

ORON® H2

PHOTOMETRIC TEST REPORT

Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

ORON® H2

Table of Contents

Report Introduction 3
Overview 4
Maximum Output 5
Zoom Wide 8
Zoom Mid 9
Zoom Narrow 10
Zoom Wide High CRI 11
Zoom Mid High CRI 14
Zoom Narrow High CRI 15
Zoom Wide CTO 16
Zoom Mid CTO 19
Zoom Narrow CTO 20
5600K High CRI 21
3200K High CRI 23

Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

Report Introduction

About this report

We measure total luminous flux with state-of-the-art equipment, such as an integrating sphere and a goniophotometer, based on a 6-Axis industry Robot. In this process we rely on our professional Cameo photometric laboratory or certified partners. Our measurements reflect the utilised flux emitted from the luminaire at all radiating angles considering the zoom range.
We process our measurement data in a specialized software to calculate all photometric data. This photometric report includes spectra, light distribution, TM-30-18, TLCI, and many other standardised reports. Additionally, we provide photometric data in IES and LDT file format.

Measurement conditions

- Stabilised laboratory room temperature for absolute consistency
- Stabilised luminaires (max. +-0.5% flux for at least 15min)
- Goniophotometer resolution: gamma = 5° and C-level = 0.1°
- Distance > photometric limit distance (tolerance < 1.0%)
- Calibrated and accurate tools

Equipment

- Goniometer with 6-Axis Robogonio by Opsira including Spectral Radiometer Spec`3 and frc-f-I, a fast Class-L Photometer for flicker etc.
- Integrating sphere UKU800 by Opsira
- Spectral Radiometer Spec`3 by Opsira
- Luxmeter Gossen MavoLux 5032-C
- Handheld-Spectrometer Gossen MavoSpec M600A
- Handheld-Spectrometer UPR-Tec MK350S Premium

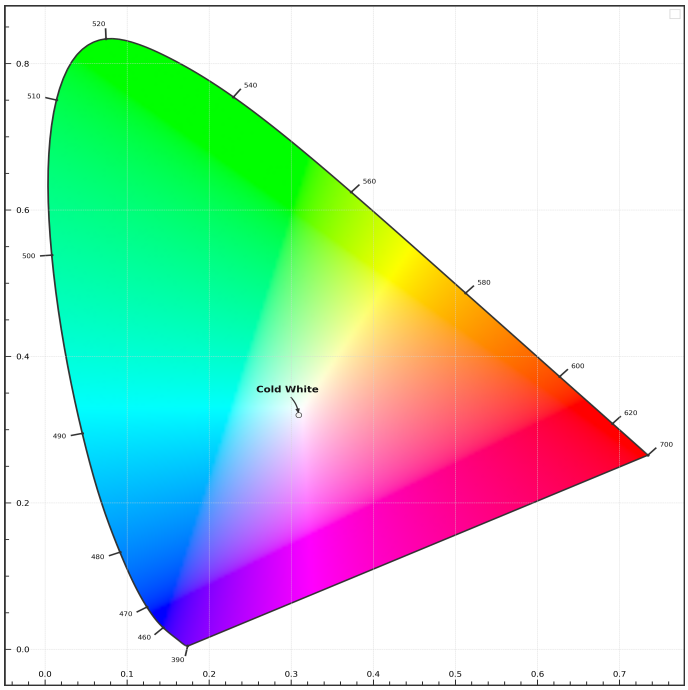
Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

ORON® H2

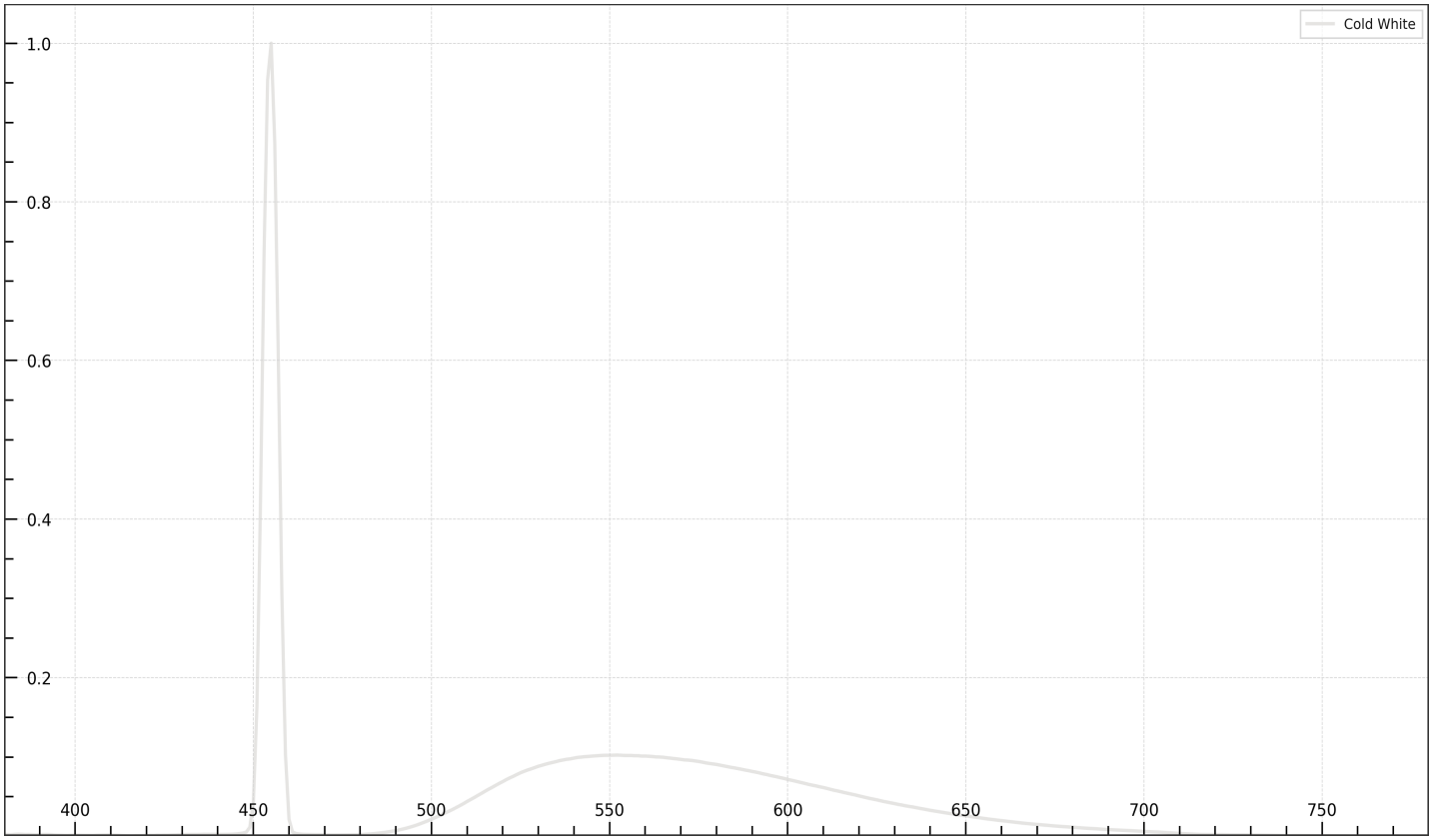
Overview

LED Colours	Lum flux [lm]	x	y
Cold White	7557	0.3090	0.3201

CIE 1931 Chromaticity Diagram - 2° Standard Observer



Spectral Distribution for Colours (Wavelength [nm] --> relative Intensity)



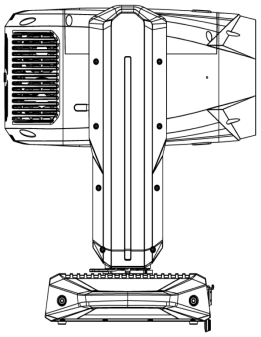
Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

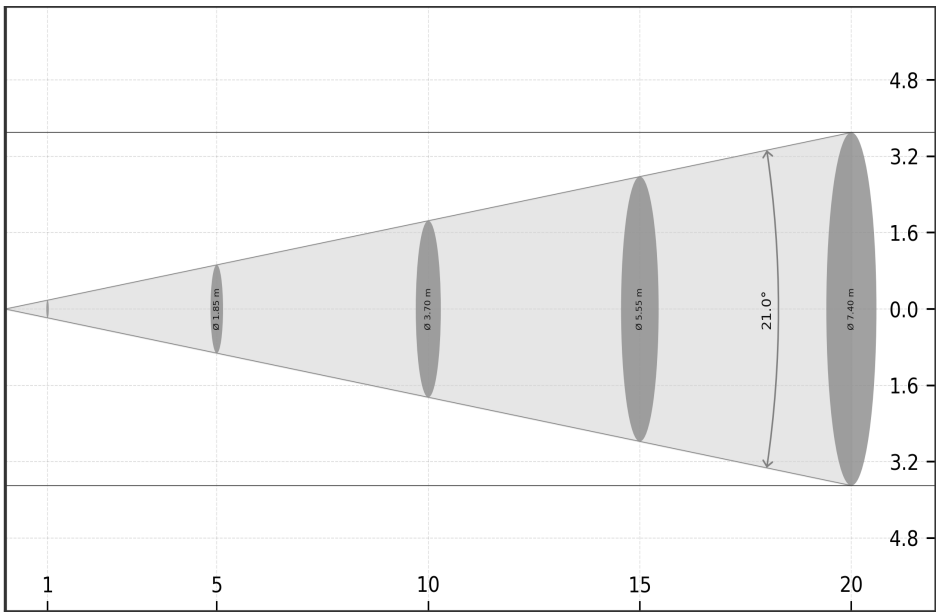
ORON® H2

Maximum Output – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
21.0	34.5	7143	342	20.9

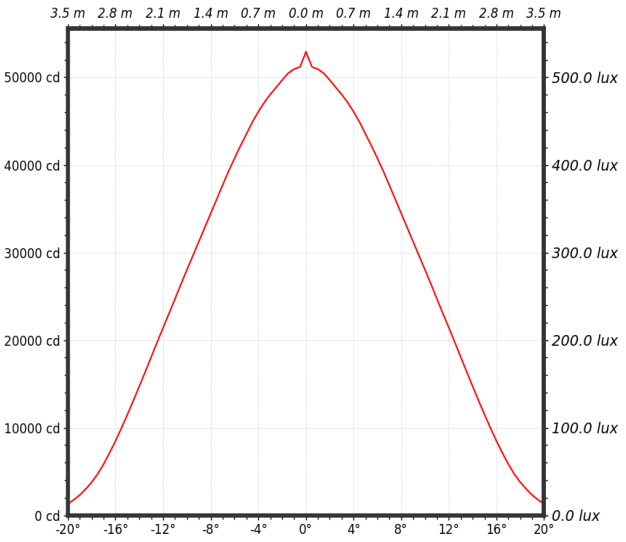
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])

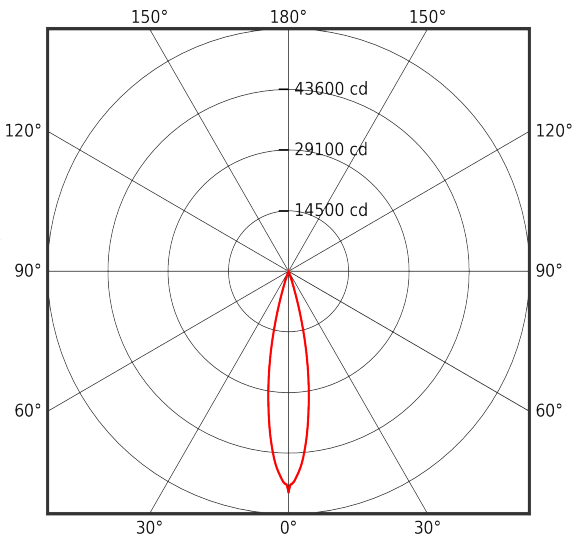




Distance [m]	1	5	10	15	20
Illuminance [lx]	52887	2115	529	235	132
Diameter [m]	0.37	1.85	3.70	5.55	7.40

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 220; Focus: 145

Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

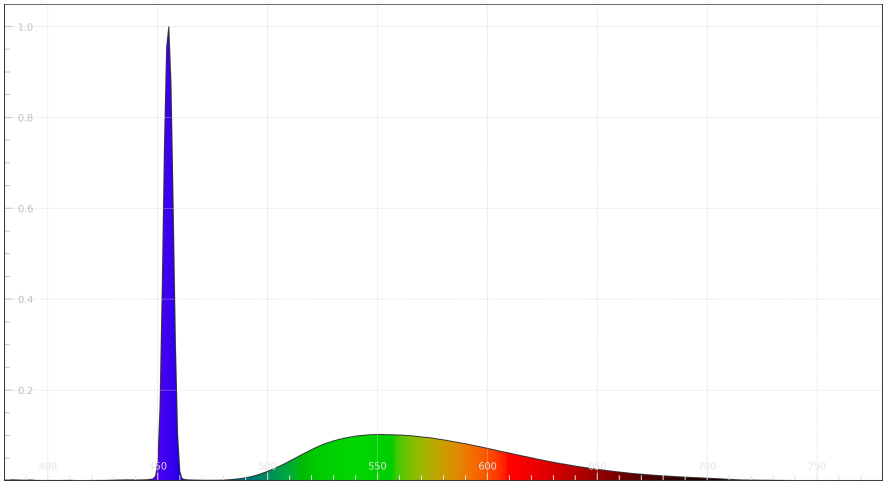
ORON® H2

Maximum Output – Colorimetric Report

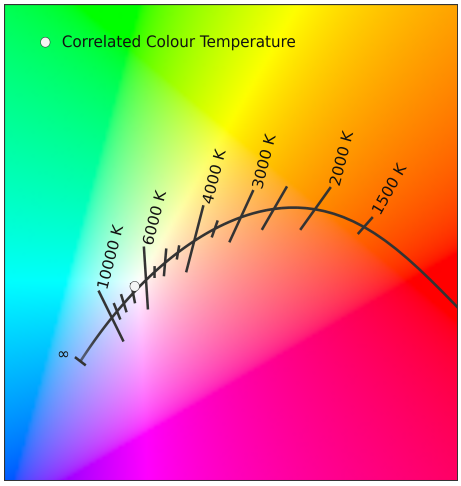
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	6796	Luminous Flux [lm]	**Lum Flux**	7143
Colour Deviation from Black	**D_{uv}**	0.0005	Colour Rendering Index	**CRI Ra**	68
Colour Coordinate CIE 1931	**x**	0.3090	Red Component	**CRI R9**	-40
Colour Coordinate CIE 1931	**y**	0.3201	Colour Fidelity	**TM30 R_f**	64
Colour Coordinate CIE 1976	**u'**	0.1986	Colour Gamut	**TM30 R_g**	89
Colour Coordinate CIE 1976	**v'**	0.4629	Television Lighting Consistency Index	**TLCI**	32
Spectral Similarity Index	**SSI[CIE D6796]**	31			

