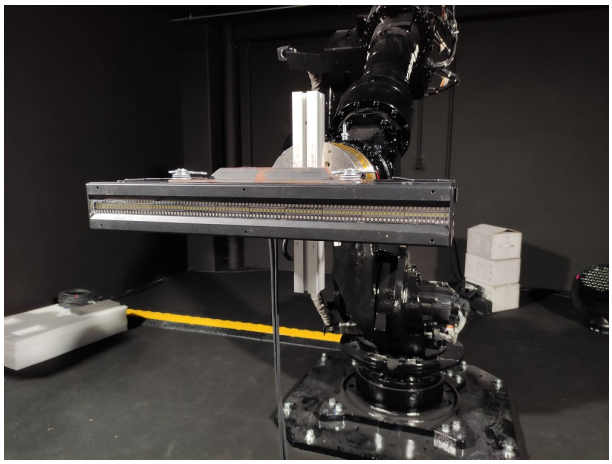
JDC Line 500
Photometric Report

Report 2021-07-28-1

GLP German Light Products GmbH
GLP LightLab

Maximum Total Lumens	42100	lm
Maximum Intensity	39900	cd
CRI	78	
Energy Efficiency Class	B	
Energy Efficiency Index	0.26	
Power Consumption	802	$\frac{kWh}{1000h}$

Measurement Date	2021-07-28 12:04
Analysis Date	2021-08-05 11:38
Measurement SW Version	2.5.0-rc.1
Analysis SW Version	2.6.0



Contents

1 Light Distribution

Table 1: Summary of beam opening angles for different fixture configurations.

Beam	Beam Angle (50 %) C0	C90	Field Angle (10 %) C0	C90	Cutoff Angle (3 %) C0	C90
W Full, RAW	150°	64°	160°	70°	170°	80°
RGBW Full, RAW	150°	64°	160°	70°	160°	88°

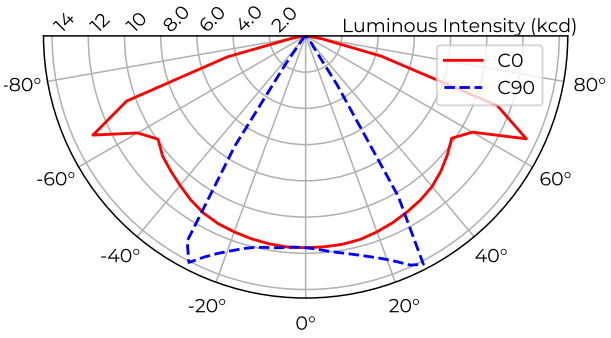
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output	Peak Luminous Intensity)
W Full, RAW	20.4 klm	19.8 kcd
RGBW Full, RAW	42.1 klm	39.9 kcd

Table 3: Approximate illuminance and beam diameter at different projection distances, calculated with the inverse-square law. The approximation is valid only for large distances, compared to the size of the fixture output port.

			Projection Distance [m]								
Beam	Parameter	Factor	5	7.5	10	12.5	15	17.5	20	22.5	25
W Full, RAW	Diameter [m]	2.6	13	19	26	32	39	45	52	58	65
	Illuminance [lx]	11.7k	470	210	120	75	52	38	29	23	19
RGBW Full, RAW	Diameter [m]	2.6	13	19	26	32	39	45	52	58	65
	Illuminance [lx]	24.3k	970	430	240	160	110	79	61	48	39

1.1 W Full, RAW Beam



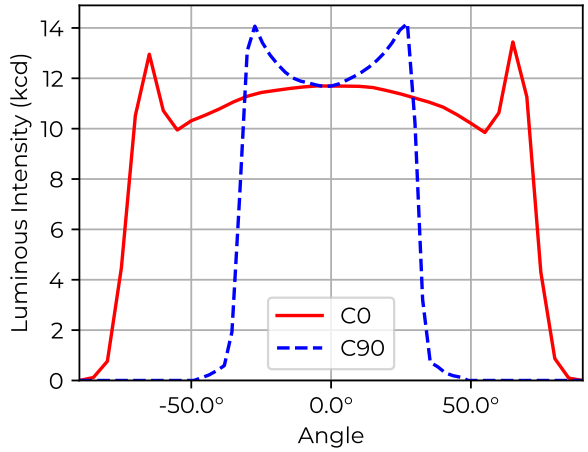


Figure 1: Polar and cartesian light intensity distributions. W Full, RAW

Type B measurement, 1296 data points.

