Welcome to the HT Enthusiast Extended Workflow

v18.2.1

Workflow → Description

↘ Introduction ↙
→ Prepare ←
↓ Calibrate ↑
← Analyze →

CalMAN HDR10

Featuring ...

- Home layout outlines the workflow structure with full access
- Comprehensive Notes Management - access button always at bottom right
- Integrated Session Setup layout with hardware configuration and dynamic range assessment, with access to Meter Profile Analysis, Meter Stability, and Screen Uniformity layouts
- Single layout takes all desired Pre- or Post-calibration readings
- Expanded Multi-Point Grayscale calibration, pre/post-cal charts, and datagrid layouts
- CMS Gamut detailed calibration layout
- Saturation Sweep detailed calibration, pre/post-cal charts, and datagrid layouts
- 3D Color Cube LUT calibration, detailed charts, and datagrid layouts
- Gamut Luminance & Color Check cal assessment, pre/post-cal charts and datagrid layouts
- High-count calibration points, HDR friendly with EOTF charts
- DeltaE is ICtCp 720: Compensated is default, With Luminance Error if indicated or after the "/"
- Layout indicators: ↧ Calibration ∫ Charts # Datagrids

Also featuring navigation for the Mouse Lazy ...

- Navigation bar on right shows where you are and takes you where you want to go
- Toggle buttons switch between complementary layouts with one click:
  - between the Calibration layouts and their corresponding Datagrid
  - between the Pre-Calibration Readings and Post-Calibration Readings
  - between corresponding Pre-Calibration and Post-Calibration Details
  - between corresponding Post-Calibration Details and Datagrids

And more!

INT
Intro
Next »
HOME
Prepare
Session Setup
PreCal Read
Calibrate
↧ Gry
↧ CMS
↧ Sat
↧ LUT
↧ Lum
↧ CCk
PostCal Read
Analyze
∫ Gry
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∫ Lum
∫ CCk
∫ LUT
Final Check

Home

Session Setup

Session Setup ↗ Notes ↙
PreCal Read Next »

CalMAN

Show Outline

WORKFLOW OVERVIEW

The HT Enthusiast Extended Workflow aims at providing all the possible calibration options in an accessible user-friendly manner.

The workflow is divided into four sections or zones with a corresponding color for the three working zones.

1) ▶ Introduction: Provides general information about the workflow and its features, and random access to all layouts

2) ▶ Preparation Zone: Enter session and device setup information , take pre-calibration readings for reference, plan the dynamic aspects of the session (contrast, brightness, etc.)

3) ▶ Calibration Zone: Contains the calibration layouts with matching datagrids, and the post-calibration readings layout for all views except the 2-Point Grayscale and 3D Color Cube LUT

4) ▶ Analysis Zone: Has detailed charts and datagrids for all views in the pre- and post-calibration states (except the 3D Color Cube LUT which feeds off the calibration layout) and a final check layout for dynamic range fine-tuning with a session summary

ACTIVE CALIBRATION VIEWS

- 2-Point Grayscale
- Multi-point Grayscale
- Saturation Sweeps, also used for basic CMS calibration
- Gamut Luminance
- Color Checker with option for Slim Datagrid
- 3D Color Cube LUT with tabs for Full-feature and Minimal

- Use Minimal layout tab where available for hopefully faster AutoCal.
- DeltaE is ICtCp 720, compensated by default, and with luminance error where indicated or after the "/".
- All active calibration layouts except 2-Point have full-screen datagrids.
- Use the Slim high-content Color Checker datagrid for faster processing of hundreds of colors.

ANALYSIS CHARTS

Except the 2-Point Grayscale and 3D Color Cube LUT, there are pre-calibration and post-calibration detail chart layouts for each active calibration view.

You can toggle between them by clicking the ↑PreCal or ↑PstCal button in the Nav Bar (they super-impose when the layout switches so just keep clicking to go back and forth). Other ↑ buttons in the Nav Bar perform similar toggling duties.

Unlike in the other color views, the CIE chart in the Color Checker pre- and post-calibration chart layouts is a display option accessible by checking the CIE Chart option.

Supplementing the charts are analysis datagrid layouts with both pre- and post-calibration data for each active calibration view. You can acces them using the #Datagrid buttons.

KEY LAYOUTS

Home - has a layout map for getting the lay of the land and a fully loaded navigation matrix for acces to all layouts.

Notes Management - Comprehensive notes management layout contains all notes for convenient editing, with access button at bottom right of all layouts.

Session Setup - Integrates calibration options, initial settings & notes, and hardware/device configuration.

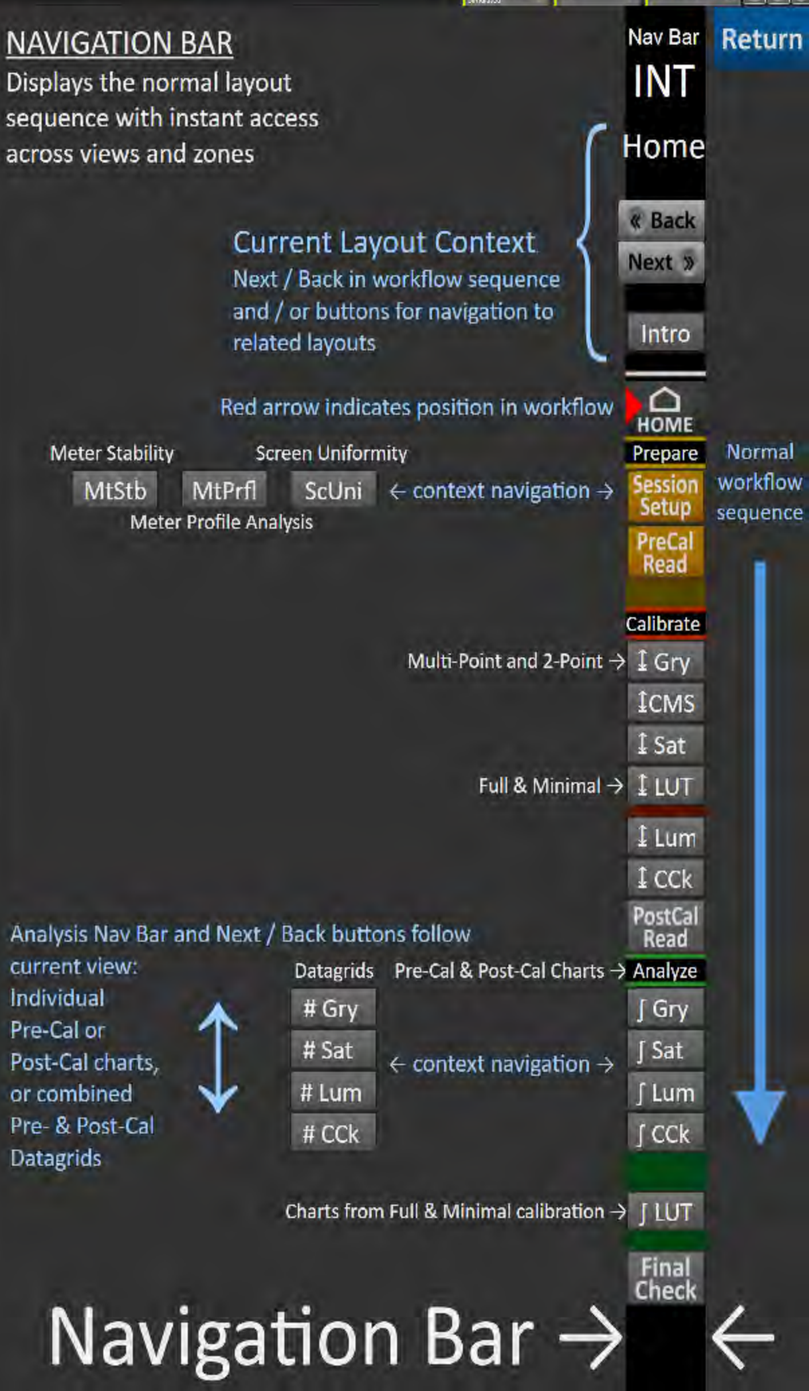
Pre-Calibration Readings, Post-Calibration Readings - these identically configured layouts are master controls for the pre- and post-calibration states with combined and selective reading of all views. They feed all the detail charts and datagrids. You can toggle between the pre- and post-cal reading layouts, and between a reading layout and its corresponding detail layouts, in the Nav Bar (↑PreCal and ↑PstCal) and the explicit toolbar buttons.

Final Check - Analyzes and fine-tunes the dynamic range aspect and provides a comprehensive calibration summary.

Layout indicators: ↧ Calibration ∫ Charts # Datagrids

NAVIGATION BAR

Displays the normal layout sequence with instant access across views and zones



CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Workflow Description

Simulated Meter Simulated | Source | Direct Display Control

☒ Show Outline

▶ Preparation (PRP)

1 ▶ Session Setup → Screen Uniformity → Meter Profile Analysis → Meter Stability

2 ▶ Pre-Calibration Readings

▶ Calibration (CAL)

4 ▶ 2-Point Grayscale Calibration

5 ▶ Multi-Pt Grayscale Calibration → Datagrid

6 ▶ CMS Gamut Calibration → Datagrid

7 ▶ Saturation Sweeps Calibration → Datagrid

8 ▶ 3D Color Cube LUT Calibration

9 ▶ Gamut Luminance Calibration Assessment → Datagrid

10 ▶ Color Checker Calibration Assessment → Datagrid (normal & slim versions)

11 ▶ Post-Calibration Readings

▶ Analysis (ANL)

11 ▶ Multi-Pt Grayscale Post-Cal Charts → Pre-Cal Charts → Datagrids

12 ▶ Saturation Sweeps Post-Cal Charts → Pre-Cal Charts → Datagrids

13 ▶ Gamut Luminance Post-Cal Charts → Pre-Cal Charts → Datagrids

14 ▶ Color Checker Post-Cal Charts → Pre-Cal Charts → Datagrids

15 ▶ 3D Color Cube LUT Calibration Detail Charts (from Full & Minimal calibrations)

16 ▶ Final Check + Summary – Fine Tune the Dynamic Range

NAVIGATION BAR

Displays the normal layout sequence with instant access across views and zones

Current Layout Context

Next / Back in workflow sequence and / or buttons for navigation to related layouts

Red arrow indicates position in workflow

Meter Stability | Screen Uniformity

MtStb | MtPrfl | ScUni ← context navigation →

Meter Profile Analysis

Analysis Nav Bar and Next / Back buttons follow current view: Individual Pre-Cal or Post-Cal charts, or combined Pre- & Post-Cal Datagrids

Datagrids | Pre-Cal & Post-Cal Charts → Analyze

Gry | # Sat | # Lum | # CCk ← context navigation →

Charts from Full & Minimal calibration → ∫ LUT

Nav Bar | Return

INT

Home

Back | Next

Intro

HOME

Prepare

Session Setup

PreCal Read

Calibrate

Multi-Point and 2-Point → ‡ Gry

‡ CMS

‡ Sat

Full & Minimal → ‡ LUT

‡ Lum

‡ CCk

PostCal Read

Analyze

∫ Gry

∫ Sat

∫ Lum

∫ CCk

∫ LUT

Final Check

Normal workflow sequence

Navigation Bar → ←

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CalMAN

Workflow Map

Simulated Meter Simulated | Source | Direct Display Control

7/26/2018 Calibration

Home | Introduction | Notes | CalMAN 5

Back | Next | Return

Preparation

Start → **Session Setup** →

- StaUn • Meter Stability
- StaUn • Screen Uniformity
- PrflAn • Profile Analysis

PreCal Read

↓ Analysis

Calibration

Grayscale	CMS / Saturation Sweeps	3d Color Cube LUT	Gamut Luminance	Color Checker
Gray ↧ 2-Pt Calibrate	CMS ↧ Calibrate	LUT ↧ Calibrate	Lumi ↧ Cal Assessment	CChk ↧ Cal Assessment
Gray ↧ Mult-Pt Calibrate	Satu ↧ Calibrate	↑ Has Full and Minimal layout tabs ↑		CChk # Cal Assessment Data
		LUT Full # Cal Data		CcSlm # Slim Assessmnt Data
		LUT Minimal # Cal Data		

PostCal Read

Analysis

Grayscale	Saturation Sweeps / CMS	Gamut Luminance	Color Checker	3d Color Cube LUT
Gray # Pre/Post-Cal Data	Satu # Pre/Post-Cal Data	Lumi # Pre/Post-Cal Data	CChk # Pre/Post-Cal Data	LUT Full ∫ Cal Charts
				LUT Minimal ∫ Cal Charts
Gray ∫ Pre-Cal Charts	Satu ∫ Pre-Cal Charts	Lumi ∫ Pre-Cal Charts	CChk ∫ Pre-Cal Charts	
Gray ∫ Post-Cal Charts	Satu ∫ Post-Cal Charts	Lumi ∫ Post-Cal Charts	CChk ∫ Post-Cal Charts	

→ **Final Check**

Notes

Layout indicators: ↧ Calibration ∫ Charts # Datagrids

PreCal Read | Notes | Back | Next

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CalMAN

Notes Management

Simulated Meter Simulated | Source: | Direct Display Control

Setup Notes

Calibration Notes

Return

Pre-Calibration Notes

REF

Notes

Calibration Description / Goals

Color Notes

Post-Calibration Notes

Return

CalMAN

Session Setup

10/29/2018 Calibration

(A) Session Options

Start New Session

Session Info

More Options

Use u'v' CIE Charts

Setup Notes

Calibration Description / Goals

Notes

Luminance Unit: cd/m²

Input Level: Video (16-235)

Stimulus Unit: Percent

DeltaE Formula: dE ICtCp 720

Colorspace Target: D65, HD BT.709

Gamma Formula: ITU BT.1886

Display • 75Q9FN

Target Black and White				Target
cd/m2 Blk	fL	cd/m2 Wht	fL	Gamma
0.0001	3E-05	100	29.2	1

(B) Display Settings

AV Mode: Cal Day 100 nits

Color Temp	Warm 2	Contrast	40		Cut	Gain
Sharpness	0	Brightness	1	Red	-2	-4
Color	25	Backlight	20	Green	-4	-4
Tint	0	TV Gamma	0	Blue	-2	-4

(C) Hardware Configuration

Meter Stability | Screen Uniformity | Profile Analysis

1 Meter

Find → | Kill All | Manage

Simulated Meter

Profile

Mode: Simulated

2 Pattern Source

Find → | Kill All | Manage

Source

Size: Constant APL 18

Delay: 0.5

3 Display / Processor

Find → | Kill All | Manage

Lumagen Radiance 3D LUT

Radiance series 460800 baud COM4 with 3D LUT

DDC

Display Slot: CMS 0

Gray Levels: 21

(D) Meter Setup

Position the meter as required for the projector or flat panel to insure accurate measurements when taking readings.

Projector

Flat Panel

(E) Dynamic Range

- Select a suitable set of gray data points and check the gamma level across the full grayscale based on the current settings, and adjust the display's various level controls to get a suitable lowest and highest value, tweaking available Backlight, Brightness, Contrast and such, and optimize RGB fluctuations.
- Select a clipping set of data points to check there is no clipping of the three primaries below and above the White level.

20 Point 5% Step 5-100%

RGB

DDC

Gamma

2.5 2.4 2.3 2.2

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

White / Black cd/m²: 100 / 0

Level: 5

		Target
Gamma	0	2.4
CCT	0	6503
Y	0	0.0763

PRP Setup

Back | Next | MtStb | MtPrf | HOME | Prepare | MtStb | MtPrf | PreCal Read | Calibrate | Gry | CMS | Sat | LUT | Lum | CCk | PostCal Read | Analyze | Final Check | Setup

CalMAN

Session Setup

10/29/2018 Calibration

(A) Session Options

Start New Session

Session Info

More Options

Use u'v' CIE Charts

Setup Notes

Calibration Description / Goals

Notes

Luminance Unit: cd/m²

Input Level: Video (16-235)

Stimulus Unit: Percent

DeltaE Formula: dE ICtCp 720

Colorspace Target: D65, HD BT.709

Gamma Formula: ITU BT.1886

Display • 75Q9FN

Target Black and White				Target
cd/m2 Blk	fL	cd/m2 Wht	fL	Gamma
0.0001	3E-05	100	29.2	1

(B) Display Settings

AV Mode: Cal Day 100 nits

Color Temp	Warm 2	Contrast	40		Cut	Gain
Sharpness	0	Brightness	1	Red	-2	-4
Color	25	Backlight	20	Green	-4	-4
Tint	0	TV Gamma	0	Blue	-2	-4

Display Controls

Input - Brightness: 0

Input - Contrast: 0

Input - Color: 0

Input - Tint: 0

Display Slot: CMS 0

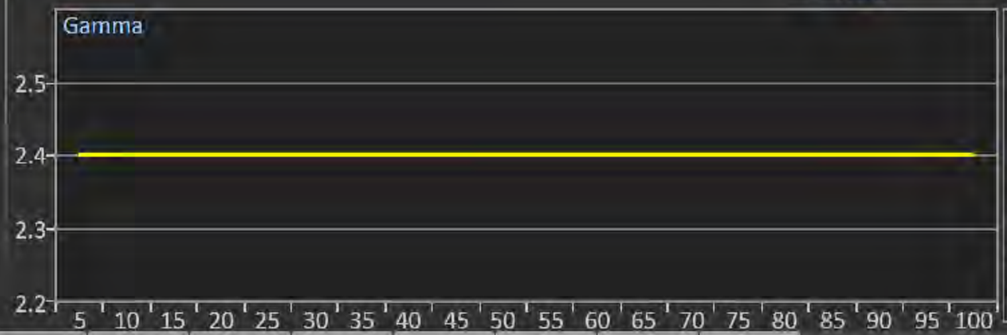
DDC

Reset Display Slot

20 Point 5% Step 5-100%

RGB

DDC



White / Black cd/m²
100 / 0

Level
5

		Target
Gamma	0	2.4
CCT	0	6503
Y	0	0.0763

PRP Setup

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Next

MtStb

MtPrf

HOME

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Session Setup

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Session Setup

7/26/2018 Calibration

(A) Session Options

Start New Session

Session Info

More Options

Setup Notes

Use u'v' CIE Charts

Luminance Unit: cd/m²

Input Level: Video (16-235)

Stimulus Unit: Percent

DeltaE Formula: dE ICtCp

Colorspace Target: D65, HD BT.709

Gamma Formula: Sliding power

Notes

Calibration Description / Goals

Display • 75Q9FN

Target Black and White					Target
cd/m2	Blk	fL	cd/m2	Wht	fL	Gamma
0.0001		3E-05	300		87.6	2.2

(B) Display Settings

AV Mode: Cal Day 300 nits

Color Temp	Warm 2	Contrast	41		Cut	Gain
Sharpness	0	Brightness	1	Red	15	-4
Color	26	Backlight	29	Green	16	-1
Tint	15 / 0	TV Gamma	0	Blue	17	3

(C) Hardware Configuration

Meter Stability | Screen Uniformity | Profile Analysis

Create Profile

Meter Settings

Profile

Reference Meter: Simulated Meter - 12345678

Advanced Options

Target Meter: Simulated Meter - 12345678

Advanced Options

Find more meters

Source

Source - 1

Stimulus Level: 100

Prompt for pattern changes

Profile Information

Current Profile: None

Add Profile

Display Type

	I	X	Y	Z
X	0	1	0	0
Y	0	0	1	0
Z	0	0	0	1

PRP Setup

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Setting Up the Session

Return

(A) CalMAN Session Options

Enter the session description & calibration options in the corresponding drop-downs and text boxes

- Click [Session Info] to enter additional information
- Click [More Options] to open the options panel - the red [X] can be used to close it
- Click the checkmark above/below [Big] to expand the note next to it

(B) Display Settings

Enter the initial display settings to use for the calibration in the corresponding boxes - you can provide alternates in the Pre- and Post-Calibration layouts

(C) Hardware Configuration

1. To start calibrating your display/processor, first connect your meter.
   a) Click the meter [Find] button and select your meter.
   b) Select the Target Display Type.
2. Connect to your reference pattern source generator.
   a) Click the source [Find] button, and select your Source.
   b) Select the pattern window size and resolution.
3. Connect to your display/processor.
   a) Click the display [Find] button and select your display or processor.
   b) Click [DDC] to show the Direct Display Control panel when appropriate
4. Click the corresponding [Configure] button for more options.
5. Click on Profile to select, edit or create a meter profile.

(D) Meter Positioning

1a. For projectors position the meter facing the projection screen, far enough away from the screen to avoid reading the meter's own shadow (see illustration on the left). Continue to take readings.

1b. Press the read continuous button to take measurements of a white window while moving the meter up/down/left/right, until the Y Max reading is largest. When Y Max is highest, click *Stop*.

2. For flat panels position the meter on the center of the screen (see illustration on the right). You do not need to take readings for this placement.

3. You can also read the White level CCT based on the current settings - adjust the display's color temperature to best match the target CCT.

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(E) Dynamic Range

Overall Range

Adjust the Backlight control (for LED) to get the desired compromise between black and white levels: less Backlight = deeper black but lower white level, more Backlight = brighter white but higher black level too.

White Level

Data Points: select Clipping or Clipping with Peak White.

Adjust the Contrast to maximize the white level without clipping any of the three primaries.

Gamma Level

Data Points: select a full set of grayscale points for this.

Check the gamma level across the full grayscale based on the current settings, and adjust the display's gamma control to get a good match, tweaking with the Brightness for Black level & Contrast for White.

