SWOP® Application Data Sheet

Remote Director™
Monitor Proofing System using the
EIZO ColorEdge CG210

The SWOP® Review Committee has approved the use of off-press proofs as input material to publications. SWOP Specifications recommend that: “The appearance of an off-press proof used in this application must closely simulate a SWOP Certified Press Proof.” See other explanations and recommendations as outlined on pages 21 and 47 of the 2001 edition of the SWOP specifications.

I. MANUFACTURER
Integrated Color Solutions, Inc.
60 Madison Avenue, Suite 1105
New York, NY 10010 USA

II. PRODUCT
Remote Director – EIZO CG210

III. INTRODUCTION
Remote Director is the first collaborative video-based “soft proofing” system that works in a fully color-managed environment. Using custom monitor calibration and profiling techniques along with industry-standard ICC output profiles and the EIZO ColorEdge CG210, Remote Director can accurately soft proof all SWOP based printing environments.

Color matching is based on an ICC profile built from the data contained in ANSI CGATS TR001 as suggested by SWOP Incorporated.
IV. CONTROL GUIDE

SWOP specifies that a control guide such as the GATF/SWOP Proofing Bar be supplied on every off-press proof. As a minimum, this guide should contain solids of the primary process colors and two-color overprints, as well as a 25%, 50% and 75% tints in 133-line screen ruling of each of the process colors. Additional areas such as 1%, 2%, 3%, 5% and 95%, 97%, 98%, 99% may be particularly useful in digital proofing.

A gray balance bar must be included on the proof, designed to match the neutral appearance and weight of black tints of three different values, under standard viewing conditions.

Any proofing bar that contains the above values can be used. A SWOP Digital Color Bar satisfying these criteria is a part of the Remote Director application.

V. SYSTEM COMPONENTS

CPU:
Apple Power Mac G4 with 500 MB SDRAM, or better; 20 GB of available hard disk space
Intel® Pentium III or 4 processor with 500 MB or RAM and 20 GB of available hard disk space; or better

Monitor:
EIZO ColorEdge CG210 (hereafter “EIZO CG210”)

Monitor Calibration Instruments:
GretagMacbeth Eye-One Monitor, Eye-One Photo or Eye-One Pro (without UV filter.)
Monaco OPTIX XR by X-Rite, Inc.

Network Connectivity:
Cable/DSL Network access minimum, 1 Mbps Cable or T1 and firewall with access to port 443 and outbound only on port 7798 recommended

Software:
Mac OS X 10.3.6 or later
Microsoft® Windows® 2000 with SP3 or Windows® XP with SP2 or better
ICS Remote Director 3.0 or later

Viewing booth:
A variable-intensity monitor-side viewing station with D50 reflective lighting.
Best: GTI SOFV-1ex
Good: GTI SOFV-1e or 2e
Acceptable: GTI PDV-3D
Environment:
The room where Remote Director is installed must have controlled lighting. Room lighting incident at the monitor and viewing booth plane MUST not exceed 30% and SHOULD not exceed 10% of the dimmed booth brightness. The room walls should be neutral gray and the room lighting should be D50 color with no direct entry of daylight.

Viewing:
Viewing angle is an important consideration when using Remote Director. The user should only judge color when sitting directly in front of, and perpendicular to, the display. The viewing station should be angled so that the viewer can make comparisons without changing their viewing angle relative to the display.

The section ‘VIEWING INSTRUCTIONS’ explains how to compare a soft proof to a hard copy proof.

VI. System Set-up:

1. Power up the G4, the EIZO CG210 display and viewing booth and allow at least 45 minutes for all components to warm up and stabilize.

2. Make sure there is no USB connection between the display and the computer
   a. Press the ENTER button on the EIZO CG210 front panel and navigate by pressing the right-arrow key twice to <Others>.
   b. Press ENTER and navigate to the <Reset> function. Press ENTER and up-arrow to select and press ENTER again to perform a display reset.
   c. Press the right-arrow key once to <Return>, press ENTER
   d. Press left-arrow twice to select <Color (Custom)>, press ENTER
   e. Press ENTER again at <Brightness>, make sure it is set at 100%. Adjust if required, press ENTER.
   f. Press the right-arrow key once to get to <Temperature>. Press ENTER.
   g. Press the right-arrow key until the temperature shows “Off”. Press ENTER.
Remote Director™ SWOP Application Data Sheet

h. Press the right-arrow key once to <Gamma>, press ENTER, verify that it is at 1.8, press ENTER to return.

i. Navigate to the <Return> and press ENTER to return to the higher menu, repeat to <Exit>, or let it time out.

j. You are now ready to calibrate the display.

3. Connect the Eye-One spectrophotometer or the Monaco OPTIX XR via an available USB port. NOTE: The Eye-One may need to be connected directly to the CPU or a powered USB hub to receive enough power.

