Photometric Test Report

ECLFS PRL19

High power RGBL full spectrum ellipsoidal LED

CONTENTS

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:

5133 lm

Peak candela output:

64168 cd

PRODUCT NAME:

ECLFS

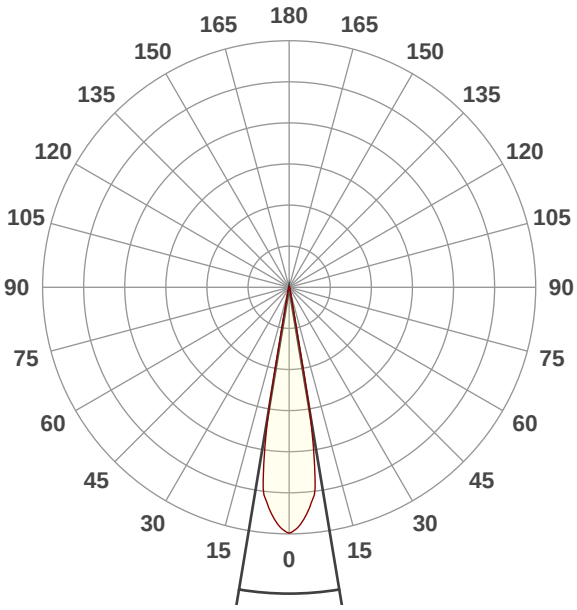
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
Full on

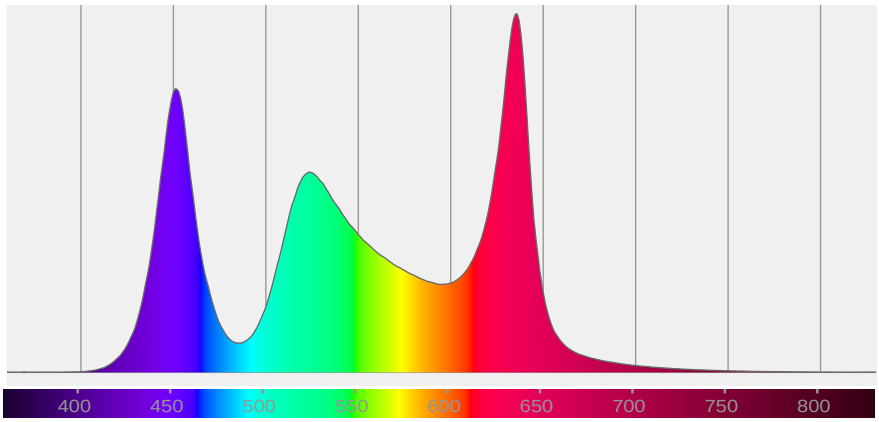
Operator:
Paolo Carvone

Date and time:
30/04/2020 10:49:12



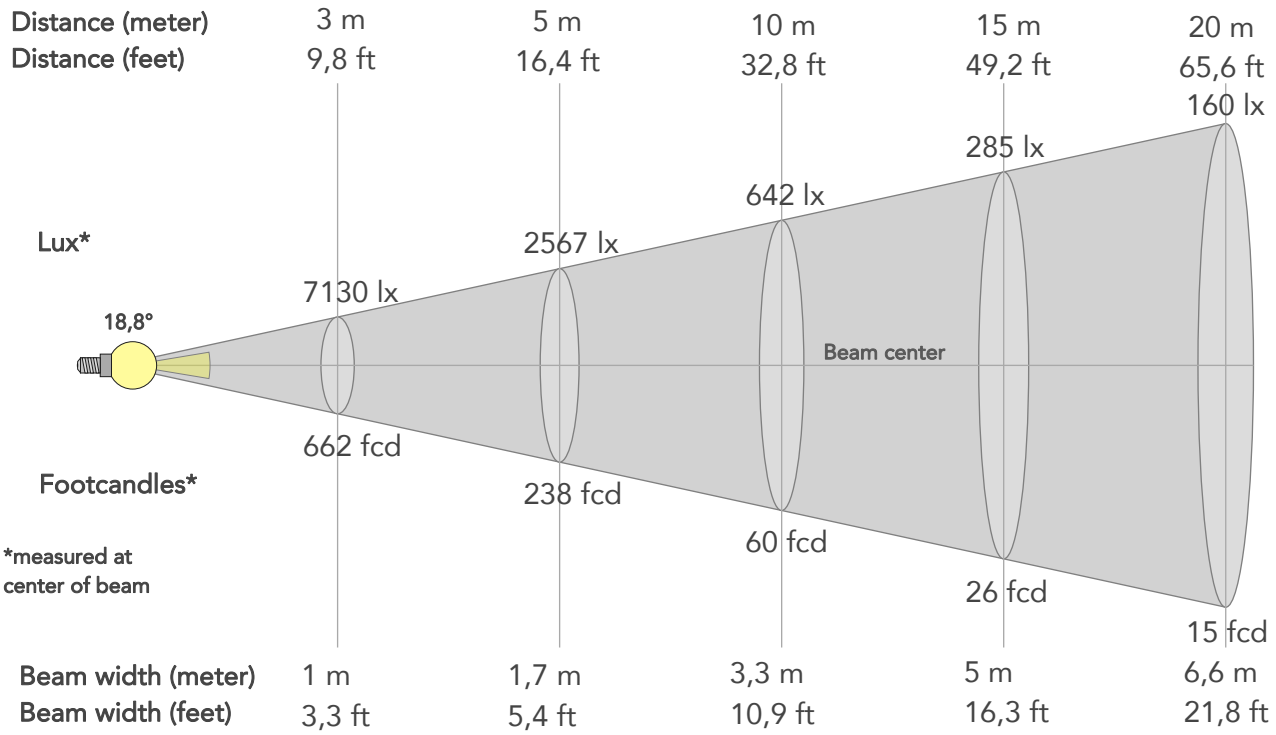
Beam angle 50%: 18,8°
Field angle 10%: 21,9°
Cut off angle 2.5%: 24,4°

Spectra



BEAM DETAILS

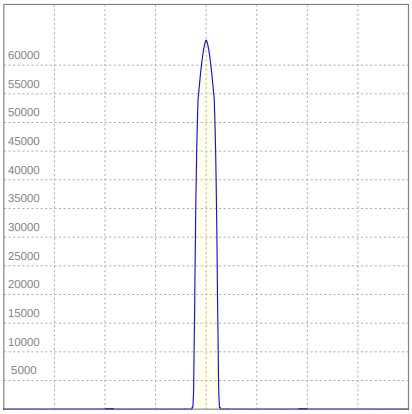
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18,8°	21,9°	24,4°	98,6%	98,6%



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	64168lx	16042lx	7130lx	4010lx	2567lx	1141lx	642lx	285lx	160lx	103lx	71lx	40lx	26lx
Footcand.	5961fcd	1490fcd	662fcd	373fcd	238fcd	106fcd	60fcd	26fcd	15fcd	10fcd	7fcd	4fcd	2fcd
Beam wid.	0,3m	0,7m	1m	1,3m	1,7m	2,5m	3,3m	5m	6,6m	8,3m	10m	13,3m	16,6m
Beam wid.	1,1ft	2,2ft	3,3ft	4,3ft	5,4ft	8,2ft	10,9ft	16,3ft	21,8ft	27,2ft	32,6ft	43,5ft	54,4ft

LINEAR DISTRIBUTION DIAGRAM



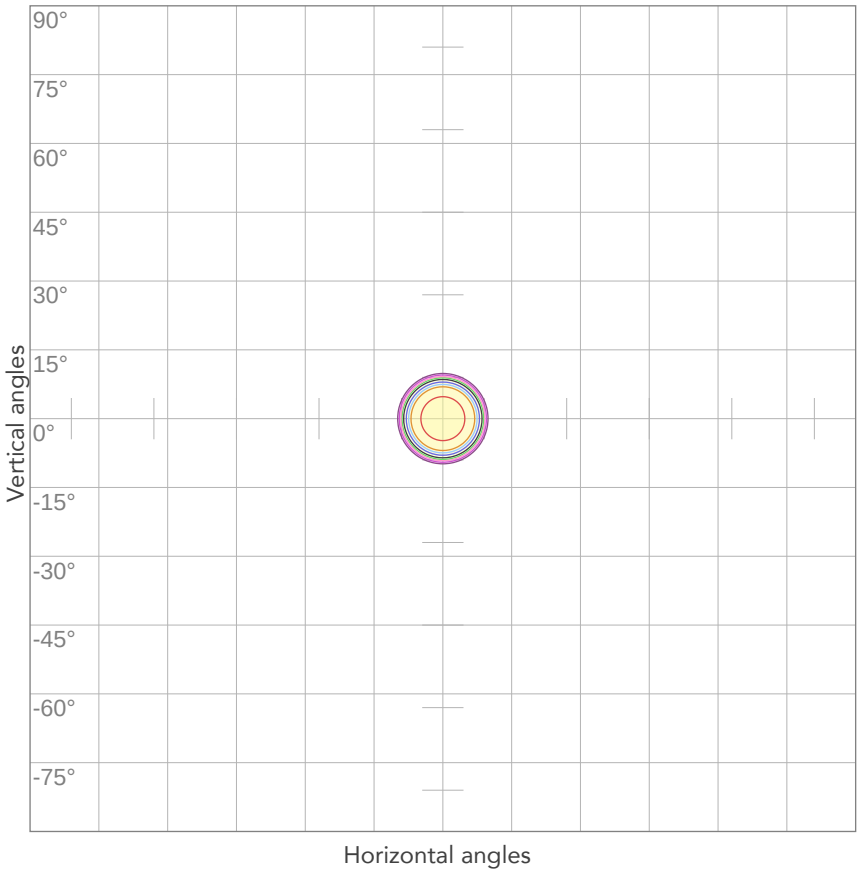
ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
226V	0,930A	200,7W	26lm/W

Power FC
0,96

ISO DIAGRAMS

ISO CANDELA DIAGRAM



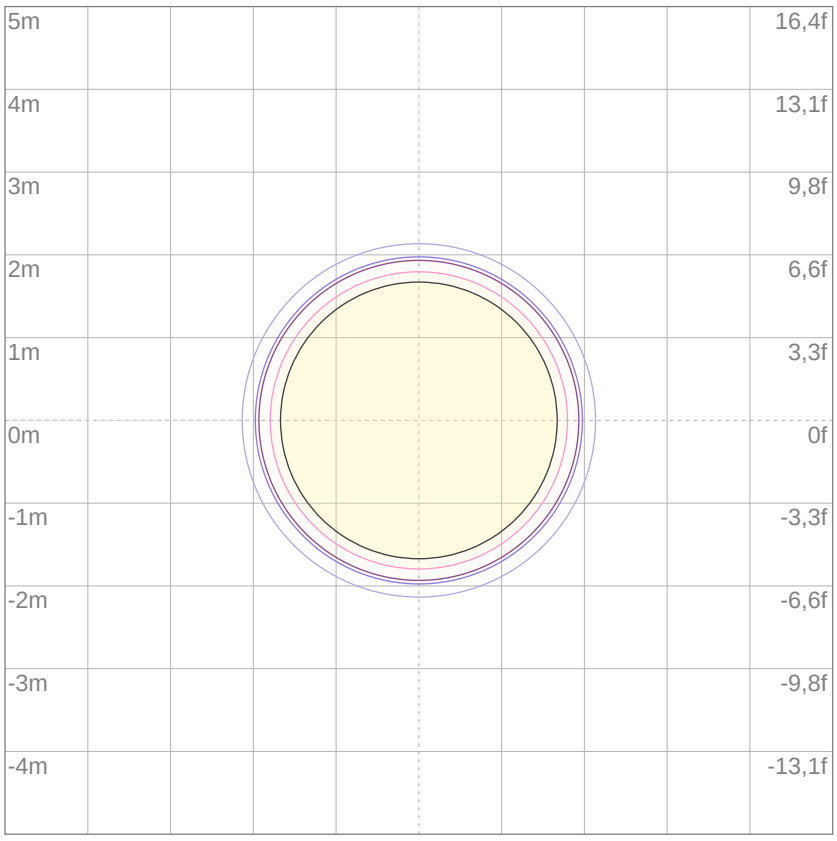
10%	6417 cd
20%	12834 cd
30%	19250 cd
40%	25667 cd
50%	32084 cd
60%	38501 cd
70%	44918 cd
80%	51334 cd

Conditions:

Number of c-planes: 2

Candela at center: 64168 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	19,3 lx
5%	32,1 lx
10%	64,2 lx
30%	193 lx
50%	321 lx

Conditions:

Number of c-planes: 2

Lux at center: 642 lx

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

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info@prolights.it

Total lumen output:

807 lm

Peak candela output:

10312 cd

PRODUCT NAME:

ECLFS

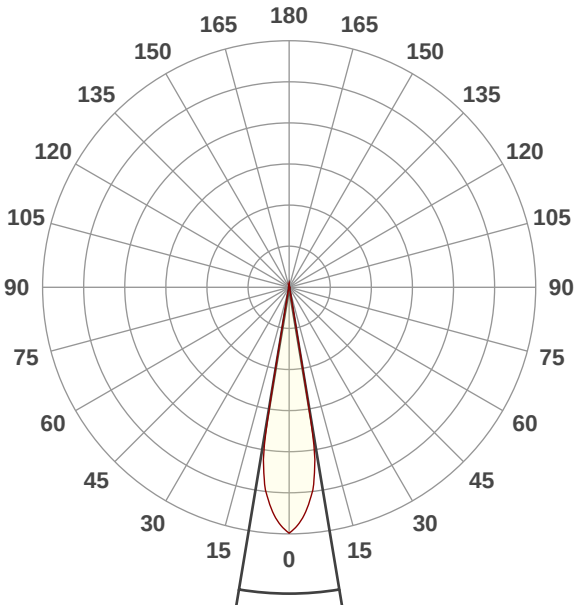
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
Red

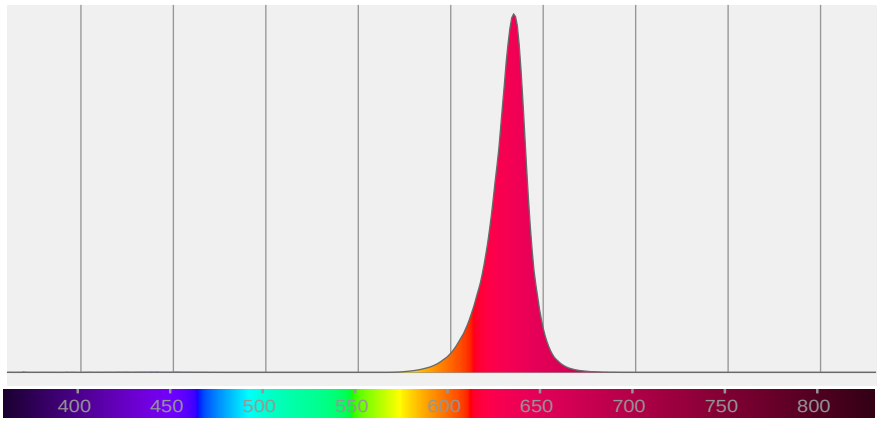
Operator:
Paolo Carvone

Date and time:
30/04/2020 10:50:53



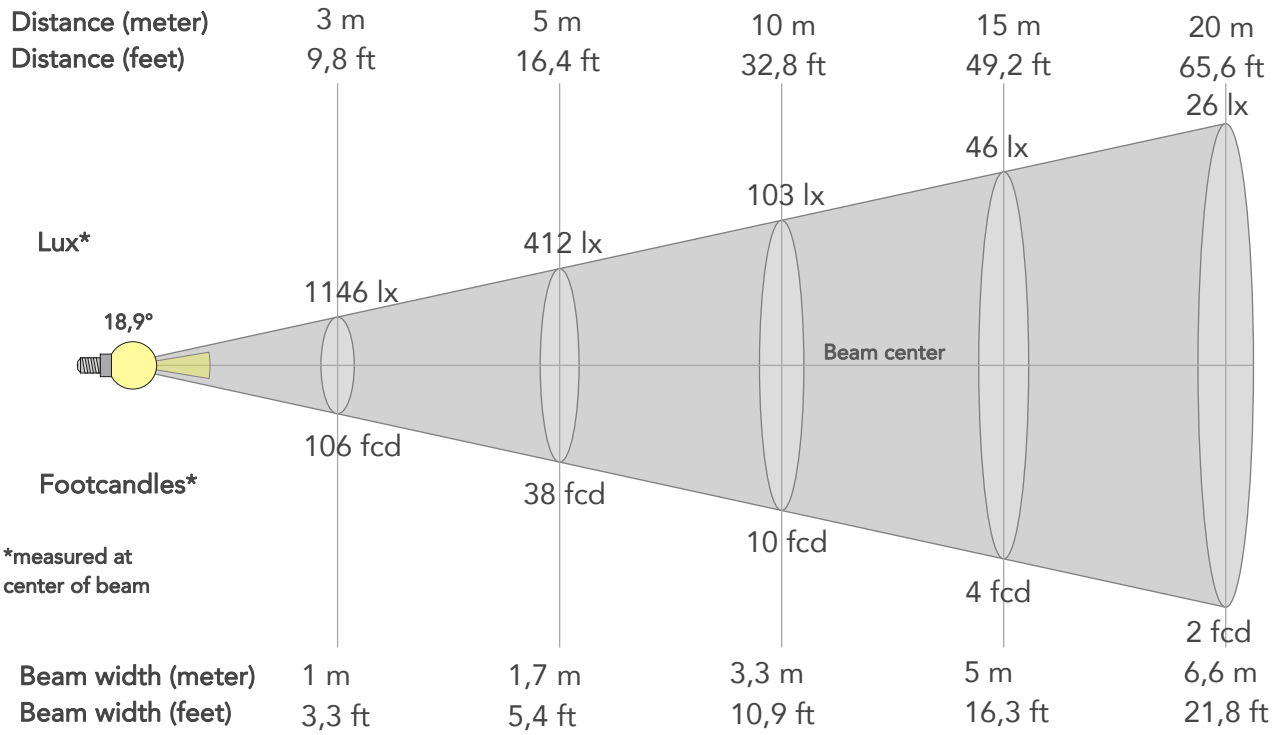
Beam angle 50%: 18,9°
Field angle 10%: 21,4°
Cut off angle 2.5%: 23,5°

Spectra



BEAM DETAILS

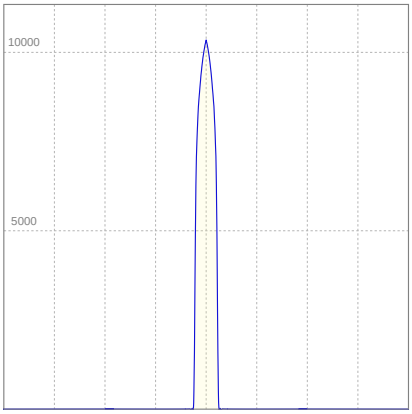
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18,9°	21,4°	23,5°	97,8%	97,7%



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	10312lx	2578lx	1146lx	644lx	412lx	183lx	103lx	46lx	26lx	16lx	11lx	6lx	4lx
Footcand.	958fcd	240fcd	106fcd	60fcd	38fcd	17fcd	10fcd	4fcd	2fcd	2fcd	1fcd	1fcd	0fcd
Beam wid.	0,3m	0,7m	1m	1,3m	1,7m	2,5m	3,3m	5m	6,6m	8,3m	10m	13,3m	16,6m
Beam wid.	1,1ft	2,2ft	3,3ft	4,4ft	5,4ft	8,2ft	10,9ft	16,3ft	21,8ft	27,2ft	32,7ft	43,6ft	54,5ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
226V	0,279A	47,2W	17lm/W

Power FC
0,96

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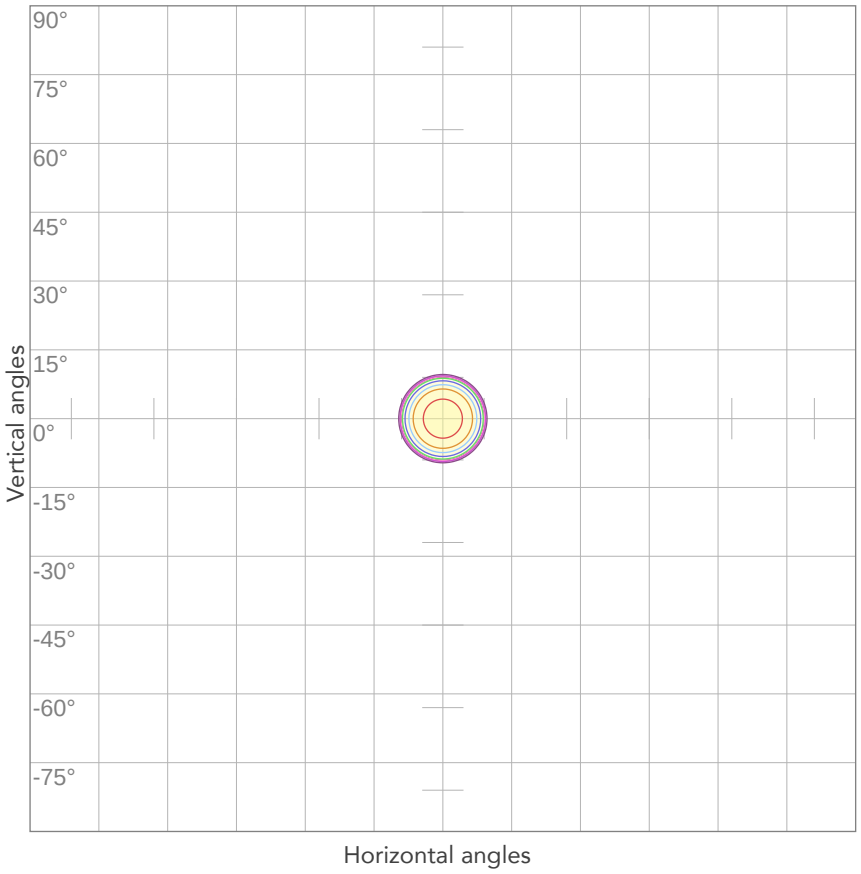
ISO DIAGRAMS

ISO CANDELA DIAGRAM



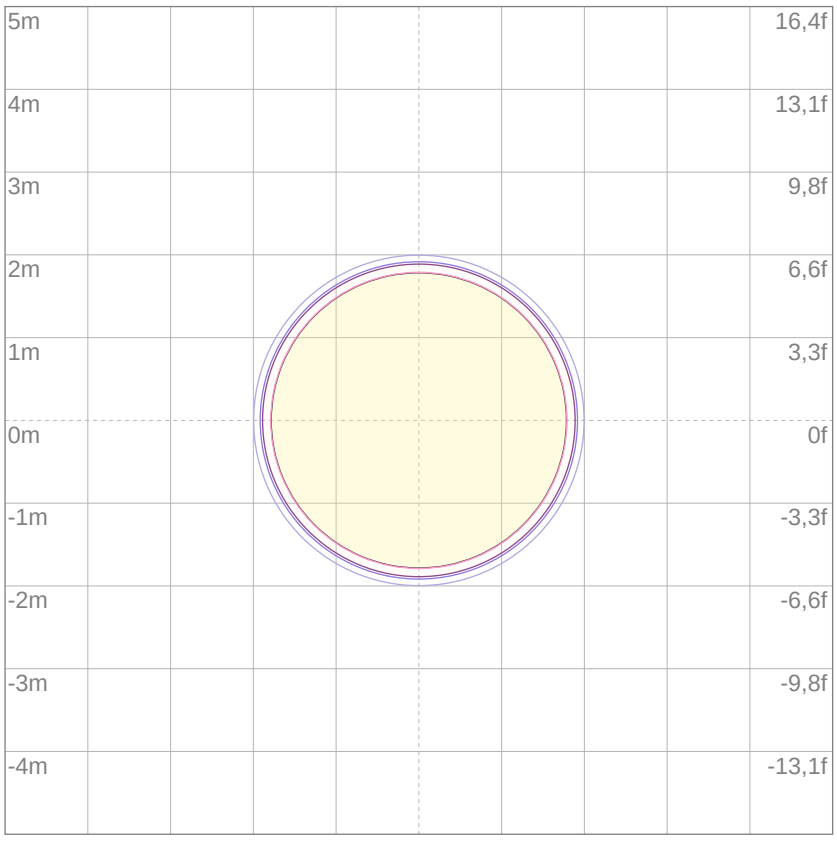
10%	1031 cd
20%	2062 cd
30%	3094 cd
40%	4125 cd
50%	5156 cd
60%	6187 cd
70%	7218 cd
80%	8250 cd

