ColorSync 2 XT

(HELIOS ColorSync 2 QuarkXPress XTension)

User manual

Version 2.0,   30 May 1997

ColorSync 2 XT

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Welcome to ColorSync 2 XT

Thank you for purchasing the HELIOS ColorSync 2 XTension for QuarkXPress (in short just *ColorSync 2 XT*).

The idea behind it

We developed ColorSync 2 XT for QuarkXPress in order to shift color management from the scanner to the most important DTP application. In QuarkXPress you can now match scanned pictures and complete documents for a specific printer or monitor or simulate printing on a proof printer. The result is more flexibility because ColorSync 2 XT takes care about the color separation, gamut mapping and black generation during the printing from QuarkXPress and it is no longer necessary to adjust the scanner to your printer.

Future developments

ColorSync 2 XT is the first color management product from HELIOS. It is using the Apple ColorSync 2 engine which has recently been integrated in the Macintosh operating system and which is supporting color management software. With our EtherShare OPI 2.0 the same ColorSync 2 engine used by ColorSync 2 XT is implemented in the OPI server. This is where we believe it belongs to allow color management for Macintosh, Windows and Unix-based computers with different color formats like RGB, CMYK, Lab, Lab(LH), XYZ, YCC, Ycbcr and with different file formats like TIFF, EPSF, DCS 1 & 2, Scitex CT, Photoshop and more. Many vendors like Adobe, Agfa, Apple Computer, Canto Software, ColorBlind, HELIOS Software, Kodak, Linotype-Hell, and Logo have already decided to support the Apple ColorSync 2 system in their products.

License information

HELIOS offers a single user and a 10 user license. With the 10 user license you can use ColorSync 2 XT on a total of 10 QuarkXPress copies on any Macintosh which is connected to the same network.

Demo mode agreement: Every customer is allowed a 30-days testing period using the *demo mode.* The demo mode does not differ from the licensed version except that it will print line "Helios ColorSync XTension Demo" across every printout you make. After 30 days you have to delete all the files we offer *or purchase a full software license*. Please note that you do automatically accept this agreement the moment you activate the demo mode for the first time.

For licensing ColorSync 2 XT in the "License Setup" (see figure 0-1), you need a QuarkXPress license and:
❍ a ColorSync 2 XT *Serial number*
❍ the number of *Users* (single user or 10 user license)
❍ an individual *Activation key*.

Fig. 0-1: Data you need for licensing ColorSync 2 XT

Note: The following paragraphs give instructions on how to request an activation key.
The activation procedure itself is described in chapter 4.5 "Verifying the installation".

What you have to do

Your ColorSync 2 XT serial number is already stated on the "Activation Key Request" form that is enclosed to your software package. The activation key must be requested from HELIOS. (In some countries, keys are issued by our distributors. Please ask your supplier for details.)

➢ Fill in the form "Activation Key Request" and fax (+49 511 3648269) or mail it to HELIOS Software GmbH (or local distributor). We do not accept telephone requests.

Please note that you will need your QuarkXPress serial number for the request form. You will find this number if you start QuarkXPress after installing ColorSync 2 XT as described in chapter 4. The serial number can then be seen in the "License Setup" dialog (compare figure 0-1 above).

Important: The generation of your activation key is based on the QuarkXPress serial number. In case you have purchased more than one QuarkXPress license, you should make a clear decision on the license you want to use with ColorSync 2 XT. Once you have requested an activation key for a specific QuarkXPress license, the key will be valid for this very license only. If you want to work with a different QuarkXPress license, you have to buy a new ColorSync 2 XT copy and request the respective activation key.

What you will get in return

On receipt of your request form we will generate your individual activation key and then send you an "Activation Key Reply" summarizing the data you need for software activa-

tion, namely:

❍ your *Serial number* (given in line "Serial:")
❍ repetition of your QuarkXPress serial number (given in line "MachID:")
❍ the number of *Users* (given in line "Units:")
❍ your *Activation key* (given in line "Checksum:")

Figure 0-2 shows an "Activation Key Reply".

Fig. 0-2: Example of an Activation Key Reply

Electronic documentation

This user manual is available as a PDF file as well. Together with the Acrobat Reader software, you can install it from our CD-ROM (see chapters 4.3 "Installing ColorSync 2 XT" and 4.4 "Completing the installation"). The PDF file is opened with a double-click. It contains hypertext links, so that you can navigate through the text and automatically go to specific pages by clicking on cross-references or contents and index entries. The PDF file is in color.

Contents

Summary of ColorSync 2 XT features

Index

1 **About the chapters of this manual**

In the following, we give a brief summary of every chapter of this manual. These summaries are supposed to help you find the information you are looking for.

Chapter 2 "Using the manual" explains how to read and understand the manual. You will find a short glossary including a list of abbreviations and information about the manual version, the structure of the contents, and the meanings of font and syntax conventions.

Chapter 3 "An introduction to color matching" gives background information. For readers who have little practical experience with color processing it discusses colors, color models, and the problems of color matching in general. After that, it explains the concepts on which ColorSync 2 XT is based and how the software is dealing with the problems of color matching.

Chapter 4 "Installation" covers all questions that might arise during installation. The chapter contains a list of hardware and software requirements and a list of all files which are delivered in addition to the program itself. You will be given detailed instructions on how to install ColorSync 2 XT from the CD-ROM and on how to check the installation.

Chapter 5 "Before getting started ..." gives directions for changing the settings of your system, monitor, and QuarkXPress copy.

These settings are essential to guarantee full performance of ColorSync 2 XT. The chapter also contains two tables listing the file formats and the color models that are supported for matching.

Chapter 6   "Enabling ColorSync 2 XT" describes how to switch on color matching in QuarkXPress. It also explains how to get access to the profiles you want to use.

Chapter 7   "Defining colors in QuarkXPress" gives instructions on how to create new colors that can be matched for monitors and printers. Explanations about CMYK and Pantone colors are rather short because the dialog used for these colors belongs to QuarkXPress and is also described in the QuarkXPress manual. The dialog for the creation of Lab colors is part of ColorSync 2 XT. Explanations about Lab colors are quite detailed, they include background information about the Lab color space and color measurement devices.

Chapter 8   "Matching images" describes how the matching of images can be defined. The chapter contains four examples explaining how and why the matching process is different for different image types and file formats.

Chapter 9   "Matching complete documents" discusses the settings used to match QuarkXPress-defined colors and imported images for a monitor, a printer, or a proof. You will find that there are a few variations of these settings, i.e. that you can define matching for monitor and printer (or monitor and proof), for printer only (or proof only), or for monitor only.

Chapter 10   "Printing documents" covers all questions about printing. It contains information about PPD files, laser printer drivers, printing to file, and PostScript Rips.

Chapter 11   "Technical support" gives advice on how to request help. You should always develop a precise error description before calling your dealer, distributor, or the HELIOS support department. Chapter 11 explains how this can be done.

Appendix 1   "About the sample files" explains the meaning of the sample images and documents we have included in our software package.

Appendix 2   "About profile generation" first of all lists all the profiles we include in our software package. For users who want to develop their own individual profiles the chapter provides a list of devices for profile generation and details about naming and saving conventions.

Appendix 3   "About image processing applications" gives instructions on how to handle images in LinoColor, Photoshop and Canto Cirrus supposing that you want to add these images to a QuarkXPress document and match them with ColorSync 2 XT.

Appendix 4   "About co-operation with EtherShare OPI 2.0" explains how OPI co-operates with ColorSync 2 XT. It gives details about how OPI affects the settings in the `ColorSync 2` dialog (in QuarkXPress) and vice versa.

2   Using the manual

2.1   **Glossary**

Apple ColorSync 2

Apple ColorSync 2 offers a programming interface to a fast computing engine which uses ICC profiles as parameters to perform color transformations between different devices. Without profiles and support from a ColorSync aware application the Apple ColorSync software is useless. Apple ColorSync 2 has been co-developed by Apple Computer and Linotype-Hell. It is part of the Apple Macintosh operating system software 7.5.3 and may be added to the system beginning with version 7.

Black generation

For the explanation of black generation, see also "GCR" and "UCR".
Length: The length value defines whether black ink is only used in very dark hues or already in the quarter tones. Length values range from 0 to 10, the standard setting is 5. Width: The width value defines whether black ink is only used in the range of the gray axis or for chromatic colors as well. Width values also range from 0 to 10 with standard 5.

CIE

The "Commission Internationale de l'Eclairage" (CIE) is responsible for the definition of color models and the standardization of color descriptions. The Lab color space has been defined by the CIE.

Euroscale

Euroscale defines the European ink set for the process colors cyan, magenta, yellow, and black.

Gamut, gamut mapping

The gamut is the range of color that a given device can produce. Gamut mapping means re-defining the colors of a given device so that its gamut becomes (approximately) identical to that of a second device. Imagine that you have scanned a rose with 35 different shades of red and 12 of these red tones are not in the gamut of your printer. Without

gamut mapping the printer would take the next possible red for every tone that is out of its gamut. This could mean that all the 12 red tones are substituted by the same red and shadows within the rose are no longer visible. With gamut mapping the colors are substituted in a way that the global impression of the image remains unchanged.

GCR   Theoretically, all dark colors, including black, can be produced by combining the chromatic inks cyan, magenta, and yellow. Due to ink impurities, however, a CMY-mixed black often appears to be only a dark, muddy color instead of rich black. For this reason, printers prefer to remove a percentage of cyan, magenta, and yellow components and replace it with a certain percentage of black ink. Thus, less color is needed to create a specific hue. This technique is called Gray Component Replacement (GCR). At maximum replacement (100 %) no position in the image has more than two chromatic inks plus black or only black in the neutral grey image areas. The standard GCR value, which is used in practice, is 70 %.

ICC,   The "International Color Consortium" (ICC) is a group of
ICC profiles   vendors who defined the ICC profile format. This format is a cross-platform specification which allows third party vendors to develop profile tools and applications supporting the ICC profile standard. The founding members of this consortium include: Adobe Systems Inc., Agfa-Gevaert N.V., Apple Computer, Inc., Eastman Kodak Company, FOGRA (Honorary), Microsoft Corporation, Silicon Graphics, Inc., Sun Microsystems, Inc., and Taligent, Inc. These companies have committed themselves to fully support this specification in their operating systems, platforms and applications.

Lab colors   Lab colors are defined by the L-value for lightness and the

co-ordinates a and b defining the quantitative distance of a color from a reference white point. The Lab color space includes all visible colors. Just like the PostScript language — which is able to define pages so that they can be exchanged between different platforms — Lab-defined colors are device independent (see chapter 3 for more details).

Max. black   For the explanation of max. black, see also "GCR", "UCR", and "Black generation".
With max. black you set the maximum dot percentage for black ink. Max. black values usually range from 60 % to 100 %.

OPI   "Open Prepress Interface" (OPI) facilitates the handling of print jobs that include huge image data. Original high-resolution images are kept on an OPI server. Layout applications can work with small low-resolution substitutes which leads to a reduction of processing time. All user actions like positioning, scaling, or rotating are marked by OPI comments and inserted in the final PostScript print job. During printing, the actions are applied to the original images.

PDF   The "Portable document format" (PDF) is an Adobe Acrobat file format. With the Acrobat Reader software — which can be installed from our CD-ROM — you may read and print any given document that has been converted into PDF.

PPD   PostScript printer description (PPD), is a file format developed by Adobe Systems, Inc. PPD files contain information enabling software to produce the best results possible for each type of designated printer.

Profiles   A profile is a device description. It contains information about how a given device (scanner, monitor, or printer) mixes and reproduces colors.

RIP   A "Raster Image Processor" (RIP) performs the final calcu-
                lation of the data which are sent to the output device. The
                RIP may be either an external unit or part of the output de-
                vice itself. A PostScript laser printer for example contains
                its RIP.

sea   sea is the abbreviation for "self-extracting archive". Differ-
                ent files and folders can be saved in a sea file. By double-
                clicking on a sea file, the contents will automatically be ex-
                tracted.

SWOP   The "Specifications for Web Offset Publications" (SWOP)
                include US standards for color separation and color print-
                ing.

UCR   Under Color Removal (UCR) is another technique of sav-
                ing cyan, magenta, and yellow inks. Printers remove these
                chromatic inks from all image areas that are gray or black
                and use black ink instead. UCR is different from GCR be-
                cause it does not affect all dark colors of an image (compare
                GCR) but only the gray and black areas. UCR values may
                range from 240 % to 400 %. The standard value is 370 %.

2.2   Conventions

Currentness   This manual covers all features of program version *2.0*. As
ColorSync 2 XT is subject to constant development, the de-
scriptions and instructions given in this manual may not
necessarily be applied to previous or future versions of the
software. If you are working with a different version, please
check the respective manual or the README files on your
installation disks or CD-ROM.

Structure   The structure of this manual is task-oriented. Every chapter
gives instructions on how to perform a specific task. This
may cause repetition of figures or screenshots. The main
ColorSync 2 XT dialog e.g. will appear several times in this
manual with every chapter explaining only a particular part
of this dialog.

**Fonts and
syntax**   Some font and syntax conventions are used in this manual.
Their meanings and uses are explained below.

The *italics* style is used for words of particular *importance*.

The **chicago font** indicates **button** names or **menu** items.

➢   The arrow in the left margin characterizes direct instruc-
tions to the user, e.g.:

➢   Open the **Edit** menu.

Note: Notes give details that might be useful as additional in-
formation. They can also contain a reference to other
chapters where additional information can be found.

Important: These paragraphs should be read carefully. They are
supposed to help you avoid problems and save time.

3 An introduction to color matching

3.1   About colors and matching

There are different color models

Color is created through the interaction of a light, an object, and the eye. The visible spectrum contains millions of colors.

Screens and monitors produce colors by means of red, green and blue light (RGB). The light intensities make up a given color. Scanners also work with RGB colors. They read the amounts of red, green, and blue light that are reflected from an image (or transmitted if you scan transparent images). The RGB color space is smaller than the visible spectrum of light. RGB colors are device dependent, they vary with scanner or monitor characteristics.

Color printing is based on the CMYK color space. Cyan, magenta, yellow, and black inks are mixed on paper to produce a given color. The CMYK color space is even smaller than the RGB color space. CMYK colors vary with printer, ink, and paper characteristics.

The CIE created different color spaces that specify colors in terms of human perception. One example is the CIE-Lab color space. Lab colors are device independent.

The transformation of color data

If you want to scan, then edit and print an image, you have to transform the scanned RGB values into CMYK values for the output device. This process is called separation. If you want to have predictable color results, you have to have calculation models that match RGB to CMYK during separation. As RGB and CMYK values are device dependent, you can never exactly define a color. E.g. scanning one particular color with three different scanners will produce three different sets of RGB values, i.e. that you will have different input values for the transformation into CMYK.

You have to have a specific transformation table for every possible scanner—printer combination. If you have a device independent color space like Lab, you can exactly define the color you scanned. Considering the color characteristics of the different scanners — which are described in the device profiles (see chapter 2.1 "Glossary") — you can transform the different sets of RGB values into one single Lab color definition. Now, you have only one single input value for the transformation into CMYK. Figures 1 and 2 illustrate the effect of a device independent color space.

