CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

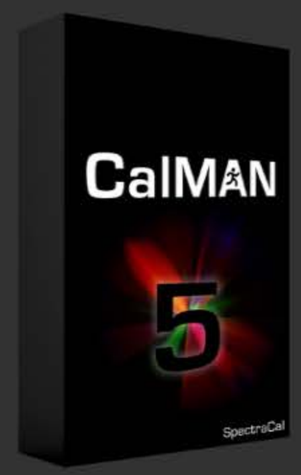
Introduction

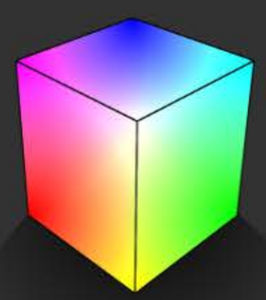
Simulated Meter Simulated | Source | Direct Display Control

Workflow → Description

Welcome to the HT Enthusiast Extended Workflow

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





AutoCal™

Featuring ...

- Home layout outlines the workflow structure with full access
- Comprehensive Notes Management - access button always at bottom right
- Integrated session setup and hardware configuration layout
- Single layout takes all desired Pre- or Post-calibration readings
- Expanded Multi-Point Grayscale calibration and pre/post-cal chart & datagrid layouts
- Detailed Saturation Sweep calibration and pre/post-cal chart & datagrid layouts
- Detailed Gamut Luminance calibration and pre/post-cal chart & datagrid layouts
- Detailed Color Check calibration and pre/post-cal chart & datagrid layouts
- 3D Color Cube LUT calibration chart & datagrid layouts
- High-count calibration points friendly
- Layout indicators: ‡ Calibration ∫ Charts # Datagrids

Also featuring navigation for the Mouse Lazy ...

- Navigation bar shows where you are and takes you where you want to go
- Calibration scheduling function is integrated with the Nav Bar Next/Back buttons
- 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
Home
Session Setup
Intro
HOME
Prepare
Setup
PreCal Read
DyRnge
Calibrate
‡ Gry
‡ Sat
‡ Lum
‡ CCk
‡ LUT
PostCal Read
Analyze
∫ Gry
∫ Sat
∫ Lum
∫ CCk
∫ LUT
Final Check
Intro

Session Setup ↗ Notes ↙
PreCal Read Next »

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Workflow Description | Workflow Outline

Simulated Meter LCD Direct View | Source | Direct Display Control

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 (tabbed Full-feature and Simple)
- Saturation Sweeps, also used for basic CMS calibration
- Gamut Luminance
- Color Checker
- 3D Color Cube LUT (tabbed Full-feature and Minimal)

- Use Simple or Minimal layout tabs for hopefully faster AutoCal.
- All active calibration layouts except 2-Point have corresponding detail datagrid layouts accessible via the ↑#data buttons.
- Use the Slim high-content Color Checker datagrid for faster processing of hundreds of colors.

Show Outline

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.

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

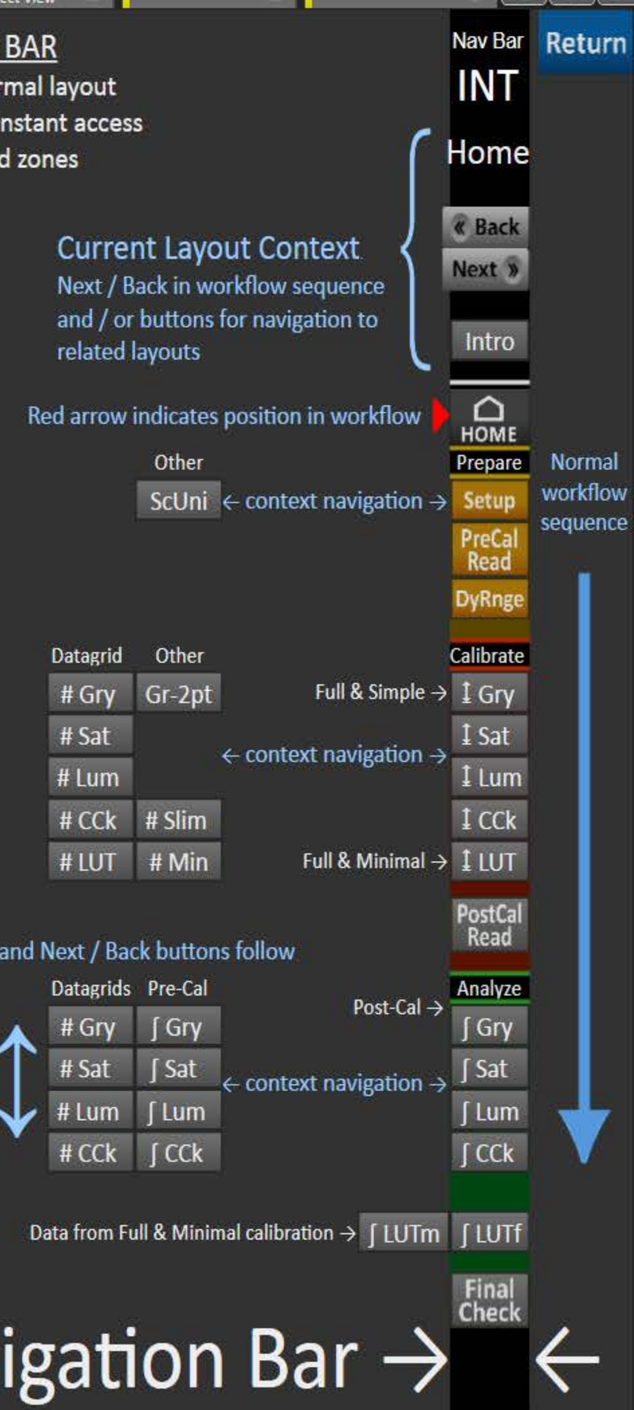
Pre-Calibration Readings, Post-Calibration Readings - these identically configured layouts are master controls for the pre- and post-calibration states with combined and selective reading of all views. They feed all the detail charts and datagrids. You can toggle between the pre- and post-cal reading 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



Home | Notes

PreCal Read | Session Setup

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Workflow Description | Workflow Outline

Simulated Meter LCD Direct View | Source | Direct Display Control

Show Description

▶ Preparation (PRP)

1 ▶ Session Setup → Screen Uniformity
2 ▶ Pre-Calibration Readings
3 ▶ Dynamic Range Analysis

▶ Calibration (CAL)

4 ▶ 2-Point Grayscale Calibration
5 ▶ Multi-Pt Grayscale Calibration → Datagrid
6 ▶ Saturation Sweeps Calibration → Datagrid
7 ▶ Gamut Luminance Calibration → Datagrid
7 ▶ Gamut Luminance Calibration → Datagrid
8 ▶ Color Checker Calibration → Datagrid (normal & slim versions)
9 ▶ 3D Color Cube LUT Calibration
10 ▶ Post-Calibration Readings

▶ Analysis (ANL)

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

Other: ScUni ← context navigation →

Datagrid: # Gry, # Sat, # Lum, # CCk, # LUT
Other: Gr-2pt, # Slim, # Min

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

Datagrids: # Gry, # Sat, # Lum, # CCk
Pre-Cal: ∫ Gry, ∫ Sat, ∫ Lum, ∫ CCk

Data from Full & Minimal calibration → ∫ LUTm, ∫ LUTf

Nav Bar
INT
Home
« Back
Next »
Intro
HOME
Prepare
Setup
PreCal Read
DyRnge
Calibrate
Full & Simple → ↧ Gry, ↧ Sat, ↧ Lum, ↧ CCk
Full & Minimal → ↧ LUT
PostCal Read
Analyze
Post-Cal → ∫ Gry, ∫ Sat, ∫ Lum, ∫ CCk
Final Check

Return

Normal workflow sequence

Navigation Bar →

Home | Notes
PreCal Read | Session Setup

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Workflow Map | Description

Simulated Meter LCD Direct View | Source | Direct Display Control

1/25/2015 Calibration

Home | Introduction | Notes | CalMAN 5

Preparation

Start →

Setup → **PreCal Read** → **DyRnge**

ScUni • Screen Uniformity

↓ Analyze →

Dynamic Range

« Back | Next »

Return

Calibration

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

Layout indicators: ↧ Calibration ∫ Charts # Datagrids

« Back | Next »

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Workflow Map | Description

Simulated Meter LCD Direct View | Source | Direct Display Control

Return

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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 ↑Data buttons with a similar toggle arrangement as the ↑PstCal button.

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.

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

Layout indicators: ↥ Calibration ∫ Charts # Datagrids

WORKFLOW OUTLINE

▶ Introduction (INT)

A ▶ Title and Features
B ▶ Home Base

▶ Preparation (PRP)

1 ▶ Session Setup → Screen Uniformity
2 ▶ Pre-Calibration Readings
3 ▶ Dynamic Range Analysis

▶ Calibration (CAL)

4 ▶ 2-Point Grayscale Calibration
5 ▶ Multi-Pt Grayscale Calibration → Datagrid
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7 ▶ Gamut Luminance Calibration → Datagrid
8 ▶ Color Checker Calibration → Datagrid (normal & slim)
9 ▶ 3D Color Cube LUT Calibration
10 ▶ 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 (2 tabs, normal & slim)

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

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Notes Management

Simulated Meter LCD Direct View | Source | Direct Display Control

Setup Notes

Calibration Notes

Pre-Calibration Notes

Calibration Description / Goals

Color Notes

Post-Calibration Notes

REF

Notes

Intro

HOME

Prepare

Setup

PreCal Read

DyRnge

Calibrate

Gry

Sat

Lum

CCk

LUT

PostCal Read

Analyze

Gry

Sat

Lum

CCk

LUT

Final Check

Return

PreCal Read | Session Setup

Home | Final Check

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Session Setup | Setup Help

Simulated Meter Simulated | Source | Direct Display Control

Session Setup

5/9/2016 Calibration

(A) Session Options

Start New Session | Session Info

Gamma Analysis | More Options

Setup Notes

Notes

Calibration Description / Goals

Luminance Unit: cd/m²

Input Level: Video (16-235)

Stimulus Unit: Percent

DeltaE Formula: dE2000 JNDab

Gamut Coordinates: D65, HD Rec.709

Gamma Formula: Sliding power

Display • PRO-70X5FD

Target Black and White						Target
cd/m2	Blk	fL	cd/m2	Wht	fL	Gamma
0.0034	0.00099		100	29.2		2.2

(B) Display Settings

AV Mode: ISF Day

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

(C) Hardware Configuration

① Meter

Find → | Configure

CalMAN Simulated
Profile : None

Mode: Simulated

② Source

Find → | Configure

Optical player or standalone generator (manual cont
Optical player or standalone generator

Pattern Size: Full 100%

Triplet Support: FullTriplets

③ Display or Processor

Find → | Configure

None

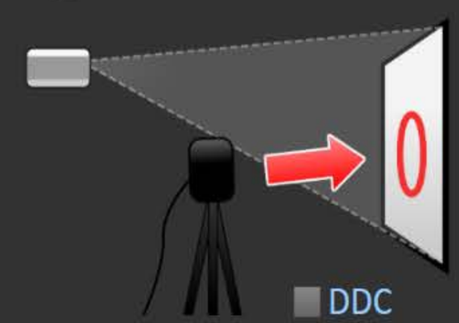
Display Slot | Data Points

DDC

(D) Meter Setup

Position the meter as required for (1) projector or (2) flat panel to insure accurate measurements, (3) taking appropriate readings.

① Projector



DDC

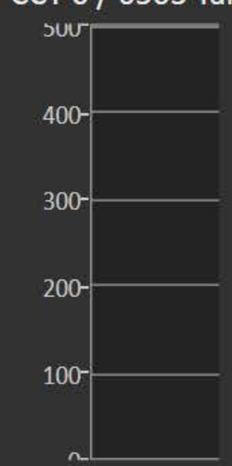
② Flat Panel

③ Readings

White / Black in cd/m²
100 / 0

Level 0

CCT 0 / 6503 Target



Screen Uniformity

PRP Setup | Back | Next | ScUni | HOME | Prepare | ScUni | PreCal Read | DyRnge | Calibrate | Gry | Sat | Lum | CCk | LUT | PostCal Read | Analyze | Final Check | Setup

0 | 100

Notes | Back | Next

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Session Setup | Setup Help

Simulated Meter Simulated | Source | Sharp Elite ISF Day

Session Setup

5/9/2016 Calibration

(A) Session Options

Start New Session | Session Info

Gamma Analysis | More Options

Setup Notes

Calibration Description / Goals

Notes

Luminance Unit: cd/m²

Input Level: Video (16-235)

Stimulus Unit: Percent

DeltaE Formula: dE2000 JNDab

Gamut Coordinates: D65, HD Rec.709

Gamma Formula: Sliding power

Display • PRO-70X5FD

Target Black and White					Target
cd/m2	Blk	fL	cd/m2	Wht	fL	Gamma
0.0034	0.00099		100	29.2		2.2

(B) Display Settings

AV Mode: ISF Day

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

(C) Hardware Configuration

1 Meter — Find → | Configure

2 Source — Find → | Configure

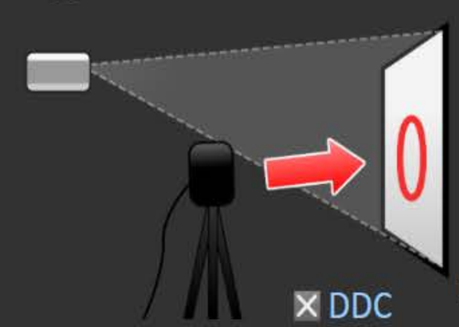
3 Display or Processor — Find → | Configure

DDC

(D) Meter Setup

Position the meter as required for (1) projector or (2) flat panel to insure accurate measurements, (3) taking appropriate readings.

1 Projector



DDC

Display Controls

Brightness	0
Contrast	77
Color	0
Tint	0
Sharpness	0
Color Temperature	Low
Gamma	0
Backlight	50
Gamut Range	Standard
Motion ENhancement	Off
Precision Color Plus	
Active Contrast	
Film Mode	Off
Digital Noise Reduction	Off

PRP Setup | Back | Next | ScUni | HOME | Prepare | ScUni | PreCal Read | DyRnge | Calibrate | Gry | Sat | Lum | CCk | LUT | PostCal Read | Analyze | Final Check | Setup

0 | 100

Notes | Back | Next

Return

Setting Up the Session

(A) 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) 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) Find and configure the appropriate (1) meter, (2) source and (3) display devices - more info on right ⟶

(D) Position the meter as required. You can now read the Level 0 (Black) and Level 100 (White) luminance and corresponding CCT based on current settings - more info on right ⟶

(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.

Return

(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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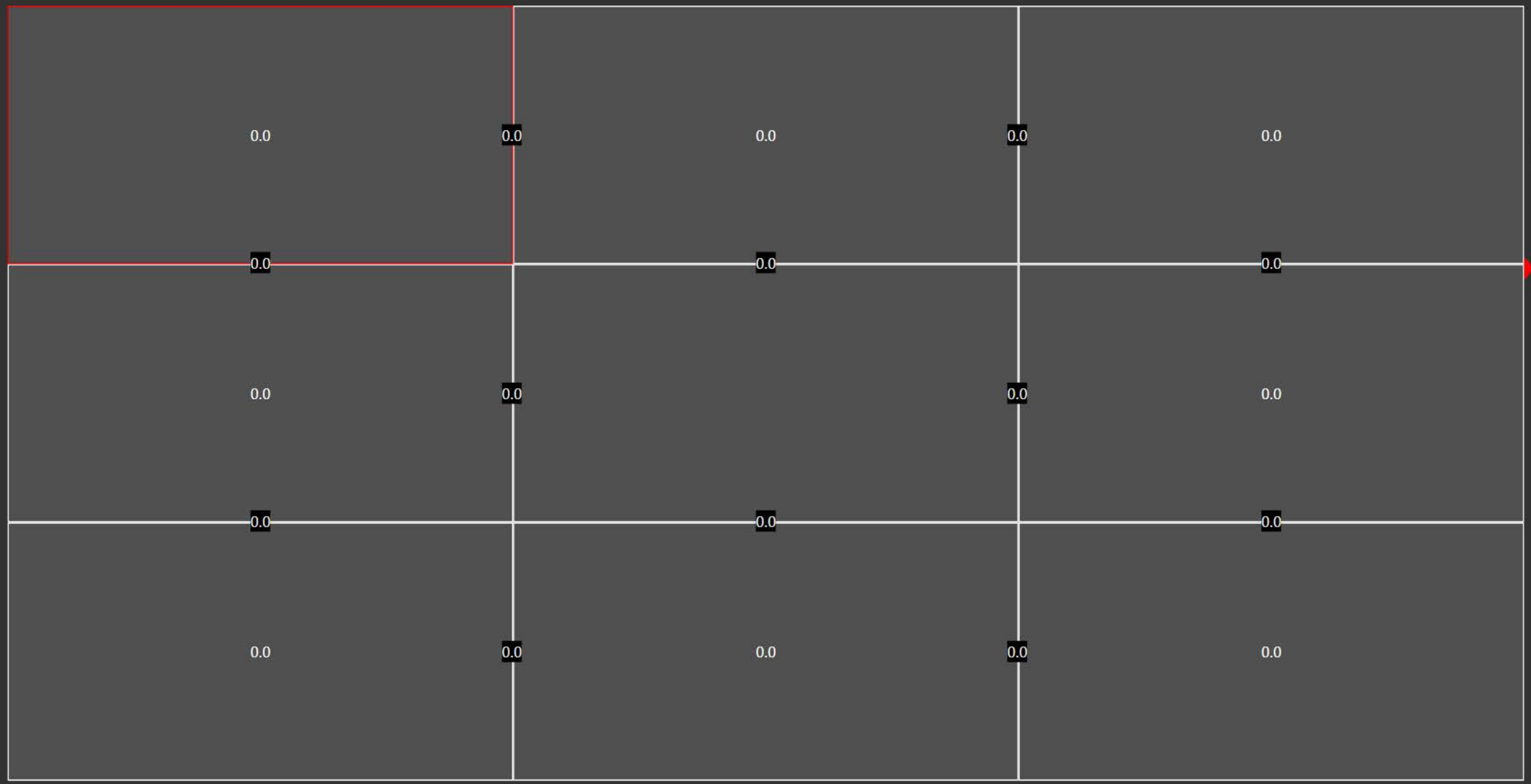
Screen Uniformity

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Screen Uniformity



Uniformity Type Grayscale | Rows 3 | Columns 3 | Session Setup

PRP ScUni

Setup

HOME

Prepare

Setup

Calibrate

Analyze

ScUni

Notes

30 100

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Pre-Cal Readings

Simulated Meter Simulated | Source | Direct Display Control

Pre-Calibration Readings

5/9/2016 Calibration

Gamma Breakout Tot 2.3 Contrast 837 Black 0.098306 White 82.28 cd/m²

1 Grayscale

Full Charts | 21 Point 5% step 0-100% | 0 | Avg 1.7 Max 3.69

DeltaE 0.6

4 Color Checker

Full Charts | Add Custom Color Set → | SG Fleshtones

DeltaE 0.69 Avg 1.14 Max 2.71

100% Magenta, 100% Blue, 100% Red, Magenta, Red, Blue, Yellow Green, Moderate Red, Orange, Blue Flower, Blue Sky, Dark Skin, Gray 50, Gray 80

100% Yellow, 100% Cyan, 100% Green, Cyan, Yellow, Green, Orange Yellow, Purple, Purplish Blue, Bluish Green, Foliage, Light Skin, Gray 35, Gray 65, White

2 Saturation Sweeps

Full Charts | 25% Sweeps | Avg 1 Max 2.11

DeltaE 1.38

3 Gamut Luminance

Full Charts | 4 Point 25% step 25-100% | Avg 0.91 Max 1.86

DeltaE 0.33

Select Colors

Populate CMS for HT report

PRP PreCal Read

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

ISF Day

Pre-Cal Readings

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

Notes

Display Slot

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

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Dynamic Range

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≡ 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.

① Adjust the Contrast to maximize the white level without clipping any of the three primaries.

Clipping with Peak White ①

Gamma Level

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

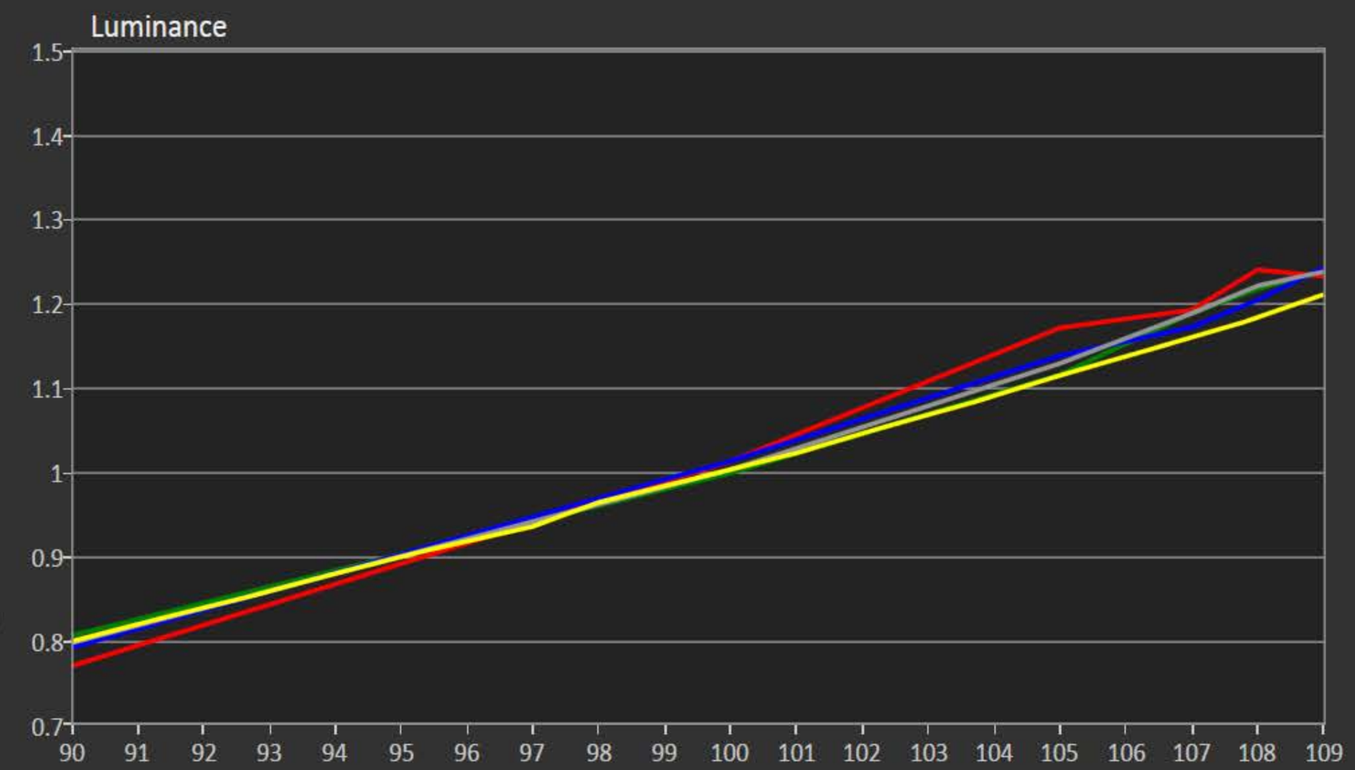
② Check the gamma level across the full grayscale based on the current settings, and adjust the display's gamma control to get a good match, tweaking with the Brightness for Black level & Contrast for White.

