

exactTM 2



User Guide

Consult this documentation in all cases where the Attention symbol  appears. This symbol is used to inform you of any potential HAZARD or actions that may require your attention.

NOTE: Additional certifications and compliance information can be viewed in Device Settings > System Information > Compliance.

CE Declaration



Hereby, X-Rite, Inc. declares that the objects of the declaration described below are in conformity with the relevant Union harmonization legislation including Directive(s) 2014/53/EU (RED), 2014/30/EU (EMC), 2014/35/EU (LVD), and RoHS EU 2015/863.

Description / Intended Use	eXact 2: CL B Peripheral Spectrophotometer w/ WLAN eXact 2 Docking Station: WPT Wireless Charger for eXact 2.
Article 3.2: Applied Radio Spectrum Standard(s)	eXact 2: ETSI EN 300 328 V2.2.2 - module (ATWILC1000-MR110PB) eXact 2 Docking Station: ETSI EN 300 330 V2.1.1 / 303 417 V1.1.1
Article 3.1(b): Applied EMC Standard(s)	EN 61326-1 : 2013, EN 55011 :2016, A1 :2017, A11 :2020 EN 301 489-1 V2.1.1, EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.0
Article 3.1(a): Applied Health and Safety Standard(s)	EN 62368-1 : 2014 / AC : 2015 / A11 : 2017 EN 62311 : 2008, EN 62233 : 2008 EN 61010-1:2010/A1 :2019 (Edition 3.1), IEC/EN 62471
Frequency band(s) in which the radio equipment operates	eXact 2: 2400 – 2483.5 MHz eXact 2 Docking Station: 119 – 140 kHz
Maximum radio-frequency power transmitted	eXact 2: 19.6 dBm (ATWILC1000-MR110PB) eXact 2 Docking Station: H-field (10m): 10.0 dBuA/m

USA

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

47 CFR § 2.1077 Compliance Information Unique Identifier: eXact 2, eXact 2 Docking Station

Responsible Party (US Contact Information): X-Rite, Inc., 4300 44th Street SE, Grand Rapids, MI 49512 USA
Models with Wi-Fi: FCC ID: LSV-EXACT2

CANADA

CAN ICES-003 (B) I NM8-003 (B)

Models with Wi-Fi: IC: 20894-EXACT2

USA CANADA NOTICE: This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Note: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure

This product has been tested to ensure conformance to KDB 447498 General RF Exposure Guidance and complies with limits for human exposure to Radio Frequency (RF) fields adopted by the Federal Communications Commission (FCC) and RSS-102 - Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands) per Canada ISDE, and EN 50566 for EU hand-held use. Nevertheless, the device shall be used in such a manner that the potential for human contact during Wi-Fi transmission is minimized.

Ce produit a été testé pour garantir la conformité aux directives générales d'exposition aux radiofréquences KDB 447498 et est conforme aux limites d'exposition humaine aux champs de radiofréquence (RF) adoptées par la Federal Communications Commission (FCC) et RSS-102 - Conformité à l'exposition aux radiofréquences (RF) d'appareils de communication radio (toutes les bandes de fréquences) selon ISDE Canada pour une utilisation portative. Néanmoins, l'appareil doit être utilisé de manière à minimiser le potentiel de contact humain pendant la transmission Wi-Fi.

Japanese Ministry of Internal Affairs and Communications (MIC)



SRRC (State Radio Regulation of China) Certification

ITE Device: Contains CMIIT ID: 2018DJ1313

Korea



R-R-XRT-EXACT2,



R-R-XRT-EXACT2DOCK

Malaysia



RGJP/75A/0722/S(22-3331)

RGJP/76A/0722/S(22-3351)

RGLO/19A/0722/S(22-3363)

Equipment Information



Use of this equipment in a manner other than that specified by X-Rite, Incorporated may compromise design integrity and become unsafe.

WARNING: This instrument is not for use in explosive environments.

ADVERTENCIA: NO use este aparato en los ambientes explosivos.

AVVERTIMENTO: NON usare questo apparecchio in ambienti esplosivi.

WARNUNG: Das Gerät darf in einer explosiven Umgebung NICHT verwendet werden.

AVERTISSEMENT: Cet instrument ne doit pas être utilisé dans un environnement explosif.



Instructions for disposal: Please dispose of Waste Electrical and Electronic Equipment (WEEE) at designated collection points for the recycling of such equipment.

If this product is used in a manner not specified by the instruction, the safety protection provided by the device may be impaired or become inoperable.

Unauthorized dismantling of the **eXact 2** will void all warranty claims.

CAUTION: Risk of explosion if battery is replaced by an incorrect type. Replace only with X-Rite part number SE15-48, selfprotected rechargeable lithium-ion battery pack.

ATTENTION : Risque d'explosion si la batterie est remplacée par une batterie de type incorrect. Utilisez uniquement le blocbatterie X-Rite au lithium-ion rechargeable et à autoprotection (n° de réf. SE15-48).

Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

Proprietary Notice

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Patents: www.xrite.com/ip

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Warranty

X-Rite warrants this Product against defects in material and workmanship for a period of twelve (12) months from the date of shipment from X-Rite's facility, unless mandatory law provides for longer periods. During such time, X-Rite will either replace or repair at its discretion defective parts free of charge.

X-Rite's warranties herein do not cover failure of warranted goods resulting from: (i) damage after shipment, accident, abuse, misuse, neglect, alteration or any other use not in accordance with X-Rite's recommendations, accompanying documentation, published specifications, and standard industry practice; (ii) using the device in an operating environment outside the recommended specifications or failure to follow the maintenance procedures in X-Rite's accompanying documentation or published specifications; (iii) repair or service by anyone other than X-Rite or its authorized representatives; (iv) the failure of the warranted goods caused by use of any parts or consumables not manufactured, distributed, or approved by X-Rite; (v) any attachments or modifications to the warranted goods that are not manufactured, distributed or approved by X-Rite. Consumable parts and Product cleaning are also not covered by the warranty.

X-Rite's sole and exclusive obligation for breach of the above warranties shall be the repair or replacement of any part, without charge, which within the warranty period is proven to X-Rite's reasonable satisfaction to have been defective. Repairs or replacement by X-Rite shall not revive an otherwise expired warranty, nor shall the same extend the duration of a warranty.

Customer shall be responsible for packaging and shipping the defective product to the service center designated by X-Rite. X-Rite shall pay for the return of the product to Customer if the shipment is to a location within the region in which the X-Rite service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations. Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service. Do not try to dismantle the Product. Unauthorized dismantling of the equipment will void all warranty claims. Contact the X-Rite Support or the nearest X-Rite Service Center, if you believe that the unit does not work anymore or does not work correctly.

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IN NO EVENT WILL X-RITE BE LIABLE FOR ANY OF BUYER'S MANUFACTURING COSTS, OVERHEAD, LOST PROFITS, GOODWILL, OTHER EXPENSES OR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES BASED UPON BREACH OF ANY WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL THEORY. IN ANY EVENT OF LIABILITY, X-RITE'S MAXIMUM LIABILITY HEREUNDER WILL NOT EXCEED THE PRICE OF THE GOODS OR SERVICES FURNISHED BY X-RITE GIVING RISE TO THE CLAIM.

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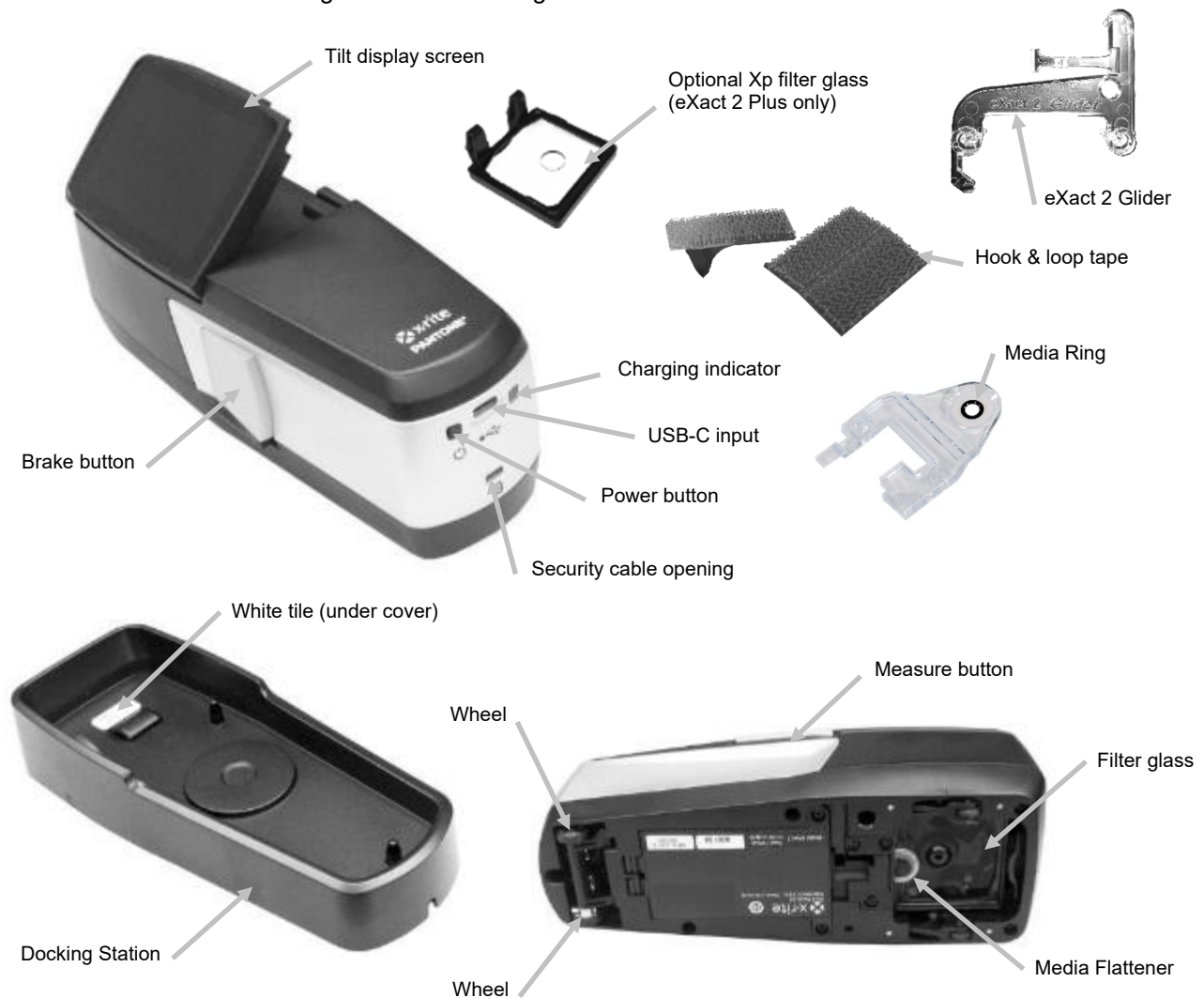
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INTRODUCTION AND SETUP

