

Light efficiency:

170 Lumen/Watt

Output: 24485 lm

Light quality:

CRI: 81.7

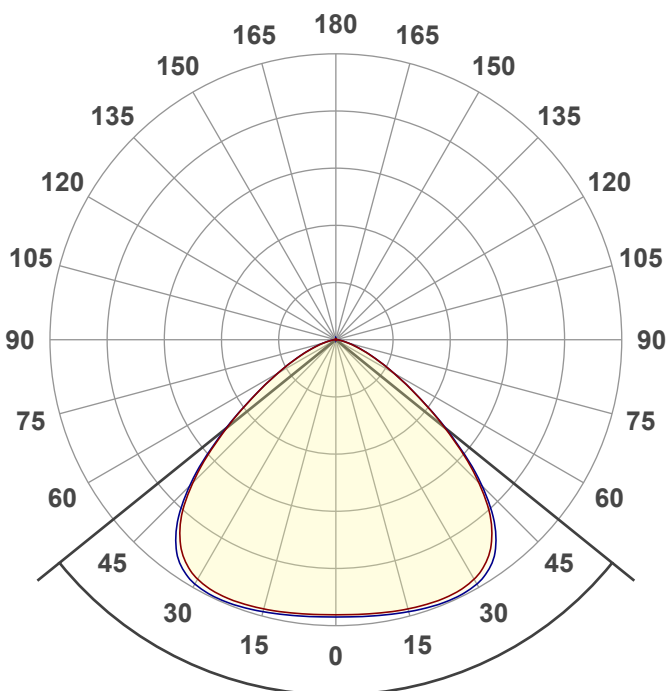
Peak: 9742 cd

Color temperature:

5033 K

Power: 143.8 W

PF: 1.0



Product name:

HBR4-50K140S-LEX39

Date and time:

7/12/2023 3:10:55 PM

Beam angle

102.2°

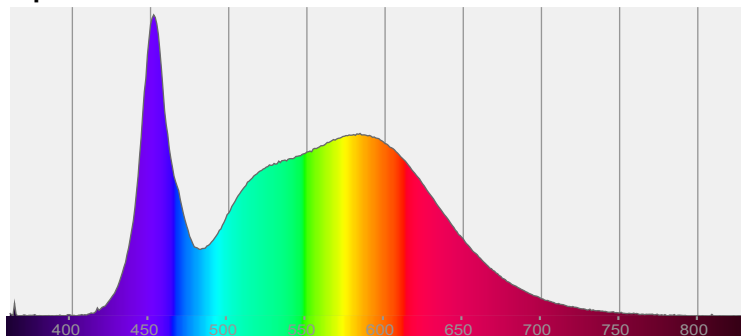


CIE 1931

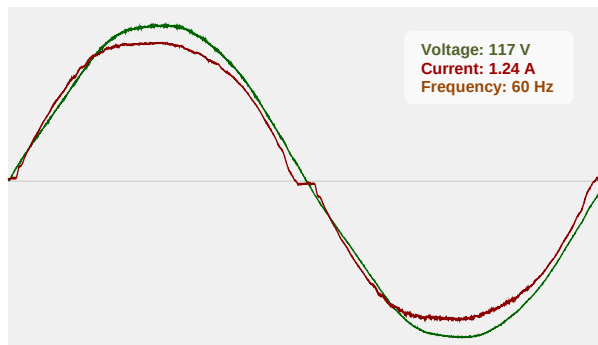
x: 0.345

y: 0.355

Spectra



Power



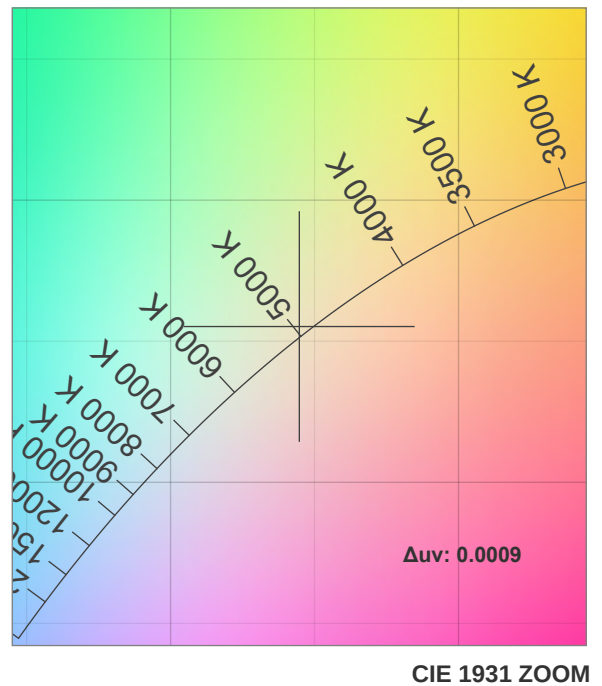
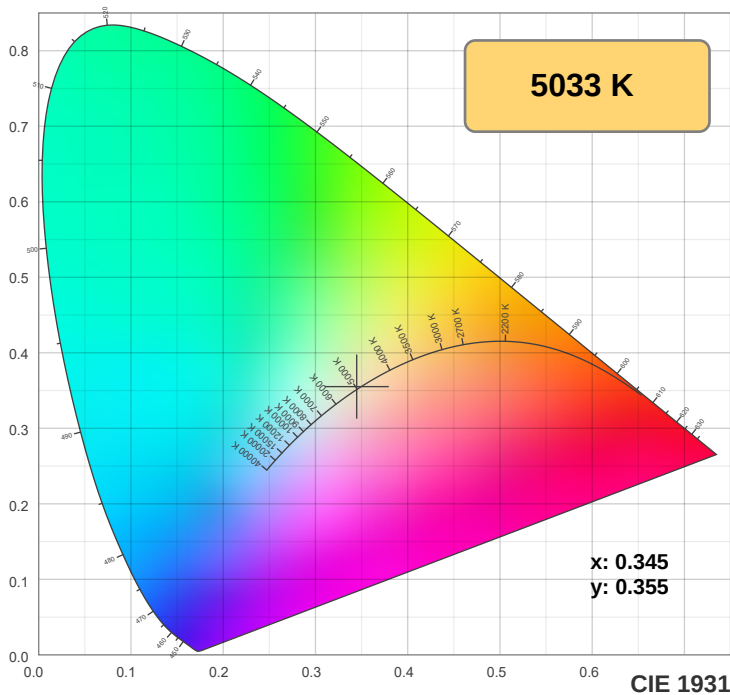
T 314.743.3067

F 314.972.6202

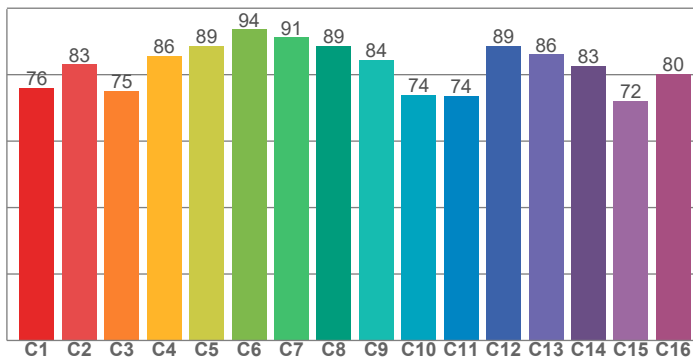
email: commercial-sales@superbrightleds.com

www.superbrightleds.com/

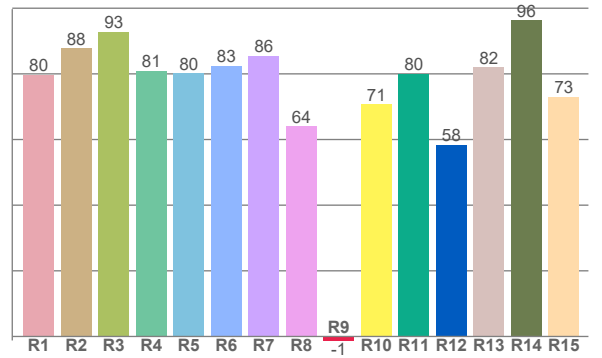
Color Specifications



TM30: 82.4



CRI: 81.7 (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
79.7	87.8	92.8	81.0	80.2	82.5	85.6	64.0	-1.2	70.7	80.0	58.4	82.0	96.4	73.1

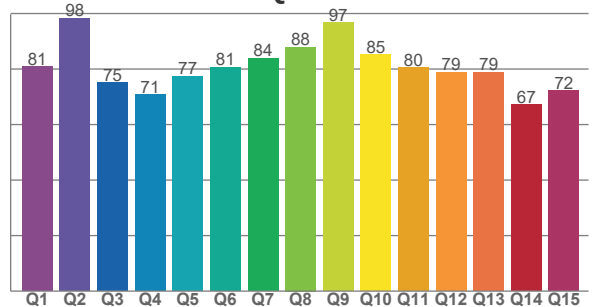
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
75.9	83.1	75.1	85.7	88.7	93.6	91.2	88.6	84.4	74.0	73.7	88.6	86.1	82.7	72.1	80.3

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.8	98.3	75.0	70.8	77.4	80.7	83.8	87.9	96.7	85.1	80.5	78.9	78.8	67.2	72.3

CQS: 79.2



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
5033 K	81.7	-1.2	82.4	95.1	79.2	0.345	0.355	0.210	0.324	0.0009