CIE 1931 2° Standard Observer (Wavelength [nm] --> relative Spectral Distribution)

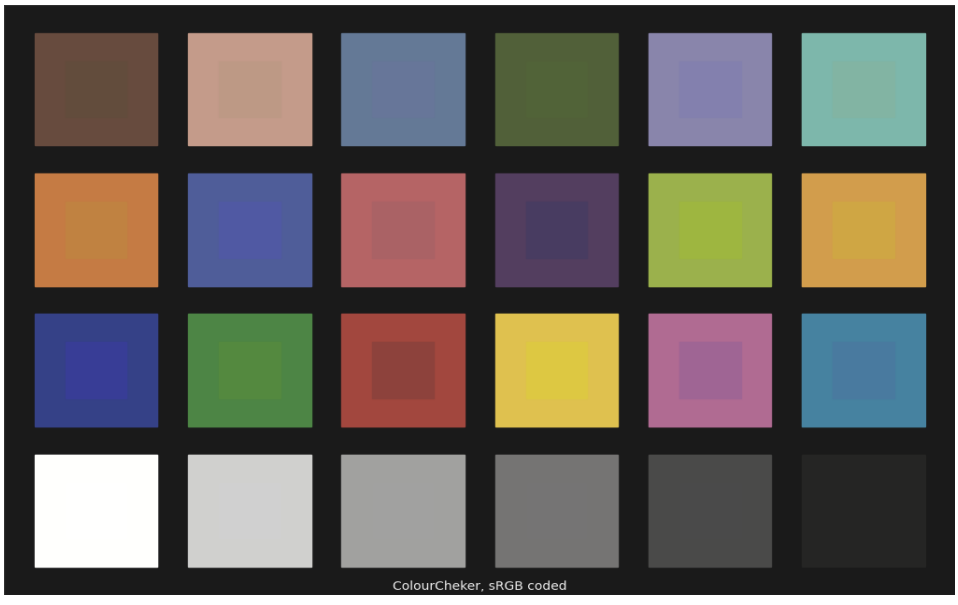


Colour Temperature

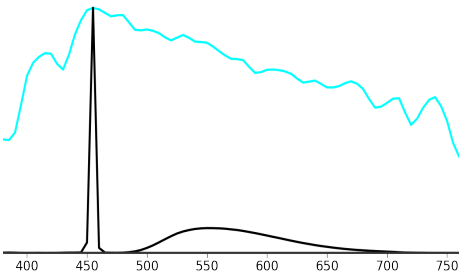


Television Lighting Consistency Index-2012

CCT = D6796 (0.1) TLCI-2012 : 32 (D6796)



Sector	Lightness	Chroma	Hue
R	+++++	+++	+
R/Y	0	+	-----
Y	--	--	-------
Y/G	--	---	0
G	---	--	++++
G/C	+	+	+++
C	++	0	---
C/B	++++	-	10*-
B	0	-----	-----
B/M	+++	---	+++
M	++++	-	+++++
M/R	++++++	0	+++++++

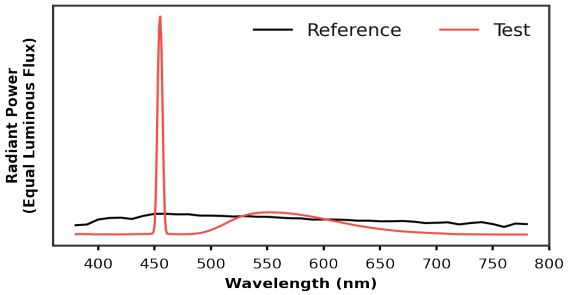


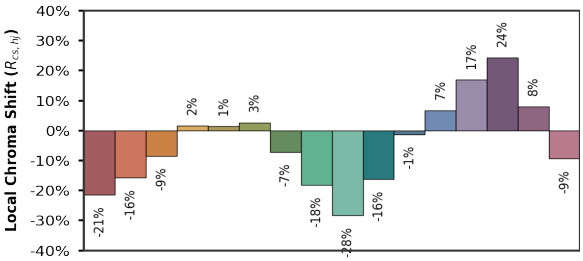
Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 220; Focus: 145

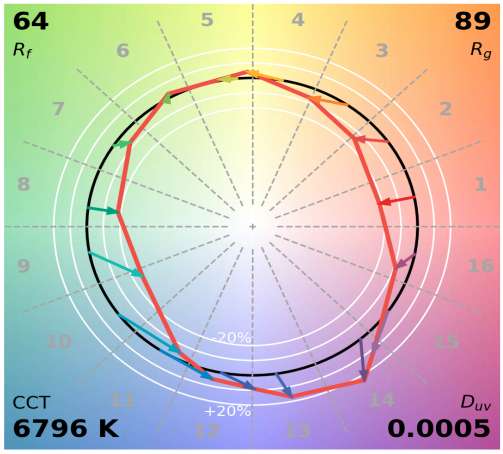
Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

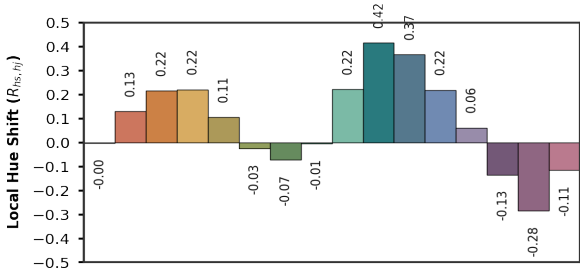
Maximum Output – Colorimetric Report

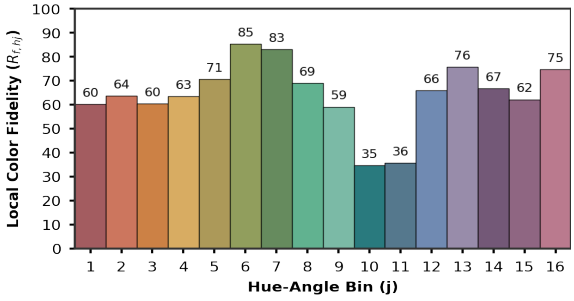
IES TM-30-18 Colour Rendition Report

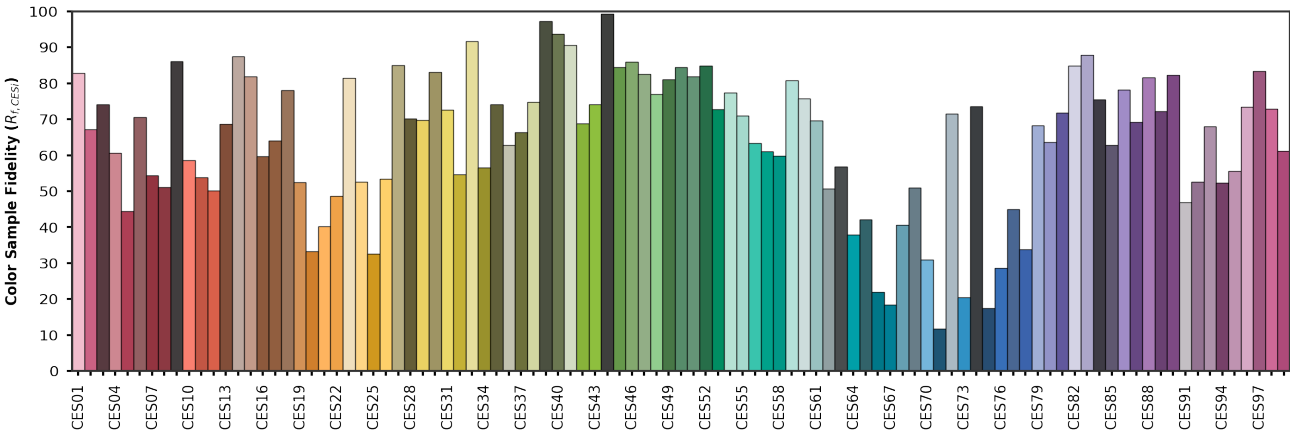












x	**0.3090**
y	**0.3201**
u′	**0.1986**
v′	**0.4629**

CIE 13.31-1995
(CRI)
R_a **68**
R_9 **-40**

Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 220; Focus: 145

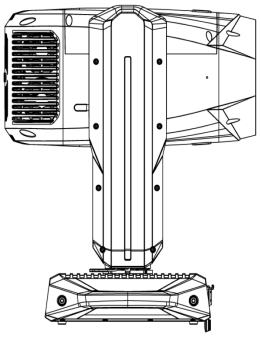
Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

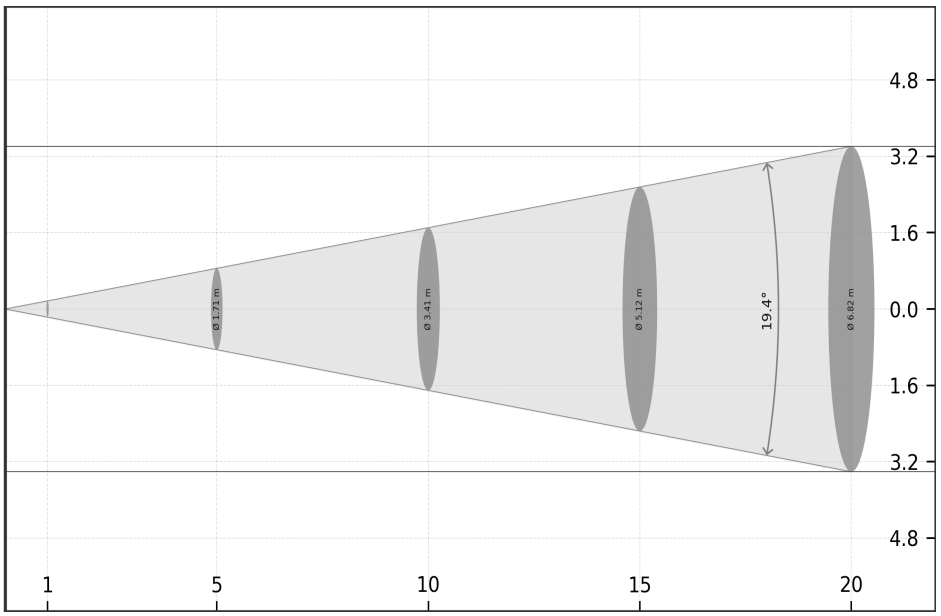
ORON® H2

Zoom Wide – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
19.4	30.4	6646	343	19.4

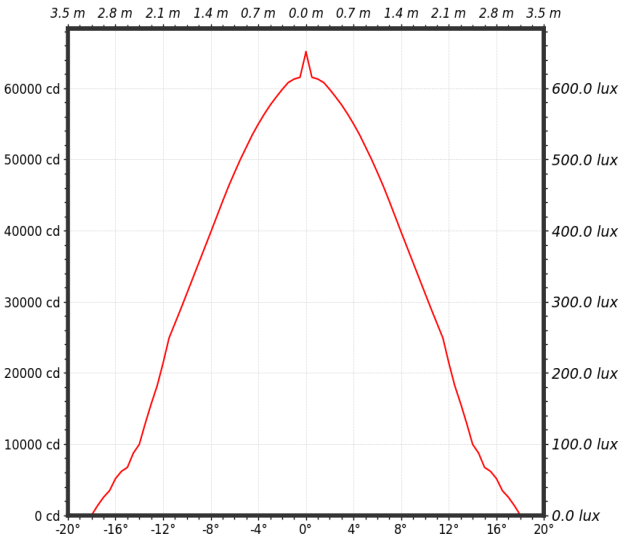
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])



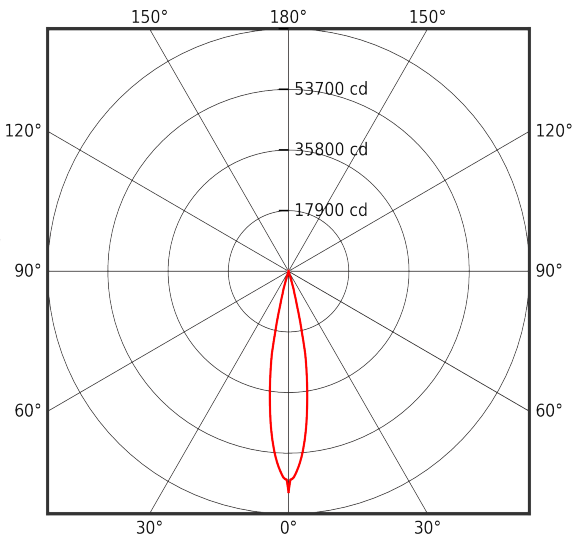


Distance [m]	1	5	10	15	20
Illuminance [lx]	65105	2604	651	289	163
Diameter [m]	0.34	1.71	3.41	5.12	6.82