Clipping with Peak White ②

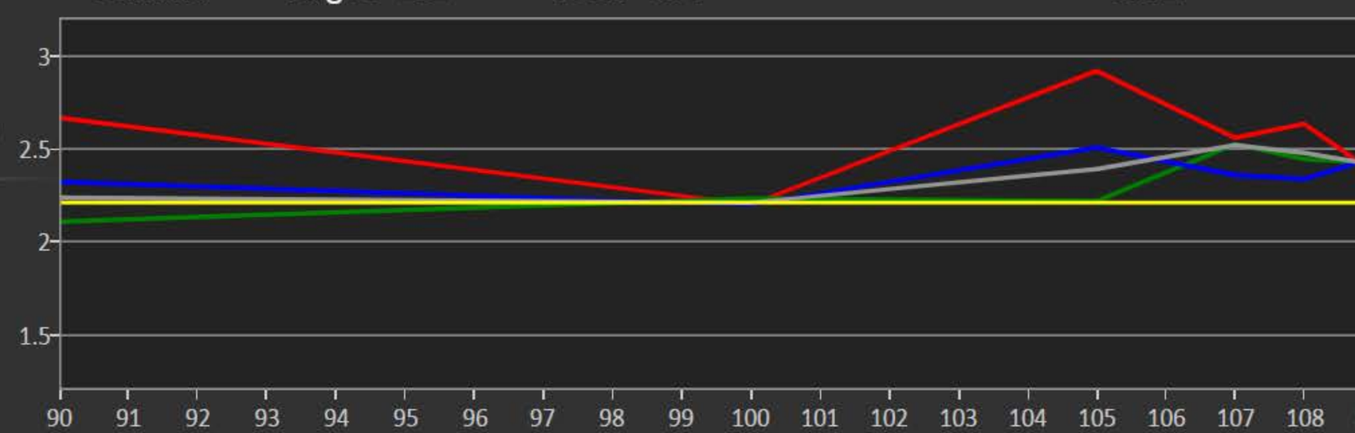
Calibration Notes

↗ Notes ↙

Contrast	78
Brightness	14
Backlight	30
TV Gamma	-4



Luminance in fL		White	23.61	109	29.14
Gamma	Target 2.2	Total	2.4		2.41



DIsplay Slot

Click the Read All button [···] to read the Grayscale

PRP DyRng

« Back | Next »

HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | Sat | Lum | CCk | LUT | PostCal Read | Analyze | Final Check | DyRng | Notes

90 100 105 107 108 109

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2 Pt Grayscale

Simulated Meter LCD Direct View | Source | Direct Display Control

2-Point Grayscale Calibration

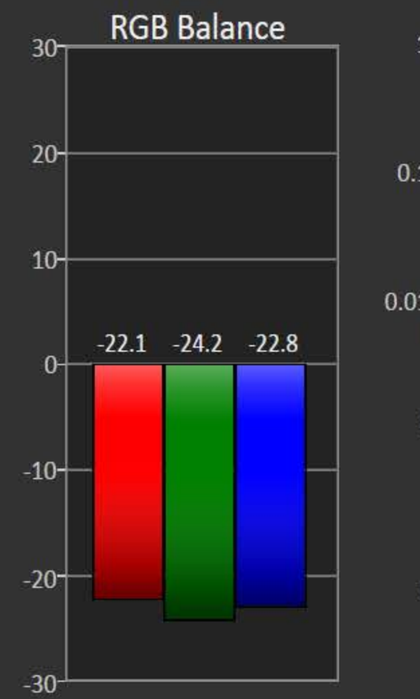
Grayscale 2-Point Adjust

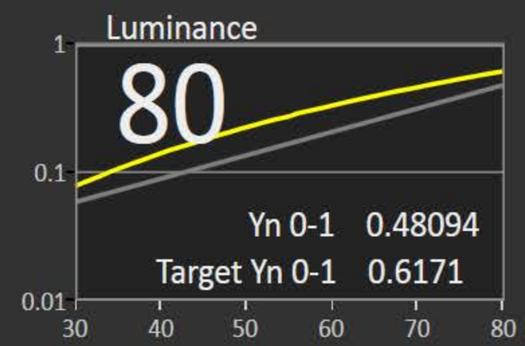
1. Reduce the Red, Green, and/or Blue (RGB) High controls to the lowest measured R, G, or B after the initial measurement of bright grayscale pattern. Continue doing this until you balance RGB to a deltaE of 3 or below (chart below).
2. Balance the RGB Low controls (if provided), while measuring a dark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

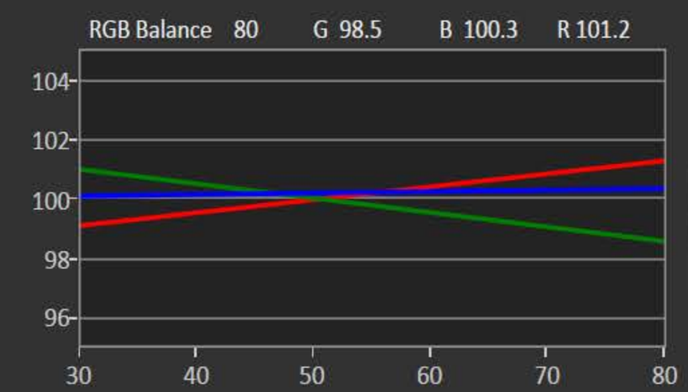
Selecting Points:

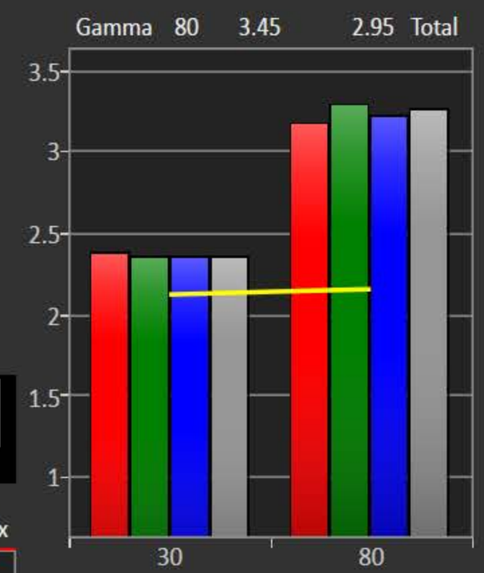
- **30% and 80%:** Use these levels if you only have access to a two point grayscale adjustment
- **30% and 100%:** Use these levels if you will be completing a multipoint adjustment afterwards and do not have access to a Peak White pattern.
- **30% and Peak White:** Use these levels if your display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

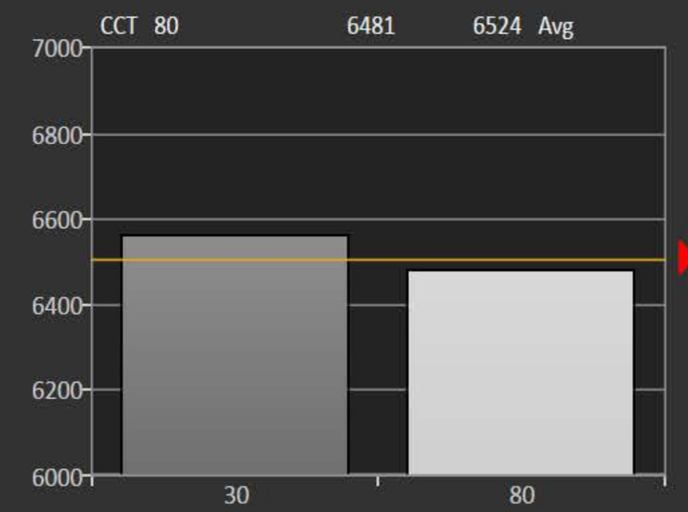
	30	80
RGB Triplet	82, 82, 82	191, 191, 191
Red index	82.0000	191.0000
Green index	82.0000	191.0000
Blue index	82.0000	191.0000
X	5.5384	46.0240
Y cd/m²	5.8854	48.0940
Z	6.3664	52.7645
Xn 0-1	0.0554	0.4602
Yn 0-1	0.0589	0.4809
Zn 0-1	0.0637	0.5276
Stimulus Percent	0.3014	0.7991
RED Stim%:0-1	0.3014	0.7991
GRN Stim%:0-1	0.3014	0.7991
BLU Stim%:0-1	0.3014	0.7991

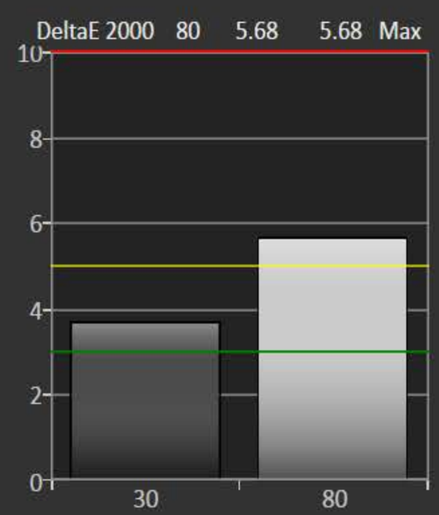












80

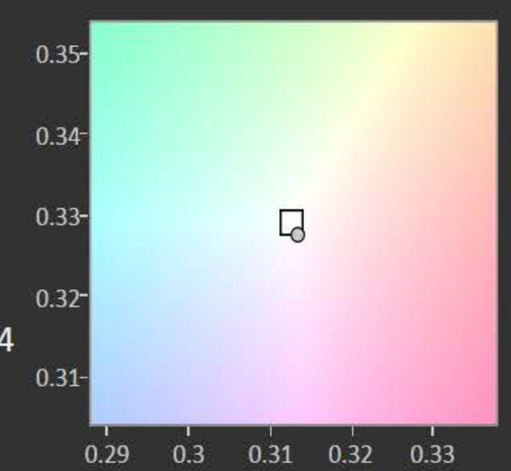
CC Temp	6481	6524	Avg
Gamma	3.45	2.95	Tot
dE 2000	5.68	4.71	Avg
		5.68	Max

White 29.19

	Y / Luminance fL	x	y
Target →	18.01103	0.3127	0.329
Read →	14.03688	0.3133	0.3274

2 Point 30,80%

Triplet 191, 191, 191



CAL Gray 2-Pnt

Back | Next | 1M-Pt | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | 1M-Pt | # data | Sat | Lum | CCk | LUT | PostCal Read | Analyze | ∫ Post | Final Check | 2-Pnt | 1M-Pt

30 | 80

Notes | Back | Next

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

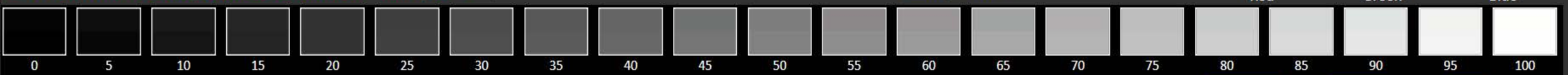
Grayscale Full | Grayscale Simple

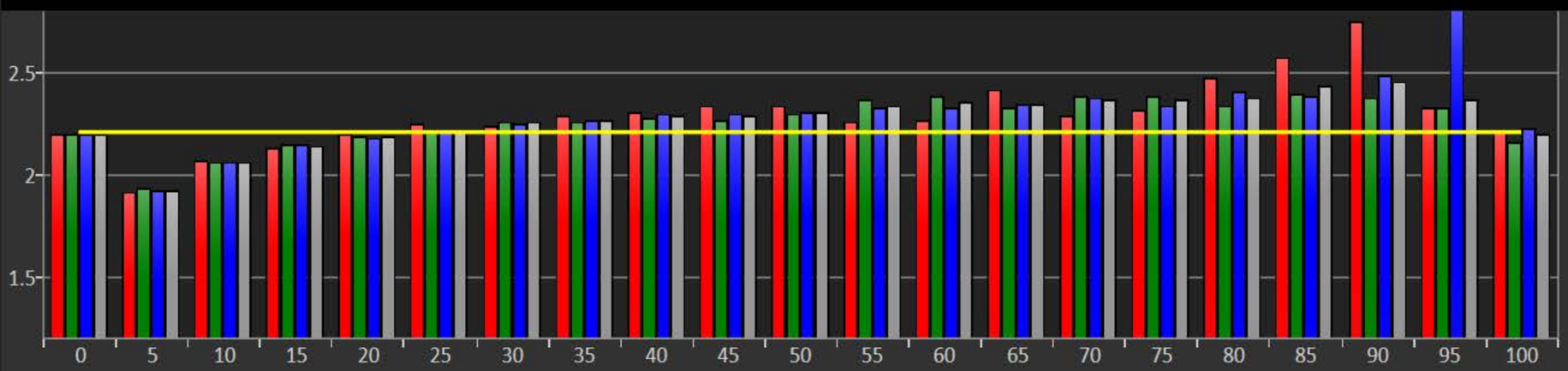
Simulated Meter Simulated | Source | Sharp Elite ISF Day

Multi-Point Grayscale Calibration - Simple

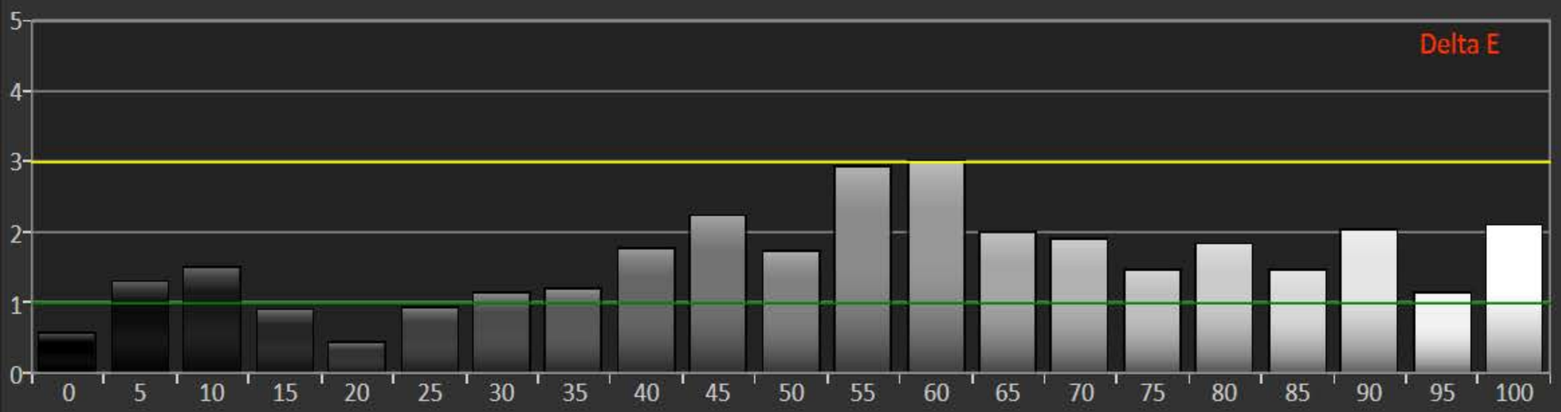
Go to Full Multi-Point

Comparator





	Red	Green	Blue
20	64	52	35
30	51	47	30
40	46	42	23
50	46	43	25
60	47	41	21
70	44	39	20
80	46	39	19
90	45	36	19
100	48	39	19



Summary

Gamma	Tot	2.28	Delta E	Avg	1.68
	Tgt	2.2		Max @ 60	3.03
CCT	Avg	6511	Black	0.098455	cd/m²
	Tgt	6503	White	82.19	

Triplet 235, 235, 235

Y in cd/m²	Target = tgt
Y tgt	82.19251
	82.19251
x tgt	0.31271
	0.31303
y tgt	0.32901
	0.33187

100

CCT 6466

Gamma 2.2

dE 2.13

Display Slot: ISF Day

Grayscale Points: 21 Point 5% step 0-100%

Reset Grayscale

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

Back | Next

CAL Simpl M-Pnt

Back | Next | 2-Pt | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | 2-Pt | # data | Sat | Lum | CCk | LUT | PostCal Read | Analyze | ∫ Post | Final Check | M-Pnt | 2-Pt | # data | Notes

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Grayscale Full | Grayscale Simple

Simulated Meter Simulated | Source | Sharp Elite ISF Day

Multi-Point Grayscale Calibration - Full

Go to Simple Multi-Point | Comparator | DDC | Logarithmic Y Axis

6535 Avg CCT

RGB Balance | CIE Chart

0.6 -0.1 -0.3

Luminance cd/m²

1.44 Avg 2.58 Max Delta E

100

Triplet 235, 235, 235

CCT 6472

Gamma 2.2

dE 0.34

Y tgt 82.00888 82.00888

x tgt 0.31271 0.31326

y tgt 0.32901 0.32919

2.28 Total Gamma Point

Black 0.09778 cd/m² White 82.0

Summary

Delta E		Gamma		CCT	
Avg	1.44	Tgt	2.2	Tgt	6503
@ 80 Max	2.58	Tot	2.28	Avg	6535

Contrast Ratio 839

Comparator | DDC

Display Slot ISF Day

Grayscale Points 21 Point 5% step 0-100%

CAL Full M-Pnt

Back | Next | 2-Pt | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | 2-Pt | # data | Sat | Lum | CCk | LUT | PostCal Read | Analyze | ∫ Post | Final Check | M-Pnt | 2-Pt | # data | Notes

Back | Next

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Grayscale Full | Grayscale Simple

Simulated Meter Simulated | Source | Sharp Elite ISF Day

Multi-Point Grayscale Calibration - Full

Go to Simple Multi-Point | Comparator | DDC | Logarithmic Y Axis →

6535 Avg CCT

CIE Chart

1.44 Avg 2.58 Max Delta E

100

Triplet 235, 235, 235

CCT 6472

Gamma 2.2

dE 0.34

Y tgt 82.00888 82.00888

x tgt 0.31271 0.31326

y tgt 0.32901 0.32919

2.28 Total Gamma Point

Luminance cd/m²

Black 0.09778 cd/m² White 82.0

Summary

Delta E		Gamma		CCT	
Avg	1.44	Tgt	2.2	Tgt	6503
@ 80 Max	2.58	Tot	2.28	Avg	6535

Contrast Ratio 839

Comparator | DDC

Display Slot ISF Day

Grayscale Points 21 Point 5% step 0-100%

CAL Full M-Pnt | Back | Next | 2-Pt | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | 2-Pt | # data | Sat | Lum | CCk | LUT | PostCal Read | Analyze | ∫ Post | Final Check | M-Pnt | 2-Pt | # data | Notes | Back | Next

CalMAN 5 CalMAN Enthusiast for Home Video

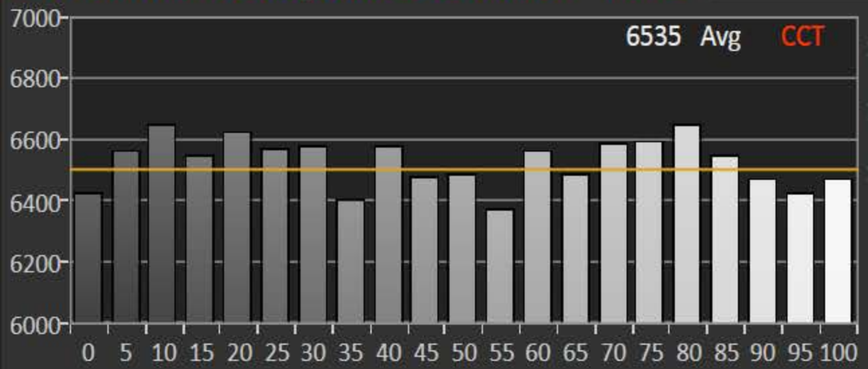
CalMAN 5

Grayscale Full | Grayscale Simple

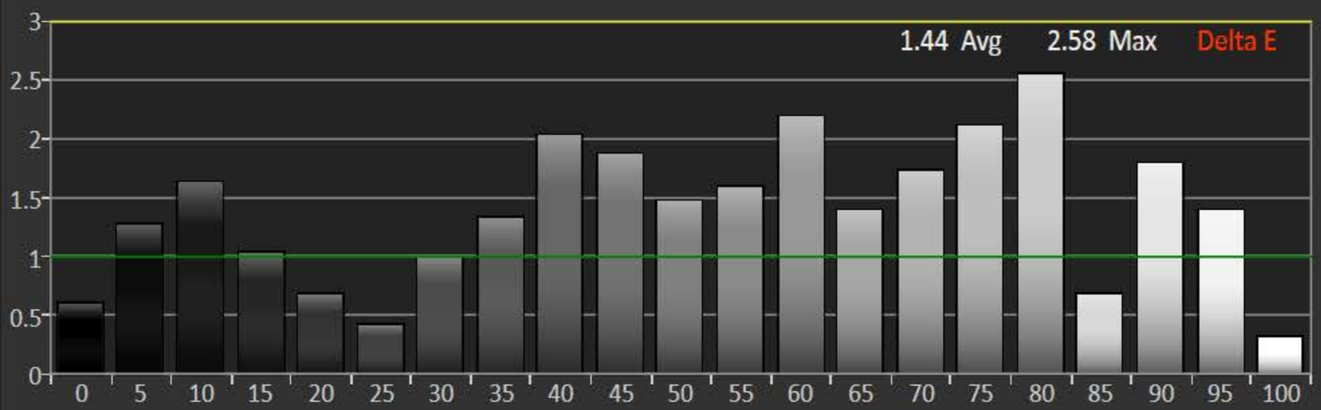
Simulated Meter Simulated | Source | Sharp Elite ISF Day

Multi-Point Grayscale Calibration - Full

Go to Simple Multi-Point | Comparator | DDC | Logarithmic Y Axis



	Red	Green	Blue
0	84	61	65
10	84	61	65
20	64	52	35
30	51	47	30
40	46	42	23
50	46	43	25
60	47	41	21
70	44	39	20
80	46	39	19
90	45	36	19
100	48	39	19



100

Triplet 235, 235, 235

CCT 6472

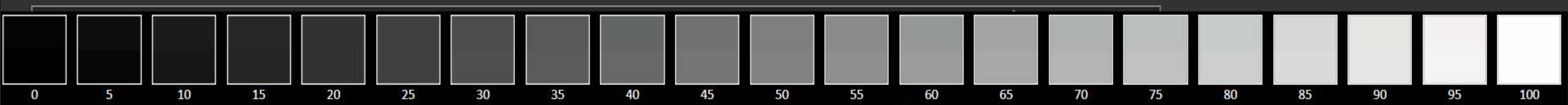
Gamma 2.2

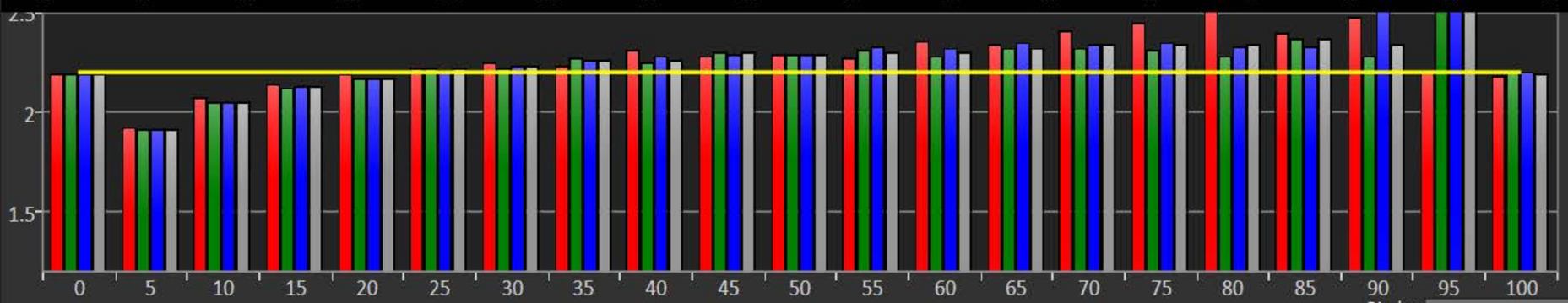
dE 0.34

Y tgt 82.00888
82.00888

x tgt 0.31271
0.31326

y tgt 0.32901
0.32919





Reset Grayscale

Contrast Ratio 839

Comparator | DDC

Display Slot ISF Day

Grayscale Points 21 Point 5% step 0-100%

Back | Next

CAL Full M-Pnt

Back | Next | 2-Pt | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | 2-Pt | # data | Sat | Lum | CCk | LUT | PostCal Read | Analyze | Post | Final Check | M-Pnt | 2-Pt | # data | Notes

CalMAN 5 CalMAN Enthusiast for Home Video

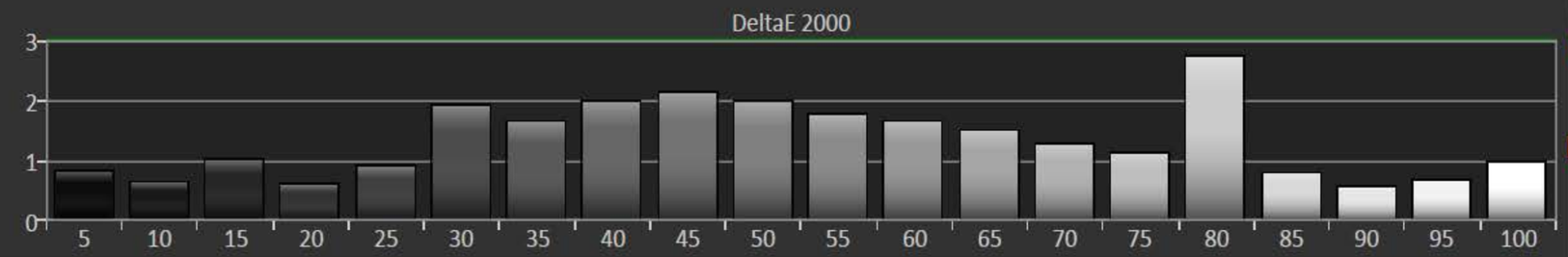
CalMAN 5

Datagrid

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Multi-Point Calibration Data - Full

