

Light efficiency:

70 Lumen/Watt

Light quality:

CRI: 94.7

Color temperature:

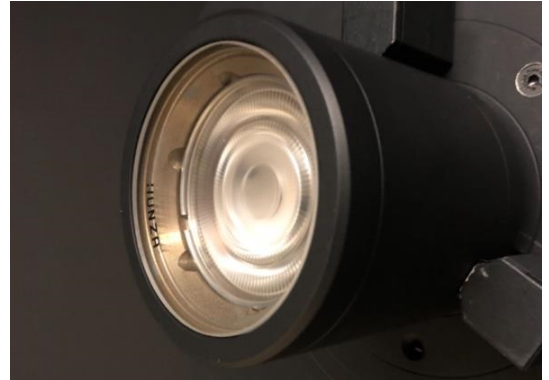
2748 K

Output: 424 lm

Peak: 475 cd

Power: 6.1 W

PF: 0.48



Tracking number: [n/a](#)

Product name:

Ultra 12 Dim to Warm 60 deg 2700K 160mA

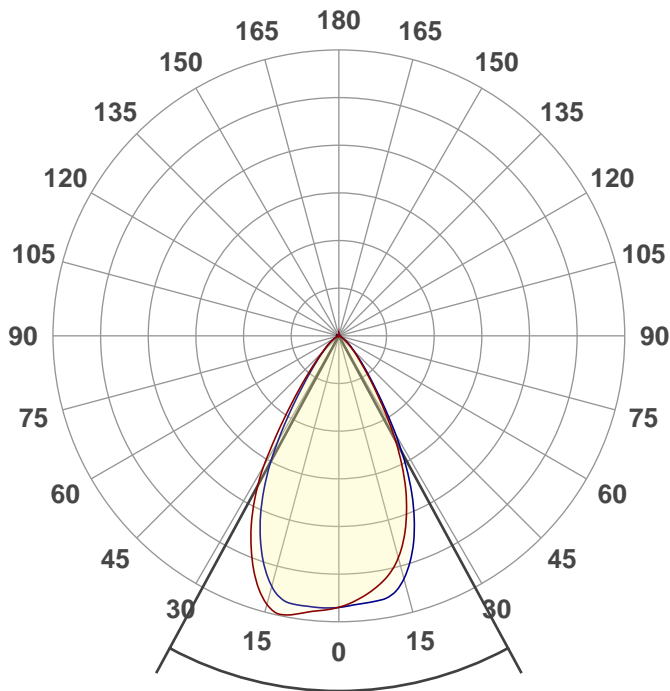
Item number:

U12-DW-57-27

Date and time:

3/09/2020 6:32:54 PM

Description:



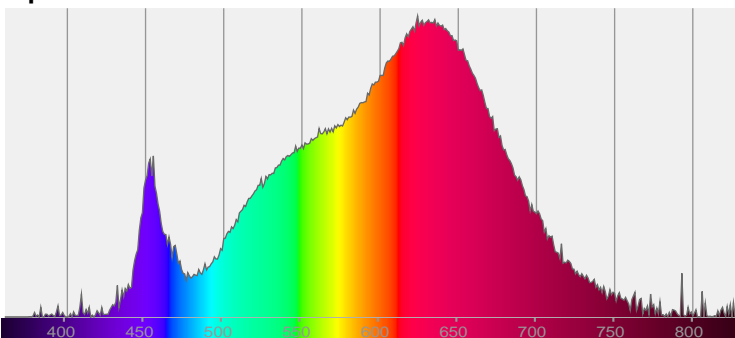
Beam angle

56.9°

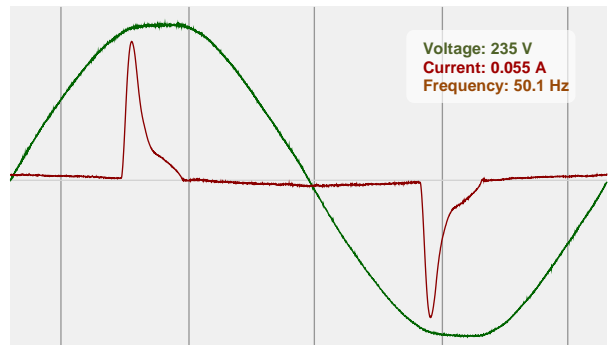


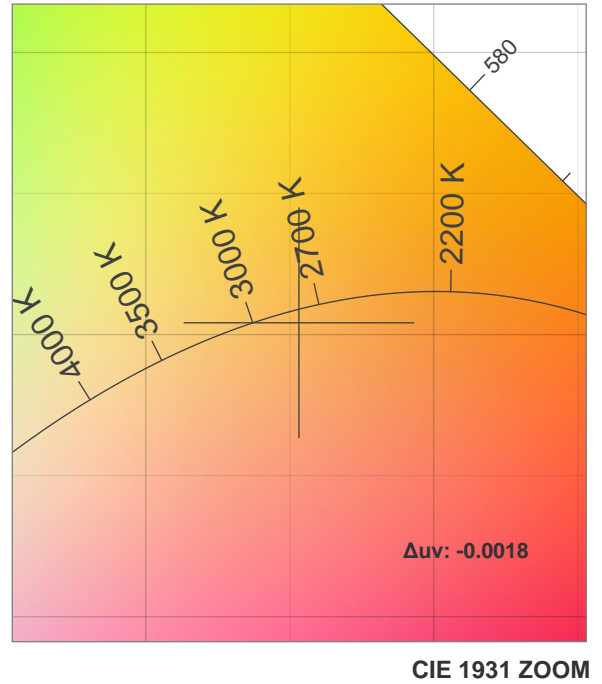
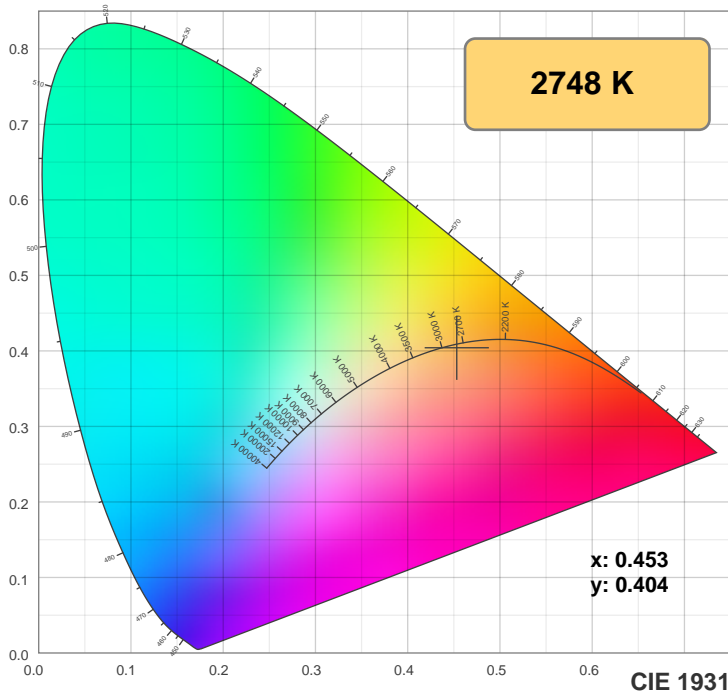
CIE 1931
x: 0.453
y: 0.404

Spectra

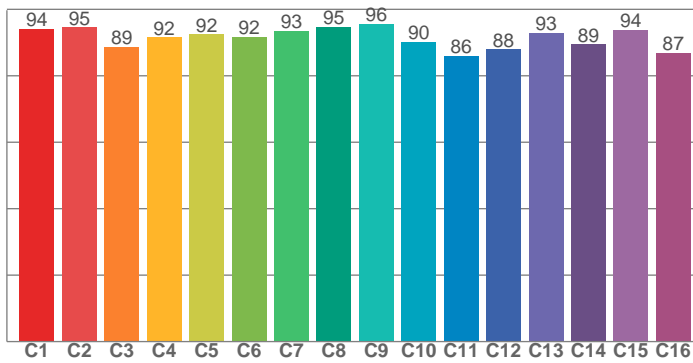


Power

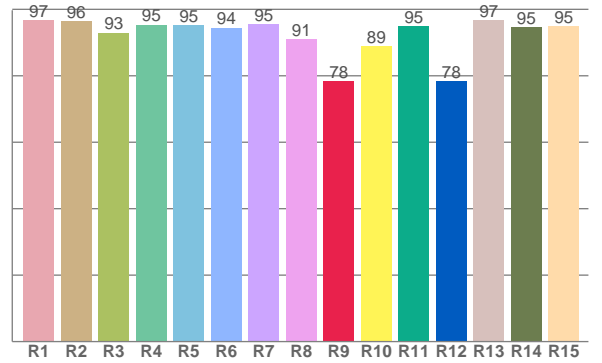




TM-30: 91.4



CRI: 94.7 (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
96.7	96.5	92.9	95.3	95.1	94.5	95.5	90.9	78.3	88.9	94.8	78.3	96.7	94.7	94.9

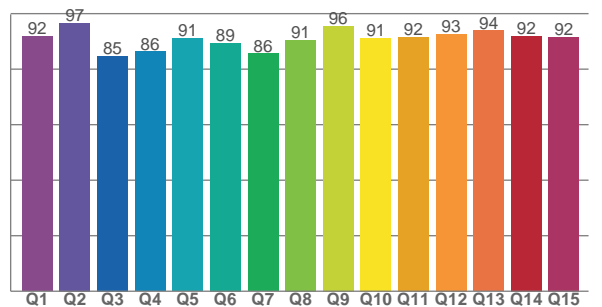
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
94.1	94.6	88.8	91.6	92.5	91.7	93.5	94.7	95.7	90.2	86.0	88.0	92.8	89.5	93.9	86.9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
91.8	96.6	84.7	86.3	91.1	89.4	85.6	90.5	95.5	91.2	91.5	92.6	94.0	92.0	91.6

CQS: 90.2



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
2748 K	94.7	78.3	91.4	102.7	90.2	0.453	0.404	0.261	0.349	-0.0018