TM30 Report

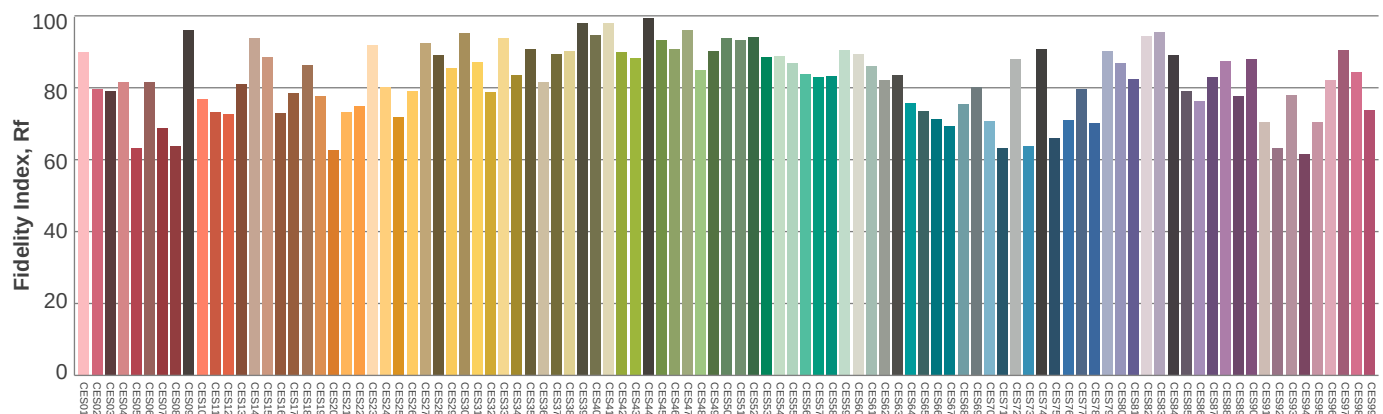
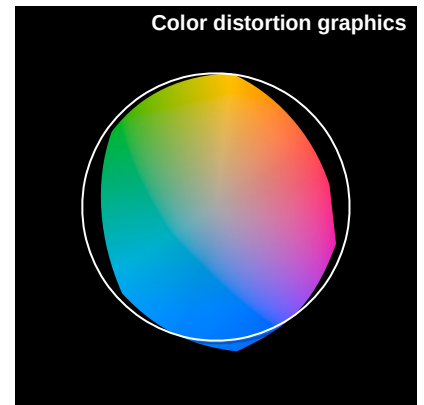
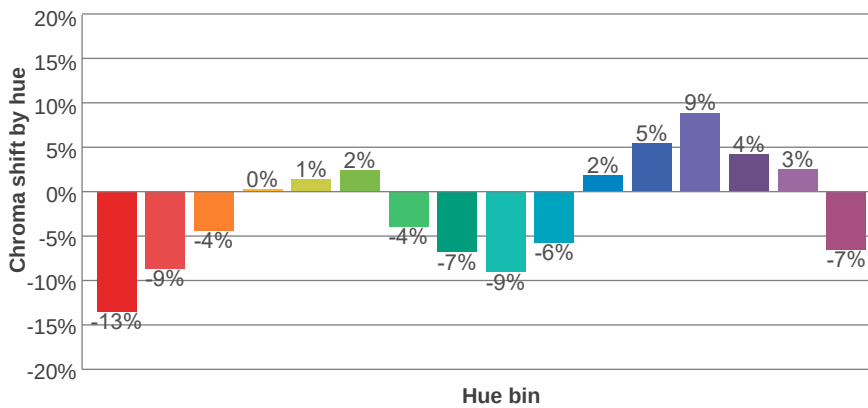
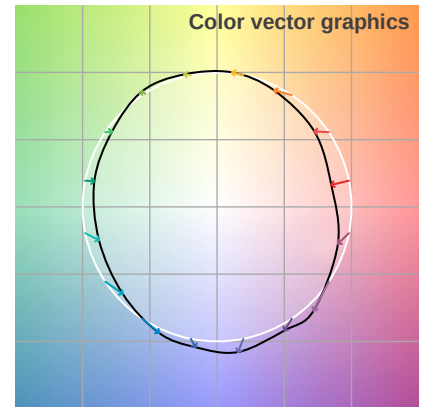
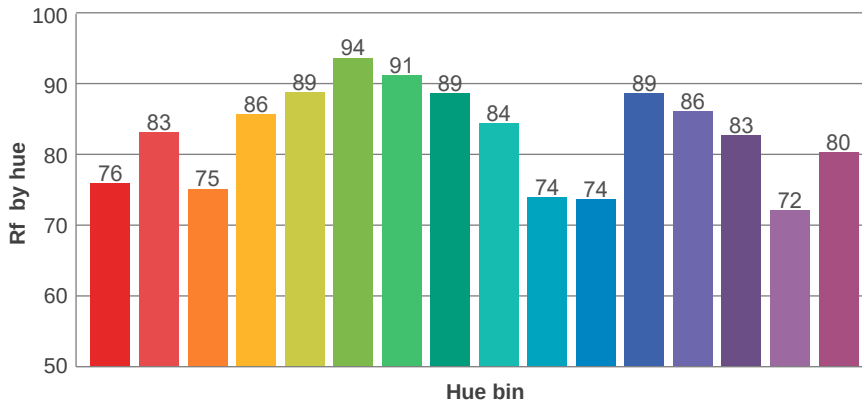
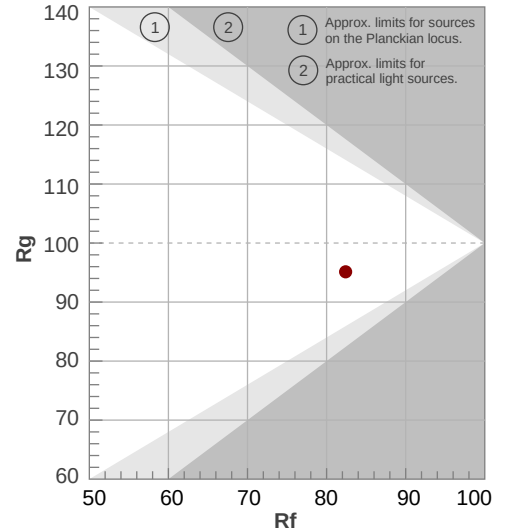
Rf 82.4

