PixBar TW Short IP G2



PixBar TW Short IP G2 (CLPBTWSIPG2)

PHOTOMETRIC TEST REPORT

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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, TM30-15, 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

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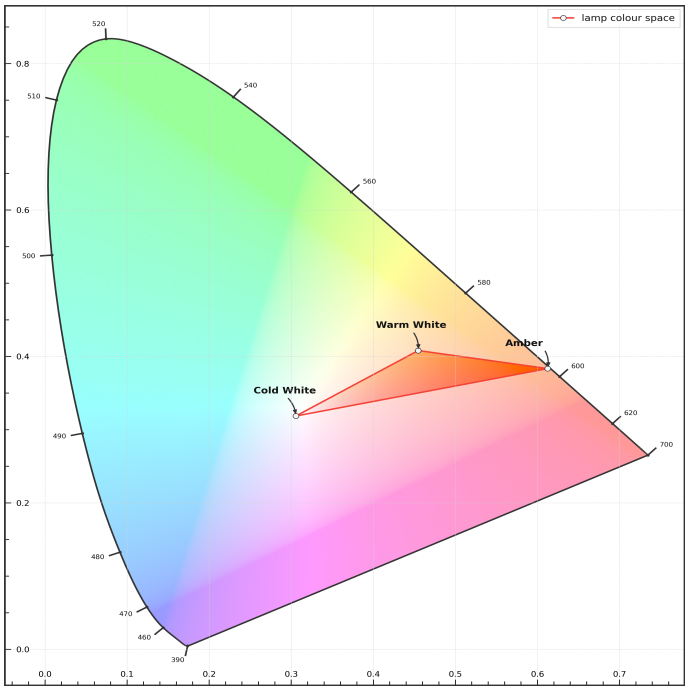
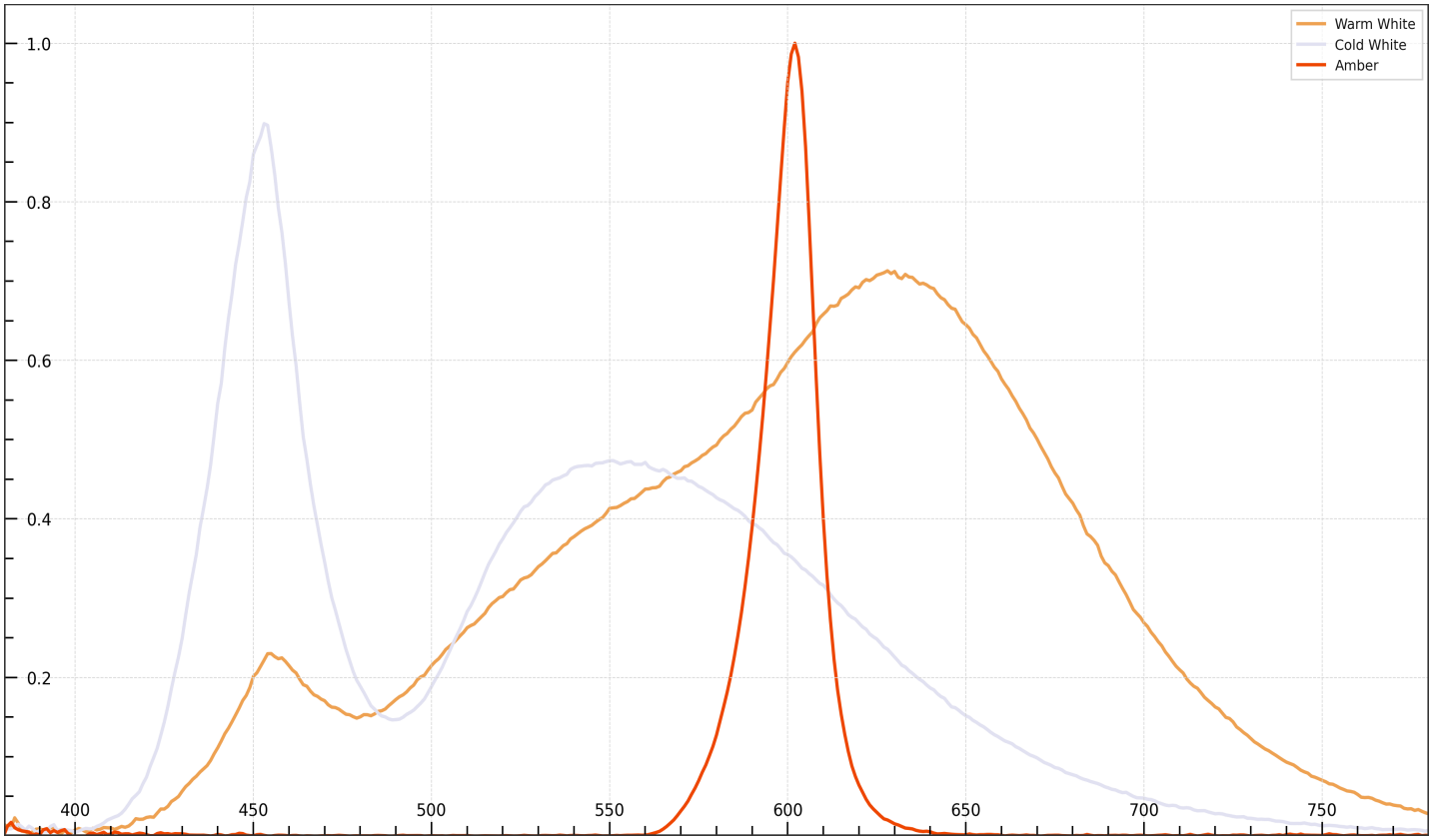
Overview

LED Colours	Lum flux [lm]	x	y
Warm White	1058	0.4548	0.4081
Cold White	946	0.3057	0.3187
Amber	363	0.6125	0.3835

CIE 1931 Chromaticity Diagram - 2° Standard Observer



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



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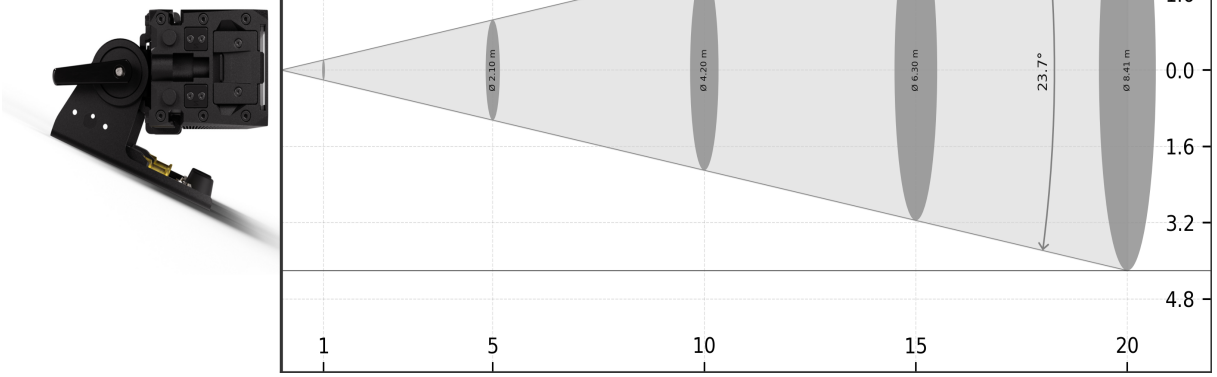
Full-On – Photometric Report

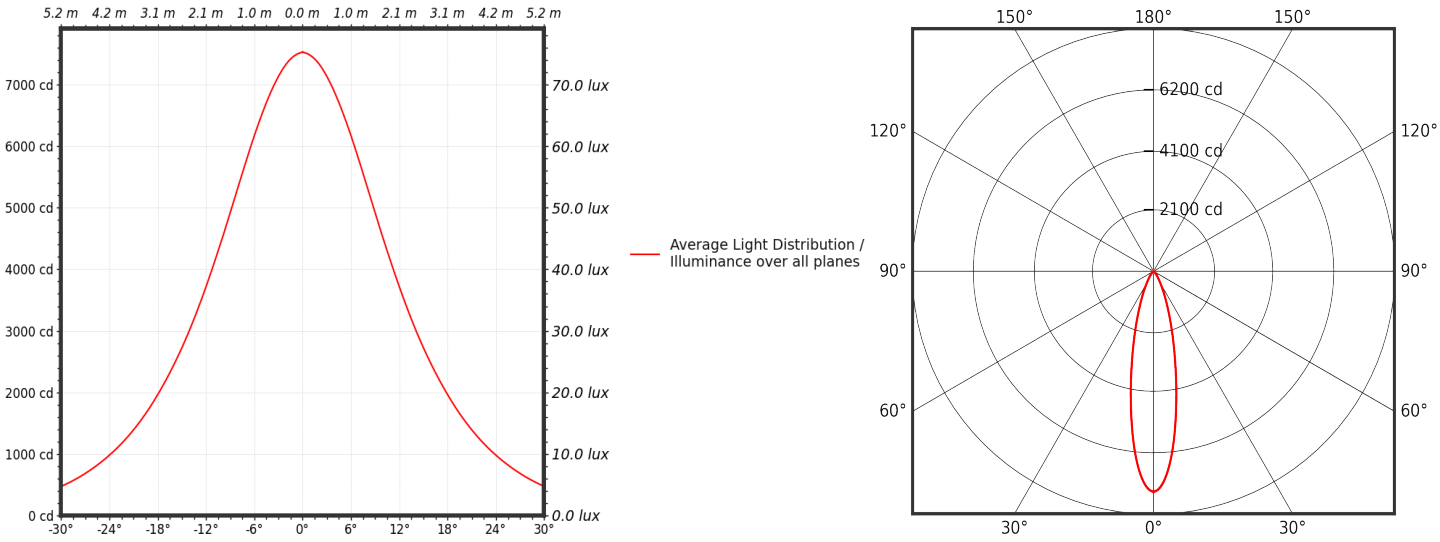
Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
23.7	52.3	2000	74	27.0

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



Distance [m]	1	5	10	15	20
Illuminance [lx]	7535	301	75	33	19
Diameter [m]	0.42	2.10	4.20	6.30	8.41

Light Distribution Diagrams / Illuminance



Fixture Settings: Full-On, No Filter

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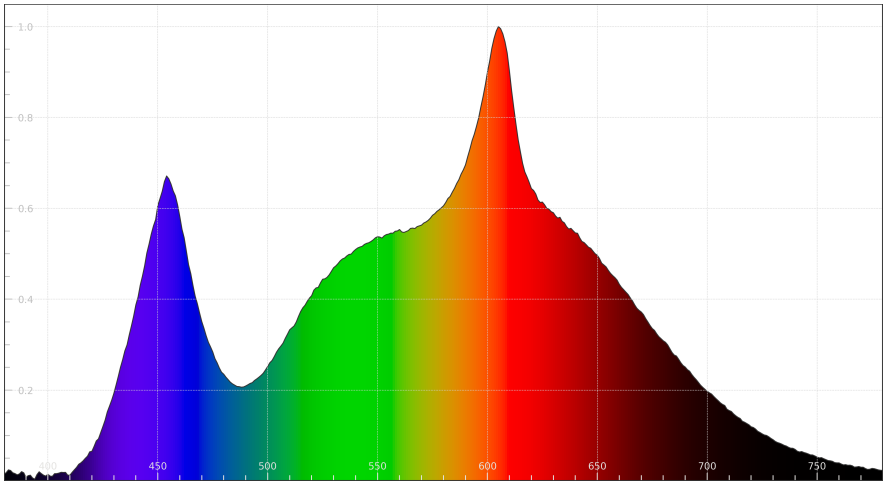
Full-On – Colorimetric Report

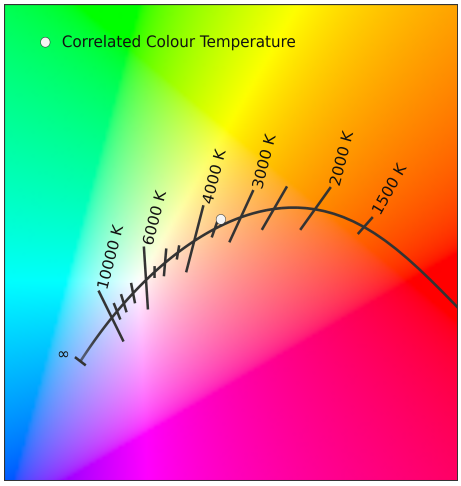
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	3432	Luminous Flux [lm]	**Lum Flux**	2000
Colour Deviation from Black	**D_{uv}**	-0.0121	Colour Rendering Index	**CRI Ra**	89
Colour Coordinate CIE 1931	**x**	0.3965	Red Component	**CRI R9**	30
Colour Coordinate CIE 1931	**y**	0.3601	Colour Fidelity	**TM30 R_f**	86
Colour Coordinate CIE 1976	**u'**	0.2430	Colour Gamut	**TM30 R_g**	101
Colour Coordinate CIE 1976	**v'**	0.4965	Television Lighting Consistency Index	**TLCI**	75
Spectral Similarity Index	**SSI[P3432]**	71			

