SWOP® Soft Proofing Application Data Sheet for DALiM DiALOGUE with 30 Inch Apple Cinema HD Display

I. MANUFACTURER

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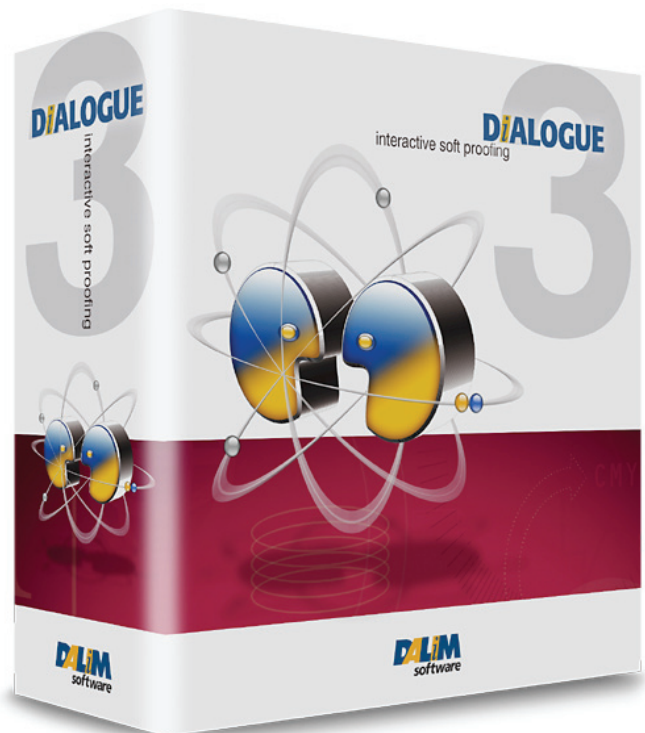Germany
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II. PRODUCT

DALiM DiALOGUE, version 3.1, for either Apple Mac OS X or Red Hat Enterprise Linux operating systems.

III. INTRODUCTION

DALiM DiALOGUE is a unique standalone system that allows the real time high-resolution viewing and collaboration of a job to be conducted from a standard web browser, without the requirement of pre-installing an application-specific browser plug-in or downloading any proprietary client software. Using 100% in-house developed technology, DALiM DiALOGUE has the ability to stream data to the browser, allowing the user to view the file at high resolution in real-time.

Compatible with almost any 3rd party automated workflow or asset management system, DALiM DiALOGUE does not restrict the number of clients accessing the system at any one time, nor does it force companies to pay for the system on a per-use "click-charge" or monthly subscription fee. DALiM DiALOGUE is also JDF-enabled, allowing systems interconnectivity to a range of other JDF-enabled devices.

DALiM DiALOGUE uses advanced color management technology and incorporates ICC profile calibration. The ICC profile support allows all DALiM DiALOGUE users to see color-accurate, high-resolution soft proofs in real-time, regardless of geographical distance. Users can generate and simulate specific ICC profiles for each job, for example substrate whiteness.

IV. CONTROL GUIDE

As outlined by the SWOP® organization, each soft-proofed document should include a color-control swatch bar such as the GATF/SWOP Proofing Bar.

As a minimum, this guide should contain solid tints of the primary process colors and two-color overprint, as well as a 25%, 50% and 75% tint 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.

V. SYSTEM COMPONENTS

The following components and methods should be used in order to attain conformance described in this document.

DALiM DiALOGUE Application Server

Users need to have a valid login to access a DALiM DiALOGUE server, version 3.1 or later, through an Internet or local area network (LAN).

Remote Client

. Apple PowerMac G5 (tower) system
. Apple Macintosh OS X operating system (at least Mac OS X 10.3.5)
. At least 512Mb of installed RAM
. "Safari" or "Firefox" web browser
. 30 Inch Apple Cinema HD Display (Apple SKU ID# M9179LL/A)
. GretagMacbeth 'Eye-One Pro' Spectrophotometer
   The 'Pro' version is preferred over the standard "Eye-One" due to better color measurement accuracy
. Monitor Calibration Software
   We recommend using an application that allows the user to calibrate the white-point setting to match a white-point reading taken directly from the print substrate, whilst illuminated in the viewing booth. An application like MonacoOPTIX^{XR} PRO offers suitable white-point calibration features. If no such software is available, standard D50 or 5000K values as appropriate to the specific viewing booth may be used instead.
. LAB color display and measurement software
   e.g. MonacoOPTIX^{XR} and its "Evaluate Monitor Profile" option in combination with Dalim Software's 'Export Monaco Set' utility.

