

# CaIMAN Setup Guide

## Atomos Monitors

Shogun Inferno, Shogun Flame, Shogun Studio,

Ninja Flame, Ninja Assassin

Rev. 1.2

## Introduction

CalMAN takes advantage of the internal 3D LUT feature of the Atomos Shogun Inferno, Shogun Flame, Shogun Studio, Ninja Flame, and Ninja Assassin monitors to calibrate the monitor with a 33x33x33 16-bit 3D cube lookup table (LUT). Atomos monitors support 3D LUTs in the industry-standard .cube format and provide multiple LUT memory slots. The Atomos monitors provide an internal test pattern generator that can be controlled by CalMAN.

CalMAN automatically creates an optimized monitor calibration 3D LUT and saves it to a computer file in a user-selected location. The LUT file can then be manually loaded into the Atomos monitor.

This setup guide assists you in calibrating an Atomos monitor with the CalMAN Color Cube workflow.

### CalMAN Required Software

- Version 5.7.2 or later
- CalMAN Ultimate or CalMAN Studio can be used to create 3D LUTs for Atomos monitors.

### CalMAN Required Workflow

- Color Cube (3D LUT)

### Atomos Monitor Control Port

- RS-232 Port (3.5mm phono)
- Special USB to Serial Cable (Figure 1), available from Atomos re-sellers.

<https://www.atomos.com/where-to-buy>



Figure 1. Special USB to Serial Cable, available from Atomos re-sellers.

## USB to Serial Cable Device Driver

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- Available from Atomos re-sellers

## CalMAN 3D LUT Monitor Calibration

Follow this procedure to create an optimized software 3D LUT calibration file, ready to be loaded into an Atomos monitor.

### Color Cube (3D LUT) Workflow

The Color Cube workflow in CalMAN is used to create monitor calibration 3D cube LUTs. In the CalMAN main menu, select Open Workflow Template / Color Cube (3D LUT). Proceed through each step of the Color Cube workflow in a normal fashion, using the following notes for Atomos monitor specifics.

#### Initial Setup section

In the *Initial Setup* section of the Color Cube workflow (Figure 2), step through the following pages:

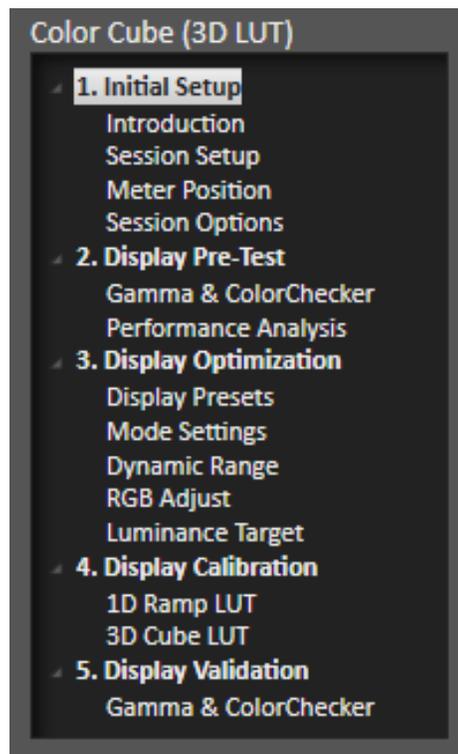


Figure 2. CalMAN Color Cube (3D LUT) workflow, for creating a monitor 3D calibration LUT.

#### Session Setup - Meter Connect

1. Connect your color meter to the CalMAN computer.
2. On the *Session Setup* page, click the *Find Meter* button to connect your meter.

3. On the *Find Meters* dialog, select your meter if it is listed, then click Search. If your meter is not listed on the *Find Meters* dialog, just click Search.
4. Under the Target Display Type drop down, for a colorimeter, select “LCD (LED White).” For a spectrophotometer, no special selection is required.

### **Session Setup - Source Connect**

1. On the *Session Setup* page, click the *Find Source* button.
2. On the *Find Source* dialog (Figure 3), under *Manufacturer*, select ‘Atomos.’
3. Under *Model*, select ‘Atomos - Shogun (9600 baud).’

