LED UFO High Bay

HBUD-50K400W-90-PR

Light efficiency:

126 Lumen/Watt

Light quality:

CRI: 83.6

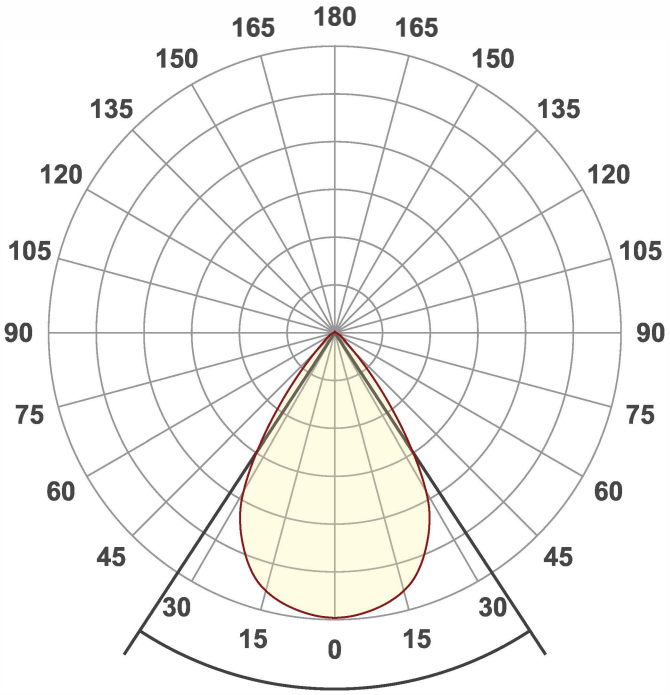
Color temperature:

4995 K

Output: 50834 lm

Peak: 44493 cd

Power: 403 W



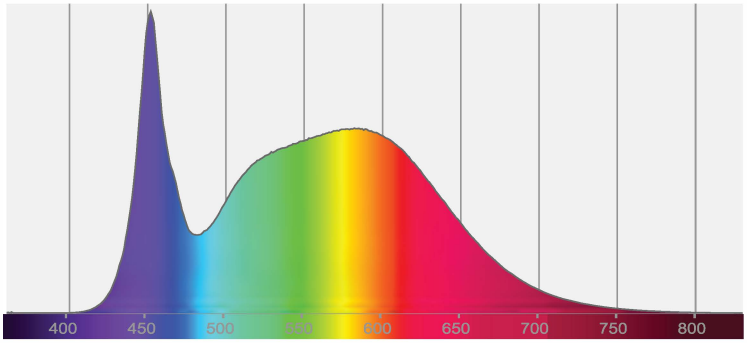
Beam angle **66.6°**

Product name:
HBUD-50K400W-90-PR

Date and time:
3/6/2019 2:01:59 PM

CIE 1931
x: 0.346
y: 0.358

Spectra



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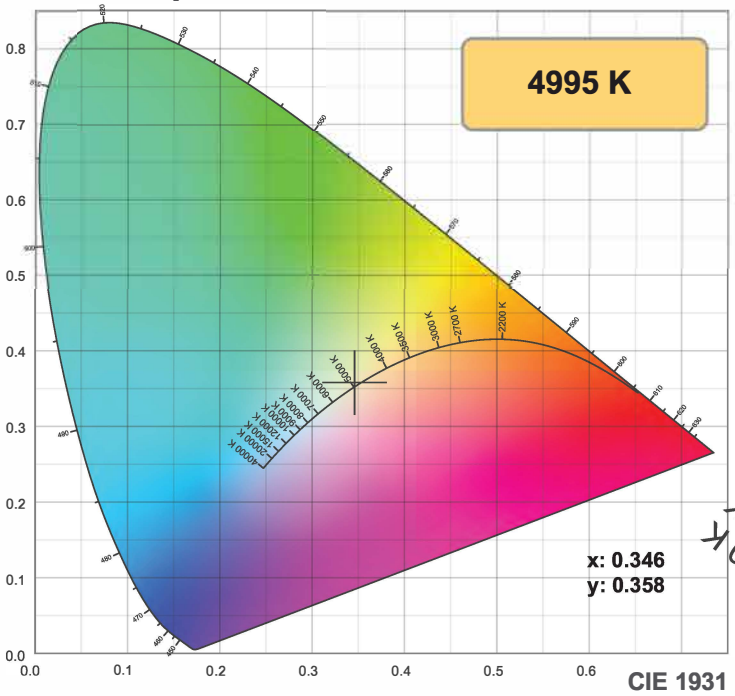
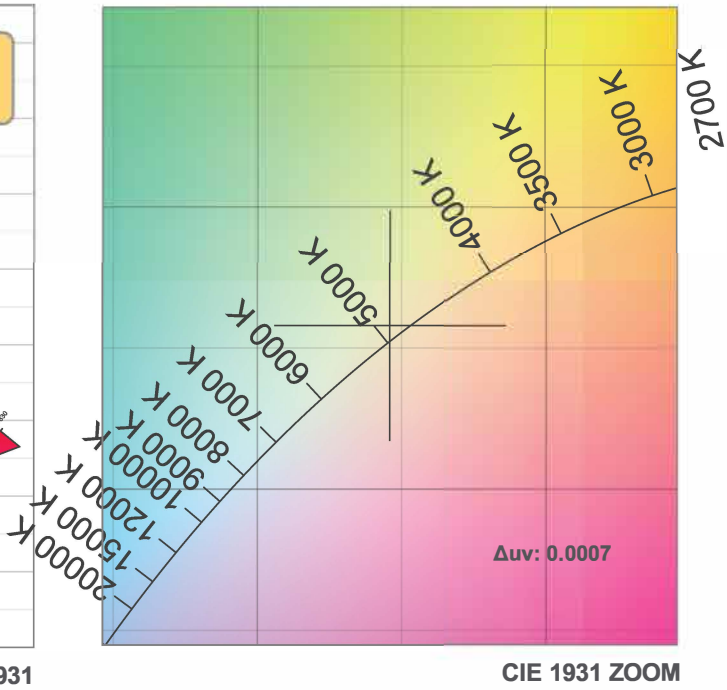
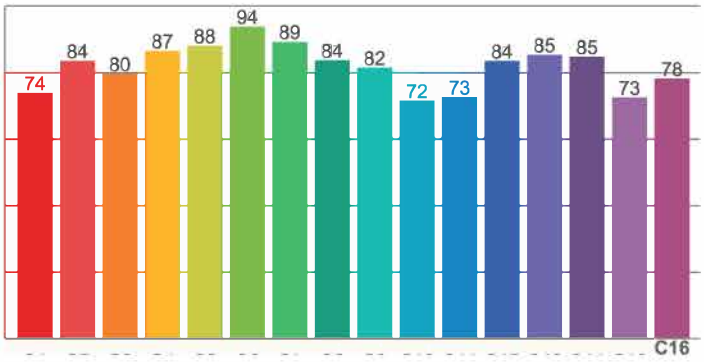
Color Specifications

