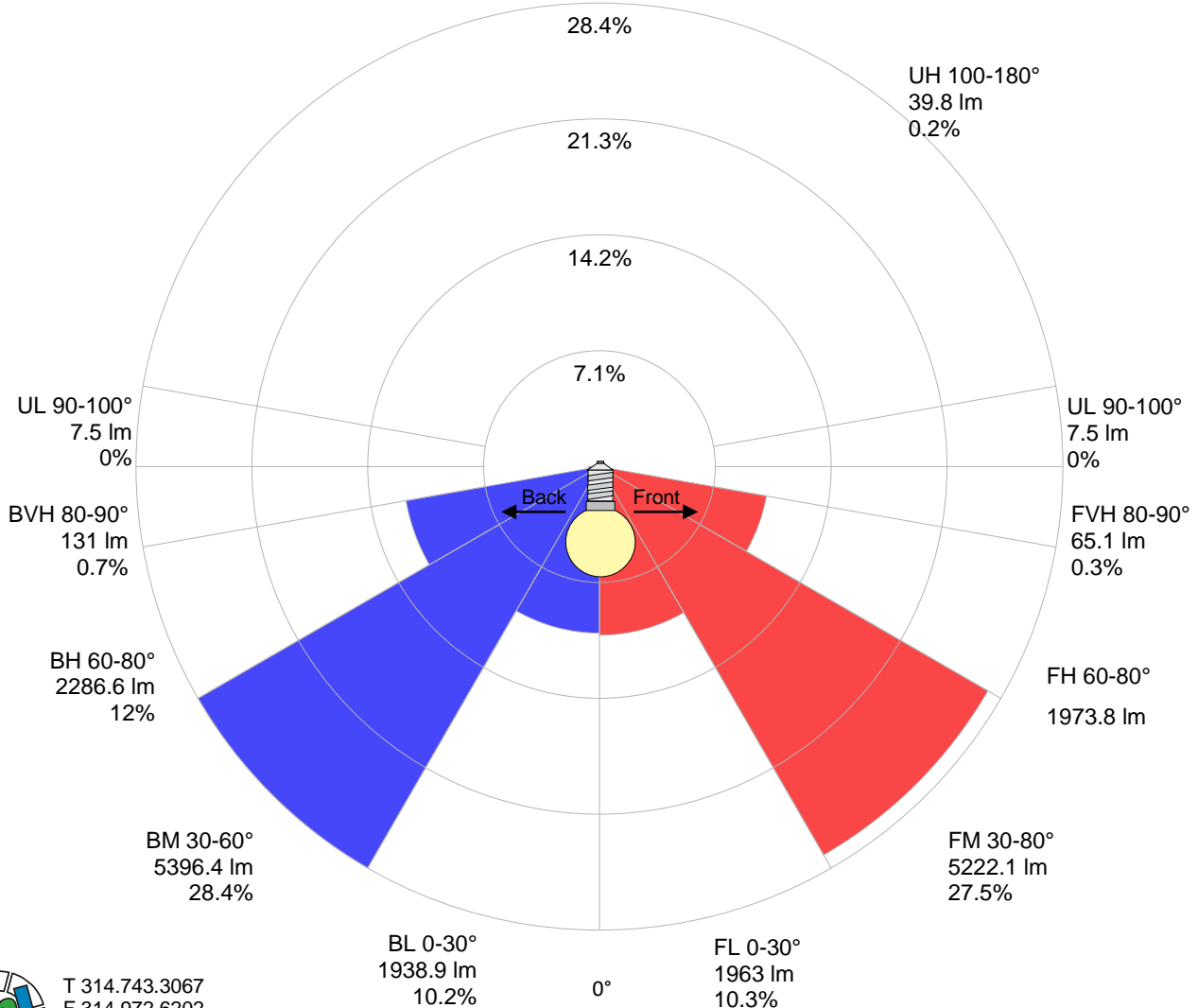


**Road Report**

**LCS table**

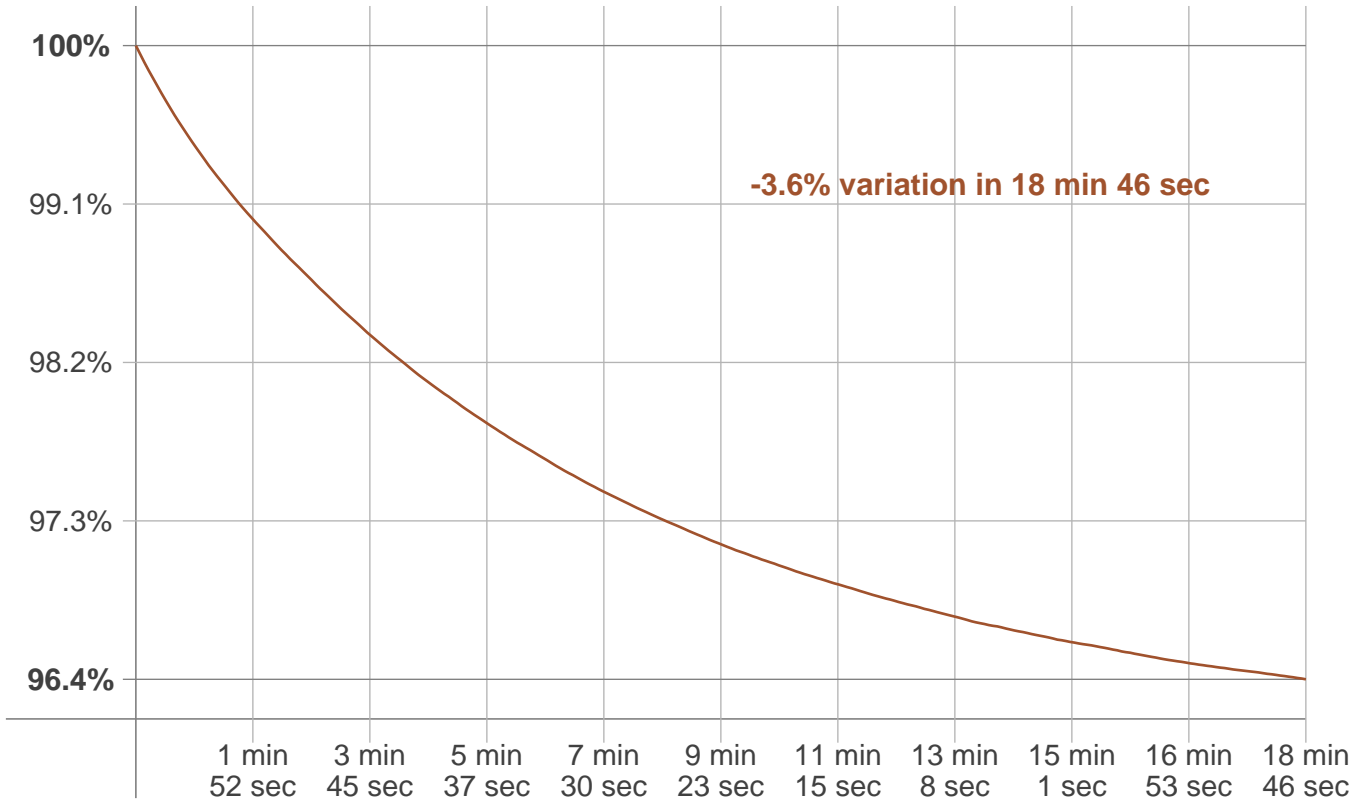
BUG rating:	B4 U2 G3	
Forward light	Lumens	Lumens %
Low(0-30):	1963	10.3%
Medium(30-60):	5222.1	27.5%
High(60-80):	1973.8	10.4%
Very high(80-90):	65.1	0.3%
Back light		
Low(0-30):	1938.9	10.2%
Medium(30-60):	5396.4	28.4%
High(60-80):	2286.6	12%
Very high(80-90):	131	0.7%
Uplight		
Low(90-100):	7.5	0%
High(100-180):	39.8	0.2%

**LCS graph**



**Stabilization**

**Warmup curve**



**Warmup result**

<b>Warmup time:</b>	<b>18 min 46 sec</b>
<b>Warmup variation</b>	<b>-3.6%</b>

**Warmup conditions**

<b>Stable period:</b>	<b>15 min</b>
<b>Stable change max:</b>	<b>2.0%</b>
<b>Minimum time:</b>	<b>15 min</b>