Calibration Notes



	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
RGB Triplet	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, 213,
Red index	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000	213.0000
Green index	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000	213.0000
Blue index	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000	213.0000
X	0.3436	0.8161	1.5479	2.5631	3.9162	5.5296	7.5876	10.1969	12.9315	16.2504	19.8961	23.8700	28.6303	33.9536	39.9612	45.8805	52.7387	60.1423
Y cd/m²	0.3620	0.8546	1.6035	2.7110	4.1114	5.9066	7.9764	10.6452	13.6963	17.1619	20.8744	25.1164	30.0704	35.6417	41.8967	48.9200	55.3907	63.3693
Z	0.3993	0.9291	1.7462	2.9470	4.4301	6.4471	8.6895	11.6231	14.7871	18.5653	22.4192	27.5289	33.0424	38.9132	45.4994	52.6757	60.5546	69.1467
Xn 0-1	0.0042	0.0101	0.0191	0.0316	0.0483	0.0681	0.0935	0.1257	0.1594	0.2003	0.2452	0.2942	0.3529	0.4185	0.4925	0.5655	0.6500	0.7412
Yn 0-1	0.0045	0.0105	0.0198	0.0334	0.0507	0.0728	0.0983	0.1312	0.1688	0.2115	0.2573	0.3095	0.3706	0.4393	0.5164	0.6029	0.6827	0.7810
Zn 0-1	0.0049	0.0115	0.0215	0.0363	0.0546	0.0795	0.1071	0.1432	0.1822	0.2288	0.2763	0.3393	0.4072	0.4796	0.5608	0.6492	0.7463	0.8522
Stimulus Percent	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995
RED Stim%:0-1	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995
GRN Stim%:0-1	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995
BLU Stim%:0-1	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995
Measured Red Stimulus	0.0650	0.1081	0.1536	0.1946	0.2431	0.2819	0.3346	0.3882	0.4301	0.4807	0.5335	0.5768	0.6291	0.6830	0.7390	0.7771	0.8385	0.8891
Measured Green Stimulus	0.0655	0.1069	0.1488	0.1966	0.2413	0.2907	0.3341	0.3828	0.4345	0.4832	0.5287	0.5779	0.6286	0.6806	0.7337	0.7944	0.8367	0.8920
Measured Blue Stimulus	0.0661	0.1071	0.1499	0.1959	0.2402	0.2890	0.3343	0.3847	0.4312	0.4807	0.5255	0.5799	0.6320	0.6822	0.7338	0.7850	0.8390	0.8923
Stimulus	5.0000	10.0000	15.0000	20.0000	25.0000	30.0000	35.0000	40.0000	45.0000	50.0000	55.0000	60.0000	65.0000	70.0000	75.0000	80.0000	85.0000	90.0000
Target X cd/m²	0.2255	0.7222	1.5398	2.7018	4.2262	6.1283	8.4210	11.1159	14.2232	17.7523	21.3339	25.6917	30.4945	35.7495	41.4633	47.6419	54.2915	61.4175
Target Y cd/m²	0.2373	0.7598	1.6201	2.8426	4.4464	6.4476	8.8598	11.6952	14.9644	18.6775	22.4457	27.0306	32.0837	37.6126	43.6241	50.1248	57.1208	64.6182
Target Z cd/m²	0.2584	0.8274	1.7642	3.0955	4.8420	7.0213	9.6481	12.7357	16.2958	20.3392	24.4427	29.4355	34.9382	40.9590	47.5053	54.5843	62.2028	70.3673
Target Xn 0-1	0.0028	0.0089	0.0190	0.0333	0.0521	0.0755	0.1038	0.1370	0.1753	0.2188	0.2629	0.3166	0.3758	0.4406	0.5110	0.5872	0.6691	0.7569
Target Yn 0-1	0.0029	0.0094	0.0200	0.0350	0.0548	0.0795	0.1092	0.1441	0.1844	0.2302	0.2766	0.3331	0.3954	0.4636	0.5376	0.6178	0.7040	0.7964
Target Zn 0-1	0.0032	0.0102	0.0217	0.0382	0.0597	0.0865	0.1189	0.1570	0.2008	0.2507	0.3012	0.3628	0.4306	0.5048	0.5855	0.6727	0.7666	0.8672
TargetGamut:Nrml Y	0.0029	0.0094	0.0200	0.0350	0.0548	0.0795	0.1092	0.1441	0.1844	0.2302	0.2766	0.3331	0.3954	0.4636	0.5376	0.6178	0.7040	0.7964
TargetRED:Lin0-1	0.0029	0.0094	0.0200	0.0350	0.0548	0.0795	0.1092	0.1441	0.1844	0.2302	0.2766	0.3331	0.3954	0.4636	0.5376	0.6178	0.7040	0.7964
TargetGRN:Lin0-1	0.0029	0.0094	0.0200	0.0350	0.0548	0.0795	0.1092	0.1441	0.1844	0.2302	0.2766	0.3331	0.3954	0.4636	0.5376	0.6178	0.7040	0.7964
TargetBLU:Lin0-1	0.0029	0.0094	0.0200	0.0350	0.0548	0.0795	0.1092	0.1441	0.1844	0.2302	0.2766	0.3331	0.3954	0.4636	0.5376	0.6178	0.7040	0.7964

CAL Full M-Pnt

Calib

HOME

Prepare

Calibrate

Calib

Analyze

DTA

Calib

Notes

CalMAN 5 CalMAN Enthusiast for Home Video

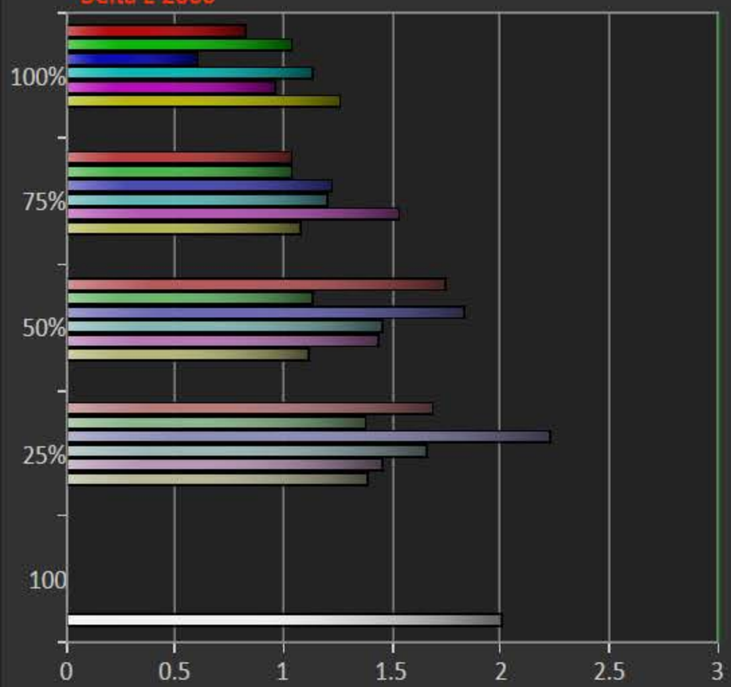
CalMAN 5

Saturation Sweeps

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Saturation Sweeps Calibration

Delta E 2000



Summary

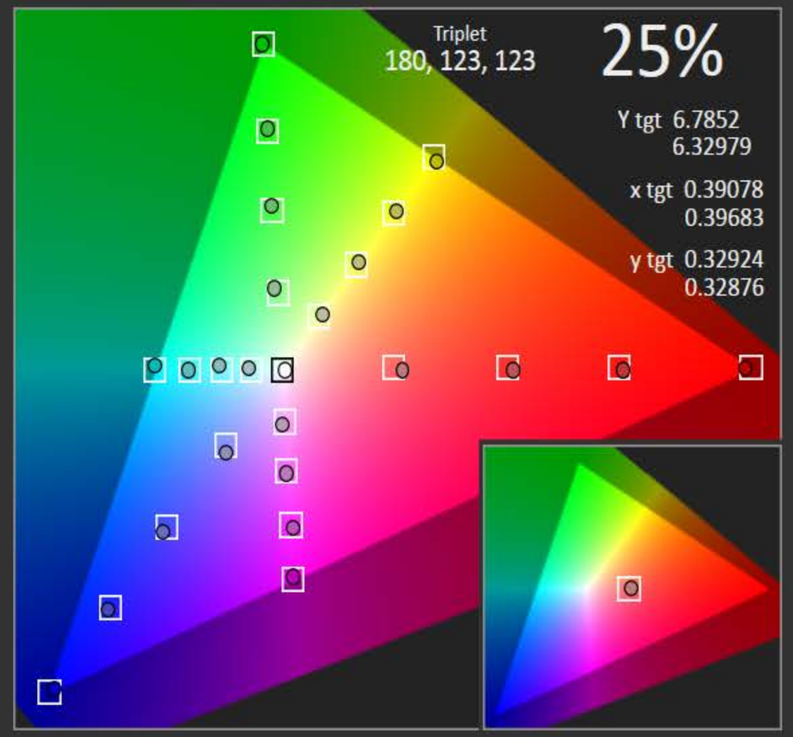
Delta E 2000
Avg 1.34
Max 2.23

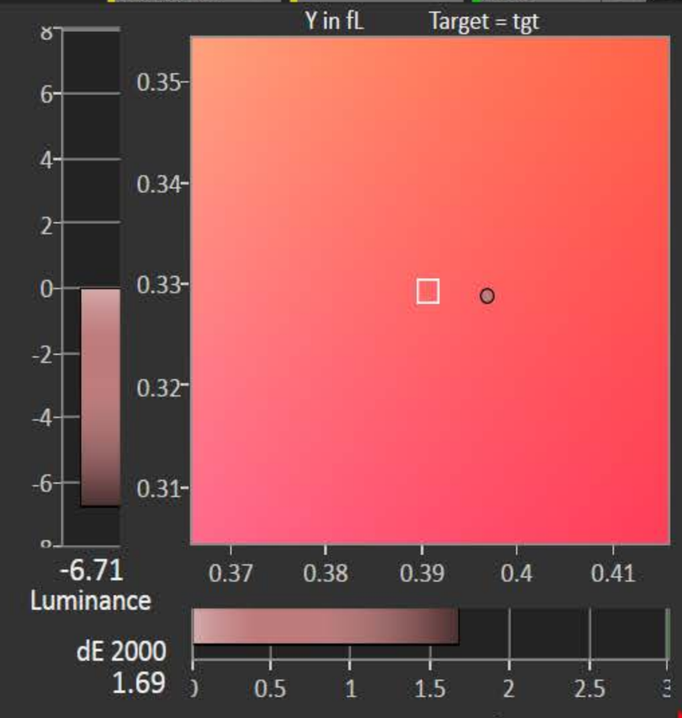
Delta L
Avg 1.356
Max 2.105

Delta H
Avg 0.426
Max 1.186

Delta C
Avg 1.3724
Max 2.476

Black 0
White 23.78



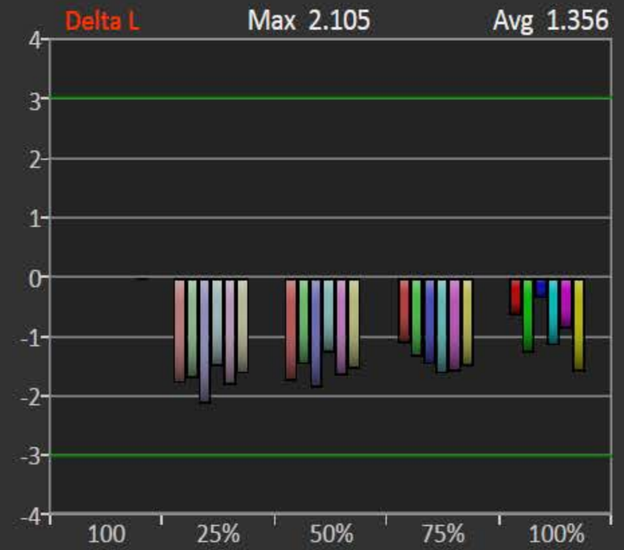


25%

Delta C Max 2.476 Avg 1.372

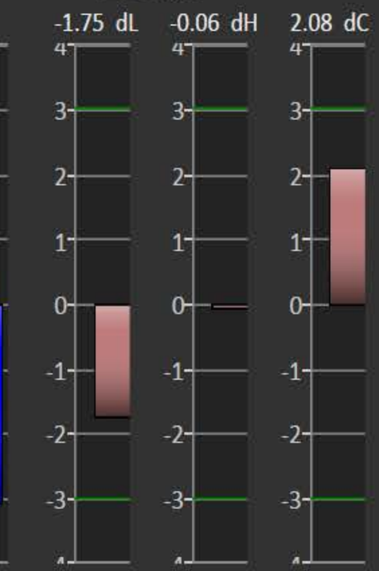
Delta H Max 1.186 Avg 0.426

Delta L Max 2.105 Avg 1.356



RGB Balance

-1.75 dL | -0.06 dH | 2.08 dC



RGB | DDC | Luminance

Display Slot: ISF Day

Sweep Level: 25% Sweeps

← For basic CMS set to 75%/100% Only

CAL
Satur

Back | Next | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | # data | Lum | CCk | LUT | PostCal Read | Analyze | Post | Final Check | Satur | # data | Notes

25% | 50% | 75% | 100%

Back | Next

CalMAN 5 CalMAN Enthusiast for Home Video

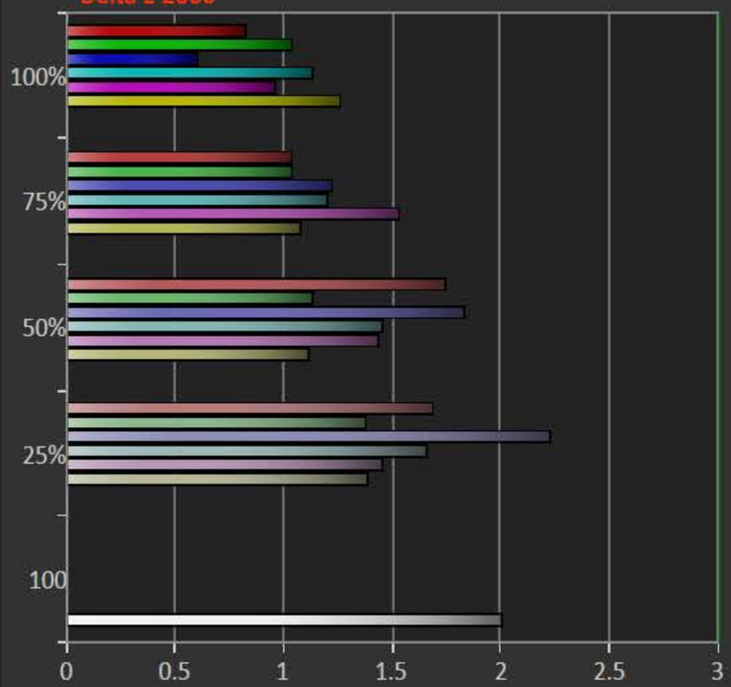
CalMAN 5

Saturation Sweeps

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Saturation Sweeps Calibration

Delta E 2000



Summary

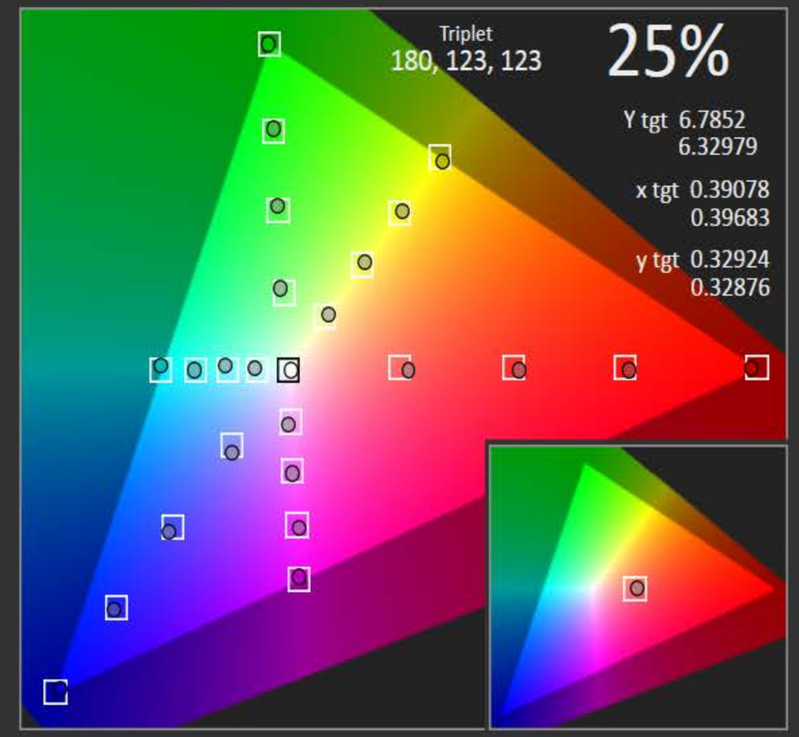
Delta E 2000
Avg 1.34
Max 2.23

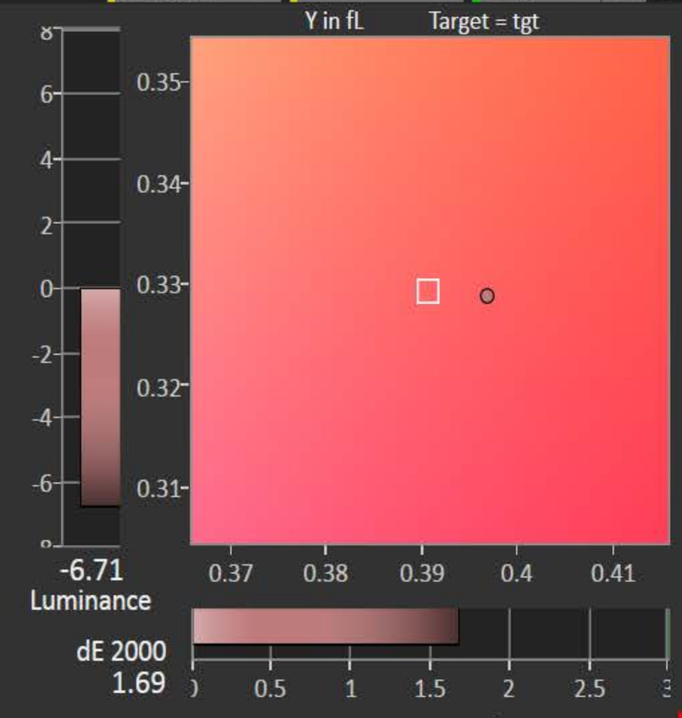
Delta L
Avg 1.356
Max 2.105

Delta H
Avg 0.426
Max 1.186

Delta C
Avg 1.3724
Max 2.476

Black 0
White 23.78



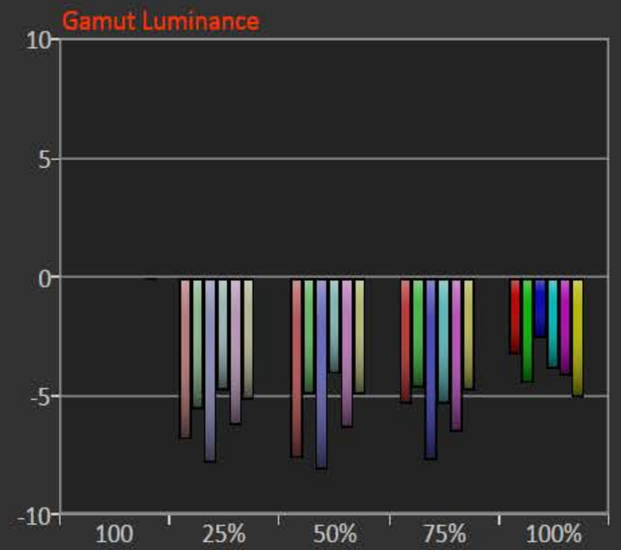


25%

Delta C Max 2.476 Avg 1.372

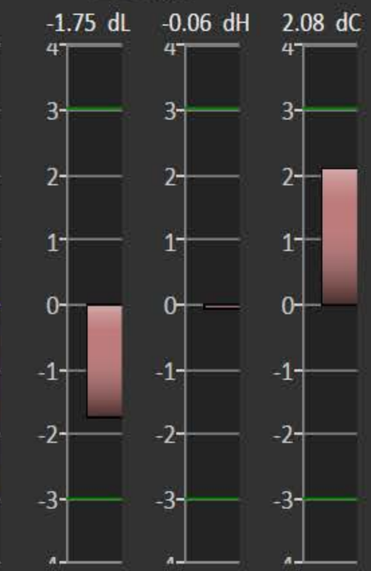
Delta H Max 1.186 Avg 0.426

Gamut Luminance



RGB Balance

-1.75 dL | -0.06 dH | 2.08 dC



RGB | DDC | Luminance

Display Slot: ISF Day

Sweep Level: 25% Sweeps

← For basic CMS set to 75%/100% Only

CAL Satur

Back | Next | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | # data | Lum | CCk | LUT | PostCal Read | Analyze | Post | Final Check | Satur | # data | Notes

25% | 50% | 75% | 100%

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CalMAN 5 CalMAN Enthusiast for Home Video

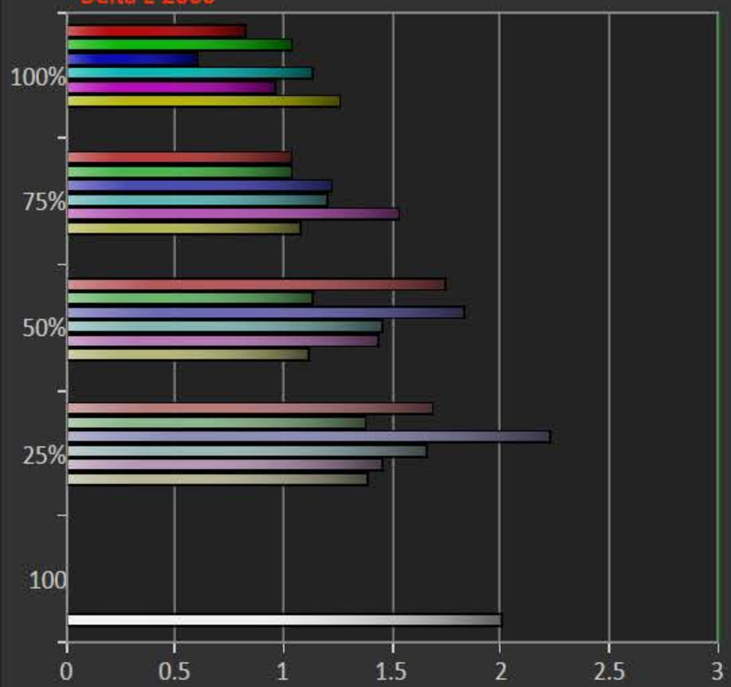
CalMAN 5

Saturation Sweeps

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Saturation Sweeps Calibration