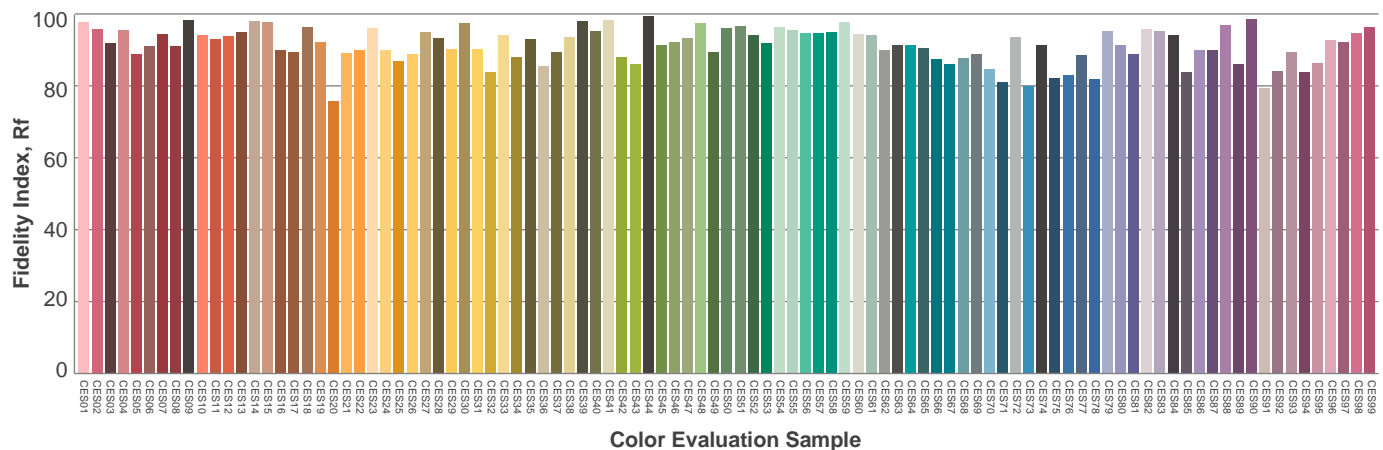
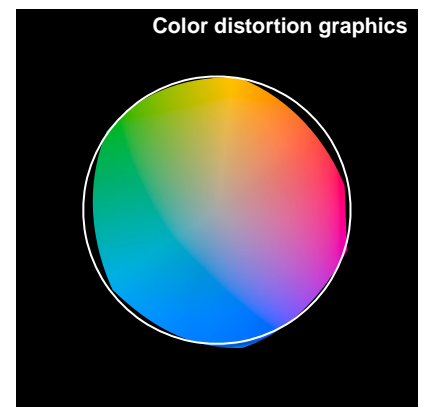
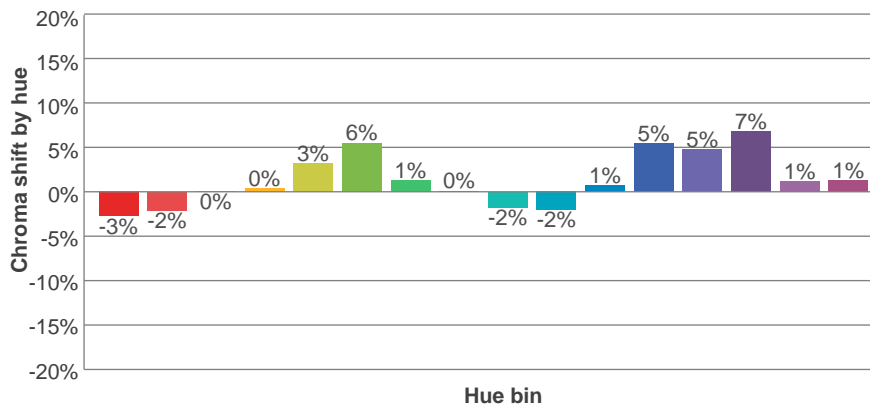
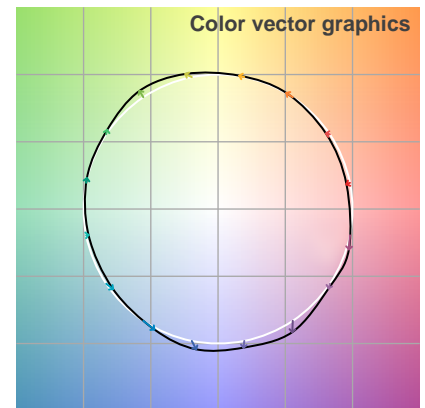
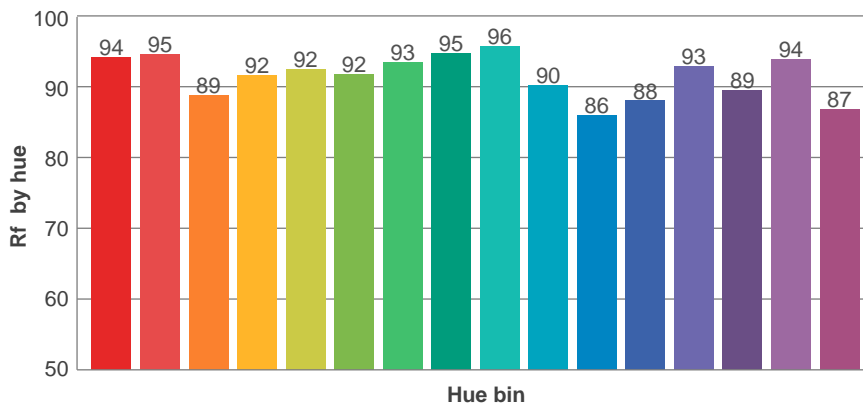
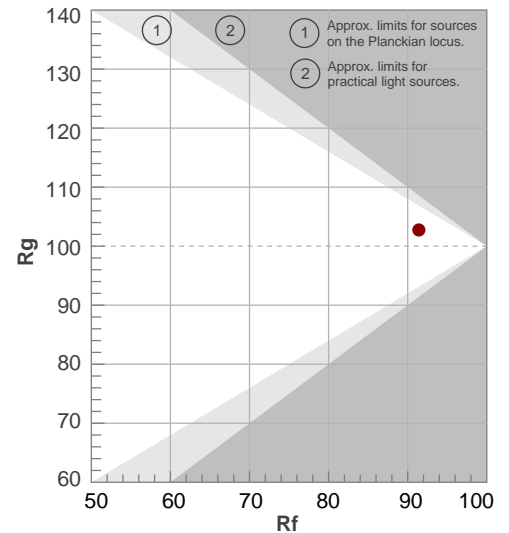
Rf 91.4