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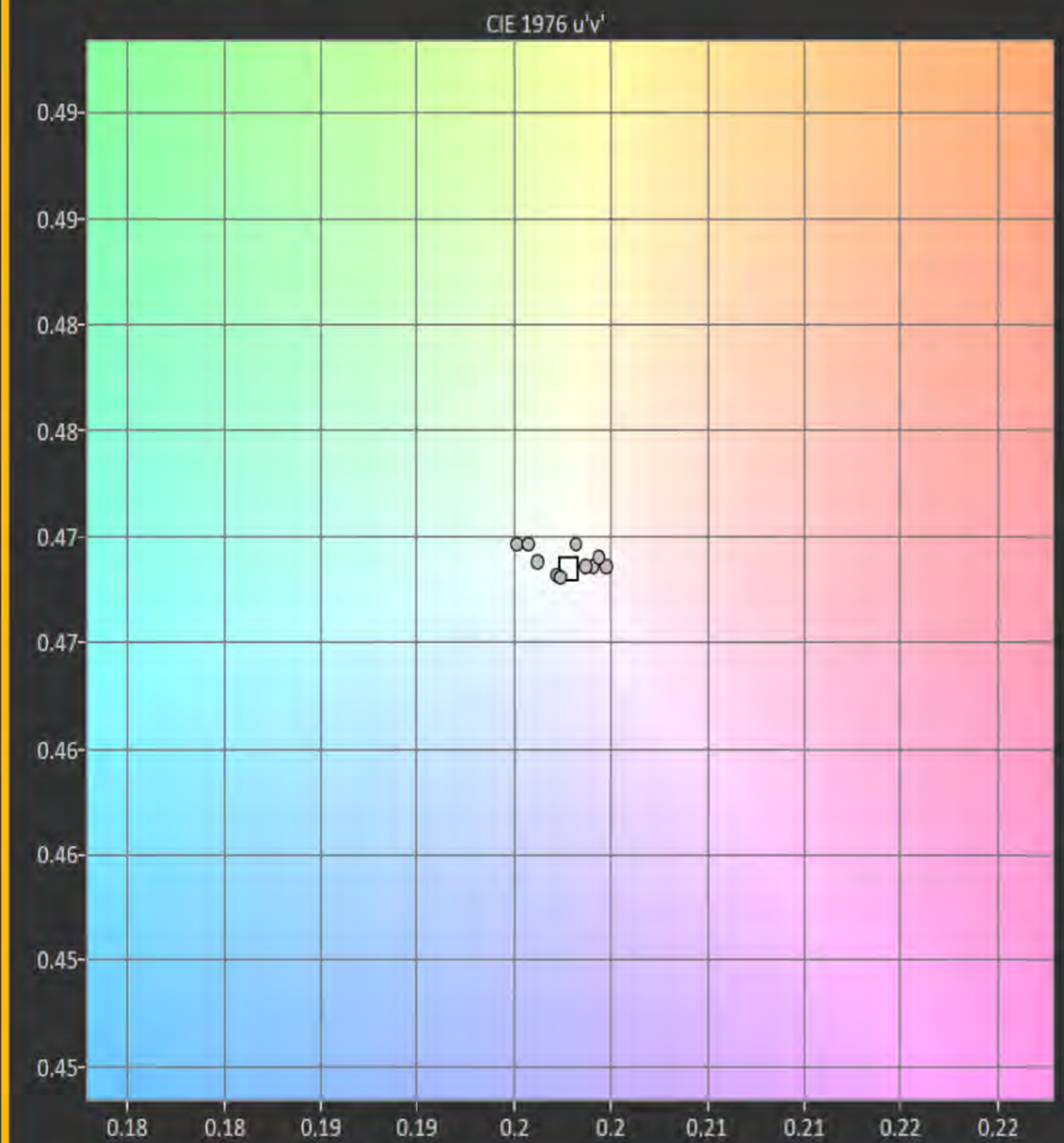
CalMAN

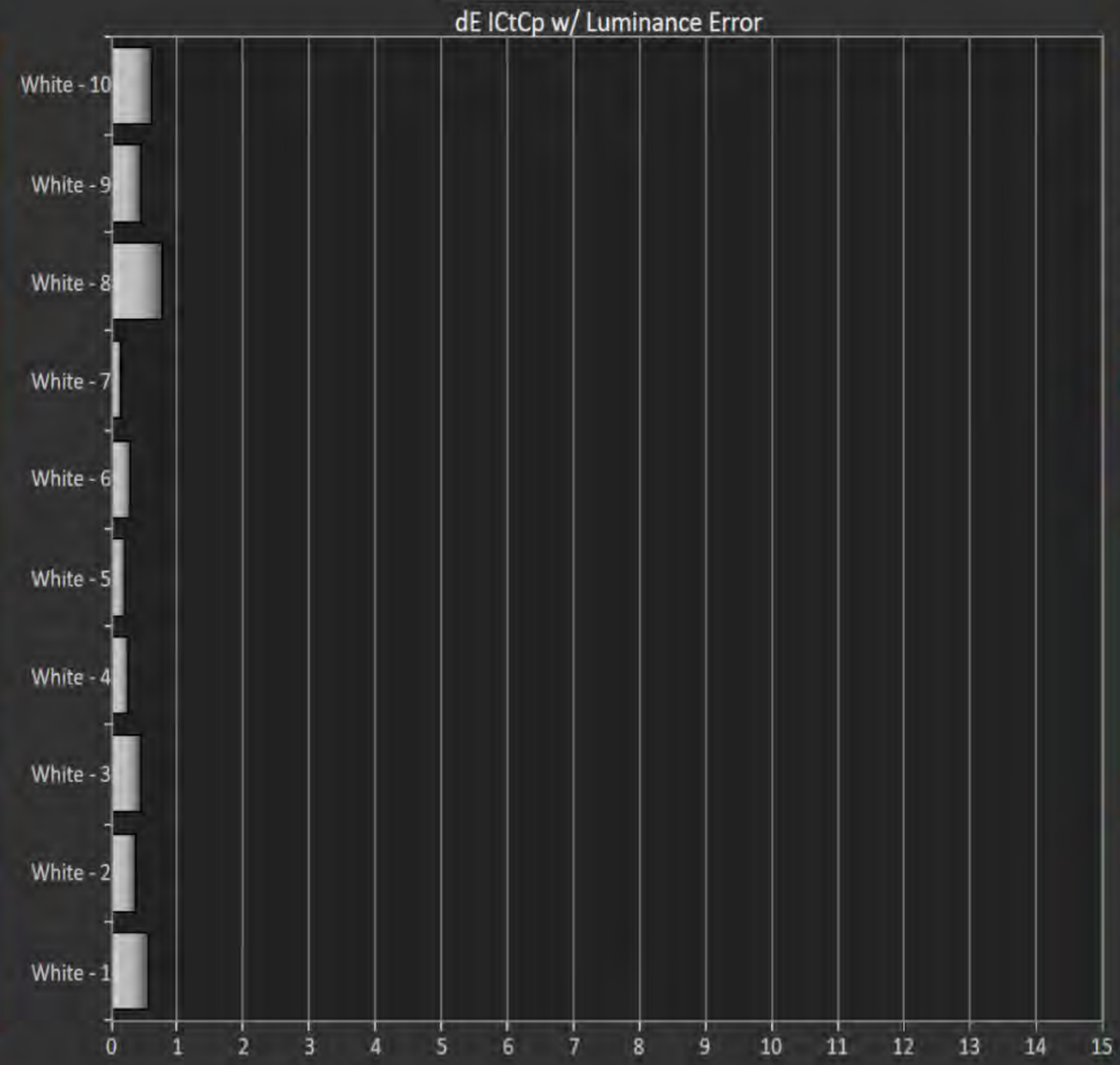
Meter Stability

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Meter Stability

Session Setup





White | Red | Green | Blue | Cyan | Magenta | Yellow | 100W

Stop | Read 10 | Read One Check Drift

Clear History

PRP ScUni

Setup

HOME

Prepare

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Meter Profile Analysis

Manage Profiles | Clear Reference | Clear Profiled

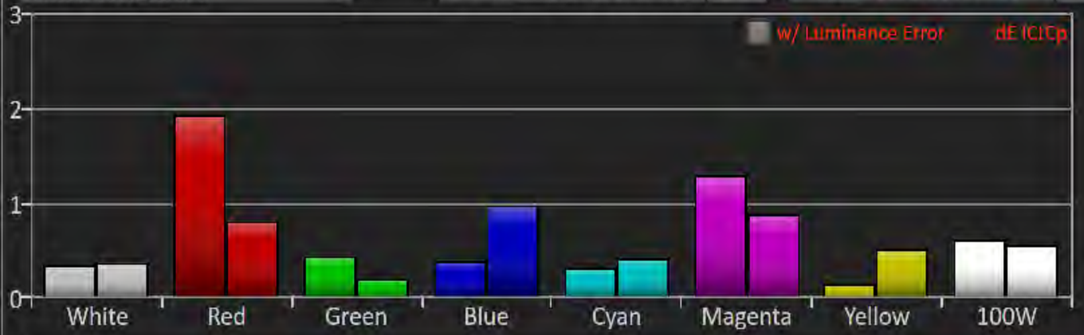
Select a meter and do the appropriate reference or profiled Read All or a Read Single selected color.
Select the same color in both CMS sliders to view a specific comparison: Reference is always on left or above.

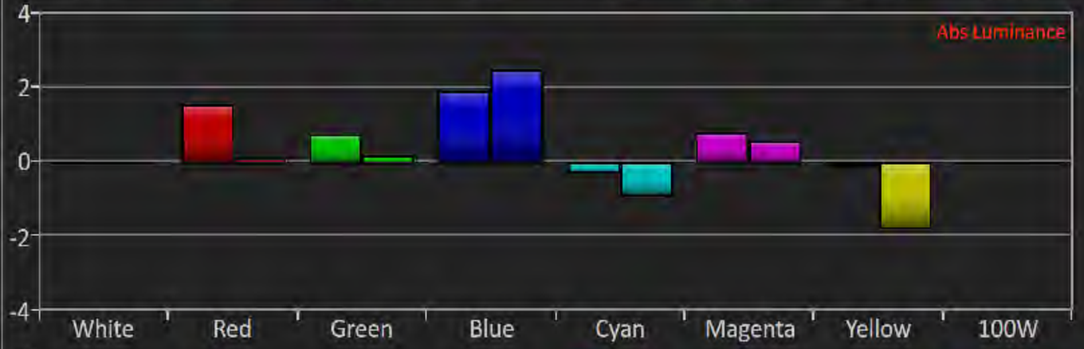
Session Setup

CMS Gamut Analysis

Target 100W → cd/m² 200 fL 58.37

Simulated Meter | Read All as Reference | Read All as Profiled





Reference Meter CMS

	White	Red	Green	Blue	Cyan	Magenta	Yellow	100W
Y cd/m²	41.9106	9.0478	30.1955	3.0840	32.9133	12.0352	38.8511	80.9991
x: CIE31	0.3146	0.6329	0.2966	0.1495	0.2259	0.3176	0.4193	0.3145
y: CIE31	0.3300	0.3335	0.6016	0.0607	0.3275	0.1548	0.5044	0.3270
RED Linear 0-1	0.2127	0.2064	-0.0036	-0.0007	0.0030	0.2053	0.2100	0.4185
Green Linear 0-1	0.2089	0.0019	0.2122	0.0005	0.2080	0.0018	0.2091	0.4006
Blue Linear 0-1	0.2069	0.0004	0.0003	0.2109	0.2100	0.2113	0.0004	0.4083

Read Single as Reference →
Simulated Meter
Read Single as Profiled →

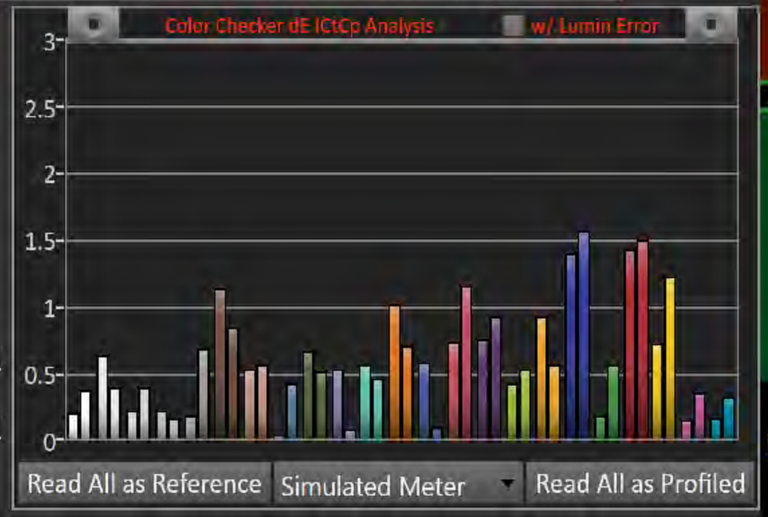
White | Red | Green | Blue | Cyan | Magenta | Yellow | 100W

White | Red | Green | Blue | Cyan | Magenta | Yellow | 100W

Profiled Meter CMS

	White	Red	Green	Blue	Cyan	Magenta	Yellow	100W
Y cd/m²	42.1935	8.9812	30.2228	3.1214	32.9342	12.0846	38.4611	81.6728
x: CIE31	0.3125	0.6363	0.2985	0.1514	0.2267	0.3192	0.4202	0.3107
y: CIE31	0.3314	0.3300	0.6002	0.0614	0.3291	0.1552	0.5021	0.3305
RED Linear 0-1	0.2073	0.2093	-0.0015	0.0009	0.0037	0.2079	0.2111	0.3955
Green Linear 0-1	0.2124	0.0005	0.2117	0.0003	0.2082	0.0014	0.2060	0.4123
Blue Linear 0-1	0.2077	0.0005	0.0003	0.2105	0.2077	0.2109	0.0012	0.4068

CMS Detail	Reference	Profiled	Ref Target
Red Linear	0.41851	0.39554	0.405
Green Linear	0.40064	0.41234	0.405
Blue Linear	0.40835	0.40679	0.405
Y cd/m²	80.999	81.673	80.999
x CIE31	0.31454	0.31072	0.31271
y CIE31	0.327	0.33045	0.32901
dE ICtCp	0.61 / 0.61	0.57 / 0.57	



PRP Prfile | Setup | HOME | Prepare | Setup | Calibrate | Analyze | Prfile

CalMAN

Meter Profile Analysis

Manage Profiles | Clear Reference | Clear Profiled

Select a meter and do the appropriate reference or profiled Read All or a Read Single selected color.
Select the same color in both CMS sliders to view a specific comparison: Reference is always on left or above.

Session Setup

Create Profile

Meter Settings

Reference Meter: Simulated Meter - 12345678

Advanced Options

Target Meter: Simulated Meter - 12345678

Advanced Options

Find more meters

Source

Source - 1

Stimulus Level:

100 — Select stimulus between 75 - 85 to avoid clipping and better sample the display

Prompt for pattern changes

Profile Information

Current Profile: None

Add Profile

Display Type: Simulated

	I	X	Y	Z
X	0	1	0	0
Y	0	0	1	0
Z	0	0	0	1

Reference Meter CMS

	White	Red	Green	Blue	Cyan	Magenta	Yellow	100W
Y cd/m²	41.9106	9.0478	30.1955	3.0840	32.9133	12.0352	38.8511	80.9991
x: CIE31	0.3146	0.6329	0.2966	0.1495	0.2259	0.3176	0.4193	0.3145
y: CIE31	0.3300	0.3335	0.6016	0.0607	0.3275	0.1548	0.5044	0.3270
RED Linear 0-1	0.2127	0.2064	-0.0036	-0.0007	0.0030	0.2053	0.2100	0.4185
Green Linear 0-1	0.2089	0.0019	0.2122	0.0005	0.2080	0.0018	0.2091	0.4006
Blue Linear 0-1	0.2069	0.0004	0.0003	0.2109	0.2100	0.2113	0.0004	0.4083

Read Single as Reference →

Simulated Meter

Read Single as Profiled →

White | Red | Green | Blue | Cyan | Magenta | Yellow | 100W

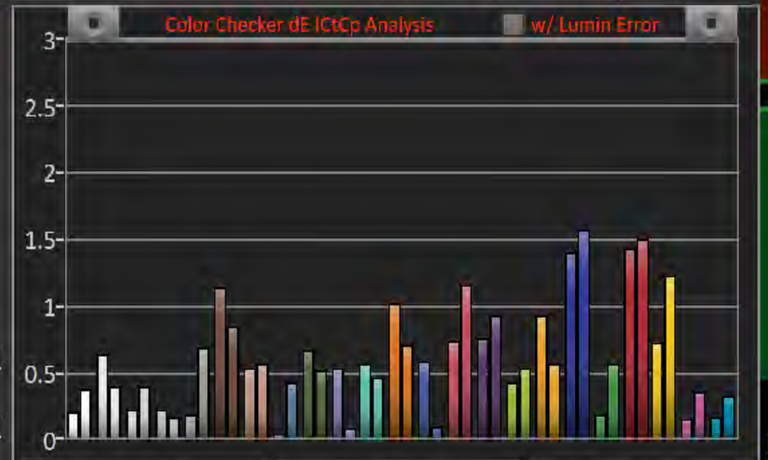
White | Red | Green | Blue | Cyan | Magenta | Yellow | 100W

Profiled Meter CMS

	White	Red	Green	Blue	Cyan	Magenta	Yellow	100W
Y cd/m²	42.1935	8.9812	30.2228	3.1214	32.9342	12.0846	38.4611	81.6728
x: CIE31	0.3125	0.6363	0.2985	0.1514	0.2267	0.3192	0.4202	0.3107
y: CIE31	0.3314	0.3300	0.6002	0.0614	0.3291	0.1552	0.5021	0.3305
RED Linear 0-1	0.2073	0.2093	-0.0015	0.0009	0.0037	0.2079	0.2111	0.3955
Green Linear 0-1	0.2124	0.0005	0.2117	0.0003	0.2082	0.0014	0.2060	0.4123
Blue Linear 0-1	0.2077	0.0005	0.0003	0.2105	0.2077	0.2109	0.0012	0.4068

CMS Detail	Reference	Profiled	Ref Target
Red Linear	0.41851	0.39554	0.405
Green Linear	0.40064	0.41234	0.405
Blue Linear	0.40835	0.40679	0.405
Y cd/m²	80.999	81.673	80.999
x CIE31	0.31454	0.31072	0.31271
y CIE31	0.327	0.33045	0.32901
dE ICtCp	0.61 / 0.61	0.57 / 0.57	

Color Checker dE ICtCp Analysis — w/ Lumin Error



Read All as Reference | Simulated Meter | Read All as Profiled

PRP Prfile

Setup

HOME

Prepare

Setup

Calibrate

Analyze

Prfile

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Screen Uniformity

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL DAY

Screen Uniformity

Rows 3 | Columns 3 | Left to right | Session Setup

0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0

Gray Levels Only | 4 Point 25% step 25-100%

Target Y 14.4603 Read 0 ΔE 0

25 | 50 | 75 | 100

Type Grayscale

PRP ScUni

Setup

HOME

Prepare

Setup

Calibrate

Analyze

ScUni

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Pre-Cal Readings

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Pre-Calibration Readings

7/26/2018 Calibration

Gamma Breakout Tot 2.86 Contrast 828 Black 0.097946 White 81.07 cd/m²

100

1 Grayscale

Detail Charts | 21 Point 5% step 0-100%

Avg 0.32 / 9.01
Max 0.92 / 14.89

100 dE ICtCp 0.34 / 10.03 w/ Lumin Error

4 Color Checker

Detail Charts

100% Yellow

u'v' CIE

dE ICtCp 0.67 Avg 0.53 Max 1.33

w/ Lumin Err 10.16 Avg 9.68 Max 10.86

100% Yellow

Add Custom Color Set → SG Fleshtones

2 Saturation Sweeps

Detail Charts | 25% Sweeps

Avg 0.51 / 10.02
Max 2 / 10.98

100% w/Lumin Err 10.5

100% dE ICtCp 0.29

100% 25% 50% 75% 100%

3 Gamut Luminance

Detail Charts | 4 Point 25% step 25-100%

Avg 0.95 / 8.18

Max 4.62 / 11 100 w/ Lumin Err 9.89

100 dE ICtCp 0.42

25 50 75 100

Select Colors

Populate CMS for HT report

PRP PreCal Read

Back | Next

PostCal Read

HOME

Prepare

Session Setup

PostCal Read

Calibrate

I Gry | I CMS | I Sat | I LUT | I Lum | I CCk | PostCal Read

Analyze

∫ Gry | ∫ Sat | ∫ Lum | ∫ CCk | ∫ LUT

Final Check

PreCal

Cal Day 300 nits

Pre-Cal Readings

Contrast | Brightness | Backlight

TV Gamma | Color | Tint

Red Green Blue

Gain | Cut

Notes

Display Slot CAL-DAY

Use [···] mid-screen or below to read all series or select one from the individual series above

Back | Next

Notes

CalMAN

≡ 2-Point Grayscale Calibration ≡

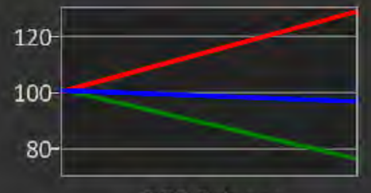
Grayscale 2-Point Adjust

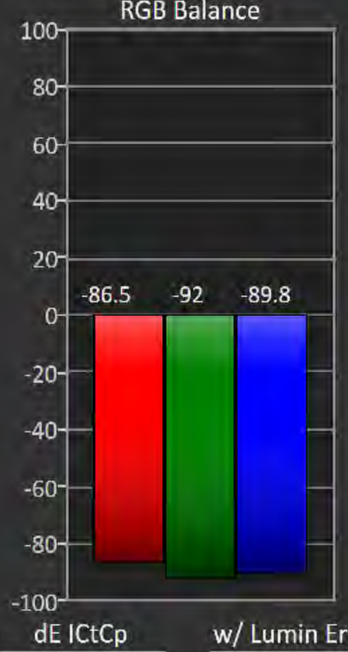
1. Reduce the Red, Green, and/or Blue (RGB) High controls to the lowest measured R, G, or B after the initial measurement of bright grayscale pattern. Continue doing this until you balance RGB to a deltaE of 3 or below (chart below).
2. Balance the RGB Low controls (if provided), while measuring a dark grayscale pattern.
3. Re-measure both bright grayscale and dark grayscale until both RGB High and RGB Low are balanced and DeltaE is under 3.