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



Colour Temperature

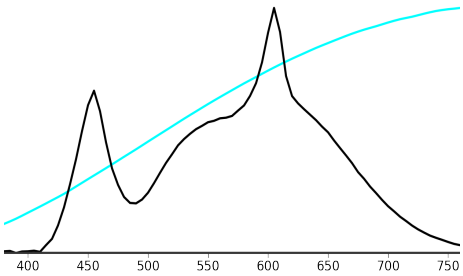


Television Lighting Consistency Index-2012

CCT = M3432 (-2.2) TLCI-2012 : 75 (M3432)



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



Fixture Settings: Full-On, No Filter

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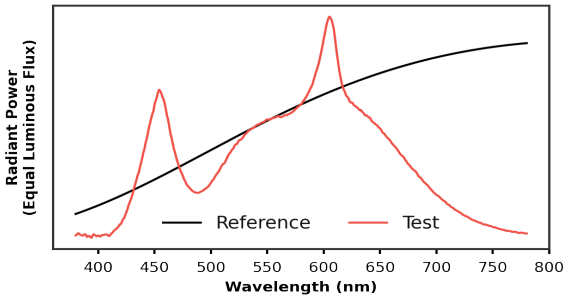
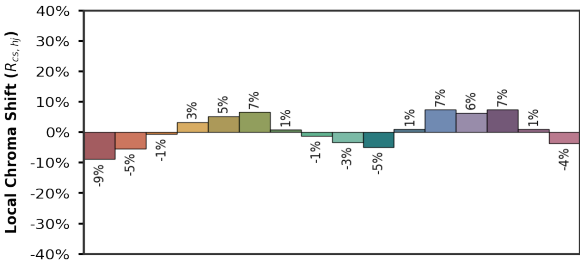
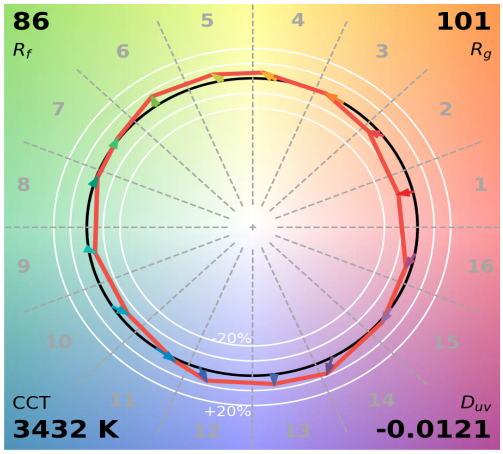
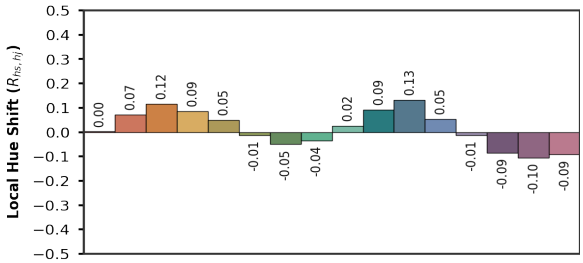
Full-On – Colorimetric Report

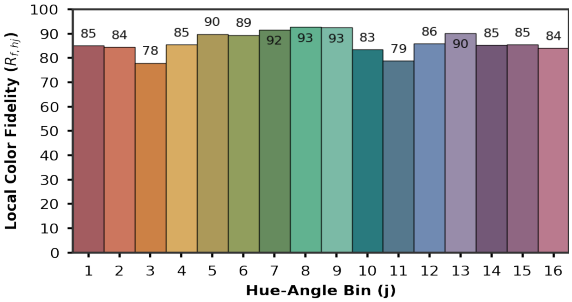
IES TM-30-18 Colour Rendition Report

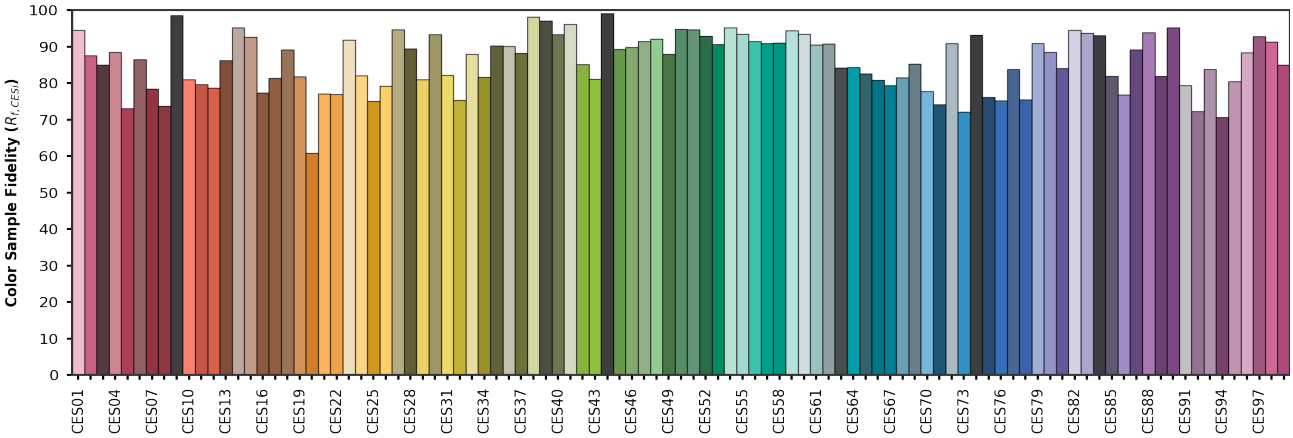












x	**0.3965**
y	**0.3601**
u'	**0.2430**
v'	**0.4965**

CIE 13.31-1995
(CRI)
R_a **89**
R_9 **30**

Fixture Settings: Full-On, No Filter

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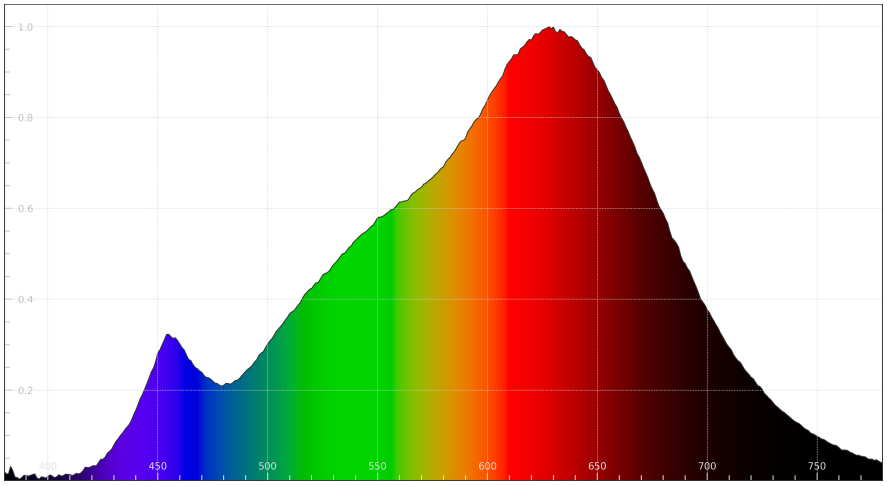
WarmWhite – Colorimetric Report

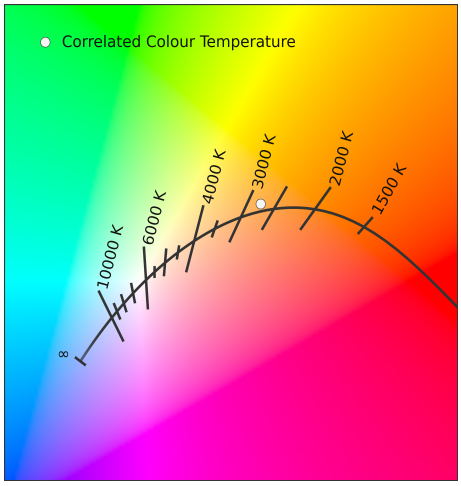
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	2650	Luminous Flux [lm]	**Lum Flux**	605
Colour Deviation from Black	**D_{uv}**	-0.0005	Colour Rendering Index	**CRI Ra**	96
Colour Coordinate CIE 1931	**x**	0.4548	Red Component	**CRI R9**	75
Colour Coordinate CIE 1931	**y**	0.4081	Colour Fidelity	**TM30 R_f**	94
Colour Coordinate CIE 1976	**u'**	0.2603	Colour Gamut	**TM30 R_g**	100
Colour Coordinate CIE 1976	**v'**	0.5256	Television Lighting Consistency Index	**TLCI**	96
Spectral Similarity Index	**SSI[P2753]**	88			

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



Colour Temperature

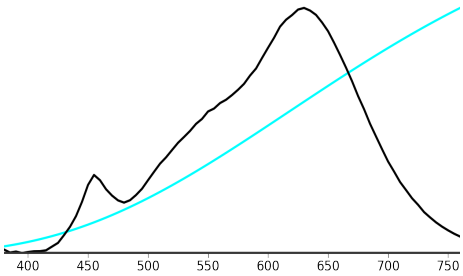


Television Lighting Consistency Index-2012

CCT = P2753 (-0.1) TLCI-2012 : 96 (P2753)



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



Fixture Settings: CCT:Warm-White, No Filter

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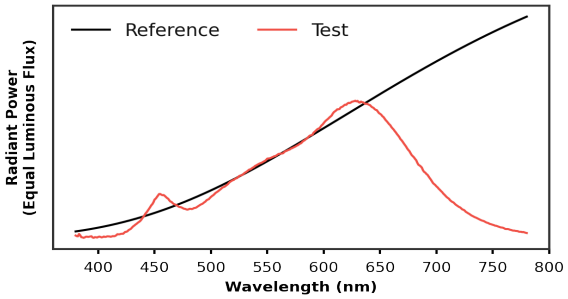
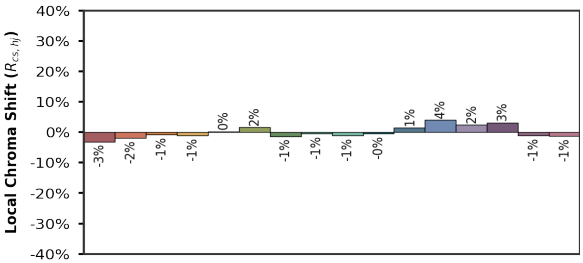
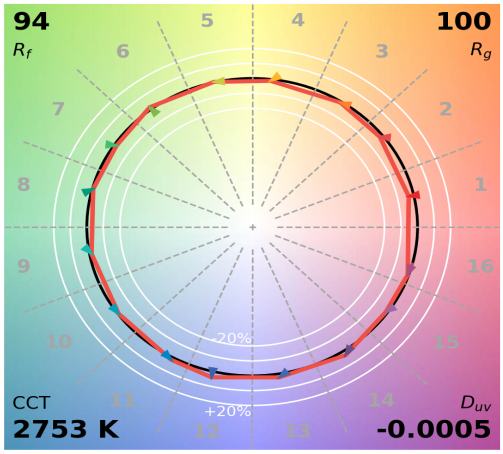
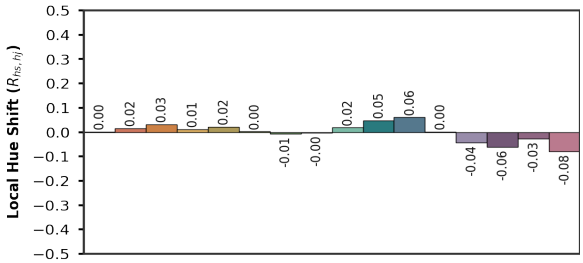
WarmWhite – Colorimetric Report