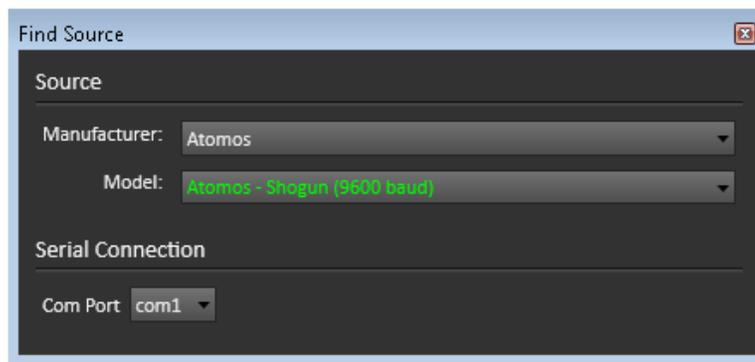


Figure 3. CalMAN Find Source dialog, for connecting to Atomos monitor as a CalMAN pattern generator.

### **Session Setup - LUT Device Setup**

1. On the *Session Setup* page, click the *Find 3D LUT Device* button.
2. On the *Find Display* dialog (Figure 4), under *Manufacturer*, select ‘SpectraCal.’
3. Under *Model*, select ‘SpectraCal - Cube Generator (3D LUT).’
4. Click *Connect*.

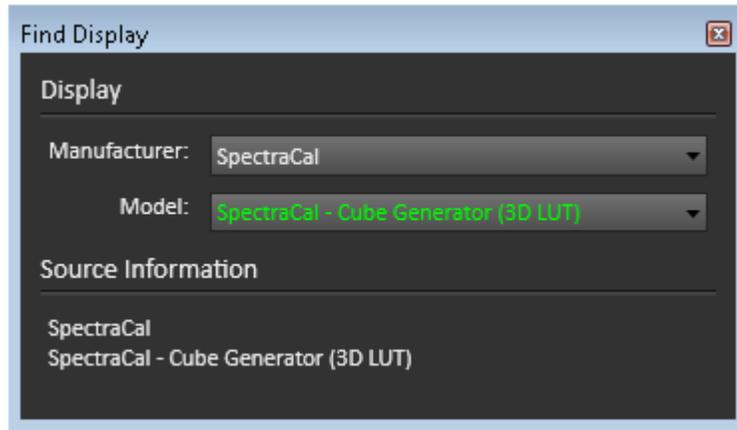


Figure 4. CalMAN Find Display dialog, for connecting to Atomos monitor for display control.

## Display Pre-Test section

You can measure the performance of an Atomos monitor before you calibrate it, on the pre-test *Gamma & ColorChecker* page.

If the *Performance Analysis* page (Figure 5) then indicates any red pass/fail lights for the monitor's native performance, you can proceed to the *Display Optimization* section of the workflow to optimize the monitor's internal picture controls before performing the 3D LUT calibration. A few minutes spent optimizing the monitor's native performance typically yields a more accurate 3D LUT calibration. The degree of improvement depends greatly on the individual monitor.

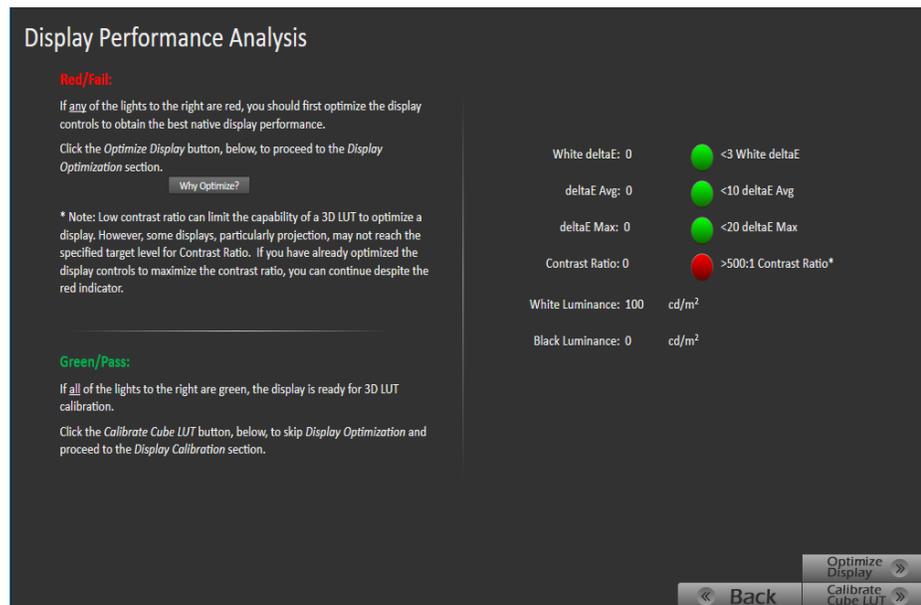


Figure 5. The Performance Analysis page provides pass/fail analysis of the display pre-test measurements that were performed on the preceding workflow page.