Selecting Points:

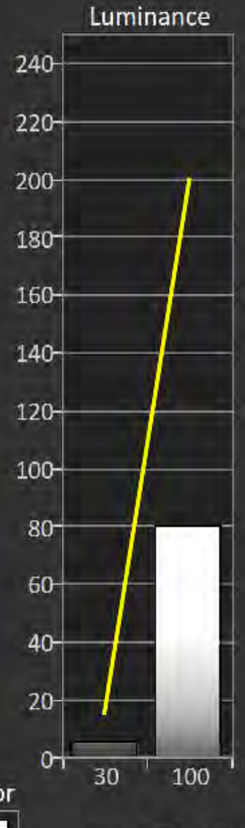
- **30% and 80%:** Use these levels if you only have access to a two point grayscale adjustment
- **30% and 100%:** Use these levels if you will be completing a multipoint adjustment afterwards and do not have access to a Peak White pattern.
- **30% and Peak White:** Use these levels if your display does not clip and you will be completing a multipoint calibration and want the best possible results.

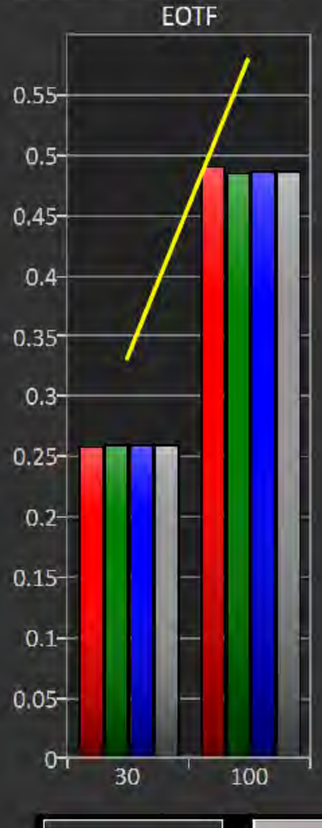
	30	100
RGB Triplet	82, 82, 82	235, 235, 235
Red index	82.0000	235.0000
Green index	82.0000	235.0000
Blue index	82.0000	235.0000
X	5.6020	78.2089
Y cd/m²	5.9194	80.8831
Z	6.4321	88.7290
Xn 0-1	0.0280	0.3910
Yn 0-1	0.0296	0.4044
Zn 0-1	0.0322	0.4436
Stimulus Percent	0.3014	1.0000
RED Stim%:0-1	0.3014	1.0000
GRN Stim%:0-1	0.3014	1.0000
BLU Stim%:0-1	0.3014	1.0000

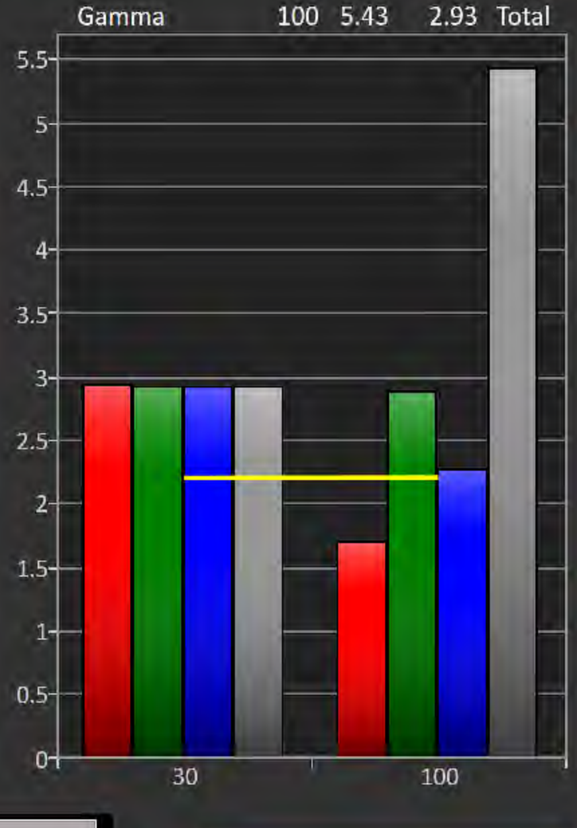


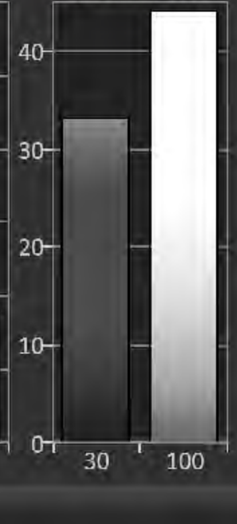


Multi-Point Grayscale









100

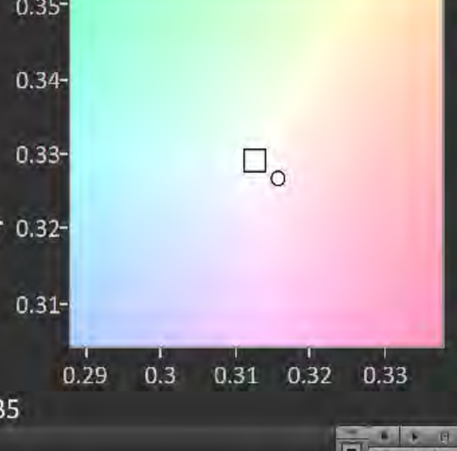
CCT	6364	6503	Target
Gamma	5.43	2.2	Target
dE ICtCp	0.89	/ 44.19	w/ Lumin Error

	Y cd/m²	x	y
Read →	80.88313	0.3156	0.3264
Target →	200	0.3127	0.329

DDC

2 Point 30,100%

Triplet
235, 235, 235



CAL
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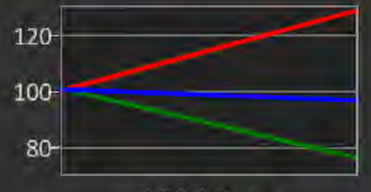
Lum
CCk
PostCal Read
Analyze
Post
Final Check
2-Pnt
M-Pt

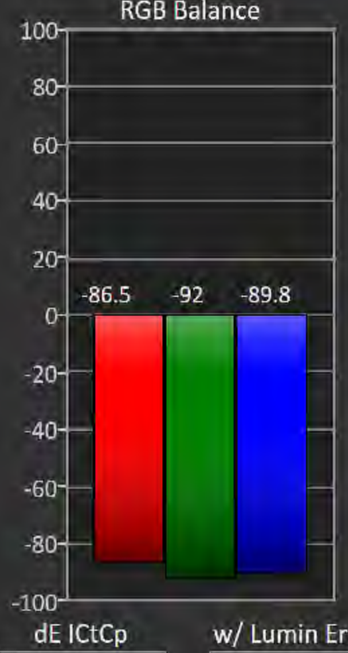
CalMAN

2-Point Grayscale Calibration

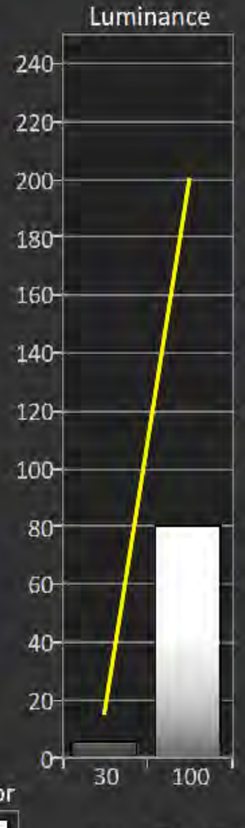
Display Controls

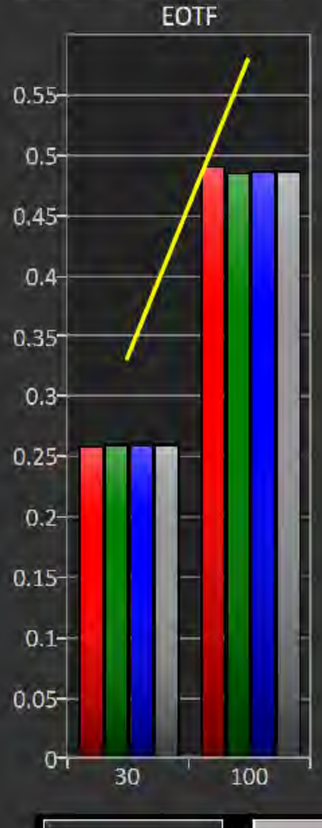
Backlight	20
Brightness	2
Contrast	41
Sharpness	0
Color	24
Tint (G/R)	-4
Color Tone	Warm2
R-Gain	0
G-Gain	0
B-Gain	-5
R-Offset	0
G-Offset	-4
B-Offset	6
Gamma	2
HDMI Black Level	Low

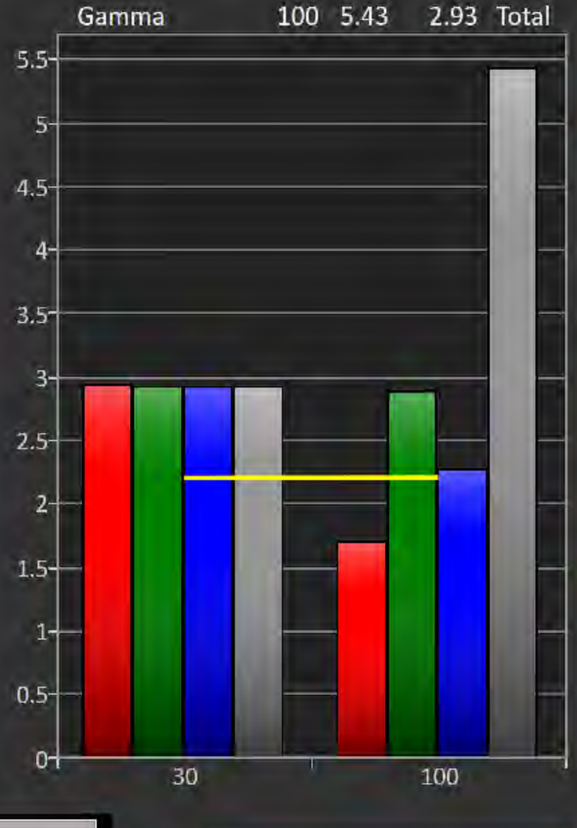


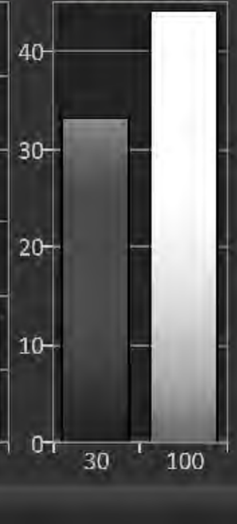


Multi-Point Grayscale









100

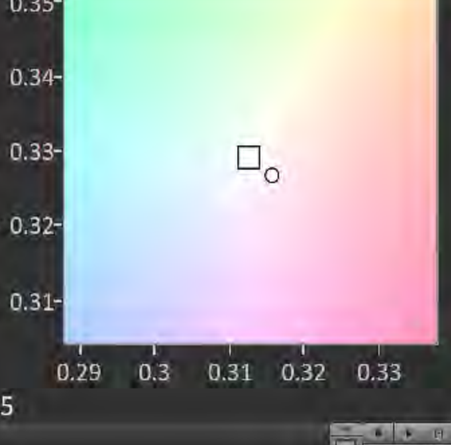
CCT	6364	6503	Target
Gamma	5.43	2.2	Target
dE ICtCp	0.89	/ 44.19	w/ Lumin Error

	Y cd/m²	x	y
Read →	80.88313	0.3156	0.3264
Target →	200	0.3127	0.329

DDC

2 Point 30,100%

Triplet
235, 235, 235



CAL
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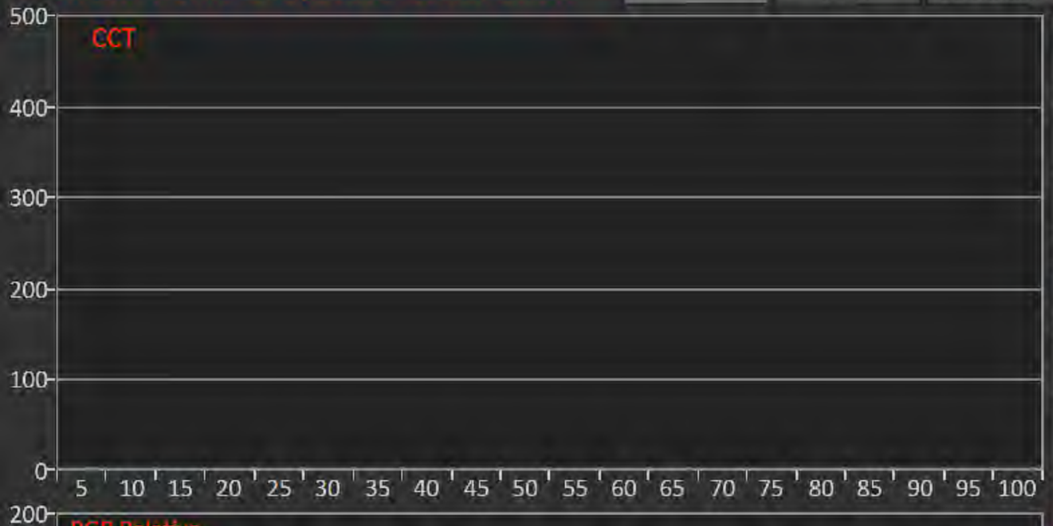
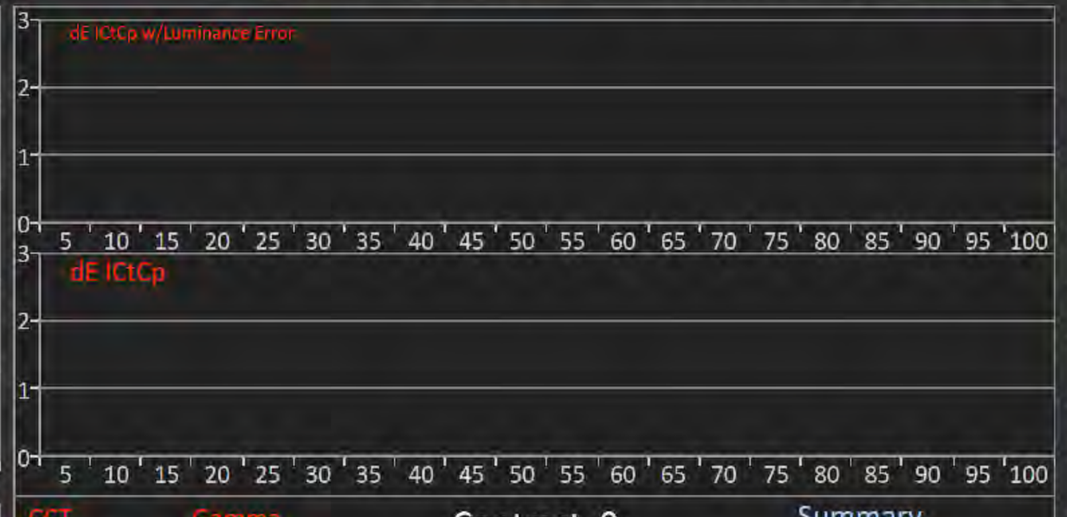
Final Check
2-Pnt
M-Pt

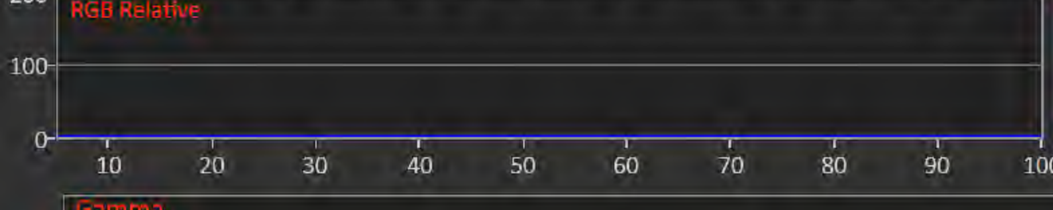
CalMAN

Multi-Point Grayscale Calibration

EOTF | Luminance | Chart Mode | Display DDC | Comparator | 2-Pt Grayscale | Datagrid







CCT		Gamma	
Avg	0	Tot	2.4
Tgt	6503	Tgt	2.4
dE ICtCp	Avg 0		/ 0
	Max 0		/ 0

Contrast 0

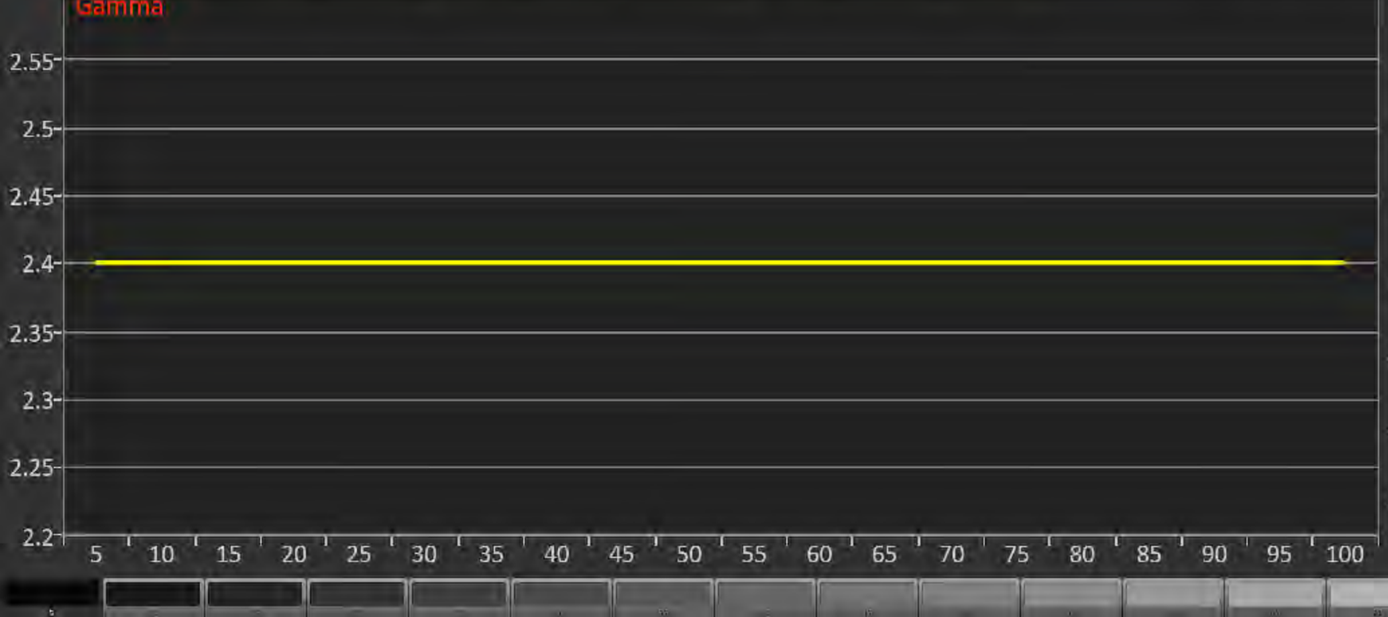
Black 0 cd/m²

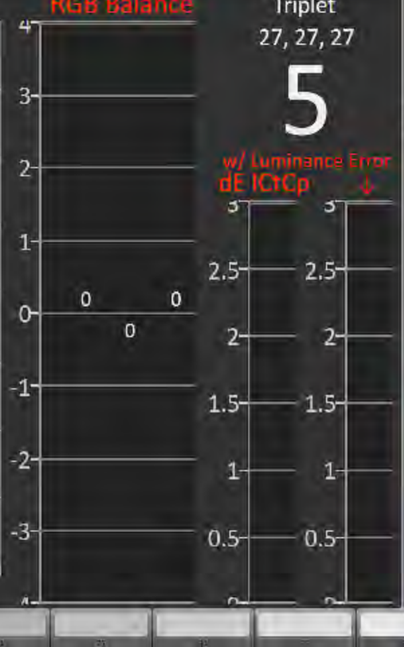
White 100

Summary

Display Slot: CMS 0

20 Point 5% Step 5-100%





Triplet

27, 27, 27

5

w/ Luminance Error dE ICtCp

w/ Luminance Error

dE 0 / 0

Target

Gamma	0	/ 2.4
CCT	0	/ 6503
Y (cd/m²)	0	/ 0.0763
x	0	/ 0.3127
y	0	/ 0.329

	Red	Green	Blue
0	0	0	0
5	5.2	4.9	4.1
10	10.2	10	10.4
15	15.1	15	15.8
20	20.7	19.7	20.6
25	25.4	24.5	25.3
30	30.2	29.4	30
35	34.8	34.4	35.2
40	39.3	39.3	39.8
45	44.3	44.1	44.8
50	49.4	49.3	50.1
55	54.9	54.2	55.1
60	60.6	59	60
65	64.4	63.5	64.5
70	70.2	68.7	69.7
75	74.5	73.7	74.7
80	78.7	78.7	79.4
85	83.6	83.5	83.9
90	90.2	88.9	90.8
95	94.8	93.6	95
100	99.6	98.6	100

