Photometric Test Report

Astra Hybrid260IP

IP65 hybrid moving head, with 260W white phosphor Laser source and zoom 0.6° - 52°

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:

10649 lm

Peak candela output:

5054083 cd

Light quality:

CRI: 68,0

Color temperature:

7142 K

PRODUCT NAME:

ASTRAHYB260IP

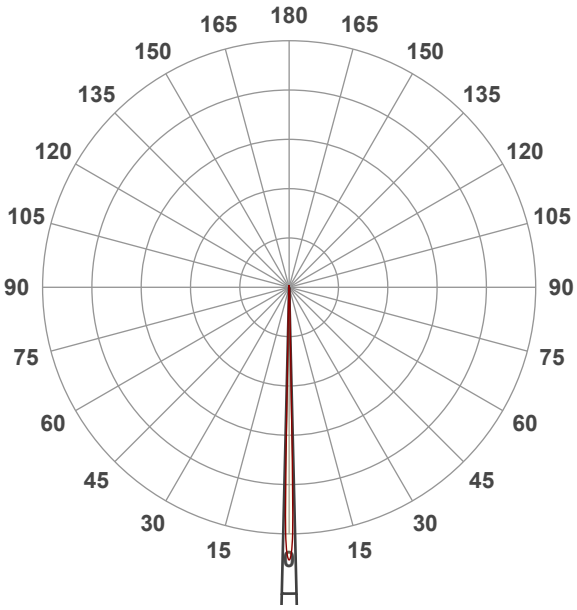
MEASURAMENT CONDITIONS:

Beam angle:
Max Zoom - Beam Mode

Target:
Full On

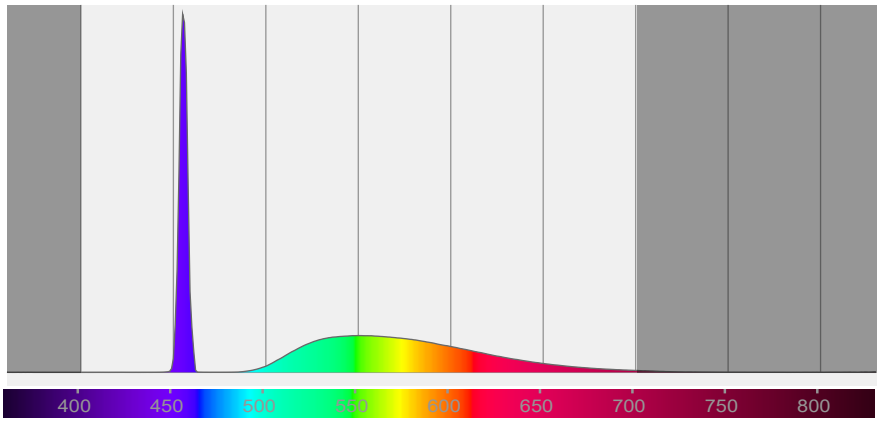
Operator:
Salvatore Giglio

Date and time:
04/12/2024 13:58:49

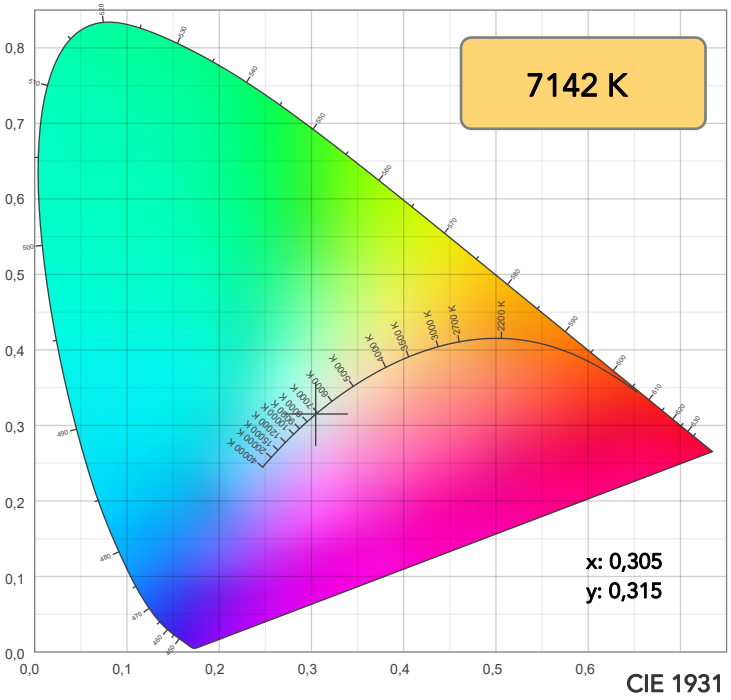


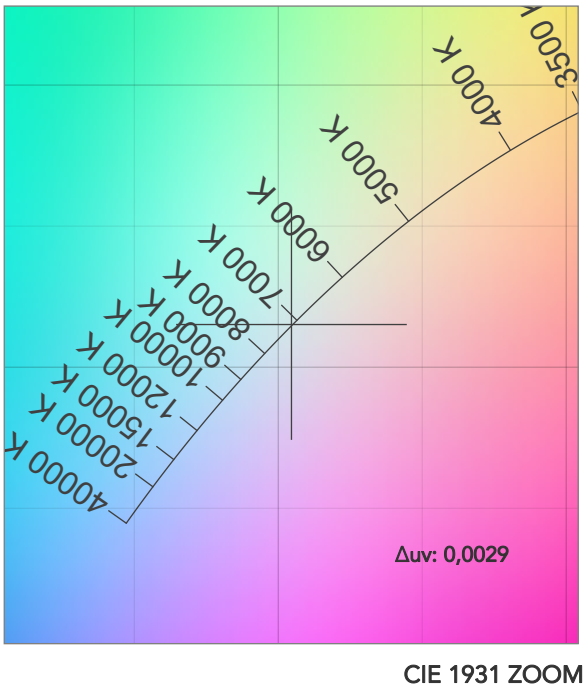
Beam angle 50%: 2,8°
Field angle 10%: 3,6°
Cut off angle 2.5%: 5,1°

Spectra

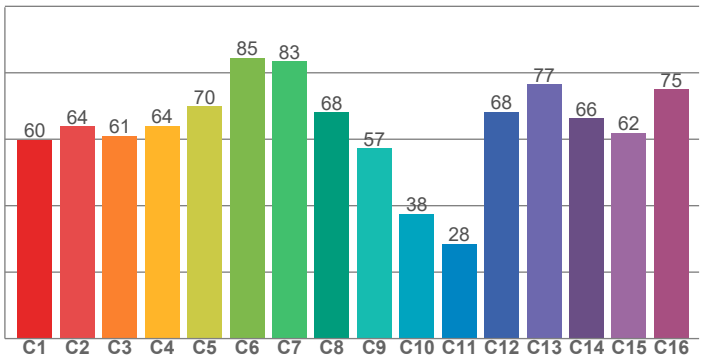


COLOR DETAILS

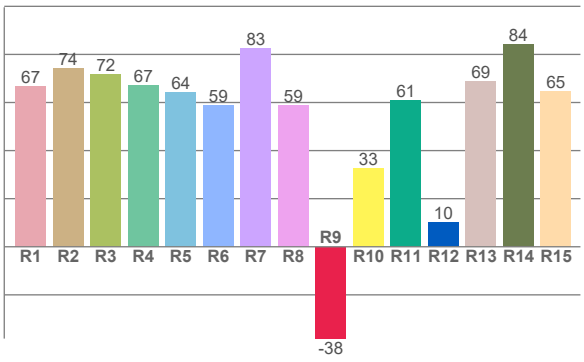




TM30: 63,9



CRI: 68,0 (R1-R8)



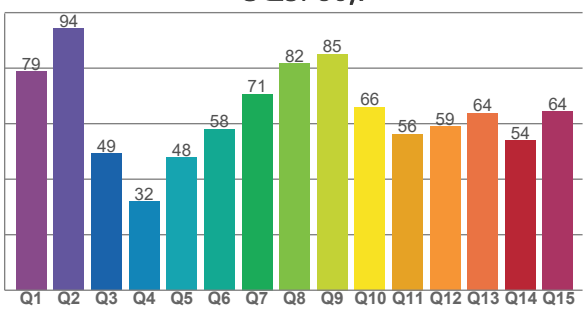
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
66,7	74,1	71,8	67,0	64,3	59,0	82,7	58,8	-38,2	32,5	60,8	10,3	69,0	84,2	64,6

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
59,8	63,9	61,0	64,0	70,0	84,6	83,4	68,1	57,3	37,5	28,5	68,3	76,5	66,2	61,9	75,1

CQS: 60,7



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
78,8	94,3	49,2	32,0	47,8	58,0	70,6	81,6	85,2	65,9	56,3	59,1	63,8	53,9	64,4

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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
7142 K	68,0	-38,2	63,9	87,4	60,7	37	0,305	0,315	0,0029