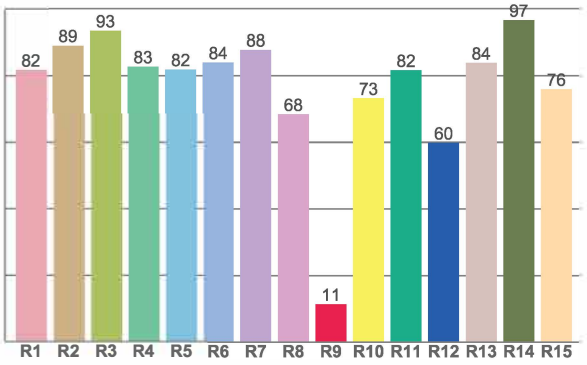




TM30: 81.9



CRI: 83.6 (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
81.8	89.0	93.4	82.7	81.9	83.9	87.7	68.4	11.4	73.2	81.6	59.8	83.8	96.6	75.9

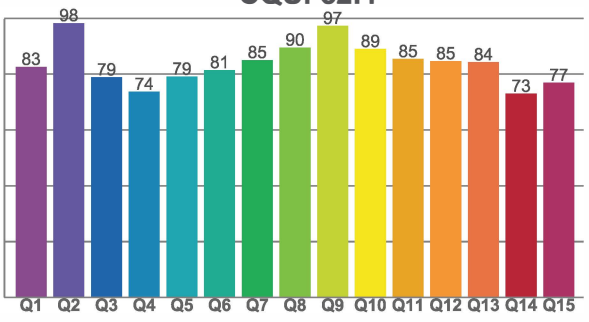
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
74.0	83.6	79.7	86.5	88.1	93.8	89.3	83.8	81.5	71.6	72.7	83.5	85.4	84.8	72.5	78.2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
82.6	98.3	78.8	73.7	79.1	81.4	85.0	89.5	97.3	89.0	85.4	84.7	84.3	73.0	76.9

CQS: 82.4



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
4995 K	83.6	11.4	81.9	94.1	82.4	0.346	0.358	0.210	0.325	0.0007

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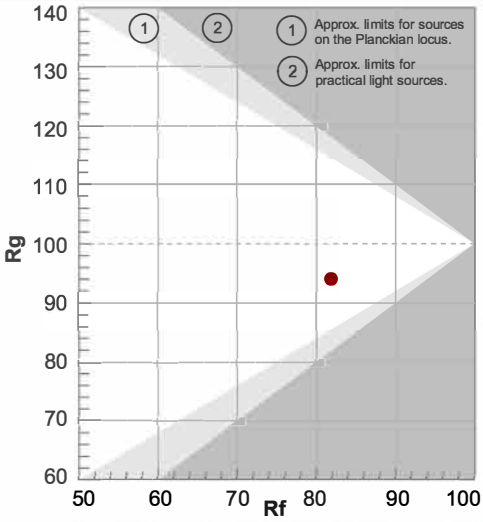
TM30 Report

