Light efficiency:

135 Lumen/Watt

Light quality:

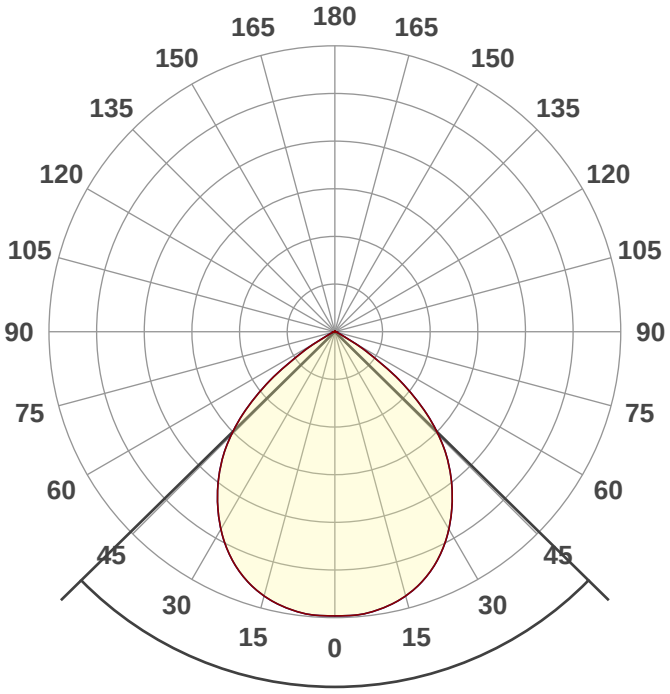
CRI: 72.8

Color temperature:

5043 K

Output: 27767 lm
Peak: 15017 cd

Power: 205 W
PF: 1.0



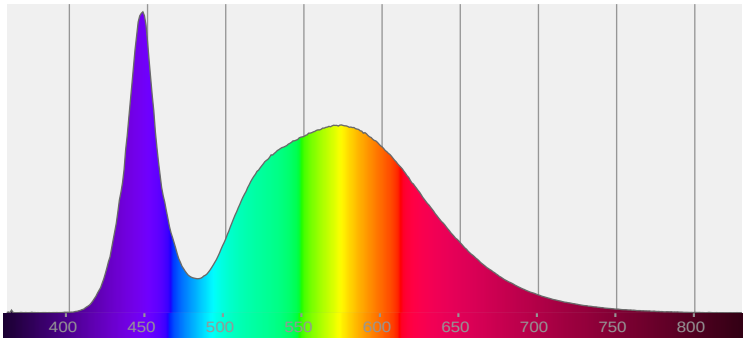
Beam angle **91.2°**

CIE 1931
x: 0.344
y: 0.354

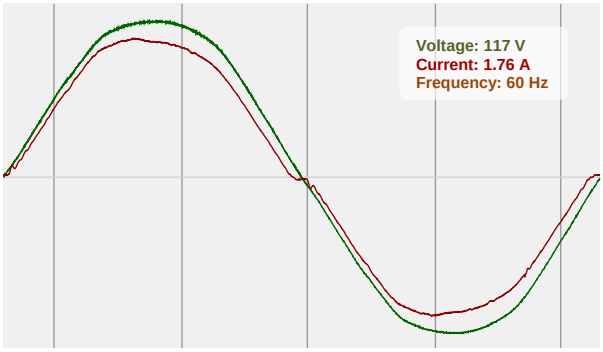
Product name:
HPAL-NW200-BP9

Date and time:
4/25/2019 1:29:35 PM

Spectra

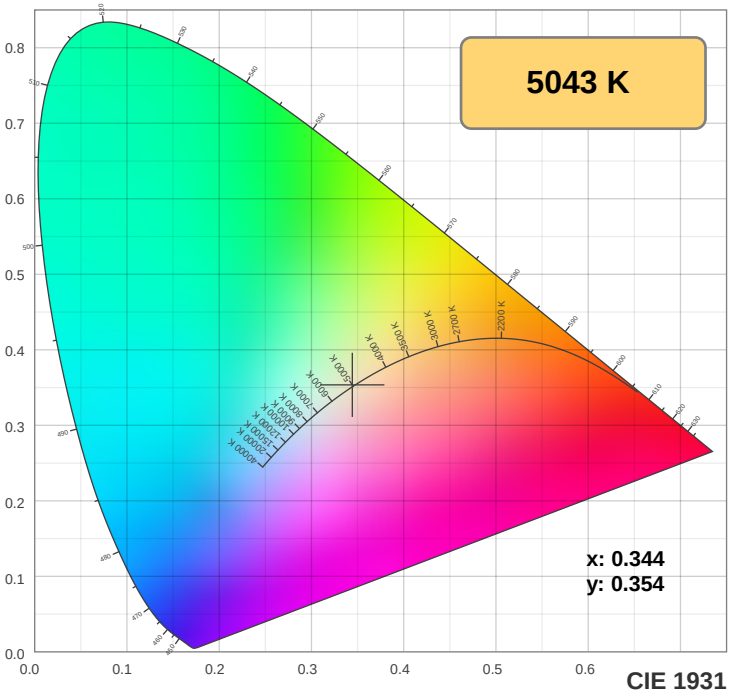


Power

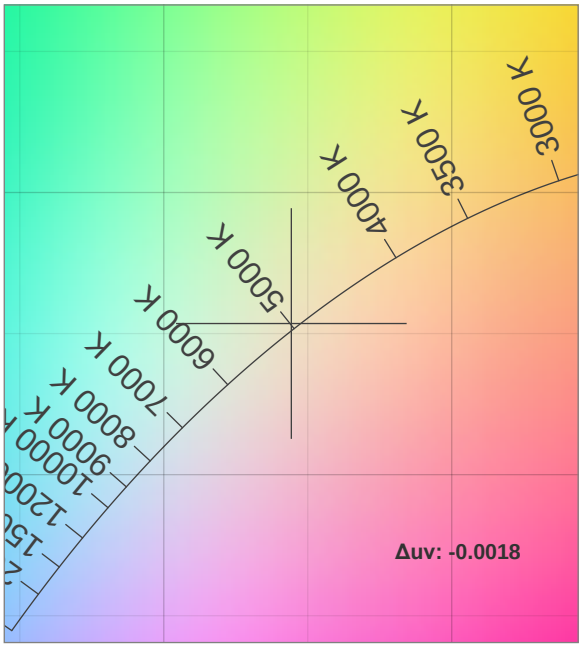


T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

Color Specifications

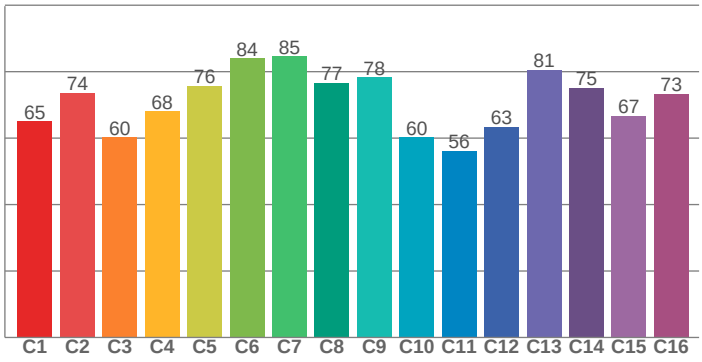


CIE 1931

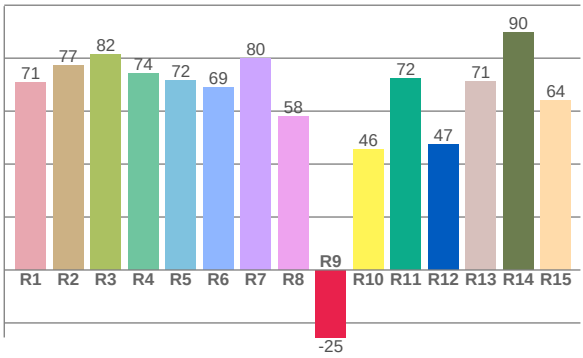


CIE 1931 ZOOM

TM30: 71.3



CRI: 72.8 (R1-R8)



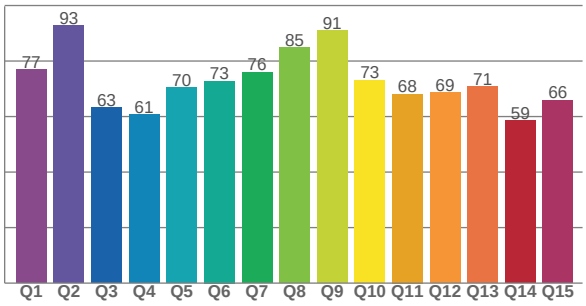
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
70.8	77.1	81.6	74.2	71.7	69.0	79.9	58.0	-25.5	45.7	72.5	47.4	71.3	89.6	64.0

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
65.0	73.6	60.3	68.1	75.7	84.0	84.7	76.5	78.2	60.3	56.3	63.5	80.6	75.1	66.6	73.3

CQS: 72.2



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
76.8	92.8	63.1	60.7	70.4	72.8	75.9	84.9	90.9	73.1	68.1	68.6	70.9	58.5	65.8

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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
5043 K	72.8	-25.5	71.3	94.8	71.2	0.344	0.354	0.210	0.324	-0.0018