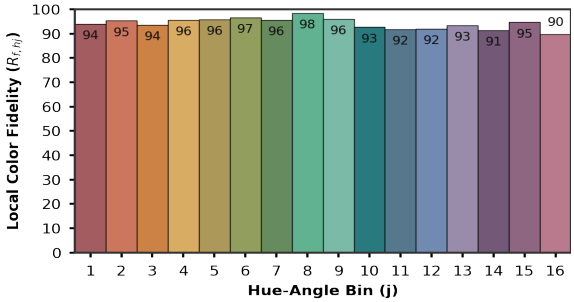
IES TM-30-18 Colour Rendition Report

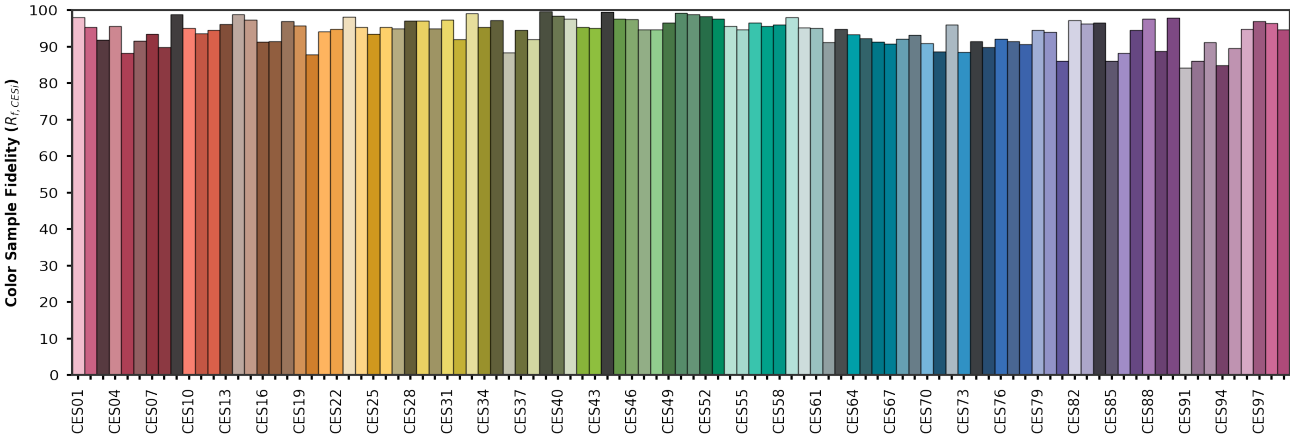












x	0.4548
y	0.4081
u'	0.2603
v'	0.5256

CIE 13.31-1995
(CRI)
R_a **96**
R_9 **75**

Fixture Settings: CCT:Warm-White, No Filter

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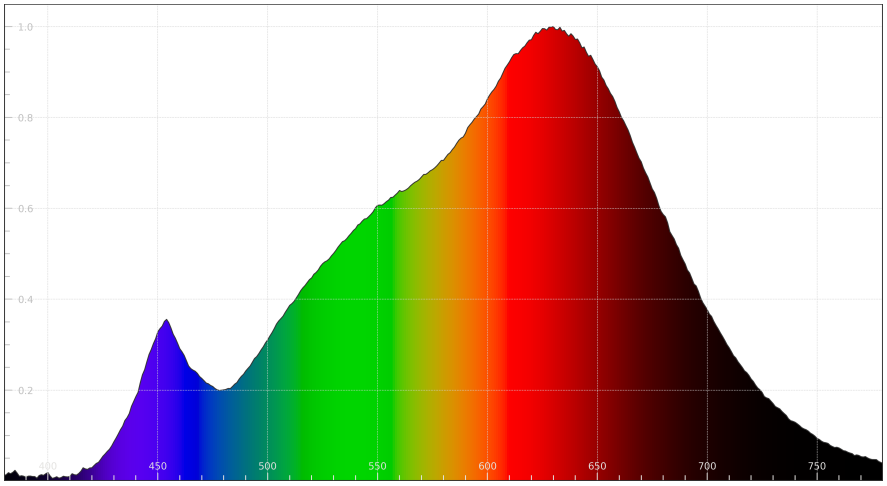
2700K – Colorimetric Report

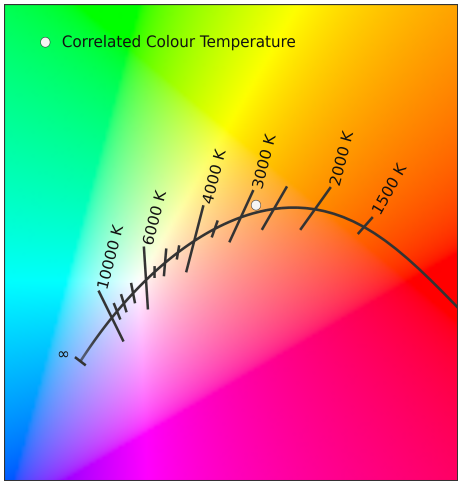
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	2700	Luminous Flux [lm]	**Lum Flux**	1000
Colour Deviation from Black	**D_{uv}**	0.0001	Colour Rendering Index	**CRI Ra**	95
Colour Coordinate CIE 1931	**x**	0.4501	Red Component	**CRI R9**	75
Colour Coordinate CIE 1931	**y**	0.4084	Colour Fidelity	**TM30 R_f**	94
Colour Coordinate CIE 1976	**u'**	0.2572	Colour Gamut	**TM30 R_g**	101
Colour Coordinate CIE 1976	**v'**	0.5251	Television Lighting Consistency Index	**TLCI**	95
Spectral Similarity Index	**SSI[P2824]**	87			

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



Colour Temperature

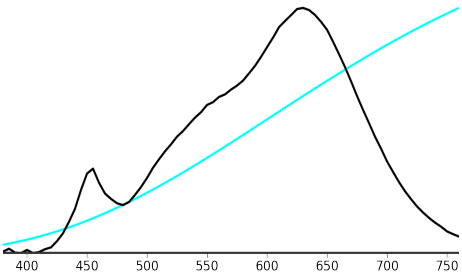


Television Lighting Consistency Index-2012

CCT = P2824 (0.0) TLCI-2012 : 95 (P2824)



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



Fixture Settings: CCT:2700K, No Filter

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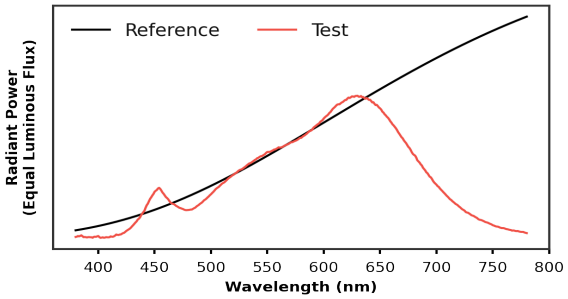
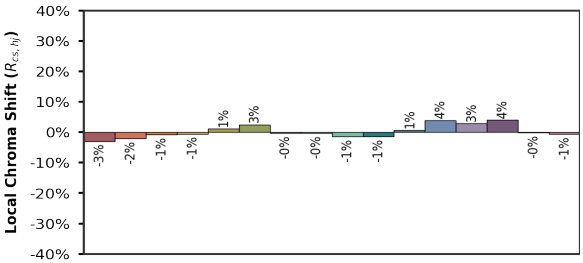
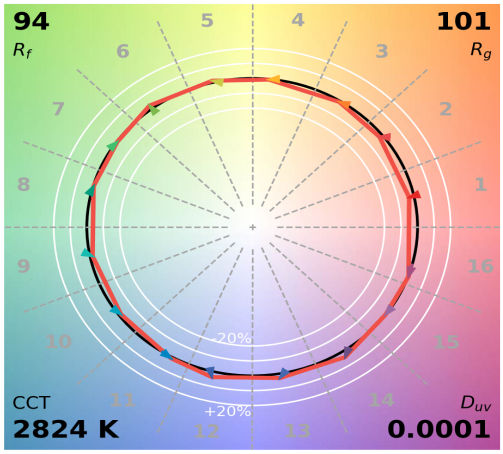
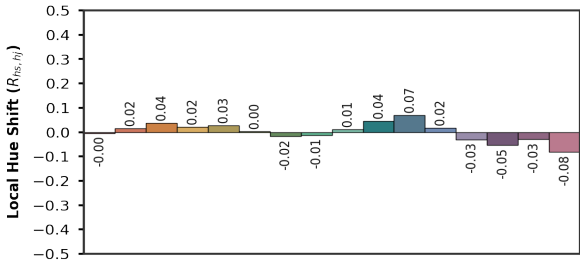
2700K – Colorimetric Report

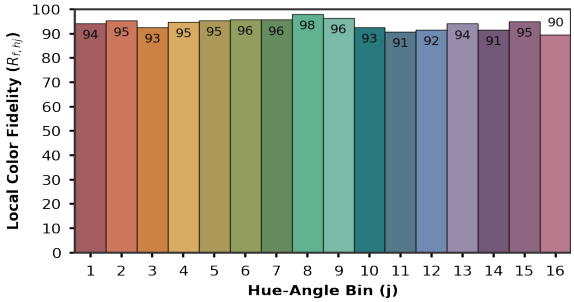
IES TM-30-18 Colour Rendition Report

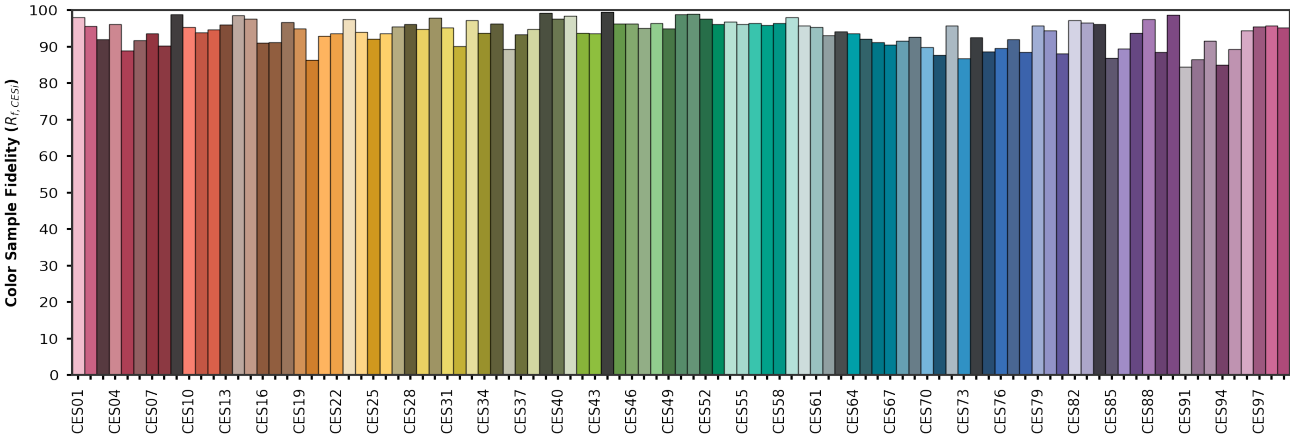












x	0.4501
y	0.4084
u′	0.2572
v′	0.5251

CIE 13.31-1995
(CRI)
R_a **95**
R_9 **75**

Fixture Settings: CCT:2700K, No Filter

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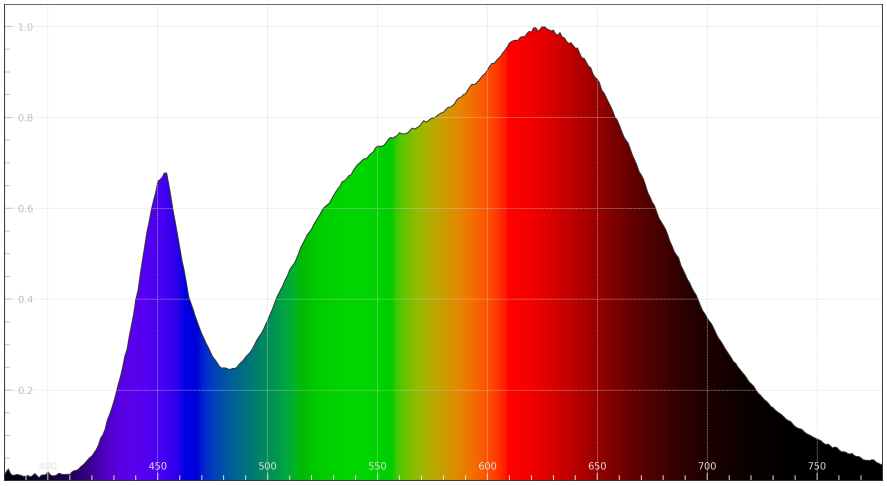
3200K – Colorimetric Report

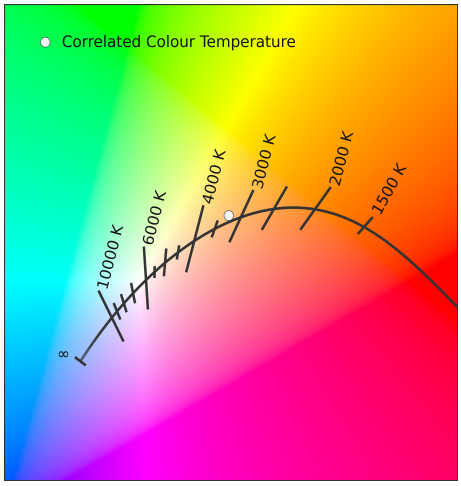
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	3200	Luminous Flux [lm]	**Lum Flux**	1350
Colour Deviation from Black	**D_{uv}**	-0.0037	Colour Rendering Index	**CRI Ra**	92
Colour Coordinate CIE 1931	**x**	0.4138	Red Component	**CRI R9**	72
Colour Coordinate CIE 1931	**y**	0.3862	Colour Fidelity	**TM30 R_f**	90
Colour Coordinate CIE 1976	**u'**	0.2432	Colour Gamut	**TM30 R_g**	102
Colour Coordinate CIE 1976	**v'**	0.5106	Television Lighting Consistency Index	**TLCI**	89
Spectral Similarity Index	**SSI[P3281]**	81			

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



Colour Temperature

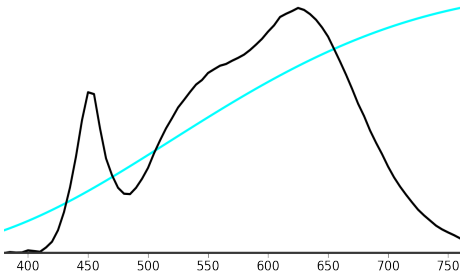


Television Lighting Consistency Index-2012

CCT = P3281 (-0.7) TLCI-2012 : 89 (P3281)