Table 4: Opening angles for different intensity thresholds. W Full, RAW

		C0	C90
Beam Angle	50 %	150°	64°
Field Angle	10 %	160°	70°
Cutoff Angle	3 %	170°	80°

Table 5: Luminous flux, integrated over the beam for several minimum threshold intensities. W Full, RAW

		Flux (lm)
Half-Peak Output	@50 %	19 000
Tenth-Peak Output	@10 %	20 300
Total Lumen Output	@3 %	20 400

$$\text{diameter} = 2.6 \times \text{distance}$$

$$\text{illuminance} = \frac{11\,700\ \text{lx}}{(\text{distance [m]})^2}$$

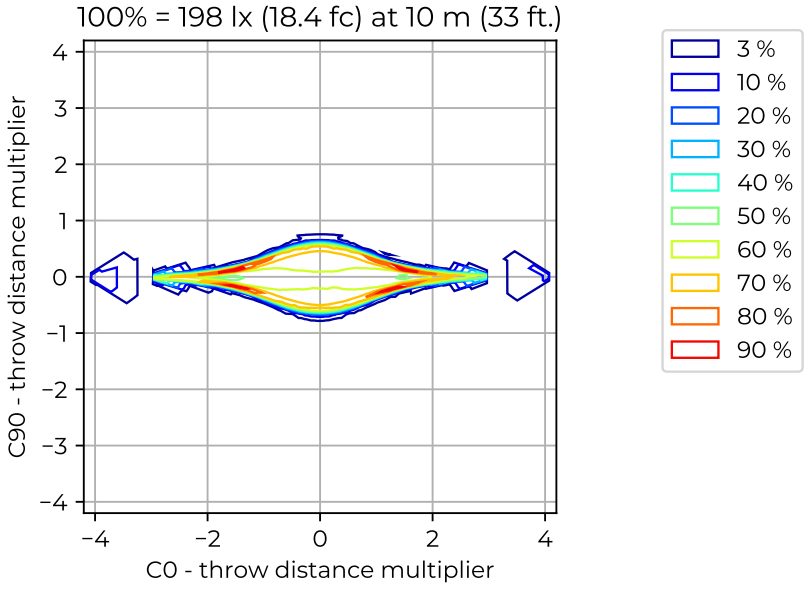


Figure 2: Iso-illuminance diagram of projected beam. W Full, RAW
dist. from origin = throw dist. × throw dist. multiplier

Table 6: Quick calculation diagram for illuminance and beam diameter. W Full, RAW

		Projection Distance [m]								
Parameter	Factor	5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	2.6	13	19	26	32	39	45	52	58	65
Illuminance [lx]	11.7k	470	210	120	75	52	38	29	23	19

1.2 RGBW Full, RAW Beam

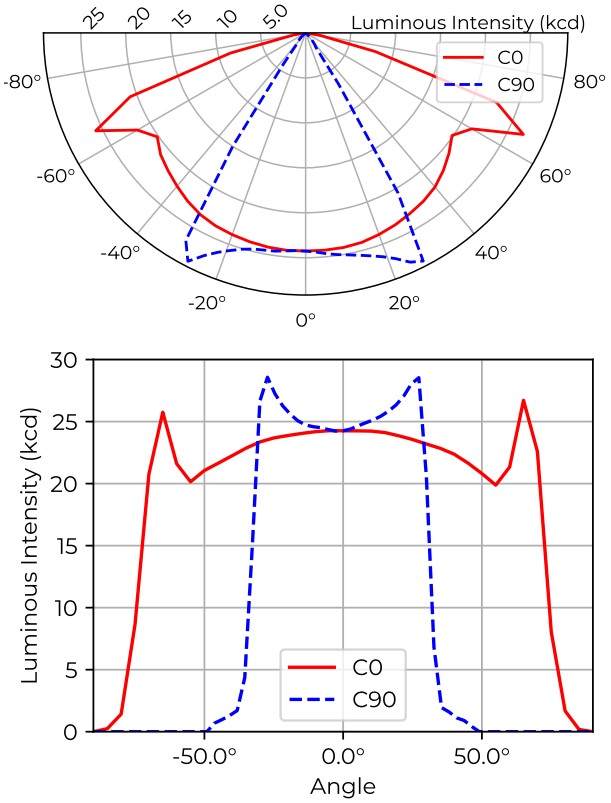


Figure 3: Polar and cartesian light intensity distributions. RGBW Full, RAW

Type B measurement, 1296 data points.

