

Light efficiency:



Output: 16610 lm

Light quality:



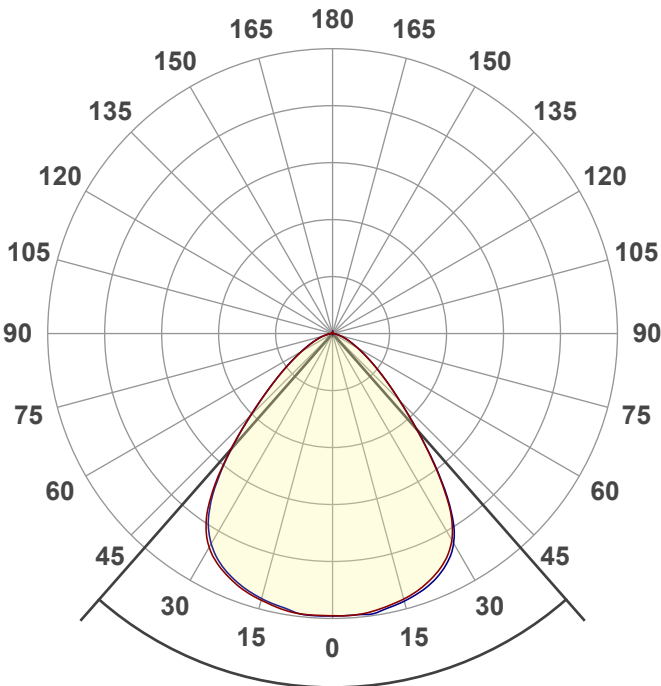
Peak: 9154 cd

Color temperature:



Power: 102.8 W

PF: 0.99



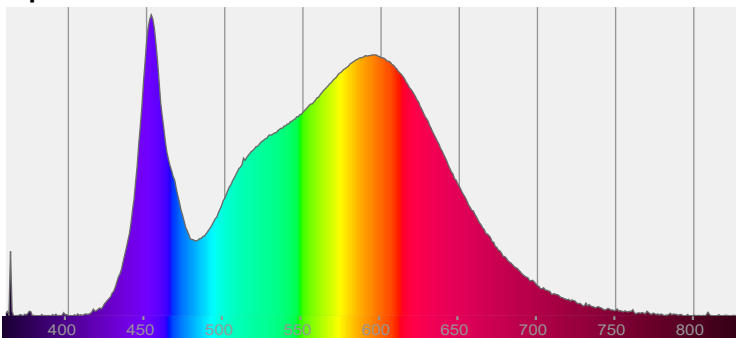
Product name:  
UDSR2-40K100-BT2BH  
Date and time:  
7/22/2024 1:44:40 PM