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



Fixture Settings: CCT:3200K, No Filter

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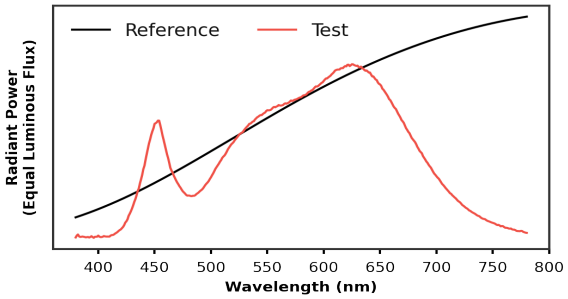
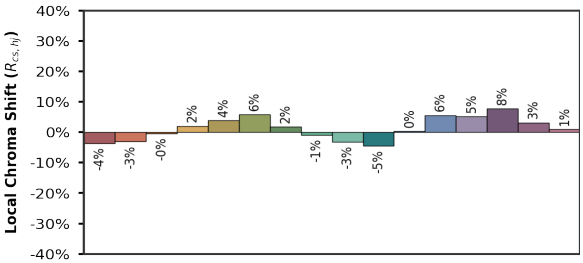
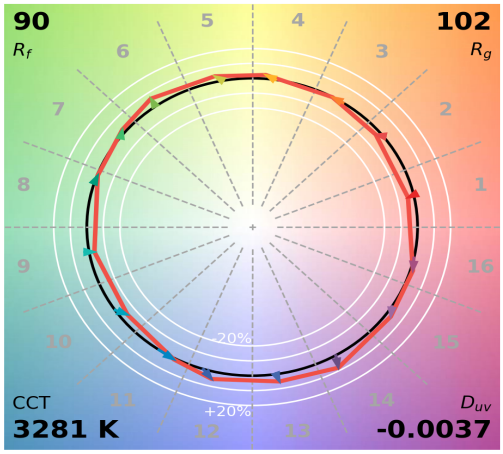
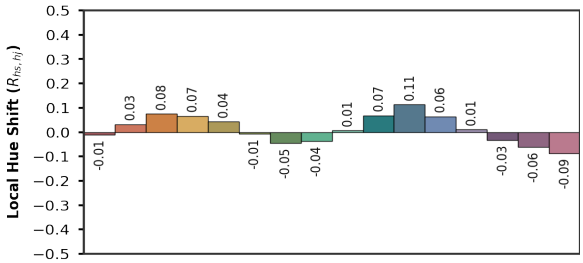
3200K – Colorimetric Report

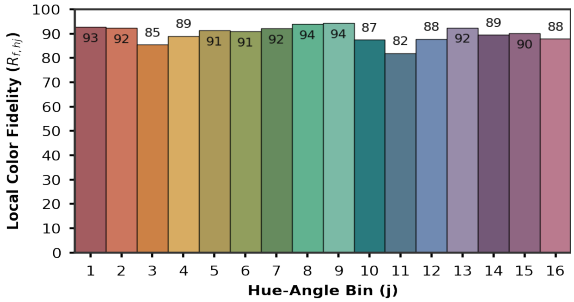
IES TM-30-18 Colour Rendition Report

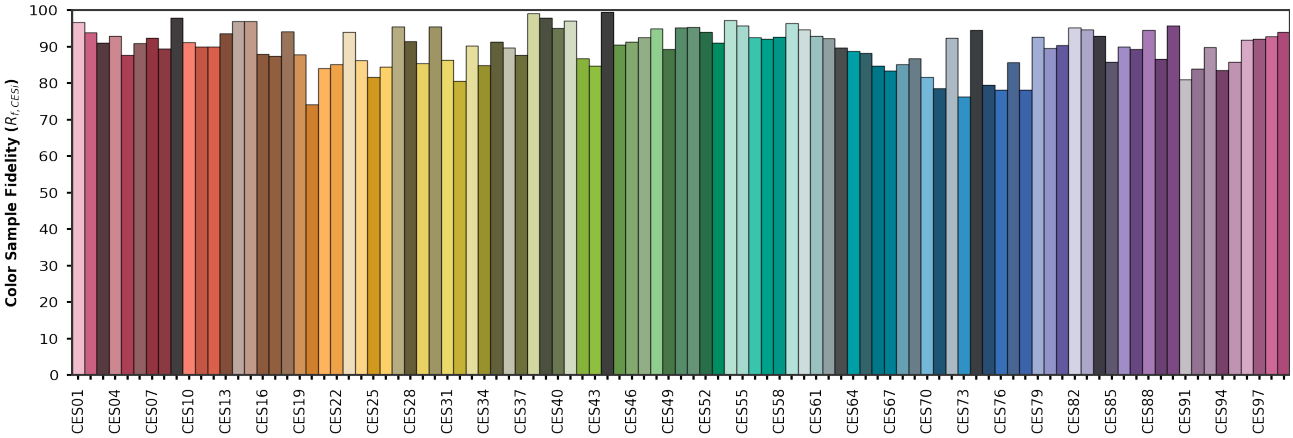












x	0.4138
y	0.3862
u'	0.2432
v'	0.5106

CIE 13.31-1995
(CRI)
R_a **92**
R_9 **72**

Fixture Settings: CCT:3200K, No Filter

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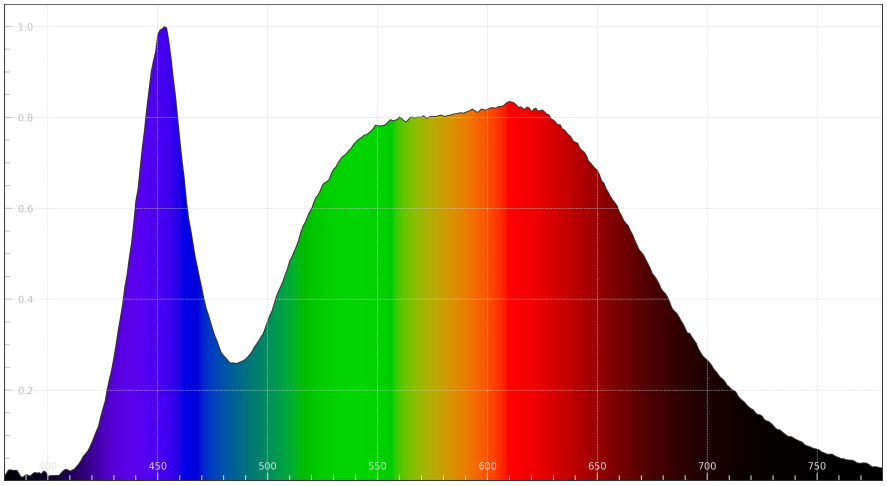
PixBar TW Short IP G2

4000K – Colorimetric Report

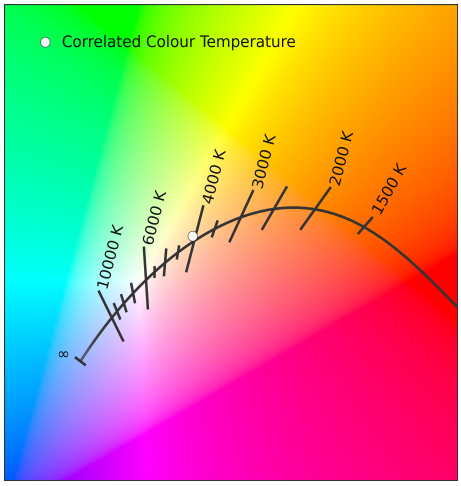
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	4000	Luminous Flux [lm]	**Lum Flux**	1800
Colour Deviation from Black	**D_{uv}**	-0.0055	Colour Rendering Index	**CRI Ra**	88
Colour Coordinate CIE 1931	**x**	0.3730	Red Component	**CRI R9**	61
Colour Coordinate CIE 1931	**y**	0.3605	Colour Fidelity	**TM30 R_f**	86
Colour Coordinate CIE 1976	**u'**	0.2267	Colour Gamut	**TM30 R_g**	101
Colour Coordinate CIE 1976	**v'**	0.4931	Television Lighting Consistency Index	**TLCI**	79
Spectral Similarity Index	**SSI[P4093]**	72			

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

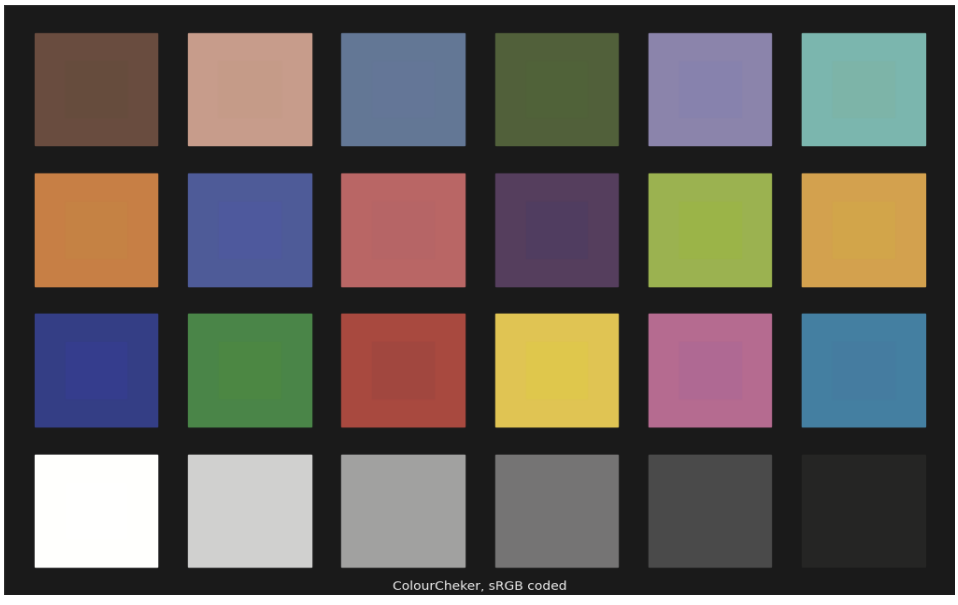


Colour Temperature

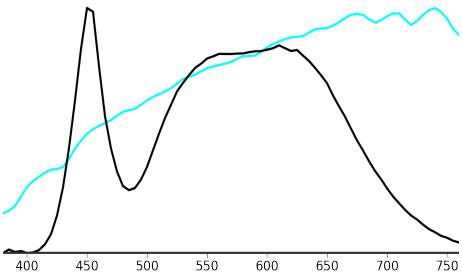


Television Lighting Consistency Index-2012

CCT = M4093 (-1.0) TLCI-2012 : 79 (M4093)



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



Fixture Settings: CCT:4000K, No Filter

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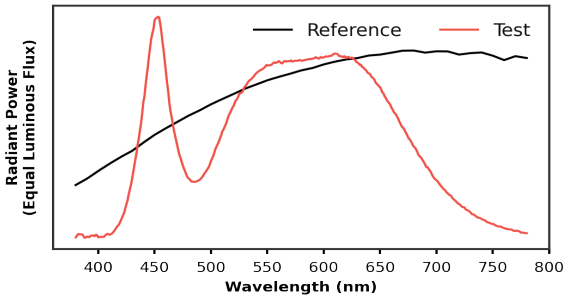
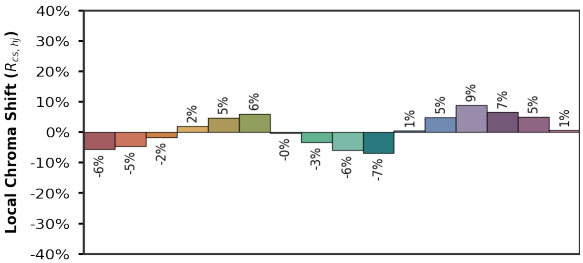
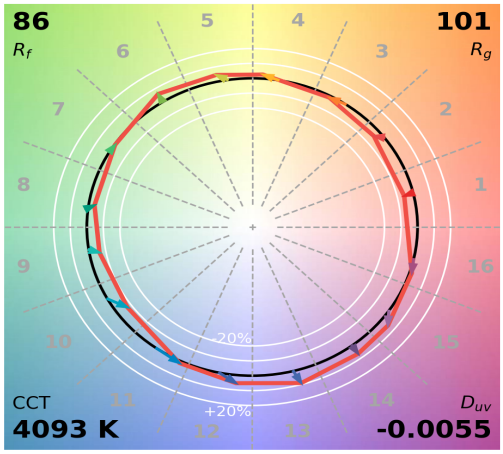
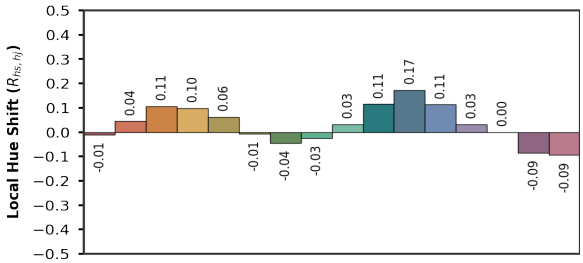
4000K – Colorimetric Report