Delta E 2000



Summary

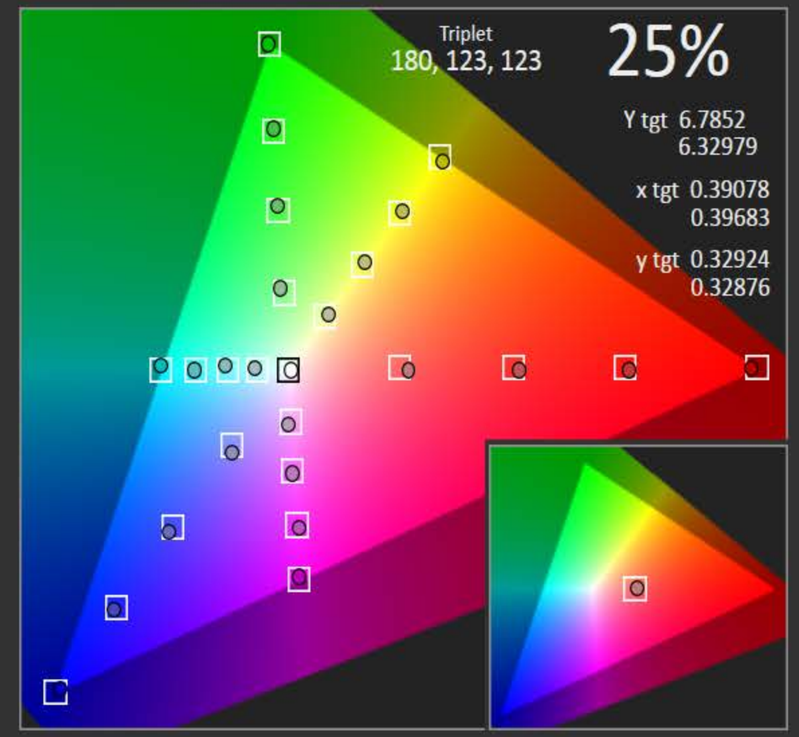
Delta E 2000
Avg 1.34
Max 2.23

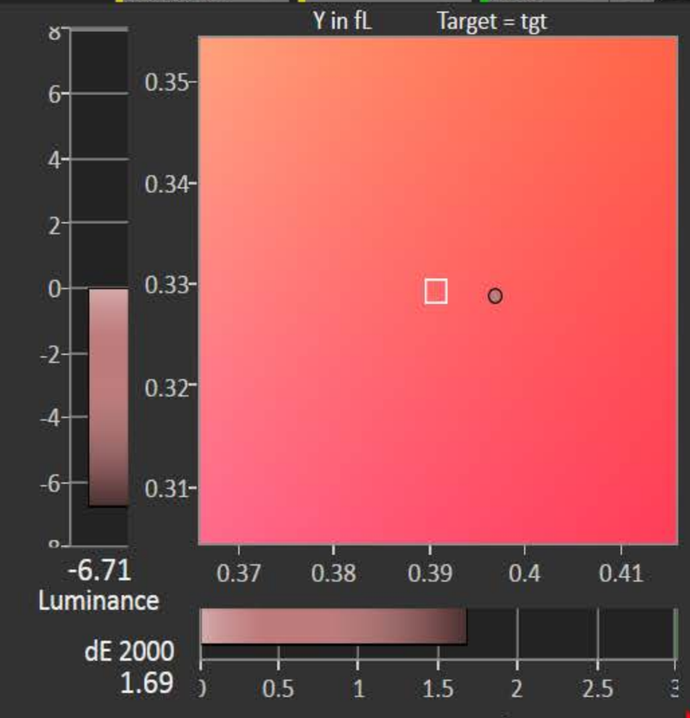
Delta L
Avg 1.356
Max 2.105

Delta H
Avg 0.426
Max 1.186

Delta C
Avg 1.3724
Max 2.476

Black 0
White 23.78





25%

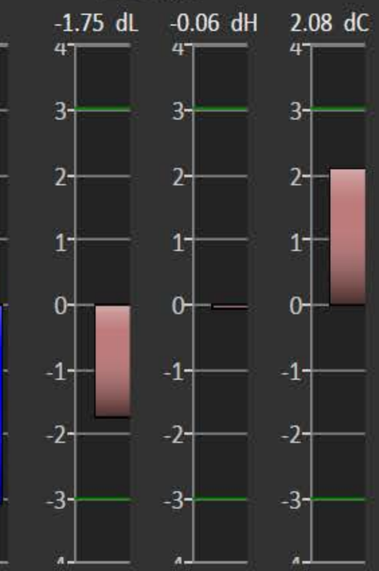
Delta C Max 2.476 Avg 1.372

Delta H Max 1.186 Avg 0.426

	Hue	Saturation	Luminance
Red	26	35	30
Green	32	45	30
Blue	42	36	38
Cyan	25	43	20
Magenta	36	37	25
Yellow	22	34	38

Reset CMS

RGB Balance



RGB | DDC | Luminance

Display Slot: ISF Day

Sweep Level: 25% Sweeps

← For basic CMS set to 75%/100% Only

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CalMAN 5 CalMAN Enthusiast for Home Video

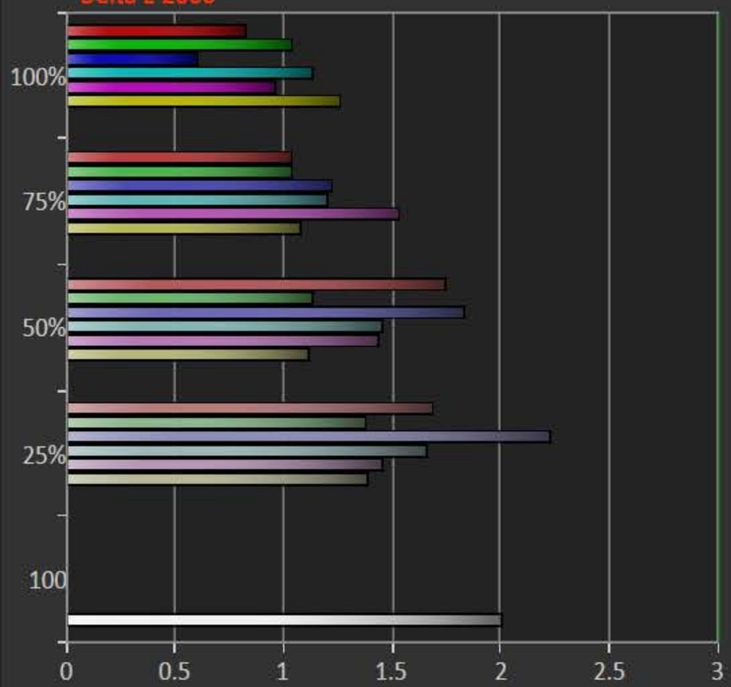
CalMAN 5

Saturation Sweeps

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Saturation Sweeps Calibration

Delta E 2000



Summary

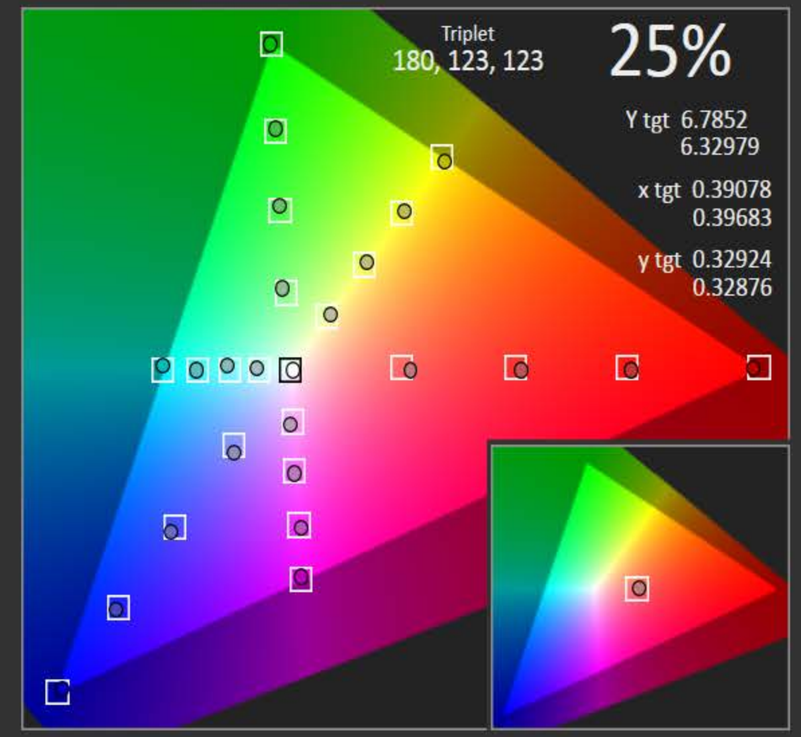
Delta E 2000
Avg 1.34
Max 2.23

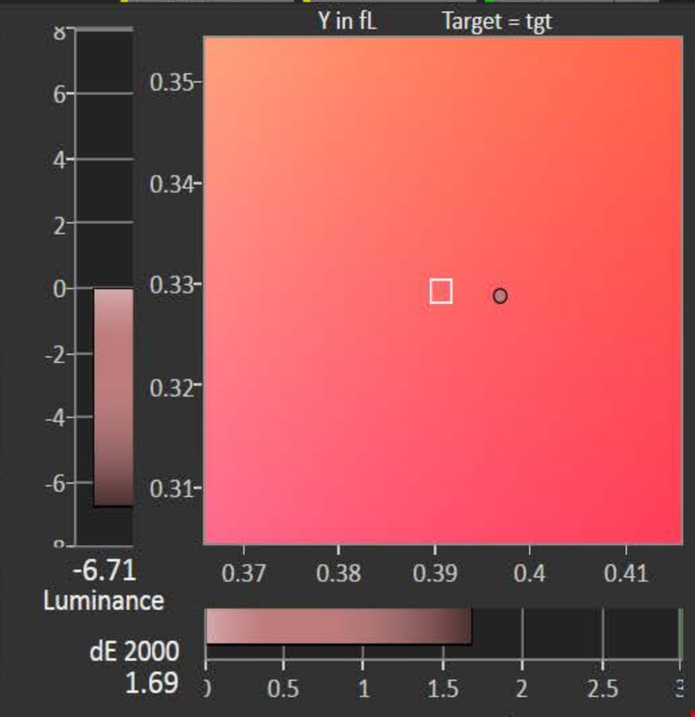
Delta L
Avg 1.356
Max 2.105

Delta H
Avg 0.426
Max 1.186

Delta C
Avg 1.3724
Max 2.476

Black 0
White 23.78

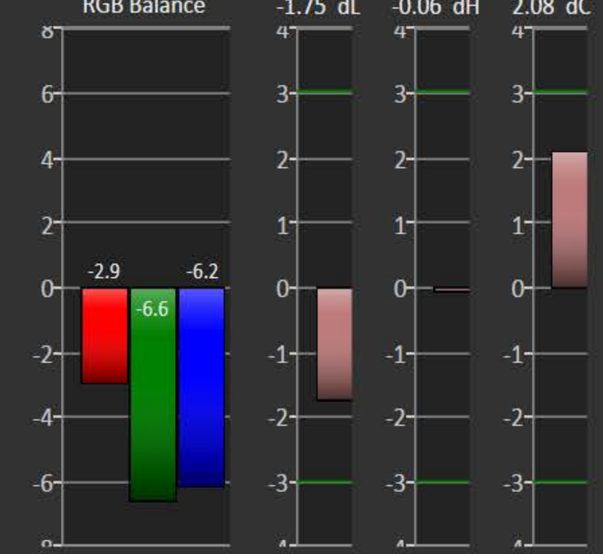




25%

RGB Balance

RGB Balance



RGB | DDC | Luminance

Display Slot: ISF Day

Sweep Level: 25% Sweeps

← For basic CMS set to 75%/100% Only

25% | 50% | 75% | 100%

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CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Datagrid

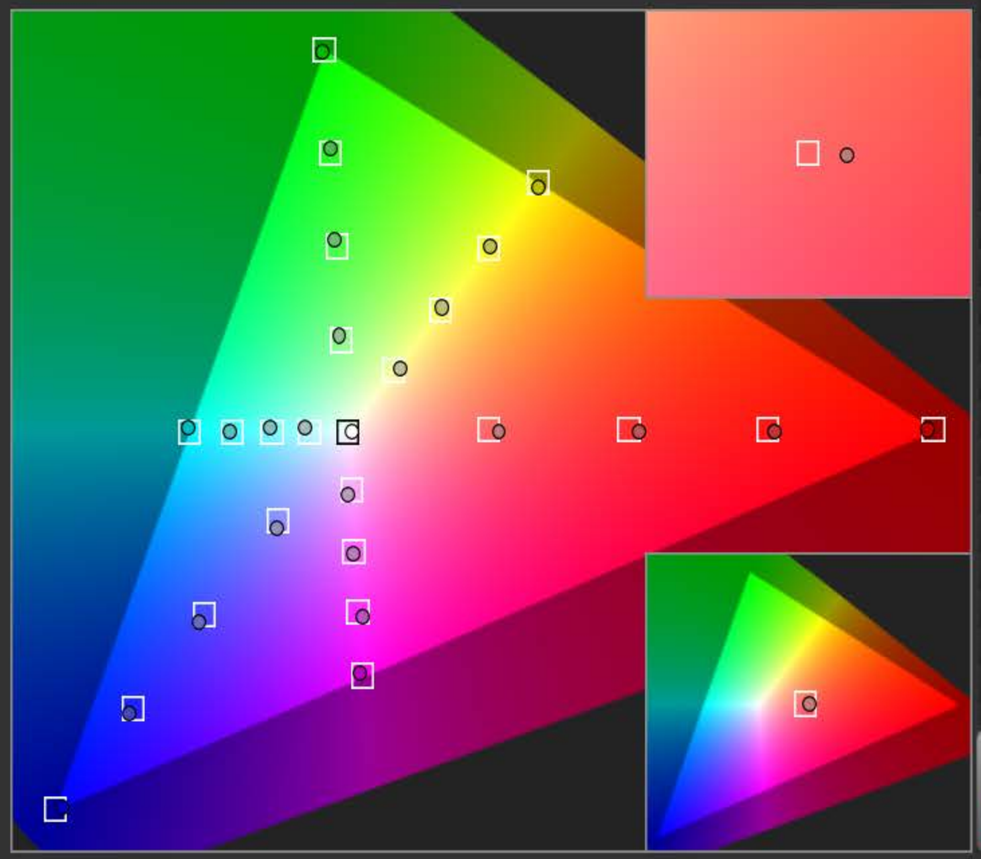
Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Saturation Sweep Calibration Data

Color Notes

Post-Calibration Notes

25%



	25%	50%	75%	100%
RGB Triplet	180, 123, 123	180, 90, 90	180, 64, 64	180, 16, 16
Red index	180.0000	180.0000	180.0000	180.0000
Green index	123.0000	90.0000	64.0000	16.0000
Blue index	123.0000	90.0000	64.0000	16.0000
X	26.1781	21.1347	19.0102	17.3522
Y cd/m²	21.6875	14.5817	11.3566	9.0300
Z	18.1028	8.7492	4.1698	0.9128
Xn 0-1	0.3213	0.2594	0.2333	0.2129
Yn 0-1	0.2661	0.1789	0.1394	0.1108
Zn 0-1	0.2222	0.1074	0.0512	0.0112
Stimulus Percent	0.7489	0.7489	0.7489	0.7489
RED Stim%:0-1	0.7489	0.7489	0.7489	0.7489
GRN Stim%:0-1	0.4886	0.3379	0.2192	0.0000
BLU Stim%:0-1	0.4886	0.3379	0.2192	0.0000
Measured Red Stimulus	0.7381	0.7319	0.7348	0.7334
Measured Green Stimulus	0.4667	0.3181	0.2078	0.0382
Measured Blue Stimulus	0.4681	0.3227	0.2111	0.0241
Stimulus	75.0000	75.0000	75.0000	75.0000
Target X cd/m²	27.5925	22.4852	19.9066	18.0944
Target Y cd/m²	23.2479	15.7680	11.9889	9.3299
Target Z cd/m²	19.7692	9.6034	4.4653	0.8482
Target Xn 0-1	0.3386	0.2759	0.2443	0.2221
Target Yn 0-1	0.2853	0.1935	0.1471	0.1145
Target Zn 0-1	0.2426	0.1179	0.0548	0.0104
TargetGamut:Nrml Y	0.5377	0.5378	0.5379	0.5380
TargetRED:Lin0-1	0.5378	0.5380	0.5382	0.5384
TargetGRN:Lin0-1	0.2171	0.1005	0.0415	0.0000
TargetBLU:Lin0-1	0.2171	0.1005	0.0415	0.0000
TargetGamut:Nrml MaxY	0.5306	0.3598	0.2735	0.2128
Target x:CIE31	0.3908	0.4698	0.5475	0.6400
Target y:CIE31	0.3292	0.3295	0.3297	0.3300
Target z:CIE31	0.2800	0.2007	0.1228	0.0300
Target Y	6.7852	4.6021	3.4991	2.7231

25% | 50% | 75% | 100%

CAL Satur

Calib

HOME

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Calibrate

Calib

Analyze

DTA

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CalMAN 5 CalMAN Enthusiast for Home Video

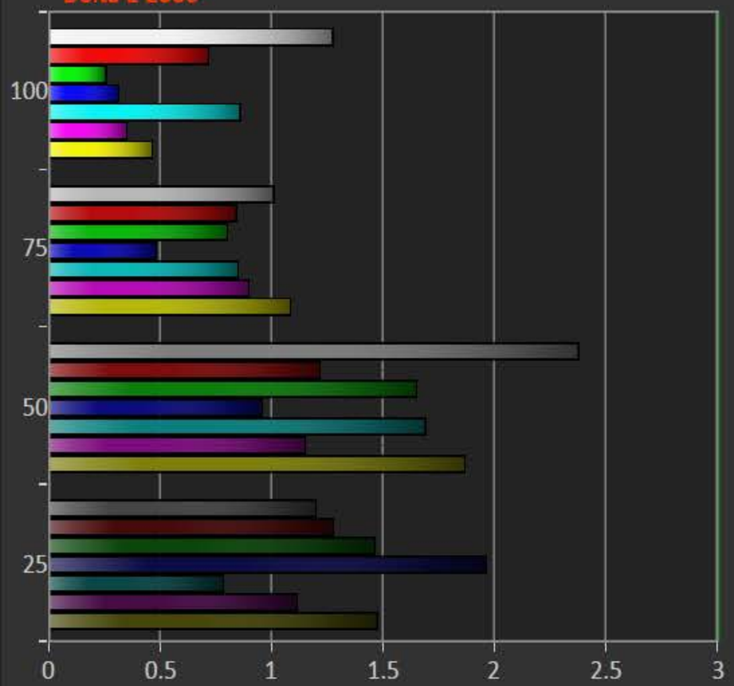
CalMAN 5

Gamut Luminance

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Gamut Luminance Calibration

Delta E 2000



Summary

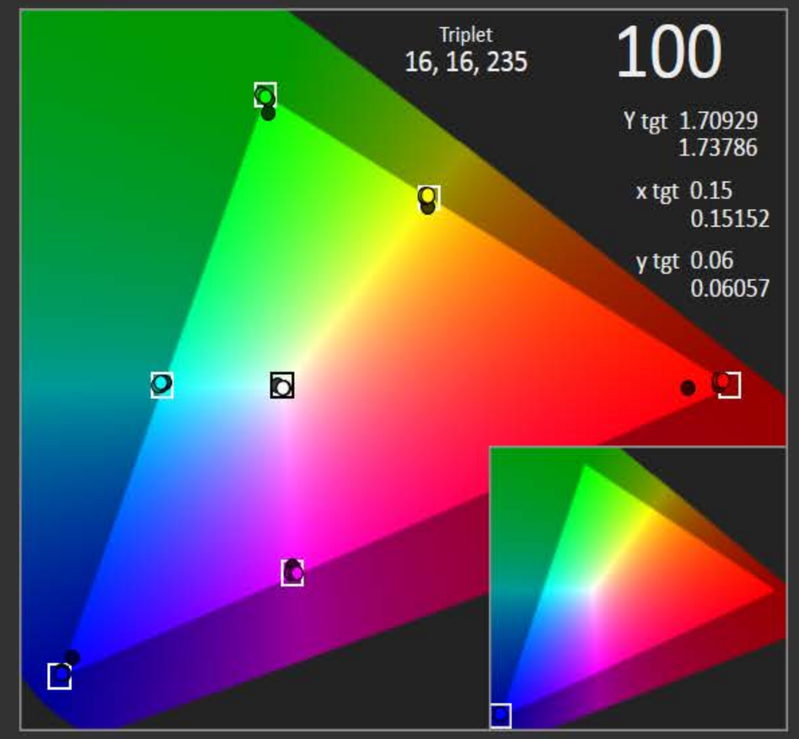
Delta E 2000
Avg 1.09
Max 2.38

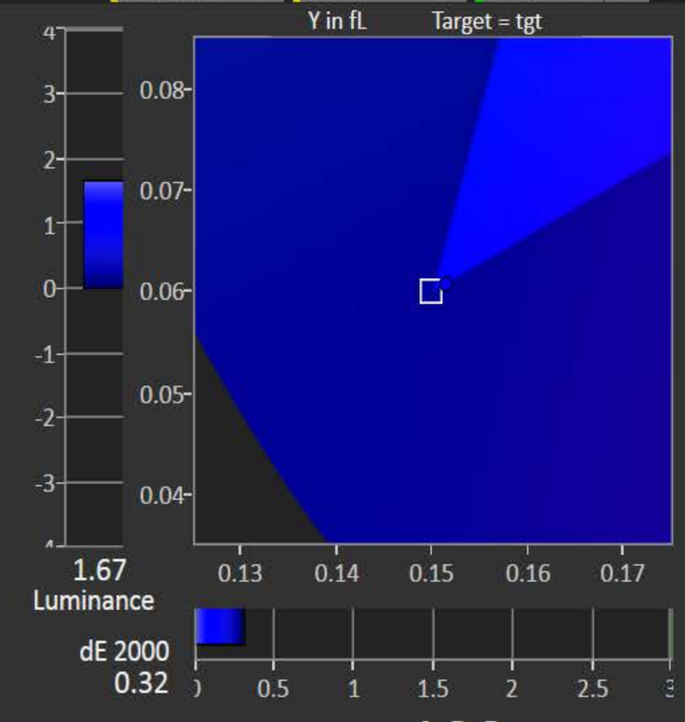
Delta L
Avg 0.803
Max 2.034

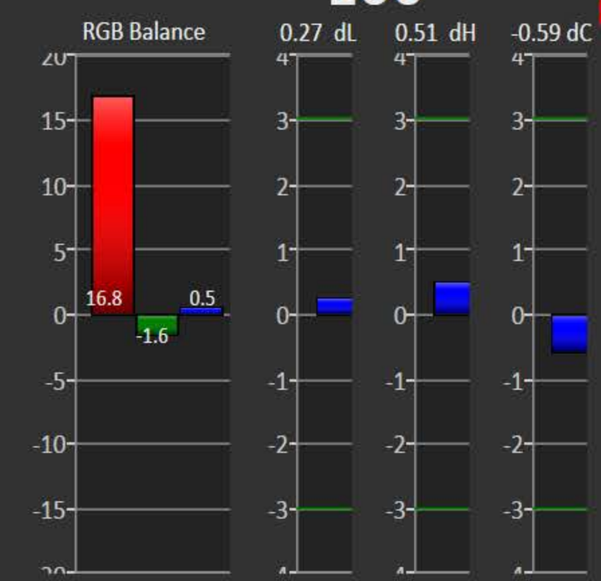
Delta H
Avg 0.472
Max 1.165

Delta C
Avg 1.537
Max 9.068

Black 0
White 23.61







RGB | DDC | Luminance

Display Slot: ISF Day

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

CAL
Lumi

Back | Next | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | Sat | # data | CCk | LUT | PostCal Read | Analyze | Post | Final Check | Lumi | # data | Notes

25 | 50 | 75 | 100

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CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Color Checker

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Color Checker Calibration

Orange Yellow

Add Custom Color Set → SG Fleshtones | Select Colors | Summary →

	Delta E	Delta L	Delta H	Delta C
Max	2.74	2.2	2.88	2.01
Avg	1.49	1.33	0.7	0.95

Delta E Avg 1.49 Max 2.74
Delta L Avg 1.33 Max 2.2
Delta H Avg 0.7 Max 2.88
Delta C Avg 0.86 Max 2.47

Black 0
White 23.97
Points 29

Orange Yellow

Orange Yellow

RGB Balance: -2.4, -5.4, -3

Slim Datagrid

1.49 dE | -1.41 dL | 1.63 dH | -0.25 dC | -4.74 Lu

Display Slot: ISF Day

Big CIE Chart | Comparator | DDC

Triplet 213, 154, 55 | Y tgt 10.48582 9.98865 | x tgt 0.47135 0.47538 | y tgt 0.44198 0.43974

CAL CChkr | Back | Next | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | Sat | Lum | # data | LUT | PostCal Read | Analyze | Post | Final Check | CChkr | # data | Notes | Back | Next