Beam angle 82.6°

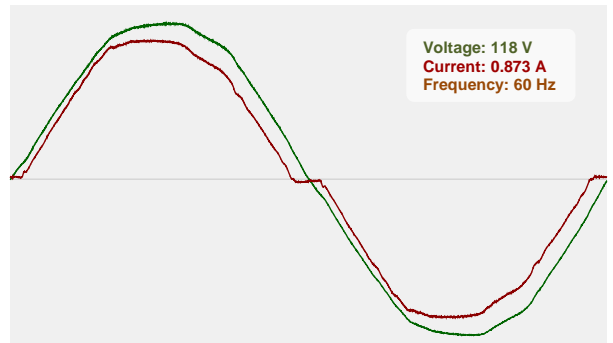


CIE 1931  
x: 0.382  
y: 0.379

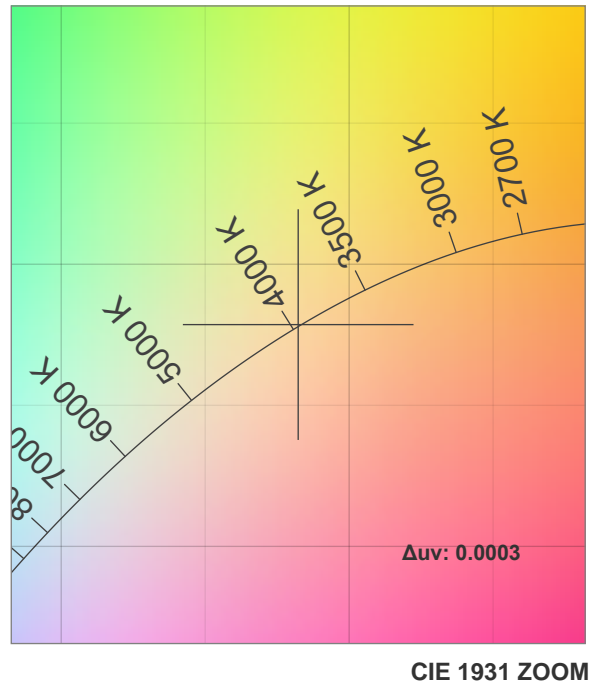
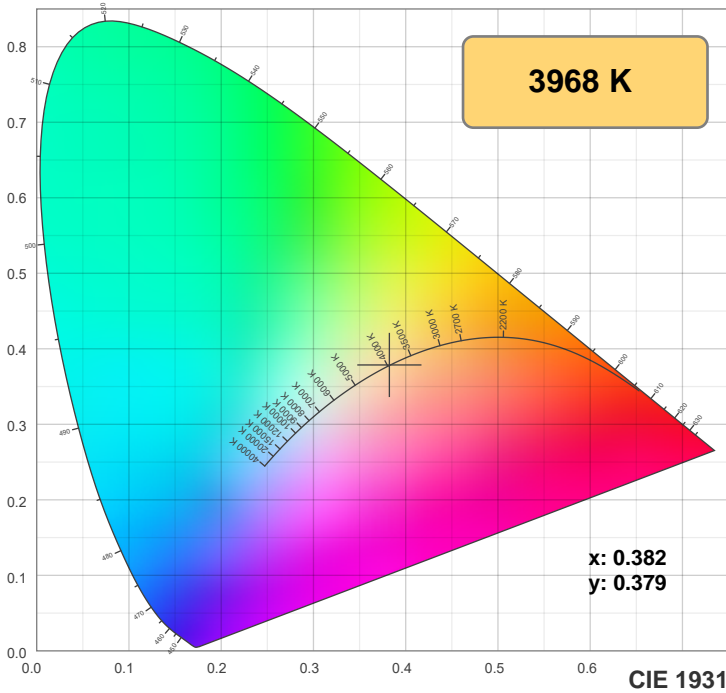
Spectra



Power

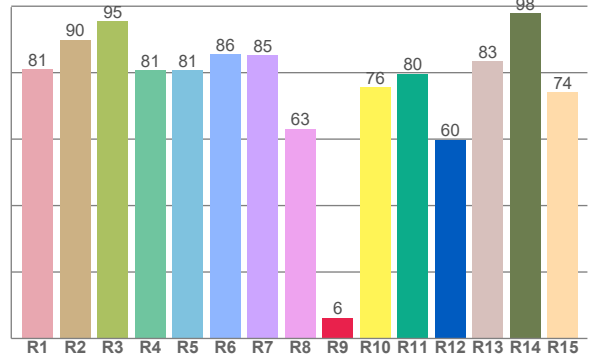
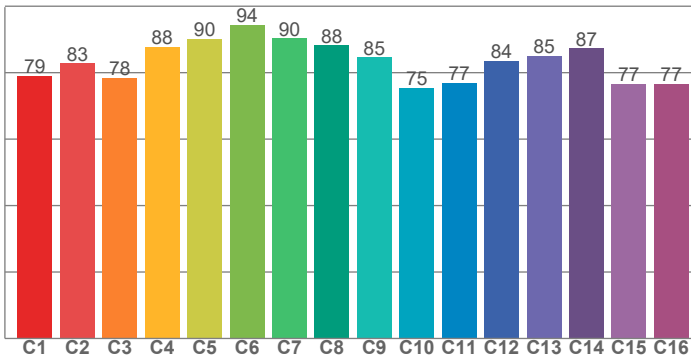


### Color Specifications



**TM30: 83.4**

**CRI: 82.7 (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
81.0	89.9	95.4	80.8	80.8	85.5	85.2	63.2	6.3	75.6	79.6	59.8	83.5	97.9	74.1

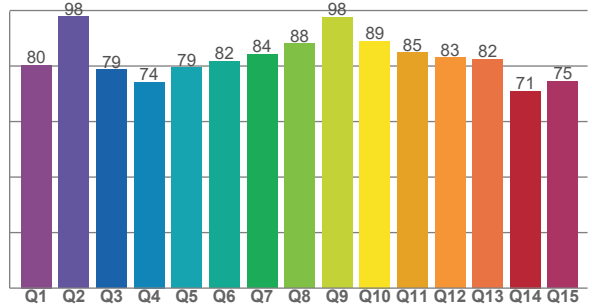
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79.0	82.8	78.5	87.7	90.2	94.3	90.3	88.3	84.6	75.4	77.0	83.6	85.0	87.4	76.6	76.6

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80.4	97.8	78.8	74.3	79.4	81.7	84.3	88.0	97.6	89.0	84.9	83.1	82.4	71.0	74.5