Conditions:

Number of c-planes: 2

Candela at center: 10312 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	3,09 lx
5%	5,16 lx
10%	10,3 lx
30%	30,9 lx
50%	51,6 lx

Conditions:

Number of c-planes: 2

Lux at center: 103 lx

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

Total lumen output:

1162 lm

Peak candela output:

15978 cd

PRODUCT NAME:

ECLFS

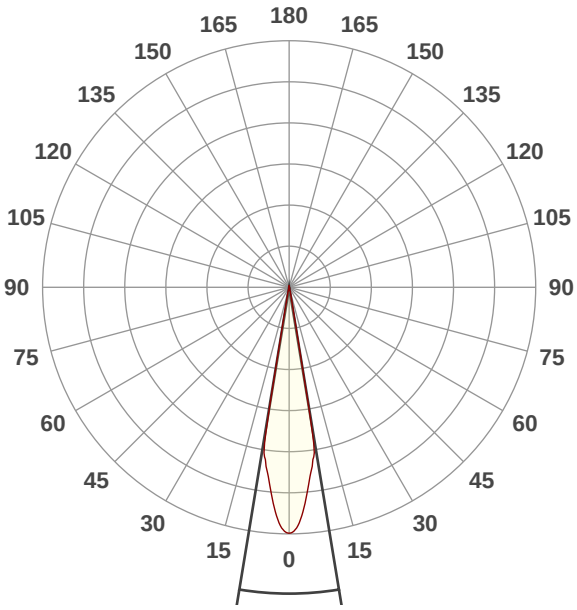
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
Green

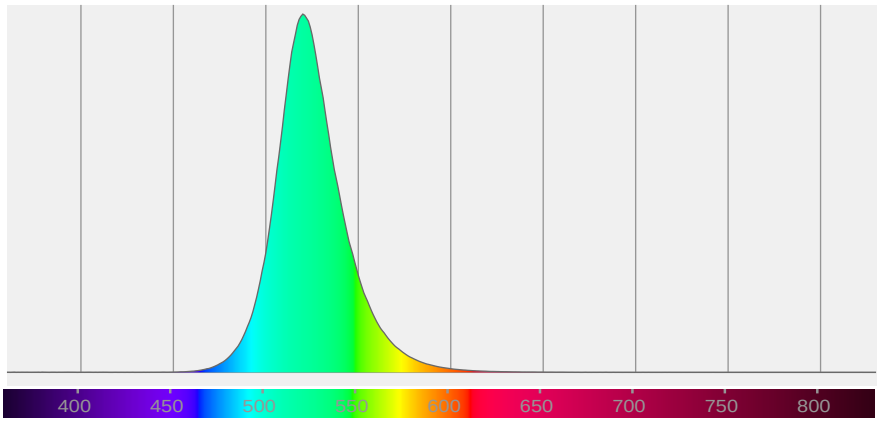
Operator:
Paolo Carvone

Date and time:
30/04/2020 10:52:30



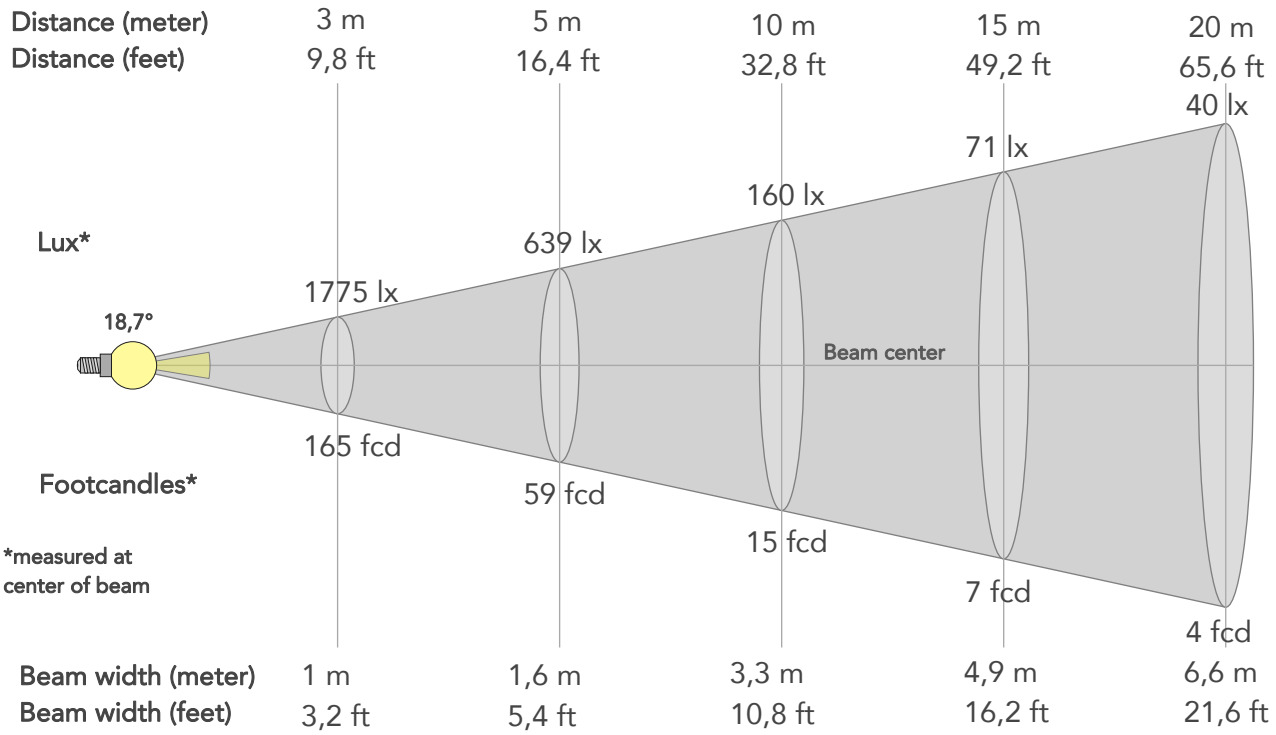
Beam angle 50%: 18,7°
Field angle 10%: 20,8°
Cut off angle 2.5%: 22,8°

Spectra



BEAM DETAILS

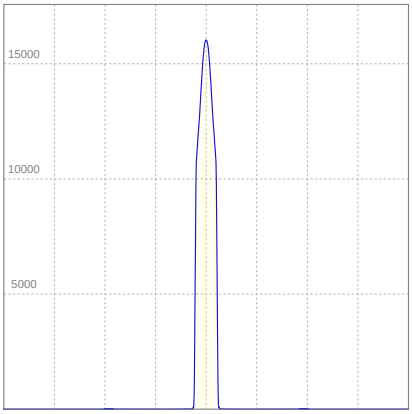
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18,7°	20,8°	22,8°	99,0%	98,7%



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	15978lx	3994lx	1775lx	999lx	639lx	284lx	160lx	71lx	40lx	26lx	18lx	10lx	6lx
Footcand.	1484fcd	371fcd	165fcd	93fcd	59fcd	26fcd	15fcd	7fcd	4fcd	2fcd	2fcd	1fcd	1fcd
Beam wid.	0,3m	0,7m	1m	1,3m	1,6m	2,5m	3,3m	4,9m	6,6m	8,2m	9,9m	13,2m	16,5m
Beam wid.	1,1ft	2,2ft	3,2ft	4,3ft	5,4ft	8,1ft	10,8ft	16,2ft	21,6ft	27ft	32,4ft	43,2ft	54,1ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
227V	0,281A	48,0W	24lm/W

Power FC
0,96

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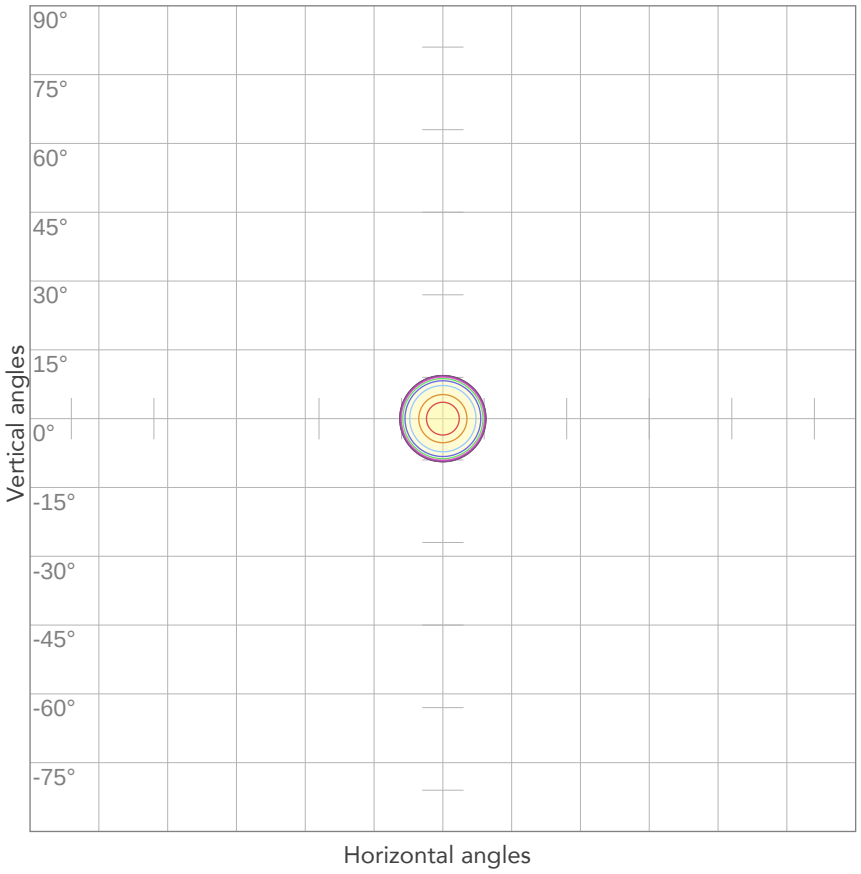
ISO DIAGRAMS

ISO CANDELA DIAGRAM



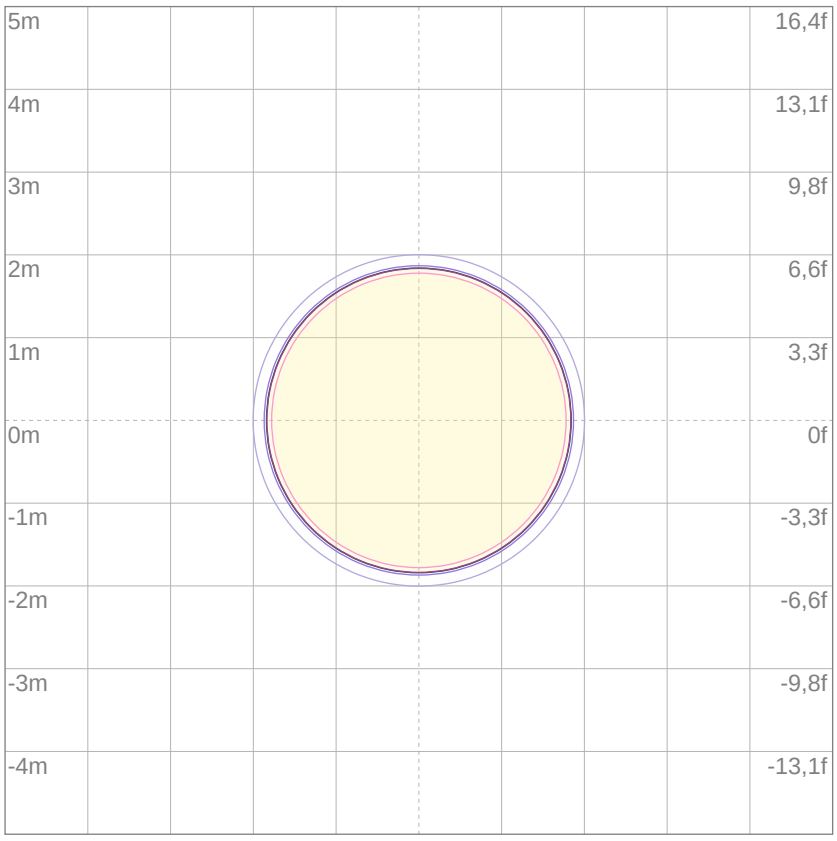
10%	1598 cd
20%	3196 cd
30%	4793 cd
40%	6391 cd
50%	7989 cd
60%	9587 cd
70%	11184 cd
80%	12782 cd

Conditions:

Number of c-planes: 2

Candela at center: 15978 cd

ISO LUX DIAGRAM



3%	4,79 lx
5%	7,99 lx
10%	16,0 lx
30%	47,9 lx
50%	79,9 lx

Conditions:

Number of c-planes: 2

Lux at center: 160 lx

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

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Total lumen output:

169 lm

Peak candela output:

2411 cd

PRODUCT NAME:

ECLFS

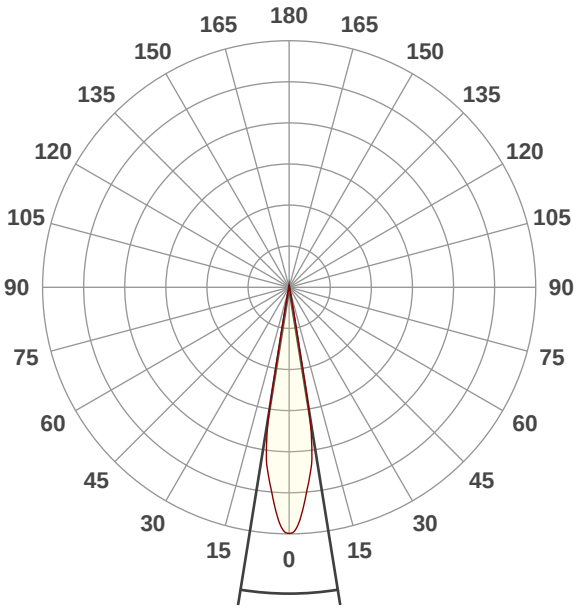
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
Blue

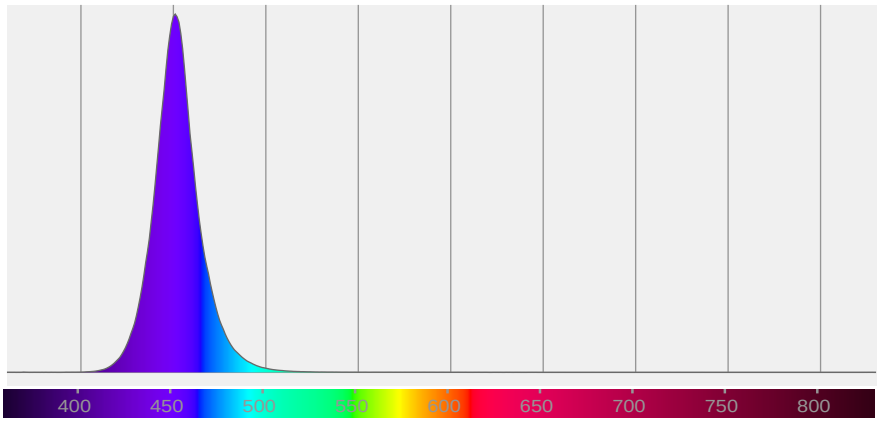
Operator:
Paolo Carvone

Date and time:
30/04/2020 10:53:53



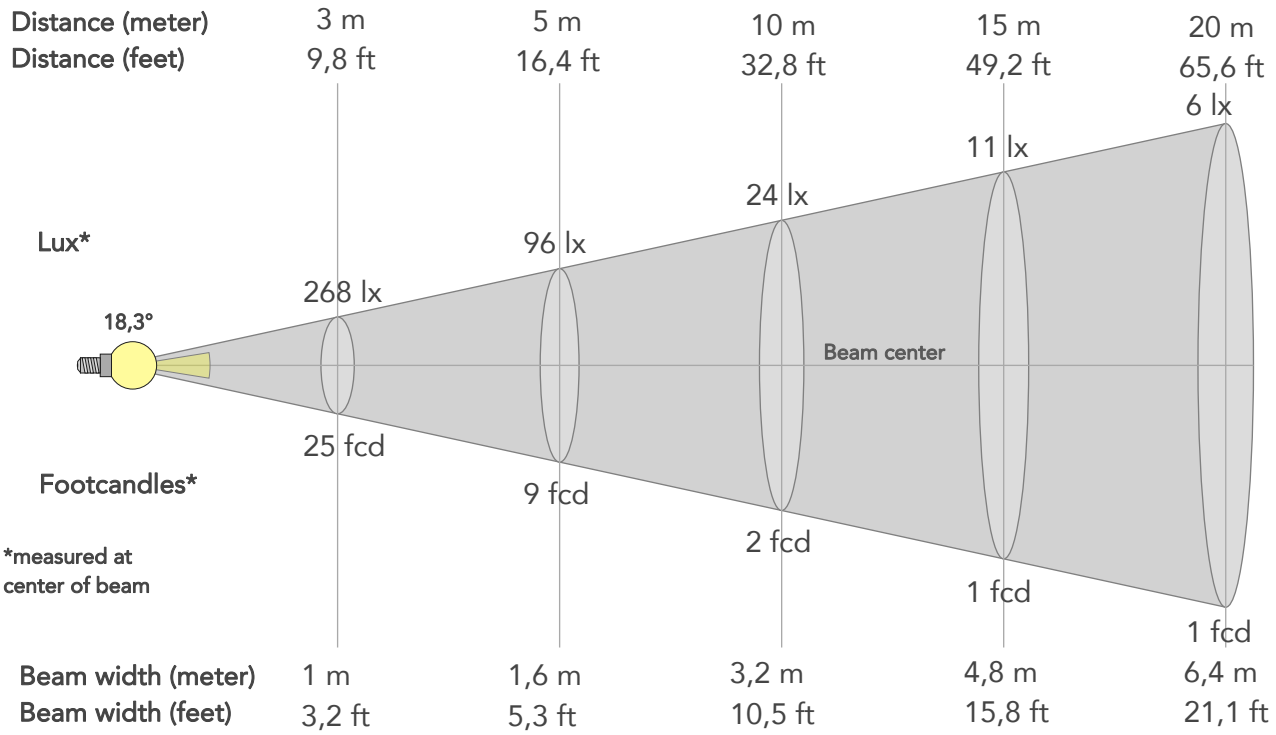
Beam angle 50%: 18,3°
Field angle 10%: 21°
Cut off angle 2.5%: 23°

Spectra



BEAM DETAILS

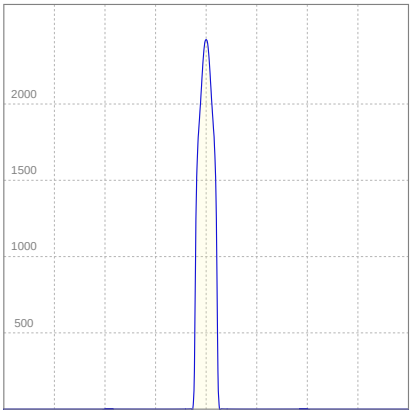
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18,3°	21°	23°	99,3%	99,1%



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	2411lx	603lx	268lx	151lx	96lx	43lx	24lx	11lx	6lx	4lx	3lx	2lx	1lx
Footcand.	224fcd	56fcd	25fcd	14fcd	9fcd	4fcd	2fcd	1fcd	1fcd	0fcd	0fcd	0fcd	0fcd
Beam wid.	0,3m	0,6m	1m	1,3m	1,6m	2,4m	3,2m	4,8m	6,4m	8m	9,6m	12,9m	16,1m
Beam wid.	1,1ft	2,1ft	3,2ft	4,2ft	5,3ft	7,9ft	10,5ft	15,8ft	21,1ft	26,4ft	31,6ft	42,2ft	52,7ft

LINEAR DISTRIBUTION DIAGRAM



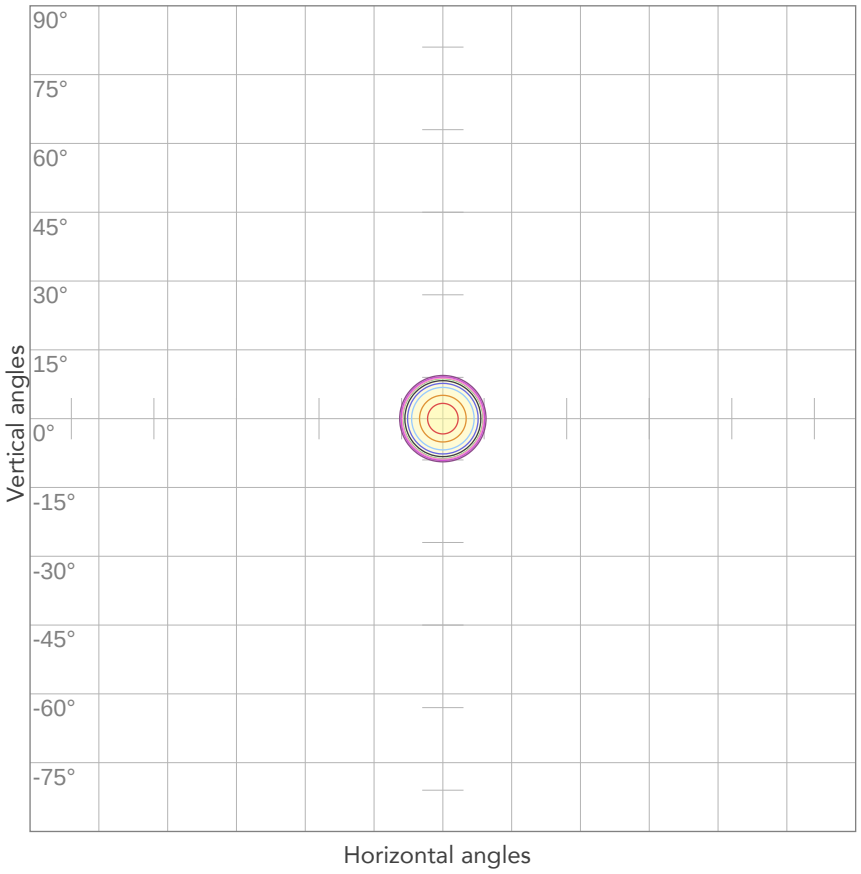
ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
226V	0,244A	37,8W	4lm/W