T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

TM30 Report

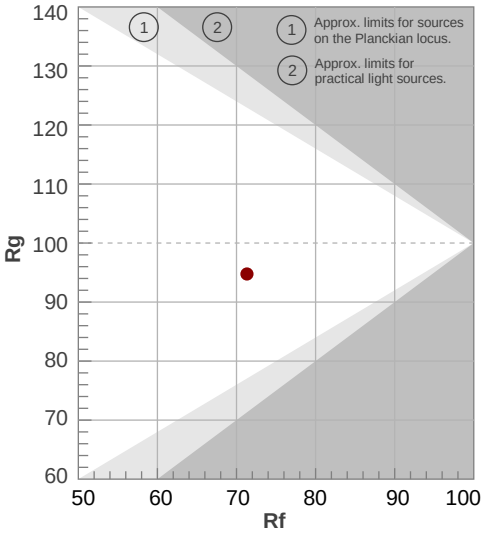
Rf 71.3

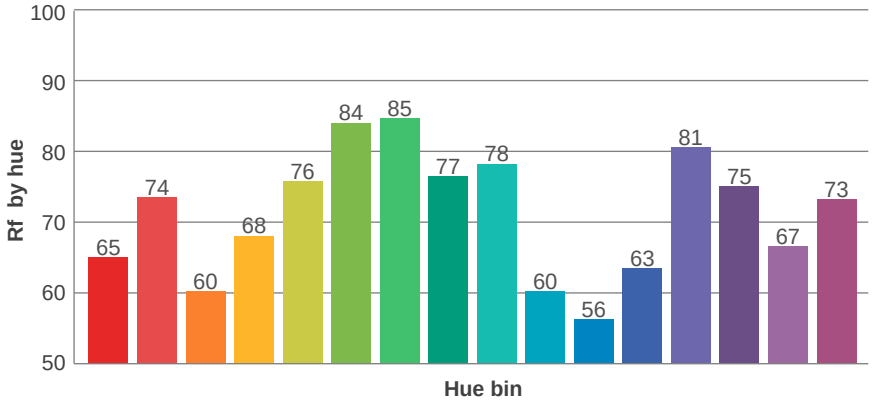
Fidelity index Rf

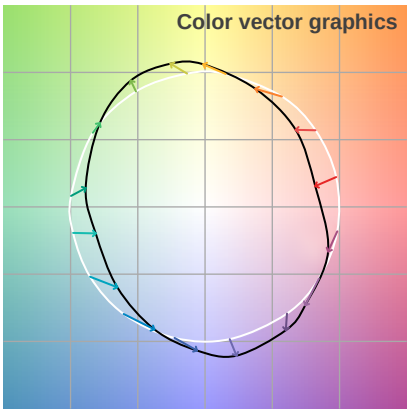
Rg 94.8

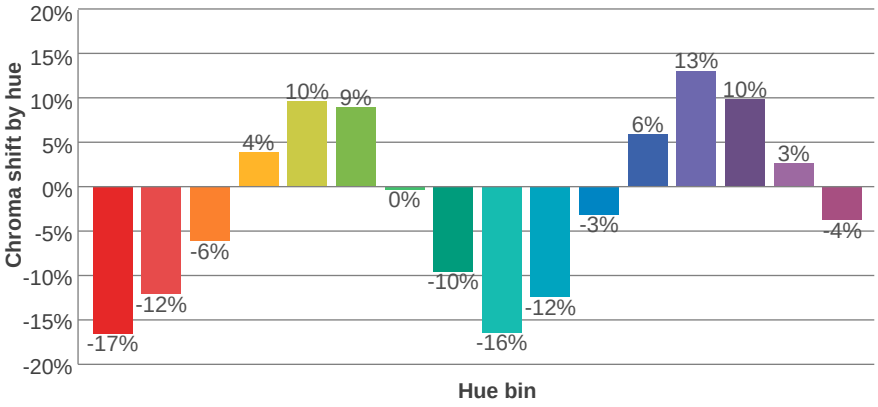
Gamut index Rg

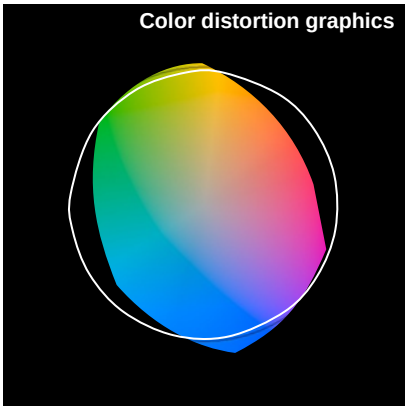
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	65	-17%	-4%
2	74	-12%	8%
3	60	-6%	20%
4	68	4%	18%
5	76	10%	11%
6	84	9%	-1%
7	85	0%	-9%
8	77	-10%	-8%
9	78	-16%	4%
10	60	-12%	18%
11	56	-3%	25%
12	63	6%	18%
13	81	13%	3%
14	75	10%	-8%
15	67	3%	-22%
16	73	-4%	-16%