Light Distribution Diagrams / Illuminance



Average Light Distribution / Illuminance over all planes



Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 255; Focus: 105

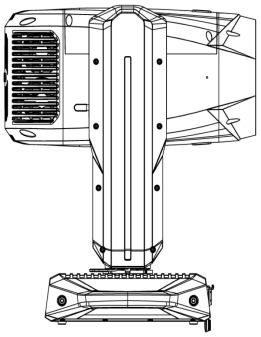
Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

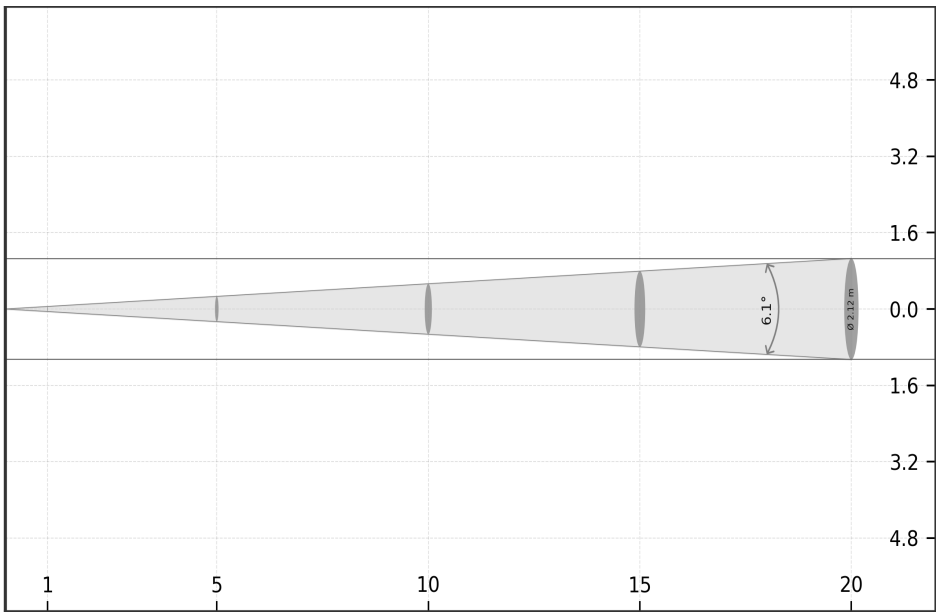
ORON® H2

Zoom Mid – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
6.1	10.1	5737	342	16.8

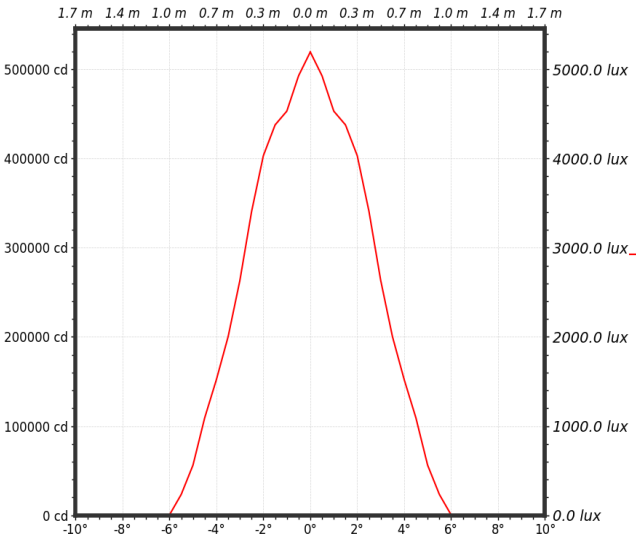
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])

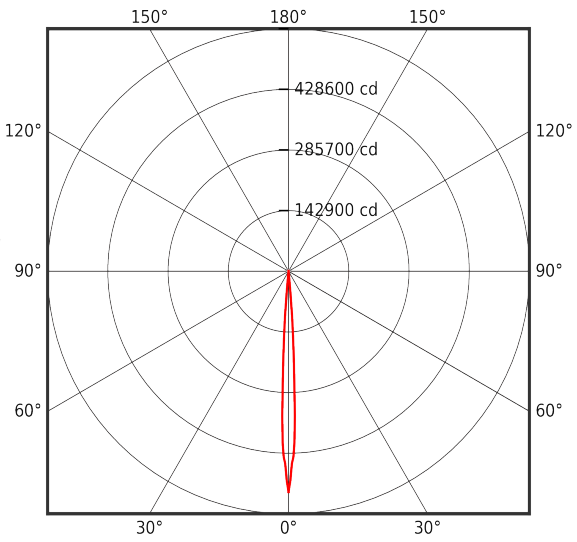




Distance [m]	1	5	10	15	20
Illuminance [lx]	519473	20779	5195	2309	1299
Diameter [m]	0.11	0.53	1.06	1.59	2.12

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 128; Focus: 112

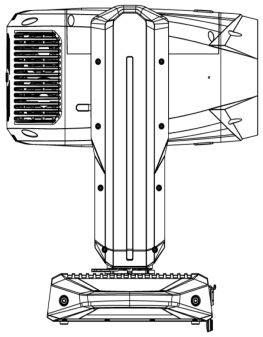
Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

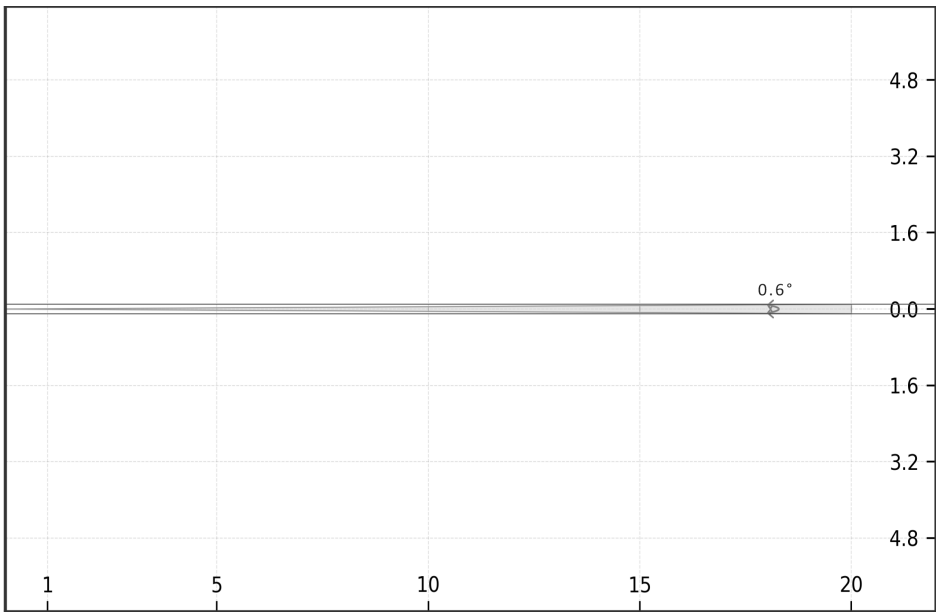
ORON® H2

Zoom Narrow – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
0.6	1.8	2970	322	9.2

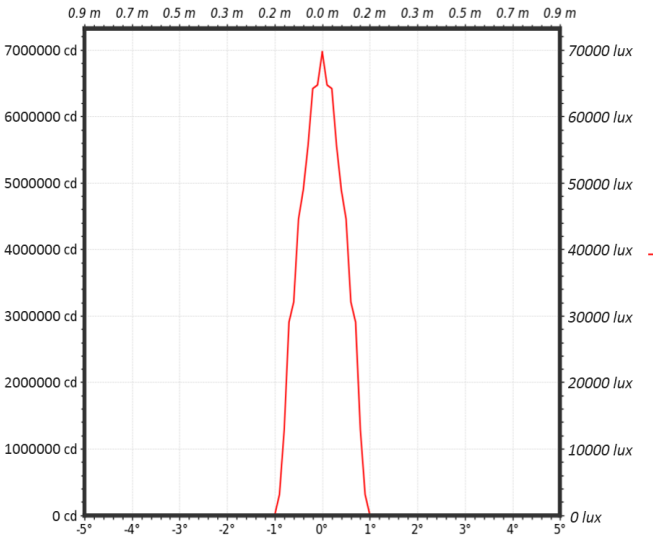
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])

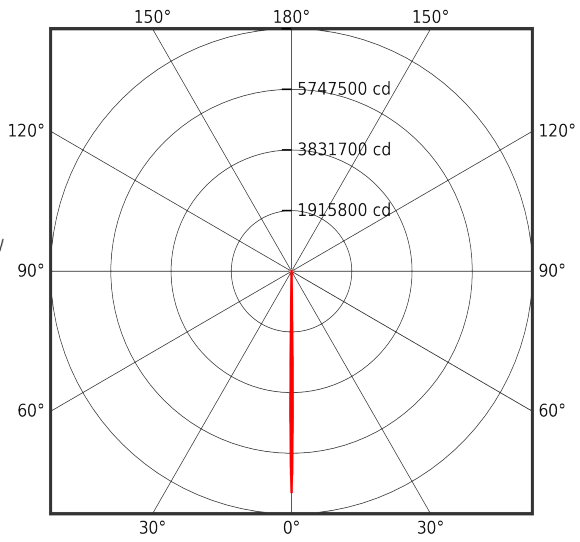




Distance [m]	1	5	10	15	20
Illuminance [lx]	6966641	278666	69666	30963	17417
Diameter [m]	0.01	0.05	0.10	0.15	0.19

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 99%; CMY: Off; CTO: Off; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 000; Focus: 022

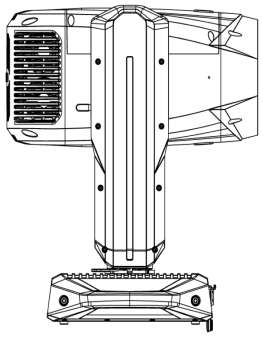
Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

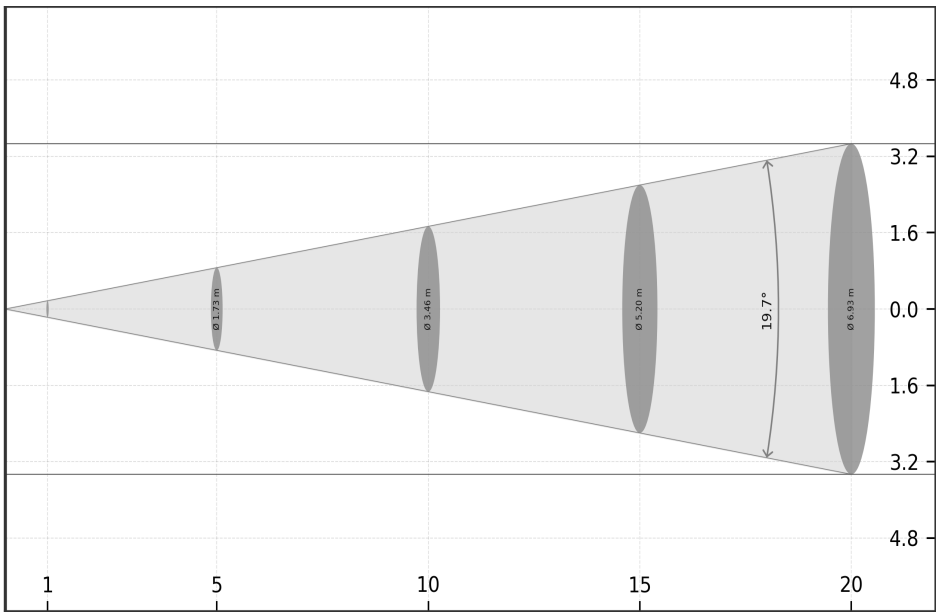
ORON® H2

Zoom Wide High CRI – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
19.7	30.9	4850	342	14.2

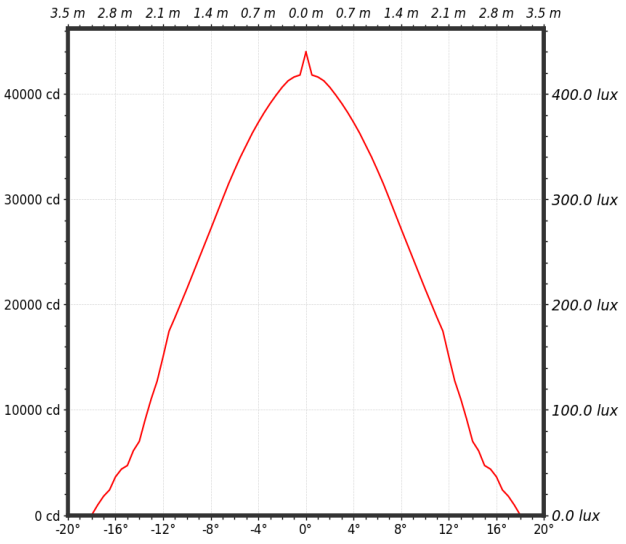
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])

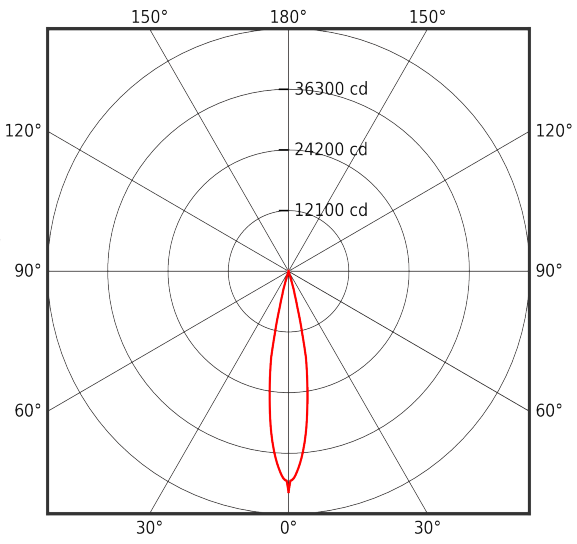




Distance [m]	1	5	10	15	20
Illuminance [lx]	43980	1759	440	195	110
Diameter [m]	0.35	1.73	3.46	5.20	6.93