Power FC
0,96

ISO DIAGRAMS

ISO CANDELA DIAGRAM



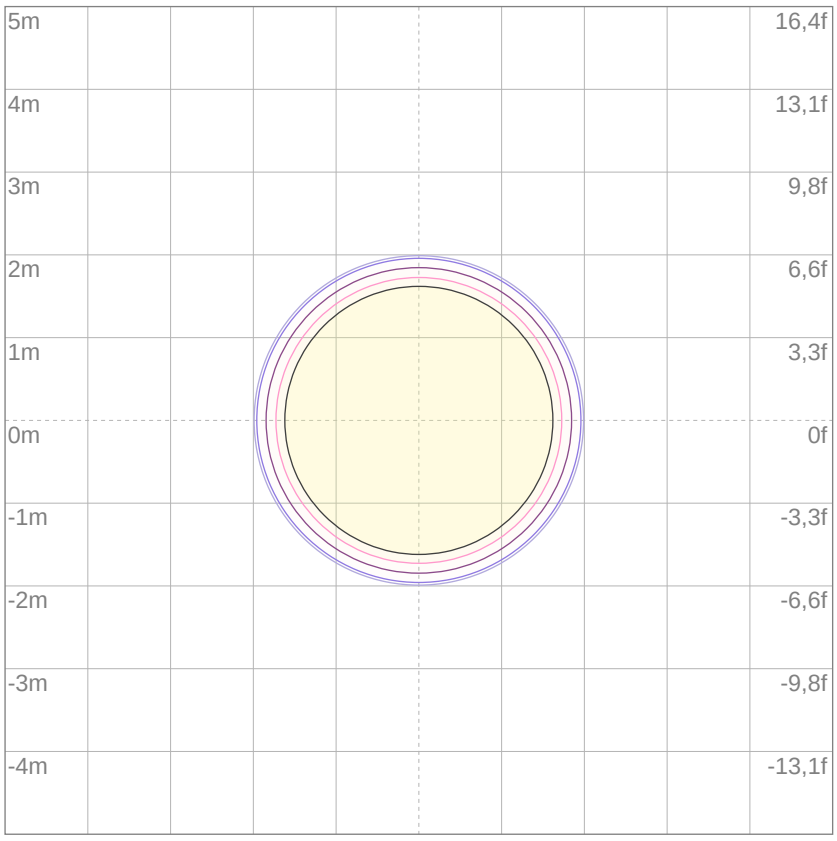
10%	241 cd
20%	482 cd
30%	723 cd
40%	965 cd
50%	1206 cd
60%	1447 cd
70%	1688 cd
80%	1929 cd

Conditions:

Number of c-planes: 2

Candela at center: 2411 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	0,723 lx
5%	1,21 lx
10%	2,41 lx
30%	7,23 lx
50%	12,1 lx

Conditions:

Number of c-planes: 2

Lux at center: 24,1 lx

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

Total lumen output:

3219 lm

Peak candela output:

37579 cd

PRODUCT NAME:

ECLFS

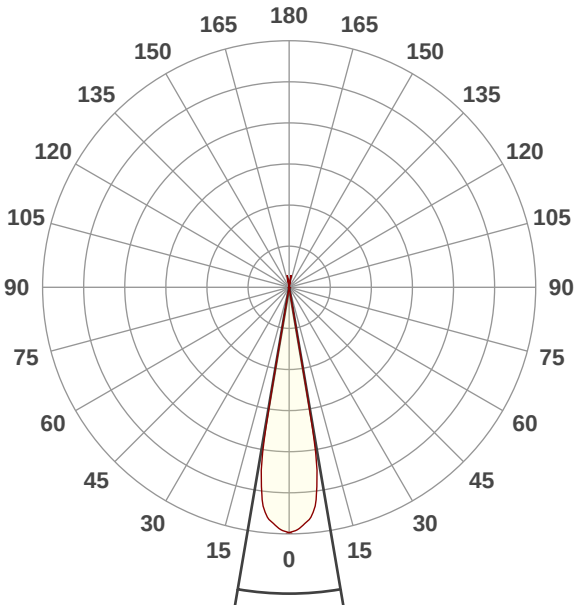
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
Lime

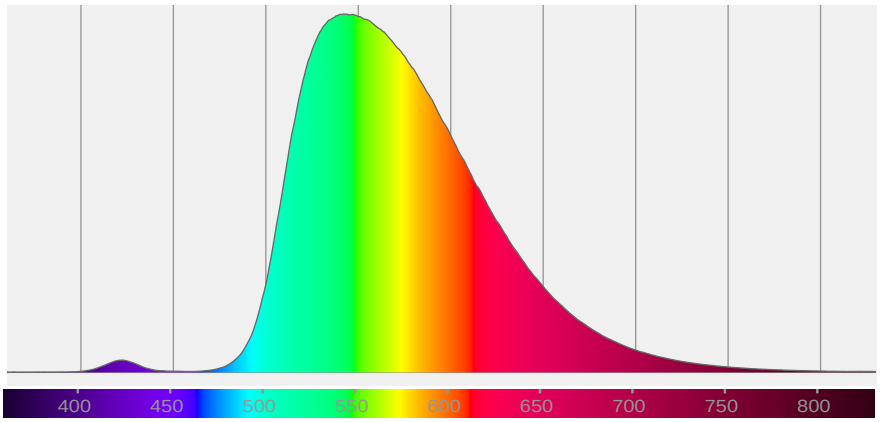
Operator:
Paolo Carvone

Date and time:
30/04/2020 10:55:23



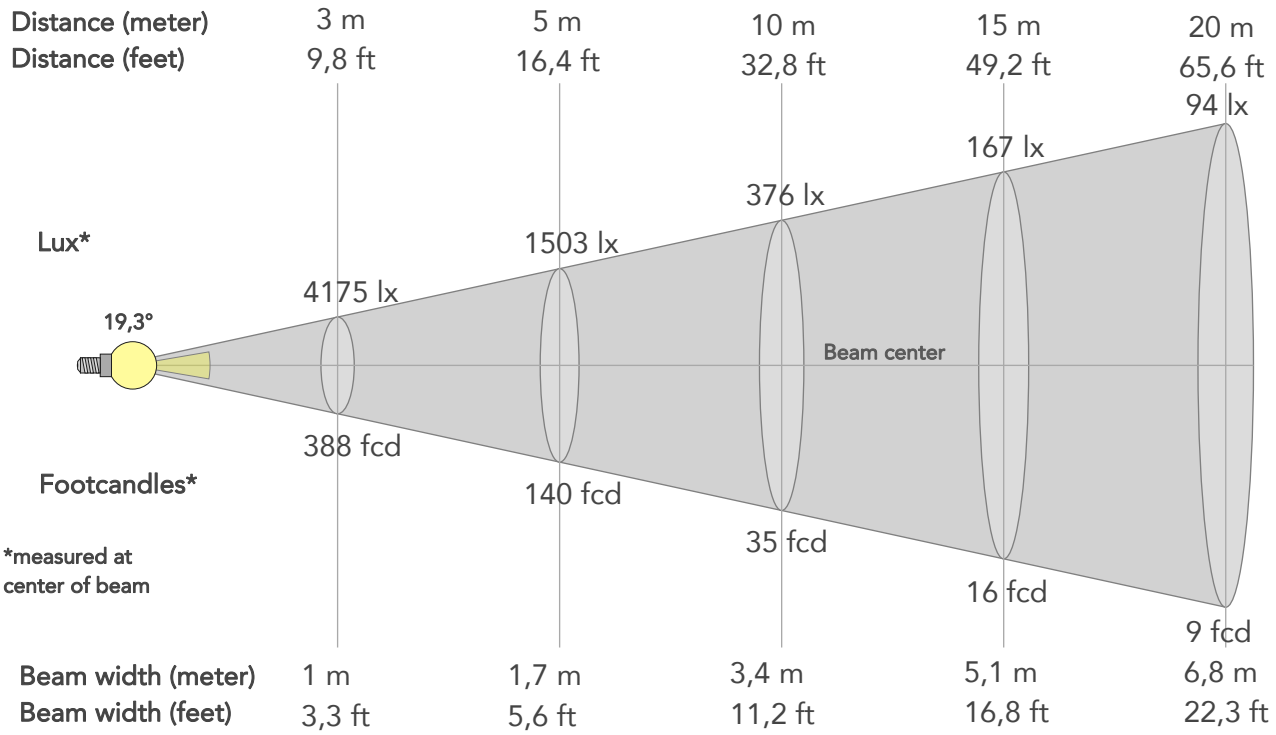
Beam angle 50%: 19,3°
Field angle 10%: 21,6°
Cut off angle 2.5%: 22,1°

Spectra



BEAM DETAILS

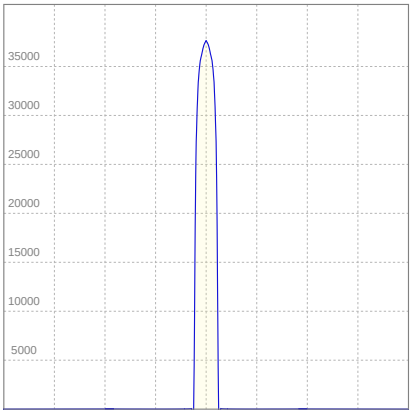
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19,3°	21,6°	22,1°	96,5%	96,2%



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	37579lx	9395lx	4175lx	2349lx	1503lx	668lx	376lx	167lx	94lx	60lx	42lx	23lx	15lx
Footcand.	3491fcd	873fcd	388fcd	218fcd	140fcd	62fcd	35fcd	16fcd	9fcd	6fcd	4fcd	2fcd	1fcd
Beam wid.	0,3m	0,7m	1m	1,4m	1,7m	2,6m	3,4m	5,1m	6,8m	8,5m	10,2m	13,6m	17m
Beam wid.	1,1ft	2,2ft	3,3ft	4,5ft	5,6ft	8,4ft	11,2ft	16,8ft	22,3ft	27,9ft	33,5ft	44,7ft	55,8ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
226V	0,428A	84,8W	38lm/W

Power FC
0,96

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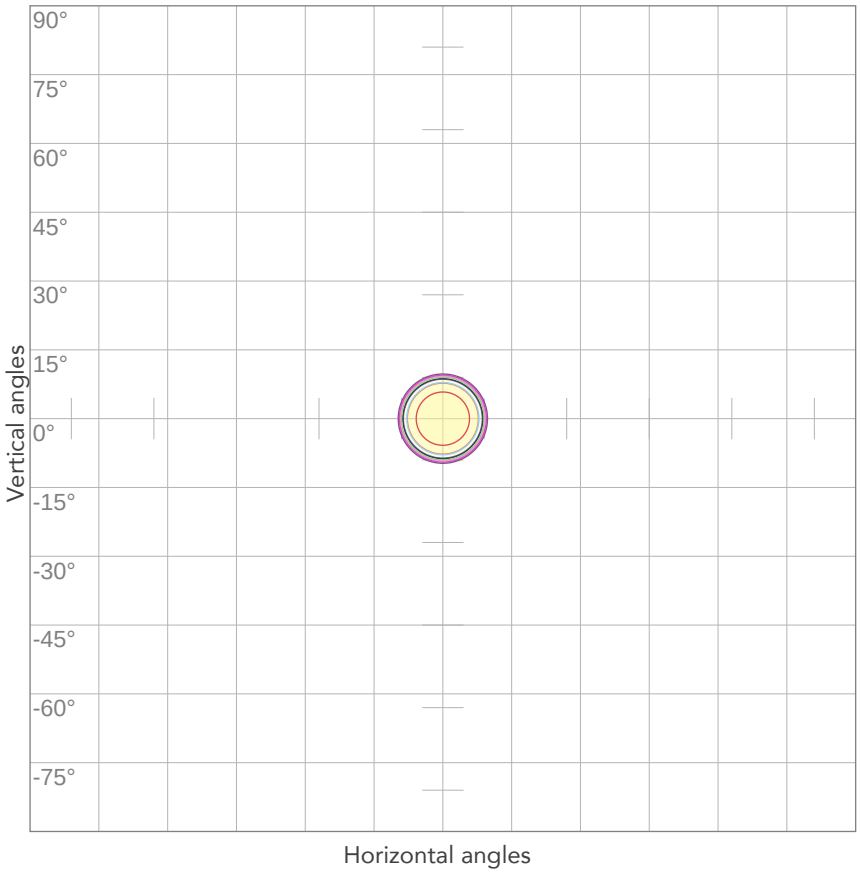
ISO DIAGRAMS

ISO CANDELA DIAGRAM



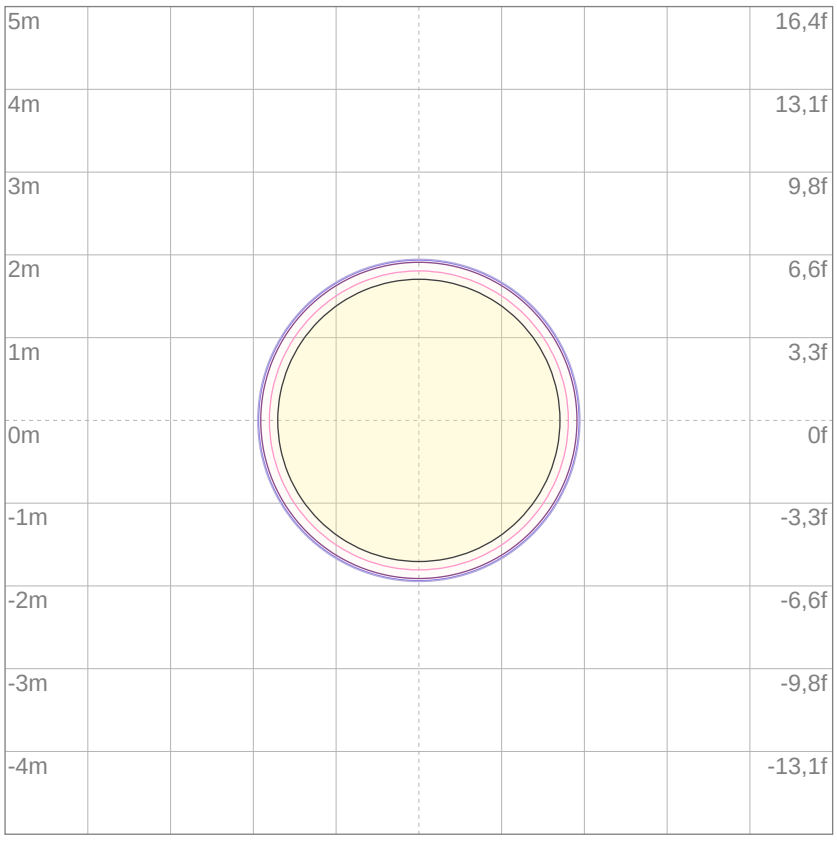
10%	3758 cd
20%	7516 cd
30%	11274 cd
40%	15032 cd
50%	18790 cd
60%	22548 cd
70%	26306 cd
80%	30064 cd

Conditions:

Number of c-planes: 2

Candela at center: 37579 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	11,3 lx
5%	18,8 lx
10%	37,6 lx
30%	113 lx
50%	188 lx

Conditions:

Number of c-planes: 2

Lux at center: 376 lx

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

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Total lumen output:

3282 lm

Peak candela output:

40644 cd

Light quality:

CRI: 85,0

Color temperature:

2901 K

PRODUCT NAME:

ECLFS

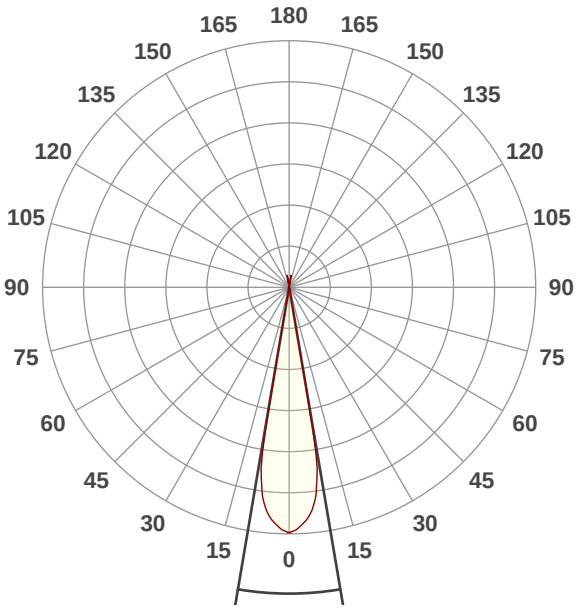
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
2800K

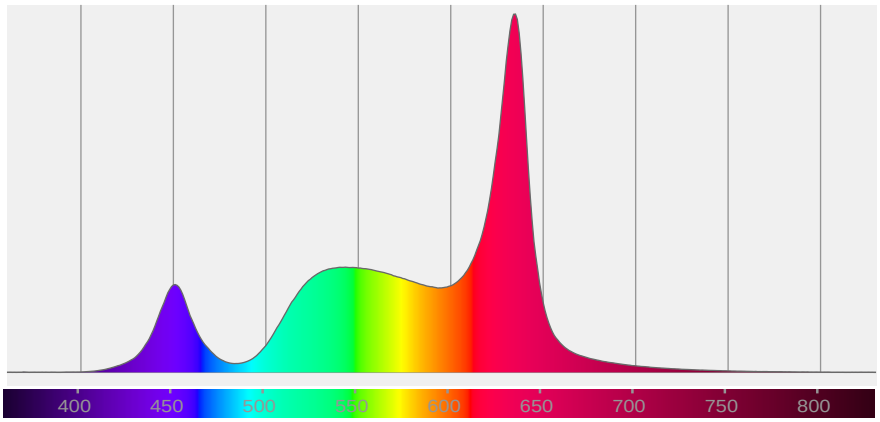
Operator:
Paolo Carvone

Date and time:
30/04/2020 10:58:58



Beam angle 50%: 19,2°
Field angle 10%: 21,2°
Cut off angle 2.5%: 21,5°

Spectra



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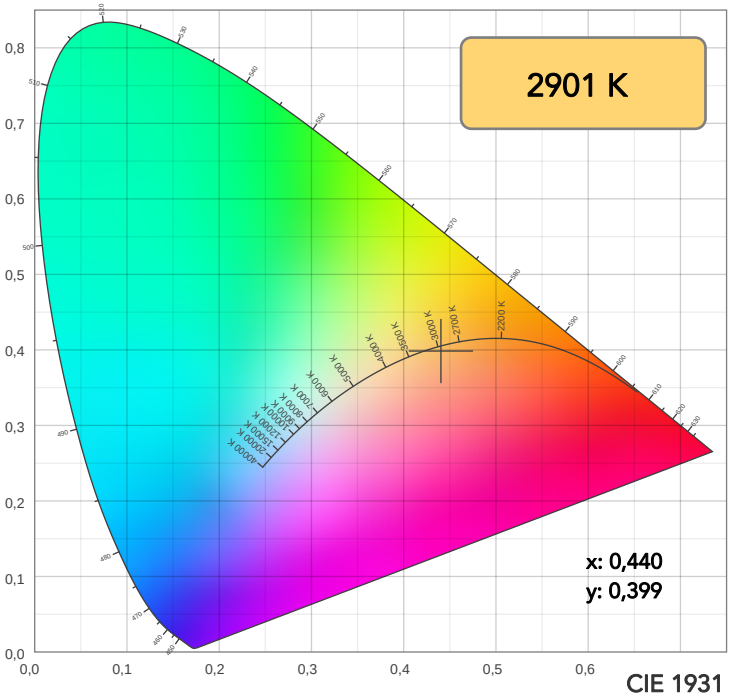
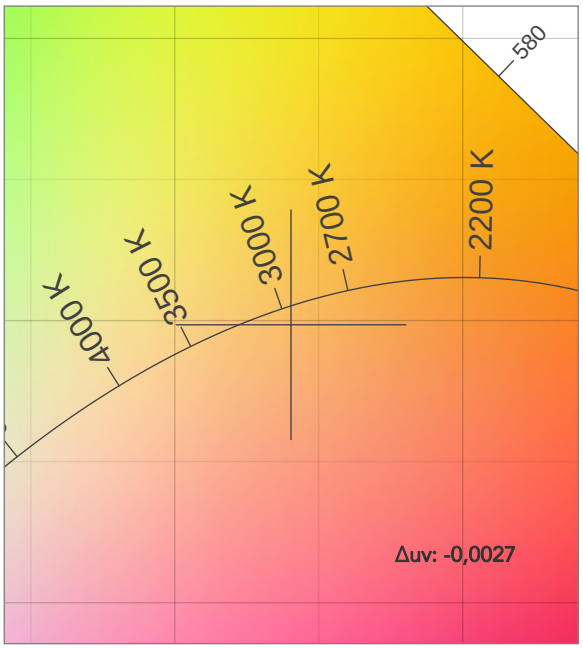
COLOR DETAILS

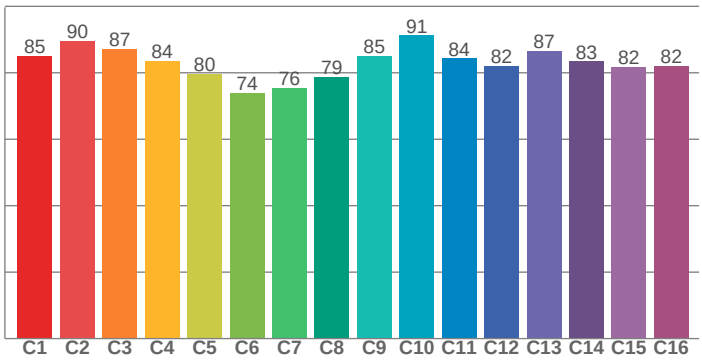


CIE 1931

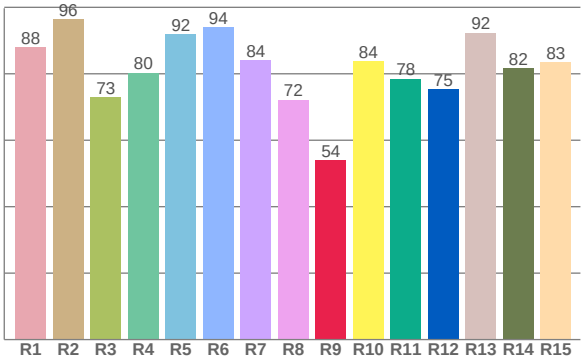


CIE 1931 ZOOM

TM30: 83,7



CRI: 85,0 (R1-R8)



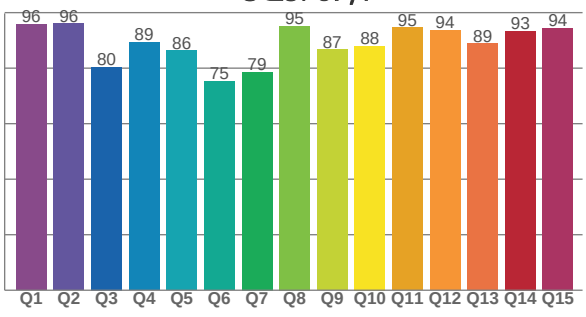
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
88,0	96,5	72,9	80,3	91,9	93,9	84,1	72,2	54,0	83,8	78,5	75,3	92,4	81,6	83,5

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
85,2	89,6	87,2	83,5	79,6	74,0	75,5	78,7	85,0	91,3	84,3	82,0	86,7	83,5	81,8	82,1

CQS: 87,1



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
95,8	96,0	80,4	89,3	86,3	75,2	78,5	95,2	86,7	87,9	94,6	93,6	88,9	93,4	94,5

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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
2901 K	85,0	54,0	83,7	112,4	87,1	70	0,440	0,399	-0,0027