Table 7: Opening angles for different intensity thresholds. RGBW Full, RAW

		C0	C90
Beam Angle	50 %	150°	64°
Field Angle	10 %	160°	70°
Cutoff Angle	3 %	160°	88°

Table 8: Luminous flux, integrated over the beam for several minimum threshold intensities. RGBW Full, RAW

		Flux (lm)
Half-Peak Output	@50 %	38 800
Tenth-Peak Output	@10 %	41 400
Total Lumen Output	@3 %	42 100

$$\text{diameter} = 2.6 \times \text{distance}$$

$$\text{illuminance} = \frac{24\,300\ \text{lx}}{(\text{distance [m]})^2}$$

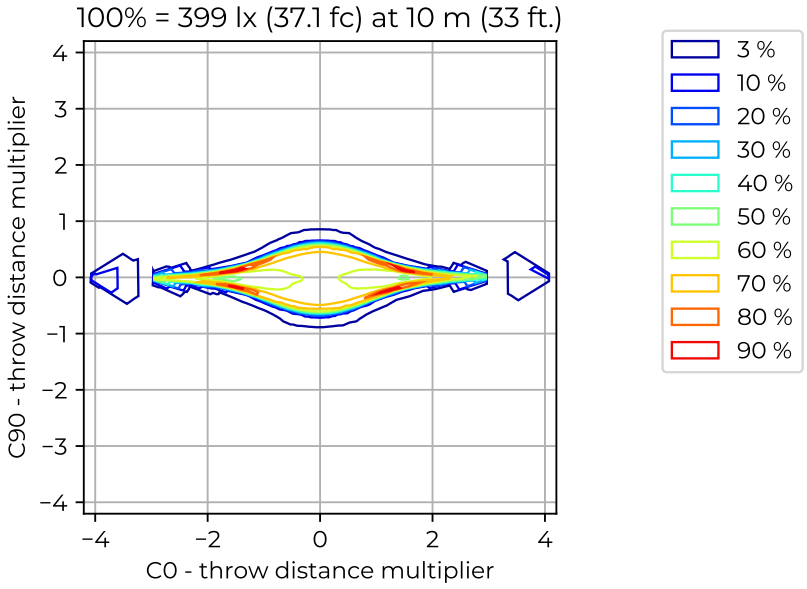


Figure 4: Iso-illuminance diagram of projected beam. RGBW Full, RAW
dist. from origin = throw dist. × throw dist. multiplier

Table 9: Quick calculation diagram for illuminance and beam diameter. RGBW Full, RAW

		Projection Distance [m]								
Parameter	Factor	5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	2.6	13	19	26	32	39	45	52	58	65
Illuminance [lx]	24.3k	970	430	240	160	110	79	61	48	39

2 White Quality – White LED

Table 10: Summary for White LED spectral measurement results and color metrics.

Metric	Value
CCT	6981 K
CCT D_{uv}	-0.0079
CRI R_a	78
CRI R_9	16
TLCI-2015	53
TM-30-15 R_f	97
TM-30-15 R_g	71
CIE 1931 x	0.309
CIE 1931 y	0.305
CIE 1960 u	0.205
CIE 1960 v	0.303