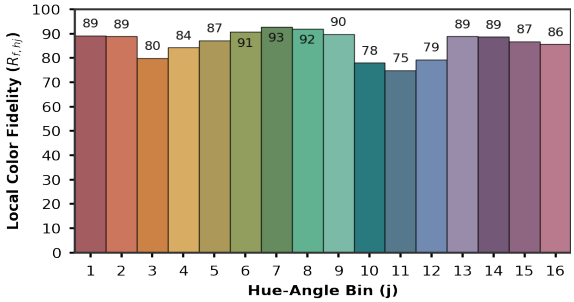
IES TM-30-18 Colour Rendition Report

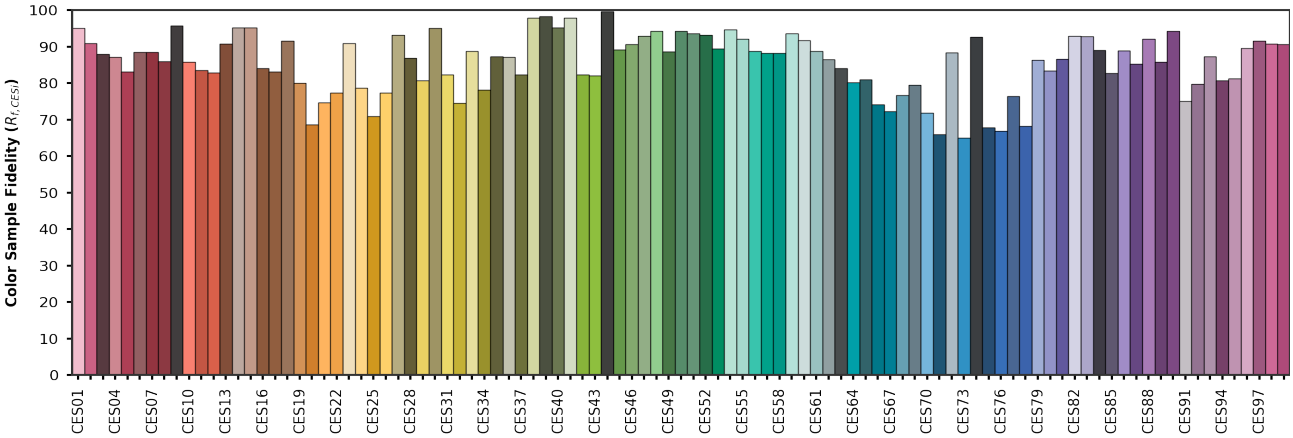












x	**0.3730**
y	**0.3605**
u′	**0.2267**
v′	**0.4931**

CIE 13.31-1995
(CRI)
R_a **88**
R_9 **61**

Fixture Settings: CCT:4000K, No Filter

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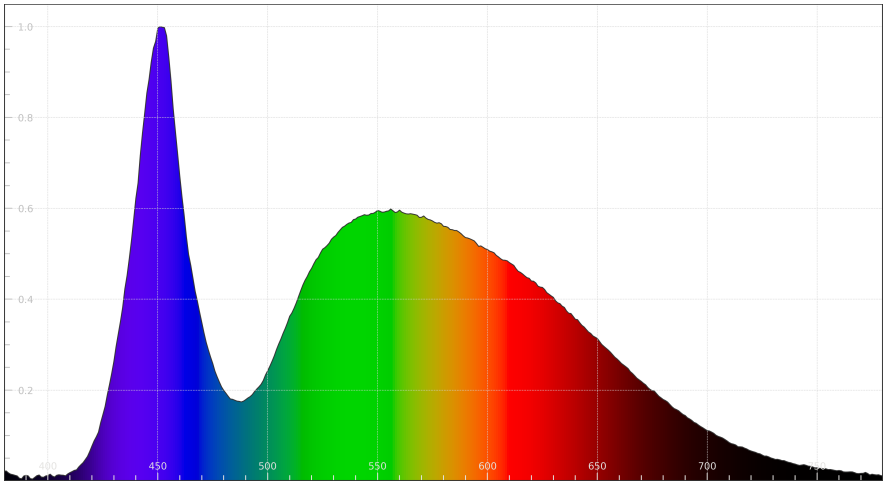
5600K – Colorimetric Report

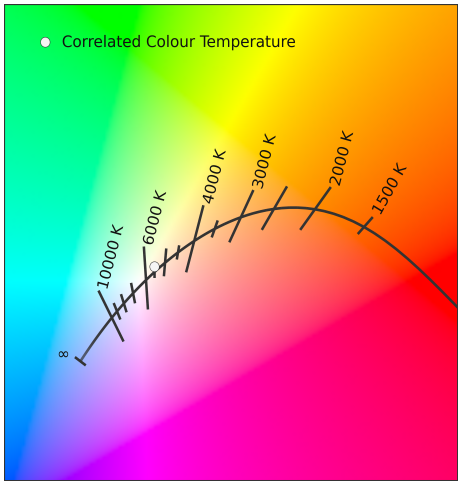
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	5600	Luminous Flux [lm]	**Lum Flux**	1080
Colour Deviation from Black	**D_{uv}**	-0.0022	Colour Rendering Index	**CRI Ra**	81
Colour Coordinate CIE 1931	**x**	0.3323	Red Component	**CRI R9**	26
Colour Coordinate CIE 1931	**y**	0.3366	Colour Fidelity	**TM30 R_f**	79
Colour Coordinate CIE 1976	**u'**	0.2085	Colour Gamut	**TM30 R_g**	98
Colour Coordinate CIE 1976	**v'**	0.4752	Television Lighting Consistency Index	**TLCI**	63
Spectral Similarity Index	**SSI[CIE D5505]**	65			

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

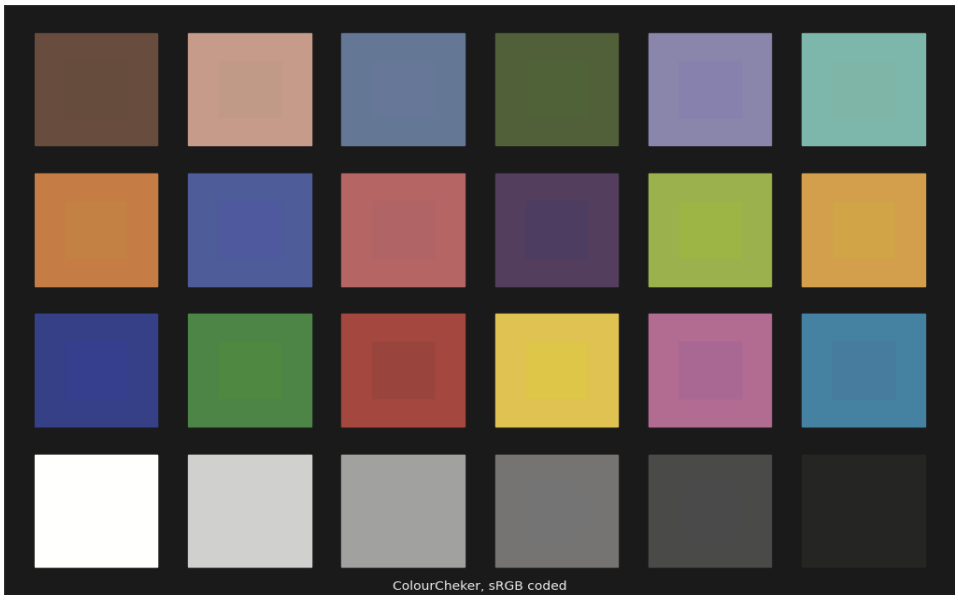


Colour Temperature

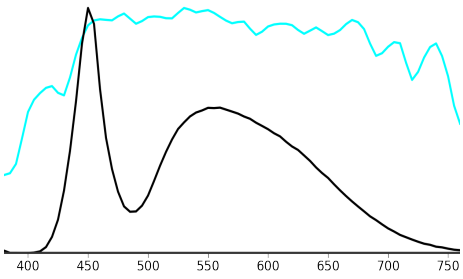


Television Lighting Consistency Index-2012

CCT = D5505 (-0.4) TLCI-2012 : 63 (D5505)



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



Fixture Settings: CCT:5600K, No Filter

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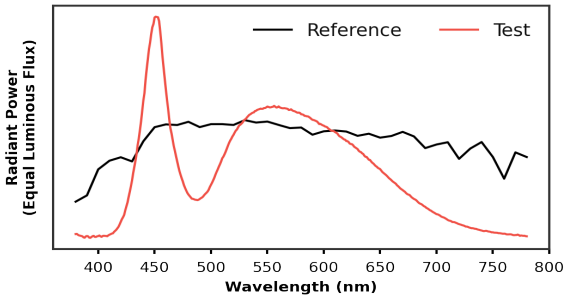
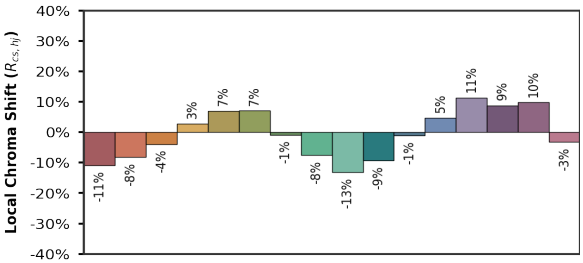
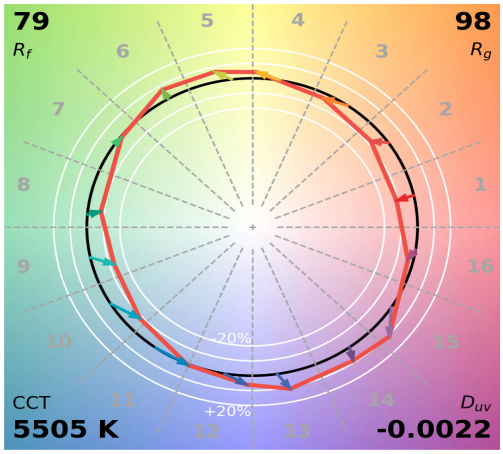
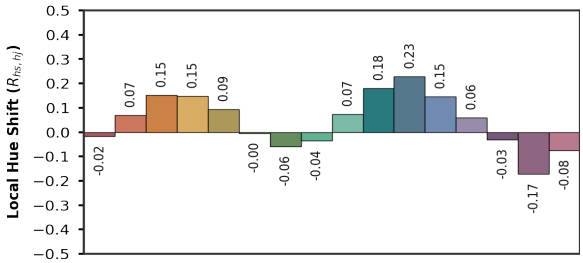
5600K – Colorimetric Report

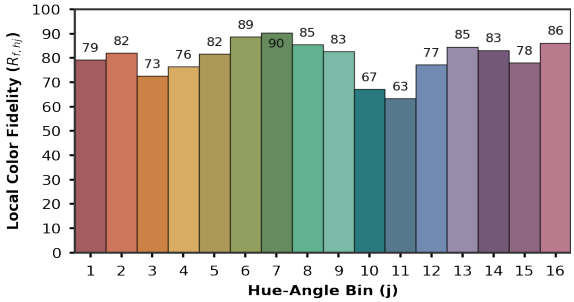
IES TM-30-18 Colour Rendition Report

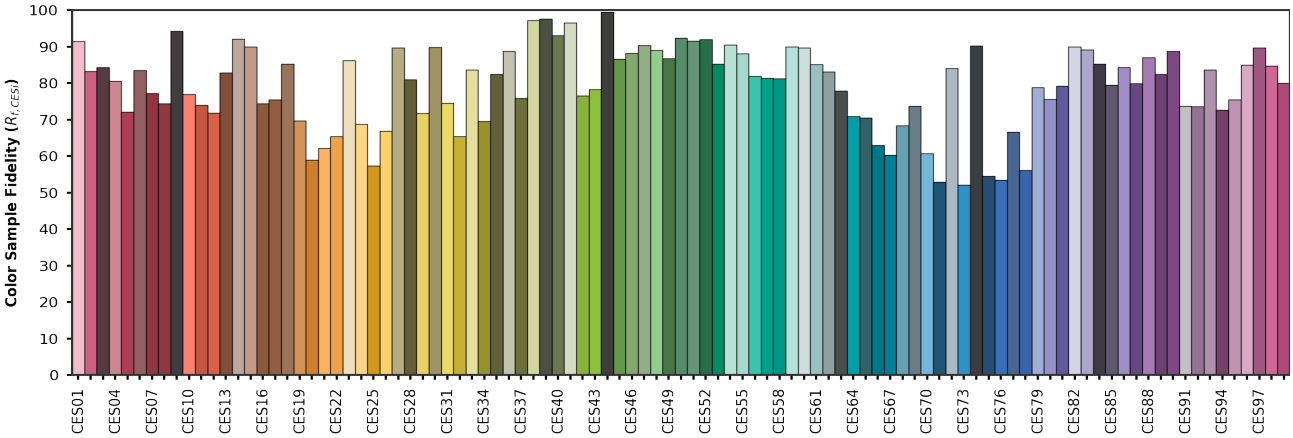












x	0.3323
y	0.3366
u′	0.2085
v′	0.4752

CIE 13.31-1995 (CRI)
R_a **81**
R_9 **26**

Fixture Settings: CCT:5600K, No Filter

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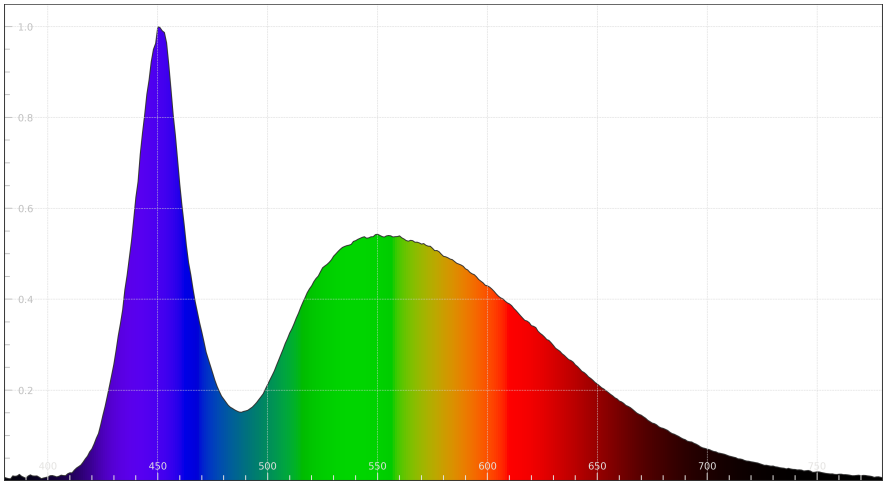
6500K – Colorimetric Report