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TM30 DETAILS

PROLiGHTS

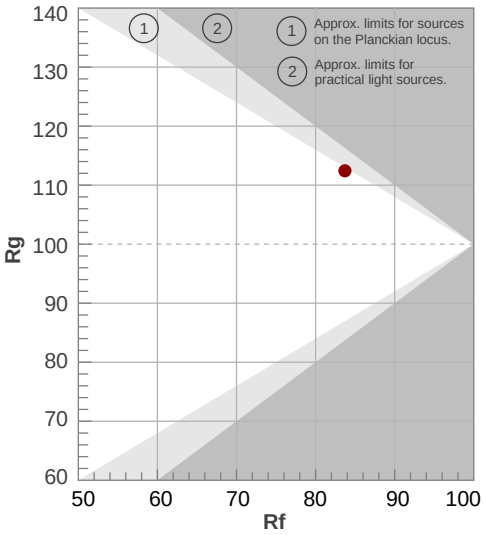
Rf 83,7

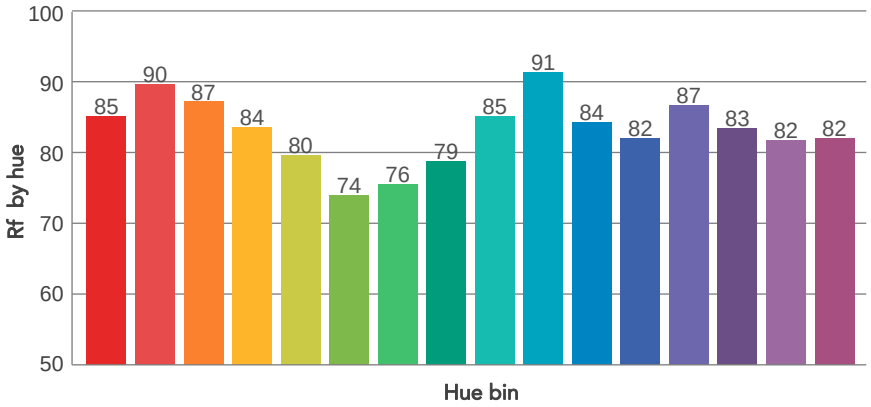
Fidelity index Rf

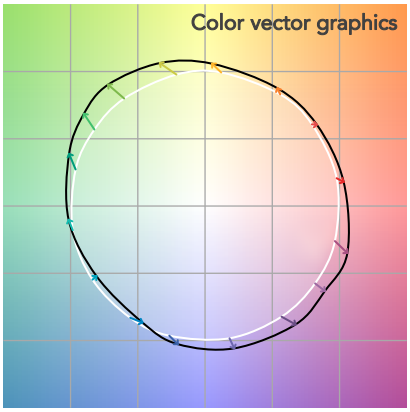
Rg 112,4

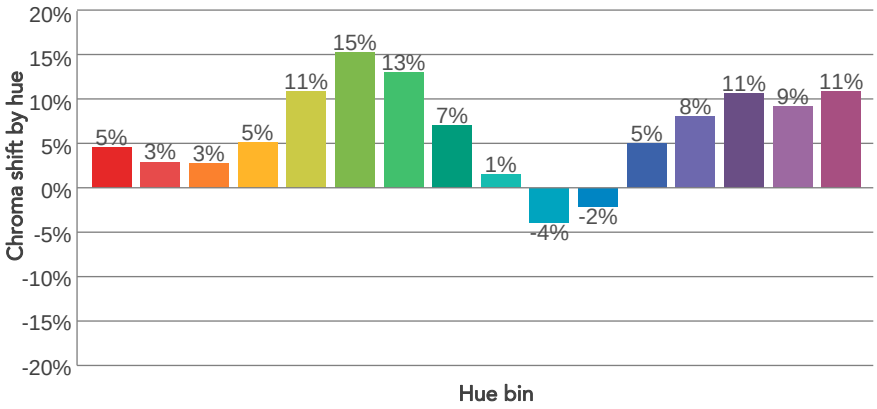
Gammut index

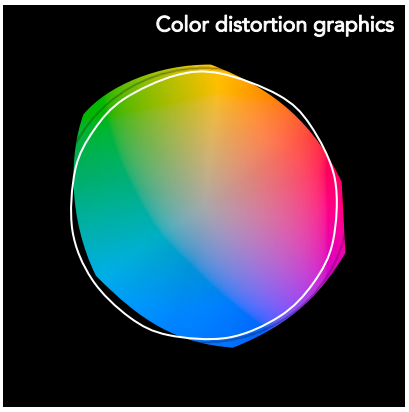
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	85	5%	-4%
2	90	3%	-2%
3	87	3%	4%
4	84	5%	8%
5	80	11%	10%
6	74	15%	4%
7	76	13%	-5%
8	79	7%	-10%
9	85	1%	-8%
10	91	-4%	-1%
11	84	-2%	9%
12	82	5%	7%
13	87	8%	2%
14	83	11%	5%
15	82	9%	-1%
16	82	11%	-7%

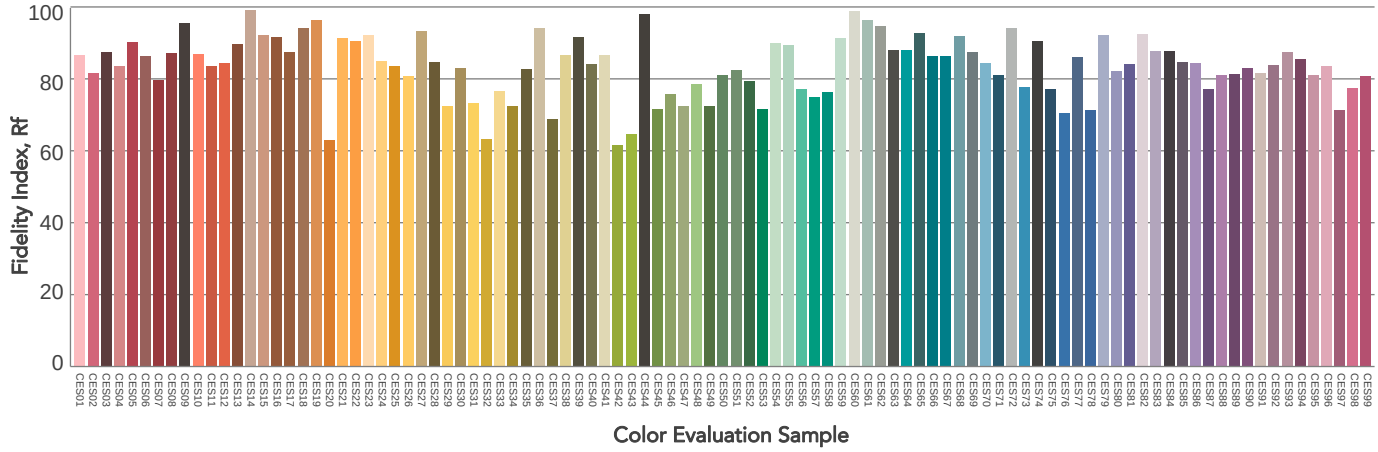












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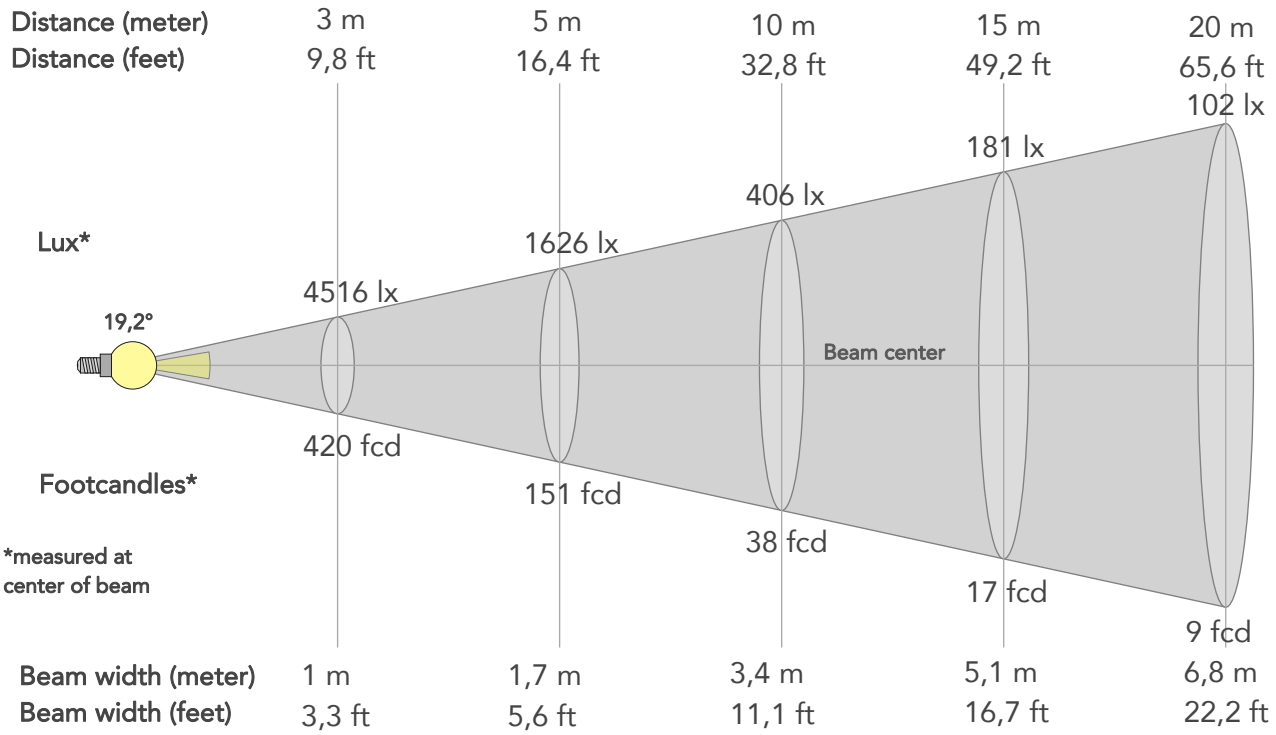
BEAM DETAILS

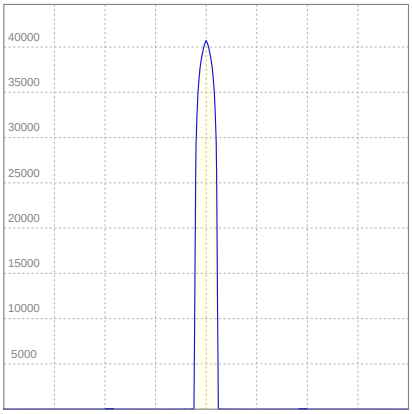
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19,2°	21,2°	21,5°	99,1%	99,1%



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	40644lx	10161lx	4516lx	2540lx	1626lx	723lx	406lx	181lx	102lx	65lx	45lx	25lx	16lx
Footcand.	3776fcd	944fcd	420fcd	236fcd	151fcd	67fcd	38fcd	17fcd	9fcd	6fcd	4fcd	2fcd	2fcd
Beam wid.	0,3m	0,7m	1m	1,4m	1,7m	2,5m	3,4m	5,1m	6,8m	8,5m	10,2m	13,6m	17m
Beam wid.	1,1ft	2,2ft	3,3ft	4,4ft	5,6ft	8,3ft	11,1ft	16,7ft	22,2ft	27,8ft	33,4ft	44,5ft	55,6ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
226V	0,553A	115,2W	28lm/W

Power FC
0,96

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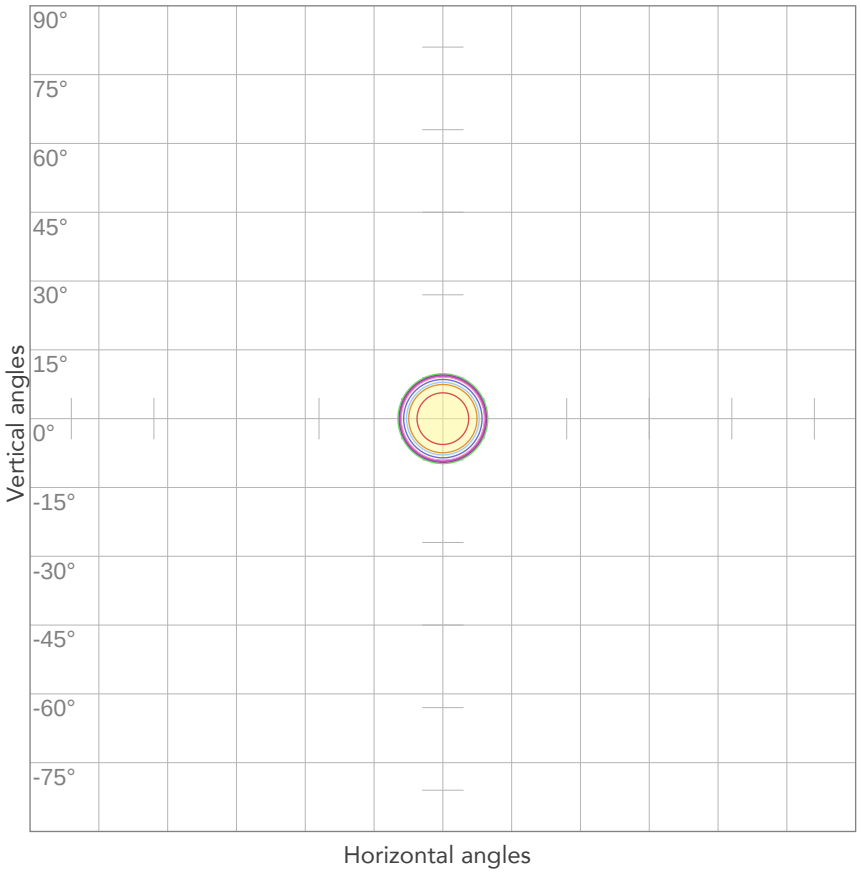
ISO DIAGRAMS

ISO CANDELA DIAGRAM



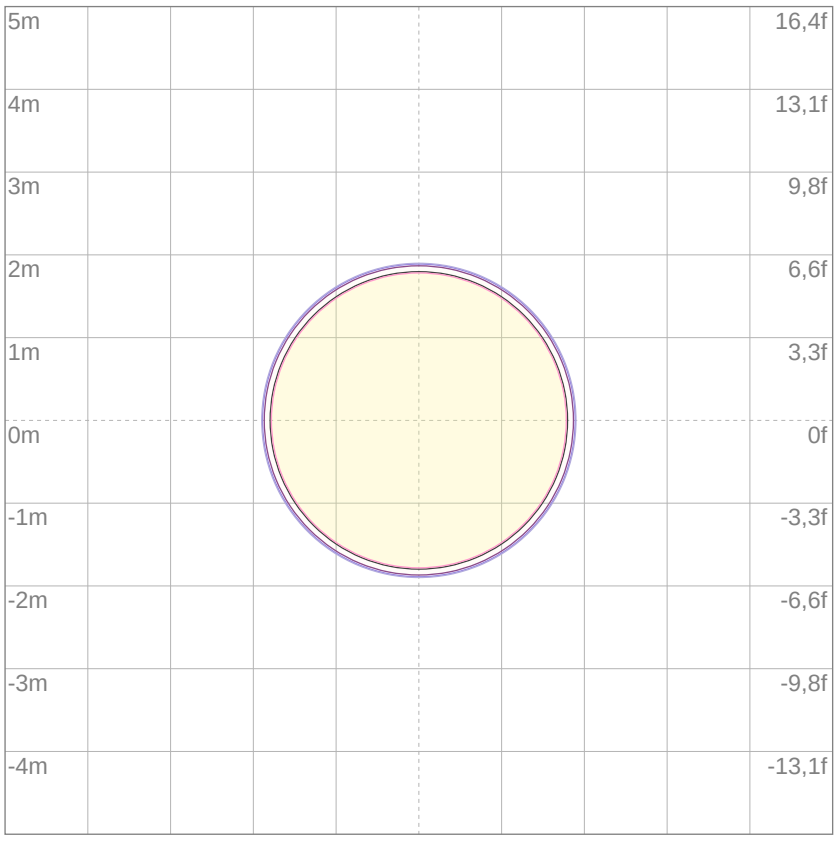
10%	4064 cd
20%	8129 cd
30%	12193 cd
40%	16257 cd
50%	20322 cd
60%	24386 cd
70%	28451 cd
80%	32515 cd

Conditions:

Number of c-planes: 2

Candela at center: 40644 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	12,2 lx
5%	20,3 lx
10%	40,6 lx
30%	122 lx
50%	203 lx

Conditions:

Number of c-planes: 2

Lux at center: 406 lx

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

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Total lumen output:

3617 lm

Peak candela output:

44646 cd

Light quality:

CRI: 86,1

Color temperature:

3227 K

PRODUCT NAME:

ECLFS

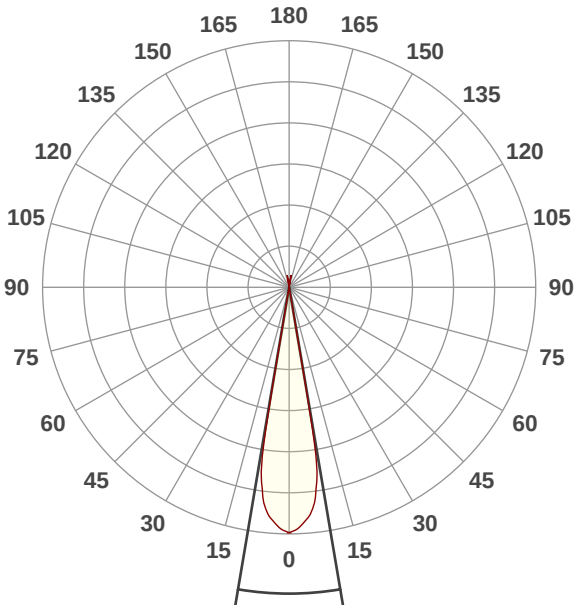
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
3200K

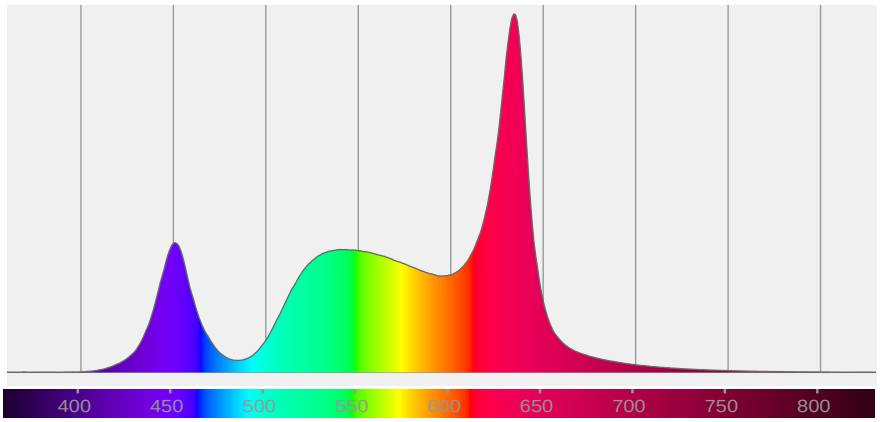
Operator:
Paolo Carvone

Date and time:
30/04/2020 11:00:51



Beam angle 50%: 19,2°
Field angle 10%: 21,5°
Cut off angle 2.5%: 21,9°

Spectra



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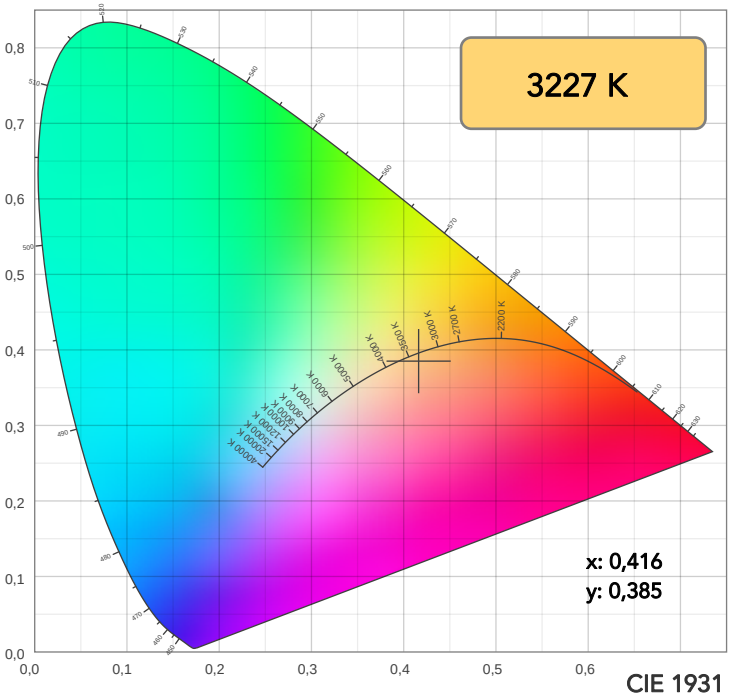
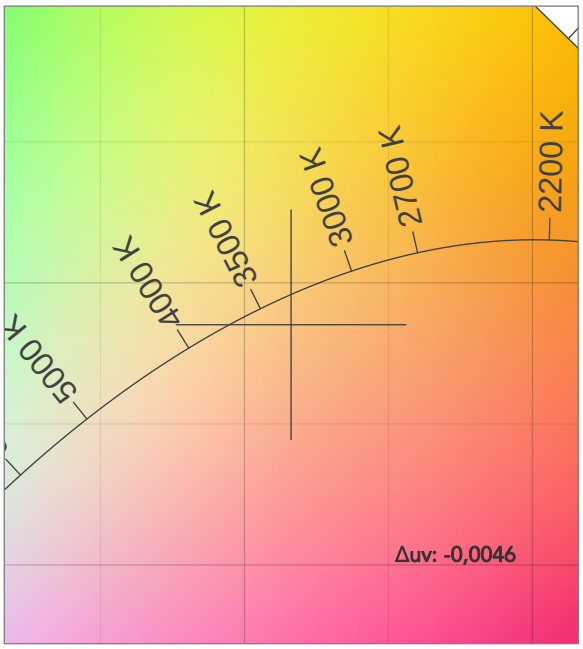
COLOR DETAILS

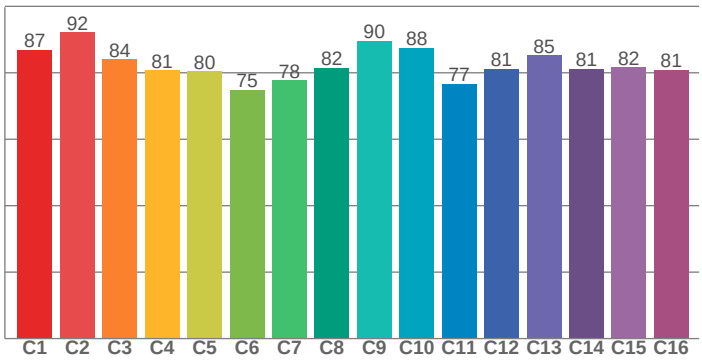


CIE 1931

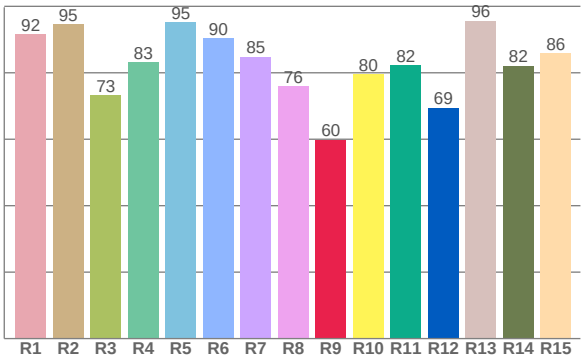


CIE 1931 ZOOM

TM30: 83,1



CRI: 86,1 (R1-R8)