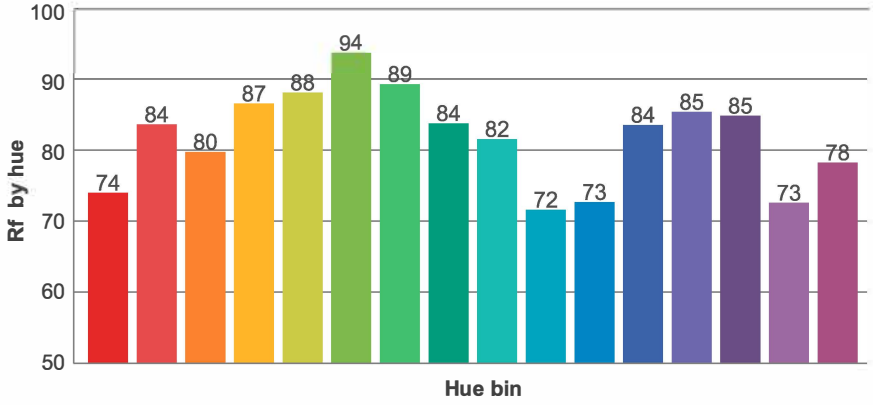
Rf 81.9

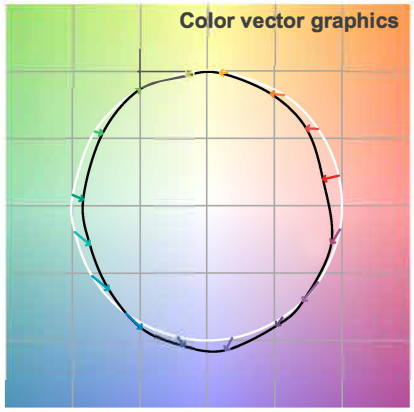
Rg 94.1

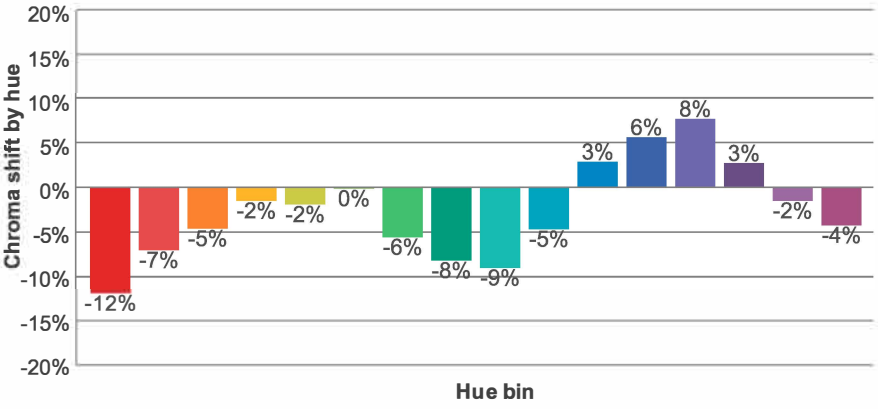
Gammut index Rg

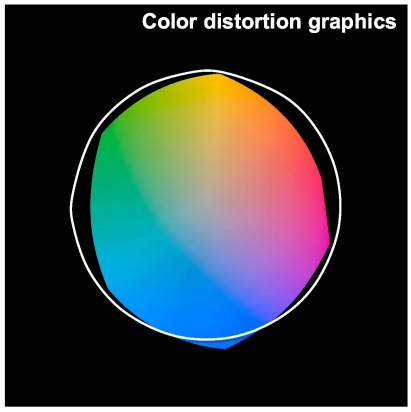
Hue Bin	R_f	Graphic shifts (%) Chroma	Hue
1	74	-12%	0%
2	84	-7%	5%
3	80	-5%	9%
4	87	-2%	5%
5	88	-2%	3%
6	94	0%	-1%
7	89	-6%	-2%
8	84	-8%	2%
9	82	-9%	11%
10	72	-5%	15%
11	73	3%	16%
12	84	6%	6%
13	85	8%	-6%
14	85	3%	-7%
15	73	-2%	-18%
16	78	-4%	-11%