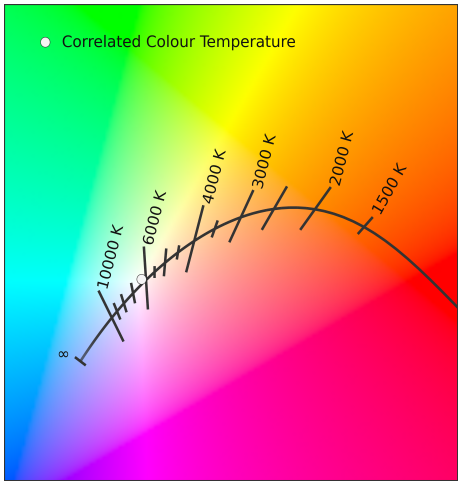
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	6500	Luminous Flux [lm]	**Lum Flux**	945
Colour Deviation from Black	**D_{uv}**	-0.0000	Colour Rendering Index	**CRI Ra**	77
Colour Coordinate CIE 1931	**x**	0.3172	Red Component	**CRI R9**	3
Colour Coordinate CIE 1931	**y**	0.3272	Colour Fidelity	**TM30 R_f**	77
Colour Coordinate CIE 1976	**u'**	0.2017	Colour Gamut	**TM30 R_g**	95
Colour Coordinate CIE 1976	**v'**	0.4680	Television Lighting Consistency Index	**TLCI**	55
Spectral Similarity Index	**SSI[CIE D6273]**	61			

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

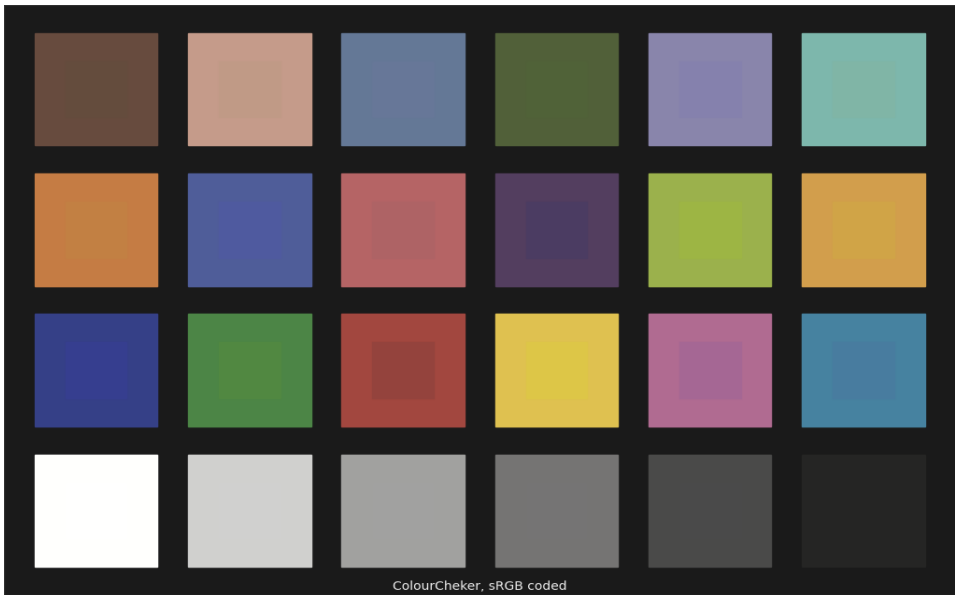


Colour Temperature

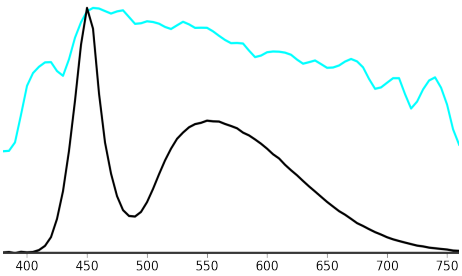


Television Lighting Consistency Index-2012

CCT = D6273 (-0.0) TLCI-2012 : 55 (D6273)



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



Fixture Settings: CCT:6500K, No Filter

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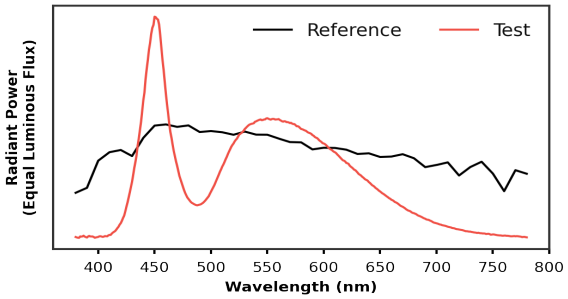
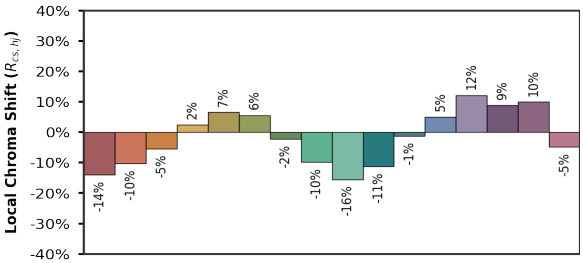
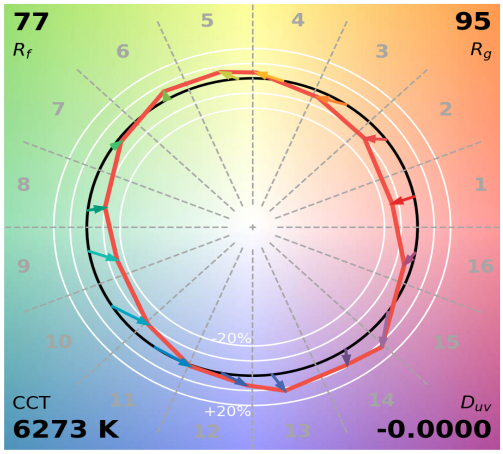
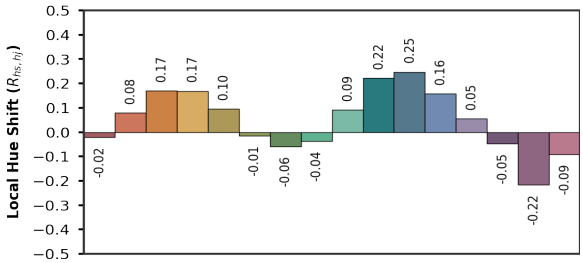
6500K – Colorimetric Report

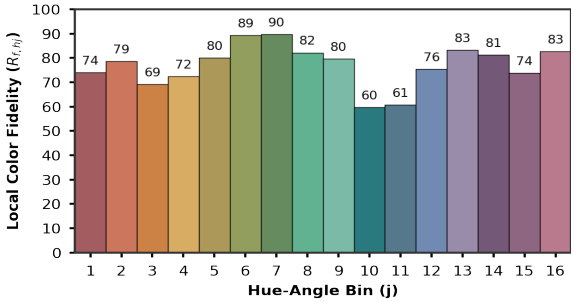
IES TM-30-18 Colour Rendition Report

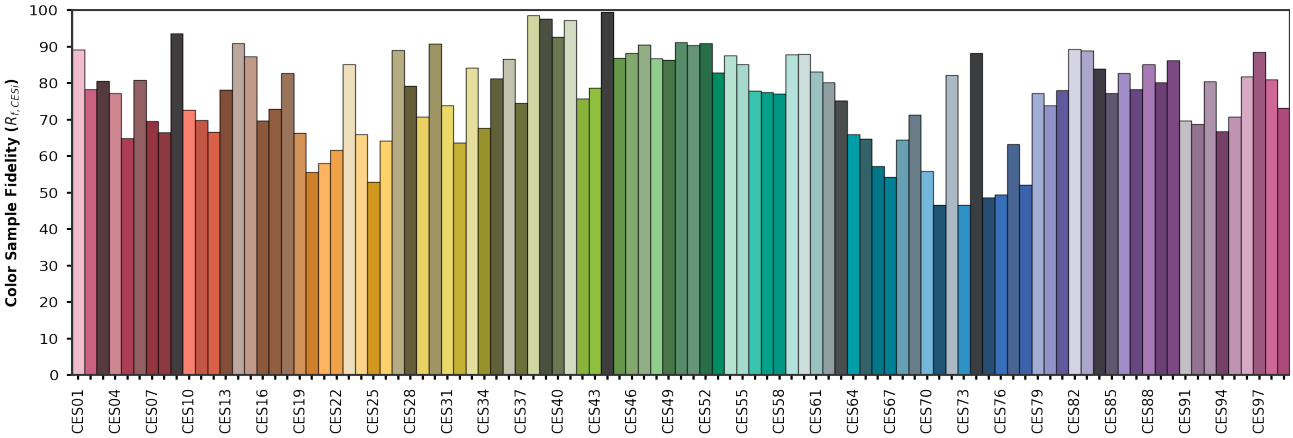












x	0.3172
y	0.3272
u′	0.2017
v′	0.4680

CIE 13.31-1995
(CRI)
R_a **77**
R_9 **3**

Fixture Settings: CCT:6500K, No Filter

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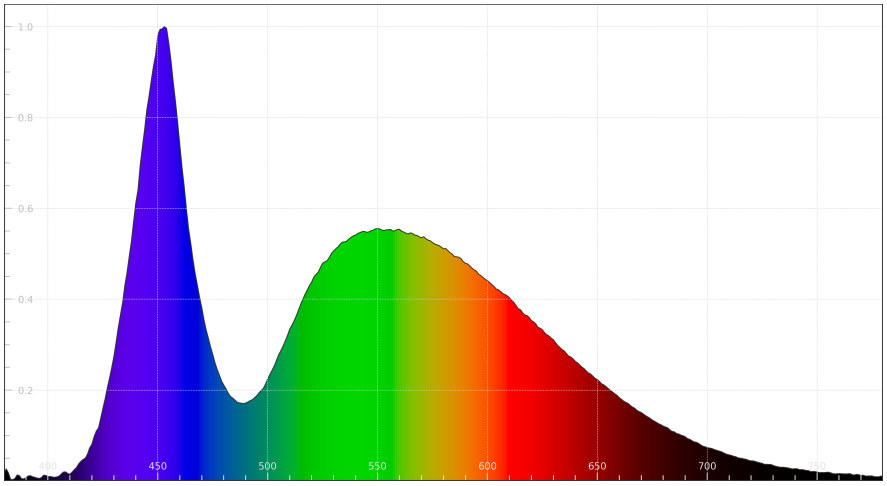
PixBar TW Short IP G2

Cold-White – Colorimetric Report

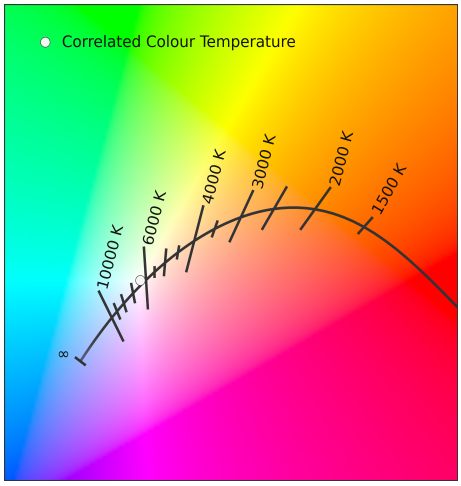
Colorimetric Characteristics

Correlated Colour Temperature [K]	**CCT**	6600	Luminous Flux [lm]	**Lum Flux**	970
Colour Deviation from Black	**D_{uv}**	-0.0003	Colour Rendering Index	**CRI Ra**	78
Colour Coordinate CIE 1931	**x**	0.3159	Red Component	**CRI R9**	7
Colour Coordinate CIE 1931	**y**	0.3254	Colour Fidelity	**TM30 R_f**	78
Colour Coordinate CIE 1976	**u'**	0.2015	Colour Gamut	**TM30 R_g**	95
Colour Coordinate CIE 1976	**v'**	0.4668	Television Lighting Consistency Index	**TLCI**	56
Spectral Similarity Index	**SSI[CIE D6354]**	62			