**CQS: 81.6**



### 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
3968 K	82.7	6.3	83.4	94.4	81.6	0.382	0.379	0.226	0.335	0.0003

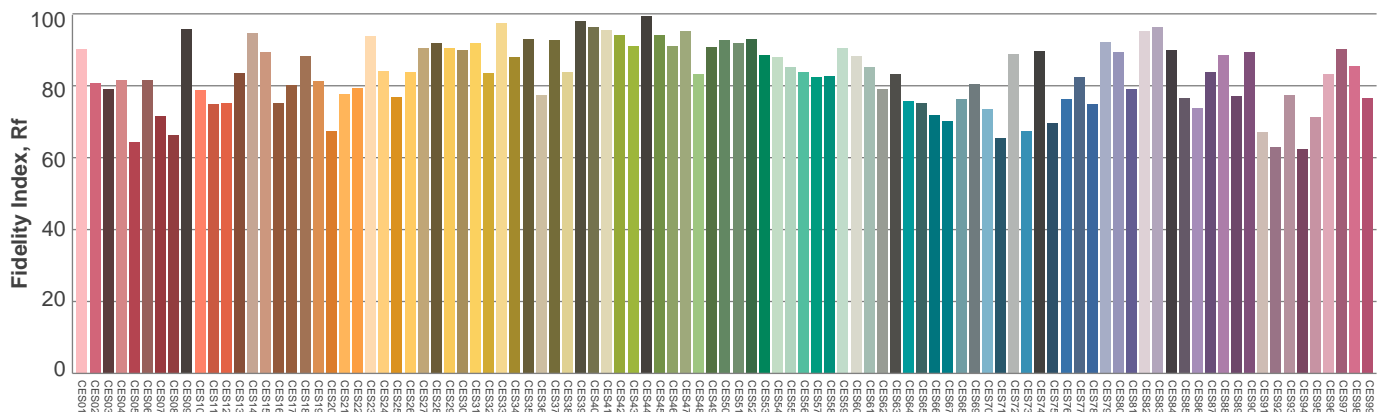
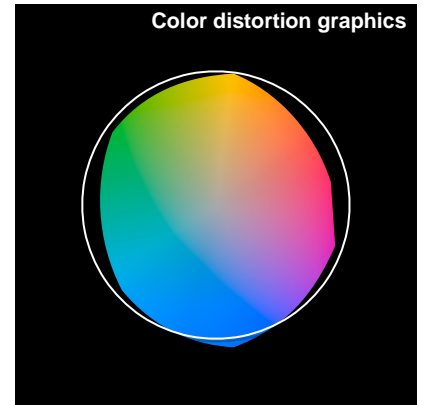
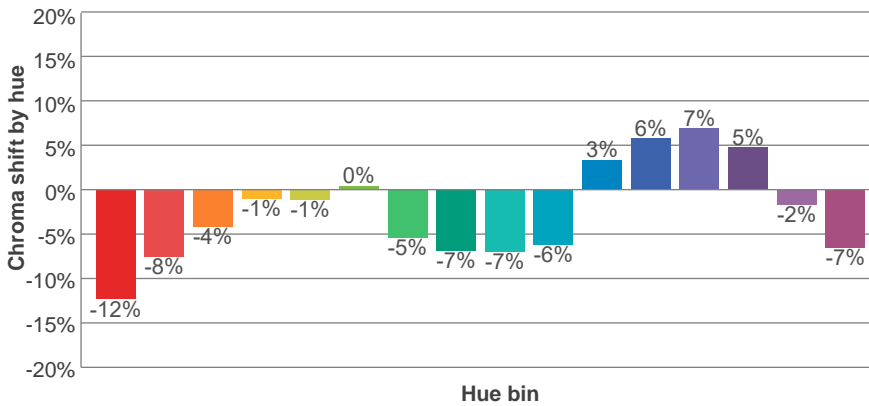
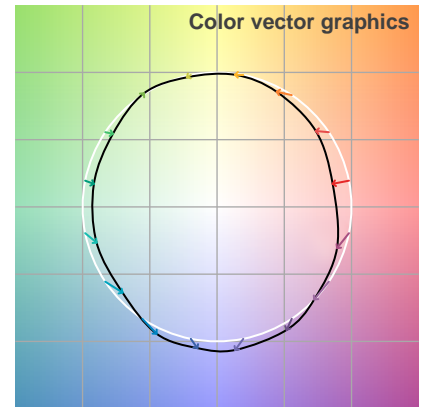
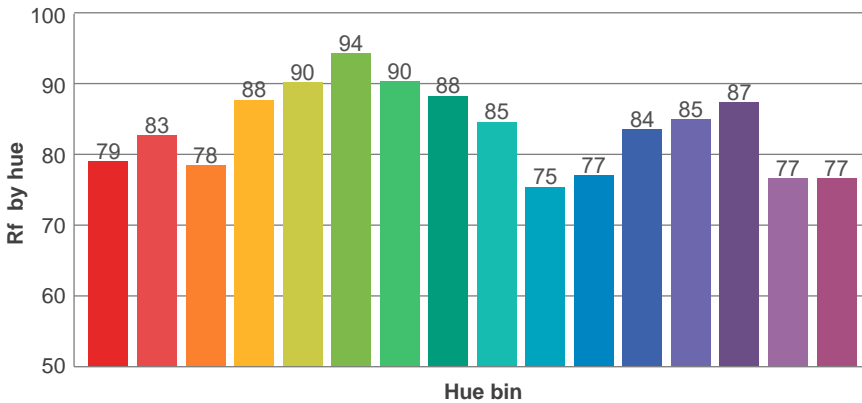
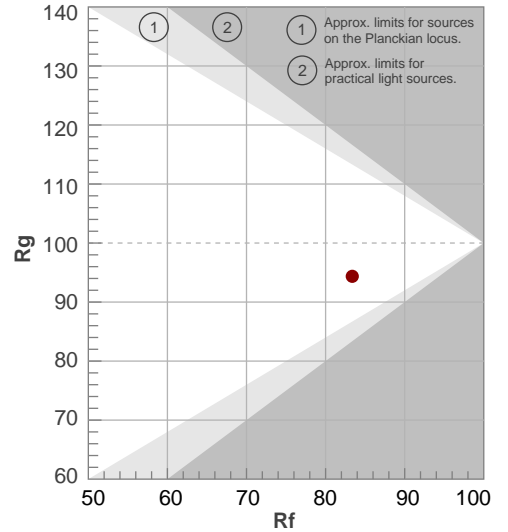