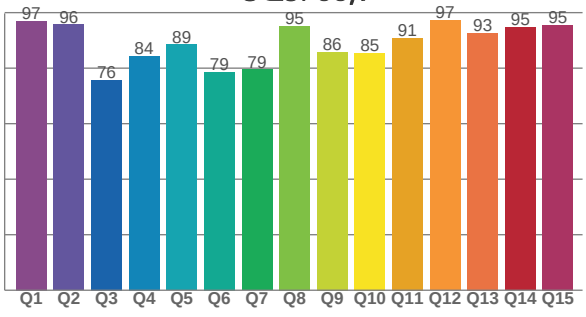
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
91,6	94,6	73,3	83,1	95,3	90,5	84,9	75,9	59,8	79,6	82,4	69,4	95,7	82,1	86,0

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
86,9	92,2	84,0	80,8	80,4	74,8	77,7	81,5	89,7	87,5	76,6	81,2	85,3	81,2	81,7	80,8

CQS: 86,9



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
97,0	95,6	75,7	84,3	88,6	78,6	79,4	95,3	85,8	85,4	90,9	97,2	92,7	94,7	95,5

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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
3227 K	86,1	59,8	83,1	111,7	86,9	73	0,416	0,385	-0,0046

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TM30 DETAILS

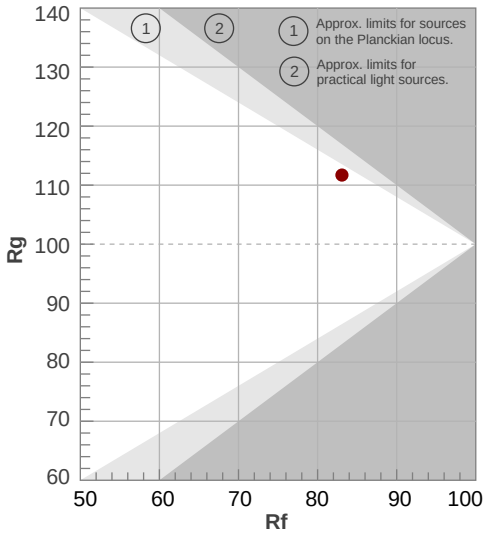
Rf 83,1

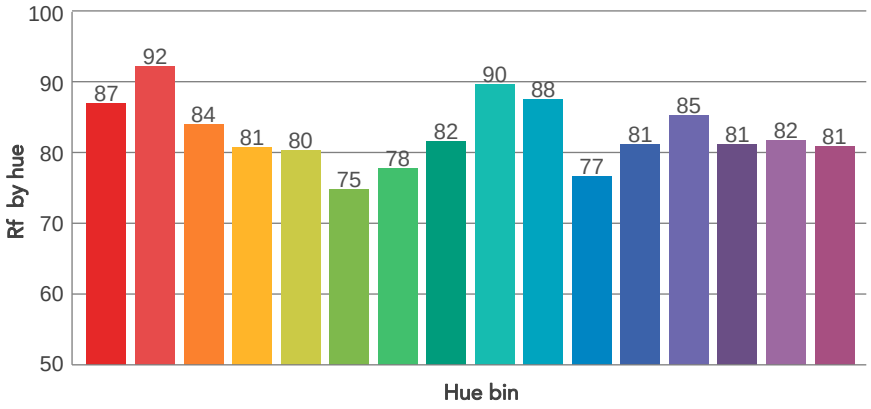
Fidelity index Rf

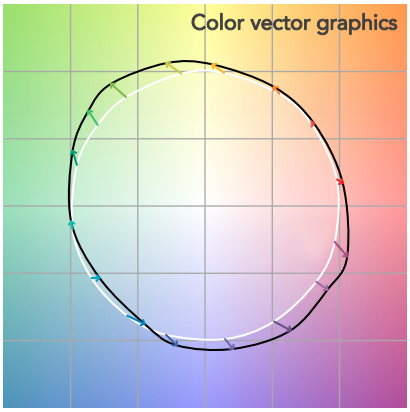
Rg 111,7

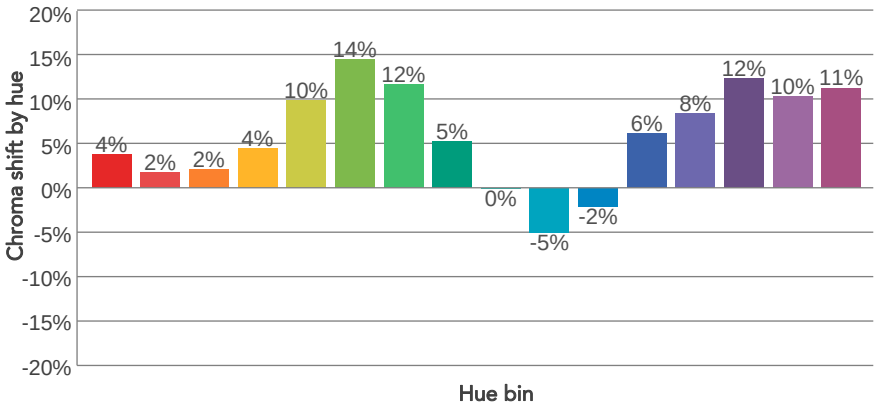
Gammut index

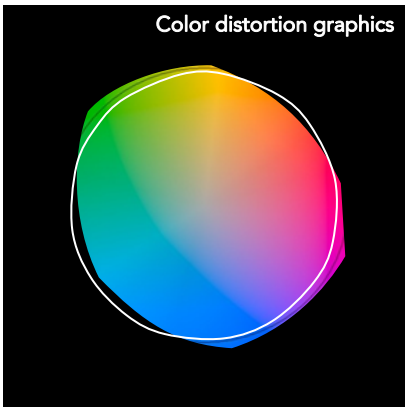
Hue Bin	R_f	Graphic shifts (%) Chroma	Hue
1	87	4%	-3%
2	92	2%	-1%
3	84	2%	6%
4	81	4%	10%
5	80	10%	9%
6	75	14%	4%
7	78	12%	-5%
8	82	5%	-9%
9	90	0%	-6%
10	88	-5%	3%
11	77	-2%	14%
12	81	6%	9%
13	85	8%	4%
14	81	12%	7%
15	82	10%	0%
16	81	11%	-9%

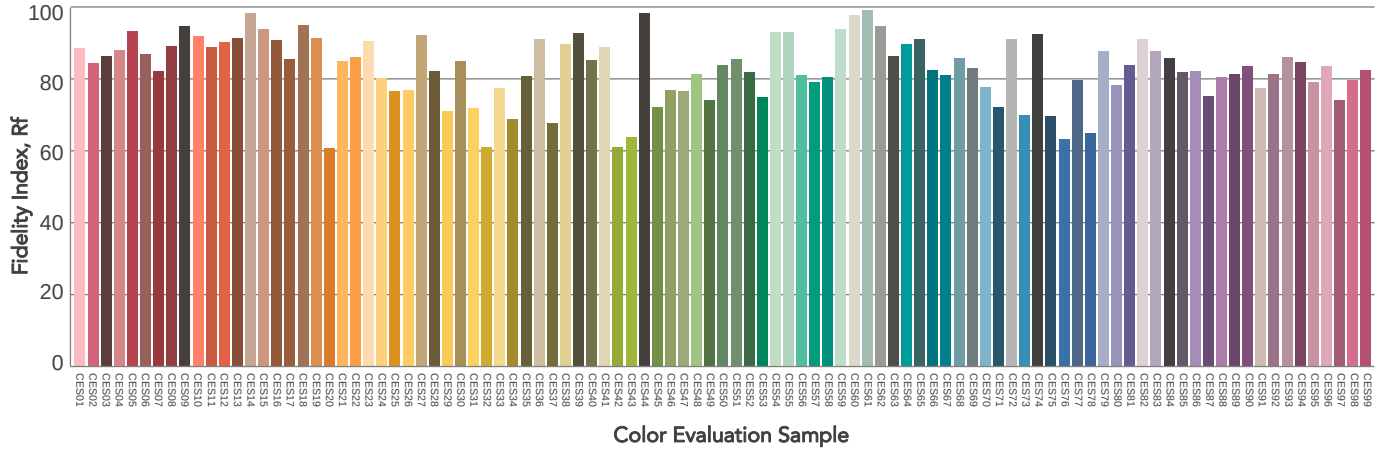












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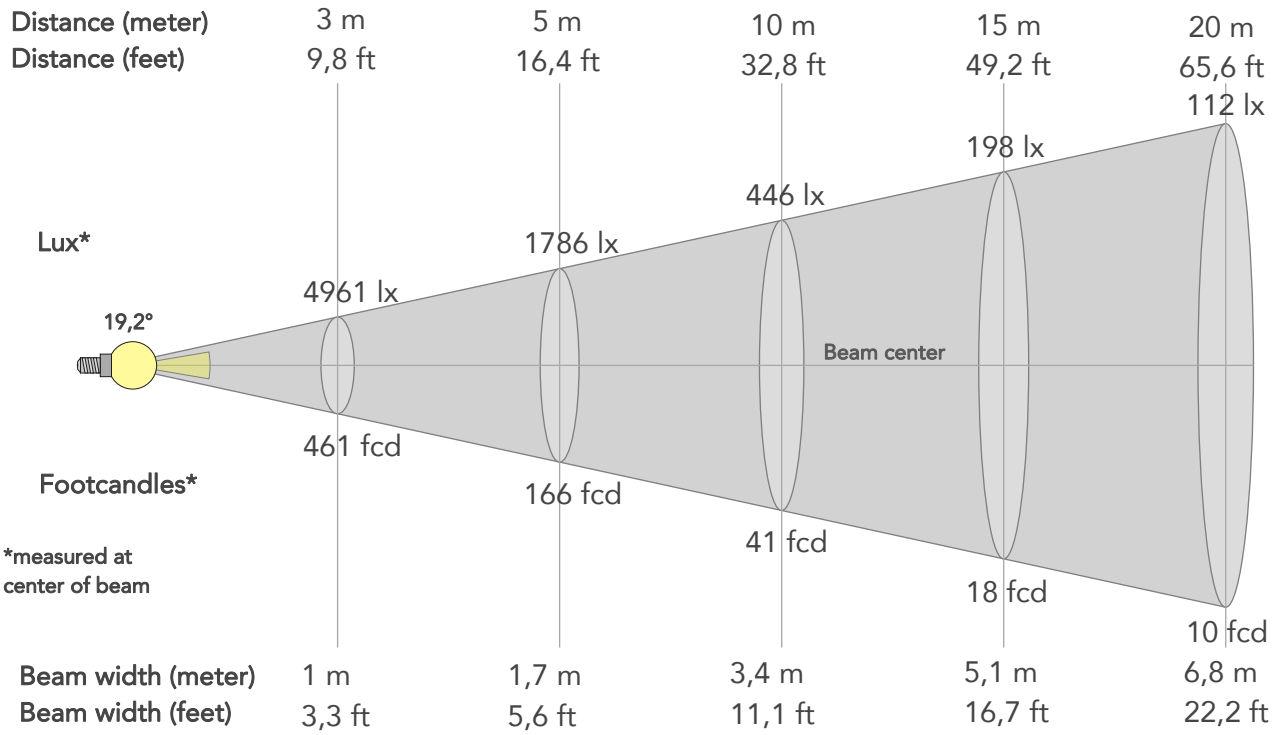
BEAM DETAILS

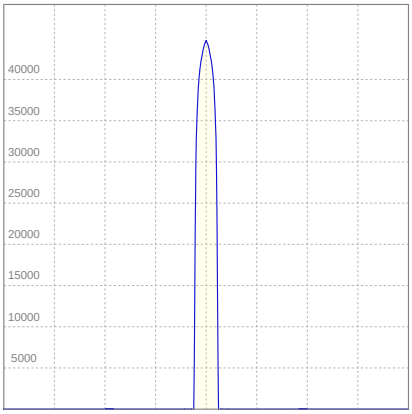
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19,2°	21,5°	21,9°	99,2%	99,2%



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	44646lx	11161lx	4961lx	2790lx	1786lx	794lx	446lx	198lx	112lx	71lx	50lx	28lx	18lx
Footcand.	4148fcd	1037fcd	461fcd	259fcd	166fcd	74fcd	41fcd	18fcd	10fcd	7fcd	5fcd	3fcd	2fcd
Beam wid.	0,3m	0,7m	1m	1,4m	1,7m	2,5m	3,4m	5,1m	6,8m	8,5m	10,2m	13,5m	16,9m
Beam wid.	1,1ft	2,2ft	3,3ft	4,4ft	5,6ft	8,3ft	11,1ft	16,7ft	22,2ft	27,8ft	33,3ft	44,4ft	55,5ft

LINEAR DISTRIBUTION DIAGRAM



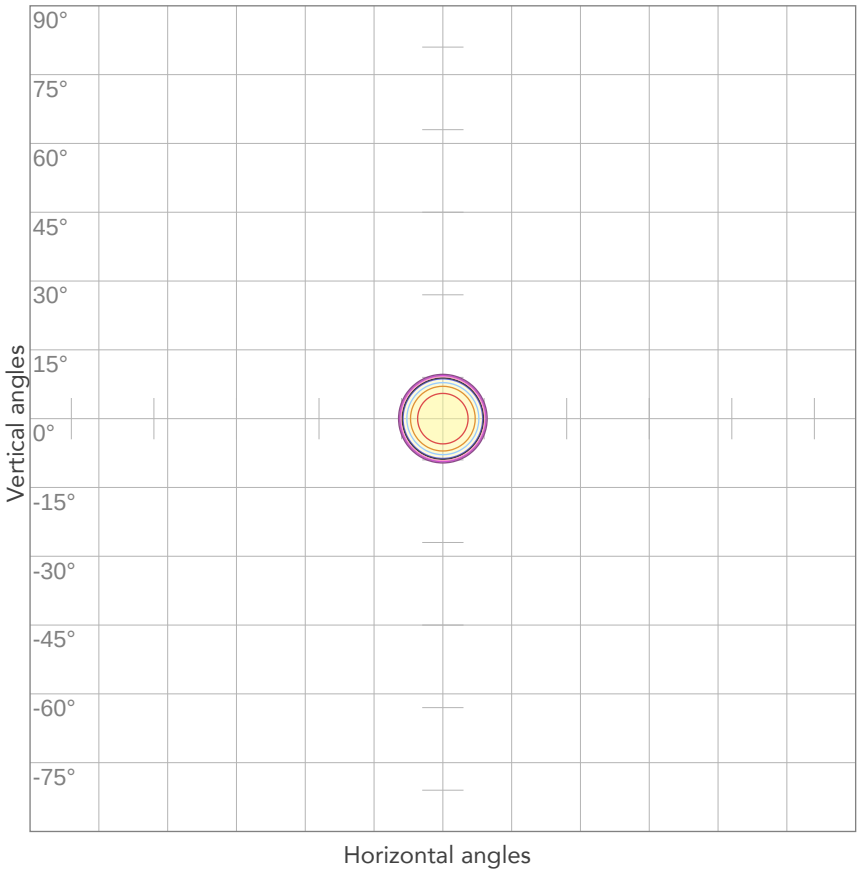
ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
225V	0,598A	125,5W	29lm/W

Power FC
0,96

ISO DIAGRAMS

ISO CANDELA DIAGRAM



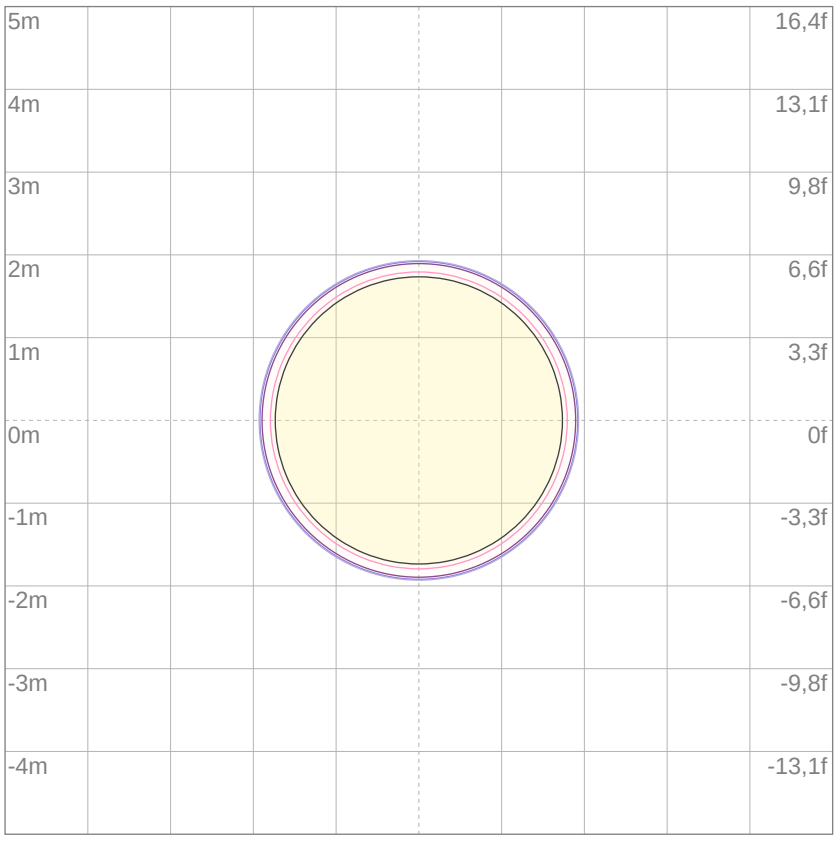
10%	4465 cd
20%	8929 cd
30%	13394 cd
40%	17858 cd
50%	22323 cd
60%	26787 cd
70%	31252 cd
80%	35716 cd

Conditions:

Number of c-planes: 2

Candela at center: 44646 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	13,4 lx
5%	22,3 lx
10%	44,6 lx
30%	134 lx
50%	223 lx

Conditions:

Number of c-planes: 2

Lux at center: 446 lx

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

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Total lumen output:

4003 lm

Peak candela output:

49558 cd

Light quality:

CRI: 85,5

Color temperature:

3909 K

PRODUCT NAME:

ECLFS

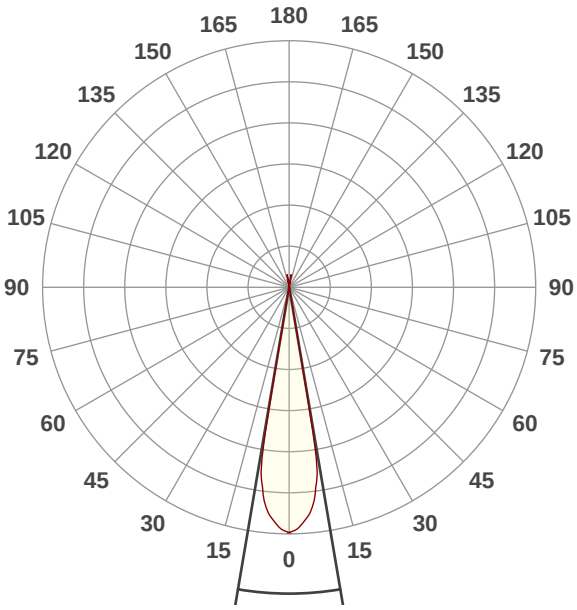
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
4000K

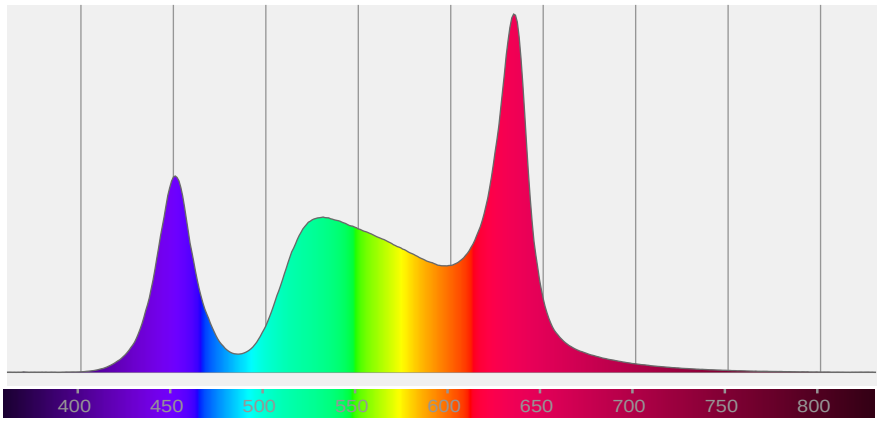
Operator:
Paolo Carvone

Date and time:
30/04/2020 11:02:34



Beam angle 50%: 19,2°
Field angle 10%: 21,4°
Cut off angle 2.5%: 21,9°

Spectra



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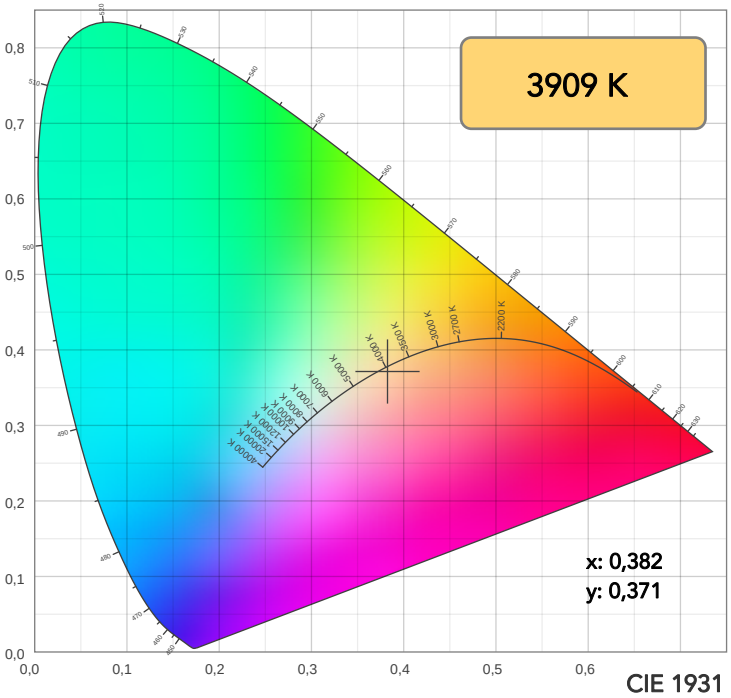
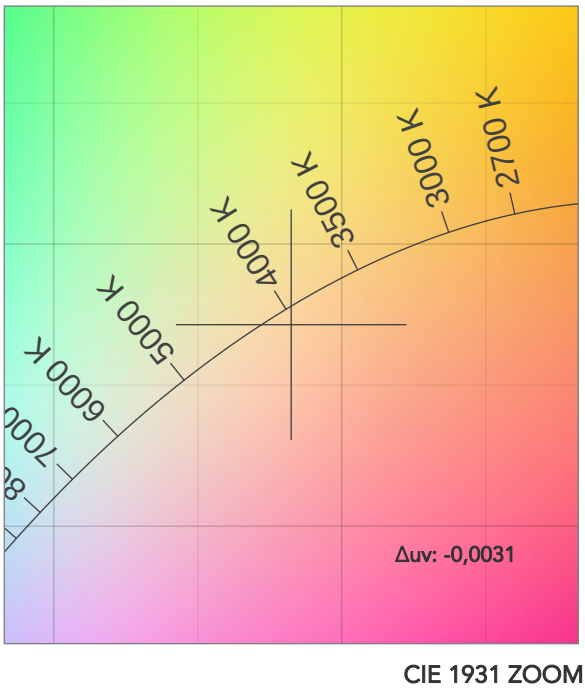
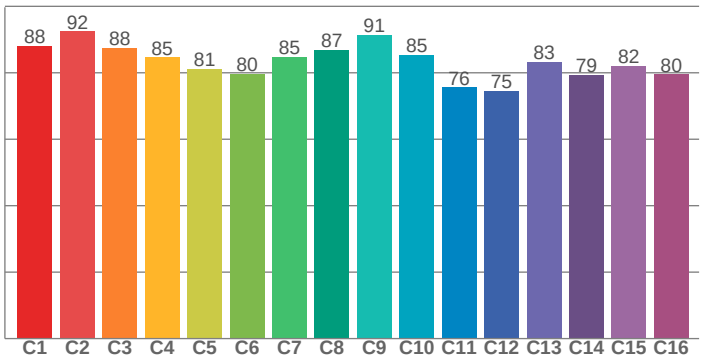
COLOR DETAILS