Three different
definitions of
light green

color:
light green

scanner 1	R:57 G:68 B:21
scanner 2	R:56 G:68 B:23
scanner 3	R:56 G:67 B:20

Transformations
into CMYK for
different printers
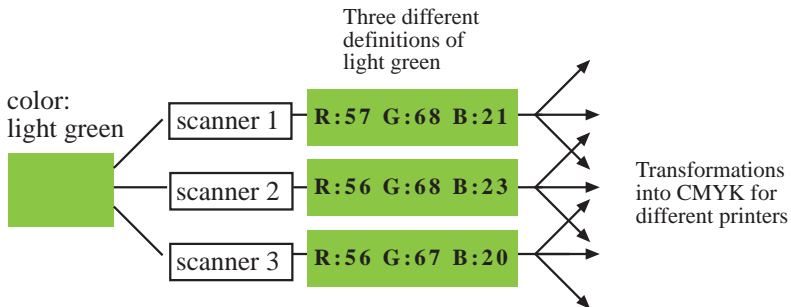
Fig. 1:   Color data transformation without Lab values + profiles

One device independent
definition of light green

color:
light green

scanner 1 +

scanner 2 +

scanner 3 +

L* 70
a*-30
b* 55

Transformations
into CMYK for
different printers
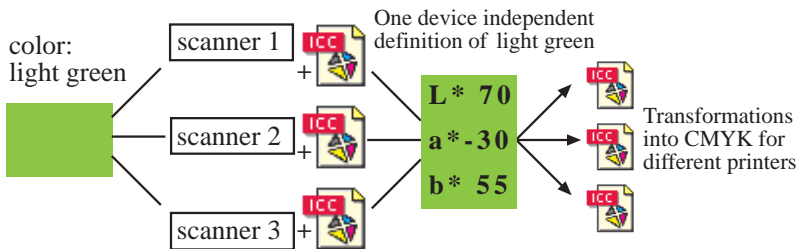
Fig. 2:   Color data transformation with Lab values + profiles

Unexpected results

Color matching does not always lead to precise reproduction. Some Lab or RGB colors cannot be printed — some can, but not by every given printer. The color matching application has to make sure that deviations are as small as possible. This can be achieved either by gamut mapping (see chapter 2.1 "Glossary") or by choosing another possible color for printing.
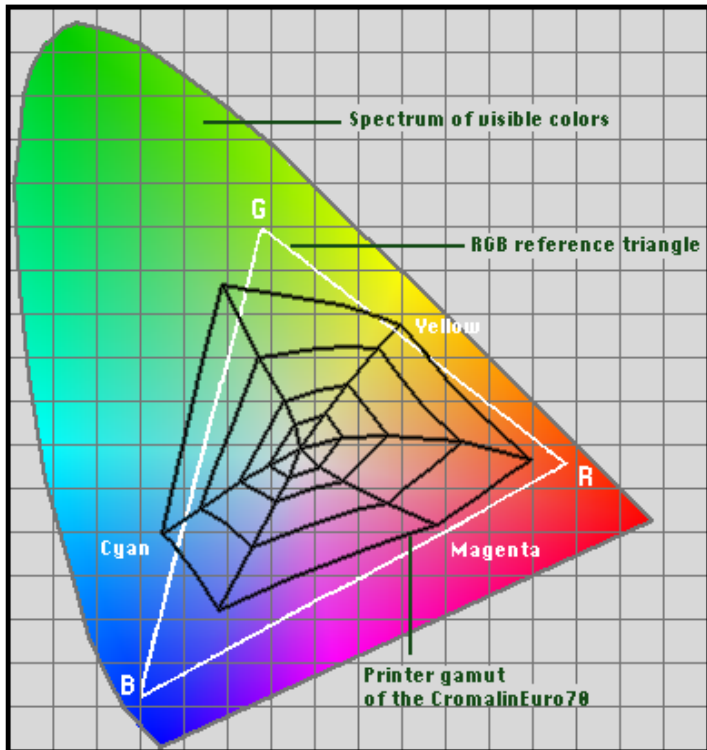
Fig. 3: Gamut of a CromalinEuro70 printer compared to the RGB color space

Figure 3 shows the spectrum of visible colors (as it has been defined by the CIE) in comparison to the RGB color space and the gamut of a CromalinEuro70 printer. To give you an impression of gamut differences, figure 4 shows the gamut of an Iris proof printer.
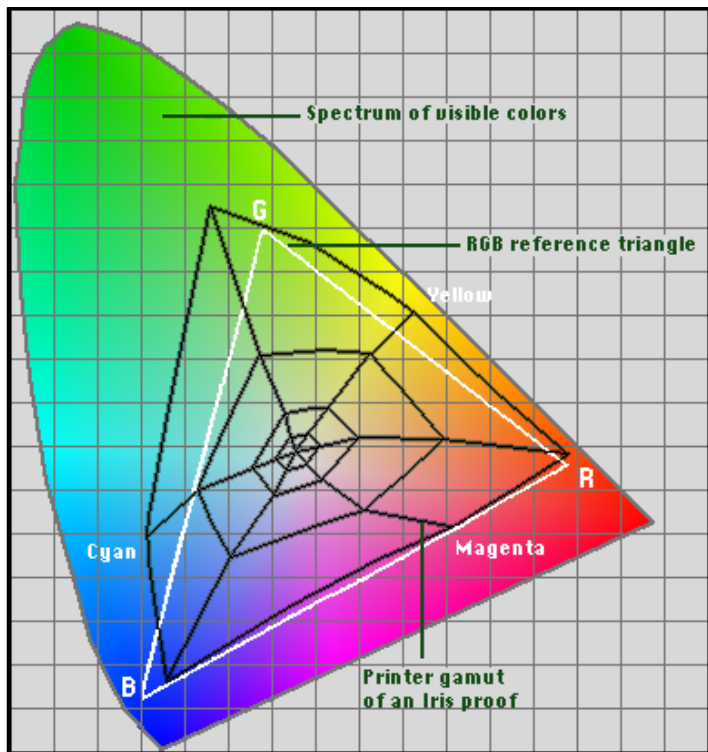

Fig. 4:   Gamut of an Iris proof printer compared to the RGB color space

3.2   Color matching with ColorSync 2 XT

ColorSync 2 XT is able to transform colors from different color models like RGB and CMYK into Lab values and vice versa. Thus, a device independent color space is used for the interchange of color data. ColorSync 2 XT also allows you to define Lab colors in QuarkXPress and use them for graphical and text elements. You can measure Lab values from a sample and then enter these values in a special color dialog in QuarkXPress. During definition, you are informed about whether the gamut of the selected printer covers this specific color. If so, the printout and the sample will not show the slightest difference in color.

Images are matched only by transforming the color data and saving these data within the QuarkXPress document. The original images and the image formats remain unchanged.

The matching process with ColorSync 2 XT is based on ICC-format profiles. For testing purposes, we include some sample profiles on our CD-ROM. They had been made up with profile generation software from Linotype-Hell, namely ScanOpen ICC 1.0, PrintOpen ICC 2.5, and ViewOpen ICC 1.0.

Important: If you are unhappy about your printouts, first check the correctness and currentness of the used profiles because matching results solely depend on the quality of the profiles. Further information on profiles — and the list of the profiles we provide — are given in appendix A 2: "About profile generation".

An illustration of all ColorSync 2 XT functions is given in chapter "Summary of ColorSync 2 XT features".

4 Installation

4.1   **System requirements**

The following list gives details about the hardware, software, and additional devices you need for running ColorSync 2 XT:

❍ Macintosh
  • *PowerPC* based computer running MacOS system 7.0 or greater
  • CD-ROM drive
  • 500 KB disk space for ColorSync 2 XT
  • about 44 MB additional disk space for profiles, sample files and user manual.pdf (optional)
  • additional 5 MB RAM for QuarkXPress
    (For the definition of memory requirements see chapter 4.4 "Completing the installation".)

❍ *PowerPC* QuarkXPress 3.x – at least version 3.31
    (Start your QuarkXPress application and select **About QuarkXPress...** from the menu to check whether you have a PowerPC version.)

❍ Additional devices (optional)
  • PostScript Level 1 or Level 2 output device
  • Scanner
  • Profile generation tools from various vendors, e.g. Linotype-Hell, Logo, Gretag, or Color Blind (see also appendix A 2: "About profile generation")

4.2   Preparing the installation

About our CD-ROM

ColorSync 2 XT is delivered on our HELIOS CD-ROM which also contains other HELIOS products. All the files that belong to ColorSync 2 XT can be found in the folder "COLORXT".

The current ColorSync 2 XT version is 2.0. Up to now, program menus and dialogs as well as the documentation are in English. You may ask your dealer whether localized versions are available.

Installing ColorSync 2 XT without an activation key?

The installation procedure does not depend on the activation key. You can install and even start ColorSync 2 XT without a key using the demo mode. If you do so, please remember the "Demo mode agreement" (see paragraph "License information" in chapter "Welcome to ColorSync 2 XT" at the beginning of this manual).

You need an individual activation key to license the ColorSync 2 XT software you have purchased. The first thing you should do after installation is to request an activation key as described in paragraph "What you have to do" in chapter "Welcome to ColorSync 2 XT".

Save your work

You should save your work and quit QuarkXPress before starting the installation, because you may have to restart your computer after the installation procedure.

4.3   **Installing ColorSync 2 XT**

In the following we comprehensively describe the installation procedure and the **Install** dialog.

➢   Place the CD-ROM into the CD drive of your MacOS computer and open folder "COLORXT". You may save a copy of the contents.

➢   Double-click on the self-extracting archive which includes all files we deliver.

➢   On the start-up screen you will find our "Read Me" file. You can print or save this file, or just read it and then press the **Continue** button to go on with the installation.

➢   In the **Install** dialog — which is shown in figure 5 — you have to make two decisions:
❍ 1.
Choose the "Install Location" (default is **Macintosh HD**).
❍ 2.
Select the items you want to install (choose between **Easy Install** and **Custom Install**).

About Easy Install   If you select **Easy Install** and press the **Install** button ColorSync 2 XT will be completely installed. This full-scale installation requires about 44.5 MB disk space. Details about what the installer does during installation are given in chapter 4.4 "Completing the installation". You can exclude single items from the installation if you select **Custom Install**. See paragraph "About Custom Install" for information about the different items.
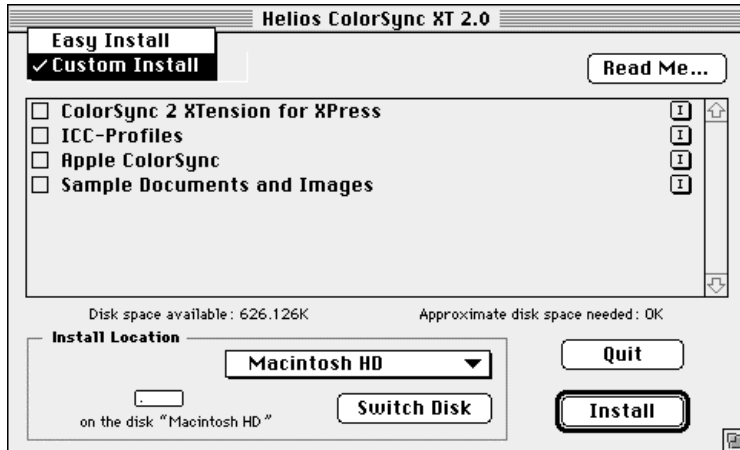
Fig. 5:   The **Install** dialog

**About
Custom Install**

Figure 5 shows the **Install** dialog with **Custom Install** se-
lected. The software package is divided into four items.
▣I Pressing the button on the right side of the box, will
open an info window with technical information
about the respective item.

⊠ **ColorSync 2 XTension for XPress**

With "ColorSync 2 XTension for XPress" you install the
ColorSync 2 XT software and the electronic documentation
(see also chapter 4.4 "Completing the installation"). Disk
space requirements: about 3.5 MB.

⊠ **ICC-Profiles**

With "ICC-Profiles" you copy the sample profiles we offer
(see also chapter 4.4 "Completing the installation"). A list
of our profiles is given in appendix A 2: "About profile gen-
eration". Disk space requirements: about 18 MB.

⊠ **Apple ColorSync**

The Apple ColorSync system software is indispensable for running ColorSync 2 XT. If you are working with Mac OS version 7.5.3 or greater, Apple ColorSync is automatically included — but you can also add it to any Mac OS system beginning with version 7.0.

Whenever you install Apple ColorSync, the installation program will check whether the system software is already available on your computer. If so, the installation will only be executed if the version on our CD-ROM is newer than that currently running on your system. (ColorSync 2 XT requires at least Apple ColorSync 2.0. You may click the info button in the **Install** dialog to find out which version we currently offer.)
Disk space requirements: about 500 k.

⊠ **Sample Documents and Images**

With "Sample Documents and Images" you copy different TIFF images and a QuarkXPress document to your hard disk (see also chapter 4.4 "Completing the installation"). You can use these files for testing purposes. Detailed information on the sample files is given in appendix A 1: "About the sample files". Disk space requirements: about 23 MB.

Important: If you have installed a new Apple ColorSync version from the CD-ROM, you will have to restart your computer to activate this new system software. Otherwise, you may just quit the **Install** dialog after successful installation.

4.4   Completing the installation

What the installer does

In case of a full-scale installation, the installer takes care about all changes to your system and to your QuarkXPress folder that are necessary to make use of ColorSync 2 XT. In detail, the installer ...

❍ installs the Apple ColorSync system software in the "Extensions" subfolder of your "System folder" (this is skipped if a copy of the software – same or newer version – is already available on your system).

❍ defines new memory requirements for QuarkXPress (see paragraph "Memory requirements" below).

❍ installs ColorSync 2 XT in your local QuarkXPress folder and re-arranges XTensions for color matching in the QuarkXPress folder (see paragraph "Re-arranging XTensions" below).

❍ copies all additional items we deliver to the "Install Location" you have selected in the **Install** dialog (see paragraph "Documentation, profiles and samples" below).

❍ writes an "Installer Log File".

What you should do

What is left for you to do is to ...

❍ re-organize the "ICC-Profiles" folder (see paragraph "Finding a profiles repository" below).

❍ install the Acrobat Reader software in case you want to use the electronic documentation from our CD-ROM (see paragraph "Installing Acrobat Reader for the electronic documentation" below).

Memory requirements

ColorSync 2 XT needs about 5 MB (5000 k) RAM for high performance. The installer, therefore, automatically re-defines the memory requirements for your QuarkXPress application by setting the "Preferred size" of the program to 10 MB (10000 k). You can check this by opening the

QuarkXPress info window as shown in figure 6.

➢ Highlight the QuarkXPress symbol in your QuarkXPress folder,

➢ select **File** and **Get Info** from the Macintosh menu.

The value for "Suggested size" indicates the memory requirements calculated for QuarkXPress. The value for "Minimum size" (here: 6000) makes sure that your Macintosh will not open QuarkXPress unless there is at least 6000 k RAM available. The value for "Preferred size" will always be 10000 after installing ColorSync 2 XT. Please note that you may change the settings for "Minimum size" and "Preferred size" manually at any time, e.g. if you want to install further plug-ins and need even more memory for running QuarkXPress.

before installation   **after installation**
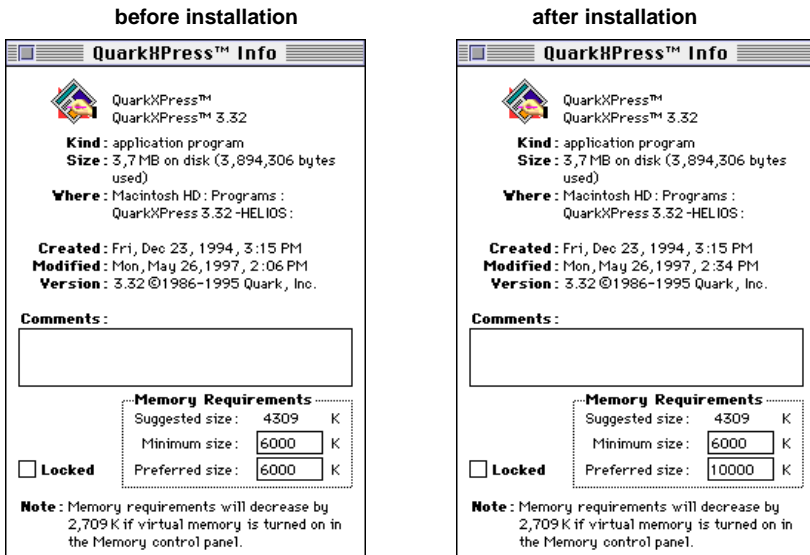
Fig. 6: Defining memory requirements for QuarkXPress

Important: If you have enough memory available to run your dif-
ferent applications, you should prefer working with vir-
tual memory turned off (as illustrated in figure 6),
because this guarantees better performance. You can
turn virtual memory on/off in the **Memory** control
panel and then have to restart the system.