The X-Rite eXact 2 provides the following key features.

- Tilt display with touch screen operation
- Media Flattener/Media Ring
- Wi-Fi network connectivity
- Supports the following measurement modes according to ISO standards:
 - M0
 - M1
 - M2
 - M3 (not in eXact 2 Xp).
- “BestMatch” function to quickly and easily determine if satisfactory matches on-press can be achieved
- Video targeting
- Integrated scanning
- Full solution including software to manage device and transfer measurement data



User Manual Information

This manual is intended to provide setup, overview, operation, and general maintenance of the device. Specific software application information is available in the software help system.

Certain functions and options described in this manual are not available on all eXact 2 models and can be disregarded.

Packaging

Your device packaging should contain all the items listed below. If any of these items are missing or damaged, contact X-Rite or your Authorized Representative.

- X-Rite eXact 2 device
- Docking station with integrated calibration tile
- USB-C interface cable with a USB-C to USB-A adapter
- AC adapter (X-Rite P/N SE30-377) and line cord
- Optional Xp filter glass (eXact 2 Plus only)
- Hook & loop tape
- eXact 2 Glider
- Media Ring (pre-installed on eXact Xp, packaged with Standard and Plus)
- Media Flattener (pre-installed on eXact Standard and Plus, packaged with Xp)
- Carrying case
- Documentation

Power Button

The power button is used to initiate the device from a power off state. Simply press the button to turn on the device. If the device does not power up after pressing the power button, the batteries may require charging. Refer to Charging the Battery Pack.



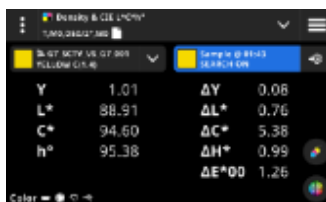
Powering Off

The device can be manually powered off by pressing and holding the power button until the screen appears with the Shut Down option. Tap **Shut Down** to power off.

When powered up, the device goes through a diagnostics test and displays a splash screen before the measurement screen appears.



Splash Screen

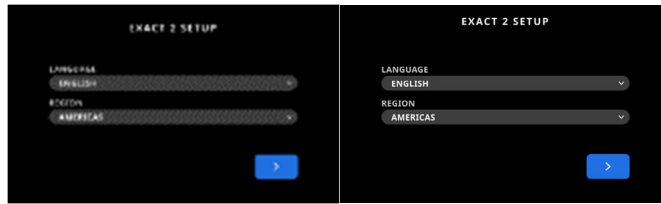


Measurement Screen

For the very first power up, the device displays a setup wizard screen after the splash screen. Refer to the User Interface section for information on completing the Setup Wizard.



Splash Screen

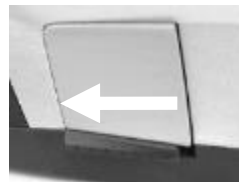


1st Setup Wizard Screen

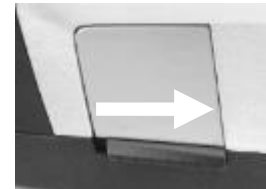
Brake Button

The button on the left side of the device is used to disengage the brake. When the brake is disengaged, the device is easily rolled over the sample for measuring. Pressing and holding the brake button disengages the brake.

The switch located below the brake button is used to lock the brake to the disengaged position. This eliminates the need to press the brake button every time you want to disengage the brake and use the wheels. To activate this feature, press the brake button and slide the switch toward the back of the device.



Switch Off



Switch On

Adjusting the Display Screen

The eXact 2 display can be adjusted at an angle (max. tilt: 60°) to help improve the viewing angle and remove glare. The operator does not need to lift the device off the press console to view results or tap the screen.



Charging the Battery Pack

The battery pack for your new device comes in a low to medium charge state and should be charged a minimum of three hours before use. Refer to Connecting the Power Supply section that follows for information on charging the battery pack.

A charged battery pack may eventually lose partial charge if not used for an extended amount of time. You should charge the battery from time to time when not in use to maintain battery performance. We recommend

keeping the docking station connected to power and placing the device on it when not in use. This will ensure the device is charged when needed. It also enables the automatic calibration of the device.

Battery Disposal

Dispose of the battery pack in a designated disposal location for recycling.

NOTE: If you use this device in a warm environment, your device may take longer to charge in the docking station. Select **Fast Charge on Docking Station** in the Power Settings to charge it faster. Refer to the Power Settings section for additional information.

Connecting the Power Supply

The power supply shipped with the device is connected directly to the docking station. The docking station is used for calibrating, charging, and storing the device when not in use. The docking station utilizes wireless charging to charge the battery pack.

Verify the voltage indicated on the AC adapter complies with the AC line voltage in your area.



Operational hazard exists if AC adapters other than X-Rite SE30-377 is used.

AC Adapter Ratings Input: 100-240V 50-60 Hz, Output: 12.0 VDC @ 2.5 A

Standard X-Rite Power Supply SE30-377 Connection

(Wireless Charging Using the Docking Station)

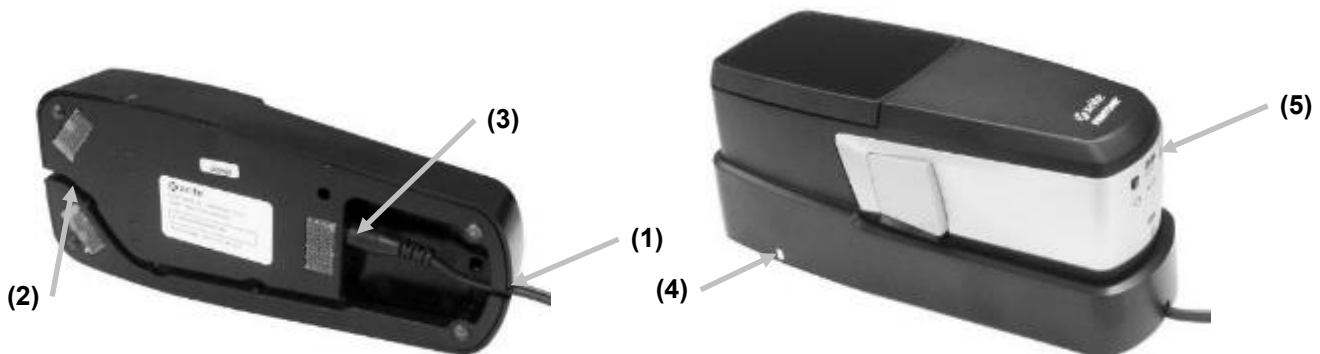
NOTE: You can find detailed information about charging the device with the docking station in the Troubleshooting Section.

1. Turn the docking station over and feed the cable from the power supply through the channel (1) at the back of the station. If desired, you can also feed the cable through the channel (2) at the front of the station.
2. Plug the small plug into the input connector (3) on the bottom of the docking station.
3. Plug the detachable line cord in the power supply and plug the line cord into the wall receptacle.

Position the device on the docking station to charge. An indicator light (4) on the side of the docking station will pulse blue. This is an indication that the device is properly seated and charging. The light will change to solid blue once the battery is fully charged.

A charging indicator (5) is also located on the back of the device. This indicator will illuminate orange when the battery is charging. The indicator will change to green when the battery is fully charged.

The docking station LED will change to blue when the battery is fully charged, and the charging indicator is off.



NOTE: You can purchase an optional power supply or a USB power adapter with a USB-C style connector to directly connect the device for charging. The optional power supply must be capable of an output at 5 VDC @ 3 A.

Optional Power Supply Connection

(Wired Charging Using a Direct USB Cable Connection)

NOTE: We recommend using at least 3 A output for charging.