**Color temperature change**

CCT start	CCT change	CCT end
5006 K	+86 K	5092 K

**Output change**

Output start	Output change	Output end
19668 lm	-683 lm	18986 lm



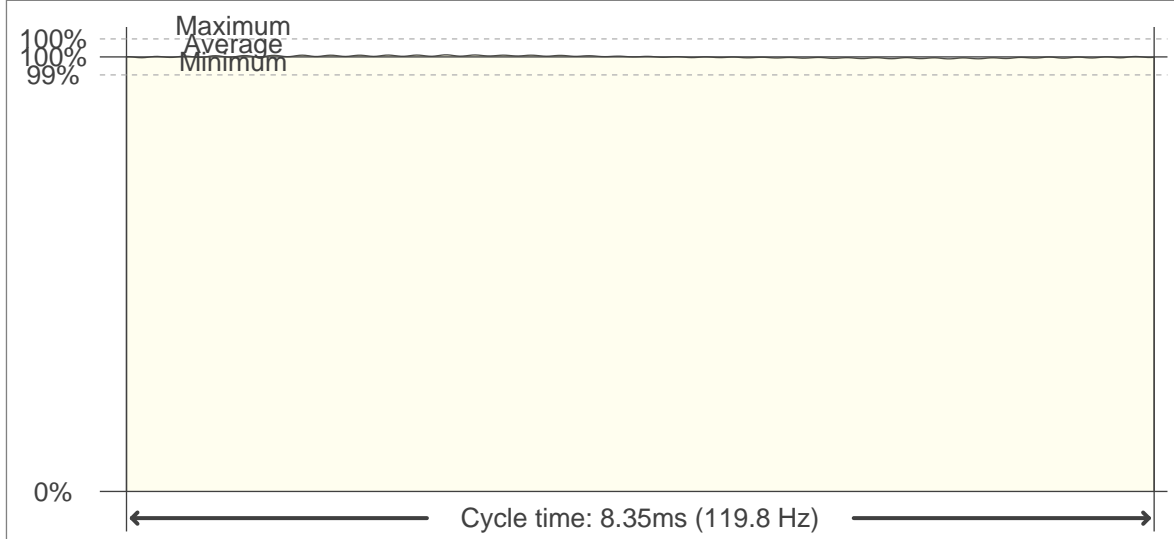


## Flicker

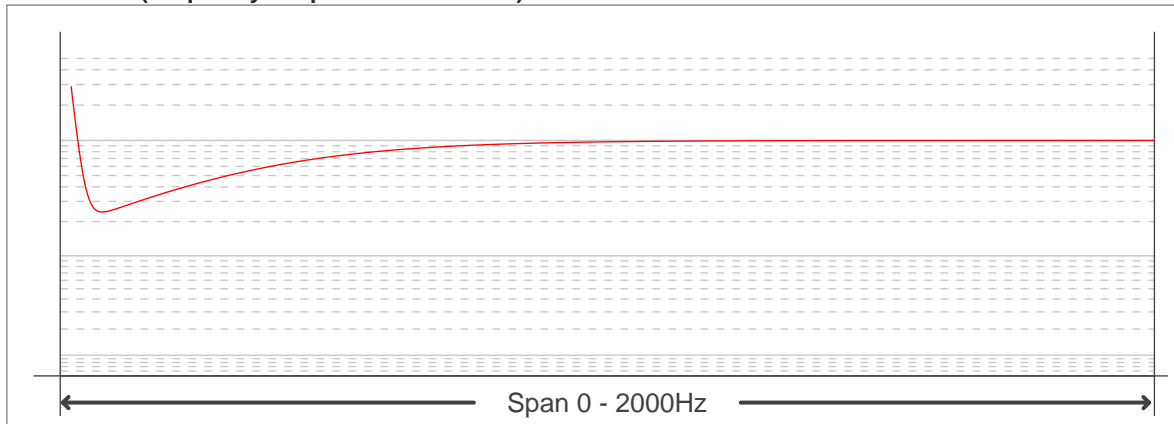
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



**Flicker results:**

<b>Flicker frequency:</b>	<b>119.76 Hz</b>
<b>Flicker index:</b>	<b>0</b>
<b>Flicker percentage:</b>	<b>0.73 %</b>
<b>SVM: (Visual flicker)</b>	<b>0.01</b>

**Flicker conditions:**

<b>Sample rate:</b>	<b>40000 samples/second</b>
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