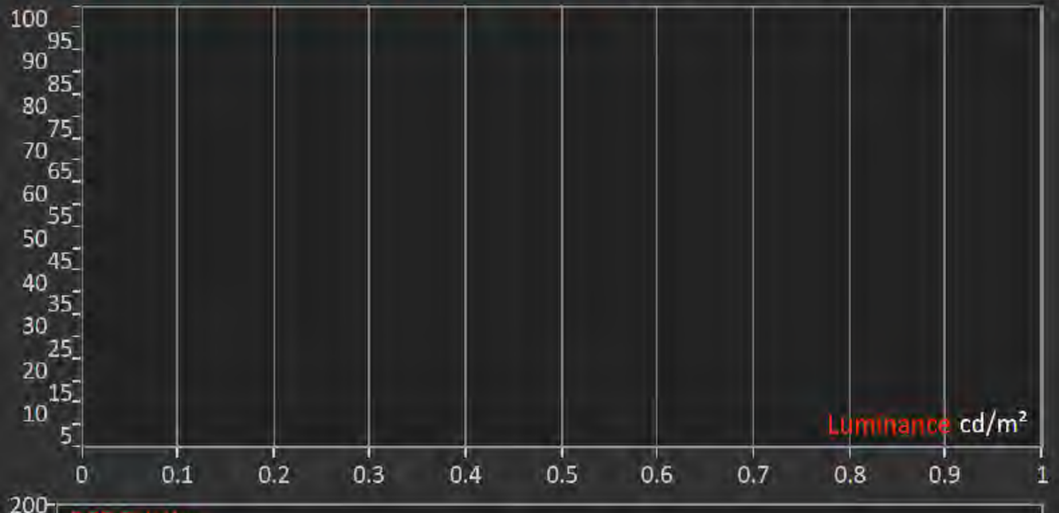
Reset Grayscale | Display DDC

CAL Adjst M-Pnt | Back | Next | 2-Pt | HOME | Prepare | Session Setup | PreCal Read | Calibrate | 2-Pt | CMS | Sat | LUT | Lum | CCk | PostCal Read | Analyze | Post | Final Check | M-Pnt | 2-Pt

CalMAN

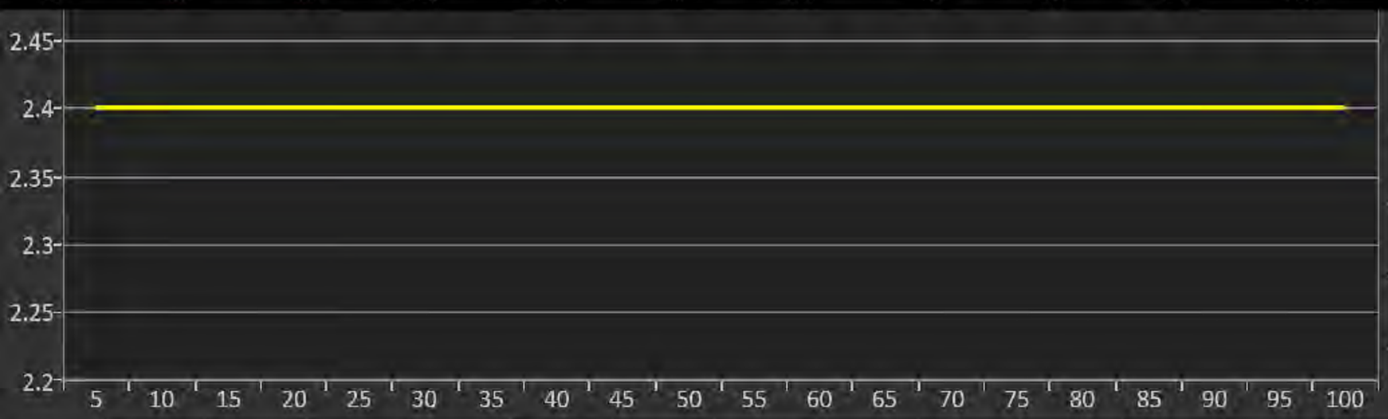
Multi-Point Grayscale Calibration

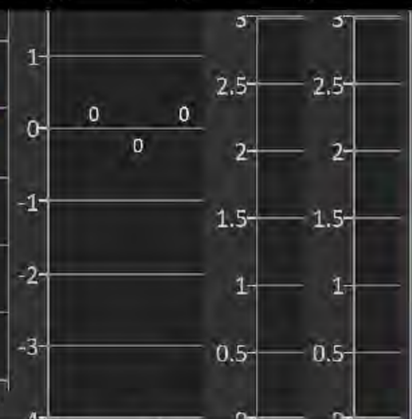
CCT | EOTF | Chart Mode | Display DDC | Comparator | 2-Pt Grayscale | Datagrid



Input - Brightness	0
Input - Contrast	0
Input - Color	0
Input - Tint	0
Input - Color Red	0
Input - Color Green	0
Input - Tint Red	0
Input - Tint Green	0
Output - Gamma Factor	1
709 CMS Mode	Linear

	Red	Green	Blue
0	0	0	0
5	5.2	4.9	4.1
10	10.2	10	10.4
15	15.1	15	15.8
20	20.7	19.7	20.6
25	25.4	24.5	25.3
30	30.2	29.4	30
35	34.8	34.4	35.2
40	39.3	39.3	39.8
45	44.3	44.1	44.8
50	49.4	49.3	50.1
75	74.5	73.7	74.7
80	78.7	78.7	79.4
85	83.6	83.5	83.9
90	90.2	88.9	90.8
95	94.8	93.6	95
100	99.6	98.6	100





cd/m²
Y 0 / 0.0763
x 0 / 0.3127
y 0 / 0.329

Reset Grayscale | Display DDC

CAL | Adjst | M-Pnt | Back | Next | 2-Pt | HOME | Prepare | Session Setup | PreCal Read | Calibrate | 2-Pt | CMS | Sat | LUT | Lum | CCk | PostCal Read | Analyze | Post | Final Check | M-Pnt | 2-Pt

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Multi-Point Grayscale

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Multi-Point Grayscale Calibration

CCT | EOTF | Luminance ← Chart Mode | Comparator | 2-Pt Grayscale | Datagrid | Click grid to select it then click Configure to select data | Configure

	7	10.5	15.5	19.6	24.7	29.7	35	39.7	44.7	49.8	55	60.3	65	70	75.3	81
RGB Triplet	31, 31, 31	39, 39, 39	50, 50, 50	59, 59, 59	70, 70, 70	81, 81, 81	93, 93, 93	103, 103, 103	114, 114, 114	125, 125, 125	136, 136, 136	148, 148, 148	158, 158, 158	169, 169, 169	181, 181, 181	193, 19
Target Y cd/m²	0.2900	0.7277	1.6981	2.8311	4.6531	6.9769	10.1064	13.2032	17.1367	21.6355	26.7115	32.9204	38.6392	45.5110	53.7123	62.6598
Y cd/m²	0.5134	0.9155	1.6907	2.5970	3.9284	5.7230	8.0296	10.3271	13.2350	16.6965	20.6841	25.7408	30.3137	35.5389	42.1846	49.5516
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127
x: CIE31	0.3142	0.3138	0.3126	0.3120	0.3114	0.3128	0.3143	0.3114	0.3115	0.3140	0.3118	0.3109	0.3115	0.3117	0.3141	0.3115
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290
y: CIE31	0.3272	0.3272	0.3293	0.3302	0.3283	0.3317	0.3283	0.3280	0.3263	0.3282	0.3292	0.3311	0.3291	0.3278	0.3284	0.3283
Target CCT	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.44
CCT	6435.0000	6455.0000	6510.0000	6532.0000	6579.0000	6481.0000	6419.0000	6584.0000	6589.0000	6440.0000	6553.0000	6588.0000	6571.0000	6566.0000	6430.0000	6577.00

CAL | Adjst | M-Pnt | Back | Next | 2-Pt | HOME | Prepare | Session Setup | PreCal Read | Calibrate | 2-Pt | CMS | Sat | LUT | Lum | CCk | PostCal Read | Analyze | Post | Final Check | M-Pnt | 2-Pt | Notes | Back | Next

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Gamut Saturation

Gamut Saturation Calibration

Datagrid

DeltaE ICtCp — w/ Luminance Error

Summary

DeltaE w/Lum Err

Avg 0.37 / 9.92
Max 1.27 / 11.08

Delta L
Avg 5.845
Max 7.347

Delta H
Avg 0.445
Max 1.411

Delta C
Avg 0.7166
Max 1.871

Black 0
White 82.18

Triplet 180, 123, 123

25%

Y tgt 27.627
21.5292

x tgt 0.3937
0.3941

y tgt 0.3293
0.33

u'v' CIE — Y in cd/m² — tgt = Target

RGB Balance

-22.6 -16.9 -16.3

25%

	Red	Green	Blue
Red	29	22	13
Green	45	39	23
Blue	22	23	34
Cyan	49	53	61
Magenta	4	24	55
Yellow	49	56	18

Reset CMS

Gamut Lum Abs | Gamut Lum Rel | RGB Balance | ← Chart Mode

Delta C Max 1.871 Avg 0.717

Delta H Max 1.411 Avg 0.445

Delta L Max 7.347 Avg 5.845

For classic CMS set to 75%/100% Only ↓

Display Slot: CAL-DAY

Sweep Level: BT.709 25% Sweeps

dE ICtCp	Luminance	dL	dH	dC
0.11 / 10.62	-22.07	-6.03	0.28	-0.05

CAL Satur

Back | Next

HOME | Prepare | Session Setup | PreCal Read | Calibrate | Gry | CMS | LUT | Lum | CCk | PostCal Read | Analyze | Post | Final Check | Satur

Notes

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Gamut Saturation

Gamut Saturation Calibration

DeltaE ICtCp | w/ Luminance Error

Datagrid

Summary

DeltaE w/Lum Err ↓
Avg 0.37 / 9.92
Max 1.27 / 11.08

Delta L
Avg 5.845
Max 7.347

Delta H
Avg 0.445
Max 1.411

Delta C
Avg 0.7166
Max 1.871

Black 0
White 82.18

Triplet 180, 123, 123 — 25%

Y tgt 27.627 21.5292
x tgt 0.3937 0.3941
y tgt 0.3293 0.33

u'v' CIE — Y in cd/m² — tgt = Target

RGB Balance

25%

	Red	Green	Blue
Red	29	22	13
Green	45	39	23
Blue	22	23	34
Cyan	49	53	61
Magenta	4	24	55
Yellow	49	56	18

Reset CMS

Gamut Luminance Relative | Delta C, H, L | Gamut Lum Abs | RGB Balance | ← Chart Mode

For classic CMS set to 75%/100% Only ↓

dE ICtCp		Luminance	dL	dH	dC
0.11	10.62	-22.07	-6.03	0.28	-0.05

Display Slot: CAL-DAY — Sweep Level: BT.709 25% Sweeps

CAL Satur | Back | Next | HOME | Prepare | Session Setup | PreCal Read | Calibrate | Gry | CMS | LUT | Lum | CCk | PostCal Read | Analyze | Post | Final Check | Satur | Notes | Back | Next

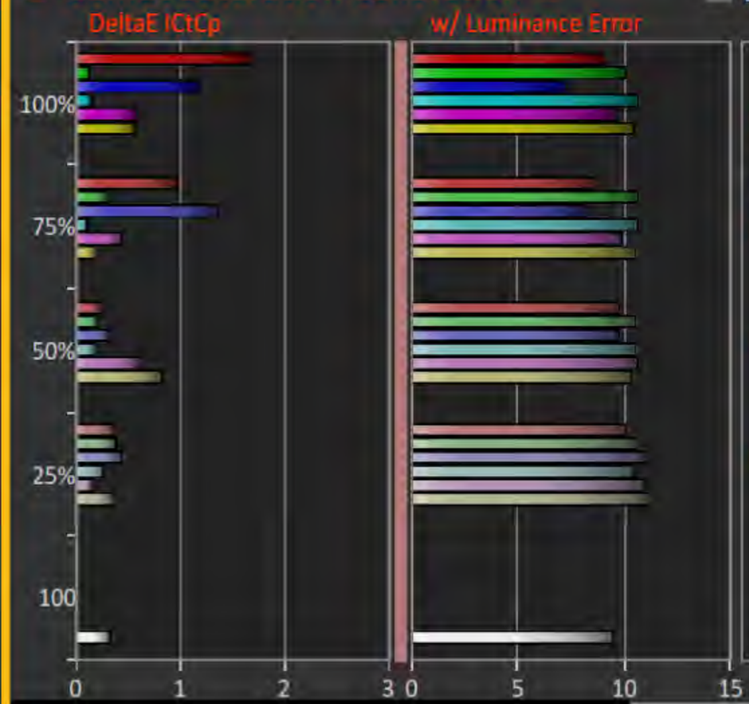
CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Gamut Saturation

Gamut Saturation Calibration

Datagrid



Summary

DeltaE w/Lum Er

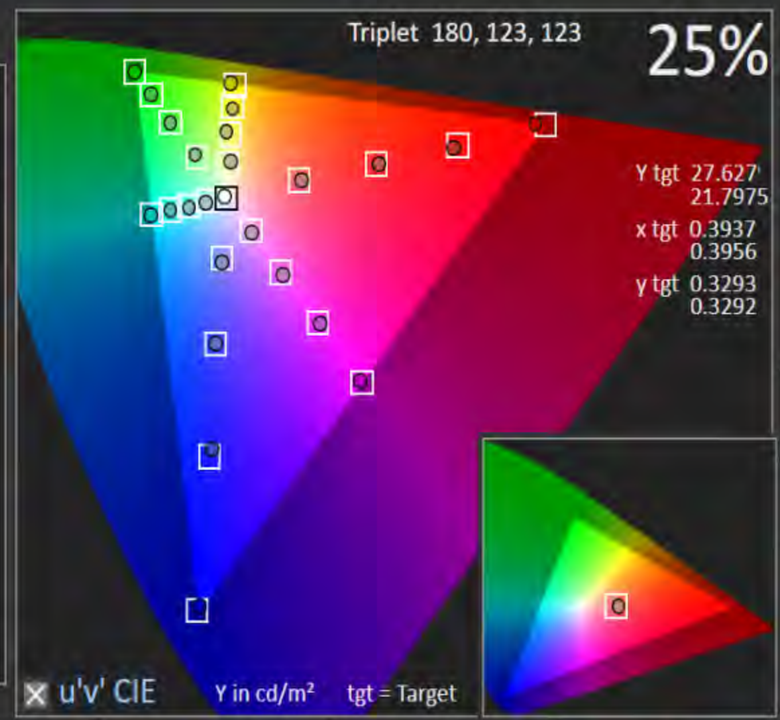
Avg 0.5 / 10.02
Max 1.7 / 11.13

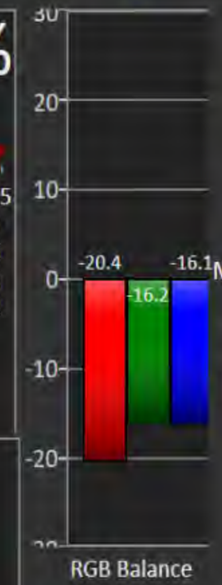
Delta L
Avg 5.893
Max 7.357

Delta H
Avg 0.441
Max 1.802

Delta C
Avg 0.7695
Max 2.187

Black 0
White 82.15



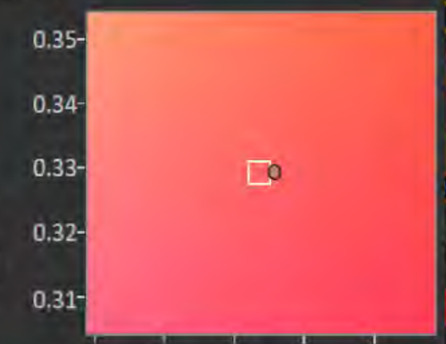


25%

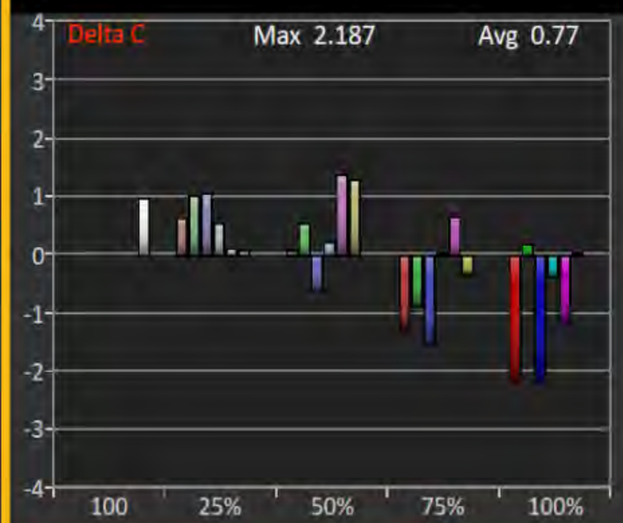
Simulated Meter Simulated | Source | Samsung 2018 QLED CAL DAY

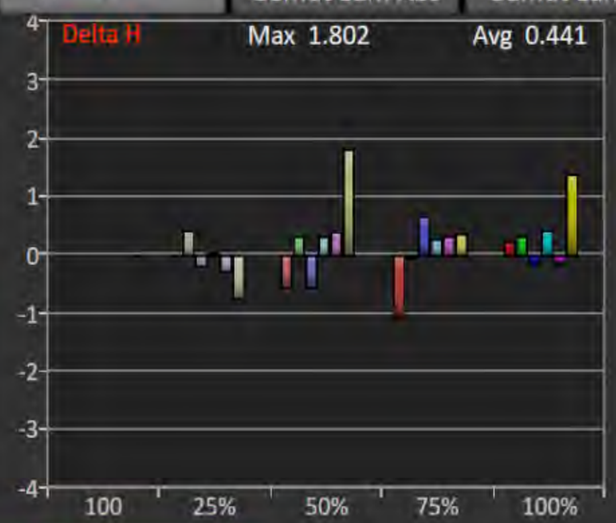
	Red	Green	Blue
Red	29	22	13
Green	45	39	23
Blue	22	23	34
Cyan	49	53	61
Magenta	4	24	55
Yellow	49	56	18

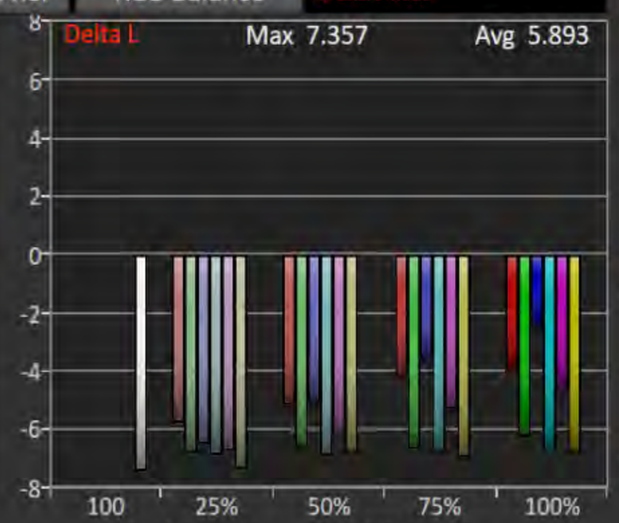
Reset CMS



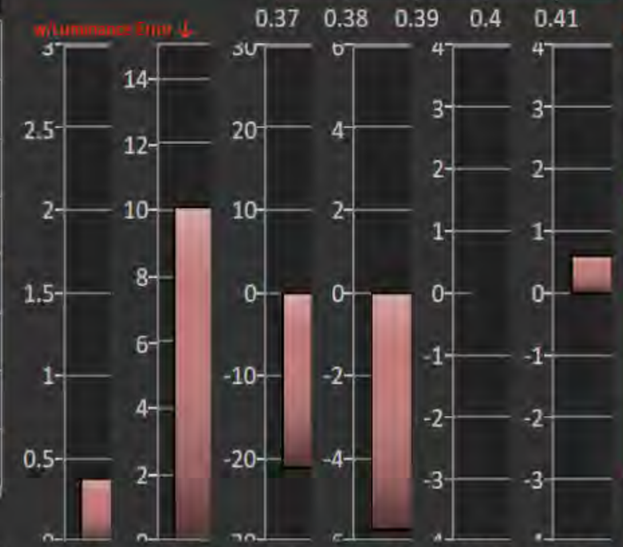
Gamut Lum Abs | Gamut Lum Rel | RGB Balance | ← Chart Mode







For classic CMS set to 75%/100% Only ↓



Display Slot: CAL-DAY | Sweep Level: BT.709 25% Sweeps

CAL Satur | Back | Next | HOME | Prepare | Session Setup | PreCal Read | Calibrate | I Gry | I CMS | I LUT | I Lum | I CCk | PostCal Read | Analyze | ∫ Post | Final Check | Satur | Notes | Back | Next

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Gamut Saturation

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Gamut Saturation Calibration

Datagrid

Configure

Click datagrid ouitside bottom right corner to select it then click Configure to select data

	25%	50%	75%	100%
RGB Triplet	180, 123, 123	180, 90, 90	180, 64, 64	180, 16, 16
Target Y cd/m²	27.6279	18.5654	14.1040	11.2709
Y cd/m²	21.5292	14.8746	11.3821	9.0538
Target x:CIE31	0.3937	0.4764	0.5563	0.6400
x: CIE31	0.3941	0.4738	0.5491	0.6368
Target y:CIE31	0.3293	0.3295	0.3297	0.3300
y: CIE31	0.3300	0.3328	0.3293	0.3298
Target CCT	3210.0466	1845.3325	1962.9459	3096.5526
CCT	3209.0000	1886.0000	1911.0000	3047.0000