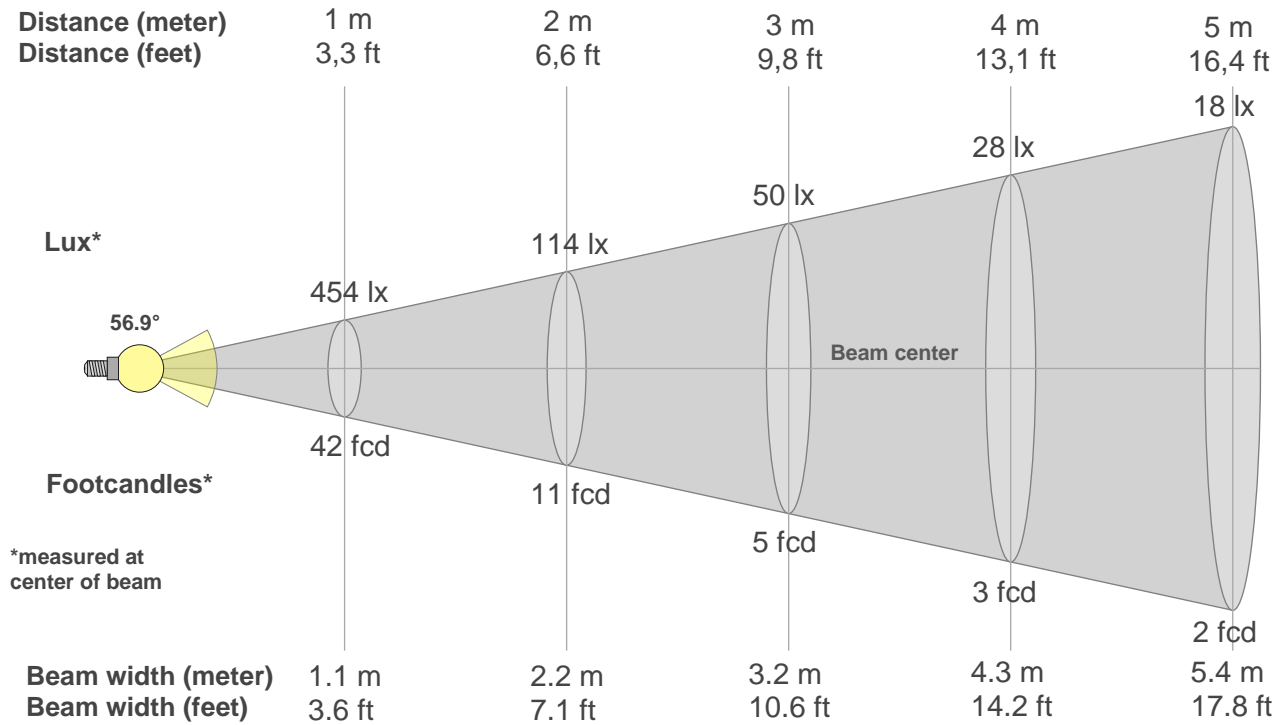
Fidelity index Rf

Rg 102.7

Gamut index Rg

Hue Bin	R _f	Shifts (%)	
		Chroma	Hue
1	94	-3%	-1%
2	95	-2%	2%
3	89	0%	6%
4	92	0%	4%
5	92	3%	4%
6	92	6%	0%
7	93	1%	-3%
8	95	0%	-4%
9	96	-2%	0%
10	90	-2%	6%
11	86	1%	10%
12	88	5%	4%
13	93	5%	-2%
14	89	7%	-5%
15	94	1%	-3%
16	87	1%	-10%





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
454lx	114lx	50lx	28lx	18lx	13lx	9lx	7lx	6lx	5lx	4lx	3lx	3lx	2lx	2lx	2lx	2lx	1lx	1lx	1lx
42.2fcd	10.5fcd	4.7fcd	2.6fcd	1.7fcd	1.2fcd	0.9fcd	0.7fcd	0.5fcd	0.4fcd	0.3fcd	0.3fcd	0.2fcd	0.2fcd	0.2fcd	0.2fcd	0.1fcd	0.1fcd	0.1fcd	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°
454	449	443	435	427	418	407	393	375	353	329	302	273	241	207	171	138	109	87	68
100%	99%	97%	96%	94%	92%	90%	86%	83%	78%	72%	66%	60%	53%	45%	38%	30%	24%	19%	15%

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°
454	452	450	449	448	446	440	428	411	390	366	337	304	269	230	190	152	120	95	76
100%	100%	99%	99%	99%	98%	97%	94%	91%	86%	81%	74%	67%	59%	51%	42%	33%	26%	21%	17%