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

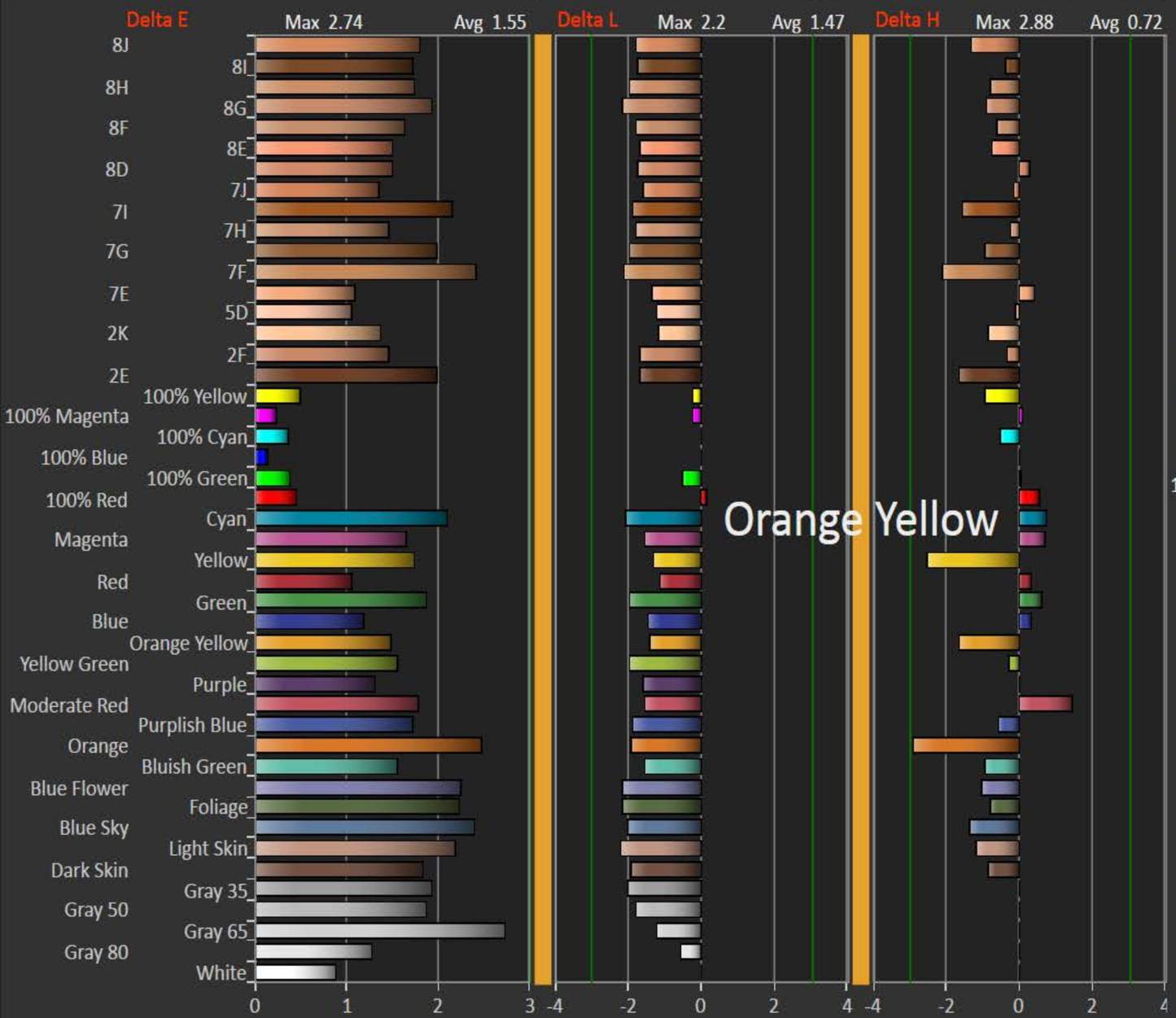
Color Checker

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Color Checker Calibration

Orange Yellow

Add Custom Color Set → SG Fleshtones | Select

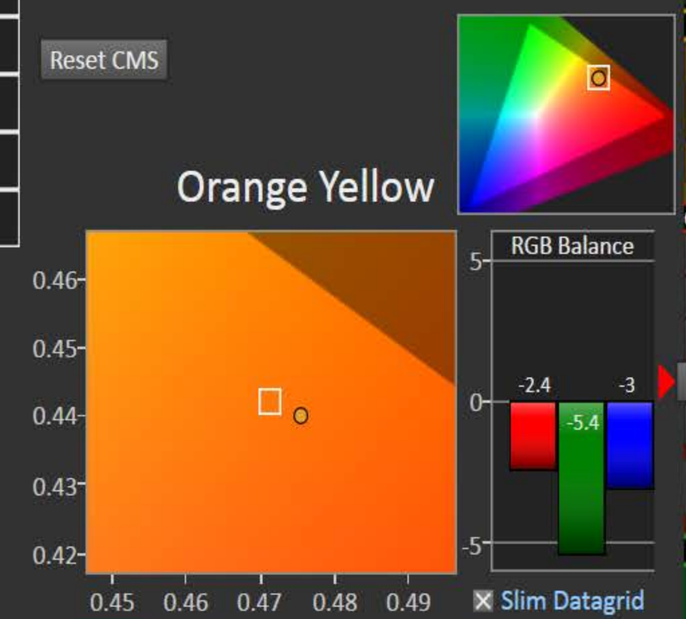


	Red	Green	Blue
0	47	39	20
10	92	69	65
20	65	53	40
30	55	48	29
40	45	41	27
50	48	43	26
60	46	39	20
70	45	38	19
80	44	38	19
90	45	38	20
100	47	39	20

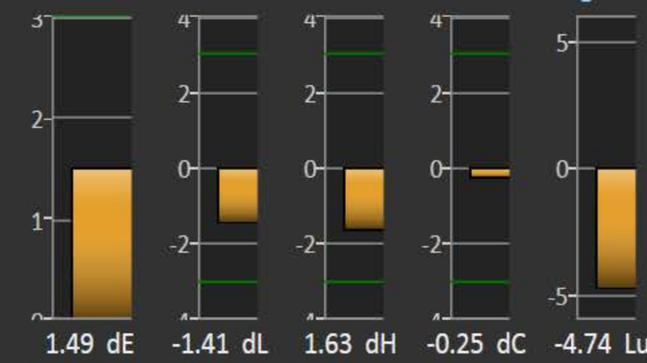
	Hue	Saturation	Luminance
Red	26	35	30
Green	32	45	30
Blue	42	36	38
Cyan	25	43	20
Magenta	36	37	25
Yellow	22	34	38

Reset CMS

Orange Yellow



Slim Datagrid



Reset Grayscale

Display Slot

ISF Day

Big CIE Chart | Comparator | DDC

Triplet 213, 154, 55 | Y tgt 10.48582 9.98865 | x tgt 0.47135 0.47538 | y tgt 0.44198 0.43974

Orange Yellow | Blue | Green | Red | Yellow | Magenta | Cyan | 100% Red | 100% Green | 100% Blue | 100% Cyan | 100% Magenta | 100% Yellow | 2E | 2F | 2K | 5D | 7E | 7F | 7G | 7H | 7I | 7J | 8D | 8E | 8F | 8G | 8H | 8I | 8J

Back | Next

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

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Color Checker

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Color Checker Calibration | Orange Yellow | Add Custom Color Set → SG Fleshtones | Select Colors | Summary → | Delta E Avg 1.55 | Black 0

CAL CChkr

Back | Next | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | Sat | Lum | # data | LUT | PostCal Read | Analyze

llow Orange Yellow | Blue | Green | Red | Yellow | Magenta | Cyan | 100% Red | 100% Green | 100% Blue | 100% Cyan | 100% Magenta | 100% Yellow | 2E | 2F | 2K | 5D | 7E | 7F | 7G | 7H | 7I | 7J | 8D

ISF Day | Big CIE Chart | Comparator | DDC

Triplet 213, 154, 55 | Y tgt 10.48582 9.98865 | x tgt 0.47135 0.47538 | y tgt 0.44198 0.43974 | 1.49 dE | -1.41 dL | 1.63 dH | -0.25 dC | -4.74 Lu

CChkr # data Notes Back Next

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Datagrid

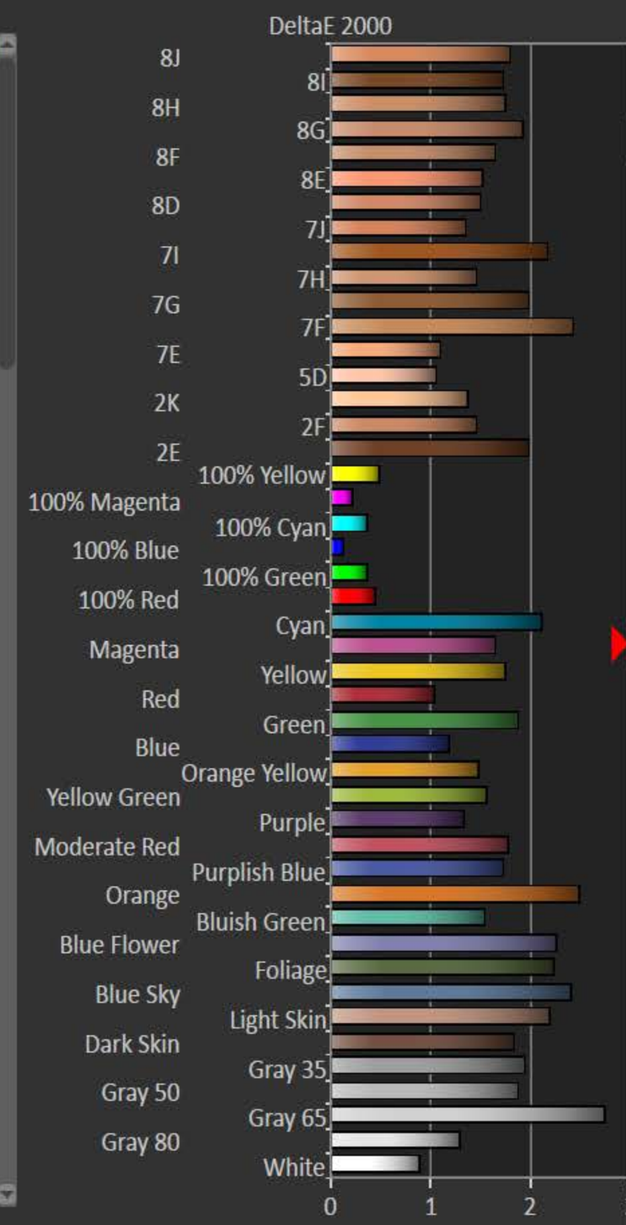
Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Color Checker Calibration 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
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
Red index	235.0000	213.0000	196.0000	176.0000	152.0000	115.0000	182.0000	97.0000	93.0000	128.0000	101.0000	202.0000
Green index	235.0000	213.0000	196.0000	176.0000	152.0000	86.0000	145.0000	121.0000	108.0000	126.0000	178.0000	119.0000
Blue index	235.0000	213.0000	196.0000	176.0000	152.0000	73.0000	128.0000	150.0000	73.0000	167.0000	161.0000	51.0000
X	77.7876	61.0123	48.7507	37.2750	26.2986	8.8506	29.7102	13.8782	8.3596	19.5980	24.1784	28.5901
Y cd/m²	82.1361	64.3887	51.9605	39.4948	27.5258	7.9453	27.6665	15.0250	10.3422	18.5965	33.7162	22.4271
Z	89.2255	68.9156	56.5328	42.8874	29.6140	5.2680	20.6814	27.1974	5.6761	35.7189	34.8715	4.5304
Xn 0-1	0.9471	0.7428	0.5935	0.4538	0.3202	0.1078	0.3617	0.1690	0.1018	0.2386	0.2944	0.3481
Yn 0-1	1.0000	0.7839	0.6326	0.4808	0.3351	0.0967	0.3368	0.1829	0.1259	0.2264	0.4105	0.2730
Zn 0-1	1.0863	0.8390	0.6883	0.5221	0.3605	0.0641	0.2518	0.3311	0.0691	0.4349	0.4246	0.0552
Stimulus Percent	1.0000	0.8995	0.8219	0.7306	0.6210	0.4521	0.7580	0.6119	0.4201	0.6895	0.7397	0.8493
RED Stim%:0-1	1.0000	0.8995	0.8219	0.7306	0.6210	0.4521	0.7580	0.3699	0.3516	0.5114	0.3881	0.8493
GRN Stim%:0-1	1.0000	0.8995	0.8219	0.7306	0.6210	0.3196	0.5890	0.4795	0.4201	0.5023	0.7397	0.4703
BLU Stim%:0-1	1.0000	0.8995	0.8219	0.7306	0.6210	0.2603	0.5114	0.6119	0.2603	0.6895	0.6621	0.1598
Measured Red Stimulus	0.9955	0.8929	0.7931	0.7040	0.6062	0.4331	0.7432	0.3391	0.3400	0.4792	0.3549	0.8362
Measured Green Stimulus	1.0015	0.8938	0.8125	0.7129	0.5984	0.3019	0.5620	0.4622	0.3969	0.4826	0.7255	0.4435
Measured Blue Stimulus	0.9986	0.8847	0.8074	0.7096	0.5960	0.2496	0.4891	0.5888	0.2472	0.6721	0.6376	0.1584
Stimulus	100.0000	90.0000	82.0000	73.0000	62.0000	45.0000	76.0000	61.0000	42.0000	69.0000	74.0000	85.0000
Target X cd/m²	78.0677	62.1702	51.2246	39.8115	28.1565	9.7534	31.7028	15.4150	9.2109	21.5388	26.0441	30.0674
Target Y cd/m²	82.1361	65.4102	53.8941	41.8863	29.6239	8.8345	29.9907	16.4457	11.5427	20.3655	35.5530	24.1982
Target Z cd/m²	89.4437	71.2297	58.6890	45.6128	32.2595	5.7588	22.6880	29.5304	6.3079	37.8280	37.6084	4.8081
Target Xn 0-1	0.9505	0.7569	0.6237	0.4847	0.3428	0.1187	0.3860	0.1877	0.1121	0.2622	0.3171	0.3661
Target Yn 0-1	1.0000	0.7964	0.6562	0.5100	0.3607	0.1076	0.3651	0.2002	0.1405	0.2479	0.4329	0.2946
Target Zn 0-1	1.0890	0.8672	0.7145	0.5553	0.3928	0.0701	0.2762	0.3595	0.0768	0.4606	0.4579	0.0585
TargetGamut:Nrml Y	1.0000	0.7964	0.6562	0.5100	0.3607	0.1845	0.5518	0.3496	0.1581	0.4508	0.5237	0.7040
TargetRED:Lin0-1	1.0000	0.7964	0.6562	0.5100	0.3607	0.1845	0.5518	0.1212	0.1091	0.2390	0.1339	0.7042
TargetGRN:Lin0-1	1.0000	0.7964	0.6562	0.5100	0.3607	0.0896	0.3224	0.2087	0.1581	0.2301	0.5237	0.2003
TargetBLU:Lin0-1	1.0000	0.7964	0.6562	0.5100	0.3607	0.0588	0.2390	0.3496	0.0588	0.4508	0.4134	0.0221
TargetGamut:Nrml MaxY	1.0000	1.0000	1.0000	1.0000	1.0000	0.5830	0.6618	0.5727	0.8887	0.5501	0.8265	0.4185
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.4006	0.3757	0.2511	0.3404	0.2701	0.2625	0.5090
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3629	0.3554	0.2679	0.4265	0.2554	0.3584	0.4096



CAL
CChkr
Calib
HOME
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Notes

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Datagrid 1 Datagrid 2

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Color Checker Calibration 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	Orange Yellow	Blue	Green	Red	Yellow	Magenta
X	77.7876	61.0123	48.7507	37.2750	26.2986	8.8506	29.7102	13.8782	8.3596	19.5980	24.1784	28.5901	10.4996	21.7371	7.0032	26.2267	36.9978	6.8547	11.2892	15.9324	45.5092	22.8581
Y cd/m²	82.1361	64.3887	51.9605	39.4948	27.5258	7.9453	27.6665	15.0250	10.3422	18.5965	33.7162	22.4271	9.3757	14.9048	5.3583	34.1802	34.2237	5.0120	18.3171	9.4403	47.6246	15.1877
Z	89.2255	68.9156	56.5328	42.8874	29.6140	5.2680	20.6814	27.1974	5.6761	35.7189	34.8715	4.5304	29.1661	10.5263	11.8224	9.1705	6.6064	23.7861	7.6832	4.2098	8.0491	23.1577
Target x:CIE31	0.3127	0.3127	0.3127	0.3127	0.3127	0.4006	0.3757	0.2511	0.3404	0.2701	0.2625	0.5090	0.2181	0.4574	0.2898	0.3763	0.4714	0.1926	0.3052	0.5370	0.4459	0.3713
x: CIE31	0.3122	0.3140	0.3100	0.3115	0.3152	0.4011	0.3806	0.2474	0.3429	0.2651	0.2606	0.5147	0.2141	0.4608	0.2896	0.3769	0.4754	0.1923	0.3027	0.5386	0.4498	0.3735
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3629	0.3554	0.2679	0.4265	0.2554	0.3584	0.4096	0.1945	0.3125	0.2221	0.4916	0.4420	0.1421	0.4881	0.3185	0.4751	0.2462
y: CIE31	0.3297	0.3314	0.3304	0.3301	0.3299	0.3601	0.3544	0.2678	0.4242	0.2516	0.3635	0.4037	0.1912	0.3160	0.2216	0.4913	0.4397	0.1406	0.4912	0.3191	0.4707	0.2482
Target Y	23.9725	19.0908	15.7297	12.2251	8.6461	2.5785	8.7532	4.7999	3.3689	5.9440	10.3766	7.0626	3.0173	4.6619	1.7315	10.6763	10.4858	1.6074	5.8083	2.9229	14.4801	4.7501
Y	23.9725	18.7927	15.1654	11.5271	8.0338	2.3190	8.0748	4.3852	3.0185	5.4277	9.8405	6.5457	2.7364	4.3502	1.5639	9.9760	9.9887	1.4628	5.3461	2.7553	13.8999	4.4327
Sat: L*u*v*	0.8511	1.7024	2.6317	1.2516	1.3605	27.2376	36.4368	34.3630	26.8118	39.8050	42.4264	94.5557	61.1383	75.7477	32.5471	69.5840	87.0078	67.6115	58.7036	94.2057	89.7971	63.1732
Hue: L*u*v*	154.9229	89.9359	171.2186	162.4690	31.1852	30.8314	32.1299	242.0982	104.9206	265.2766	167.7148	31.8771	259.2219	7.9093	291.7336	99.5913	49.3505	263.7490	128.5133	9.9410	66.3329	334.7620
L*	100.0000	90.9588	83.5797	74.8782	64.5737	37.2497	64.7107	49.8493	42.1412	54.7007	70.2103	59.2554	40.2706	49.6732	30.6969	70.6040	70.6408	29.6686	54.3448	40.3995	80.7291	50.0861
Gamma Point: Flat	2.2000	2.3918	2.4148	2.4065	2.3662	3.0633	4.1827	3.6185	2.4787	4.2198	3.0934	9.0574	5.1273	6.6681	3.2836	2.9143	10.0954	5.5756	2.8600	6.2091	10.3855	5.7640

CAL

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Datagrid 2 Notes

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Datagrid 1 | Datagrid 2

Simulated Meter LCD Direct View | Source | Sharp Elite ISF Day

Color Checker Calibration 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
Sat: L*a*b*	0.6204	1.1593	1.8513	0.9303	0.8218	18.7440	21.8571	21.1287	24.3426	27.5350	33.4025	64.9653	42.8658	46.0133	31.0631	61.3556	67.4832	55.9636	52.4745	57.06
Hue: L*a*b*	164.7903	113.9296	178.4161	170.8863	42.9229	48.2994	48.6241	262.6798	122.7681	292.8029	175.6531	59.1127	288.5398	19.3151	316.5401	114.7720	75.9567	296.9754	140.9788	26.01
ΔE 2000	0.8943	1.2856	2.7354	1.8713	1.9329	1.8356	2.1905	2.3949	2.2349	2.2533	1.5523	2.4757	1.7313	1.7813	1.3230	1.5597	1.4886	1.1909	1.8820	1.047
dE2000 LuminanceCompensated	0.8943	1.2375	2.6131	1.3438	1.0373	0.8165	1.4478	1.3305	0.6898	1.1012	1.2019	1.8120	0.6255	0.8422	0.0729	0.1357	1.0418	0.3478	0.4536	0.209
ΔE 1976:L*u*v*	0.8511	1.7930	2.9008	2.1911	2.4166	2.3631	3.1746	2.5055	3.1548	2.9023	2.8180	4.3853	2.0968	2.8442	2.2136	2.8697	2.9167	2.9388	2.3024	2.423
ΔE 1976:L*a*b*	0.6204	1.2886	2.2173	2.0248	2.1597	2.1639	2.6944	2.4323	2.8037	2.4610	2.6401	3.5029	1.9542	2.3289	1.8427	2.4876	2.1710	1.7639	2.0810	1.457
ΔE 1994 L*:±	0.0000	-0.5626	-1.2202	-1.7984	-1.9972	-1.9166	-2.1996	-2.0134	-2.1679	-2.1742	-1.5380	-1.9310	-1.8627	-1.5326	-1.6117	-1.9809	-1.4143	-1.4571	-1.9714	-1.121
ΔE 1994 Sat:±	0.6204	1.1593	1.8513	0.9303	0.8218	-0.5372	1.0392	-0.1402	-1.5899	0.5388	1.9196	-0.4863	-0.1473	-1.0134	-0.8934	-1.4824	-0.2522	-0.9319	-0.2732	-0.865
ΔE 1994 Hue:±	0.0000	0.0000	0.0000	0.0000	0.0000	-0.8490	-1.1583	-1.3574	-0.7958	-1.0192	-0.9590	-2.8818	-0.5723	1.4310	-0.0055	-0.2588	-1.6278	0.3461	0.6077	0.343
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	0.000
Signed dE94 C LuminanceCompensated	0.6204	1.1593	1.8513	0.9303	0.8218	0.1327	1.5915	0.4909	-0.6577	1.3442	2.4714	1.1511	1.2309	0.0590	0.1727	-0.0772	0.8357	0.8273	1.1648	0.263
Signed dE94 H LuminanceCompensated	0.0000	0.0000	0.0000	0.0000	0.0000	-0.8341	-1.1428	-1.3371	-0.7814	-1.0038	-0.9506	-2.8455	-0.5631	1.4146	-0.0054	-0.2558	-1.6146	0.3407	0.5994	0.339

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CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