TM30 DETAILS

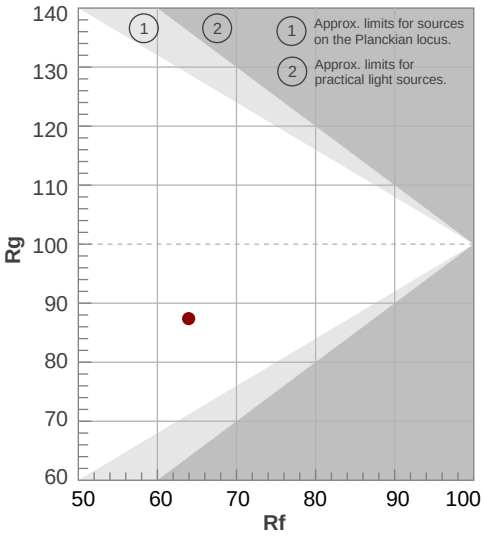
Rf 63,9

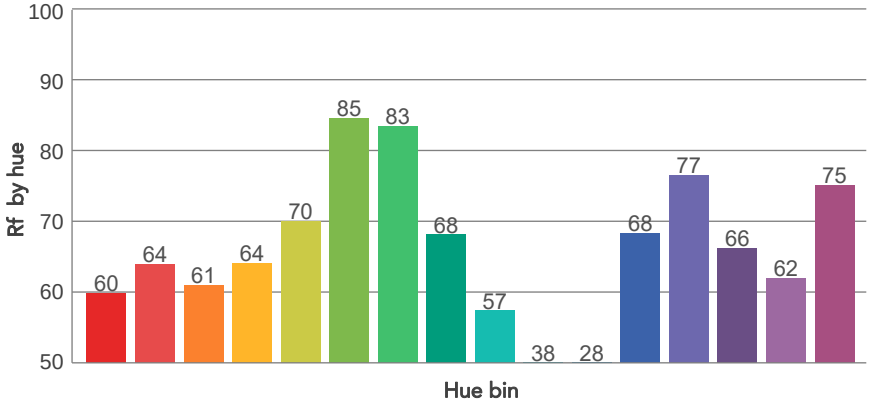
Fidelity index Rf

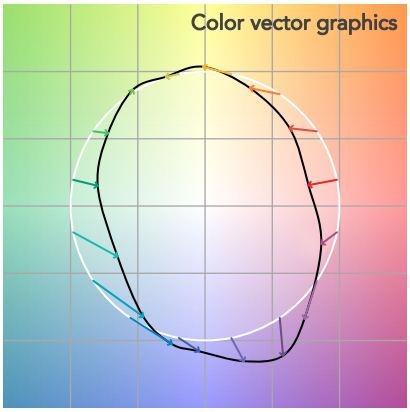
Rg 87,4

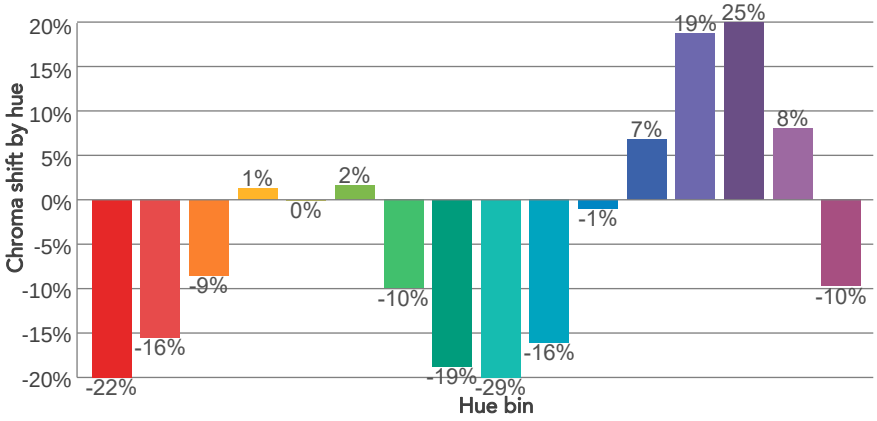
Gammut index

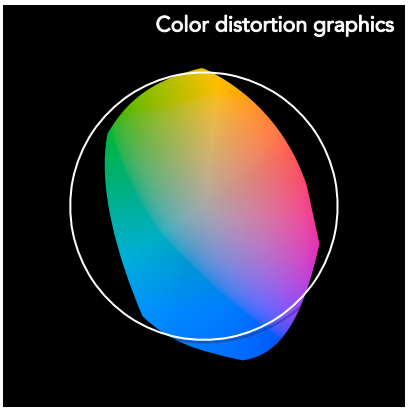
Hue Bin	R_f	Graphic shifts (%) Chroma	Hue
1	60	-22%	0%
2	64	-16%	13%
3	61	-9%	21%
4	64	1%	22%
5	70	0%	10%
6	85	2%	-3%
7	83	-10%	-5%
8	68	-19%	1%
9	57	-29%	24%
10	38	-16%	43%
11	28	-1%	36%
12	68	7%	17%
13	77	19%	6%
14	66	25%	-14%
15	62	8%	-29%
16	75	-10%	-11%

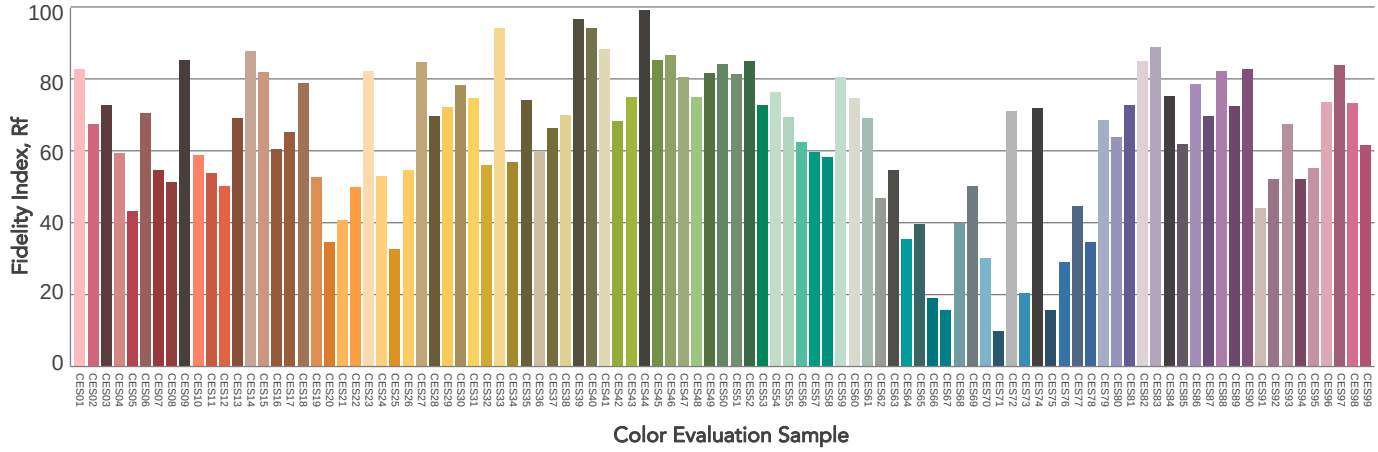












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Via A. Olivetti snc
04026 - Minturno (LT) ITALY
Tel: +39 0771 72190

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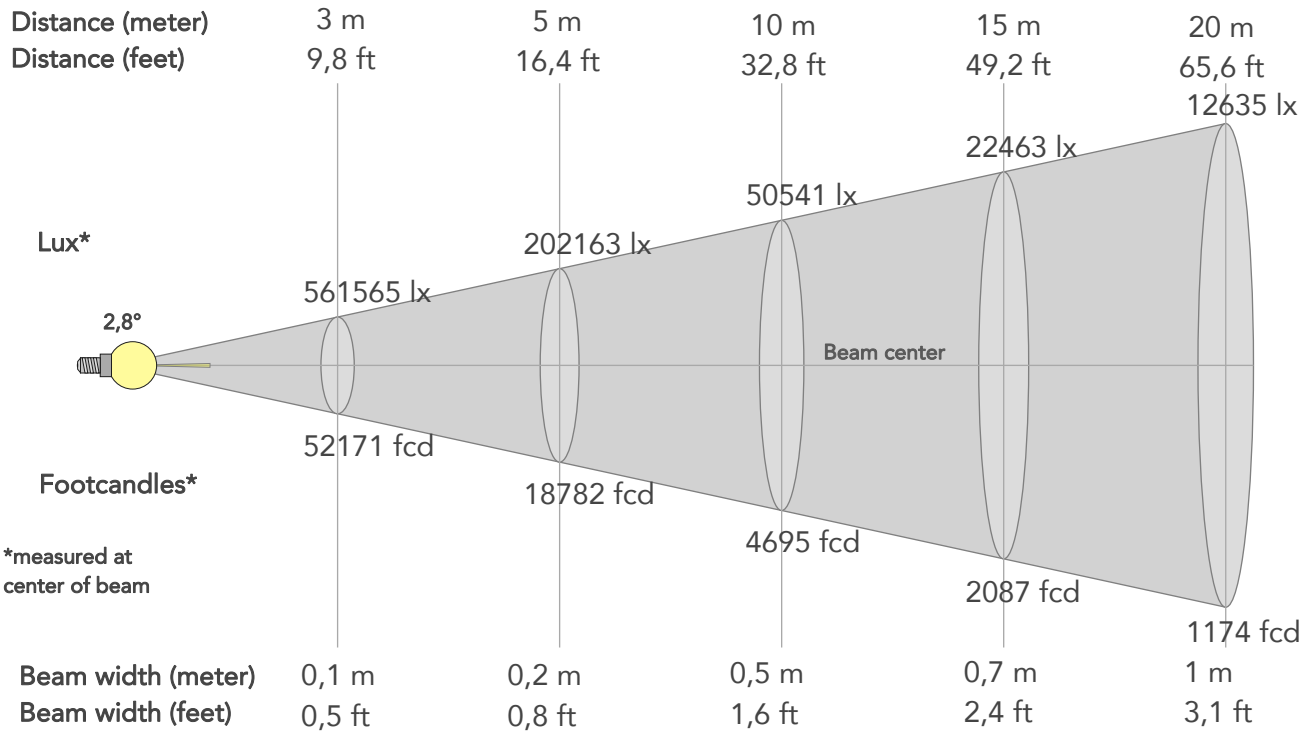
BEAM DETAILS

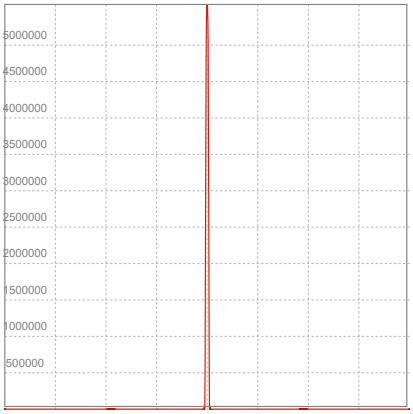
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
2,8°	3,6°	5,1°	97,2%	96,5%



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	5054083lx	1263521lx	561565lx	315880lx	202163lx	89850lx	50541lx	22463lx	12635lx	8087lx	5616lx	3159lx	2022lx
Footcand.	469540fcd	117385fcd	52171fcd	29346fcd	18782fcd	8347fcd	4695fcd	2087fcd	1174fcd	751fcd	522fcd	293fcd	188fcd
Beam wid.	0m	0,1m	0,1m	0,2m	0,2m	0,4m	0,5m	0,7m	1m	1,2m	1,4m	1,9m	2,4m
Beam wid.	0,2ft	0,3ft	0,5ft	0,6ft	0,8ft	1,2ft	1,6ft	2,4ft	3,1ft	3,9ft	4,7ft	6,3ft	7,9ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
224V	1,64A	356,6W	0,97	30lm/W

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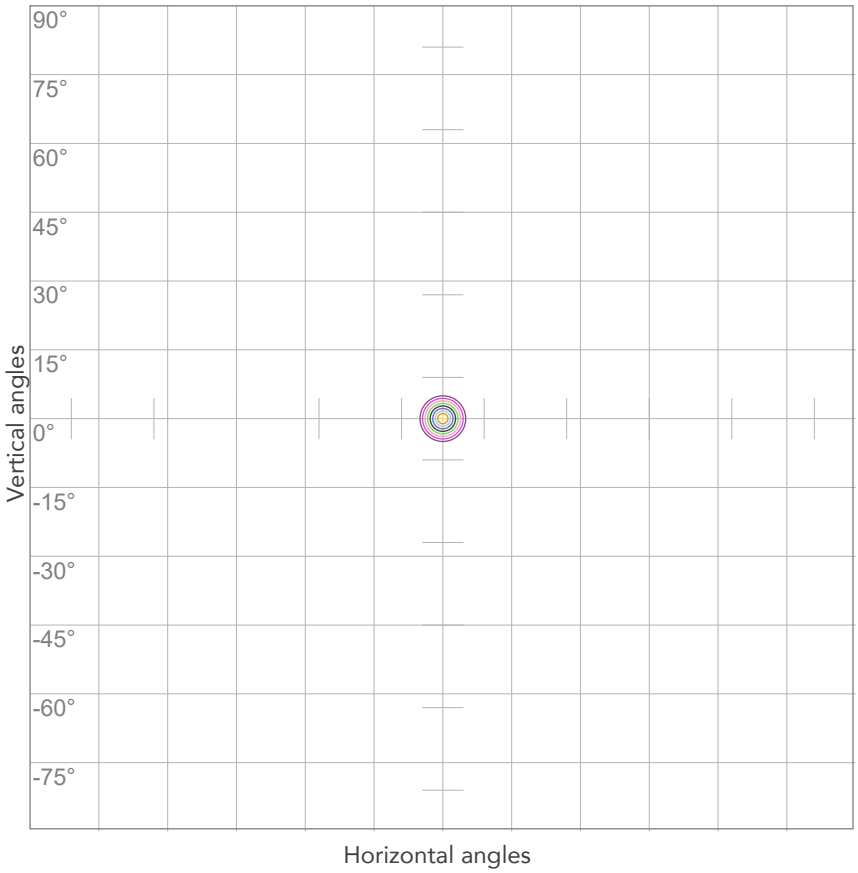
ISO DIAGRAMS