Viewing Booth

The viewing area should be divided into two areas.

> AREA ONE
> To situate the specified Viewing Booth, using normalized D50-spec illumination. The angle that the color proofs will be placed in the viewing booth for scrutiny should match the angle that the color-matched monitor is offered towards the viewer.

> AREA TWO
> To situate the color-matched computer monitor.

Room Description

The ambient light in the room designated to contain the color-matched computer monitor should be controllable. This means that the room should be free of any strongly-colored walls and/or objects that may adversely affect user peripheral vision when called upon to access color. The ambient room illumination should not vary greatly in either brightness or color temperature (e.g. in the case of different times of the day and/or year). Ideally, the room should be painted a neutral gray color and illuminated by D50-type illumination. In such cases, it is also advised that the room illumination be periodically checked as to the actual color temperature of the lamps, to counteract the effects of lamp age. Both the

viewing booth area and monitor proofing area should be shielded from direct incident and/or reflected lighting. Both the viewing booth and computer monitor should be kept at least 1.00 metre (approx 3 feet) from room walls.

VI.   CALIBRATION PROCEDURE

System set-up

1. Start-up the Apple Power Mac computer.
2. Turn on the 30 Inch Apple Cinema HD Display, setting it to maximum brightness.
3. Turn on the viewing booth.
4. Have Spectrophotometer and profile creation application standing by.

Calibration of Monitor using Spectrophotometer

Before starting the calibration procedure, the display should have been turned on since at least 30 minutes.

1. Place a sample of the print substrate that will be used to produce the printed matter into the viewing booth. Using the spectrophotometer, measure the substrate's white-point while in the viewing booth, noting the CIE x-y values. Alternatively, use a pre-set white-point setting of D50 or 5000K that matches the viewing booth specifications.
2. Select the white point CIE xy values obtained from Stage One (above) or pre-defined values in the profile making application.
3. If/When asked by the profile creation application, select a Gamma setting of 2.2.
4. Complete the creation of the monitor profile, as per the instructions of the profile creation application. Place this newly-created profile in the /Library/ColorSync/Profiles folder on the Macintosh computer Hard Disk.
5. Open the Macintosh "System Preferences" application. Make sure that the right monitor profile is selected in the "Monitor -> Color" preferences pane.

Activate Monitor Profile on DALiM DiALOGUE Server

1. Launch web browser and enter the DALiM DiALOGUE server URL to connect to the DALiM DiALOGUE system. Type in your login and password.
2. Click on the 'Color Management' icon in the user interface (5th from the left).
3. Select the ICC monitor profile (as created above), and click on "Upload".
4. Select this profile as being your default Monitor Profile.

Set-up Document Profile on DALiM DiALOGUE Server

1. Click on the 'Job' icon in the user interface (1st from the left).
2. Navigate through to the folder containing the files of the documents to be assessed.
3. Select the correct Document Profile by clicking on the "Job Profile" icon in the user interface (1st on the right).
4. Select the document ICC profile created to map TR001 with SWOP CMYK color space
5. Click on the 'Job' icon again and click on the document icons to launch the DALiM DiALOGUE remote soft-proofing applet.
6. In the user interface, select the 'Absolute Colorimetric' color analysis check button.
7. Use the "Zoom Factor" selection to render the displayed file at the same size as the printed sheet.
8. Select a neutral gray background in the 'Preferences…'menu.
9. Compare the displayed file against the printed sheet.

VII. VIEWING PROCEDURE

When the file is viewed on the monitor, in comparison to the same file printed out on a printed color sheet in a viewing booth; the viewer should ensure that the viewing angle to the sheet is as close as possible to the angle of view when looking at the monitor. Ideally, the viewer should view both the monitor and hard-copy proof from directly in front and at a perpendicular angle to the monitor/hard-copy. By looking at specific areas on the hard-copy proof and comparing it to the monitor rendition, the viewer is able to compare both proofs – monitor and hardcopy – to check for color matching.