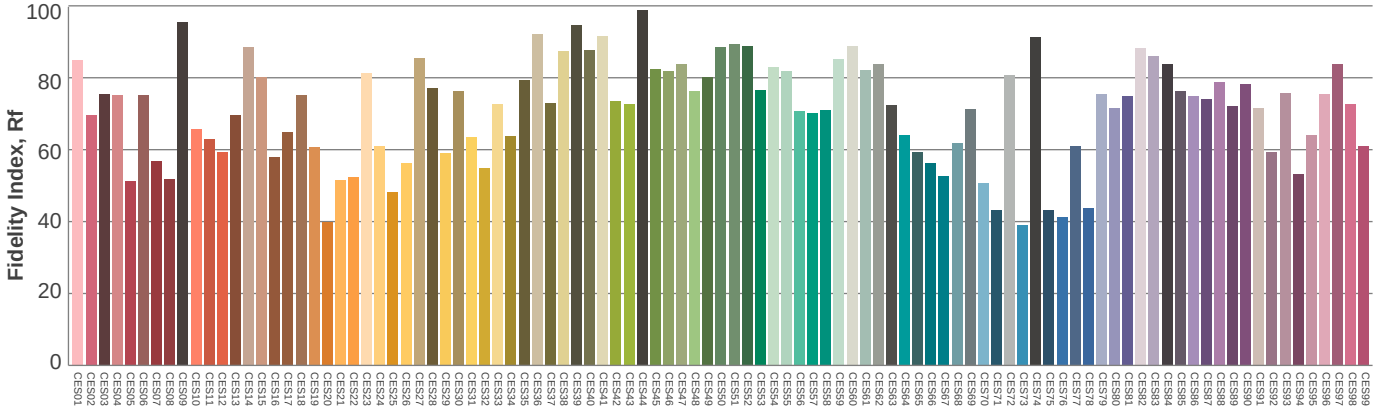






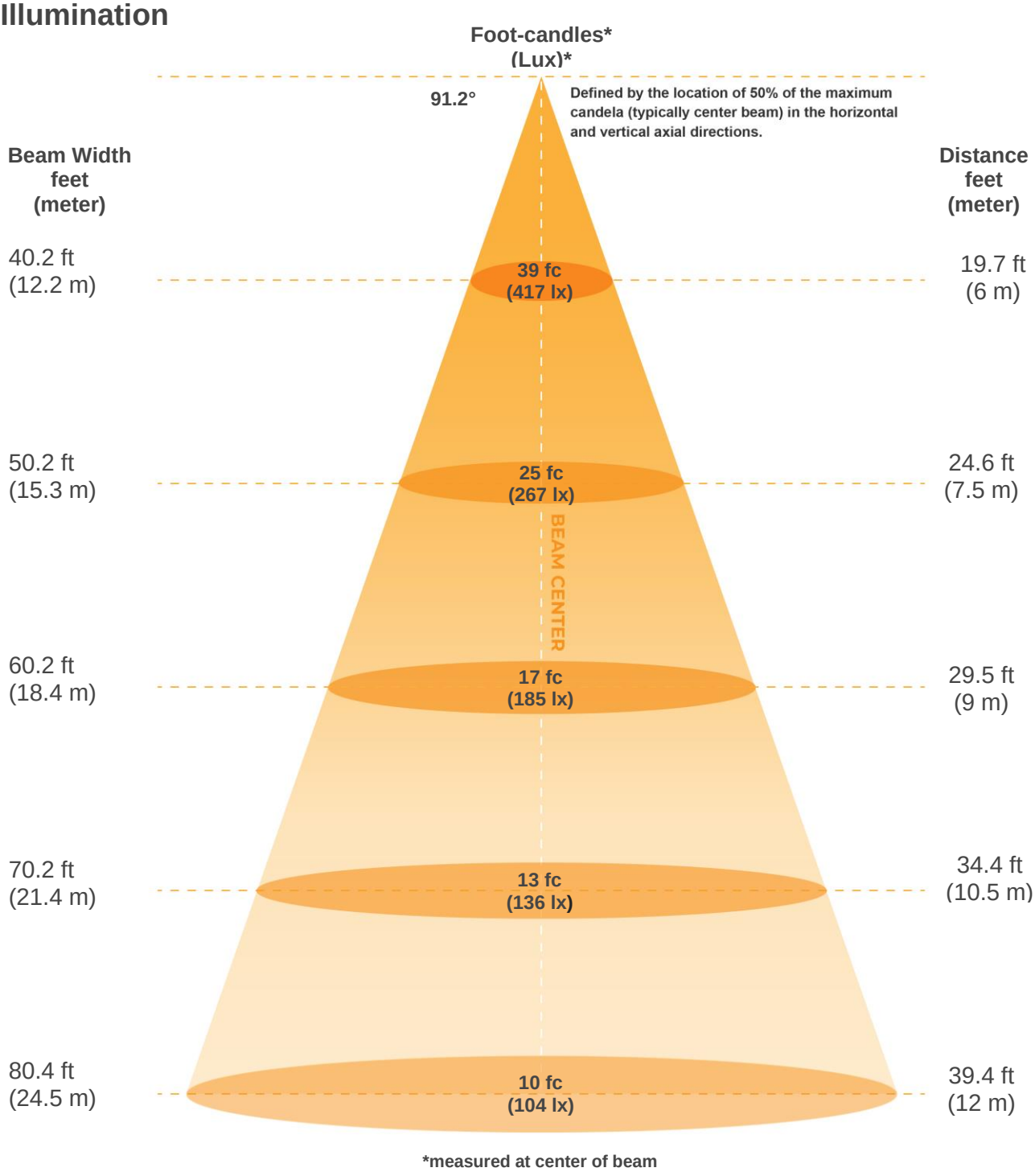






T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

Illumination



Beam intensities from 1-20m

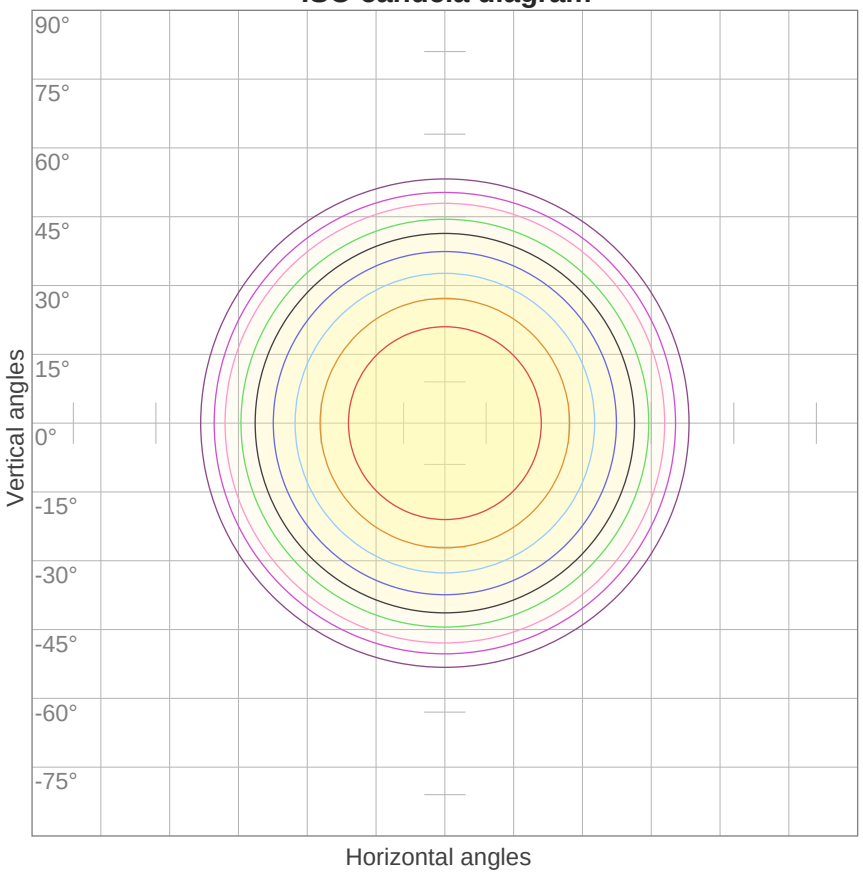
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
15017lx	3754lx	1669lx	939lx	601lx	417lx	306lx	235lx	185lx	150lx	124lx	104lx	89lx	77lx	67lx	59lx	52lx	46lx	42lx	38lx
1395.1f	348.8fc	155fcd	87.2fcd	55.8fcd	38.8fcd	28.5fcd	21.8fcd	17.2fcd	14fcd	11.5fcd	9.7fcd	8.3fcd	7.1fcd	6.2fcd	5.4fcd	4.8fcd	4.3fcd	3.9fcd	3.5fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
91.2°	**119.1°**	**129.5°**	**97.9%**	**77.2%**

