



以ICC為基礎的相機工作流程必要條件

深藍科技

張錫本

eastwood@deepblue.com.tw

2006/12/7





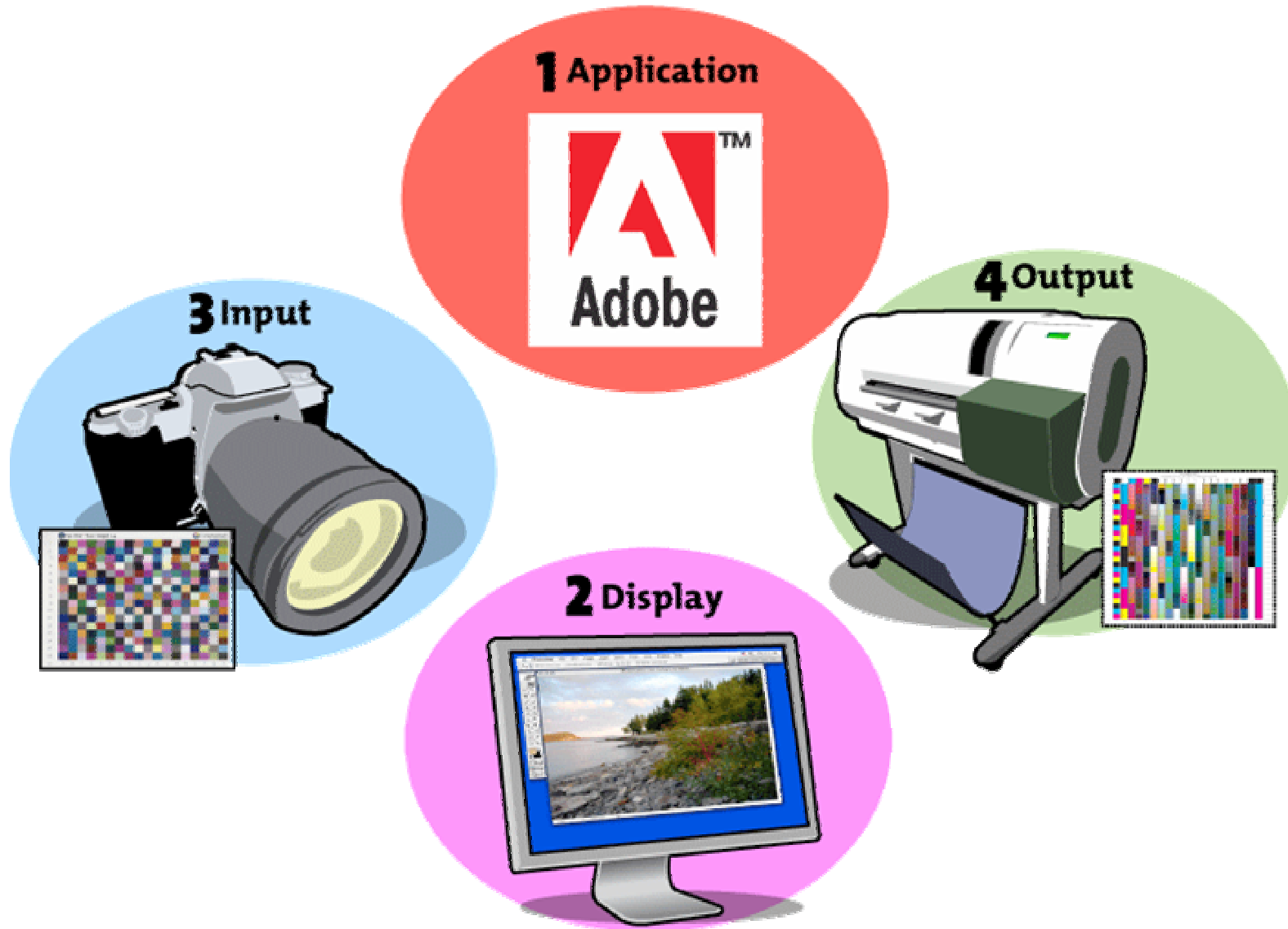
DESIGN
PHOTO
PREPRESS

數位相機設定



DESIGN
PHOTO
PREPRESS

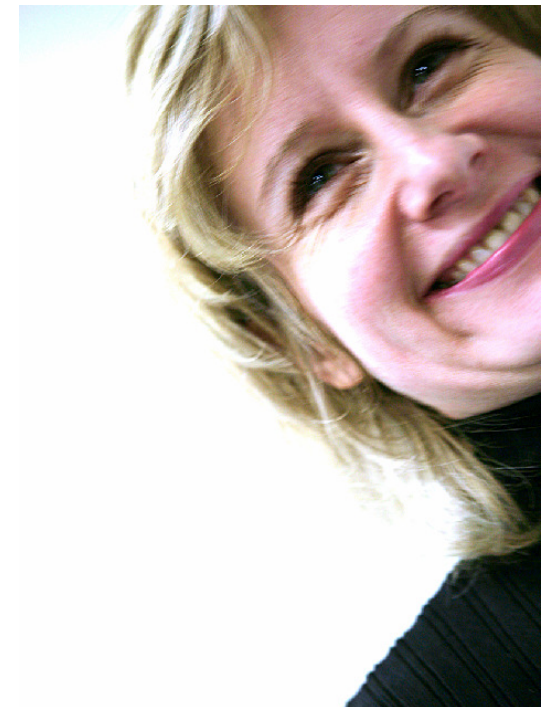
Color Map





File Formats

- 設定RAW為所有相關合適的位置, 16bit, 需要RAW轉換器
- Jpg and Tiff, 所有設定完成, 8bit, 僅改變降低色彩 color





DESIGN
PHOTO
PREPRESS

Camera Set Up - JPEG

- White Balance
 - Custom White Balance
 - Color Temperature
 - White Balance Correction
- Color Matrix Settings
 - Color Matrix 4 = AdobeRGB
 - All others are sRGB
 - Custom Color Matrix
- Processing Parameters
 - Tone Curve
 - Sharpness and Contrast





White Balance

- White Point (4221° , 5000° , 5500° ...)
- White Balance (linearisation) with white balance card or gray card





Camera Set Up - RAW

- Set Image Recording Quality
 - RAW
 - RAW + JPEG
- RAW Image Processing