CAL

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Prepare

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Analyze

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Final Check

Satur

25%

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

CMS Gamut

CMS Gamut Calibration

Datagrid

DeltaE ICtCp | w/ Luminance Error

100W, Yellow, Magenta, Cyan, Blue, Green, Red, White

Summary

DeltaE w/Lum Err

Avg 0.55 / 0.74
Max 1.13 / 1.19

Delta L
Avg 0.204
Max 0.563

Delta H
Avg 0.622
Max 1.861

Delta C
Avg 1.1997
Max 3.109

Black 0
White 81.5

Triplet 235, 235, 235

100W

Y tgt 81.531
81.5318
x tgt 0.3127
0.3117
y tgt 0.329
0.3298

u'v' CIE Y in cd/m² tgt = Target

RGB Balance

-1.7 -0.3 0.5

100W

	Red	Green	Blue
Red	29	22	13
Green	45	39	23
Blue	22	23	34
Cyan	49	53	61
Magenta	4	24	55
Yellow	49	56	18

Reset CMS

Gamut Lum Abs | Gamut Lum Rel | RGB Balance | ← Chart Mode

Delta C Max 3.109 Avg 1.2

Delta H Max 1.861 Avg 0.622

Delta L Max 0.563 Avg 0.204

White, Red, Green, Blue, Cyan, Magenta, Yellow, 100W

dE ICtCp		Luminance	dL	dH	dC
0.28	0.28	0	0	0	0.85

Display Slot CAL-DAY

CAL CMS | Back | HOME | Prepare | Session Setup | PreCal Read | Calibrate | Gry | Sat | LUT | Lum | CCk | PostCal Read | Analyze | Post | Final Check | CMS | Notes | Back | Next

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Gamut Luminance

Gamut Luminance Cal Assessment

DeltaE ICtCp | w/ Luminance Error

Datagrid

Summary

DeltaE w/Lum Err

Avg 0.98 / 8.14
Max 4.35 / 10.81

Delta L
Avg 4.209
Max 7.618

Delta H
Avg 0.359
Max 2.387

Delta C
Avg 1.46
Max 8.376

Black 0
White 81.56

Triplet 16, 235, 16

100

Y tgt 71.515
58.2093
x tgt 0.3
0.2996
y tgt 0.6
0.5997

u'v' CIE Y in cd/m² tgt = Target

RGB Balance

100

	Red	Green	Blue
Red	29	22	13
Green	45	39	23
Blue	22	23	34
Cyan	49	53	61
Magenta	4	24	55
Yellow	49	56	18

Reset CMS

Y Luminance | Delta C, H, L | Gamut Lum Abs | Gamut Lum Rel | RGB Balance | ← Chart Mode

cd/m²

Ramp Levels: 4 Point 25% step 25-100%

Display Slot: CAL-DAY

dE ICtCp		Luminance	dL	dH	dC
0.09	9.58	-18.61	-6.88	0.24	-0.09

CAL Lumi

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HOME | Prepare | Session Setup | PreCal Read | Calibrate | Gry | CMS | Sat | LUT | CCk | PostCal Read | Analyze | Post | Final Check | Lumi

Notes | Back | Next

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Color Checker

Color Checker Cal Assessment

Moderate Red

Add Custom Color Set → Skintone 10 | Select Colors | u'v' CIE

DeltaE ICtCp Max 1.7 / 11.03 Avg 0.6 / 9.57 | w/Luminance Error

Delta L Max +/- 7.77 Avg 5.61

Delta H Max +/- 1.83 Avg 0.56

Delta C Max +/- 3.01 Avg 0.98

100% Yellow, 100% Magenta, 100% Cyan, 100% Blue, 100% Green, 100% Red, Cyan, Magenta, Yellow, Red, Green, Blue, Orange Yellow, Yellow Green, Purple, Moderate Red, Purplish Blue, Orange, Bluish Green, Blue Flower, Foliage, Blue Sky, Light Skin, Dark Skin, Gray 35, Gray 50, Gray 65, Gray 80, White

Moderate Red

Points 29 | Black 0 | White 81.2

Delta E Avg 9.57 Max 11.03

Delta L Avg 5.61 Max 7.77

Delta H Avg 0.58 Max 1.91

Delta C Avg 0.98 Max 8.94

Moderate Red

RGB Balance

-22.3 -9.2 -12.9

0.87 dE 9.31 wle -4.77 dL 0.65 dH -4.67 dC -20.08 Lu

Display Slot

CAL-DAY | Open DDC | Big CIE Chart | Comparator | Slim Datagrid

Triplet 182, 88, 99 | Y cd/m² 14.9248 Tgt 18.6747 | x 0.4609 Tgt 0.4635 | y 0.3147 Tgt 0.3123

Back | Next | Notes

CAL CChkr Back Next # slim HOME Prepare Session Setup PreCal Read Calibrate Gry CMS Sat LUT Lum # slim PostCal Read Analyze Post Final Check CChkr # slim

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Color Checker

Color Checker Cal Assessment

DeltaE ICtCp — Max 1.7 / 11.03 Avg 0.6 / 9.65 — w/Luminance Error

Color 10, Color 9, Color 7, Color 6, Color 5, Color 4, Color 3, Color 1, 100% Yellow, 100% Magenta, 100% Cyan, 100% Blue, 100% Green, 100% Red, Cyan, Magenta, Yellow, Red, Green, Blue, Orange Yellow, Yellow Green, Purple, Moderate Red, Purplish Blue, Orange, Bluish Green, Blue Flower, Foliage, Blue Sky, Light Skin

Moderate Red — Add Custom Color Set → Skintone 10 — Select Colors — u'v' CIE

Points 37 — Black 0 — White 81.2

Delta E: Avg 9.65, Max 11.03
Delta L: Avg 5.6, Max 7.77
Delta H: Avg 0.61, Max 1.91
Delta C: Avg 0.93, Max 8.94

Moderate Red

RGB Balance: 20, 0, -20; -22.3, -9.2, -12.9

0.33, 0.32, 0.31, 0.3, 0.29; 0.44, 0.45, 0.46, 0.47, 0.48

White, Gray 80, Gray 65, Gray 50, Gray 35, Dark Skin, Light Skin, Blue Sky, Foliage, Blue Flower, Bluish Green, Orange, Purplish Blue, Moderate Red, Purple, Yellow Green, Orange Yellow, Blue, Green, Red, Yellow, Magenta, Cyan, 100% Re

Display Slot: CAL-DAY — Open DDC — Big CIE Chart — Comparator — Slim Datagrid

Triplet 182, 88, 99 — Y cd/m² 14.9248 Tgt 18.6747 — x 0.4609 Tgt 0.4635 — y 0.3147 Tgt 0.3123

0.87 dE 9.31 wle -4.77 dL 0.65 dH -4.67 dC -20.08 Lu

CAL CChkr — Back — Next — # slim — HOME — Prepare — Session Setup — PreCal Read — Calibrate — Gry — CMS — Sat — LUT — Lum — # slim — PostCal Read — Analyze — Post — Final Check — CChkr — # slim — Notes — Back — Next

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Datagrid

Simulated Meter Simulated | Source | Direct Display Control

Color Checker Assessment Data

Color Notes

Post-Cal Notes

	White	Gray 80	Gray 65	Gray 50	Gray 35	Dark Skin	Light Skin	Blue Sky	Foliage	Blue Flower	Bluish Green	Orange	Purplish Blue	Moderate Red	Purple	Yellow G
RGB Triplet	235, 235, 235	213, 213, 213	196, 196, 196	176, 176, 176	152, 152, 152	115, 86, 73	182, 145, 128	97, 121, 150	93, 108, 73	128, 126, 167	101, 178, 161	202, 119, 51	80, 95, 156	182, 88, 99	95, 69, 108	152, 17(
Target Y cd/m²	100.0000	79.2590	65.0145	50.2050	35.1480	9.9716	35.6179	19.1127	13.1987	23.8604	42.4852	28.6553	11.7829	18.6747	6.5450	43.7286
Y cd/m²	81.8139	63.8600	51.6044	39.6294	27.6990	7.9403	27.9251	14.9784	10.4486	18.6678	33.8266	22.6482	9.3353	14.8345	5.3204	34.5484
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.4057	0.3778	0.2491	0.3415	0.2687	0.2615	0.5141	0.2150	0.4635	0.2884	0.3773
x: CIE31	0.3121	0.3122	0.3117	0.3135	0.3130	0.4022	0.3777	0.2482	0.3363	0.2661	0.2629	0.5149	0.2163	0.4627	0.2903	0.3731
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3643	0.3561	0.2656	0.4314	0.2530	0.3593	0.4095	0.1896	0.3123	0.2170	0.4951
y: CIE31	0.3290	0.3298	0.3293	0.3286	0.3302	0.3615	0.3573	0.2663	0.4288	0.2538	0.3626	0.4041	0.1905	0.3137	0.2214	0.4949
Target CCT	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	3278.9495	3931.9347	17004.8230	5258.4868	15500.1515	8916.1635	2106.8573	16532072.9677	1816.3588	23330.5377	4592.49
CCT	6535.0000	6524.0000	6557.0000	6461.0000	6479.0000	3334.0000	3943.0000	17020.0000	5396.0000	15905.0000	8766.0000	2064.0000	8642804.0000	1830.0000	19159.0000	4670.00
dE ICtCp	9.6094	10.1717	10.6916	10.6687	10.3996	8.5072	10.6424	9.9461	9.0707	10.3420	10.1518	10.0820	8.9910	9.4616	7.4378	10.5473
dE ICtCp LuminanceCompensated	0.1299	0.1929	0.2327	0.2101	0.1403	0.4799	0.1787	0.2370	0.7019	0.6885	0.3597	1.1183	0.2972	0.4030	0.5085	0.6536
Red PQ Diff	-0.0207	-0.0222	-0.0235	-0.0211	-0.0220	0.0264	0.0162	-0.0650	-0.0431	-0.0287	-0.1248	0.0631	-0.0582	0.0746	0.0205	-0.0452
Green PQ Diff	-0.0198	-0.0208	-0.0219	-0.0226	-0.0214	-0.0321	-0.0333	-0.0167	-0.0085	-0.0268	-0.0030	-0.0578	-0.0262	-0.0782	-0.0401	-0.0085
Blue PQ Diff	-0.0199	-0.0215	-0.0221	-0.0222	-0.0224	-0.0612	-0.0613	0.0289	-0.0835	0.0335	-0.0279	-0.2073	0.0783	-0.0566	0.0450	-0.1929
dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dE94 C LuminanceCompensated	0.3247	0.6082	0.5482	0.4977	0.4468	0.6884	0.0110	0.0639	0.4020	0.4842	0.4847	0.5819	0.3354	0.5315	1.3943	0.4121
dE94 H LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	0.4998	0.4706	0.5238	1.1227	1.1726	0.9515	2.2495	0.1790	0.4365	0.1337	1.4669
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Signed dE94 C LuminanceCompensated	0.3247	0.6082	0.5482	0.4977	0.4468	-0.6884	-0.0110	-0.0639	-0.4020	-0.4842	0.4847	-0.5819	-0.3354	-0.5315	-1.3943	-0.4121
Signed dE94 H LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	-0.4998	0.4706	-0.5238	1.1227	-1.1726	-0.9515	-2.2495	0.1790	0.4365	0.1337	1.4669

CAL
CChkr
Asmt
HOME
Prepare
Calibrate
Asmt
Analyze
DTA
Asmt
Notes

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Datagrid 1 Datagrid 2

Simulated Meter Simulated | Source | Direct Display Control

Color Checker Assessment Data Slim 1

Color Notes

Post-Cal Notes

	White	Gray 80	Gray 65	Gray 50	Gray 35	Dark Skin	Light Skin	Blue Sky	Foliage	Blue Flower	Bluish Green	Orange	Purplish Blue	Moderate Red	Purple	Yellow Green
RGB Triplet	235, 235, 235	213, 213, 213	196, 196, 196	176, 176, 176	152, 152, 152	115, 86, 73	182, 145, 128	97, 121, 150	93, 108, 73	128, 126, 167	101, 178, 161	202, 119, 51	80, 95, 156	182, 88, 99	95, 69, 108	152, 176, 71
Target Y cd/m²	100.0000	79.2590	65.0145	50.2050	35.1480	9.9716	35.6179	19.1127	13.1987	23.8604	42.4852	28.6553	11.7829	18.6747	6.5450	43.7286
Y cd/m²	81.8139	63.8600	51.6044	39.6294	27.6990	7.9403	27.9251	14.9784	10.4486	18.6678	33.8266	22.6482	9.3353	14.8345	5.3204	34.5484
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.4057	0.3778	0.2491	0.3415	0.2687	0.2615	0.5141	0.2150	0.4635	0.2884	0.3773
x: CIE31	0.3121	0.3122	0.3117	0.3135	0.3130	0.4022	0.3777	0.2482	0.3363	0.2661	0.2629	0.5149	0.2163	0.4627	0.2903	0.3731
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3643	0.3561	0.2656	0.4314	0.2530	0.3593	0.4095	0.1896	0.3123	0.2170	0.4951
y: CIE31	0.3290	0.3298	0.3293	0.3286	0.3302	0.3615	0.3573	0.2663	0.4288	0.2538	0.3626	0.4041	0.1905	0.3137	0.2214	0.4949
Target CCT	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	3278.9495	3931.9347	17004.8230	5258.4868	15500.1515	8916.1635	2106.8573	16532072.9677	1816.3588	23330.5377	4592.4945
CCT	6535.0000	6524.0000	6557.0000	6461.0000	6479.0000	3334.0000	3943.0000	17020.0000	5396.0000	15905.0000	8766.0000	2064.0000	8642804.0000	1830.0000	19159.0000	4670.0000
dE ICtCp	9.6094	10.1717	10.6916	10.6687	10.3996	8.5072	10.6424	9.9461	9.0707	10.3420	10.1518	10.0820	8.9910	9.4616	7.4378	10.5473
dE ICtCp LuminanceCompensated	0.1299	0.1929	0.2327	0.2101	0.1403	0.4799	0.1787	0.2370	0.7019	0.6885	0.3597	1.1183	0.2972	0.4030	0.5085	0.6536

CAL

Asmt

HOME

Prepare

Calibrate

Asmt

Data2

Analyze

DTA

Asmt

Datagrid 2 Notes

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Datagrid 1 Datagrid 2

Simulated Meter Simulated | Source | Direct Display Control

Color Checker Assessment Data Slim 2

Color Notes

Post-Cal Notes

	White	Gray 80	Gray 65	Gray 50	Gray 35	Dark Skin	Light Skin	Blue Sky	Foliage	Blue Flower	Bluish Green	Orange	Purplish Blue	Moderate Red	Purple	Yellow Green	Orange Yellow	Blue	Green	Red	Yellow	Ma
Red PQ Diff	-0.0207	-0.0222	-0.0235	-0.0211	-0.0220	0.0264	0.0162	-0.0650	-0.0431	-0.0287	-0.1248	0.0631	-0.0582	0.0746	0.0205	-0.0452	0.0360	-0.0567	-0.1204	0.0931	0.0143	0.0
Green PQ Diff	-0.0198	-0.0208	-0.0219	-0.0226	-0.0214	-0.0321	-0.0333	-0.0167	-0.0085	-0.0268	-0.0030	-0.0578	-0.0262	-0.0782	-0.0401	-0.0085	-0.0364	-0.0316	0.0000	-0.1045	-0.0245	-0.
Blue PQ Diff	-0.0199	-0.0215	-0.0221	-0.0222	-0.0224	-0.0612	-0.0613	0.0289	-0.0835	0.0335	-0.0279	-0.2073	0.0783	-0.0566	0.0450	-0.1929	-0.2330	0.1119	-0.1216	-0.0898	-0.3012	0.0
ΔE 1994 L*:±	-7.5074	-7.4585	-7.4475	-6.9901	-6.2479	-3.9331	-6.4060	-5.2143	-4.4253	-5.6514	-6.3794	-5.7682	-4.2469	-4.8978	-3.1193	-6.6511	-6.4352	-2.6394	-5.7331	-3.7400	-6.9700	-5.
ΔE 1994 Sat:±	0.3247	0.6082	0.5482	0.4977	0.4468	-2.1433	-1.6726	-1.7606	-2.3931	-2.6544	-1.8582	-5.6204	-3.6285	-4.0854	-3.5814	-5.2374	-6.3819	-7.0764	-6.1094	-7.2286	-6.4182	-3.
ΔE 1994 Hue:±	0.0000	0.0000	0.0000	0.0000	0.0000	-0.5191	0.4901	-0.5456	1.1673	-1.2216	-0.9883	-2.3395	0.1861	0.4536	0.1384	1.5257	-0.1405	-0.7258	0.0529	0.2784	-0.8165	0.6
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
Signed dE94 C LuminanceCompensated	0.3247	0.6082	0.5482	0.4977	0.4468	-0.6884	-0.0110	-0.0639	-0.4020	-0.4842	0.4847	-0.5819	-0.3354	-0.5315	-1.3943	-0.4121	-1.3235	-3.6982	-1.7918	-3.3155	-0.7557	0.6
Signed dE94 H LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	-0.4998	0.4706	-0.5238	1.1227	-1.1726	-0.9515	-2.2495	0.1790	0.4365	0.1337	1.4669	-0.1353	-0.7045	0.0507	0.2690	-0.7868	0.6

CAL

Asmt

HOME

Prepare

Calibrate

Asmt

Data1

Analyze

DTA

Asmt

Datagrid 1 Notes

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

3D Color Cube LUT

Simulated Meter Simulated | Source | Direct Display Control

3D Color Cube LUT Calibration - Full

Go to Minimal 3D LUT

Datagrid

DeltaE ICtCp | w/Luminance Error

100 0 0
95 0 0
87.7 0 0
80.4 0 0
73 0 0
65.8 0 0
58.4 0 0
51 0 0
44 0 0
36.5 0 0
29 0 0
22 0 0
14.6 0 0
7.3 0 0
0 0 0

0 5 10 150 10 20 30

Summary

Delta C
2.24 Avg 4.74 Max

Delta H
0.83 Avg 2.13 Max

Delta L
2.86 Avg 4.61 Max

Delta E
Avg 3.11 / 8.6
Max 12.32 / 14.82

RGB Balance | dE ICtCp

30 20 10 0 -10 -20 -30

-24 2.5 4.6

3 2 1 0 10 5 0

w/Lumin Err

100 0 0

Triplet
235, 16, 16

Y 17.29603
Tgt 21.26567

x 0.63765
Tgt 0.64

y 0.33047
Tgt 0.33

dC -8.04
dH -0.37
dL -4.61

dE 0.61
/ 8.81

Points 195
Virtual LUT

100 White
0.097695 Black

dE Avg 3.11 / 8.6
dE Max 12.32 / 14.82

u'v' CIE
Color Bars
Big Comparator

100 0 0 dE 0.61 / 8.81

Red | Green | Blue | Cyan | Magenta | Yellow | White | Ramp

Inner Data Points

Luminance Level Points
15 Points per side, SMPTE (0-100)

Display Slot

Selected LUT

000 7.300 14.600 22.00 29.00 36.500 44.00 51.00 58.400

Ramp 0 0 | 100 0 0

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CAL 3dLUT Full

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

3D Color Cube LUT

Simulated Meter Simulated | Source | Direct Display Control

3D Color Cube LUT Calibration - Full

Go to Minimal 3D LUT

Datagrid

DeltaE ICtCp | w/Luminance Error

100 0 0
95 0 0
87.7 0 0
80.4 0 0
73 0 0
65.8 0 0
58.4 0 0
51 0 0
44 0 0
36.5 0 0
29 0 0
22 0 0
14.6 0 0

Summary

Delta C
2.24 Avg 4.74 Max

Delta H
0.83 Avg 2.13 Max

Delta L
2.86 Avg 4.61 Max

Delta E
Avg 3.11 / 8.6
w/Luminance Error
Max 12.32 / 14.82

RGB Balance | dE ICtCp

30 20 10 0 -10 -20 -30
-24 4.6 2.5

3 2 1 0 10 5 0
w/Lumin Er

Triplet
235, 16, 16

Y 17.29603
Tgt 21.26567

x 0.63765
Tgt 0.64

y 0.33047
Tgt 0.33

dC -8.04
dH -0.37
dL -4.61

dE 0.61
/ 8.81

100 0 0

Points 195
Virtual LUT

100 White
0.097695 Black

dE Avg 3.11 / 8.6
dE Max 12.32 / 14.82

u'v' CIE
Color Bars
Big Comparator

100 0 0 dE 0.61 / 8.81

Red | Green | Blue | Cyan | Magenta | Yellow | White

Ramp

Inner Data Points | Luminance Level Points

000 | 7.300 | 14.600 | 22 0 0 | 29 0 0 | 36.5 0 0 | 44 0 0 | 51 0 0 | 58.4 0 0 | 65.8 0 0 | 73 0 0 | 80.4 0 0 | 87.7 0 0 | 95 0 0 | 100 0 0

Ramp R G B

100 0 0

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CAL 3dLUT Full

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

3D Color Cube LUT | 3D Cube LUT Minimal

Simulated Meter Simulated | Source | Direct Display Control

3D Color Cube LUT Calibration - Minimal

Go to Full 3D LUT

Datagrid

Summary

Points 195

Black 0.098826

White 100

dE Avg 3.17 / 7.99

dE Max 12.96 / 17.07

w/Luminance Error

dE ICtCp

dE @ 0 0 100 0.42

w/ Luminance Error 7.59

dL -3.05 dH -0.31 dC -9.88

RGB Balance

R 1.5 G 3.3 B -23.8

Red | Green | Blue | Cyan | Magenta | Yellow | White

Read Cube Ramp

Go to Charts

View charts in the Analysis section

Luminance Level Points: 15 Points per side, SMPTE (0-100)

