Display Monitor Calibration Services

SKYLITE media

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

A message from the Chief Engineer

Hello and thanks for reading. Whether you are in the broadcast, production, post-production, cinema or content creation business, properly-calibrated displays are critical to your successful workflow. We're here to help. We have included within this document some information about our calibration services, our rates and about us.

We would be pleased to further discuss our services with you, and we're always available to answer your questions.

You can directly contact me at:
 (626) 255-7511

You can directly contact Aarin Ripes—our resident color and calibration expert—at:
(480) 442-2746

We look forward to building and continuing our relationship with you.

Sincerely,

Dan Janetzke
President and Chief Engineer

Table of Contents

Display Monitor Calibration Services

Questions & Answers

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

Q: What is display monitor calibration, anyway?

A: Simply stated, it's the process of adjusting the picture and performance of a display monitor to match some known specifications or desired characteristics.

Q: Why is display calibration important to me?

A: Ultimately, display calibration is all about **confidence**. Confidence in your images and in your content means that your clients, viewers and end users can trust what you deliver. When your displays are properly calibrated, you can "believe what you see", every time you see it.

Q: Confidence sounds good. But how does display calibration provide this?

Let's break it down a bit further. Confidence in your content comes from the **predictability** and **repeatability** of your display monitors. Here's how we do it:

➤ Calibration to uniform standards. There is typically one set of standards for North American standard-definition video; one set of standards for hi-definition video; and a few standards for digital cinema. We calibrate each of your display monitors to the proper uniform standards for your specific content, systems and workflow. (Do you work with PAL or SECAM material? We can calibrate to those standards as well.)

➤ Individual display adjustments to account for age, performance and room light conditions. Rarely will two displays—even the exact same models— give the same imaging results prior to calibration, even when using the same menu settings. Our calibration process adjusts and neutralizes the age and performance variability of individual displays (subject to their individual performance limits).

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

Additionally, room light has a direct effect on a display's picture. For every room, we adjust each display to account for the differences in lighting conditions.

The result? After our calibration, all your displays perform to the same uniform standards—they match. That's the predictability. As displays age and room light conditions change, we can re-calibrate them regularly in order to keep them performing within the same standards. That's the repeatability.

Q: *Why is regular calibration necessary? Can't I just do it once and be done?*

A: In our experience, here's what often happens in a facility that doesn't regularly calibrate:

As time passes, each display ages and drifts away at its own rate from a calibrated state. Additionally, room light conditions often change over time, whether accidentally or on purpose. Finally, over time many operators start to adjust their display settings, either to taste or to try and account for the changing display picture they are noticing.

The result? A facility full of display monitors that not only aren't displaying your content according to proper and predictable standards; but also are now displaying the exact same content differently everywhere you look. Which display is now picturing your content correctly? Which room do you now use for critical viewing? Where can you accurately review your content when a client or viewer complains about the look of the deliverables? Bye-bye, workflow confidence.

Our regular calibrations (and operator education) prevent this from happening.

**Display Monitor
Calibration Services**

Questions & Answers

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

Q: Is there really that big an improvement when my displays are properly calibrated?

A: There can be, depending on how far out of spec the uncalibrated displays are. We've all seen how poor and unreliable a bad display can truly be.

On a calibrated display, the blacks will appear as "true black" (not washy and grey) but not so dark that you can't see all the shadow detail. The whites will be bright and true, while still preserving the proper highlight detail. The contrast and brightness range will be maximized. The color balance will be accurate and pleasing, without misleading color casts. Black-and-white images will be neutral, balanced and free of color casts.

Q: I bought the exact same display model for several of my rooms, but the same project looks different in every room. Can you fix this?

A: Yes, assuming the displays aren't malfunctioning and the room lighting conditions aren't completely improper for viewing. We discuss how to resolve this above in the Q&A section:

Q: Confidence sounds good. But how does display calibration provide this?

**Display Monitor
Calibration Services**

Questions & Answers

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

Q: Even after calibration, my displays don't look all that great. Can you recommend better ones?

A: Absolutely. We test and compare different display monitors all the time, searching for the best-performing ones available. We've researched and installed critical viewing displays in broadcast studios, post-production houses, content-creation facilities, DI theatres, color-correction suites and screening rooms. We also regularly research the best performing displays at different budget levels.