**Re-arranging
XTensions**

During installation the installer removes all existing copies
of ColorSync 2 XT on your system - wherever they may be
located. It then copies the new program version from the
CD-ROM to the "XTension" subfolder of your QuarkX-
Press folder (compare figure 7).

ColorSync 2 XT works as a separation module. As the
QuarkXPress application can make use of *one* separation
module only, the installer automatically disables all other
extensions that offer color separation, as e.g. "EfiColor".
These extensions are moved to the "XTension (Disabled)"
subfolder of your QuarkXPress folder (see figure 7).
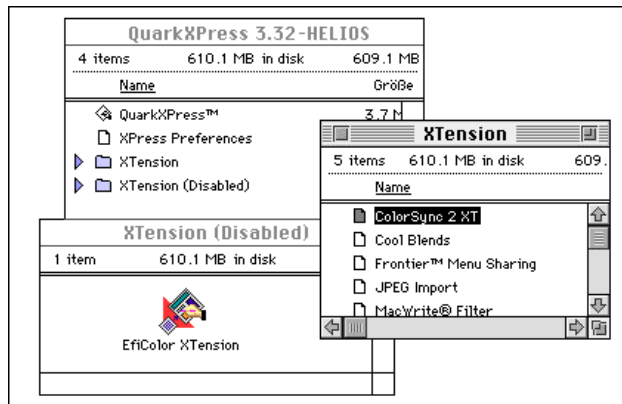
Fig. 7:   Re-arranging XTensions in the QuarkXPress folder

**Documenta-
tion, profiles
and samples**

During a full-scale installation the installer creates the
"HELIOS ColorSync 2 XTension" folder on your hard disk
(or any other location you may have selected as "Install Lo-
cation"). The contents of this folder is shown in figure 8.
The "Installer Log File" reveals what the installer has done.
It is meant for information purposes. The electronic docu-
mentation ("colorxt.pdf"), the "Read Me" file, and the
"Sample files" folder can be kept where they are. It is up to
you to copy these items to other locations. The "ICC-Pro-
files" folder, however, should be re-organized (see the fol-
lowing paragraph).

Fig. 8:   Items we deliver in addition to ColorSync 2 XT and Ap-
ple ColorSync.

Finding a profiles repository

You should find an adequate location for your profiles.

➢ If you are using an AppleShare Server like EtherShare or AppleShare, we recommend to create an "ICC-Profiles" volume on your server and use this volume as profile repository.

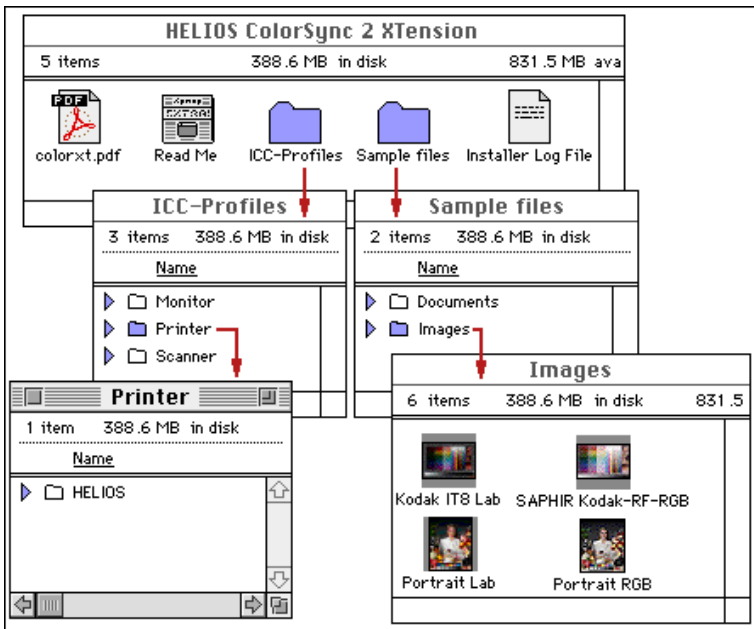➢ All the profiles you want to use, must be copied to the profile repository (volume or folder). ColorSync 2 XT is not able to handle several repositories. So, if you already have ICC profiles, you should move them to the one repository you want to use. Make sure that your profile names are unique so that existing profiles are not overwritten.

➢ For better orientation you can create several subfolders within the profile repository (compare the "Printer" folder in figure 8).

Note: If you want to create and add your own profiles to one of the folders, please refer to appendix A 2: "About profile generation" for further advice.

Installing Acrobat Reader for the electronic documentation

If you want to make use of our electronic documentation as described in chapter "Welcome to ColorSync 2 XT" at the beginning of this manual, the Adobe Acrobat Reader software has to be available on your system. You can install Acrobat Reader from our CD-ROM. For that purpose, open the "ACROBAT" folder on the CD-ROM and follow the instructions given in the README file.

Are there several QuarkXPress copies on your system?

In case you have more than one QuarkXPress copy on your system, please note that the installer will only select the first QuarkXPress folder he can detect. So, if you want to install ColorSync 2 XT in a different QuarkXPress folder you have to proceed as follows:

➢ Open the QuarkXPress folder that contains ColorSync 2 XT after the installation and move the program to the QuarkXPress folder you want to use with our XTension. If necessary, change the memory requirements for that QuarkXPress copy manually as described in paragraph "Memory requirements" above, and disable "EfiColor" or other color management modules.

Note: To find out which QuarkXPress folder the installer se-
         lected you may read the "Installer Log File". Just dou-
         ble-click the respective icon in the folder "HELIOS
         ColorSync 2 XTension" that is shown in figure 8.

4.5   Verifying the installation

During installation, ColorSync 2 XT and Apple ColorSync are copied automatically to the locations where they belong (see chapter 4.4 "Completing the installation"). Nevertheless, you should verify the installation.

➢   Open your control panel and check whether the "ColorSync System Profile" dialog can be opened. If so, Apple ColorSync has been installed succesfully.

➢   Start your QuarkXPress application and enter your "Serial number", the number of "Users", and the "Activation key" in the "License Setup" dialog which will pop up automatically (see figure 9 below).

If you do not yet have an activation key, copy the QuarkXPress serial number from the dialog to your "Activation Key Request" form and request a key as described in paragraph "What you have to do" in chapter "Welcome to ColorSync 2 XT" at the beginning of this manual.

For verifying the installation use the **Demo mode** option to start QuarkXPress.

➢   Open the **Utilities** menu in QuarkXPress and check whether the items **ColorSync 2** and **Lab colors** appear in the list.

The **Lab colors** item will be gray because it will only be enabled after activating the ColorSync 2 XT software in the **ColorSync 2** dialog.
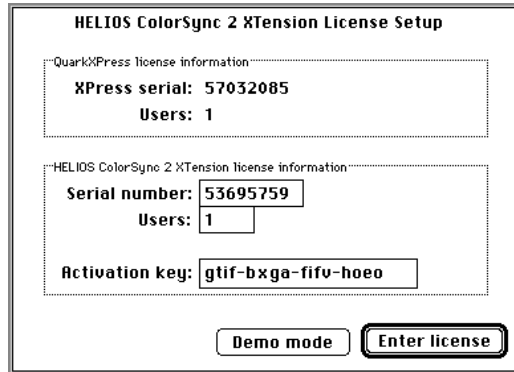
Fig. 9: The "License Setup" dialog

5 Before getting started ...

5.1   For best results

The main purpose of ColorSync 2 XT is to improve the quality of color printouts. However, it is also possible to achieve high-quality monitor display. For better display results you should check some QuarkXPress and system settings:

Quark   ➢   Open the **Edit** menu in QuarkXPress and select **Preferenc-**
XPress: **es** and **Application** to set display preferences for QuarkX-Press. Set "Color TIFFs" to 32 bit and "Grey TIFFs" to 256 levels.

System: ➢   Open the **Monitors and Sound** or **Monitors** control panel and make sure that your monitor displays at least "Thousands" or even "Millions" of colors.
       ➢   Open the **ColorSync System Profile** control panel and activate your profile repository using the **Set Profile...** button. Select your monitor profile as shown in figure 10.

Fig. 10:   Selecting the correct profile for your monitor

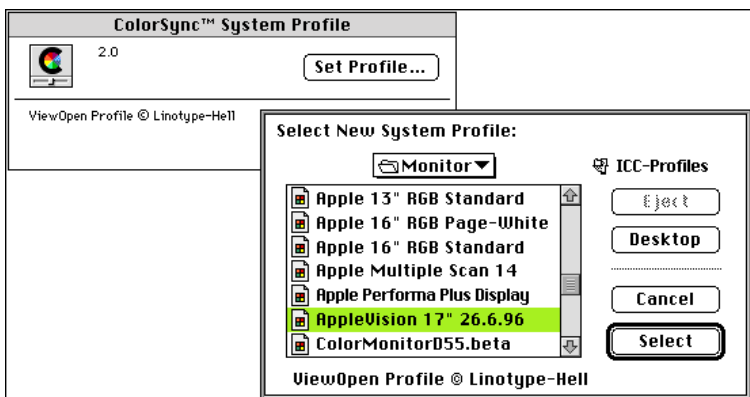By default the **Set Profile...** button selects the "ColorSync Profile" folder located in the "Preferences" folder of your system folder, but we recommend to use your "ICC-Profiles" repository, even for monitor profiles. In figure 10, the system profile is selected from the "Monitor" folder of the "ICC-Profiles" server volume.

We consider the standard profiles delivered by Apple to be rather poor. You will achieve better results by measuring the monitors and generating your own monitor profiles. In figure 10, we have selected a profile which was generated for a specific AppleVision 17'' monitor.

Please note that your system does not necessarily state the profile name in the **ColorSync System Profile** control panel. In case you have generated your profile with ViewOpen ICC from Linotype-Hell as shown in the example, the copyright note ("ViewOpen Profile © Linotype-Hell") will appear in the control panel.

Note: For further information about monitor matching see
          chapter 9.1 "Matching documents for the monitor".
          The generation of individual profiles is described in ap-
          pendix A 2: "About profile generation".

5.2   Supported file formats

Table 1 lists all file formats that are supported for image file matching in QuarkXPress using ColorSync 2 XT.

Table 1:   File formats supported by ColorSync 2 XT

File format	Matching for printers printing separations	Matching for printers printing composite color pages	Simulating a printer on your proof printer	Matching of images on your monitor
TIFF-RGB	yes	yes	yes	yes
TIFF-CMYK	yes	yes	yes	no
TIFF-Lab	yes	yes	yes	yes
EPSF-Images	no (OPI 2.0)	no (OPI 2.0)	no (OPI 2.0)	no
EPSF Illustr.	no	no	no	no
JPEG images	no (OPI 2.0)	no (OPI 2.0)	no (OPI 2.0)	no
DCS 1 & 2 images	no (OPI 2.0)	no (OPI 2.0)	no (OPI 2.0)	no
Scitex CT	no (OPI 2.0)	no (OPI 2.0)	no (OPI 2.0)	no
Adobe Photo-Shop native	no (OPI 2.0)	no (OPI 2.0)	no (OPI 2.0)	no

Note: For the different purposes and features of EtherShare OPI 2.0 and ColorSync 2 XT see appendix A 4: "About co-operation with EtherShare OPI 2.0".

5.3   Supported colors in QuarkXPress

You can define colors from different color models in QuarkXPress using either QuarkXPress dialogs or ColorSync 2 XT. Table 2 shows which color models are supported for matching.

Table 2:   Color models supported by ColorSync 2 XT

Model	Monitor matching	Printer matching	Proof matching
CMYK (Euroscale, SWOP or Japan)	yes	yes	yes
Pantone (and Pantone Uncoated if available)	yes	yes	yes
Lab	yes	yes	yes
RGB	no	no	no
others	no	no	no

Important: To achieve the most accurate reproduction you should define all colors using the Lab model. Lab is device independent and there are no different standards like CMYK Euro, CMYK SWOP, or CMYK Japan. For further information on the measurement of Lab values and the handling of QuarkXPress-defined colors see chapter 7 "Defining colors in QuarkXPress".

6 Enabling ColorSync 2 XT

➢ Open the QuarkXPress **Utilities** menu and select
ColorSync 2. The dialog shown in figure 11 appears. All
matching processes that can be carried out by ColorSync 2
XT are defined in this dialog. Please note that the settings
in this dialog will be saved within the document, they are
not valid for the entire application.
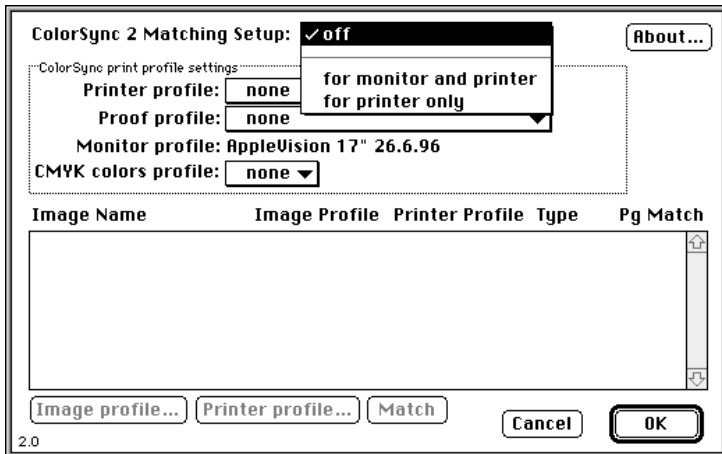
For explanations about ...	**Printer Profile:** see chapters 7.2.3 and 9.2
	Proof Profile: see chapter 9.3
	Monitor Profile: see 5.1 and 9.1
	CMYK colors profile: see chapter 7.3
	"Image Name" field: see chapter 8

Fig. 11:   Enabling ColorSync 2 XT

With the top pop-up menu you can switch on matching **for monitor and printer** or **for printer only**. If you choose **for printer only**, you will not see any matching results on the monitor. This setting, however, reduces processing time.

Important:	Turning on matching **for monitor and printer** or **for printer only** automatically invokes separation of your document. All color data are transformed into CMYK. The result of this transformation — i.e. the matching result — depends on the profiles you define in the **ColorSync 2** dialog.

Note:	The **About...** button in the top right corner of the **ColorSync 2** dialog reveals information about your ColorSync 2 XT software and other HELIOS products.

Finding your profiles

Whenever you turn matching off and on again, the dialog shown in figure 12 will pop up. In this dialog you select the volume (or folder) that contains the ICC profiles you want to use for matching. Please note that ColorSync 2 XT can make use of one single profile repository only. Profiles you may have stored outside your "ICC-Profiles" volume (or folder) will not be available in QuarkXPress.

Important:	You may not rename your profile repository because ColorSync 2 XT will not accept a volume (or folder) name other than "ICC-Profiles".

➢ Turn matching off and on again using the top pop-up menu in the **ColorSync 2** dialog.