If you skip display optimization at this time and the final calibration validation indicates less than the desired improvement, you can easily return to the *Display Optimization* section to optimize the internal display controls and then repeat the 3D LUT calibration by clicking the *Optimize Display* button on the final calibration validation page.

On the *Performance Analysis* page (Figure 5):

- To proceed first to the workflow *Display Optimization* section, click the *Optimize Display* button.
- To skip directly to the *Display Calibration* section, click the *Calibrate Cube LUT* button.

## Display Optimization section

To optimize the monitor's internal picture controls before creating a 3D calibration LUT, advance through the control adjustment pages in the *Display Optimization* section of the workflow (Figure 6).

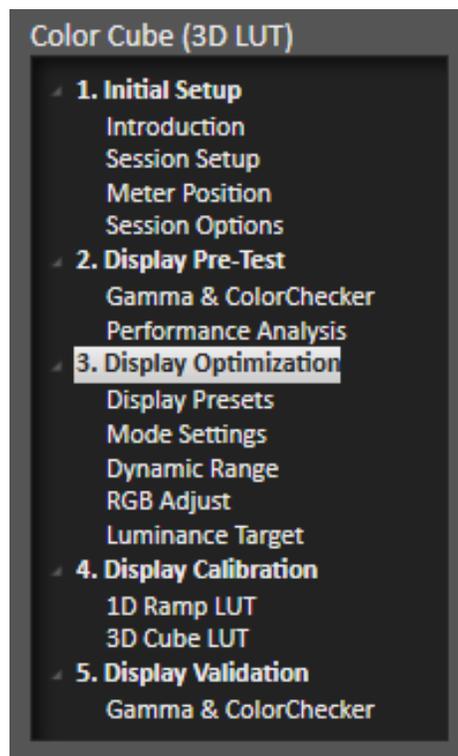


Figure 6. The *Display Optimization* section of the workflow helps you optimize the monitor's picture controls if there were any monitor performance failures, or if you have previously created a 3D LUT for the display with less than the desired improvement.

## Display Calibration section

In the *Display Calibration* section of the Color Cube workflow, there are provisions for calibrating both a 1D RGB LUT (*1D Ramp LUT* page) and a 3D

cube LUT (*3D Cube LUT* page). When we are calibrating a Atomos monitor with a 3D LUT, we will skip the *1D Ramp LUT* page (1D RGB LUT) and use only the *3D Cube LUT* page.

### **1D Ramp LUT page**

Skip over this page when creating a 3D LUT file for an Atomos monitor, as the Atomos monitor does not support a correction 1D LUT.

### **3D Cube LUT page**

1. On the 3D Cube LUT page, click the AutoCal button (rotating arrows) at the right end of the meter action buttons. The AutoCal Setup dialog then appears (Figure 7).
2. On the popup AutoCal Setup dialog (Figure 7), under *File Format*, select “Atomos – LUT (.cube)” (creates a 33x33x33 16-bit 3D LUT .cube format file).