Q: How much does your calibration cost? What is the process?

A: See the **Rates and Terms** below section for these details.

Q: It seems expensive. Why is your calibration better than what I can do with my own eyes, or with my own inexpensive light measuring device?

A: It's better for several reasons. First: Human vision is highly adaptive, inconsistent and notoriously easy to fool. Our eyes make poor tools for technical calibration. Can we use our eyes alone to make a display "look better"? Sometimes, depending on how bad the display looked in the first place. Can we use our eyes alone to make a display accurately and consistently perform to uniform calibration specifications? Not a chance.

Second: Proper display calibration requires equipment specially engineered for critical light / color measurement and critical signal generation. This equipment needs to perform accurately and consistently, and needs to be regularly re-calibrated with NIST-traceable certifications. The professional equipment we use meets or exceeds these specifications.

**Display Monitor
Calibration Services**

Questions & Answers

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

Third: We've been doing this for a long time. We have extensive experience with all types of displays. We have devised calibration and color management strategies for facilities of all sizes—from the smallest content creation boutiques to the largest broadcast and cinema studios. We know your devices; we understand your workflow; and we can improve the performance of your display systems and increase your content confidence.

Q: How often do my display monitors need to be calibrated?

A: There are several ways to determine a calibration schedule:

➢ Client and project demands. Some projects (and some clients) require higher image confidence and certainty. This can mean a calibration at the project onset and regular calibrations during the project to ensure maximum confidence. Many projects and clients are less demanding, allowing for a more relaxed schedule.

➢ Display characteristics and performance. All displays tend to drift out of calibration spec over time at different rates. Some displays can hold calibration for several months; others drift out within a few weeks. In general: CRTs tend to drift out of spec more rapidly than LCDs; newer displays are often more stable than aging displays; "professional" displays can be more stable than "home theatre" displays; and projectors require regular re-calibration as their lamps age.

Analysis of ongoing calibration data can also help us determine a proper calibration schedule for your displays. For example, if a certain display is stable after 1 month; then we can check it again in 2 months. If it's stable after 2 months, we can check it again in 3 months, and so forth.

**Display Monitor
Calibration Services**

Questions & Answers

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

*Q: Can you calibrate the computer monitors on my Avid / Final Cut /
Photoshop / After Effects / Autodesk systems, too?*

A: Yes, but this is a different process from what we've been describing so far. We've been discussing calibration procedures which apply to "non-computer" video display monitors: devices you use for preview or final view of motion video images.

Calibration of "desktop" computer display monitors involves operating-system-level color management across multiple software applications. It can also involve different equipment and color management software. We can consult with you and help devise color management solutions that fit your specific systems, workflow and budgets.

Q: I'm interested in the technical details of display calibration. Can you explain it without drowning me in confusing jargon, math or science?

A: Sure, we can explain it with as much or as little color science as you are comfortable with. We have also authored a **Video Signals and Colorspaces Primer** that explains quite a bit of this for the beginning-to-intermediate user. Just ask us and we will send you a free copy.

Q: Can you summarize all the benefits of display calibration?

A:
> ➢ Uniform display standards.
> ➢ Matched viewing for all rooms, systems and workstations.
> ➢ Workflow predictability and repeatability.
> ➢ Client / viewer / end-user assurance.
> ➢ Confidence in your content, everywhere and every time you view it.

Calibration Rates (for video display monitors)

For each CRT, LCD, plasma or projector:
  - ➤ **$600** for device adjustments and calibration of one input on a single device.
  - ➤ **$150** for calibration of each additional input on the same device.

Please note: displays which accept SD and HD signals on the same physical input often require two discrete calibrations. If you desire a proper calibration of both formats, the second calibration will be billed as an additional input.

Quantity Discount
On any single visit in which we calibrate 5 or more monitors, we will apply a **15% discount** to the total charges.

Selected calibration equipment List
  - ➤ Minolta CS-200 colorimeter.
  - ➤ Minolta CS-S10w measurement software.
  - ➤ Sencore VP-403 video signal generator.

