User's Manual

ColorEdge® ColorNavigator™

Important

Please read this User's Manual carefully to familiarize yourself with safe and effective usage.
Please retain this manual for future reference

The latest software and User's Manual are available for download from our site:
http://www.eizo.com

EIZO®

About This Manual

This manual describes the features, installation and usage of ColorNavigator (monitor adjustment software for LCD monitor).

The Mac OS X image capture is given as an example in this manual. In case of using this software in Windows environment, you may find the image a little different.

About ColorNavigator

The ColorNavigator software for ColorEdge series monitor makes monitor adjustment both simple and accurate. You can adjust the monitor settings easily.

*Please prepare the measurement device separately.

Features

- Precisely adjusting monitor characteristics on the ColorEdge series
  - Preset adjustment targets for each of principal uses (Simple mode)
  - Specify the brightness, white balance, black level and/or gamma of the monitor (Detailed mode)
  - L* is available as the target of gamma
  - Displays the measurement result with CIE-chromaticity diagram
  - Generates ICC 2.0 profiles (for Windows XP) / ICC 4.2 profiles (for Windows Vista) / Apple ColorSync profiles (for Macintosh) based on the measurement result
  - 6 Color adjustment function[*1]
  - Manual adjustment function (white balance/brightness/black level/gamma)[*1]
  - Measures ambient light[*1]
  - Measures paper white[*1]
  - Emulation of Monitor Display based on the profile (CG220/CG221/CG222W/CG241W/CG301W)

[*1] :The function's availability depends on the monitor, the measurement device, or usage

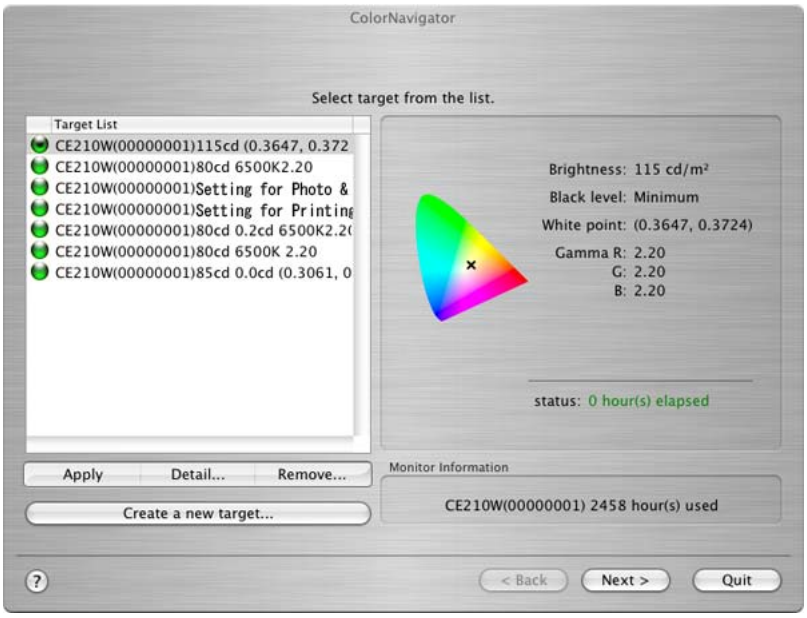
- Profiling monitor validation
- Switching monitor display
  - Switches monitor display based on the monitor adjustment result.
- Supporting monitor adjustment function with timer setting
- Supporting a multi monitor environment
- Showing Patterns

Tips

- L* is a lightness value based on the CIELUV and CIELAB color spaces. CIELUV and CIELAB are color spaces that describe the relationship between color and human vision, in which L* corresponds to perceived brightness.

ColorNavigator Software

ColorNavigator Software construction is as follows. Select an operation on the startup screen which is displayed when the software is started.



[Next]:

Adjust the monitor based on the adjustment target that is selected from the list.

2-1. Monitor Adjustment Procedure (Selecting a target)

[Apply]:

Set the monitor to the adjustment target selected from the list.

[Detail...]:

Display the details of the adjustment target selected from the list. Manual adjustment and monitor validation can be performed.

3. Advanced Settings (Validation, Manual Adjustment)

[Remove…]:

Remove the adjustment target selected from the list.

[Create a new target…]:

Specify the target and set a new adjustment target.

2-2. Monitor Adjustment Procedure (Creating a New Target)

 :

Display the instruction of the window.

1. Setting Up

Set up the operating environment according to the following procedures. (Install ColorNavigator on the computer and connect the measurement device with the monitor.)

1-1. Macintosh

The following is required for adjusting the monitors in the ColorEdge series with ColorNavigator.

System Requirements

- Macintosh: satisfy the OS requirement (except iMac(Power PC), iBook, iBook G4) (Built-in USB)
- Operating System (OS): Mac OS X 10.3.9 or later
- 16.7 million or more colors
- 1024 x 768 or higher (recommended)
- USB ports (at least 2 free ports required)
- EIZO USB Cable (MD-C93)
- Measurement Device
  - EIZO ColorEdge CX1
  - X-Rite Eye-One series
  - X-Rite colormunki
  - ColorVision Spyder2
  - ColorVision Spyder3
  - MonacoOPTIX^{XR}/DTP94/X-RiteOPTIX^{XR2}/DTP94B

Note

- You cannot use ColorNavigator in the Classic environment in Mac OS X
- USB Hub may be required if adjusting several monitors in a multiple monitor environment. Also, USB cables are required for monitor adjustment.
- This product does not contain measurement device.
- Refer to the user's manual of the measurement device for the system requirements and usage.

Installing ColorNavigator

Note

- To install ColorNavigator, a user account with the following authority is required.
  -"Administrator"
- Please consult your system administrator for your account.
- If the previous version ColorNavigator is already installed to the system, uninstall it before the new version installation.

How to Install

To install the software from the EIZO LCD Utility Disk (CD-ROM)

1 **Insert the" EIZO LCD Utility Disk" to the CD-ROM drive**

The "EIZO LCD Utility Disk" icon appears on the desktop. Double click the icon to open the window.

2 **Double click "Start Menu" icon on the window**

The start menu opens. Click "Install ColorNavigator" on the start menu.
The ColorNavigator installer starts up. Go to Step 3.

* Displyed window depends on your monitor.

To download and install the software from our website

1 **Double click the downloaded file**

The "ColorNavigator for Mac OSX" icon appears on the desktop. Double click the icon to open the window.

2 **Double click "ColorNavigator.pkg" icon on the window**

The ColorNavigator installer starts up. Go to Step 3.

3 **Install the software**

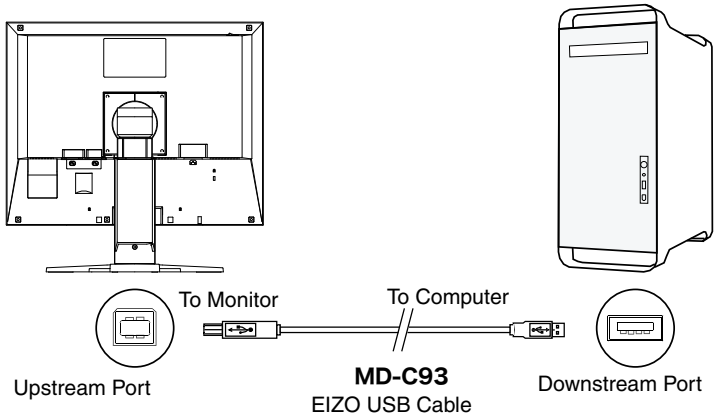
Follow the instructions to install the software.

Confirming the Software Version

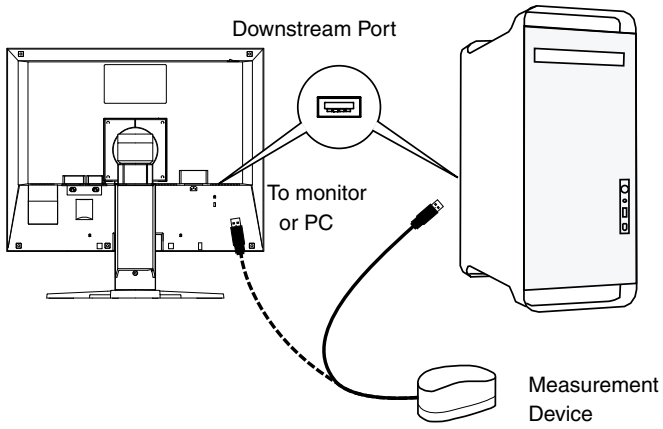
The software version can be confirmed through "Application menu" - "About ColorNavigator...".

Connecting the Measurement Device

1 **Connect the upstream port of monitor and the USB downstream port of computer with the EIZO USB Cable (MD-C93)**



2 **Connect the measurement device to the downstream port of computer, USB keyboard or the monitor**



Note

- Some measurement devices require a self-powered USB hub. For details, refer to the user's manual of the measurement device.
- If the measurement device is connected after starting up ColorNavigator, it cannot be detected. Be sure to connect the measurement device before starting up the ColorNavigator.

Starting Up ColorNavigator

Double click "ColorNavigator" icon in "Application" - "Utilities".

1-2. Windows

The following is required for adjusting the monitors in the ColorEdge series with ColorNavigator.

System Requirements

- Pentium-compatible Processor 1 GHz or more (recommended)
  - Physical RAM: Windows XP Series: 128 MB (256 MB for 64 bit)
    Windows Vista Series: 1 GB
  - PC/AT compatible machine with built-in USB
  - Operating System (OS): Windows XP Series / Windows Vista Series
  - Colors: 24 bit or more
  - Resolution: 1024 x 768 or higher (recommended)
  - USB ports (at least 2 free ports required)
- EIZO USB Cable (MD-C93)
- Measurement Device
  - EIZO ColorEdge CX1
  - X-Rite Eye-One series
  - X-Rite colormunki
  - ColorVision Spyder2
  - ColorVision Spyder3
  - MonacoOPTIX^{XR}/DTP94 /X-RiteOPTIX^{XR2}/DTP94B

Note

- If your OS is Windows Vista, the following settings are required in a multiple monitor environment.
  1. Select [Control Panel] - [Appearance and Personalization] - [Personalization] - [Adjust screen resolution].
  2. [Display Settings] dialog appears.
  3. Check the [Extend the desktop onto this monitor] check box for all monitors.
- USB Hub may be required if adjusting several monitors in a multiple monitor environment. Also, USB cables are required for multiple monitor adjustment.
- This product does not contain measurement device.
- Refer to the user's manual of the measurement device about system requirements and usage.

Installing ColorNavigator

Note

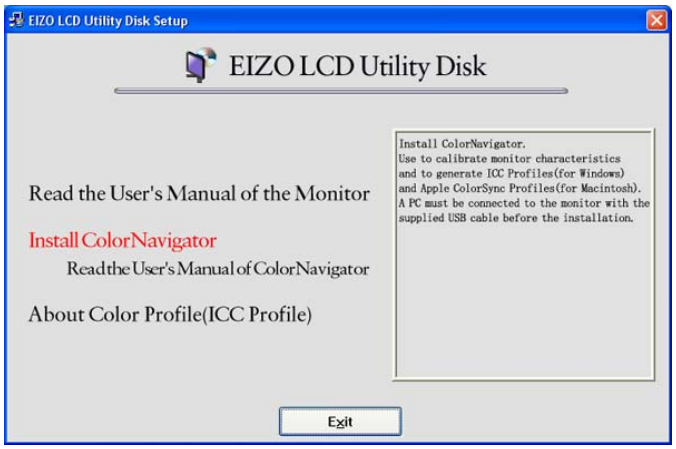
- To install ColorNavigator, a user account with the following authority is required.
  - "Administrator"
- Please consult your system administrator for your account.
- If the previous version ColorNavigator is already installed to the system, uninstall it before the new version installation.

How to Install

To install the software from the EIZO LCD Utility Disk (CD-ROM)

1 Insert the" EIZO LCD Utility Disk" to the CD-ROM drive

The start menu opens. Click "Install ColorNavigator" on the start menu. The ColorNavigator installer starts up. Go to Step 2.



* Displyed window depends on your monitor.

Note

- Double click the "Launcher.exe" icon if the menu does not open automatically.

To download and install the software from our website

1 After unzip the downloaded file, click "setup.exe"

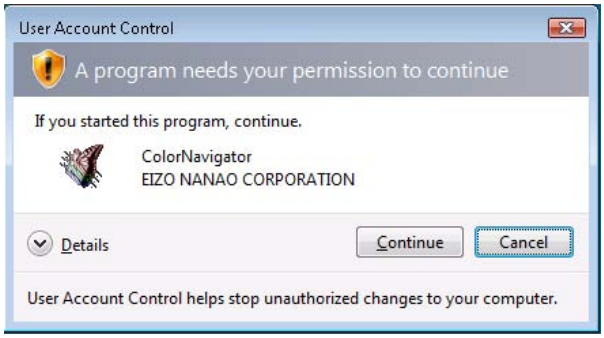
The ColorNavigator installer starts up. Go to Step 2.

2 Install the software

Follow the instructions to install the software.