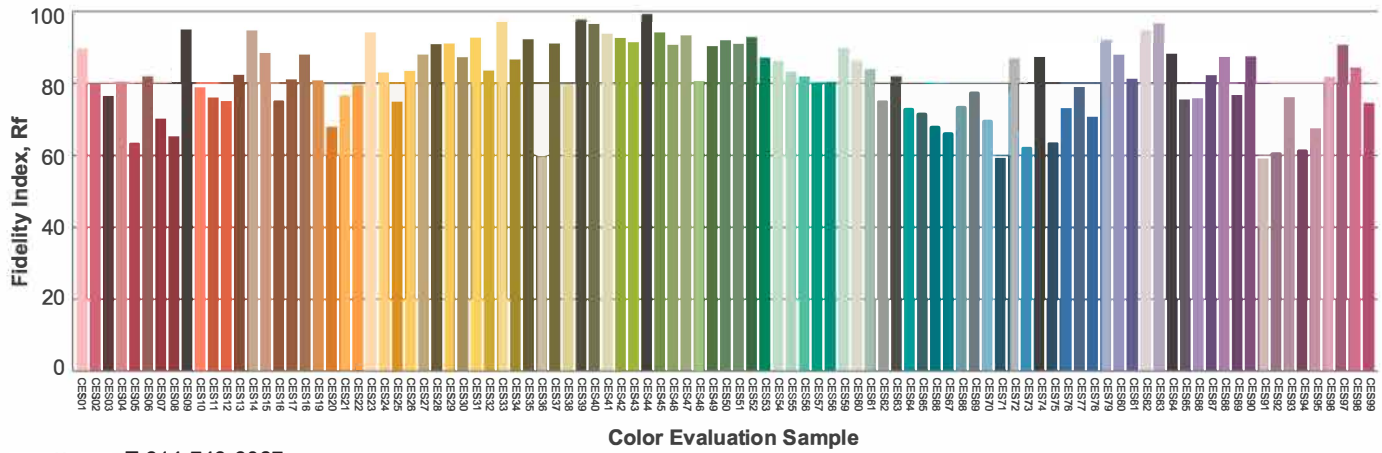












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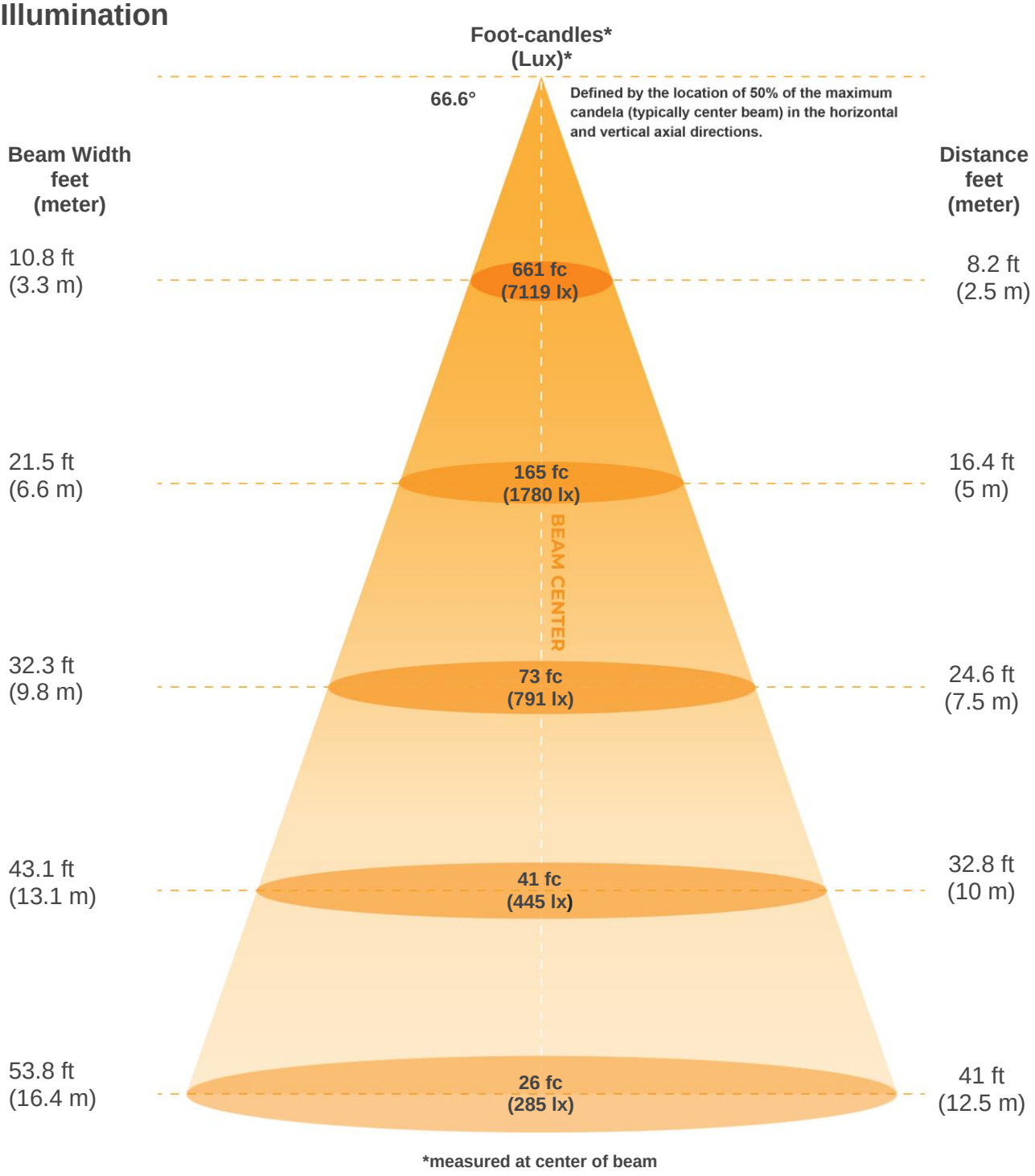
Illumination



*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
44493lx	11123lx	4944lx	2781lx	1780lx	1236lx	908lx	695lx	549lx	445lx	368lx	309lx	263lx	227lx	198lx	174lx	154lx	137lx	123lx	111lx
4133.6fcd	1033.4fcd	459.3fcd	258.3fcd	165.3fcd	114.8fcd	84.4fcd	64.6fcd	51fcd	41.3fcd	34.2fcd	28.7fcd	24.5fcd	21.1fcd	18.4fcd	16.1fcd	14.3fcd	12.8fcd	11.5fcd	10.3fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
66.6°	90.6°	120.4°	95.5%	90.3%