➢ Highlight your "ICC-Profiles" volume (or folder) and click on **Select "ICC-Profiles"**
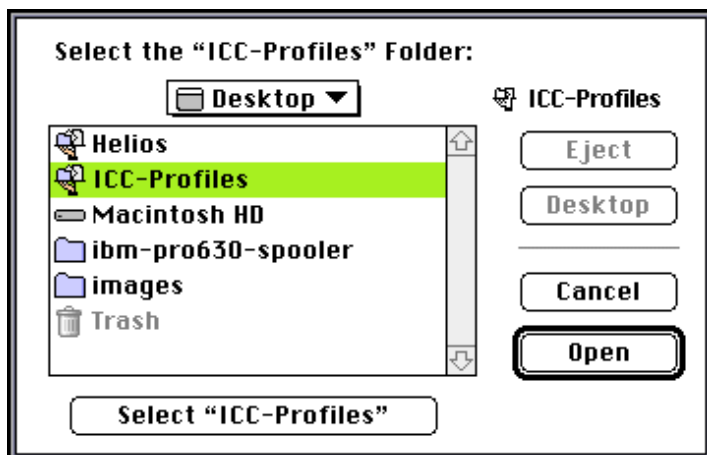
Fig. 12:   Activating the volume/folder containing the ICC profiles

7 Defining colors in QuarkXPress

7.1   General remarks

In QuarkXPress you can apply colors to graphical elements,
borders, and text. Three color models are supported by
ColorSync 2 XT, namely CMYK, Pantone, and Lab colors.
Figure 13 illustrates how these colors are transformed and
thereby matched for a monitor or a printer.
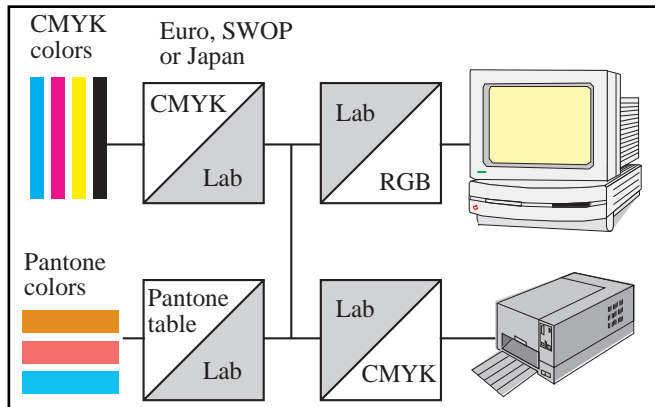
Fig. 13:   Matching of QuarkXPress-defined colors

If you define Lab colors in QuarkXPress, the match-
ing process will be reduced to one transformation
only.

Important:	Colors belong to a specific document. If you want to copy a self-defined color to several documents you have to apply this color to an object and then **Copy** and **Paste** the object. Do not use the QuarkXPress **Colours, Append** option, because this option does not support Lab colors and will cause a system crash.

7.2   Defining Lab colors

7.2.1   The structure of the Lab color space

Figure 14 illustrates how colors are arranged within the Lab color space. A specific hue and the saturation are defined by the a- and b- co-ordinates of a color. Both, a- and b-values, range from -128 to +128. The saturation of a color increases with growing distance from the center of the circle.

The L-axis is missing in the illustration. It runs perpendicular to the circle and defines the lightness of a chosen color. L-values range from 0 (dark) to 100 (light) — with a = 0 and b = 0, they represent the gray space from black to white.
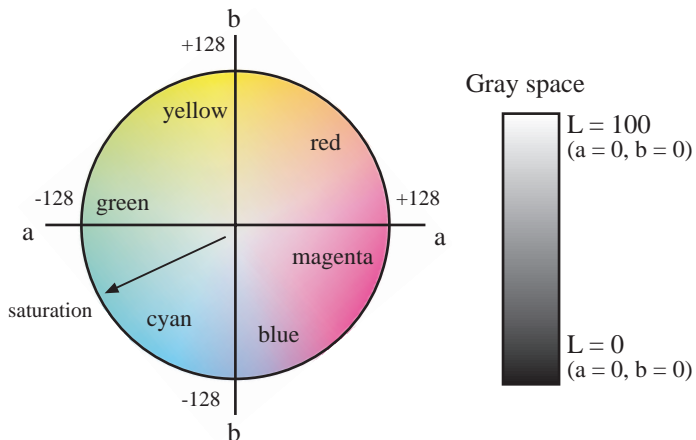

Fig. 14:   Structure of the Lab color space

Note:	Part of the Lab color space cannot be printed. In general, colors of high saturation and L-values smaller than 20 are not reproducible.

7.2.2   Measuring Lab values

If you want to measure Lab values from a sample you need a color measurement device. Figure 15 shows the Gretag SPM50 device as an example.

Important:	Make sure that you are using the settings given in figure 15, even if you are working with a different device, because these settings have proved to deliver the most accurate results.

The required settings are:
❍ White base: absolute white (Abs)
❍ Illuminant: D 50
❍ Observer angle: 2°
❍ Pol filter: none
❍ Display mode: L*a*b*

Specific devices may already use some of these settings as default.

Note:	The PrintOpen 2.5 CD contains a "SPM Control" tool for devices of the Gretag SPM series. You can use this software tool for the setup of your color measurement device.
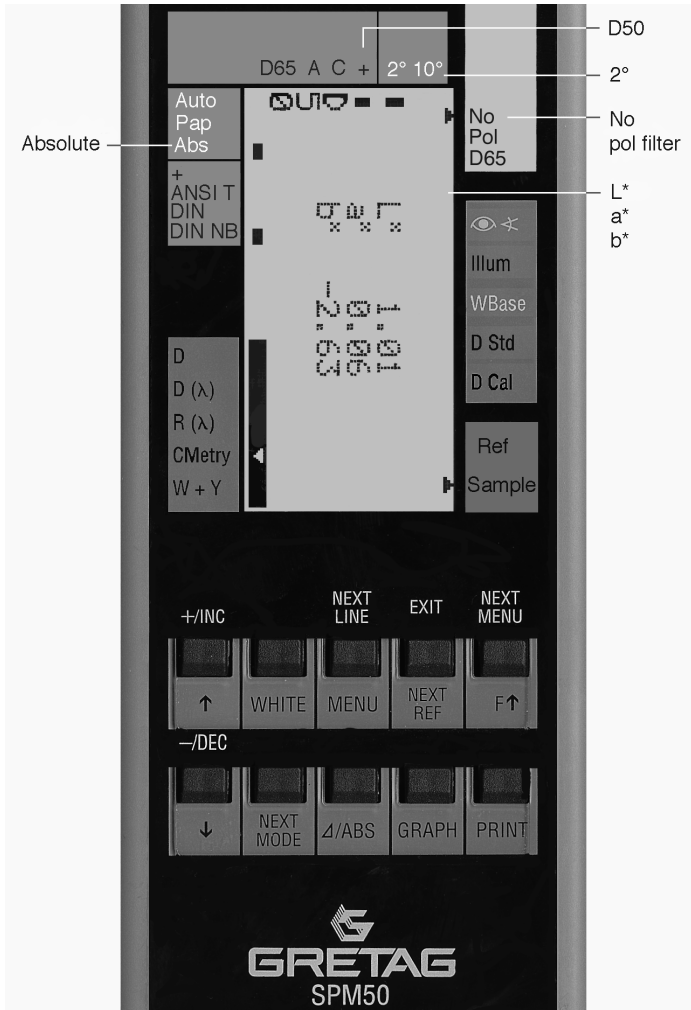
Fig. 15:   Control panel of the Gretag SPM50 device

7.2.3 Adding Lab colors to a document

Please note that it is impossible to define Lab colors with color matching turned off. The **Lab colors** menu item is dependent on the settings in the **ColorSync 2** dialog. Matching — **for printer only** or **for monitor and printer** — has to be turned on in order to activate the **Lab colors** menu item.

➢ Before defining Lab colors, open the **ColorSync 2** dialog and choose the profile of your final output device from the **Printer profile:** pop-up menu as shown in figure 16. The advantage of this setting is, that you will get an immediate warning if you define a color that cannot be reproduced by your printer.
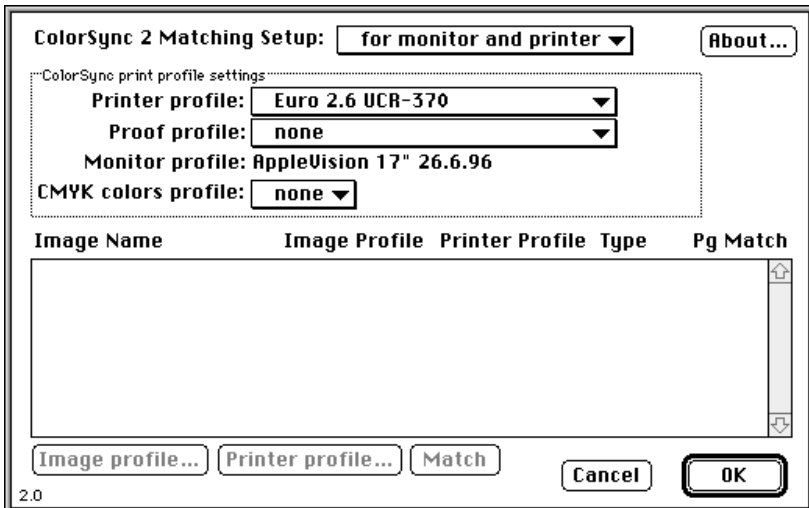
Fig. 16: Recommended **Matching Setup:** and **Printer profile:** settings for the definition of Lab colors

Now, you can define new Lab colors in QuarkXPress.

➢ Select **Utilities** and **Lab colors** to open the dialog shown in figure 17.

➢ Switch on "Separation" if you want the new color to be separated for printing. Switch off "Separation" if you want to define a spot color.

➢ Enter your L, a, and b value and a name for the new color. Please note that
— valid L-values must be between 0 and 100
— valid a- and b-values must be between -128 and +128
— valid names must not exceed 20 characters.

➢ Click on the **Add** button to save the new color.

➢ You can remove a color from the color list using the **Del** button. If you want to re-define an existing color you have to delete it first and then enter a new definition.
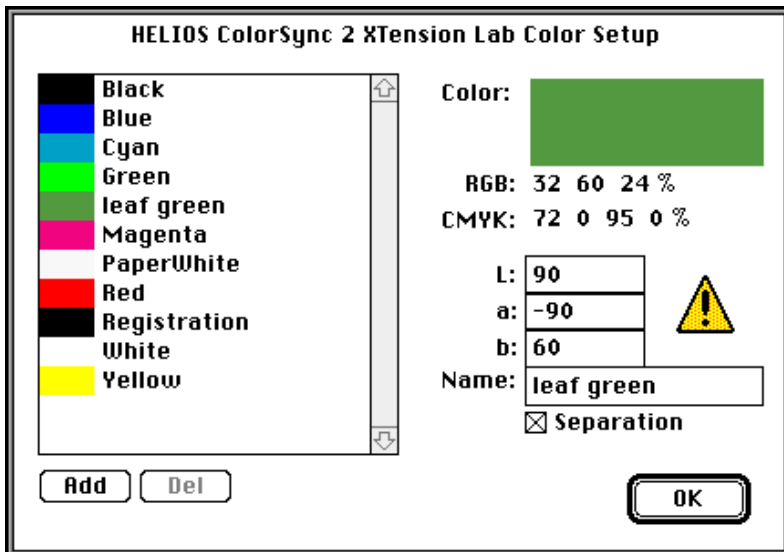
Fig. 17: The **Lab colors** dialog

How to interpret the `Lab colors` dialog

The warning sign that appears right of the Lab values in figure 17 indicates that this particular color cannot be printed by your chosen output device. The sign will disappear if you define a color that is within the printer gamut.

The "RGB" and "CMYK" line below the color preview pane inform you about the values ColorSync 2 XT has calculated for your monitor and printer. If all CMYK values were 0 this would indicate that you did not select a printer profile in the `ColorSync 2` dialog (see figure 16).

If you choose a color from the color list and then click into the color preview pane you will find that the RGB and CMYK values toggle between percent (0 — 100 %) and absolute (values from 0 — 255) representation.

Important: Please remember that the QuarkXPress `Colours, Append` option will cause a system crash if you have defined Lab colors (see chapter 7.1 "General remarks").

About PaperWhite

Once you have enabled ColorSync 2 XT in the `ColorSync 2` dialog, "PaperWhite" will automatically be added to the color list of your document. By default PaperWhite is set to 100, 0, 0 (Lab). If you select a printer profile for your document, the PaperWhite represents the color of the paper your printer is using. The values shown in figure 18 e.g. define the PaperWhite of a certain newspaper press.

The color PaperWhite may not be deleted or re-defined because it is part of the respective printer profile.

Even though the pages of your QuarkXPress document will not appear PaperWhite on your monitor, they are coated with this color internally. PaperWhite is considered during

the matching process. Provided that you have selected matching **for monitor and printer**, all matched colors of your document will be displayed the way they would appear if printed on this specific paper.
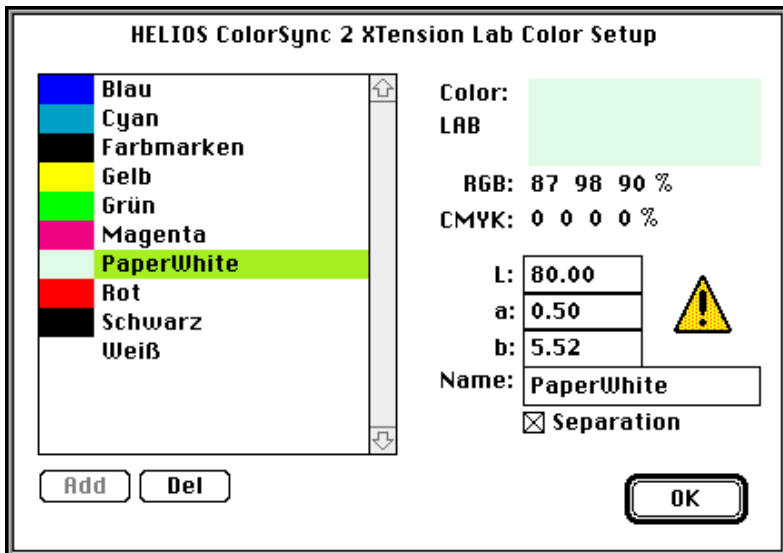
Fig. 18:   Color of the paper used by the selected printer

7.3   **Defining CMYK colors**

➢   To turn on the matching of CMYK colors, you have to se-
        lect a **CMYK colors profile:** in the **ColorSync 2** dialog.

        The basic hues used for the creation of CMYK inks are
        slightly different in Europe, America, and Japan. CMYK
        colors are matched according to the Euroscale, SWOP, or
        Japanese color definition as provided in the 2.6 version of
        the included printer profiles. You can choose between these
        different profiles as shown in figure 19.
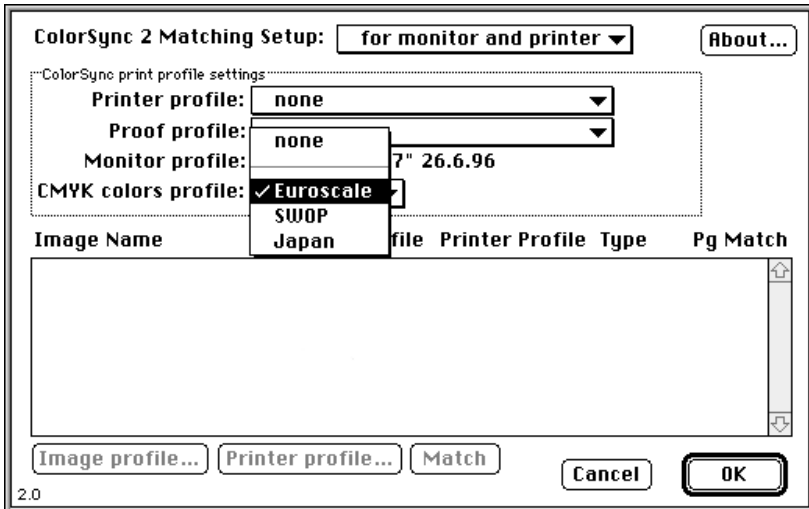
Fig. 19:   Settings for the matching of CMYK colors

        Now, you can start to define a new CMYK color.
➢   Select **Edit**, **Colours** and **New** from the QuarkXPress menu
        to open the dialog shown in figure 20.