 - Digital Photo Professional
 - Adobe Camera RAW
- Calibrating Camera RAW
 - Images are color-converted on import
 - No ICC Color Profile necessary



RAW 工作流程工具的好處

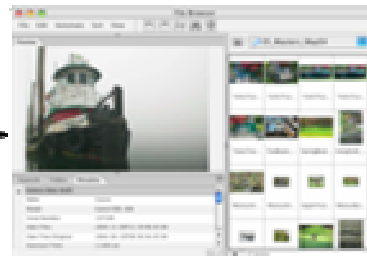
- You can access the full power of a computer to perform the interpolation task instead of a small in-camera processor.
- You can change all these camera parameters later and so get faster images and improve on them later.
- Make corrections on a large color managed monitor instead of the small viewer.
- Apply corrections on a large set of images.
- 12 bit color would not be necessary if, indeed, everything was perfect at the time of capturing the photo which never is the case.

Color Workflow - ACR

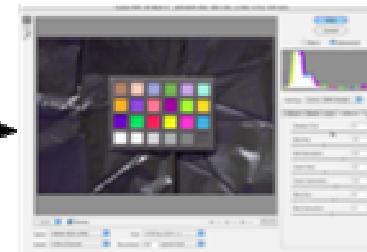
- Set Camera to RAW Capture
- Transfer Images to Computer
- Open in Photoshop File Browser
- Assign Working Space in ACR



