



Photometric Test Report



ASTRAHYB330

Moving hybrid beam-spot, 330W LED
Source with zoom 3-50° and CMY

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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:

15272 lm

Peak candela output:

47051 cd

Light quality:

CRI: 68,6

Color temperature:

6838 K

PRODUCT NAME:

ASTRAHYB330

MEASURAMENT CONDITIONS:

Beam angle:

Max Zoom

Target:

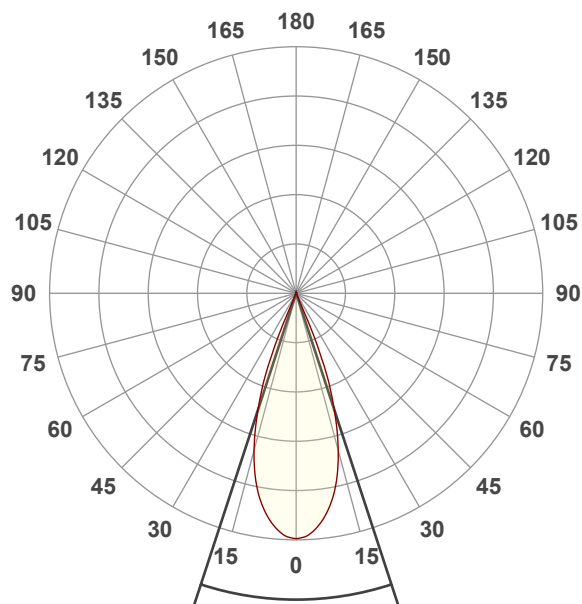
Full On

Operator:

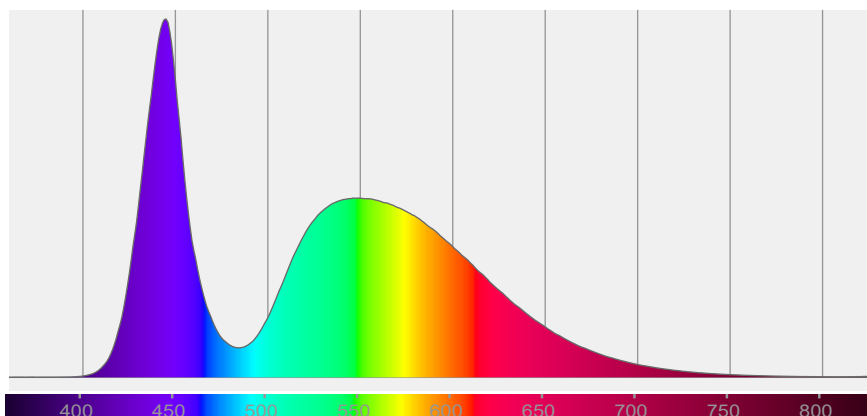
Salvatore Giglio

Date and time:

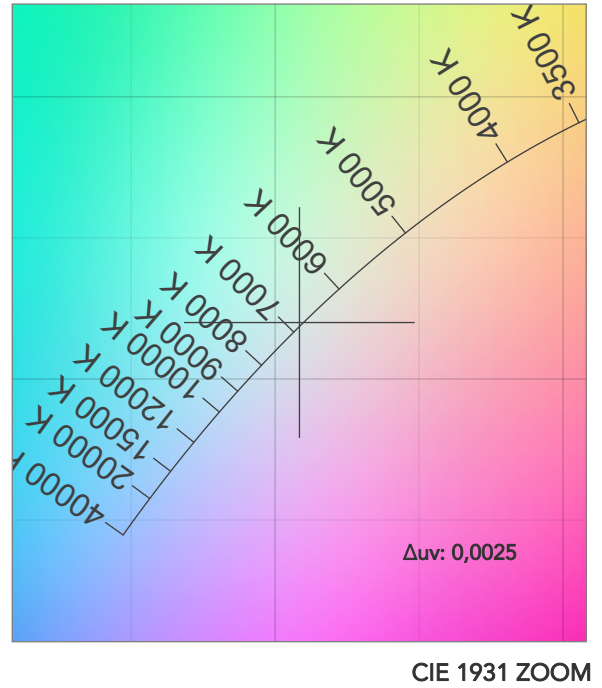
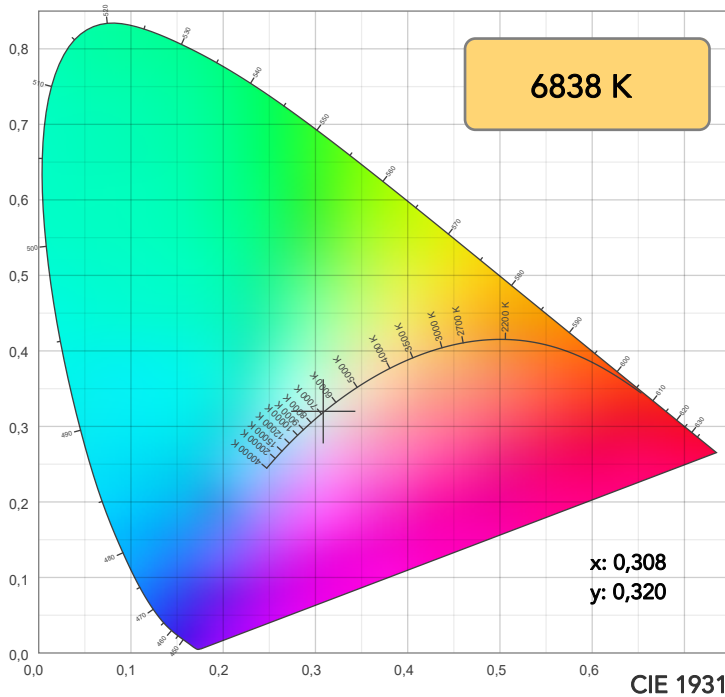
16/01/2024 15:58:33



Spectra

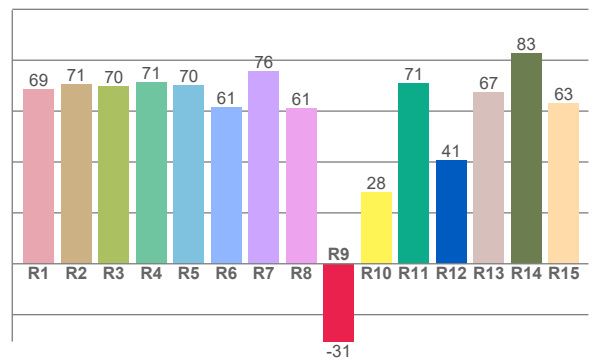
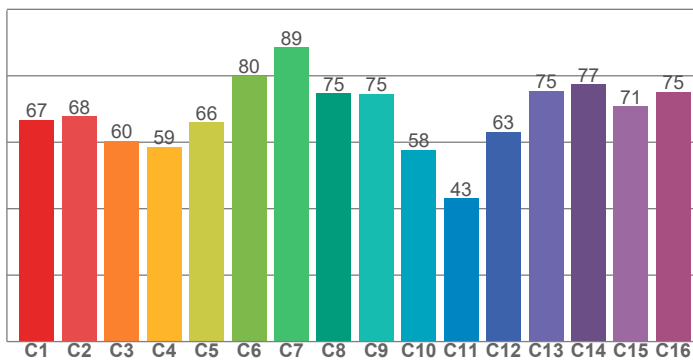


COLOR DETAILS



TM30: 68,2

CRI: 68,6 (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
68,6	70,5	69,7	71,4	70,1	61,4	75,7	61,1	-30,6	28,2	70,8	40,7	67,4	82,6	62,9

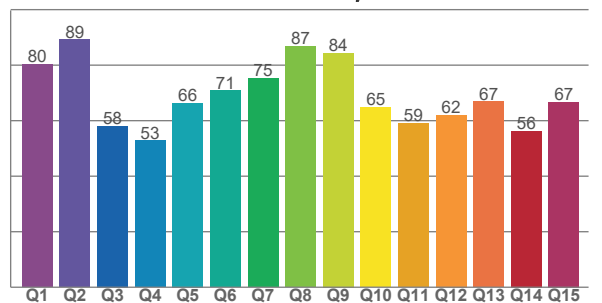
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
66,8	67,8	60,4	58,7	65,9	79,9	88,6	74,7	74,6	57,7	43,0	63,1	75,4	77,4	70,8	75,2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80,3	89,2	58,1	52,9	66,3	70,9	75,3	86,8	84,4	64,8	59,0	62,1	66,9	56,3	66,8

CQS: 67,4



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
6838 K	68,6	-30,6	68,2	95,3	67,4	45	0,308	0,320	0,0025

TM30 DETAILS

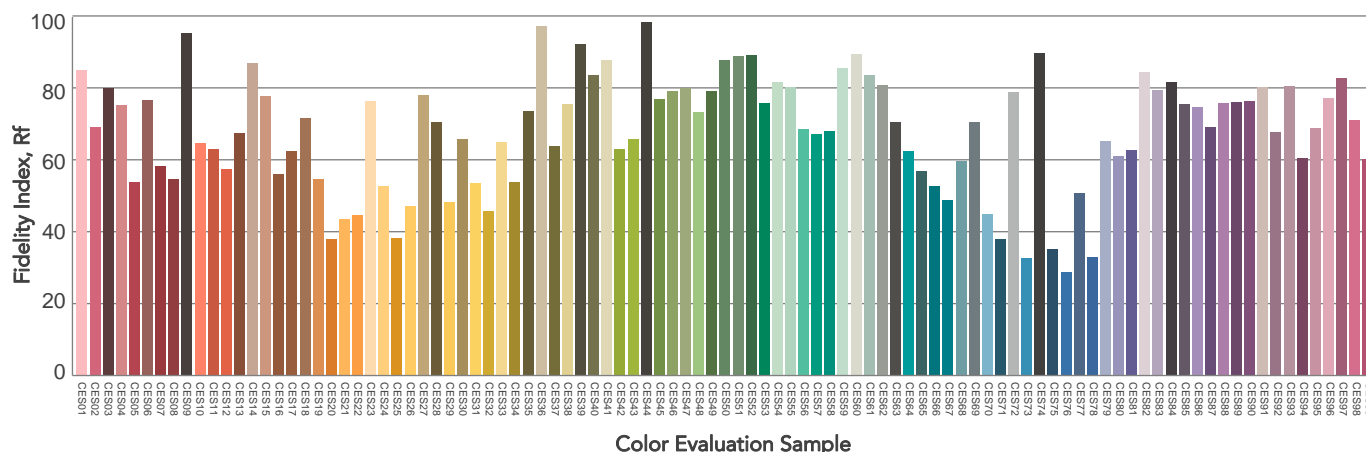
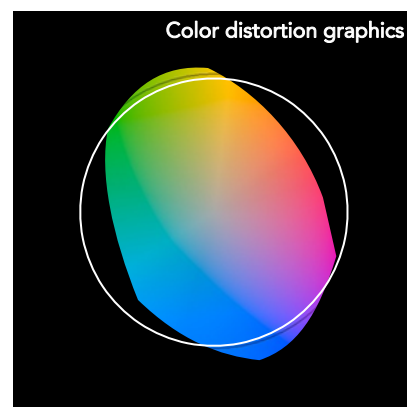
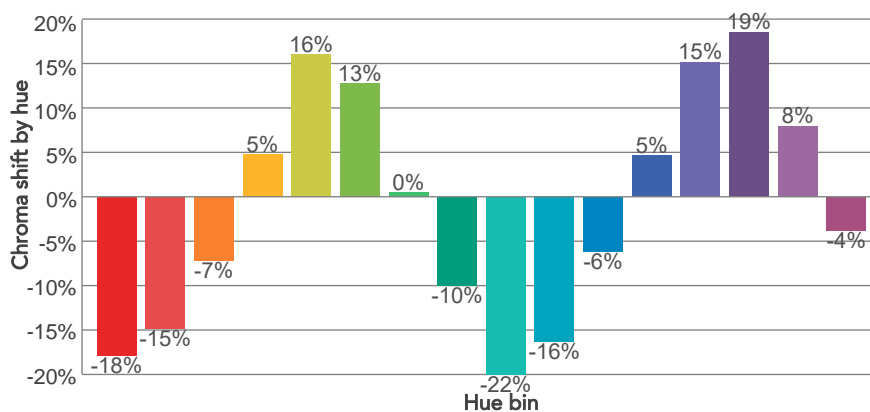
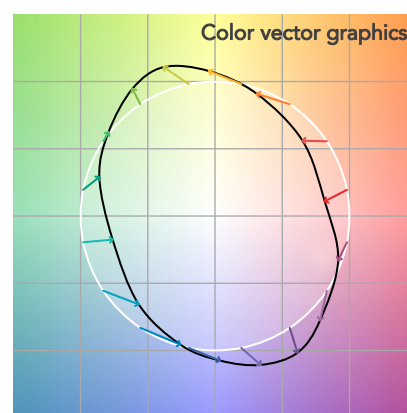
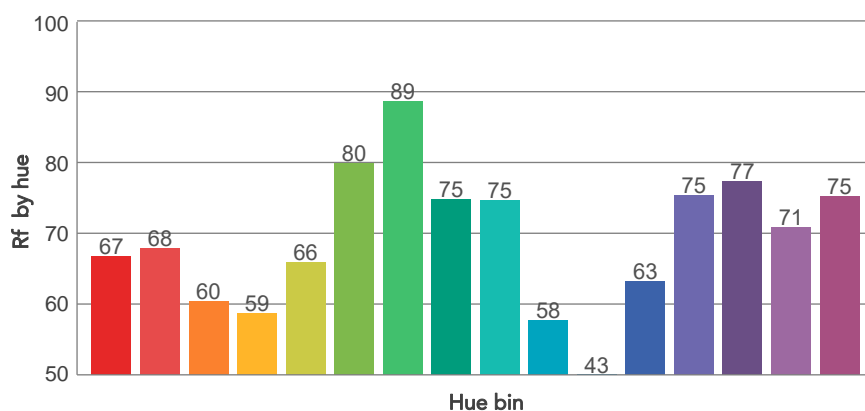
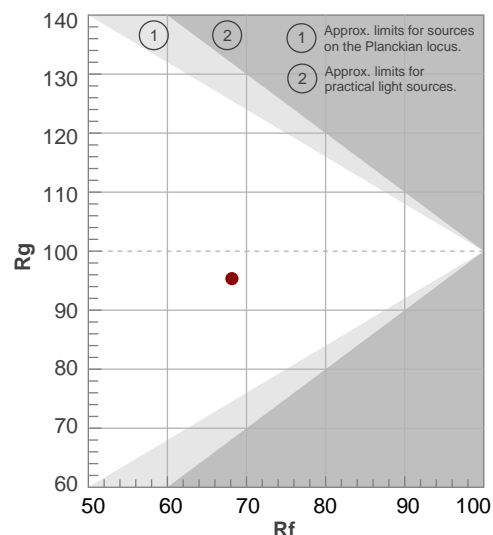
Rf 68,2

Fidelity index Rf

Rg 95,3

Gammut index

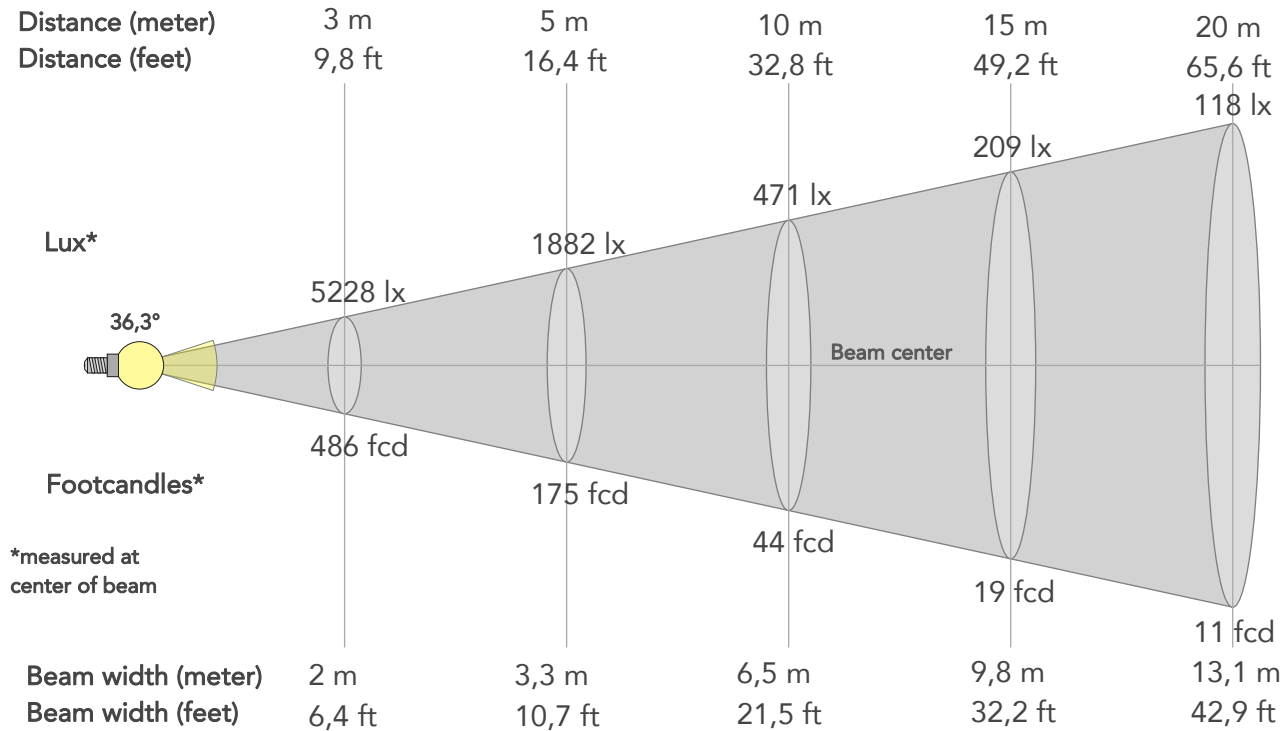
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	67	-18%	-5%
2	68	-15%	10%
3	60	-7%	25%
4	59	5%	25%
5	66	16%	16%
6	80	13%	-1%
7	89	0%	-8%
8	75	-10%	-12%
9	75	-22%	2%
10	58	-16%	23%
11	43	-6%	32%
12	63	5%	25%
13	75	15%	12%
14	77	19%	-5%
15	71	8%	-21%
16	75	-4%	-14%



BEAM DETAILS



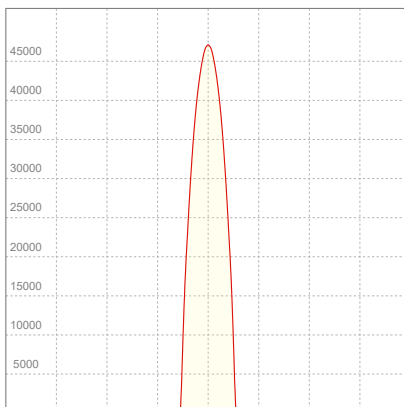
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
36,3°	47,1°	48,8°	94,4%	93,9%



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	47051lx	11763lx	5228lx	2941lx	1882lx	836lx	471lx	209lx	118lx	75lx	52lx	29lx	19lx
Footcand.	4371fcd	1093fcd	486fcd	273fcd	175fcd	78fcd	44fcd	19fcd	11fcd	7fcd	5fcd	3fcd	2fcd
Beam wid.	0,7m	1,3m	2m	2,6m	3,3m	4,9m	6,5m	9,8m	13,1m	16,4m	19,6m	26,2m	32,7m
Beam wid.	2,2ft	4,3ft	6,4ft	8,6ft	10,7ft	16,1ft	21,5ft	32,2ft	42,9ft	53,7ft	64,4ft	85,9ft	107,4ft

LINEAR DISTRIBUTION DIAGRAM

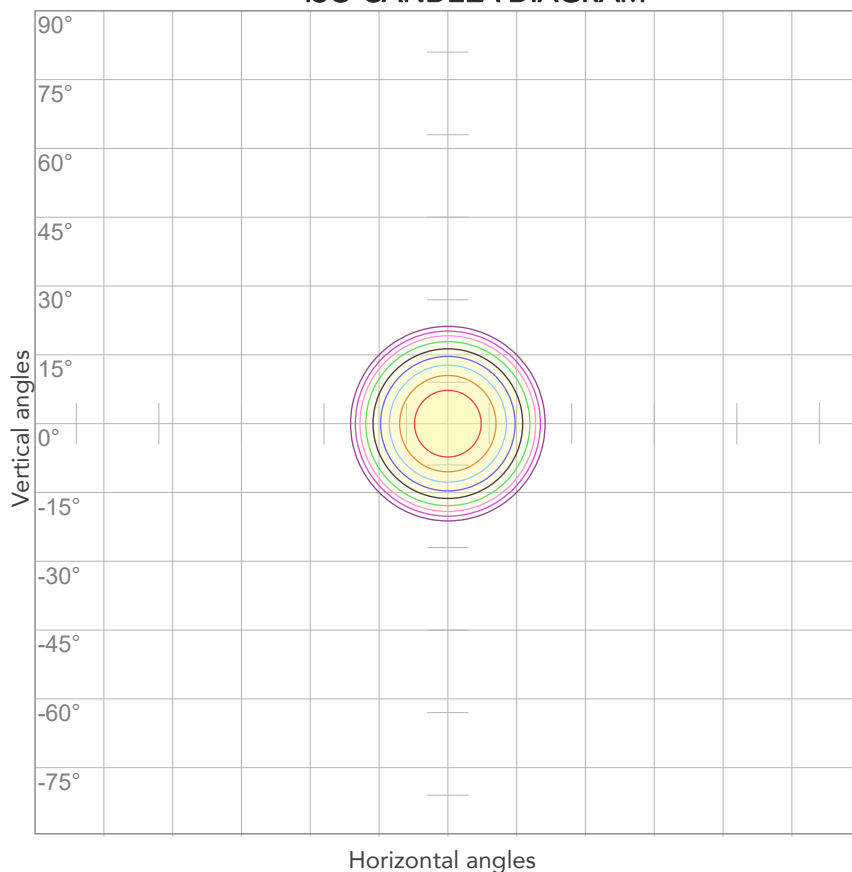


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
223V	2,11A	460,3W	0,98	33lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



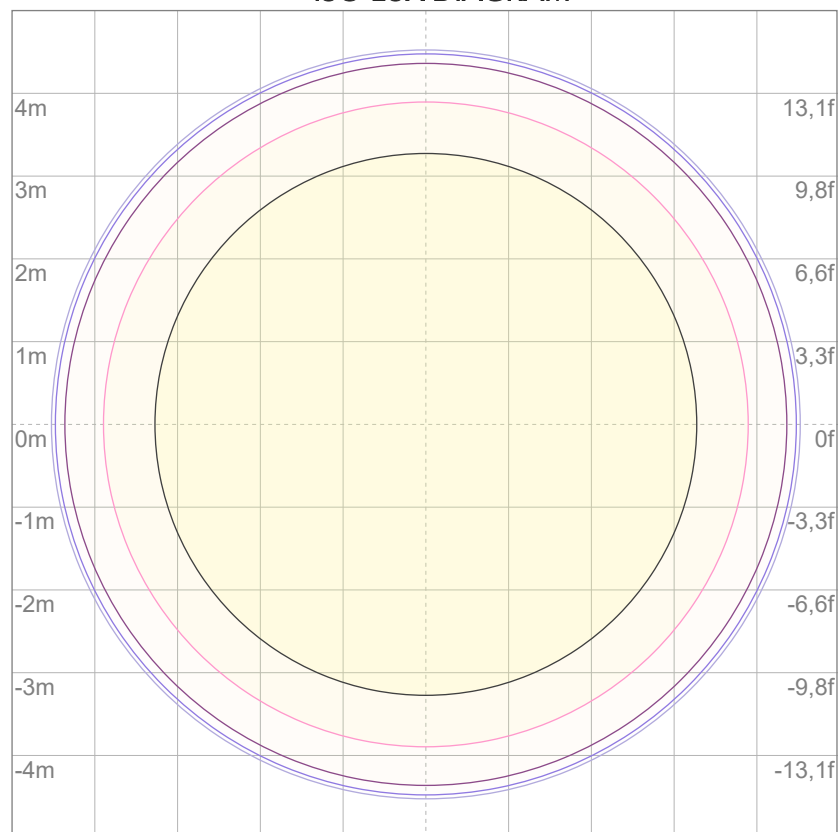
10%	4705 cd
20%	9410 cd
30%	14115 cd
40%	18820 cd
50%	23525 cd
60%	28231 cd
70%	32936 cd
80%	37641 cd

Conditions:

Number of c-planes: 2

Candela at center: 47051 cd

ISO LUX DIAGRAM



3%	14,1 lx
5%	23,5 lx
10%	47,1 lx
30%	141 lx
50%	235 lx

Conditions:

Number of c-planes: 2

Lux at center: 471 lx

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



Total lumen output:

14974 lm

Peak candela output:

435878 cd

Light quality:

CRI: 68,6

Color temperature:

6776 K

PRODUCT NAME:

ASTRAHYB330

MEASUREMENT CONDITIONS:

Beam angle:

Med Zoom

Target:

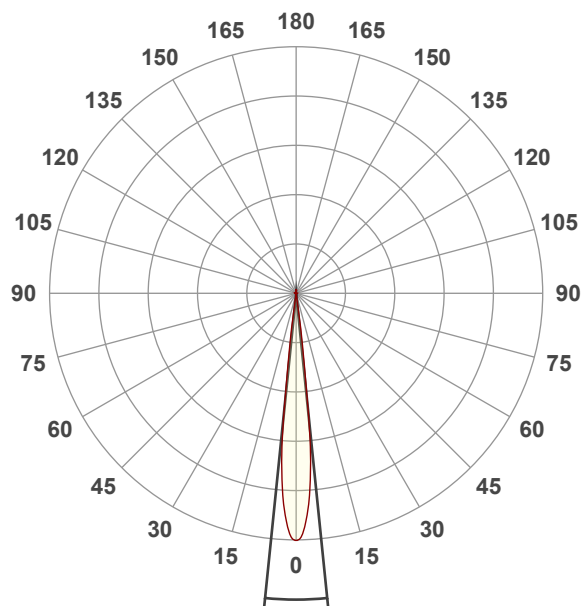
Full On

Operator:

Salvatore Giglio

Date and time:

