



## Remote Director and NEC LCD2690WUXi2 on GRACoL Coated #1

The IDEAlliance Print Properties Working Group has established a certification process for off-press proofs as input material to publications. In accordance with this process: “The appearance of a hard copy or monitor proof used in this application must have the ability to closely match specific CGATS or other documented characterization data sets within outlined tolerances.” See further explanations and recommendations outlined on [www.swop.org](http://www.swop.org) or [www.gracol.org](http://www.gracol.org).

**NOTE:** It is important for the industry to understand that performing certification on any one display with any one monitor proofing system does not necessarily guarantee the same result on a different display of the same model of monitor. IDEAlliance notes that each monitor of a particular brand and model is unique. That is, for any given brand of monitor, while our experience in certification shows that while most displays pass the ISO criteria, an individual monitor may fail the ISO criteria due to manufacturing issues or may fail at some point in the future as a result of use. IDEAlliance therefore recommends that in addition to calibrating each monitor routinely, users should also verify the uniformity of the display over time as well. The monitor proofing systems vendors have agreed to provide a monitor uniformity test with their system and over the next 12 months will implement software to automate that process for users.

The following information is intended to assist producers and consumers in the use of vendor specified proofing materials in an off-press proof application:

### I. Manufacturer

Integrated Color Solutions (ICS)  
60 Madison Avenue, Suite 1105  
New York, NY 10010  
Phone: (212) 683-0585  
Fax: (212) 683-0578



Certified 10/21/08

### II. Product

Remote Director/NEC LCD2690WUXi2 Display/GRACoL Coated #1

### III. Introduction

Color proofing is the safeguard that syncs together the goals and vision of the client, designer, agency and printer, assuring each party is visually on the same page. ICS's Remote Director™ is the first SWOP® Certified monitor-based contract proofing system that applies advanced color management to verify the accuracy of every monitor and every proof. Running on commercially available hardware, Remote Director software allows multiple reviewers in dispersed locations to view, collaborate and comment on color as well as content and build a digital record of the proofing process from start to finish, including legal sign-off. Reviewers can collaborate in real-time or work at their own convenience, allowing photographers, agencies, clients, prepress shops and printers to communicate more effectively while accomplishing in hours what used to take days. The GRACoL/SWOP Certification guarantees that Remote Director proofs match the Certified Press Proofs used in Publication production. It's the next step in the design-to-print evolution.

## IV. Control Guide

IDEAlliance specifies a control guide such as an ISO 12647-7 Digital Control Strip 2007 be supplied on every off-press proof. As a minimum, the guide used for proofing applications should contain solids for the primary process colors (YMCK), two-color overprints (RGB) and a three-color overprint (YMC), as well as 25%, 50%, and 75% tints in stated line screen resolution of each of the primary process colors and 3-color gray patches. All control guides should be checked for accuracy of the original values. Use and interpretation of a control guide is the responsibility of the creator.



Remote Director is set up to automatically display the patches of the IDEAlliance Control Strip and measure the same. This is done through the Color Management pull-down menu, under Monitor, Validate, GRACoL-2006 Coated #1, and Quick Verification. The automated program will calculate and display color differences and errors in compliance with the IDEAlliance specifications based on  $\Delta E_{2000}$  color difference calculations. Make sure that proof parameters are defined to be an illuminant of D50 and target luminance of 160 cd/m<sup>2</sup> for the display.

## V. System Components

### MINIMUM SYSTEM REQUIREMENTS

#### Macintosh Specifications

- PowerMac G4 with OS 10.4 (Tiger) or greater
- Quartz Extreme capable
- 1GB RAM
- 2GB available hard-disk space

#### Windows Specifications

- Intel® Pentium® III processor or greater
- Microsoft® Windows® 2000 Server, Windows 2003 Server, or Windows XP Pro with Service Pack 2
- 1GB RAM
- 2GB available hard-disk space

#### Display Specifications

- 24-bit color video card
- Minimum display resolution (1920 x 1200 pixels)

#### Instrument Specifications

- GretagMacbeth® "EyeOne Monitor", or "EyeOne Pro" Spectrophotometer, or X-Rite® "DTP94" Colorimeter

#### Network Specifications

- 512 Kbps DSL/Cable connection (minimum)
- 1 Mbps Cable (recommended)
- Internet access to the Remote Director application machine

## VI. Finishing Procedures

Launch the Remote Director application and open the application Preferences. Click on the Display tab and make sure that the Monitor Driver selection is set to "DDC Capable LCD Monitor" and that the Utilize Digital Controls checkbox is checked. It is also from within this dialog that the measurement sensor to be used is defined.

Open an existing proof, or create a new proof. Add at least one CMYK image or PDF.

The Proof Parameters should be set to illuminant D50 and a display target luminance of 160 cd/m<sup>2</sup> should be selected.

The source profile should be set to GRACoL2006\_Coated1v2.icc (from the Tools palette, Color tab, Source Profile field).