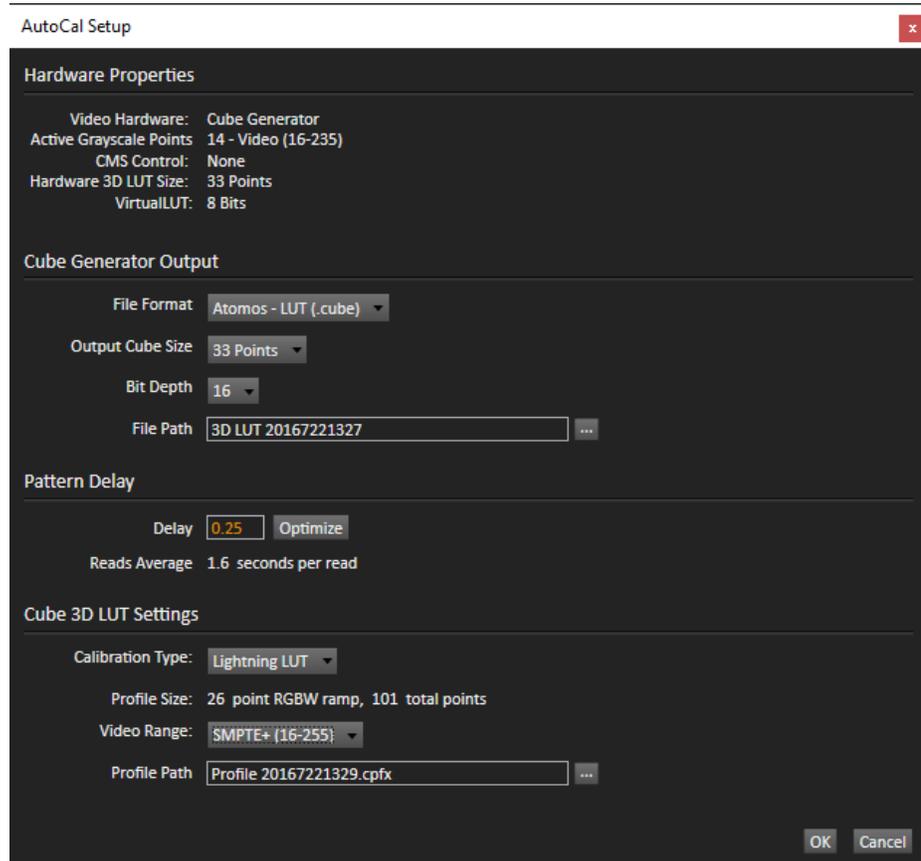


Figure 7. CalMAN AutoCal Setup dialog, for selecting 3D LUT creation options.

3. Also on the AutoCal Setup dialog, under *File Path*, select a convenient location for the LUT file that CalMAN will create. Name the .cube file to identify the monitor and the date.

4. On the AutoCal Setup dialog, under *Calibration Type*, select the desired type of 3D LUT calibration process.
  - **IR Profile (time based):** Creates the best quality display calibration 3D LUT possible in the selected period of time. You select how much display quality you have time for, from 30 minutes to maximum display quality (6,000 points max). Uses Intelligent Resolution Profiling to search out the most nonlinear color space areas and correct those first.
  - **IR Profile (point based):** Creates the best quality display calibration 3D LUT possible with the selected number of measurement points (1,000 - 10,000 points). Uses Intelligent Resolution Profiling to search out the most nonlinear color space areas and correct those first.
  - **Lightning LUT:** Creates a display calibration 3D LUT in five minutes or less. Produces a very high quality result on professional displays with moderate linearity. Displays with significant nonlinearity may produce marginal results.
5. Click *OK*.

Upon completion of the AutoCal 3D software LUT calibration process, CalMAN automatically writes the optimized LUT calibration data into an Atomos format .cube file in the selected drive location.

## Atomos Monitor LUT Load

When CalMAN completes its automatic 3D LUT calibration, the created software 3D LUT file is ready to be loaded into the Atomos monitor. To load the software 3D LUT calibration file into your Atomos monitor:

1. Copy the 3D LUT .cube file from your computer to the SSD/HDD in your Master Caddy II.
2. Select the desired LUT slot, press on the blue file icon, and select the OFF DISK option.
3. Navigate through the disk file system to the LUT file to be uploaded, press on the file name to highlight/select the LUT, then press again to import the LUT.
4. Wait for the LUT loading progress bar to complete. The name of the currently selected 3D LUT will be displayed at the top of the display menu panel.
5. Press the Monitor LUT Icon once to apply the LUT to 50% of the image, to allow a comparison of the image with and without the LUT.
6. Press the Monitor LUT Icon again to apply the LUT to the entire image.
7. Press the Monitor LUT Icon a third time to turn off the LUT.

**DONE!** – Atomos monitor 3D LUT calibration and setup is complete.

## About / Contact

### About Portrait Displays

Portrait Displays, Inc., since 1993, is a leading application software provider (ASP) for PC, smartphone, and tablet displays. The Portrait Displays team now includes **SpectraCal**, the world's leading provider of video display calibration software. The combined companies offer value-added, feature-rich solutions to both OEM display manufacturers and end users seeking improved accuracy and manageability of their displays.

Portrait Displays, an Intel Capital Portfolio company, is a private corporation with headquarters in Pleasanton, California, USA with representatives in Europe, Taiwan, China, Japan, and Korea.

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