RAW capture



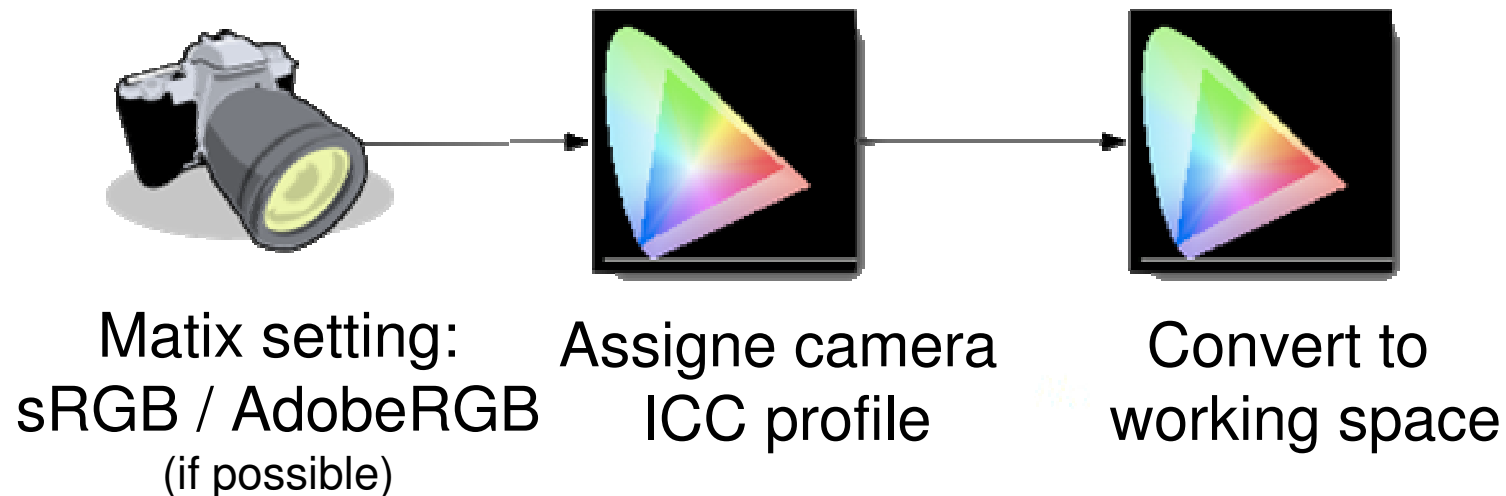
Open file
browser



Assign working
space in ACR

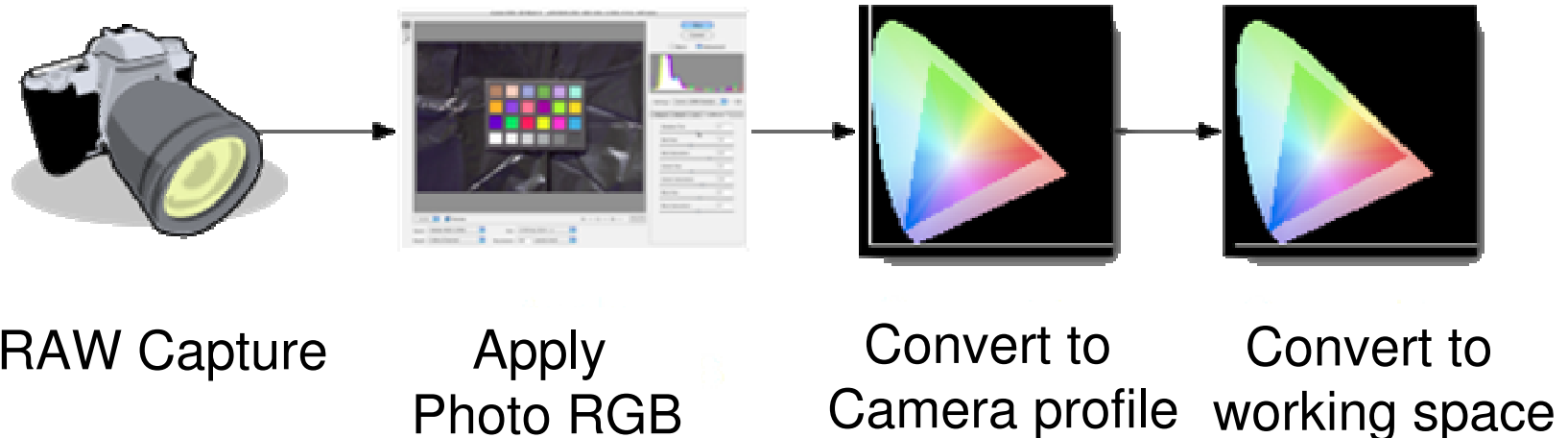
Color Workflow - JPEG

- Set Color Matrix on Camera
- Transfer Images to Computer
- Apply Camera ICC Color Profile
- Convert to Working Space Profile



Color Workflow - RAW

- Set Camera to RAW Capture
- Transfer Images to Computer
- Apply ProPhoto RGB in RAW Conversion Tool
- Convert to Camera Profile
- Convert to Working Space Profile





Adobe Camera RAW No Profile



Camera RAW

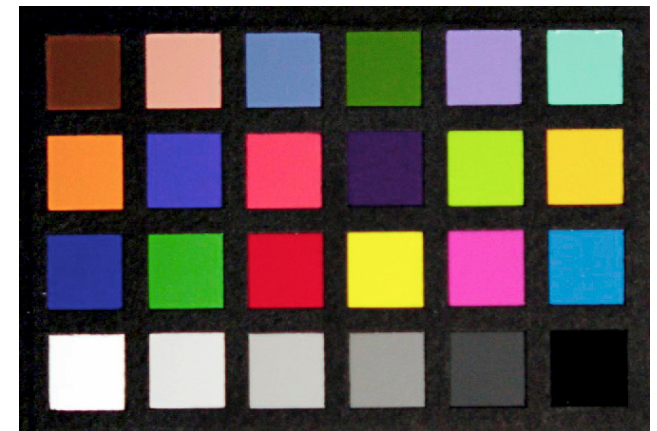
- Two ways of handling
- No profile required
- Color corrections performed during RAW import by ACR

Tom Fors' Script



Camera RAW Script

- Shoot test chart
- Check exposure
- Open file using ACR default
- Use paths to identify swatches
- Run script
- Set to use in RAW import





DESIGN
PHOTO
PREPRESS

Camera Profiling



DESIGN
PHOTO
PREPRESS

Practical use of profiles

- Photo studio
 - all kinds of in house shooting
- Photo journalism
 - depending on local conditions
- Artistic photography
 - mostly not desired, possibly for special effects



DESIGN
PHOTO
PREPRESS

Practical Activity

- Comparing “With or Without”





Why profile a camera

- Analog process
 - Film, film processing, manual color correction, scanning
 - Possibilities for error
- Digital process
 - Digital sensors
 - Possibilities for error