The eXact 2 device can also be charged using a USB-A or USB-C computer port or a USB charger.

1. Plug the USB-C connector (6) from the power supply into the port on the back of the device.
2. Plug the detachable line cord in the power supply and plug the line cord into the wall receptacle.

A charging indicator (5) on the back of the device will illuminate orange. This is an indication that the battery is charging. The indicator will change to green when the battery is fully charged.



NOTE: If the device is directly connected using a USB cable and placed on the connected docking station the instrument is charged wirelessly and NOT over USB. The docking station has priority.

LED Charging Indicators

Indicator LEDs are located on the device (5) and the docking station (4). The LEDs show the different charging states of the battery.

Device LED

The indicator (2) is located on the back of the device.

Orange (solid): Battery is charging.

Green (solid): Battery is fully charged while connected to USB-C. The green LED turns off on the rear of the eXact 2 device when the battery is fully charged while charging in the docking station.

Red (flashing): Device error, for example charging attempt without battery.

Docking Station LED

The indicator (4) is located on the side of the docking station. When you position the device on the docking station the LED starts to pulse blue. This indicates that the device is properly seated and charging.

Blue (flashing): Battery is charging.

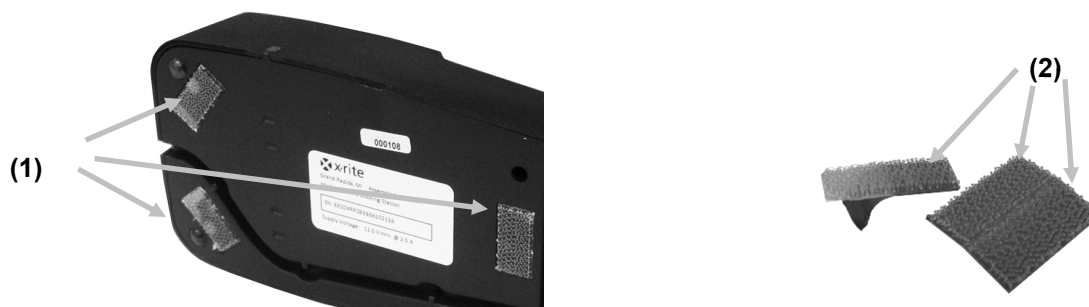
Blue (solid):

- Battery is fully charged. The wireless charger is suspended for 20 minutes. The LED turns off on the rear of the eXact 2 device.
- Battery was approaching maximum charging temperature. The wireless charger is suspended for 20 minutes to allow battery to cool. The LED turns off on the rear of the eXact 2 device.

Red (flashing): Foreign object detected.

Attaching the Hook & Loop Tape

The device comes with hook & loop fasteners that allow you to fasten the docking station to your work station. Three hook strips (1) are located underneath the docking station and three loop strips (2) are included separately.



Remove the backing from the loop tape and attach the tape with the adhesive side down to a spot on your desk, where you would like to position the docking station.

Connecting the USB Cable

IMPORTANT: You must install the software driver before connecting the device to your computer.

The device communicates with the eXact 2 Suite software through a type USB-C cable or over a Wi-Fi connection (if applicable). Refer to the Wi-Fi section for more information.

1. Install the eXact 2 Suite if not already installed. Refer to the eXact 2 Suite section for more information.
2. Plug the USB-C plug of the supplied USB cable into the back of the device (1).
3. Plug the USB cable into an available port on your computer.

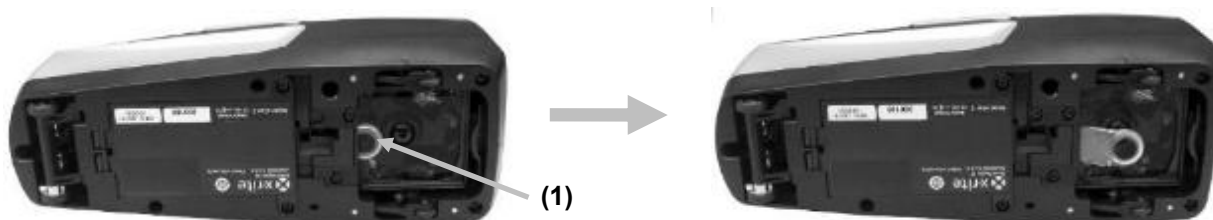


Media Flattener (pre-installed on eXact Standard and Plus)

The media flattener is used to hold media flat on dry ink samples (i.e., flexo) during measurements. Do not use the media flattener when measuring wet inks (i.e., offset) samples.

Using the Media Flattener

Using your finger, pull out on the looped end (1) of the media flattener until it stops.



Turn the device right side up and proceed with the measurements.

Storing the Media Flattener

When not in use, push the media flattener back into to the device using your finger.

Installing the Media Flattener:

Connect the device using the USB cable and power it on. Start the eXact 2 Suite and connect the device to the software. Click on Maintenance and then on Install Media Accessory. Follow the instructions on screen to install the Media Accessory.

NOTE: You MUST use the eXact Suite to install or remove the Media Flattener.

Media Ring (pre-installed on eXact Xp)

The Media Ring accessory for the eXact 2 is designed for customers requiring inter-model agreement between the first-generation eXact and the eXact 2 models when working with translucent samples like film.

The Media Ring enhances measurement agreement by controlling illumination for translucent samples. It mimics the targeting window pattern of the first-generation eXact, reducing light transmission within translucent samples and improving correlation between the two models.

While unnecessary for non-translucent materials like paper, paperboard, and corrugated samples, the Media Ring does not adversely affect measurements on these substrates. For samples with translucency effects like film, the Media Ring ensures improved correlation.

Please refer to the Media Accessory instruction sheet (P/N ETV-504) for more information.

Installing the Media Ring:

Connect the device using the USB cable and power it on. Start the eXact 2 Suite and connect the device to the software. Click on Maintenance and then on Install Media Accessory. Follow the instructions on screen to install the Media Accessory.

NOTE: You MUST use the eXact Suite to install or remove the Media Ring.

Exchanging the Filter Glass

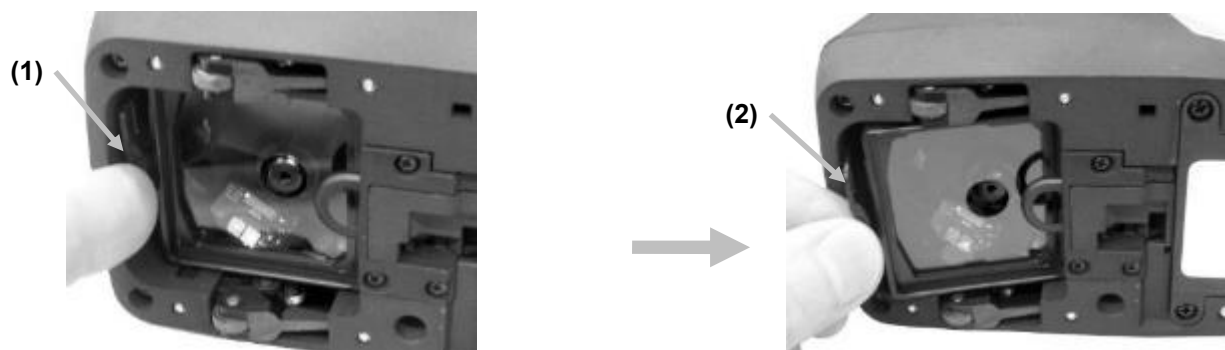
The device comes with an Xp filter glass or standard filter glass installed depending on model. The eXact 2 Plus comes with both filters. Follow the procedure below to exchange the filter glass in the eXact 2 if required.



1. Make sure the Media Flattener is in its retracted position.
2. Remove the standard filter glass by pushing the tab (1) on the filter towards the back of the device. Lift the filter glass up holding the outer edges.

NOTE: Do not touch the filter glass directly with your fingers to avoid finger prints and smudges on the glass.

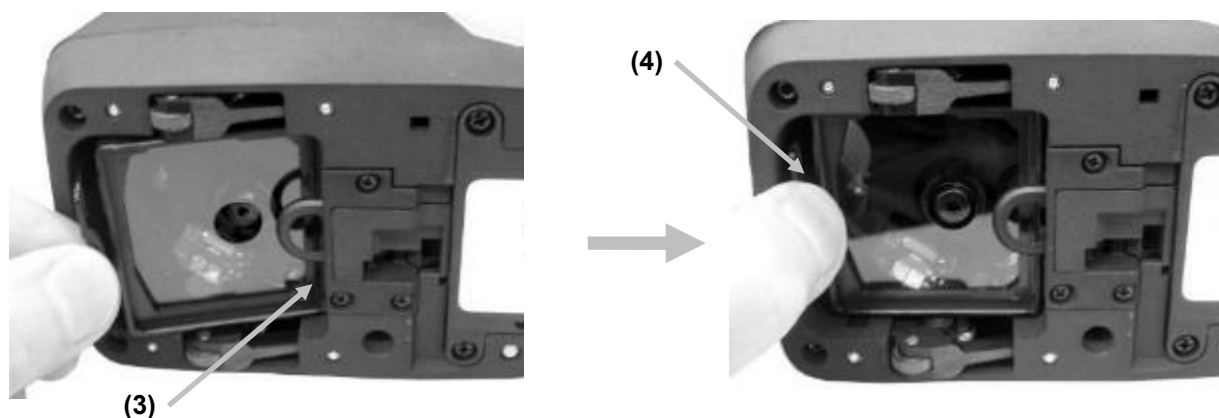
3. Carefully lift the installed filter glass (2) out of the optics area using the tab.