Tips

- If your OS is Windows Vista, the "User Account Control" dialog may appear when you double click Launcher.exe.*1
  Click [Continue] to open the menu.



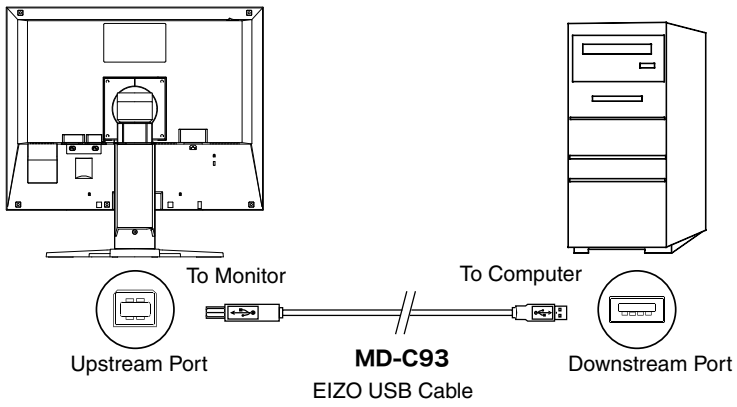
*1: Whether the "User Account Control" dialog appears or not depends on operating system settings.

Confirming the Software Version

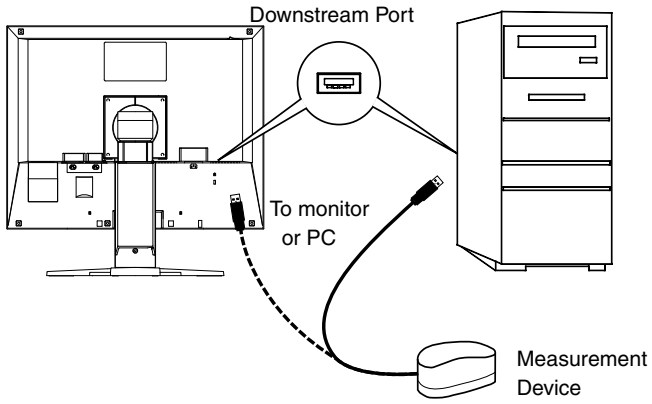
The software version can be confirmed through "About ColorNavigator..." by clicking the ColorNavigator icon on the title bar.

Connecting the Measurement Device

1 Connect the USB upstream of monitor and the USB downstream port of computer with the EIZO USB Cable (MD-C93)



2 Connect the measurement device to downstream port of computer, USB keyboard or the monitor



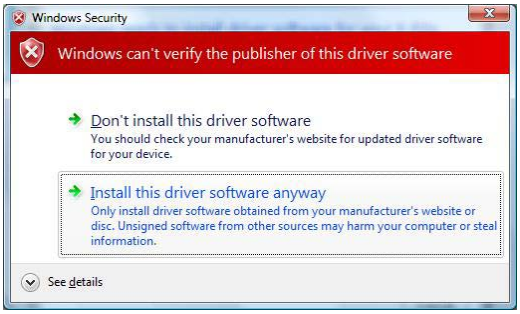
Note

- Some measurement devices require a self-powered USB hub. For details, refer to the user's manual of the measurement device.
- If the measurement device is connected after starting up ColorNavigator, it cannot be detected. Be sure to connect the measurement device before starting up the ColorNavigator.
- The measurement device driver is automatically installed with ColorNavigator. It is not necessary to install the measurement device supplied with the device.

Tips

- The following dialog may appear several times when you install the driver software. Click [Continue Anyway](Windows XP) / [Install this driver software anyway](Windows Vista) to install the driver software.

(Windows XP)



(Windows Vista)

Starting Up ColorNavigator

Double click the "Shortcut to ColorNavigator" icon on the desktop.

2. How to Adjust the Monitor

This section describes adjustment procedures when one monitor is connected to computer. To adjust several monitors in a multiple monitor environment, refer to "4. Using ColorNavigator in Multiple Monitor Environment".

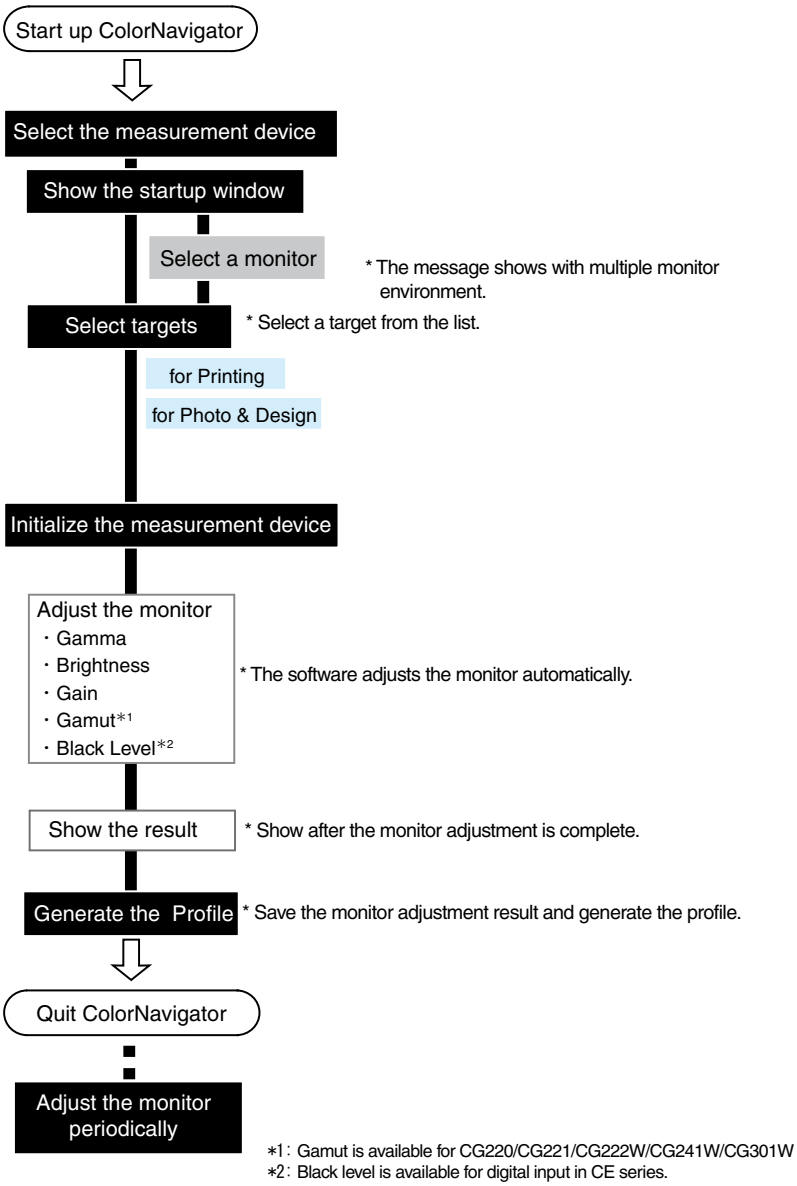
2-1. Monitor Adjustment Procedure (Selecting a Target)

Select an Adjustment Target from the List to Adjust the Monitor

Flow Diagram

Note

- The suitable modes for the display image are available on the monitor (fine contrast mode). When you perform the monitor adjustment with ColorNavigator, the monitor automatically switches to CAL mode/EMU mode (i.e. Calibration mode/Emulation mode). The monitor adjustment result is only registered in CAL mode. (The result is not registered in other modes.)



Setup ColorNavigator

1 Turn on both the monitor and the computer 30 minutes before monitor adjustment (= warming up)

Disable the power management function of them so they will not be in the power save mode.

Quit other applications before starting up the ColorNavigator. Disable the screen saver so that it will not be activated during adjustment or measurement.

Note

- To obtain precise monitor adjustment results, the monitor and computer must be sufficiently warmed-up. Once the monitor goes into the power-save mode, it takes a while for the brightness and color conditions to re-stabilize.

2 Set the display resolution and colors

Set the monitor color at 16.7 million (24 bit) or more.

It is recommended that the resolution is 1024 x 768 or higher.

How to Adjust a Monitor

1 Startup ColorNavigator

Macintosh

Double click "ColorNavigator" icon in "Application" - "Utilities".

Windows

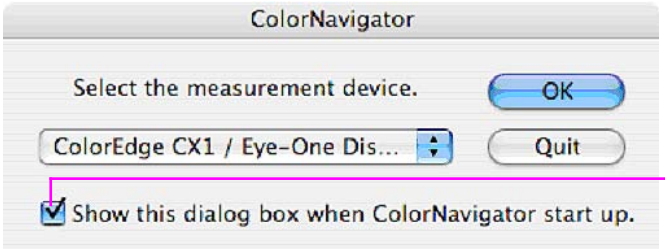
Double click "Shortcut to ColorNavigator" icon on the desktop.

Note

- Do not disconnect USB cables of the monitor or measurement device while running ColorNavigator. Doing so may result in system freeze or software malfunction.

2 Select a measurement device

Select the proper measurement device for using ColorNavigator then click [OK].

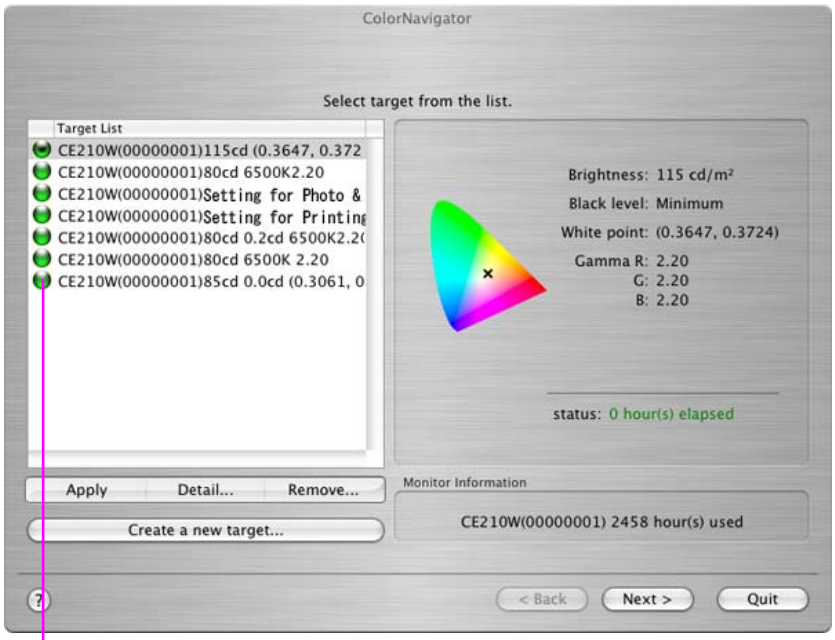


Check box
Shows this dialog box when the software starts next time, even if there is only one measurement device connecting to the PC.

If the box is unchecked, this dialog is not shown unless the measurement device cannot be found.

3 Startup window appears. Select an adjustment target from the list, and then click [Next].

For general printing, select "Setting for Printing". For photos and designs, select "Setting for Photo & Design".



About Marks

	The adjustment target set to the monitor. (monitor using time is less than the timer setting threshold, or no threshold)
	The adjustment target set to the monitor. (monitor using time is more than the timer setting threshold)
	The adjustment target not set to the monitor. (monitor using time is less than the timer setting threshold, or no threshold)
	The adjustment target not set to the monitor. (monitor using time is more than the timer setting threshold)
Blank	Unadjusted status.

Tips

- When you readjust the monitor, previous adjustment results can be selected as a target. Click [Apply] to set the monitor based on the previous adjustment result.
  ColorNavigator compares the configuration with the existing profile and automatically revises the profile if its parameter differs from the adjustment result.
- File names can be modified by double clicking the adjustment target in the list.

4 Proceed "Auto Adjust" button (for analog input only)

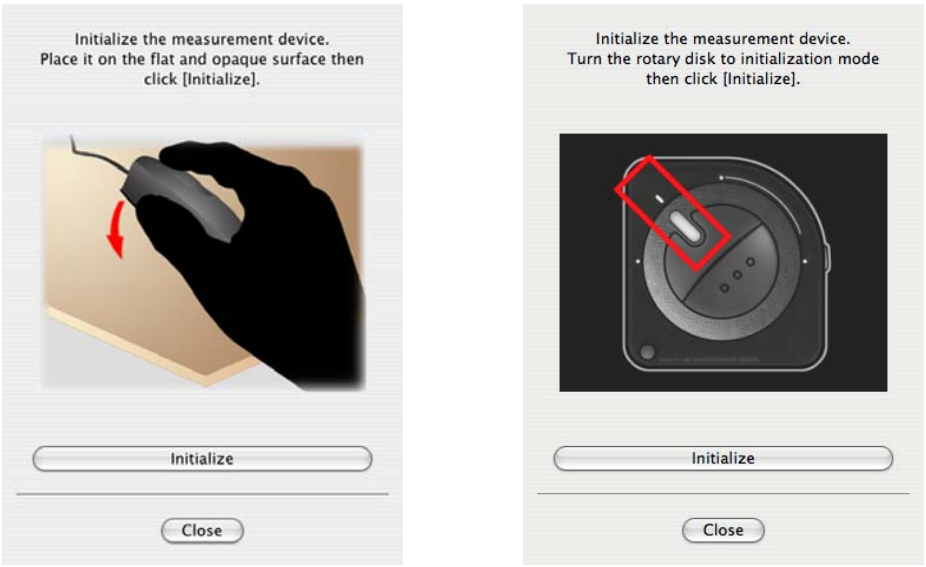
Follow the instructions and click the monitor auto adjust function.