16/01/2024 15:47:08

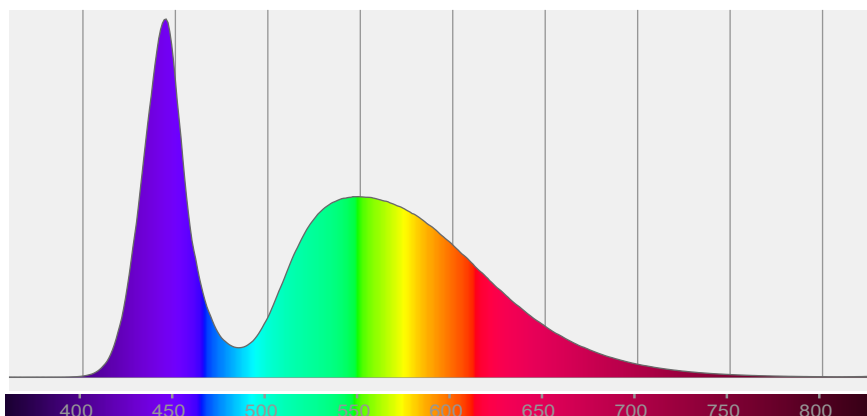


Beam angle 50%: 11,6°

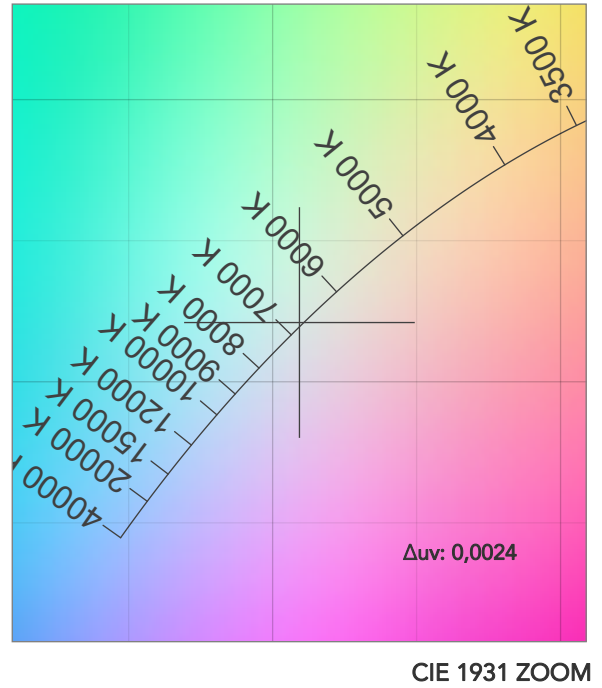
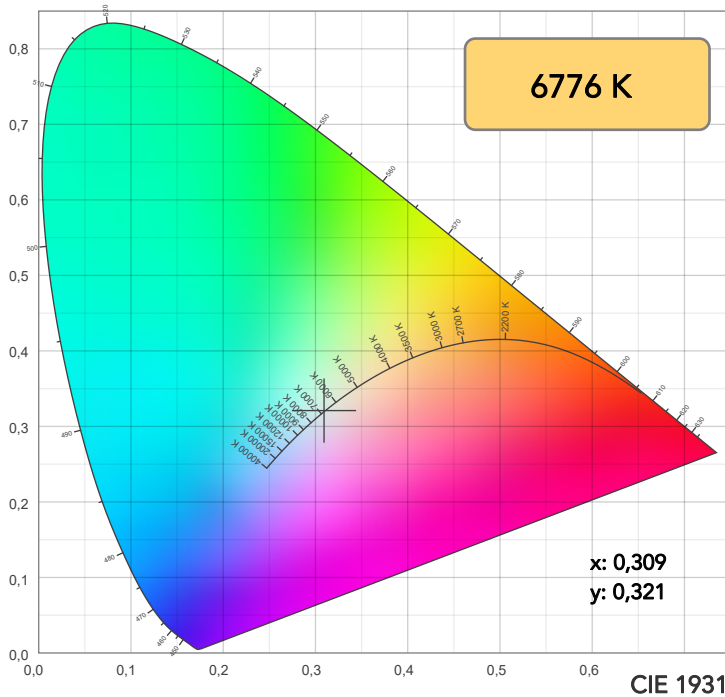
Field angle 10%: 15,5°

Cut off angle 2.5%: 16,6°

Spectra

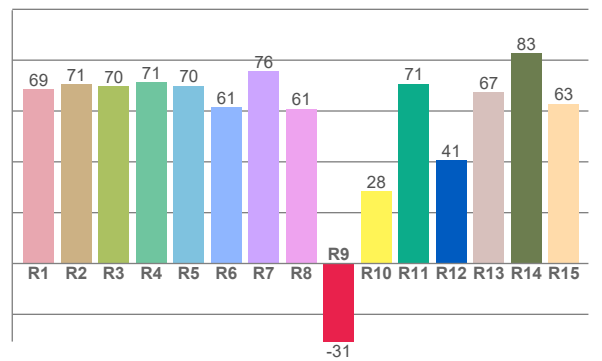
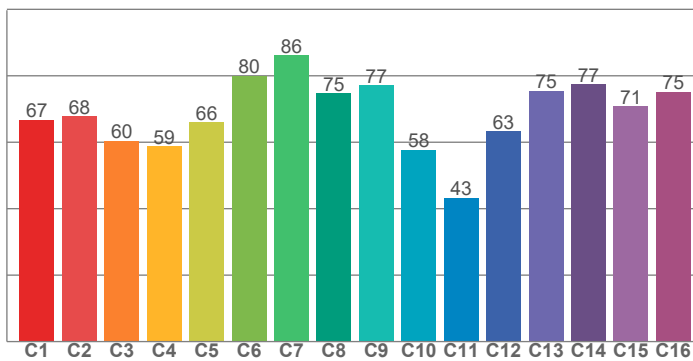


COLOR DETAILS



TM30: 68,2

CRI: 68,6 (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
68,6	70,6	69,9	71,4	70,0	61,4	75,7	60,9	-30,7	28,4	70,8	40,7	67,4	82,7	62,9

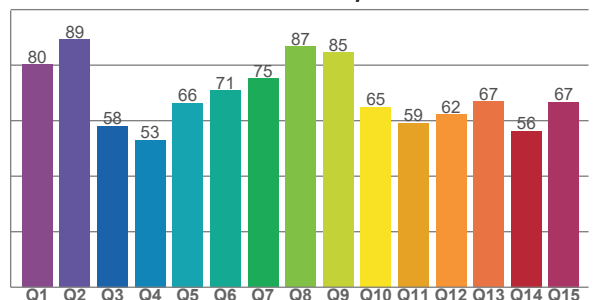
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
66,8	67,8	60,4	58,8	65,9	80,0	86,2	74,7	77,1	57,7	43,2	63,3	75,5	77,5	70,8	75,2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80,2	89,2	58,1	53,0	66,3	70,8	75,2	86,7	84,5	64,9	59,1	62,2	66,9	56,2	66,7

CQS: 67,4



COLOR PARAMETERS

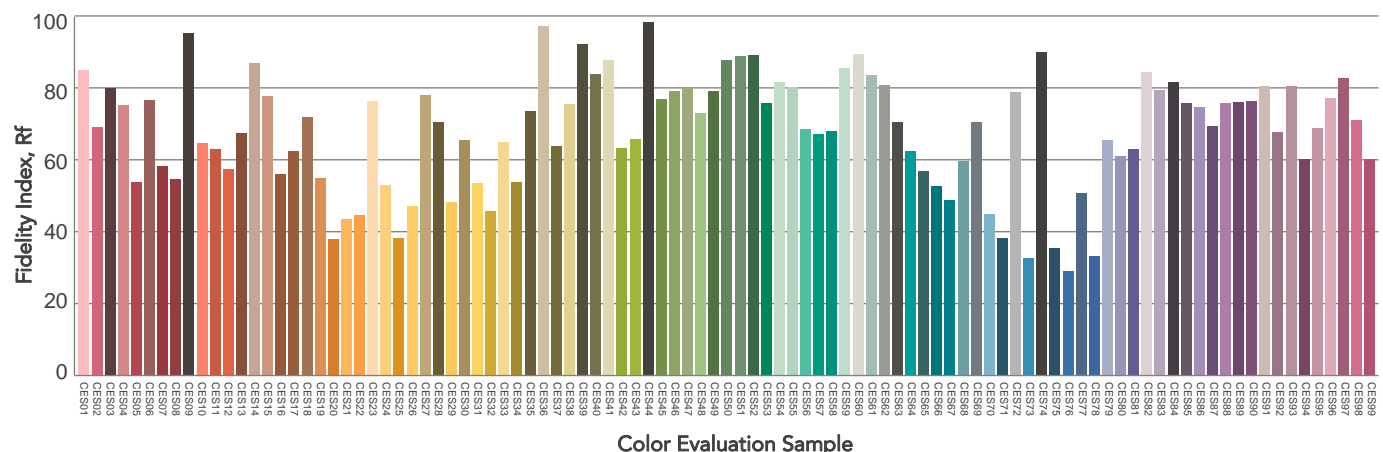
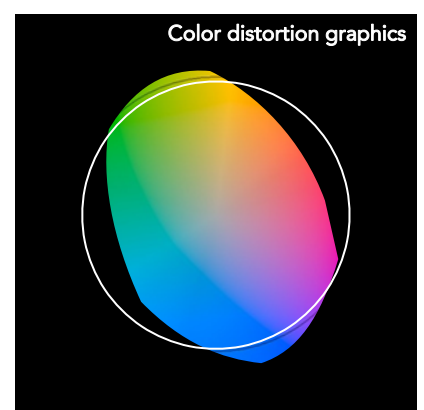
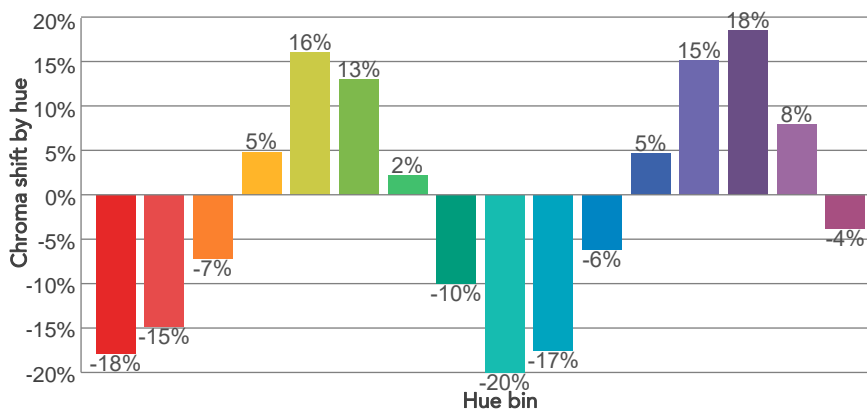
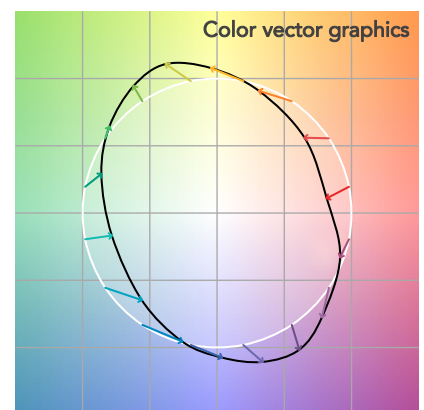
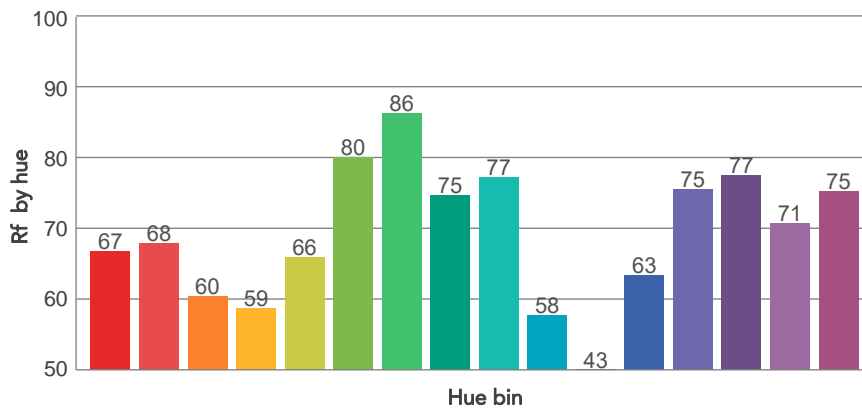
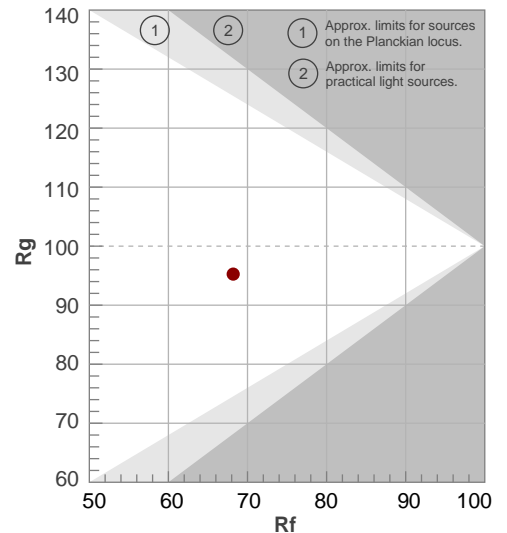
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
6776 K	68,6	-30,7	68,2	95,3	67,4	45	0,309	0,321	0,0024

TM30 DETAILS

Rf 68,2
Fidelity index Rf

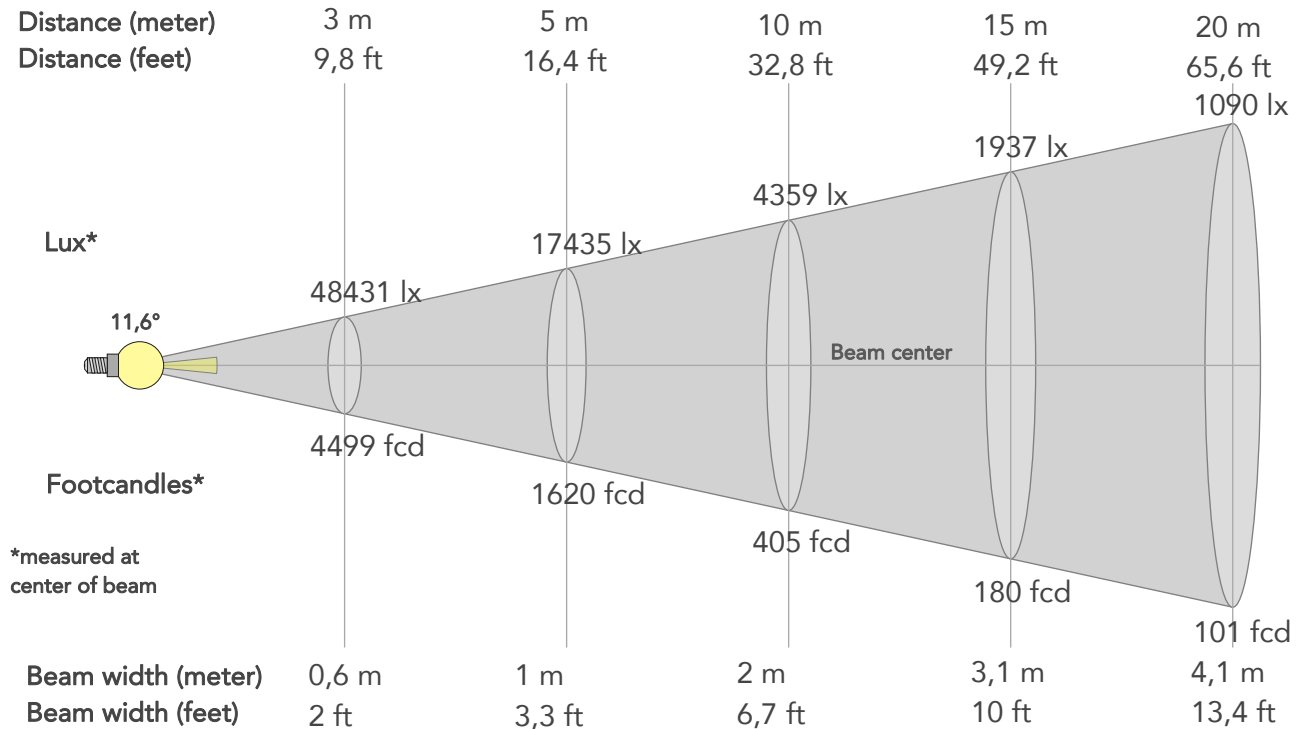
Rg 95,3
Gammut index

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	67	-18%	-5%
2	68	-15%	10%
3	60	-7%	25%
4	59	5%	25%
5	66	16%	16%
6	80	13%	-1%
7	86	2%	-9%
8	75	-10%	-12%
9	77	-20%	1%
10	58	-17%	23%
11	43	-6%	32%
12	63	5%	25%
13	75	15%	12%
14	77	18%	-6%
15	71	8%	-21%
16	75	-4%	-14%



BEAM DETAILS

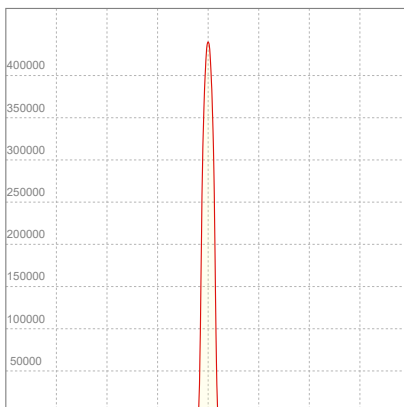
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
11,6°	15,5°	16,6°	94,8%	94,1%



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	435877lx	108969lx	48431lx	27242lx	17435lx	7749lx	4359lx	1937lx	1090lx	697lx	484lx	272lx	174lx
Footcand.	40494fcd	10124fcd	4499fcd	2531fcd	1620fcd	720fcd	405fcd	180fcd	101fcd	65fcd	45fcd	25fcd	16fcd
Beam wid.	0,2m	0,4m	0,6m	0,8m	1m	1,5m	2m	3,1m	4,1m	5,1m	6,1m	8,2m	10,2m
Beam wid.	0,7ft	1,3ft	2ft	2,7ft	3,3ft	5ft	6,7ft	10ft	13,4ft	16,7ft	20,1ft	26,8ft	33,4ft

LINEAR DISTRIBUTION DIAGRAM

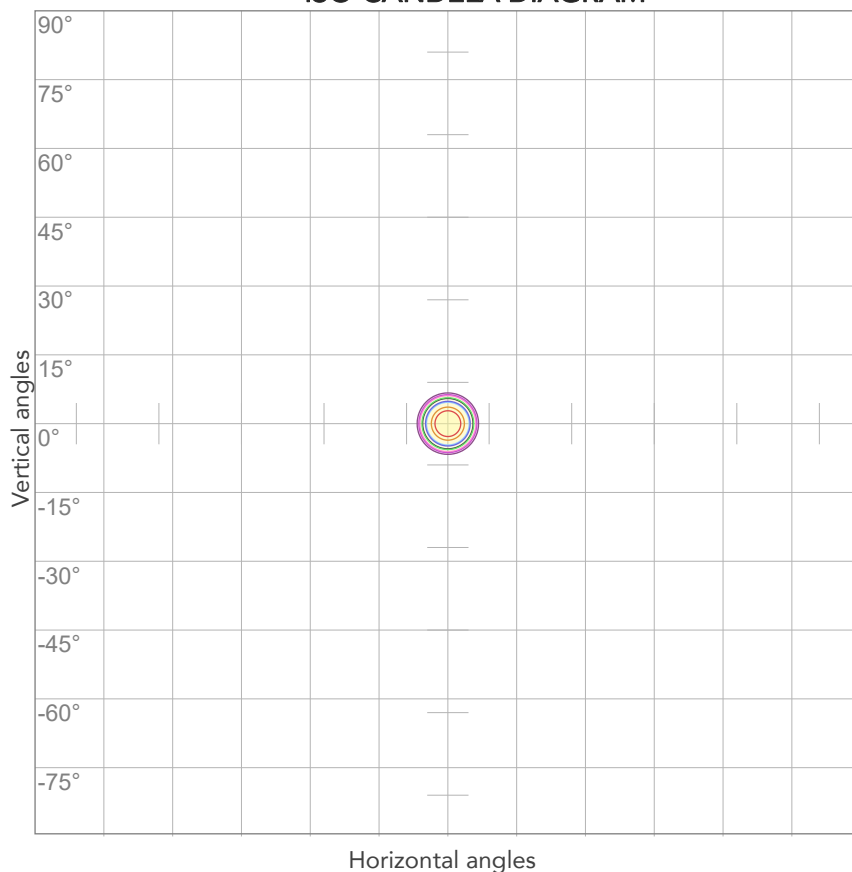


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
221V	2,13A	460,8W	0,98	32lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



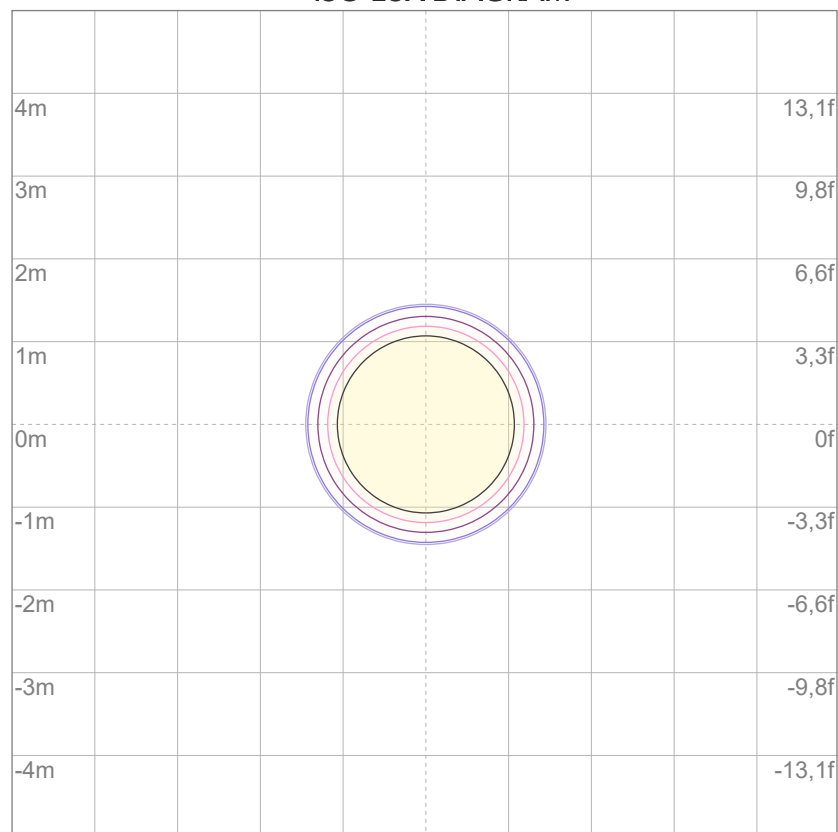
10%	43588 cd
20%	87175 cd
30%	130763 cd
40%	174351 cd
50%	217939 cd
60%	261526 cd
70%	305114 cd
80%	348702 cd

Conditions:

Number of c-planes: 2

Candela at center: 435877 cd

ISO LUX DIAGRAM



3%	131 lx
5%	218 lx
10%	436 lx
30%	1308 lx
50%	2179 lx

Conditions:

Number of c-planes: 2

Lux at center: 4359 lx

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



Total lumen output:

8493 lm

Peak candela output:

2867537 cd

Light quality:

CRI: 68,5

Color temperature:

6622 K

PRODUCT NAME:

ASTRAHYB330

MEASUREMENT CONDITIONS:

Beam angle:

Min Zoom

Target:

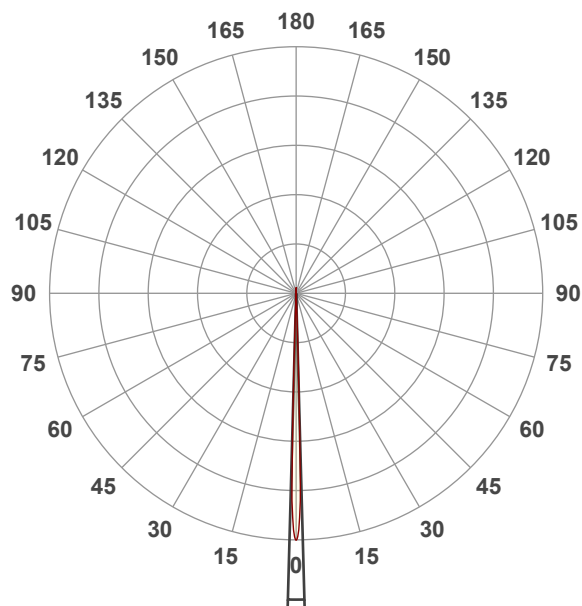
Full On

Operator:

Salvatore Giglio

Date and time:

16/01/2024 15:30:41

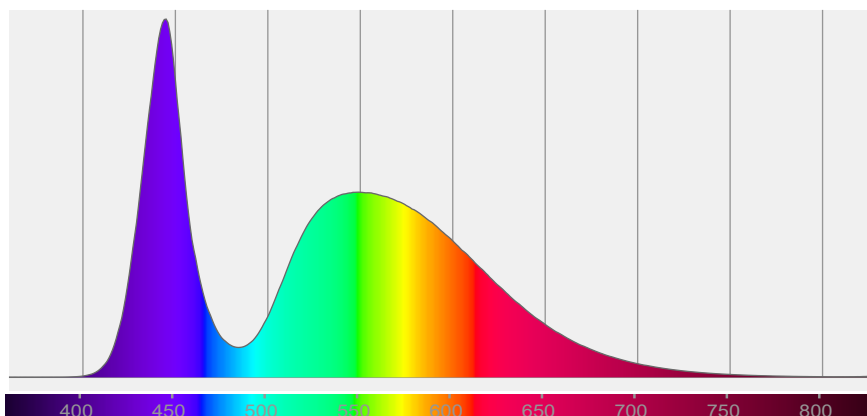


Beam angle 50%: 3,1°

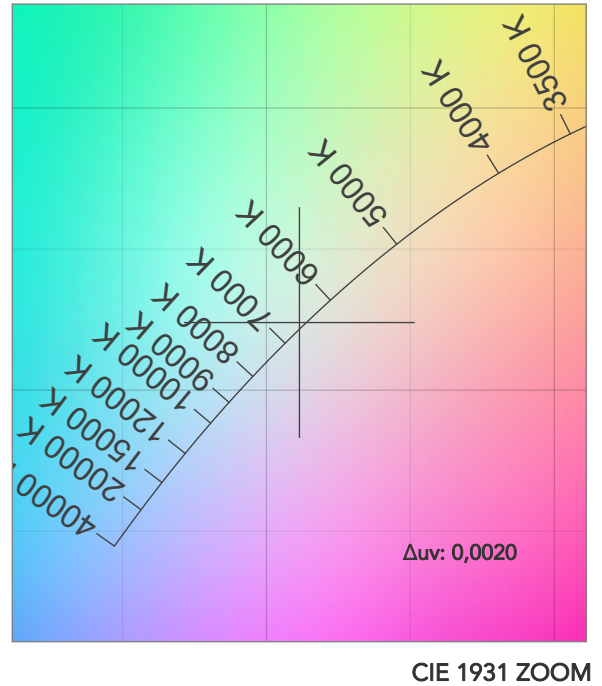
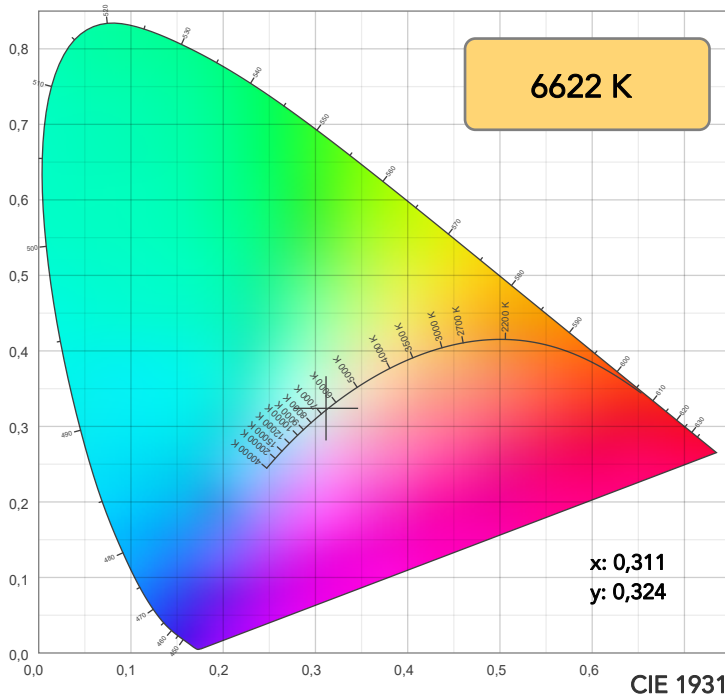
Field angle 10%: 4,2°

Cut off angle 2.5%: 4,4°

Spectra

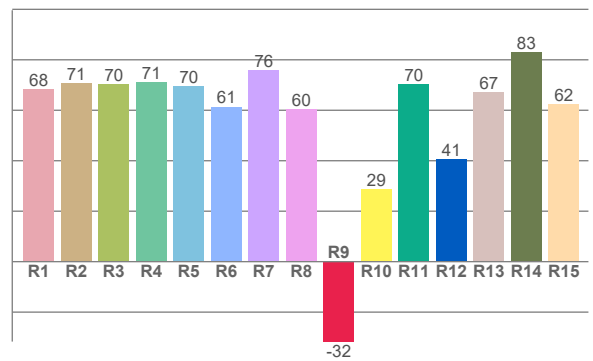
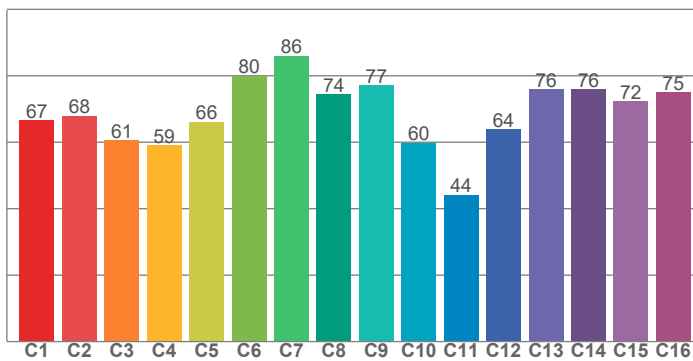