Fidelity index Rf

Rg 95.1

Gammut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	76	-13%	-1%
2	83	-9%	6%
3	75	-4%	13%
4	86	0%	9%
5	89	1%	5%
6	94	2%	-2%
7	91	-4%	-3%
8	89	-7%	-1%
9	84	-9%	7%
10	74	-6%	15%
11	74	2%	16%
12	89	5%	5%
13	86	9%	-6%
14	83	4%	-9%
15	72	3%	-24%
16	80	-7%	-9%



Color Evaluation Sample



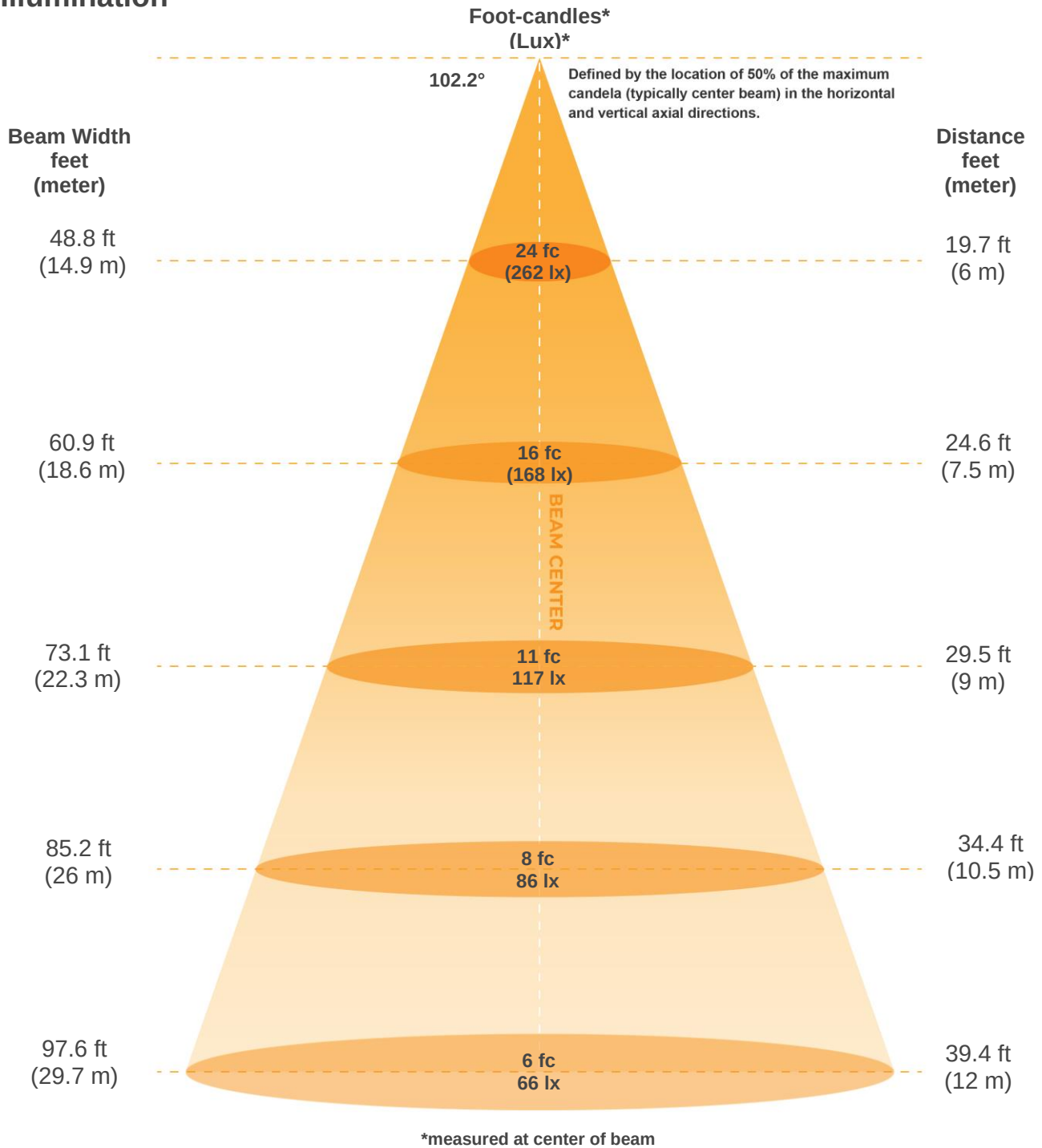
T 314.743.3067

F 314.972.6202

email: commercial-sales@superbrightleds.com

www.superbrightleds.com/

Illumination



Beam intensities from 1-20m

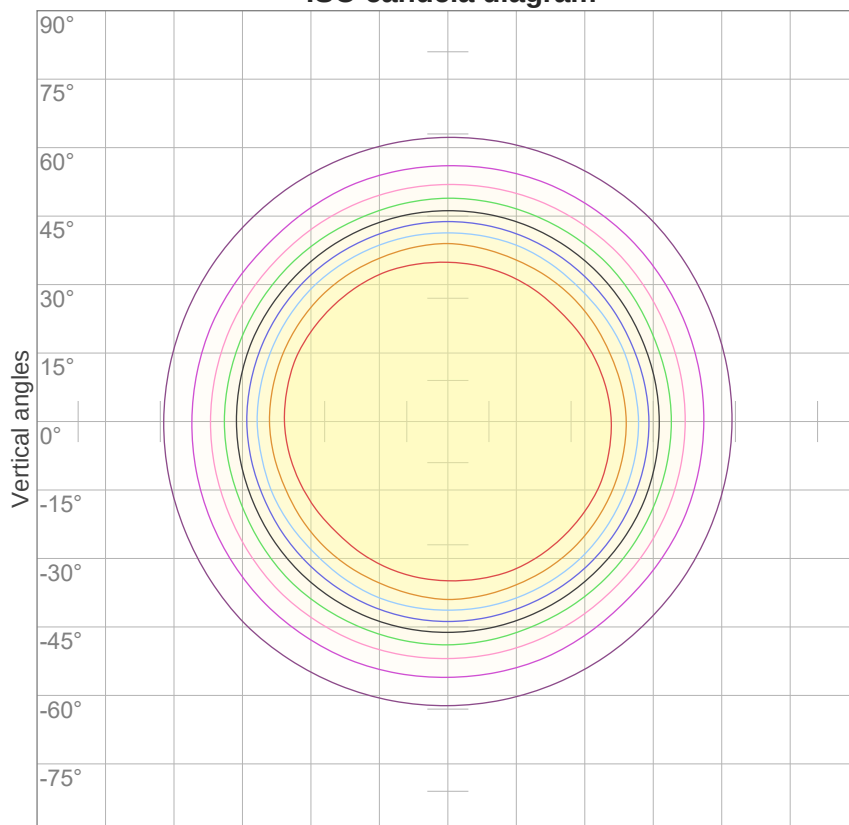
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
9443lx	2361lx	1049lx	590lx	378lx	262lx	193lx	148lx	117lx	94lx	78lx	66lx	56lx	48lx	42lx	37lx	33lx	29lx	26lx	24lx
877.2fcd	219.3fcd	97.5fcd	54.8fcd	35.1fcd	24.4fcd	17.9fcd	13.7fcd	10.8fcd	8.8fcd	7.2fcd	6.1fcd	5.2fcd	4.5fcd	3.9fcd	3.4fcd	3fcd	2.7fcd	2.4fcd	2.2fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
102.2°	138°	158.7°	91.1%	67.9%