5 Initialize the measurement device

Initialize the measurement device according to the instructions.

When colormunki is connected to the computer, turn the rotary disk to initialization mode.

Initialization takes a few seconds.



colormunki

Note

- Be sure that light does not seep through to the sensor of the measurement device during initialization. Precise adjustment results cannot be obtained if light is detected during the initialization process.
- When ColorVision Spyder2 or Spyder3 is connected to the computer, this window will be skipped.

6 Proceed monitor adjustment

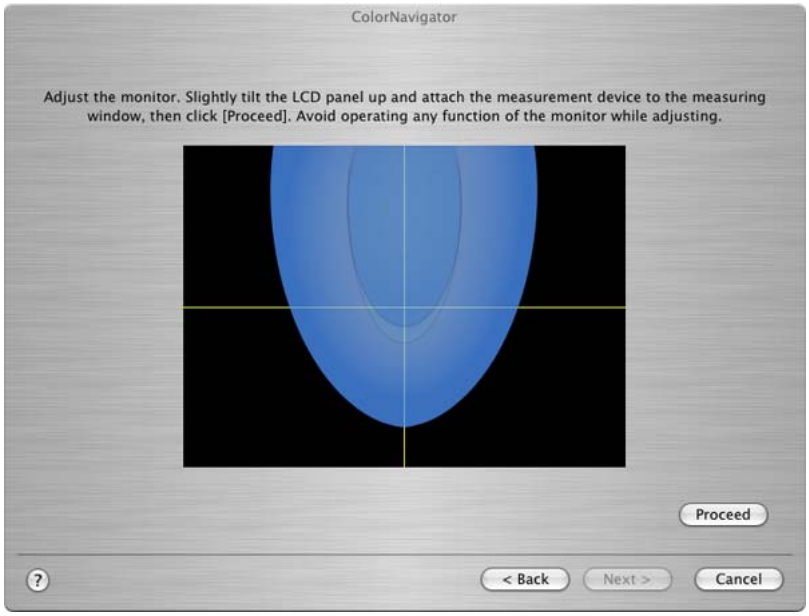
The measurement window appears on the screen.

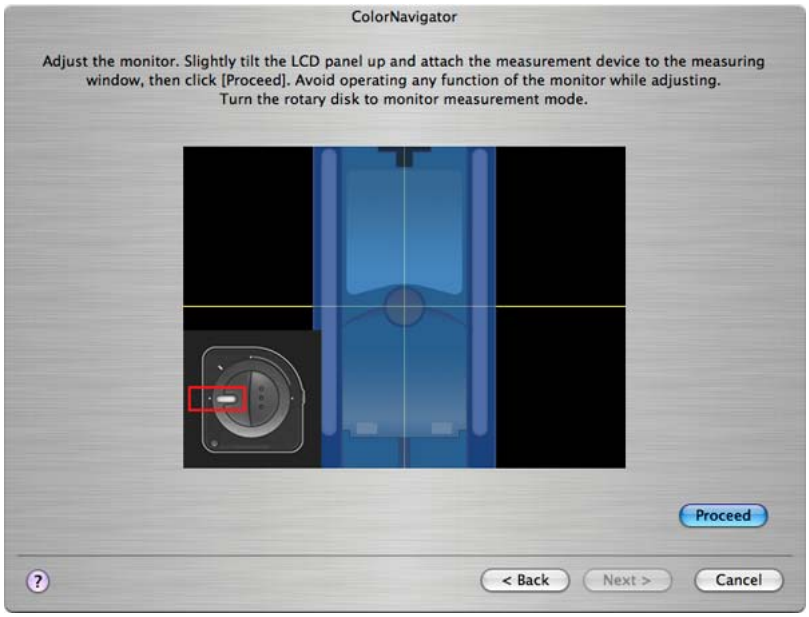
When colormunki is connected to the computer, turn the rotary disk to monitor measurement mode.

Tilt the LCD panel up slightly and attach the measurement device to the measurement window. (Refer to the user's manual of the measurement device)

Proceed with adjustment in accordance with the instruction on the message window.

ColorNavigator sequentially shows some patterns for adjusting the monitor. Monitor adjustment takes approximately 3 minutes.



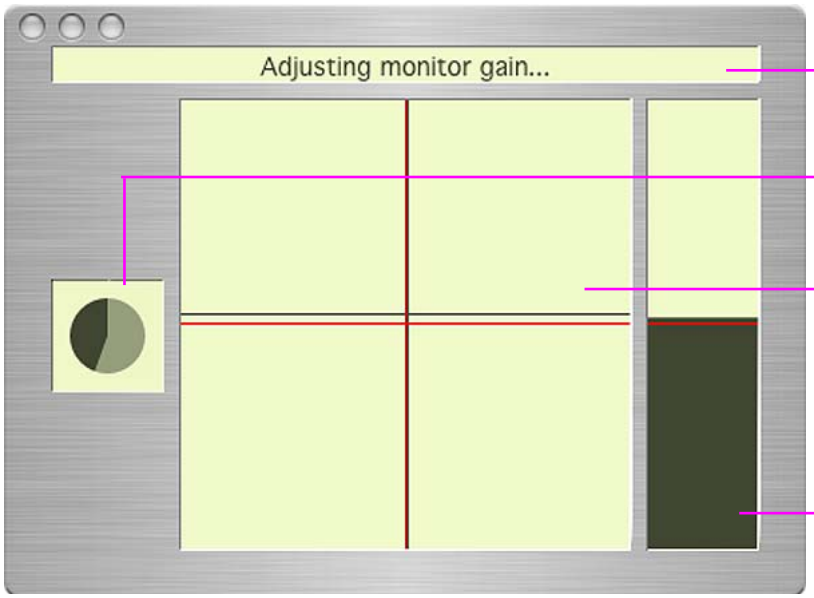


colormunki

Note

- When you perform the monitor adjustment, the monitor automatically switches to CAL mode/EMU mode (i.e. Calibration mode/Emulation mode). The monitor adjustment result is only registered in CAL mode/EMU mode. (The result is not registered in other modes.)
- The figure displayed in this window, depends on the type of measurement device connected to the computer.

Progress bars are displayed on the right-bottom corner while adjustment is in progress.



Message display area:
Instructions or any software messages will be displayed while the adjustment is in progress.

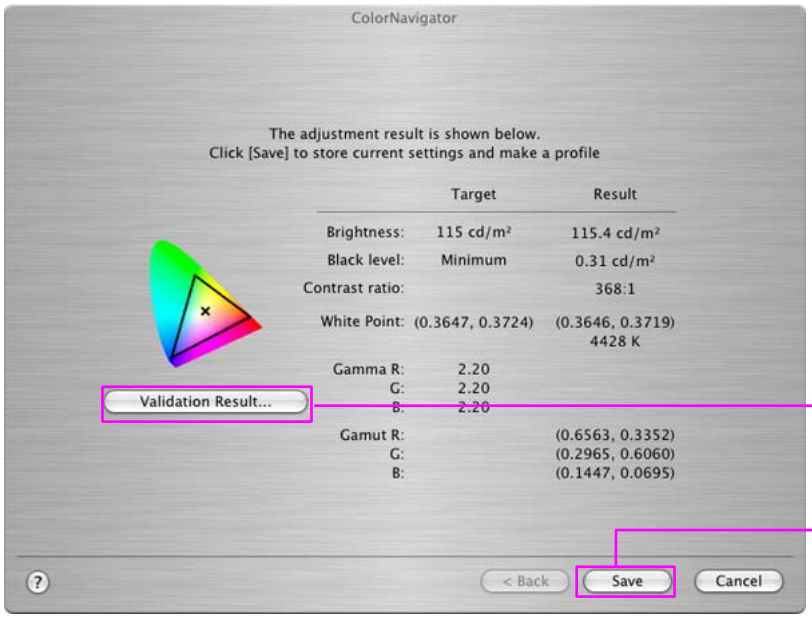
Progress chart:
The chart shows the status of adjustment.

Level display chart :
The present adjustment status is plotted in the chart.The red cross line means the target and the black cross line indicates the present status.

Brightness bar:
The present brightness level is shown in the brightness bar. The target brightness level is marked in red.

7 Confirm the result

When the monitor adjustment has been finished, the result window will appear. Confirm the result.



About monitor validation, refer to "3-1.Monitor Validation".

Store the adjustment result and generate a monitor profile.

Note

- If the black level became to minus value and the adjustment failed, an error message is displayed. Follow the indication displayed in the window and adjust the monitor from the beginning again. It's because the measurement device could not have been attached to the monitor closely or light could have seeped through to the sensor of the measurement device during initialization.

8 Save a profile

Click [Save] and then the message "The adjustment of the monitor is completed." is displayed.

Click [Quit]. (Mac OS)

Click [Exit]. (Windows)

The monitor adjustment is finished.

Note

- The suitable modes for the display image are available on the monitor (fine contrast mode). When you perform the monitor adjustment with ColorNavigator, the monitor automatically switches to CAL mode/EMU mode (i.e. Calibration mode/Emulation mode). The monitor adjustment result is only registered in CAL mode. (The result is not registered in other modes.)
- Once the monitor is adjusted by ColorNavigator, avoid adjusting the monitor image to no purpose. If the monitor image is adjusted after monitor adjustment, the adjustment result will be lost.
- Do not select the color profile on your OS after the profile is saved, or color management cannot be conducted properly.

2-2. Monitor Adjustment Procedure (Creating a New Target)

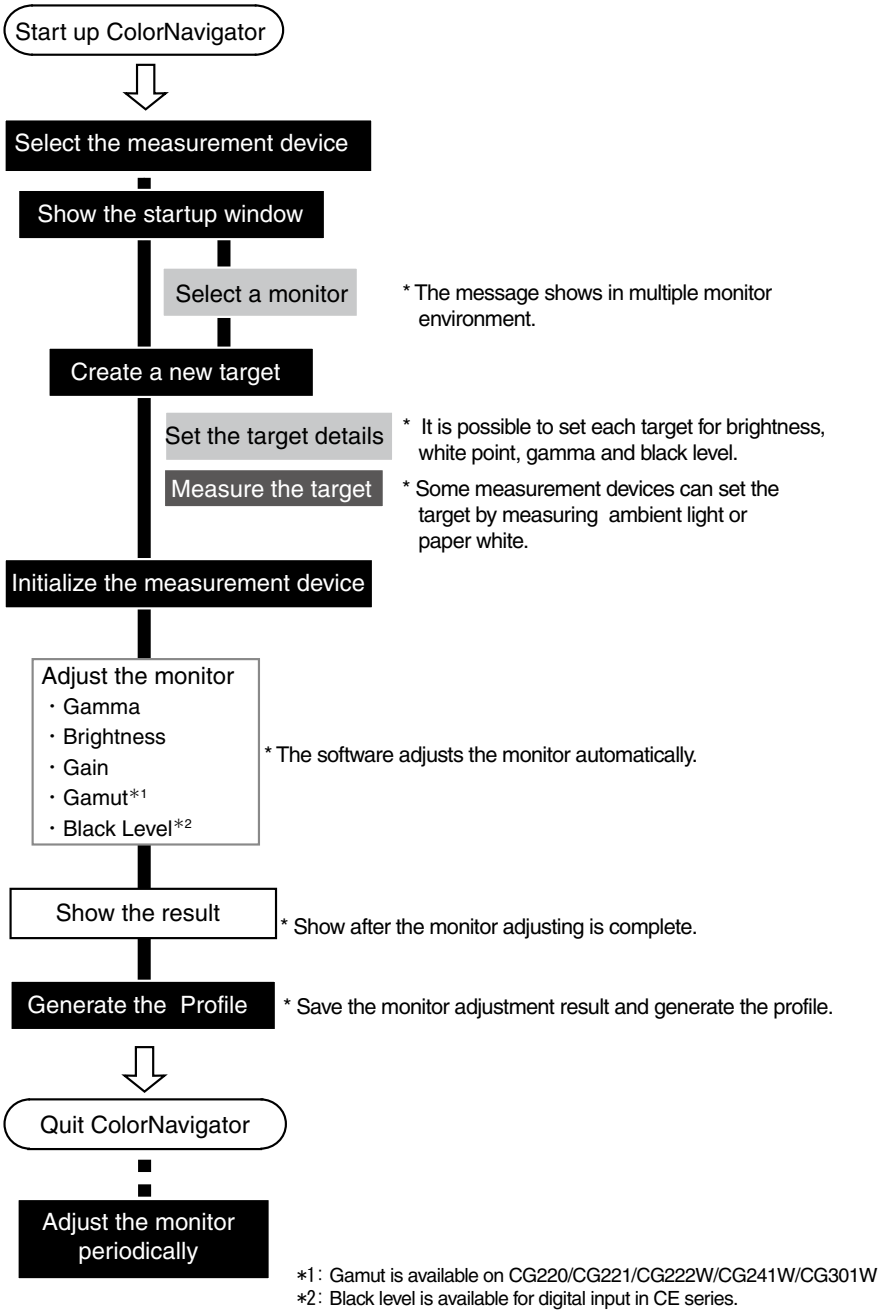
Create a Target to Adjust the Monitor

It is possible to set the adjustment target by specifying each value of brightness, white point and gamma.