COLOR DETAILS



TM30: 68,3

CRI: 68,5 (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
68,3	70,6	70,3	71,2	69,6	61,4	75,8	60,4	-31,7	28,7	70,4	40,5	67,2	83,0	62,4

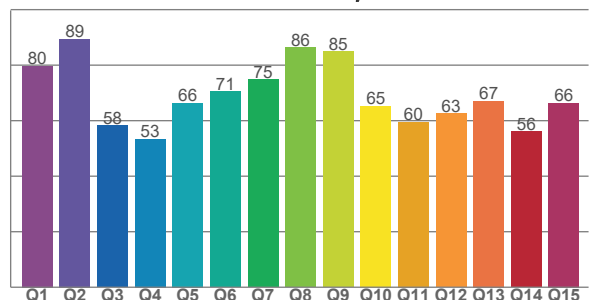
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
66,6	67,9	60,6	59,0	66,1	80,0	86,0	74,4	77,1	59,8	44,1	63,8	75,9	75,9	72,3	75,0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
79,8	89,4	58,2	53,3	66,3	70,5	74,9	86,4	84,9	65,3	59,6	62,5	67,1	56,0	66,3

CQS: 67,4



COLOR PARAMETERS

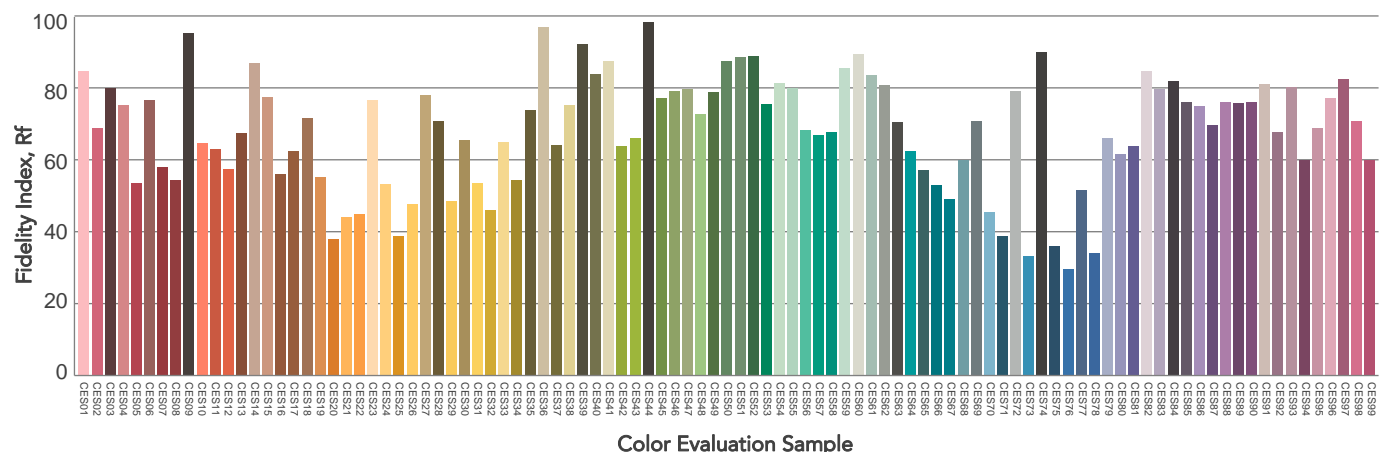
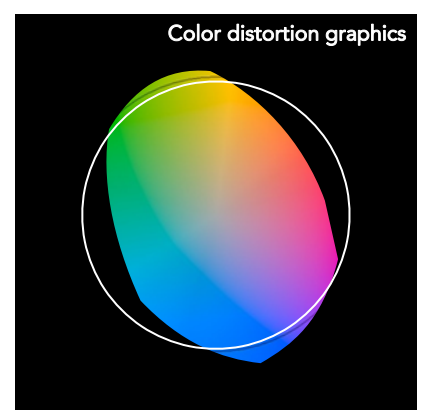
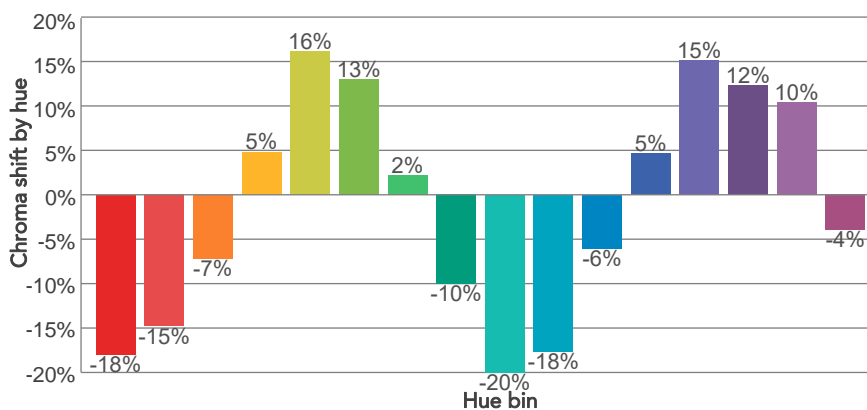
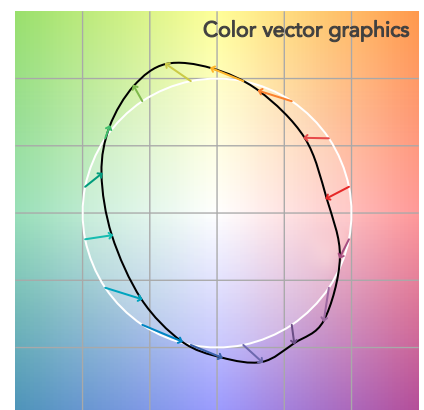
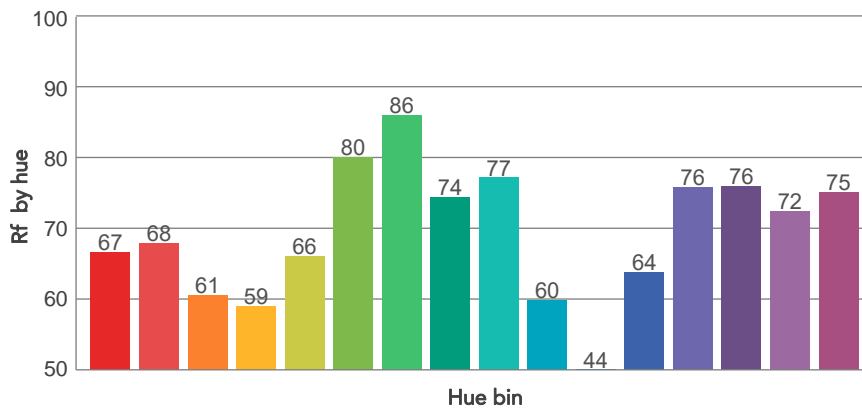
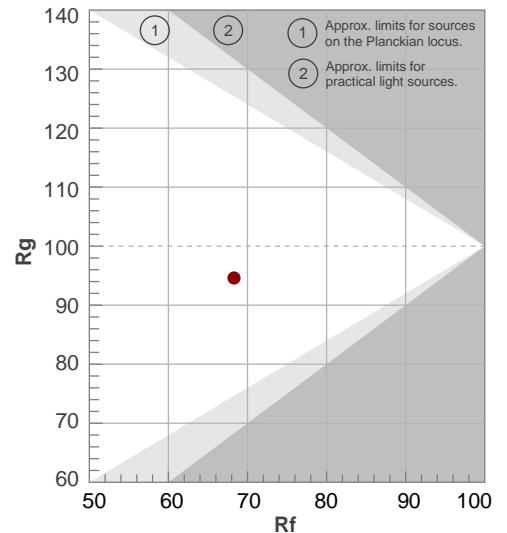
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
6622 K	68,5	-31,7	68,3	94,6	67,4	45	0,311	0,324	0,0020

TM30 DETAILS

Rf 68,3
Fidelity index Rf

Rg 94,6
Gammut index

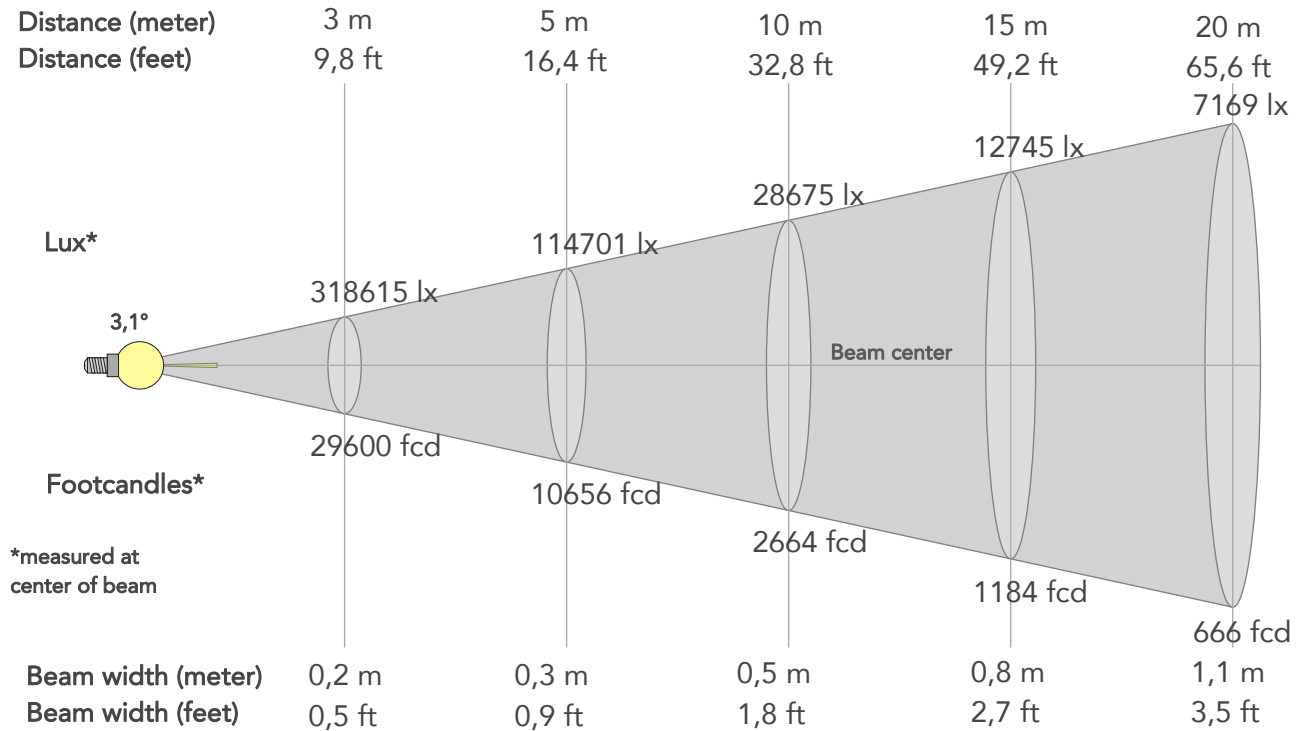
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	67	-18%	-5%
2	68	-15%	10%
3	61	-7%	25%
4	59	5%	25%
5	66	16%	16%
6	80	13%	-1%
7	86	2%	-9%
8	74	-10%	-12%
9	77	-20%	1%
10	60	-18%	22%
11	44	-6%	31%
12	64	5%	24%
13	76	15%	11%
14	76	12%	-6%
15	72	10%	-22%
16	75	-4%	-14%



BEAM DETAILS



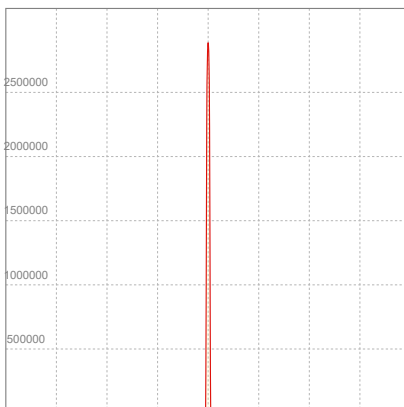
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
3,1°	4,2°	4,4°	94,9%	94,8%



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	2867537lx	716884lx	318615lx	179221lx	114701lx	50978lx	28675lx	12745lx	7169lx	4588lx	3186lx	1792lx	1147lx
Footcand.	266403fcd	66601fcd	29600fcd	16650fcd	10656fcd	4736fcd	2664fcd	1184fcd	666fcd	426fcd	296fcd	167fcd	107fcd
Beam wid.	0,1m	0,1m	0,2m	0,2m	0,3m	0,4m	0,5m	0,8m	1,1m	1,3m	1,6m	2,2m	2,7m
Beam wid.	0,2ft	0,4ft	0,5ft	0,7ft	0,9ft	1,3ft	1,8ft	2,7ft	3,5ft	4,4ft	5,3ft	7,1ft	8,9ft

LINEAR DISTRIBUTION DIAGRAM

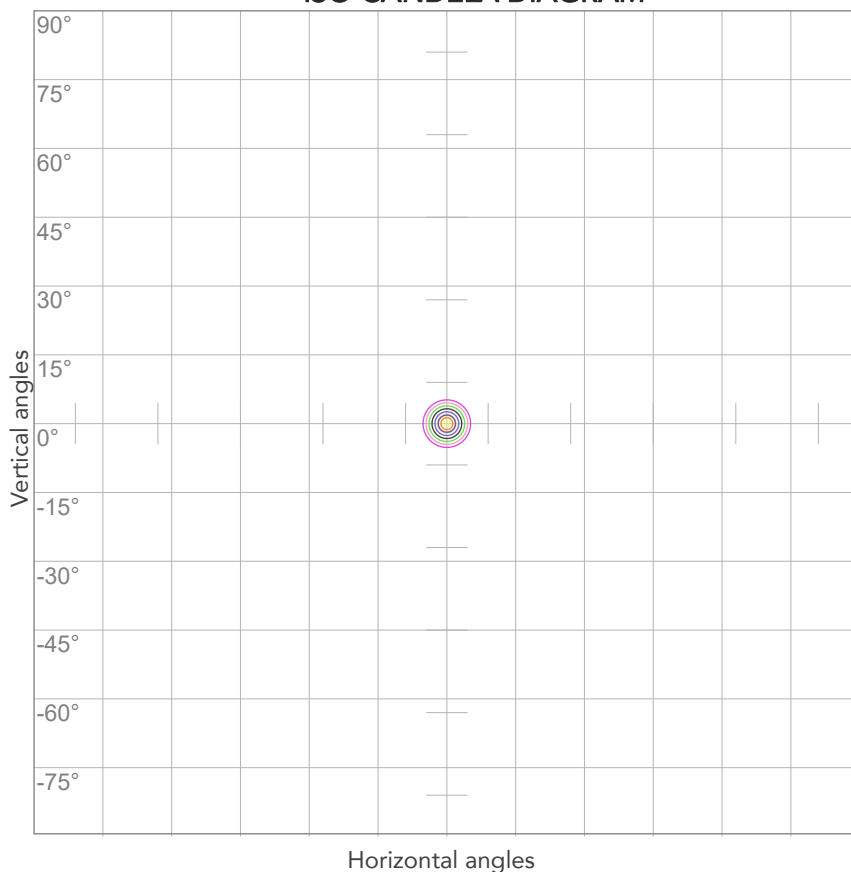


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
223V	2,12A	462,5W	0,98	16lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



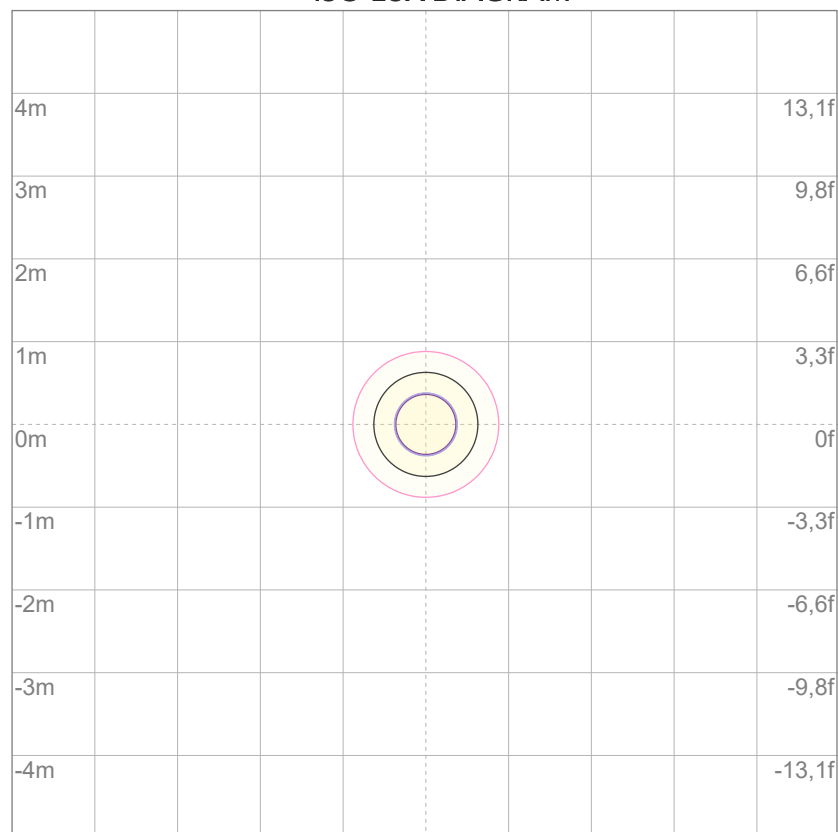
10%	286754 cd
20%	573507 cd
30%	860261 cd
40%	1147015 cd
50%	1433768 cd
60%	1720522 cd
70%	2007276 cd
80%	2294030 cd

Conditions:

Number of c-planes: 2

Candela at center: 2867537 cd

ISO LUX DIAGRAM



3%	860 lx
5%	1434 lx
10%	2868 lx
30%	8603 lx
50%	14,3K lx

Conditions:

Number of c-planes: 2

Lux at center: 28,7K lx

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



Total lumen output:

2180 lm

Peak candela output:

6715 cd

Light quality:

CRI: 93,6

Color temperature:

2966 K

PRODUCT NAME:

ASTRAHYB330

MEASURAMENT CONDITIONS:

Beam angle:

Max Zoom

Target:

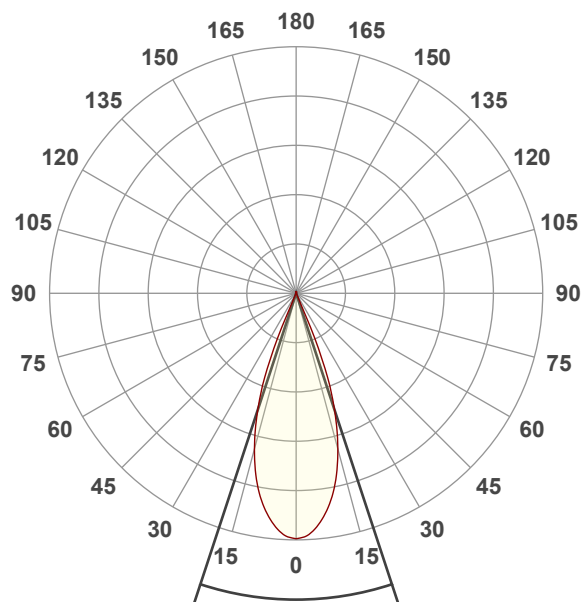
CTO 3200K

Operator:

Salvatore Giglio

Date and time:

16/01/2024 16:03:39

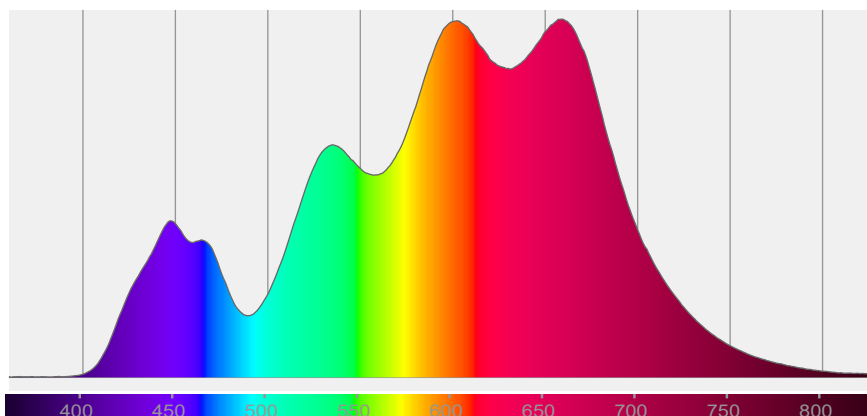


Beam angle 50%: 36,4°

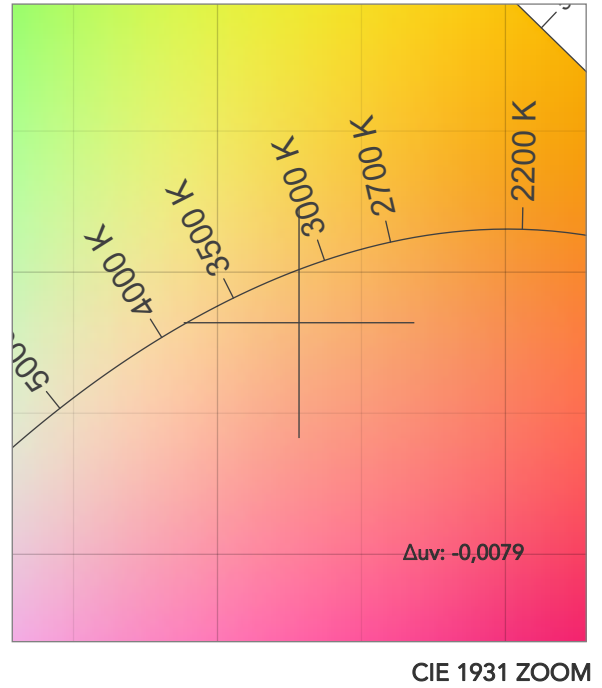
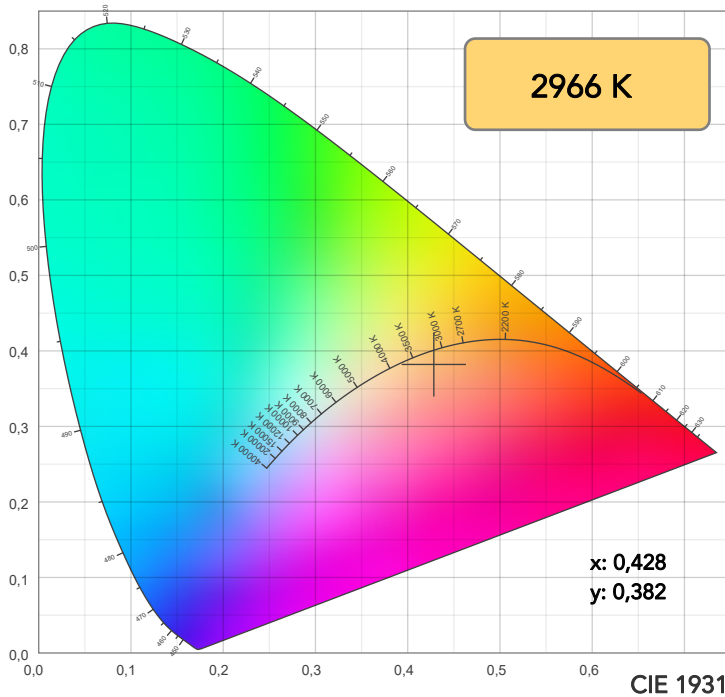
Field angle 10%: 47,1°

Cut off angle 2.5%: 48,8°

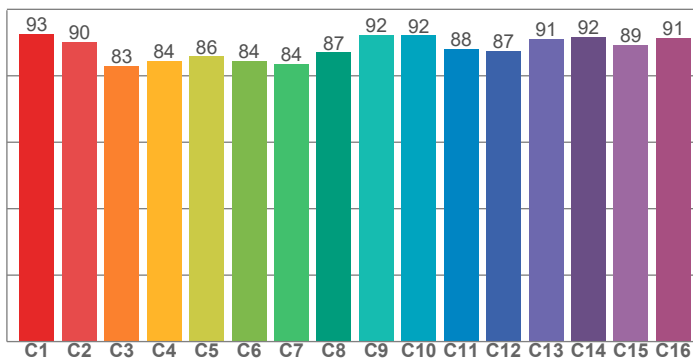
Spectra



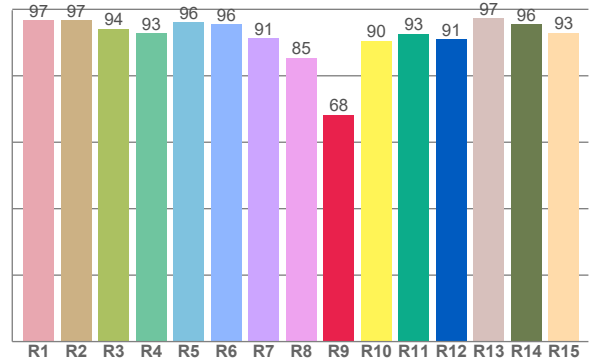
COLOR DETAILS



TM30: 88,6



CRI: 93,6 (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
96,7	96,6	94,2	92,9	96,1	95,6	91,2	85,5	68,2	90,5	92,6	90,9	97,4	95,6	92,9

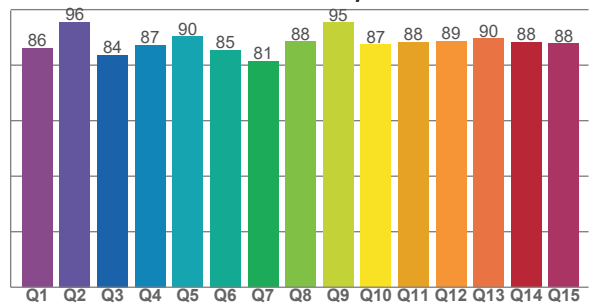
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92,6	90,1	83,0	84,4	85,8	84,4	83,5	87,1	92,4	92,2	88,0	87,4	91,0	91,8	89,4	91,4

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
86,1	95,5	83,7	87,3	90,3	85,5	81,4	88,4	95,3	87,4	88,2	88,6	89,6	88,3	87,7