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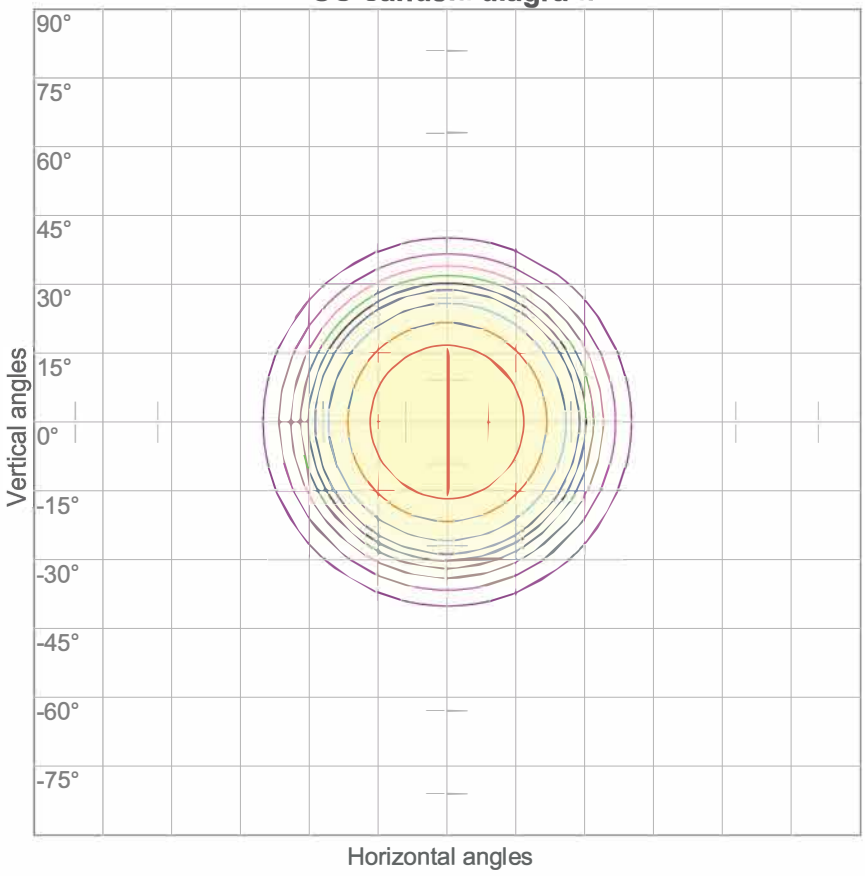
ISO Diagrams

ISO candela diagram



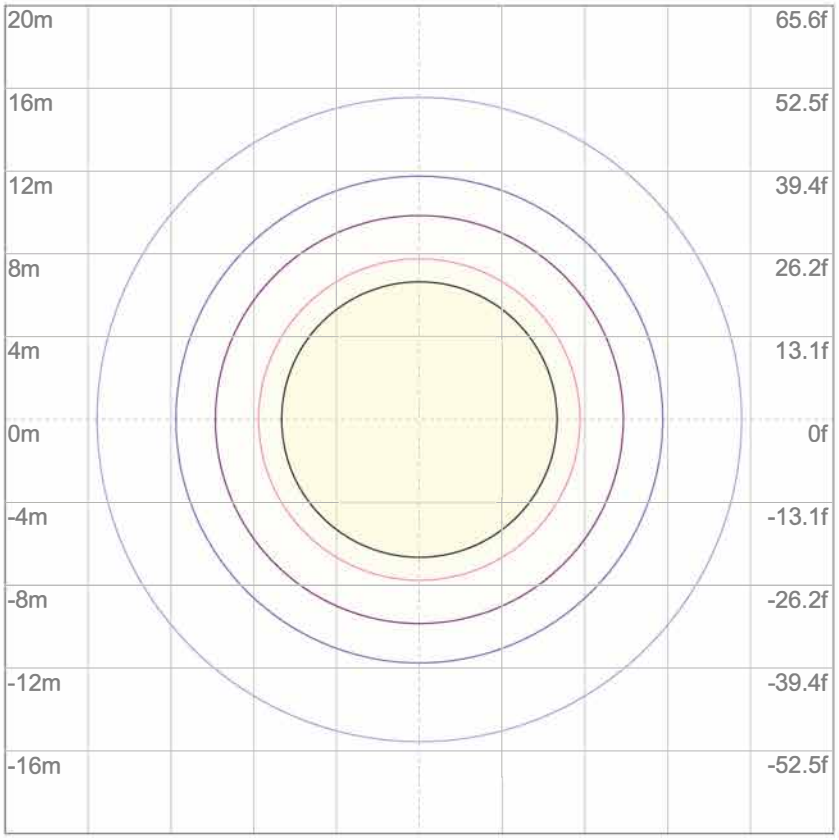
10%	4449 cd
20%	8899 cd
30%	13348 cd
40%	17797 cd
50%	22247 cd
60%	26696 cd
70%	31145 cd
80%	35595 cd
90%	40044 cd

Conditions:

Number of c-planes: 16

Candela at center: 44493 cd

ISO lux diagram



3%	13.3 lx
5%	22.2 lx
10%	44.5 lx
30%	133 lx
50%	222 lx

Conditions:

Number of c-planes: 16

Lux at center: 445 lx

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

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UGR

Glare Evaluation According to UGR

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				
2H	2H	33.0	33.8	33.3	34.0	34.2	33.0	33.8	33.3	34.0	34.2
	3H	33.1	33.8	33.4	34.1	34.3	33.1	33.8	33.4	34.1	34.3
	4H	33.1	33.8	33.5	34.1	34.4	33.1	33.8	33.5	34.1	34.4
	6H	33.2	33.8	33.6	34.1	34.4	33.2	33.8	33.6	34.1	34.4
	8H	33.2	33.8	33.6	34.1	34.5	33.2	33.8	33.6	34.1	34.5
	12H	33.3	33.9	33.7	34.2	34.5	33.3	33.9	33.7	34.2	34.5
4H	2H	32.9	33.6	33.3	33.9	34.2	32.9	33.6	33.3	33.9	34.2
	3H	33.1	33.6	33.5	34.0	34.3	33.1	33.6	33.5	34.0	34.3
	4H	33.2	33.7	33.6	34.1	34.4	33.2	33.7	33.6	34.1	34.4
	6H	33.4	33.8	33.8	34.2	34.6	33.4	33.8	33.8	34.2	34.6
	8H	33.5	33.8	33.9	34.2	34.7	33.5	33.8	33.9	34.2	34.7
	12H	33.6	33.9	34.0	34.3	34.8	33.6	33.9	34.0	34.3	34.8
8H	4H	33.2	33.6	33.7	34.0	34.4	33.2	33.6	33.7	34.0	34.4
	6H	33.4	33.7	33.9	34.2	34.6	33.4	33.7	33.9	34.2	34.6
	8H	33.6	33.8	34.1	34.3	34.8	33.6	33.8	34.1	34.3	34.8
	12H	33.8	34.0	34.3	34.5	35.0	33.8	34.0	34.3	34.5	35.0
12H	4H	33.2	33.5	33.7	33.9	34.4	33.2	33.5	33.7	33.9	34.4
	6H	33.4	33.7	33.9	34.2	34.7	33.4	33.7	33.9	34.2	34.7
	8H	33.6	33.8	34.1	34.3	34.8	33.6	33.8	34.1	34.3	34.8

Variation of the observer position for the luminaire distance S		
S = 1.0H	+3.0 / -2.6	+3.0 / -2.6
S = 1.5H	+5.3 / -3.1	+5.3 / -3.1
S = 2.0H	+7.2 / -3.7	+7.2 / -3.7
Standard table	BK02	BK02
Correction summand	15.8	15.8

Corrected glare indices referring to 50834 lm total luminous flux

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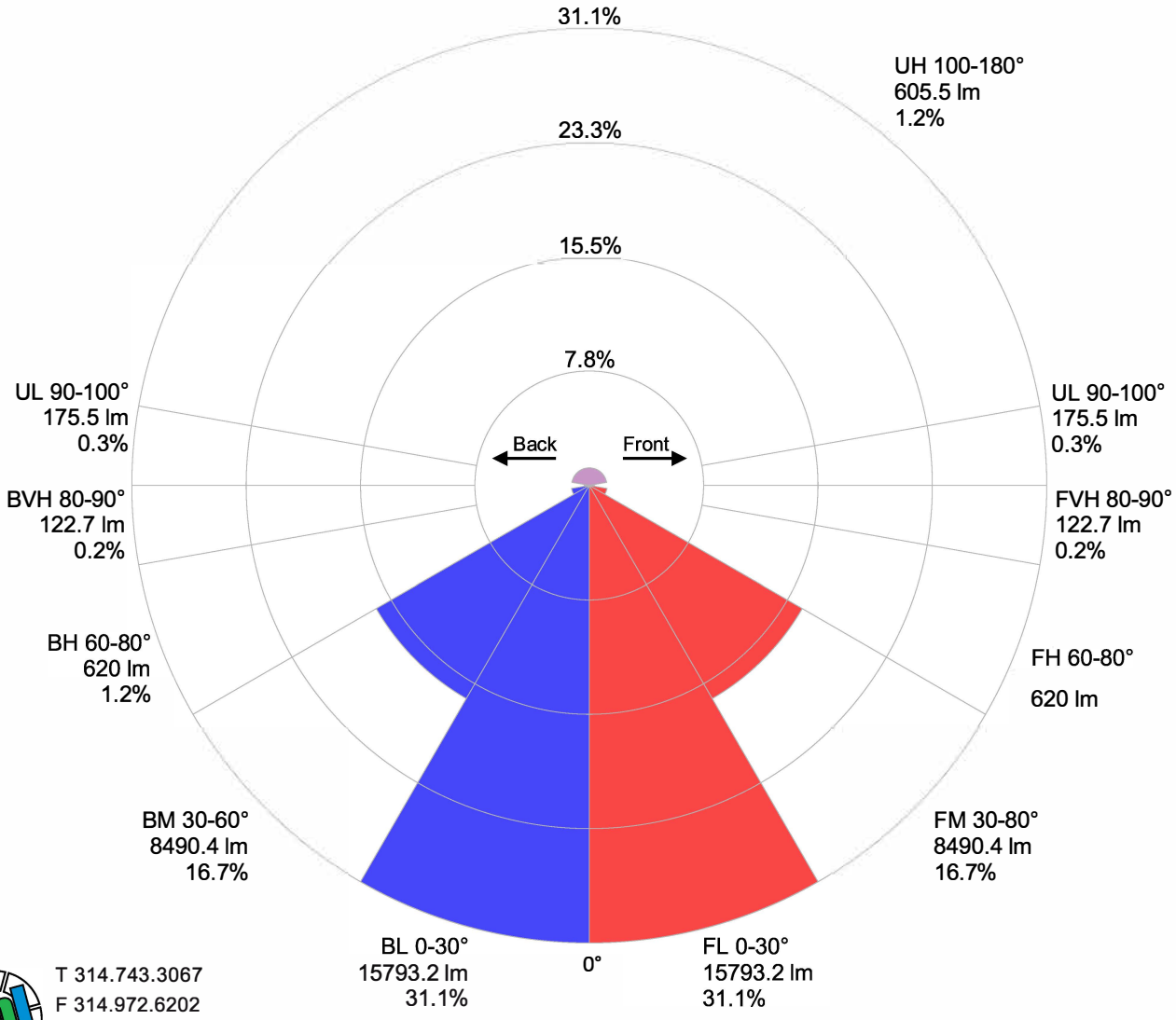
Road Report