Flow Diagram

Note

- When you perform the monitor adjustment, the monitor automatically switches to CAL mode/ EMU mode (i.e. Calibration mode/Emulation mode). The monitor adjustment result is only registered in CAL mode/EMU mode. (The result is not registered in other modes.)
- When you adjust 6 colors on CG18, CG19, CG21 monitors, the monitor adjustment result is registered to the Custom mode.



*1: Gamut is available on CG220/CG221/CG222W/CG241W/CG301W
*2: Black level is available for digital input in CE series.

Setup ColorNavigator

1 Turn on both the monitor and the computer 30 minutes before monitor adjustment (= warming up)

Disable the power managing function of them so they will not be in the power save mode.

Quit other applications before starting up the ColorNavigator. Disable the screen saver so that it will not be activated during adjustment or measurement.

Note

- To obtain precise adjustment results, the monitor and computer must be sufficiently warmed-up. Once the monitor goes into the power-save mode, it takes a while for the brightness and color conditions to re-stabilize.

2 Set the display resolution and colors

Set the monitor color at 16.7 million (24 bit) or more.

It is recommended that the resolution is 1024 x 768 or higher.

How to Adjust a Monitor

1 Startup ColorNavigator

Macintosh

Double click "ColorNavigator" icon in "Application" - "Utilities".

Windows

Double click "Shortcut to ColorNavigator" icon on the desktop.

Note

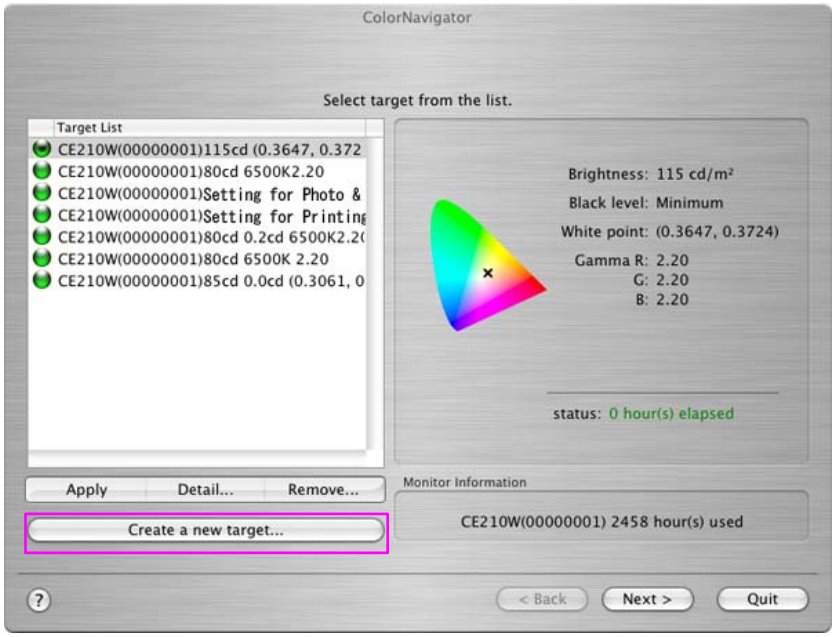
- Do not disconnect USB cables of the monitor or measurement device while running ColorNavigator. Doing so may result in system freeze or software malfunction.

2 Select a measurement device

Select the proper measurement device for using ColorNavigator then click [OK].

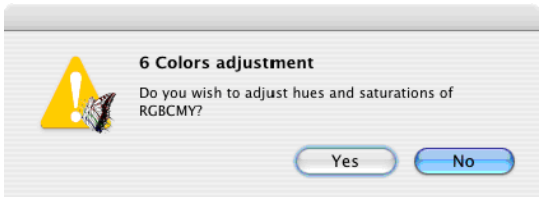
If "Show this dialog box when ColorNavigator starts up" box is unchecked, this dialog is not shown unless the measurement device is cannot be found.

3 Startup window appears. Click [Create a new target...]



4 If the monitor is CG18, CG19 or CG21, the following window will appear

If adjusting the 6 Colors after monitor adjustment, click the radio button "Yes" in "Do you wish to adjust hues and saturations of RGBCMY?".



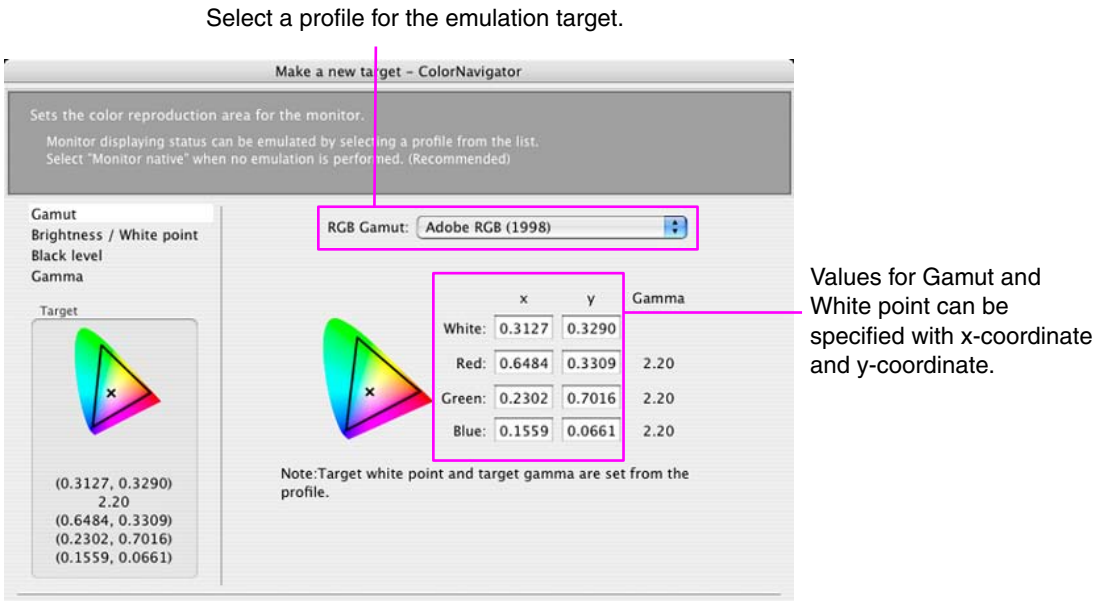
5 Set the targets

Make a new target window will appear. Set values for following items, and then click [Next].

Gamut: (for CG220, CG221, CG222W, CG241W, CG301W)

Monitor displaying status can be emulated by selecting a profile from the list.

Recommended: Select "Monitor native" when no emulation is performed. (Recommended)



After setting, click [Next].

Note

- When you set the target white point by color coordinates, assign the target between 0.24 and 0.45 for x-coordinate and y-coordinate.
- When the target white point or RGB Gamut has been changed, the status displayed in the profile is changed to "manually".

Brightness / White Point:

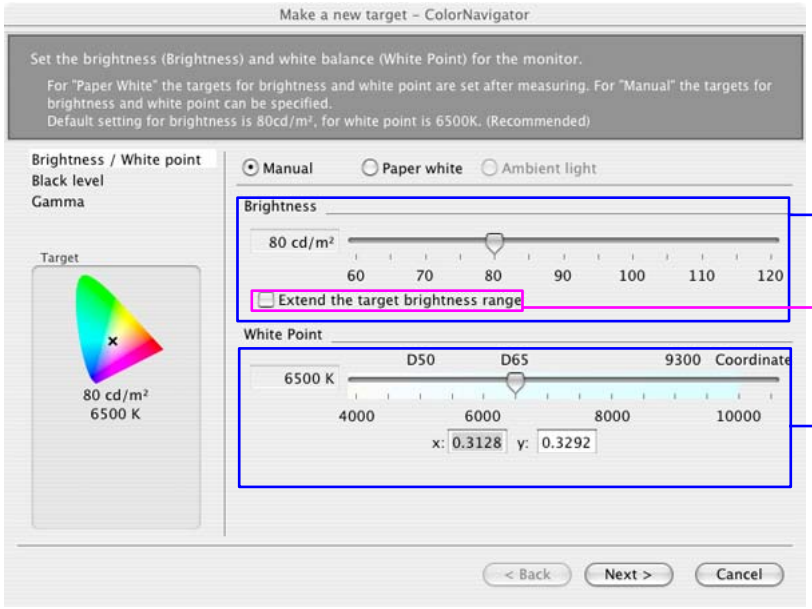
Set the Brightness (brightness) and White Point (white balance) for the monitor.

Recommended : Brightness 80cd/m^2, White Point 6500K (default settings).

Some measurement device can set the target by measuring ambient light or paper white.

When selecting "Manual"

Specify the targets for brightness and white point manually.



Set the monitor brightness while white color is displayed over the screen.

Extend the setting range of the target brightness.

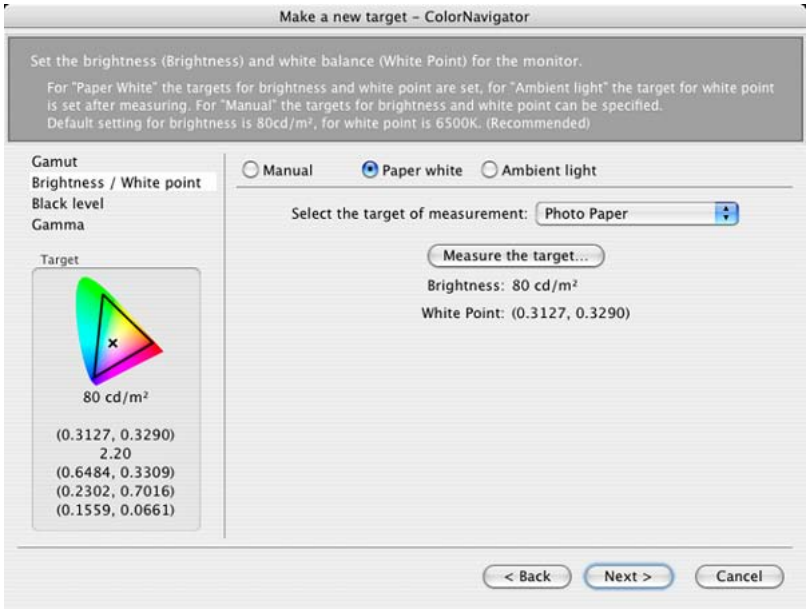
Set the color temperature. The white point can be set with numerical input.

After setting, click [Next].

When selecting "Paper white"

Set the target coordinates of a white point and target brightness by measuring white point and the brightness of the paper (paper white).

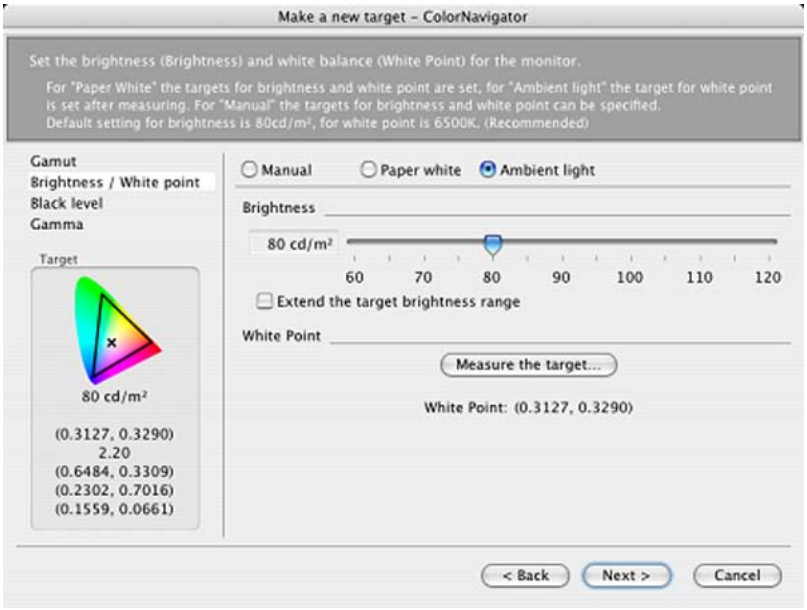
About the measuring procedure, refer to "2-3. Procedure for Measuring Paper White" (p. 31).



After setting, click [Next].

When selecting "Ambient light"

Set the target coordinates of a white point by measuring ambient light.
About the measuring procedure, refer to "2-4. Procedure for Ambient Light" (p. 33).