### TM30 Report

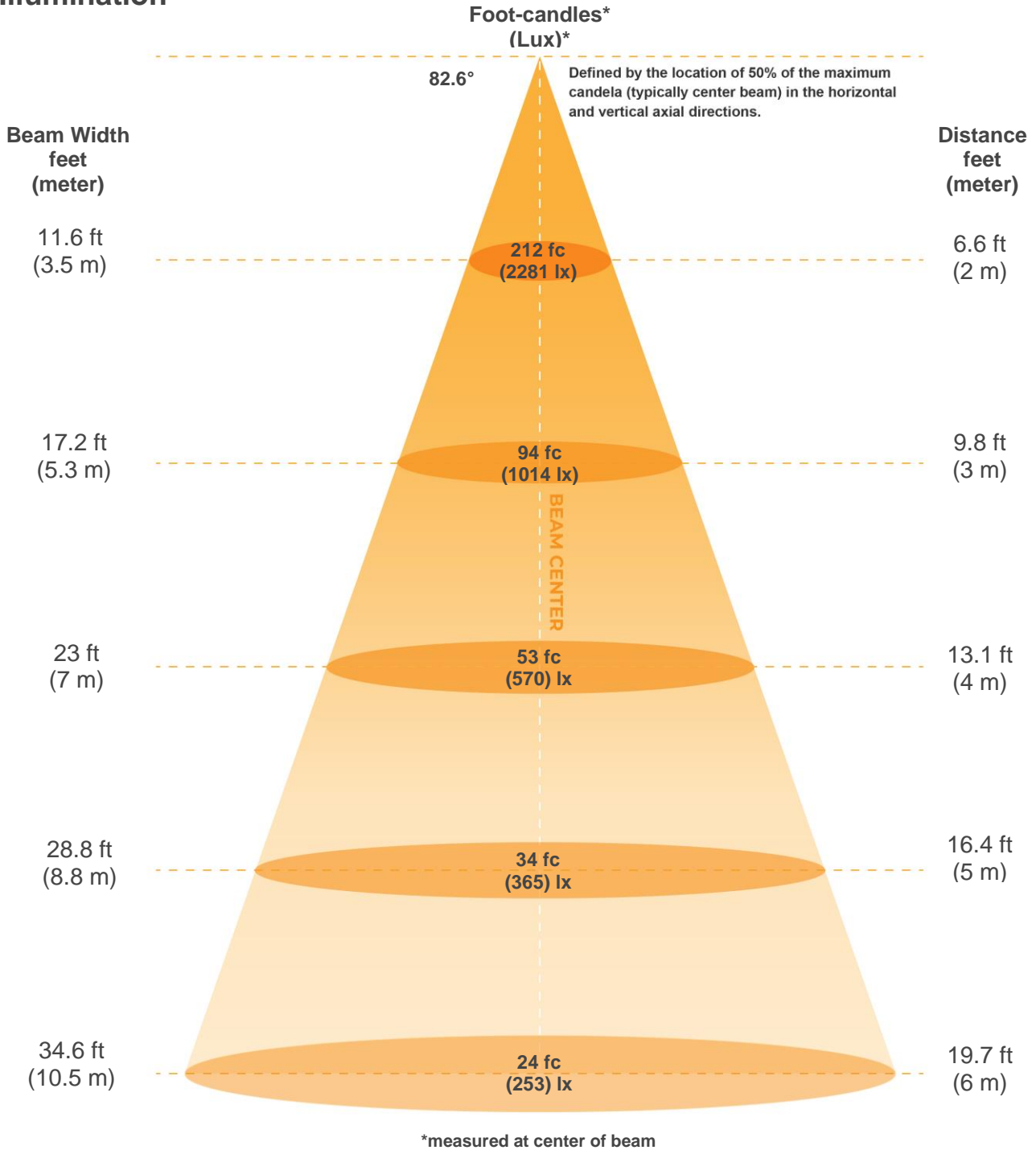
**Rf 83.4**  
Fidelity index Rf

**Rg 94.4**  
Gammut index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	79	-12%	0%
2	83	-8%	6%
3	78	-4%	11%
4	88	-1%	6%
5	90	-1%	3%
6	94	0%	-2%
7	90	-5%	-2%
8	88	-7%	1%
9	85	-7%	9%
10	75	-6%	14%
11	77	3%	15%
12	84	6%	6%
13	85	7%	-8%
14	87	5%	-8%
15	77	-2%	-17%
16	77	-7%	-13%



**Illumination**



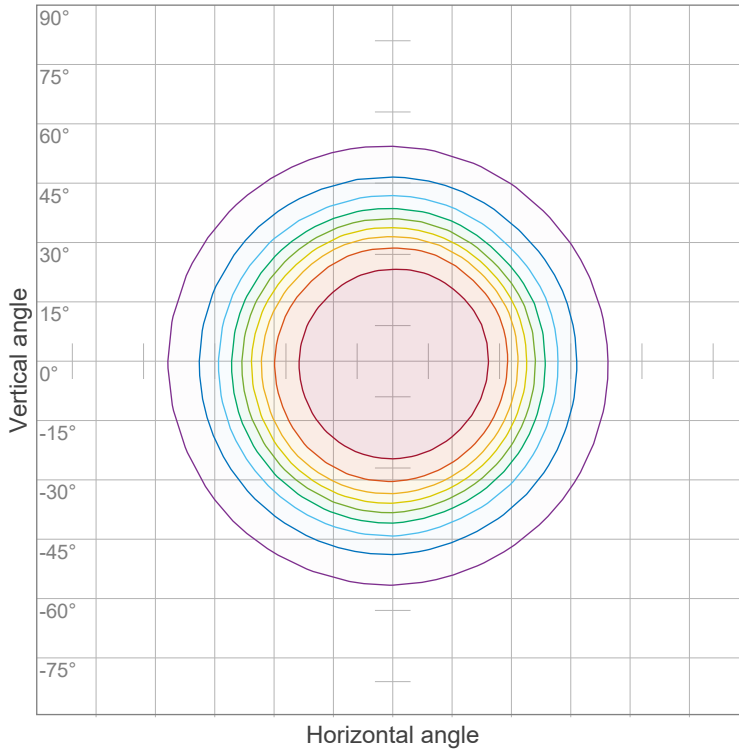
**Beam intensities from 1-20m**

m	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ft	3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6