Intensities in 180° c-plane

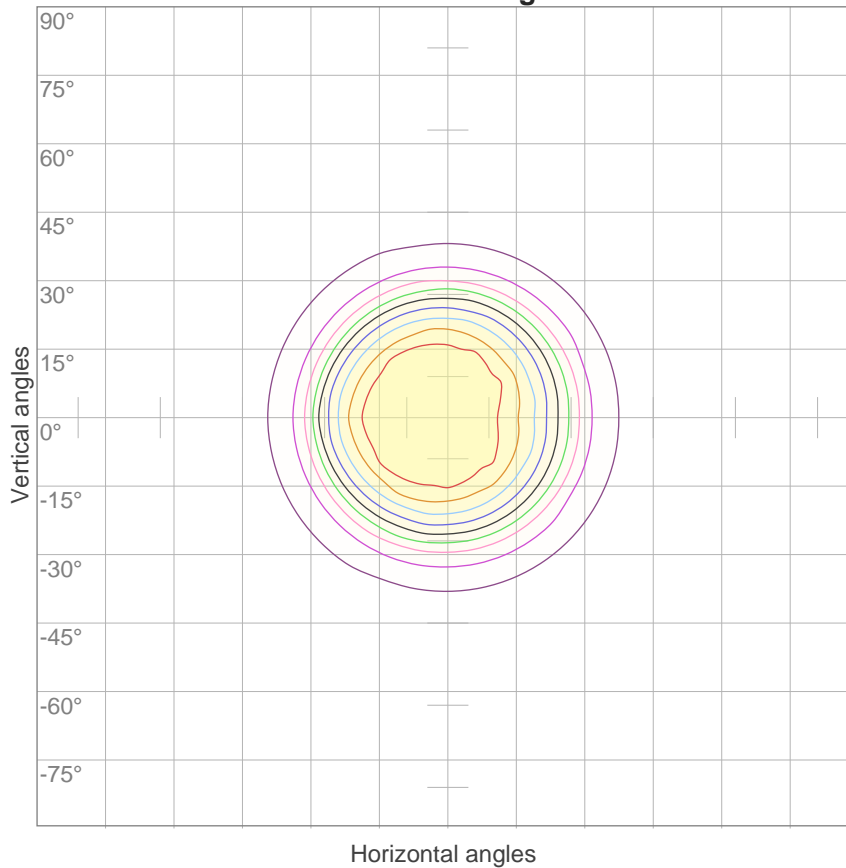
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
454	458	461	464	469	474	475	470	457	439	417	390	361	329	293	251	200	157	122	94
100%	101%	101%	102%	103%	104%	105%	103%	101%	97%	92%	86%	80%	72%	64%	55%	44%	35%	27%	21%

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°
454	455	456	456	455	455	451	441	425	404	379	351	320	286	248	206	165	129	100	79
100%	100%	100%	100%	100%	100%	99%	97%	94%	89%	83%	77%	71%	63%	55%	45%	36%	29%	22%	17%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
56.9°	85.3°	112.6°	96.9%	91.1%

iso-candela diagram



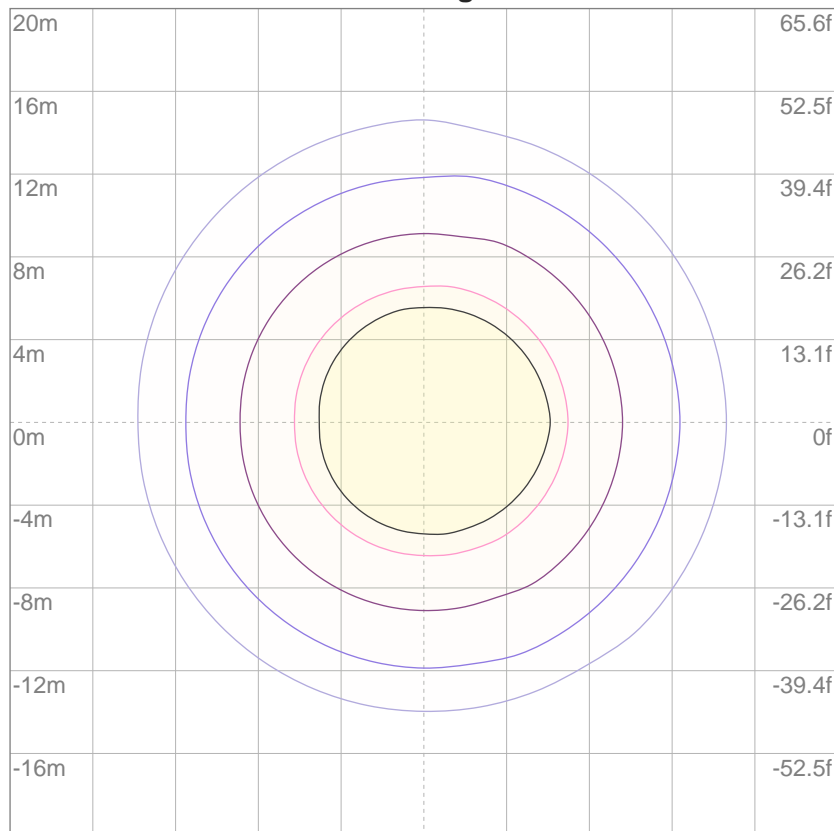
10%	45 cd
20%	91 cd
30%	136 cd
40%	182 cd
50%	227 cd
60%	272 cd
70%	318 cd
80%	363 cd
90%	409 cd

Conditions:

Number of c-planes: 4

Candela at center: 454 cd

iso-lux diagram



3%	0.136 lx
5%	0.227 lx
10%	0.454 lx
30%	1.36 lx
50%	2.27 lx

Conditions:

Number of c-planes: 4

Lux at center: 4.54 lx

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

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				
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Variation of the observer position for the luminaire distance S										
n/a	n/a					n/a				
n/a	n/a					n/a				
n/a	n/a					n/a				
Standard table	n/a					n/a				
Correction summand	n/a					n/a				
Corrected glare indices referring to 424 lm total luminous flux										