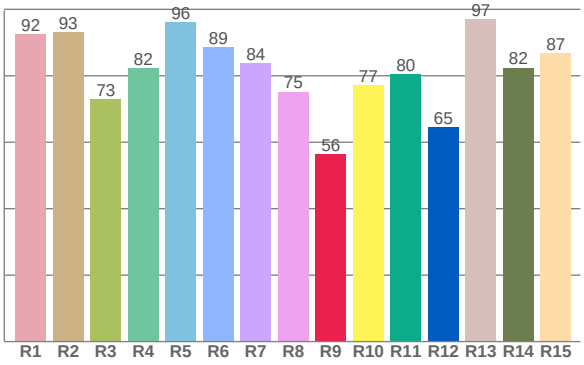




TM30: 83,9



CRI: 85,5 (R1-R8)



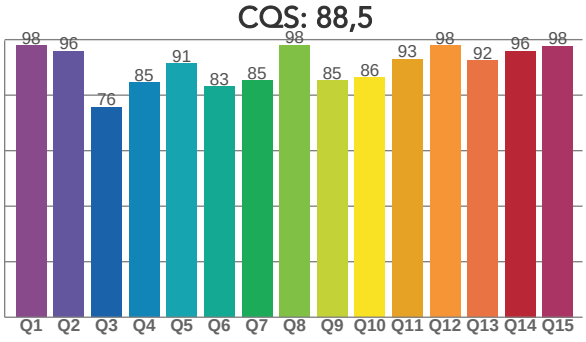
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
92,4	93,0	72,9	82,2	96,0	88,6	83,8	75,2	56,3	77,2	80,4	64,6	97,0	82,4	86,8

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
88,2	92,5	87,6	84,6	81,2	79,7	84,8	87,0	91,5	85,5	75,6	74,6	83,3	79,4	82,0	79,5

CQS: 88,5



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
97,8	95,8	75,6	84,6	91,4	83,0	85,2	98,0	85,3	86,4	93,0	97,8	92,4	96,0	97,7

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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
3909 K	85,5	56,3	83,9	110,0	88,5	77	0,382	0,371	-0,0031

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TM30 DETAILS

PROLiGHTS

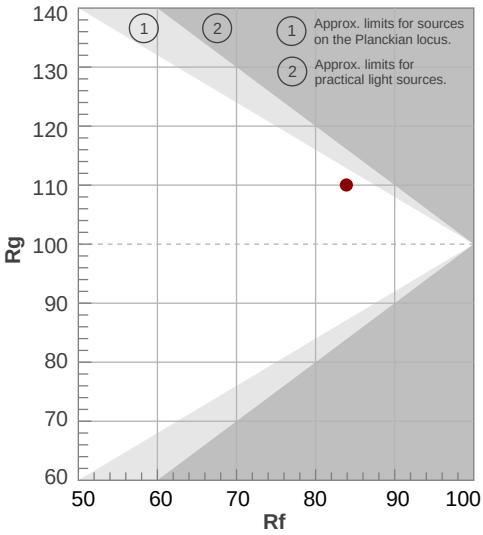
Rf 83,9

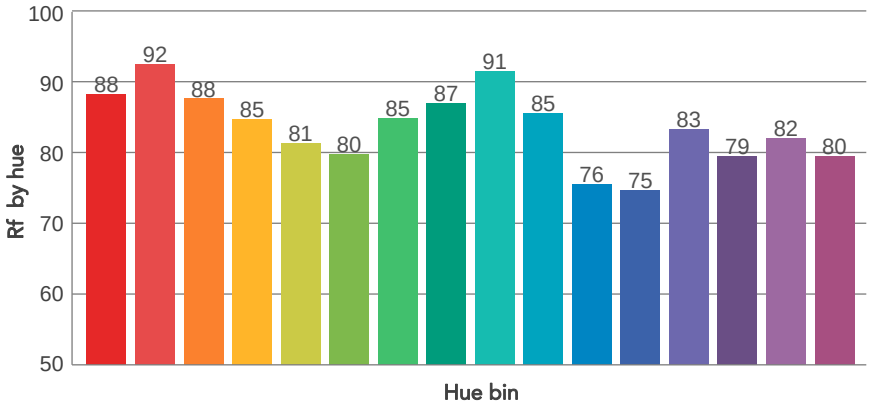
Fidelity index Rf

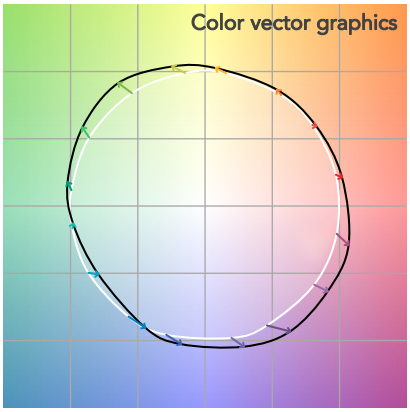
Rg 110,0

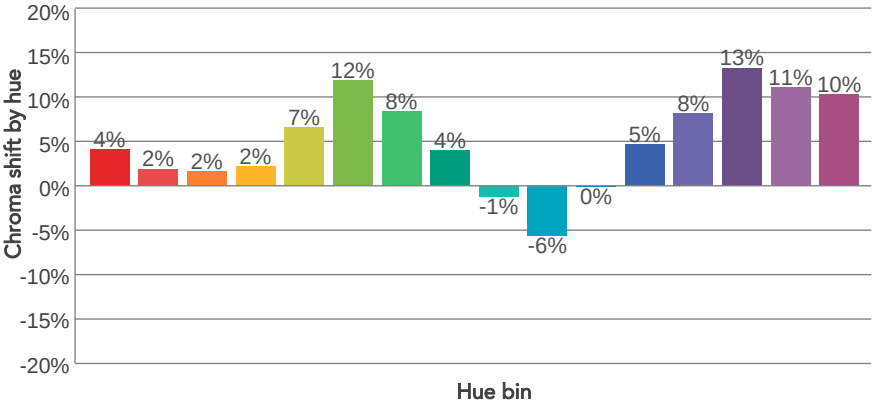
Gammut index

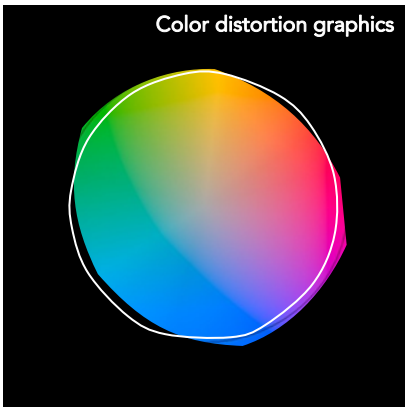
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	88	4%	-3%
2	92	2%	-2%
3	88	2%	5%
4	85	2%	8%
5	81	7%	8%
6	80	12%	4%
7	85	8%	-3%
8	87	4%	-5%
9	91	-1%	-3%
10	85	-6%	5%
11	76	0%	15%
12	75	5%	12%
13	83	8%	8%
14	79	13%	12%
15	82	11%	1%
16	80	10%	-6%

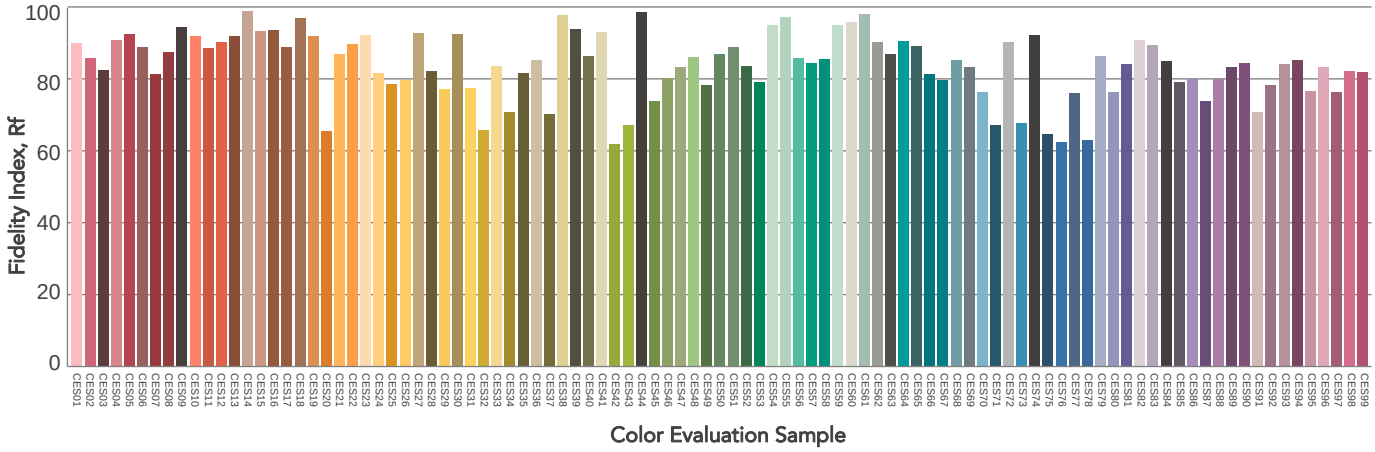












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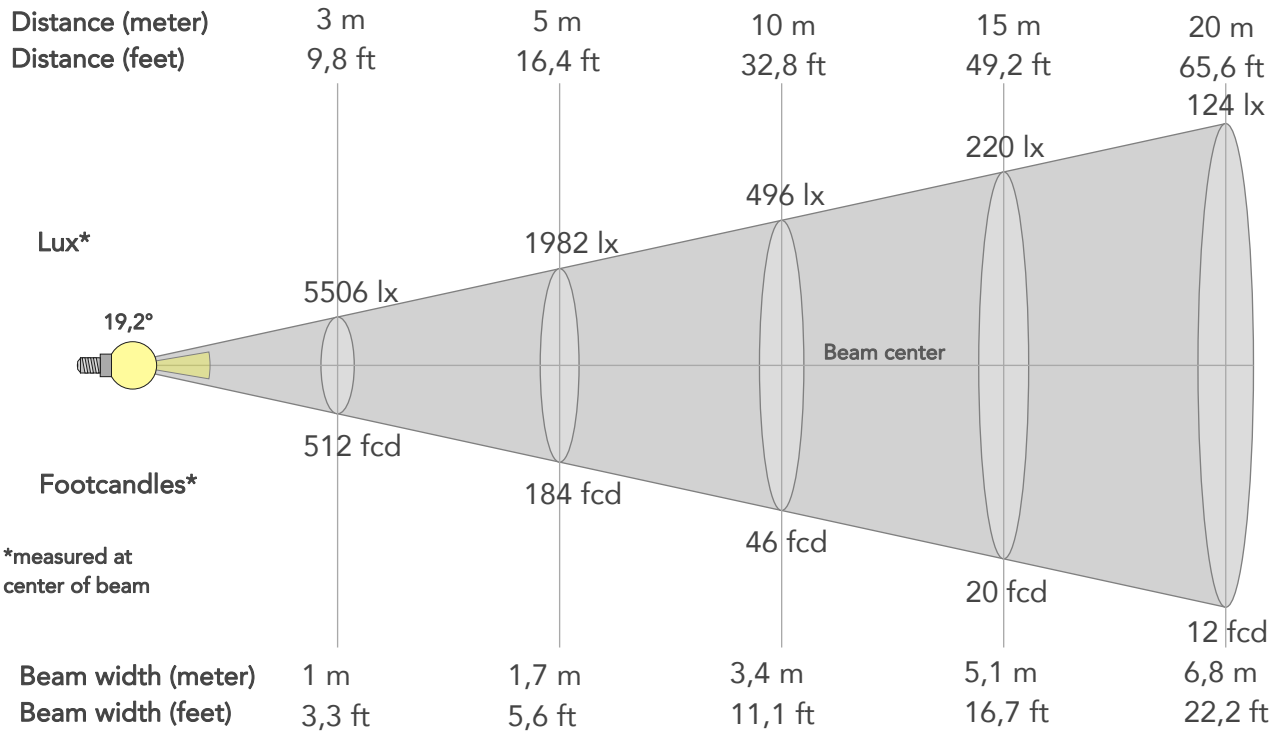
BEAM DETAILS

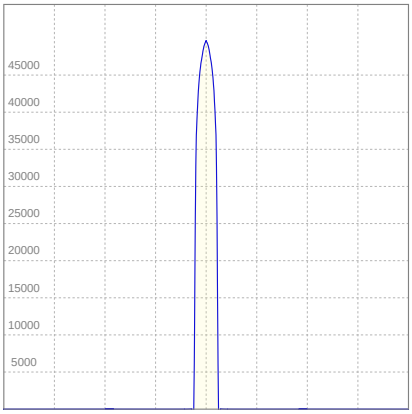
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19,2°	21,4°	21,9°	99,1%	99,1%



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	49558lx	12389lx	5506lx	3097lx	1982lx	881lx	496lx	220lx	124lx	79lx	55lx	31lx	20lx
Footcand.	4604fcd	1151fcd	512fcd	288fcd	184fcd	82fcd	46fcd	20fcd	12fcd	7fcd	5fcd	3fcd	2fcd
Beam wid.	0,3m	0,7m	1m	1,4m	1,7m	2,5m	3,4m	5,1m	6,8m	8,5m	10,2m	13,6m	16,9m
Beam wid.	1,1ft	2,2ft	3,3ft	4,4ft	5,6ft	8,3ft	11,1ft	16,7ft	22,2ft	27,8ft	33,3ft	44,5ft	55,6ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
225V	0,667A	140,8W	28lm/W

Power FC
0,96

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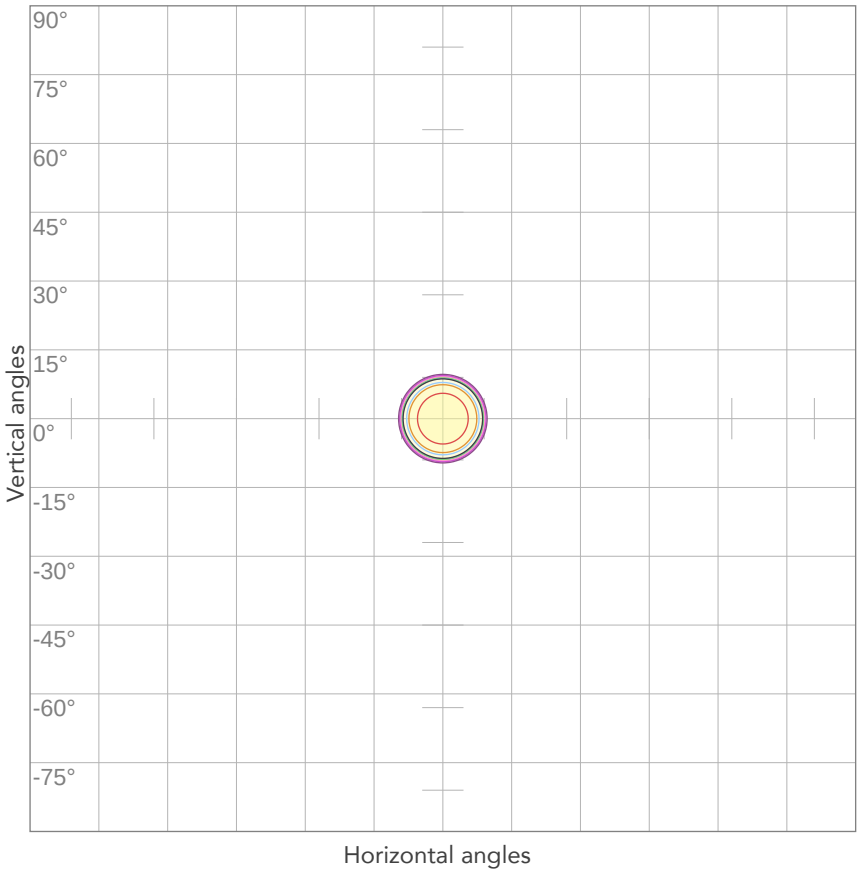
ISO DIAGRAMS

ISO CANDELA DIAGRAM



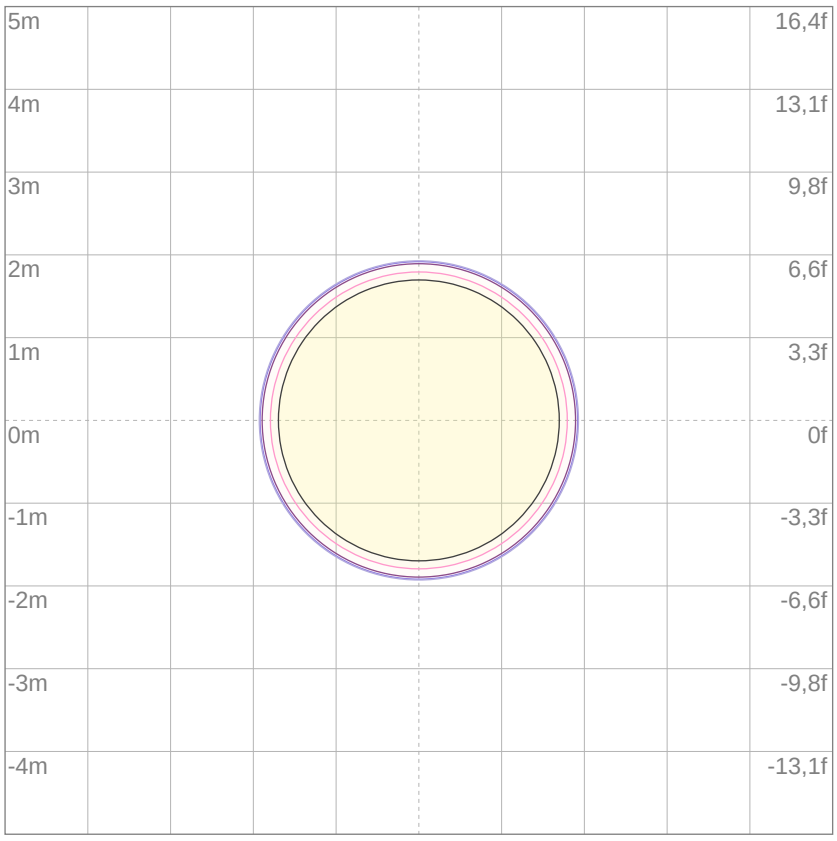
10%	4956 cd
20%	9912 cd
30%	14867 cd
40%	19823 cd
50%	24779 cd
60%	29735 cd
70%	34690 cd
80%	39646 cd

Conditions:

Number of c-planes: 2

Candela at center: 49558 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	14,9 lx
5%	24,8 lx
10%	49,6 lx
30%	149 lx
50%	248 lx

Conditions:

Number of c-planes: 2

Lux at center: 496 lx

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

Total lumen output:

4231 lm

Peak candela output:

51914 cd

Light quality:

CRI: 85,6

Color temperature:

5620 K

PRODUCT NAME:

ECLFS

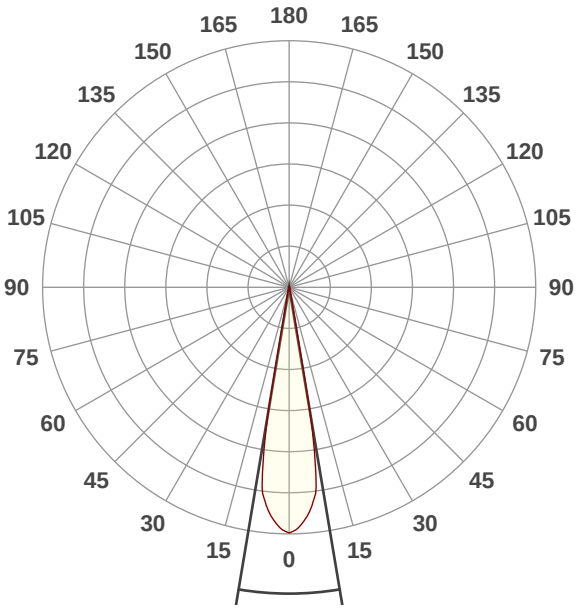
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
5600K

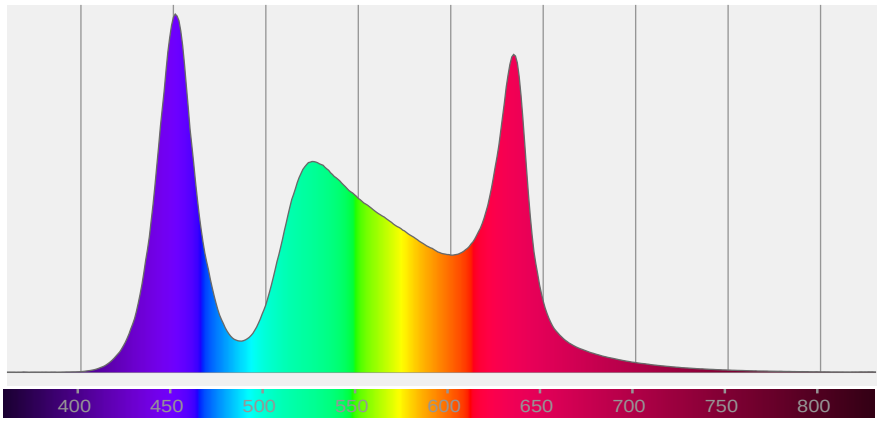
Operator:
Paolo Carvone

Date and time:
30/04/2020 11:10:34



Beam angle 50%: 19°
Field angle 10%: 21,5°
Cut off angle 2.5%: 23,6°

Spectra



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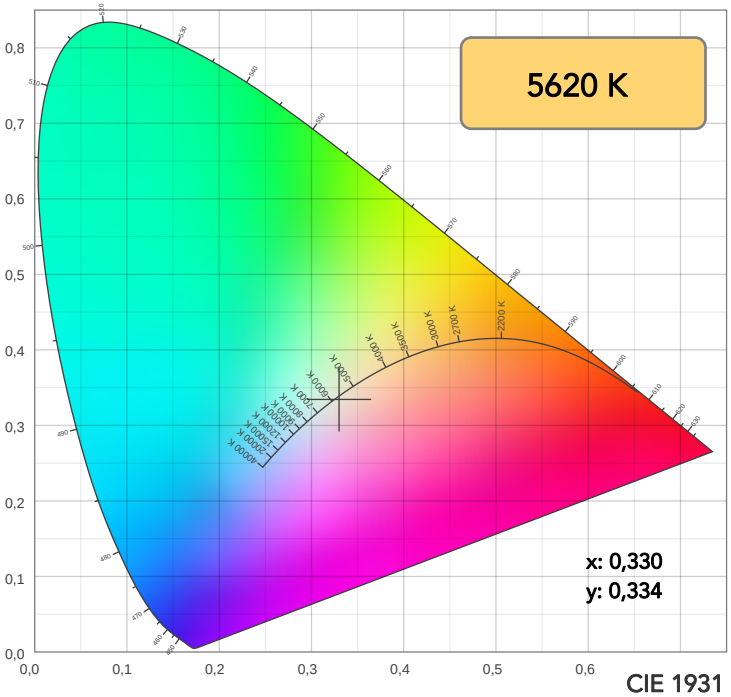
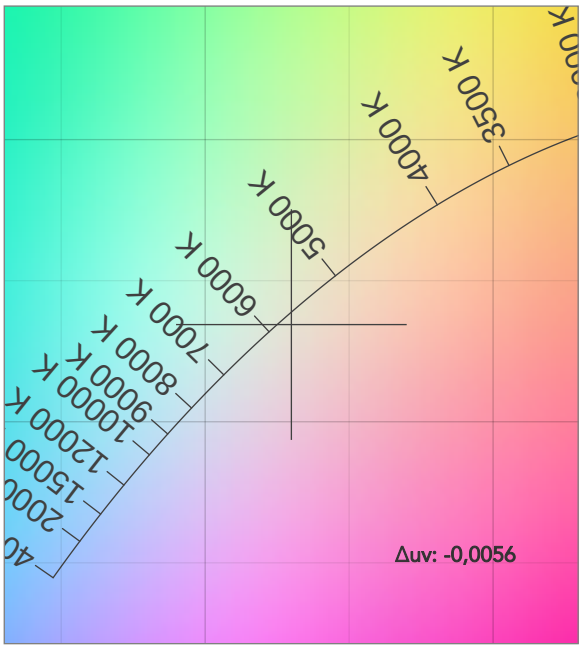
COLOR DETAILS