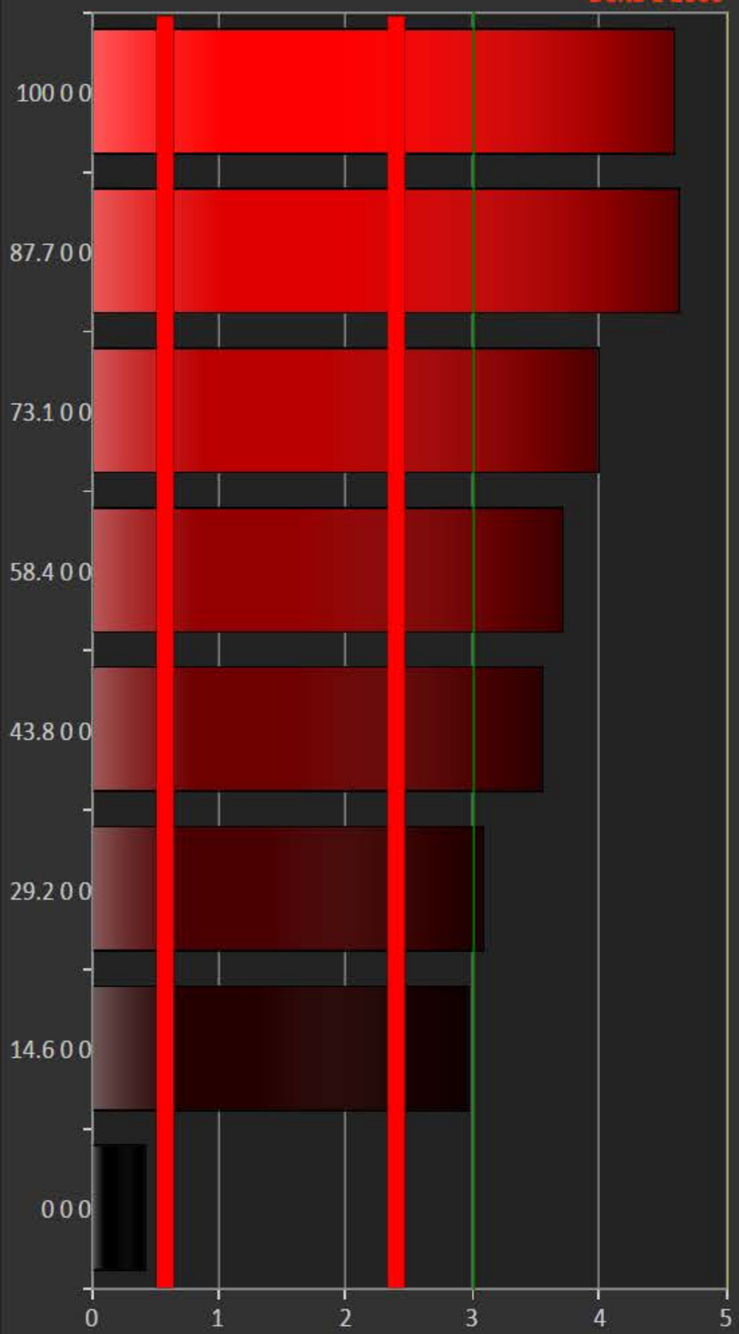
3D Color Cube LUT | 3D Cube LUT Minimal

Simulated Meter LCD Direct View | Source | Direct Display Control

3D Color Cube LUT Calibration - Full

Delta E 2000

Go to Minimal 3D LUT



Summary

Delta C
1.9 Avg 4.32 Max

Delta H
1 Avg 2.33 Max

Delta L
3.26 Avg 4.6 Max

Delta E
3.79 Avg 4.62 Max
@ 87.7 0 0

RGB Balance

Triplet
235, 16, 16

Y tgt 6.21059
5.10029

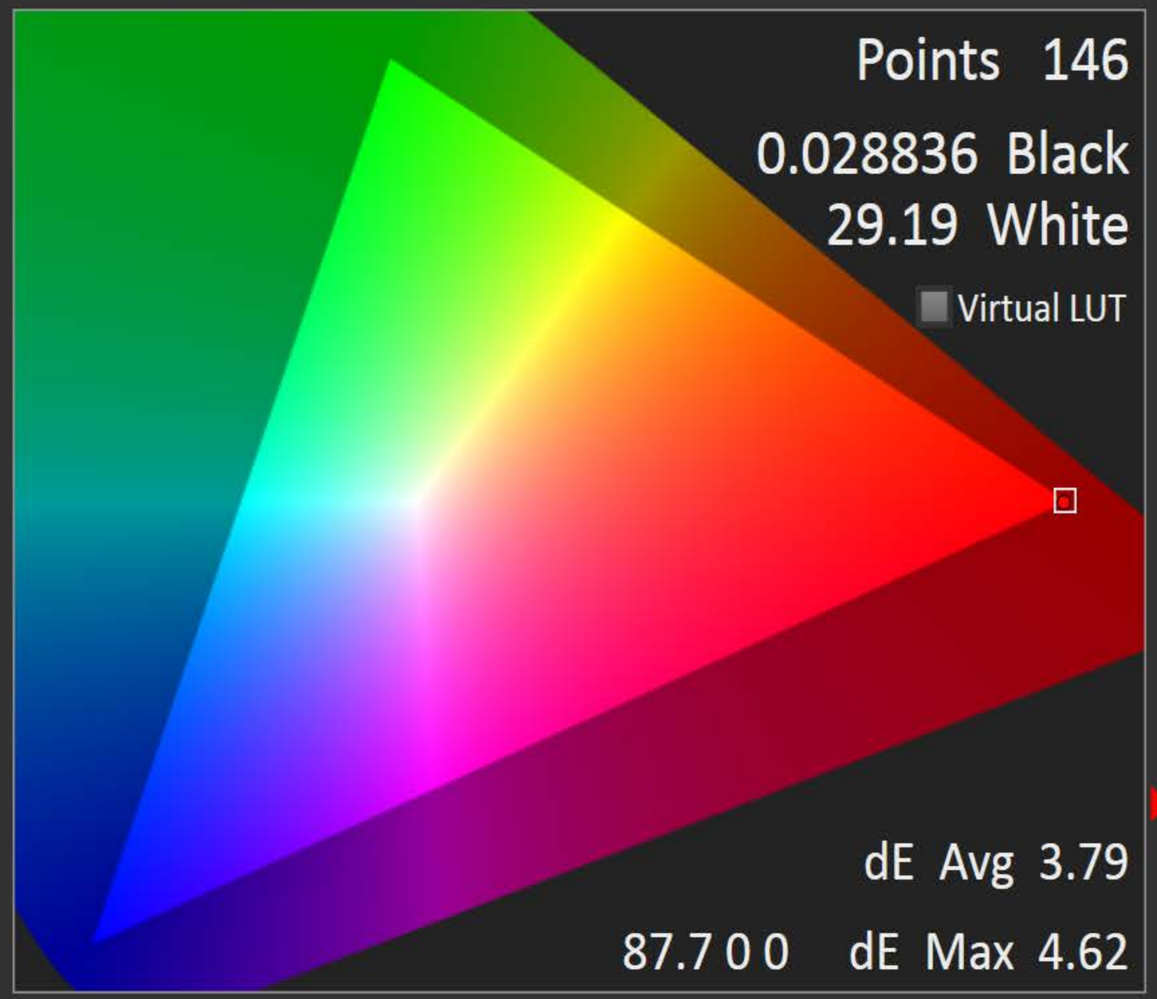
x tgt 0.64
0.63892

y tgt 0.33
0.32913

dC -7.25
dH -0.93
dL -4.4

dE 4.6

100 0 0



100 0 0 dE 4.6

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

Big Comparator

Inner Data Points

Luminance Level Points: 8 Points per side, SMPTE (0-100)

Display Slot

Selected LUT

CAL 3dLUT Full

Back | Next | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | Sat | Lum | CCk | # data | PostCal Read | Analyze | Chrts | Final Check | 3dLUT | # data

Ramp | 16 | 16 | 0 0 0 | 14.6 0 0 | 29.2 0 0 | 43.8 0 0 | 58.4 0 0 | 73.1 0 0 | 87.7 0 0 | 100 0 0

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CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

3D Color Cube LUT | 3D Cube LUT Minimal

Simulated Meter LCD Direct View | Source | Direct Display Control

3D Color Cube LUT Calibration - Full

Delta E 2000

Go to Minimal 3D LUT

Summary

Delta C	2.03 Avg	4.38 Max
Delta H	1.16 Avg	2.43 Max
Delta L	3.06 Avg	4.67 Max
Delta E	3.47 Avg	4.79 Max @ 91.3 0 0

RGB Balance

Triplet 235, 16, 16

Y tgt 6.21059 5.06023

x tgt 0.64 0.63846

y tgt 0.33 0.32937

dC -7.7

dH -0.9

dL -4.57

dE 4.78

100 0 0

Points 482

0.028626 Black

29.19 White

Virtual LUT

dE Avg 3.47

91.3 0 0 dE Max 4.79

100 0 0 dE 4.78

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

Big Comparator

Inner Data Points | Luminance Level Points

CAL 3dLUT Full

Back | Next | # data | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | Sat | Lum | CCk | # data | PostCal Read | Analyze | Chrts

Ramp | 16 | 16

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CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

3D Color Cube LUT | 3D Cube LUT Minimal

Simulated Meter LCD Direct View | Source | Direct Display Control

3D Color Cube LUT Calibration - Minimal

Go to Full 3D LUT

View charts in the Analysis section

Summary

Points 482

Black 0.028768

White 29.19

dE Avg 4.16

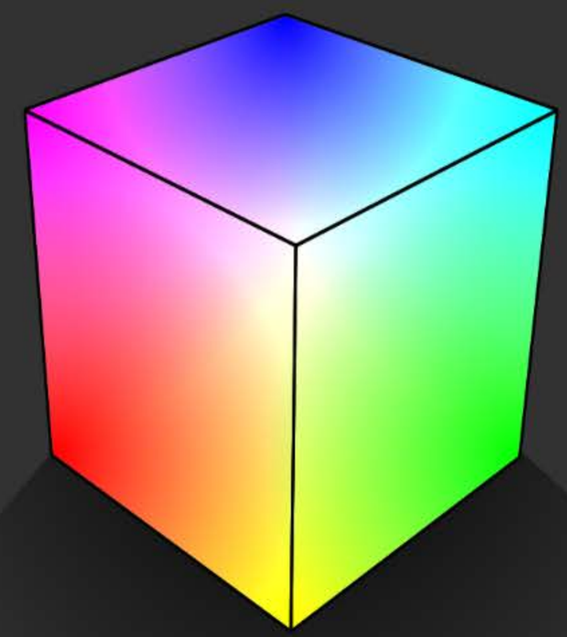
dE Max 4.4 @ 78.5 0 0

dE 3.75 @ 54.8 0 0

dL -3.94 dH -2.18 dC -7.48

RGB Balance

R -19.9 G 0 B 2.8



Luminance Level Points: 56 Points per side, SMPTE (0-100)

Inner Data Points

Display Slot

Selected LUT

Ramp 16 16

51.1 0 0 | 53 0 0 | 54.8 0 0 | 56.6 0 0 | 58.4 0 0 | 60.3 0 0 | 62.1 0 0 | 63.9 0 0 | 65.8 0 0 | 67.6 0 0 | 69.4 0 0 | 71.2 0 0 | 73.1 0 0 | 74.9 0 0 | 76.7 0 0 | 78.5 0 0 | 80.4 0 0 | 82.2 0 0 | 84 0 0 | 85.8 0 0 | 87.7 0 0 | 89.5 0 0 | 91.3 0 0 | 93.2 0 0 | 95 0 0 | 96.8 0 0 | 98.6 0 0 | 100 0 0

Notes

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CAL 3dLUT Mnml

Back Next # data

HOME

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Final Check

3dLUT

data

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Datagrid

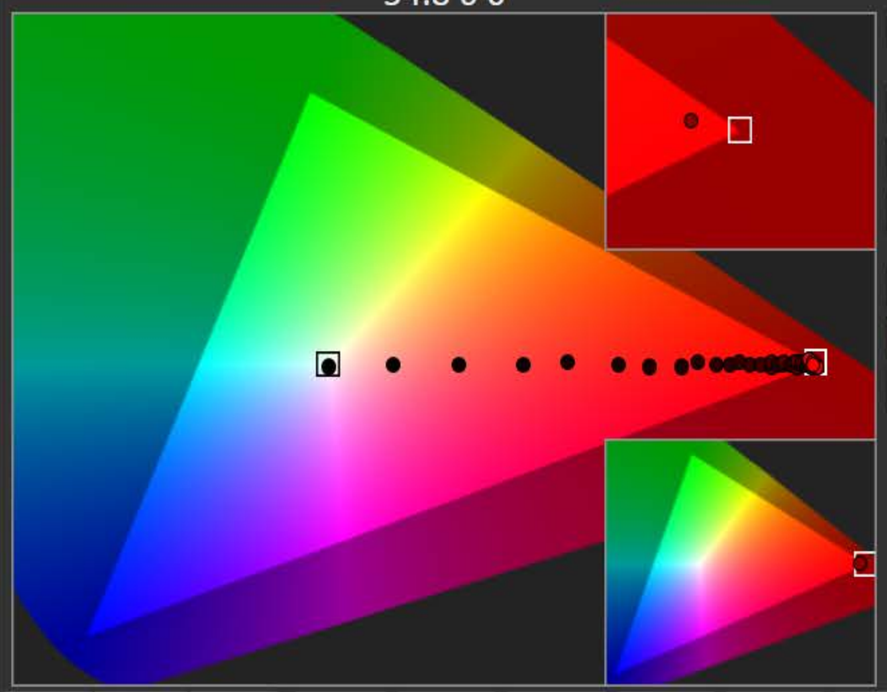
Simulated Meter LCD Direct View | Source | Direct Display Control

3D Color Cube LUT Calibration Data - Full

Color Notes

Post-Calibration Notes

54.800



White
Red
Green
Blue
Cyan
Magenta
Yellow

	000	1.800	3.700	5.500	7.300	9.100	11.00	12.800	14.600	16.400	18.300	20.10
RGB Triplet	16, 16, 16	20, 16, 16	24, 16, 16	28, 16, 16	32, 16, 16	36, 16, 16	40, 16, 16	44, 16, 16	48, 16, 16	52, 16, 16	56, 16, 16	60, 16
Red index	16.0000	20.0000	24.0000	28.0000	32.0000	36.0000	40.0000	44.0000	48.0000	52.0000	56.0000	60.00
Green index	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.00
Blue index	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.00
X	0.0934	0.1233	0.1648	0.2194	0.2833	0.3652	0.4581	0.5686	0.6927	0.8291	0.9795	1.156
Y cd/m²	0.0981	0.1135	0.1361	0.1629	0.1982	0.2364	0.2826	0.3383	0.4084	0.4736	0.5545	0.649
Z	0.1081	0.1088	0.1117	0.1129	0.1174	0.1191	0.1253	0.1285	0.1351	0.1432	0.1487	0.158
Xn 0-1	0.0009	0.0012	0.0016	0.0022	0.0028	0.0037	0.0046	0.0057	0.0069	0.0083	0.0098	0.011
Yn 0-1	0.0010	0.0011	0.0014	0.0016	0.0020	0.0024	0.0028	0.0034	0.0041	0.0047	0.0055	0.006
Zn 0-1	0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0014	0.0014	0.0015	0.001
Stimulus Percent	0.0000	0.0183	0.0365	0.0548	0.0731	0.0913	0.1096	0.1279	0.1461	0.1644	0.1826	0.200
RED Stim%:0-1	0.0000	0.0183	0.0365	0.0548	0.0731	0.0913	0.1096	0.1279	0.1461	0.1644	0.1826	0.200
GRN Stim%:0-1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
BLU Stim%:0-1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Measured Red Stimulus	0.0240	0.0365	0.0495	0.0635	0.0764	0.0912	0.1052	0.1198	0.1336	0.1480	0.1619	0.176
Measured Green Stimulus	0.0239	0.0239	0.0244	0.0239	0.0248	0.0232	0.0226	0.0220	0.0244	0.0225	0.0238	0.025
Measured Blue Stimulus	0.0242	0.0241	0.0242	0.0240	0.0242	0.0239	0.0244	0.0240	0.0239	0.0245	0.0241	0.024
Stimulus	0.0000	2.0000	3.7000	5.5000	7.3000	9.0000	11.0000	13.0000	14.6000	16.4000	18.3000	20.00
Target X cd/m²	0.0163	0.0559	0.0967	0.1569	0.2379	0.3405	0.4655	0.6136	0.7854	0.9815	1.2024	1.448
Target Y cd/m²	0.0171	0.0288	0.0498	0.0809	0.1227	0.1756	0.2400	0.3164	0.4050	0.5061	0.6200	0.746
Target Z cd/m²	0.0187	0.0026	0.0045	0.0074	0.0112	0.0160	0.0218	0.0288	0.0368	0.0460	0.0564	0.067
Target Xn 0-1	0.0002	0.0006	0.0010	0.0016	0.0024	0.0034	0.0047	0.0061	0.0079	0.0098	0.0120	0.014
Target Yn 0-1	0.0002	0.0003	0.0005	0.0008	0.0012	0.0018	0.0024	0.0032	0.0040	0.0051	0.0062	0.007
Target Zn 0-1	0.0002	0.0000	0.0000	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004	0.0005	0.0006	0.000
TargetGamut:Nrml Y	0.0002	0.0014	0.0023	0.0038	0.0058	0.0083	0.0113	0.0149	0.0190	0.0238	0.0291	0.035
TargetRED:Lin0-1	0.0002	0.0014	0.0023	0.0038	0.0058	0.0083	0.0113	0.0149	0.0190	0.0238	0.0292	0.035
TargetGRN:Lin0-1	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
TargetBLU:Lin0-1	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
TargetGamut:Nrml MaxY	1.0000	0.2128	0.2128	0.2128	0.2128	0.2128	0.2128	0.2128	0.2128	0.2128	0.2128	0.212
Target x:CIE31	0.3127	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400	0.6400	0.640
Target y:CIE31	0.3290	0.3300	0.3300	0.3300	0.3300	0.3300	0.3300	0.3300	0.3300	0.3300	0.3300	0.330

CAL 3dLUT Full

Calib

HOME

Prepare

Calibrate

Calib

Analyze

Charts

DTA

Calib

Ramp | 16 | 16

36.500 | 38.400 | 40.200 | 42.00 | 43.800 | 45.700 | 47.500 | 49.300 | 51.100 | 53.00 | **54.800** | 56.600 | 58.400 | 60.300 | 62.100 | 63.900 | 65.800 | 67.600 | 69.400 | 71.200

Detail Charts | Notes

CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Post-Cal Readings

Simulated Meter Simulated | Source | Direct Display Control

Post-Calibration Readings

5/13/2016 Calibration

Gamma Breakout Tot 2.26 Contrast 834 Black 0.097656 White 81.44 cd/m²

1 Grayscale | Full Charts | 21 Point 5% step 0-100% | 100 | Avg 1.42 Max 2.39

DeltaE 1.74

100% Yellow

4 Color Checker | Full Charts | Add Custom Color Set → | SG Fleshtones

DeltaE 0.24 Avg 1.09 Max 2.76

CAL PstCal Read | Back | Next | PreCal Read | HOME | Prepare | Setup | PreCal Read | DyRnge | Calibrate | Gry | Sat

Select Colors | Comparator

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% Red | 100 Gre

Analyze | Gry | Sat | Lum | CCk | LUT

LUT Calibration

Avg dE2000 0

Max dE2000 0

@ 0 0 0

ISF Day

Post-Cal Readings

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

Notes | Display Slot

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

Final Check | PstCal

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CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Post-Calibration

Simulated Meter Simulated | Source | Direct Display Control

Post-Cal Grayscale Detail

Comparator | Logarithmic Y Axis

DeltaE 2000 Grayscale | Contrast 823 | 100 dE 2.97 | 0 Avg | 3.25 Max

Post-Cal Readings | RGB Balance

3.2 | -1.2 | 2.3

Gamma Target 2.2 | 2.2 | 2.23 Total

Luminance cd/m² | Target 80.935381 | 80.935381 | Black 0.098329 | 80.94 White

POST-CAL

100

CCT | 6490 | 6510 Avg

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

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

CalMAN 5 CalMAN Enthusiast for Home Video

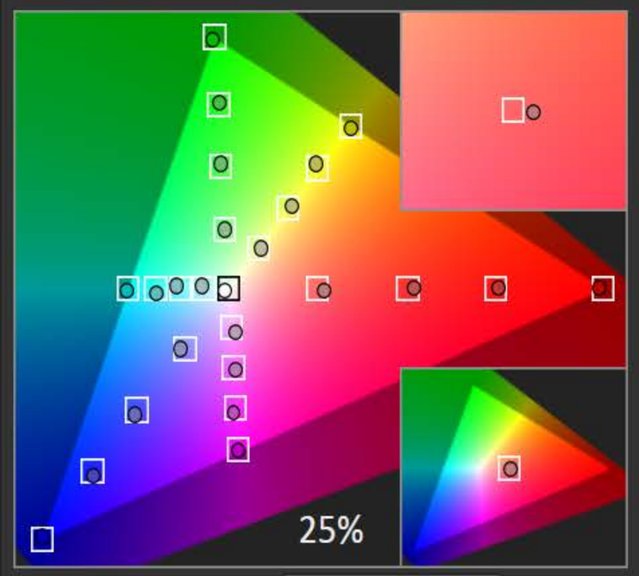
CalMAN 5

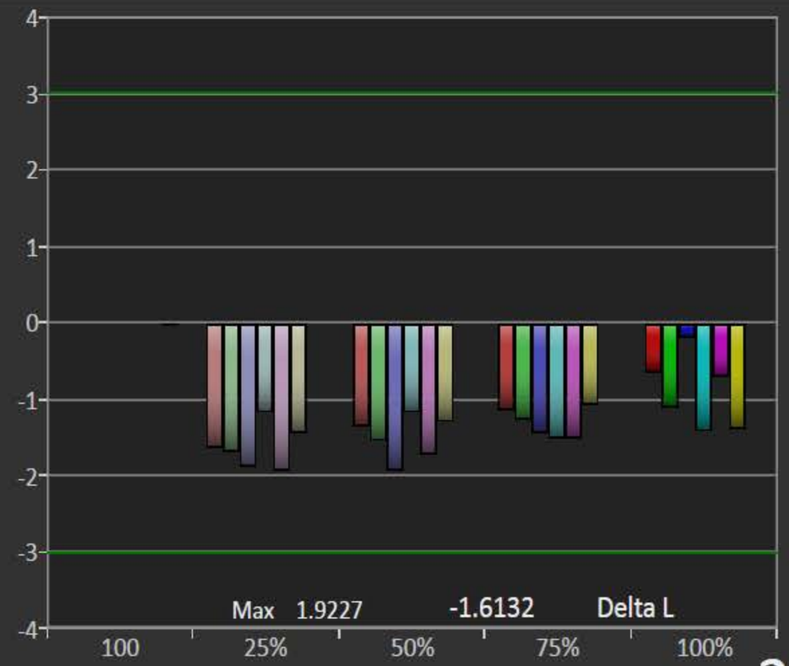
Post-Calibration

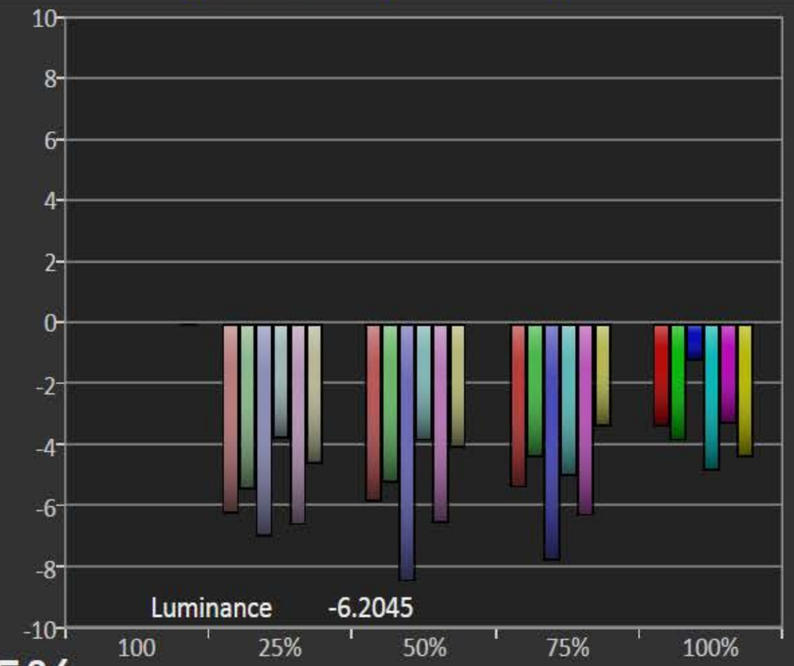
Simulated Meter LCD Direct View | Source | Direct Display Control

Post-Cal Saturation Sweeps Detail

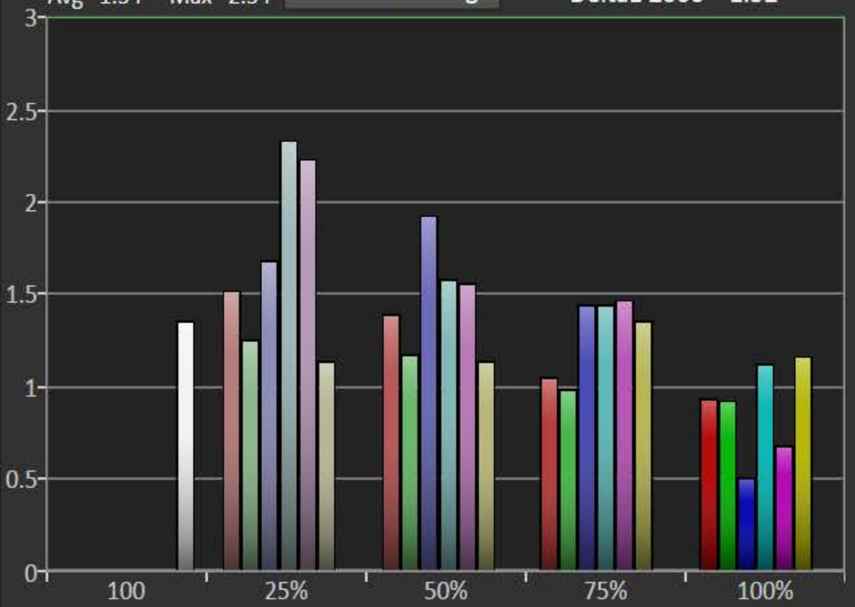
Comparator







Avg 1.34 Max 2.34 Post-Cal Readings DeltaE 2000 1.52



Post-Cal 25% Post-Cal

25% 50% 75% 100%

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

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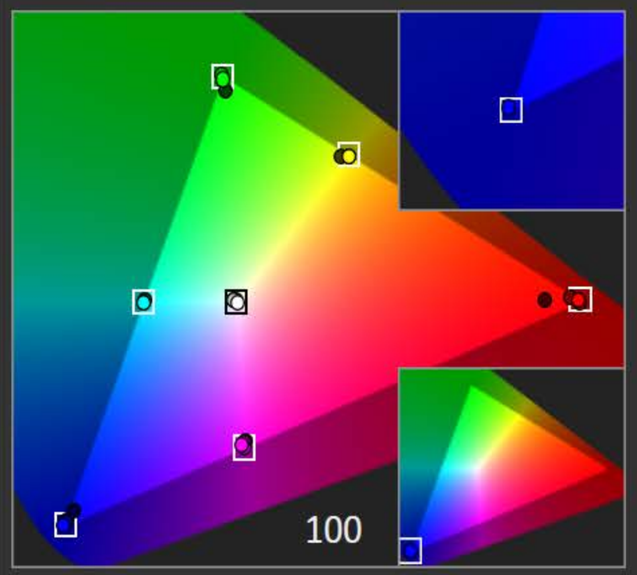
CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Post-Calibration