ISO CANDELA DIAGRAM



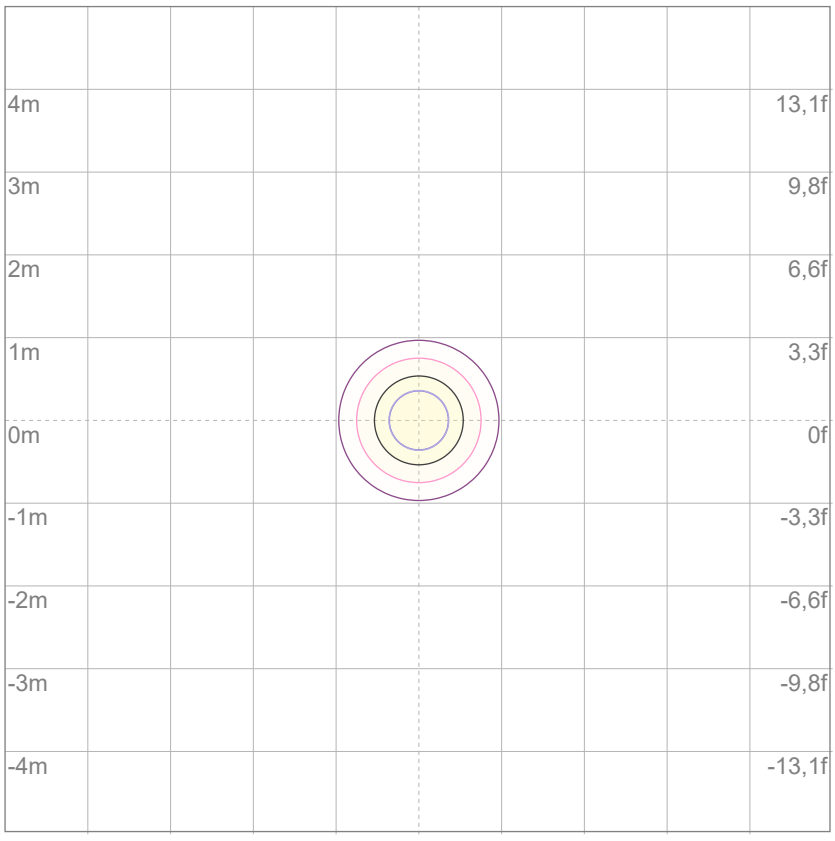
10%	505408 cd
20%	1010817 cd
30%	1516225 cd
40%	2021633 cd
50%	2527041 cd
60%	3032450 cd
70%	3537858 cd
80%	4043266 cd

Conditions:

Number of c-planes: 2

Candela at center: 5054083 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	1516 lx
5%	2527 lx
10%	5054 lx
30%	15,2K lx
50%	25,3K lx

Conditions:

Number of c-planes: 2

Lux at center: 50,5K lx

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

Total lux output at 20mt:

417219 lx @ 20mt

Foot candela output at

38775 fcd @ 20mt

PRODUCT NAME:

ASTRAHYB260IP

MEASURAMENT CONDITIONS:

Beam angle:

Min Zoom - Beam Mode

Target:

Full On

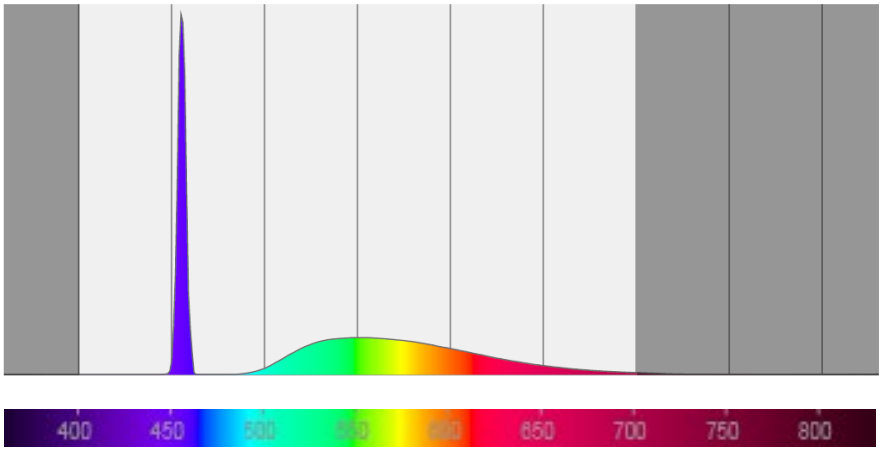
Operator:

Salvatore Giglio

Date and time:

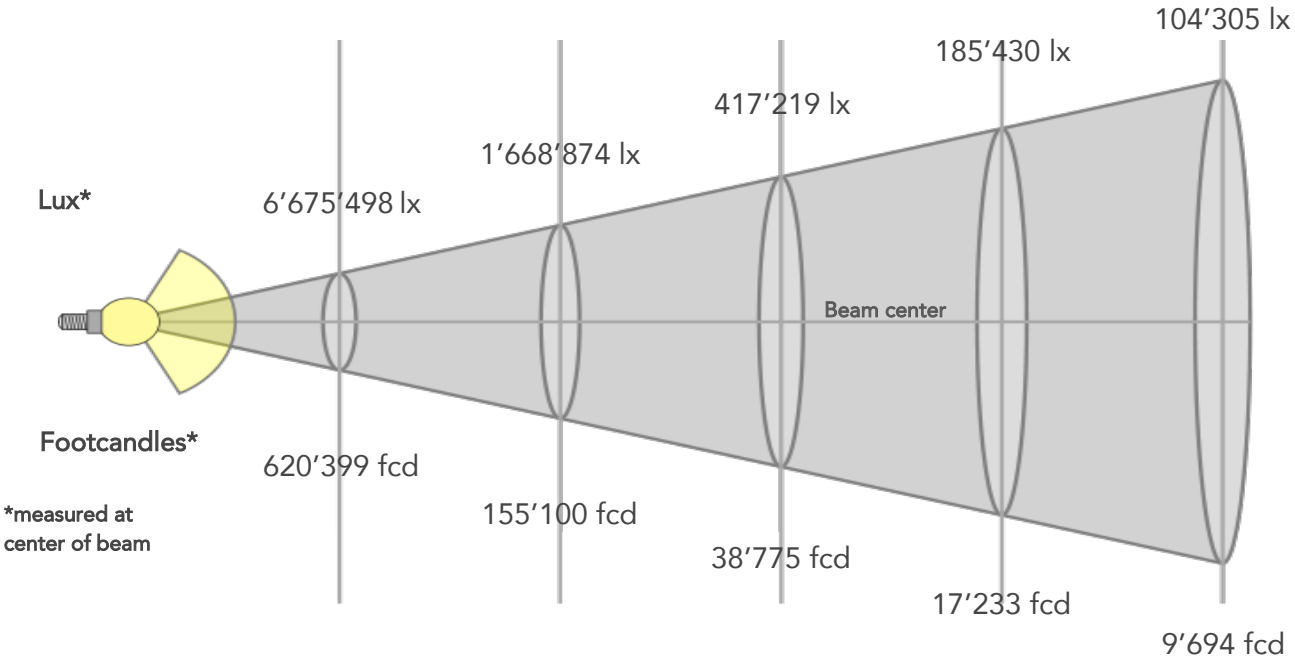
04/12/2024 12:57:49

Spectra



BEAM DETAILS

Distance (meter)	5 m	10 m	20 m	30 m	40 m
Distance (feet)	16,4 ft	32,8 ft	65,6 ft	98,4 ft	131,2 ft



BEAM INTENSITIES AND WIDTHS

Distance	1m	3m	5m	10m	15m	20m	25m	30m	40m	50m
Distance	3,3ft	9,8ft	16,4ft	32,8ft	49,2ft	65,6ft	82ft	98,4ft	131,2ft	164ft
Lux	166'887'448	18'543'050	6'675'498	1'668'874	741'722	417'219	267'020	185'430	104'305	66'755
Footcand.	15'509'986	1'723'332	620'399	155'100	68'933	38'775	24'816	17'233	9'694	6'204

ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC
224V	1,64A	356,7W	0,97

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Total lumen output:

5067 lm

Peak candela output:

979071 cd

Light quality:

CRI: 69,0

Color temperature:

7399 K

PRODUCT NAME:

ASTRAHYB260IP

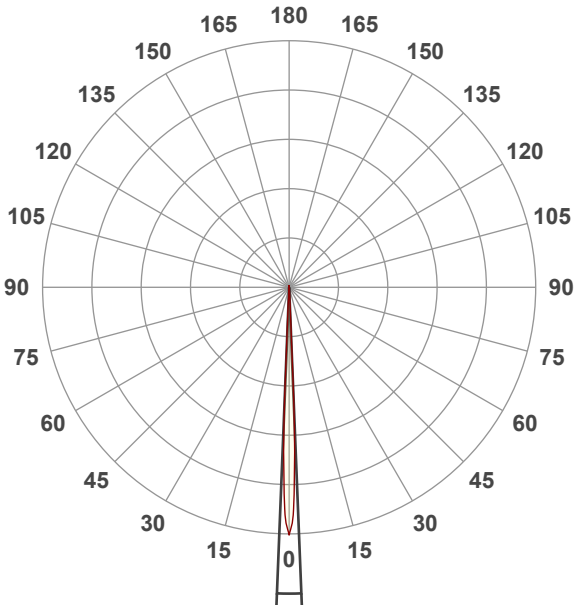
MEASURAMENT CONDITIONS:

Beam angle:
Max Zoom - Far Mode

Target:
Full On

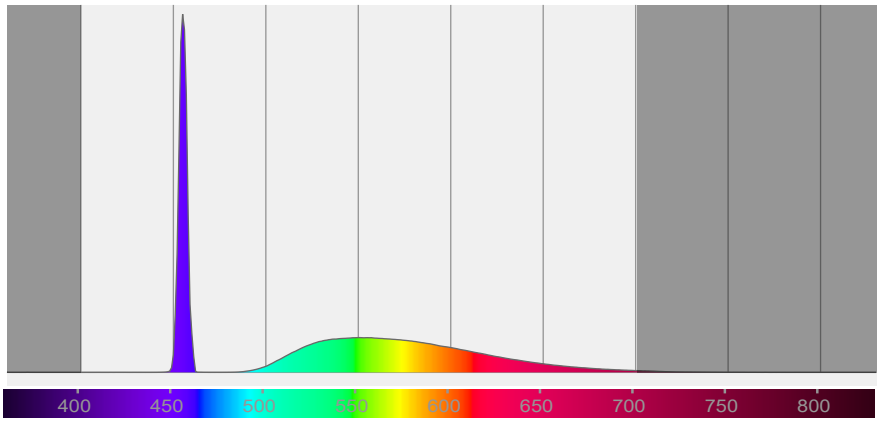
Operator:
Salvatore Giglio

Date and time:
04/12/2024 13:55:14

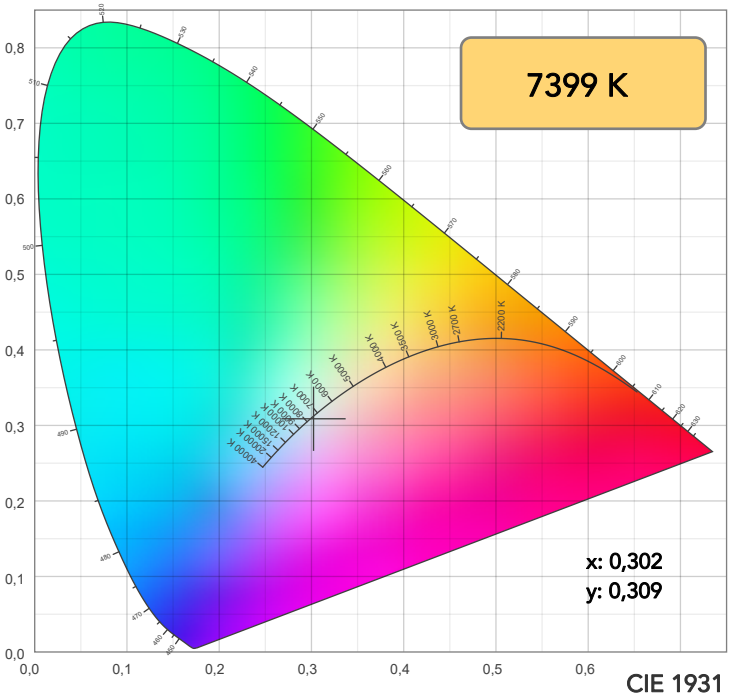


Beam angle 50%: 4,6°
Field angle 10%: 6,2°
Cut off angle 2.5%: 7,6°

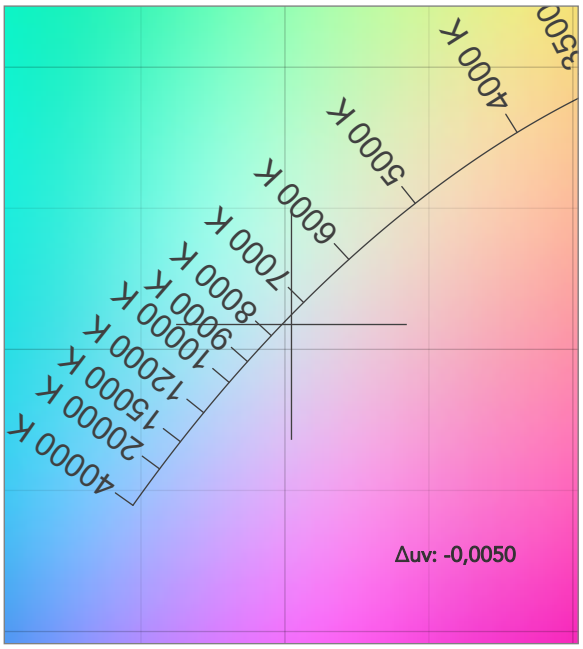
Spectra



COLOR DETAILS

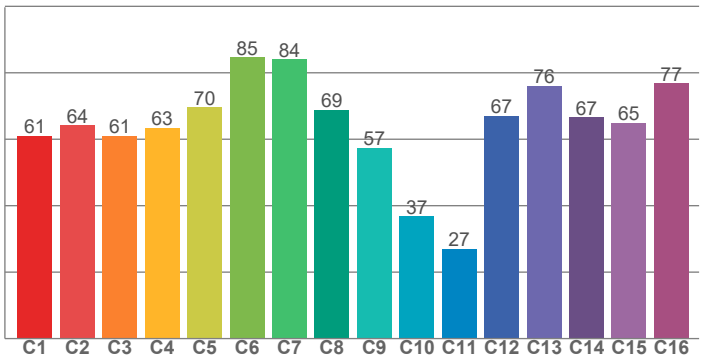


CIE 1931

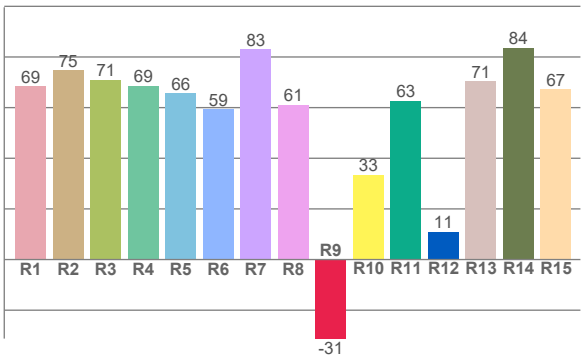


CIE 1931 ZOOM

TM30: 64,0



CRI: 69,0 (R1-R8)



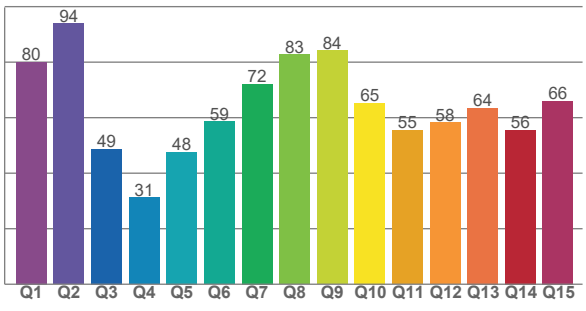
CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
68,5	74,8	71,0	68,7	65,7	59,3	83,0	61,1	-31,2	33,5	62,8	11,0	70,6	83,7	67,3

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
61,0	64,2	61,0	63,4	69,6	84,7	84,0	68,9	57,4	36,8	27,0	67,1	76,0	66,6	65,0	76,8

CQS: 60,8



CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
80,0	93,9	48,7	31,2	47,6	58,7	72,1	82,8	84,3	65,3	55,5	58,3	63,5	55,6	66,0

COLOR PARAMETERS

Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Television lighting index	Color coordinate cie 1931	Color coordinate cie 1931	Color diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	TLCI	x	y	Δuv
7399 K	69,0	-31,2	64,0	88,2	60,8	37	0,302	0,309	-0,0050

TM30 DETAILS

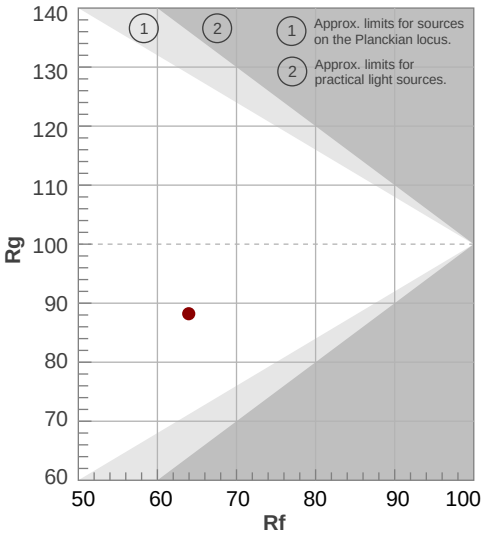
Rf 64,0

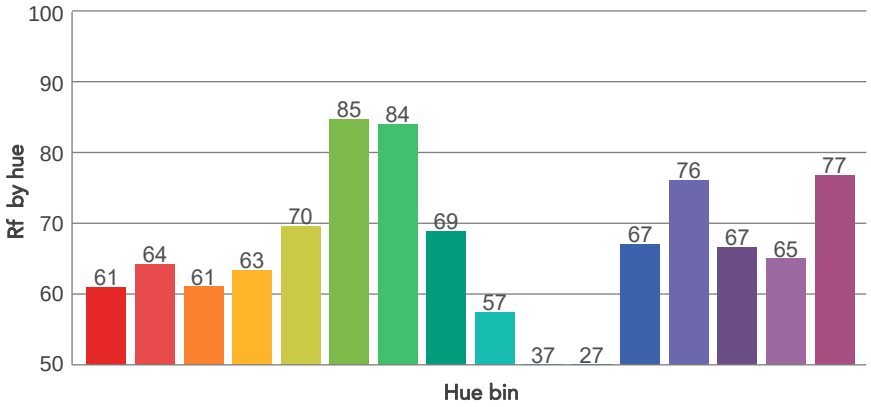
Fidelity index Rf

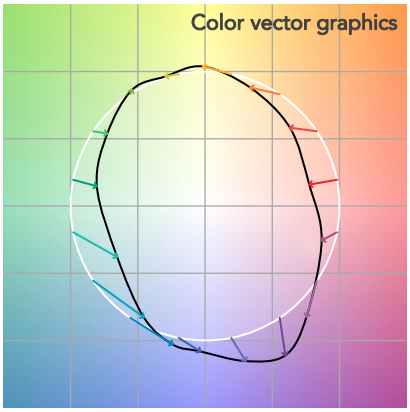
Rg 88,2

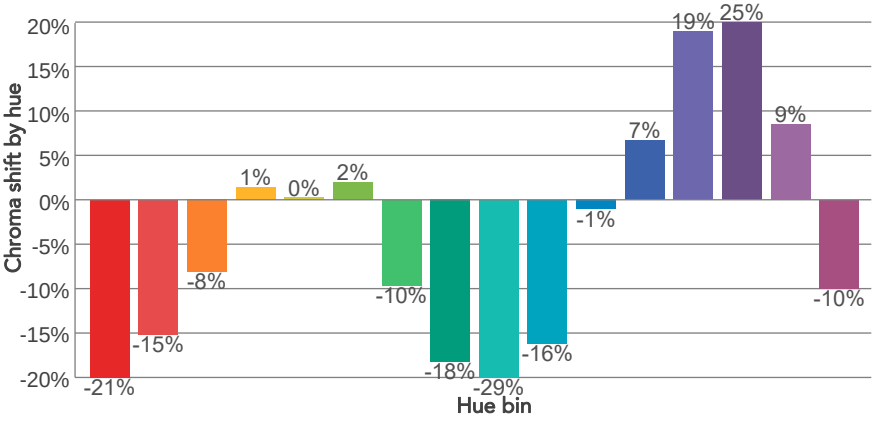
Gammut index

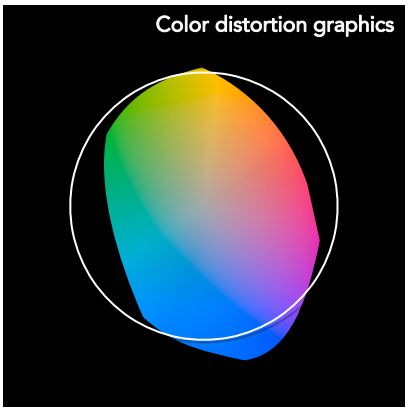
Hue Bin	R_f	Graphic shifts (%) Chroma	Hue
1	61	-21%	1%
2	64	-15%	13%
3	61	-8%	21%
4	63	1%	22%
5	70	0%	10%
6	85	2%	-3%
7	84	-10%	-5%
8	69	-18%	1%
9	57	-29%	24%
10	37	-16%	43%
11	27	-1%	37%
12	67	7%	18%
13	76	19%	7%
14	67	25%	-12%
15	65	9%	-27%
16	77	-10%	-8%