LCS table

BUG rating:	B5 U4 G2	
Forward light	Lumens	Lumens %
Low(0-30):	15793.2	31.1%
Medium(30-60):	8490.4	16.7%
High(60-80):	620	1.2%
Very high(80-90):	122.7	0.2%
Back light		
Low(0-30):	15793.2	31.1%
Medium(30-60):	8490.4	16.7%
High(60-80):	620	1.2%
Very high(80-90):	122.7	0.2%
Uplight		
Low(90-100):	175.5	0.3%
High(100-180):	605.5	1.2%

LCS graph



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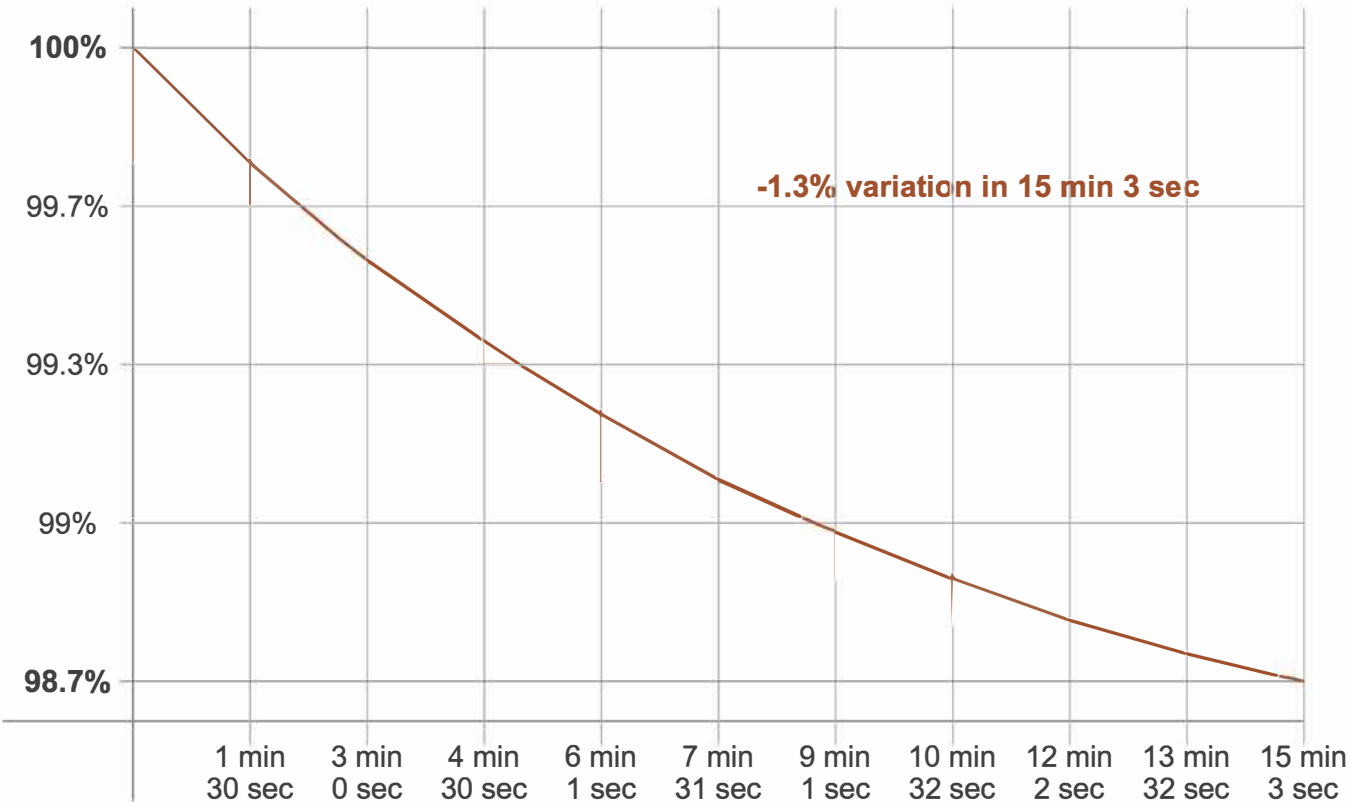
Stabilization