T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

ISO Diagrams

ISO candela diagram



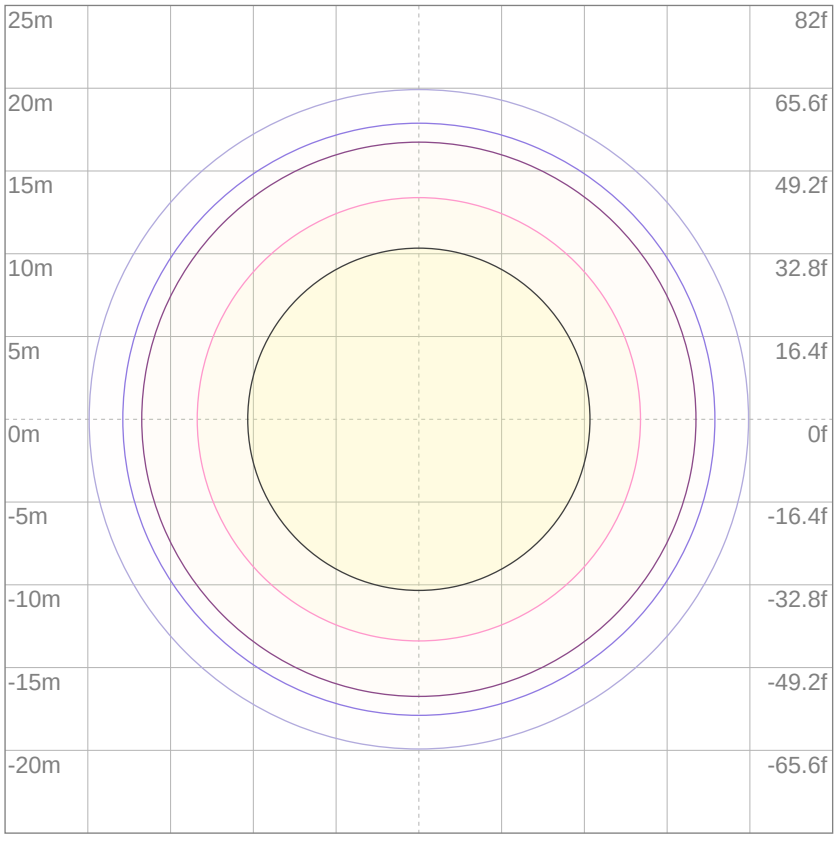
10%	1502 cd
20%	3003 cd
30%	4505 cd
40%	6007 cd
50%	7508 cd
60%	9010 cd
70%	10512 cd
80%	12013 cd
90%	13515 cd

Conditions:

Number of c-planes: 16

Candela at center: 15017 cd

ISO lux diagram



3%	4.50 lx
5%	7.51 lx
10%	15.0 lx
30%	45.0 lx
50%	75.1 lx

Conditions:

Number of c-planes: 16

Lux at center: 150 lx

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

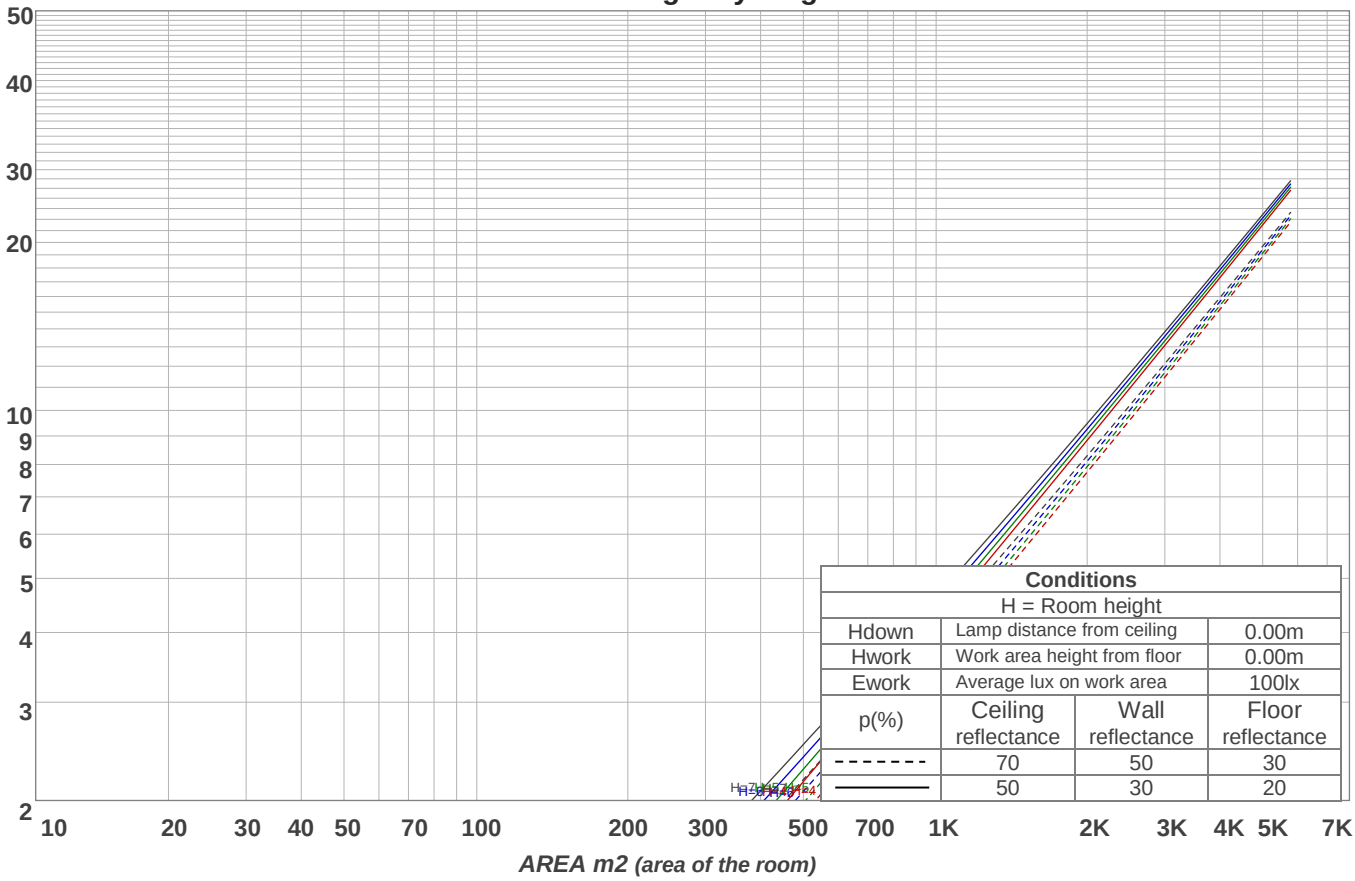
T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

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	100
1	112	109	105	103	109	106	104	101	102	100	98	98	97	95	95	93	92	90
2	104	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	74	80	76	73	71
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64
5	84	74	66	61	82	73	66	60	71	64	60	69	63	59	67	62	59	57
6	78	67	60	54	77	66	59	54	65	58	54	63	57	53	62	57	53	51
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46
8	69	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38
10	60	49	42	37	59	48	41	37	47	41	37	46	41	36	45	40	36	35

Luminaire budgetary diagram



Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
1425 lm	4071 lm	6010 lm	6746 lm	5934 lm	3002 lm	400 lm	94.1 lm	27.7 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
3.21 lm	3.88 lm	5.42 lm	8.05 lm	9.53 lm	9.53 lm	8.81 lm	6.04 lm	2.14 lm

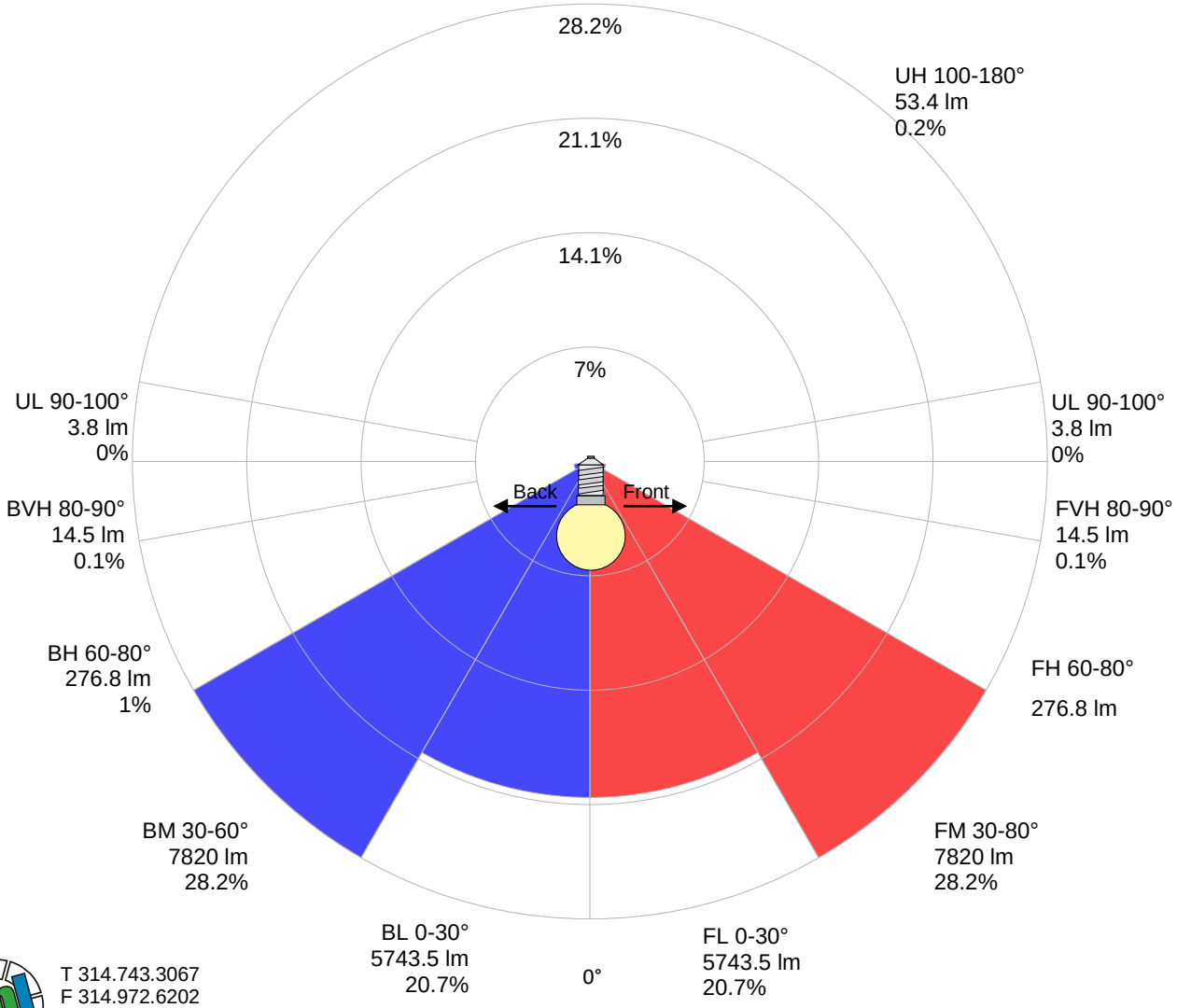
T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

