

Photometric Test Report



ECLFR2KTU

Warm White LED Fresnel Luminaire

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TESTING PROCESS

Prolights has its own optical testing laboratory in order to provide accurate photometric reports for its lighting products. The testing laboratory contains certain variety of precise lighting measurement systems that ensure an optimal reading of all the characteristic parameters of the lighting devices. All measurements are made at a controlled room temperature of 20°C without any external light sources. This photometric report is obtained through the data measured by a high precision measurement system and analyzed by a dedicate software.

Prolights measurement instrument

Prolights measurement instrument is a complete measurement system for any light source. It's equipped with two-axis goniometer, that enables to measure the full 3D distribution field of the light source. This instrument measures the light intensity, the beam angle and the most significative colors parameters, like color temperature, spectral distribution, CRI, CQS, TM-30 with a very high accuracy rate.

Please Note: All measurements are made with light source at operating temperature. Before starting the measurement, the instrument analyzes the process of the light source during the heating phase. The measuring process of all the parameters begins only when the light emission is stable, that is with a variation of less than 0.5% in a 15 minutes time frame.

Prolights measurement software

The software provides user friendly interface for the operator who does the measurements, and it also analyzes and processes all the collected data by the instrument. With this software it is possible to see the measured data in real-time and it is possible to examine all the measured data and graphics afterwards as well. All information is collected in a specific Prolights template, and the software creates also IES and LDT files, which are widely used to transfer the photometric data, and to develop lighting system.

Additionally, the fixtures are rechecked using various hand-held instruments like Sekonic C-700 and Gossen Mavospec Base, this is done to ensure, that the data in the photometric report are as accurate as possible.



Total lumen output:

26126 lm

Peak candela output:

44262 cd

Light quality:

CRI: 94,9

Color temperature:

3255 K

PRODUCT NAME:

ECLFR2KTU

MEASURAMENT CONDITIONS:

Beam angle:

Max Zoom

Target:

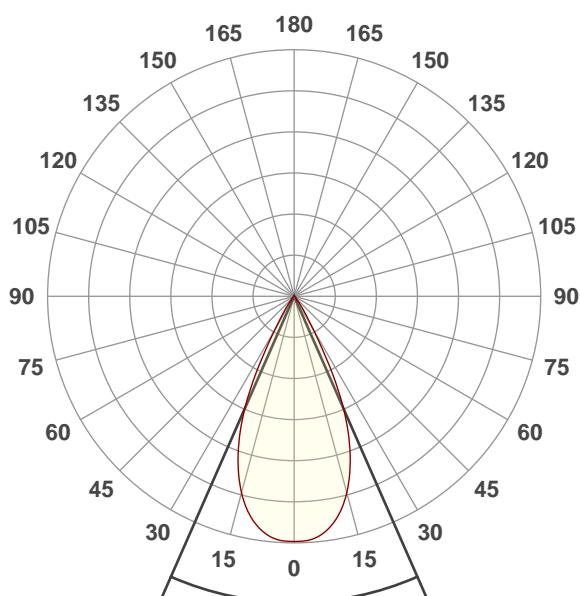
Warm White

Operator:

Paolo Carvone

Date and time:

30/01/2020 12:42:59

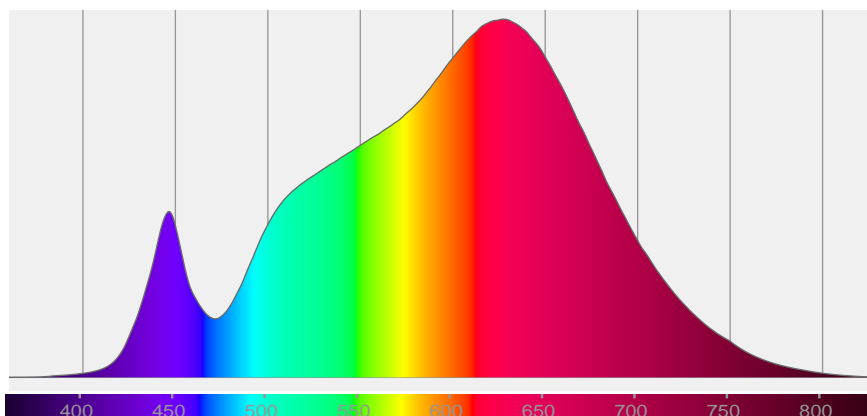


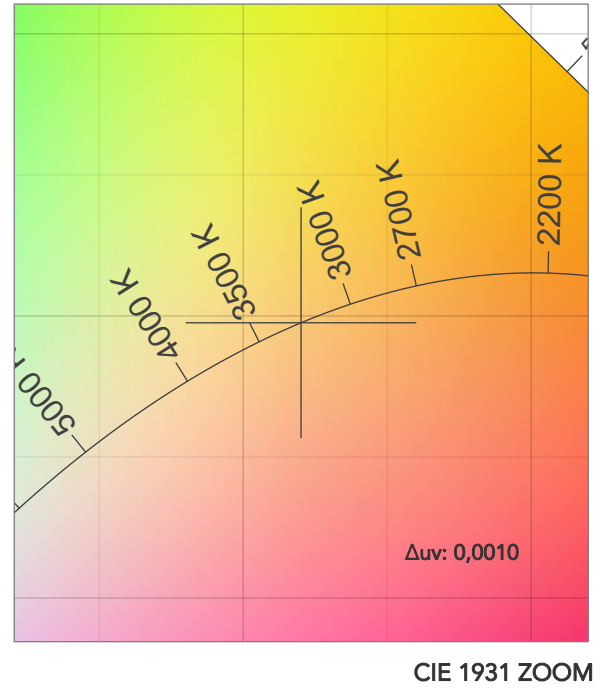
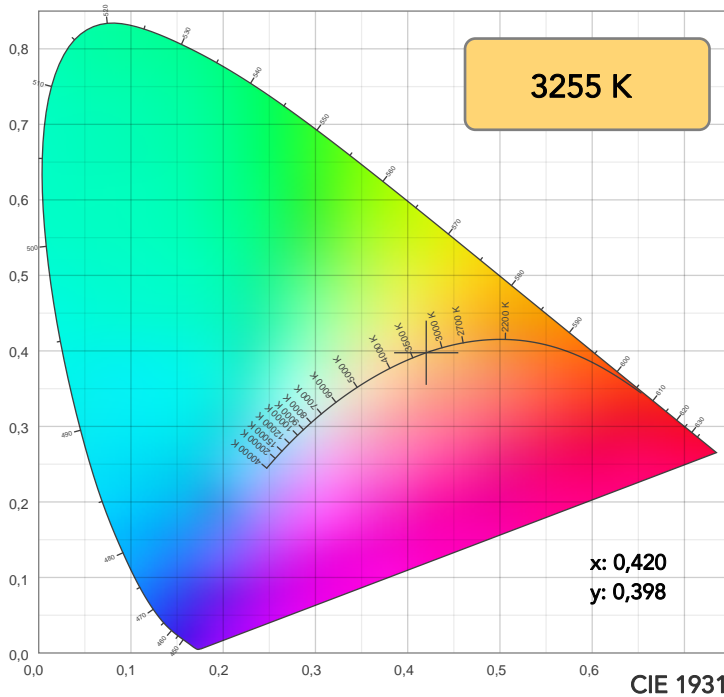
Beam angle 50%: 47,4°

Field angle 10%: 64,3°

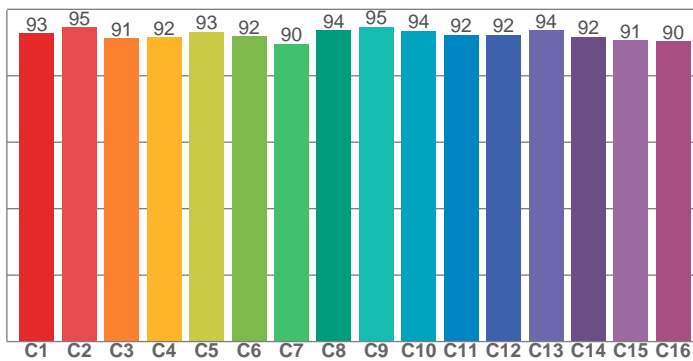
Cut off angle 2.5%: 77,7°

Spectra

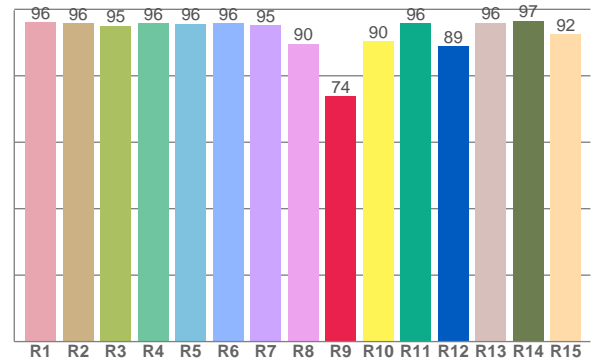




TM30: 92,6



CRI: 94,9 (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
96,1	95,9	95,1	95,7	95,7	95,8	95,2	89,6	73,9	90,4	95,8	89,0	95,9	96,6	92,5

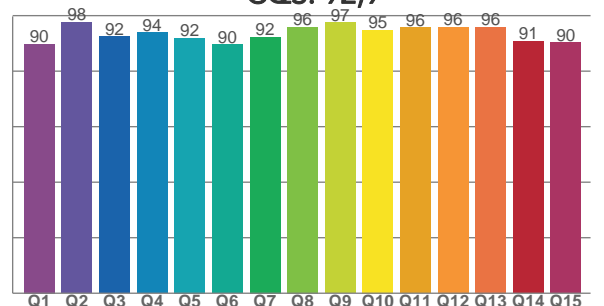
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92,7	94,6	91,3	91,6	93,3	91,9	89,7	93,7	94,6	93,5	92,4	92,3	93,7	91,7	90,7	90,4