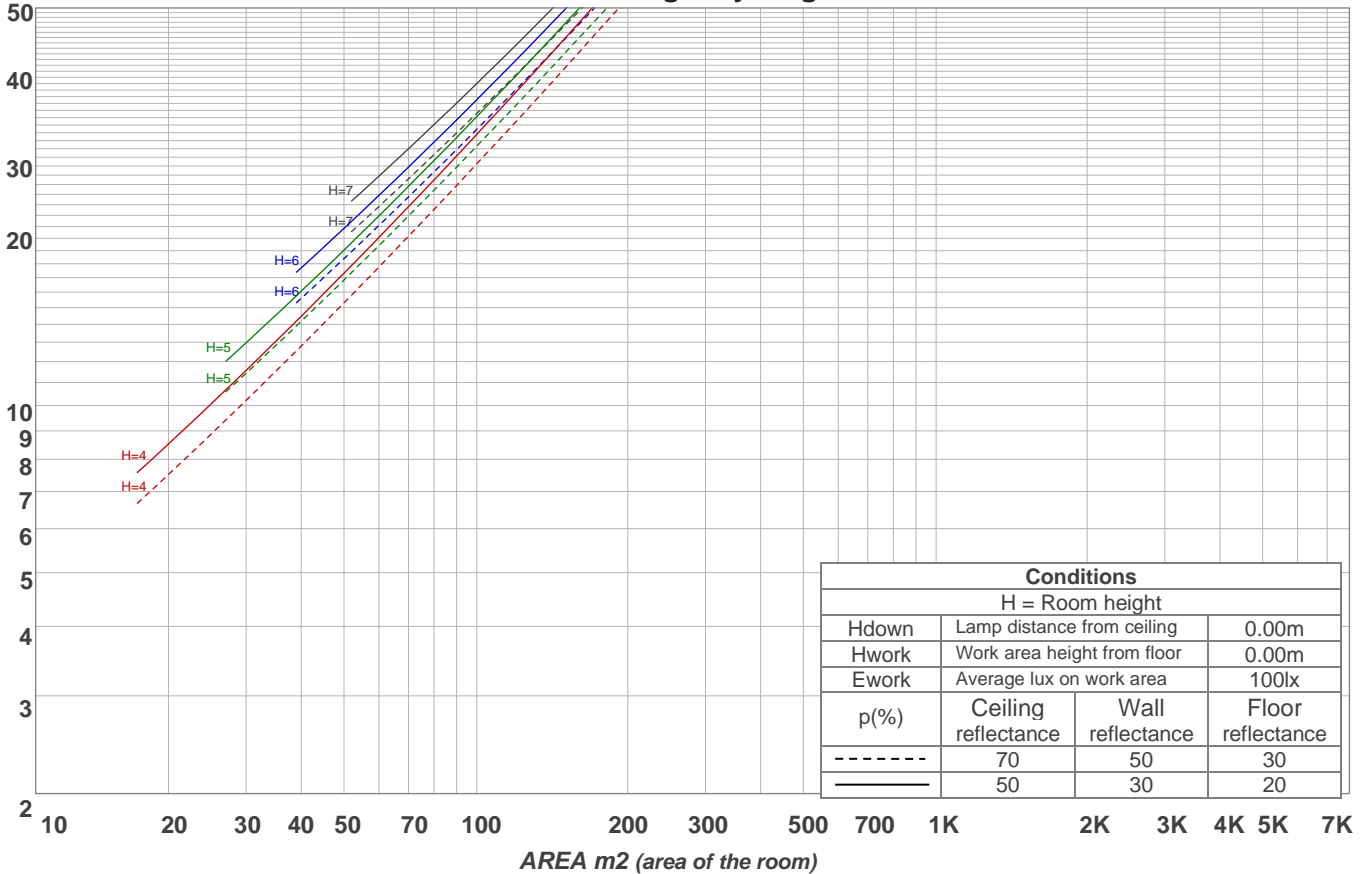
Viso Systems Aps – Copenhagen, Denmark – www.visosystems.com

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	98
1	113	110	107	105	110	108	105	103	103	101	100	99	98	96	96	94	93	92
2	107	102	98	94	105	100	96	93	97	93	91	93	91	89	90	88	86	85
3	101	95	90	85	99	93	88	85	90	86	83	88	84	82	85	82	80	78
4	96	88	83	78	94	87	82	78	85	80	77	82	79	75	80	77	74	73
5	91	82	76	72	89	81	76	72	79	75	71	78	73	70	76	72	69	68
6	86	77	71	67	85	76	71	66	75	70	66	73	69	65	72	68	65	63
7	82	73	66	62	81	72	66	62	70	65	61	69	64	61	68	64	61	59
8	78	68	62	58	77	68	62	58	66	61	58	65	61	57	64	60	57	55
9	74	64	58	54	73	64	58	54	63	58	54	62	57	54	61	57	53	52
10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49

LAMPS (number of lamps)