Simulated Meter LCD Direct View | Source | Direct Display Control

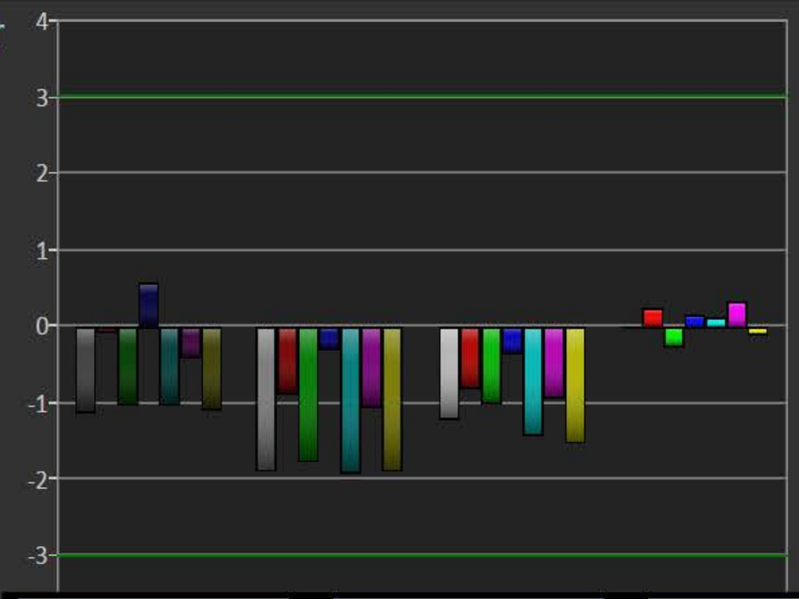
Post-Cal Gamut Luminance Detail

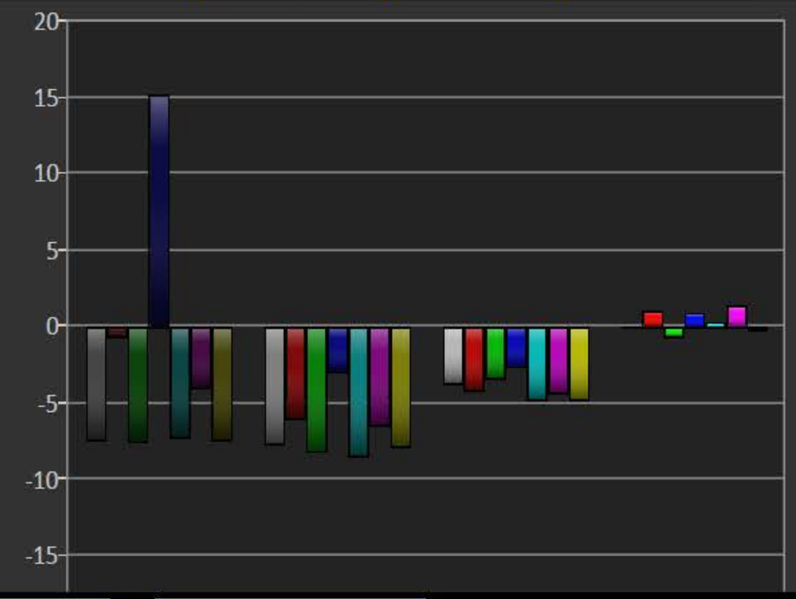


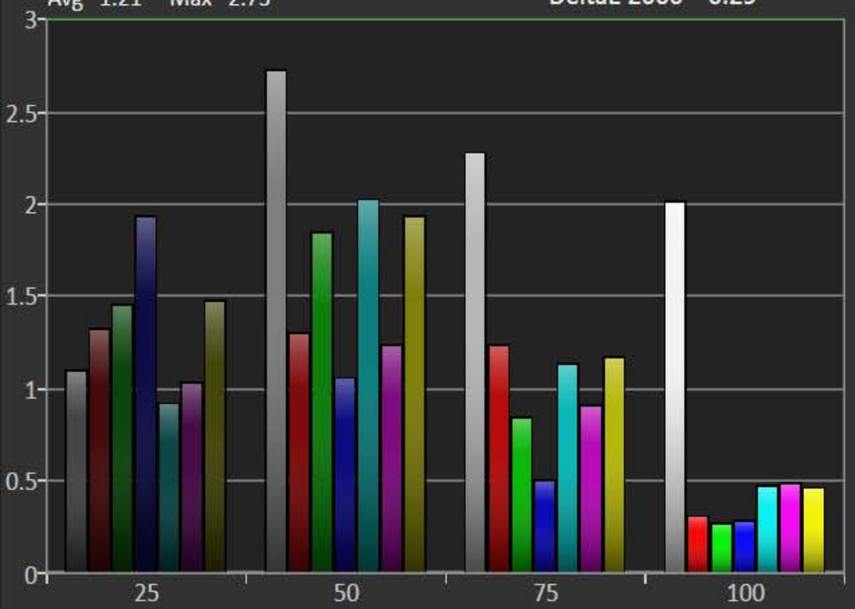
Avg 1.21 Max 2.73

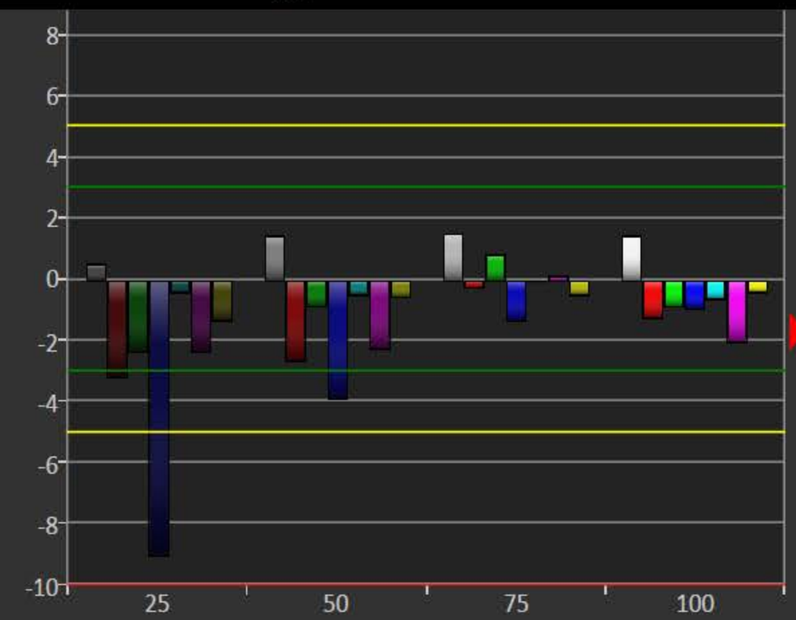
Comparator

DeltaE 2000 0.29









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Post-Calibration

Simulated Meter LCD Direct View | Source | Direct Display Control

Post-Cal Color Checker Detail

Post-Cal • Orange Yellow

Notes

Post-Cal Readings

CIE Chart

Comparator

Post-Cal

dE 2000 3 Avg 1.5 Max 3

DeltaH -4.308 Max 4.308

DeltaC -0.562 Max 2.141

Gamut Luminance -5.265

DeltaL -1.573 Max 2.174

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

0 0.5 1 1.5 2 2.5 3 | -6 -4 -2 0 2 4 6 | 4 -2 0 2 4 | Post-Cal -10 -5 0 5 10 | -4 -2 0 2 4

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Sat
Lum
PreCal
LUT
Final Check
PstC
CChk
Notes

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% Red | 100% Green | 100% Blue | 100% Cyan | 100% Magenta | 100% Yellow

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Post-Calibration

Simulated Meter LCD Direct View | Source | Direct Display Control

Post-Cal Color Checker Detail

Post-Cal • Orange Yellow

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Post-Cal Readings

CIE Chart

Comparator

Post-Cal

dE 2000 3 Avg 1.5 Max 3

DeltaH -4.308 Max 4.308

DeltaC -0.562 Max 2.141

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

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PreCal
LUT

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% Red | 100 Gre

Pre-Cal # Datagrid

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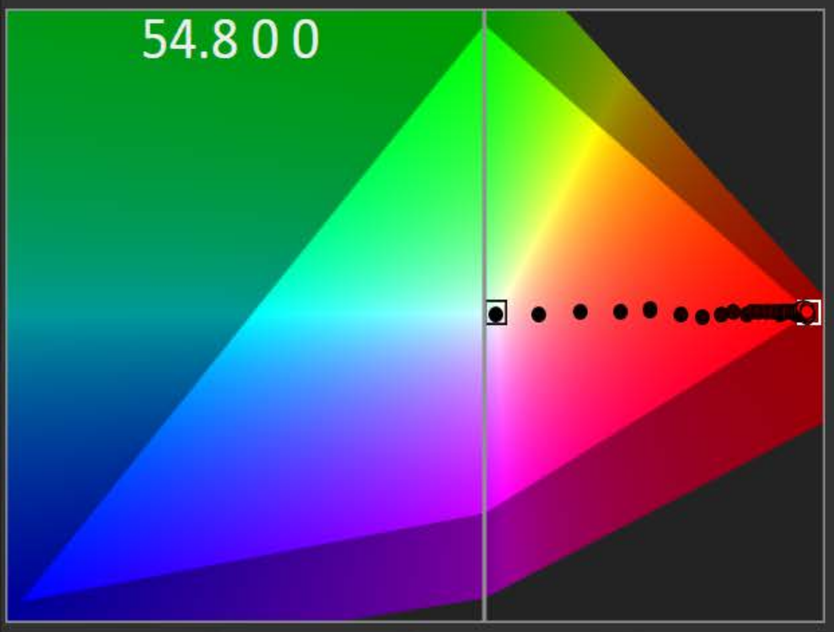
CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

DeltaE DeltaL Lminance | DeltaE DeltaH DeltaC

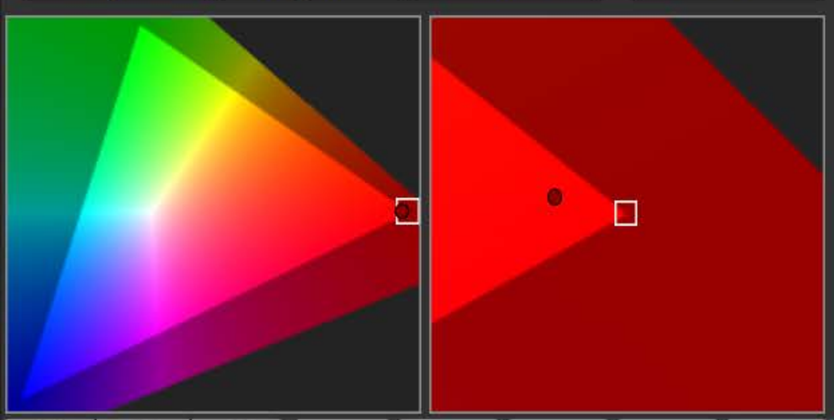
Simulated Meter LCD Direct View | Source | Direct Display Control

3D Color Cube LUT Full Calibration Detail 1

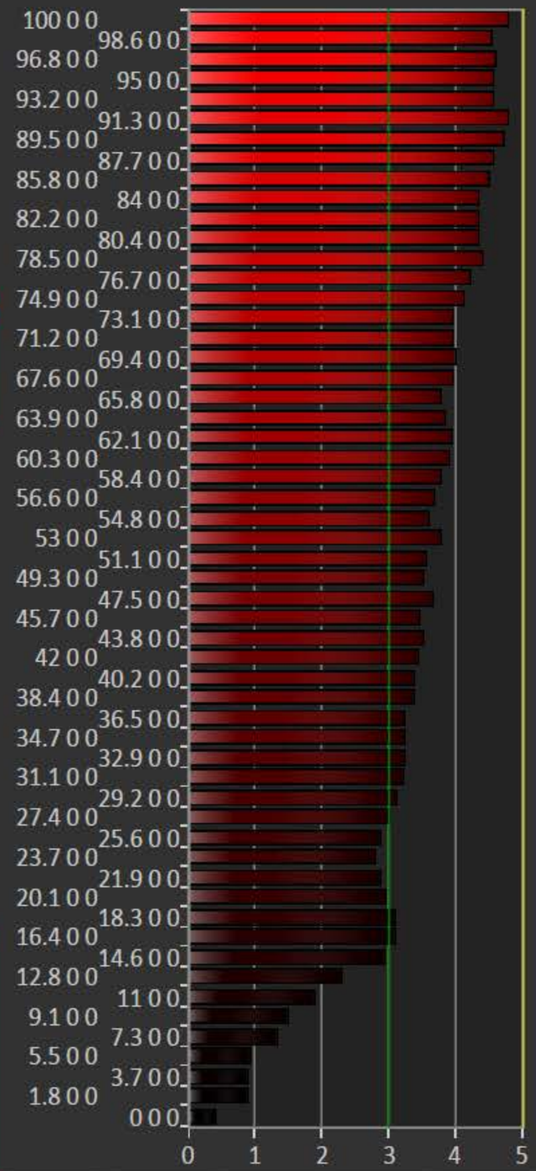


Red | Green | Blue | White

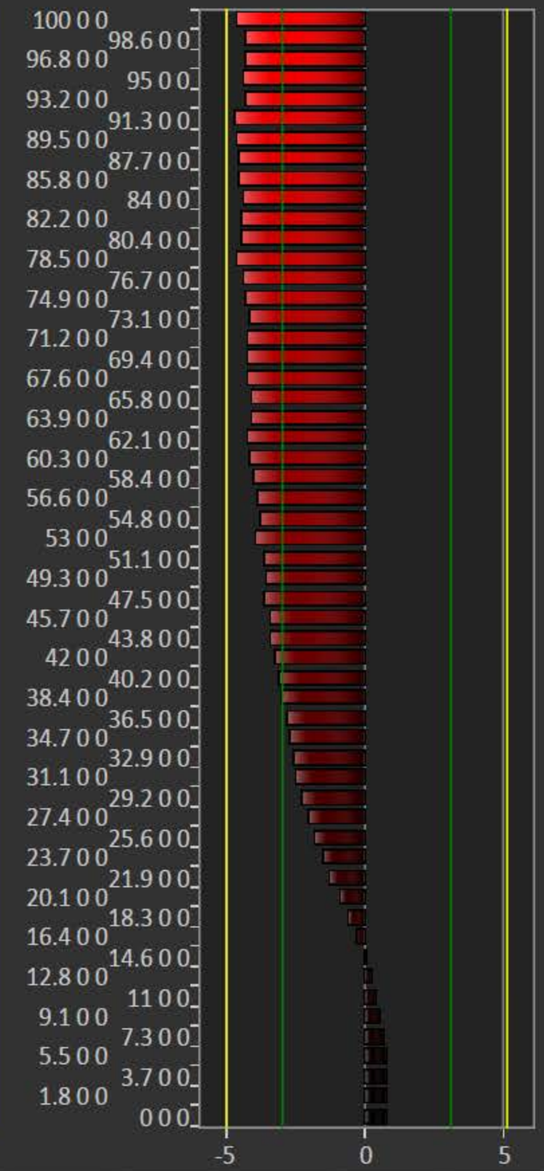
Cyan | Magenta | Yellow | Charts 2



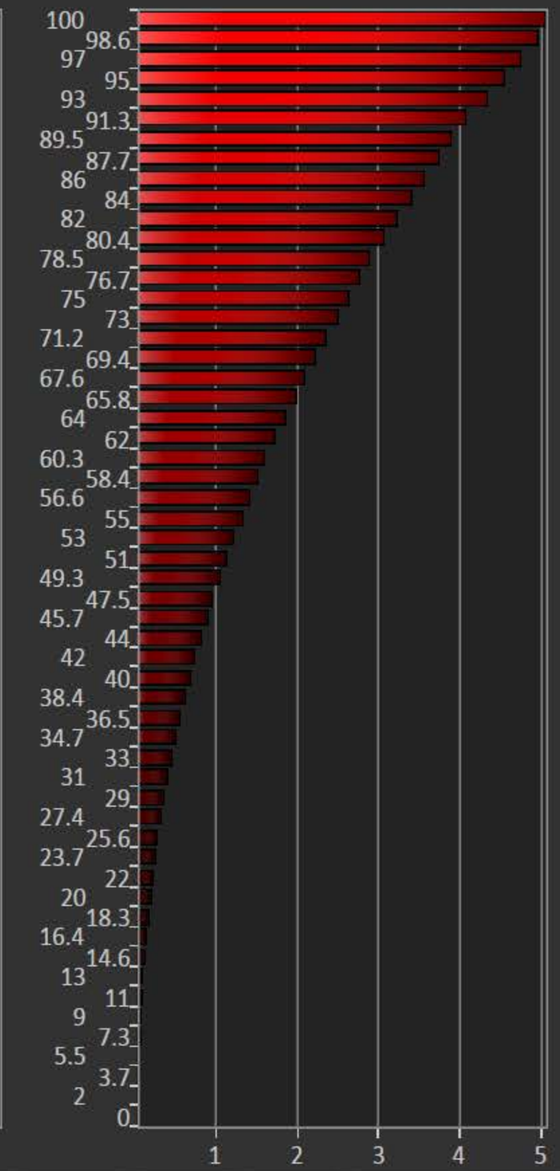
ΔE 2000 3.6 Avg 3.47 Max 4.79



Delta L -3.74 Avg -2.91 Max 4.67



Luminance 1.32268



ANL 3dLUT Detail

Back | Next | Calib | HOME | Prepare | Setup | PreCal Read | Calibrate | Calib | PostCal Read | Analyze | ∫ Gry | ∫ Sat | ∫ Lum | ∫ CCk | Calib | chrts2 | Final Check | CAL | Calib

Ramp | 16 | 16

36.5 0 0 | 38.4 0 0 | 40.2 0 0 | 42 0 0 | 43.8 0 0 | 45.7 0 0 | 47.5 0 0 | 49.3 0 0 | 51.1 0 0 | 53 0 0 | **54.8 0 0** | 56.6 0 0 | 58.4 0 0 | 60.3 0 0 | 62.1 0 0 | 63.9 0 0 | 65.8 0 0 | 67.6 0 0 | 69.4 0 0 | 71.2 0 0

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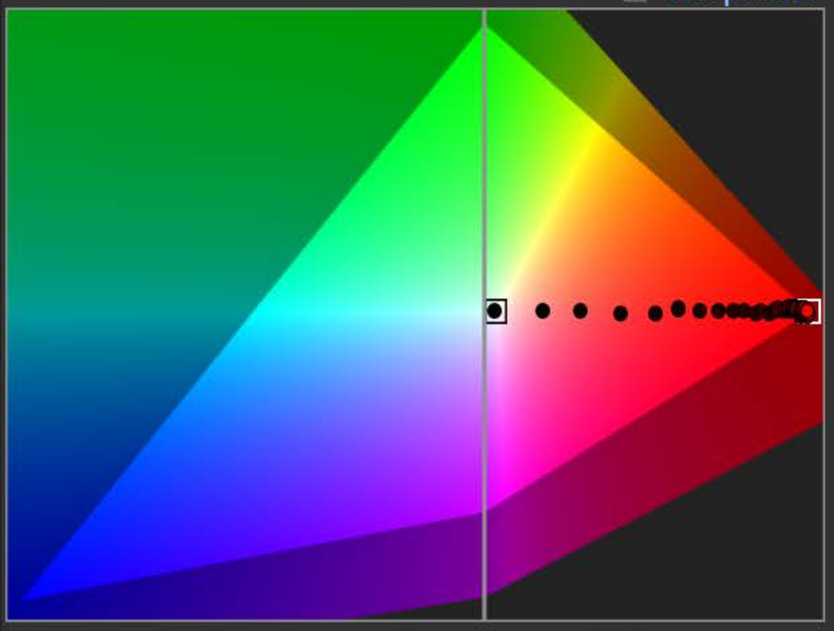
CalMAN 5

DeltaE DeltaL Lminance | DeltaE DeltaH DeltaC

Simulated Meter LCD Direct View | Source | Direct Display Control

3D Color Cube LUT Minimal Calibration - Charts1

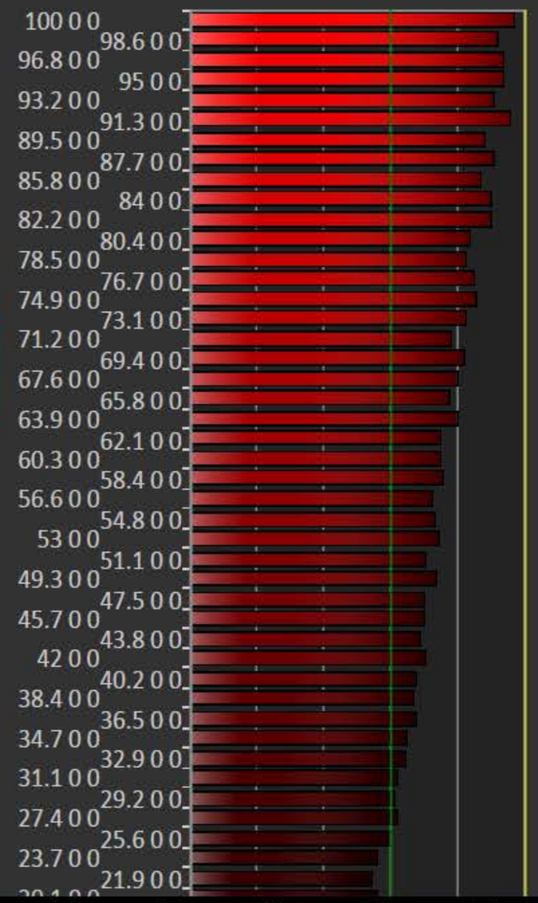
Comparator



Red | Green | Blue | White

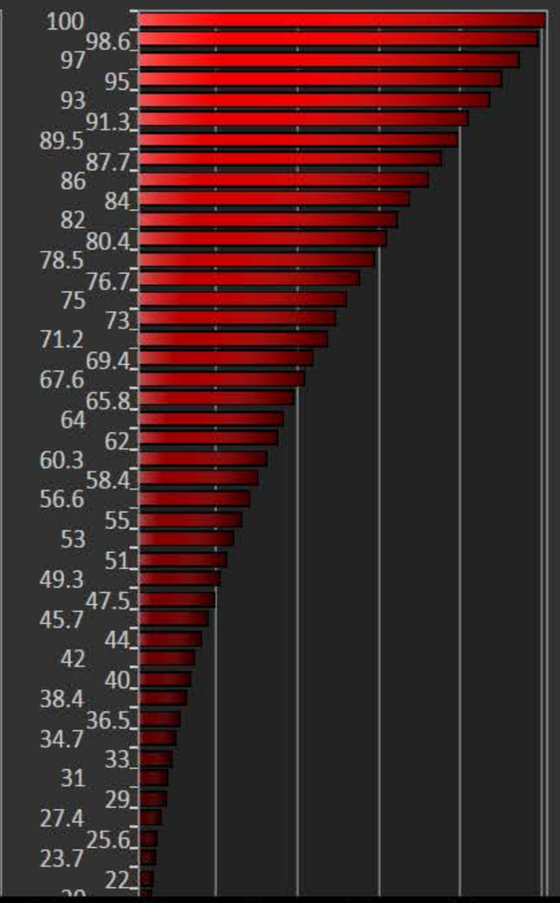
Cyan | Magenta | Yellow | Charts 2

ΔE 2000 4.85 Avg 3.45 Max 4.85



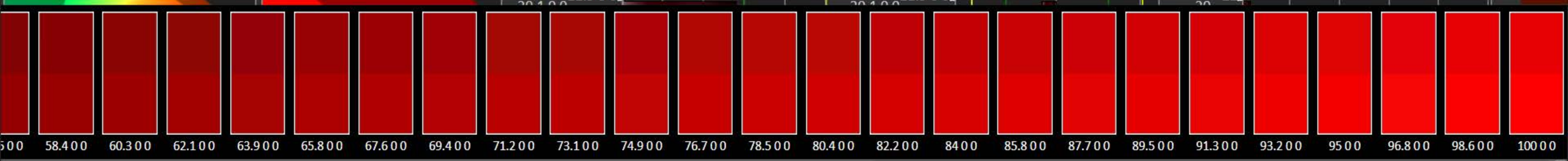
Delta L -4.64 Avg -2.78 Max 4.67

Luminance 5.04297



ANL 3dLUT Detail

Back | Next | Calib | HOME | Prepare | Setup | PreCal Read | Calibrate | Calib | PostCal Read