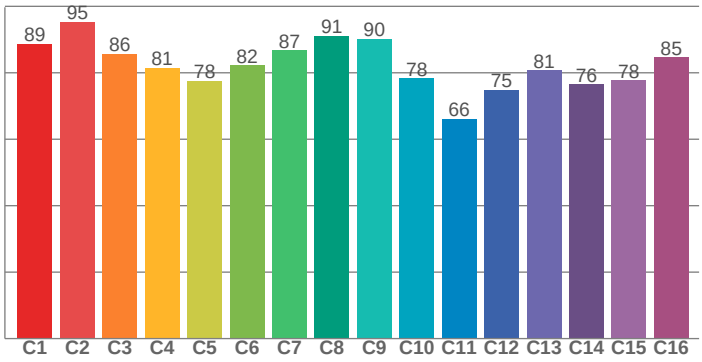


CIE 1931

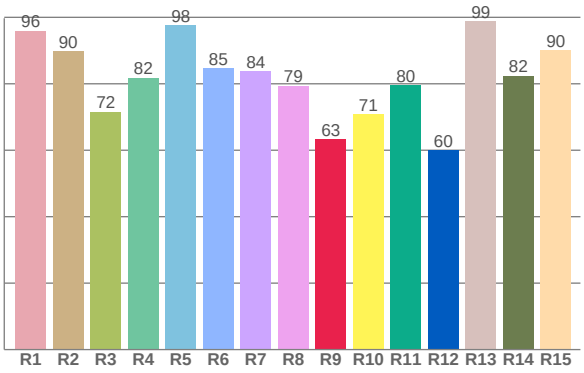


CIE 1931 ZOOM

TM30: 82,3



CRI: 85,6 (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
96,0	89,8	71,6	81,8	97,6	84,7	83,8	79,4	63,3	70,8	79,6	60,0	98,8	82,4	90,0

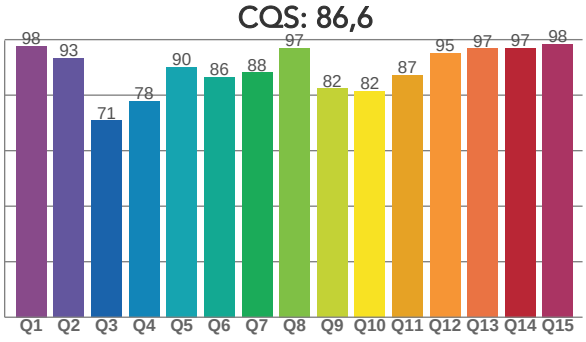
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
88,7	95,4	85,7	81,4	77,5	82,2	86,8	91,1	90,2	78,4	66,1	74,9	80,7	76,5	77,7	84,7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
97,8	93,3	70,8	77,8	90,2	86,5	88,2	97,0	82,4	81,5	87,3	95,2	96,7	96,9	98,5

CQS: 86,6



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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
5620 K	85,6	63,3	82,3	108,7	86,6	82	0,330	0,334	-0,0056

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TM30 DETAILS

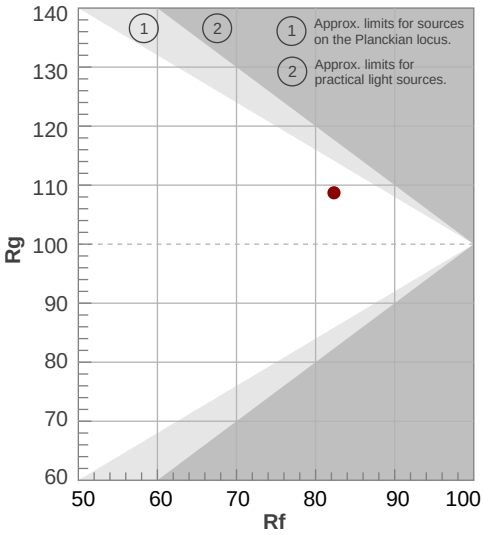
Rf 82,3

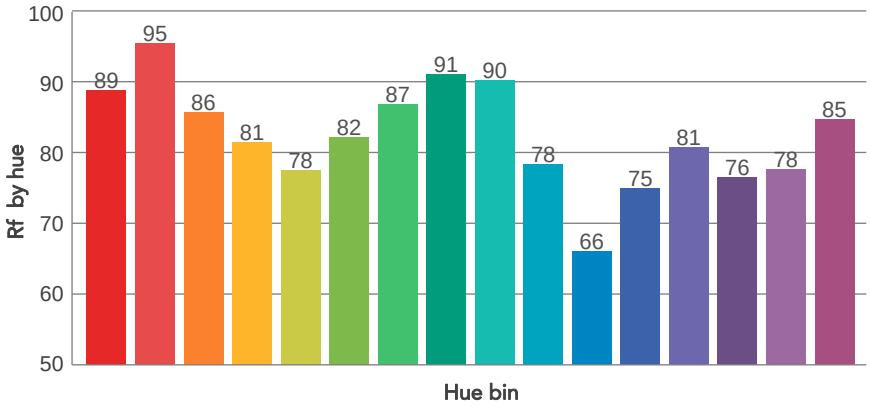
Fidelity index Rf

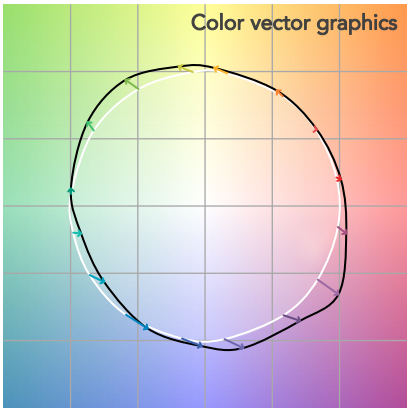
Rg 108,7

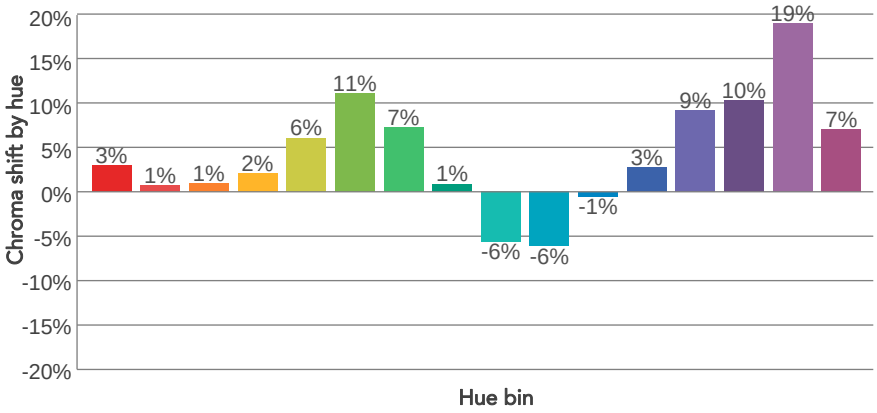
Gammut index

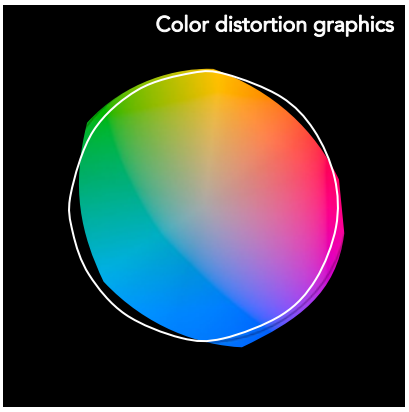
Hue Bin	R_f	Graphic shifts (%) Chroma	Hue
1	89	3%	-2%
2	95	1%	-1%
3	86	1%	6%
4	81	2%	10%
5	78	6%	9%
6	82	11%	4%
7	87	7%	-3%
8	91	1%	-4%
9	90	-6%	2%
10	78	-6%	10%
11	66	-1%	19%
12	75	3%	15%
13	81	9%	12%
14	76	10%	8%
15	78	19%	-1%
16	85	7%	-3%

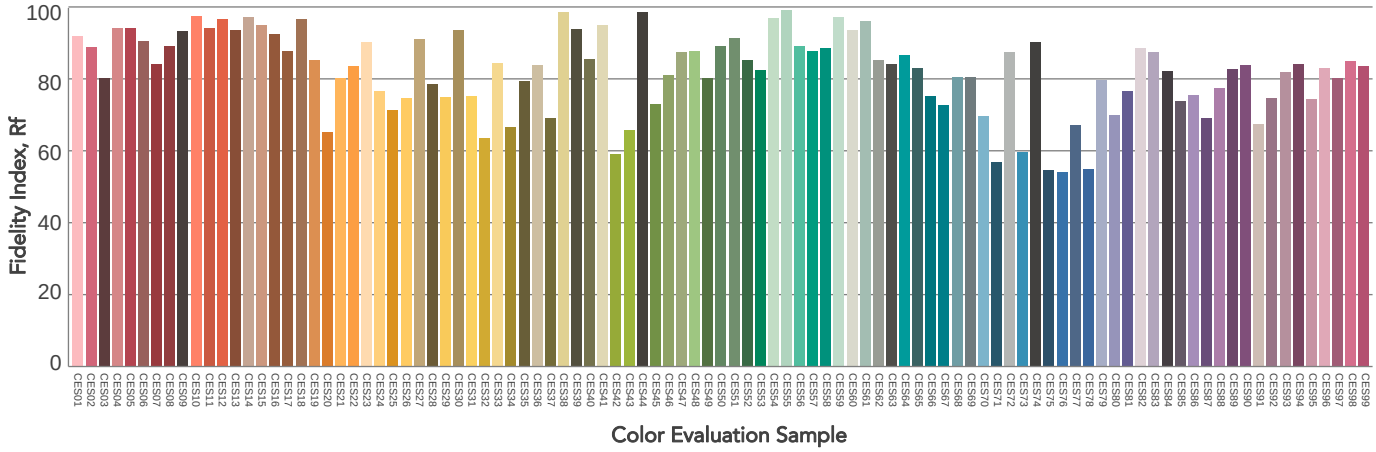












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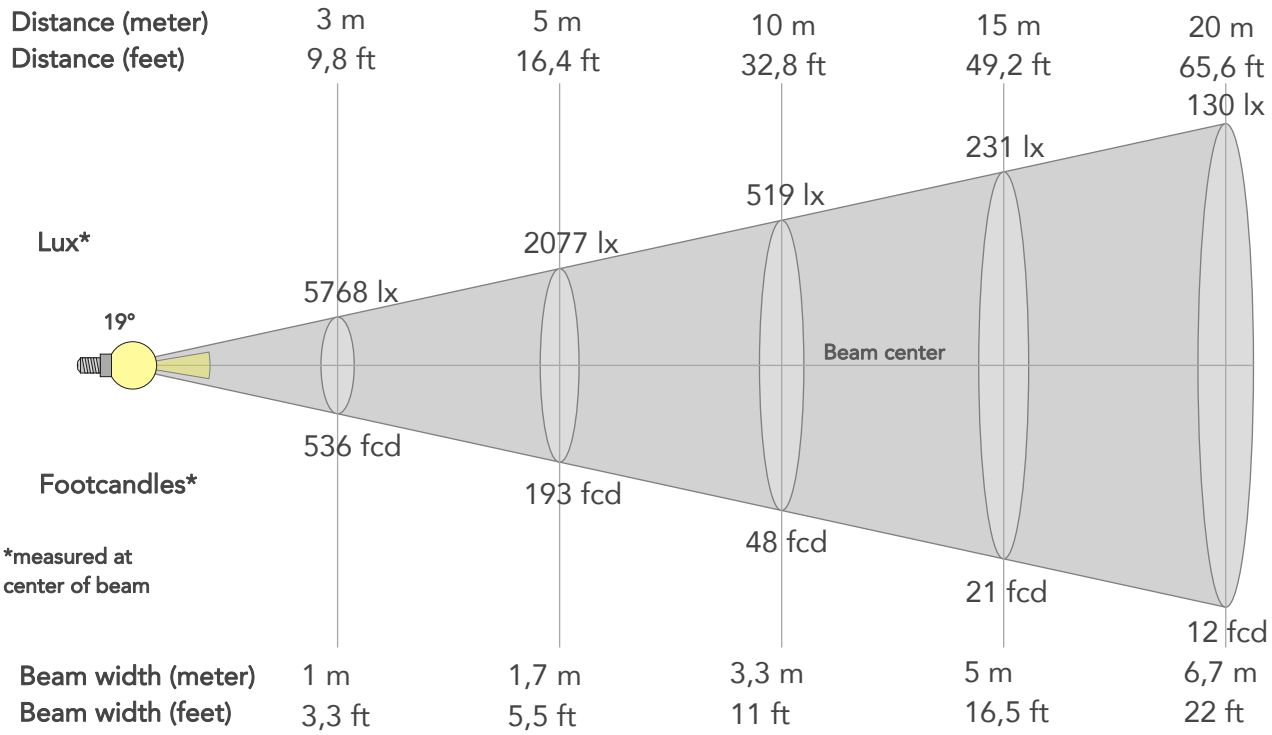
BEAM DETAILS

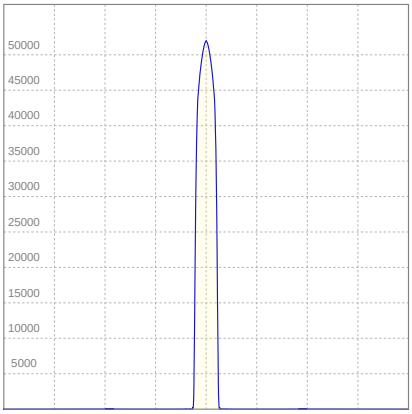
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19°	21,5°	23,6°	97,8%	97,7%



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	51914lx	12978lx	5768lx	3245lx	2077lx	923lx	519lx	231lx	130lx	83lx	58lx	32lx	21lx
Footcand.	4823fcd	1206fcd	536fcd	301fcd	193fcd	86fcd	48fcd	21fcd	12fcd	8fcd	5fcd	3fcd	2fcd
Beam wid.	0,3m	0,7m	1m	1,3m	1,7m	2,5m	3,3m	5m	6,7m	8,4m	10m	13,4m	16,7m
Beam wid.	1,1ft	2,2ft	3,3ft	4,4ft	5,5ft	8,2ft	11ft	16,5ft	22ft	27,4ft	32,9ft	43,9ft	54,9ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
228V	0,716A	153,3W	28lm/W

Power FC
0,96

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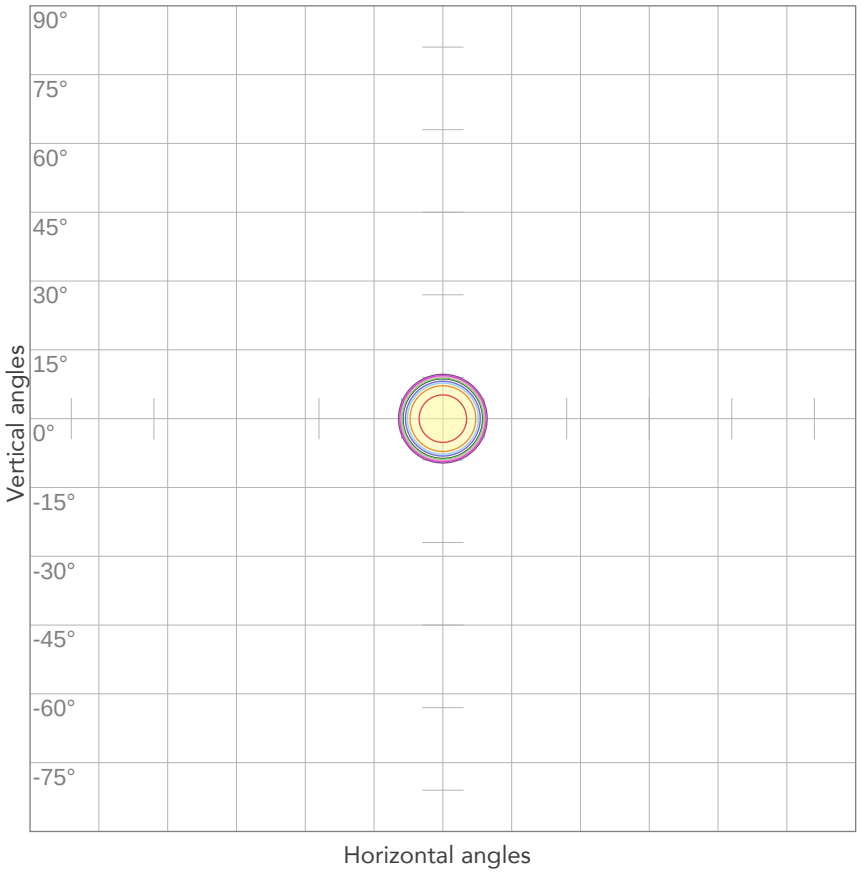
ISO DIAGRAMS

ISO CANDELA DIAGRAM



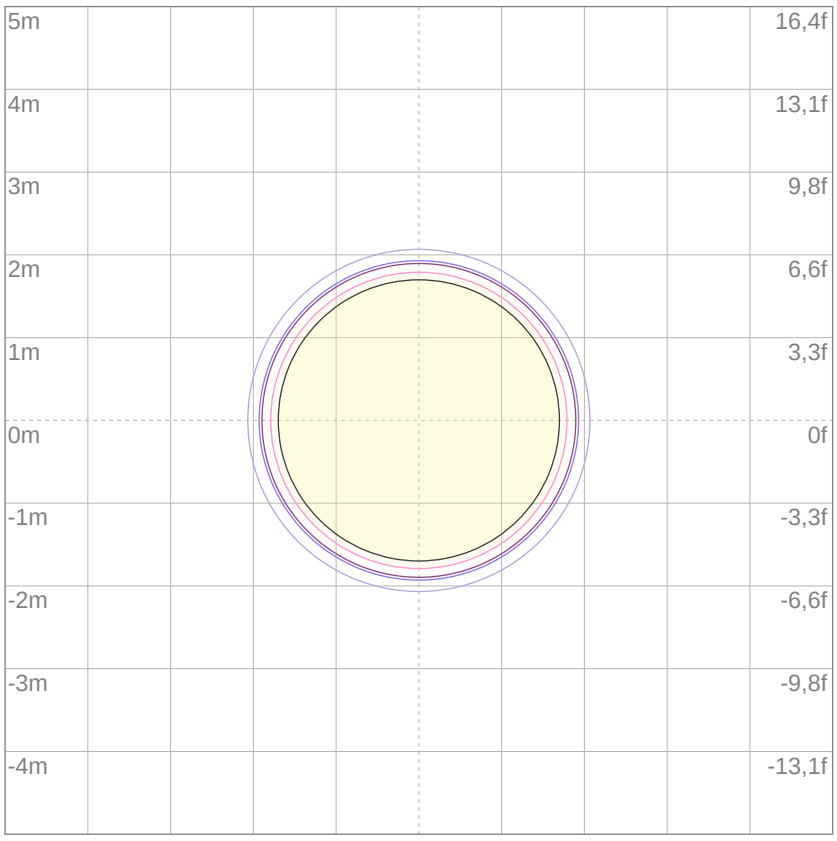
10%	5191 cd
20%	10383 cd
30%	15574 cd
40%	20766 cd
50%	25957 cd
60%	31148 cd
70%	36340 cd
80%	41531 cd

Conditions:

Number of c-planes: 2

Candela at center: 51914 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	15,6 lx
5%	26,0 lx
10%	51,9 lx
30%	156 lx
50%	260 lx

Conditions:

Number of c-planes: 2

Lux at center: 519 lx

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

Total lumen output:

4167 lm

Peak candela output:

49994 cd

Light quality:

CRI: 86,0

Color temperature:

6041 K

PRODUCT NAME:

ECLFS

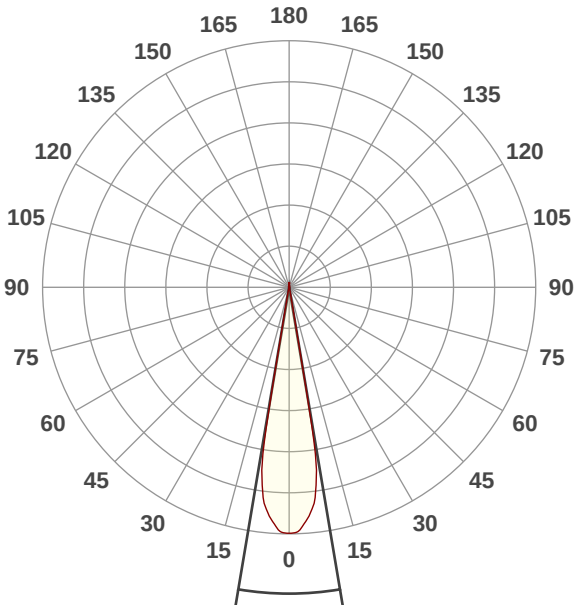
MEASURAMENT CONDITIONS:

Beam angle:
PRL19

Target:
6000K

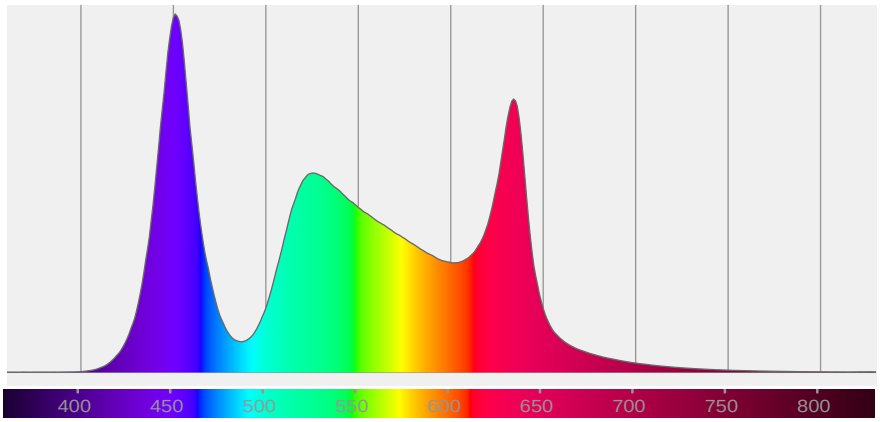
Operator:
Paolo Carvone

Date and time:
30/04/2020 11:12:48

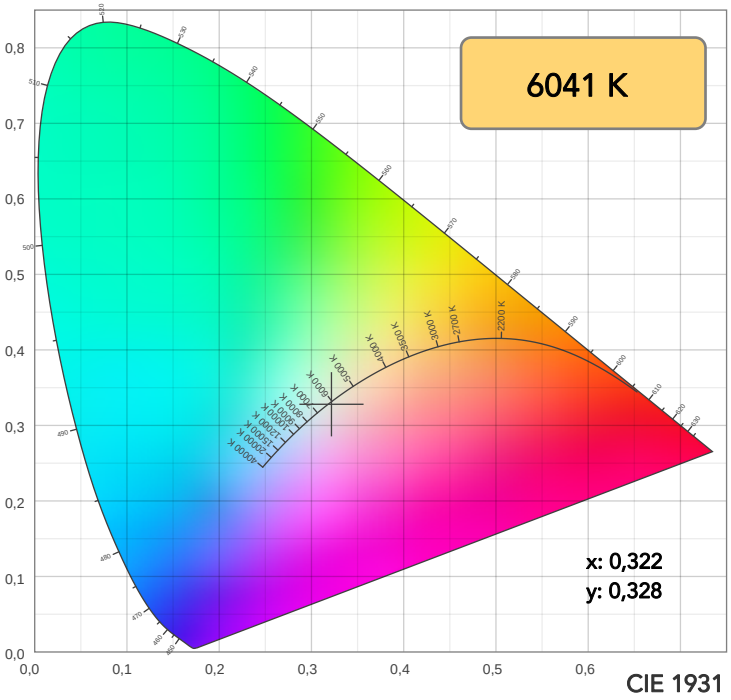


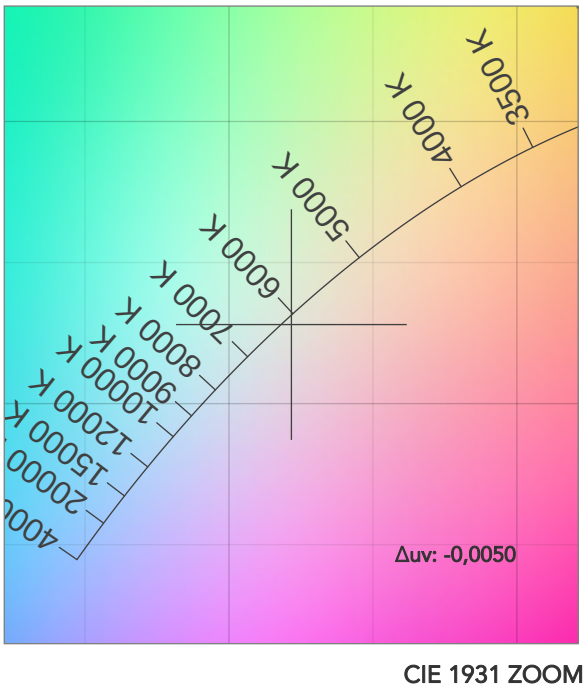
Beam angle 50%: 19,1°
Field angle 10%: 21,5°
Cut off angle 2.5%: 23,2°

Spectra

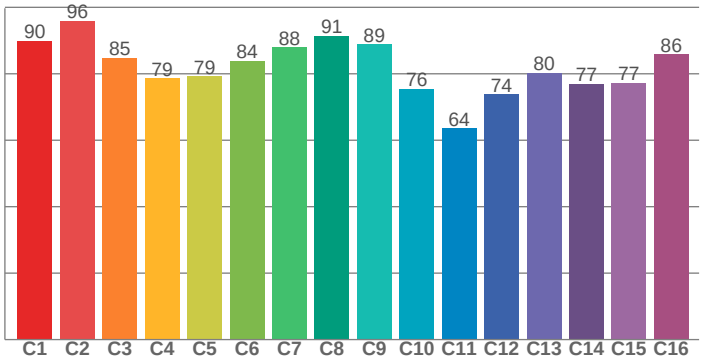


COLOR DETAILS

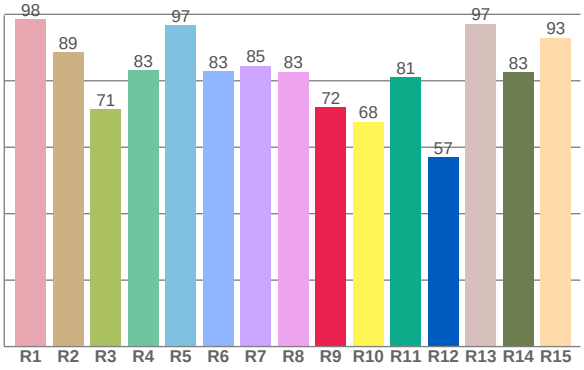




TM30: 82,0



CRI: 86,0 (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
98,4	88,5	71,5	83,2	96,7	82,8	84,5	82,7	72,1	67,7	81,1	57,0	97,2	82,6	93,0

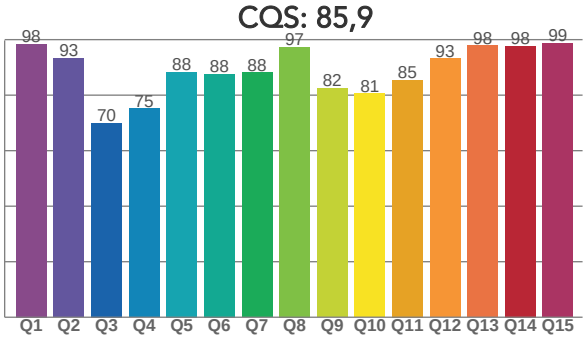
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
90,0	95,9	84,8	78,7	79,3	83,8	87,9	91,4	88,9	75,5	63,6	73,8	80,3	77,0	77,3	85,9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
98,5	93,3	69,9	75,1	88,3	87,6	88,1	97,3	82,5	80,5	85,4	93,1	97,9	97,7	98,7

CQS: 85,9



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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
6041 K	86,0	72,1	82,0	107,5	85,9	83	0,322	0,328	-0,0050

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TM30 DETAILS

PROLiGHTS

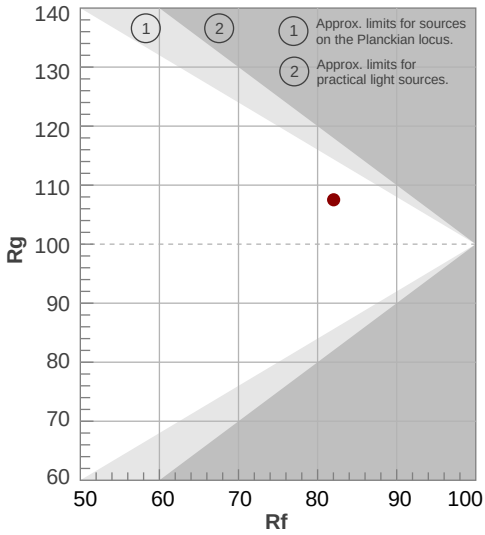
Rf 82,0

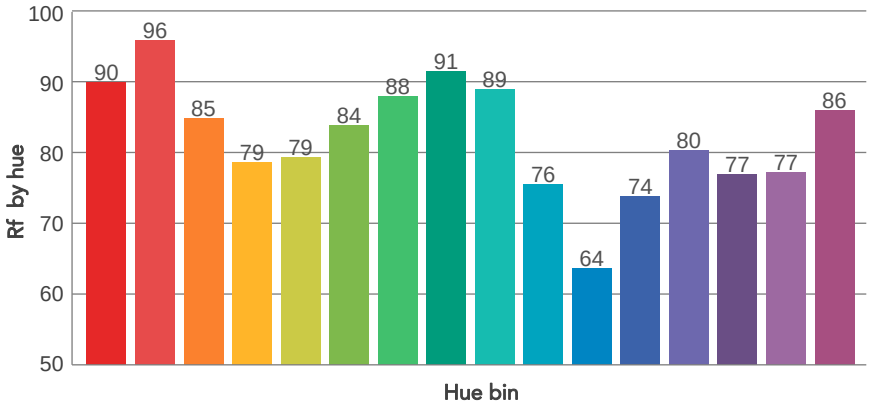
Fidelity index Rf

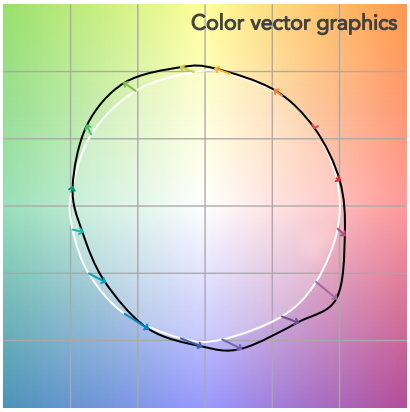
Rg 107,5

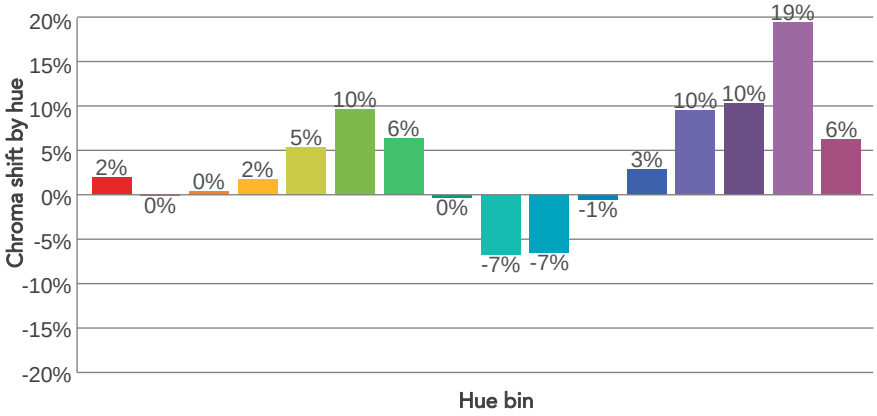
Gammut index

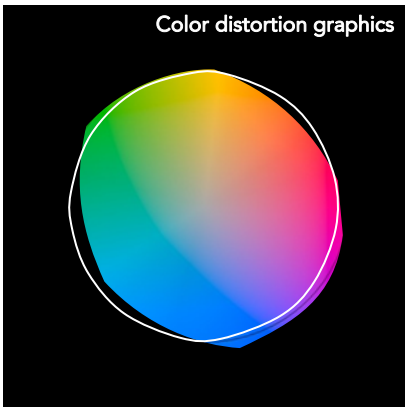
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	90	2%	-2%
2	96	0%	0%
3	85	0%	7%
4	79	2%	12%
5	79	5%	9%
6	84	10%	4%
7	88	6%	-4%
8	91	0%	-4%
9	89	-7%	3%
10	76	-7%	12%
11	64	-1%	20%
12	74	3%	16%
13	80	10%	12%
14	77	10%	7%
15	77	19%	-2%
16	86	6%	-4%

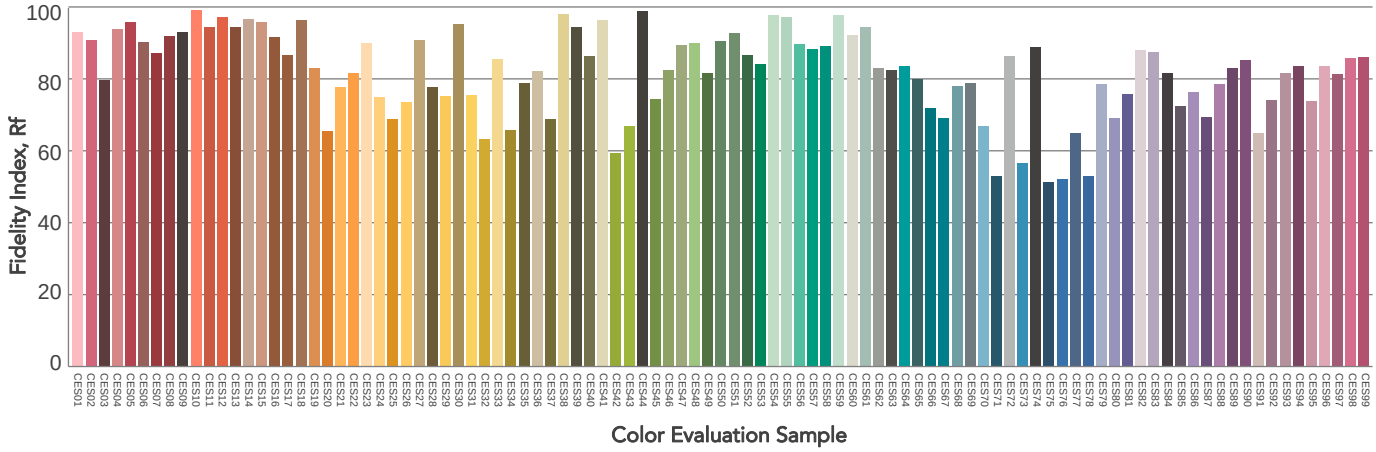












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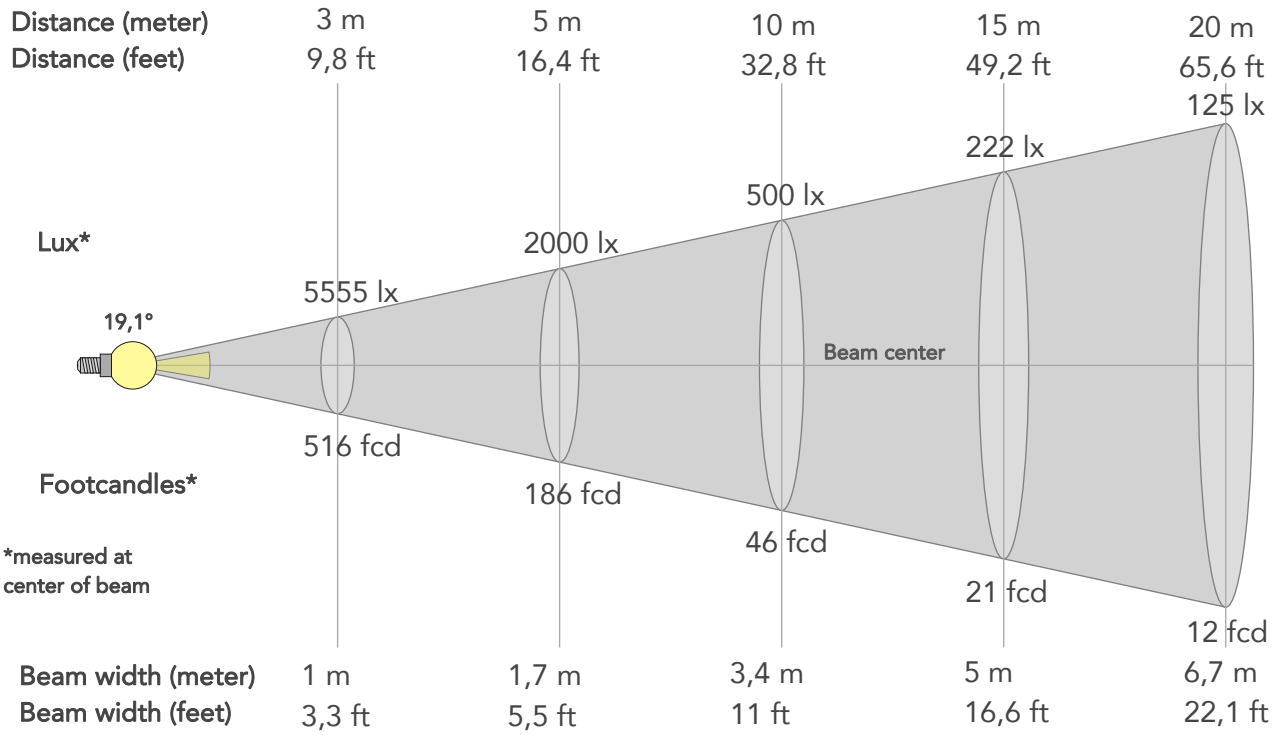
BEAM DETAILS

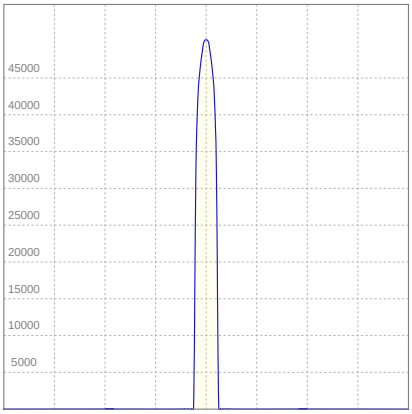
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19,1°	21,5°	23,2°	97,2%	97,0%



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	49994lx	12498lx	5555lx	3125lx	2000lx	889lx	500lx	222lx	125lx	80lx	56lx	31lx	20lx
Footcand.	4645fcd	1161fcd	516fcd	290fcd	186fcd	83fcd	46fcd	21fcd	12fcd	7fcd	5fcd	3fcd	2fcd
Beam wid.	0,3m	0,7m	1m	1,3m	1,7m	2,5m	3,4m	5m	6,7m	8,4m	10,1m	13,5m	16,8m
Beam wid.	1,1ft	2,2ft	3,3ft	4,4ft	5,5ft	8,3ft	11ft	16,6ft	22,1ft	27,6ft	33,1ft	44,2ft	55,2ft

LINEAR DISTRIBUTION DIAGRAM



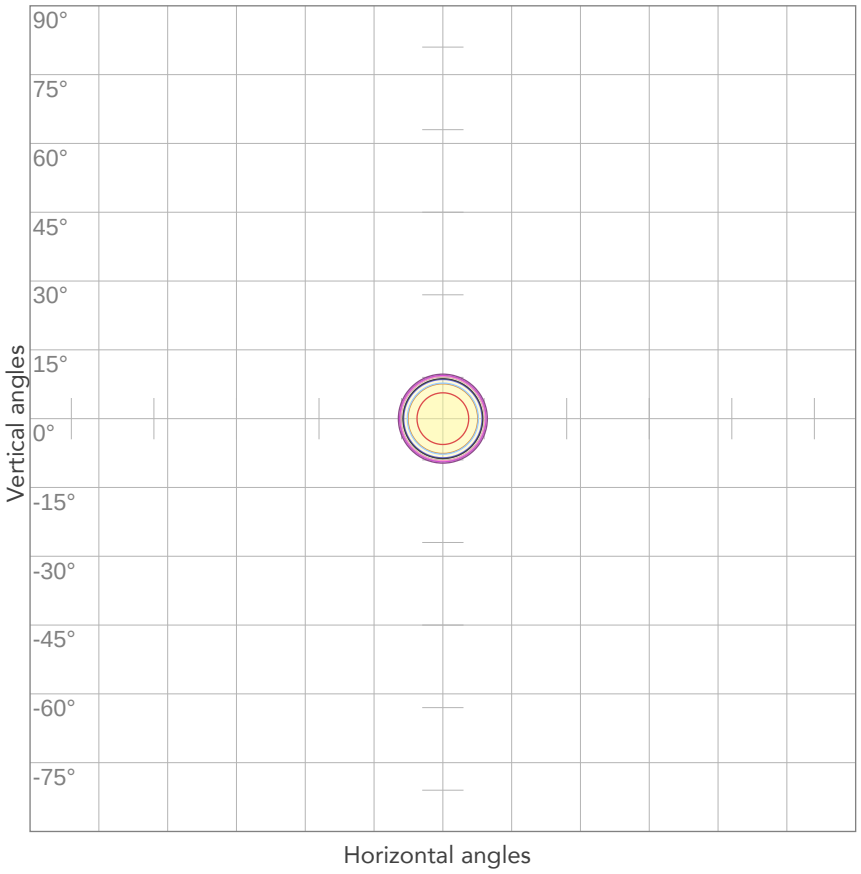
ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Effeciency
228V	0,702A	150,3W	28lm/W

Power FC
0,96

ISO DIAGRAMS

ISO CANDELA DIAGRAM



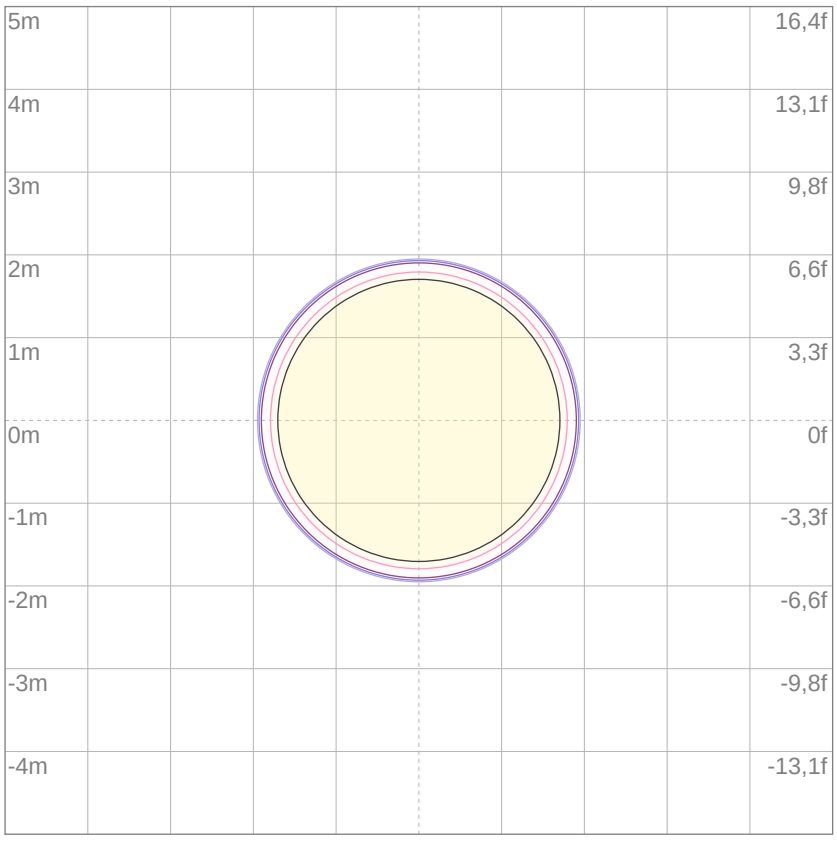
10%	4999 cd
20%	9999 cd
30%	14998 cd
40%	19998 cd
50%	24997 cd
60%	29996 cd
70%	34996 cd
80%	39995 cd

Conditions:

Number of c-planes: 2

Candela at center: 49994 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	15,0 lx
5%	25,0 lx
10%	50,0 lx
30%	150 lx
50%	250 lx

Conditions:

Number of c-planes: 2

Lux at center: 500 lx

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