CQS: 87,6



COLOR PARAMETERS

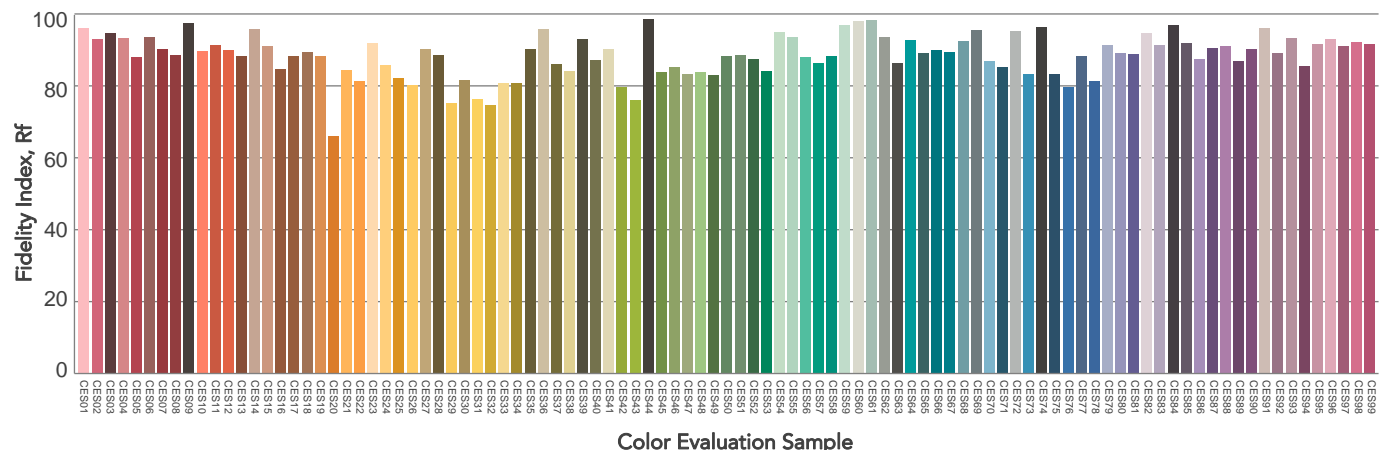
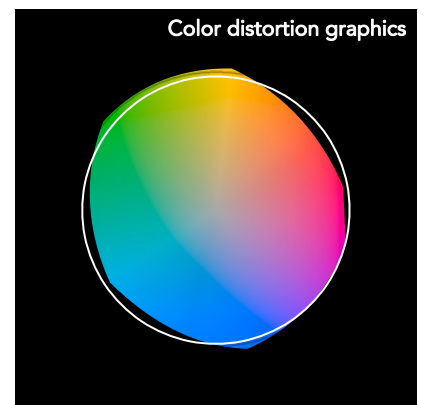
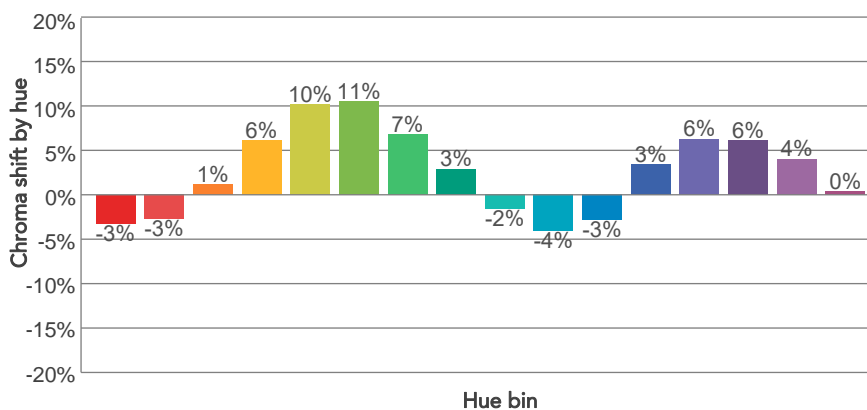
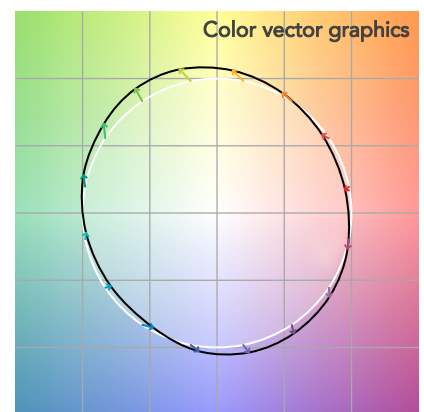
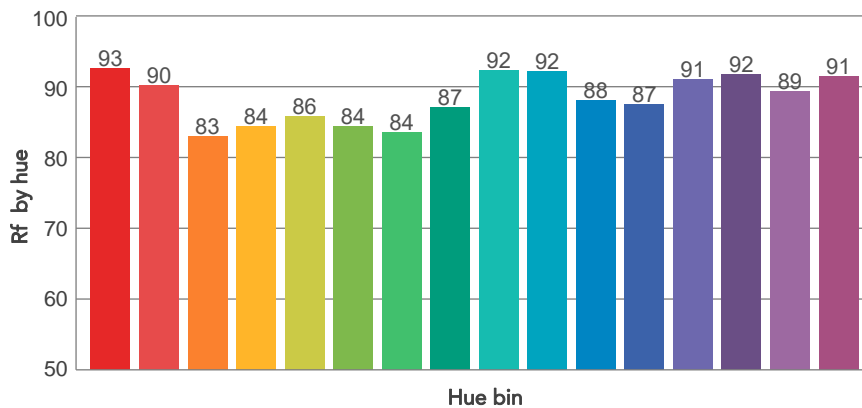
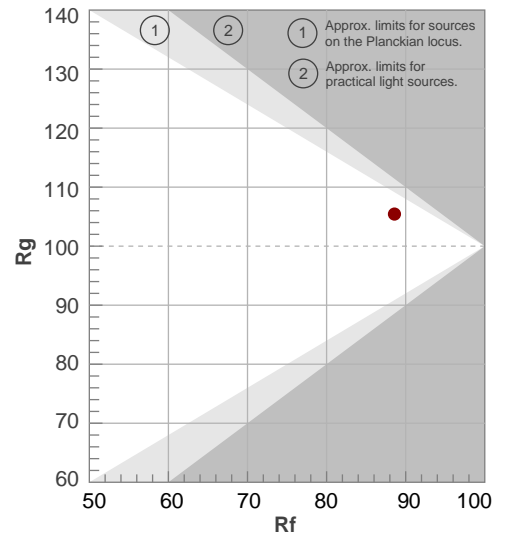
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
2966 K	93,6	68,2	88,6	105,4	87,6	83	0,428	0,382	-0,0079

TM30 DETAILS

Rf 88,6
Fidelity index Rf

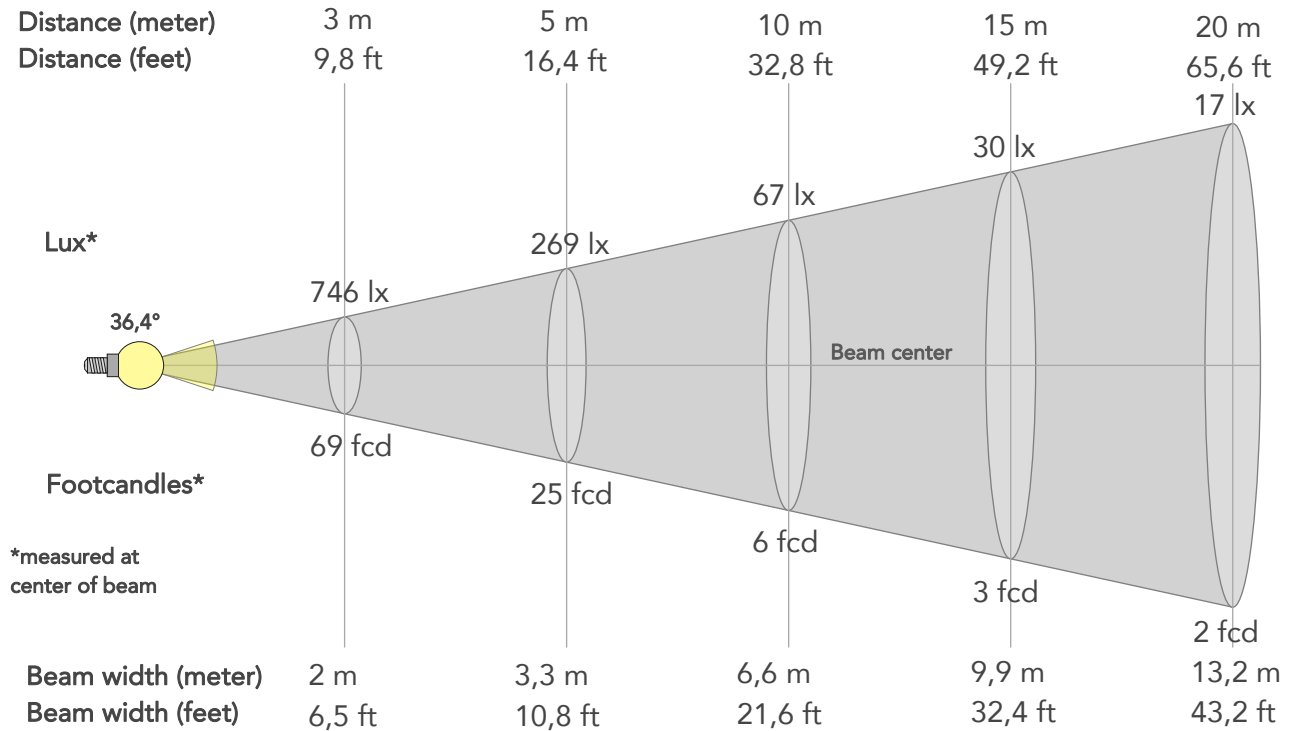
Rg 105,4
Gammut index

		Graphic shifts (%)	
Hue Bin	R _f	Chroma	Hue
1	93	-3%	-2%
2	90	-3%	5%
3	83	1%	9%
4	84	6%	9%
5	86	10%	6%
6	84	11%	-1%
7	84	7%	-8%
8	87	3%	-8%
9	92	-2%	-4%
10	92	-4%	1%
11	88	-3%	8%
12	87	3%	6%
13	91	6%	3%
14	92	6%	-2%
15	89	4%	-5%
16	91	0%	-7%



BEAM DETAILS

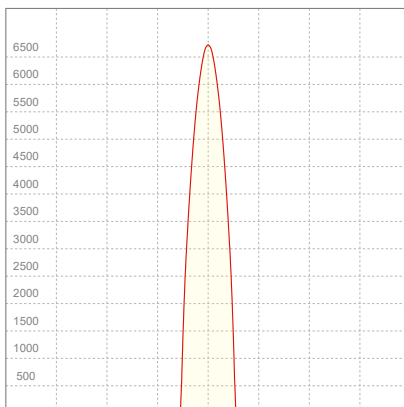
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
36,4°	47,1°	48,8°	94,3%	93,8%



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	6715lx	1679lx	746lx	420lx	269lx	119lx	67lx	30lx	17lx	11lx	7lx	4lx	3lx
Footcand.	624fcd	156fcd	69fcd	39fcd	25fcd	11fcd	6fcd	3fcd	2fcd	1fcd	1fcd	0fcd	0fcd
Beam wid.	0,7m	1,3m	2m	2,6m	3,3m	4,9m	6,6m	9,9m	13,2m	16,5m	19,7m	26,3m	32,9m
Beam wid.	2,2ft	4,3ft	6,5ft	8,6ft	10,8ft	16,2ft	21,6ft	32,4ft	43,2ft	54ft	64,8ft	86,4ft	108ft

LINEAR DISTRIBUTION DIAGRAM

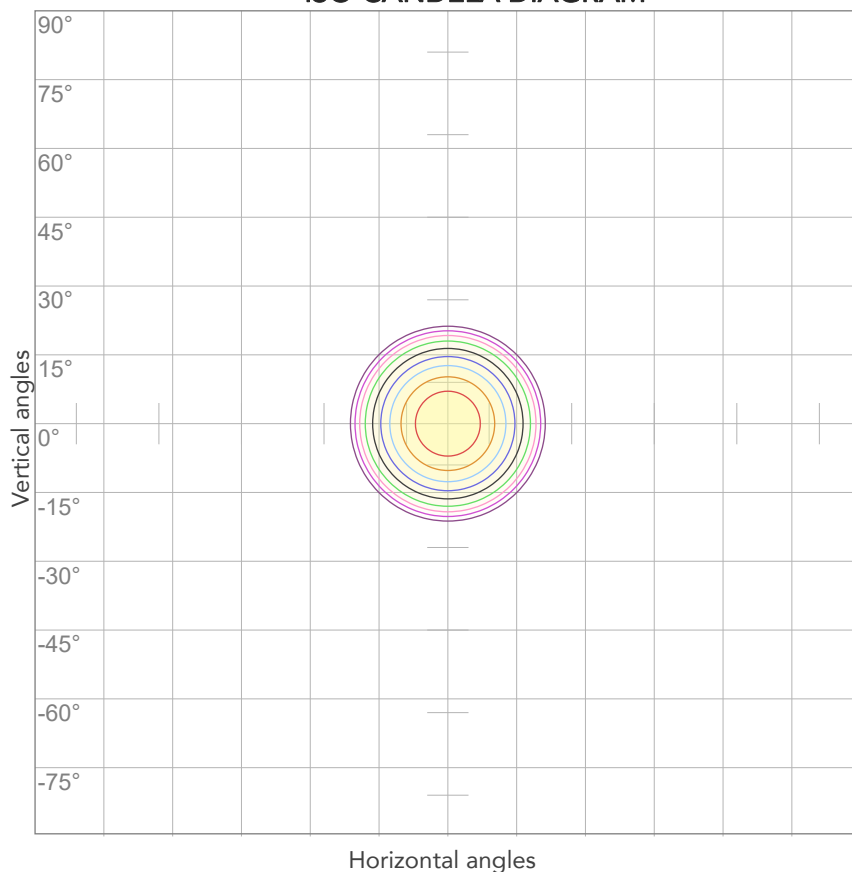


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
223V	2,11A	459,6W	0,98	5lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



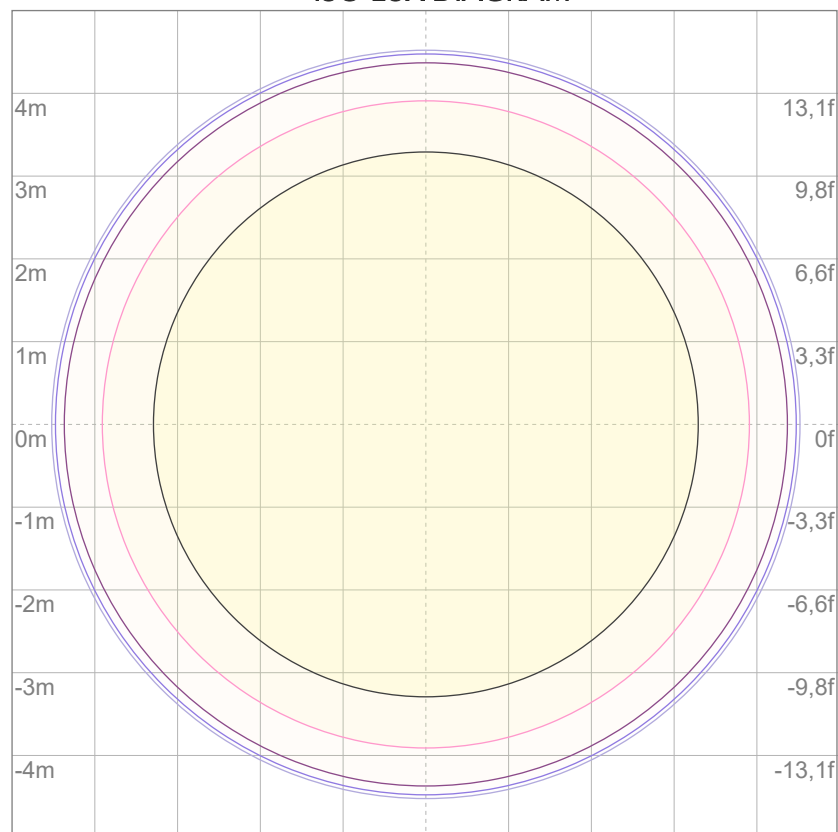
10%	671 cd
20%	1343 cd
30%	2014 cd
40%	2686 cd
50%	3357 cd
60%	4029 cd
70%	4700 cd
80%	5372 cd

Conditions:

Number of c-planes: 2

Candela at center: 6715 cd

ISO LUX DIAGRAM



3%	2,01 lx
5%	3,36 lx
10%	6,71 lx
30%	20,1 lx
50%	33,6 lx

Conditions:

Number of c-planes: 2

Lux at center: 67,1 lx

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



Total lumen output:

2012 lm

Peak candela output:

63702 cd

Light quality:

CRI: 93,5

Color temperature:

2971 K

PRODUCT NAME:

ASTRAHYB330

MEASUREMENT CONDITIONS:

Beam angle:

Med Zoom

Target:

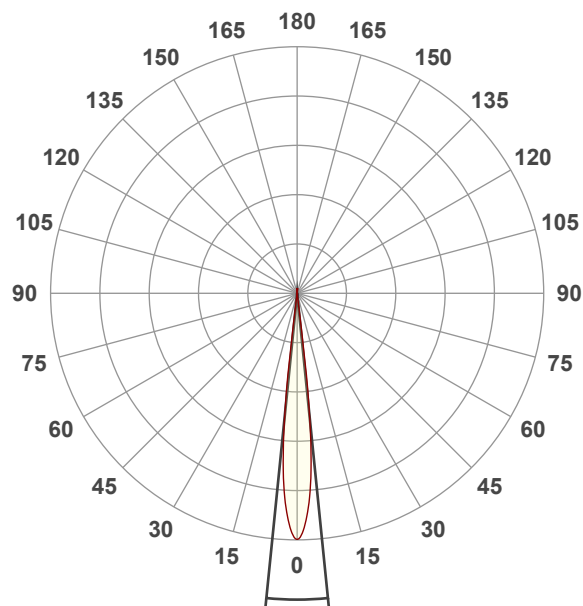
CTO 3200K

Operator:

Salvatore Giglio

Date and time:

16/01/2024 15:51:37

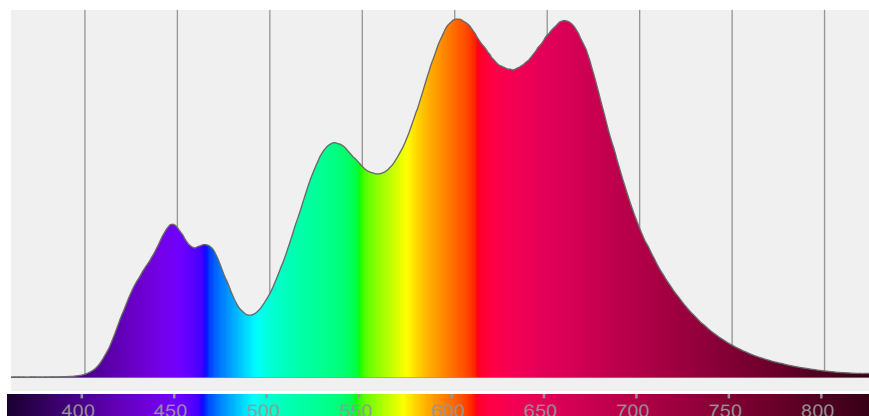


Beam angle 50%: 11,5°

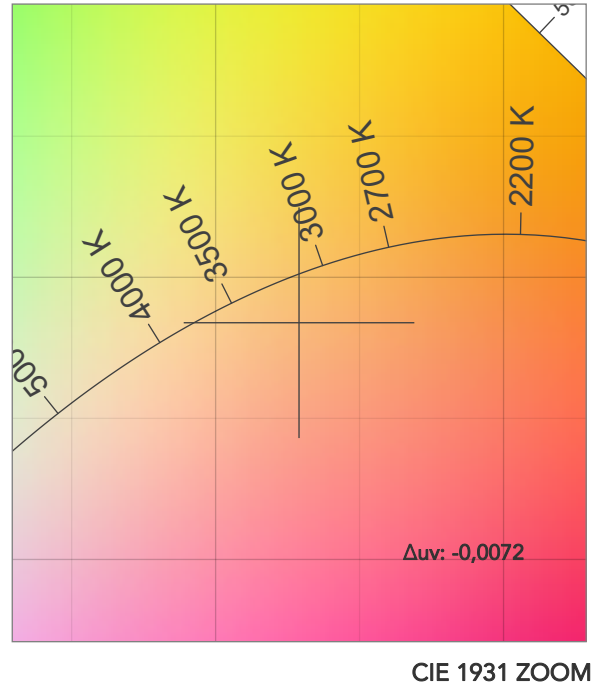
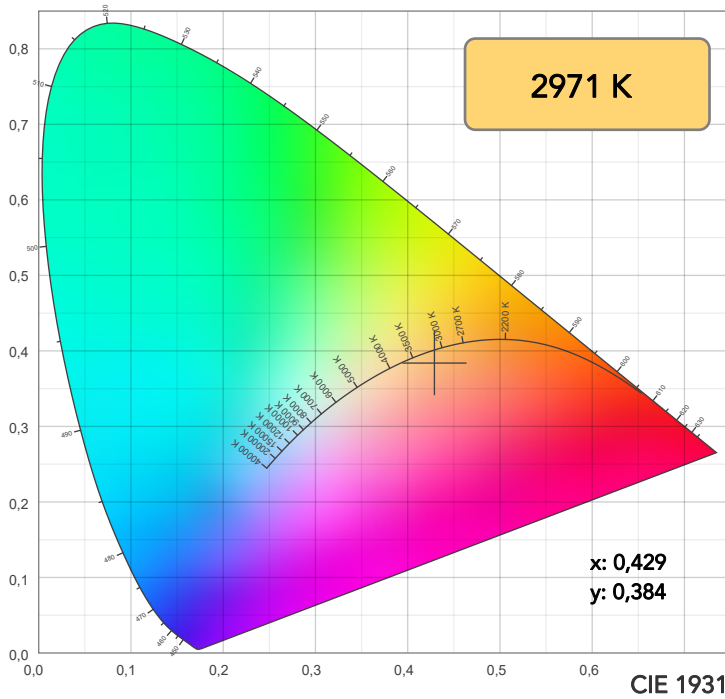
Field angle 10%: 14,4°

Cut off angle 2.5%: 14,9°

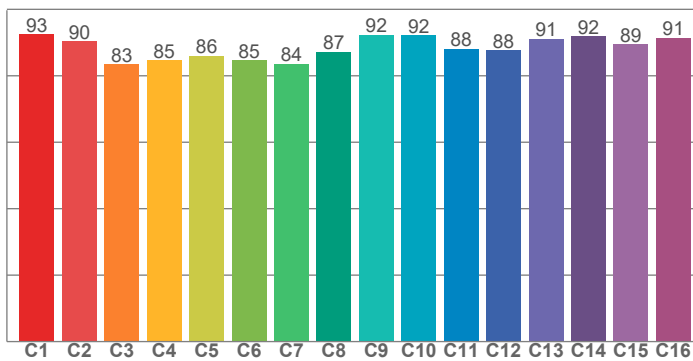
Spectra



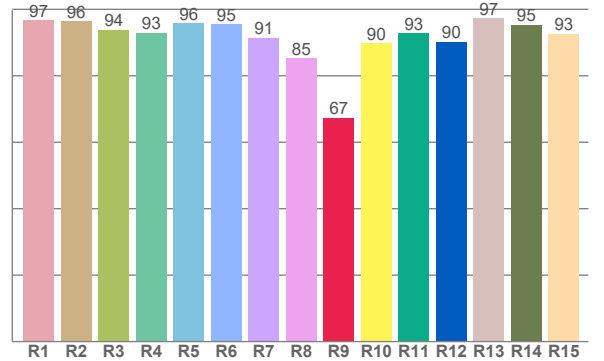
COLOR DETAILS



TM30: 88,7



CRI: 93,5 (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
96,6	96,5	93,8	93,0	95,9	95,5	91,4	85,3	67,4	89,8	92,7	90,2	97,3	95,4	92,6

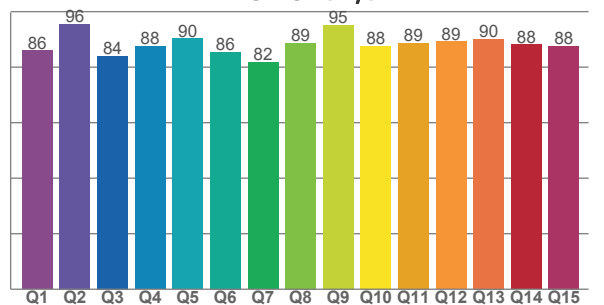
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
92,5	90,3	83,4	84,6	85,9	84,7	83,6	87,2	92,3	92,1	88,2	87,7	91,2	91,9	89,4	91,5

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
86,0	95,6	84,0	87,5	90,3	85,5	81,7	88,8	95,2	87,5	88,6	89,1	90,1	88,1	87,6

CQS: 87,8



COLOR PARAMETERS

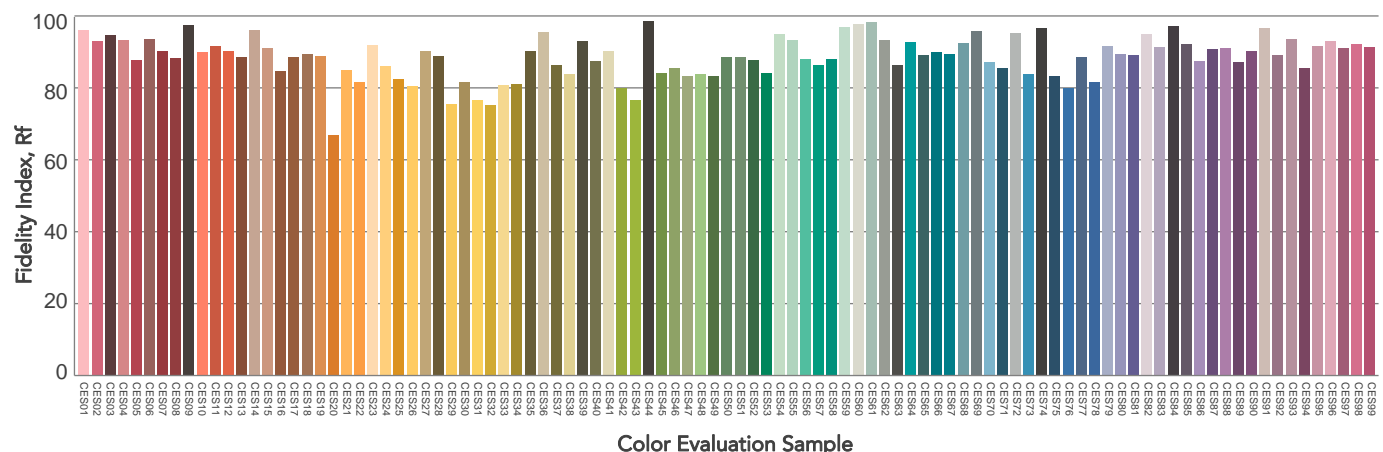
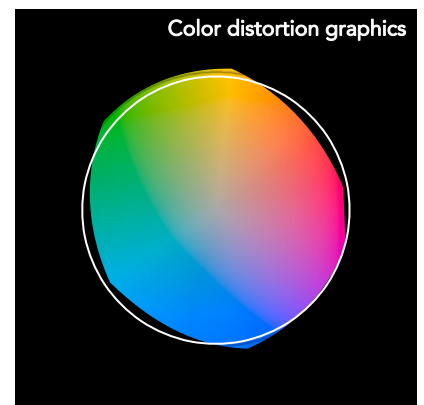
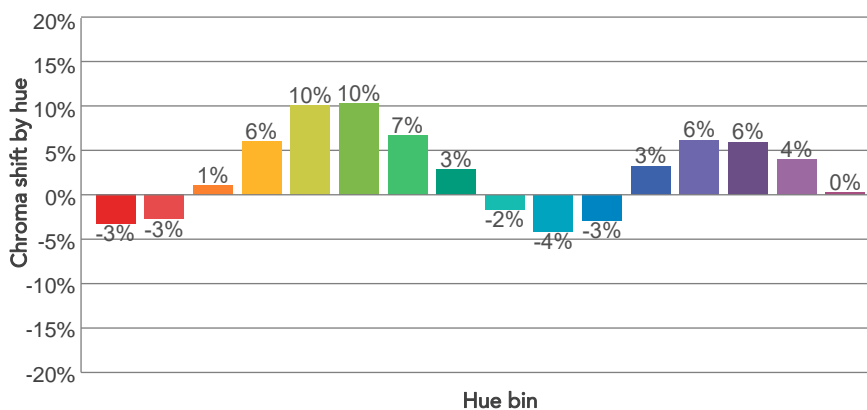
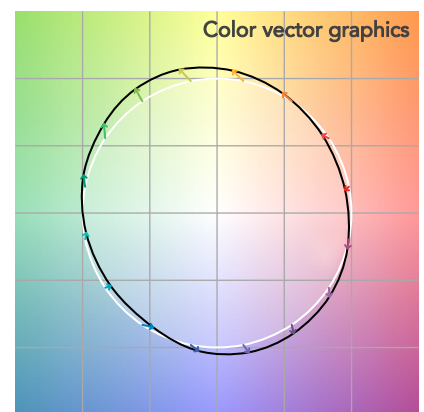
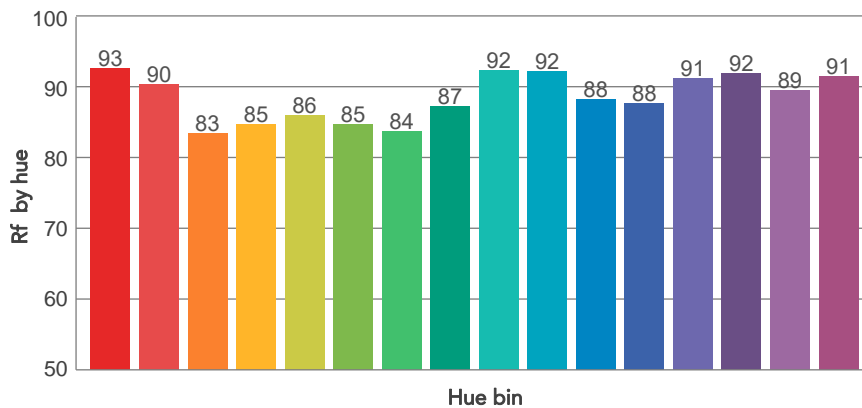
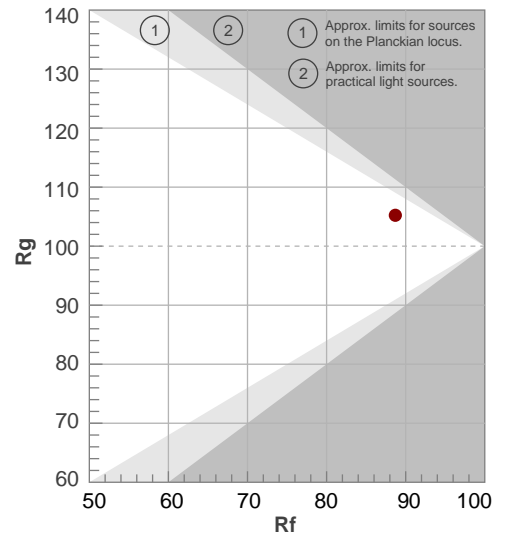
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
2971 K	93,5	67,4	88,7	105,2	87,8	83	0,429	0,384	-0,0072