Ramp | 16 | 16

Final Check | CAL | Calib

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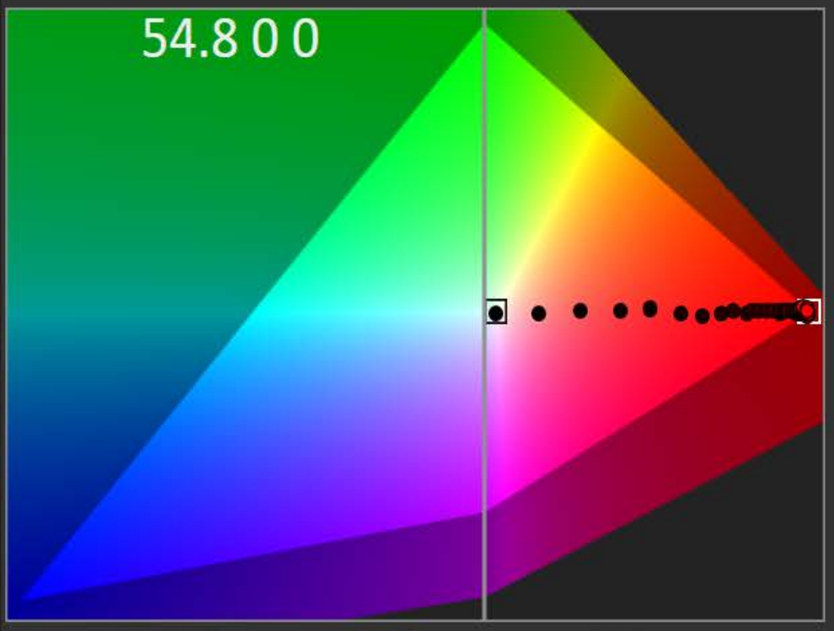
CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

DeltaE DeltaL Luminance | DeltaE DeltaH DeltaC

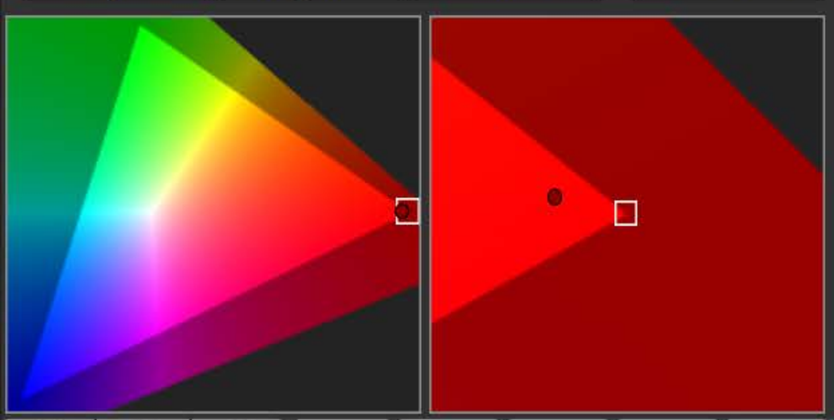
Simulated Meter LCD Direct View | Source | Direct Display Control

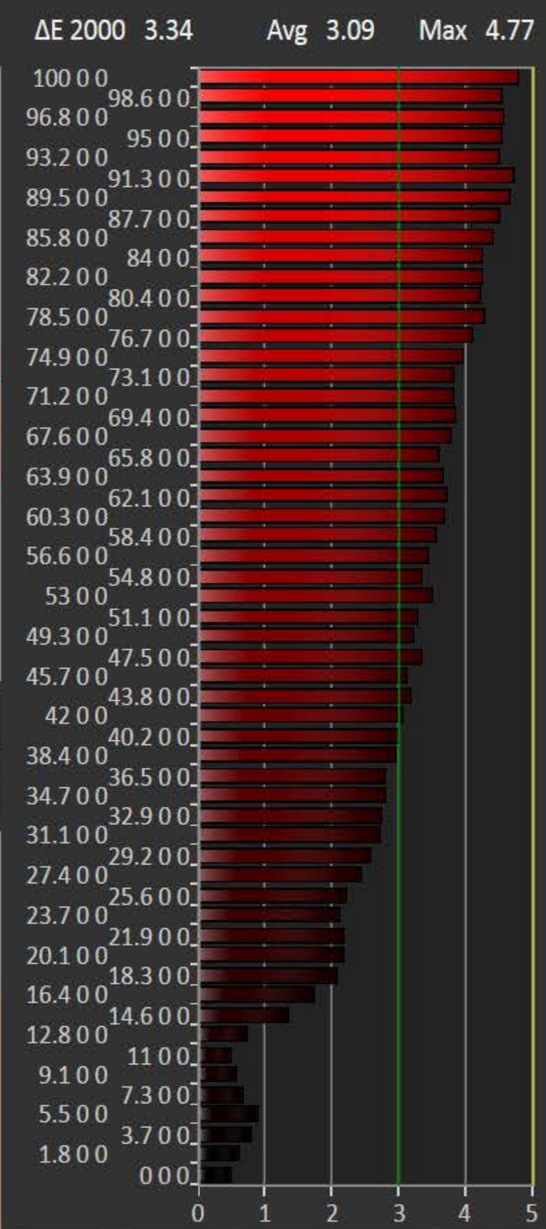
3D Color Cube LUT Full Calibration Detail 2

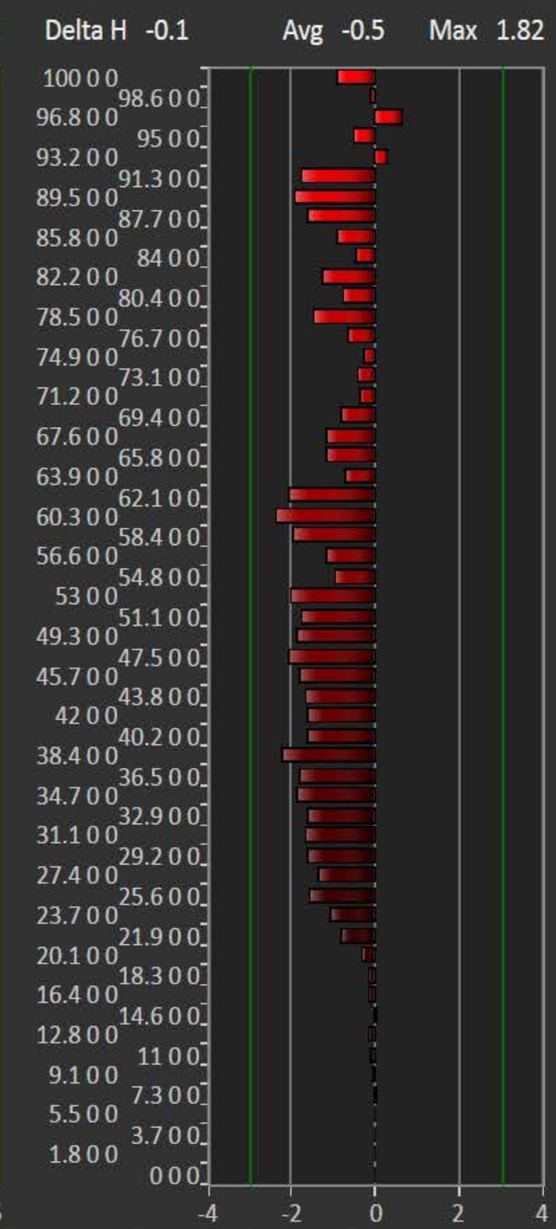


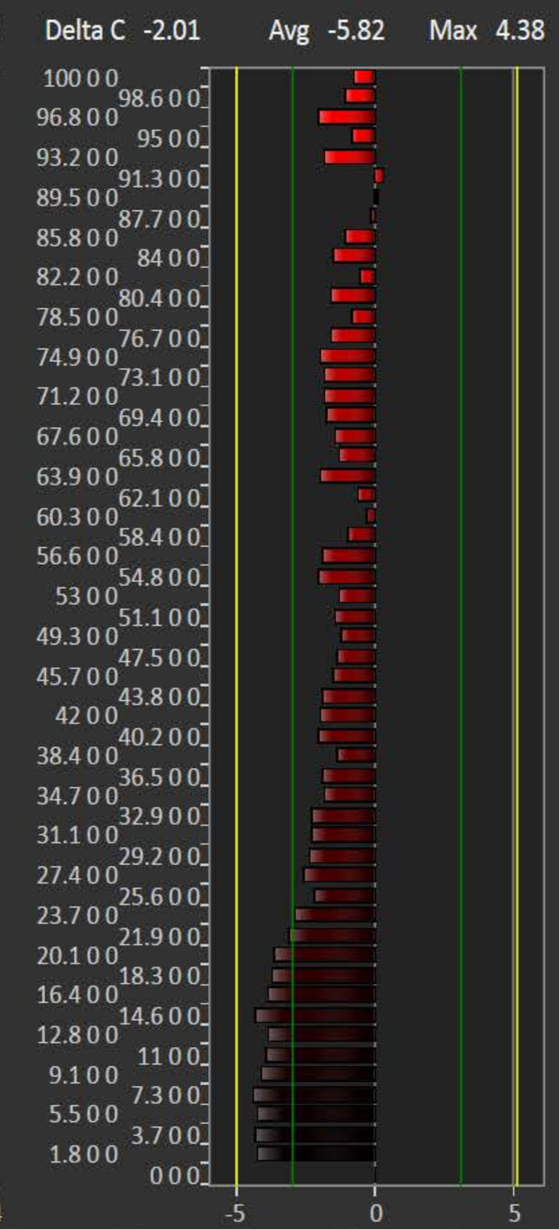
Red | Green | Blue | White

Cyan | Magenta | Yellow | Charts 1









ANL 3dLUT Detail

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

Ramp | 16 | 16

36.5 0 0 | 38.4 0 0 | 40.2 0 0 | 42 0 0 | 43.8 0 0 | 45.7 0 0 | 47.5 0 0 | 49.3 0 0 | 51.1 0 0 | 53 0 0 | 54.8 0 0 | 56.6 0 0 | 58.4 0 0 | 60.3 0 0 | 62.1 0 0 | 63.9 0 0 | 65.8 0 0 | 67.6 0 0 | 69.4 0 0 | 71.2 0 0

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Final Check

Simulated Meter LCD Direct View | Source | Direct Display Control

Session Final Check

3/12/2015 Calibration

AV Mode - ISF Day

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.

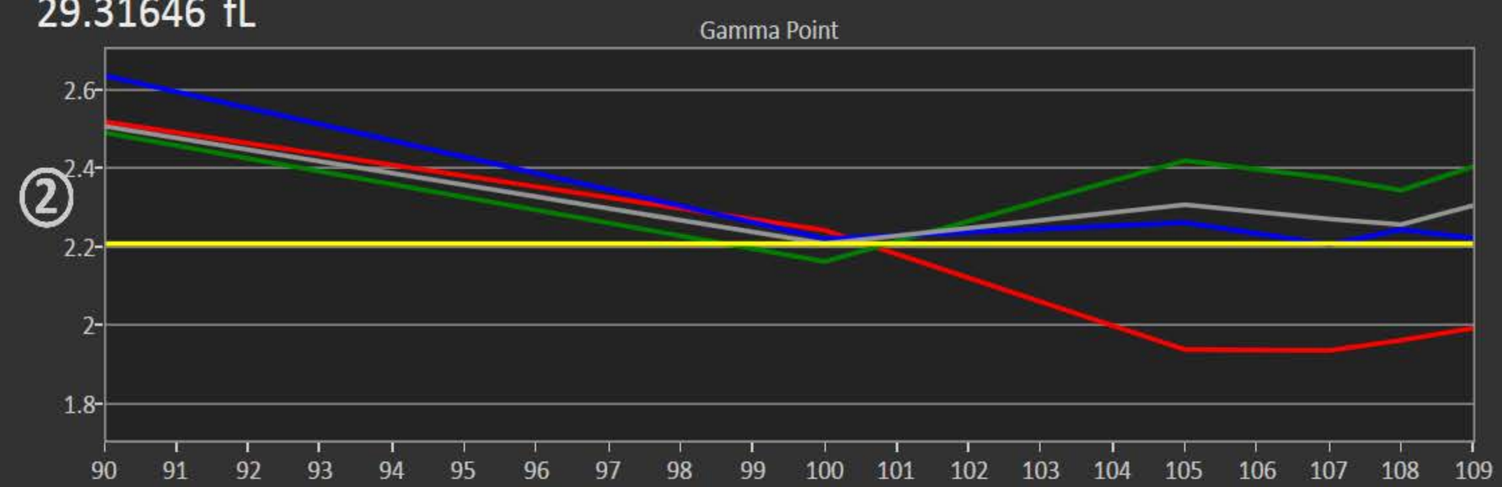
Post-Calibration Summary

Grayscale dE	Avg	1.85	Saturation dE	Avg	1.34
	Max	3.97		Max	2.34
Luminance dE	Avg	1.21	Color Checker dE	Avg	1.5
	Max	2.73		Max	3
Color Cube LUT dE	Avg	3.47	Full	Gamma Target	2.2
Use Minimal layout data	Max	4.79		Total	2.28
LUT values come from calibration Full layout, or Minimal layout if checked				CCT Target	6503
				Avg	6505
White	23.6	fL	Black 0.02895	Cntr Ratio	815

109

Gamma 2.3

29.31646 fL



Post-Calibration Notes

Notes

Save

Contrast		TV Gamma	
Brightness		Color	
Backlight		Tint	

	Red	Green	Blue
Gain			
Cut			

ANL Final Check

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LUT

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Final

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CalMAN 5

Grayscale Datagrids

Simulated Meter LCD Direct View | Source | Direct Display Control

Pre-Cal Multi-Point Grayscale Data

Pre-Cal

	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
RGB Triplet	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, 213,
Red index	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000	213.0000
Green index	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000	213.0000
Blue index	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000	213.0000
X	0.3457	0.8070	1.5507	2.5551	3.8882	5.5614	7.6875	10.1106	13.0989	16.4167	19.6888	24.0357	28.6626	33.7536	40.0904	46.2302	53.1705	60.2165
Y cd/m²	0.3672	0.8538	1.6252	2.6827	4.1168	5.8679	8.0410	10.7017	13.6667	17.2630	20.6052	25.3291	30.3193	36.0375	41.9705	48.5675	56.1095	63.7856
Z	0.3983	0.9275	1.7721	2.9522	4.4960	6.3555	8.7072	11.4870	14.9198	18.7649	22.6866	27.4822	33.0907	38.8989	45.7891	53.1651	60.2279	70.0652
Xn 0-1	0.0042	0.0099	0.0189	0.0312	0.0475	0.0679	0.0939	0.1235	0.1600	0.2005	0.2405	0.2936	0.3501	0.4123	0.4897	0.5647	0.6494	0.7355
Yn 0-1	0.0045	0.0104	0.0199	0.0328	0.0503	0.0717	0.0982	0.1307	0.1669	0.2109	0.2517	0.3094	0.3703	0.4402	0.5126	0.5932	0.6853	0.7791
Zn 0-1	0.0049	0.0113	0.0216	0.0361	0.0549	0.0776	0.1064	0.1403	0.1822	0.2292	0.2771	0.3357	0.4042	0.4751	0.5593	0.6494	0.7356	0.8558
Stimulus Percent	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995
RED Stim%:0-1	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995
GRN Stim%:0-1	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995
BLU Stim%:0-1	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493	0.8995

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
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
Red index	16.0000	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000
Green index	16.0000	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000
Blue index	16.0000	27.0000	38.0000	49.0000	60.0000	71.0000	82.0000	93.0000	104.0000	115.0000	126.0000	136.0000	147.0000	158.0000	169.0000	180.0000	191.0000	202.0000
X	0.0932	0.3439	0.8091	1.5285	2.5729	3.8696	5.5551	7.7070	10.1604	12.9866	16.4463	19.6673	23.8281	28.4409	33.9237	39.7269	46.6086	52.6251
Y cd/m²	0.0992	0.3650	0.8600	1.6208	2.6897	4.0895	5.8567	7.9584	10.7172	13.5343	17.0033	20.9475	25.1634	30.0318	35.7226	42.1582	48.2138	55.6852
Z	0.1077	0.4000	0.9413	1.7635	2.8958	4.4518	6.3268	8.7499	11.5077	14.8099	18.5170	22.6696	27.2951	33.0183	39.0367	45.3711	52.7280	60.7761
Xn 0-1	0.0012	0.0043	0.0100	0.0189	0.0318	0.0478	0.0687	0.0953	0.1256	0.1606	0.2034	0.2432	0.2946	0.3517	0.4195	0.4912	0.5763	0.6507
Yn 0-1	0.0012	0.0045	0.0106	0.0200	0.0333	0.0506	0.0724	0.0984	0.1325	0.1674	0.2103	0.2590	0.3112	0.3714	0.4417	0.5213	0.5962	0.6886
Zn 0-1	0.0013	0.0049	0.0116	0.0218	0.0358	0.0550	0.0782	0.1082	0.1423	0.1831	0.2290	0.2803	0.3375	0.4083	0.4827	0.5610	0.6520	0.7515
Stimulus Percent	0.0000	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493
RED Stim%:0-1	0.0000	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493
GRN Stim%:0-1	0.0000	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493
BLU Stim%:0-1	0.0000	0.0502	0.1005	0.1507	0.2009	0.2511	0.3014	0.3516	0.4018	0.4521	0.5023	0.5479	0.5982	0.6484	0.6986	0.7489	0.7991	0.8493

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 5 CalMAN Enthusiast for Home Video

CalMAN 5

Saturation Datagrids

Simulated Meter LCD Direct View | 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	0.3908	0.4698	0.5474	0.6400
x: CIE31	0.3929	0.4780	0.5485	0.6341
Target y:CIE31	0.3292	0.3295	0.3297	0.3300
y: CIE31	0.3295	0.3272	0.3318	0.3323
Target Y	6.7425	4.5733	3.4772	2.7058
Y	6.2916	4.2752	3.3548	2.6404
Gamma Point: Flat	4.8983	6.3818	7.3125	8.2318
ΔE 2000	1.5453	1.6107	0.8911	0.7375
dE2000 LuminanceCompensated	0.3074	0.9149	0.5316	0.4753
ΔE 1994 L*:±	-1.7418	-1.4910	-0.7272	-0.4573
ΔE 1994 Sat:±	0.0149	1.6318	-0.7311	-2.9259
ΔE 1994 Hue:±	0.1202	-0.5134	0.9302	-0.1209
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000
Signed dE94 C LuminanceCompensated	0.6388	2.6665	0.0121	-2.2353
Signed dE94 H LuminanceCompensated	0.1189	-0.5076	0.9247	-0.1205

Post-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	0.3908	0.4698	0.5475	0.6400
x: CIE31	0.3956	0.4744	0.5493	0.6371
Target y:CIE31	0.3292	0.3295	0.3297	0.3300
y: CIE31	0.3287	0.3309	0.3291	0.3293
Target Y	6.7656	4.5888	3.4890	2.7151
Y	6.3458	4.3233	3.3032	2.6238
Gamma Point: Flat	4.8781	6.3513	7.3843	8.2682
ΔE 2000	1.5205	1.3931	1.0562	0.9321
dE2000 LuminanceCompensated	0.7908	0.5512	0.1658	0.6366
ΔE 1994 L*:±	-1.6132	-1.3202	-1.1072	-0.6384
ΔE 1994 Sat:±	1.1230	0.0921	-0.5612	-2.2197
ΔE 1994 Hue:±	-0.1148	0.7136	-0.1205	-1.1030
Signed dE94 L LuminanceCompensated	0.0000	0.0000	0.0000	0.0000
Signed dE94 C LuminanceCompensated	1.7009	1.0083	0.5705	-1.2556
Signed dE94 H LuminanceCompensated	-0.1136	0.7065	-0.1194	-1.0967

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Pre-Cal

25% 50% 75% 100%

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Change Selection

Post-Cal

25% 50% 75% 100%

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CalMAN 5 CalMAN Enthusiast for Home Video

CalMAN 5

Color Check Datagrids

Simulated Meter LCD Direct View | 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	0.4006	0.3757	0.2511	0.3404	0.2701	0.2625	0.5089	0.2181	0.4574	0.2898	0.3763
x: CIE31	0.3114	0.3103	0.3121	0.3124	0.3114	0.4040	0.3802	0.2494	0.3407	0.2708	0.2617	0.5128	0.2171	0.4661	0.2899	0.3760
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3629	0.3554	0.2679	0.4265	0.2554	0.3584	0.4096	0.1945	0.3125	0.2221	0.4916
y: CIE31	0.3280	0.3294	0.3295	0.3300	0.3306	0.3598	0.3543	0.2666	0.4273	0.2523	0.3609	0.4063	0.1902	0.3127	0.2234	0.4924
Target Y	23.6718	18.8519	15.5333	12.0729	8.5391	2.5473	8.6447	4.7411	3.3279	5.8708	10.2477	6.9752	2.9807	4.6046	1.7108	10.5436
Y	23.6718	18.6454	15.1301	11.6388	8.0013	2.3030	8.1124	4.3514	3.0509	5.4257	9.7691	6.6576	2.7135	4.3339	1.5651	10.0170
Gamma Point: Flat	2.2000	2.3345	2.3548	2.3287	2.3472	3.0564	4.1149	3.6088	2.4507	4.1852	3.0747	8.8507	5.1189	6.6357	3.2680	2.8562
ΔE 2000	0.6791	2.0503	0.9468	1.1176	2.1090	1.9326	1.8908	1.9130	1.6152	2.0500	1.1518	1.4750	1.7846	1.4617	1.2681	1.1597
dE2000 LuminanceCompensated	0.6791	2.0357	0.7466	0.7687	1.5368	1.2603	1.4011	0.2936	0.0969	1.1962	0.6092	1.0656	0.9895	0.8314	0.2199	0.1252
ΔE 1994 L*:±	0.0000	-0.3940	-0.8798	-1.1245	-1.7713	-1.8238	-1.7382	-1.9129	-1.7227	-1.8905	-1.3877	-1.1899	-1.7915	-1.3439	-1.4121	-1.5000
ΔE 1994 Sat:±	0.6509	1.4365	0.5077	0.5540	1.0788	0.1340	1.0243	-0.0973	-0.5453	0.7832	0.7137	-0.1409	0.5545	1.3800	-1.4370	-0.8015
ΔE 1994 Hue:±	0.0000	0.0000	0.0000	0.0000	0.0000	-1.1845	-1.1599	-0.1369	-0.0487	1.0589	-0.5079	-1.6749	0.9334	0.6440	-0.0679	0.2016
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	0.4006	0.3757	0.2511	0.3404	0.2701	0.2625	0.5090	0.2181	0.4574	0.2898	0.3763
x: CIE31	0.3101	0.3116	0.3135	0.3112	0.3116	0.4019	0.3826	0.2481	0.3406	0.2698	0.2609	0.5155	0.2186	0.4591	0.2897	0.3785
Target y:CIE31	0.3290	0.3290	0.3290	0.3290	0.3290	0.3629	0.3554	0.2679	0.4265	0.2554	0.3584	0.4096	0.1945	0.3125	0.2221	0.4916
y: CIE31	0.3279	0.3306	0.3256	0.3307	0.3298	0.3590	0.3541	0.2673	0.4251	0.2507	0.3583	0.4029	0.1919	0.3160	0.2252	0.4899
Target Y	23.7017	18.8756	15.5528	12.0880	8.5497	2.5504	8.6555	4.7469	3.3320	5.8781	10.2605	6.9839	2.9843	4.6103	1.7128	10.5567
Y	23.7017	18.6125	14.9954	11.6001	7.9993	2.3094	8.0700	4.3648	3.0106	5.3675	9.6883	6.5528	2.7374	4.3707	1.5718	9.9516
Gamma Point: Flat	2.2000	2.3713	2.4148	2.3448	2.3506	3.0543	4.1409	3.6047	2.4685	4.2204	3.1097	8.9740	5.1006	6.6064	3.2642	2.8836
ΔE 2000	1.4857	1.9371	2.8806	2.0892	1.8079	1.9244	2.3832	2.0553	1.9455	2.3206	1.2849	2.5135	1.6963	1.4707	1.4188	1.4694
dE2000 LuminanceCompensated	1.4857	1.9120	2.7650	1.8792	1.0420	1.2037	1.9773	0.9018	0.2073	1.3496	0.3387	2.0880	0.9226	0.7841	0.5583	0.5190
ΔE 1994 L*:±	0.0000	-0.5019	-1.2189	-1.2642	-1.8113	-1.7956	-1.9132	-1.8722	-2.0055	-2.1742	-1.6623	-1.6221	-1.6498	-1.1849	-1.3639	-1.7260
ΔE 1994 Sat:±	1.2339	1.3608	2.1105	1.3265	0.7130	-0.2952	1.7818	-0.0807	-1.2170	1.2730	0.0845	-0.0599	-0.0074	-1.2251	-2.1409	-1.6424
ΔE 1994 Hue:±	0.0000	0.0000	0.0000	0.0000	0.0000	-1.2337	-1.5709	-0.8892	-0.1413	1.0309	0.2664	-3.3229	1.0207	1.3115	-0.2319	-0.9729
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

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