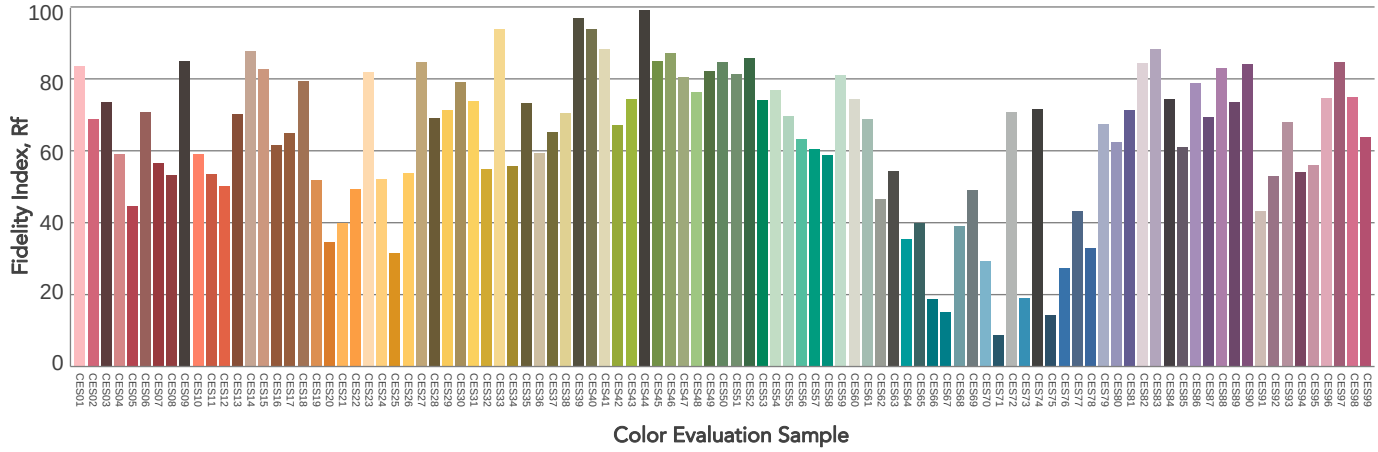












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Via A. Olivetti snc
04026 - Minturno (LT) ITALY
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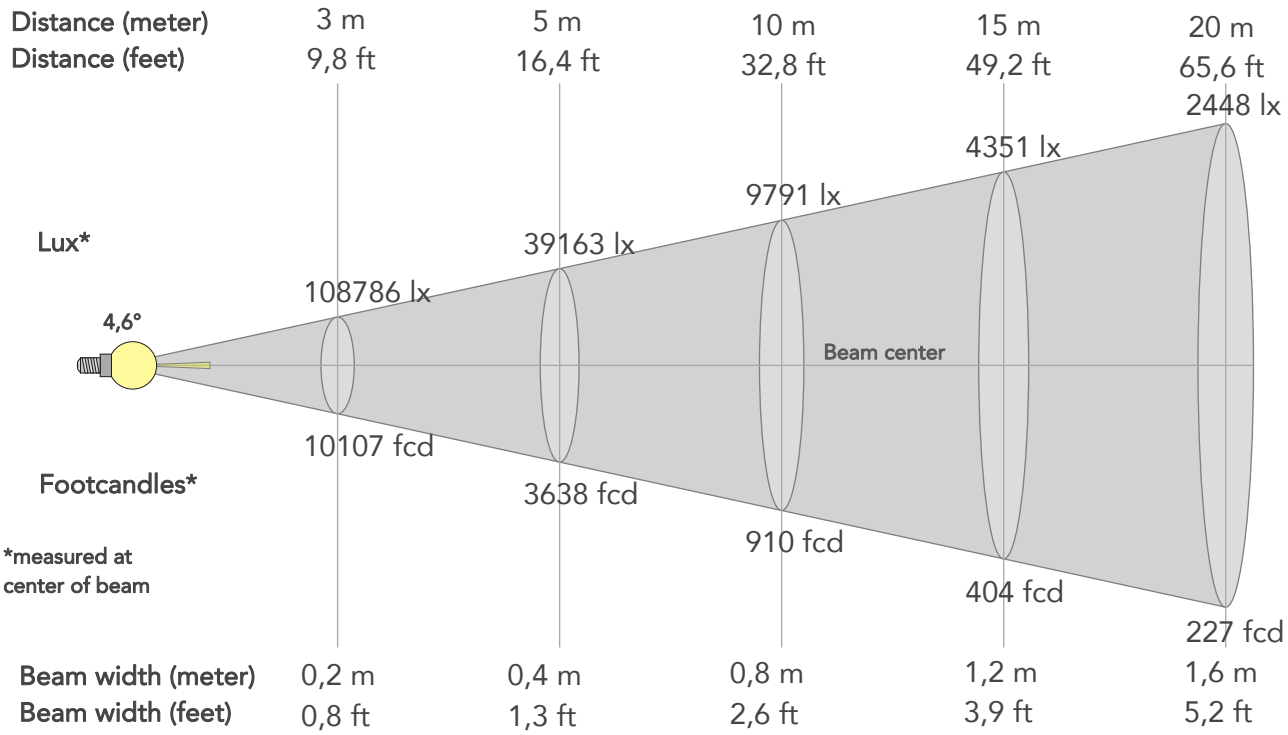
BEAM DETAILS

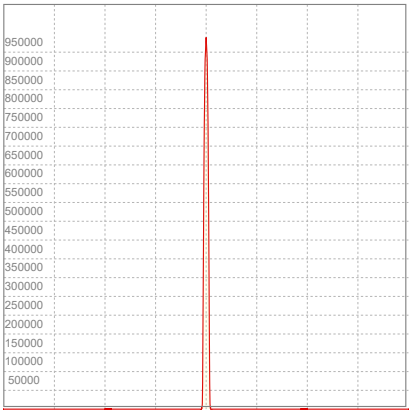
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
4,6°	6,2°	7,6°	99,6%	99,4%



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	979071lx	244768lx	108786lx	61192lx	39163lx	17406lx	9791lx	4351lx	2448lx	1567lx	1088lx	612lx	392lx
Footcand.	90959fcd	22740fcd	10107fcd	5685fcd	3638fcd	1617fcd	910fcd	404fcd	227fcd	146fcd	101fcd	57fcd	36fcd
Beam wid.	0,1m	0,2m	0,2m	0,3m	0,4m	0,6m	0,8m	1,2m	1,6m	2m	2,4m	3,2m	4m
Beam wid.	0,3ft	0,5ft	0,8ft	1ft	1,3ft	2ft	2,6ft	3,9ft	5,2ft	6,5ft	7,9ft	10,5ft	13,1ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
225V	1,64A	358,2W	0,97	14lm/W

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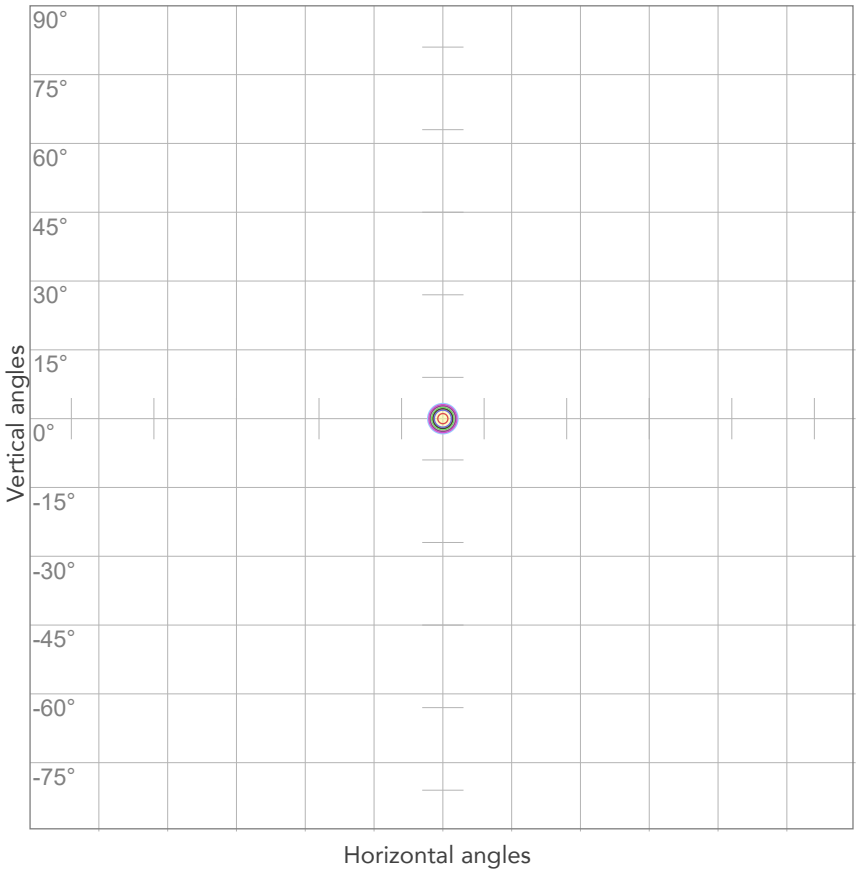
ISO DIAGRAMS

ISO CANDELA DIAGRAM



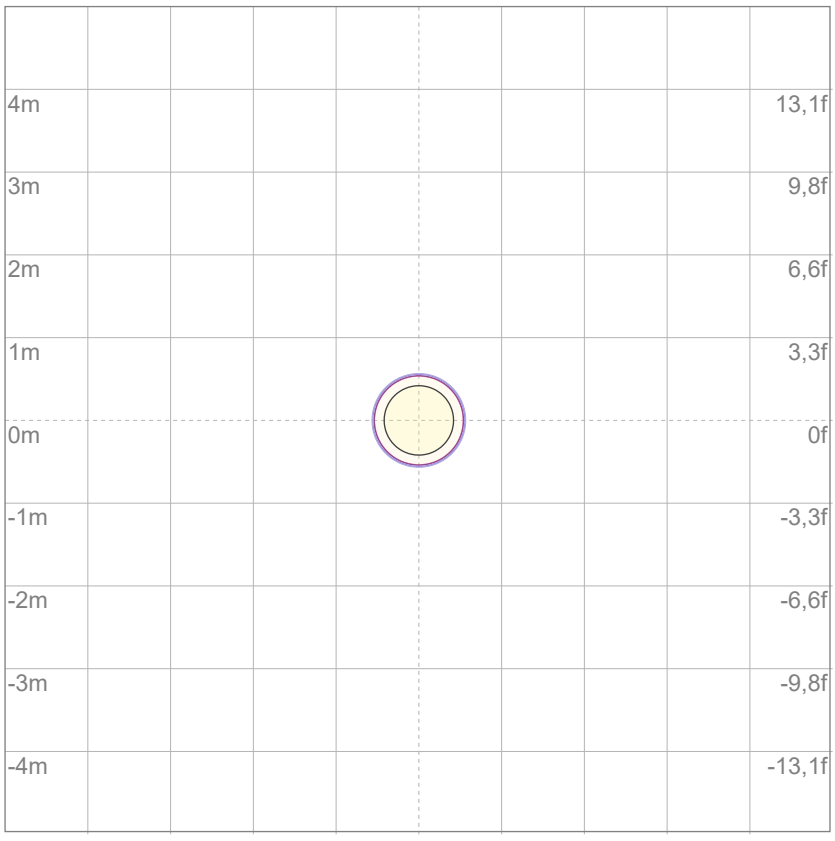
10%	97907 cd
20%	195814 cd
30%	293721 cd
40%	391628 cd
50%	489536 cd
60%	587443 cd
70%	685350 cd
80%	783257 cd

Conditions:

Number of c-planes: 2

Candela at center: 979071 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	294 lx
5%	490 lx
10%	979 lx
30%	2937 lx
50%	4895 lx

Conditions:

Number of c-planes: 2

Lux at center: 9791 lx

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

Total lux output at 20mt:

406428 lx @ 20mt

Foot candela output at

37772 fcd @ 20mt

PRODUCT NAME:

ASTRAHYB260IP

MEASURAMENT CONDITIONS:

Beam angle:

Min Zoom - Far Mode

Target:

Full On

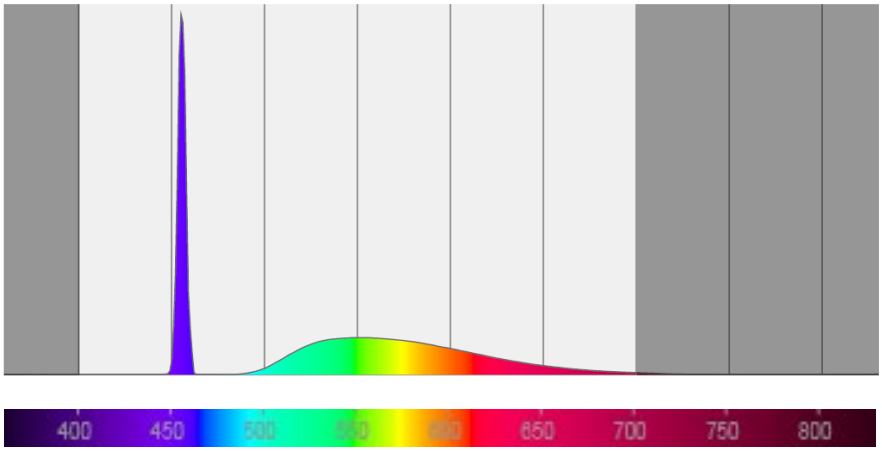
Operator:

Salvatore Giglio

Date and time:

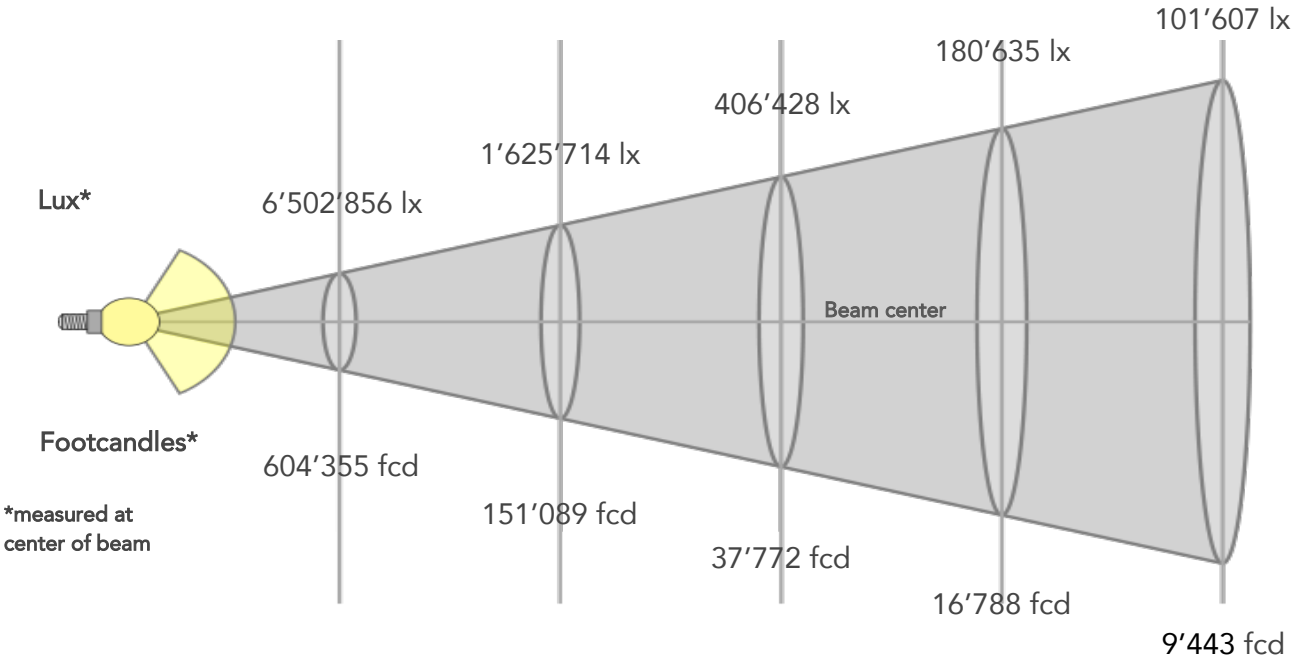
04/12/2024 12:37:17

Spectra



BEAM DETAILS

Distance (meter)	5 m	10 m	20 m	30 m	40 m
Distance (feet)	16,4 ft	32,8 ft	65,6 ft	98,4 ft	131,2 ft



BEAM INTENSITIES AND WIDTHS

Distance	1m	3m	5m	10m	15m	20m	25m	30m	40m	50m
Distance	3,3ft	9,8ft	16,4ft	32,8ft	49,2ft	65,6ft	82ft	98,4ft	131,2ft	164ft
Lux	162’571’394	18’063’488	6’502’856	1’625’714	722’540	406’428	260’114	180’635	101’607	65’029
Footcand.	15’108’866	1’678’763	604’355	151’089	67’151	37’772	24’174	16’788	9’443	6’044

ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC
225V	1,64A	357,7W	0,97

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Total lumen output:

10457 lm

Peak candela output:

58887 cd

Light quality:

CRI: 66,1

Color temperature:

7007 K

PRODUCT NAME:

ASTRAHYB260IP

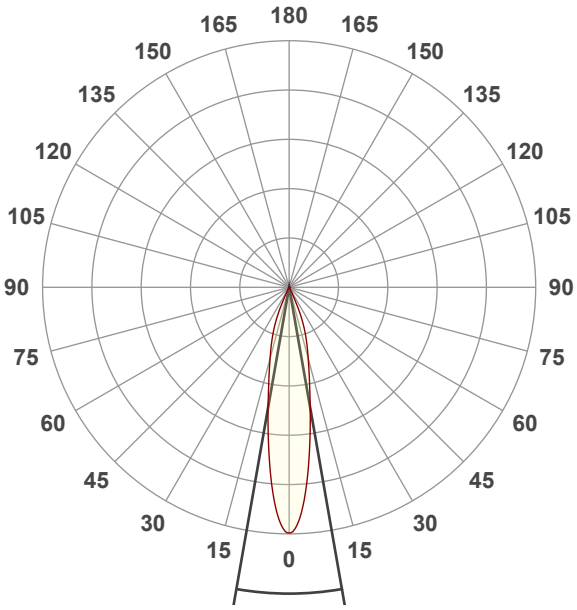
MEASURAMENT CONDITIONS:

Beam angle:
Max Zoom - Spot Mode

Target:
Full On

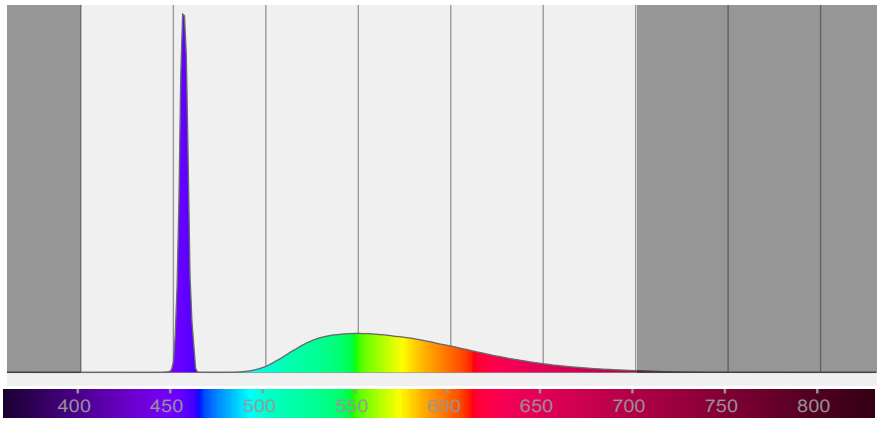
Operator:
Salvatore Giglio

Date and time:
04/12/2024 14:10:54



Beam angle 50%: 19,8°
Field angle 10%: 46,2°
Cut off angle 2.5%: 52,7°

Spectra



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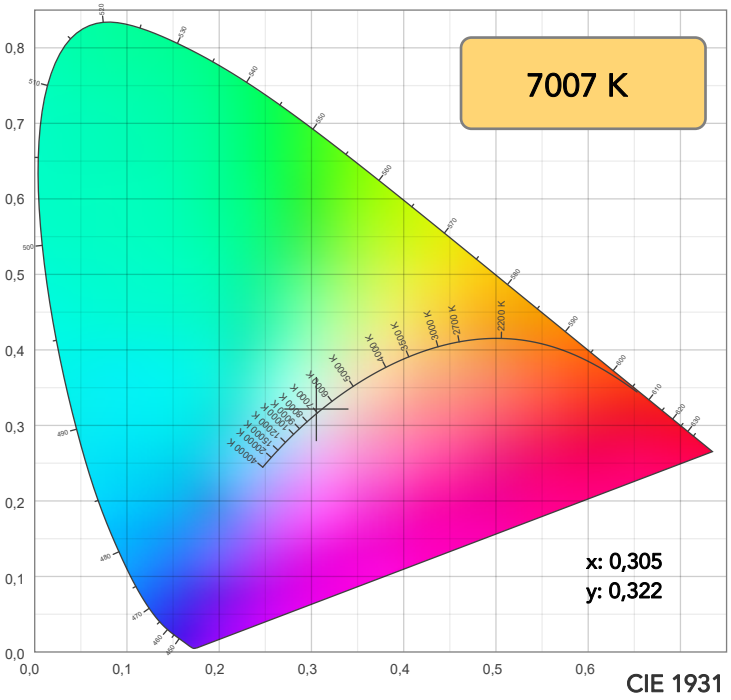
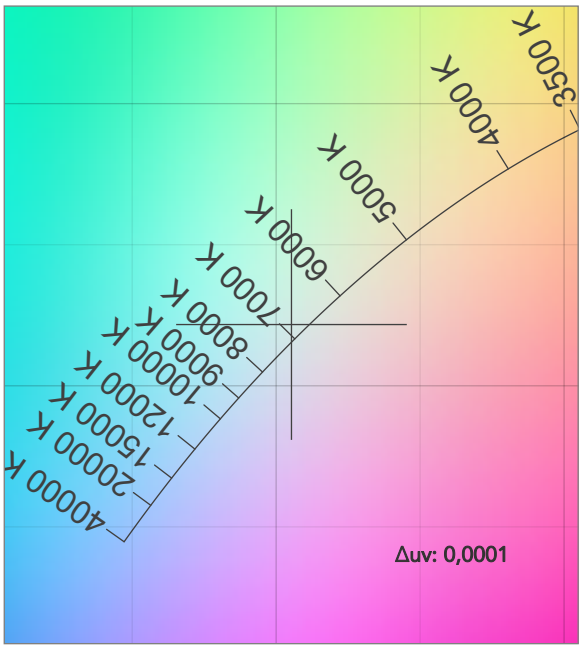
COLOR DETAILS

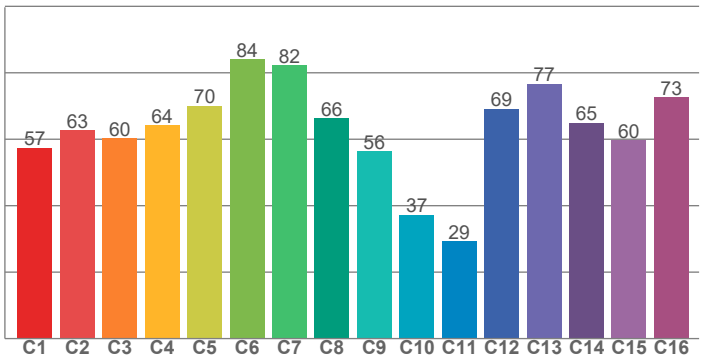


CIE 1931

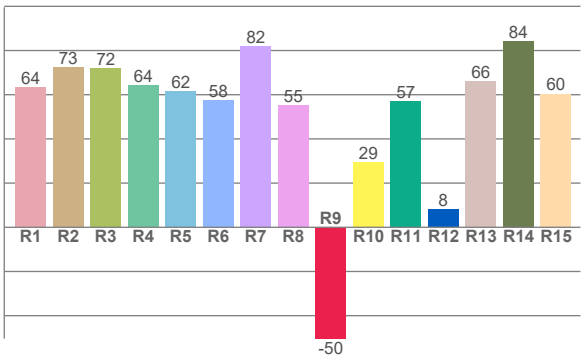


CIE 1931 ZOOM

TM30: 63,2



CRI: 66,1 (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
63,6	72,6	72,0	64,2	61,6	57,5	82,0	55,3	-50,4	29,5	57,3	8,1	66,1	84,3	60,4