TM30 DETAILS

Rf 88,7
Fidelity index Rf

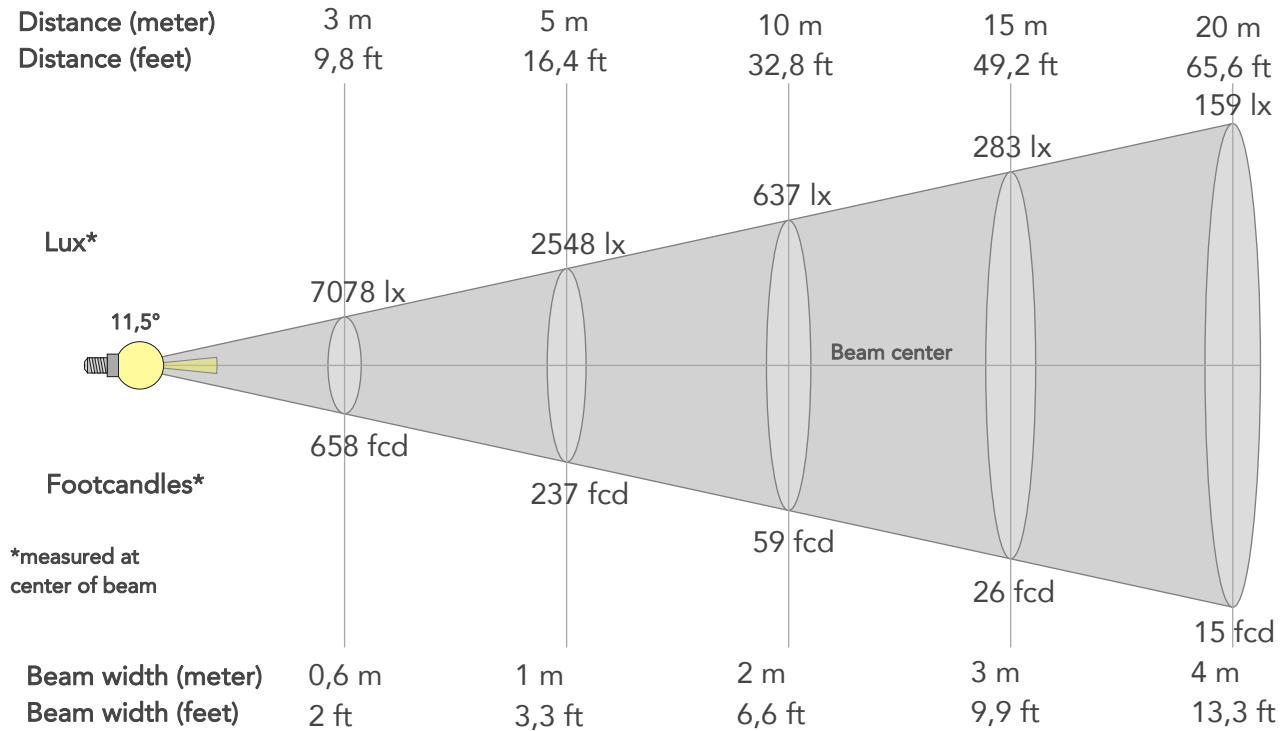
Rg 105,2
Gammut index

		Graphic shifts (%)	
Hue Bin	R _f	Chroma	Hue
1	93	-3%	-2%
2	90	-3%	5%
3	83	1%	9%
4	85	6%	9%
5	86	10%	6%
6	85	10%	-1%
7	84	7%	-8%
8	87	3%	-8%
9	92	-2%	-5%
10	92	-4%	1%
11	88	-3%	7%
12	88	3%	6%
13	91	6%	3%
14	92	6%	-2%
15	89	4%	-5%
16	91	0%	-7%



BEAM DETAILS

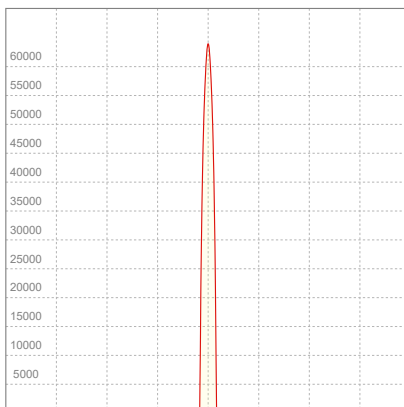
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
11,5°	14,4°	14,9°	96,9%	96,0%



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	63702lx	15925lx	7078lx	3981lx	2548lx	1132lx	637lx	283lx	159lx	102lx	71lx	40lx	25lx
Footcand.	5918fcd	1480fcd	658fcd	370fcd	237fcd	105fcd	59fcd	26fcd	15fcd	9fcd	7fcd	4fcd	2fcd
Beam wid.	0,2m	0,4m	0,6m	0,8m	1m	1,5m	2m	3m	4m	5m	6,1m	8,1m	10,1m
Beam wid.	0,7ft	1,3ft	2ft	2,6ft	3,3ft	5ft	6,6ft	9,9ft	13,3ft	16,6ft	19,9ft	26,5ft	33,1ft

LINEAR DISTRIBUTION DIAGRAM

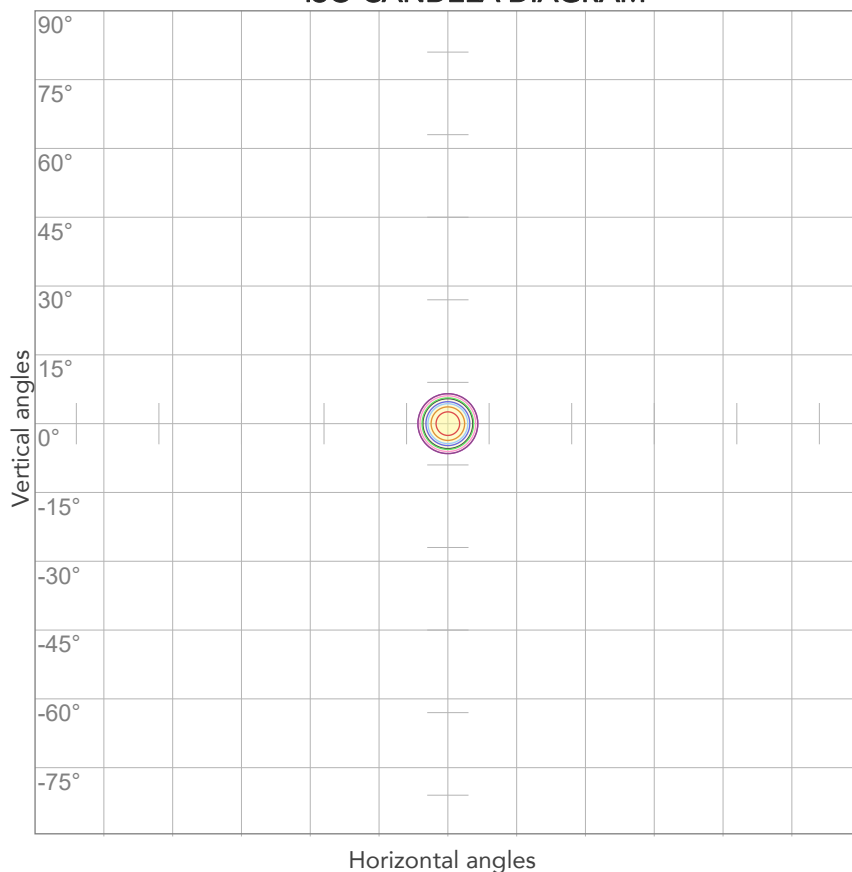


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
223V	2,11A	460,1W	0,98	4lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



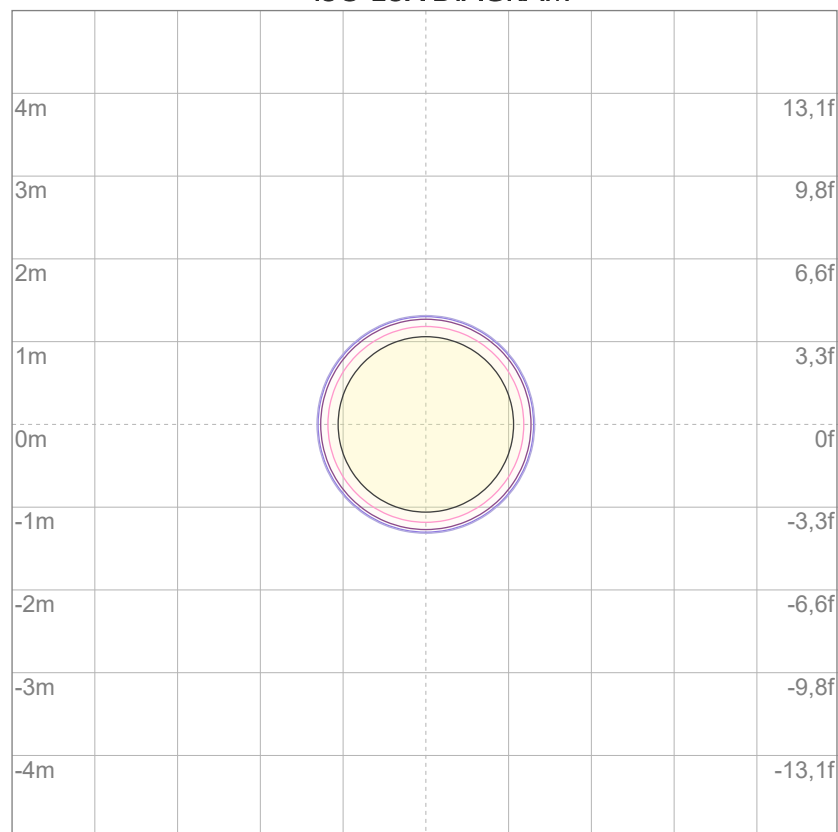
10%	6370 cd
20%	12740 cd
30%	19111 cd
40%	25481 cd
50%	31851 cd
60%	38221 cd
70%	44591 cd
80%	50962 cd

Conditions:

Number of c-planes: 2

Candela at center: 63702 cd

ISO LUX DIAGRAM



3%	19,1 lx
5%	31,9 lx
10%	63,7 lx
30%	191 lx
50%	319 lx

Conditions:

Number of c-planes: 2

Lux at center: 637 lx

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



Total lumen output:

1206 lm

Peak candela output:

482035 cd

Light quality:

CRI: 91,2

Color temperature:

3029 K

PRODUCT NAME:

ASTRAHYB330

MEASURAMENT CONDITIONS:

Beam angle:

Min Zoom

Target:

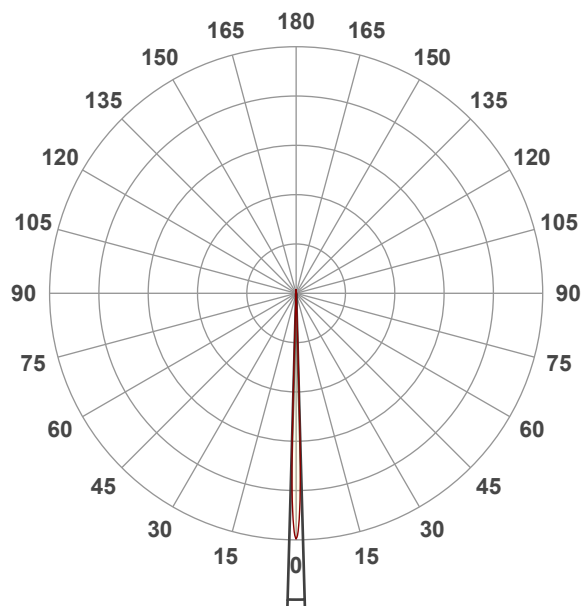
CTO 3200K

Operator:

Salvatore Giglio

Date and time:

16/01/2024 15:35:12

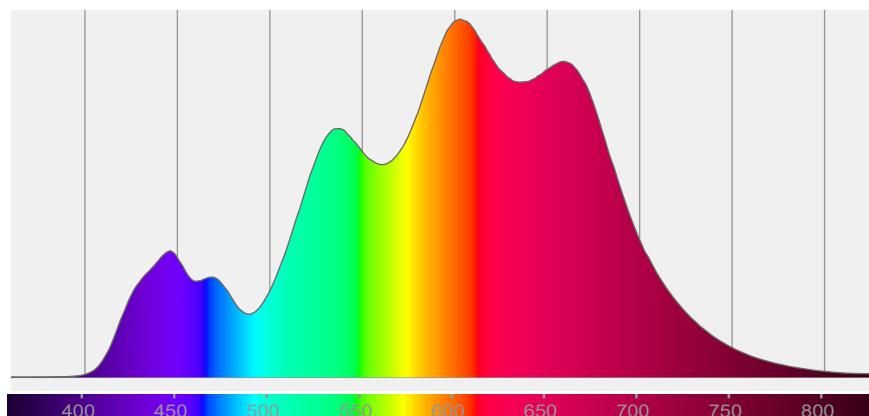


Beam angle 50%: 3,2°

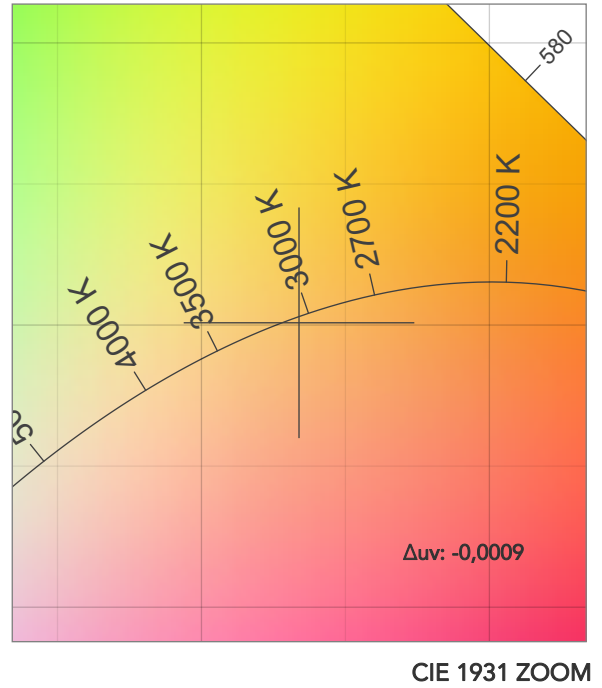
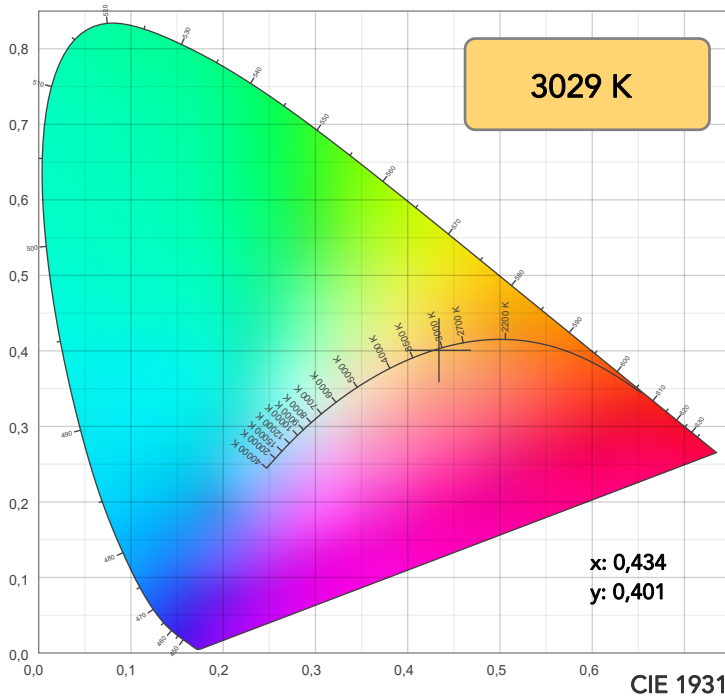
Field angle 10%: 4°

Cut off angle 2.5%: 4,2°

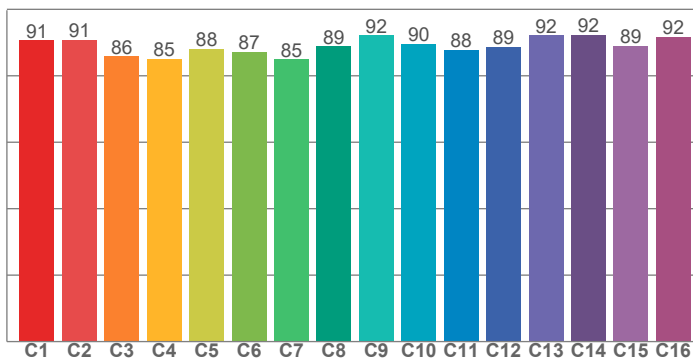
Spectra



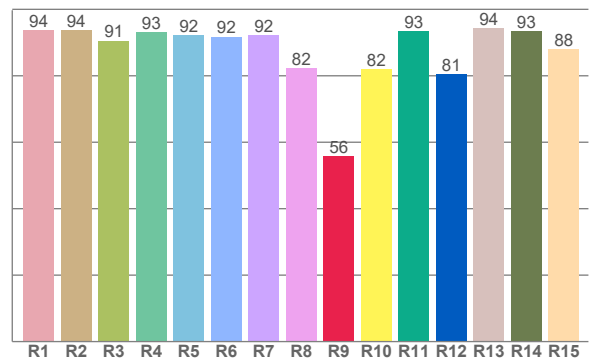
COLOR DETAILS



TM30: 89,1



CRI: 91,2 (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
93,8	93,6	90,6	93,0	92,2	91,8	92,2	82,4	55,8	82,0	93,4	80,5	94,3	93,4	88,1

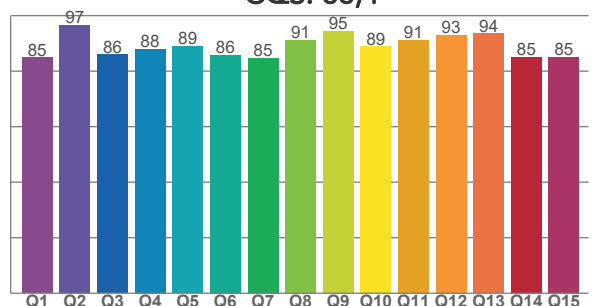
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
90,7	90,7	85,8	85,1	88,1	87,2	84,9	88,9	92,2	89,6	87,8	88,6	92,1	92,3	89,1	91,6

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
84,8	96,6	86,0	88,0	88,9	85,8	84,7	91,2	94,5	88,8	91,2	93,1	93,6	85,0	85,2

CQS: 88,4



COLOR PARAMETERS

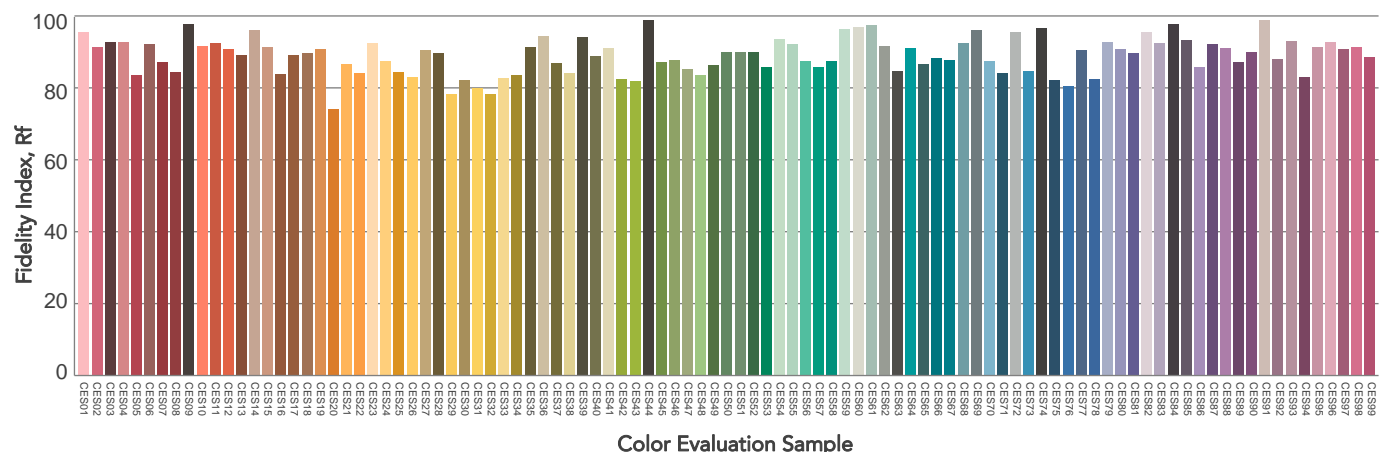
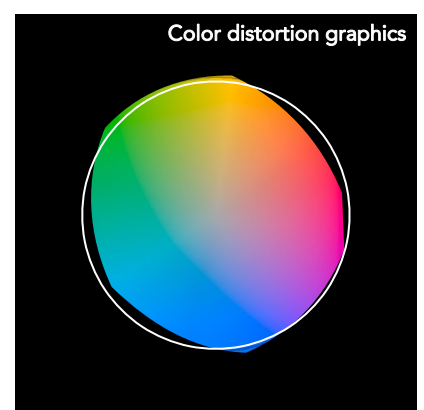
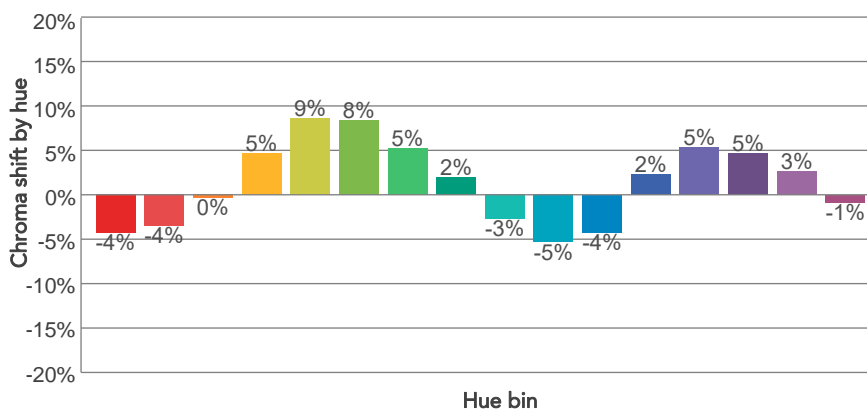
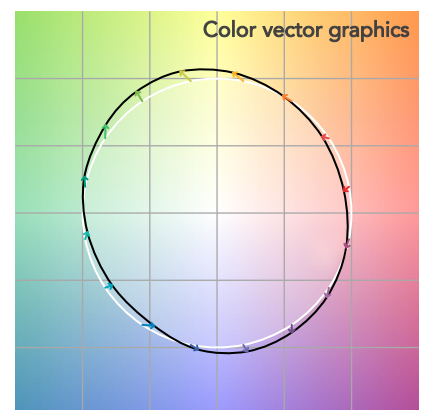
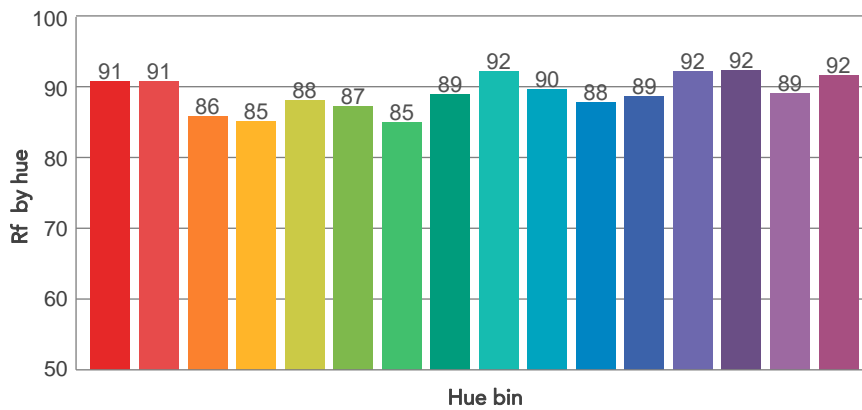
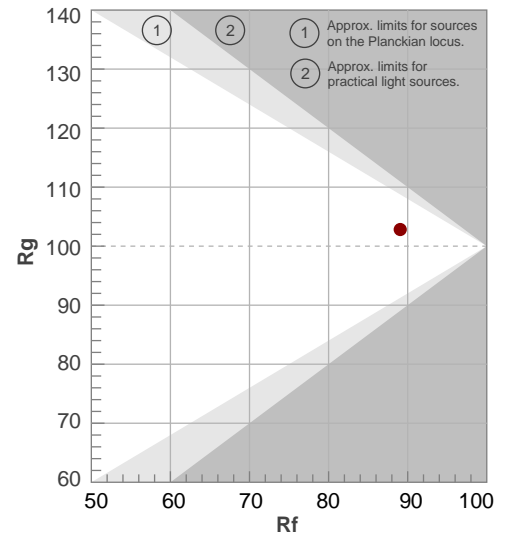
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
3029 K	91,2	55,8	89,1	102,8	88,4	84	0,434	0,401	-0,0009