lux	9124	2281	1014	570	365	253	186	143	113	91	75	63	54	47	41	36	32	28	25	23
fc	847.6	211.9	94.2	53	33.9	23.5	17.3	13.2	10.5	8.5	7	5.9	5	4.3	3.8	3.3	2.9	2.6	2.3	2.1

Beam angle 50%	Field angle 10%	Cutoff Angle 2.5%	Intensity Ratio in 120° cone	Intensity Ratio in 90° cone
82.6°	123.5°	152.7°	93.1%	77.6%



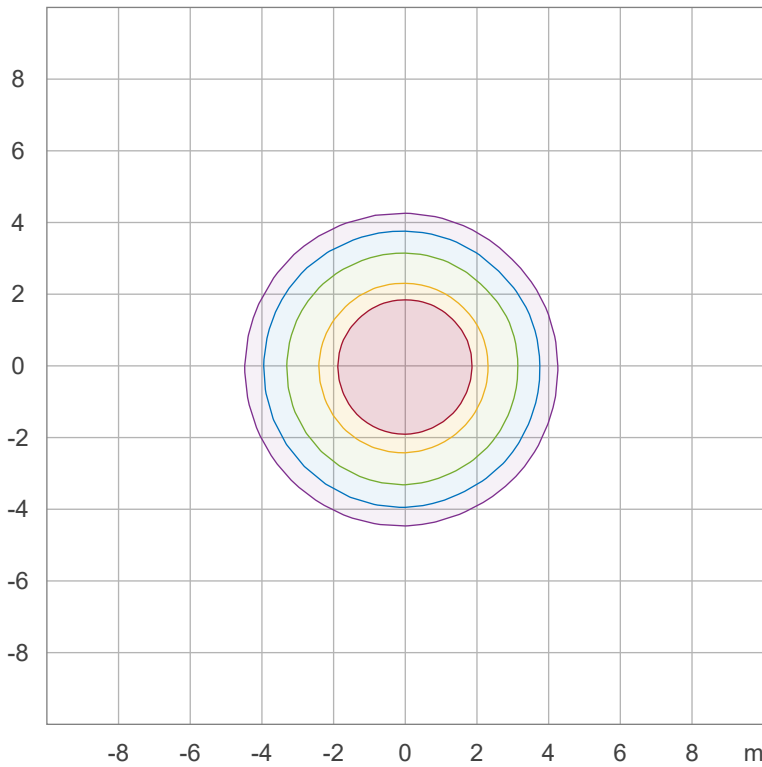
**Iso-intensity Diagram (Iso-candela)**



90 %	8237.3 cd
80 %	7322.0 cd
70 %	6406.8 cd
60 %	5491.5 cd
50 %	4576.3 cd
40 %	3661.0 cd
30 %	2745.8 cd
20 %	1830.5 cd
10 %	915.3 cd