➢ Select **CMYK** from the **Model:** pop-up menu.
➢ Do not forget to activate "Process Separation".
➢ Define a new color and click on **OK** and **Save** to add this color to your document.
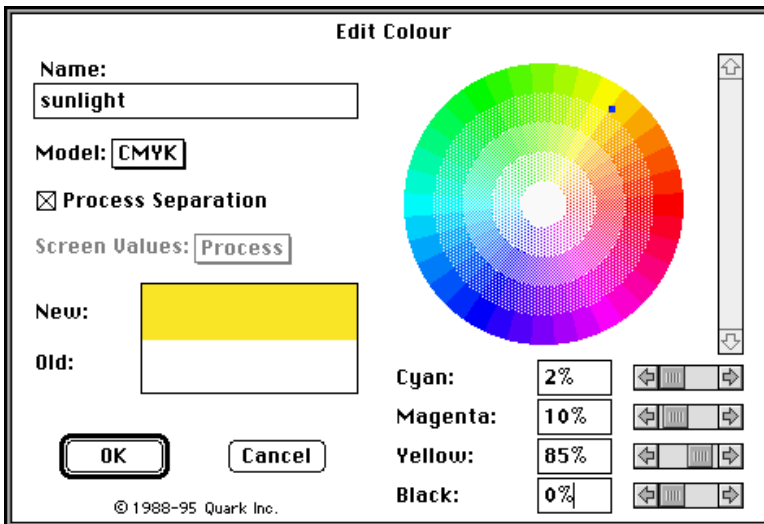
Fig. 20: Defining a CMYK color with the **Edit Colour** dialog

Important: If you want to match the CMYK colors of your document you may not use the QuarkXPress built-in colors "Cyan", "Magenta", "Yellow", and "Black" because these colors are RGB colors (internally) and RGB colors cannot be matched by ColorSync 2 XT.

7.4   Defining Pantone colors

Each Pantone color is identified by an ID and defined by
CMYK values. As the CMYK color space is device depen-
dent, the Pantone-defined CMYK values do not guarantee
correct reproduction of the colors. ColorSync 2 XT uses a
Pantone ID table which defines Pantone colors by Lab val-
ues. Thus, the colors can be matched correctly.
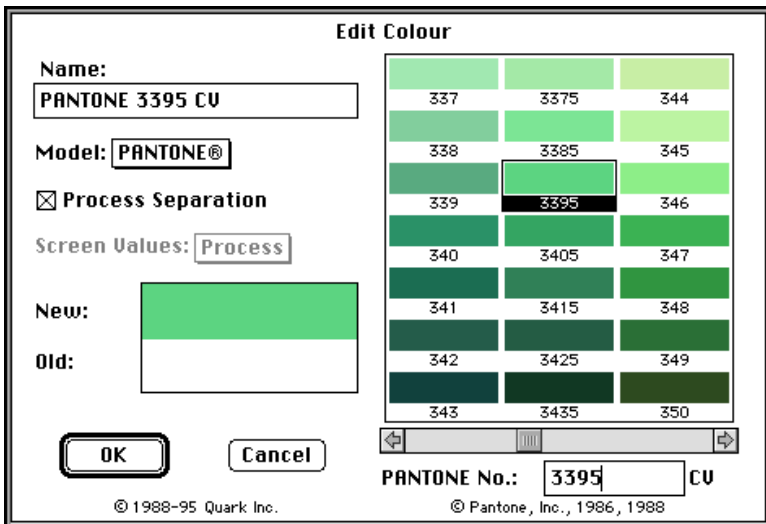
Fig. 21:   Defining a Pantone color with the **Edit Colour** dialog

➢   Open the **Edit Colour** dialog again using **Edit**, **Colours** and
     New.
➢   Select **Pantone** from the **Model:** pop-up menu as shown in
     figure 21.
➢   Remember that matching of colors can only be accom-

plished if "Process Separation" is activated.

➢   Define a new color and click on **OK** and **Save** to add this
    color to your document.

Note: The **Pantone Uncoated** color model is not auto-
            matically available in QuarkXPress. It is, however,
            supported by ColorSync 2 XT. So, if you have **Pan-
            tone Uncoated** colors available in your application,
            you can select this model instead of **Pantone**.

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8 Matching images

8.1   General remarks

Using the **File** and **Get Picture** menu items you can add different images to your QuarkXPress document. You can match these images for your monitor and printer if the specific file format is supported (compare table 1 in chapter 5.2 "Supported file formats").

ColorSync 2 XT matches your images but does not convert them. Original image formats remain unchanged.

Every single image may have its own individual matching definitions. If you place a specific image several times into one QuarkXPress document, however, you should note that the different copies are not treated separately. The first matching definition you enter will be applied to all copies of this image. If you really want to enter different definitions for the same image, you have to create several files containing this image but using different file names. QuarkXPress will then be able to make a distinction between these images and ColorSync 2 XT can therefore treat them individually.

8.2   Setting up image matching

➢   Open the **ColorSync 2** dialog again. The images you have
placed in your current document will be listed in the dialog
as shown in figure 22 — provided that the respective image
format is supported for matching. Images of non-supported
file formats are not considered.

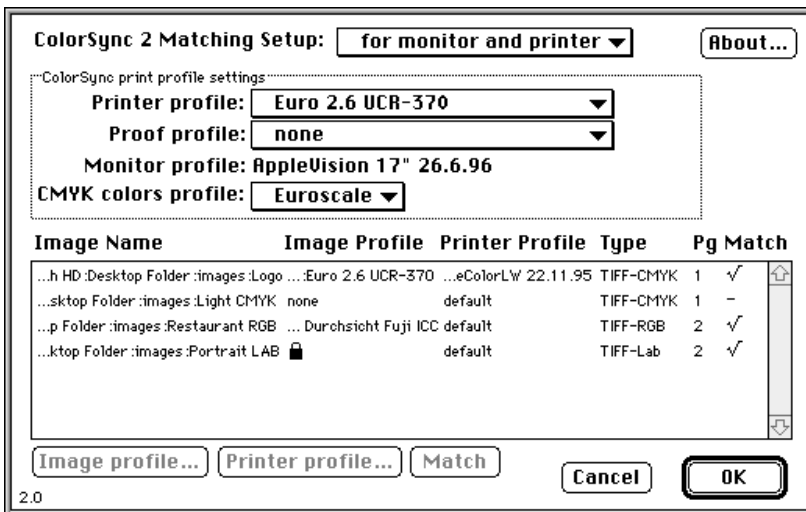Fig. 22:   Settings for image matching

Every single image in the list is described by its:
❍ "Image Name": file name of the specific image
❍ "Image Profile": profile of the input device used for this
   image (see also "About image profiles" below)
❍ "Printer Profile": profile of the printer you want to se-
   lect for printing this particular image (see also "About
   printer profiles" below)

❍ "Type": file format of the image file
❍ "Pg": Number of the page on which the image is placed
❍ "Match" indicator

How to set up matching for a single image

Image matching has to be defined image by image.Click on the first image description in the list to select this particular image.

➣ Selecting an image description will activate the **Image profile ..., Printer profile ...**, and **Match** buttons at the bottom of the dialog.

➣ If you want to see the selected image during definition, you can double-click on the image description. QuarkXPress will automatically scroll through the document, find the image and display it in the top left corner of your monitor.

➣ Images may come from different sources. So you have to click on the **Image profile ...** button and select the profile of the input device used for this particular image (see "About image profiles" below).

➣ Click on the **Printer profile ...** button if you want to select a special printer for this image only (see "About printer profiles" below).

➣ Click on the **Match** button to activate matching for the selected image. The √ check mark indicates that matching is switched on. Clicking the **Match** button again will exclude the image from matching.

Important: If matching is switched off for one or more images you will get – during printing – a warning message telling you the number of images that will not be matched. You can then stop the print job, if necessary.

About image profiles

ColorSync 2 XT needs an "input profile" for every single image to be able to transform the color data correctly into Lab. The input or image profile depends on the file format and the software that generated the color data of the specific

image. Please note that matching for a single image will be switched off automatically if the image profile is missing. This is e.g. the case if you open an old document that has been created with a previous version of ColorSync 2 XT. You will then have to assign new image profiles. Explanations are given in the following examples.

1. TIFF-RGB image from scanner
If you click on the **Image profile ...** button the "Scanner" folder of your "ICC-Profiles" volume (or folder) will open. Here, you can select the profile of the scanner you have used for this specific image.

2. TIFF-RGB image from another application (Photoshop)
If you apply new, Photoshop-defined RGB colors to an image and then import this image into QuarkXPress, you have to have an RGB profile for the transformation into Lab. The scanner profile of the original input device will no longer be suitable. In this case, you can select the standard "CCIR-EBU-RGB" profile from your "Scanner" folder.

3. TIFF-Lab
The TIFF-Lab file format can be generated either by a scanner or by an image processing application. For imported TIFF-Lab images you cannot define an image profile any more because Lab values are already device independent.

The "locked" symbol appears in the "Image profile" column.

Note: Please note that the Lab values of TIFF-Lab images may be less exact than the values ColorSync 2 XT would have calculated. Photoshop e.g. is able to transform images into TIFF-Lab but does not use ICC-format profiles for the transformation (see also appendix A 3: "About image processing applications").

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4. TIFF-CMYK

For each TIFF-CMYK image the separation has already
been accomplished in a different application (e.g. LinoCol-
or or Photoshop) for a specific printer. Therefore, CMYK
image profiles are printer profiles and not scanner profiles.
ColorSync 2 XT has to know how the separation was car-
ried out. Usually this was accomplished by creating an ICC
profile for the printer which represents your in-house
CYMK standard. You should use this CMYK profile for
your LinoColor printing process setup as well. Some profile
generation tools also allow you to generate Photoshop sep-
aration tables from your ICC printer profile (compare ap-
pendix A 3: "About image processing applications").

Using a CMYK profile for images that have already been
matched to a printer may seem superfluous. Nevertheless,
there are a few aspects that make it sensible to develop a
CYMK profile and use it as an in-house standard:

❍ If you work with one TIFF-CMYK standard you can
   save variations of your printer profile which use e.g. dif-
   ferent black generation.
❍ You can develop additional profiles for use with differ-
   ent paper types.
❍ You can send these CMYK images to your proof where
   ColorSync 2 XT simulates the printer you are using. For
   example, if your image is separated with the "Euro 2.6
   UCR-370" profile, and your printer is printing with an
   "A-Offset GCR-60" profile, and your Iris proof is the
   Iris-ICC profile, then your proof simulates the results
   you would get printing directly to the printer.
❍ Imagine that you (Customer-A) receive a print job from
   Customer-B. You can now simulate the output of the
   Customer-B press on your Customer-A press by select-
   ing the printer profile from Customer-B as printer pro-
   file and your own printer profile as proof profile.

In table 3 you will find some examples of CMYK profiles.

Table 3:   Printer profiles used as CMYK image profiles

	Printer profiles
Standard	Euro 2.6 UCR-370
Standard	Euro 2.6 UCR-340
Standard	SWOP 2.6 UCR-370
Customer-A	A-Offset-GCR-60
Customer-B	B-Offset-UCR370
Customer-C	C-Offset-UCR-360

Please note that we recommend to use TIFF-Lab or TIFF-RGB images directly from your scanner. This guarantees better quality and images are much smaller (about 30% less in size). RGB images are matched exactly to the gamut of your printer. For a CMYK image the gamut mapping is already done for a specific printer. If you print to a different device the colors will only be matched to the different CMYK used by this printer, but the gamut mapping will remain unchanged.

About "tagged" image profiles

Up to now, image profiles are selected and assigned in the `ColorSync 2` dialog. They are part of the QuarkXPress document. Future scanners will be able to include the ICC profile in the TIFF file (embedded or by reference). Thus, images will already contain their profiles — they will be "tagged". Image tagging is also possible with EtherShare OPI 2.0.

🔒 If a profile is embedded in the image this will be indicated by the "locked" symbol in the "Image profile" column which is also used for TIFF-Lab images. In case the image only contains a reference to the tagged profile, this profile will be stated in the "Image profile" column and can be changed again.

About printer profiles

If the "Printer Profile" column shows "default", this indicates that the image will be matched for the printer selected in the **Printer profile:** pop-up menu. Using the **Printer profile ...** button you can select an individual printer for every single image (e.g. a printer with a different GCR value). Among other things, you can use this feature for comparing different printers on your monitor (see also chapter 9.1 "Matching documents for the monitor").

➢ If you want to reset an individual printer profile to default again, you have to highlight the image description and switch matching off and on again using the **Match** button.

9 Matching complete documents

9.1 Matching documents for the monitor

All colors will be matched according to the current system or monitor profile. The file name of this particular profile is given in the **ColorSync 2** dialog as shown in figure 23. If you want to activate another monitor profile, you have to open the **ColorSync System Profile** control panel. Detailed instructions on how to select a system profile are given in chapter 5.1 "For best results".

```
ColorSync 2 Matching Setup:  for monitor and printer ▼     (About...)
  ┌ColorSync print profile settings┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄
       Printer profile: │ Euro 2.6 UCR-370              ▼
        Proof profile: │ none                           ▼
      Monitor profile: AppleVision 17" 26.6.96
  CMYK colors profile: │ Euroscale ▼
```
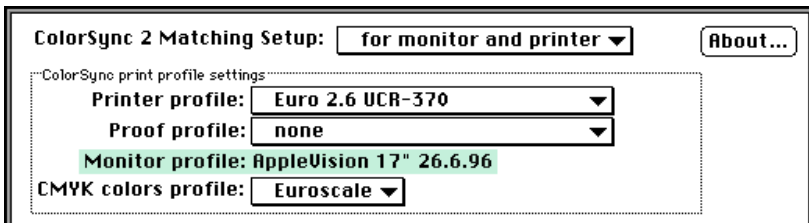
Fig. 23: Information about the selected monitor profile

➢ In case you have changed your system profile, you have to open the **ColorSync 2** dialog and press the **OK** button to make the changed setting visible (it is not necessary to restart your system or your QuarkXPress application).

➢ To match a document for the monitor, make sure that

❍ **for monitor and printer** is activated in the **ColorSync 2** dialog and

❍ you have selected a profile from the **CMYK colors profile:** pop-up menu (for documents containing self-defined CMYK or Pantone colors).

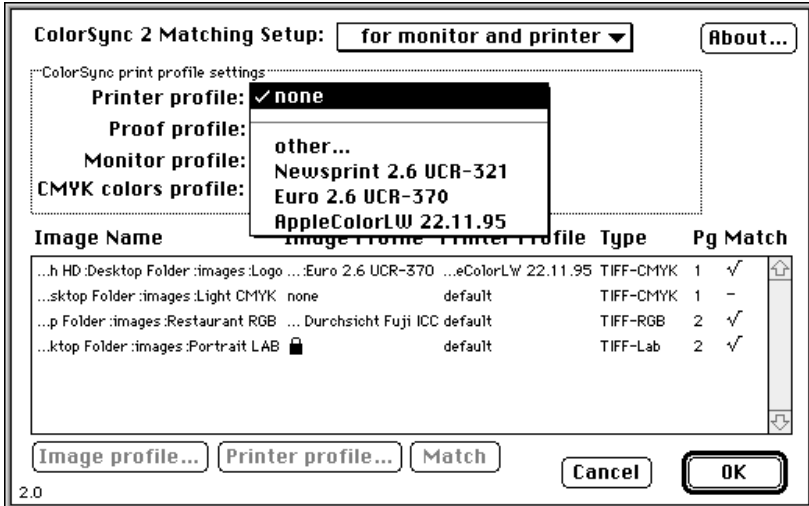Now, you have two possibilities of matching (compare figure 24):

Fig. 24: Setting up matching for the monitor

➢ 1. If you choose a printer profile from the **Printer profile:** pop-up menu, the monitor simulates a printout of the document according to this default printer. Special printer profiles — which may be selected for single images — are considered. Thus, you can import two copies of the same image into your QuarkXPress document, define different printer profiles for these images and compare the different output results on the monitor.