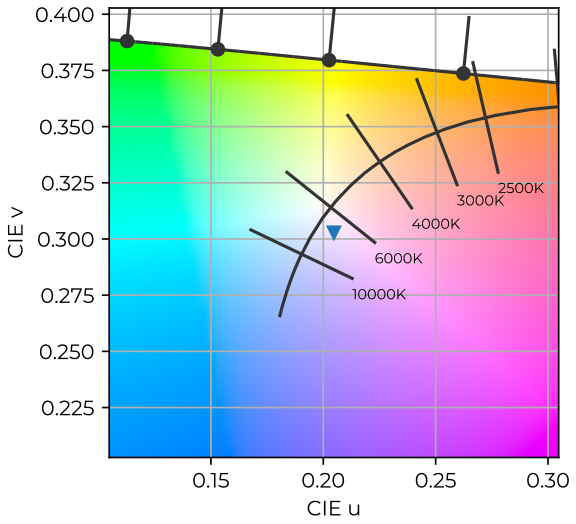


Figure 5: Color coordinates in CIE 1960 chromaticity diagram. White LED

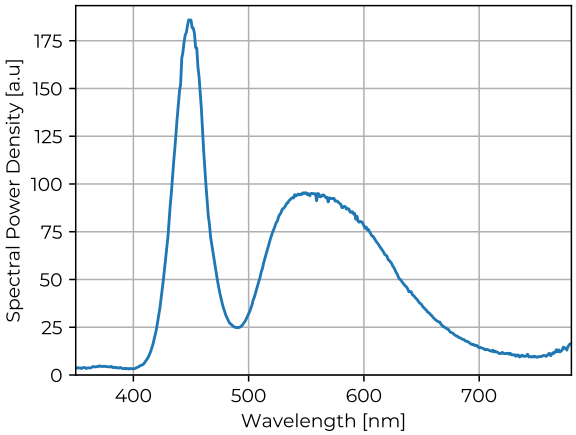
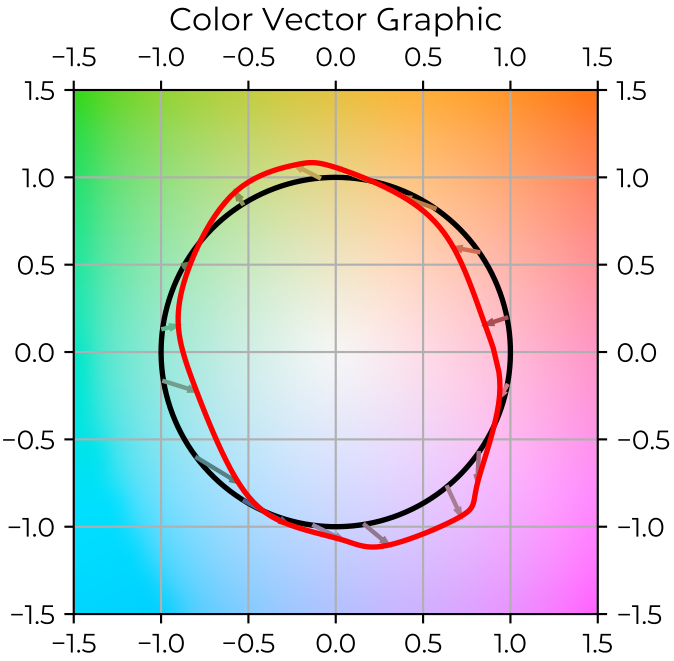
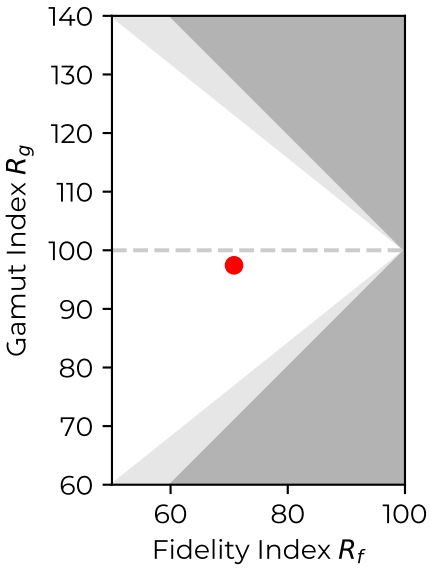
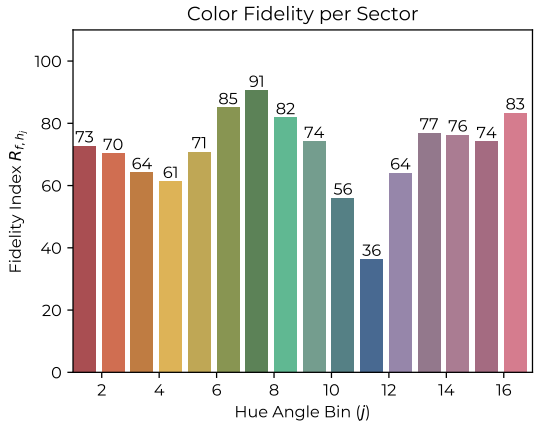