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

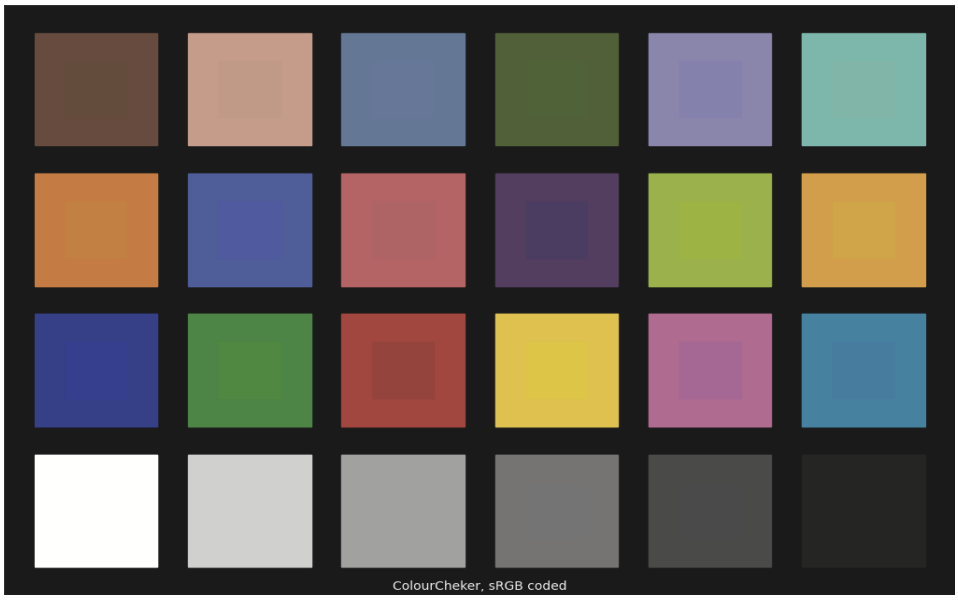


Colour Temperature

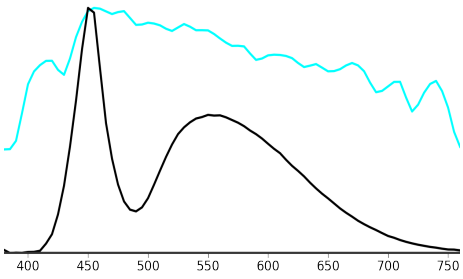


Television Lighting Consistency Index-2012

CCT = D6354 (-0.1) TLCI-2012 : 56 (D6354)



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



Fixture Settings: CCT:Cold-White, No Filter

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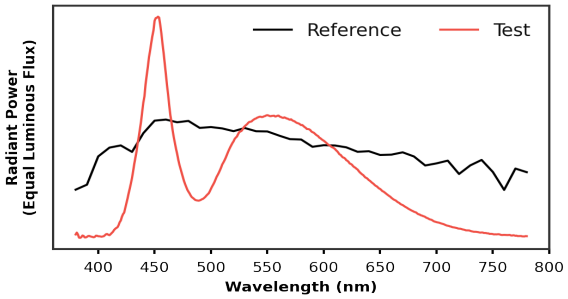
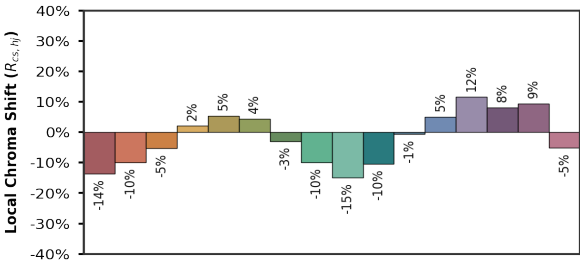
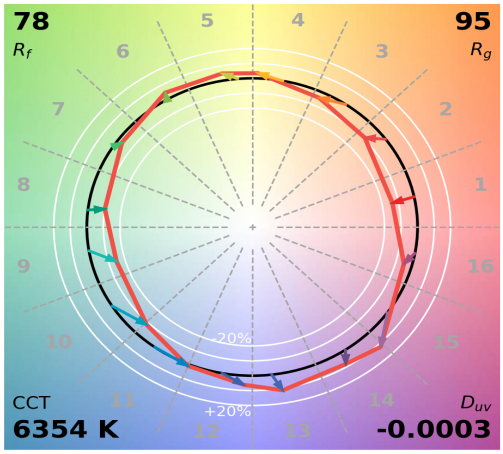
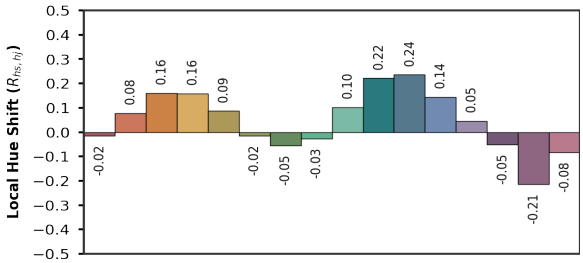
Cold-White – Colorimetric Report

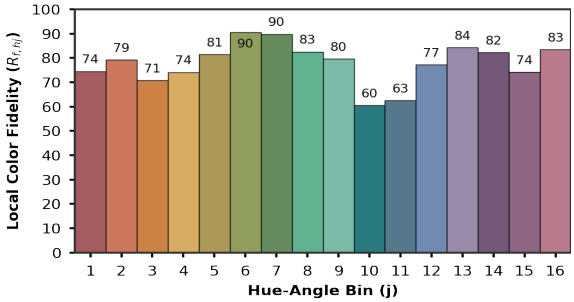
IES TM-30-18 Colour Rendition Report

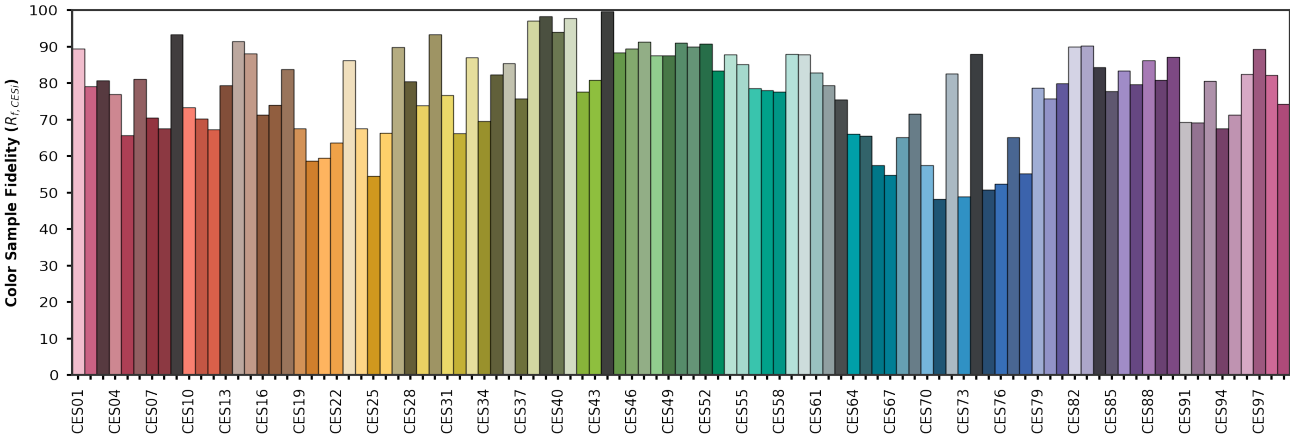












x	**0.3159**
y	**0.3254**
u'	**0.2015**
v'	**0.4668**

CIE 13.31-1995
(CRI)
R_a **78**
R_9 **7**

Fixture Settings: CCT:Cold-White, No Filter

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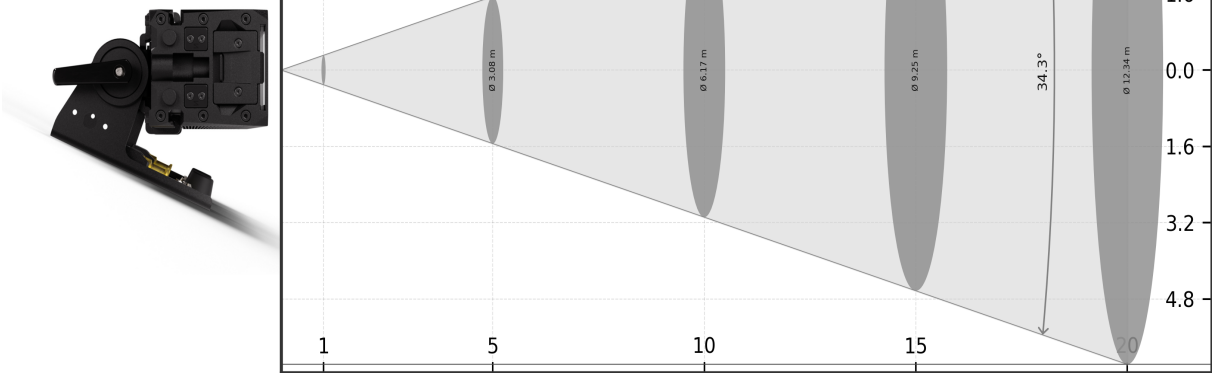
Standard Filter – Photometric Report

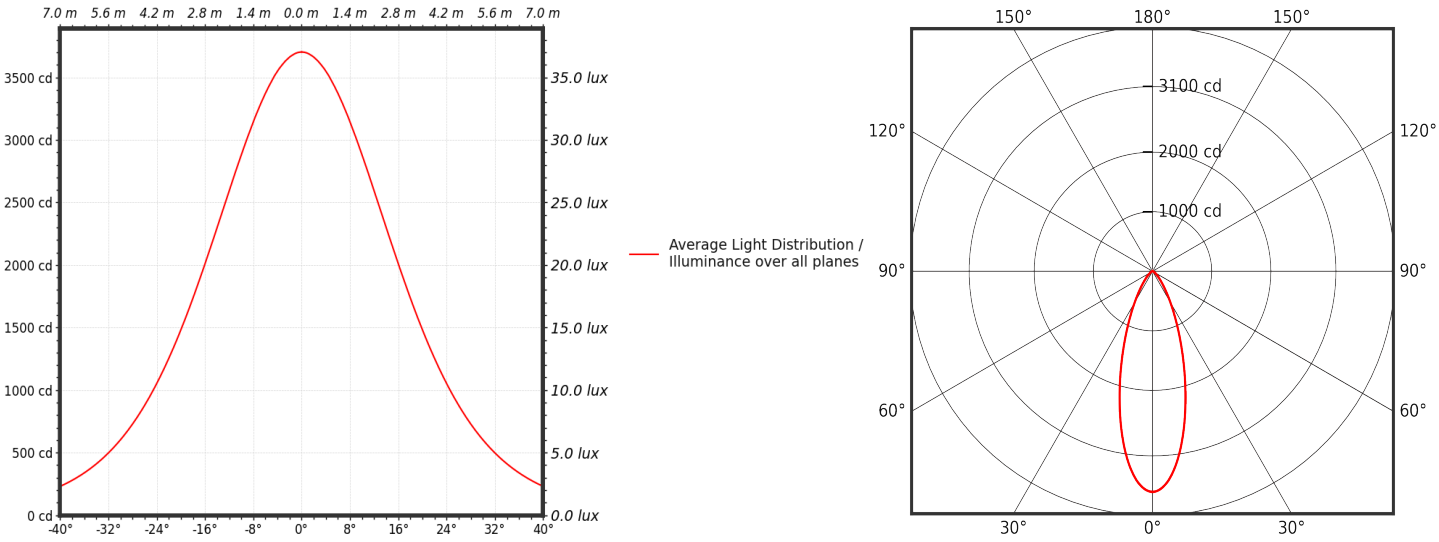
Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
34.3	70.1	1800	74	24.3

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



Distance [m]	1	5	10	15	20
Illuminance [lx]	3703	148	37	16	9
Diameter [m]	0.62	3.08	6.17	9.25	12.34

Light Distribution Diagrams / Illuminance



Fixture Settings: Full-On, Standard-Filter

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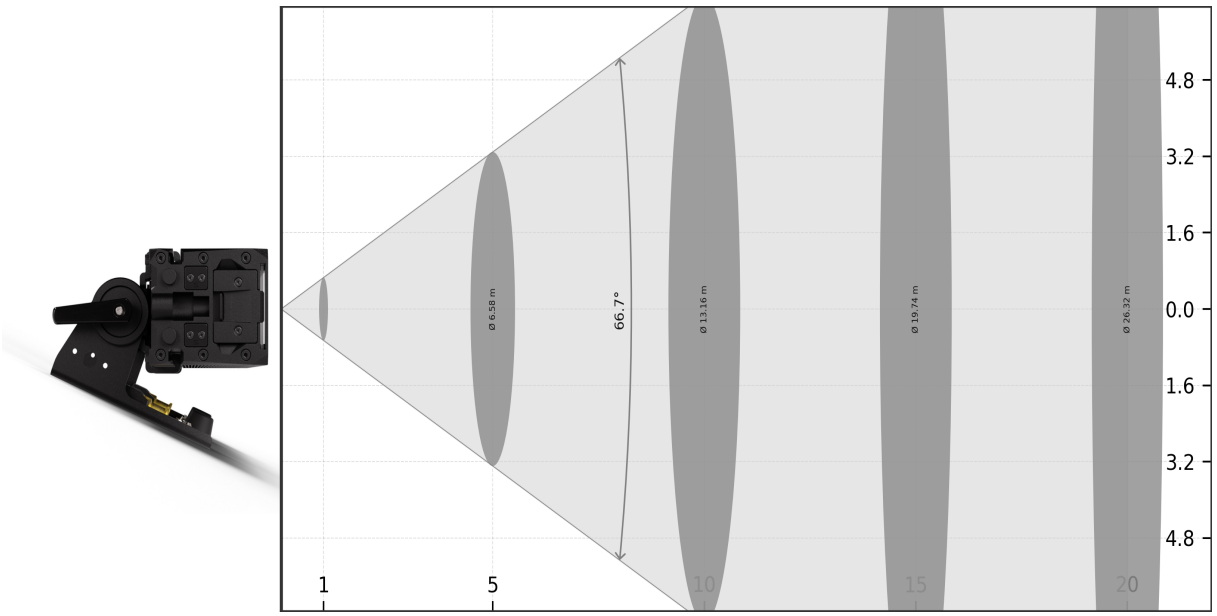
55°-Filter – Photometric Report