Peak intensity: 9152.5 cd  
 Number of c-planes: 16

**Iso-illuminance Diagram (Iso-lux)**



50.0 %	507.2 lx
30.0 %	304.3 lx
10.0 %	101.4 lx
5.0 %	50.7 lx
3.0 %	30.4 lx

Peak illuminance: 1014.5 lx  
 Mounting height: 3.0 m  
 Number of c-planes: 16



**Light Planning – UGR table**

*Uncorrected, comprehensive UGR table according to 117-1995*

Reflectances		70	70	50	50	30	70	70	50	50	30
$\rho$ Ceiling		70	70	50	50	30	70	70	50	50	30
$\rho$ Walls		50	30	50	30	30	50	30	50	30	30
$\rho$ Floor		20	20	20	20	20	20	20	20	20	20
Room size		Viewed Crosswise					Viewed Endwise				
H = mounting height above eye level		(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
X	Y	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	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

**Variations with the observer position for the luminaire spacings, S:**

n/a	n/a	n/a
n/a	n/a	n/a
n/a	n/a	n/a

UGR data could not be calculated due to missing dimensions. Goto Edit->Photometric->Dimensions and set the fixture/lamp dimensions.

**Coefficients of Utilization**

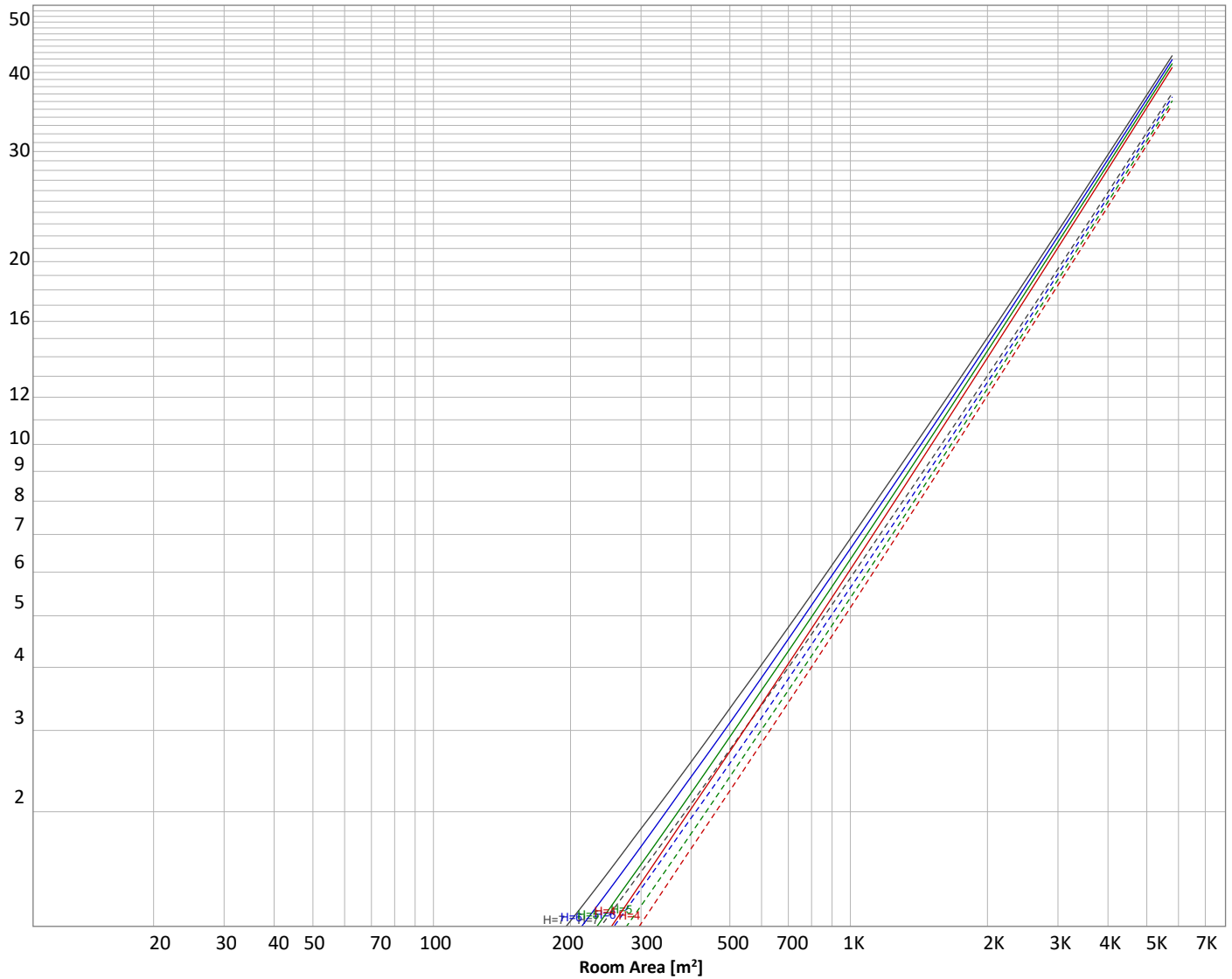
Ceiling reflectance	80			70			50			30			10			0		
Wall reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Floor reflectance	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
RCR	(RCR: Room Cavity Ratio)																	
	Room Values are expressed as percentage of Lumen delivered to the task surface																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	99
1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	92	91	89
2	104	97	92	88	101	96	91	87	92	88	85	89	86	83	86	83	81	79
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70
4	90	80	73	68	88	79	72	67	77	71	66	74	69	65	72	68	65	63
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	66	62	58	56
6	78	67	60	54	77	66	59	54	64	58	53	63	57	53	61	56	53	51
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46
8	69	57	50	44	67	56	49	44	55	49	44	54	48	44	53	47	44	42
9	65	53	46	41	63	52	45	41	51	45	40	50	44	40	49	44	40	38
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35