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89,8	97,6	92,5	93,9	91,9	89,5	92,3	96,0	97,5	94,8	95,7	95,9	95,9	90,8	90,3

CQS: 92,9



COLOR PARAMETERS

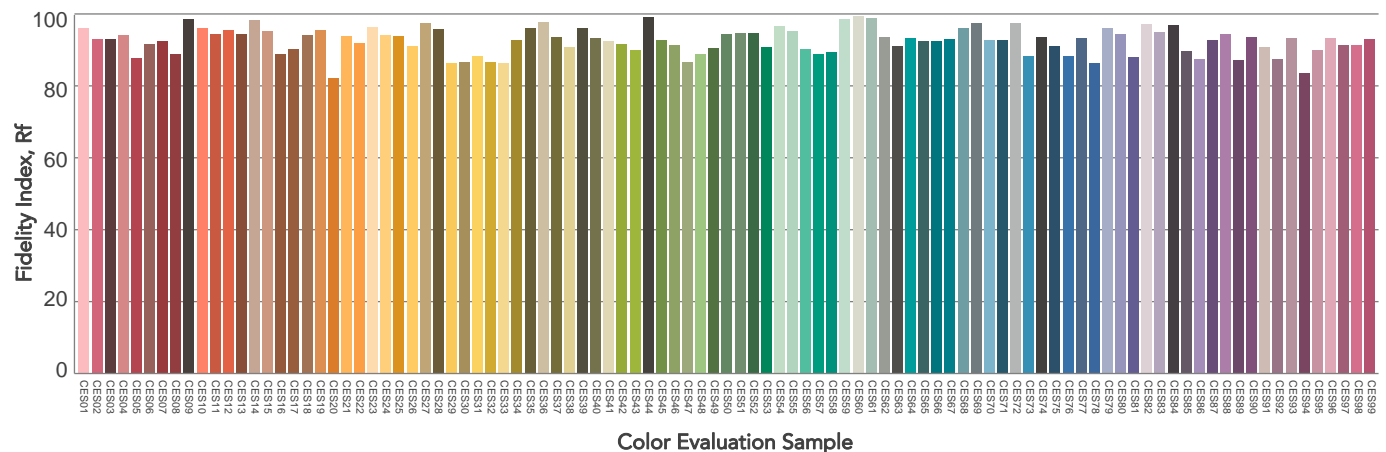
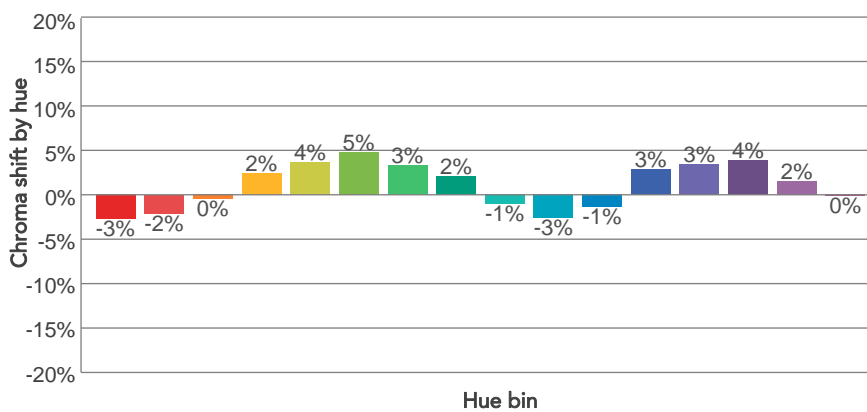
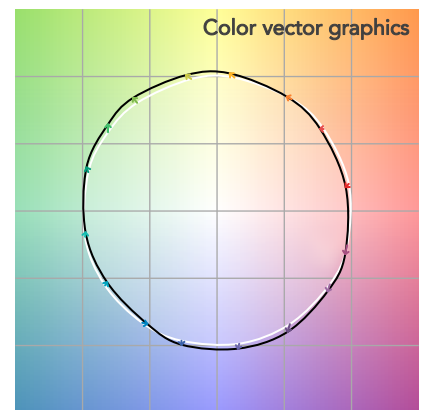
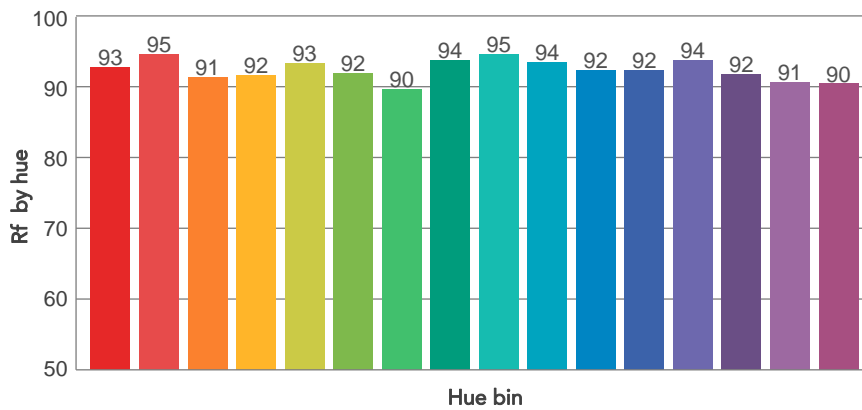
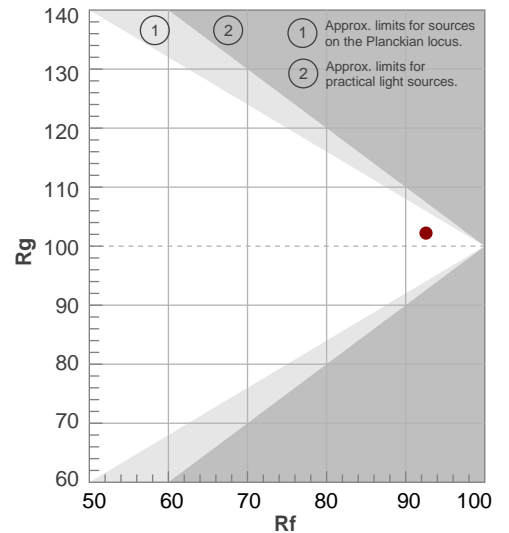
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
3255 K	94,9	73,9	92,6	102,2	92,9	96	0,420	0,398	0,0010

TM30 DETAILS

Rf 92,6
Fidelity index Rf

Rg 102,2
Gammut index

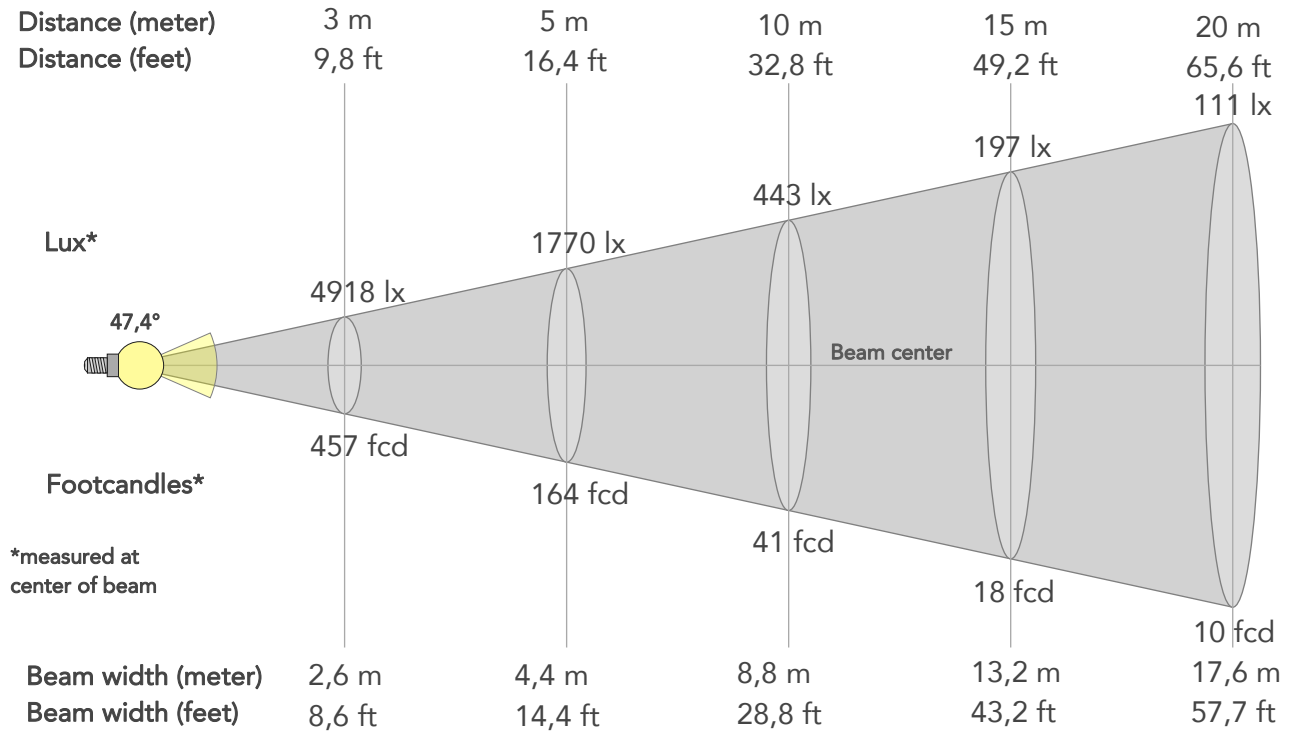
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	93	-3%	-2%
2	95	-2%	2%
3	91	0%	4%
4	92	2%	4%
5	93	4%	3%
6	92	5%	0%
7	90	3%	-5%
8	94	2%	-3%
9	95	-1%	-3%
10	94	-3%	-1%
11	92	-1%	4%
12	92	3%	1%
13	94	3%	-2%
14	92	4%	-5%
15	91	2%	-5%
16	90	0%	-7%