TM30 DETAILS

Rf 89,1
Fidelity index Rf

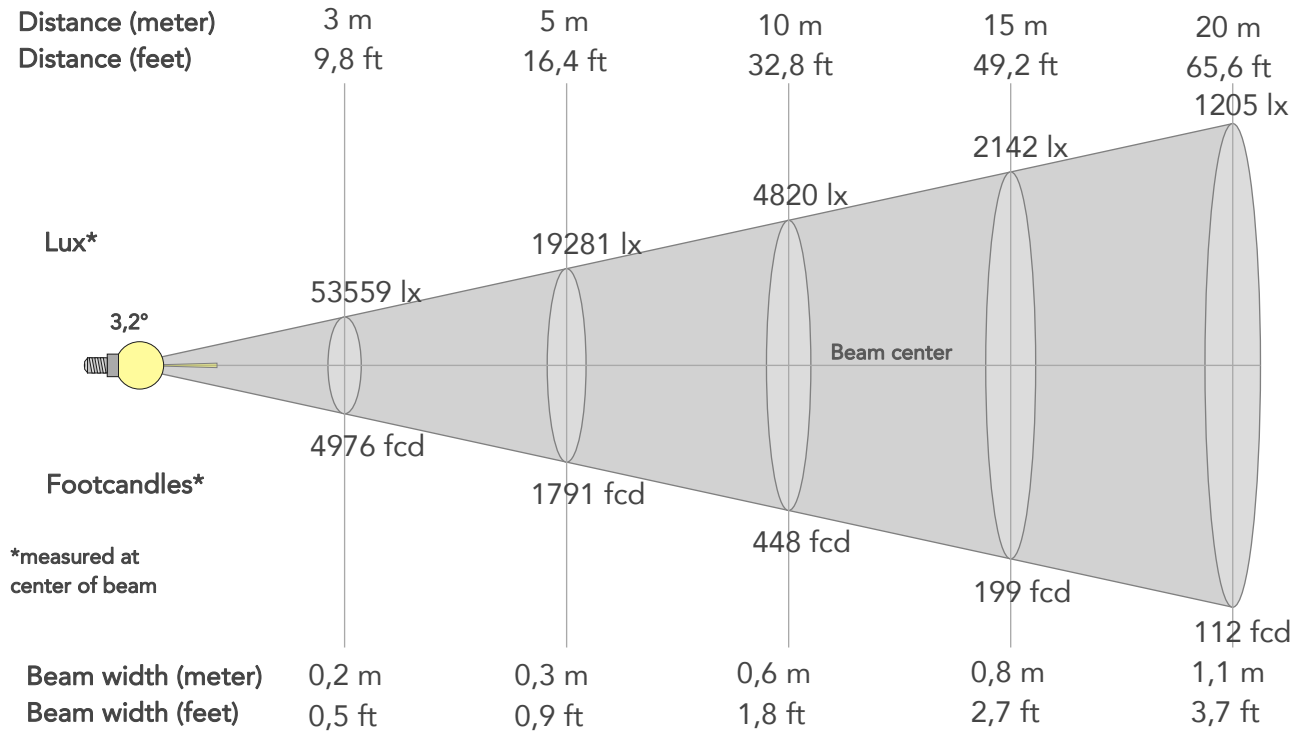
Rg 102,8
Gammut index

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	91	-4%	-2%
2	91	-4%	4%
3	86	0%	8%
4	85	5%	8%
5	88	9%	6%
6	87	8%	0%
7	85	5%	-8%
8	89	2%	-7%
9	92	-3%	-5%
10	90	-5%	1%
11	88	-4%	8%
12	89	2%	6%
13	92	5%	2%
14	92	5%	-3%
15	89	3%	-6%
16	92	-1%	-6%



BEAM DETAILS

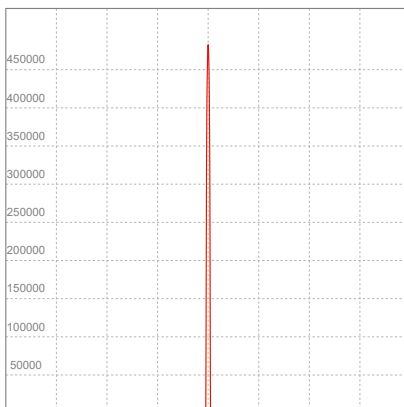
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
3,2°	4°	4,2°	96,4%	95,0%



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	482035lx	120509lx	53559lx	30127lx	19281lx	8570lx	4820lx	2142lx	1205lx	771lx	536lx	301lx	193lx
Footcand.	44782fcd	11196fcd	4976fcd	2799fcd	1791fcd	796fcd	448fcd	199fcd	112fcd	72fcd	50fcd	28fcd	18fcd
Beam wid.	0,1m	0,1m	0,2m	0,2m	0,3m	0,4m	0,6m	0,8m	1,1m	1,4m	1,7m	2,2m	2,8m
Beam wid.	0,2ft	0,4ft	0,5ft	0,7ft	0,9ft	1,4ft	1,8ft	2,7ft	3,7ft	4,6ft	5,5ft	7,3ft	9,1ft

LINEAR DISTRIBUTION DIAGRAM

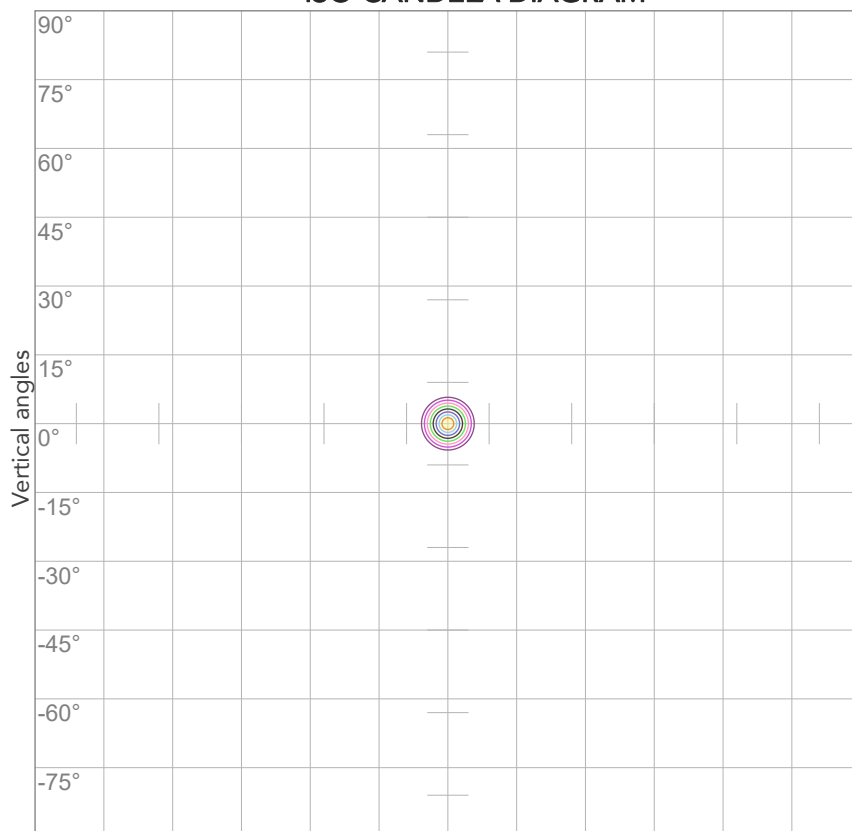


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
223V	2,12A	461,6W	0,98	3lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



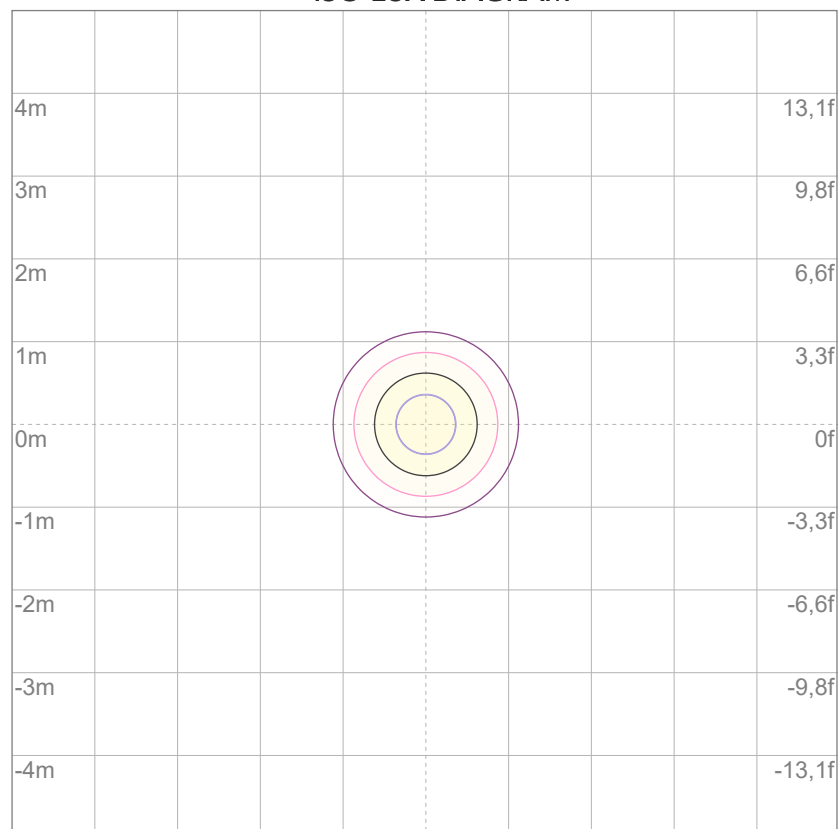
10%	48203 cd
20%	96407 cd
30%	144610 cd
40%	192814 cd
50%	241017 cd
60%	289221 cd
70%	337424 cd
80%	385628 cd

Conditions:

Number of c-planes: 2

Candela at center: 482035 cd

ISO LUX DIAGRAM



3%	145 lx
5%	241 lx
10%	482 lx
30%	1446 lx
50%	2410 lx

Conditions:

Number of c-planes: 2

Lux at center: 4820 lx

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



Total lumen output:

6488 lm

Peak candela output:

19848 cd

Light quality:

CRI: 89,2

Color temperature:

5183 K

PRODUCT NAME:

ASTRAHYB330

MEASURAMENT CONDITIONS:

Beam angle:

Max Zoom

Target:

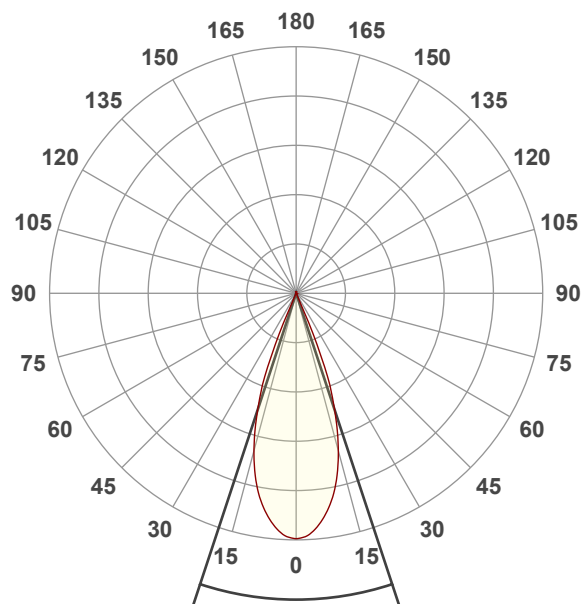
HIGH CRI

Operator:

Salvatore Giglio

Date and time:

16/01/2024 16:00:29

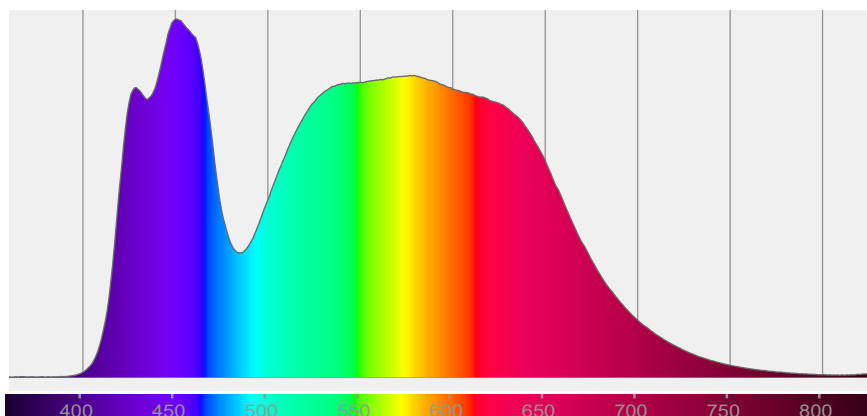


Beam angle 50%: 36,5°

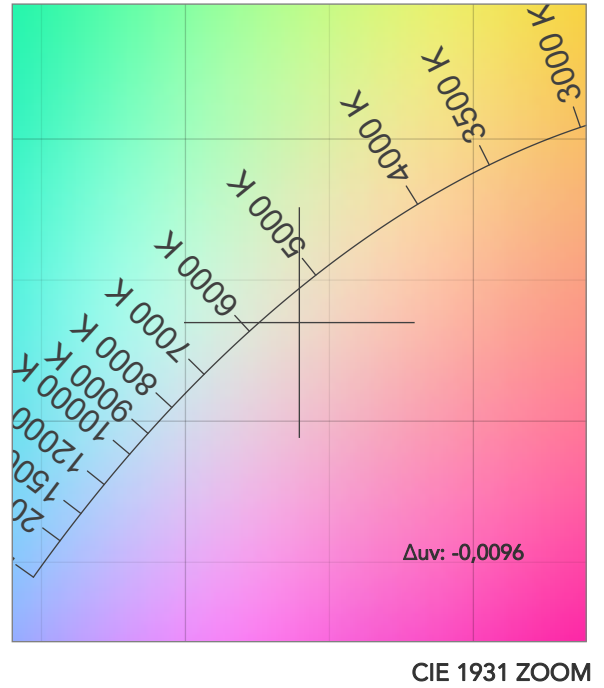
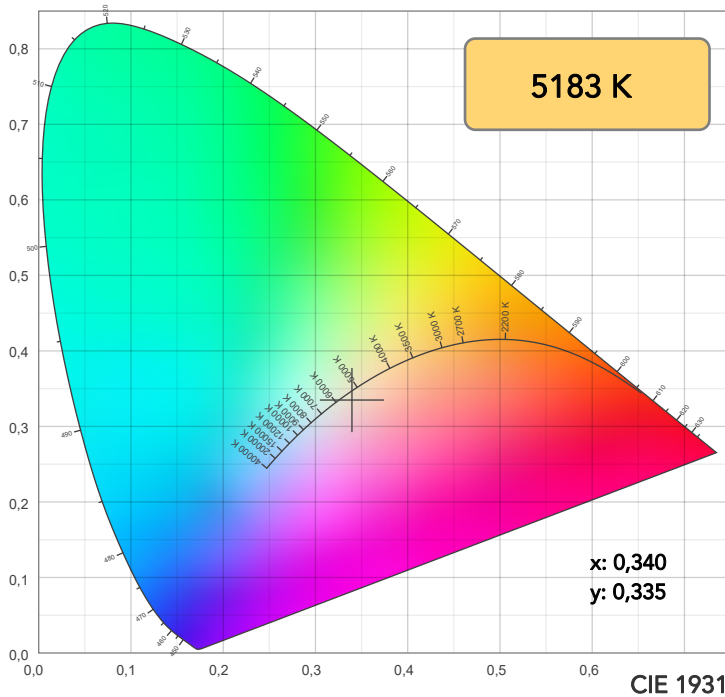
Field angle 10%: 47,2°

Cut off angle 2.5%: 49°

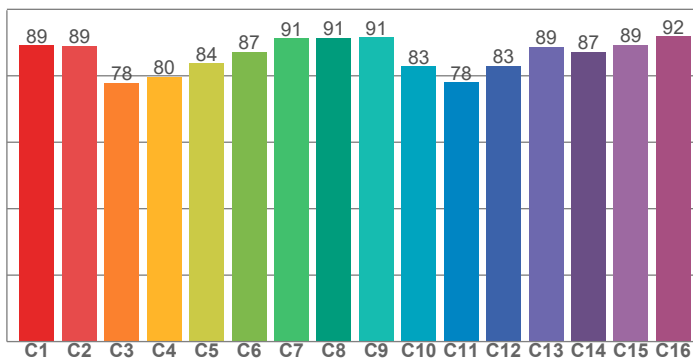
Spectra



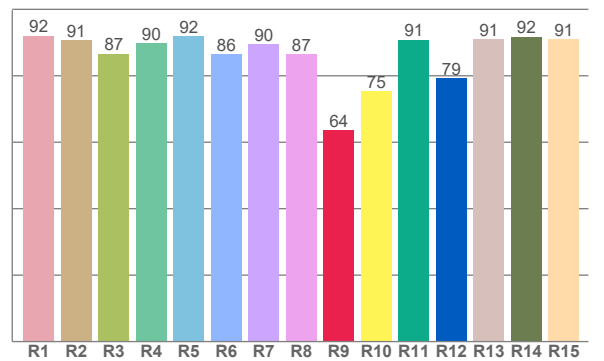
COLOR DETAILS



TM30: 85,9



CRI: 89,2 (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
92,1	90,6	86,7	89,8	91,8	86,5	89,6	86,5	63,6	75,4	90,9	79,4	90,9	91,8	91,1

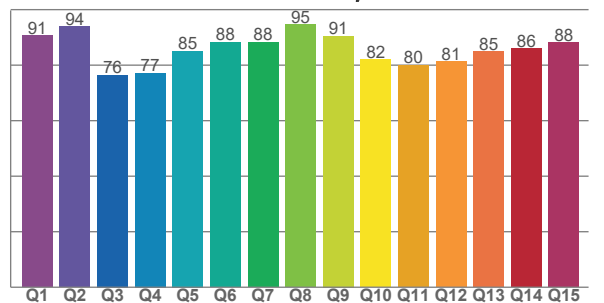
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
89,2	89,0	77,8	79,6	83,7	87,3	91,2	91,4	91,5	82,8	78,1	82,9	88,7	87,2	89,3	91,9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
90,6	94,0	76,5	77,2	85,1	88,2	88,2	94,6	90,6	82,0	80,0	81,3	85,0	86,0	88,2

CQS: 84,8



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
5183 K	89,2	63,6	85,9	102,6	84,8	84	0,340	0,335	-0,0096

TM30 DETAILS

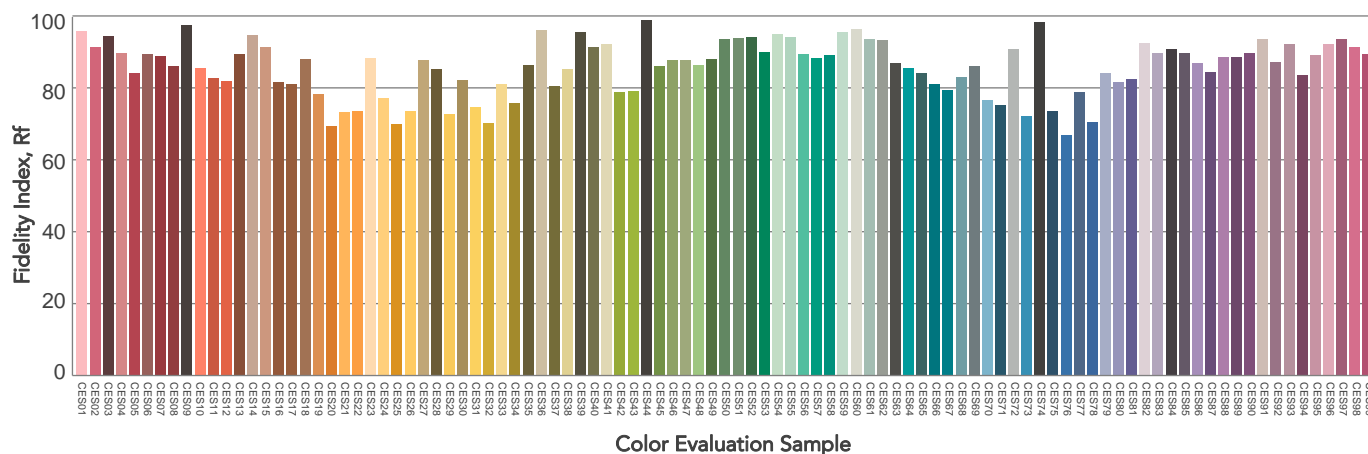
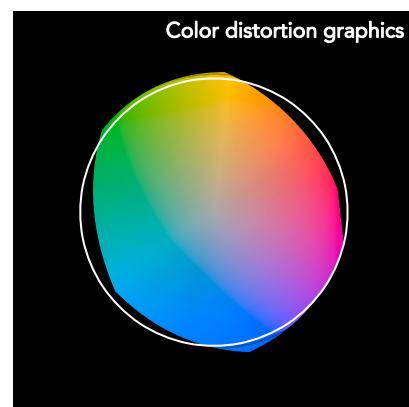
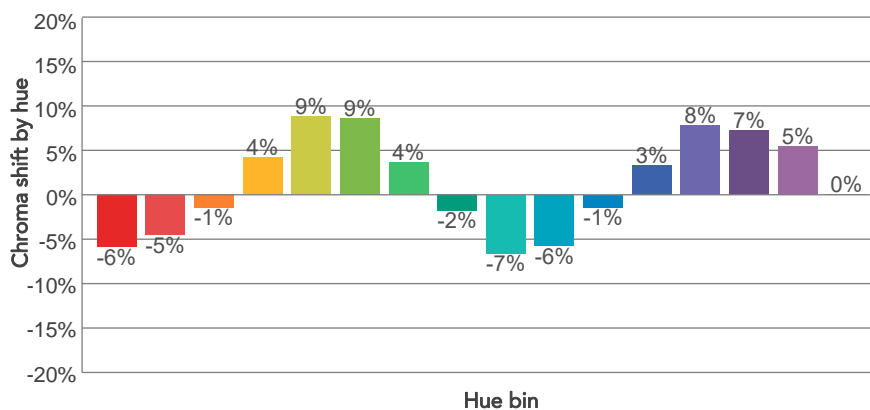
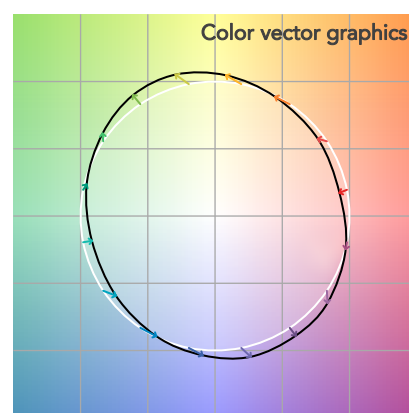
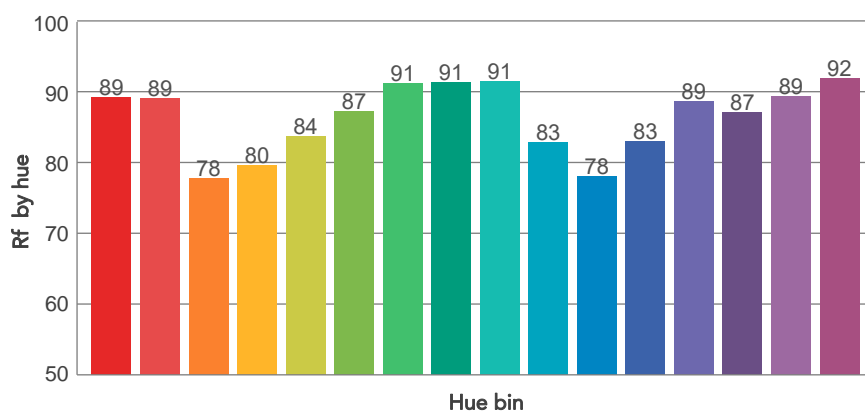
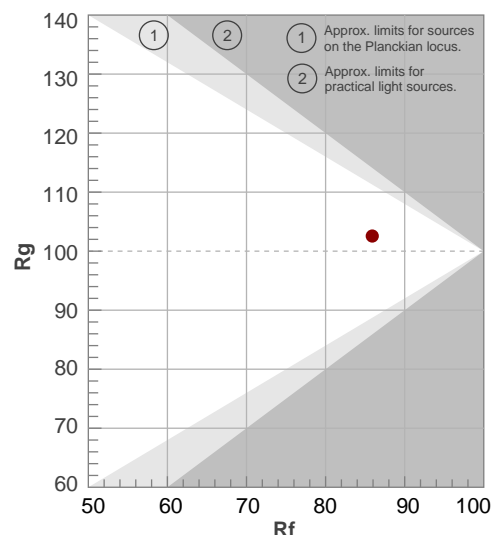
Rf 85,9

Fidelity index Rf

Rg 102,6

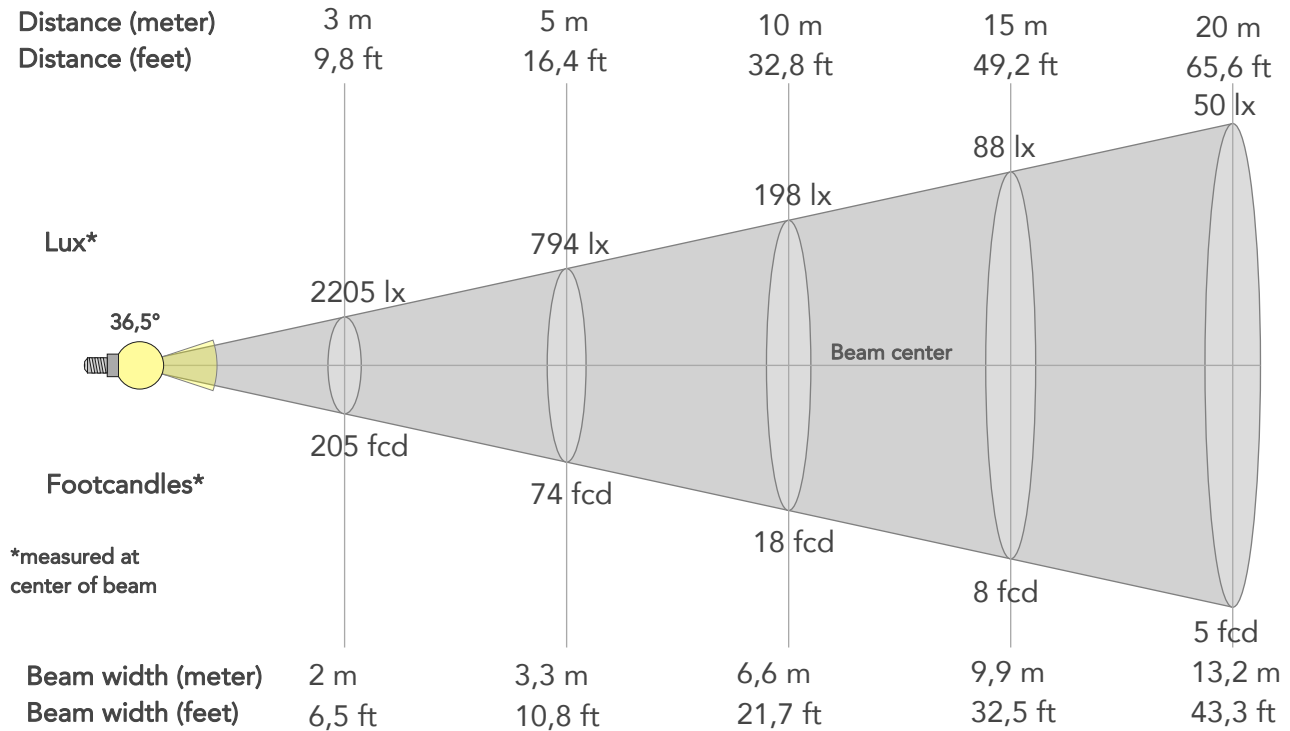
Gammut index

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	89	-6%	-1%
2	89	-5%	5%
3	78	-1%	12%
4	80	4%	12%
5	84	9%	8%
6	87	9%	1%
7	91	4%	-5%
8	91	-2%	-4%
9	91	-7%	0%
10	83	-6%	8%
11	78	-1%	13%
12	83	3%	11%
13	89	8%	6%
14	87	7%	0%
15	89	5%	-7%
16	92	0%	-5%



BEAM DETAILS

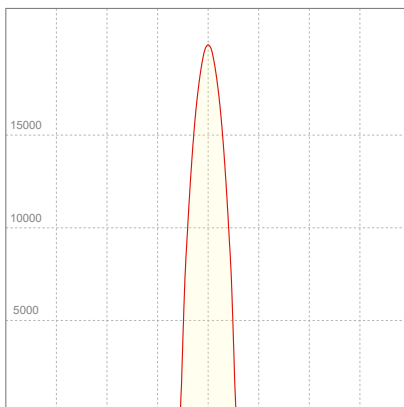
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
36,5°	47,2°	49°	94,4%	93,9%