ISO Diagrams

ISO candela diagram



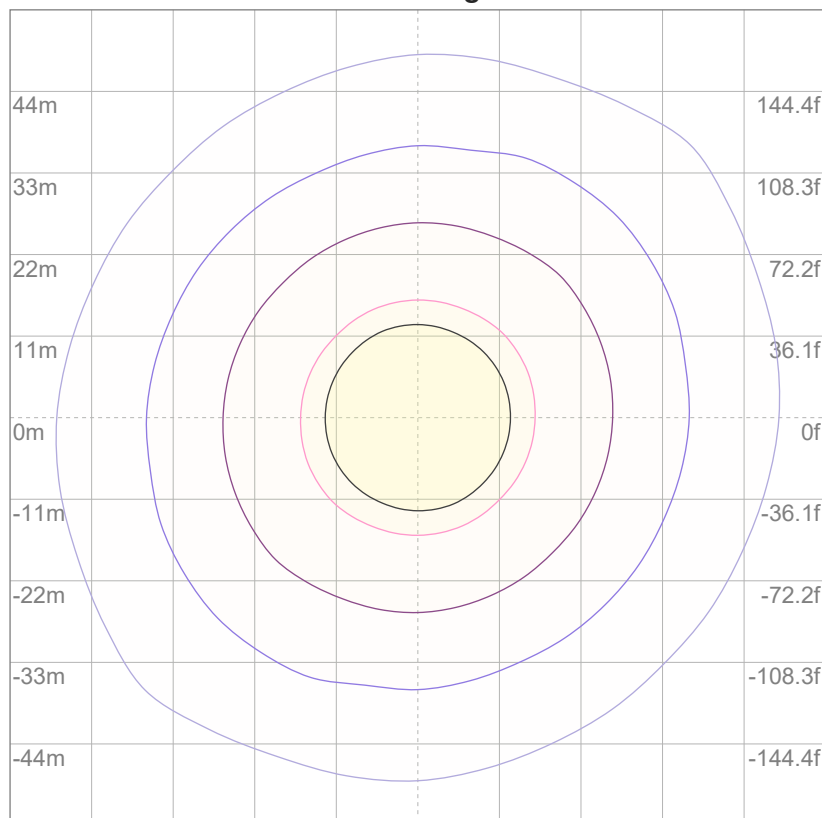
10%	944 cd
20%	1889 cd
30%	2833 cd
40%	3777 cd
50%	4721 cd
60%	5666 cd
70%	6610 cd
80%	7554 cd
90%	8498 cd

Conditions:

Number of c-planes: 16

Candela at center: 9443 cd

ISO lux diagram



3%	2.83 lx
5%	4.72 lx
10%	9.44 lx
30%	28.3 lx
50%	47.2 lx

Conditions:

Number of c-planes: 16

Lux at center: 94.4 lx

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



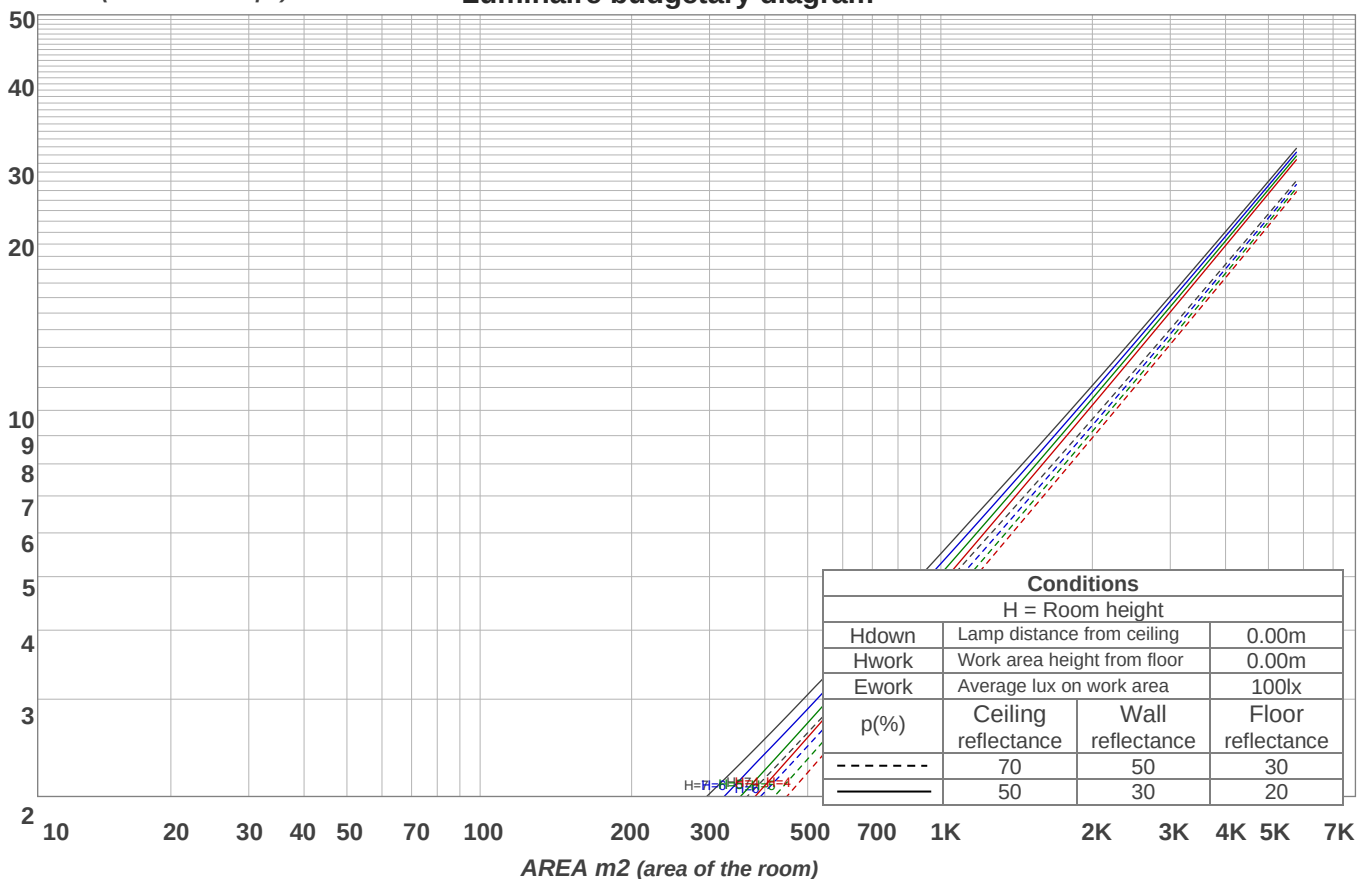
Light Planning

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	111	107	103	100	108	105	101	99	100	98	95	96	94	92	93	91	90	88
2	102	95	90	85	100	93	88	84	90	86	82	87	83	80	84	81	78	76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	75	71	68	66
4	87	76	69	63	85	75	68	62	73	66	61	70	65	60	68	64	60	58
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	56	51	47	45