BEAM DETAILS



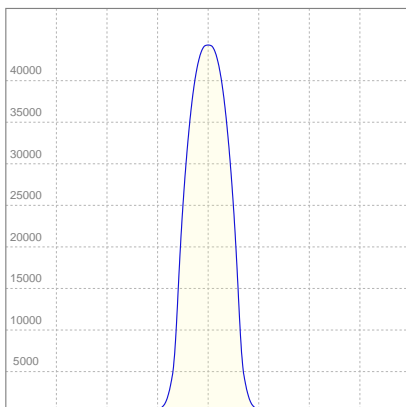
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
47,4°	64,3°	77,7°	95,3%	93,6%



BEAM INTENSITIES AND WIDTHS

Distance	1m	2m	3m	4m	5m	7,5m	10m	15m	20m	25m	30m	40m	50m
Distance	3,3ft	6,6ft	9,8ft	13,1ft	16,4ft	24,6ft	32,8ft	49,2ft	65,6ft	82ft	98,4ft	131,2ft	164ft
Lux	44262lx	11065lx	4918lx	2766lx	1770lx	787lx	443lx	197lx	111lx	71lx	49lx	28lx	18lx
Footcand.	4112fcd	1028fcd	457fcd	257fcd	164fcd	73fcd	41fcd	18fcd	10fcd	7fcd	5fcd	3fcd	2fcd
Beam wid.	0,9m	1,8m	2,6m	3,5m	4,4m	6,6m	8,8m	13,2m	17,6m	22m	26,4m	35,2m	43,9m
Beam wid.	2,9ft	5,8ft	8,6ft	11,5ft	14,4ft	21,6ft	28,8ft	43,2ft	57,7ft	72,1ft	86,5ft	115,3ft	144,1ft

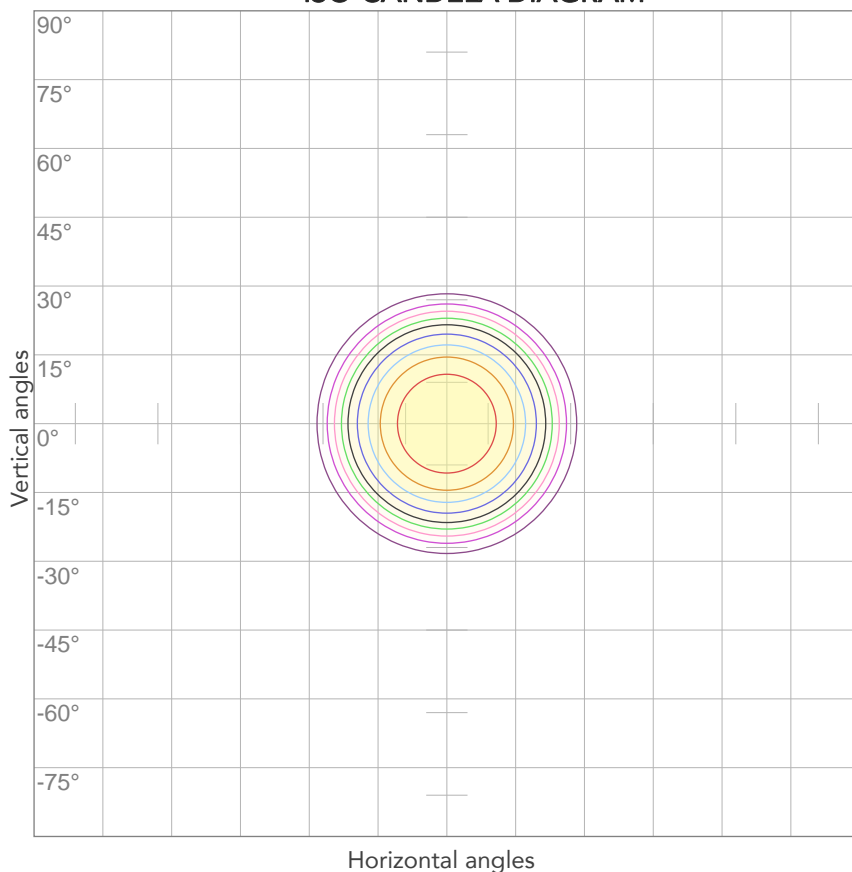
LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
224V	2,15A	465,9W	56lm/W
Power Fc			
0,97			

ISO CANDELA DIAGRAM



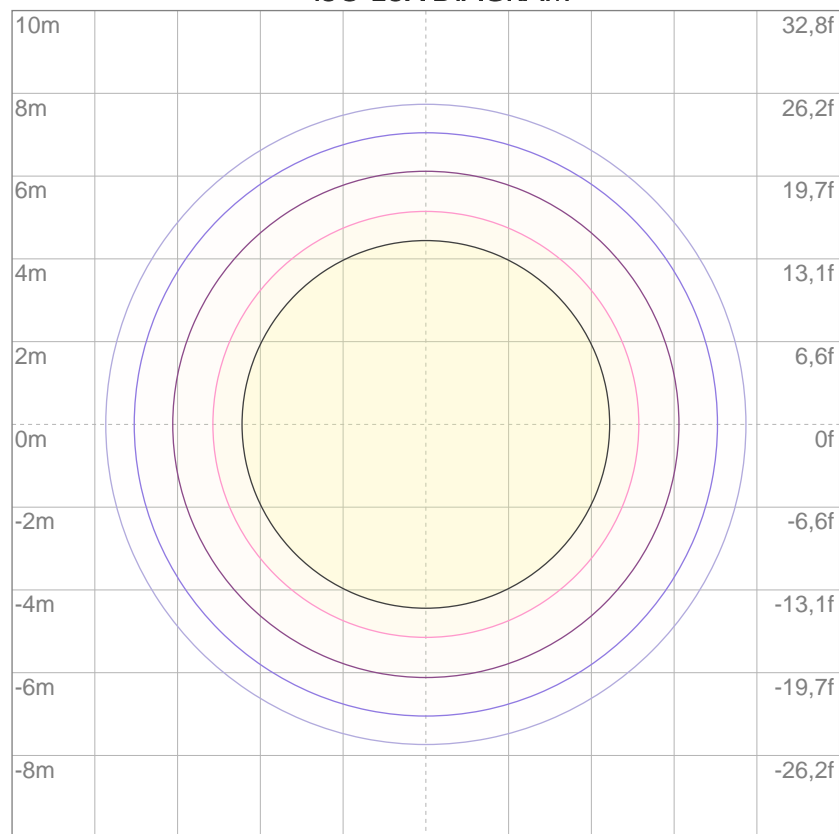
10%	4426 cd
20%	8852 cd
30%	13279 cd
40%	17705 cd
50%	22131 cd
60%	26557 cd
70%	30983 cd
80%	35409 cd

Conditions:

Number of c-planes: 2

Candela at center: 44262 cd

ISO LUX DIAGRAM



3%	13,3 lx
5%	22,1 lx
10%	44,3 lx
30%	133 lx
50%	221 lx

Conditions:

Number of c-planes: 2

Lux at center: 443 lx

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



Total lumen output:

25303 lm

Peak candela output:

109747 cd

Light quality:

CRI: 94,8

Color temperature:

3260 K

PRODUCT NAME:

ECLFR2KTU

MEASURAMENT CONDITIONS:

Beam angle:

Med Zoom

Target:

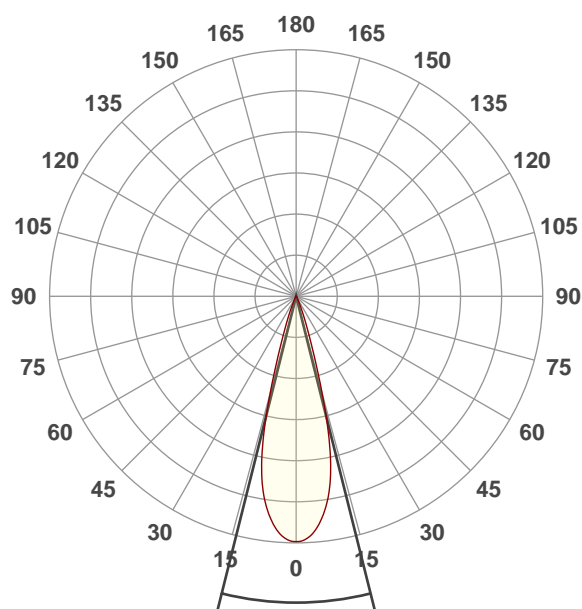
Warm White

Operator:

Paolo Carvone

Date and time:

30/01/2020 12:45:14

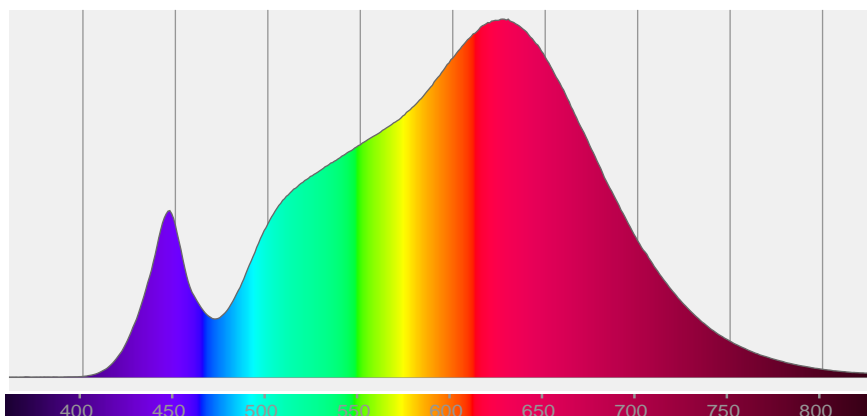


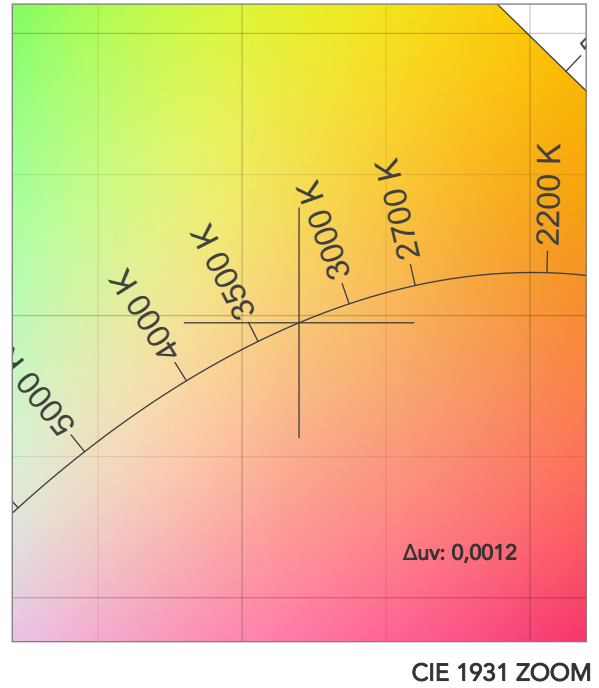
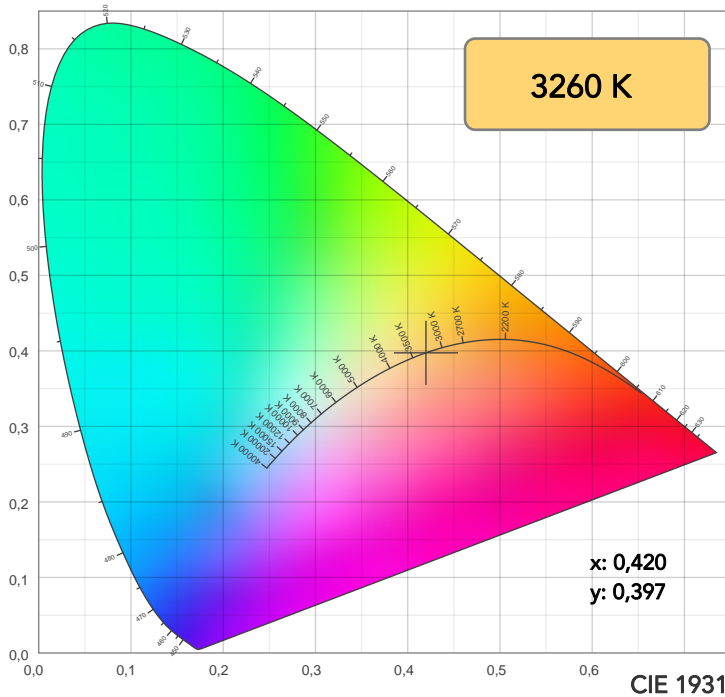
Beam angle 50%: 28,1°

Field angle 10%: 40,7°

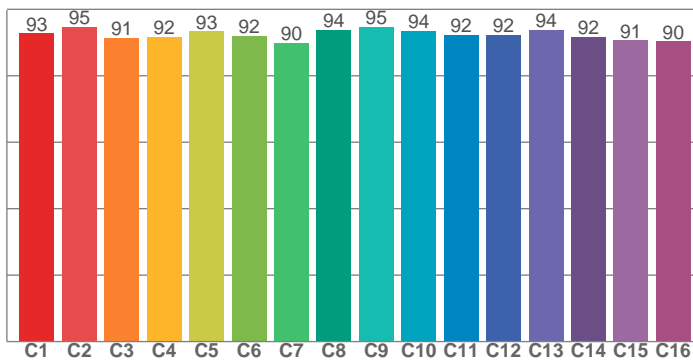
Cut off angle 2.5%: 50,9°

Spectra

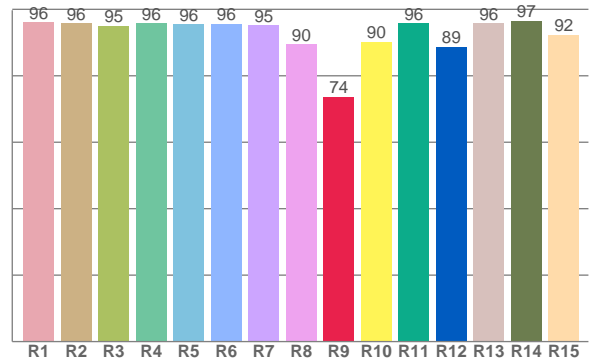




TM30: 92,6



CRI: 94,8 (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
96,1	95,8	95,0	95,8	95,6	95,7	95,2	89,6	73,7	90,2	95,9	88,7	95,9	96,6	92,4

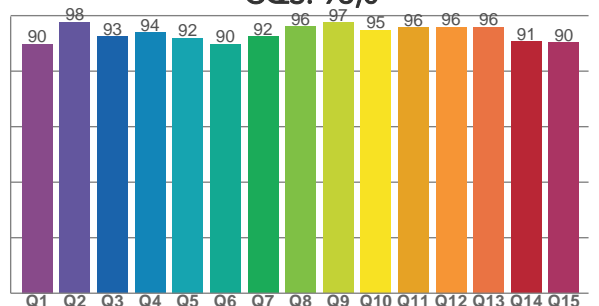
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92,7	94,6	91,4	91,8	93,4	92,0	89,9	93,9	94,7	93,6	92,4	92,4	93,8	91,7	90,7	90,4

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89,8	97,6	92,5	93,9	91,9	89,7	92,5	96,1	97,5	94,8	95,7	95,9	95,9	90,7	90,3

CQS: 93,0



COLOR PARAMETERS

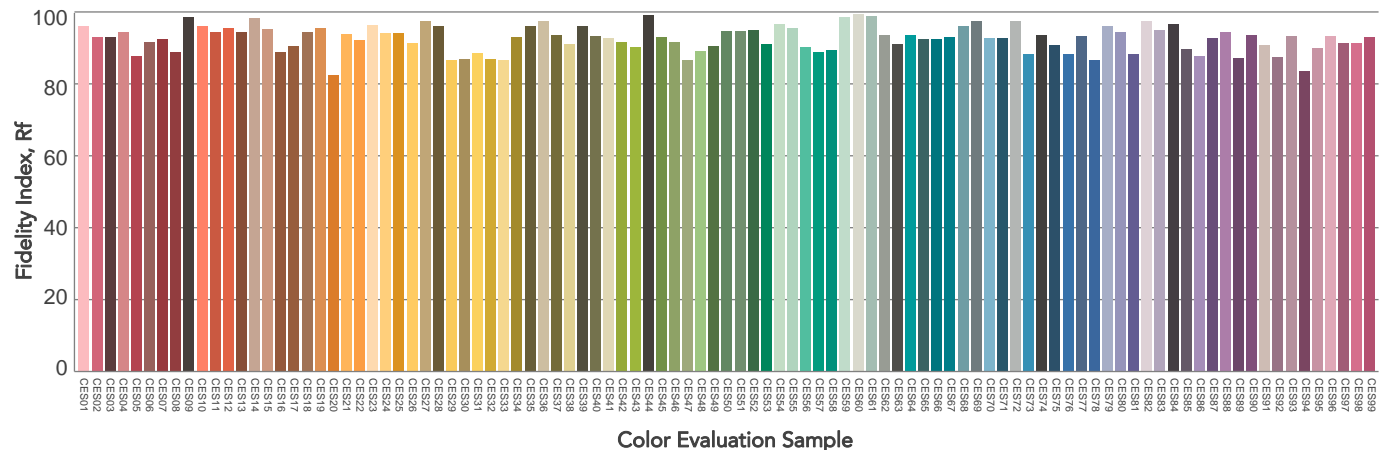
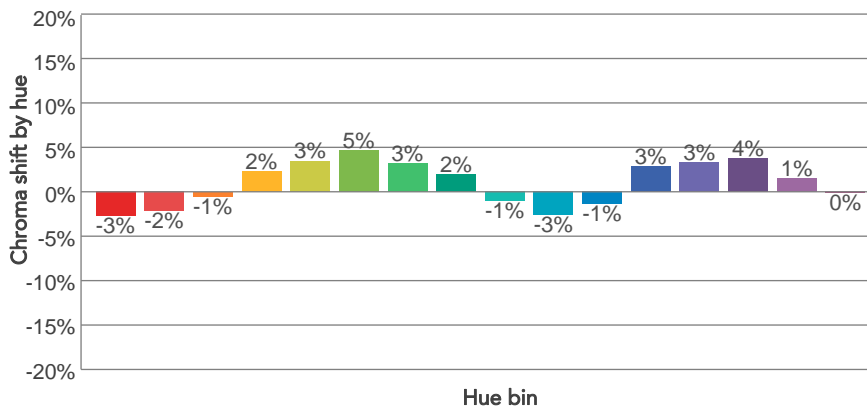
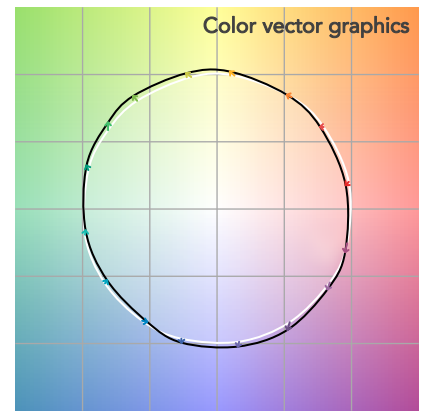
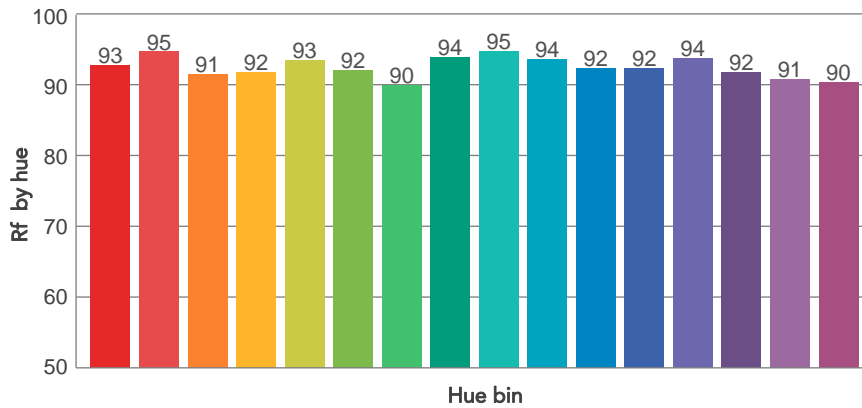
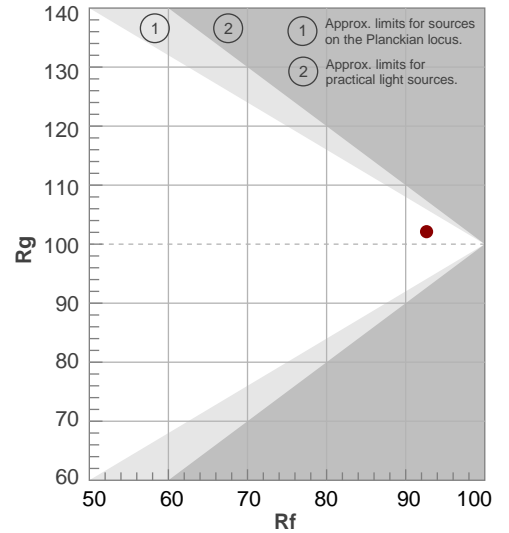
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
3260 K	94,8	73,7	92,6	102,1	93,0	96	0,420	0,397	0,0012