4. Remove the other filter glass from the storage case and insert the back edge (3) of the filter into the bottom side of the opening behind the Media Flattener.
5. Place the removed filter glass into the storage case to protect it from dirt or scratches.

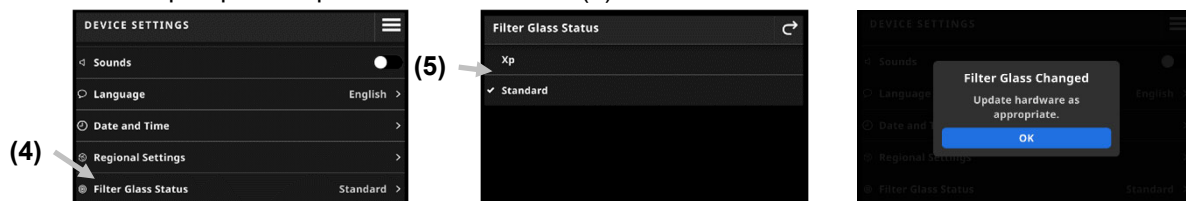


6. Lower the front edge (4) of the filter glass into the opening and press down until it snaps into place.



NOTE: After changing the filter glass, you need to match the Filter Glass Status in the Device Settings.

7. Turn the device right side up again.
8. Tap the  icon in the upper left corner of the screen to open the eXact 2 menu.
9. Swipe up on the eXact 2 menu list and tap **Device Settings**.
10. Swipe up and tap **Filter Glass Status** (4).



11. Match the filter setting (5) to the filter you are currently using. Refer to **Filter Glass Status** in the section **Device Settings** for more information.

NOTE: The filter glass is unique to the specific device. You cannot swap filter glasses between different devices.

eXact 2 Suite Software Application

NOTE: You will need to register your eXact 2 device before you have access to download the eXact 2 Suite software. Refer to the Registration section in the Appendix for additional information.

You should install the software application before connecting the device to your computer.

The application allows you to run and set several setting options in the device, such as:

- View and edit all settings
- Update device firmware
- Create and manage color libraries, jobs, and more
- Capture spot and scan measurements from eXact 2 devices and transfer the data directly to an application, such as Microsoft® Excel
- Transfer color libraries, jobs, and firmware to and from X-Rite Link fleet management
- Manage and transfer PantoneLIVE libraries
- Manage and transfer Digital Loupe images from the device

Installing the eXact 2 Suite Software

IMPORTANT: You must be logged on as an administrator or a member of the Administrators group to install the software on Windows 10 system.

1. After the eXact Suite 2 application is downloaded, browse to the download location, and double-click the .exe file.
2. Follow the on-screen prompts to install the software.

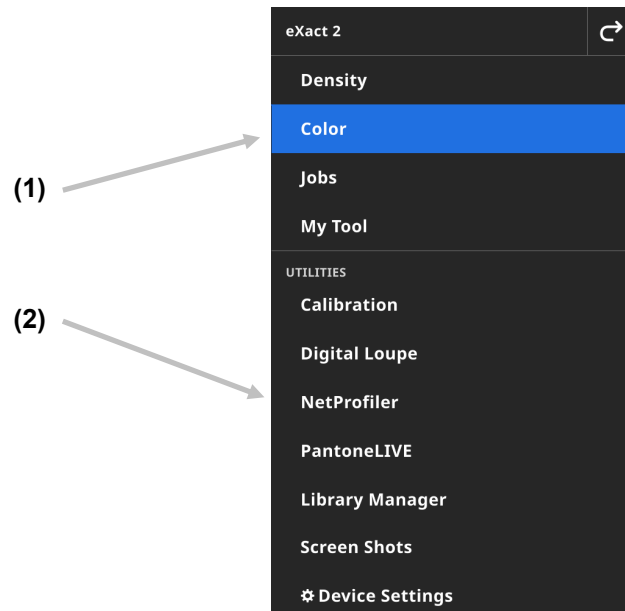
Refer to the online help for information on using the application.

USER INTERFACE

This section describes the eXact 2 menu, the basic use of the touch screen, setup wizard procedure, and measurement techniques.

eXact 2 Menu

The eXact 2 menu contains a list of tools (1) and utilities (2).



(1) Tools

- **Density:** Measure patches and access density functions (Density, Tone Value, Tone Value Increase, Trapping, etc.)
- **Color:** Measure solid patches to make comparisons and do searches in color libraries.
- **Jobs:** Measure custom jobs with different patch types (Paper, Solids, Tints, Overprints, Gray Balance) or industry standard processes (G7, PSO, JapanColor etc.)
NOTE: The device comes pre-loaded with a variety of built in jobs. Users can also use eXact 2 Suite to create custom jobs to load here.
- **My Tool:** Create custom versions of the Color tool to use multiple configurations or fixed color libraries.
NOTE: My Tool is a custom version of Color tool and can be created on the instrument or with eXact 2 Suite.

(2) Utilities


- **Calibration:** Display information about the device calibration status
- **Digital Loupe:** Open the Digital Loupe Manager to view images you captured of your live targeting area
- **NetProfiler:** Display information about your current NetProfiler profile, for example Version, Status etc.
- **PantoneLIVE:** Connect to your PantoneLIVE account
- **Library Manager:** Manage your color libraries
- **Screenshots:** Manage screenshots on your device
- **Device Settings:** Set the global settings of the device, for example Wi-Fi, Display, Language etc.

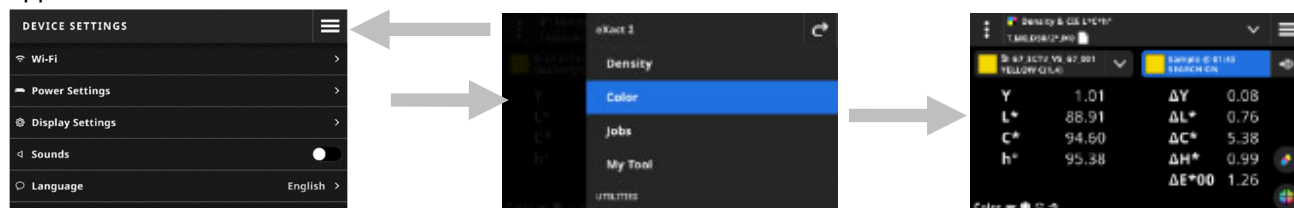
See the corresponding sections of this manual for additional information on Tools and Utilities.

Navigating the Screen

The X-Rite eXact 2 device contains a graphical touch screen display. All functionality is accessed directly through the screen.

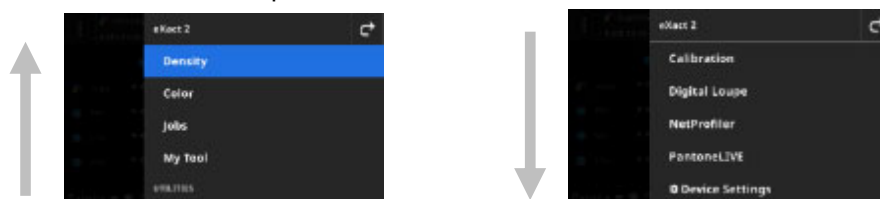
Opening Tools

Tap the  icon in the upper right corner of the screen to open the eXact 2 menu. For this example, Color was tapped.




Selecting a Tool

The eXact 2 menu shows a list of tools and utilities. Swipe the screen up to view entries at the end of the list and swipe down to view entries at the top of the list.




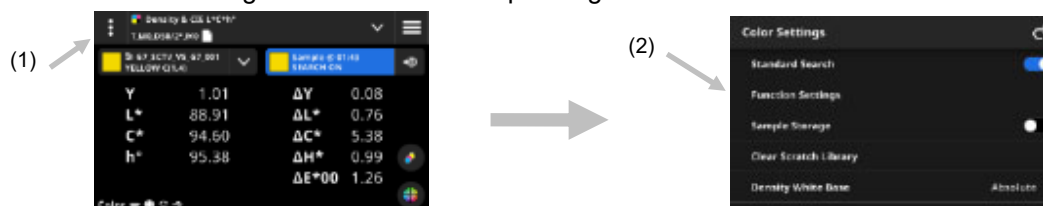
Opening and Closing the Targeting Window

When using a tool, press the Measure button to activate the targeting window. Tap the  icon to close the targeting window. Additional measurement data is displayed. The targeting window times out after a certain amount of time. See Device Settings section for additional details on setting a targeting timeout.



Opening Settings

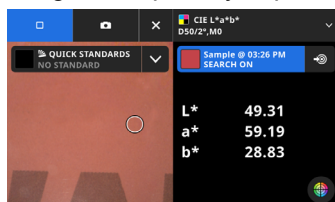
Many tools have their own settings in the device. Tap the Settings icon  (1) in the upper left corner of the screen to open the Settings screen. Once open, tap the desired setting (2) you want to change. A description of each available setting is listed in the corresponding section of each tool.