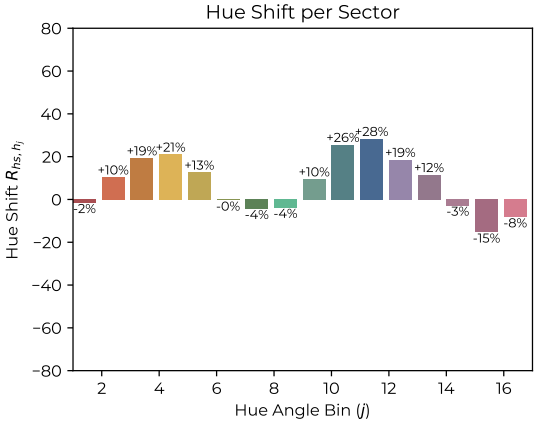
Figure 6: Measured Spectral Power Distribution of light source. White LED

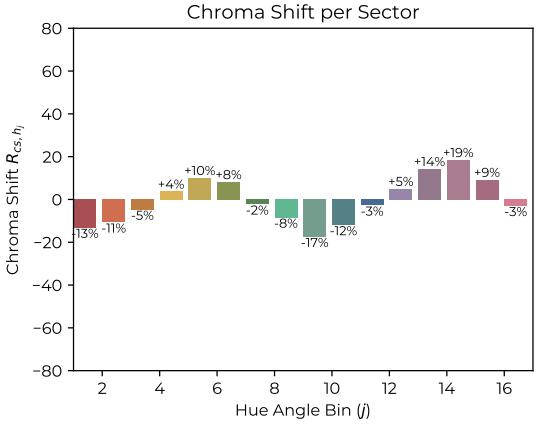
2.1 TM-30-15 Detail Plots

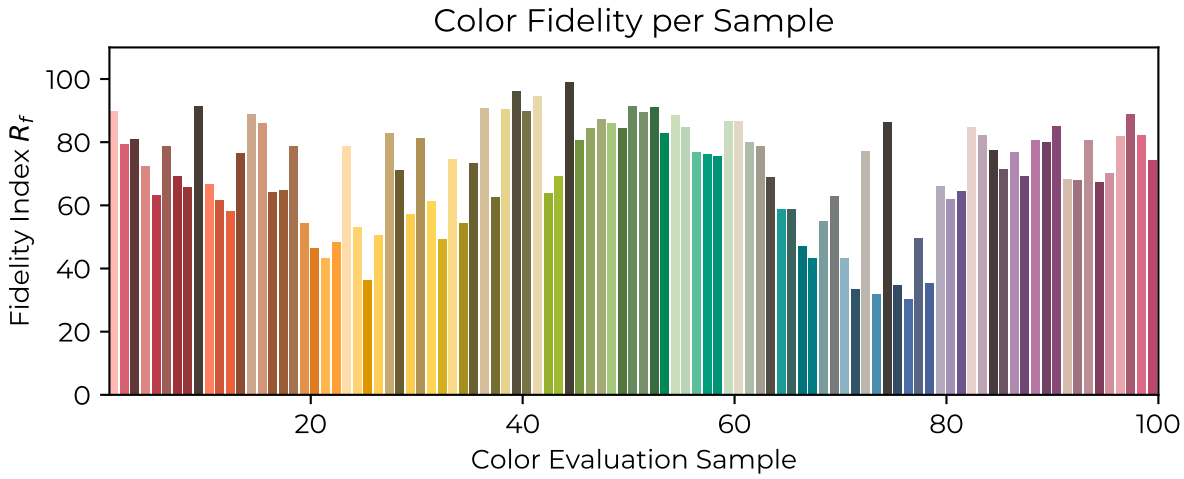






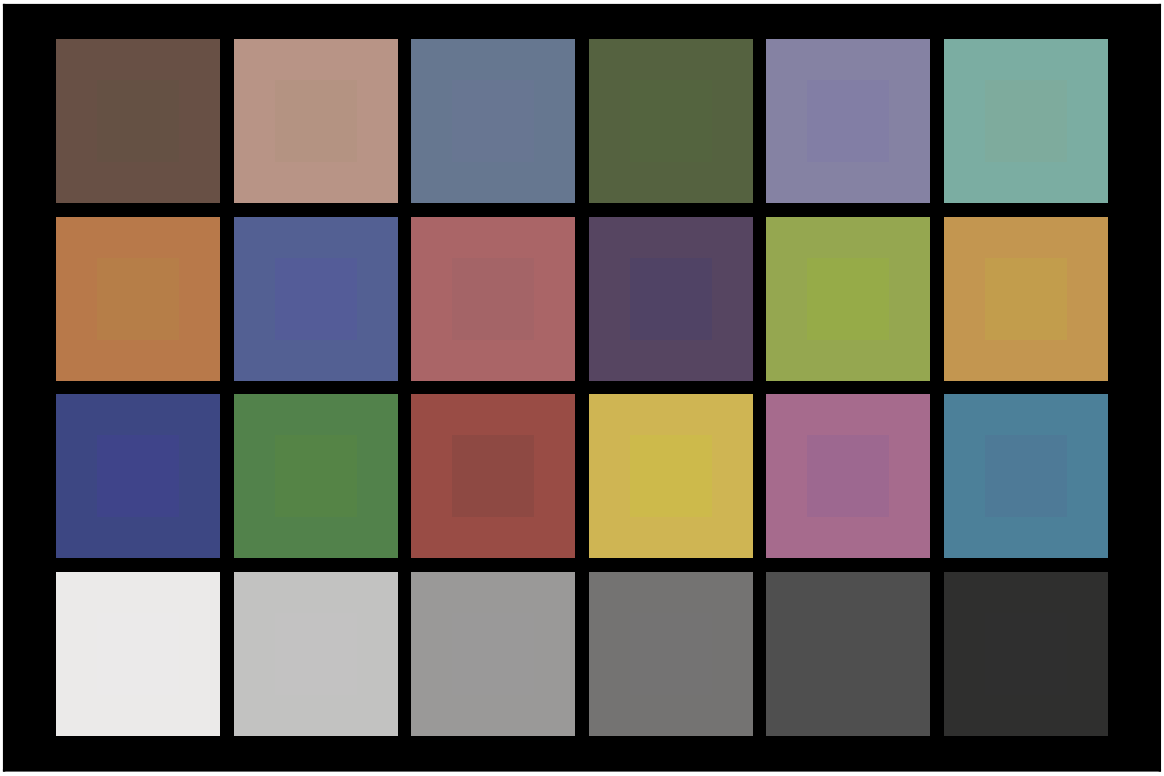


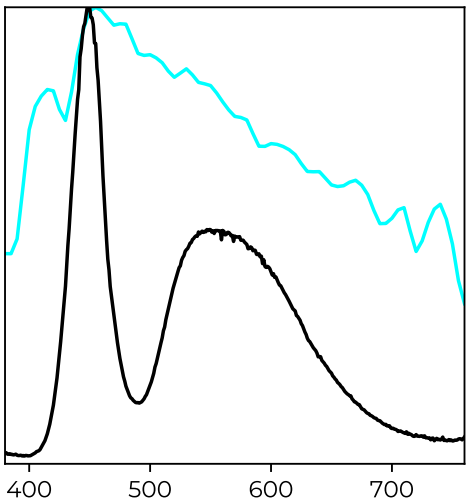



Color Fidelity per Sample
Fidelity Index R_f
100
80
60
40
20
0
20
40
60
80
100
Color Evaluation Sample

2.2 TLCI-2012 Results

JDC Line 500 White LED : CCT = D6998 −2.1, TLCI = 53





Sector	Lightness	Chroma	Hue
R	4	4	4
R/Y	2	2	2
Y	7	7	7
Y/G	3	3	3
G	4	4	4
G/C	3	3	3
C	5	5	5
C/B	7	7	7
B	4	4	4
B/M	5	5	5
M	5	5	5
M/R	7	7	7