Display Monitor Calibration Scope of Work
  - ➤ Initial monitor state measurements with colorimeter.
  - ➤ Device settings adjustments: signal specifications and levels, color, brightness, contrast, phase, convergence, landing, gamma, image placement, focus, uniformity, sharpness, moiré cancellation, backlight, color temperature, primaries chromaticity measurements. (Adjustments vary depending on the specific device.)
  - ➤ Gain and white point adjustment to proper standards (e.g., Rec.601 / Rec.709 / DCI / DCDM).
  - ➤ Bias and grey point adjustment (on applicable devices),

➢ Final monitor measurements with colorimeter.

➢ Adjustments and measurements comply with appropriate U.S. and international standards and recommendations (e.g., SMPTE, ITU, DCI / DCDM).

➢ We can provide calibration data reports and NIST-traceable calibration certifications for our equipment upon request.

Service Contracts and additional discounts

Service contracts with additional discounts are available for clients who would like the benefits of a regular calibration schedule. The additional discounts are based on the number of devices, interval and length of term commitment. Please inquire with us if you are interested in more information about our service contracts.

Other Calibration Rates

The rates and terms in this document refer to "non-computer-desktop" video display monitors: devices used for preview or final view of motion video images.

All consulting beyond the scope of work described in this document of non-computer-desktop video display monitors calibration will be billed at our standard consulting rate of **$150 per hour**. (Minimum 2 hours; any travel time is billed as part of this.)

Examples of this type of consulting include:

➢ Tutorials and user training.

➢ "Desktop" computer display monitor calibration (PC or Mac - including software install, setup and device profiling).

➢ Computer system color management implementation and maintenance.

➢ Input device and output device calibration (e.g., scanners, digital cameras, and printers).

SKYLITE media **464 Northcliff Road** **Pasadena, CA 91107** **626.796.8090** **www.skylitemedia.com**	**Display Monitor Calibration Services** **Rates & Terms**

Standard Business Hours, Availability and Territory

- ➢ 9am – 6pm Pacific Time weekdays. Our standard rates are charged during these hours.

- ➢ Additional charges apply during all other hours.

- ➢ Standard rates apply throughout the greater Los Angeles area. Locations beyond will incur additional travel charges. Please contact us for exact details.

- ➢ We are available 24 hours a day, 7 days a week. Local same-day response time is typically 4 hours or less.

SKYLITE media

464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

About Us

An Introduction to All Our Services

At Skylite Media, we do much more than just monitor calibrations. Here is a brief summary of the services we provide:

- **Systems Integration and Equipment Sales**
  From the smallest boutiques to the largest broadcast studios, we provide all the stages of systems integration you require, including: project consultation, design and cost analysis; engineering; equipment procurement; installation; commissioning and testing; systems programming; and user instruction.

- **Production**
  For any studio, location or mobile production, we provide all the needed engineering, support and production equipment – - including – our own customized flight pack. We can also provide our experienced production staff, including directors, camera operators and sound engineers.

- **Engineering**
  Whatever the size and scope of your facilities, we provide all the stages of engineering you need to keep things running smoothly. We specialize in 24-hour on-call emergency support; diagnostics and repair; facility-wide troubleshooting and analysis; equipment calibration—including monitors, scopes and cameras; and regular equipment maintenance.

Who We Are

Skylite Media is composed of a select group of skilled people with extensive experience across the broadcast and entertainment industry spectrum. We have been—and still are—directors, editors, broadcast and audio and electrical engineers, production supervisors, systems administrators, programmers, camera operators and equipment technicians.

SKYLITE
media
464 Northcliff Road
Pasadena, CA 91107
626.796.8090
www.skylitemedia.com

About Us

We believe that our backgrounds give us an uncommon diversity of knowledge and expertise. The satisfaction reported by our clients confirms it.

Our Partnership with You

For nearly two decades now, Skylite Media has been working closely with companies like yours. We have a well-earned reputation of highly-personalized service and attention to detail. We collaborate with you as your technology partners; we address your specific needs and goals; and we deliver them within your budgets and timeframes. We work alongside you every step of the way, until your projects are completed to your satisfaction.

To further help you realize your goals, we have established partnerships with other technology manufacturers and specialists. We can recommend and deliver specific broadcast, transmission, production, video, audio and IT solutions customized to meet your unique demands.

You have comprehensive needs - we specialize in comprehensive solutions.