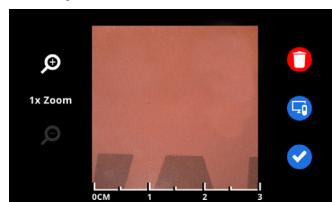
Screenshots

While using the device, you may want to capture an image of the screen for reference, for example as a visual reference of measurement data together with the target image. You can capture the view of the camera with the Digital Loupe function, but not other parts of the screen.

A screenshot allows you to capture the content of the screen, including the data view part and other information while the Digital Loupe only captures the view through the camera port.



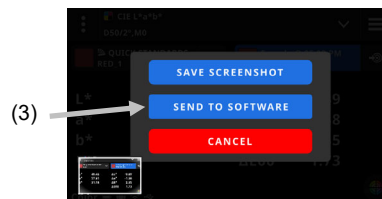
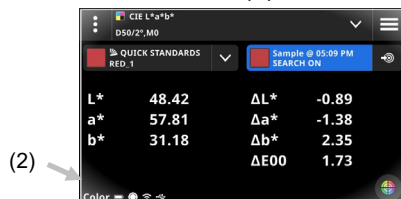
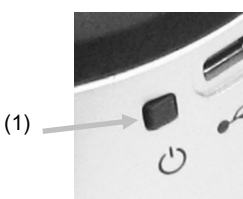
Screenshot image



Digital Loupe image

To take a screenshot:


1. Doublepress the power button (1) on the back of the device. The screen on the display briefly shows a white frame with white shaded corners (2).

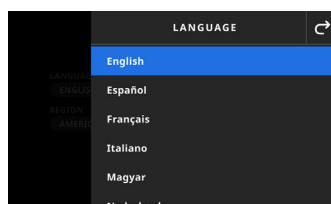
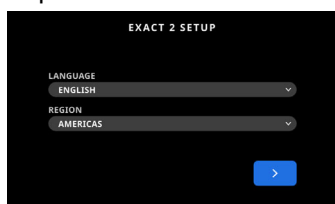



2. A list with options (3) to process the screenshot opens.
3. Tap **Save Screenshot** to save the screenshot.
4. Tap **Send to Software** to send the screenshot to the eXact 2 Suite.
5. Tap **Cancel** to return to the previous screen without saving or sending the screenshot.

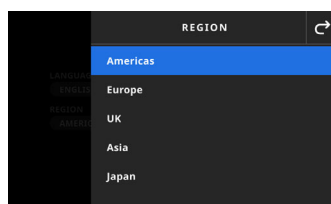
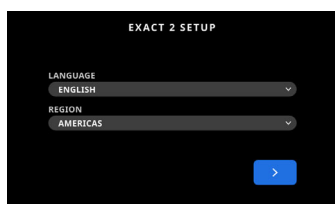
Initial Wizard Setup



Upon initially startup, the device requires you to specify some basic settings.

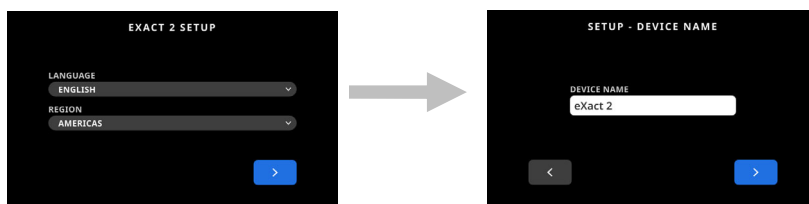
1. Tap Language and then select the desired language in the list that you want the device to operate in. Tap the  icon to return to the Setup screen and continue.



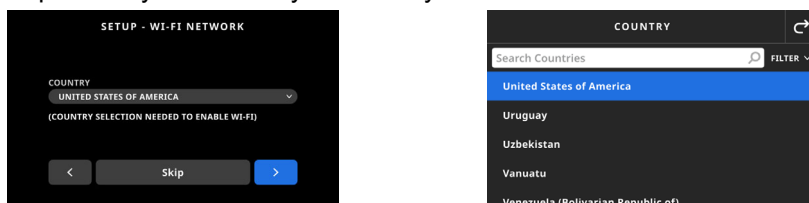
2. Tap Region and then select the desired region in the list. Tap the  icon to return to the Setup screen and continue.




3. Tap  to continue. Enter the device name in the field and tap  to continue.

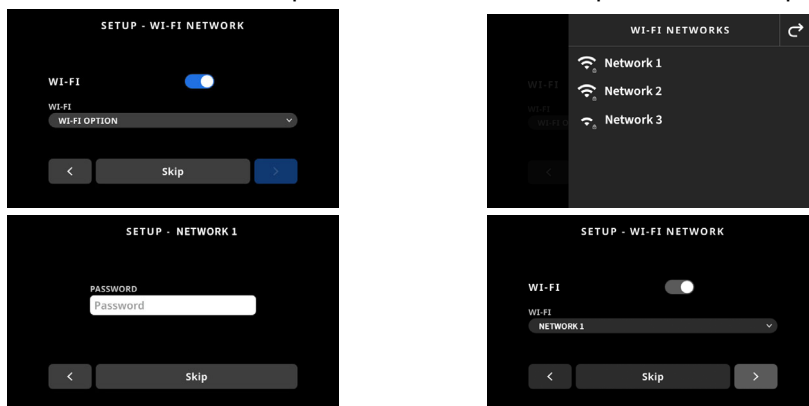



4. Tap Country and select your country from the list.

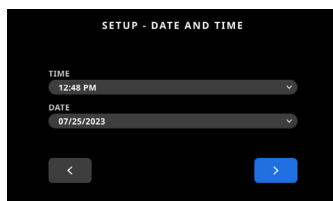


NOTE: Tap **Skip** if you do not wish to setup Wi-Fi at this time. Wi-Fi can also be setup in Device Settings at a later time.

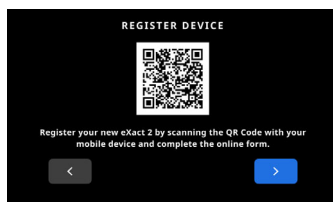
5. To setup Wi-Fi, tap the  icon to toggle to Enabled. Select Wi-Fi option and then select the Wi-Fi network from the list. Tap **Next** to continue. Enter password as required and then tap **Enter**.





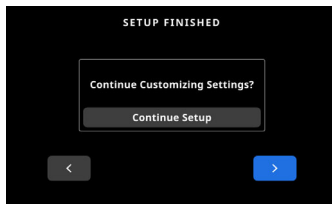
6. Enter Time and Date, and tap  to continue.



7. Scan the QR Code on the screen and register your device on the X-Rite website.



8. Tap  to continue.
9. Tap  to finish setup and exit. Continue with the main measurement screen
10. Tap Continue Setup to configure additional settings. Refer to the Device Settings section if continuing the setup.

























Note: You can access these settings in the Device Settings if you would like to change them at a later time.

Basic Sample Measurement Technique

Sample Criteria

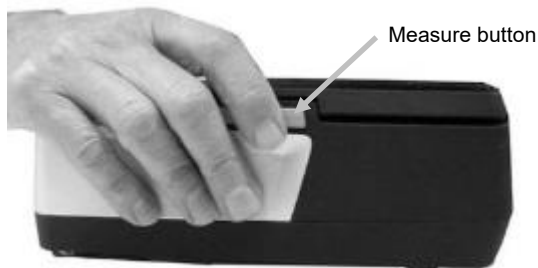
The device can take measurements from different substrates depending on the model of the device. Make sure to use the Media Flattener on slightly curved samples. See the Media Flattener section earlier for information on how to use.

Supported Substrates	eXact 2	eXact 2 Xp	eXact 2 Plus
Recycled White Paper Carton - Flexo			
Recycled Paper Box - Offset			
Thick Premium Box - Flexo			
Brown Paper Carton - Flexo			
White Paper Bag - Flexo			
Clear Label - Flexo			
White Film Label - Flexo			
Clear Film on Clear Plastic Bag - Flexo			
Clear Label - Gravure			
White Film Wrapper - Flexo			
Coated Paper Label - Flexo			

Basic Sample Measurement Procedure


NOTE: Refer to the Calibration section later in this manual if your device requires a calibration before continuing with the measurement.

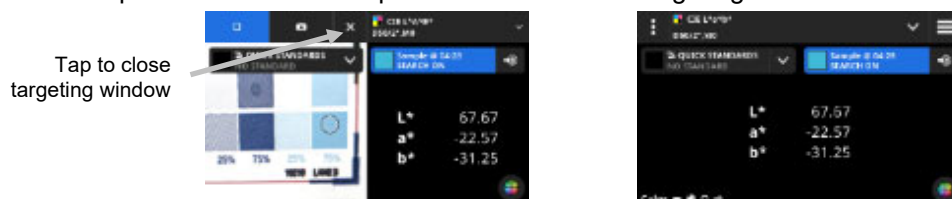
1. Clear the sample surface of any dirt, dust, or moisture.
2. If required, extend out the Media Flattener into the aperture area.
3. Select Density or Color. This example explains the steps for Color.
4. Activate targeting mode by pressing the Measure button once.



5. Press and hold the brake button. Roll the device over the sample until the area to measure is viewed within the circle (reticle) in the targeting window. Release the brake button.



6. Press the Measure button again to take the measurement. Measurement data appears in the display along with a simulated color patch. Continue with additional measurements if required.
7. Tap the  icon at the top of the screen to exit targeting mode and view additional measurement data.