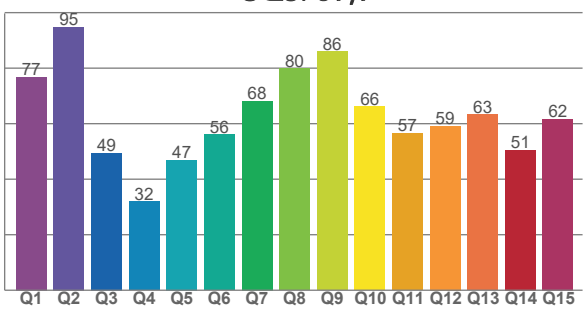
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
57,4	62,6	60,2	64,2	70,1	84,1	82,2	66,3	56,4	37,3	29,2	69,1	76,6	65,0	59,7	72,7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
76,8	94,7	49,5	32,0	47,0	56,1	68,2	79,9	86,0	66,1	56,5	59,2	63,3	50,6	61,7

CQS: 59,9



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
7007 K	66,1	-50,4	63,2	85,9	59,9	36	0,305	0,322	0,0001

TM30 DETAILS

PROLiGHTS

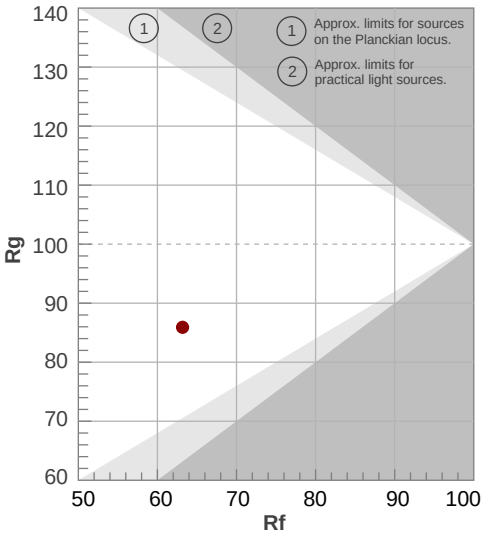
Rf 63,2

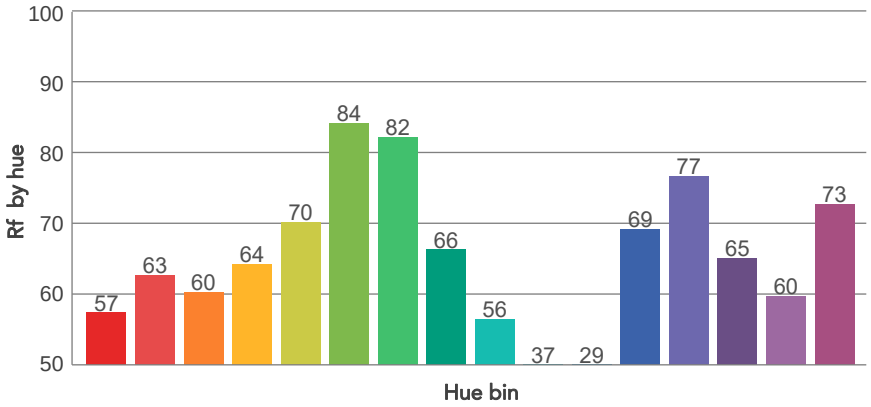
Fidelity index Rf

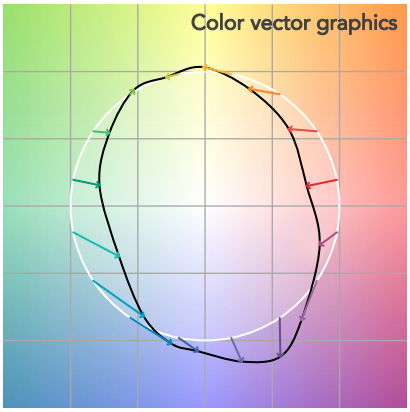
Rg 85,9

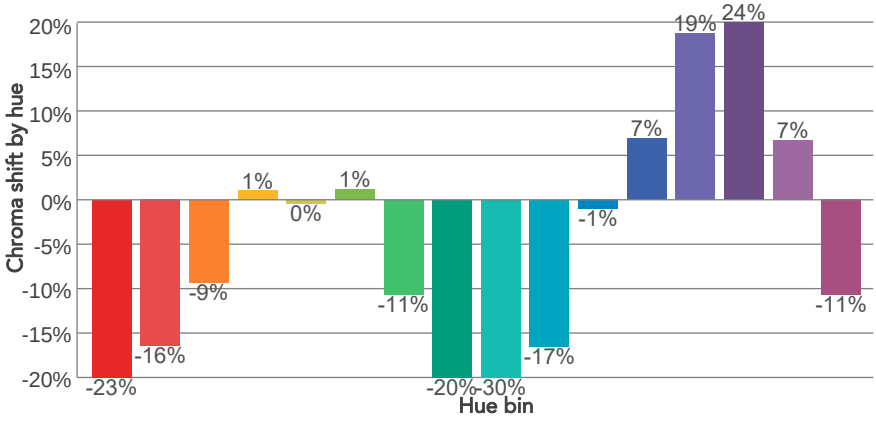
Gammut index

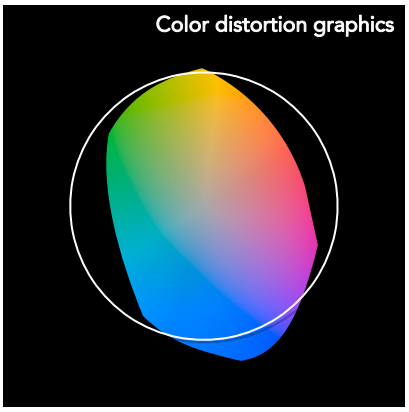
Hue Bin	R_f	Graphic shifts (%) Chroma	Hue
1	57	-23%	0%
2	63	-16%	13%
3	60	-9%	21%
4	64	1%	21%
5	70	0%	10%
6	84	1%	-4%
7	82	-11%	-6%
8	66	-20%	0%
9	56	-30%	24%
10	37	-17%	43%
11	29	-1%	36%
12	69	7%	16%
13	77	19%	4%
14	65	24%	-16%
15	60	7%	-31%
16	73	-11%	-12%

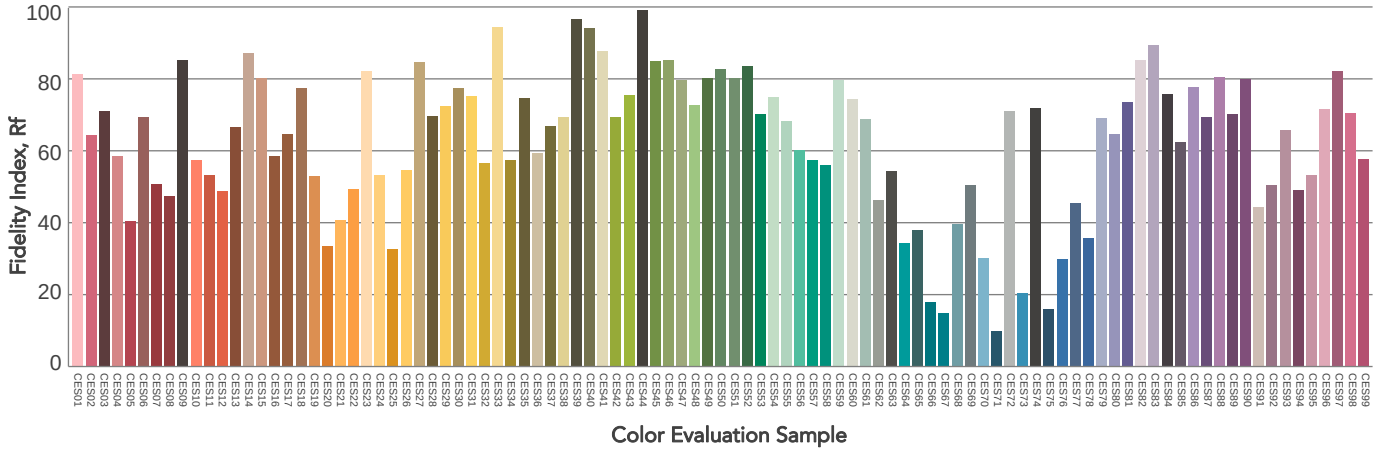












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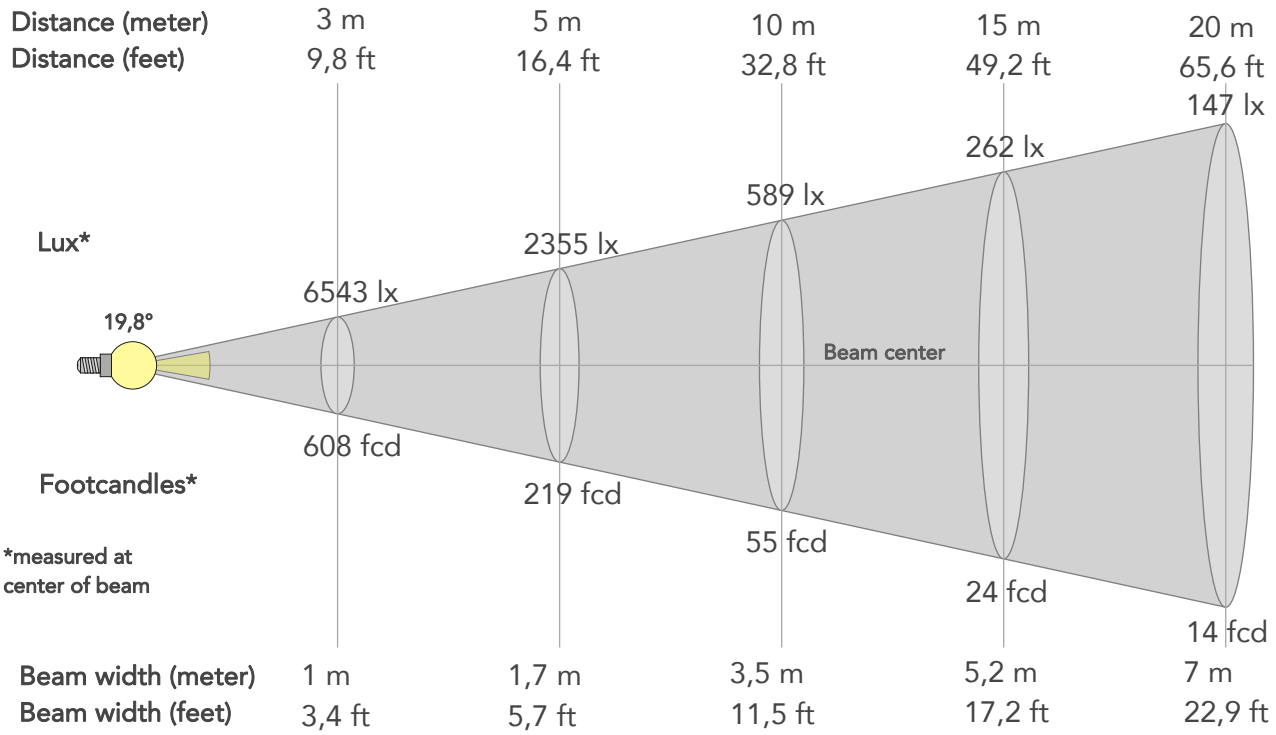
BEAM DETAILS

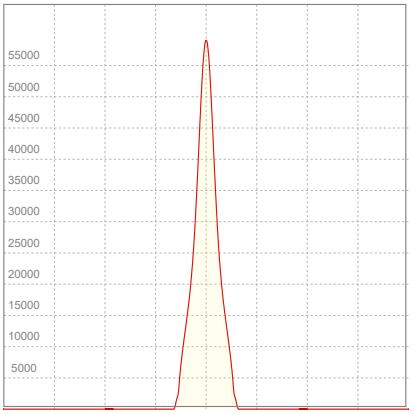
Beam angle 50%	Field angle 10%	Cut off angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
19,8°	46,2°	52,7°	100,0%	100,0%