TM30 DETAILS

Rf 92,6
Fidelity index Rf

Rg 102,1
Gammut index

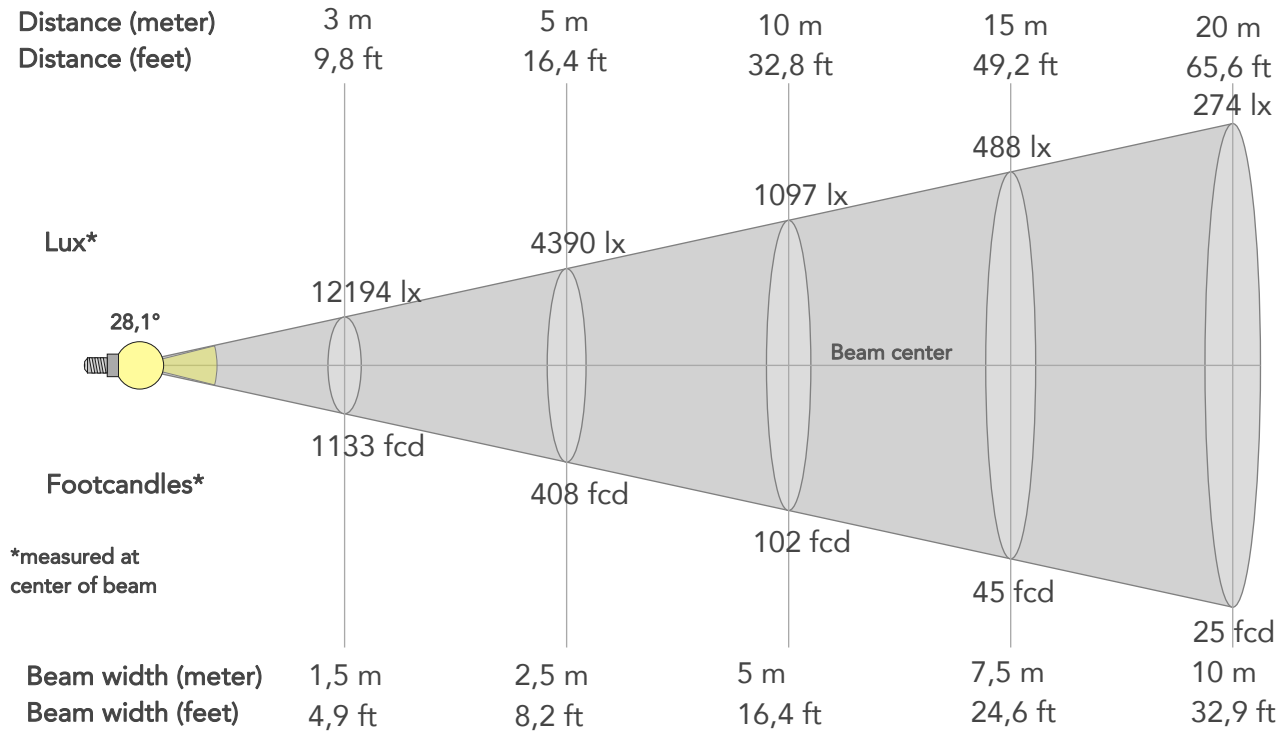
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	93	-3%	-2%
2	95	-2%	1%
3	91	-1%	4%
4	92	2%	4%
5	93	3%	3%
6	92	5%	0%
7	90	3%	-5%
8	94	2%	-3%
9	95	-1%	-3%
10	94	-3%	-1%
11	92	-1%	4%
12	92	3%	1%
13	94	3%	-2%
14	92	4%	-5%
15	91	1%	-5%
16	90	0%	-7%



BEAM DETAILS



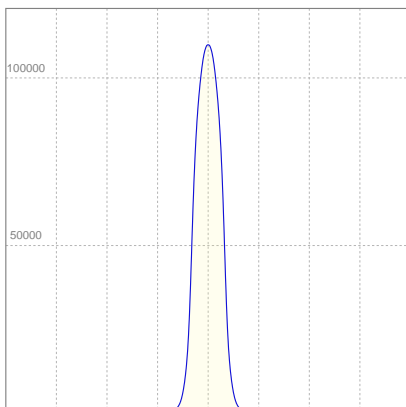
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
28,1°	40,7°	50,9°	95,1%	93,6%



BEAM INTENSITIES AND WIDTHS

Distance	1m	2m	3m	4m	5m	7,5m	10m	15m	20m	25m	30m	40m	50m
Distance	3,3ft	6,6ft	9,8ft	13,1ft	16,4ft	24,6ft	32,8ft	49,2ft	65,6ft	82ft	98,4ft	131,2ft	164ft
Lux	109747lx	27437lx	12194lx	6859lx	4390lx	1951lx	1097lx	488lx	274lx	176lx	122lx	69lx	44lx
Footcand.	10196fcd	2549fcd	1133fcd	637fcd	408fcd	181fcd	102fcd	45fcd	25fcd	16fcd	11fcd	6fcd	4fcd
Beam wid.	0,5m	1m	1,5m	2m	2,5m	3,8m	5m	7,5m	10m	12,5m	15m	20m	25m
Beam wid.	1,7ft	3,3ft	4,9ft	6,6ft	8,2ft	12,3ft	16,4ft	24,6ft	32,9ft	41,1ft	49,3ft	65,7ft	82,2ft

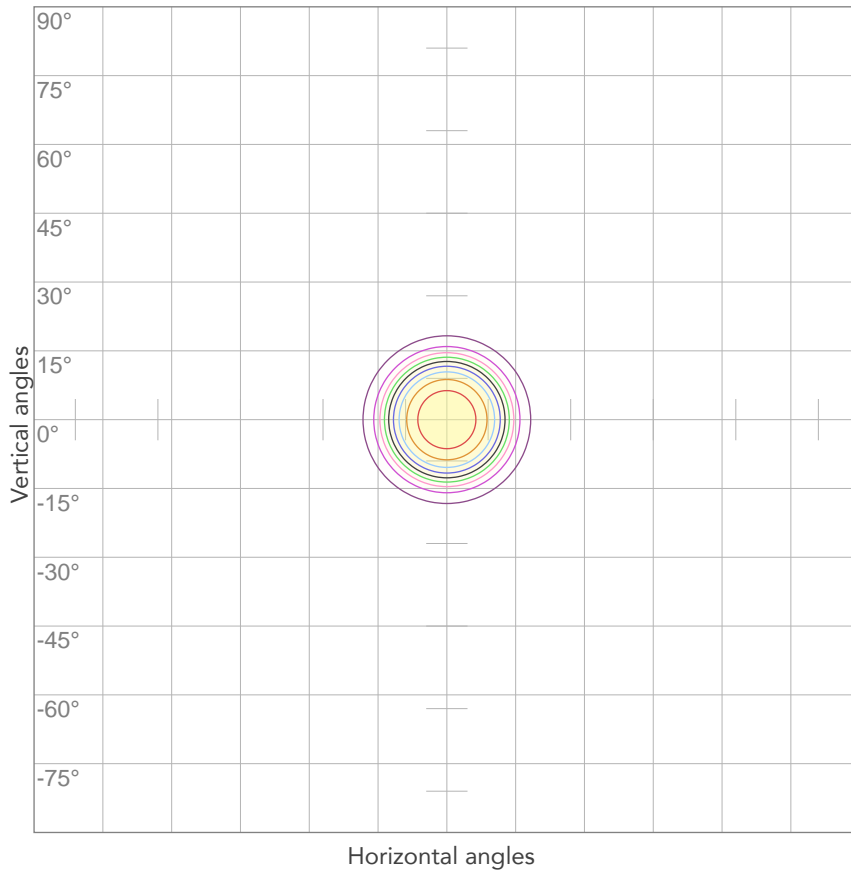
LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
223V	2,16A	466W	54lm/W
Power Fc			
0,97			