➢ 2. If you set the **Printer profile:** to **none**, all QuarkXPress-defined colors as well as the TIFF-RGB and TIFF-Lab images are matched for the monitor without involving any printer correction. The number of reproducible colors will increase considerably because monitor color spaces (RGB) usually are larger than printer color spaces (CMYK). This setting may be used for a presentation.

9.2 Matching documents for a printer

You can match TIFF-Lab, TIFF-RGB, and TIFF-CMYK images and QuarkXPress-defined Lab, CMYK, and Pantone colors for your printer. Considering the respective ICC profile, ColorSync 2 XT takes care about the color transformation, gamut mapping and black generation during the printing process. Please remember that for TIFF-CMYK images the gamut mapping has already been accomplished by a different application (see paragraph "About image profiles" in chapter 8 "Matching images"). Figure 25 shows the settings that are used to match documents for a printer.
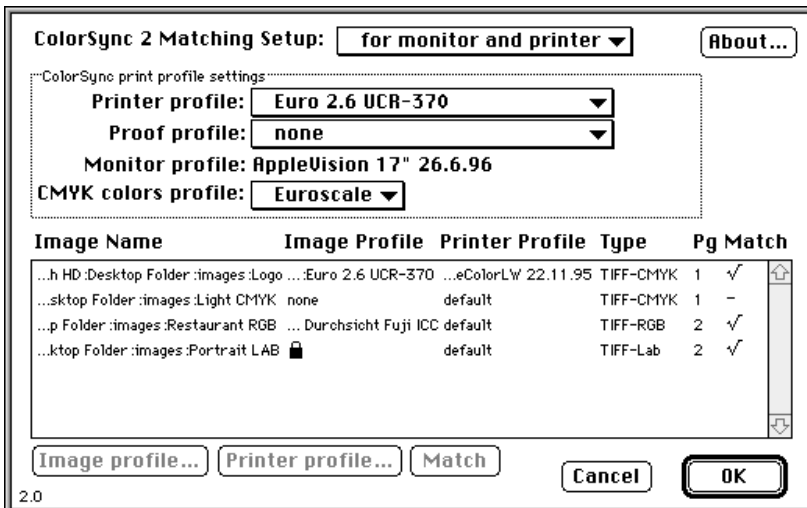
Fig. 25: Setting up matching for a printer

If you are not interested in seeing the printing results on your monitor, you can select **for printer only** from the pop-up menu **ColorSync 2 Matching Setup:**.

Important: If you set up matching for a printer, you have to make sure that the **Proof profile:** is set to **none**. Otherwise, ColorSync 2 XT will automatically expect the proof to be selected for printing (compare figure 26 below to figure 27 in chapter 9.3 "Matching documents for a proof").

Figure 26 illustrates how color data are transformed if you match a document for a printer.

Fig. 26:   Color data transformation for printing to the final output device

9.3   **Matching documents for a proof**
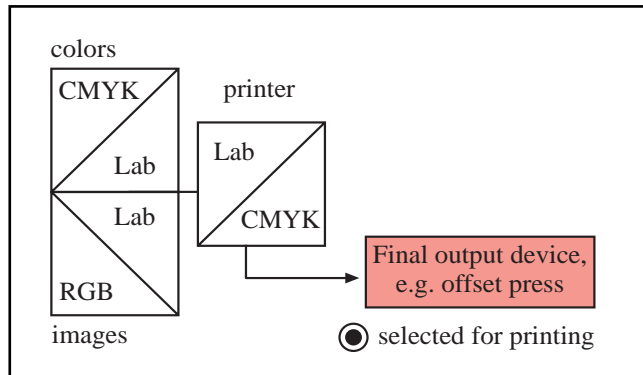
All the color data that can be matched for a printer can also be matched for a proof. A proof is a printer which is used to simulate the output results of another printer or a press. The color data transformation and gamut mapping are accomplished for the printer you want to use as final output device (e.g. an offset press). The resulting CMYK values are then transformed into the specific CMYK values of the proof. To guarantee a precise simulation, the gamut of the proof may not be smaller than that of the printer because there is no gamut mapping from printer to proof. Different printer gamuts are illustrated in chapter 3.1 "About colors and matching", figures 3 and 4. Figure 27 shows how color data are transformed if you print to a proof.
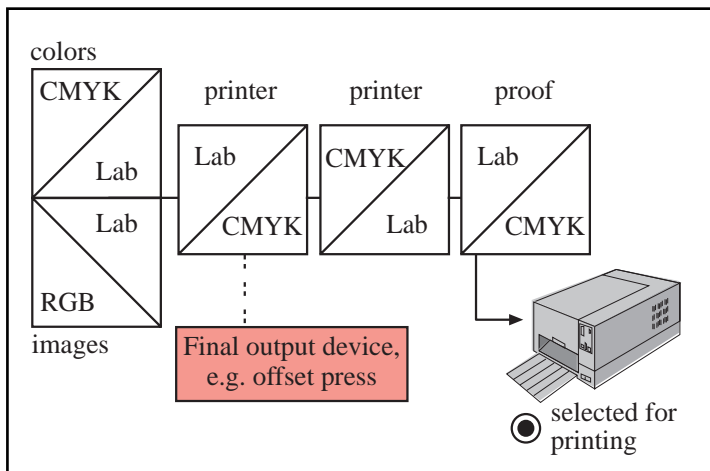

Fig. 27:   Color data transformation for the simulation of printer colors on a proof

Figure 28 shows the settings for a simulation of an Euro 2.6 UCR-370 printer on an Iris proof.
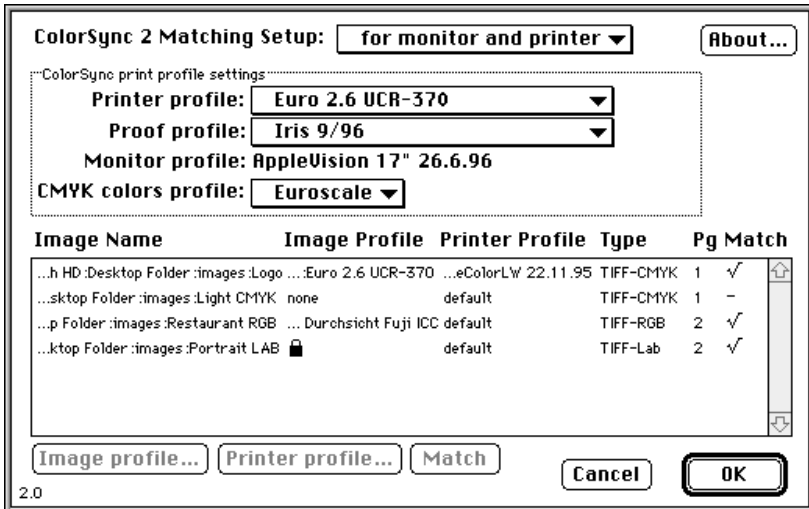
Fig. 28: Setting up matching for a proof

Note: You can use the proof feature to print separations sim-
            ulating the offset press of another customer. Select the
            press profile of the customer in the **Printer profile:**
            menu and your own press in the **Proof profile:**
            menu.
            You can also simulate an RGB output device on a
            CMYK proof printer. For that purpose, you have to se-
            lect an RGB profile (e.g. a monitor profile) as **Printer
            profile:** and the CMYK profile of your proof as **Proof
            profile:**. As CMYK color spaces usually are smaller
            than RGB color spaces, you have to have a proof print-
            er with an extraordinary color space.

Important: The PaperWhite of the final output device is considered when printing to a proof. The proof printer even prints this PaperWhite, so that you have a complete simulation of the result you would get from your printer. This complete simulation can only be perfect, however, if the color of the paper your proof printer is using is lighter than the PaperWhite of your final output device.

---

10 **Printing documents**

There are different possibilities for printing a QuarkXPress document. You can send the data to a printer, a spooler, or print to a file. In the following, we give you some advice on the settings you should prefer. For general information on setting up printing, see the QuarkXPress user manual and the description of your current printer driver.

The following explanations are based on the user interface of LaserWriter driver 8.5.1a1.

➢ First of all, select **File** and **Page Setup** from the QuarkX-Press menu, proceed to the "QuarkXPress" window and select the correct PPD file for your current printer type.

The setting should be identical to the chooser's PPD setting. **Generic Color** may be selected if your printer type is not stated in the list and you plan to print colored documents; *do not* select **Generic B&W.** For details compare figure 29.
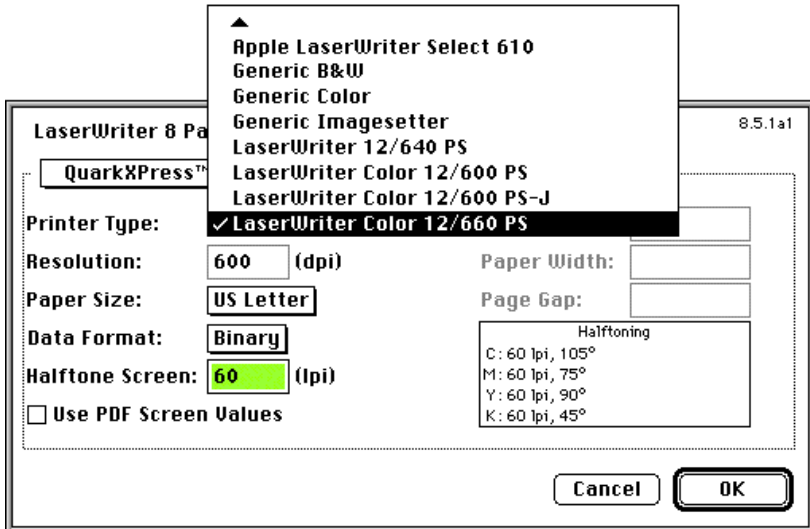
Fig. 29:   Selecting the correct printer type

➢   Then open the print dialog using **File** and **Print...** from the QuarkXPress menu.

There are different windows in the print dialog (in case you are using LaserWriter driver 8.4 or newer). These windows can be opened from a pop-up menu as shown in figure 30. There are two windows that are important for printing with ColorSync 2 XT, namely the "QuarkXPress" window (figure 32) and the "Color Matching" window (figure 31). They are both described below.
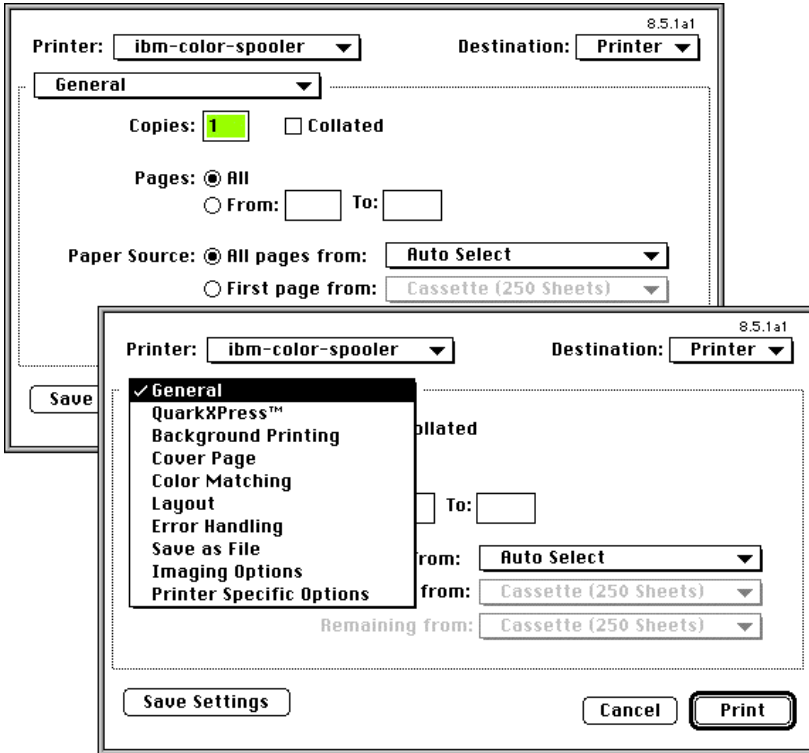
Fig. 30:   Different windows in the print dialog

Printing to a laser writer   ColorSync 2 XT can use all Apple or Adobe LaserWriter 7 or LaserWriter 8 printer drivers. Please note that new releases of the Apple LaserWriter 8 version may contain two additional print options, namely **ColorSync Color Matching** and **PostScript Color Matching** (see figure 31). They invoke either the ColorSync system software or a PostScript Level II printer to perform color matching.
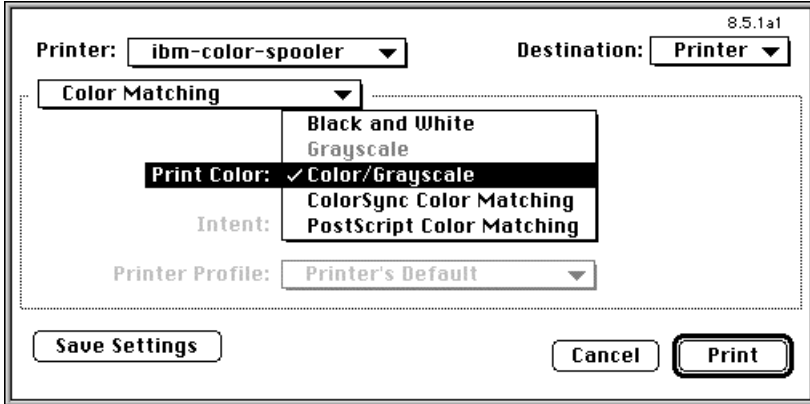
Fig. 31: Settings in the "Color Matching" window of the print dialog

For both options the matching results will be rather poor in comparison to ColorSync 2 XT.

➢ So, make sure that you select the standard **Color/Grayscale** option as shown in figure 31.

Print spoolers and Ether-Share OPI 2.0

ColorSync 2 XT supports printing to different print spoolers. If you are using the HELIOS EtherShare OPI 2.0 network software you can even shift the color matching process to your server before printing. For that purpose, you may change the default in the **OPI** pop-up menu in the "QuarkXPress" window and read appendix A 4: "About co-operation with EtherShare OPI 2.0". Without the Ether-Share OPI 2.0 version — even if you are using EtherShare OPI 1.2 — the standard setting would be **Include Images** as shown in figure 32.
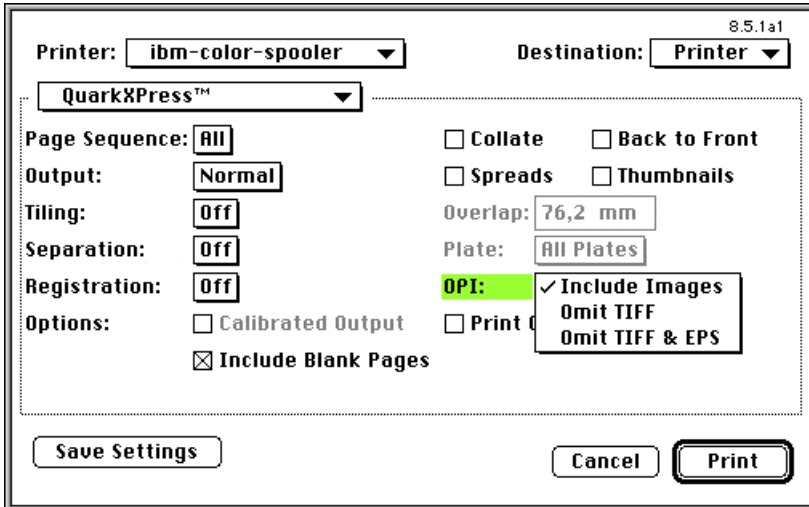
Fig. 32: "QuarkXPress" window in the print dialog — OPI settings

Printing to a PostScript file

Printing to a printer or spooler is only one option in the print dialog. The other one is printing to a PostScript file. The data in the PostScript file will be matched according to the current printer profile settings in the **ColorSync 2** dialog. Please remember to select **Color/Grayscale** in the "Color Matching" window to avoid system or printer driver color corrections (see figure 31).