After setting, click [Next].

Note

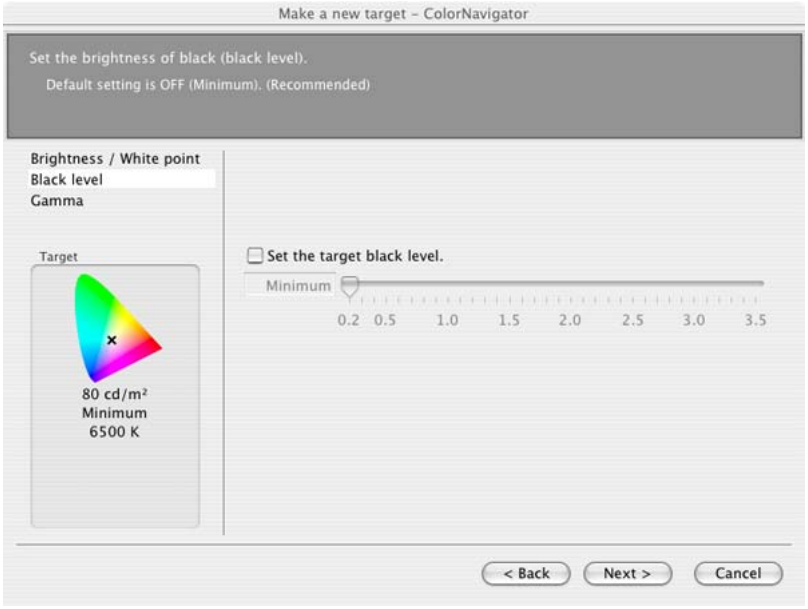
- When you set the target white point by color coordinates, assign the target between 0.24 and 0.45 for x-coordinate and y-coordinate.

Black Level:

Set the brightness of black (black level).

Black level adjustment function enables you to reproduce the light black with higher bright level. It is effective to set black level higher when the contrast is too apparent.

Recommended: OFF [Minimum] (default setting)



After setting, click [Next].

Note

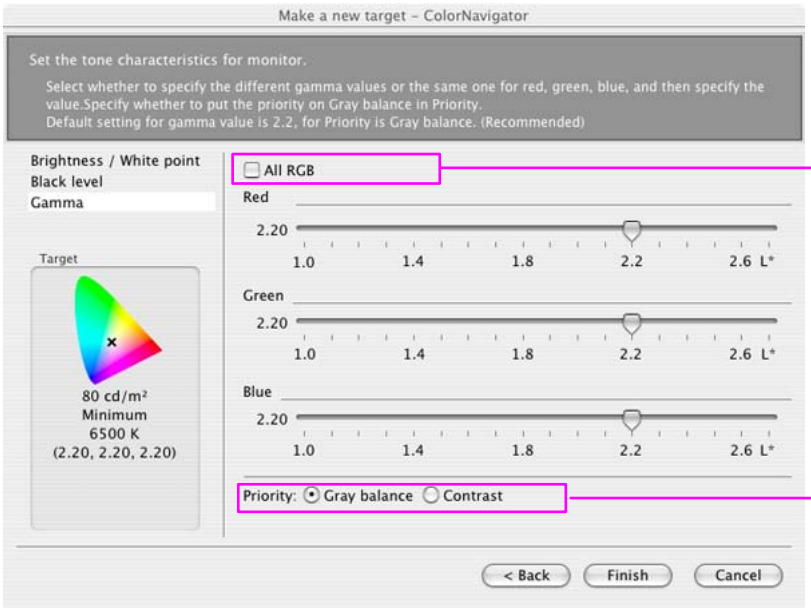
- The black level adjustment does not function when you adjust 6 colors with CG18, CG19, and CG21.

Gamma:

Set the gamma. About L*, the selectable gamma value, refer to "About ColorNavigator".

Specify whether to put the priority on Gray balance in "Priority". ("Priority" item is not displayed for CG18, CG19, CG21 monitors)

Recommended : Gamma 2.2, Priority Gray balance. (default setting)



Specify whether to set Red, Green and Blue Gamma individually or with the same vale.

Specify whether to put the priority on "Gray balance" in "Priority".

After setting, click [Finish].

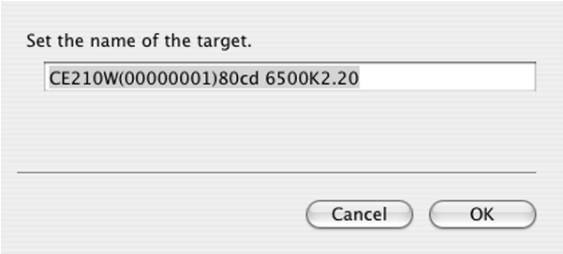
Note

About gray balance

The monitor adjustment with the priority on gray balance does the adjustment that brings all points on the grayscale closer to the target white point.
Select priority on gray balance to correct RGB color balance of the grayscale in the middle tone. However, the following restrictions exist when the monitor adjustment with the priory on gray balance is done.

- The gamma and the black level adjustment are not available in the manual adjustment.
- The contrast might decrease.
- The color space is different from that of the monitor adjustment without priority on gray balance.
- In the state to raise the contrast by using "Contrast emphasis" function (part of the universal access function), the gray balance cannot be adjusted on Mac OS X. Please turn off the contrast emphasis.
- The gray balance cannot be adjusted with ColorVision Spyder2/ColorVision Spyder3.

6 Set a target name



Click [OK].

7 Save a profile

The above window will appear. Click [Do adjust].

Tips

- Name the profile within 63 characters.
- Profile name cannot contain any of the following characters:
  Windows: \ / : * ? " < > |
  Mac: / :
  The name beginning with "."
- Generating a profile allows ColorNavigator to switch the monitor color settings based on the adjustment result (Select an adjustment result from the list, and click [Apply] in the startup window).

Note

- The suitable modes for the display image are available on the monitor (fine contrast mode). When you perform the monitor adjustment with ColorNavigator, the monitor automatically switches to CAL mode/EMU mode (i.e. Calibration mode/Emulation mode). The monitor adjustment result is only registered in CAL mode/EMU mode. (The result is not registered in other modes.) Use CAL mode/EMU mode for the monitor.
- When you adjust 6 colors on CG18, CG19, CG21 monitors, the monitor adjustment result is registered to the Custom mode.
- Once the monitor is adjusted by ColorNavigator, avoid adjusting the monitor image on no purpose. If the monitor is adjusted again, the previous adjustment result will be lost.
- Do not select the color profile on your OS after saving the profile, or color management cannot work properly.

8 Proceed "Auto Adjust" button (analog input only)

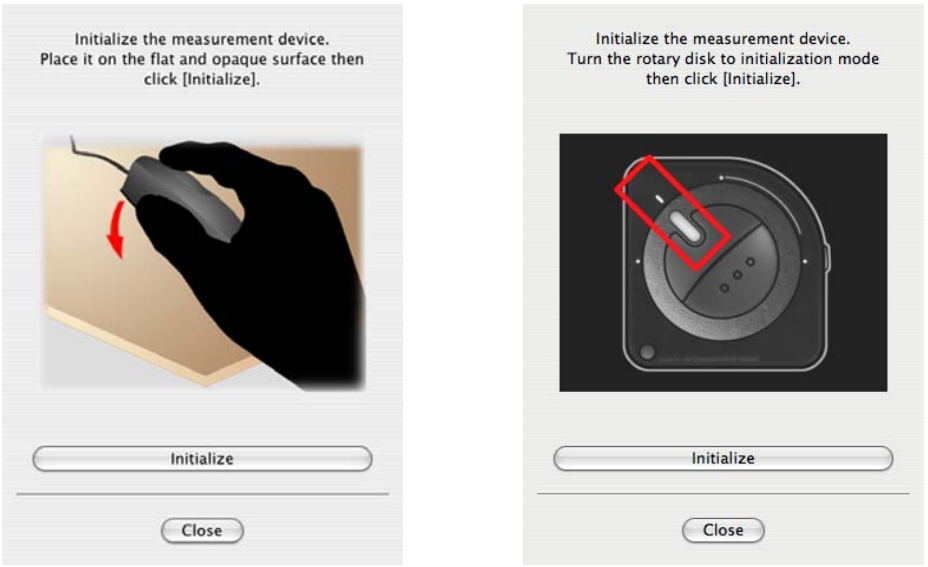
Follow the software instructions and click the monitor auto adjust button.

9 Initialize the measurement device

Initialize the measurement device according to the instructions.

When colormunki is connected to the computer, turn the rotary disk to initialization mode.

Initialization takes a few seconds.



colormunki

Note

- Be sure that light does not seep through to the sensor of the measurement device during initialization. Precise monitor adjustment results cannot be obtained if light is detected during the initialization process.
- When ColorVision Spyder2 or Spyder3 is connected to the computer, this window will not appear.

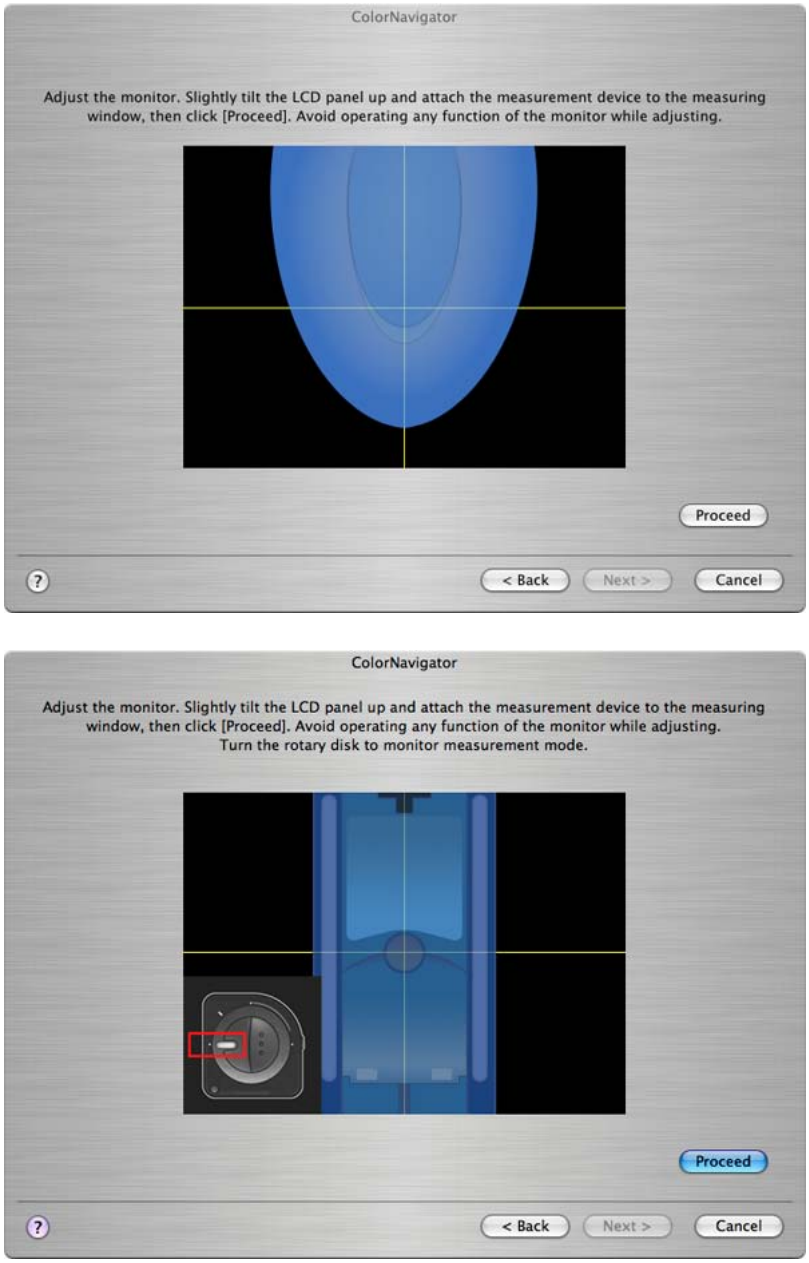
10 Proceed monitor adjustment

When colormunki is connected to the computer, turn the rotary disk to monitor measurement mode.

Tilt the LCD panel up slightly and attach the measurement device to the measurement window. (Refer to the user's manual of the measurement device)

Proceed with adjustment in accordance with the instruction on the message window.

ColorNavigator sequentially shows some patterns for adjusting the monitor. Monitor adjustment takes approximately 3 minutes.