ISO CANDELA DIAGRAM



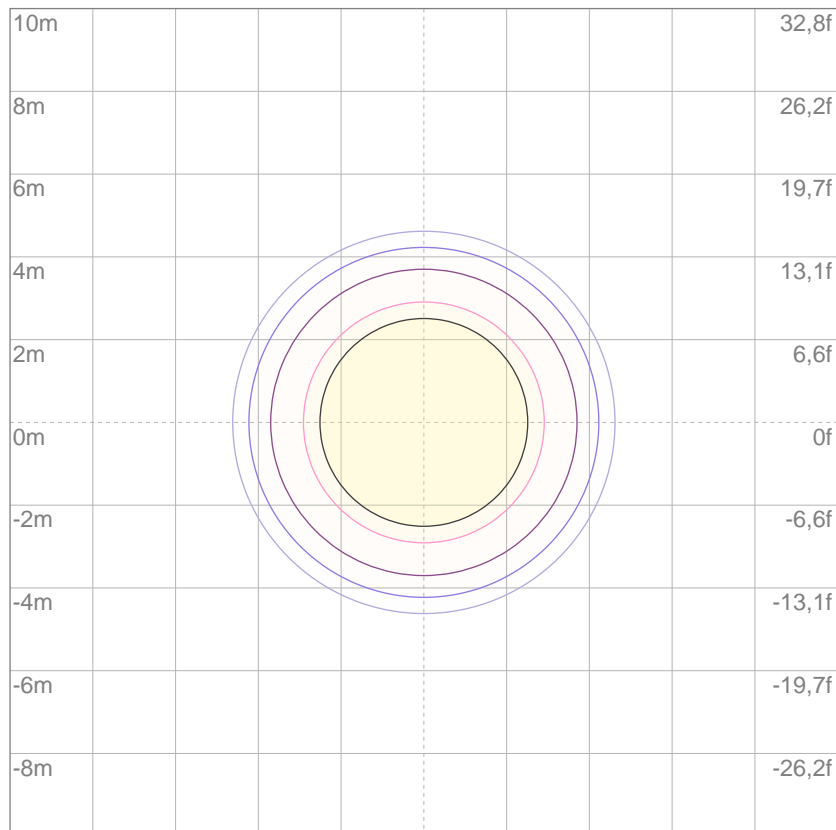
10%	10975 cd
20%	21949 cd
30%	32924 cd
40%	43899 cd
50%	54873 cd
60%	65848 cd
70%	76823 cd
80%	87798 cd

Conditions:

Number of c-planes: 2

Candela at center: 109747 cd

ISO LUX DIAGRAM



3%	32,9 lx
5%	54,9 lx
10%	110 lx
30%	329 lx
50%	549 lx

Conditions:

Number of c-planes: 2

Lux at center: 1097 lx

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



Total lumen output:

20256 lm

Peak candela output:

226183 cd

Light quality:

CRI: 94,8

Color temperature:

3269 K

PRODUCT NAME:

ECLFR2KTU

MEASURAMENT CONDITIONS:

Beam angle:

Min Zoom

Target:

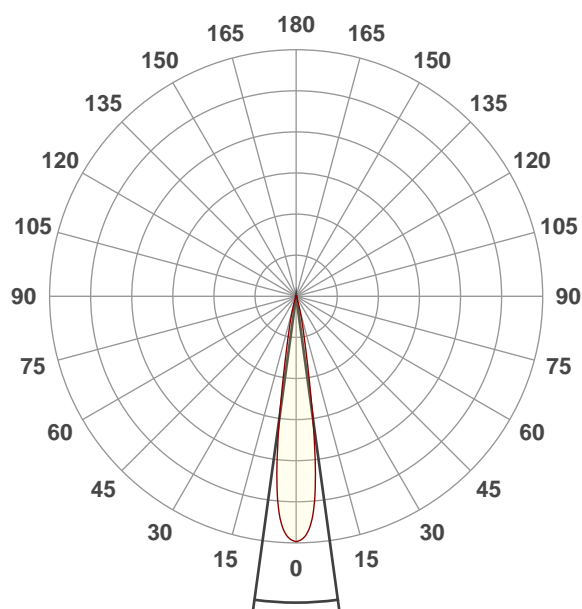
Warm White

Operator:

Paolo Carvone

Date and time:

30/01/2020 12:47:25

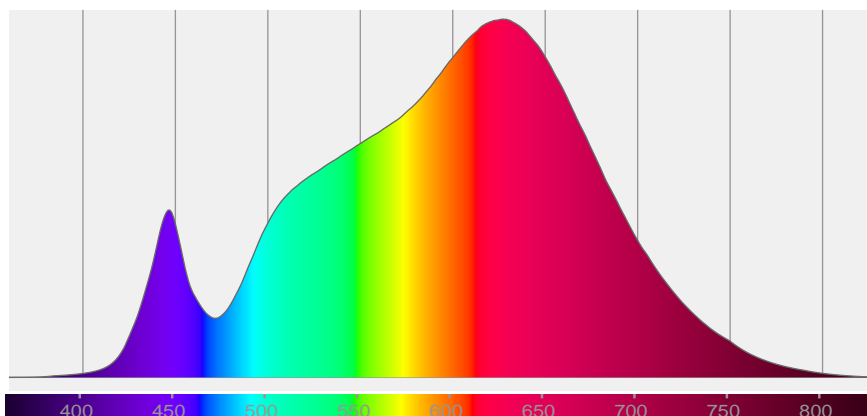


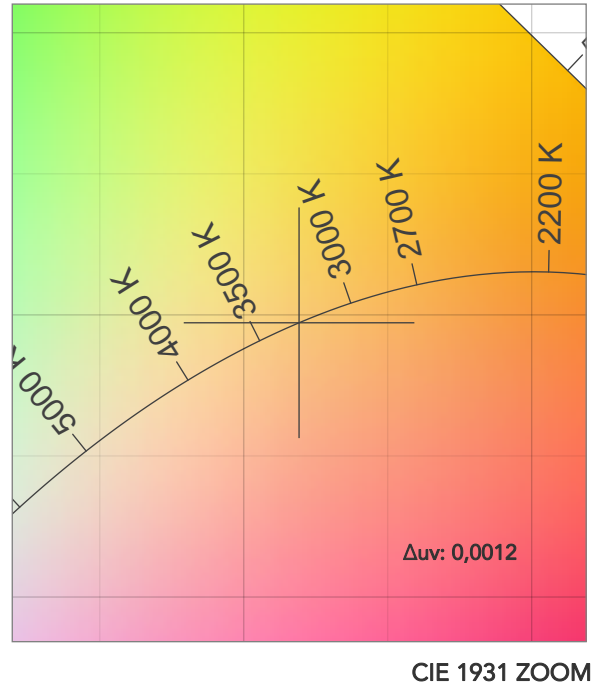
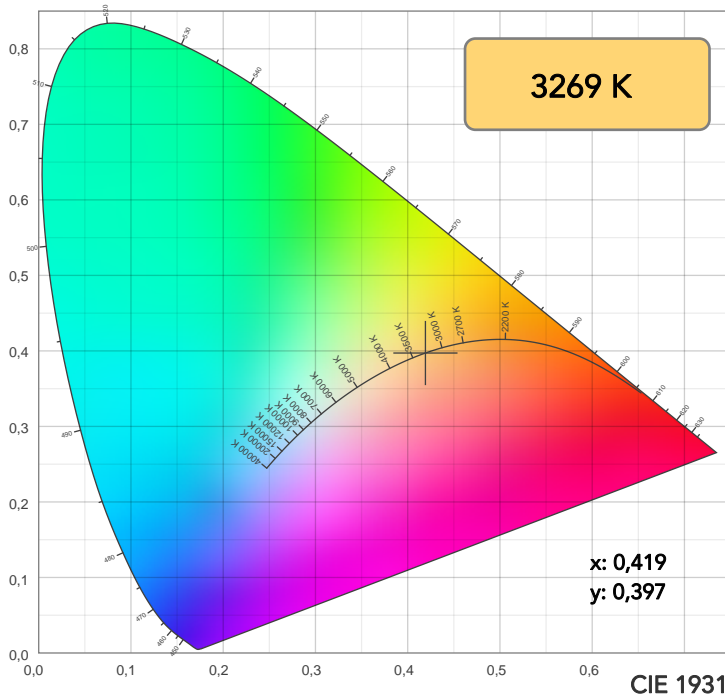
Beam angle 50%: 15,6°