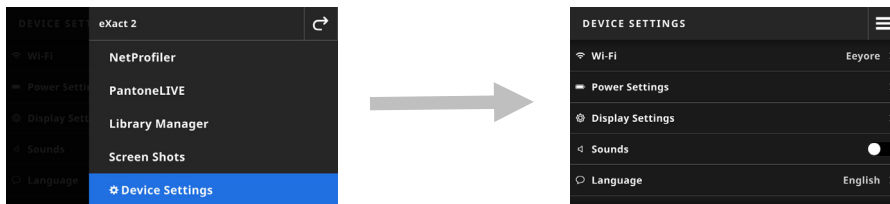
8. An unsuccessful measurement will be indicated by an error message. See the Troubleshooting section for more details.

DEVICE SETTINGS

Use the Device Settings to set the global settings of the device.

To access Device Settings:

1. Tap the  icon in the upper left corner of the screen to open the eXact 2 menu.
2. Swipe up on the eXact 2 menu list and tap **Device Settings**.
3. Tap the setting you want to change and select your options. Refer below for a description of all available options.
4. Tap  to leave the individual setting and return to the Device Settings.

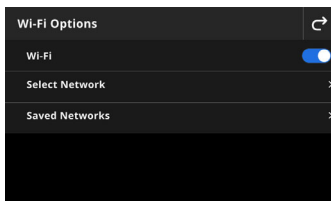


Wi-Fi


The device uses Wi-Fi technology and can communicate wirelessly with your network. Data from the application can be transmitted to/from the device. Connecting a USB cable to the device disables the wireless connection.

NOTE: eXact 2 supports only 2.4 GHz Wi-Fi networks. Select the corresponding 2.4 GHz SSID to connect the device to your network.

This option is used to activate/deactivate Wi-Fi mode, view saved networks, and add new networks.



Enable or disable Wi-Fi

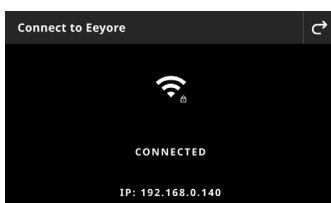
To enable or disable Wi-Fi, tap the Enabled switch icon . When Wi-Fi is enabled, the switch icon shows the blue background. When Wi-Fi is disabled, the other options disappear and the background shows black.

Once activated, the screen allows you to select a network and view your saved networks.

Selecting a Network

The Select Network option is used to add available networks to the device.

1. Tap **Select Network** and then tap the network you would like to add.
2. Enter required **Password** and tap **Connect**.
3. The device acquires the IP address from the network, and when successful shows **Connected** and the IP address.



4. Tap  twice to return to the **Wi-Fi Options**. The connected network appears on the screen.

NOTE: If you have multiple SSIDs available, please select one in the 2.4 GHz band. This is often displayed in the network name, for example “MyNetwork-2G” and “MyNetwork -5G”.

Viewing Saved Networks

The Saved Network option displays a list of networks that are saved on the device. If you are currently connected to a network, the display shows [CURRENT] next to that network.

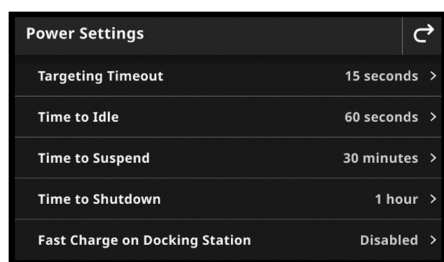
Disconnecting a Network

1. Tap the active network connection from the screen Wi-Fi Options.
2. Tap **Disconnect Network**. The device is disconnected from the network.


NOTE: If you want to remove the network from the list of saved networks, tap **Forget Network**. The network is deleted from the list of saved networks in the device.

Power Settings

This option is used to set the Targeting Timeout and device down times. You can also turn the option off by tapping the switch to disable it.




Tap Power Settings and select desired option.

- **Targeting Timeout:** To help preserve battery life you can set the amount of time the device remains in targeting mode (video streaming to display) before reverting back to detail view without any user intervention. The option can be set from 15 to 60 seconds in 1 second increments. The default setting is 15 seconds.
- **Time to Idle:** This setting is used to set the idle time the display is kept on before it shuts off to help preserve battery life. The option can be set from 15 seconds to 30 minutes in 15 second increments. The default setting is 60 seconds.
- **Time to Suspend:** This setting is used to set the time before the device goes into a power down mode to help preserve battery life. Tapping the screen will reactivate the device. The option can be set from 1 to 5 hours (in 15 minute increments) or turned off. The default setting is 30 minutes.
- **Time to Shutdown:** This setting is used to set the time before the device shuts down to help preserve battery life. Pressing the power button reactivates the device. The option can be set from 1 to 10 hours (in 1 hour increments) or turned off. The default setting is 1 hour.
- Tap the **Fast Charge on Docking Station** switch icon  to enable or disable this feature. This setting is used to improve the charging speed on the powered docking station by allowing the device to enter a low power mode. USB and Wi-Fi are disabled and the device is in Suspend mode. It is recommended to enable this setting when working in a warm environment to allow the device to charge quicker. The default setting is disabled.

Display Settings

This option is used to change display brightness and if the device displays thumbnails of the samples.

- Tap **Display Brightness** to set the brightness of your display. Move the slide to the right to increase the brightness or to the left to reduce the brightness.
- Tap the **Display Sample Thumbnails** switch icon  to enable or disable the display of thumbnail images as icons for your samples.

Sounds

This setting is used to activate the device speaker. Tap the switch icon to toggle device sounds off and on.

Language

This option is used to set the language that appears on the device (English, German, French. etc.). Tap Language and select desired language.

Date and Time

This option is used to set the Time and Date. Tap the desired option and adjust as needed.

Regional Settings

This option is used to set the Region, Number Separator, Time Format, and Date Format.

Tap **Regional Settings** and select the desired options.

- **Region:** The setting is used to set the desired region. The options are: Americas, Europe, UK, Asia and Japan.
- **Country:** The setting is used to set the country. Select your location from the list of countries.
- **Number Separator:** This setting is used to set the desired number separator for the region. The options are: #,###.## and #.###,##.
- **Time Format:** This setting is used to set the desired time format. The options are: 12 Hour and 24 Hour.
- **Date Format:** This setting is used to set the desired date format. The options are: MM/DD/YYYY, DD/MM/YYYY, DD.MM.YYYY, YYYY/MM/DD and YYYY-MM-DD.

Filter Glass Status

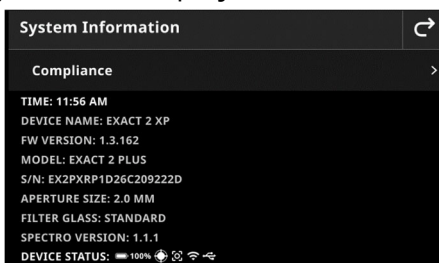
This option is used to set the filter glass status for the device when exchanging the filter glass. Refer to the section **Exchanging the Filter Glass** earlier in this manual for more information on changing the physical filter. The options are **Xp** and **Standard**. Use Standard for the eXact 2 model or when measuring on paper-based substrates with the eXact 2 Plus model. Use Xp for the eXact 2 Xp model or when measuring on flexible film with the eXact 2 Plus model. For a detailed list of substrates by model type, see the table in the section “Basic Sample Measurement Technique”.

Device Name

This option is used to set the name of the device. Tap **Device Name** and enter a desired name.

System Information

This option shows information about your device. Tap **System Information** to see the following information.



Compliance: Displays the device compliance information.

Time: Displays the current time.

Device Name: Displays the device name. The default name is eXact 2.

FW Version: Displays the current firmware version.

Model: Displays the device model.

S/N: Displays the device serial number.

Aperture Size: Displays the device aperture size.

Filter Glass: Displays the device filter status. Options are Standard or Xp.

Spectro Version: Displays the version of the Spectro.

Device Status:     

- **Battery Gauge:** Depicts the current condition of the battery pack.



Indicates the battery pack is fully charged (charge > 80%)



Indicates the battery pack has a sufficient charge for a substantial number of measurements (charge 20% to 80%)



Warning state: Indicates the battery pack is low, but measurements are still possible. Battery pack should be charged soon (charge 10% to 20%)



Alert state: Indicates the battery pack is very low and only a few measurements remain. Battery pack should be charged immediately (charge 7% to 10%)



Indicates the battery pack is charging after it was in warning state.








Indicates the battery pack is charging after it was in alert state.



Indicates the battery pack is charging and the battery pack already has a sufficient charge for a substantial number of measurements.



Indicates the battery pack is tested to see if it is faulty or not inserted properly.

- **Calibration icon:** The calibration icon  indicates the current calibration status. A white icon  indicate that the calibration is current, and the segments around the circle indicate when the next calibration is required. A red icon  indicates that a calibration is required.
- **Lock icon:** Depicts the current user security setting. A closed lock  indicates that a password is required to make changes. An open lock  indicates that the user security is disabled.
- **Wi-Fi Connection icon:** The Wi-Fi icon appears when the option is activated in the Settings. Refer to Setting Mode for information on activating.





Indicates Wi-Fi is on, but the device is not connected to the network.



Indicates Wi-Fi is on and connected to the network. The number of arches indicates the signal strength.