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 255; Focus: 105

Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

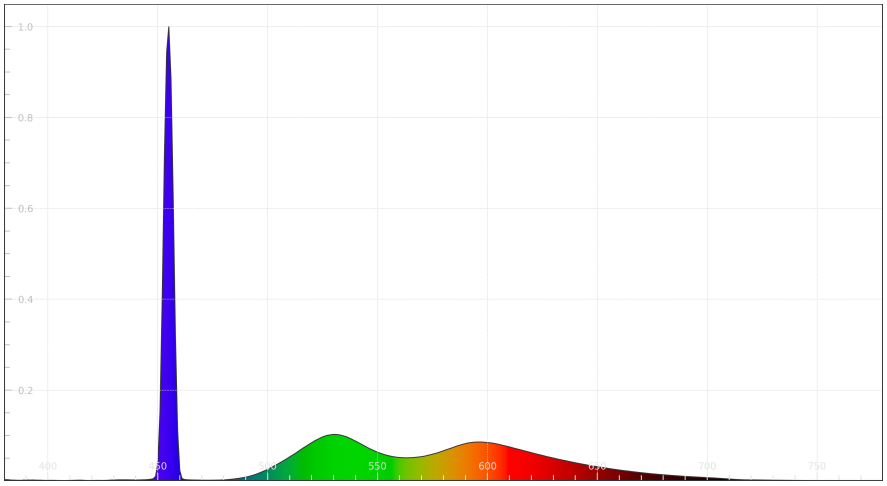
ORON® H2

Zoom Wide High CRI – Colorimetric Report

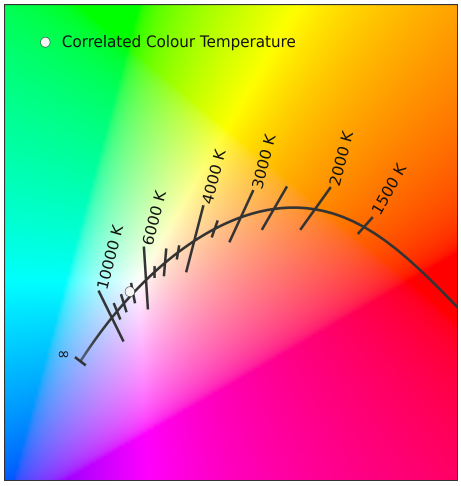
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	7223	Luminous Flux [lm]	**Lum Flux**	4850
Colour Deviation from Black	**D_{uv}**	-0.0114	Colour Rendering Index	**CRI Ra**	87
Colour Coordinate CIE 1931	**x**	0.3075	Red Component	**CRI R9**	57
Colour Coordinate CIE 1931	**y**	0.2968	Colour Fidelity	**TM30 R_f**	78
Colour Coordinate CIE 1976	**u'**	0.2068	Colour Gamut	**TM30 R_g**	103
Colour Coordinate CIE 1976	**v'**	0.4492	Television Lighting Consistency Index	**TLCI**	64
Spectral Similarity Index	**SSI[CIE D7223]**	33			

CIE 1931 2° Standard Observer (Wavelength [nm] --> relative Spectral Distribution)

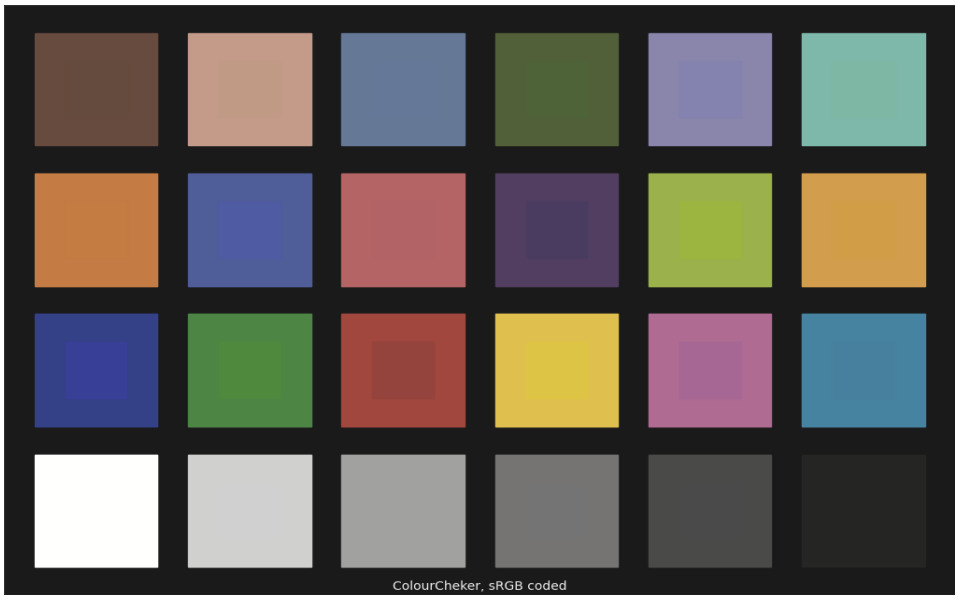


Colour Temperature

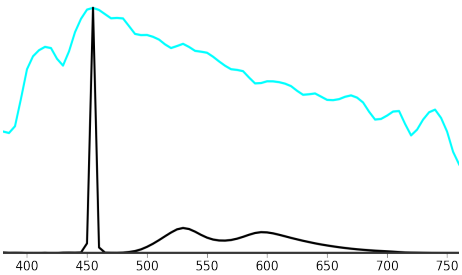


Television Lighting Consistency Index-2012

CCT = D7223 (-2.1) TLCI-2012 : 64 (D7223)



Sector	Lightness	Chroma	Hue
R	++	+	+
R/Y	0	0	--
Y	0	-	--
Y/G	-	---	-
G	--	---	++
G/C	0	-	++++
C	0	0	+
C/B	+	0	-
B	0	---	--
B/M	++	-	++++
M	++	0	++++
M/R	+++	0	++++

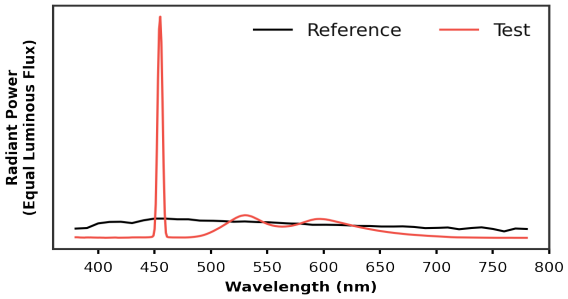


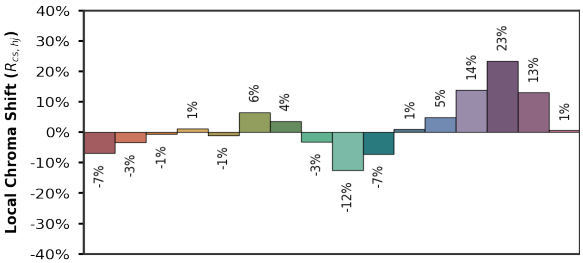
Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 255; Focus: 105

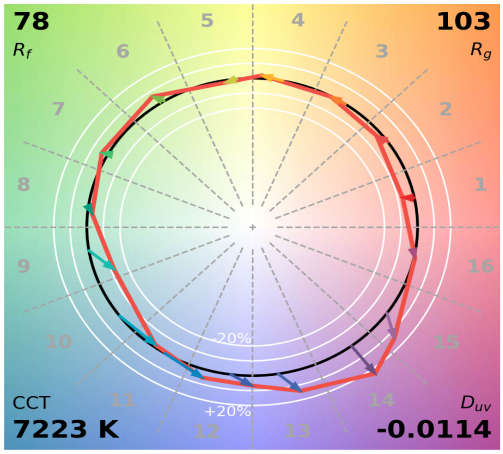
Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

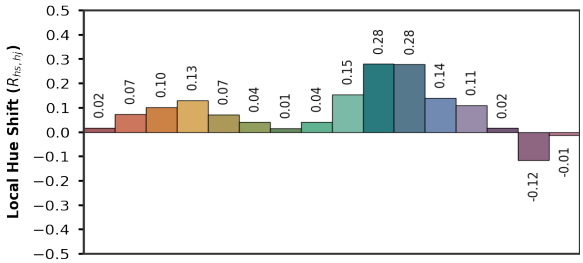
Zoom Wide High CRI – Colorimetric Report

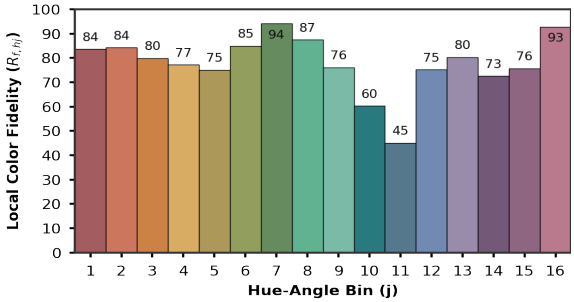
IES TM-30-18 Colour Rendition Report

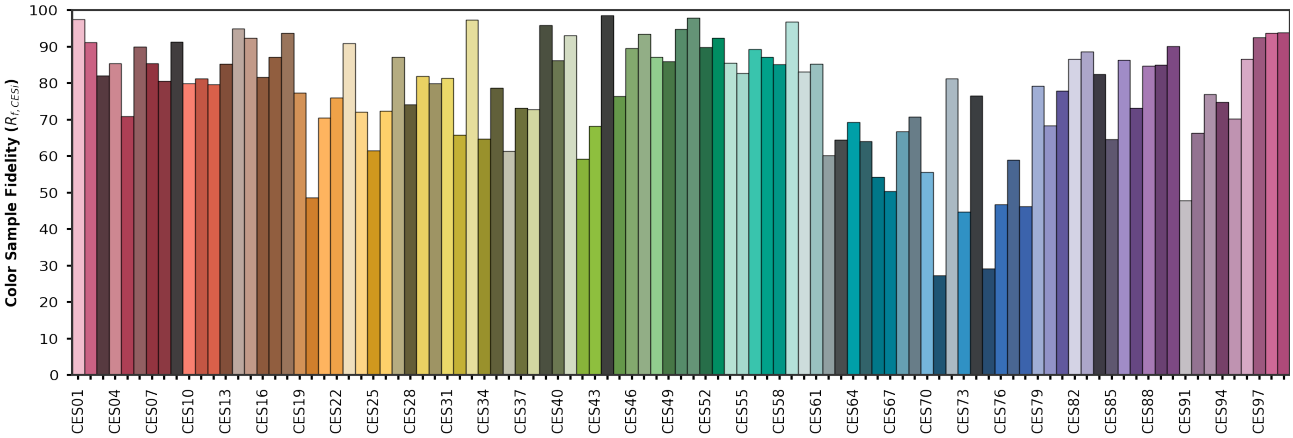












x	0.3075
y	0.2968
u'	0.2068
v'	0.4492

CIE 13.31-1995
(CRI)
R_a **87**
R_9 **57**

Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 255; Focus: 105

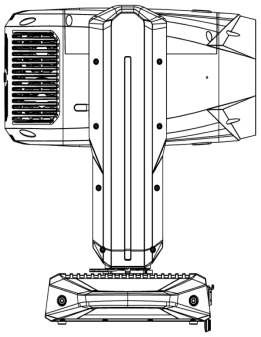
Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

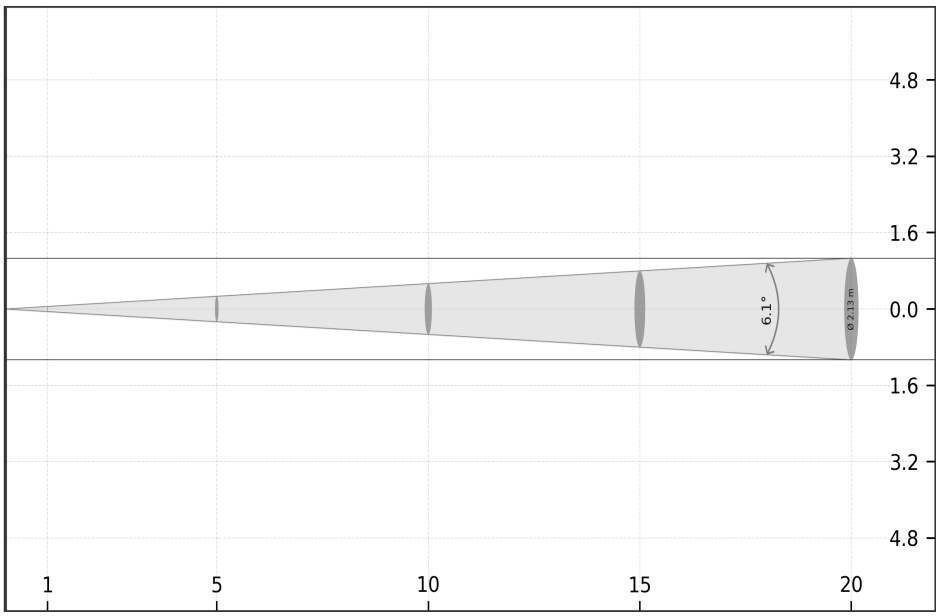
ORON® H2

Zoom Mid High CRI – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
6.1	10.2	3949	341	11.6