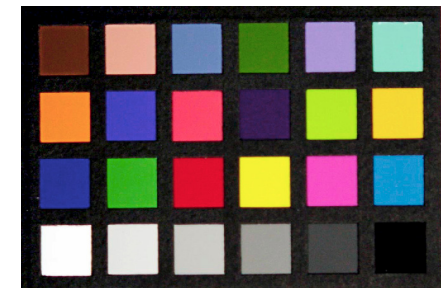
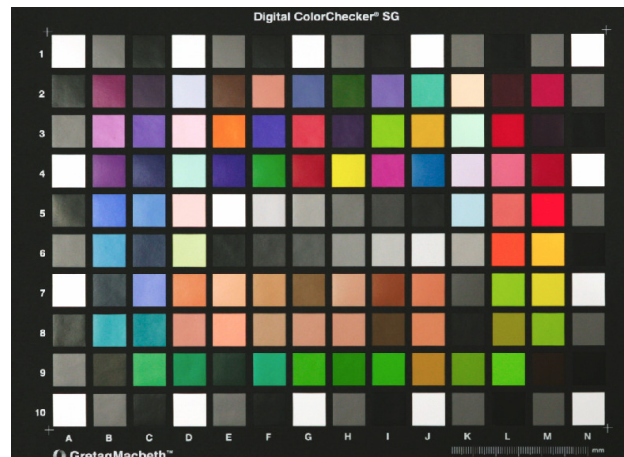
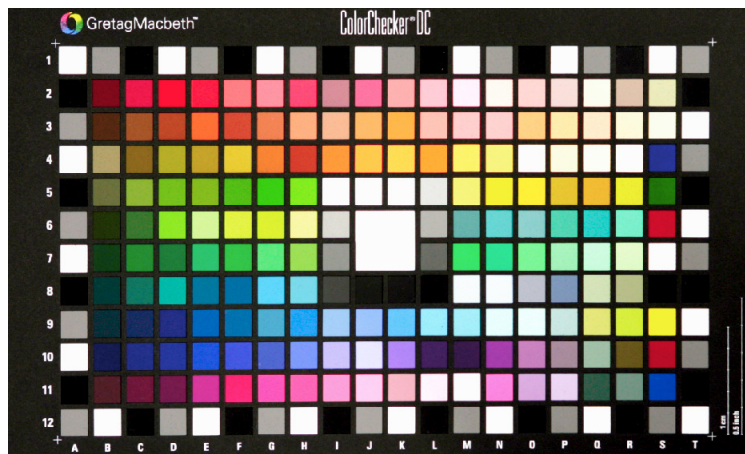


Profiling Tools

- Test Charts
- Profiling software
 - i1 Photo
 - ProfileMaker

Test Charts

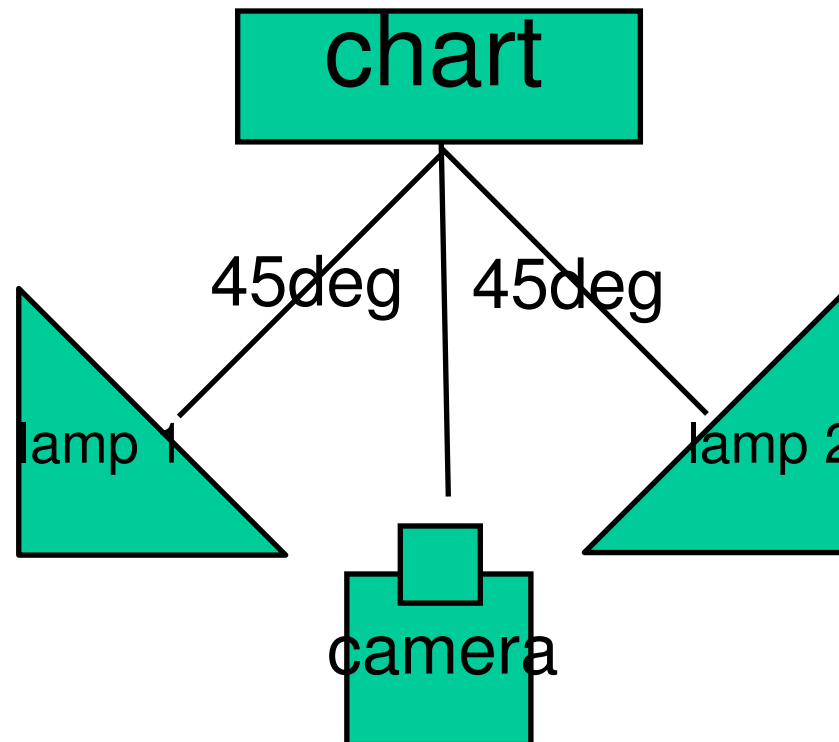
- Digital camera test charts
 - ColorChecker SG: Semigloss, best quality
 - ColorChecker DC: Older chart, update to SG
- Analog (can be used for profiling, but not ideal)
 - Colorchecker 24: Good first step, but not as accurate
 - Mini Colorchecker: Small version of 24





Lighting and Exposure

- Take a shot of the testchart under reproduction standard conditions
- Correct exposure