7	69	57	49	43	68	56	48	43	54	47	42	53	47	42	52	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	47	42	38	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

LAMPS (number of lamps)

Luminaire budgetary diagram



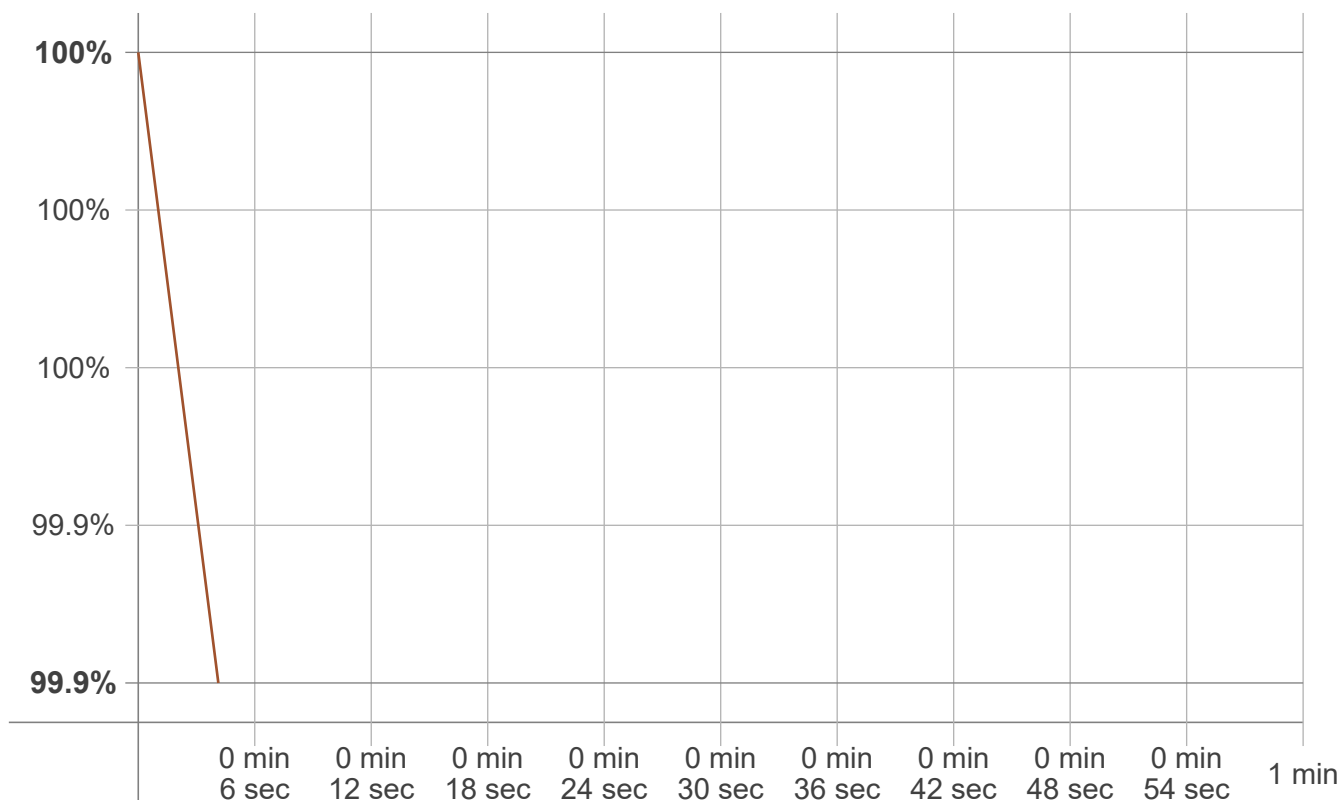
Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
905 lm	2716 lm	4452 lm	5694 lm	5306 lm	3221 lm	1480 lm	514 lm	106 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
9.91 lm	8.05 lm	10.8 lm	13.2 lm	14.4 lm	13.6 lm	11.2 lm	7.50 lm	2.65 lm