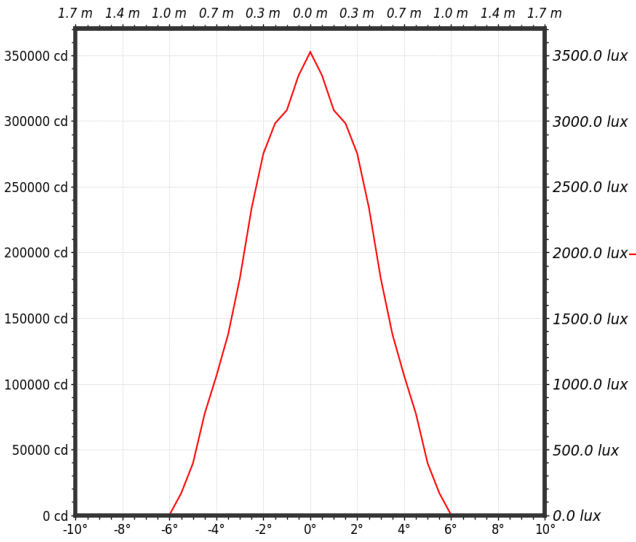
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])

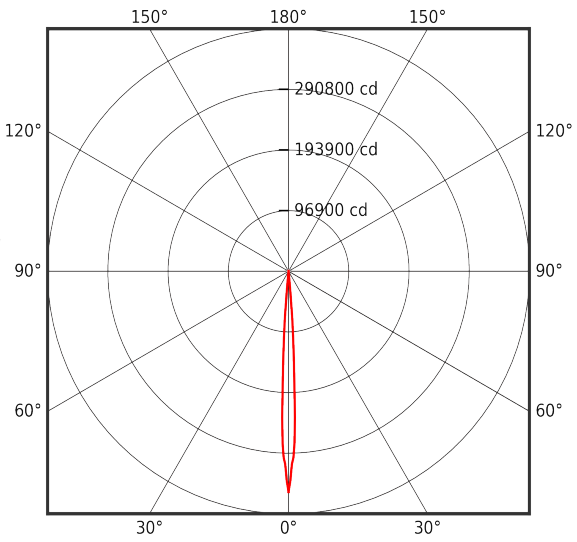




Distance [m]	1	5	10	15	20
Illuminance [lx]	352539	14102	3525	1567	881
Diameter [m]	0.11	0.53	1.07	1.60	2.13

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 100%; CMY: Off; CTO: Off; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 128; Focus: 112

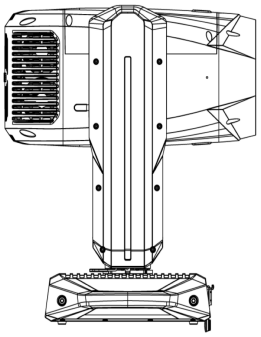
Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

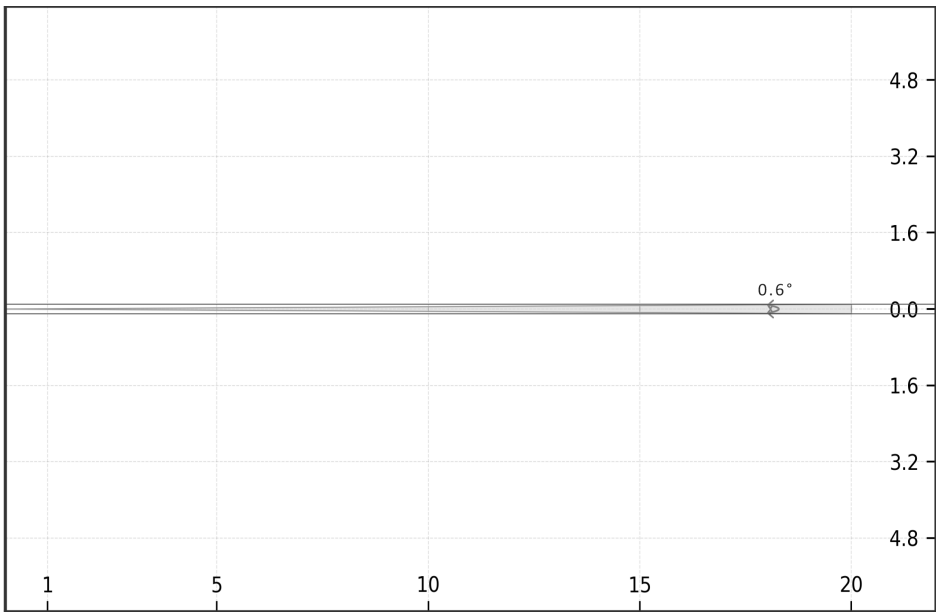
ORON® H2

Zoom Narrow High CRI – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
0.6	1.8	2838	322	8.8

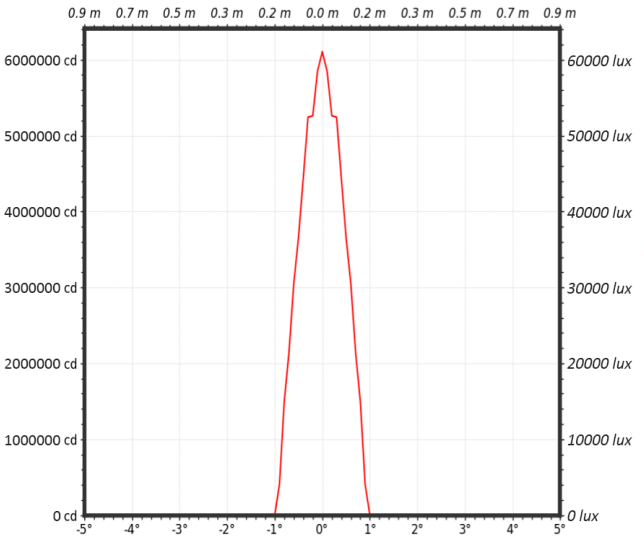
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])

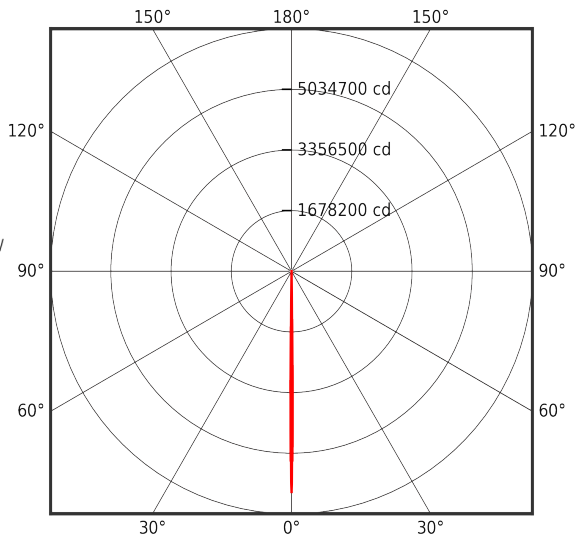




Distance [m]	1	5	10	15	20
Illuminance [lx]	6102707	244108	61027	27123	15257
Diameter [m]	0.01	0.05	0.10	0.15	0.19

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 99%; CMY: Off; CTO: Off; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 000; Focus: 022

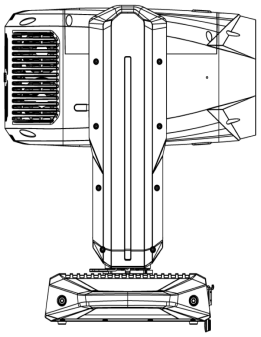
Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

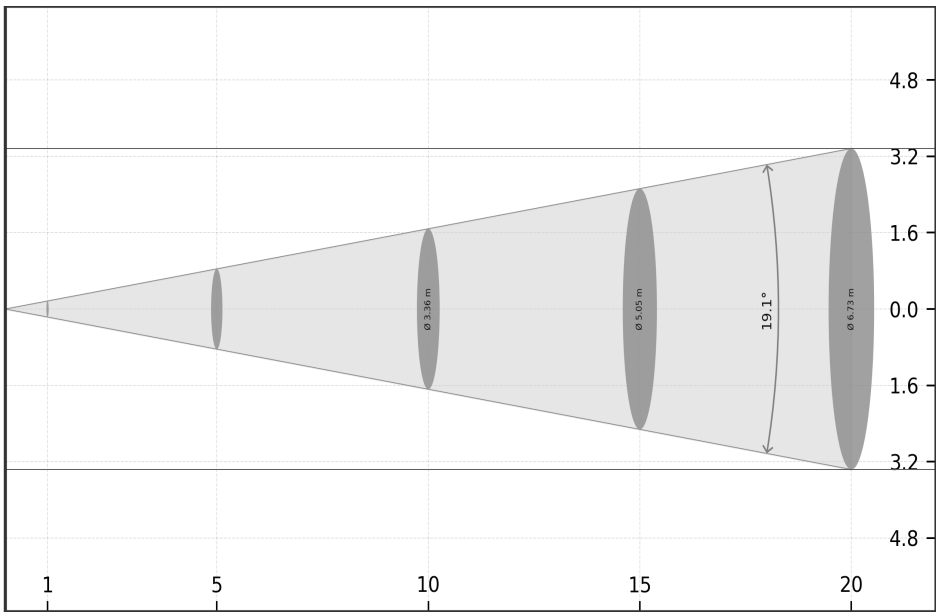
ORON® H2

Zoom Wide CTO – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
19.1	30.1	3689	342	10.8

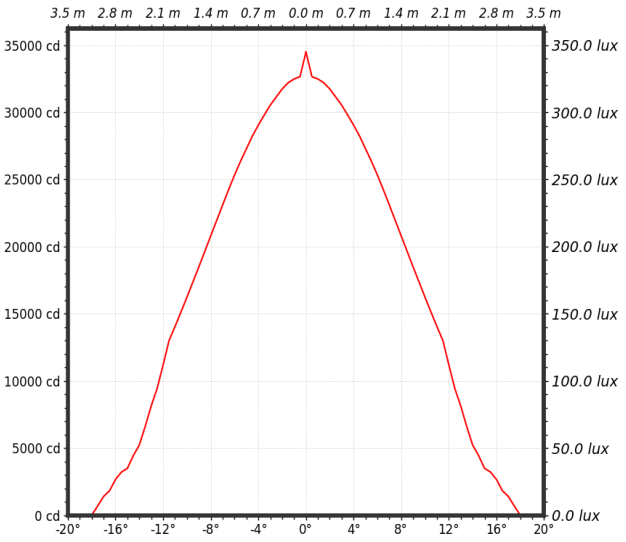
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])

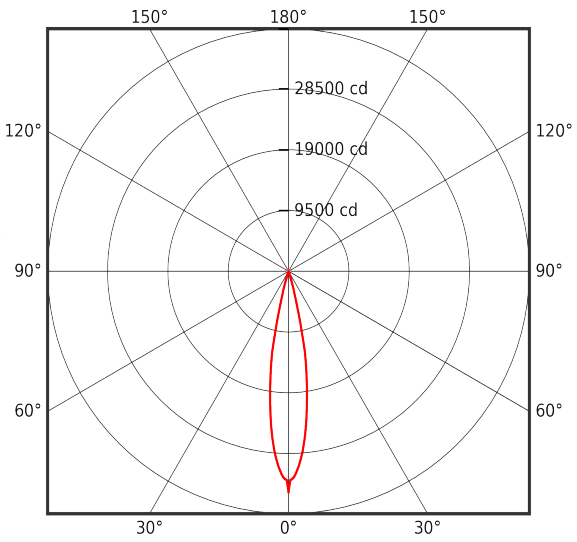




Distance [m]	1	5	10	15	20
Illuminance [lx]	34490	1380	345	153	86
Diameter [m]	0.34	1.68	3.36	5.05	6.73

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 100%; CMY: Off; CTO: 255; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 255; Focus: 105

Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

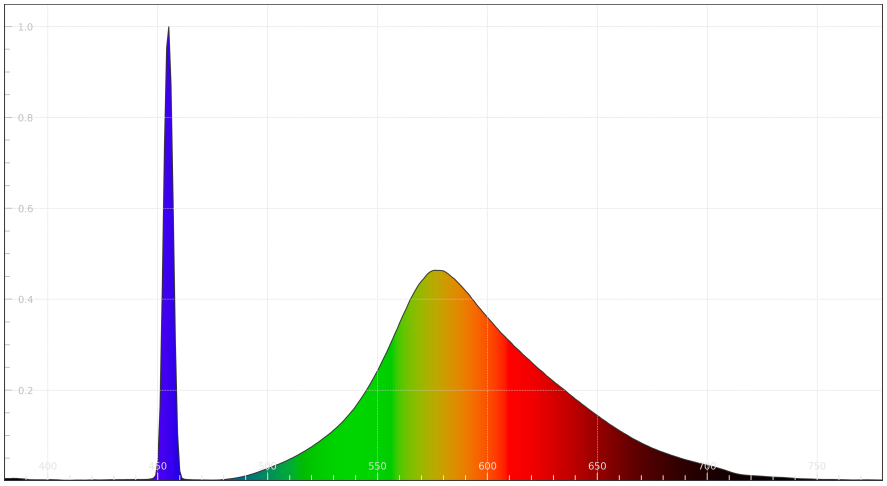
ORON® H2

Zoom Wide CTO – Colorimetric Report

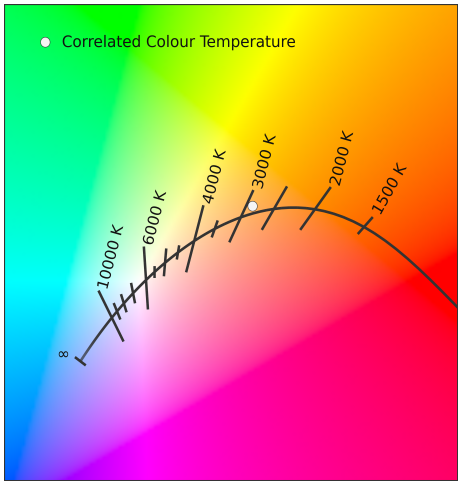
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	2876	Luminous Flux [lm]	**Lum Flux**	3689
Colour Deviation from Black	**D_{uv}**	-0.0002	Colour Rendering Index	**CRI Ra**	50
Colour Coordinate CIE 1931	**x**	0.4458	Red Component	**CRI R9**	-100
Colour Coordinate CIE 1931	**y**	0.4065	Colour Fidelity	**TM30 R_f**	55
Colour Coordinate CIE 1976	**u'**	0.2552	Colour Gamut	**TM30 R_g**	82
Colour Coordinate CIE 1976	**v'**	0.5237	Television Lighting Consistency Index	**TLCI**	1
Spectral Similarity Index	**SSI[P2876]**	43			