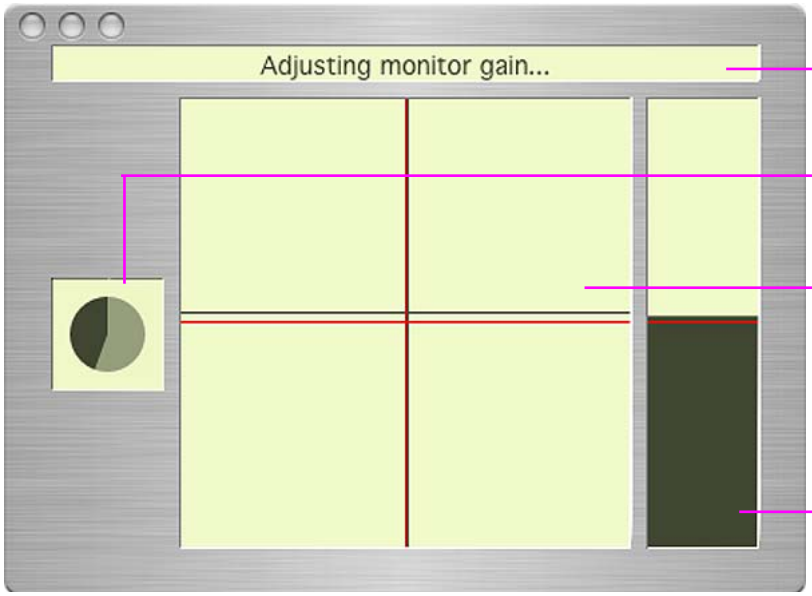


colormunki

Note

- When you perform the monitor adjustment, the monitor automatically switches to CAL mode/EMU mode (i.e. Calibration mode/Emulation mode). The monitor adjustment result is only registered in CAL mode/EMU mode. (The result is not registered in other modes.)
- The figure displayed in this window depends on the type of measurement device connected to the computer.

Progress bars are displayed on the right-bottom corner while adjustment is in progress.



Message display area:
Instructions or any software messages will be displayed while the adjustment is in progress.

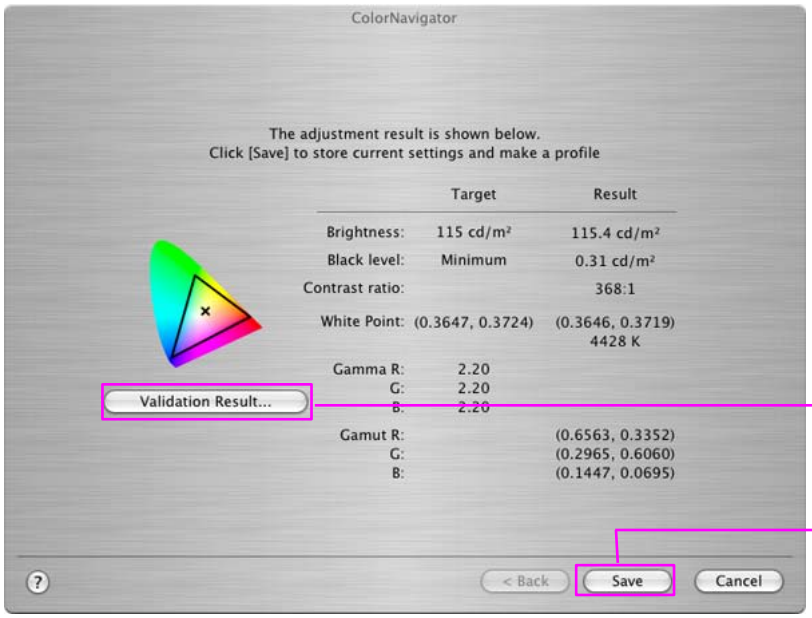
Progress chart:
The chart shows the status of adjustment.

Level display chart :
The present adjustment status is plotted in the chart.The red cross line means the target and the black cross line indicates the present status.

Brightness bar:
The present brightness level is shown in the brightness bar. The target brightness level is marked in red.

11 Confirm the result

After completing the monitor adjustment, confirm the result in the displayed result window.



About monitor validation, refer to "3-1. Monitor Validation".
* Depending on the setting [Validation Result...]. is displayed.

Store the adjustment result and generate a monitor profile.

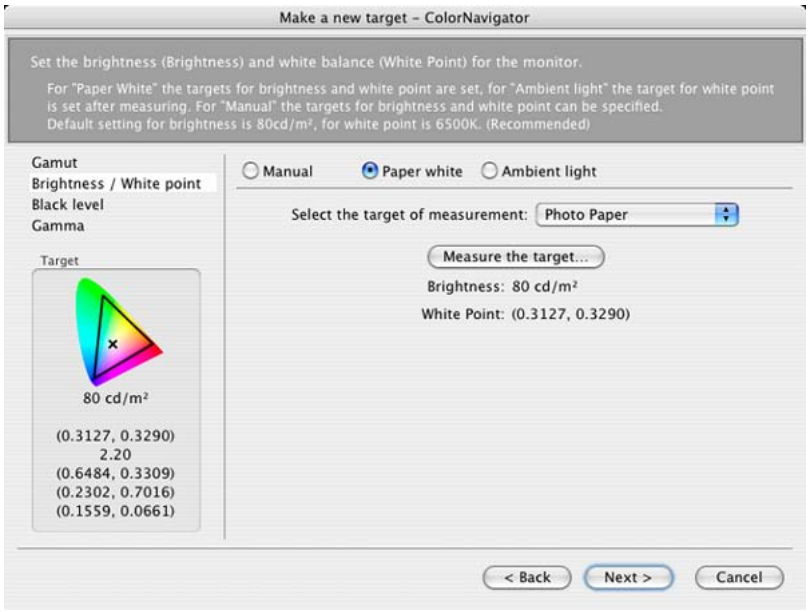
Note

- If the black level became to minus value and the adjustment failed, an error message is displayed. Follow the indication displayed in the window and adjust the monitor from the beginning again. The measurement device may not have been attached to the monitor closely or light may have seeped through to the sensor of the measurement device during initialization.

2-3. Procedure for Measuring Paper White

The target value of a white point and the target brightness can be set by measuring the light that is reflected from the paper.

1 Select "Paper white" in the new target creation window



2 Select "EPSON Photo Paper" or "Photo Paper" and click [Measure the target...]

3 Initialize the measurement device

The initialization window of the measurement device will open.

When colormunki is connected to the computer, turn the rotary disk to initialization mode.

Click [Initialize]. Initialize the measurement device according to the instructions.

Initialization takes a few seconds. The paper white measurement window will open.

Note

- Be sure that light does not seep through to the sensor of the measurement device during initialization. Precise adjustment results cannot be obtained if light is detected during the initialization process.
- When ColorVision Spyder2 or Spyder3 is connected to the computer, this window will not appear.

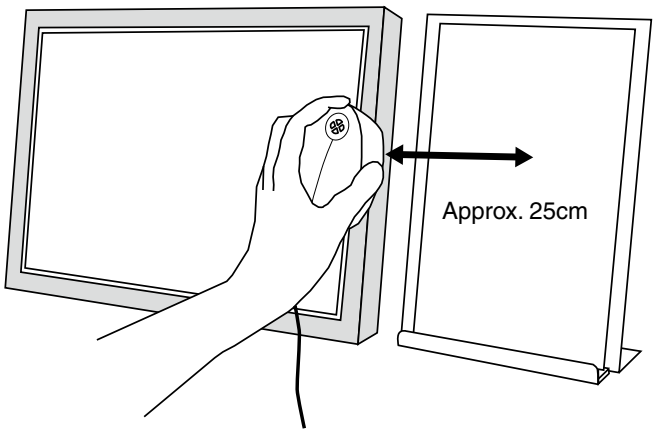
4 Measure the paper white

When colormunki is connected to the computer, turn the rotary disk to monitor measurement mode.

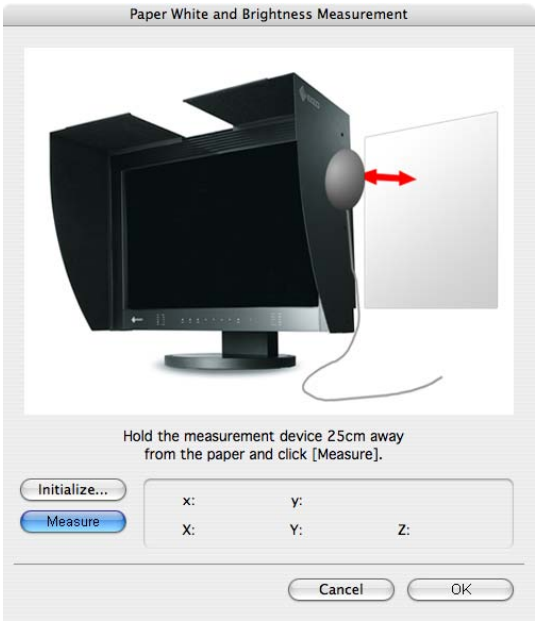
Hold the measurement device as below, with the sensor facing the paper.

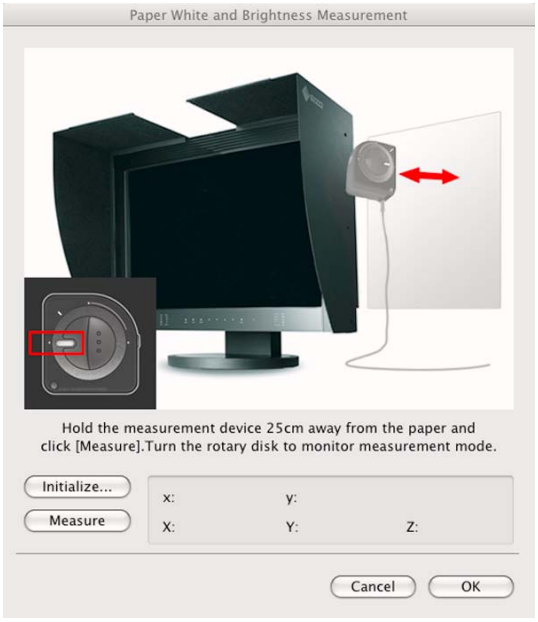
Move it approximately 25 cm away from the paper and maintain it parallel to the paper.

The use of the photo stands is recommended so that the paper will not move.



Click [Measure] on the paper white measurement window.





colormunki

After the measurement, click [OK]. The measured values are set as the target brightness and white of the configuration window. Click [OK].

Next, proceed to p.28 "9. Initialize the measurement device" and the further procedures.

Note

- In the paper white measurement, not only white point but also brightness is measured and reflected in the target value.
- The target value of brightness is set by 5cd/m^2, based on the rounded-up measurement value. ex.) measured brightness : 80.1 cd/m^2 -> 85 cd/m^2
- If the measurement value of brightness is under 25 cd/m^2, the target value of brightness is automatically set to minimum value.

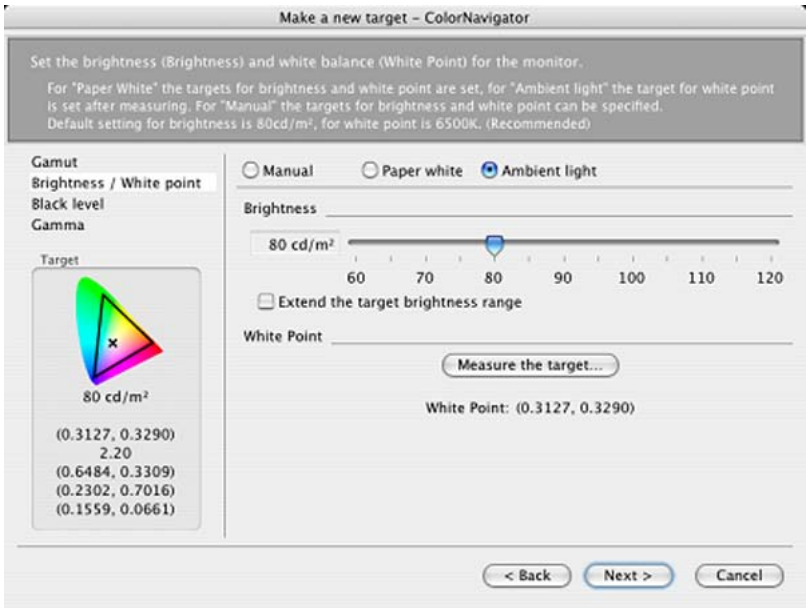
2-4. Procedure for Measuring Ambient Light

Note

- The following measurement devices enable ambient light measurement.
  - X-Rite Eye-One Pro
  - X-Rite Eye-One Display2
  - X-Rite colormunki

Eye-One Pro/Eye-One Display2

1 Select "Ambient light" in the Make a new target window



2 Click [Measure the target...]

3 Initialize the measurement device

The initialization window of the measurement device will open. Click [Initialize]. Initialize the measurement device according to the instructions.

Initialization takes a few seconds. The ambient light measurement window will open.

Note

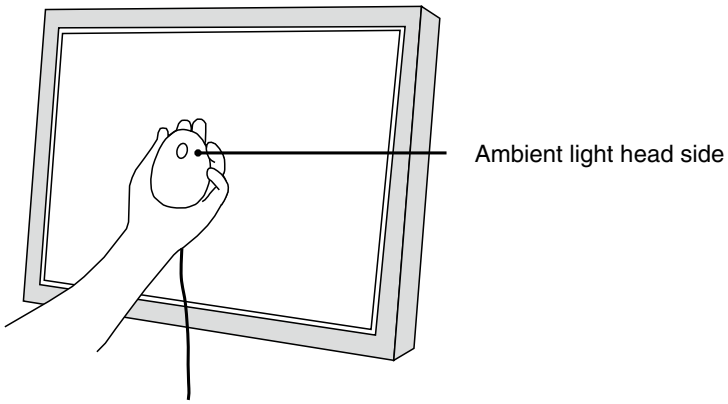
- Be sure that light does not seep through to the sensor of the measurement device during initialization. Precise adjustment results cannot be obtained if light is detected during the initialization process.

