

SWOP® Application Data Sheet

Remote Director™

Monitor Proofing System using the

EIZO ColorEdge CG220



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 ColorEdge CG220



Certified - January 2005

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 CG220, 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 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 and is accessed from the *Color Management* pull-down menu.

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 CG220 (hereafter “EIZO CG220”)

A Radeon 9800 or equivalent is required to drive this display

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

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Acceptable: GTI PDV-3D

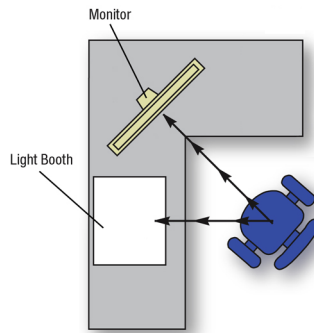
Environment:

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 CG220 display and viewing booth and allow at least 30 minutes for all components to warm up.
2. Make sure there is no USB connection between the display and the computer
 - a. Click the ENTER button on the EIZO CG220 control panel and navigate by pressing the arrow keys to Color (Custom). Press ENTER and navigate to the RESET function. Press ENTER and perform a display reset.
 - b. Then navigate back to Color Temperature, and make sure this is set to 5000. Press ENTER to exit
 - c. Check brightness, set it to 100%. Press ENTER to exit.
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 to receive enough power.

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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 ΔE (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 ΔE of 1. Make sure that *Validate to Proof* has been run, and that the resulting ΔE values are acceptable.

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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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Standard Proofing Bar Values for SWOP Validation

Color	Absolute Density	L*	a*	b*
Cyan	100	55.78	-38.63	-39.40
Magenta	100	47.18	68.07	-3.79
Yellow	100	84.78	-5.76	85.51
Black	100	18.20	-0.09	1.80
Red	100 M 100 Y	46.69	62.67	42.67
Green	100 C 100 Y	51.68	-60.75	26.47
Blue	100 C 100 M	26.24	16.99	-41.11
Cyan	75	62.65	-29.69	-30.80
Magenta	75	56.35	49.41	-4.41
Yellow	75	85.16	-5.34	62.72
Black	75	39.05	-0.61	0.59
Gray	75 C 63 M 63 Y	40.38	-3.05	0.58
Red	75 M 75 Y	55.31	46.31	36.47
Green	75 C 75 Y	59.29	-42.79	21.16
Blue	75 C 75 M	38.28	13.36	-32.63
Cyan	50	70.24	-20.95	-20.59
Magenta	50	65.97	33.33	-2.58
Yellow	50	86.11	-4.54	42.28
Black	50	55.53	-0.79	0.10
Gray	50 C 39 M 39 Y	54.17	-1.13	0.76
Red	50 M 50 Y	64.78	29.43	27.36
Green	50 C 50 Y	67.94	-26.67	15.14
Blue	50 C 50 M	51.82	9.77	-23.38
Cyan	25	78.71	-10.79	-9.27
Magenta	25	77.01	15.82	0.05
Yellow	25	87.43	-3.62	23.42
Black	25	71.96	-0.81	1.84
Gray	25 C 16 M 16 Y	71.16	-1.37	1.07
Red	25 M 25 Y	75.72	14.31	17.03
Green	25 C 25 Y	78.02	-13.90	10.87
Blue	25 C 25 M	68.12	5.10	-11.68
Paper	0	89.11	-0.41	4.23