Road Report

LCS table

BUG rating:	B5 U3 G1	
Forward light	Lumens	Lumens %
Low(0-30):	5743.5	20.7%
Medium(30-60):	7820	28.2%
High(60-80):	276.8	1%
Very high(80-90):	14.5	0.1%
Back light		
Low(0-30):	5743.5	20.7%
Medium(30-60):	7820	28.2%
High(60-80):	276.8	1%
Very high(80-90):	14.5	0.1%
Uplight		
Low(90-100):	3.8	0%
High(100-180):	53.4	0.2%

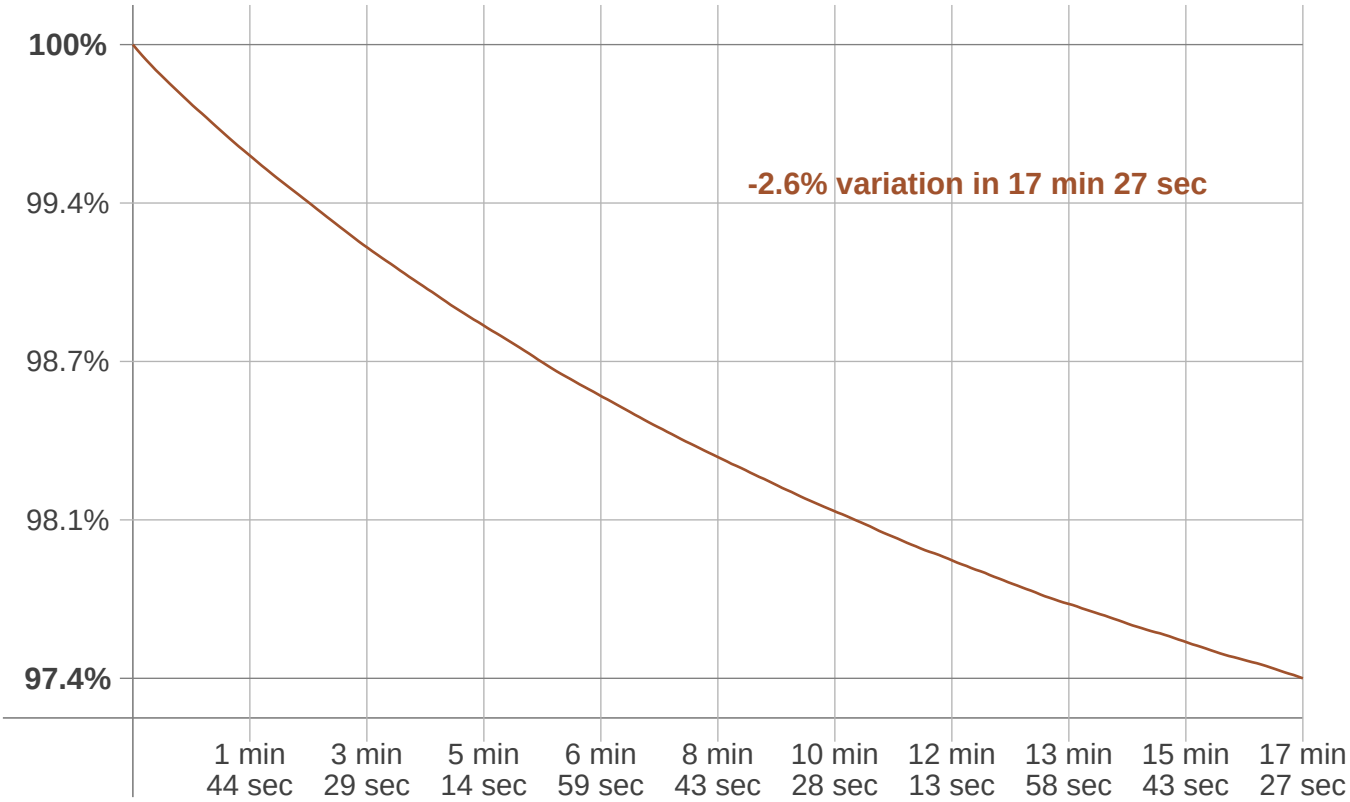
LCS graph



T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

Stabilization

Warmup curve



Warmup result

Warmup time:	**17 min 27 sec**
Warmup variation	**-2.6%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
5004 K	+39 K	5043 K