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	19848lx	4962lx	2205lx	1241lx	794lx	353lx	198lx	88lx	50lx	32lx	22lx	12lx	8lx
Footcand.	1844fcd	461fcd	205fcd	115fcd	74fcd	33fcd	18fcd	8fcd	5fcd	3fcd	2fcd	1fcd	1fcd
Beam wid.	0,7m	1,3m	2m	2,6m	3,3m	5m	6,6m	9,9m	13,2m	16,5m	19,8m	26,4m	33m
Beam wid.	2,2ft	4,4ft	6,5ft	8,6ft	10,8ft	16,2ft	21,7ft	32,5ft	43,3ft	54,1ft	65ft	86,6ft	108,3ft

LINEAR DISTRIBUTION DIAGRAM

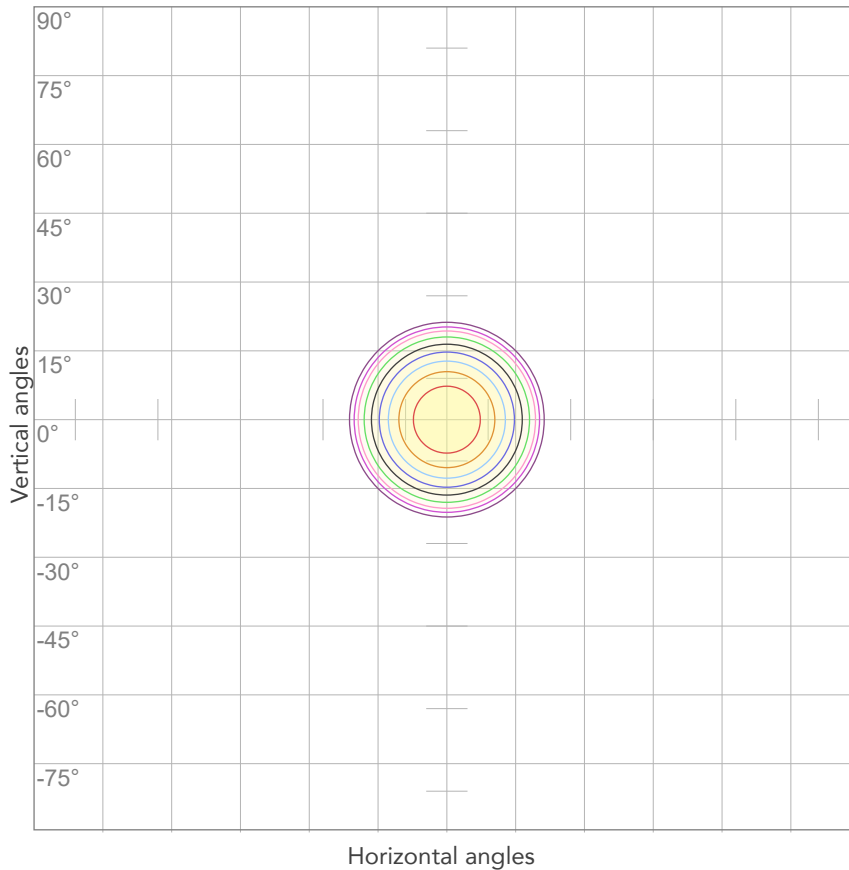


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
223V	2,11A	459,9W	0,98	14lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



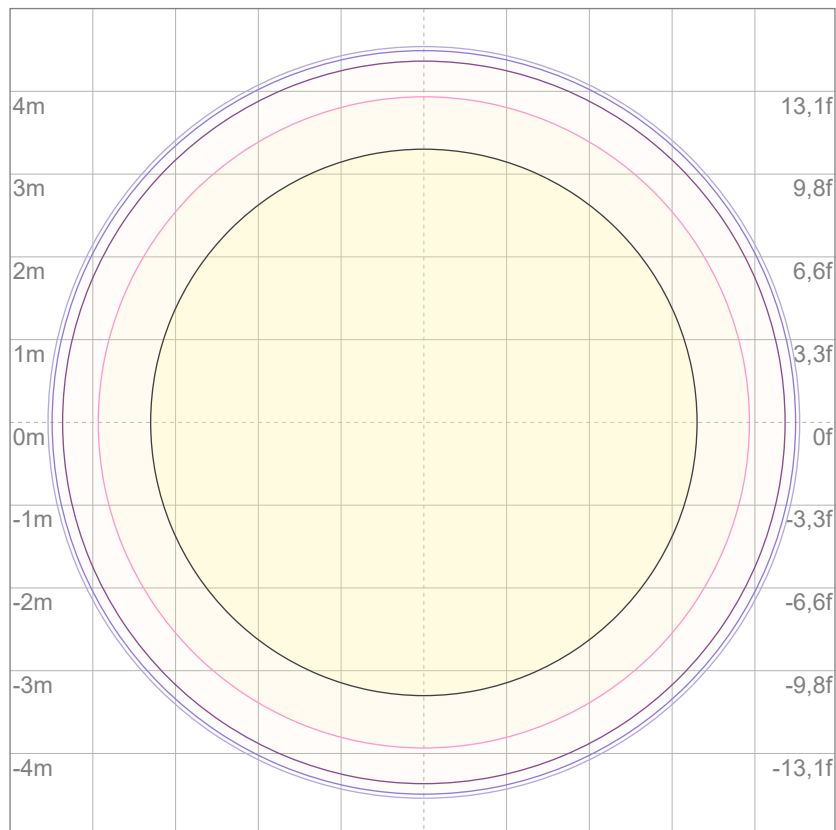
10%	1985 cd
20%	3970 cd
30%	5955 cd
40%	7939 cd
50%	9924 cd
60%	11909 cd
70%	13894 cd
80%	15879 cd

Conditions:

Number of c-planes: 2

Candela at center: 19848 cd

ISO LUX DIAGRAM



3%	5,95 lx
5%	9,92 lx
10%	19,8 lx
30%	59,5 lx
50%	99,2 lx

Conditions:

Number of c-planes: 2

Lux at center: 198 lx

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



Total lumen output:

6407 lm

Peak candela output:

184882 cd

Light quality:

CRI: 88,9

Color temperature:

5144 K

PRODUCT NAME:

ASTRAHYB330

MEASURAMENT CONDITIONS:

Beam angle:

Med Zoom

Target:

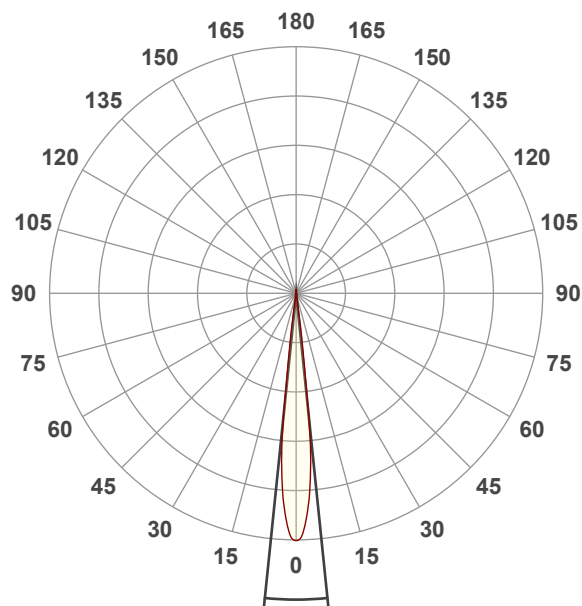
HIGH CRI

Operator:

Salvatore Giglio

Date and time:

16/01/2024 15:49:26

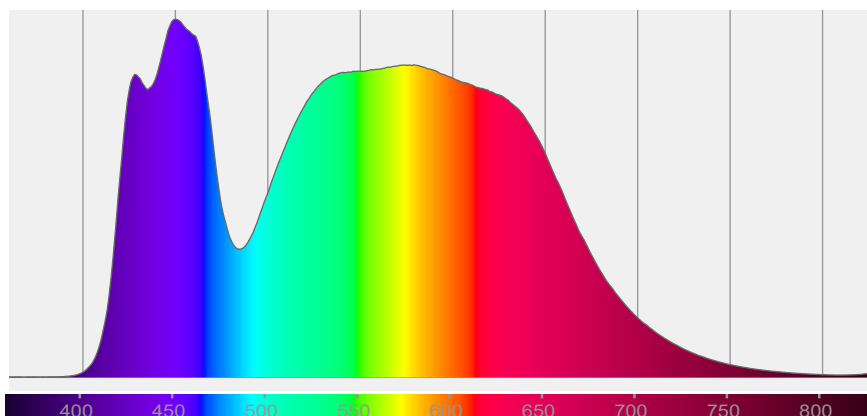


Beam angle 50%: 11,7°

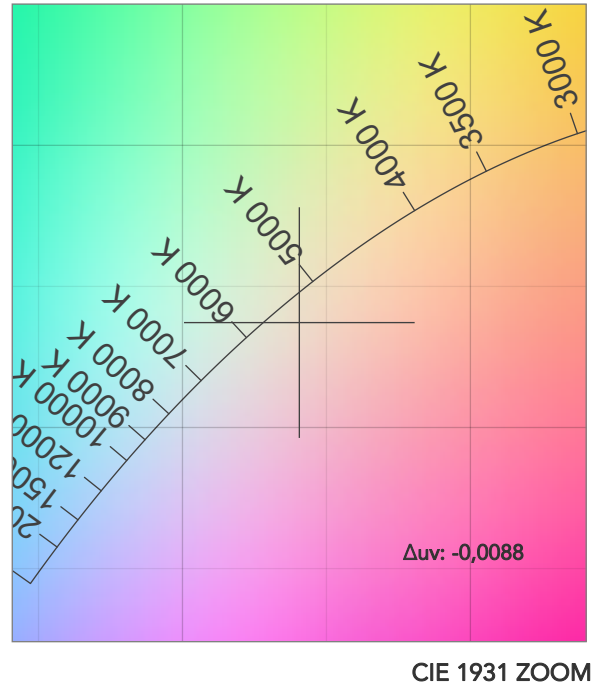
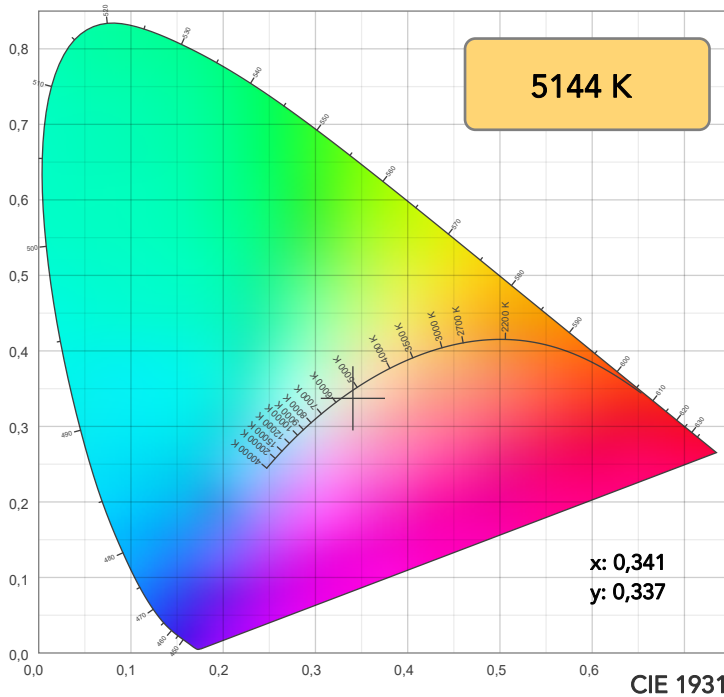
Field angle 10%: 15,6°

Cut off angle 2.5%: 16,7°

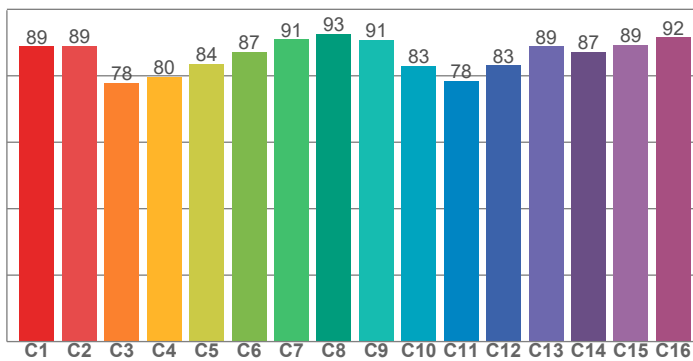
Spectra



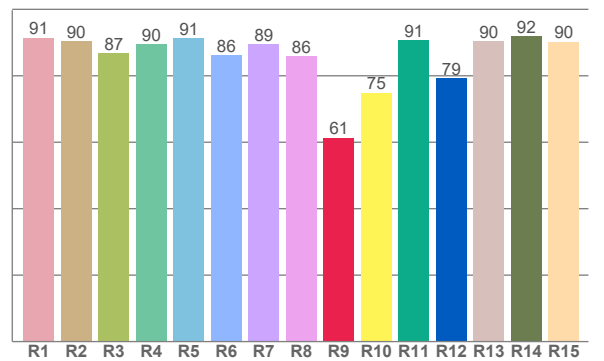
COLOR DETAILS



TM30: 85,9



CRI: 88,9 (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
91,5	90,3	86,8	89,5	91,3	86,3	89,4	85,8	61,4	74,9	90,6	79,2	90,4	91,8	90,2

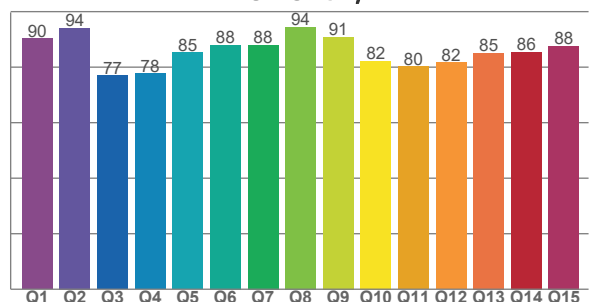
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
88,8	89,0	77,8	79,6	83,6	87,2	91,0	92,6	90,8	83,1	78,4	83,2	88,9	87,2	89,3	91,6

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
90,2	94,1	76,9	77,6	85,2	88,0	88,0	94,4	90,9	82,2	80,3	81,6	85,1	85,5	87,7

CQS: 84,9



COLOR PARAMETERS

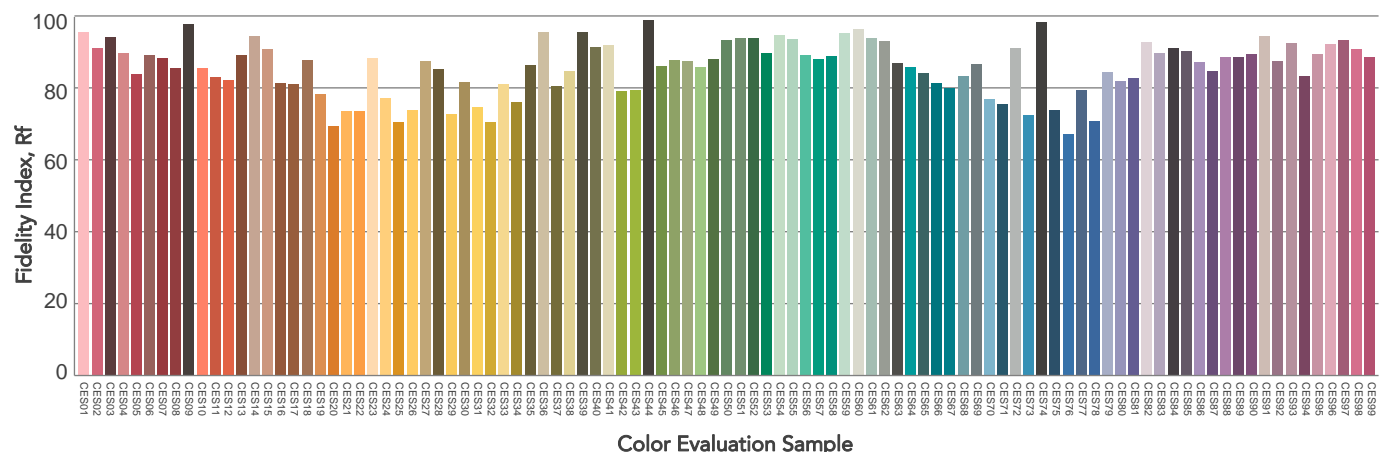
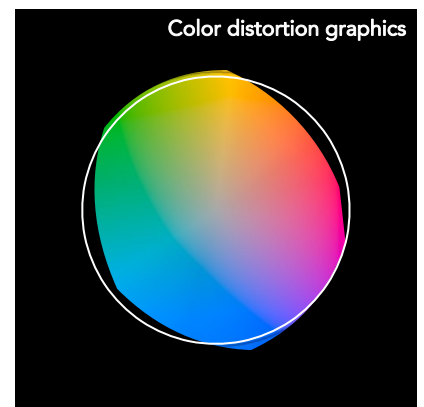
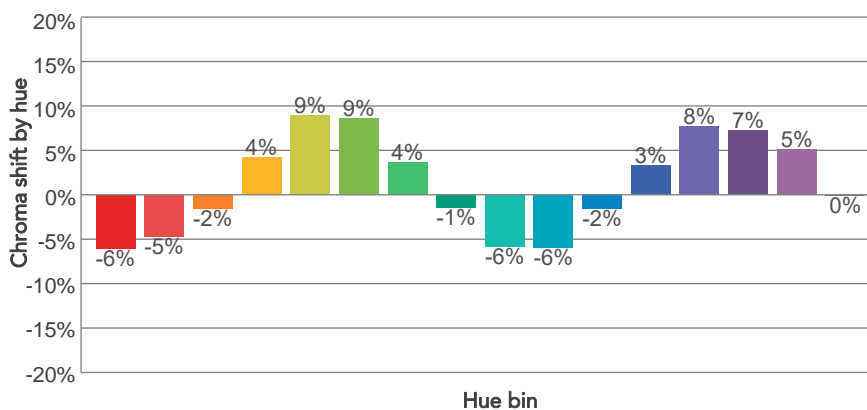
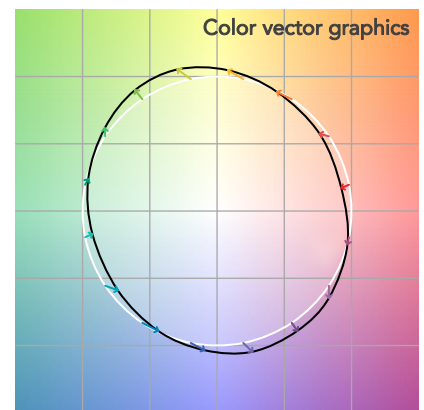
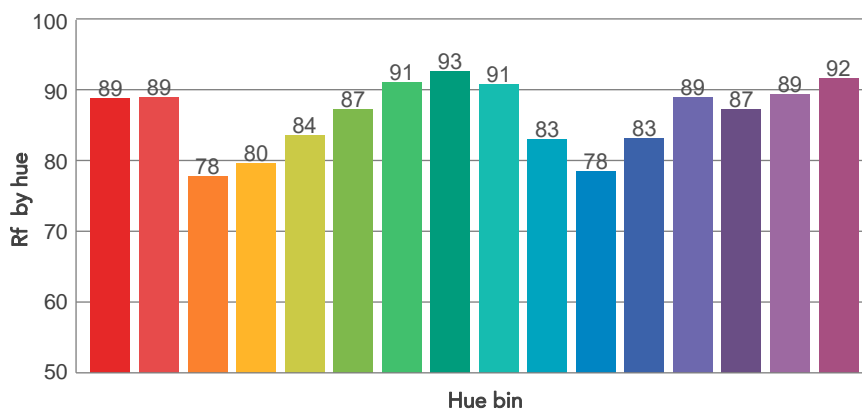
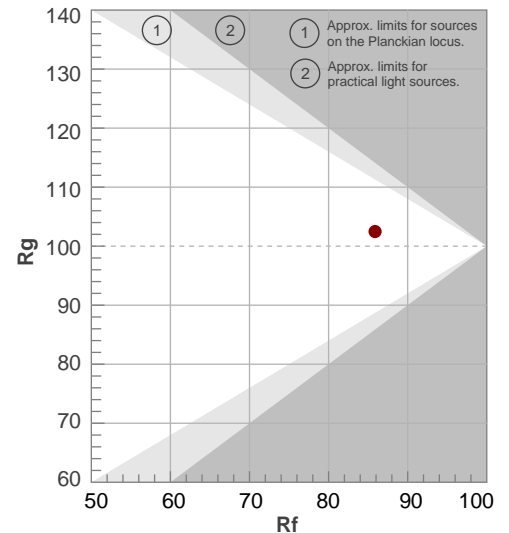
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
5144 K	88,9	61,4	85,9	102,5	84,9	84	0,341	0,337	-0,0088

TM30 DETAILS

Rf 85,9
Fidelity index Rf

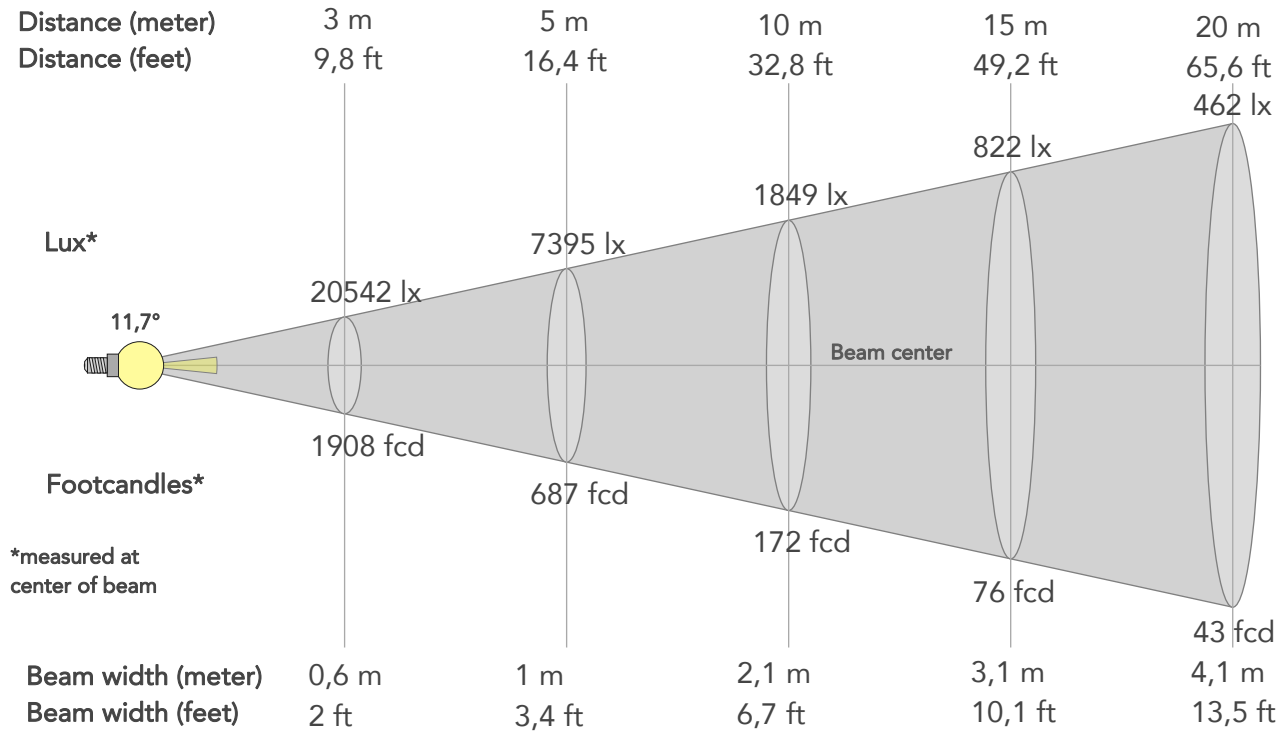
Rg 102,5
Gammut index

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	89	-6%	-1%
2	89	-5%	5%
3	78	-2%	12%
4	80	4%	12%
5	84	9%	8%
6	87	9%	1%
7	91	4%	-5%
8	93	-1%	-5%
9	91	-6%	-1%
10	83	-6%	8%
11	78	-2%	13%
12	83	3%	11%
13	89	8%	5%
14	87	7%	0%
15	89	5%	-7%
16	92	0%	-5%



BEAM DETAILS

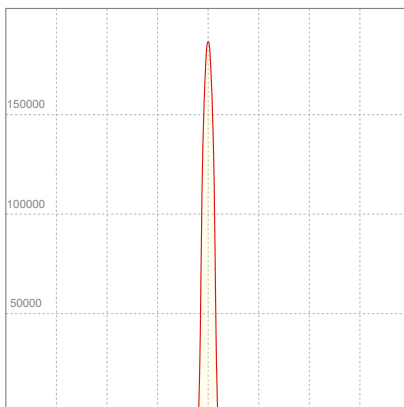
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
11,7°	15,6°	16,7°	94,9%	94,2%



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	184882lx	46221lx	20542lx	11555lx	7395lx	3287lx	1849lx	822lx	462lx	296lx	205lx	116lx	74lx
Footcand.	17176fcd	4294fcd	1908fcd	1074fcd	687fcd	305fcd	172fcd	76fcd	43fcd	27fcd	19fcd	11fcd	7fcd
Beam wid.	0,2m	0,4m	0,6m	0,8m	1m	1,5m	2,1m	3,1m	4,1m	5,1m	6,2m	8,2m	10,3m
Beam wid.	0,7ft	1,4ft	2ft	2,7ft	3,4ft	5,1ft	6,7ft	10,1ft	13,5ft	16,8ft	20,2ft	27ft	33,7ft

LINEAR DISTRIBUTION DIAGRAM

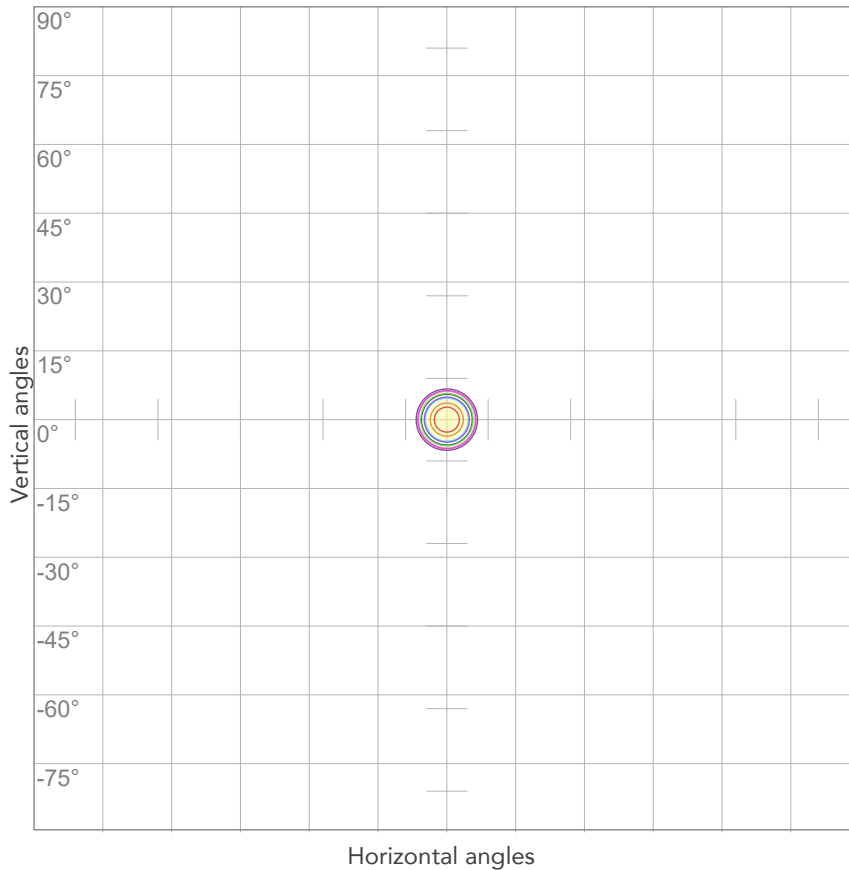


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
222V	2,12A	460,7W	0,98	14lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