Stabilization

Warmup curve



Warmup result

Warmup time:	Not completed
Warmup variation	-0.1%

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
5032 K	+1 K	5033 K

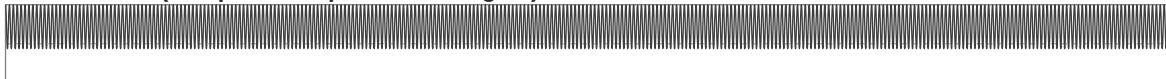
Output change

Output start	Output change	Output end
24504 lm	-19 lm	24485 lm

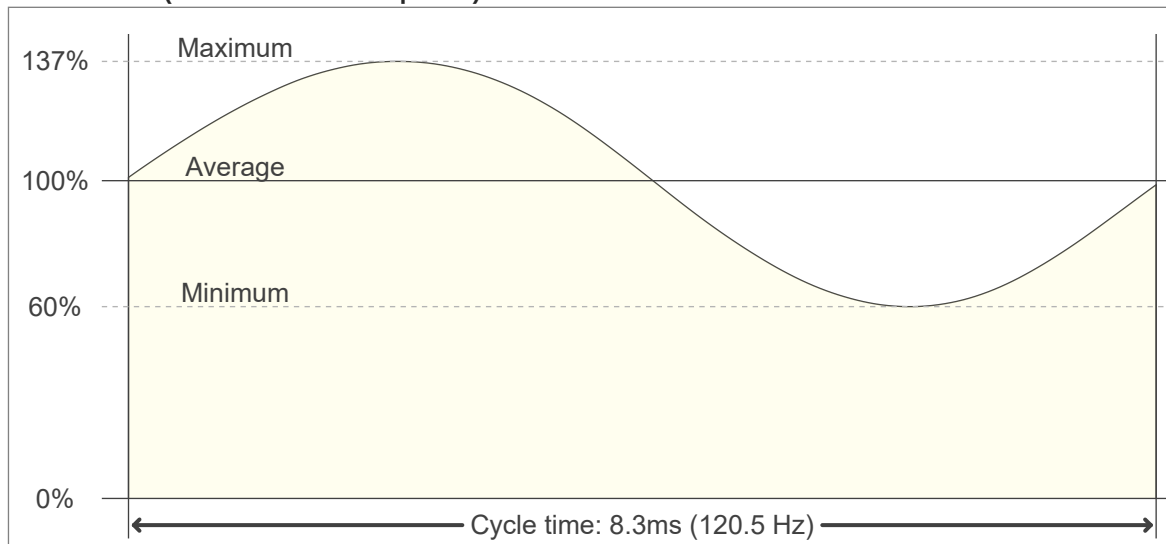


Flicker Specifications

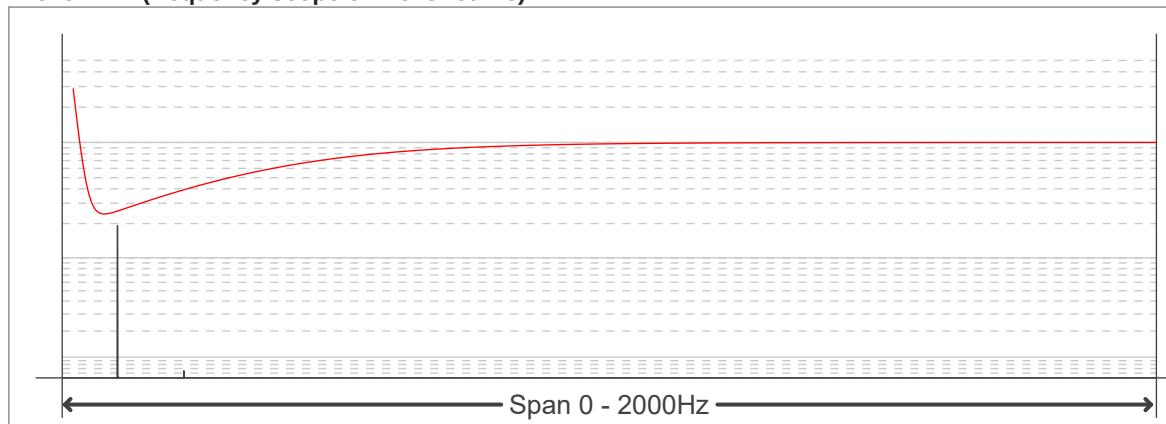
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



Flicker results:

Flicker frequency:	120.48 Hz
Flicker index:	0.12
Flicker percentage:	39.2 %
SVM: (Visual flicker)	1.4

Flicker conditions:

Sample rate:	20000 samples/second
--------------	----------------------