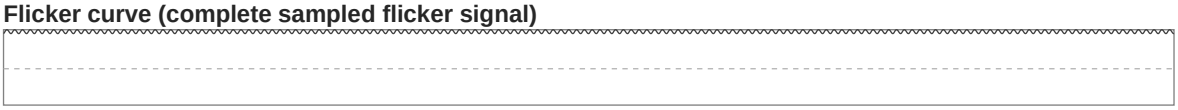
Output change

Output start	Output change	Output end
28485 lm	-718 lm	27767 lm

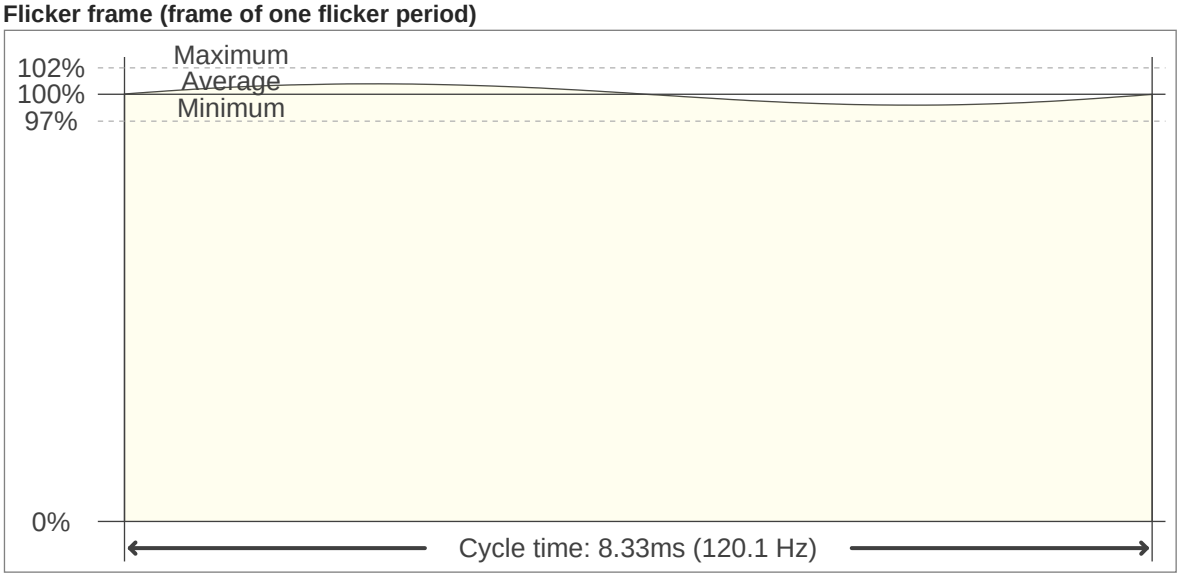
T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/

Flicker

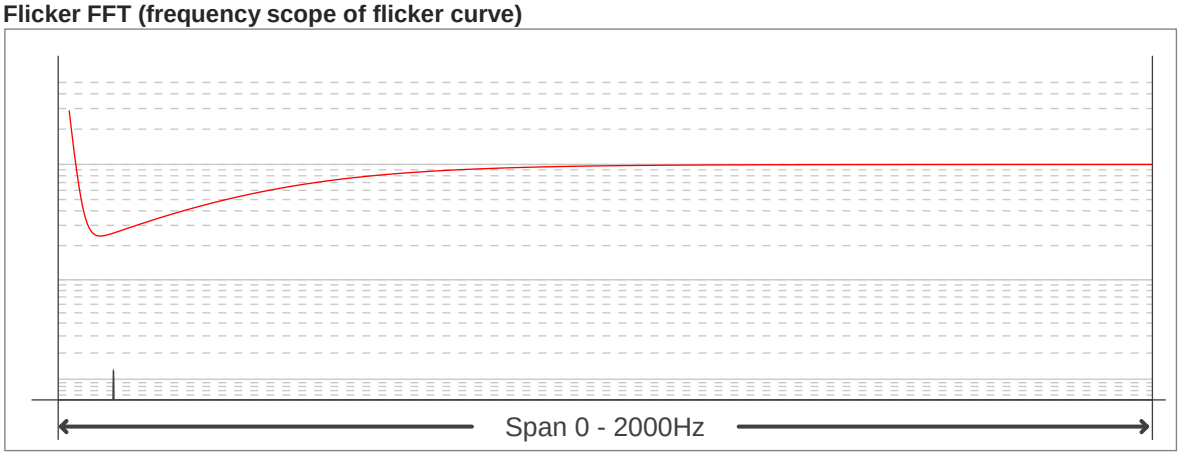
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	**120.12 Hz**
Flicker index:	**0.01**
Flicker percentage:	**2.54 %**
SVM: (Visual flicker)	**0.09**

Flicker conditions:

Sample rate:	**40000 samples/second**

T 314.743.3067
F 314.972.6202
email: commercial-sales@superbrightleds.com
www.superbrightleds.com/