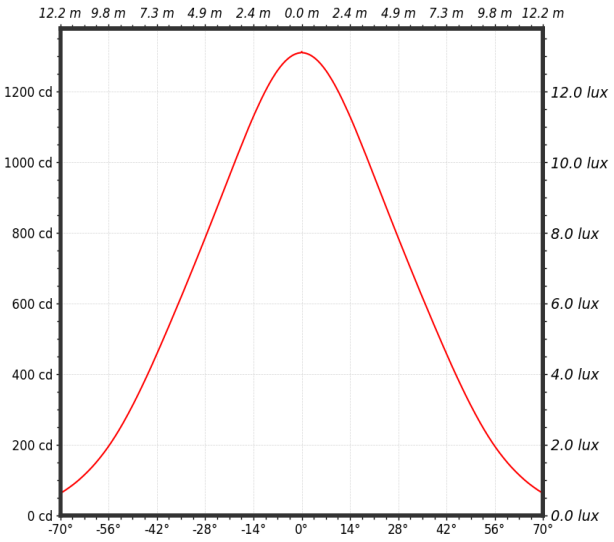
Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
66.7	122.5	1800	74	24.3

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

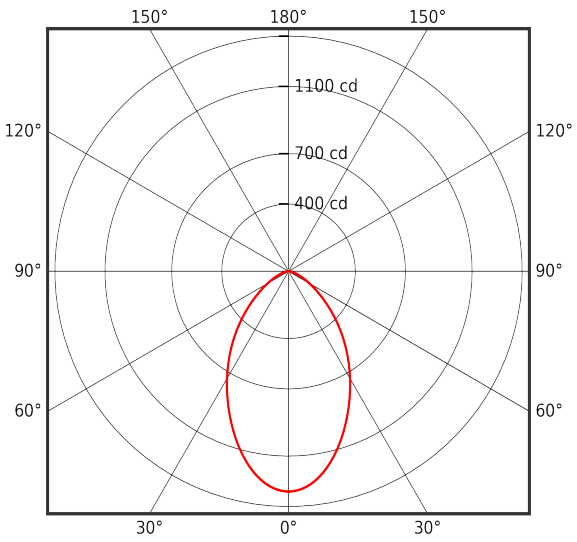


Distance [m]	1	5	10	15	20
Illuminance [lx]	1313	53	13	6	3
Diameter [m]	1.32	6.58	13.16	19.74	26.32

Light Distribution Diagrams / Illuminance



Average Light Distribution / Illuminance over all planes



Fixture Settings: Full-On, 55°-Filter

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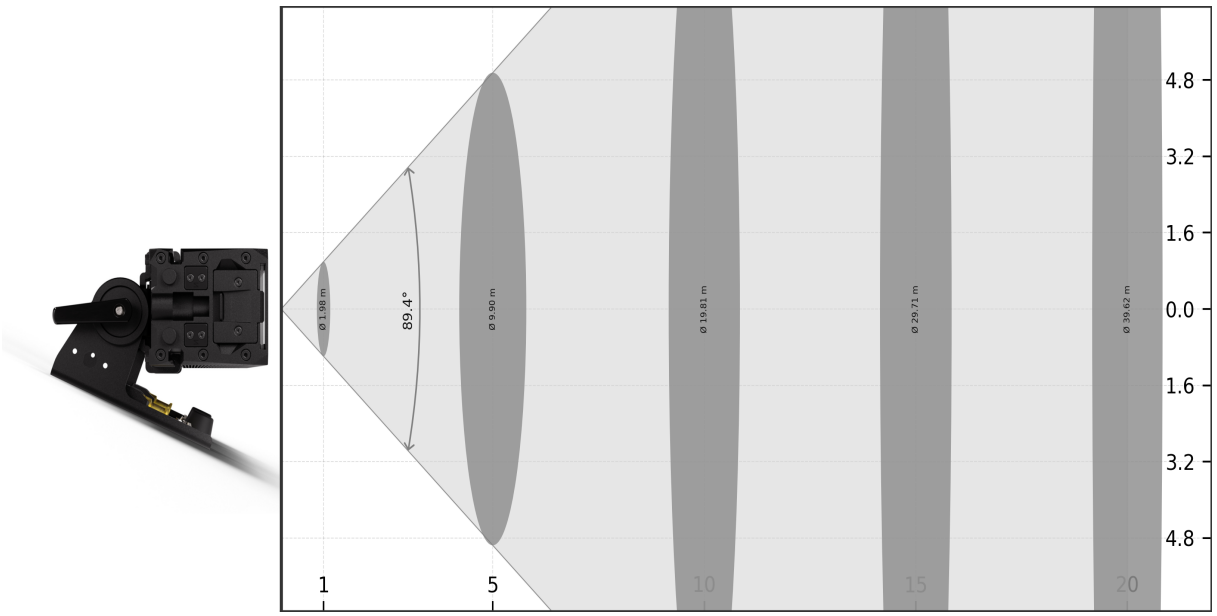
70°-Filter – Photometric Report

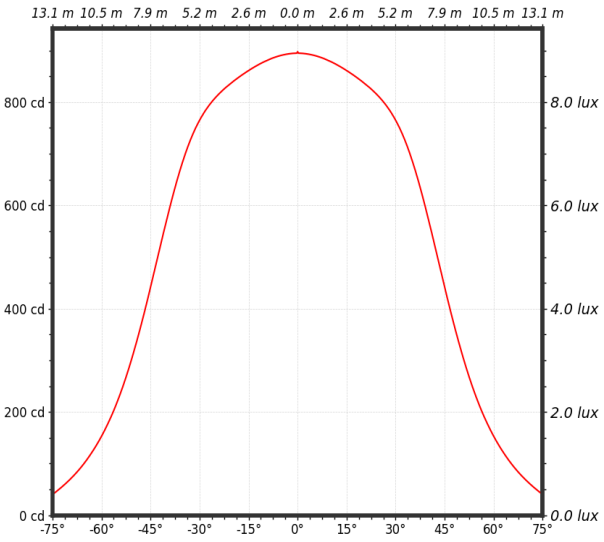
Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
89.4	133.3	1800	74	24.3

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

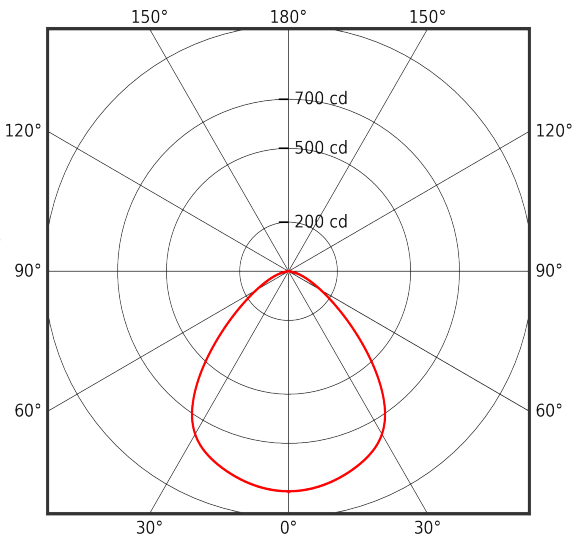


Distance [m]	1	5	10	15	20
Illuminance [lx]	897	36	9	4	2
Diameter [m]	1.98	9.90	19.81	29.71	39.62

Light Distribution Diagrams / Illuminance



Average Light Distribution / Illuminance over all planes



Fixture Settings: Full-On, 70°-Filter

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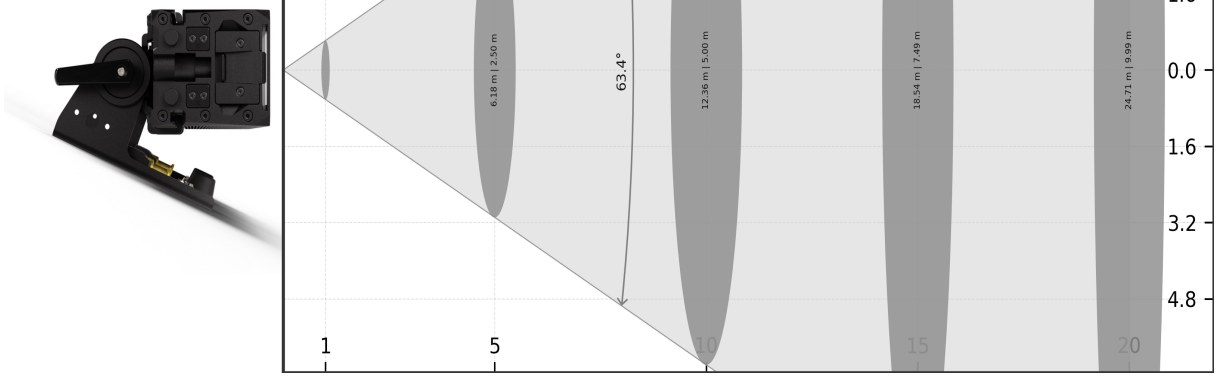
25°x55°-Filter – Photometric Report

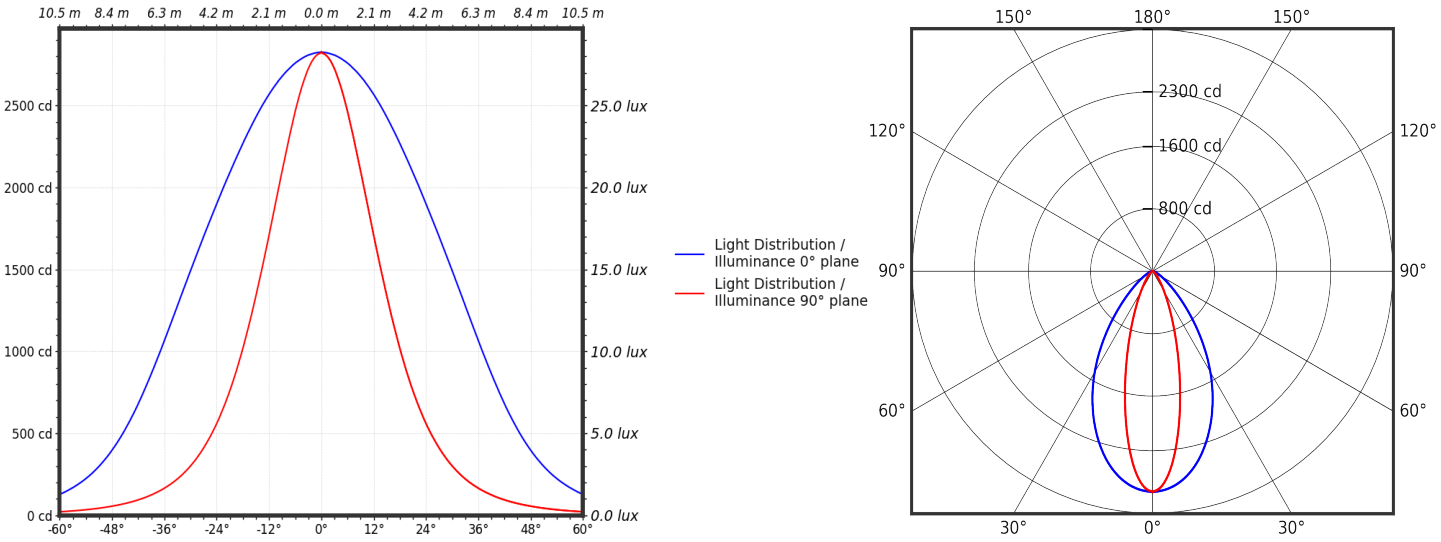
Beam Angle [°]	Field Angle [°]	Luminous flux [lm]	Power [W]	Luminous Efficacy [lm/W]
63.4 | 28.0	103.0 | 60.6	1800	74	24.3

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



Distance [m]	1	5	10	15	20
Illuminance [lx]	2827	113	28	13	7
Diameter [m]	1.24 | 0.50	6.18 | 2.50	12.36 | 5.00	18.54 | 7.49	24.71 | 9.99

Light Distribution Diagrams / Illuminance



Fixture Settings: Full-On, 25°x55°-Filter

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