CIE 1931 2° Standard Observer (Wavelength [nm] --> relative Spectral Distribution)

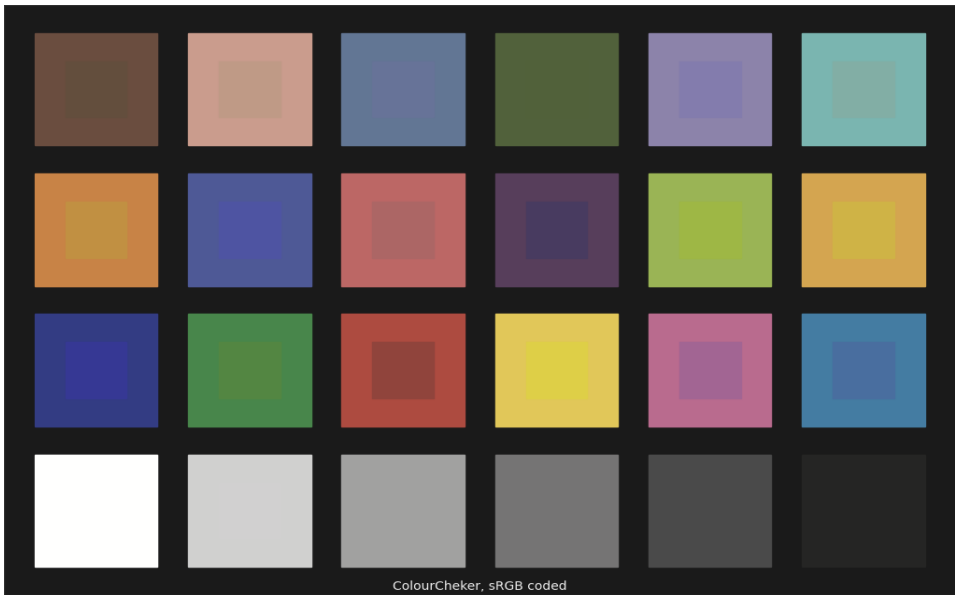


Colour Temperature

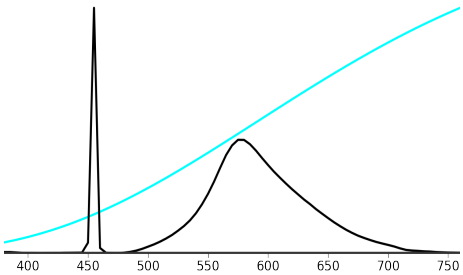


Television Lighting Consistency Index-2012

CCT = P2876 (-0.0) TLCI-2012 : 1 (P2876)



Sector	Lightness	Chroma	Hue
R	+++++++++	+++++	+
R/Y	0	+	10*-
Y	---	----	45*+
Y/G	0	--	++
G	0	-	++++++
G/C	+	+	+++++
C	+++	+++	++++
C/B	+++++++	---	69*+
B	0	------	------
B/M	++++	----	+++++
M	++++++	--	+++++++++
M/R	+++++++++	0	11*+

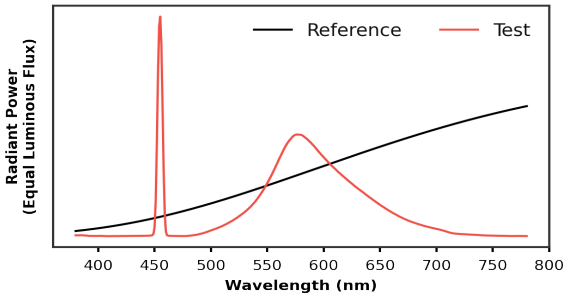


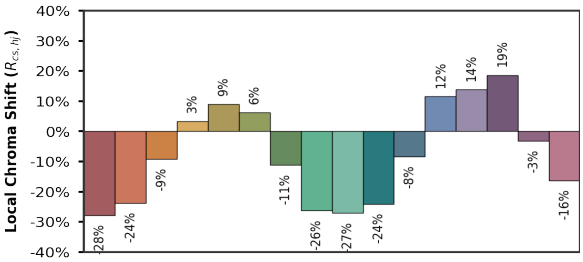
Device Settings: Dimmer: 100%; CMY: Off; CTO: 255; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 255; Focus: 105

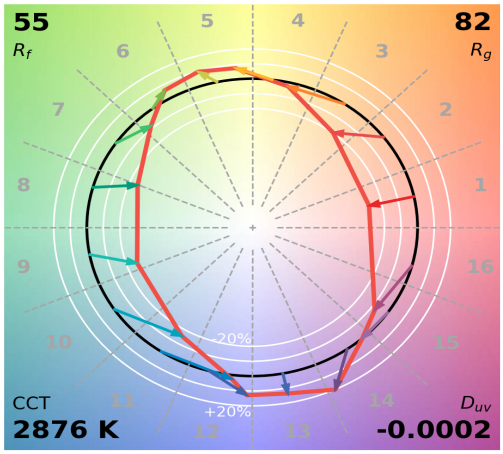
Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

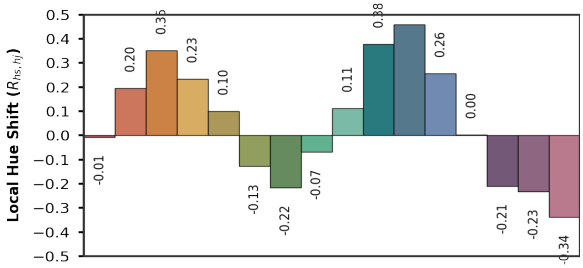
Zoom Wide CTO – Colorimetric Report

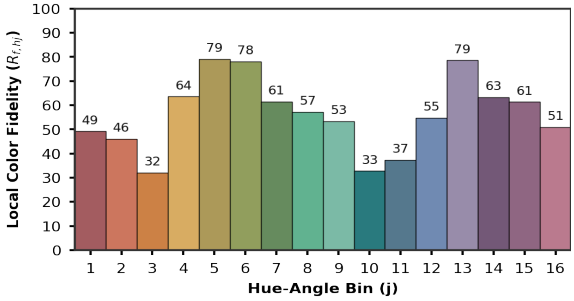
IES TM-30-18 Colour Rendition Report

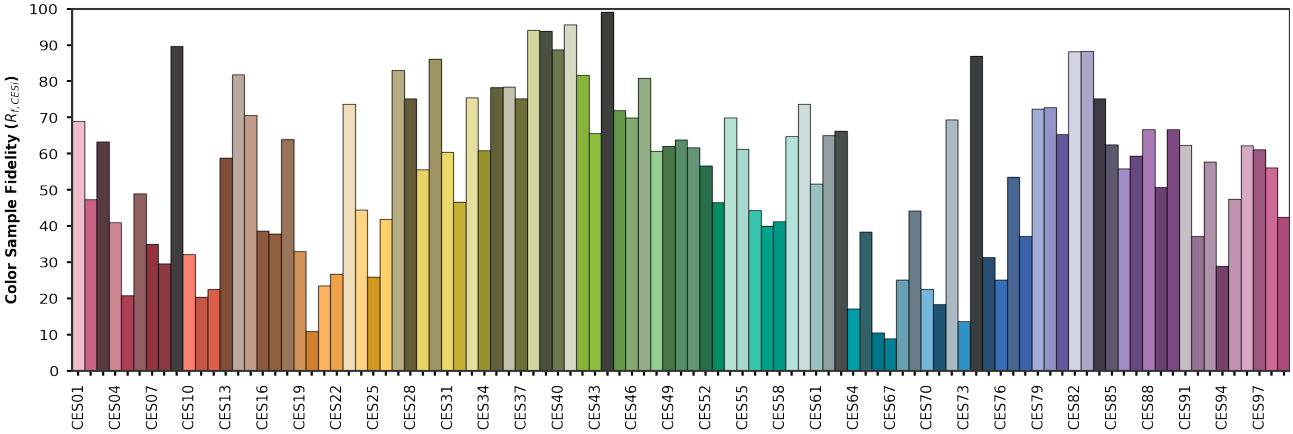












x	0.4458
y	0.4065
u'	0.2552
v'	0.5237

CIE 13.31-1995 (CRI)
R_a 50
R_9 -100

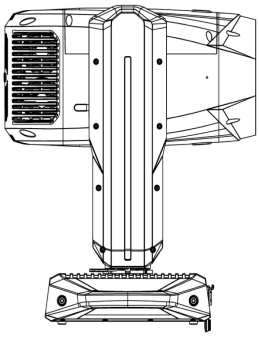
Device Settings: Dimmer: 100%; CMY: Off; CTO: 255; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 255; Focus: 105

Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

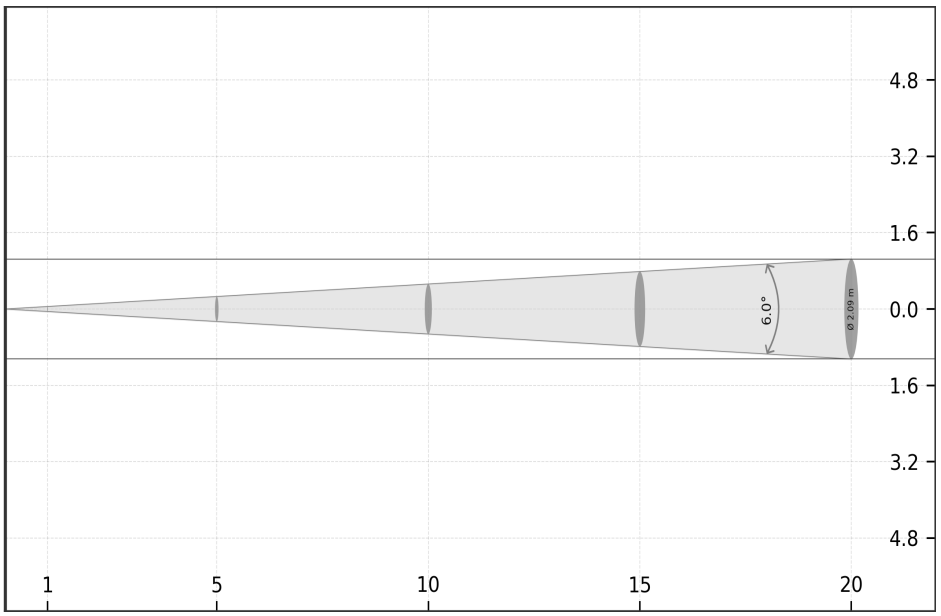
ORON® H2

Zoom Mid CTO – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
6.0	10.1	2996	342	8.8

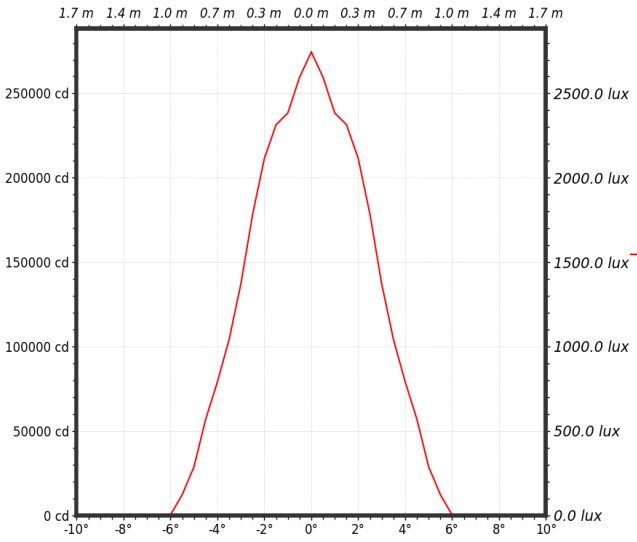


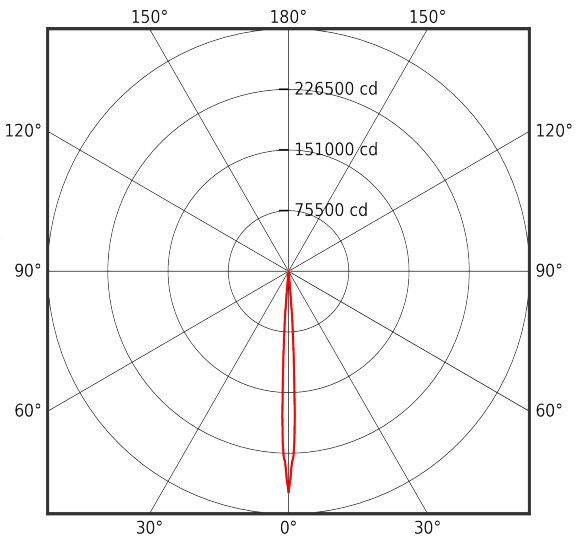
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])



Distance [m]	1	5	10	15	20
Illuminance [lx]	274535	10981	2745	1220	686
Diameter [m]	0.10	0.52	1.05	1.57	2.09