DESIGN
PHOTO
PREPRESS

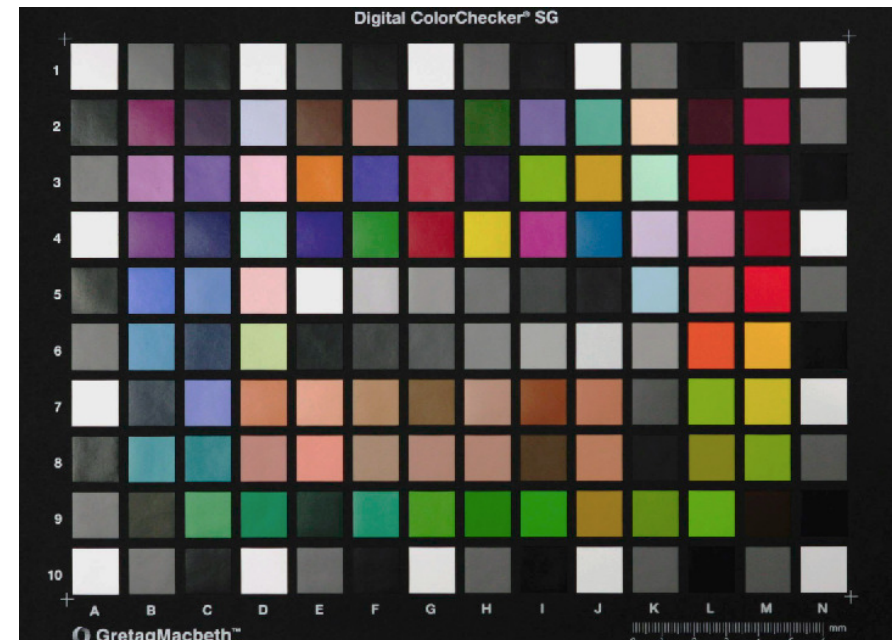
Lighting and Exposure

- Take a shot of the testchart under reproduction standard conditions
- Correct exposure @ 45° to ColorChecker



Verifying Exposure

- Check correct values
 - White: 210-245
 - Black: Less than 20
 - Gray: Less than 7 levels different (from equal)



Creating a profile

- Profilemaker 5
- i1 Match 3 (available soon)





Profiles with i1 Match

- The profiling tool Eye-One Match
- Specific Workflow for creative directors, ad agencies, photographers and people in print production

Eye-One Match 3
Beta

Calibrate all your devices!

V 3.0.1

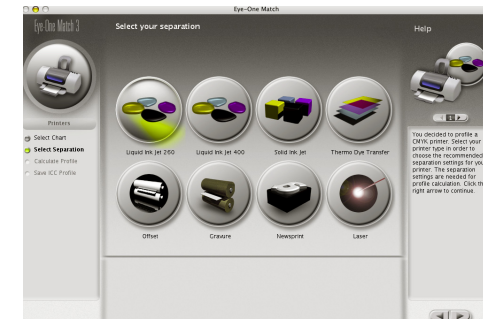
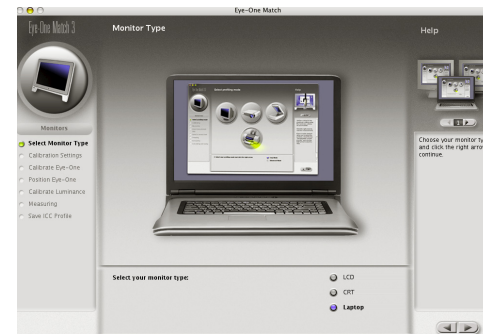
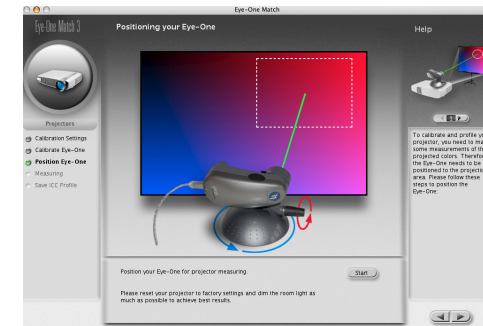
Copyright (C) 2004 GretagMacbeth
Usage of this software is subject to a licence agreement (see document) and registration.