Due to the nature of current LCD monitor technology, it is not possible to match a monitor's light output (i.e. ANSI lumen value) to the illumination from color-matched viewing booths. Consequently, the brightness of the monitor should be set to its maximum, while the brightness of the viewing booth is carefully adjusted so as to visually match the illumination of the monitor as closely as possible. A comparatively easy way to do this is to 'zoom' into the white (paper) area of the document so as to completely fill the monitor screen with a 'paper-white' color. This then enables the user to reduce the viewing booth's light intensity accordingly.

With some viewing booths, especially with booths of a small physical size, the illumination area may be uneven. In such cases, it may be necessary to alter the booth illumination brightness so that the viewer can make the necessary assessments in color rendition.

Some monitors may also exhibit a lack of color and/or brightness across their screen area, especially towards the edges of the unit. In such cases, the viewer should move the DALiM DIALOGUE interface window so as to be away from the edges of the monitor. This could be accomplished either by 'moving' the window with the computer mouse to a less extreme area, or perhaps by reducing the size of the viewing window so that the image area stays within acceptable confines.

Finally, please note that proofs created on-press can often exhibit color and/or density variations from one side of the printable area to the other. This can lead to the result that a press proof may have a color change from one side of the sheet to the other. Consequently, document elements on the extreme left or right edges may vary considerably in terms of color accuracy. This is one of the reasons why we recommend any hard-copy proofing comparisons be assessed from hard-copy proofs produced from a calibrated (and ideally SWOP® Certified) digital-proofing system.

VIII. PERIODIC SYSTEM CHECKING

In order to ensure that the color-matched system created above continues to meet the predetermined criteria, it may be necessary to periodically check that the system is still within tolerance.

To check the system, the user needs to simply measure the LAB values of predefined targets and compare them with the table provided in this ADS. The ΔE_{ab}^* can then be calculated using these two tables. If the resulting ΔE_{ab}^* figure is less than 3, the monitor remains within the specification detailed in this ADS.

To generate this table:
1. Launch the "DALiM Export Monaco Sets" utility application.
2. Select the same document and monitor profiles as the ones used during the procedure.
3. Click on "Generate" in the user interface, to create a target for Monaco OPTIX in the ~/Documents folder.
4. Launch the 'MonacoOPTIX' application and use 'Evaluate Monitor Profile' option. Use 'Load chart ...' to open the generated target file and launch the 'Measure' procedure. When measures are done, create a report using 'Save report …' button.
5. Launch the "DALiM Translate Monaco Report" utility application. Select the MonacoOPTIX report and click on 'Translate'. The table with the measured LAB values will be created in the ~/Documents folder.

Reference Target List Values

Name	Cyan	Magenta	Yellow	Black	L	a	b
A1	100%				57.2	-31.0	-36.0
A2		100%			46.7	64.1	-2.2
A3			100%		86.4	-8.0	80.0
A4				100%	20.6	0.5	1.7
A5		100%	100%		45.1	62.1	38.1
A6	100%		100%		52.7	-55.5	29.4
A7	100%	100%			23.7	21.1	-42.5
B1	75%				37.8	-21.2	-27.2
B2		75%			53.9	51.4	-3.5
B3			75%		85.9	-5.6	62.4
B4				75%	39.4	-0.3	1.2
B5		75%	75%		54.0	46.0	36.4
B6	75%		75%		59.2	-41.4	24.5
B7	75%	75%			36.4	15.5	-33.0
C1	50%				71.3	-18.0	-18.1
C2		50%			65.1	34.8	-1.2
C3			50%		87.2	-4.9	44.5
C4				50%	56.5	-0.8	2.2
C5		50%	50%		64.3	29.6	29.4
C6	50%		50%		69.2	-26.2	19.4
C7	50%	50%			48.2	16.7	-23.3
D1	25%				80.2	-10.5	-5.9
D2		25%			77.1	17.3	2.5
D3			25%		88.1	-3.0	26.4
D4				25%	73.4	-1.2	4.8
D5		25%	25%		76.1	14.1	18.6
D6	25%		25%		79.2	-13.2	14.1
D7	25%	25%			69.3	6.0	-8.9
E1	0%	0%	0%	0%	89.3	-1.1	7.2