Luminaire budgetary diagram



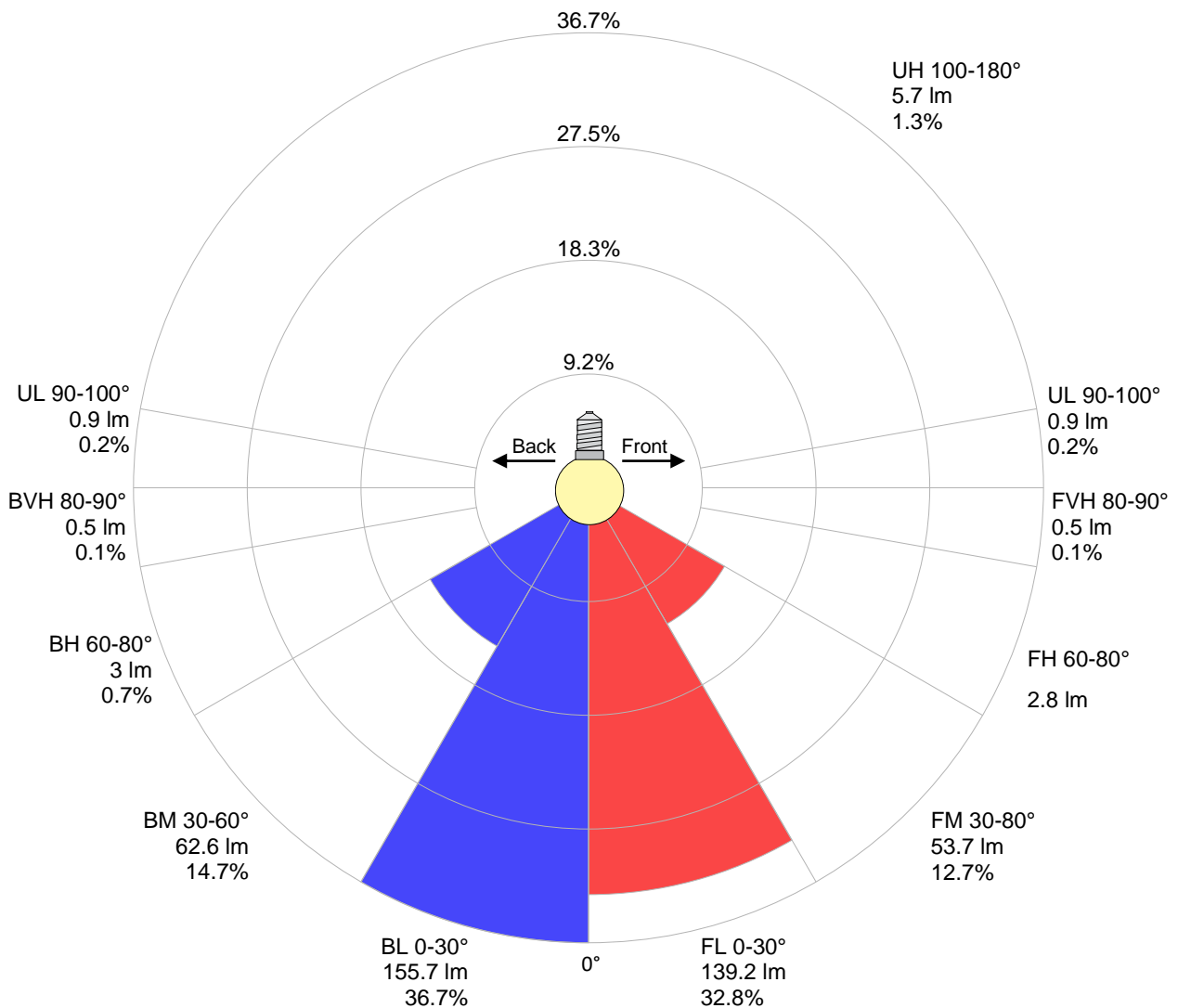
Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
{LUM0-10}	118 lm	134 lm	73.9 lm	29.6 lm	12.6 lm	4.21 lm	1.55 lm	0.970 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.860 lm	0.935 lm	0.979 lm	1.05 lm	0.965 lm	0.769 lm	0.539 lm	0.343 lm	0.102 lm