Light Distribution Diagrams / Illuminance





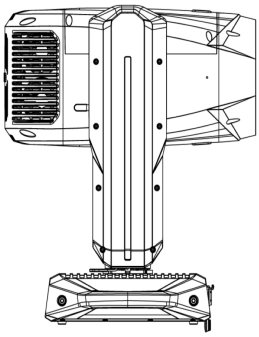
Device Settings: Dimmer: 100%; CMY: Off; CTO: 255; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 128; Focus: 112

Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

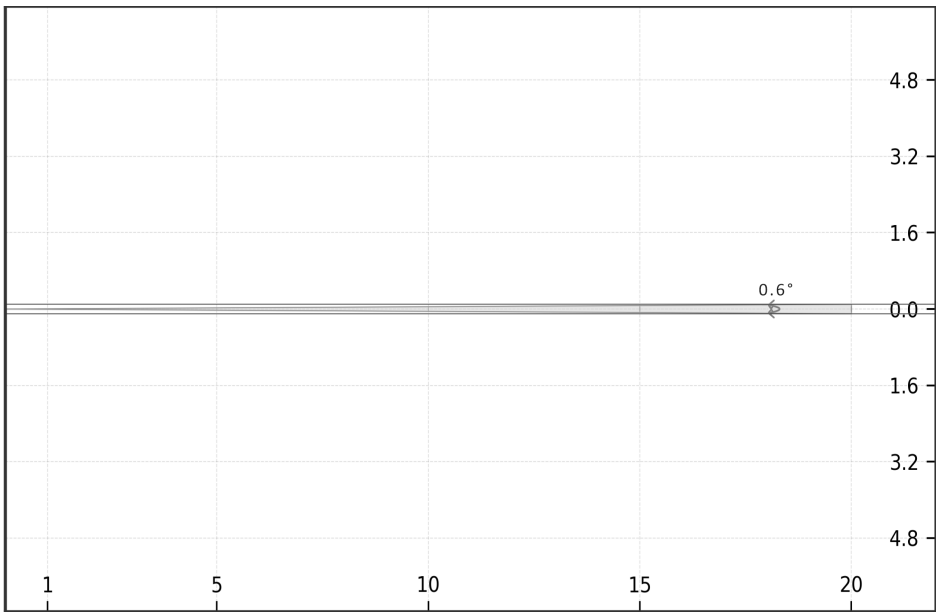
ORON® H2

Zoom Narrow CTO – Photometric Report

Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
0.6	1.8	2549	322	7.9

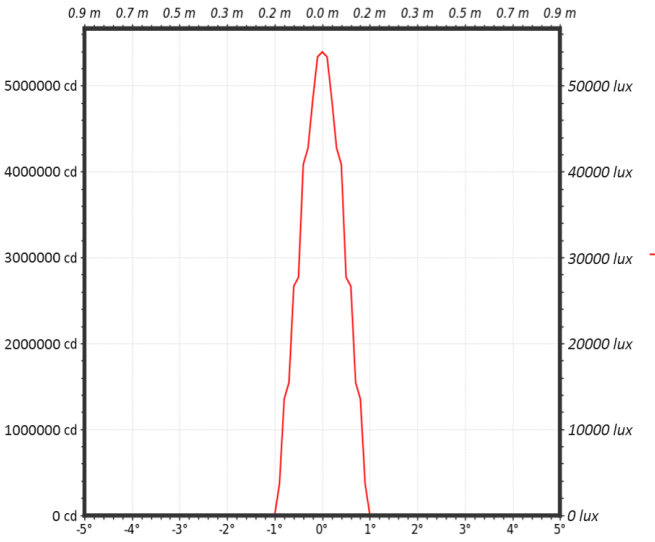


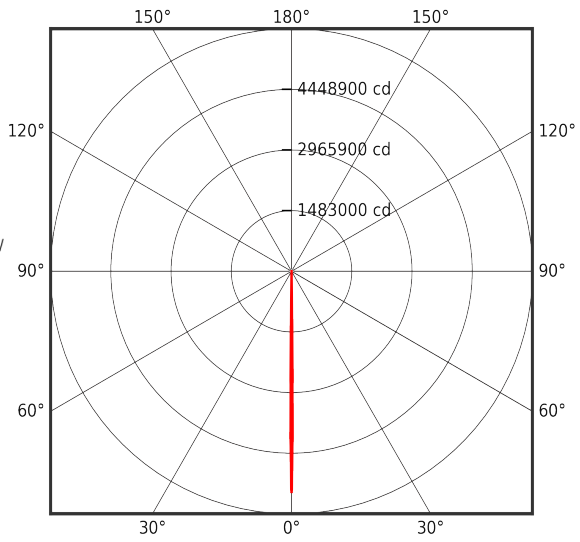
Distance-Diameter-Diagram (Distance [m] --> Beam Opening [m])



Distance [m]	1	5	10	15	20
Illuminance [lx]	5392629	215705	53926	23967	13482
Diameter [m]	0.01	0.05	0.10	0.15	0.19

Light Distribution Diagrams / Illuminance





Device Settings: Dimmer: 99%; CMY: Off; CTO: 255; Color Wheel: Off; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 000; Focus: 022

Cameo® is a registered brand of the Adam Hall Group I Adam Hall GmbH I Adam-Hall-Str. 1 I 61267 Neu-Anspach I Germany I Phone: +49 6081 9419-0 I adamhall.com

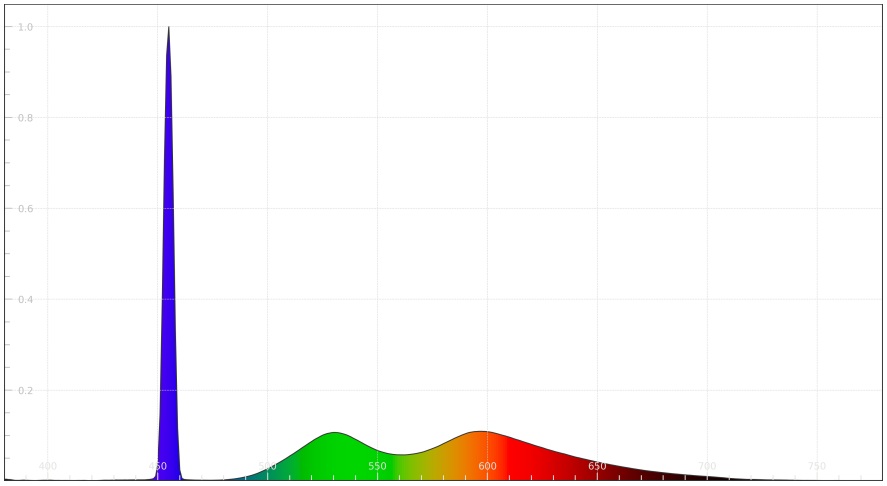
ORON® H2

5600K High CRI – Colorimetric Report

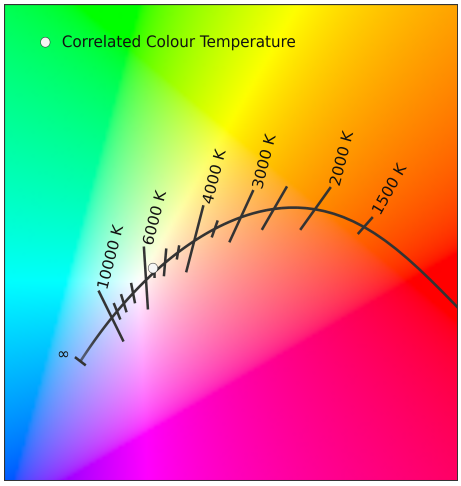
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	5587	Luminous Flux [lm]	**Lum Flux**	3507
Colour Deviation from Black	**D_{uv}**	-0.0170	Colour Rendering Index	**CRI Ra**	88
Colour Coordinate CIE 1931	**x**	0.3307	Red Component	**CRI R9**	52
Colour Coordinate CIE 1931	**y**	0.3084	Colour Fidelity	**TM30 R_f**	78
Colour Coordinate CIE 1976	**u'**	0.2190	Colour Gamut	**TM30 R_g**	104
Colour Coordinate CIE 1976	**v'**	0.4596	Television Lighting Consistency Index	**TLCI**	61
Spectral Similarity Index	**SSI[CIE D5587]**	36			

CIE 1931 2° Standard Observer (Wavelength [nm] --> relative Spectral Distribution)

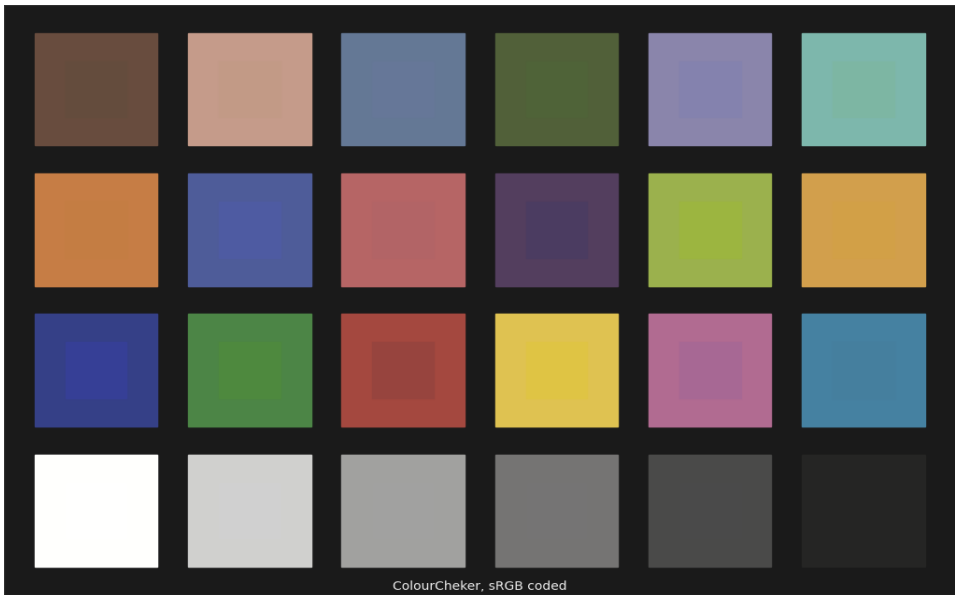


Colour Temperature

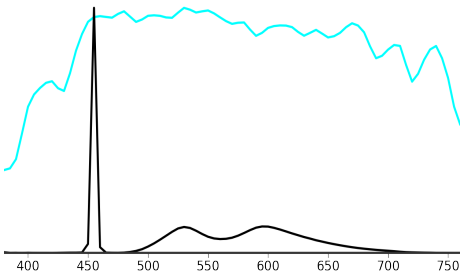


Television Lighting Consistency Index-2012

CCT = D5587 (-3.2) TLCI-2012 : 61 (D5587)



Sector	Lightness	Chroma	Hue
R	+++	++	+
R/Y	0	0	--
Y	0	--	--
Y/G	-	---	0
G	--	---	+++
G/C	0	-	+++++
C	0	0	++
C/B	+	0	0
B	0	---	--
B/M	++	-	+++++
M	++	0	+++++
M/R	+++	0	+++++

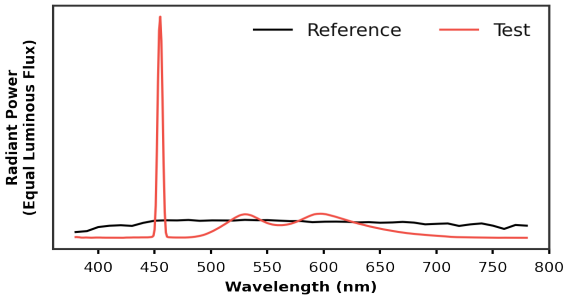


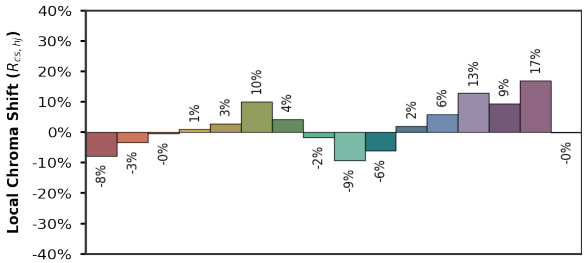
Device Settings: Dimmer: 100%; CMY: Off; CTO: 059; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 220; Focus: 145

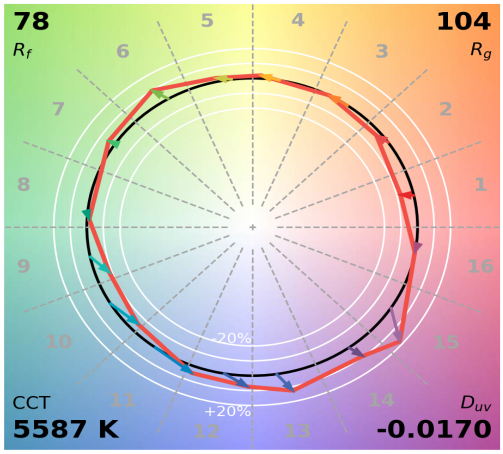
Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