Saving pages as an EPS file

You can save pages of your QuarkXPress document as an EPS file. This option from the **File** menu is only suitable for pages you do not want to match. EPS files only contain the original data without any color matching done. If you place an EPS file into a QuarkXPress document again, this file will automatically be excluded from matching because the

current ColorSync 2 XT does not support the EPS file format (see also table 1 in chapter 5.2 "Supported file formats").

About Post-Script features and RIP calibration

Once you have sent your document or a PostScript file to a printer, the printer's PostScript RIP takes care of generating the individual output commands. ColorSync 2 XT supports all Level I and Level II based PostScript RIPs. Some PostScript Level II features already support color matching. It is, however, more sensible to skip these features and use the ColorSync engine for color matching. The advantages are:

❍ Lab, RGB and CMYK based colors are supported.
❍ You can keep your old PostScript Level I devices and yet perform color matching.
❍ Composite and separation based printing are supported.
❍ There is full compatibility to the ICC profile standard.
❍ Matching is done with the same engine and profiles for monitor, printer and proof.
❍ The same ColorSync matching engine is used by Ether-Share OPI 2.0.
❍ Matching is product independent, it is identical for all PostScript RIPs from different vendors.

Our experience shows that you will obtain the best results by turning off all RIP based calibration and Euroscale or SWOP simulations for both printing and creating test forms for profile measurement. After the profile is created, it will take care about the best possible color results available on this printer. Table 4 gives two examples of settings we recommend for specific printers.

Table 4: Best RIP settings for work with ColorSync 2 XT

RIP / Printer	Settings
IRIS Proof	LH-LIN-OS
Apple Color LaserWriter 12/660	none

11   Technical support

If you happen to make a mistake using ColorSync 2 XT, the program will provide a warning message similar to that shown in figure 33.


```
        HELIOS ColorSync 2 XTension Warning

    XT function:  ConfigureDialog
 XT error code:  36, 373
 MacOS function:  CMOpenProfile
MacOS error code:  -
          Name:  TOPAZ Durchsicht Fuji ICC


Error description:  Please select a CMYK profile for the
                    CMYK image.



                                           [  OK  ]
```
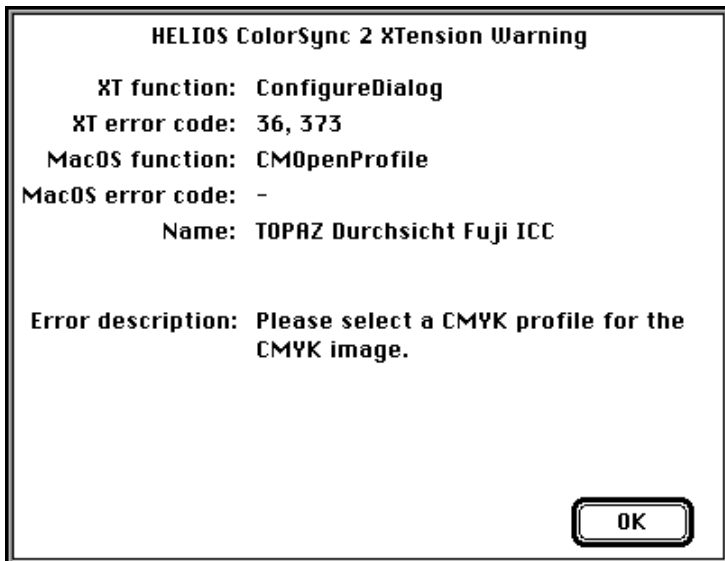
Fig. 33:   Example of a warning dialog

There are different ways of looking for help and dealing with errors.

❍ Follow the instructions given in the "Error description"
  line and/or re-read the manual.

  Please read the "Error description" carefully, it may
  give you the very hint you need for proceeding. In case
  that it does not, check the user manual again. If the in-
  formation you need is not in the manual, it might be
  found in the README file on the CD-ROM. This file
  contains the latest news and technical details about
  ColorSync 2 XT.

❍ Contact your dealer.

  For problems you cannot solve on your own, you may
  request help from your dealer. If you do so, please note
  that for a fast problem localization the dealer needs
  some specific information from you. You should pre-
  pare a report containing the details listed in figure 34.

❍ Under certain circumstances, you may as well contact
  our support department.

  In case you have detected any mistakes in our software
  or documentation, please set up a detailed report as de-
  scribed in figure 34 and contact our support department:

HELIOS Software GmbH
Lavesstrasse 80
D—30159 Hannover, Germany
phone: +49 511 364820
fax: +49 511 3648245
e-mail: support@helios.de

**Designing an
error report**

❍ Mac OS version
➢ Select **About This Macintosh...** from the menu.

❍ ColorSync System Software version
➢ Open your "System folder" and the "Extensions" subfolder, highlight the "ColorSync" icon and select **File** and **Get Info** from the main menu.

❍ QuarkXPress version
➢ Open your QuarkXPress application and select **About QuarkXPress...** from the menu holding down the **Alt** key.

❍ Version and serial number of your ColorSync 2 XT copy
➢ The version number is stated in the bottom left corner of the **ColorSync 2** dialog.
The serial number can be obtained from the "QuarkXPress environment" dialog. For this dialog, open your application and select **About QuarkXPress...** from the menu holding down the **Alt** key. Then, select "ColorSync 2 XT" from the "XTensions" list.

❍ List of all active QuarkXPress XTensions
❍ List of active profiles (monitor, scanner/image, printer, proof)
❍ Error description of the warning dialog, if available
❍ Complete description of what you wanted and what you got
❍ Screenshots are helpful (of dialogs: Warning, **ColorSync 2** and windows in the print dialog)

Fig. 34: Contents of a complete error report

A 1: About the sample files

Our CD-ROM contains some images and a document file for testing purposes (compare folder "Sample files" in figure 8 in chapter 4.4 "Completing the installation").

Images   With the "Images" subfolder we provide six different scanner or Photoshop files that have been saved as TIFF-RGB, TIFF-Lab, or TIFF-CMYK. These files may be placed into a QuarkXPress document and processed with ColorSync 2 XT as described in chapter 8 "Matching images".

Documents   The "Documents" subfolder contains only one file, namely the "Lab Colors Test page v1.4". This test page has been created in QuarkXPress and includes several color panels and the respective Lab or CMYK values. You can print the test page and then measure the colors on your printout using e.g. a Gretag measurement device. From the differences that may occur between the measured values and the values stated on the test page, you can draw conclusions about the characteristics of your printer or about the quality of your printer profile.

An illustration of the test page is shown in figure A-1. Please proceed as follows:

➢   Open the document file "Lab Colors Test page v1.4".
➢   Enable ColorSync 2 XT (as described in chapter 6) and select a `CMYK colors profile:` and a `Printer profile:` from the respective pop-up menus.
➢   Print the document.

Fig. A-1:   The "Lab Colors Test page v1.4" document

Appendix

A 2: About profile generation

The quality of color matching mainly depends on the quality of the selected profiles. Standard profiles which have been generated for a certain device and then included in a software package — e.g. the monitor profiles delivered by Apple — often do not guarantee high-quality results. Our CD-ROM contains several ICC profiles for different popular devices. You can use these profiles for your monitor, scanner and printer.

The profiles we have generated

The following figures show all the sample profiles we provide on our CD-ROM. They are stored in different folders (compare figures A-2 to A-4).
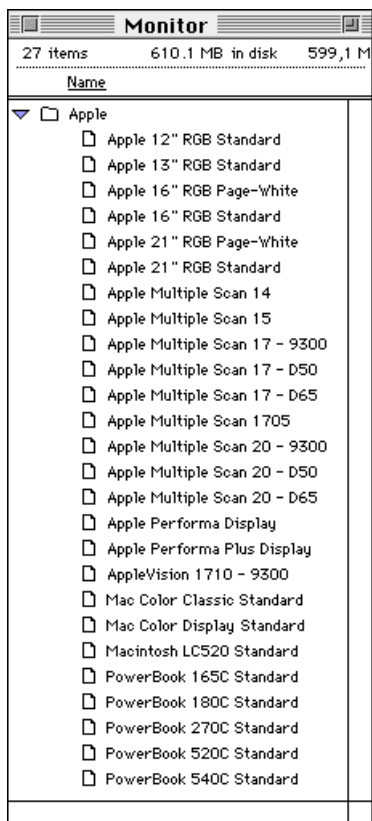
Fig. A-2:   The monitor profiles on our CD-ROM

	Scanner	
21 items	610.1 MB in disk	599,1 MB fr

Name

▽ 🗀 HELIOS
   ▽   🗀 AppleOne1200/30
        🗋 AppleOne1200-Agfa-RF 19.2.97
        🗋 AppleOne1200-Agfa-TF 19.2.97
        🗋 AppleOne1200-Fuji-RF 19.2.97
        🗋 AppleOne1200-Fuji-TF 19.2.97
        🗋 AppleOne1200-Kodak-RF 19.2....
        🗋 AppleOne1200-Kodak-TF 19.2....
   ▽   🗀 AppleOne600/27
        🗋 AppleOne600-Agfa-RF 19.2.97
        🗋 AppleOne600-Fuji-RF 19.2.97
        🗋 AppleOne600-Kodak-RF 19.2.97
        🗋 CCIR-EBU-RGB
   ▽   🗀 SAPHIR
        🗋 SAPHIR-Agfa-RF 8.8.96
        🗋 SAPHIR-Agfa-TF 8.8.96
        🗋 SAPHIR-Fuji-RF 8.8.96
        🗋 SAPHIR-Fuji-TF 8.8.96
        🗋 SAPHIR-Kodak-RF 8.8.96
        🗋 SAPHIR-Kodak-TF 8.8.96
        🗋 TOPAZ Durchsicht Fuji ICC

Fig. A-3:   The scanner profiles on our CD-ROM

HELIOS	
35 items	610.1 MB in disk 599,1

Name

- Apple Color-PO-22.11.95-2.5
- CromalinEuro 1.0 GCR50 UCR3...
- CromalinEuro 1.0 GCR70 UCR3...
- CromalinEuro 1.0 GCR85 UCR3...
- CromalinEuro 1.0 K85 UCR360
- CromalinEuro 1.0 K95 UCR340
- CromalinEuro 1.0 ShortKe UCR...
- CromalinEuro 1.0 UCR370
- Euro 2.6 GCR50 UCR370
- Euro 2.6 GCR70 UCR370
- Euro 2.6 GCR85 UCR300
- Euro 2.6 K85 UCR360
- Euro 2.6 K95 UCR340
- Euro 2.6 ShortKey UCR370
- Euro 2.6 UCR-370
- MatchPrintS 1.0 GCR50 UCR370
- MatchPrintS 1.0 GCR70 UCR370
- MatchPrintS 1.0 GCR85 UCR300
- MatchPrintS 1.0 K85 UCR360
- MatchPrintS 1.0 K95 UCR340
- MatchPrintS 1.0 ShortKey UCR...
- MatchPrintS 1.0 UCR-370
- Newspaper 2.6 K75 UCR280
- Newspaper 2.6 SkelKey K75 U...
- NewsPrintE 1.0 GCR50 K80 UC...
- NewsPrintE 1.0 GCR70 K80 UC...
- NewsPrintE 1.0 GCR85 K80 UC...
- NewsPrintE 1.0 K75 UCR280
- NewsPrintE 1.0 SkelKey K75 U
- SWOP 2.6 GCR50 UCR370
- SWOP 2.6 GCR80 UCR370
- SWOP 2.6 ShortKey UCR310
- SWOP 2.6 ShortKey UCR3280
- SWOP 2.6 ShortKey UCR370
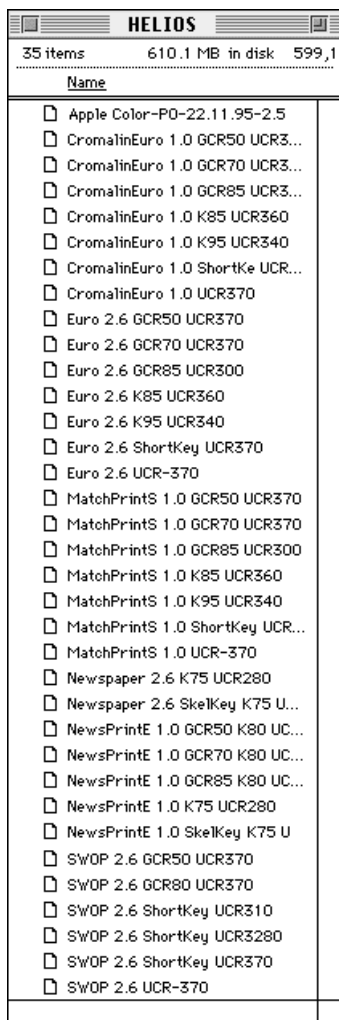- SWOP 2.6 UCR-370

Fig. A-4: The printer profiles on our CD-ROM

Table A-1 again lists the printer profiles on our CD-ROM and states the settings we have used for generation. All printer profiles have been generated with PrintOpen ICC 2.5 from Linotype-Hell with exactly the same settings that have been used for the LinoColor 4.1 print tables.

Table A-1:   The settings we used for profile generation

Abbreviations in table A-1: **O** = optimized gamut mapping, **L** = black length, **W** = black width (see also "Black generation" in chapter 2.1 "Glossary").

Profile name	Settings for profile generation
Apple Color-PO-22.11.95-2.5	O / L5, W5 / UCR: 370 / max. black: 95
CromalinEuro 1.0 GCR50 UCR370	O / GCR: 50 / UCR: 370 / max. black: 95
CromalinEuro 1.0 GCR70 UCR370	O / GCR: 70 / UCR: 370 / max. black: 95
CromalinEuro 1.0 GCR85 UCR300	O / GCR: 85 / UCR: 300 / max. black: 90
CromalinEuro 1.0 K85 UCR360	O / L6, W8 / UCR: 360 / max. black: 85
CromalinEuro 1.0 K95 UCR340	O / L7, W7 / UCR: 340 / max. black: 95
CromalinEuro 1.0 ShortKe UCR370	O / L6, W5 / UCR: 370 / max. black: 95
CromalinEuro 1.0 UCR370	O / L5, W5 / UCR: 370 / max. black: 95
Euro 2.6 GCR50 UCR370	O / GCR: 50 / UCR: 370 / max. black: 95
Euro 2.6 GCR70 UCR370	O / GCR: 70 / UCR: 370 / max. black: 95
Euro 2.6 GCR85 UCR300	O / GCR: 85 / UCR: 300 / max. black: 90
Euro 2.6 K85 UCR360	O / L6, W8 / UCR: 360 / max. black: 85
Euro 2.6 K95 UCR340	O / L7, W7 / UCR: 340 / max. black: 95

Table A-1:   The settings we used for profile generation

Euro 2.6 ShortKey UCR370	O / L6, W5 / UCR: 370 / max. black: 95
Euro 2.6 UCR-370	O / L5, W5 / UCR: 370 / max. black: 95
MatchPrintS 1.0 GCR50 UCR370	O / GCR: 50 / UCR: 370 / max. black: 95
MatchPrintS 1.0 GCR70 UCR370	O / GCR: 70 / UCR: 370 / max. black: 95
MatchPrintS 1.0 GCR85 UCR300	O / GCR: 85 / UCR: 300 / max. black: 90
MatchPrintS 1.0 K85 UCR360	O / L6, W8 / UCR: 360 / max. black: 85
MatchPrintS 1.0 K95 UCR340	O / L7, W7 / UCR: 340 / max. black: 95
MatchPrintS 1.0 ShortKey UCR370	O / L6, W5 / UCR: 370 / max. black: 95
MatchPrintS 1.0 UCR-370	O / L5, W5 / UCR: 370 / max. black: 95
Newspaper 2.6 K75 UCR280	O / L5, W5 / UCR: 280 / max. black: 75
Newspaper 2.6 SkelKey K75 UCR28	O / L2, W2 / UCR: 280 / max. black: 75
NewsPrintE 1.0 GCR50 K80 UCR280	O / GCR: 50 / UCR: 280 / max. black: 80
NewsPrintE 1.0 GCR70 K80 UCR280	O / GCR: 70 / UCR: 280 / max. black: 80
NewsPrintE 1.0 GCR85 K80 UCR280	O / GCR: 85 / UCR: 280 / max. black: 80
NewsPrintE 1.0 K75 UCR280	O / L2, W2 / UCR: 280 / max. black: 75
NewsPrintE 1.0 SkelKey K75 U	O / L5, W5 / UCR: 280 / max. black: 75
SWOP 2.6 GCR50 UCR370	O / GCR: 50 / UCR: 370 / max. black: 95
SWOP 2.6 GCR80 UCR370	O / GCR: 80 / UCR: 370 / max. black: 95
SWOP 2.6 ShortKey UCR310	O / L6, W5 / UCR: 310 / max. black: 95
SWOP 2.6 ShortKey UCR280	O / L6, W5 / UCR: 280 / max. black: 95

Table A-1:   The settings we used for profile generation

SWOP 2.6 ShortKey UCR370	O / L6, W5 / UCR: 370 / max. black: 95
SWOP 2.6 UCR-370	O / L5, W5 / UCR: 370 / max. black: 95

Devices for profile generation

If you want to achieve high-quality color reproduction, you might wish to develop your own individual profiles. Table A-2 lists the hardware and software you will need for profile generation.