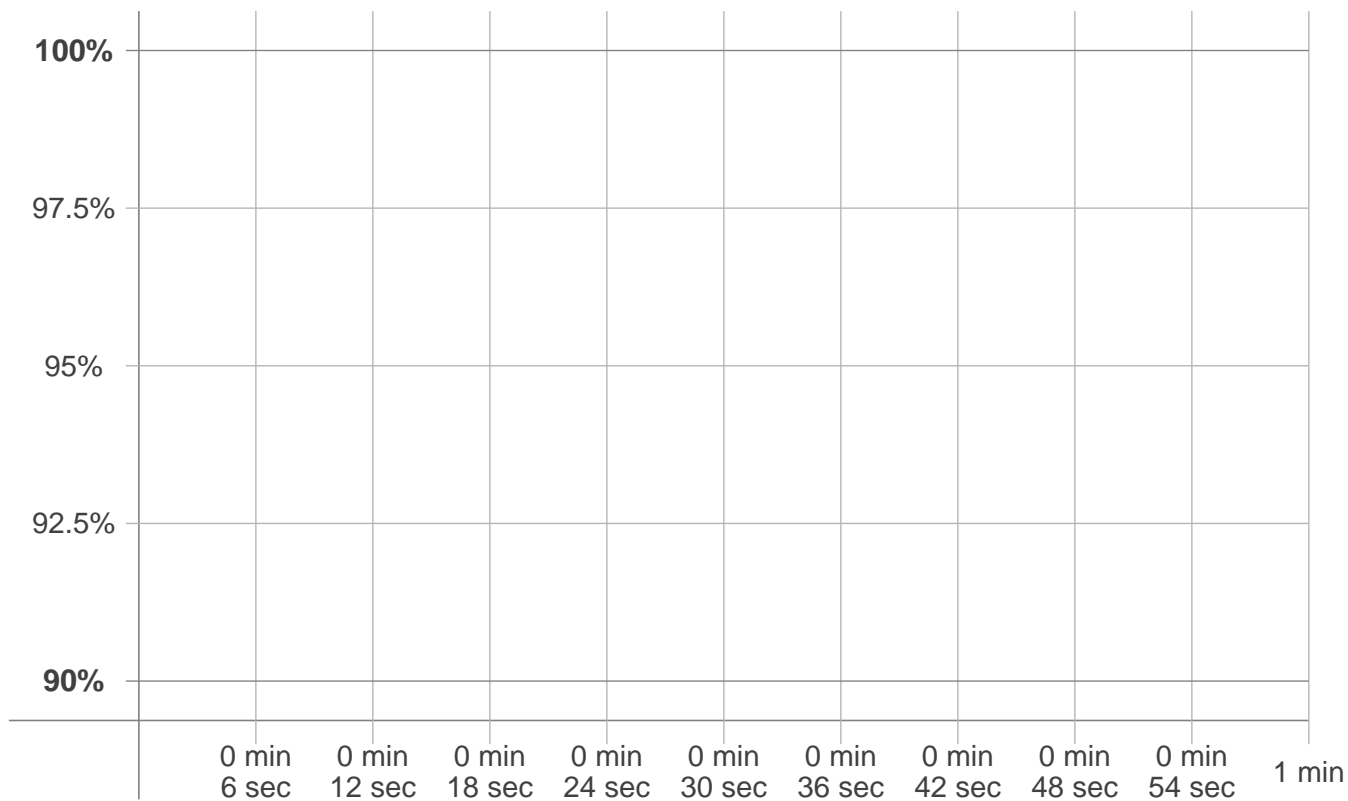
LCS table

BUG rating:	B1 U1 G0	
Forward light	Lumens	Lumens %
Low(0-30):	139.2	32.8%
Medium(30-60):	53.7	12.7%
High(60-80):	2.8	0.7%
Very high(80-90):	0.5	0.1%
Back light		
Low(0-30):	155.7	36.7%
Medium(30-60):	62.6	14.7%
High(60-80):	3	0.7%
Very high(80-90):	0.5	0.1%
Uplight		
Low(90-100):	0.9	0.2%
High(100-180):	5.7	1.3%

LCS graph



Warmup curve



Warmup result

Warmup time:	n/a
Warmup variation	n/a%

Warmup conditions

Stable period:	n/a
Stable change max:	n/a%
Minimum time:	n/a

Color temperature change

CCT start	CCT change	CCT end
n/a K	n/a K	2748 K

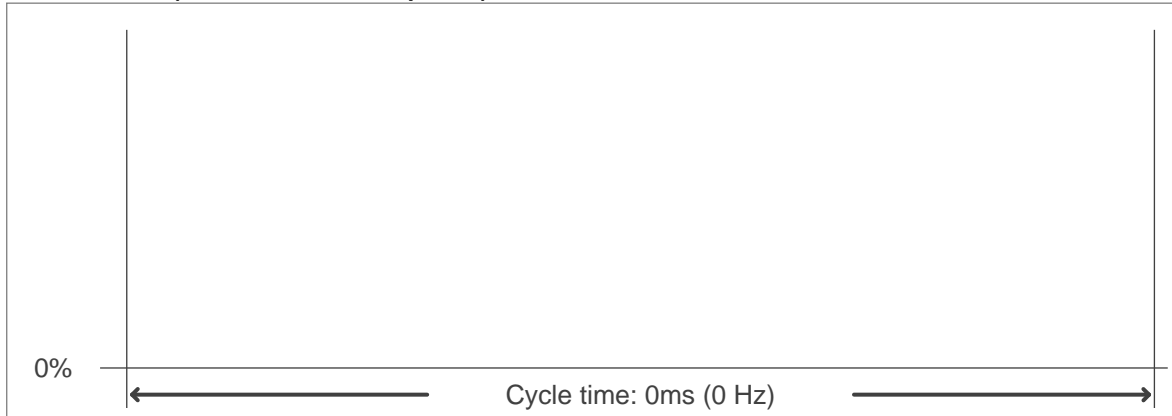
Output change

Output start	Output change	Output end
n/a lm	n/a lm	424 lm

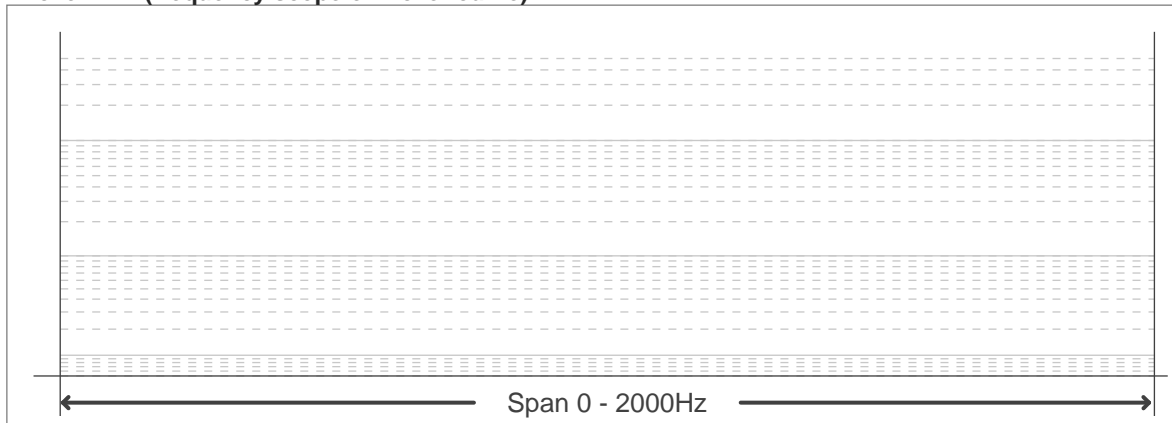
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	n/a Hz	JA8/10 40Hz	n/a %
Flicker index:	n/a	JA8/10 90Hz	n/a %
Flicker percentage:	n/a %	JA8/10 200Hz	n/a %
SVM: (Visual flicker)	n/a	JA8/10 400Hz	n/a %
PstLM	n/a	JA8/10 1000Hz	n/a %

Flicker conditions:

Sample rate:	0 samples/second
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