Field angle 10%: 26,4°

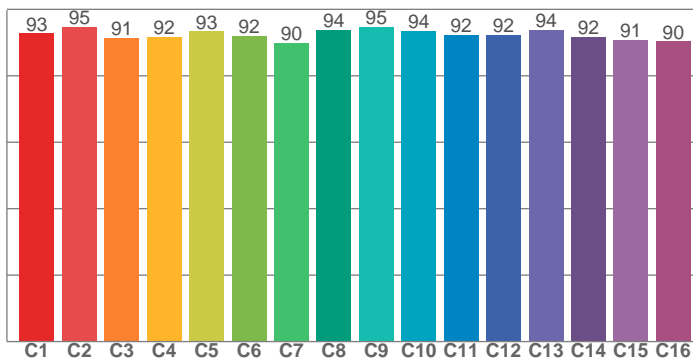
Cut off angle 2.5%: 35,8°

Spectra

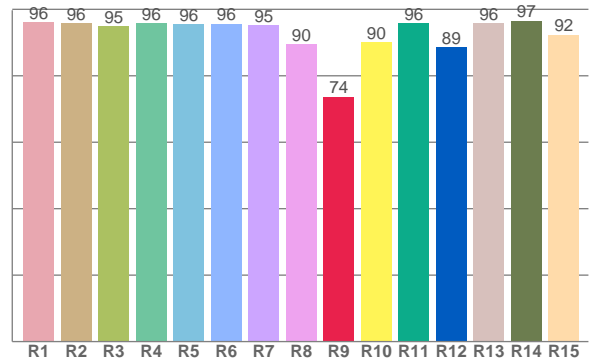




TM30: 92,6



CRI: 94,8 (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
96,0	95,8	95,0	95,8	95,6	95,6	95,2	89,6	73,7	90,1	95,9	88,6	95,8	96,6	92,4

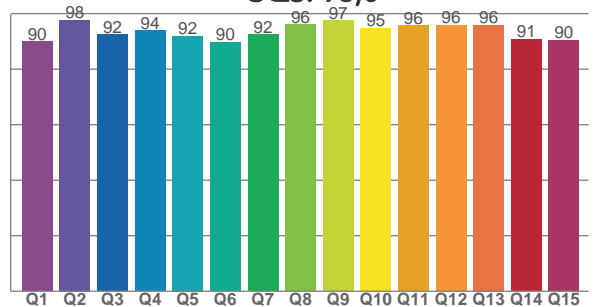
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92,8	94,6	91,4	91,8	93,4	92,1	90,0	93,9	94,7	93,6	92,3	92,4	93,8	91,7	90,7	90,3

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89,9	97,6	92,5	93,9	92,0	89,7	92,5	96,1	97,5	94,8	95,7	95,9	95,9	90,7	90,4

CQS: 93,0



COLOR PARAMETERS

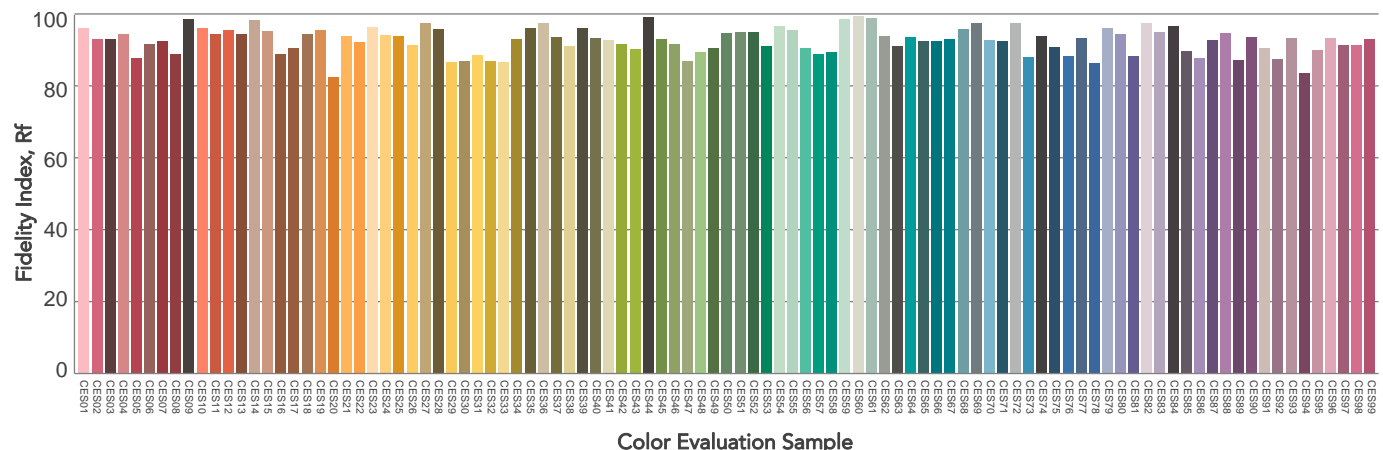
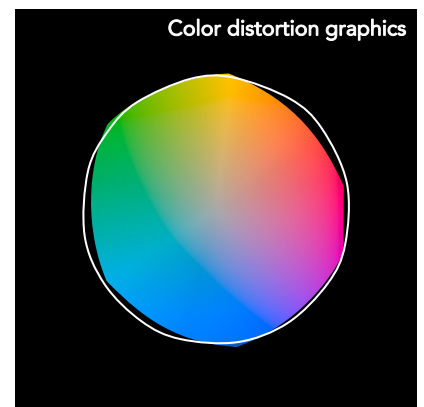
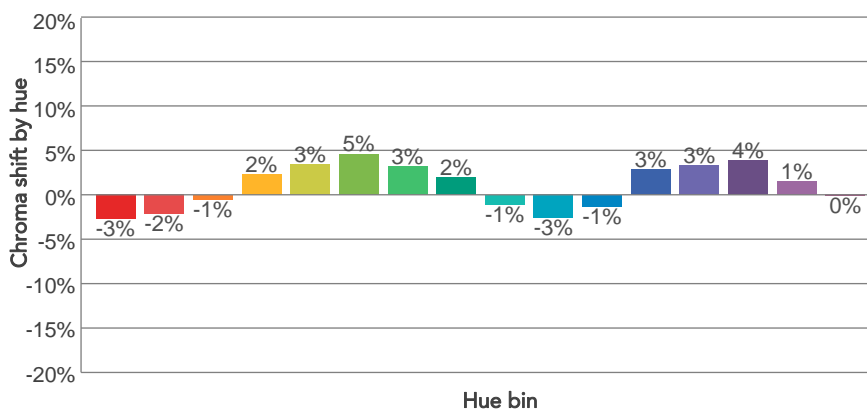
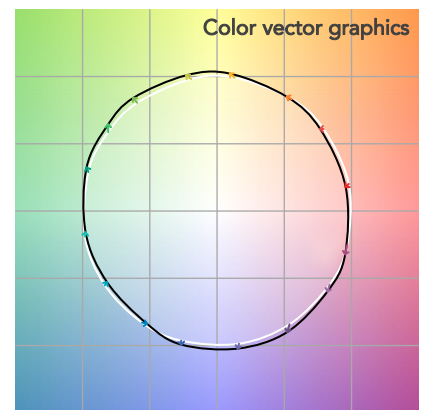
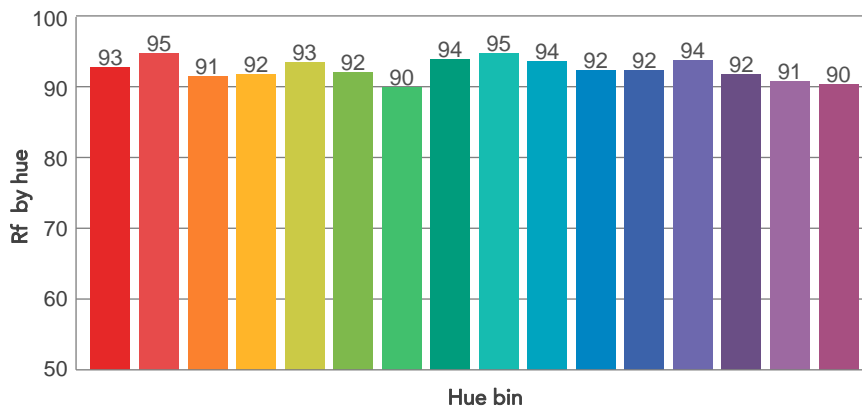
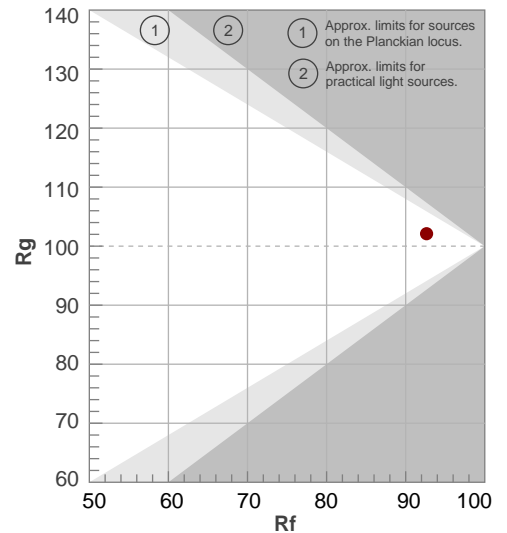
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
3269 K	94,8	73,7	92,6	102,1	93,0	96	0,419	0,397	0,0012