The display must have been properly warmed up, at least 45 minutes, preferably one hour prior to calibration and measurements. The instrument must also be warmed up in contact with the display for at least 45 minutes, see the RD Users Guide for options on measurements. The certification process is done with the instrument in physical contact with the display. It is also important that the USB connection to the display is connected to the computer.

Note: If the EyeOne Pro spectrophotometer is being used to calibrate and/or create a uniformity correction map, it is important that the orientation of the instrument remain vertical, either head-up or head-down. Measurements taken with the instrument held at an angle will not be accurate.

## VII. Finished Proof Characteristics

A proof with the color characteristics referenced in Appendix 1 is to be expected when measured from the IDEAlliance ISO 12647-7 Digital Control Strip 2007 having been properly made to all the listed system components and procedures.

Note: Three-color grays are comprised of Cyan, Magenta, Yellow: 75, 66, 66; 50, 40, 40; and 25, 19, 19 values.

An EyeOne Pro spectrophotometer was used to perform the measurements.

The user may at this time perform a Quick Verification (Color Management:Monitor:Validate:GRACoL:GRACoL-2006 Coated #1:Quick Verification). This is an automated process and will present the IDEAlliance Control Strip CMYK values for measurements and evaluation to data in Appendix 1. Note that the measured values may differ from the values in Appendix 1 due to systematic differences in measurement devices and/or display. However, it is expected that the verification will display a full "Pass" on all counts, as shown below. The same resulting window will also be displayed after a Complete Certification run on all the patches in the IT8.7/4 target (Color Management:Monitor:Validate:GRACoL:GRACoL-2006 Coated #1:Complete Certification). Resulting errors are shown with reference to the specification values shown in Appendix 1 as an example; values may differ from display to display.



## VIII. Sample Proofs

ICS has made this Application Data Sheet and the corresponding monitor proofing system available to the IDEAlliance certifying contractor to perform independent, corroborating measurements in the course of certification.

## IX. Additional Proof Data

An image file of the IDEAlliance Control Strip CMYK can be downloaded from the [www.gracol.org](http://www.gracol.org) website, numerical data is included in Remote Director.

**Appendix 1**  
**Characterization Data CIELab Values**

**IDEAlliance ISO 12647-7 Digital Control Strip 2007 for GRACoL 2006 Coated #1**

Patch ID	CIELab Data			Maximum
	L*	a*	b*	$\Delta E$ -2000
A1	30.05	-22.65	-28.82	-
A2	54.96	-37.12	-50.00	7
A3	66.60	-25.13	-37.01	-
A4	82.64	-9.99	-17.85	-
A5	26.45	41.59	-1.73	-
A6	47.93	74.11	-3.01	7
A7	60.35	51.93	-5.67	-
A8	80.03	20.38	-5.35	-
A9	48.53	-5.30	49.19	-
A10	88.94	-5.02	93.17	7
A11	90.56	-4.57	63.58	-
A12	92.84	-2.51	24.77	-
A13	52.53	-53.19	-19.34	-
A14	37.89	52.56	-22.07	-
A15	70.88	22.91	72.40	-
A16	50.86	15.13	33.06	-
A17	42.17	33.42	13.25	-
A18	34.60	23.09	-17.15	-
A19	52.45	-18.04	26.12	-
A20	36.56	-1.43	-26.62	-
A21	92.88	-0.08	-1.96	-
A22	87.93	-0.20	-1.98	-
A23	77.43	-0.40	-1.93	-
A24	59.77	-0.53	-1.61	-
A25	39.75	-0.57	-1.02	-
A26	25.57	-0.21	-0.53	-
A27	14.95	0.19	-0.14	7

Patch ID	CIELab Data			Maximum
	L*	a*	b*	$\Delta E$ -2000
B1	15.18	8.84	-24.61	-
B2	24.13	17.20	-46.14	7
B3	40.84	17.09	-35.77	-
B4	69.57	8.37	-19.26	-
B5	26.22	35.38	24.54	-
B6	47.37	68.25	48.79	7
B7	59.09	47.55	39.25	-
B8	78.62	17.92	18.20	-
B9	28.47	-39.38	12.04	-
B10	50.12	-68.43	25.00	7
B11	62.69	-41.44	20.96	-
B12	80.64	-14.75	8.25	-
B13	42.57	-16.27	-48.19	-
B14	48.28	70.95	17.76	-
B15	72.70	-25.21	65.09	-
B16	70.23	19.71	18.63	-
B17	53.40	36.61	28.63	-
B18	41.61	32.01	26.83	-
B19	45.40	-26.20	-3.82	-
B20	95.00	-0.02	-1.96	3
B21	92.43	0.19	-2.06	-
B22	86.74	0.31	-2.04	-
B23	75.52	0.07	-1.50	-
B24	57.54	-0.12	-1.44	3
B25	39.39	-0.30	-0.55	-
B26	23.00	0.17	-0.25	-
B27	8.46	0.34	0.44	-

**Note:** Color is measured with a calibrated EyeOne Pro spectrophotometer.