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	58887lx	14722lx	6543lx	3680lx	2355lx	1047lx	589lx	262lx	147lx	94lx	65lx	37lx	24lx
Footcand.	5471fcd	1368fcd	608fcd	342fcd	219fcd	97fcd	55fcd	24fcd	14fcd	9fcd	6fcd	3fcd	2fcd
Beam wid.	0,3m	0,7m	1m	1,4m	1,7m	2,6m	3,5m	5,2m	7m	8,7m	10,5m	14m	17,5m
Beam wid.	1,2ft	2,3ft	3,4ft	4,6ft	5,7ft	8,6ft	11,5ft	17,2ft	22,9ft	28,7ft	34,4ft	45,9ft	57,3ft

LINEAR DISTRIBUTION DIAGRAM



ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC	Effeciency
224V	1,64A	355,6W	0,97	29lm/W

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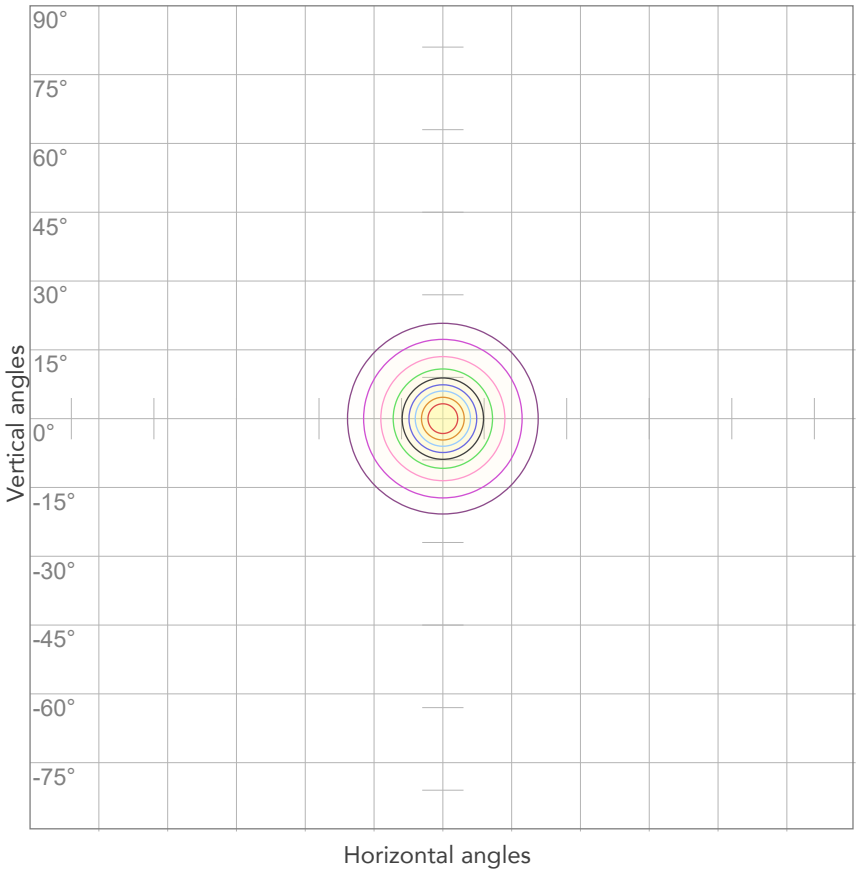
ISO DIAGRAMS

ISO CANDELA DIAGRAM



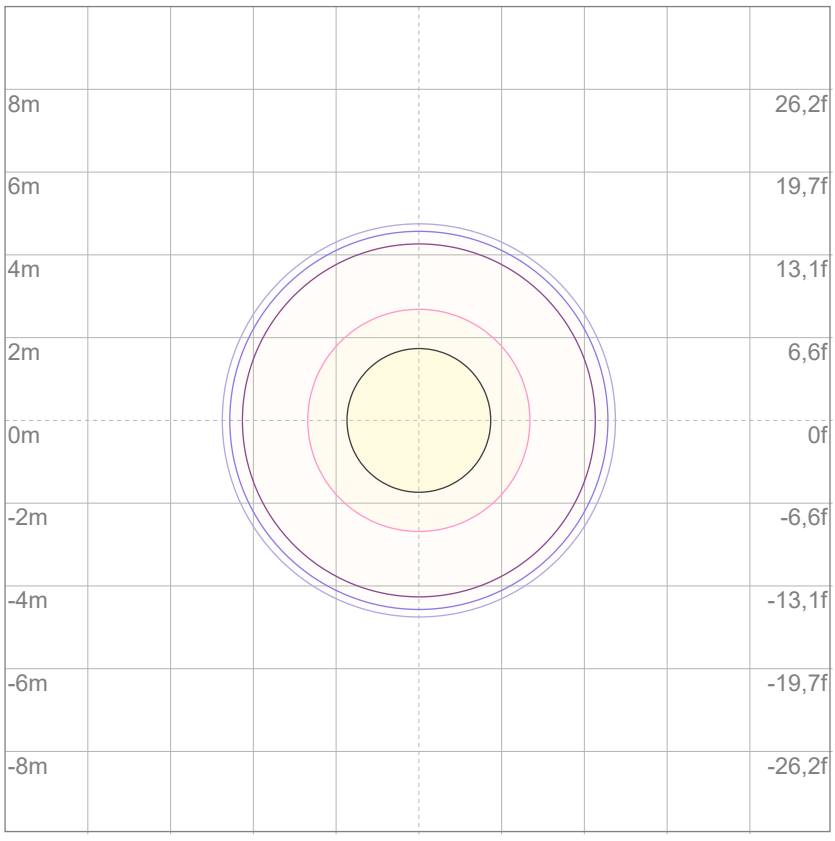
10%	5889 cd
20%	11777 cd
30%	17666 cd
40%	23555 cd
50%	29444 cd
60%	35332 cd
70%	41221 cd
80%	47110 cd

Conditions:

Number of c-planes: 2

Candela at center: 58887 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	17,7 lx
5%	29,4 lx
10%	58,9 lx
30%	177 lx
50%	294 lx

Conditions:

Number of c-planes: 2

Lux at center: 589 lx

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

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Total lux output at 20mt:

363268 lx @ 20mt

Foot candela output at

33761 fcd @ 20mt

PRODUCT NAME:

ASTRAHYB260IP

MEASURAMENT CONDITIONS:

Beam angle:

Min Zoom - Spot Mode

Target:

Full On

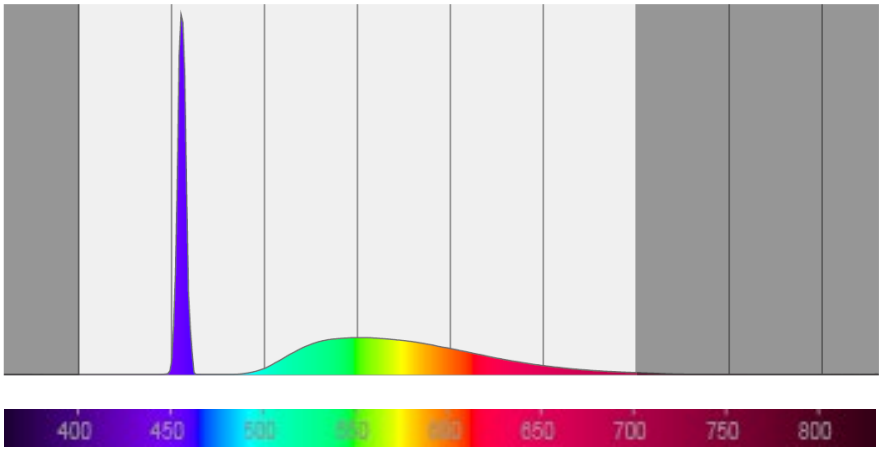
Operator:

Salvatore Giglio

Date and time:

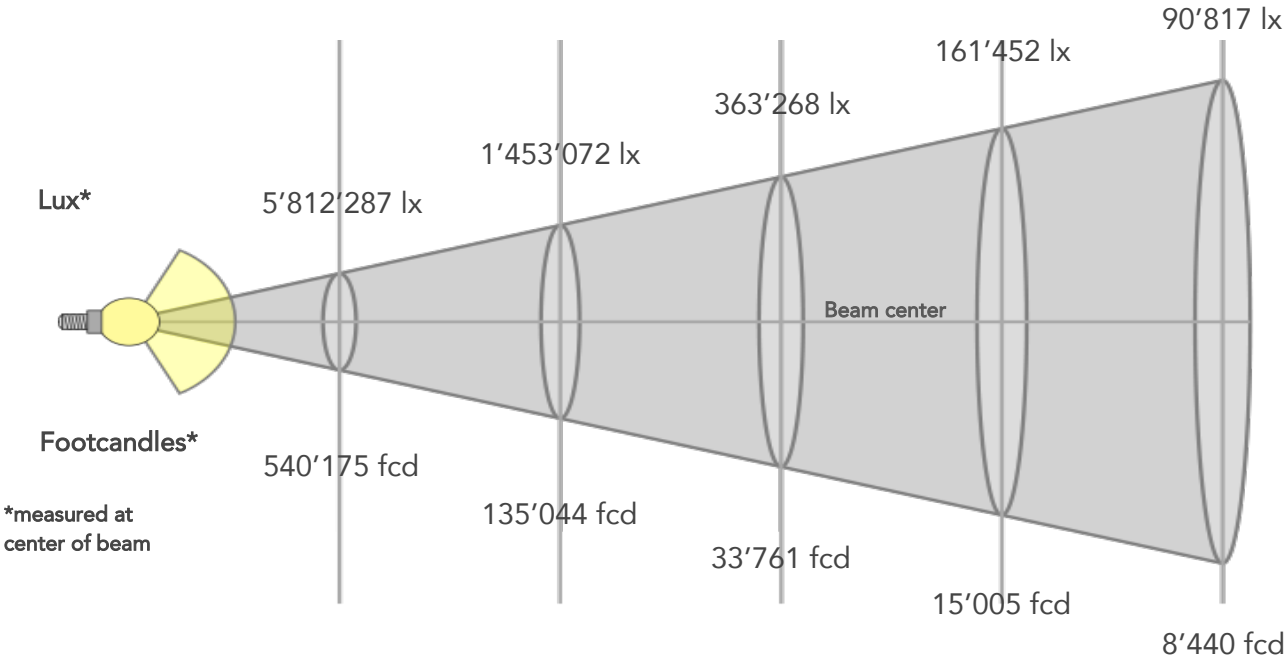
04/12/2024 12:10:34

Spectra



BEAM DETAILS

Distance (meter)	5 m	10 m	20 m	30 m	40 m
Distance (feet)	16,4 ft	32,8 ft	65,6 ft	98,4 ft	131,2 ft



BEAM INTENSITIES AND WIDTHS

Distance	1m	3m	5m	10m	15m	20m	25m	30m	40m	50m
Distance	3,3ft	9,8ft	16,4ft	32,8ft	49,2ft	65,6ft	82ft	98,4ft	131,2ft	164ft
Lux	145'307'175	16'145'242	5'812'287	1'453'072	645'810	363'268	232'491	161'452	90'817	58'123
Footcand.	13'504'384	1'500'487	540'175	135'044	60'019	33'761	21'607	15'005	8'440	5'402

ELECTRICAL SPECIFICATIONS

Input voltage	Input current	Input power	Power FC
224V	1,64A	355,8W	0,97

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