4 Attach the ambient light head to the measurement device

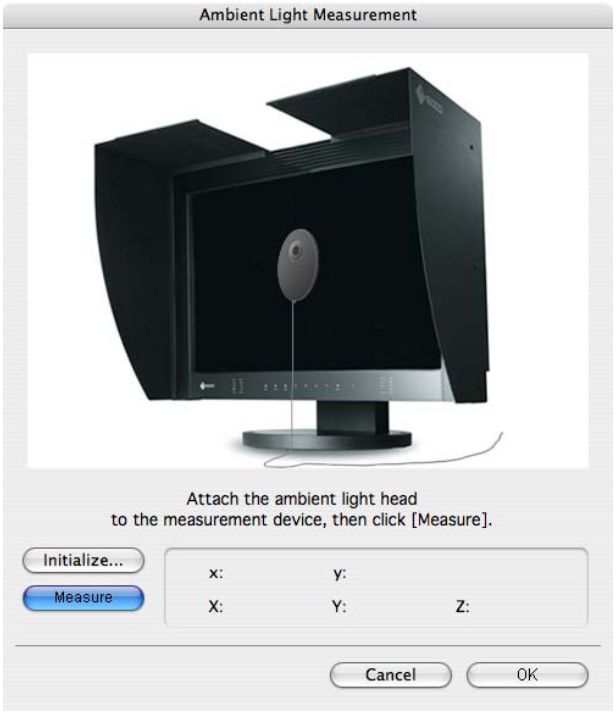
About attaching, refer to the user's manual of the measurement device.

5 Measure the ambient light

Hold the measurement device as below, with the ambient light head side facing front.
Move it under the ambient light to be measured.



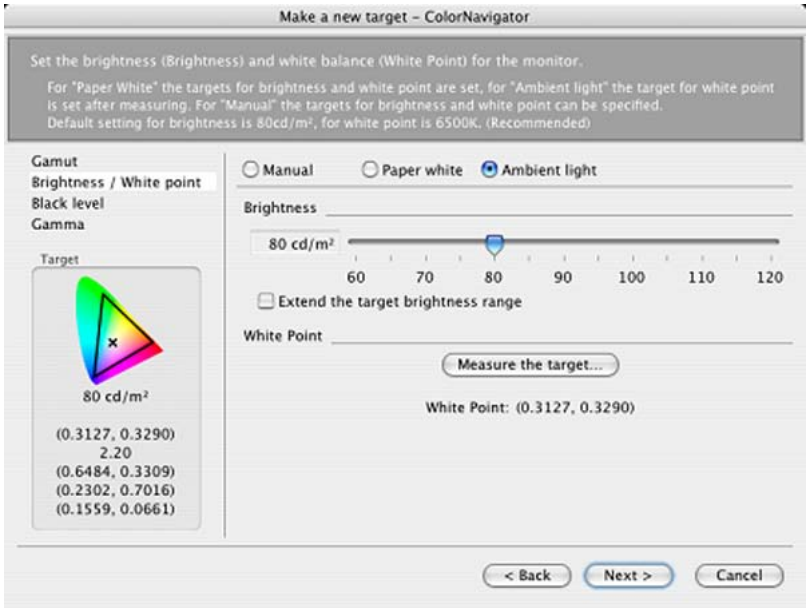
Click [Measure] on the ambient light measurement window.



After the measurement, click [OK]. The measured values are set as the target white point of the configuration window. Click [OK].
Next, proceed to p.28 "9. Initialize the measurement device" and the further procedures.

colormunki

1 Select "Ambient light" in the Make a new target window



2 Click [Measure the target...]

3 Initialize the measurement device

The initialization window of the measurement device will open.

Turn the rotary disk to initialization mode.

Click [Initialize]. Initialize the measurement device according to the instructions.

Initialization takes a few seconds. The ambient light measurement window will open.

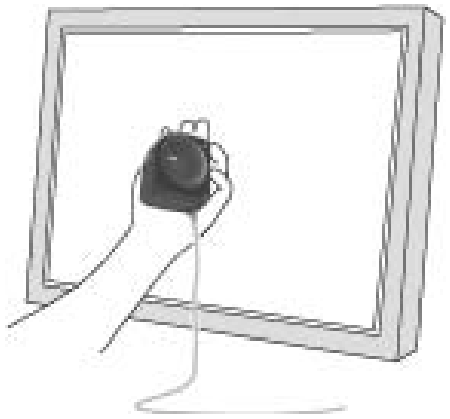
Note

- Be sure that light does not seep through to the sensor of the measurement device during initialization. Precise adjustment results cannot be obtained if light is detected during the initialization process.

4 Measure the ambient light

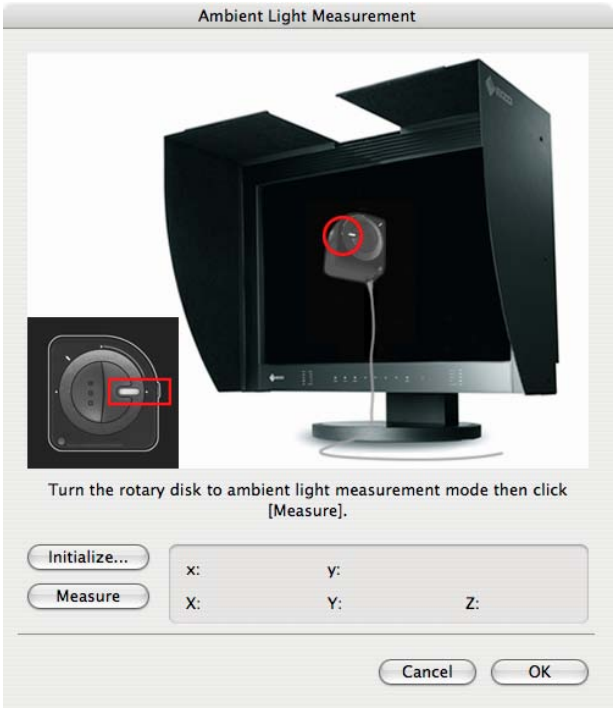
Turn the rotary disk to ambient light measurement mode.

Hold the measurement device as below.



Move it under the ambient light to be measured.

Click [Measure] on the ambient light measurement window.



After the measurement, click [OK]. The measured values are set as the target white point of the configuration window. Click [OK].

Next, proceed to p.28 "9. Initialize the measurement device" and the further procedures.

2-5. Periodic Monitor Adjustment

Periodic Readjustment

The monitor brightness and color gradually alter. To compensate for changes, adjusting once every 2-4 weeks is recommended. It can be performed with the timer.

The monitor should be readjusted if the system configuration changes as below.

- Changing the computer or graphics board
- Changing the connector on the monitor (ex. from SIGNAL1 to SIGNAL2) to the computer or graphics board
- Changing the monitor resolution or color
- Adjusting the monitor screen

Timer

Setting a timer displays messages on the screen a few hours after the monitor adjustment.

Refer to "5-1. Timer" (p. 43).

3. Advanced Settings (Validation, Manual Adjustment)

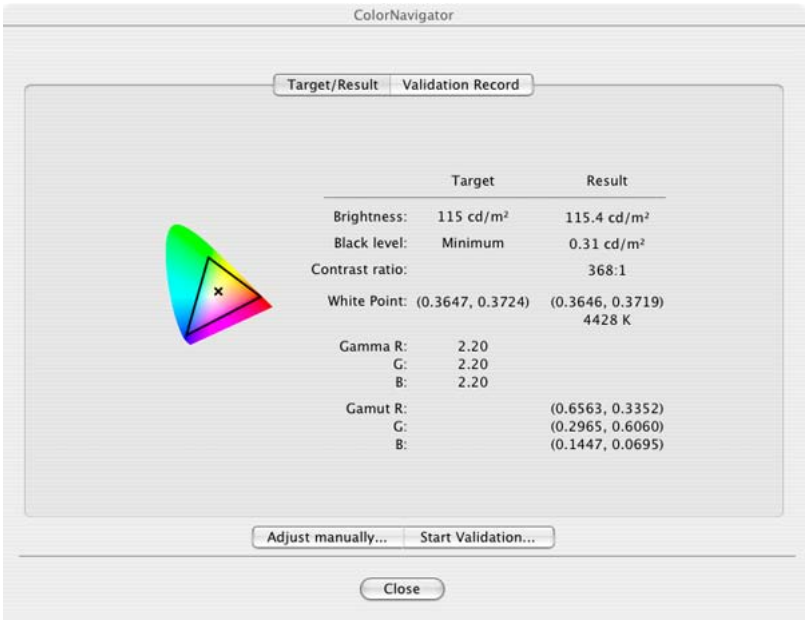
3-1. Monitor Validation

Verifies the adjustment status and adjustment target (profile) of the monitor.

1 Select a target and click [Detail...] in the startup window

Tips

- When you select "Start validation after calibration has completed.", validation is automatically performed after adjusting monitor. Refer to "5-3. Validation (p. 45)"
- Validation can be performed in the adjustment result window.



2 Click [Start Validation...]

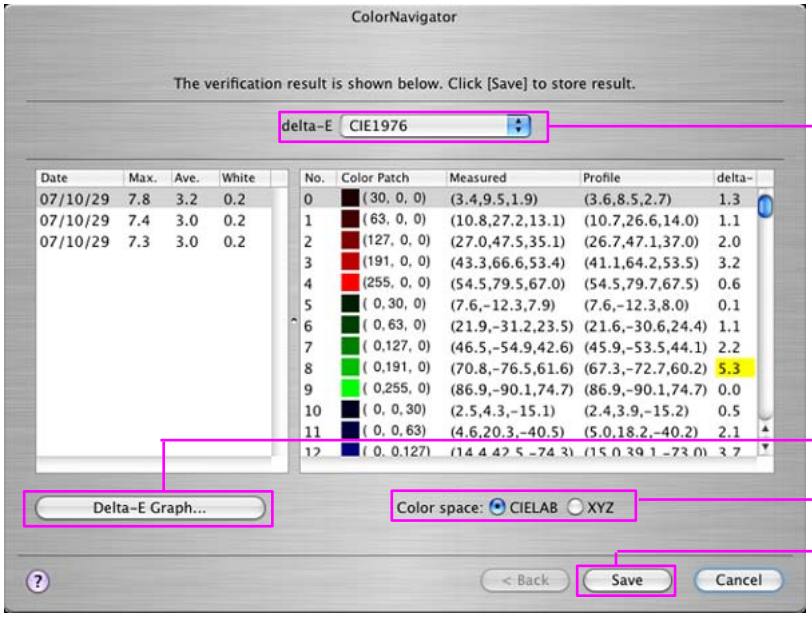
3 Initialize the measurement device

The initialization window of the measurement device will open. Click [Initialize]. Initialize the measurement device according to the instructions.

Initialization takes a few seconds.

4 Confirm the result

After validation, the number of the measured color batch, the color batch, the RGB values, the measurement results, the calculated value derived from the profile, and the color difference (delta-E) between the profile and the measurement results are shown on the result window.



Select the method of calculation.

Display the delta-E graph.

Select the color coordinates to display the results.

Save the validation results and generates a monitor profile.

5 Save a profile

Click [Save] and then the message "The measurement result is saved." is displayed. Click [Quit]. The validation is completed.

3-2. Manual Adjustment

After completing adjustment, the white point, brightness, gamma, the hue and saturation of those 6 colors (red/green/blue/cyan/magenta/yellow) can be adjusted manually.

Note

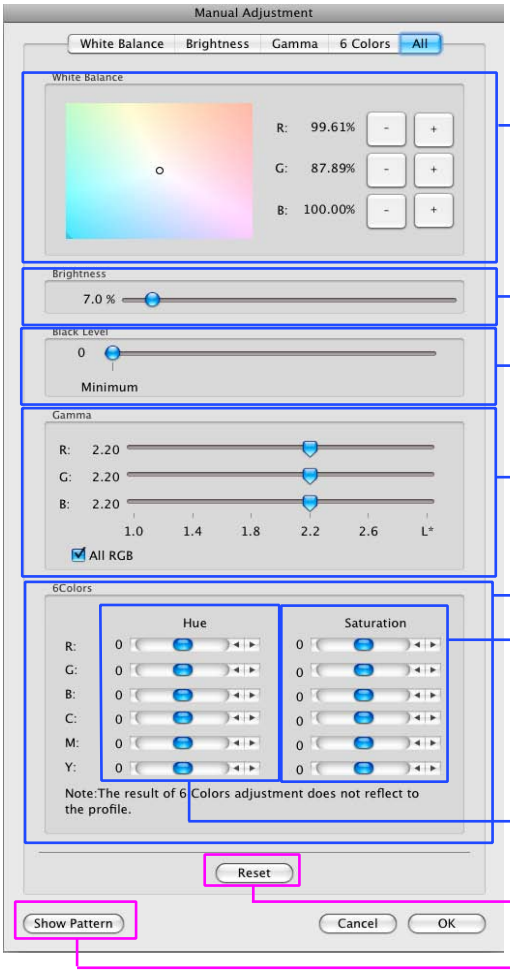
However, note the following when adjusting the 6 Colors.