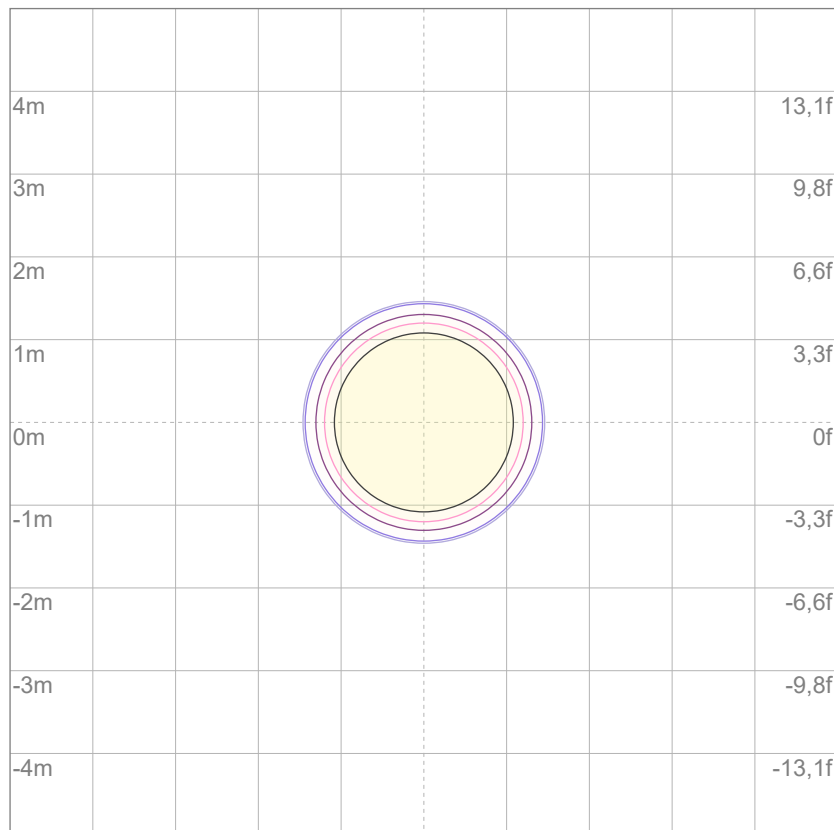
10%	18488 cd
20%	36976 cd
30%	55465 cd
40%	73953 cd
50%	92441 cd
60%	110929 cd
70%	129418 cd
80%	147906 cd

Conditions:

Number of c-planes: 2

Candela at center: 184882 cd

ISO LUX DIAGRAM



3%	55,5 lx
5%	92,4 lx
10%	185 lx
30%	555 lx
50%	924 lx

Conditions:

Number of c-planes: 2

Lux at center: 1849 lx

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



Total lumen output:

3631 lm

Peak candela output:

1373604 cd

Light quality:

CRI: 84,5

Color temperature:

4951 K

PRODUCT NAME:

ASTRAHYB330

MEASURAMENT CONDITIONS:

Beam angle:

Min Zoom

Target:

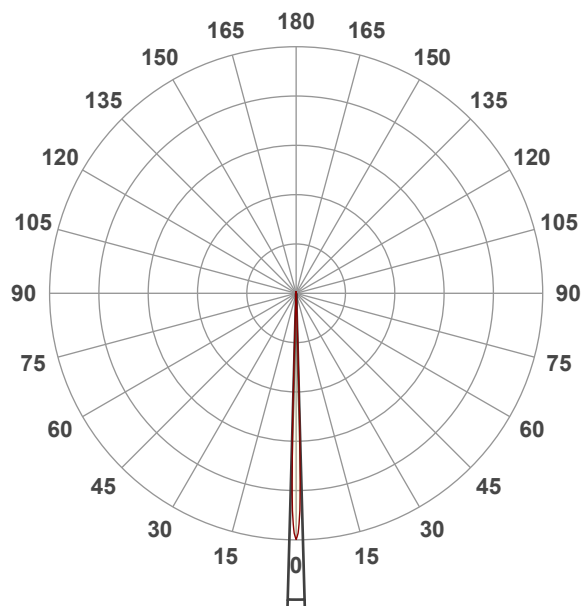
HIGH CRI

Operator:

Salvatore Giglio

Date and time:

16/01/2024 15:33:18

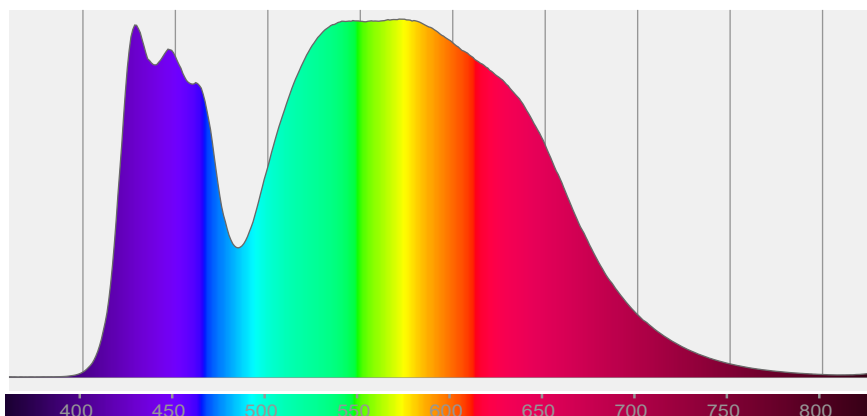


Beam angle 50%: 3,2°

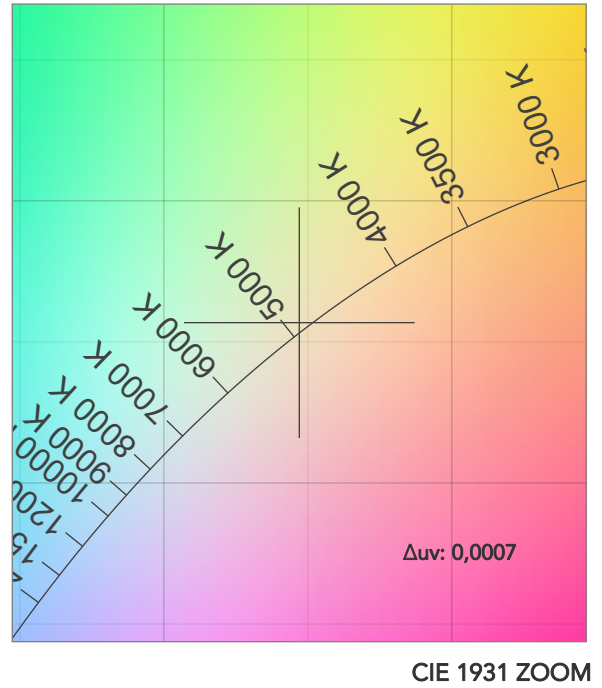
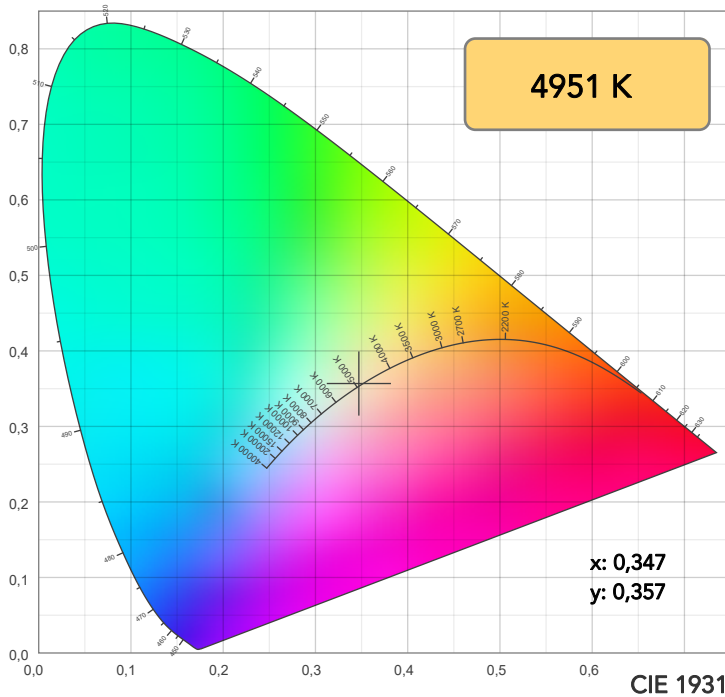
Field angle 10%: 4,1°

Cut off angle 2.5%: 4,7°

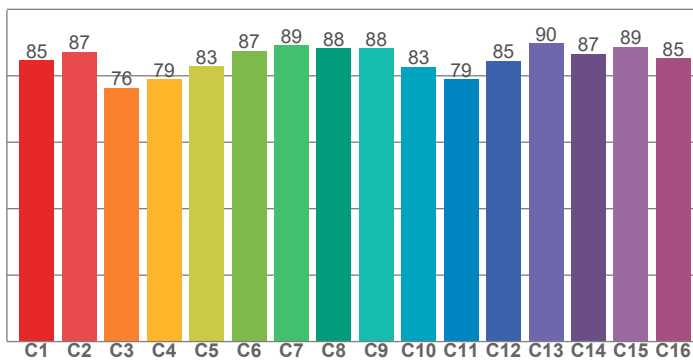
Spectra



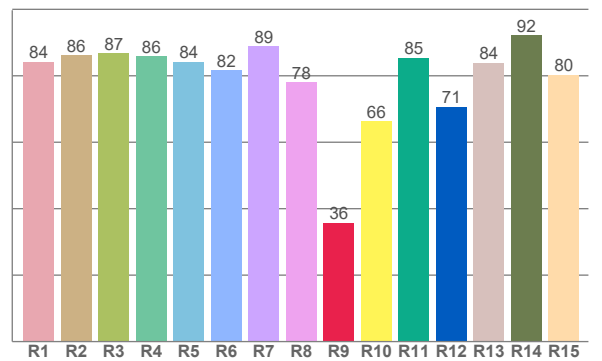
COLOR DETAILS



TM30: 84,4



CRI: 84,5 (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
84,2	86,1	86,8	86,0	84,2	81,8	88,8	78,1	35,8	66,3	85,4	70,6	83,9	92,2	80,3

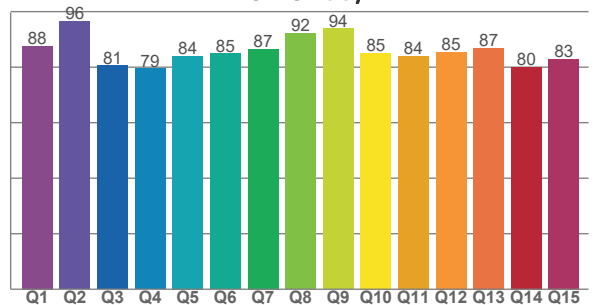
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
84,7	87,2	76,4	79,0	82,9	87,4	89,2	88,2	88,2	82,7	78,9	84,5	89,8	86,7	88,8	85,2

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87,7	96,5	80,5	79,5	84,0	84,9	86,6	92,2	93,9	85,1	84,1	85,4	86,9	80,1	82,9

CQS: 85,2



COLOR PARAMETERS

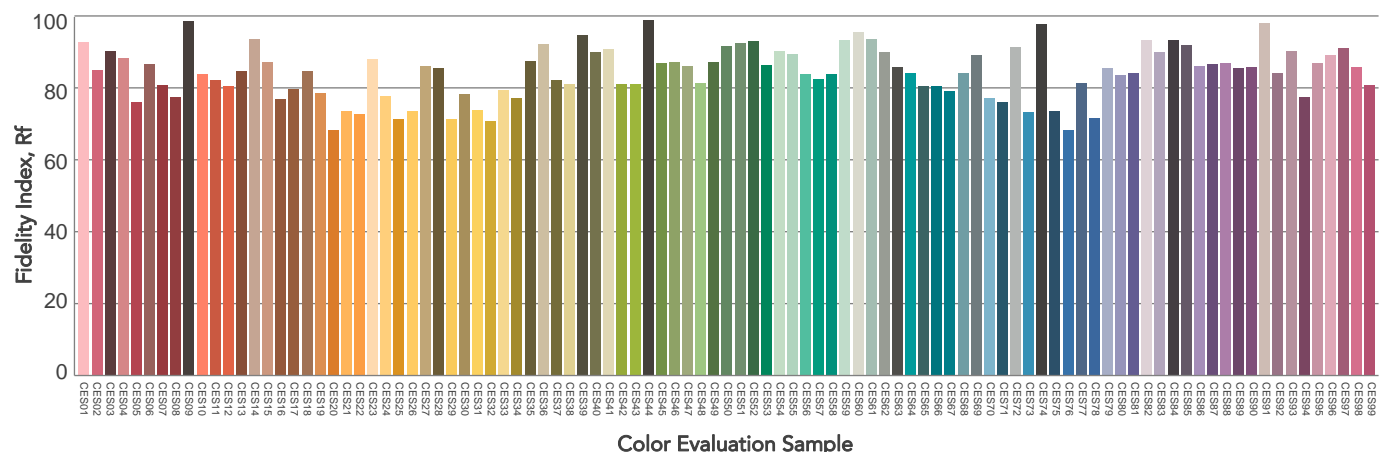
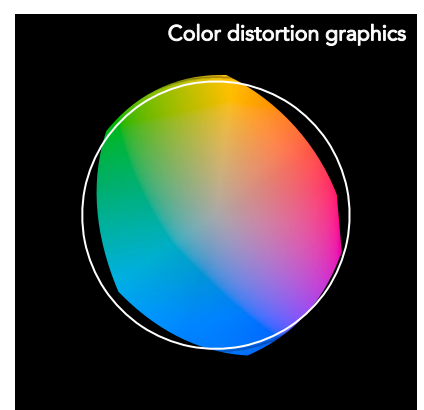
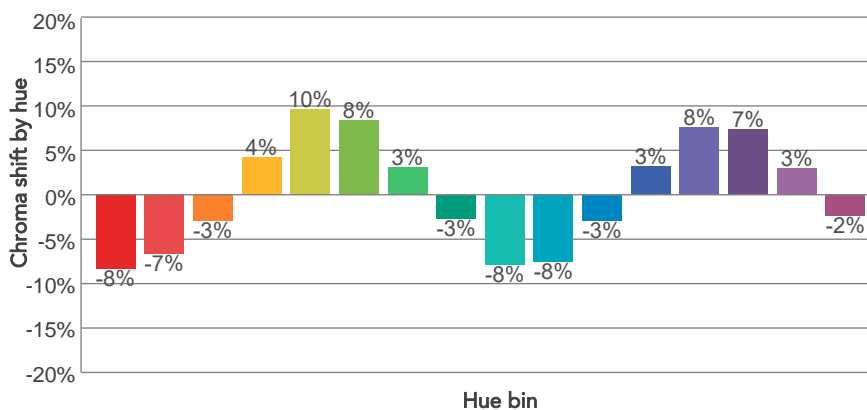
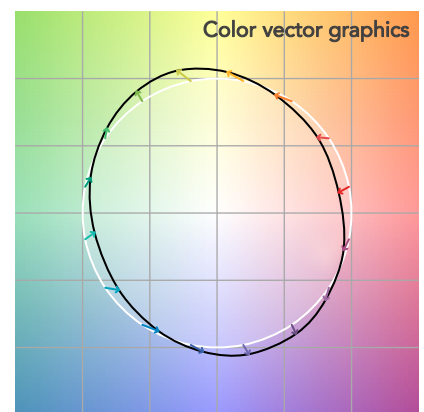
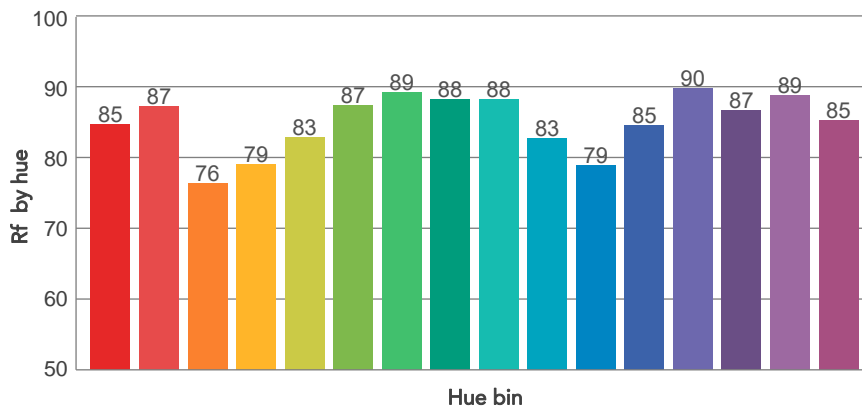
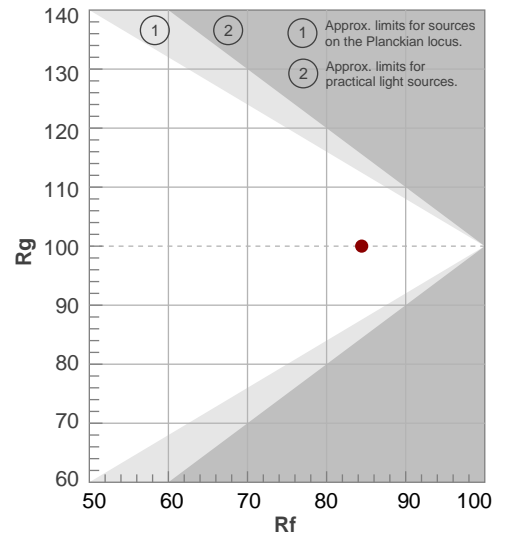
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
4951 K	84,5	35,8	84,4	100,0	85,2	81	0,347	0,357	0,0007

TM30 DETAILS

Rf 84,4
Fidelity index Rf

Rg 100,0
Gammut index

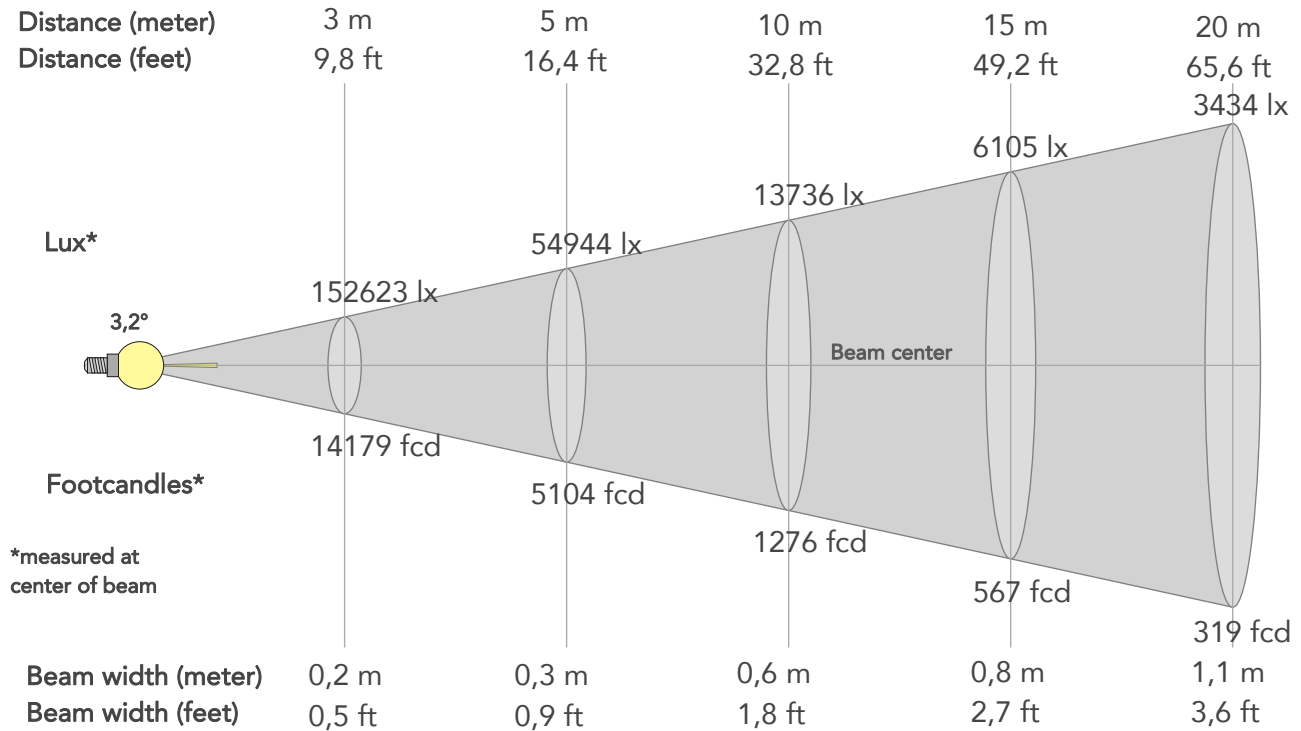
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	85	-8%	-3%
2	87	-7%	5%
3	76	-3%	13%
4	79	4%	13%
5	83	10%	8%
6	87	8%	0%
7	89	3%	-7%
8	88	-3%	-7%
9	88	-8%	-3%
10	83	-8%	7%
11	79	-3%	12%
12	85	3%	10%
13	90	8%	3%
14	87	7%	-1%
15	89	3%	-9%
16	85	-2%	-9%



BEAM DETAILS



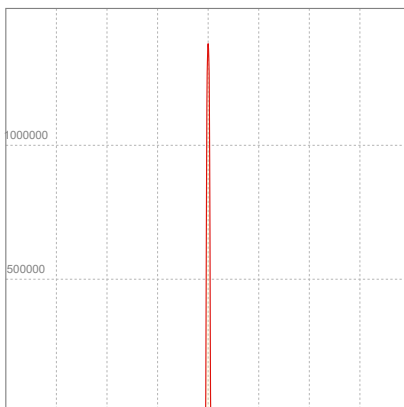
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
3,2°	4,1°	4,7°	91,5%	91,1%



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	1373604lx	343401lx	152623lx	85850lx	54944lx	24420lx	13736lx	6105lx	3434lx	2198lx	1526lx	859lx	549lx
Footcand.	127612fcd	31903fcd	14179fcd	7976fcd	5104fcd	2269fcd	1276fcd	567fcd	319fcd	204fcd	142fcd	80fcd	51fcd
Beam wid.	0,1m	0,1m	0,2m	0,2m	0,3m	0,4m	0,6m	0,8m	1,1m	1,4m	1,7m	2,2m	2,8m
Beam wid.	0,2ft	0,4ft	0,5ft	0,7ft	0,9ft	1,4ft	1,8ft	2,7ft	3,6ft	4,5ft	5,4ft	7,2ft	9ft

LINEAR DISTRIBUTION DIAGRAM

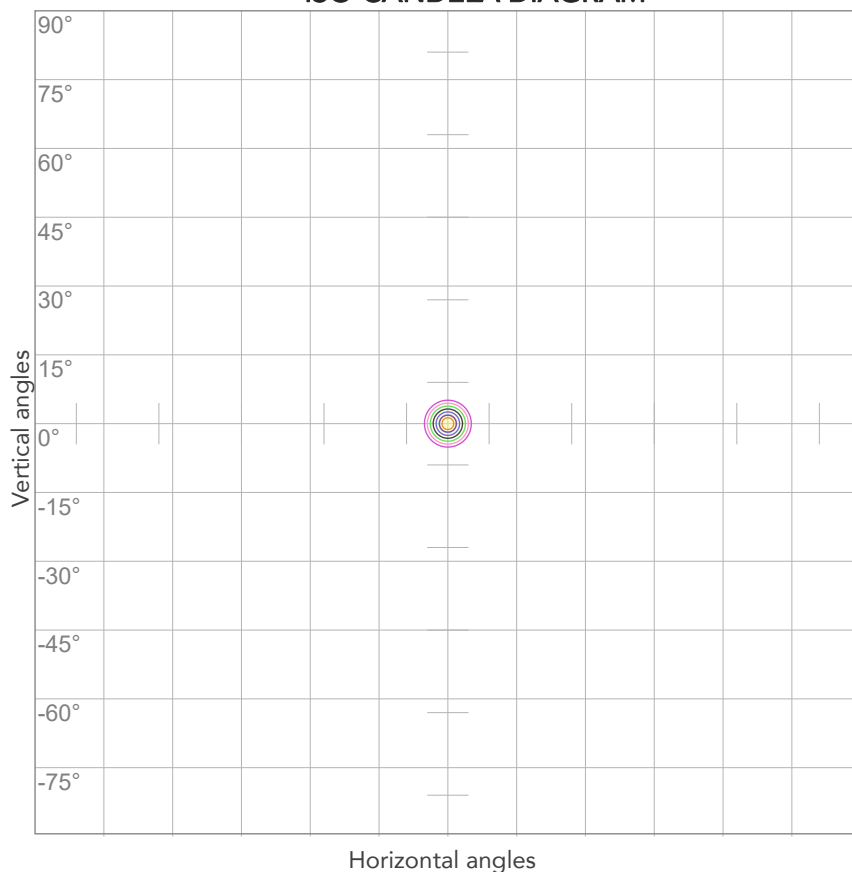


ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
222V	2,13A	462,1W	0,98	8lm/W

ISO DIAGRAMS

ISO CANDELA DIAGRAM



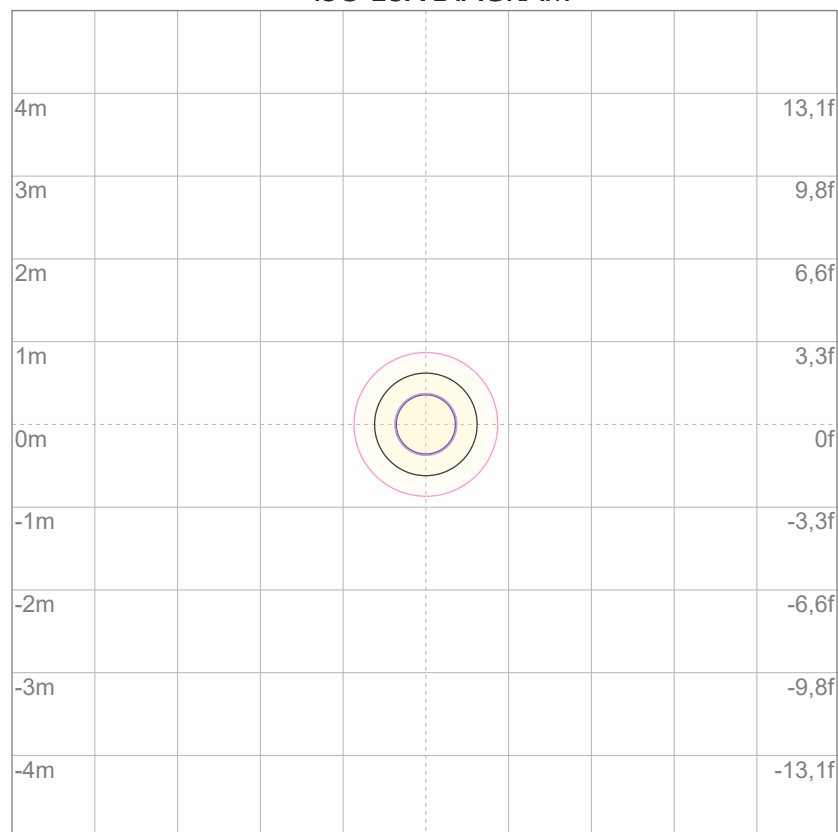
10%	137360 cd
20%	274721 cd
30%	412081 cd
40%	549442 cd
50%	686802 cd
60%	824162 cd
70%	961523 cd
80%	1098883 cd

Conditions:

Number of c-planes: 2

Candela at center: 1373604 cd

ISO LUX DIAGRAM



3%	412 lx
5%	687 lx
10%	1374 lx
30%	4121 lx
50%	6868 lx

Conditions:

Number of c-planes: 2

Lux at center: 13,7K lx

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