DESIGN
PHOTO
PREPRESS

Profiles with i1 Match

- New tools for camera and cmyk printers
- Features for laptops and beamers





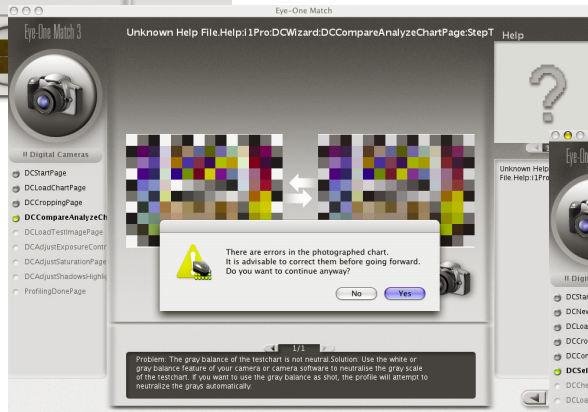
DESIGN
PHOTO
PREPRESS

i1 Match Features

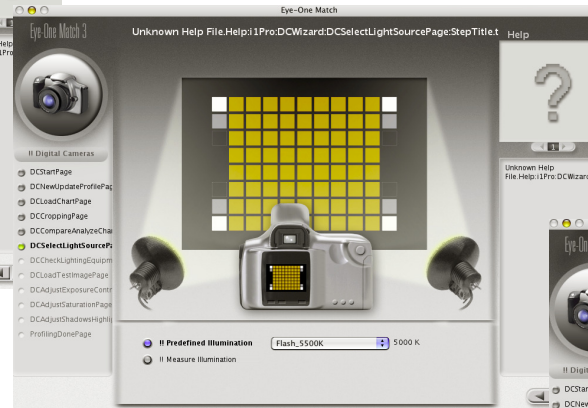
- Shooting and cropping



- Verifying



- White Point



- Corrections





Camera Profiles PM5

- The profiling tool Profile Maker 5
- Professional Color Management tool for scanners, cameras, monitors as well as for RGB, CMYk, CMYk + Hexachrome +RedGreen output devices