**Luminaire budgetary diagram**

Uncorrected, comprehensive UGR table according to 117-1995

LAMPS (number of lamps)



**Conditions**

H = Room height	Flux = 16610 lm	ρ(%)			
H <sub>down</sub> = Lamp distance from ceiling =	0.00 m	Line type	Ceiling reflectance	Wall reflectance	Floor reflectance
H <sub>work</sub> = Work area height from floor =	0.00 m	-----	70	50	30
E <sub>work</sub> = Average lux on work area =	100 lx	_____	50	30	20

**Zonal Lumen Summary**

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
869 lm	2517 lm	3851 lm	4115 lm	2688 lm	1429 lm	709 lm	294 lm	53.2 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
7.12 lm	7.64 lm	9.41 lm	12.1 lm	13.4 lm	13.6 lm	11.7 lm	8.04 lm	2.95 lm



**Power Details**

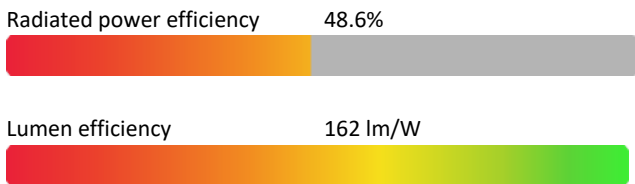
**Input Power**

Power feed to light source	102.8 W
Frequency of input power	60 Hz
RMS Input voltage feed, $V_{RMS}$	118 V
RMS Input current feed, $I_{RMS}$	0.873 A
Volt-Ampere or apparent power = $V_{RMS} * I_{RMS}$	103.47 VA
Displacement factor of AC power feed	1.0
Power factor of AC current feed	0.99
Total harmonic distortion of the current	9.49%
Total harmonic distortion of the voltage	2.21%