Inner Data Points | Display Slot | Selected LUT

CAL 3dLUT Mnml

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R G B Ramp 0 0 100 Back Next Notes

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Post-Cal Readings

Simulated Meter Simulated | Source | Samsung 2017 QLED Custom

Post-Calibration Readings

7/28/2018 Calibration

Gamma Breakout Tot 2.86 Contrast 827 Black 0.099564 White 82.33 cd/m²

95

1 Grayscale

Detail Charts | 21 Point 5% step 0-100%

Avg 0.33 / 9.03
Max 0.78 / 14.61

95 dE ICtCp 0.14 / 10.34 w/ Lumin Error

2 Saturation Sweeps

Detail Charts | BT.709 25% Sweeps

Avg 0.64 / 9.32
Max 1.81 / 11.17

100% w/Lumin Err 10.42

100% dE ICtCp 0.37

100% | 100 | 25% | 50% | 75% | 100%

4 Color Checker

Detail Charts

100% Yellow

u'v' CIE

dE ICtCp 0.06 Avg 0.62 Max 1.76

w/ Lumin Err 9.54 Avg 9.56 Max 10.98

100% Yellow

Add Custom Color Set → SG Fleshtones

Select Colors

Comparator

Populate CMS for HT report

3 Gamut Luminance

Detail Charts | 4 Point 25% step 25-100%

Avg 0.89 / 8.19

Max 4.62 / 11.05 100 w/ Lumin Err 9.6

100 dE ICtCp 0.32

25 | 50 | 75 | 100

100

LUT Calibration

Points 8

Avg dE ICtCp 0

Max dE ICtCp 0

Cal Day 300 nits

Post-Cal Readings

Use calibration layout tabs for additional detailed readings

Contrast | Brightness | Backlight | Setup Values | TV Gamma | Color | Tint

Red | Green | Blue

Gain | Cut

Notes

Display Slot: Custom

Use [···] mid-screen or below to read all series or select one from the individual series above

CAL | PstCal Read | Back | Next | PreCal Read | HOME | Prepare | Session Setup | PreCal Read | Calibrate | I Gry | I CMS | I Sat | I LUT | I Lum | I CCk | PreCal Read | Analyze | ∫ Gry | ∫ Sat | ∫ Lum | ∫ CCk | ∫ LUT | Final Check | PstCal

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Post-Calibration

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Post-Cal Multi-Point Grayscale Detail

Comparator

DeltaE ICtCp w/ Luminance Error — Contrast 827 — 95 dE 10.34 — 9.03 Avg — 14.61 Max

DeltaE ICtCp — Post-Cal Readings — 95 dE 0.14 — 0.33 Avg — 0.78 Max

RGB Balance

Gamma Target 2.2 — 6.42 — 2.86 Total

POST-CAL

95

White 82.3

Black 0.09956

-24.3 -23.7 -23.2

Luminance cd/m² — Target 89.3011 — 71.8327

EOTF

CCT — 6523 — 6538 Avg

ANL

PstCal

Gray

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Gray

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0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

∫ Pre-Cal # Datagrid

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CalMAN 2018 CalMAN Home Enthusiast

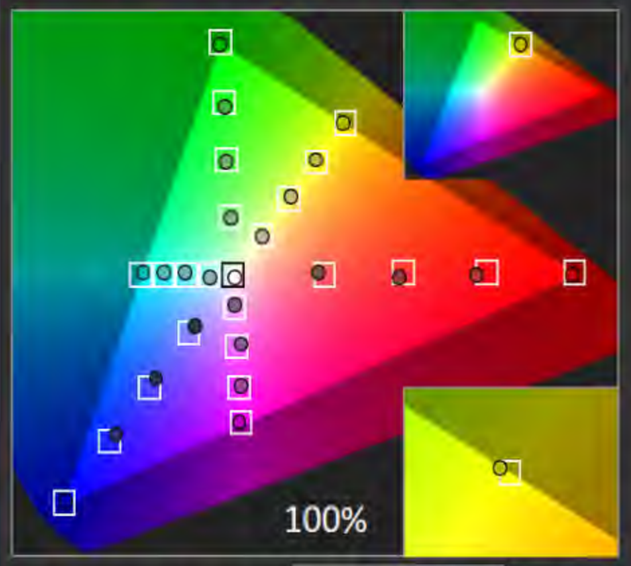
CalMAN

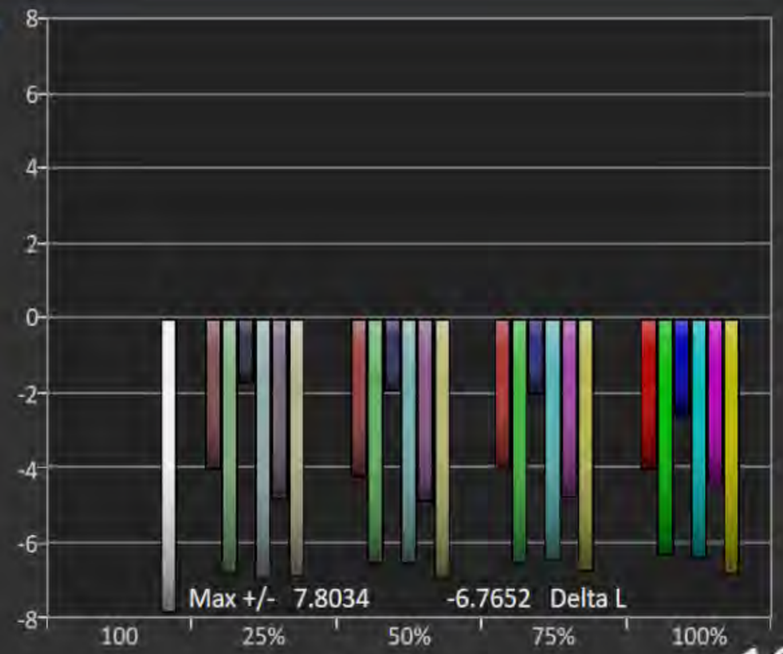
Post-Calibration

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Post-Cal Saturation Sweeps Detail

Comparator





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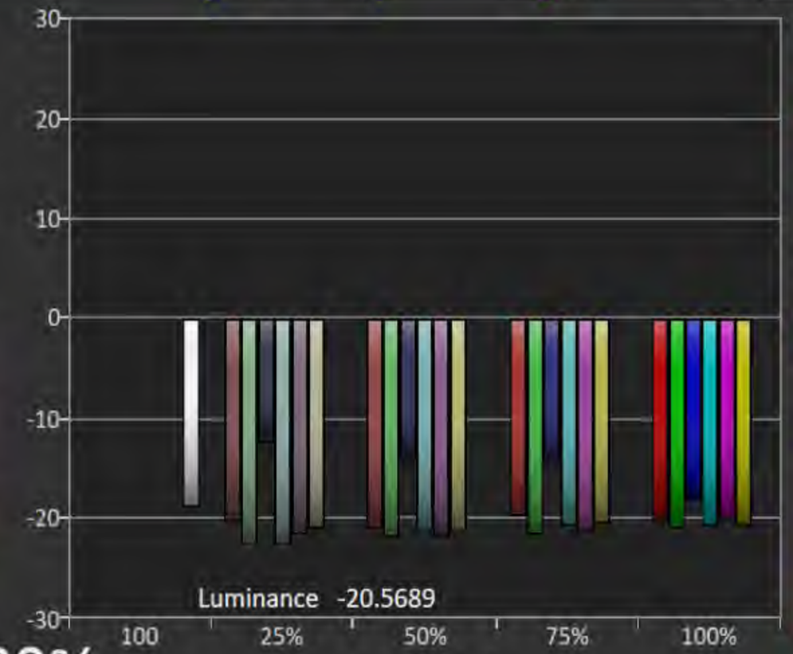
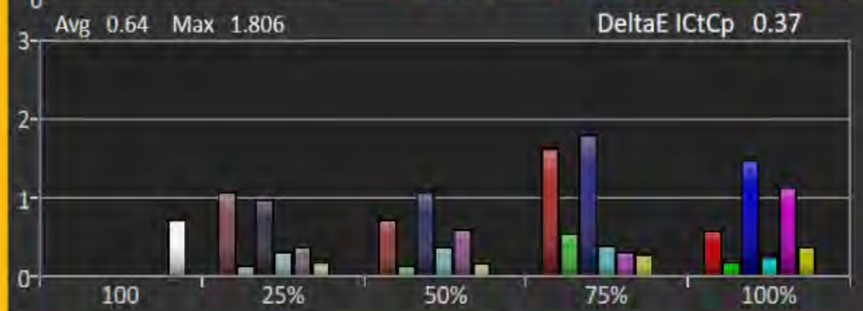
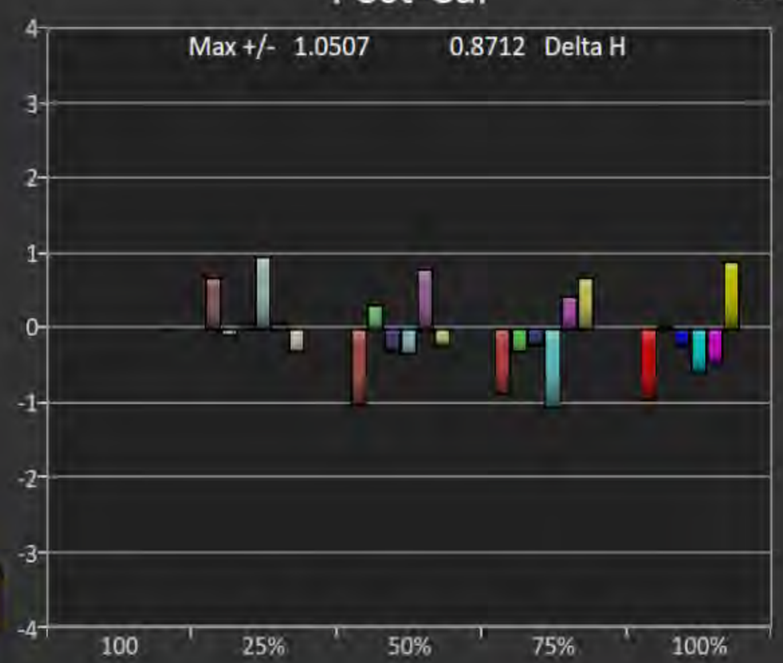


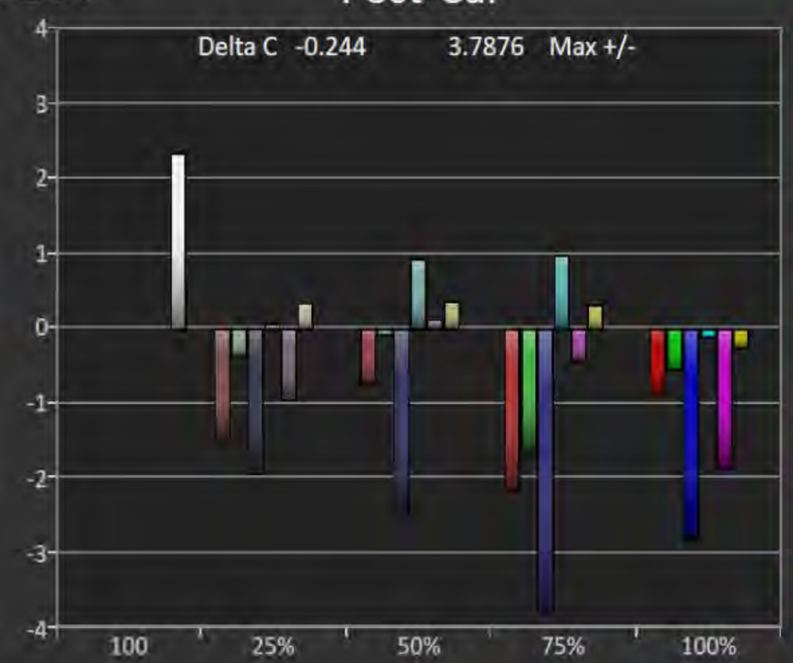
Post-Cal

Avg 9.32 Max 11.17 | Post-Cal Readings | dE w/ Lumin Error 10.42

Avg 0.64 Max 1.806 | DeltaE ICtCp 0.37







25% 50% 75% 100%

ANL PstCal Satur Back Next PreCal # Data HOME Prepare Session Setup PreCal Read Calibrate I Sat PostCal Read Analyze ∫ Gry PreCal ∫ Lum ∫ CCk ∫ LUT Final Check PstCal Satur Notes

∫ Pre-Cal # Datagrid

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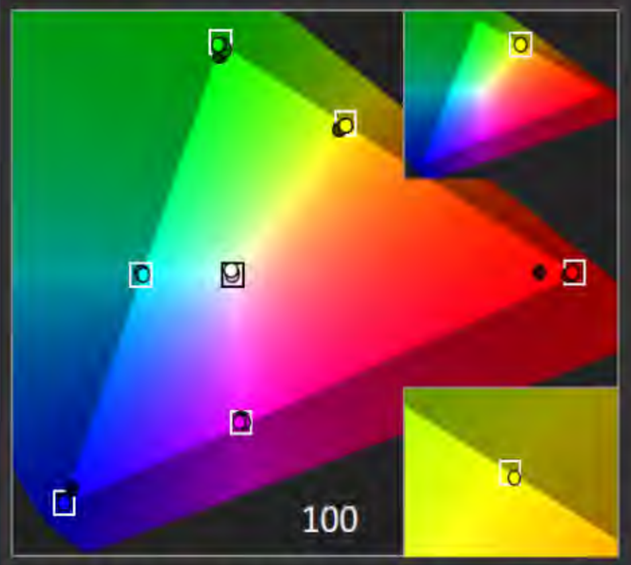
CalMAN 2018 CalMAN Home Enthusiast

CalMAN

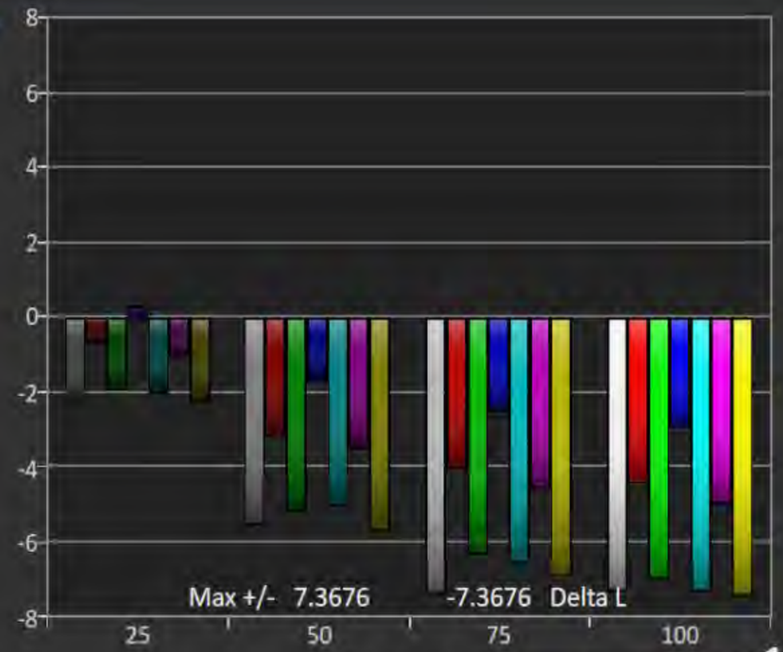
Post-Calibration

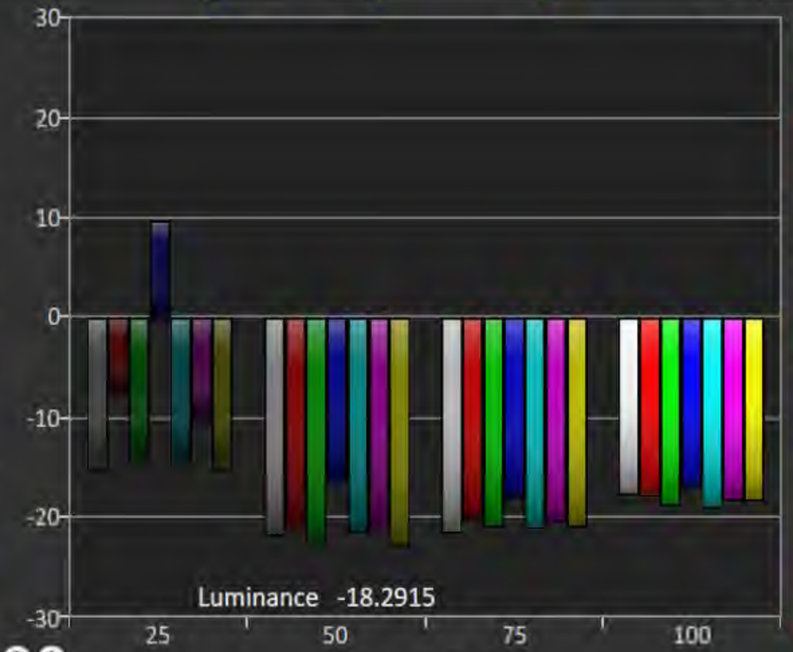
Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Post-Cal Gamut Luminance Detail

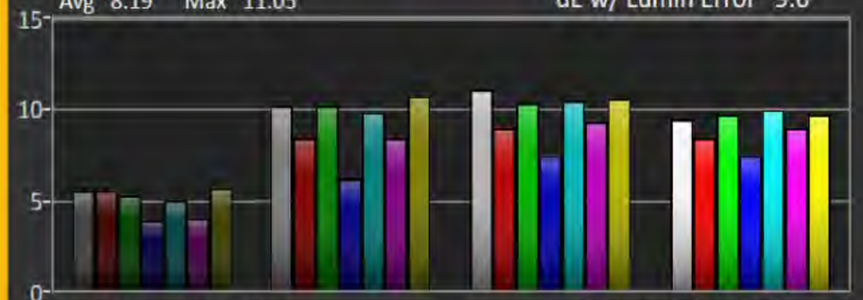


Comparator

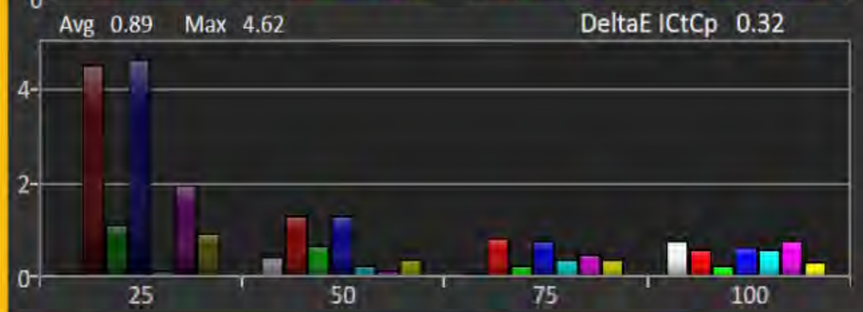




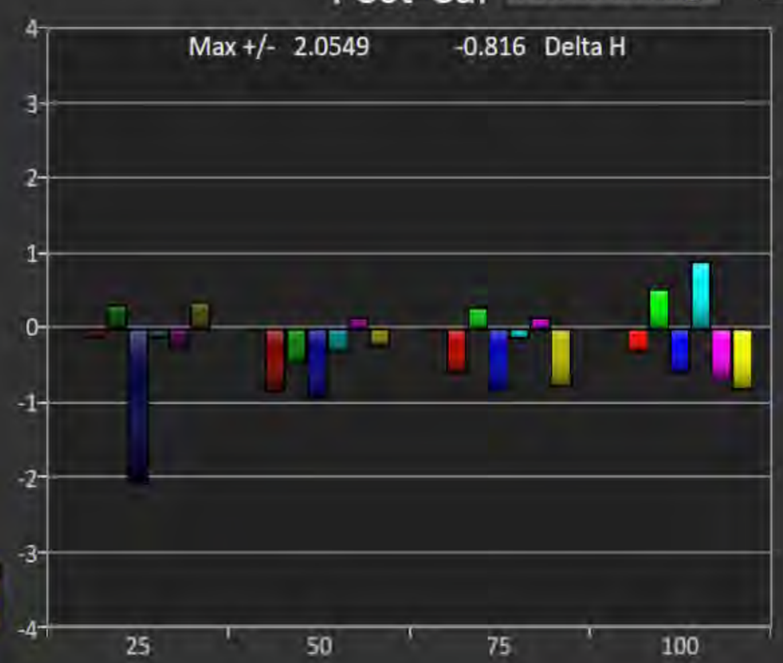
Avg 8.19 Max 11.05 dE w/ Lumin Error 9.6



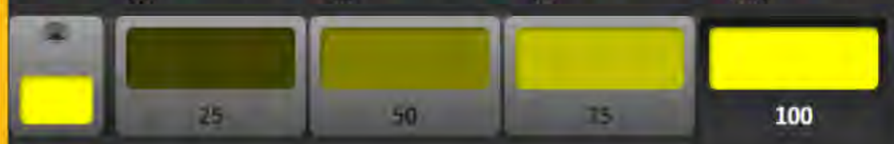
Avg 0.89 Max 4.62 DeltaE ICtCp 0.32



Post-Cal | Post-Cal Readings | 100



Post-Cal



ANL | PstCal | Lumi | Back | Next | PreCal | # Data | HOME | Prepare | Session Setup | PreCal Read | Calibrate | Lum | PostCal Read | Analyze | Gry | Sat | PreCal | CCk | LUT | Final Check | PstCal | Lumi | Notes