- Adjusting the 6 Colors makes difference in the color between images and print less noticeable and does not correct the colors. The color management settings of each device may not be appropriate when the color of the monitor image is noticeably different from that of the print.
- The results of any adjustment to the 6 Colors will be saved in the ColorNavigator as adjustment data. The result of the 6 colors adjustment does not reflect the profile made after adjustment.

Procedure

1 Open the manual adjustment palette

Click [Adjust manually...] on the detail window.
The manual adjustment palette will open. Each tab of the manual adjustment palette will be changed and adjusted. [All] includes all adjustment items.



Adjust the gain of Red/Green/Blue to adjust the white balance.

+/- button:
click the button to either increase or decrease each gain.

Coordinate specification:
Specify the coordinate by dragging the "O" mark that indicates the current white point, and each gain will be calculated.

Correct the brightness.

Correct the black level.

Set the monitor gamma. About L*, the selectable gamma value, refer to "About ColorNavigator"

Change the hue and saturation of 6 colors

Adjust the hue of red, green, blue, cyan, magenta and yellow.
As the slide bar moves to the left, the saturation goes low. As the slide bar moves to the right, the saturation goes high

Adjust the hue of red, green, blue, cyan, magenta and yellow.
The hue changes as the slide bar moves. See the next page.

Go back to the stage before it was adjusted manually

Show pattern display screen.

Color	Slide bar to the left	Slide bar to the right
R	to magenta	to yellow
G	to yellow	to cyan
B	to cyan	to magenta
C	to green	to blue
M	to blue	to red
Y	to red	to green

Tips

- The manual adjustment palette can move and be adjusted with the image.
- The values displayed on the left of the functions, such as white point, brightness, black level, 6 colors adjustment are reference values.

Note

- The monitor gamma adjustment varies depending on the monitor.
- The profile does not reflect the result of the 6 colors adjustment.
- If 6 colors adjustment is performed on CG18, CG19 or CG21, select "Yes" in the 6 color adjustment window before performing.

2 Measure the monitor

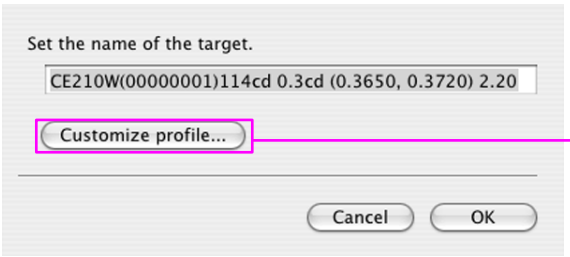
After adjusting manually, click [OK] of the manual adjustment palette.

The manual adjustment palette will close and the measurement window will appear.

Follow the window instructions to measure the monitor.

3 Confirm the result and generate a profile

When the measurement has completed, the adjustment result window will appear. Confirm the measurement result and click [Save] to generate a profile.

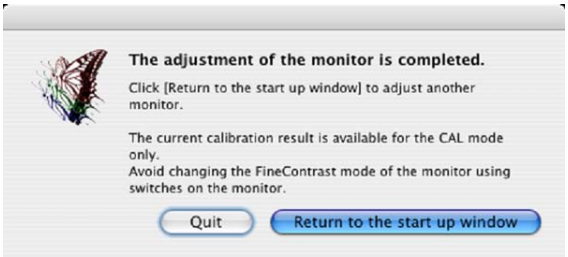


Click [OK].

Note

- If the black level became to minus value and the adjustment failed, an error message is displayed. Follow the indication displayed in the window and adjust the monitor from the beginning again. It's because the measurement device could not have been attached to the monitor closely or light could have seeped through to the sensor of the measurement device during initialization.

4 Save a profile



The above window will appear. Click [Quit].

4. Using ColorNavigator in Multiple Monitor Environment

If you use ColorNavigator in a multiple monitor environment, select a monitor to run the software after starting up ColorNavigator.

Note

- If your OS is Windows Vista, the following settings are required in a multiple monitor environment.
  1. Select [Control Panel] - [Appearance and Personalization] - [Personalization] - [Adjust screen resolution].
  2. [Display Settings] dialog appears.
  3. Check the [Extend the desktop onto this monitor] check box for all monitors.

Startup ColorNavigator in Multiple Monitor Environment

1 Select a monitor

The software shows the following window after starting ColorNavigator.

Move the software window to the screen of the monitor you want to adjust and go on to the next step.

2 Select a function

Select a function on the startup window. The process for each function is the same as that in a single monitor environment.

3 Run ColorNavigator on the second monitor

When calibration is completed, a completion message will appear.
Press [Return to the start up window] and repeat the process for the second monitor.

5. Preferences

Macintosh

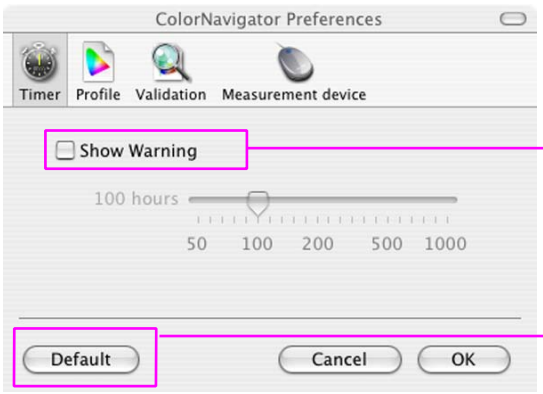
Click [ColorNavigator] - [Preferences...] to open the timer setup window.

Windows

Click the [Preferences] button in the startup window to open the timer setup window

5-1. Timer

Setting a timer displays messages on the screen a few hours after the monitor adjustment.



Enable the check box to activate timer.

Disable the check box and set the timer 100 hours. Also, return the setting of the profile and validation to the defult settings.

The timer can be set between 50 and 1,000 hours. The setup varies depending on the time.

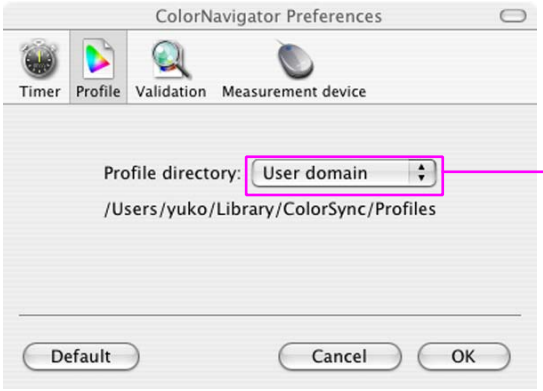
Time	Setup
50-100 hrs	every 10 hr
100-200 hrs	every 20 hr
200-500 hrs	every 50 hr
500-1000 hrs	every 100 hr

Click [OK] after setting the time.

5-2. Profile

Macintosh

Specify a folder with the attribute to save a profile.

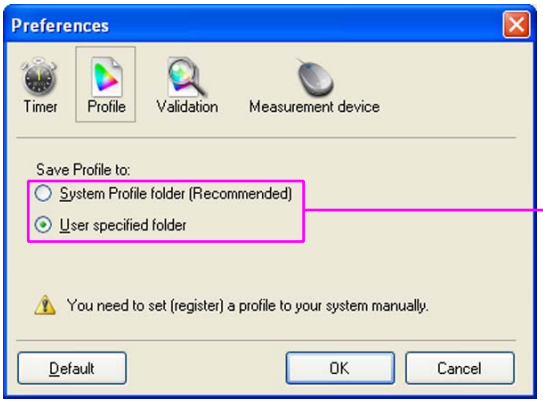


Local domain
Usable folders for all accounts which registered in PC. (Administrator authority is required)

User domain
User's personal folder

Windows

Select a folder to save a profile.



System Profile folder (Recommended)
Usable folders for all accounts which registered in PC. (Administrator authority is required)

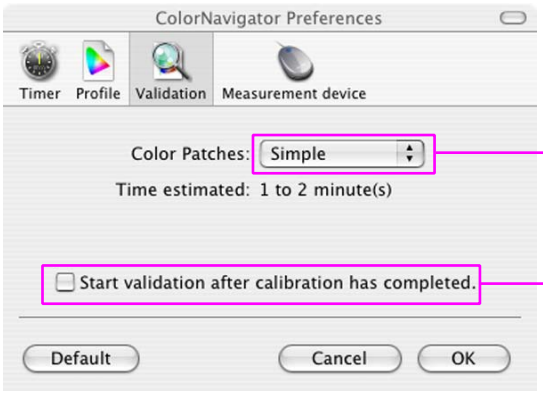
User specified folder
Folder specified by user.

Note

When you select "User specified folder"
- The profile needs to be set to the system manually.
  About the setting, refer to "About Color Profiles" in EIZO LCD Utility Disk.
- If you have no access right to the folder, an error message will appear.

5-3. Validation

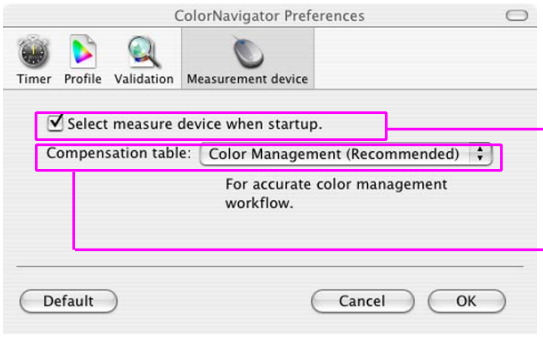
Specify the number of color patches that is used for validation. Default setting is 32.



Simple: 32 colors
Detail: 145 colors
Default setting is "Detail".

When the box is checked, validation is performed automatically after the monitor adjustment. Default setting is OFF.

5-4. Measurement device



When the box is checked, the measurement device selecting window appears during ColorNavigator startup.
If the box is unchecked, this dialog is not shown unless the measurement device cannot be found.

Select the method to compensate the measurement value.

Color Management (Recommended)
For accurate color management workflow.
Suitable for single monitor using.

Multiple Monitor Matching
For color matching among various monitors.

No compensation
For other company's monitor validation tool.
The sensor measurement value is used as it is.
Adobe RGB-compliant monitor may not be measured correctly depending on your sensor.

6. Error Message List

Find the following description if a message appears while running Color Navigator.

Problems	Points to check / Description
Initialization Error:	
<Macintosh> •Mac OS X 10.3.9 or later is required for starting up ColorNavigator. •Set monitor color to 16.7 million colors or more to start up ColorNavigator. **<Windows>** •Windows XP or later is required for starting up ColorNavigator. •Set monitor color to 24 bit or more to start up ColorNavigator.	[] Check the system requirements of ColorNavigator. Refer to "1. Setting Up".
•Failed to detect monitor and measurement device. Quit (Macintosh) / Exit (Windows) the software, reconnect USB cable to both monitor and measurement device, then restart the software. •The adjustment capable monitor cannot be found. The monitor cannot be adjusted with the current status. •Turn the rotary disk to initialization mode then click [Initialize].	[] Confirm that all the devices, that are necessary to start up ColorNavigator, are detected by Device Manager. [] Check the USB connection of the monitor and measurement device. [] Check whether the ColorEdge series monitor is connected. [] Check whether the rotary disk is turned to initialization mode when colormunki is connected to the computer.
•Check the measurement device is placed on the white ceramic tile of base plate firmly then click [Initialize]. •Check the measurement device is placed on the flat and opaque surface then click [Initialize].	[] Check whether the measurement device is placed on the base plate.
Measurement Error / Adjustment Error / File Error:	
•Select another white point, or retry [Proceed].	[] Check whether the target of white point is set between 0.24 and 0.45 for x-coordinate and y-coordinate.
•Check the measurement device firmly attached to the measurement window, then click [Proceed].	[] Attach the measurement device to the measurement window firmly.
•Avoid operating any function of the monitor while measuring monitor. Retry measurement. •Avoid operating any function of the monitor while running ColorNavigator. Retry Adjustment. •Avoid operating any function of the monitor while the adjustment result selection window is displayed. Start the operation over again.	[] If the monitor is operated while ColorNavigator is in active, the software operation may end in failure.
•Failed to generate a profile. Retry [Save].	[] It cannot generate a profile if the file name includes "/". Rename and retry save.
Communication Error:	
•Restart the software and retry operation.	[] Check whether the USB cable of the monitor and measurement device is connected. Avoid disconnecting the USB cable while adjusting the monitor.

EIZO NANAO CORPORATION

http://www.eizo.com

7th Edition-July, 2008

03V22065G1

(U.M-E C.N)