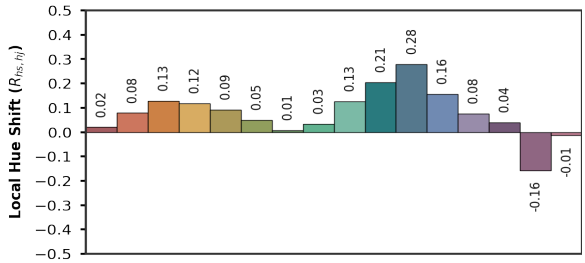
5600K High CRI – Colorimetric Report

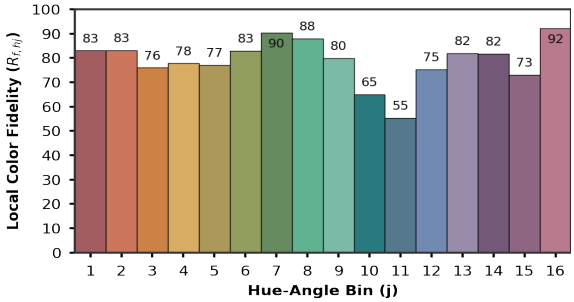
IES TM-30-18 Colour Rendition Report

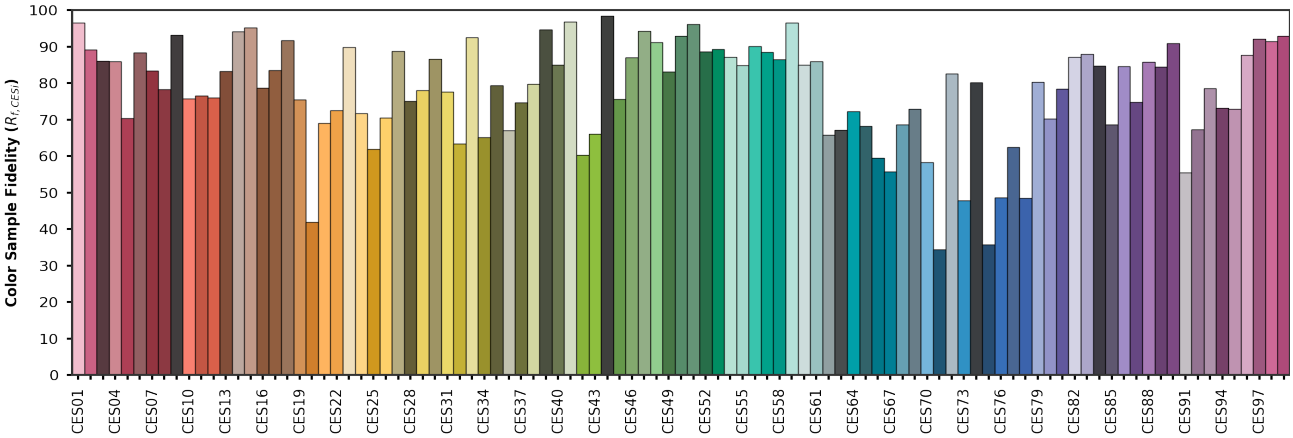












x	0.3307
y	0.3084
u'	0.2190
v'	0.4596

CIE 13.31-1995
(CRI)
R_a **88**
R_9 **52**

Device Settings: Dimmer: 100%; CMY: Off; CTO: 059; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 220; Focus: 145

Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

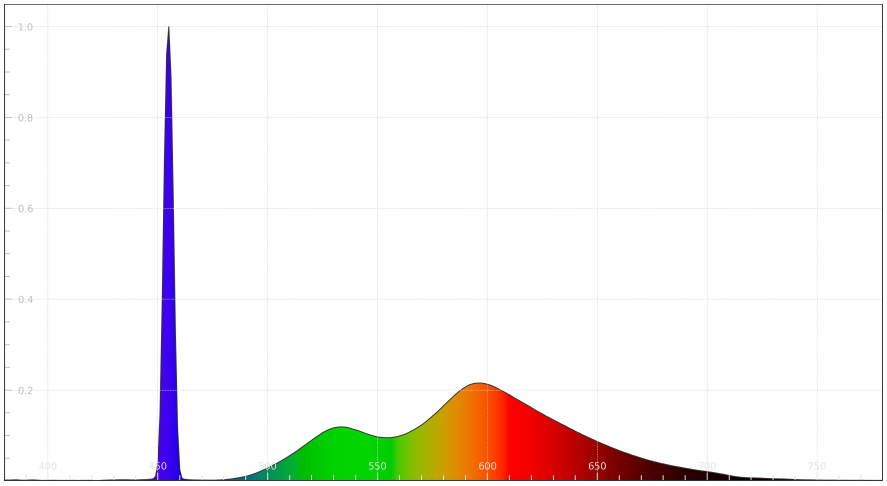
ORON® H2

3200K High CRI – Colorimetric Report

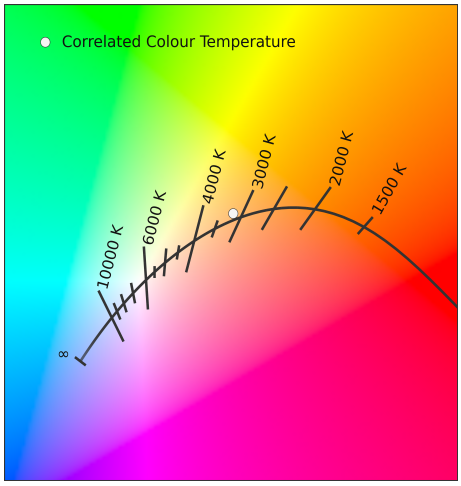
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	3196	Luminous Flux [lm]	**Lum Flux**	2838
Colour Deviation from Black	**D_{uv}**	-0.0200	Colour Rendering Index	**CRI Ra**	80
Colour Coordinate CIE 1931	**x**	0.4000	Red Component	**CRI R9**	-8
Colour Coordinate CIE 1931	**y**	0.3454	Colour Fidelity	**TM30 R_f**	74
Colour Coordinate CIE 1976	**u'**	0.2522	Colour Gamut	**TM30 R_g**	101
Colour Coordinate CIE 1976	**v'**	0.4900	Television Lighting Consistency Index	**TLCI**	45
Spectral Similarity Index	**SSI[P3196]**	38			

CIE 1931 2° Standard Observer (Wavelength [nm] --> relative Spectral Distribution)

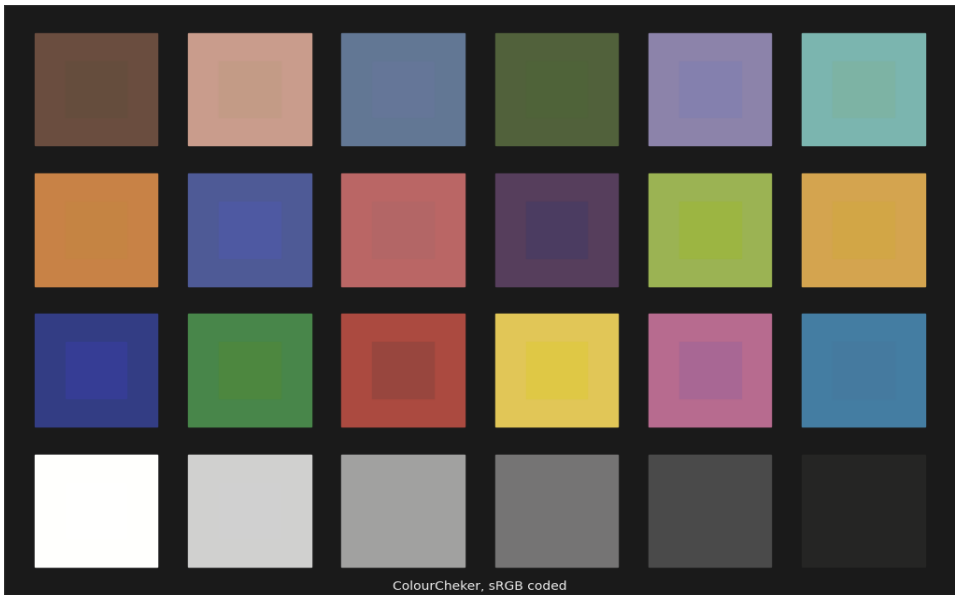


Colour Temperature

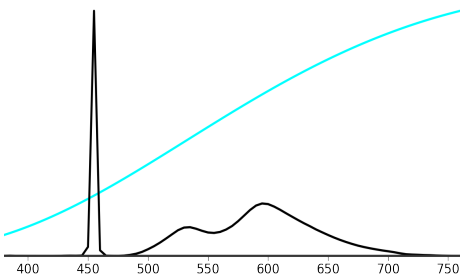


Television Lighting Consistency Index-2012

CCT = P3196 (-3.7) TLCI-2012 : 45 (P3196)



Sector	Lightness	Chroma	Hue
R	++++	+++	+
R/Y	0	0	----
Y	0	--	---
Y/G	0	---	0
G	-	---	+++++
G/C	+	-	++++++
C	+	0	++
C/B	++	0	-
B	-	----	---
B/M	++	--	+++++
M	+++	-	++++++
M/R	++++	0	+++++++

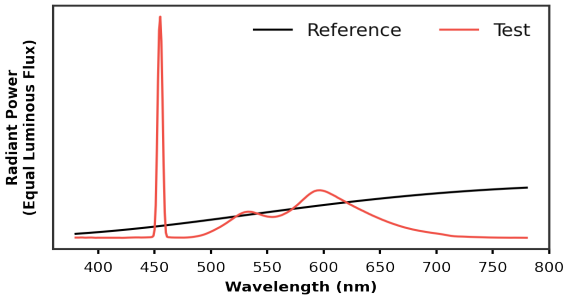


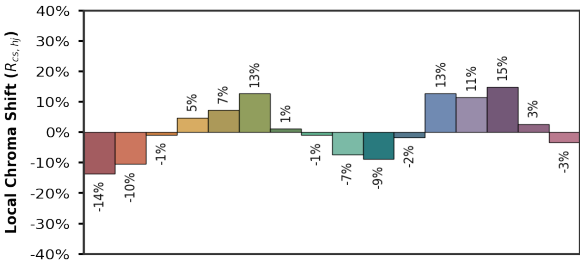
Device Settings: Dimmer: 100%; CMY: Off; CTO: 137; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 220; Focus: 145

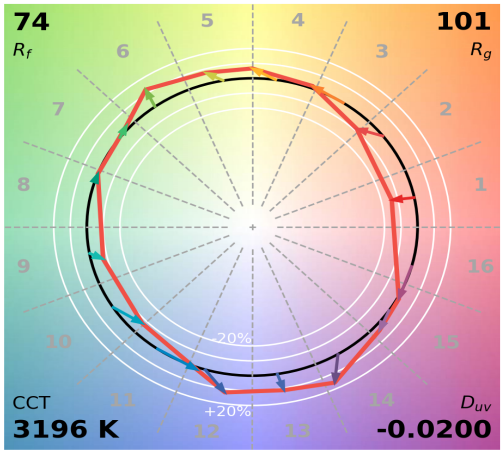
Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com

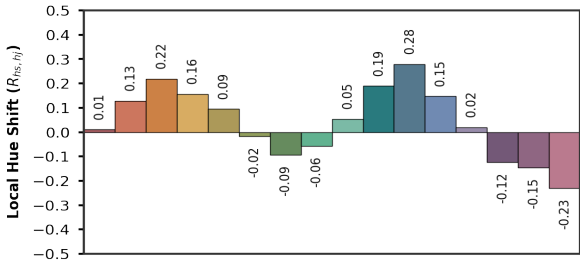
3200K High CRI – Colorimetric Report

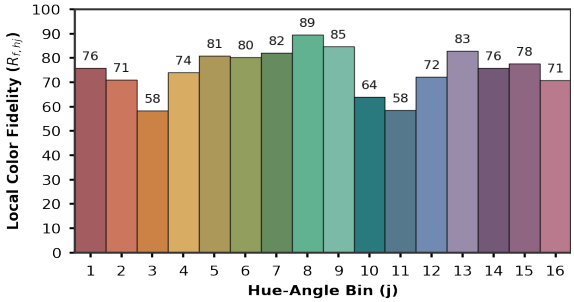
IES TM-30-18 Colour Rendition Report

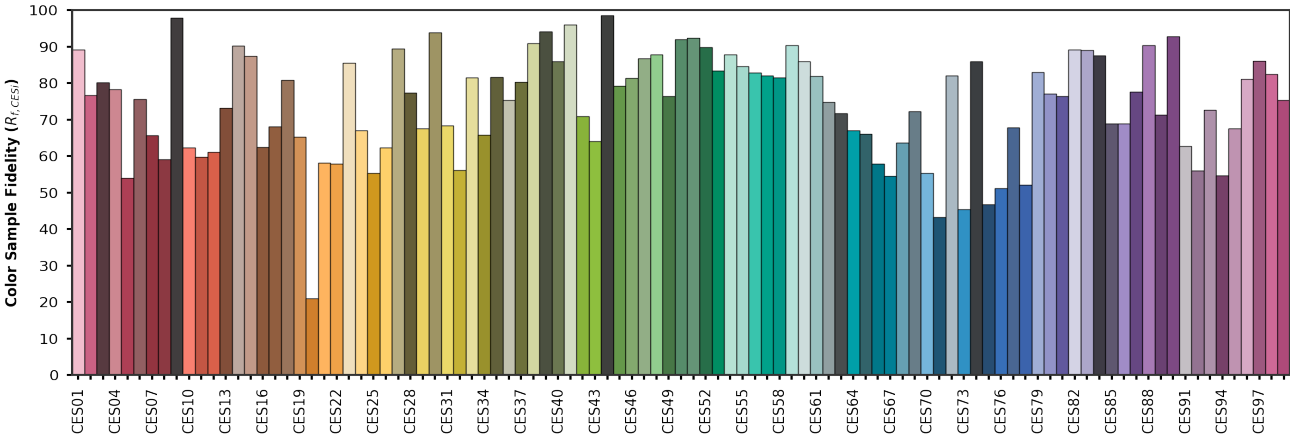












x	**0.4000**
y	**0.3454**
u′	**0.2522**
v′	**0.4900**

CIE 13.31-1995
(CRI)
R_a **80**
R_9 **-8**

Device Settings: Dimmer: 100%; CMY: Off; CTO: 137; Color Wheel: 063; PWM: 1530 Hz; Fan Mode: Auto; Zoom: 220; Focus: 145

Cameo® is a registered brand of the Adam Hall Group | Adam Hall GmbH | Adam-Hall-Str. 1 | 61267 Neu-Anspach | Germany | Phone: +49 6081 9419-0 | adamhall.com