∫ Pre-Cal | # Datagrid | « Back | Next »

CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Post-Calibration

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

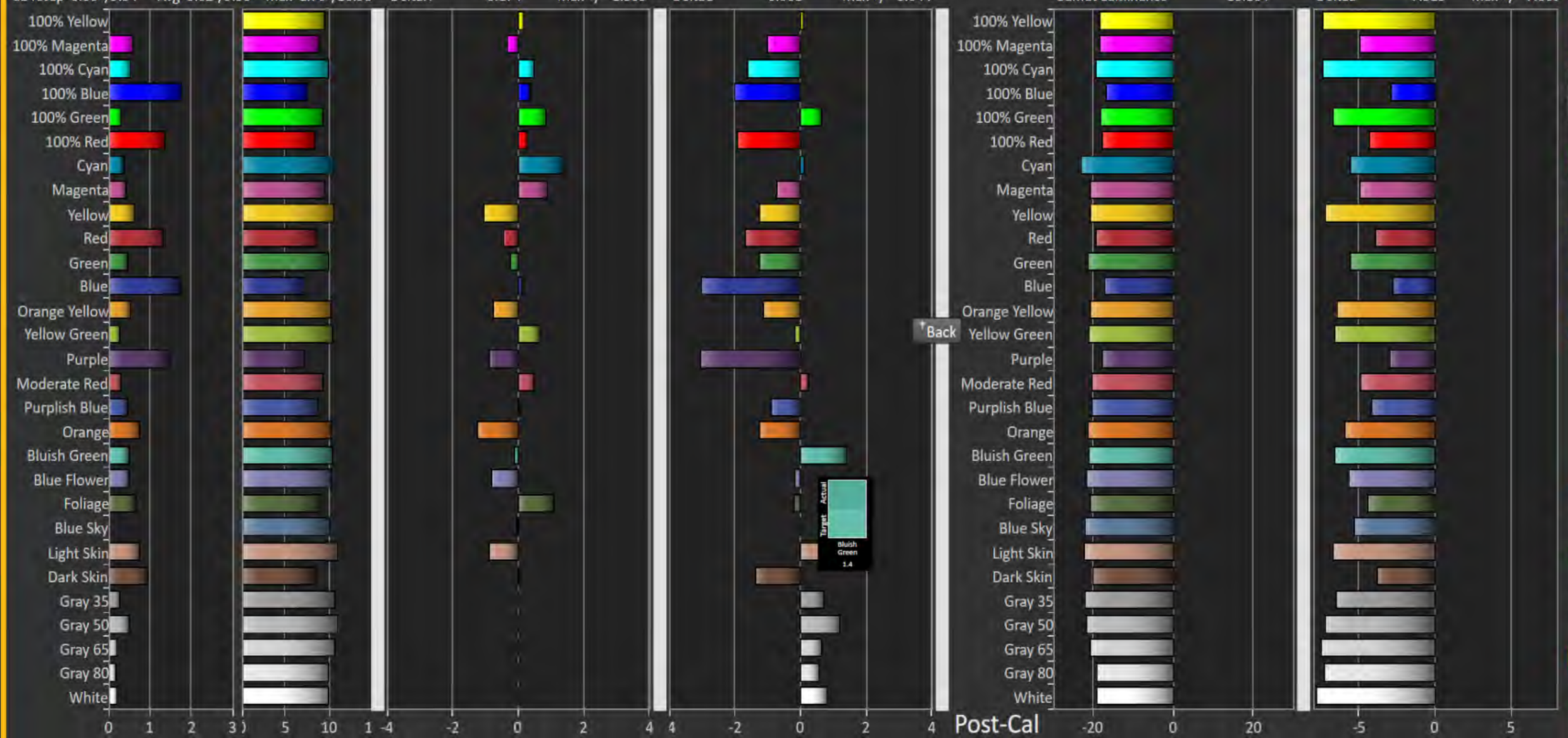
Post-Cal Color Checker Detail

Post-Cal • 100% Yellow

Notes | Post-Cal Readings | CIE Chart | Comparator | Post-Cal

w/ Luminance Error ↓

dE ICtCp 0.06 /9.54 Avg 0.62 /9.56 Max 1.76 /10.98 | DeltaH 0.174 Max +/- 1.369 | DeltaC 0.061 Max +/- 3.044 | Gamut Luminance -18.164 | DeltaL -7.313 Max +/- 7.801



White | Gray 80 | Gray 65 | Gray 50 | Gray 35 | Dark Skin | Light Skin | Blue Sky | Foliage | Blue Flower | Bluish Green | Orange | Purplish Blue | Moderate Red | Purple | Yellow Green | Orange Yellow | Blue | Green | Red | Yellow | Magenta | Cyan

ANL | PstCal | CChkr | Back | Next | PreCal | # Data | HOME | Prepare | Session Setup | PreCal Read | Calibrate | CCk | PostCal Read | Analyze | ∫ Gry | ∫ Sat | ∫ Lum | PreCal | ∫ LUT | Final Check | PstC | CChk | Notes

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CalMAN 2018 CalMAN Home Enthusiast

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Post-Calibration

Simulated Meter Simulated | Source | Samsung 2018 QLED CAL-DAY

Post-Cal Color Checker Detail

Post-Cal • 100% Yellow

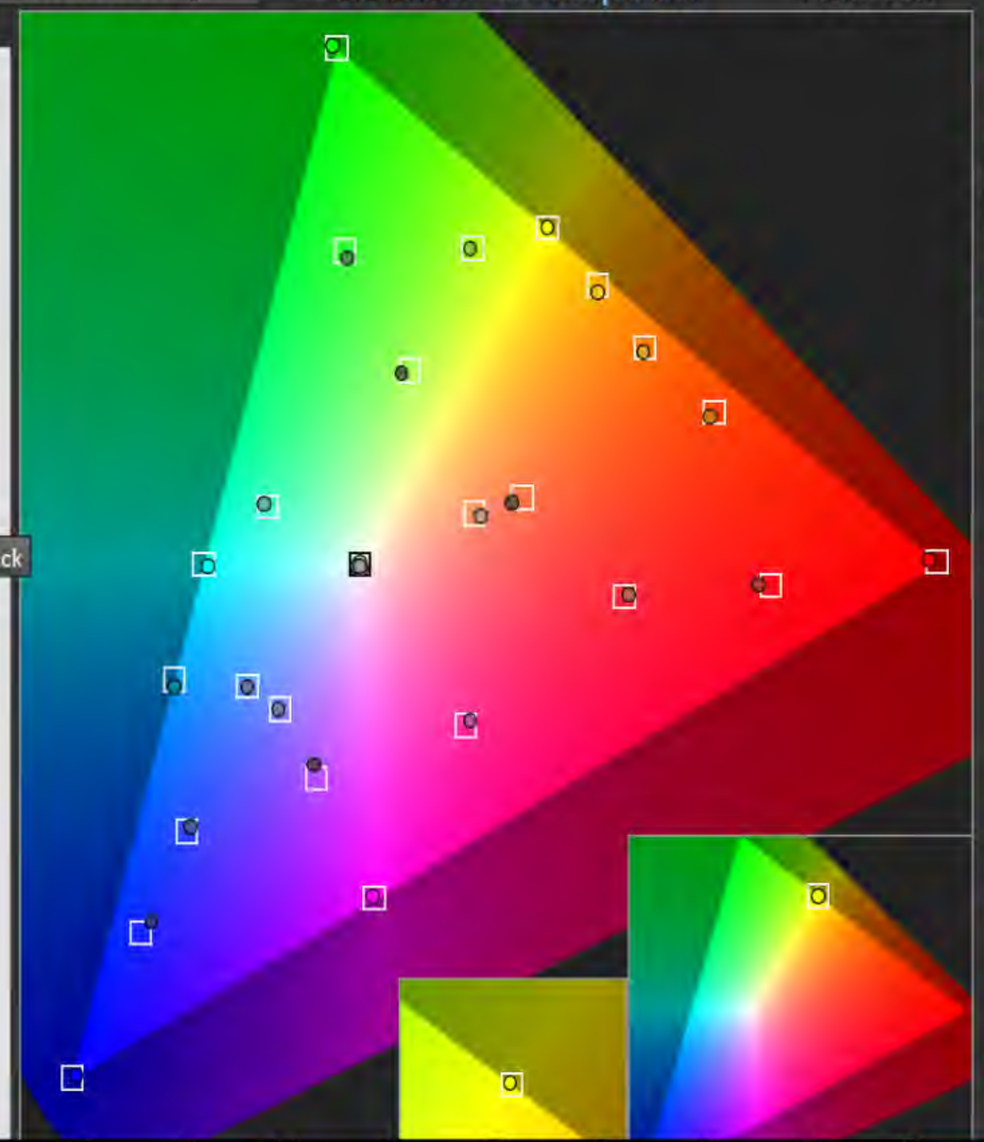
Notes

Post-Cal Readings | CIE Chart | Comparator | Post-Cal

w/ Luminance Error ↓

dE ICtCp 0.06 /9.54 Avg 0.62 /9.56 Max 1.76 /10.98 DeltaH 0.174 Max +/- 1.369 DeltaC 0.061 Max +/- 3.044

100% Yellow
100% Magenta
100% Cyan
100% Blue
100% Green
100% Red
Cyan
Magenta
Yellow
Red
Green
Blue
Orange Yellow
Yellow Green
Purple
Moderate Red
Purplish Blue
Orange
Bluish Green
Blue Flower
Foliage
Blue Sky
Light Skin
Dark Skin
Gray 35
Gray 50
Gray 65
Gray 80
White



White | Gray 80 | Gray 65 | Gray 50 | Gray 35 | Dark Skin | Light Skin | Blue Sky | Foliage | Blue Flower | Bluish Green | Orange | Purplish Blue | Moderate Red | Purple | Yellow Green | Orange Yellow | Blue | Green | Red | Yellow | Magenta | Cyan | 100% Re

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CalMAN 2018 CalMAN Home Enthusiast

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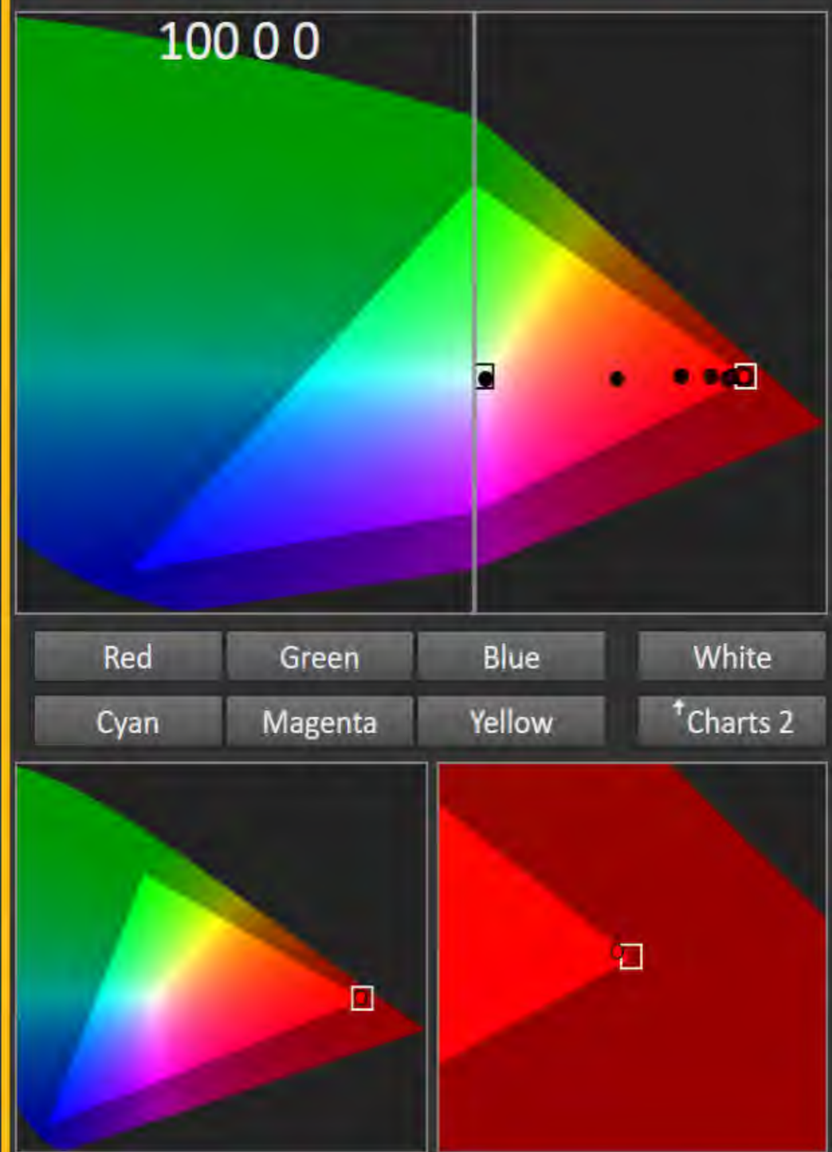
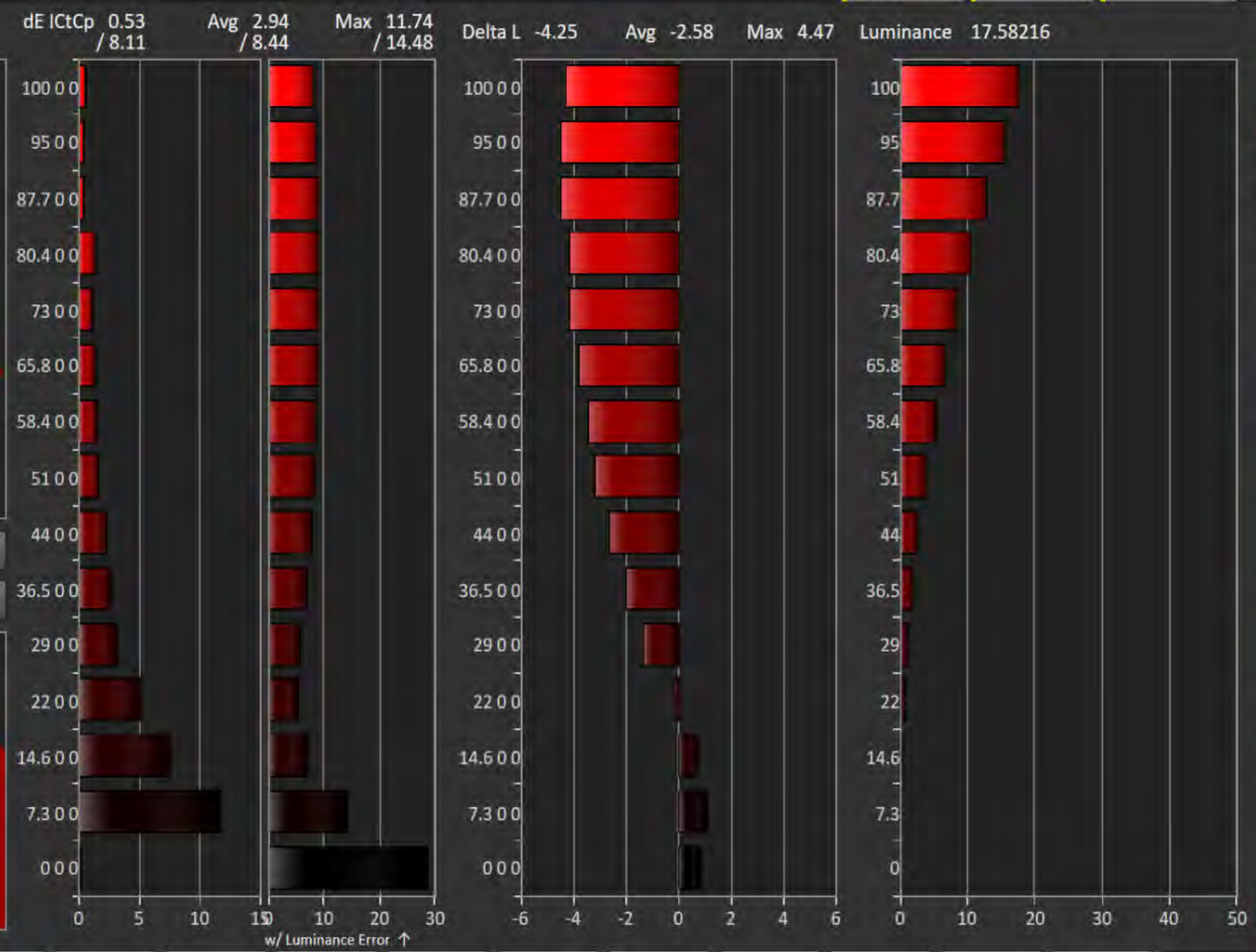
DeltaE DeltaL Luminance

Simulated Meter Simulated | Source | Direct Display Control

3D Color Cube LUT Full Calibration Detail 1





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CAL
Calib

Ramp | 16 | 16 | 0 0 0 | 7.3 0 0 | 14.6 0 0 | 22 0 0 | 29 0 0 | 36.5 0 0 | 44 0 0 | 51 0 0 | 58.4 0 0 | 65.8 0 0 | 73 0 0 | 80.4 0 0 | 87.7 0 0 | 95 0 0 | 100 0 0

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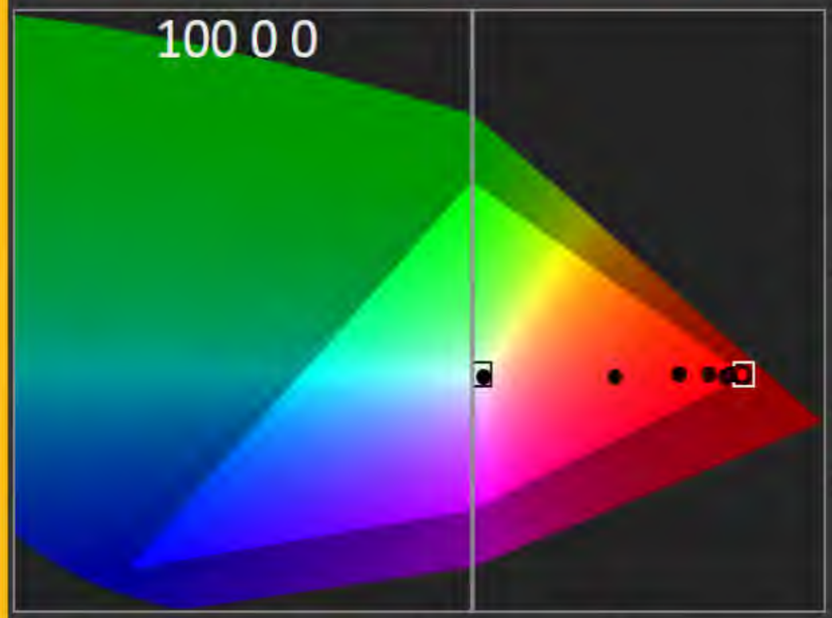
CalMAN 2018 CalMAN Home Enthusiast

CalMAN

DeltaE DeltaH DeltaC

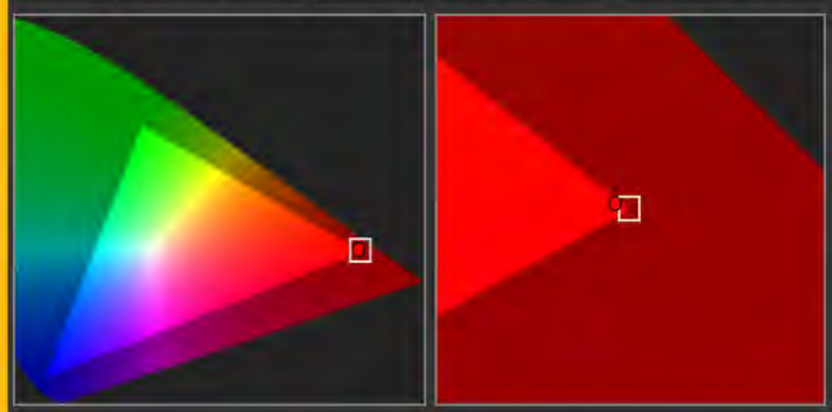
Simulated Meter Simulated | Source | Direct Display Control