No icon indicates Wi-Fi is off.

- **NetProfiler icon** (if applicable): The NetProfiler icon  indicates if the profile is active, out of date, etc.
- **USB icon:** The USB icon  appears when the device is plugged into the USB port on the computer.

Registration QR Code

This option is used to access the QR Code that can be used to register your device. Scan the QR code with your mobile device and complete the online form on my.xrite.com.


Restore To Factory Defaults

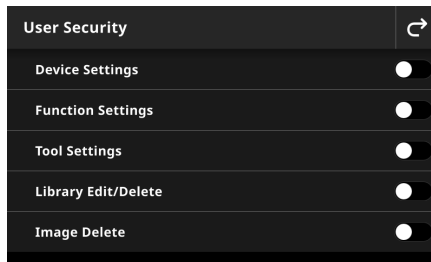
This option is used to restore the device back to the default settings.



The restore process takes several minutes (approximately 5 minutes) while the device is rebuilding the database. The display shows a message indicating progress and a scroll wheel.

User Security

This option is used to access the security options for the device. The different options are enabled and disabled with toggle switches. Once a security feature is enabled , the user can still see the setting but no longer edit it. When you try to access settings, the protected settings are greyed out and cannot be changed.



Device Settings: Protects the general settings of the device.

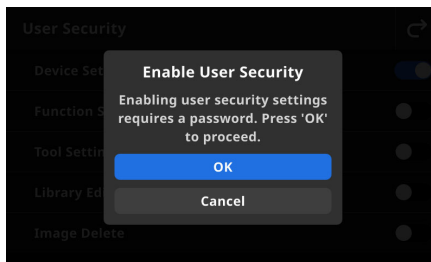
Function Settings: Protects the settings of individual functions, for example in the Density or Color section.



Tool Settings: Protects the settings of Tools.

Library Edit/Delete: Protects libraries from being edited or deleted.

Image Delete: Protects images from being deleted.

After you toggled one or more switches and click the return arrow, a message informs you that you need to enter a password to change or enable security settings.



Tap **OK** and enter a password. The setting or function is now password protected and a lock icon  appears in the top bar. Click on the lock item and enter the password to make changes. After unlocking, the lock icon changes to unlocked .

NOTE: An unlocked function does not automatically get locked again. You have to manually enable the password protection again by tapping on the lock icon or returning to the User Security section.

DENSITY

The main purpose for the Density tool is to automatically detect patch types and colors. Each measurement gets automatically displayed with the function or list of functions determined by a predefined job for different patch types. For example, a process may call for paper measurements to be qualified by $L^*a^*b^*$ and tint measurements by TVI values. A properly configured job means that you do not have to manually switch between functions as you measure different patches of a color bar.

The Density tool is a simplified version of the Jobs tool which runs simple measurements without using standards.

Settings and functions can be reviewed and edited as needed before using Density.

To access Density:

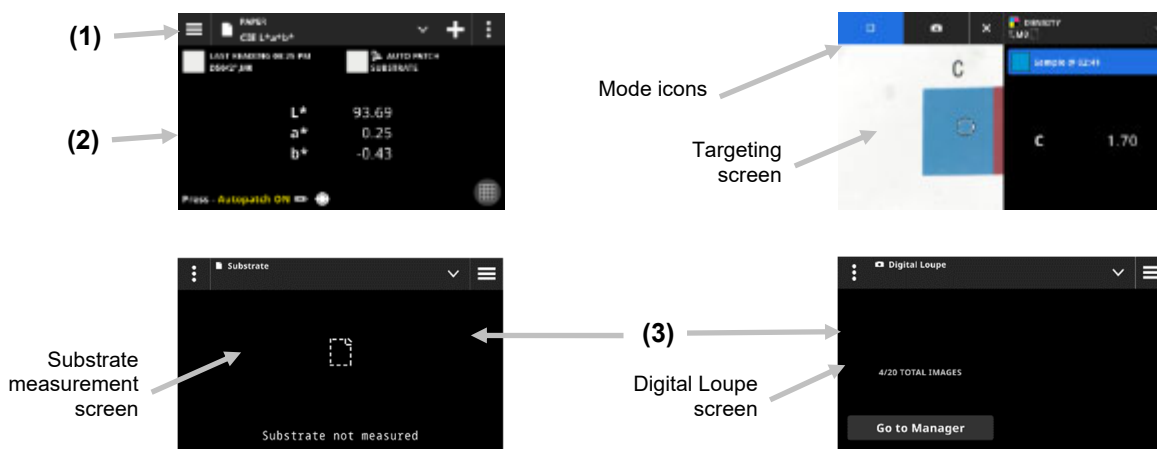
1. Tap Density in the eXact 2 menu to access the screen.
2. Refer to the following pages for information on Density.



Main Screen

The screen consists of three main areas:

- (1) Top Bar
- (2) Data View area (with targeting if active)
- (3) Function screens (when selected)

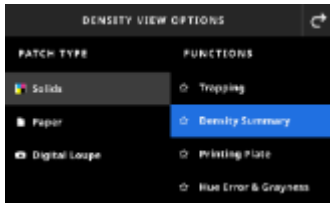


Top Bar

Used to access the eXact 2 menu, view the current function, select other density view options (patch type and functions), and access density settings.

Patch Type Screens and Digital Loupe

Tap the  icon to select a Patch Type screen or the Digital Loupe:





Solids: The Solids patch type contains a variety of functions that you can select here. Refer to the section Density Functions later in this manual for additional details.

Paper: Select Paper and then select Substrate on the right. If you have not measured the substrate or your substrate measurement is outdated, please measure your substrate now. If your substrate measurement is current, the screen will display the time of the substrate measurement.

Digital Loupe: Select Digital Loupe to view the images you captured of the targeting area. Tap **Go to Manager** to manage your stored images. Refer to the section Digital Loupe Manager later in this manual for additional details.



Targeting Window and Measurement Mode Selection

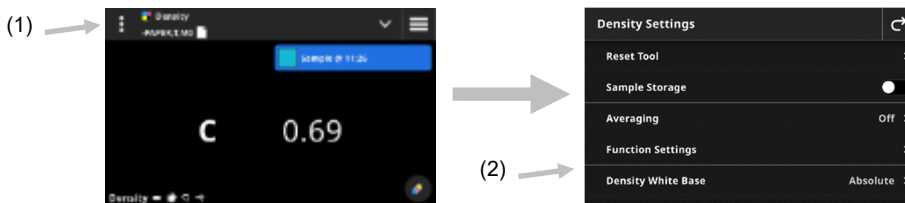
The targeting screen displays the targeting area and last measurement (patch/time). The top of the screen indicates what mode is currently selected, along with an option to select the standard or a library. The Spot  icon is the default setting and is highlighted during spot measurements. Tap the Camera  icon to activate **Loupe Mode** to capture an image. Tap **Go to Manager** to manage your stored images. Refer to the section Digital Loupe Manager later in this manual for additional details.

Density Settings

This option is used to define the settings for density or the selected job in the Density tool. Settings can be set for each job as needed. Density is the default job that is selected. You should review the settings before measuring.

To access the settings:


1. Select Density or the Job from the eXact 2 menu that you want to configure. Density is the default that is selected.
2. Tap  (1) in the upper left corner of the screen to open the Density Settings screen.
3. Tap the setting (2) you want to change. Additional settings can be accessed by swiping up on the screen. A description of each available setting follows below.
4. Tap  to return to the main screen.



Reset Tool

This option allows you to clear out the current sheet measurements if you want to start over.

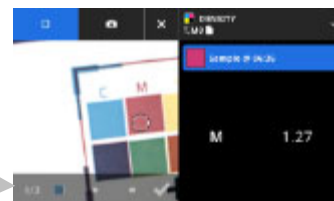
Sample Storage

When this option is set to On, the device stores your sample measurements. Tap the switch icon  to turn on sample storage.

Averaging

Used to set the number of measurements required to obtain an average. The number of measurements can be set from 2 to 5 and Off. The number of measurements taken in the sequence is displayed (1) in the bottom left side during the measurement. In this example, averaging is set to an average out of 3 measurements. The user has taken 1 out of 3 measurements.

(1)



Tap the Check symbol if you are satisfied with the measurements before all the required samples have been measured. The average is now calculated from the measurements that are done.


Function Settings

Used to set the parameters for the various press functions.

Density Display Settings: Used to configure which color responses are shown. Auto color picks the dominant color response and also displays the last measurements for the other colors (C, M, Y, and K). Spot color picks the dominant spectral density wavelength.

All Densities Display Settings: Used to select what density values the device displays. Options are: CMYK and CMYK+SPOT.

Tone Value Formula: Used to set the tone value formula for dot calculation. The formulas are individually configurable for C, M, Y, K and Spot Colors. Spot Color Tone Value (SCTV) provides tone values of colors that correlate well with visual appearance. If a tone ramp is printed with visually equidistant steps the corresponding SCTV values should have approximately equidistant percentages from 0 to 100%. For the Murray-Davies formula, the degree of light optical absorption is predefined. For Yule-Nielsen formula, this can be adapted for different conditions. When Yule-Nielsen formula is selected for the color, you set the coefficient. Options are: Murray-Davies, Yule-Nielsen, or SCTV (ISO 20654).

Tint Patch Percentages: Used to enter up to five tint patch percentages for tint patch measurements. Tap the switch icon  to turn on the individual tint patches.