3 Colors

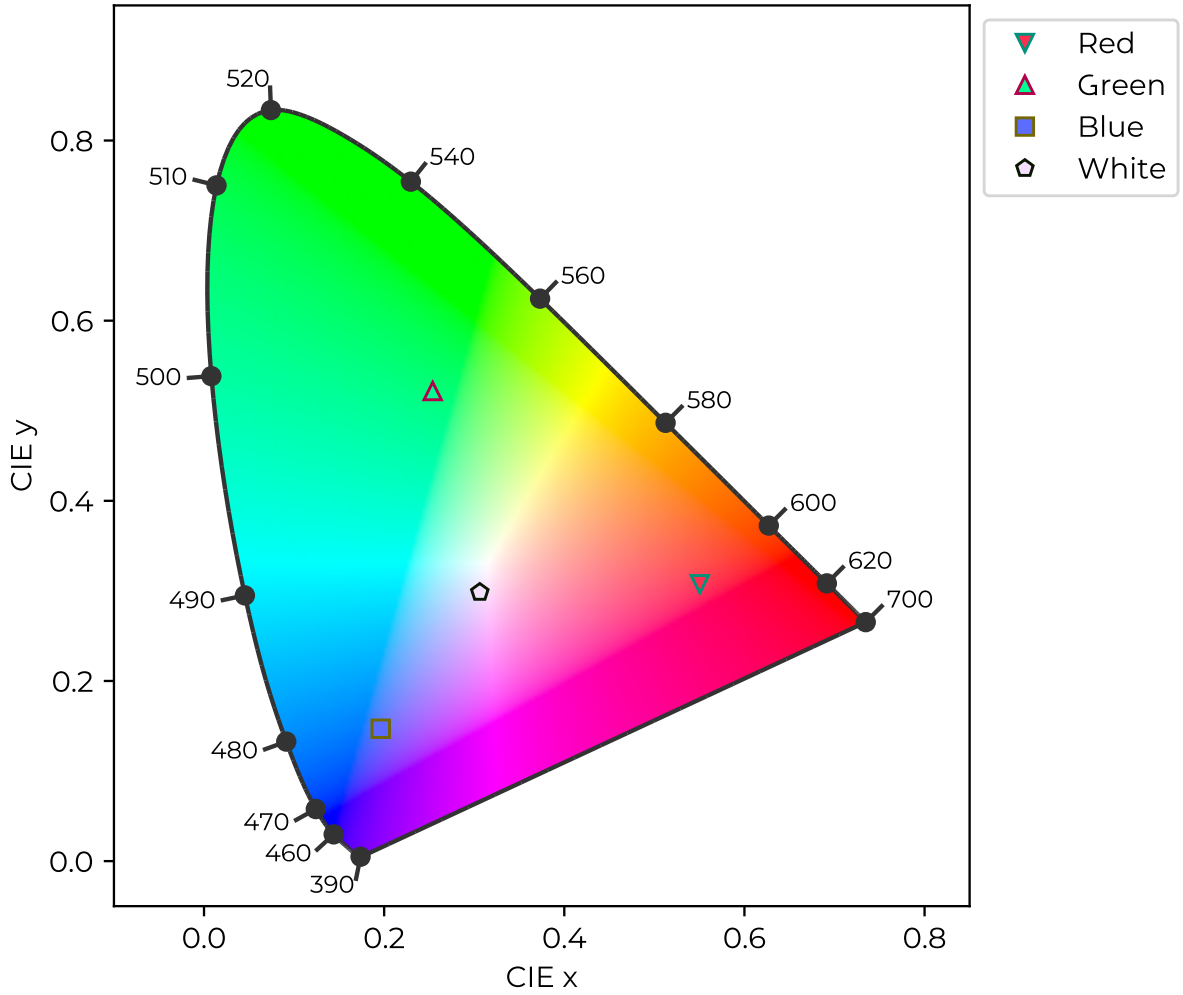


Figure 7: Chromaticity coordinates of device colors in a CIE 1931 chromaticity diagram.

Table 11: Chromaticity coordinates for figure 7, in CIE 1931 xy and CIE 1960 UCS uv coordinates. Color swatches are illustrative only, limited by screen and print color space. Color appearance will be different when used for illumination.

Color	xy	uv
Red	0.55, 0.307	0.394, 0.33
Green	0.254, 0.522	0.116, 0.358
Blue	0.196, 0.147	0.18, 0.202
White	0.306, 0.299	0.205, 0.3