Table A-2:   Hardware and software requirements for profile generation

Profiles for ...	Hardware / devices	Profile generation Software
Monitor	Sequel Chroma (measuring tool which is integrated in ViewOpen ICC)	ViewOpen ICC 1.0
Scanner	IT8 targets - Agfa, Kodak, Fuji (included in ScanOpen ICC)	ScanOpen ICC 1.0
Printer	reference document (included in PrintOpen ICC), measuring device (e.g. Gretag SPM 10, SPM 50, or Gretag Spectrolino)	PrintOpen ICC 2.5

Profile naming and saving conventions

Each profile has to be kept in an appropriate folder and it has to have an unmistakable name so that it can be clearly identified. In the following, we give you some advice on

how to name and save your self-generated profiles.
The naming conventions for profiles are:

❍ Start with the name of the respective device.
❍ State the specific characteristics of this profile (e.g. the film type for a scanner profile or the UCR value for a printer profile).
❍ Add the date of generation.
❍ Make sure that the name does not exceed 31 characters.

Table A-3 contains a list of scanner profiles which are named according to these conventions. For examples of printer profiles, see table A-1.

Table A-3: Naming examples for scanner profiles

Film type	Saphir profile name	TOPAZ profile name	Arcus profile name
Agfa transparent	Saphir-Agfa-trans-2.9.96	TOPAZ-Agfa-trans-5.9.96	Arcus-Agfa-trans-2.9.96
Agfa reflection	Saphir-Agfa-refl-2.9.96	TOPAZ-Agfa-refl-5.9.96	Arcus-Agfa-refl-2.9.96
Kodak transparent	Saphir-Kodak-trans-2.9.96	TOPAZ-Kodak-trans-5.9.96	Arcus-Kodak-trans-2.9.96
Kodak reflection	Saphir-Kodak-refl-2.9.96	TOPAZ-Kodak-refl-5.9.96	Arcus-Kodak-refl-2.9.96
Fuji transparent	Saphir-Fuji-trans-2.9.96	TOPAZ-Fuji-trans-5.9.96	Arcus-Fuji-trans-2.9.96
Fuji reflection	Saphir-Fuji-refl-2.9.96	TOPAZ-Fuji-refl-5.9.96	Arcus-Fuji-refl-2.9.96

If you save your profiles, please note that:

❍ All profiles must be kept in the "ICC-Profiles" volume (or folder) you have selected when enabling ColorSync 2 XT (compare chapter 6 "Enabling ColorSync 2 XT").
❍ Monitor, scanner, and printer profiles should be kept in different folders.
❍ You can create several subfolders in the "Monitor", "Scanner", and "Printer" folder and thus structure your profile repository.

Appendix

A 3: About image processing applications

A 3.1   LinoColor 4.0

The Linotype-Hell image processing software LinoColor may be used for manipulating scanned images and for printing color separations. This chapter gives explanations about LinoColor and advice on how to set up the program if you want to place LinoColor image files in a QuarkXPress document and match them with ColorSync 2 XT. Please note that LinoColor supports the ICC profile format starting with version 4.0.24.

Linotype-Hell Print Tables vs. ICC Profiles

Linotype-Hell used its own profile format which is called print tables before ICC profiles became standardized. Both formats are supported by the profile generation tools Scan-Open and PrintOpen and there is no difference in quality. Nevertheless, we recommend to use ICC profiles, because they are standardized by the International Color Consortium and used by the Apple ColorSync system software. Another reason for using ICC profiles is that these profiles contain the printer and proof table in one file, whereas print tables are using one file for each table.

Using LinoColor with ICC profiles

With LinoColor 4.0.24 you can use ICC format profiles instead of print tables. The profiles, however, are only recognized if they are stored in the "ColorSync Profiles" folder. So, you have to re-organize your ICC profiles as described below:

➢ Open folders: "System folder", "Preferences", and "ColorSync Profiles".

➢ *Copy* the profiles from your "ICC-Profiles" volume (or folder) to "ColorSync Profiles". The original profiles must always be kept in the "ICC-Profiles" volume.

➢ Restart your LinoColor application to make the ICC profiles available.

Handling LinoColor CMYK images

You can separate images in LinoColor and thereby create TIFF-CMYK files which may then be placed in your QuarkXPress document. If you want to match these images in QuarkXPress using ColorSync 2 XT, you should proceed as follows:

➢ Decide on the ICC CMYK profile you want to use (e.g Euroscale 2.6 UCR-370 or your own CMYK printer standard).

➢ Select this CMYK profile in the LinoColor **Print Process** dialog (see paragraph "Using LinoColor with ICC profiles"). LinoColor will now separate all new images based on your CMYK standard. Please note that your scanned images will become incompatible if you change the selection again.

➢ Select the same CMYK profile as "image profile" in the **ColorSync 2** dialog in QuarkXPress (see also chapter 8 "Matching images").

➢ If you want to choose a different output device, please select the respective printer profile in the **ColorSync 2** dialog instead of changing your CMYK standard used for separation in LinoColor.

Handling LinoColor Lab images

In LinoColor you can save images as TIFF-Lab or TIFF-Lab(LH). The Lab and the Lab(LH) color space are not exactly identical, because the Linotype-Hell Lab(LH) color space uses a different reference white point. Both file formats can be placed in a QuarkXPress document and matched by ColorSync 2 XT.

LinoColor and monitor matching

With LinoColor 4.0.24 you can match *single images* for your monitor simulating a printout or representing the original image. ColorSync 2 XT allows you to match *complete documents* for the monitor — CMYK images not included because the current ColorSync 2 XT only supports RGB and Lab images for monitor matching. So, you may use LinoColor to match a single CMYK image on your monitor.

A 3.2   Abobe Photoshop 3.x

Important:	For Adobe Photoshop users we recommend to always keep an image in its original RGB format. As Photoshop is not using ICC format profiles for separation you should save every image as TIFF-RGB and shift matching and separation to your QuarkXPress application using ColorSync 2 XT.

Separating images with Photoshop

If you still need to work with CMYK based images, there are at least three possibilities of proceeding.

1.

You can use LinoColor instead of Photoshop, because the ICC printer profiles — which may be used by LinoColor — offer better quality for separation. In addition, you can use the profile you have selected for separation as image profile in the **ColorSync 2** dialog in QuarkXPress.

2.

If you still need to separate your image with Photoshop you can use third party utilities, which are able to convert an ICC profile to a Photoshop separation table.

3.

Another possibility is to select Euroscale ink setup and Photoshop "UCR-370" black generation to separate an RGB image in Photoshop. The resulting TIFF-CMYK image must then be tagged with the "Euro 2.6 UCR-370" ICC printer profile in the **ColorSync 2** dialog in QuarkXPress.

Photoshop and monitor matching

Photoshop 3 allows you to select an ICC profile to extract some parameters from the profile for use in the Photoshop monitor setup. Please note that Photoshop does not use a scanner profile, the monitor matching is thus incomplete. You can use the XTension to match the RGB based images on your monitor (optionally with printer simulation).

A 3.3   Canto Cirrus

For Cirrus users we recommend to scan and edit images based on RGB colors and save the images as TIFF-RGB. Matching and separation should be shifted to the QuarkX-Press application using ColorSync 2 XT.

Canto Cirrus and monitor matching

Cirrus already supports ColorSync 2.0 and allows you to either see the original image matched on your monitor or simulate printer output on your monitor. It offers an additional option to indicate all colors which are out of gamut for the selected printer. It is not necessary to change these colors because ColorSync 2 XT will take care about mapping the RGB image colors into the printer gamut.

Appendix

A 4: About co-operation with EtherShare OPI 2.0

The main differences ...   ... between EtherShare OPI 2.0 and ColorSync 2 XT 2.0 – as far as color matching features are concerned – are briefly specified in table A-4.

Table A-4:   Comparing EtherShare OPI and ColorSync 2 XT

	EtherShare OPI 2.0	ColorSync 2 XT 2.0
matches images in print jobs	yes	yes
supported image file formats	TIFF, EPSF, JPEG, Photo-shop, and many others	TIFF
supported layout applications	QuarkXPress, PageMaker and others	the program is a utility for QuarkXPress only
matches colors you apply to text and graphics	no	yes
matches documents on the monitor	no	yes

Both programs are designed to smoothly work together. In the following, we describe how OPI will behave if you are working with QuarkXPress and use ColorSync 2 XT.

Please note ...   ❍ First of all, when talking about co-operation, we assume that ColorSync 2 XT has been activated in the **ColorSync 2** dialog in QuarkXPress and that OPI is ac-

tive on the printer queue you are using.

❍ Whenever ColorSync 2 XT is active, the program will take care about the matching of colors you have defined for text or graphics in QuarkXPress. OPI does not affect this process.

❍ The printer and proof profiles you have selected in the **ColorSync 2** dialog, are always valid. They replace the OPI settings.

❍ Whenever you switch off color matching for a single image (which can be done using the **Match** button in the **ColorSync 2** dialog), this image will be excluded from matching, even if the matching process is performed by the OPI software.

❍ Raster-based EPSF files are always matched by the OPI software, because ColorSync 2 XT is not able to handle EPSF files.

Working with high-resolution images

By default, OPI does not replace high-resolution images for printing. So, if you place high-resolution images in a QuarkXPress document, color matching will be performed by ColorSync 2 XT on the Macintosh computer. ColorSync 2 XT will use the ICC image profiles that are tagged to the high-resolution images (embedded or by reference) – if there are any. For every image that has not yet been tagged, you have to select an image profile using the respective features in the **ColorSync 2** dialog.

If you switch the **Replace Images** option to **All** on your EtherShare printer queue, OPI will replace all images for printing – high-resolution images included. In this case, color matching will be performed by the OPI software, but will nevertheless be based on the settings in the **ColorSync 2** dialog. OPI will use the ICC profiles that are tagged to the high-resolution images (embedded or by reference) – if there are any – or use the image profiles you have assigned

to the images in the **ColorSync 2** dialog in QuarkXPress. You will get an error message if the high-resolution images that are to be sent to the printer do not have an image profile at all.

Working with low-resolution layouts

In case you place low-resolution layouts in a QuarkXPress document, color matching will – in particular situations – be performed by ColorSync 2 XT on the Macintosh *and* by the OPI server simultaneously.
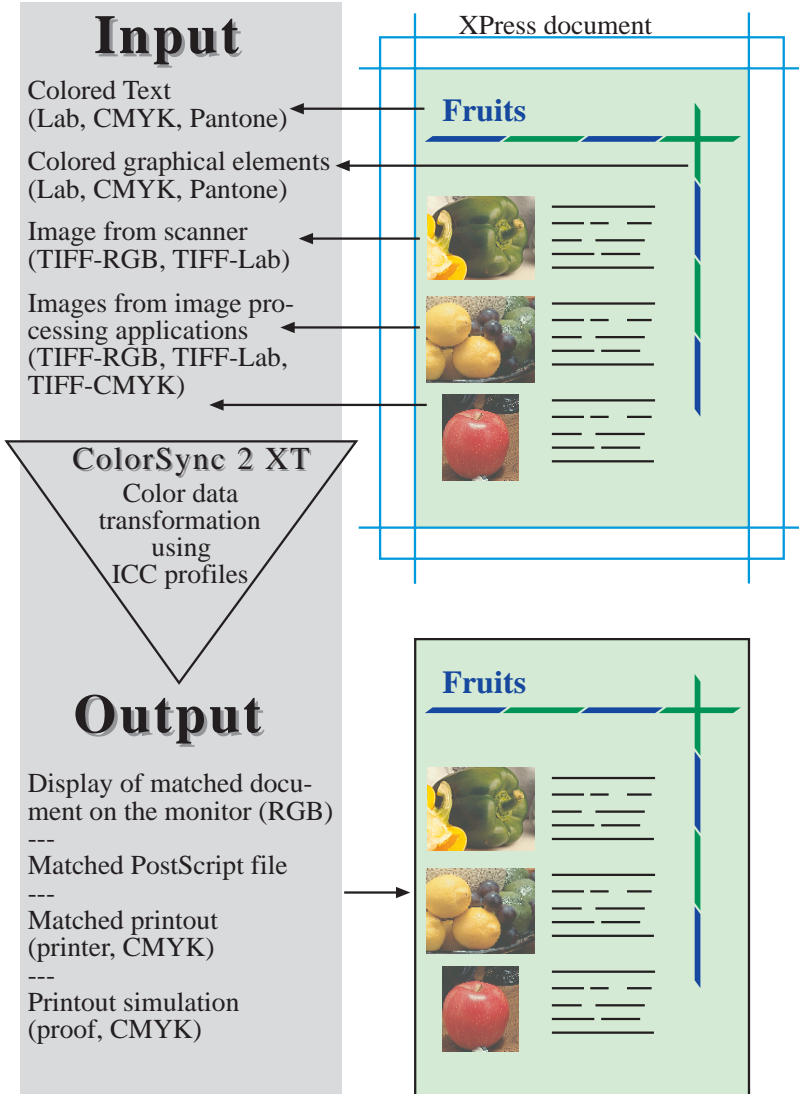
If the low-resolution image already includes an ICC profile (embedded or tagged by reference), you cannot select an image profile in the **ColorSync 2** dialog. During printing, the image will be replaced by OPI and the profile tagged to the high-resolution image will be used for color matching.

If the low-resolution image does not yet have an ICC image profile, you may select one in the **ColorSync 2** dialog. This profile, however, only serves to match the layout correctly on the monitor, it will be skipped when the image is re-placed by OPI during printing. OPI will then use the image profile of the high-resolution image for color matching.

Omitting images

The "Omit..." options in the "QuarkXPress" window in the print dialog (compare figure 32 in chapter 10) may only be used if you print to an EtherShare printer queue on which OPI is active. If you have placed both, high-resolution and layout images in your document you have to make sure that the **Replace Images** option is set to **All** for this printer queue.

Note: For further details please read the EtherShare OPI 2.0 documentation.

Input

Colored Text
(Lab, CMYK, Pantone)

Colored graphical elements
(Lab, CMYK, Pantone)

Image from scanner
(TIFF-RGB, TIFF-Lab)

Images from image pro-
cessing applications
(TIFF-RGB, TIFF-Lab,
TIFF-CMYK)

ColorSync 2 XT
Color data
transformation
using
ICC profiles

Output

Display of matched docu-
ment on the monitor (RGB)

Matched PostScript file

Matched printout
(printer, CMYK)

Printout simulation
(proof, CMYK)

XPress document

Fruits

Fruits

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