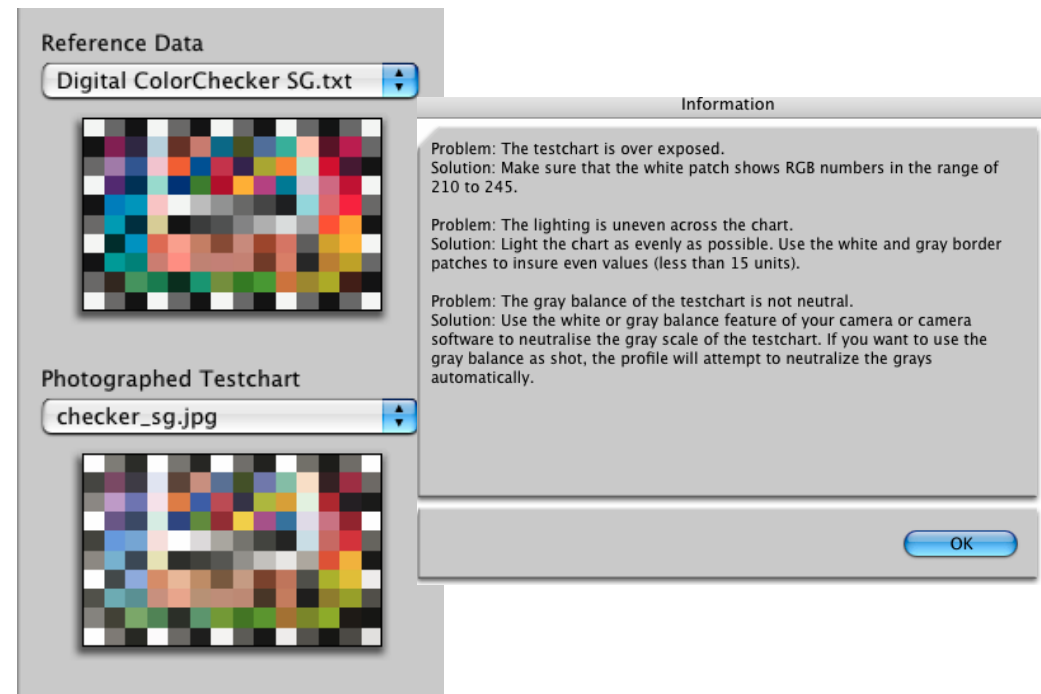


Profiling with PM5

- Shooting and cropping



- Verifying





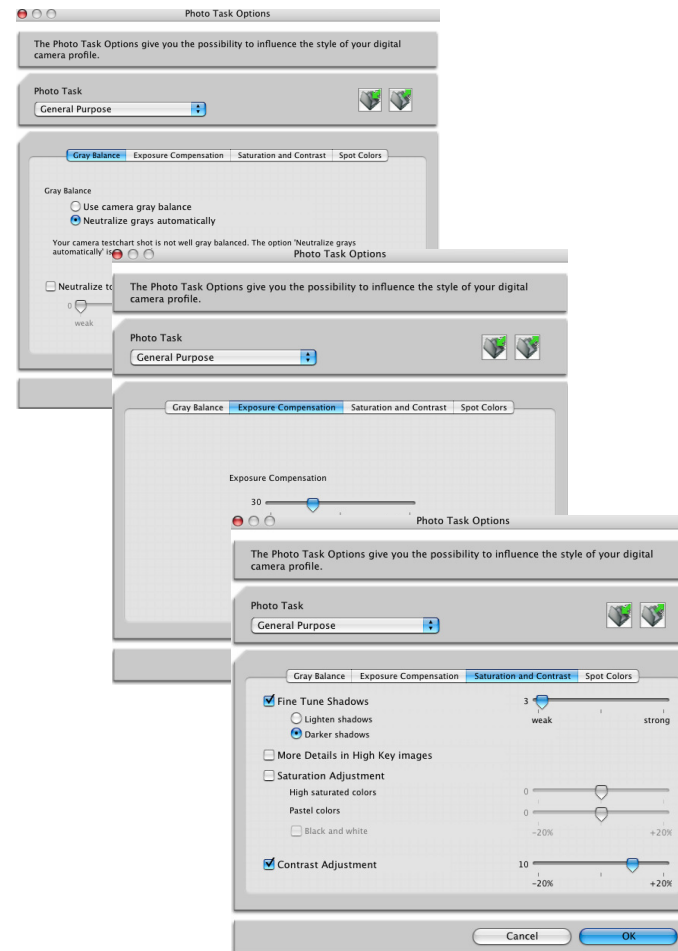
DESIGN
PHOTO
PREPRESS

Profiling PM5

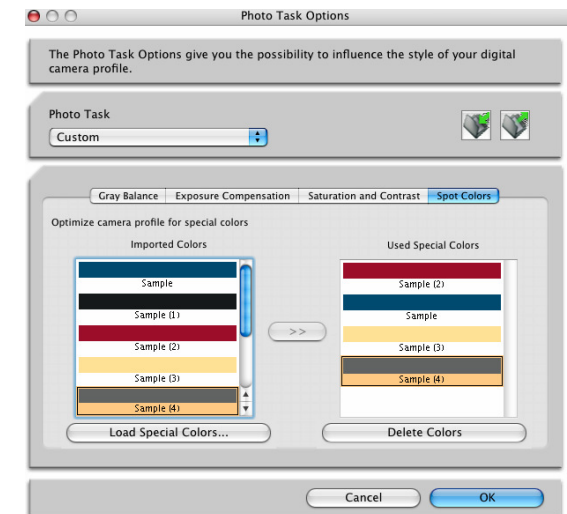
- White Point



- Photo Tasks



- Special Colors



Practical Activity

- Take a shot of the testchart
- Refer to the practical exercises
 - In the basic training content
 - In the advanced training content