TM30 DETAILS

Rf 92,6
Fidelity index Rf

Rg 102,1
Gammut index

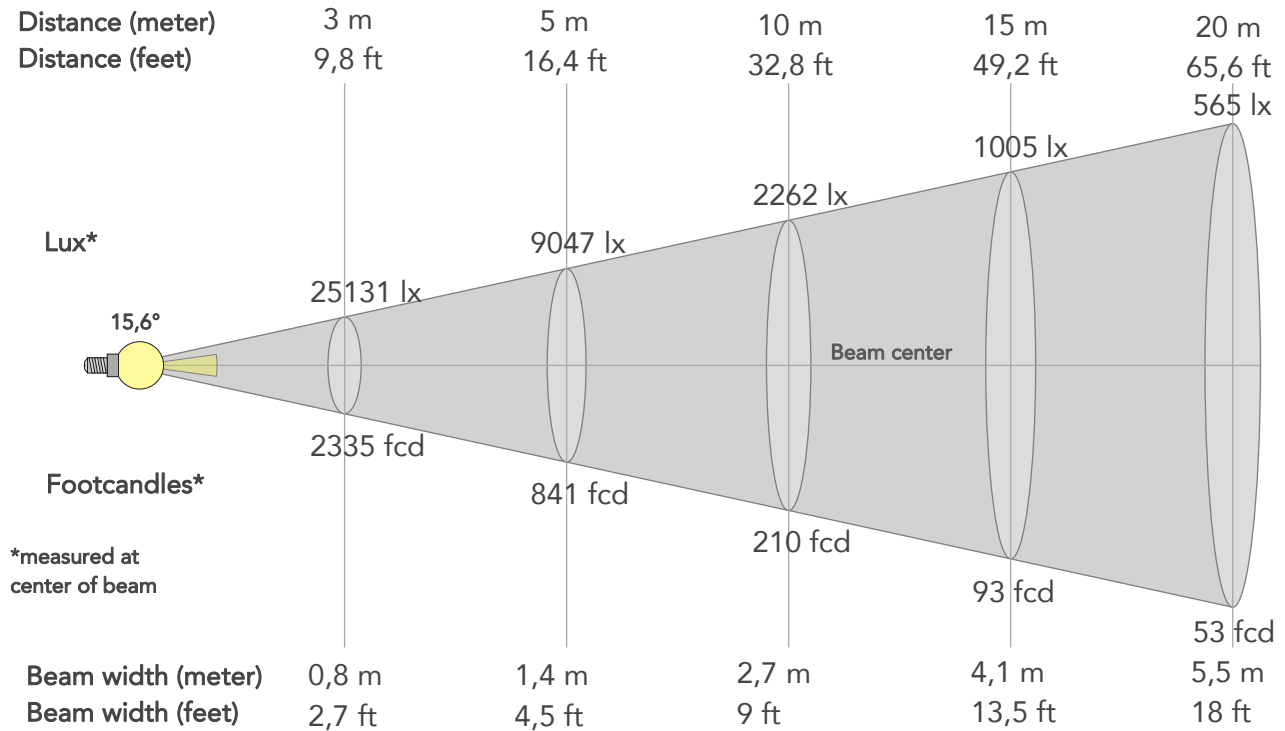
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	93	-3%	-2%
2	95	-2%	1%
3	91	-1%	4%
4	92	2%	4%
5	93	3%	3%
6	92	5%	0%
7	90	3%	-5%
8	94	2%	-3%
9	95	-1%	-3%
10	94	-3%	-1%
11	92	-1%	4%
12	92	3%	1%
13	94	3%	-2%
14	92	4%	-5%
15	91	1%	-5%
16	90	0%	-7%



BEAM DETAILS



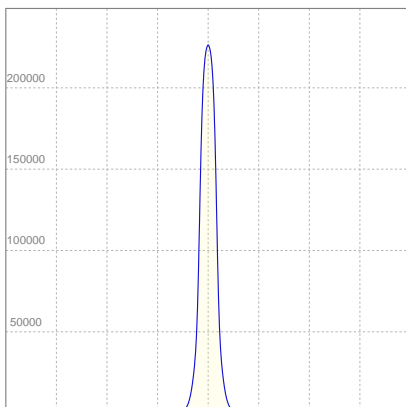
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
15,6°	26,4°	35,8°	94,7%	92,9%



BEAM INTENSITIES AND WIDTHS

Distance	1m	2m	3m	4m	5m	7,5m	10m	15m	20m	25m	30m	40m	50m
Distance	3,3ft	6,6ft	9,8ft	13,1ft	16,4ft	24,6ft	32,8ft	49,2ft	65,6ft	82ft	98,4ft	131,2ft	164ft
Lux	226183lx	56546lx	25131lx	14136lx	9047lx	4021lx	2262lx	1005lx	565lx	362lx	251lx	141lx	90lx
Footcand.	21013fcd	5253fcd	2335fcd	1313fcd	841fcd	374fcd	210fcd	93fcd	53fcd	34fcd	23fcd	13fcd	8fcd
Beam wid.	0,3m	0,5m	0,8m	1,1m	1,4m	2,1m	2,7m	4,1m	5,5m	6,9m	8,2m	11m	13,7m
Beam wid.	0,9ft	1,8ft	2,7ft	3,6ft	4,5ft	6,8ft	9ft	13,5ft	18ft	22,5ft	27ft	36ft	45,1ft

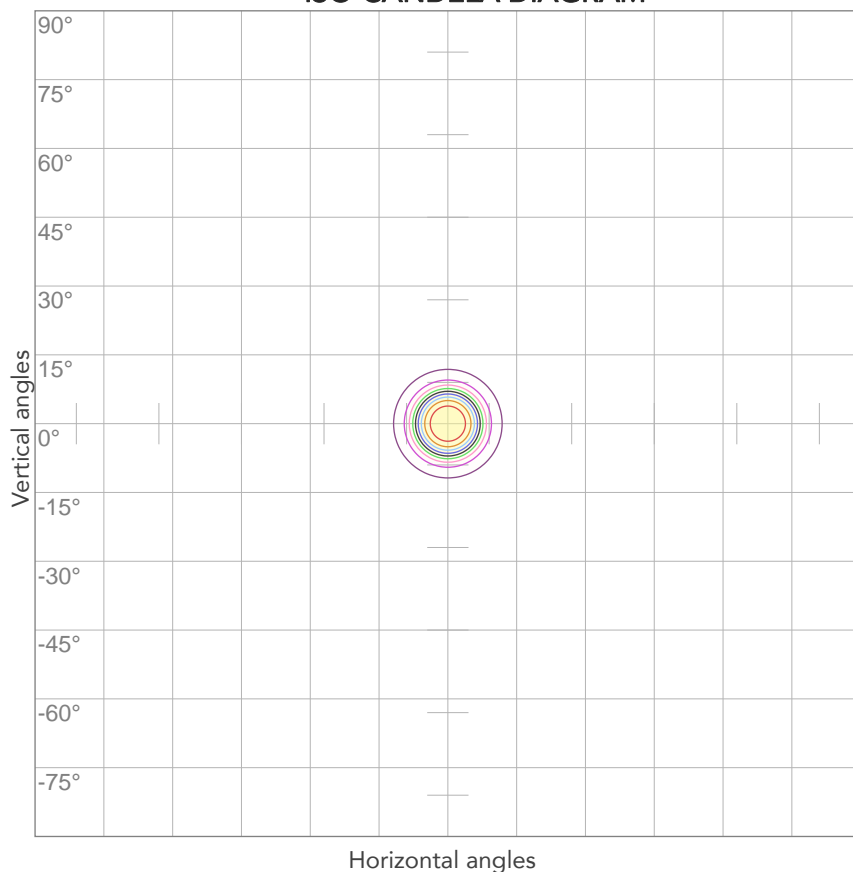
LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
224V	2,15A	467,1W	43lm/W
Power Fc			
0,97			

ISO CANDELA DIAGRAM



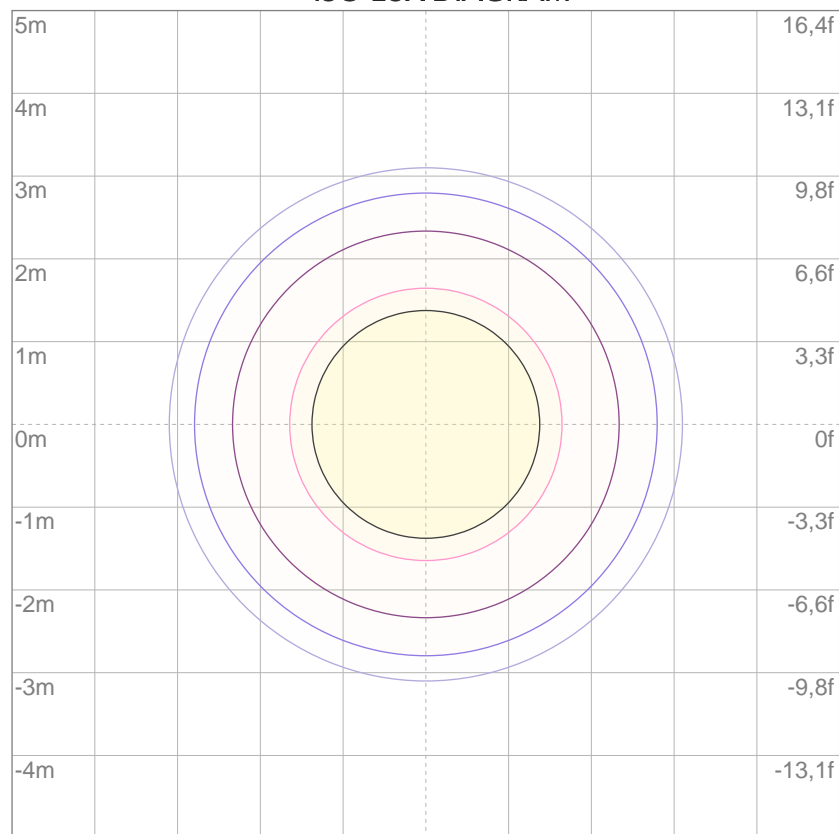
10%	22618 cd
20%	45237 cd
30%	67855 cd
40%	90473 cd
50%	113092 cd
60%	135710 cd
70%	158328 cd
80%	180946 cd

Conditions:

Number of c-planes: 2

Candela at center: 226183 cd

ISO LUX DIAGRAM



3%	67,9 lx
5%	113 lx
10%	226 lx
30%	679 lx
50%	1131 lx

Conditions:

Number of c-planes: 2

Lux at center: 2262 lx

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