Warmup curve



Warmup result

Warmup time:	**15 min 3 sec**
Warmup variation	**-1.3%**

Warmup conditions

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

Color temperature change

CCT start	CCT change	CCT end
4963 K	+32 K	4995 K

Output change

Output start	Output change	Output end
51507 lm	-673 lm	50834 lm

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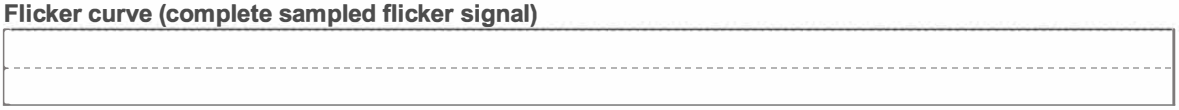
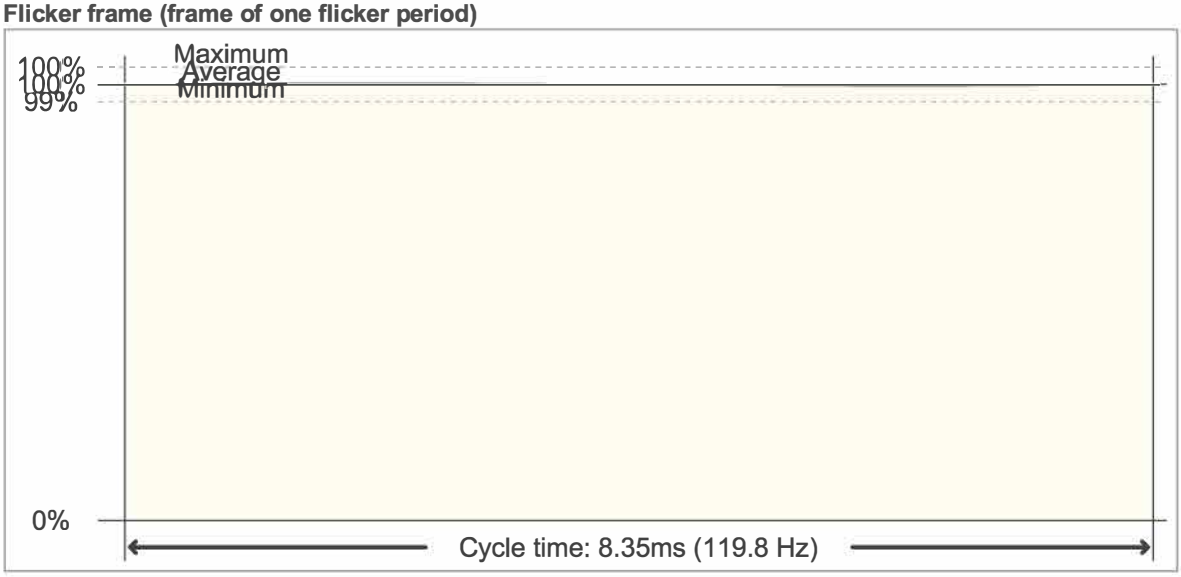
Flicker Specifications

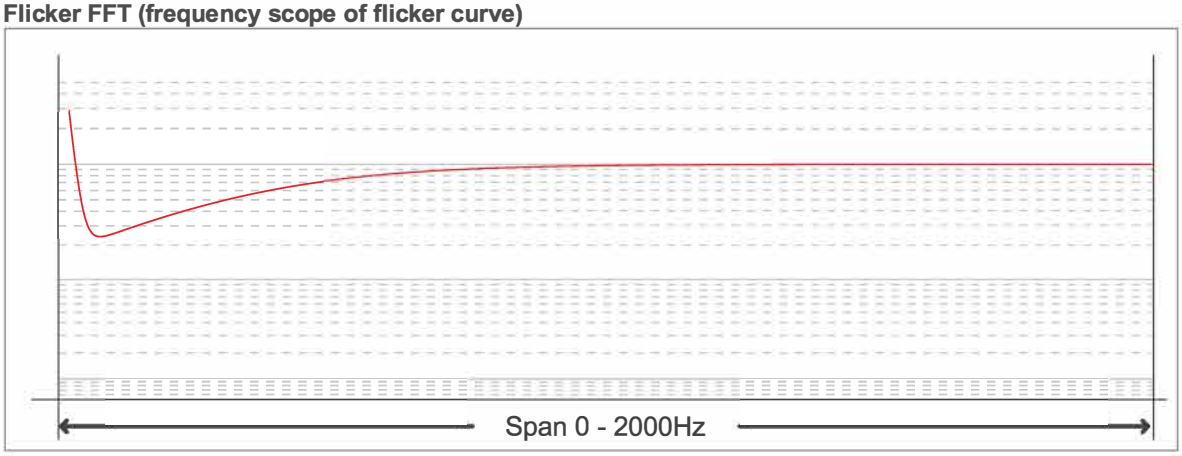
Flicker curve (complete sampled flicker signal)



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:	0.35 %
SVM: (Visual flicker)	0.01

Flicker conditions:

Sample rate:	40000 samples/second

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