4. Install the Remote Director application on the Apple computer. When completed, launch the application.

5. Check “Remote Director 3.0 … Preferences” that the ICS SWOP 2004.icc profile is the default profile for both Vector and Raster graphics. If not, click the profile selection bar, and select this profile. If ICS SWOP 2004 is not in the list, download it from www.icscolor.com.

6. Select Prepare Proof… from the File menu, select or create a new customer and job, and name the proof something like “SWOP Test”, and click Next.

7. In the window that follows set Illuminant to D50 and Luminance to Maximum, then click Next.

8. Click Finish to keep you as the only user.

9. Click Add Files and navigate to the file(s) you wish to proof. Click Open to add to the list, and then click Process Now when done. Your files will be displayed in Remote Director’s main window. NOTE: PDF’s should be rasterized at minimum of 150 DPI (Remote Director default) for proper color viewing. Make sure that the soft proof profile matches the default ICS SWOP 2004.

10. From the menu bar select Color Management, Monitor and Calibrate.. and the Display Calibration application will appear. Follow directions on screen. You can also click the Calibrate Now button in the Tools palette under the Color tab.

11. Follow the instructions as Remote Director builds the monitor profile. NOTE: This will take several minutes, during which time room lighting must remain absolutely constant. If the ambient room lighting changes for any reason, re-start the calibration process.

12. When calibration is finished, the proof will be displayed with the default CMYK source profile. Open the Color tab from the Tools palette and select the profile named “ICS SWOP 2004” in the Custom Source Profile unless it is shown as the Default profile. Be sure to activate the radio button alongside the custom list to make this selection active, if you have chosen a custom profile.

13. Run Color Management.. Validate. Follow directions on screen. Average and Peak values should be well below 1.0. If not, please recalibrate and re-validate.

14. Hide all the tools palettes, unless you have two displays where you can move them to the second display. Click on View and deactivate active palette windows.
15. Click on the “Maximize Window” button, green in the upper left hand corner of the active proof image window. Make sure that this window covers the full display area, and that no background is showing. You are now ready to evaluate the proof.

16. From the View pull-down menu, select the Navigation palette when you need to navigate around in the image, or change image. Hide the palette for evaluation.

VII. VIEWING INSTRUCTIONS

This section is included to ensure the best possible comparison between the soft proofing screen and an actual hard-copy proof.

Because today’s monitor technologies cannot achieve the illumination intensity of a standard pre-press viewing booth, a soft proof will appear too dark when compared to a hard copy proof illuminated in a standard graphic arts viewing booth. A dimmable D50 viewing booth located alongside the monitor mitigates this problem.

1. Adjust the light intensity of the viewing booth so that the base material (paper) of the hard-copy proof is the same apparent brightness as the simulated paper on the soft proof. To display a large area of simulated proofing paper, slide the Matte control in the Navigation tool to the right. NOTE: The brightness level to which the viewing booth must be dimmed depends on the age and calibration settings of the monitor, as well as the evenness of light distribution within the viewing booth itself. Owing to the wide range of variables, the dimming process is best governed by subjective judgment rather than instrumentation.

2. Note that all viewing booths exhibit some lighting unevenness, usually appearing brighter nearer the light source. This unevenness is typically worse in smaller booths and can significantly affect the apparent match between a soft proof and a hard-copy proof. Viewing booths that illuminate from two or more directions, such as the GTI SOFV-1ex, largely eliminate this problem.

3. Check the viewing booth for evenness and decide the best position in which to place the hard copy proof. When viewing very large hard-copy proofs it may be necessary to adjust the booth intensity so that the area of interest is illuminated to the same brightness as the monitor.

4. Image size can affect apparent matching quality. For the most critical match, adjust the soft proof to the same magnification as the hard copy proof.

VIII. FINISHED PROOF CHARACTERISTICS

To verify that the displayed proof meets this application data sheet you can measure your display’s rendition of a Virtual Proofing Bar using Remote Director’s Color Management… Monitor… Validate to SWOP selection from the pull-down menu and follow the wizard based instructions.
Standard measured values for each ‘patch’ in the proofing bar (listed below) are stored as a data set within Remote Director based on the values from the display that passed SWOP certification. During the Validate to SWOP function the measured values are compared to these previous reference values, and an average $\Delta E$ (color difference based on CIE94) is displayed, along with the color difference for each of the patches. The average value should be less than a $\Delta E$ of 1. Make sure that Validate to Proof has been run, and that the resulting $\Delta E$ values are acceptable.

If your display is showing values significantly greater than this, you should re-calibrate, run Validate to Proof, and then Validate to SWOP again. If values are still abnormal, it could be due to the age or quality of the display.

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Eye-One is a registered trademark of GretagMacbeth
Monaco OPTIX XR is a registered trademark of X-Rite Incorporated
Remote Director is a registered trademark of Integrated Color Solutions, Inc.
## Standard Proofing Bar for SWOP Validation

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<th>Absolute Density</th>
<th>L*</th>
<th>a*</th>
<th>b*</th>
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