3D Color Cube LUT Full Calibration Detail 2

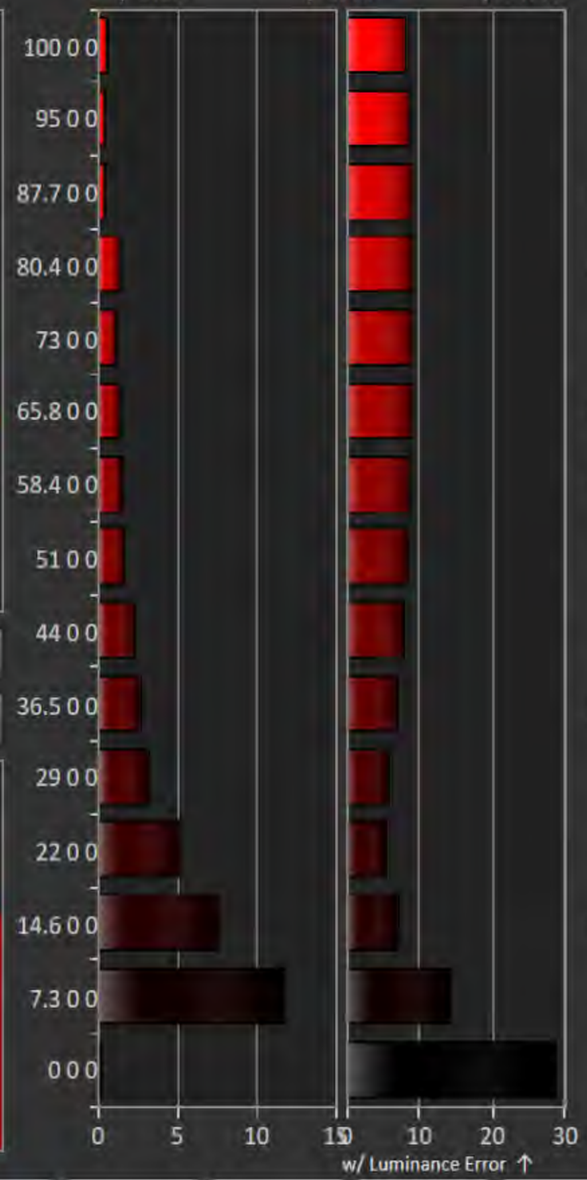


Red | Green | Blue | White

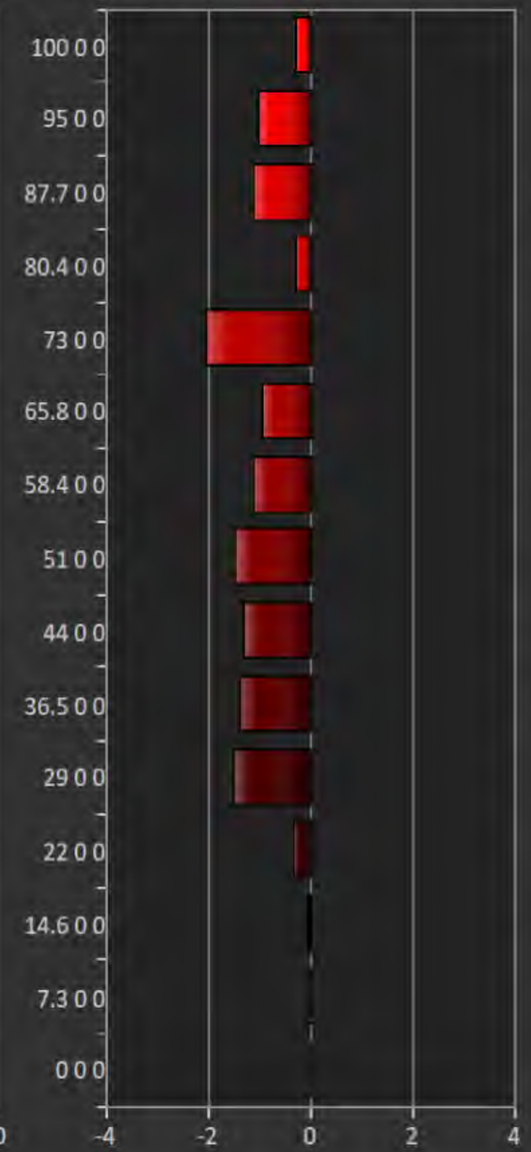
Cyan | Magenta | Yellow | Charts 1



dE ICtCp 0.53 / 8.11 Avg 2.94 / 8.44 Max 11.74 / 14.48



Delta H -0.25 Avg 0.9 Max 2.02



Delta C 7.35 Avg 5.82 Max 8.3

ANL 3dLUT Detail

Back | Next | Calib | HOME | Prepare | Session Setup | PreCal Read | Calibrate | Calib | PostCal Read | Analyze | Gry | Sat | Lum | CCk | Calib | chrts1 | Final Check | CAL | Calib

Ramp | 16 | 16 | 0 0 0 | 7.3 0 0 | 14.6 0 0 | 22 0 0 | 29 0 0 | 36.5 0 0 | 44 0 0 | 51 0 0 | 58.4 0 0 | 65.8 0 0 | 73 0 0 | 80.4 0 0 | 87.7 0 0 | 95 0 0 | 100 0 0

Datagrid | Notes

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

DeltaE DeltaL Luminance

Simulated Meter Simulated | Source | Direct Display Control

≡ 3D Color Cube LUT Minimal Calibration - Charts1 ≡

✕ Comparator

dE ICtCp 0.42 / 7.59 | Avg 3.17 / 7.99 | Max 12.96 / 17.07

Delta L -3.05 | Avg -2 | Max 4.36

Luminance 5.93696

0 0 100

Red | Green | Blue | White

Cyan | Magenta | Yellow | Charts 2

0 0 100 | 0 0 95 | 0 0 87.7 | 0 0 80.4 | 0 0 73 | 0 0 65.8 | 0 0 58.4 | 0 0 51 | 0 0 44 | 0 0 36.5 | 0 0 29 | 0 0 22

100 | 95 | 87.7 | 80.4 | 73 | 65.8 | 58.4 | 51 | 44 | 36.5 | 29 | 22

0 0 0 | 0 0 7.3 | 0 0 14.6 | 0 0 22 | 0 0 29 | 0 0 36.5 | 0 0 44 | 0 0 51 | 0 0 58.4 | 0 0 65.8 | 0 0 73 | 0 0 80.4 | 0 0 87.7 | 0 0 95 | 0 0 100

w/ Luminance Error ↑

0 | 0 | Ramp | 0 0 0 | 0 0 7.3 | 0 0 14.6 | 0 0 22 | 0 0 29 | 0 0 36.5 | 0 0 44 | 0 0 51 | 0 0 58.4 | 0 0 65.8 | 0 0 73 | 0 0 80.4 | 0 0 87.7 | 0 0 95 | 0 0 100

ANL | 3dLUT | Detail | Back | Next | Calib | HOME | Prepare | Session Setup | PreCal Read | Calibrate | Calib | PostCal Read | Analyze | Calib | chrts2 | Final Check | CAL | Calib

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Final Check

Simulated Meter Simulated | Source | Direct Display Control

Session Final Check

7/28/2018 Calibration

AV Mode - Cal Day 300 nits

Contrast Verification

Data Points: select Clipping or Clipping with Peak White: Clipping with Peak White

① Adjust the Backlight, Brightness and Contrast controls to optimize the white level so it doesn't clip any of the primaries.

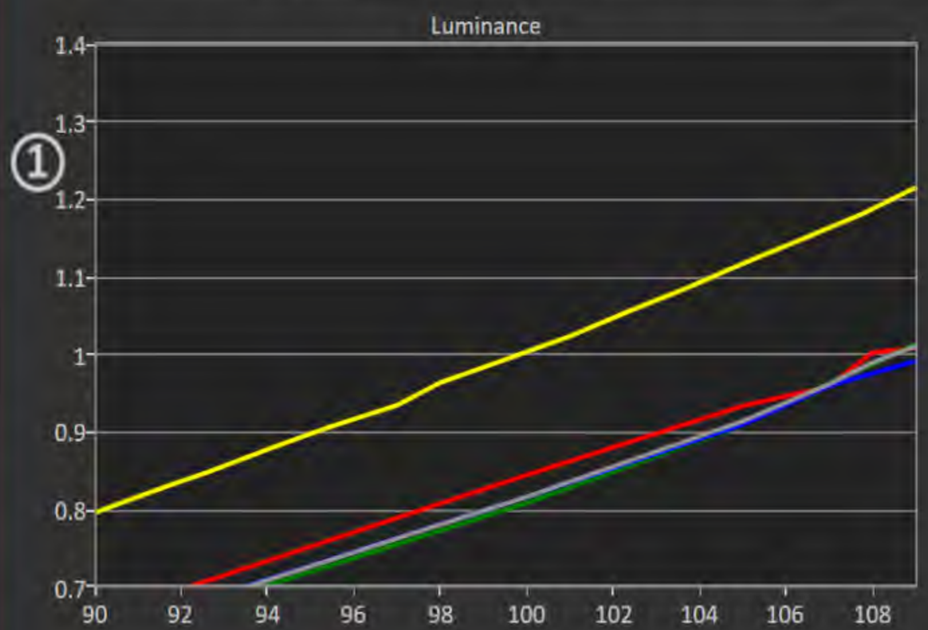
Gamma Level Verification

Data Points: select a full set of grayscale points, e.g. 11: Clipping with Peak White

② Check / adjust the gamma level across the full grayscale. Use the Backlight, Brightness, Contrast and Gamma controls to make this adjustment.

Post-Calibration Summary

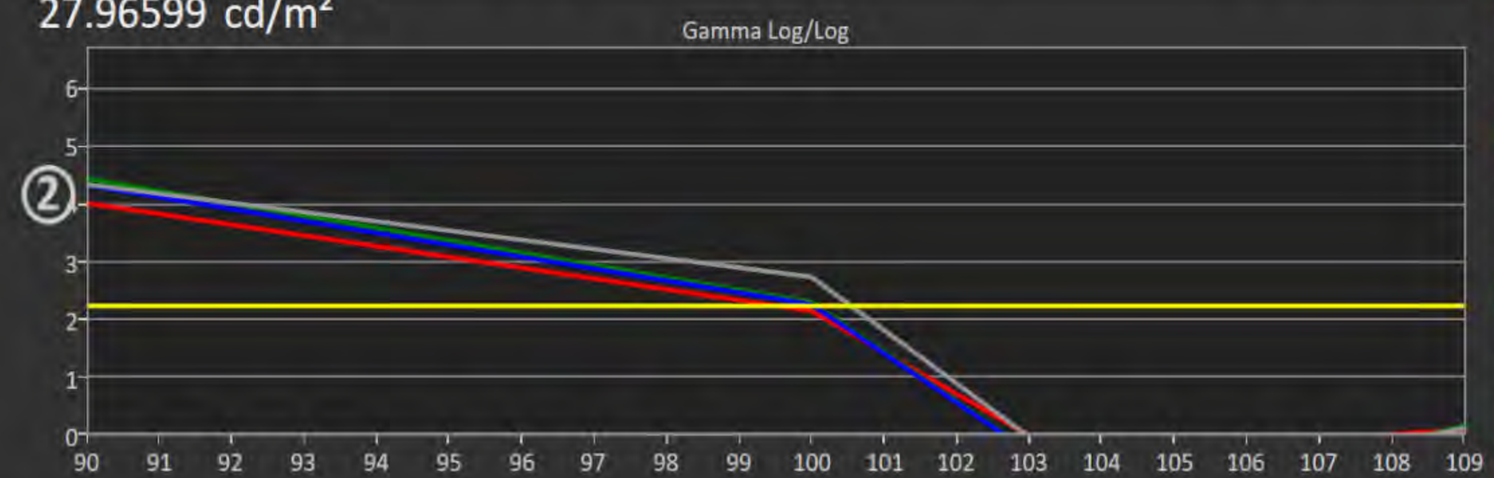
Grayscale dE	Avg	0	Saturation dE	Avg	0
	Max	0		Max	0
Luminance dE	Avg	0	Color Checker dE	Avg	0
	Max	0		Max	0
Color Cube LUT dE	Avg	8.44 Full	Gamma Target		2.2
Use Minimal layout data	Max	14.48	Total		2.2
LUT values come from calibration Full layout, or Minimal layout if checked			CCT Target		6503
				Avg	0
White	100	cd/m²	Black	0	Cntr Ratio 0



~~107~~

Gamma -0.64

27.96599 cd/m²



Post-Calibration Notes

Notes

Save

Contrast		TV Gamma			Red	Green	Blue
Brightness		Color		Gain			
Backlight		Tint		Cut			

ANL Final Check

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I LUT

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Grayscale Datagrids

Simulated Meter Simulated | Source | Direct Display Control

Pre-Cal Multi-Point Grayscale Data

Pre-Cal

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
RGB Triplet	16, 16, 16	27, 27, 27	38, 38, 38	49, 49, 49	60, 60, 60	71, 71, 71	82, 82, 82	93, 93, 93	104, 104, 104	115, 115, 115	126, 126, 126	136, 136, 136	147, 147, 147	158, 158, 158	169, 169, 169	180, 180, 180	191, 191, 191	202, 202, 202	213, 2
Target Y cd/m²	0.0001	0.1497	0.6611	1.5914	2.9765	4.8433	7.2137	10.1064	13.5377	17.5222	22.0729	26.7115	32.3759	38.6392	45.5110	53.0005	61.1162	69.8665	79.25
Y cd/m²	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.312
x: CIE31	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.329
y: CIE31	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Target CCT	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.
CCT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000

Post-Cal Multi-Point Grayscale Data

Post-Cal

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
RGB Triplet	16, 16, 16	27, 27, 27	38, 38, 38	49, 49, 49	60, 60, 60	71, 71, 71	82, 82, 82	93, 93, 93	104, 104, 104	115, 115, 115	126, 126, 126	136, 136, 136	147, 147, 147	158, 158, 158	169, 169, 169	180, 180, 180	191, 191, 191	202, 202, 202	213, 2
Target Y cd/m²	0.0001	0.1497	0.6611	1.5914	2.9765	4.8433	7.2137	10.1064	13.5377	17.5222	22.0729	26.7115	32.3759	38.6392	45.5110	53.0005	61.1162	69.8665	79.25
Y cd/m²	0.0995	0.3629	0.8548	1.6328	2.6905	4.0828	5.8819	8.0148	10.5787	13.6639	17.0725	20.9271	25.1011	30.3738	36.0370	42.0427	48.2878	56.0356	63.58
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.3127	0.312
x: CIE31	0.3129	0.3143	0.3140	0.3110	0.3101	0.3150	0.3137	0.3126	0.3137	0.3136	0.3154	0.3121	0.3147	0.3100	0.3092	0.3126	0.3121	0.3124	0.313
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.3290	0.329
y: CIE31	0.3300	0.3287	0.3265	0.3301	0.3297	0.3283	0.3300	0.3297	0.3273	0.3304	0.3281	0.3316	0.3270	0.3309	0.3305	0.3299	0.3289	0.3295	0.328
Target CCT	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.4440	6503.
CCT	6484.0000	6420.0000	6449.0000	6591.0000	6644.0000	6384.0000	6441.0000	6504.0000	6459.0000	6446.0000	6364.0000	6517.0000	6409.0000	6639.0000	6683.0000	6501.0000	6540.0000	6518.0000	6458.

Click Change Selection then right-click on either datagrid chart (ESCape the context menu) to show possible selections

Change Selection

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Saturation Datagrids

Simulated Meter Simulated | Source | Direct Display Control

Pre-Cal Saturation Sweeps Data

	25%	50%	75%	100%
RGB Triplet	180, 123, 123	180, 90, 90	180, 64, 64	180, 16, 16
Target x:CIE31	0.3937	0.4764	0.5563	0.6400
x: CIE31	0.0000	0.0000	0.0000	0.0000
Target y:CIE31	0.3293	0.3295	0.3297	0.3300
y: CIE31	0.0000	0.0000	0.0000	0.0000
Target Y	27.6279	18.5654	14.1040	11.2709
Y	0.0000	0.0000	0.0000	0.0000
Gamma Point: Flat	0.0000	0.0000	0.0000	0.0000
ΔE 2000	0.0000	0.0000	0.0000	0.0000
dE2000 LuminanceCompensated	0.0000	0.0000	0.0000	0.0000
ΔE 1994 L*:±	0.0000	0.0000	0.0000	0.0000
ΔE 1994 Sat:±	0.0000	0.0000	0.0000	0.0000
ΔE 1994 Hue:±	0.0000	0.0000	0.0000	0.0000
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000
Signed dE94 C LuminanceCompensated	0.0000	0.0000	0.0000	0.0000
Signed dE94 H LuminanceCompensated	0.0000	0.0000	0.0000	0.0000

Post-Cal Saturation Sweeps Data

	25%	50%	75%	100%
RGB Triplet	126, 86, 86	147, 75, 75	165, 60, 60	180, 16, 16
Target x:CIE31	0.3991	0.4767	0.5549	0.6400
x: CIE31	0.3934	0.4711	0.5430	0.6354
Target y:CIE31	0.3293	0.3295	0.3297	0.3300
y: CIE31	0.3300	0.3286	0.3301	0.3311
Target Y	11.1535	11.3303	11.4753	11.2709
Y	8.8760	9.0665	9.2385	8.9706
Gamma Point: Flat	3.5302	4.6921	6.2182	8.3958
ΔE 2000	3.9044	3.7531	3.9337	3.9140
dE2000 LuminanceCompensated	0.8394	0.5055	0.9007	0.4218
ΔE 1994 L*:±	-4.0935	-4.0192	-3.9301	-4.1055
ΔE 1994 Sat:±	-2.9961	-3.9724	-6.9381	-7.8976
ΔE 1994 Hue:±	0.1326	-0.4761	-0.6553	-0.5088
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000
Signed dE94 C LuminanceCompensated	-1.3819	-1.0686	-2.7921	-1.6211
Signed dE94 H LuminanceCompensated	0.1277	-0.4587	-0.6321	-0.3985

ANL

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Pre-Cal: 25% | 50% | 75% | 100%

Click Change Selection then right-click on either datagrid chart (ESCape the context menu) to show possible selections

Change Selection

Post-Cal: 25% | 50% | 75% | 100%

∫ Pre-Cal | ∫ Post-Cal

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CalMAN 2018 CalMAN Home Enthusiast

CalMAN

Color Check Datagrids

Simulated Meter Simulated | Source | Direct Display Control

Pre-Cal Color Checker Data

Pre-Cal

	White	Gray 80	Gray 65	Gray 50	Gray 35	Dark Skin	Light Skin	Blue Sky	Foliage	Blue Flower	Bluish Green	Orange	Purplish Blue	Moderate Red	Purple	Yellow Gre
RGB Triplet	235, 235, 235	213, 213, 213	196, 196, 196	176, 176, 176	152, 152, 152	115, 86, 73	182, 145, 128	97, 121, 150	93, 108, 73	128, 126, 167	101, 178, 161	202, 119, 51	80, 95, 156	182, 88, 99	95, 69, 108	152, 176,
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.4057	0.3778	0.2491	0.3415	0.2687	0.2615	0.5141	0.2150	0.4635	0.2884	0.3773
x: CIE31	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3643	0.3561	0.2656	0.4314	0.2530	0.3593	0.4095	0.1896	0.3123	0.2170	0.4951
y: CIE31	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Target Y	100.0000	79.2590	65.0145	50.2050	35.1480	9.9716	35.6179	19.1127	13.1987	23.8604	42.4852	28.6553	11.7829	18.6747	6.5450	43.7286
Y	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Gamma Point: Flat	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ΔE 2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dE2000 LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ΔE 1994 L*:±	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ΔE 1994 Sat:±	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ΔE 1994 Hue:±	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Post-Cal Color Checker Data

Post-Cal

	White	Gray 80	Gray 65	Gray 50	Gray 35	Dark Skin	Light Skin	Blue Sky	Foliage	Blue Flower	Bluish Green	Orange	Purplish Blue	Moderate Red	Purple	Yellow Gre
RGB Triplet	235, 235, 235	213, 213, 213	196, 196, 196	176, 176, 176	152, 152, 152	115, 86, 73	182, 145, 128	97, 121, 150	93, 108, 73	128, 126, 167	101, 178, 161	202, 119, 51	80, 95, 156	182, 88, 99	95, 69, 108	152, 176,
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.4057	0.3778	0.2491	0.3415	0.2687	0.2615	0.5141	0.2150	0.4635	0.2884	0.3773
x: CIE31	0.3139	0.3134	0.3123	0.3120	0.3151	0.4025	0.3814	0.2508	0.3384	0.2670	0.2610	0.5141	0.2164	0.4650	0.2896	0.3723
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3643	0.3561	0.2656	0.4314	0.2530	0.3593	0.4095	0.1896	0.3123	0.2170	0.4951
y: CIE31	0.3282	0.3269	0.3278	0.3281	0.3267	0.3615	0.3550	0.2662	0.4245	0.2531	0.3579	0.4049	0.1911	0.3105	0.2214	0.4960
Target Y	100.0000	79.2590	65.0145	50.2050	35.1480	9.9716	35.6179	19.1127	13.1987	23.8604	42.4852	28.6553	11.7829	18.6747	6.5450	43.7286
Y	81.4120	63.5920	51.4250	39.3078	27.2482	7.9312	27.8845	15.0129	10.3310	18.7117	33.1915	22.7612	9.3286	14.7228	5.3292	34.5857
Gamma Point: Flat	2.7023	4.3221	3.4097	2.9860	2.7378	3.2036	4.6356	3.8760	2.6261	4.5300	3.6755	9.1609	5.3273	6.9613	3.3933	3.3970
ΔE 2000	4.7665	5.2138	5.2253	5.4332	6.0900	3.5089	5.5155	5.2371	4.4645	5.5972	5.6067	5.4869	3.9182	5.0723	2.8345	5.4539
dE2000 LuminanceCompensated	1.4206	1.8543	0.6104	0.3763	2.2516	0.5576	1.1445	0.4154	0.7707	0.6543	0.2953	1.2193	0.2125	0.3800	0.6510	0.9850
ΔE 1994 L*:±	-7.6853	-7.5985	-7.5555	-7.2213	-6.6604	-3.9521	-6.4427	-5.1670	-4.6311	-5.5996	-6.8884	-5.6507	-4.2595	-5.0523	-3.0952	-6.6219
ΔE 1994 Sat:±	0.9800	1.3610	0.5186	0.3676	1.5963	-2.0930	-0.5737	-2.0131	-3.5686	-2.2937	-2.7438	-5.6945	-3.8803	-2.8781	-3.6724	-4.8972
ΔE 1994 Hue:±	0.0000	0.0000	0.0000	0.0000	0.0000	-0.5205	-0.9799	0.3763	0.4313	-0.7036	0.4289	-1.9552	0.0727	-0.4794	-0.0374	1.9343
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Click Change Selection then right-click on either datagrid chart (ESCape the context menu) to show possible selections

Change Selection

ANL | Back | Next | PreCal | PostCal | HOME | Prepare | PreCal Read | Calibrate | I CCk | PostCal Read | Datagrid | # Gry | # Sat | # Lum | Final Check | DTA | Notes

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