**Input Power Curve**



**Efficiency**



**Stabilization Details**

**Warmup Conditions**

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

**Color Temperature Change**

CCT start	3930 K
CCT shift	+38 K
CCT end	3968 K

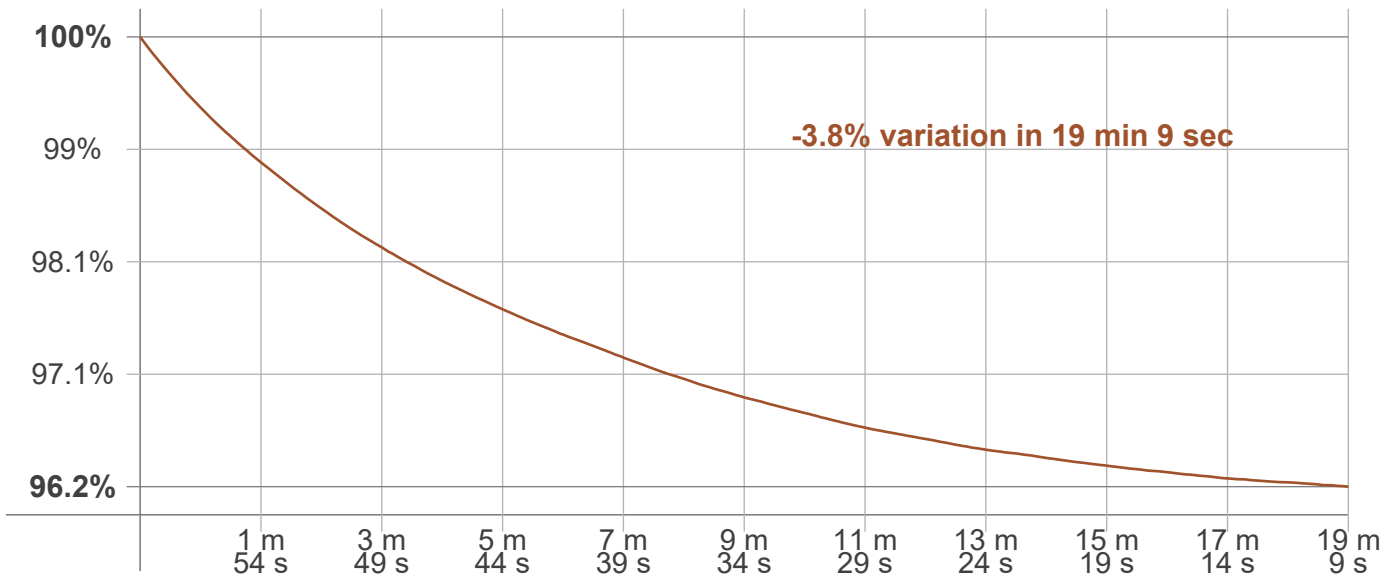
**Warmup Result**

Total warmup time	Lamp stabilized in 19 min 9 sec
Warmup variation	-3.8%

**Output Change**

Output start	17254 lm
Output change	-643 lm
Output end	16610 lm

**Stabilization Curve**



**Flicker /TLA details**





Flicker Meter Type                    Viso Systems LabFlicker  
 Frequency of input power            60 Hz  
 Flicker/TLA sample rate            20000 samples/s

**Measurement time**  
 PstLM                                    180 sec  
 All other indices                      1.2 sec

**Flicker indices according to Illuminating Engineering Society (IES)**

Flicker frequency                    119.76 Hz  
 Percent Flicker                      29.83 %  
 Flicker index                         0.09

**Flicker indices per California Energy Commission (CEC) 2016b**

JA8/10 40 Hz                         0.09 %  
 JA8/10 90 Hz                         0.1 %  
 JA8/10 200 Hz                        29.6 %  
 JA8/10 400 Hz                        29.95 %  
 JA8/10 1000 Hz                       29.83 %

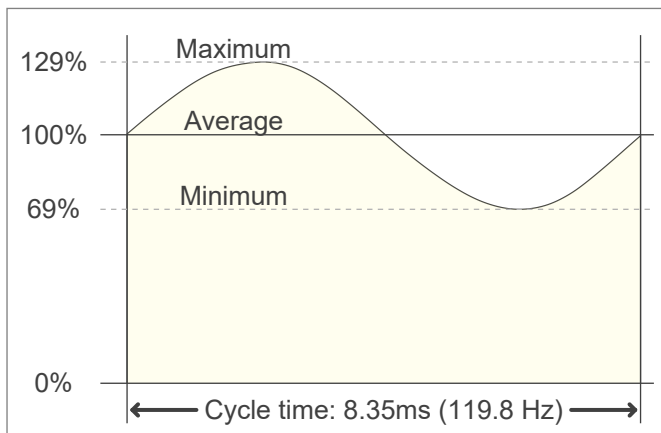
**TLA indices (re IEC TR 61547-1, IEC 61000-3-3 and IEC 61000-4-15)**

PstLM value (F < 80 Hz)            0.57  
 SVM value (80 < F < 2000 Hz)    1.07

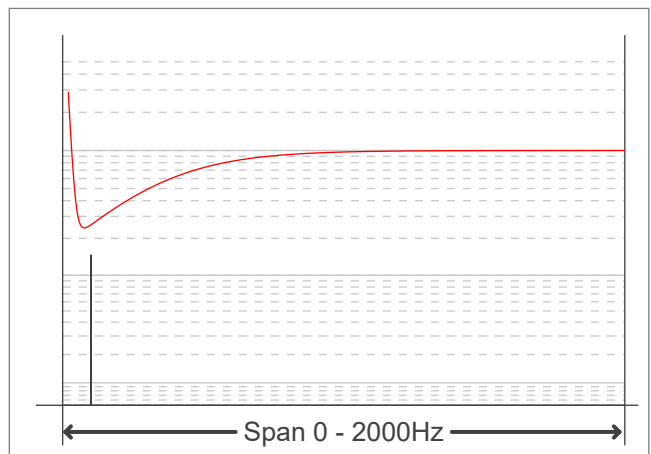
**Flicker indices according to Lighting Research Center (2015)**

Perception metric, Assist Mp        0.03

**Flicker frame (frame of one flicker period in time domain)**



**Flicker FFT (flicker curve in frequency domain)**



**IEEE 1789 Frequency/modulation plot**