Printing Plate Yule-Nielsen Factor: Used to set the factor that is used to calculate the physical dot area coverage of your printing plate. The factory default value is set at 1.15. The numeric value can range from 0.50 to 9.90.

Printing Plate Type: Used to set the printing plate type used. Options are: Positive and Negative.

TV/TVI Preferences: Used to set how you want to calculate tone value. Options are: TV (tone value) and TVI (tone value increase).

Density White Base

Used to set a paper or absolute requirement for various density functions. If you select Minus Paper, as white base, all subsequent measurements will refer exclusively to the printed ink layer, while the paper color effect will not be included. If you select Absolute the measurements will also include the paper effect.

To make sure that a paper measurement is taken for all densitometric functions, select Minus Paper. If paper measurements are not a requirement, select Absolute.

The functions include Density, All Densities, Density Trend, and Hue Error & Grayness. Some functions require a paper measurement and some may not.

Density Status

Used to select the status for all densitometric functions. Options are: ISO Status A, E, I, T, and G.

Density Measurement Condition



Used to select the measurement condition for densitometric (e.g. Density, TVI, Trapping, etc.) functions. Options are:

- M0(No) – No Filter
- M1(D50)
- M2(UVC) – UV Cut Filter
- M3(Pol) – Polarization Filter (not in eXact 2 Xp).

Density Functions

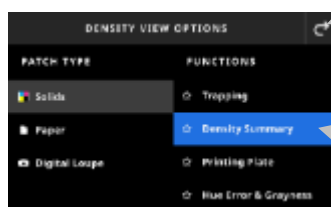
The functions determine what measurement values are displayed after a measurement. The available functions are specific to density measurements.

To select a solids function:

1. Tap the  icon (1) next to the function name at the top of the screen to open the Density View Options.
2. Tap the desired solids function (2) for your data. Additional functions can be accessed by swiping up on the screen. A table with the available functions is shown below.
3. Tap the  icon (3) to return to the Density screen.



(1)



(3)

(2)

Available Density Functions



All Densities
Density
Tone Value
Contrast

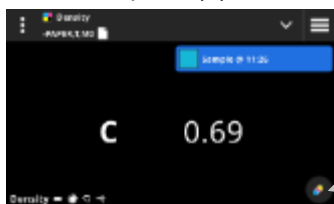
Trapping
Density Summary
Printing Plate
Hue Error & Grayness

Density Display Settings

This option is used to choose a density display option for density functions. Options are: Auto, C, M, Y, K, or Spot. Selecting Auto displays the dominate process color measured. Selecting C, M, Y, or K displays the density value for the measured sample. For Spot selection, the result is given as the density value at the wavelength of maximum density for the spectral curve.

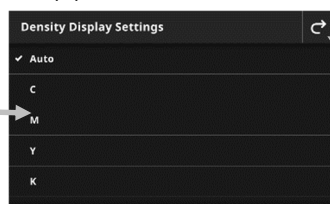
To select a density display setting:

1. Tap the  icon (1) at the bottom right of the screen to open the Density Display Settings.
2. Tap the desired option (2) and then tap the  icon (3) to return to the data view screen.



(2)

(1)



(3)

Measurement Procedure

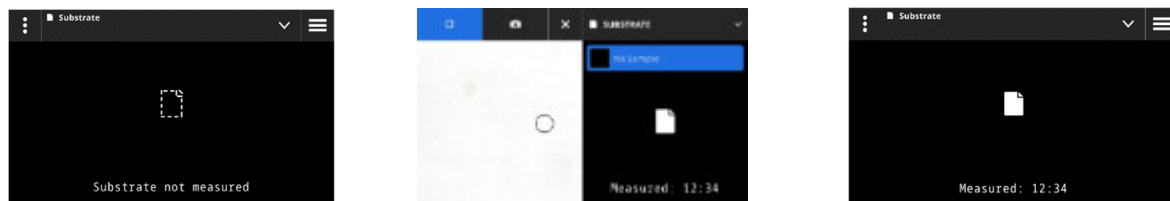
The measurement workflow is different depending on the active function. Many functions, for example Density or All Densities require a single measurement of a patch. The display shows the measurement values according to the selected function. Other functions like Tone Value and Trapping require multiple measurements in a workflow.


The Density Summary function which will walk the user through measuring Paper, Solid and Tint patches and show all the results on one screen.

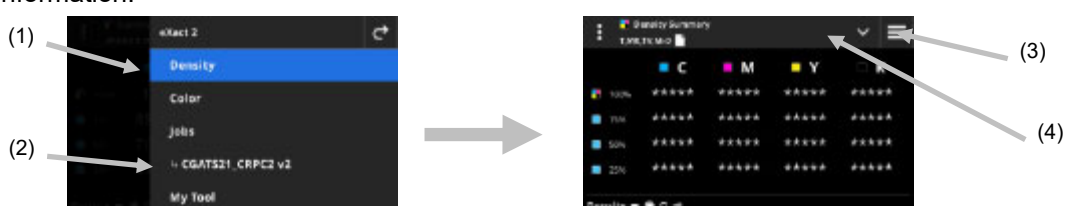
1. Activate targeting mode by pressing the Measure button once
2. Select Density (1) to select the measurement tool you want to use.

NOTE: Your own jobs appear indented below the menu item Jobs. Refer to the Jobs section that follows for information on Jobs.

- Review or edit the settings (3) if required. See Density Settings section earlier for additional information.
- Select Paper from the Density View Options screen if a substrate measurement is required. Position the device on the substrate and take a measurement.

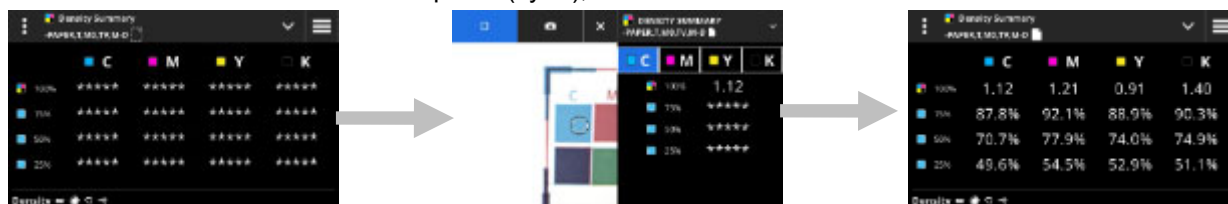


- After substrate measurement, tap the  icon (4) to select the density function from the Density View Options screen for measuring and viewing data. See the Density Functions section earlier for additional information.



NOTE: You can continue with solid patch, tint, overprint, etc. measurements while in targeting mode without selecting the type of patch. If you would like to select the individual patches before measuring, follow steps 6 through 13.

- Position the device on the first solid patch (cyan), take a measurement and view data.









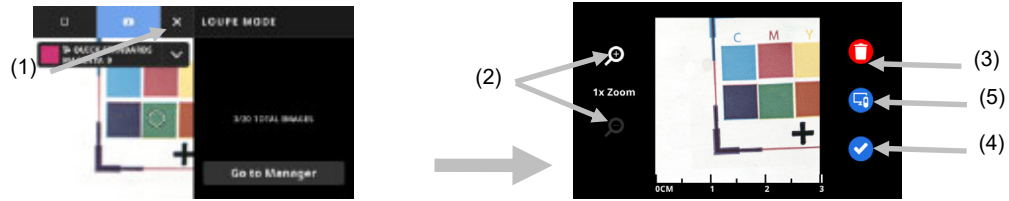
- Position the device on the 2nd solid patch and take a measurement and view data.
- Continue with measurements of the 3rd and 4th solid patches.
- Measure the tint patches.

Digital Loupe

This function is used to capture a high resolution image of the targeting area. Once an image is captured, you can view and enlarge the area. The device can store up to 20 total images for Color and Density.

To capture an image:

- Activate targeting mode by pressing the **Measure** button once
- Tap the  icon (1) to open the **Loupe Mode**.
- Position the device on sample and press the **Measure** button again to capture the image.
- Tap the  or  icons (2) to zoom in and out of the image. You can also use your finger to pan around the image.
- Tap the  icon (3) to save the image to the device. Tap the  icon (4) to delete the image. Tap the  icon (5) to send the image to the eXact 2 Suite.



6. Take additional images if required.
7. Refer to the Digital Loupe Manager section later in this document for additional information.

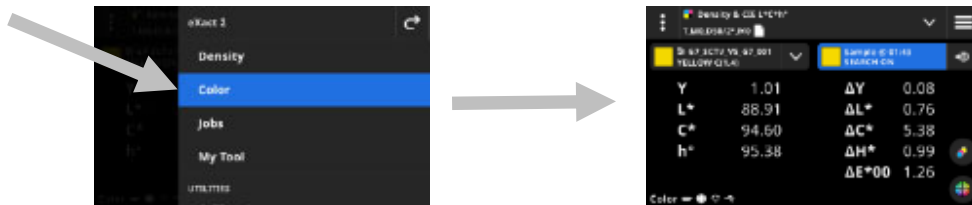
COLOR

This feature is used to measure solid patches with or without standard comparisons. You can create temporary standards, use a color library, or measure stand-alone samples.

Settings and functions can be reviewed and edited as needed before using Color.

To access Color:

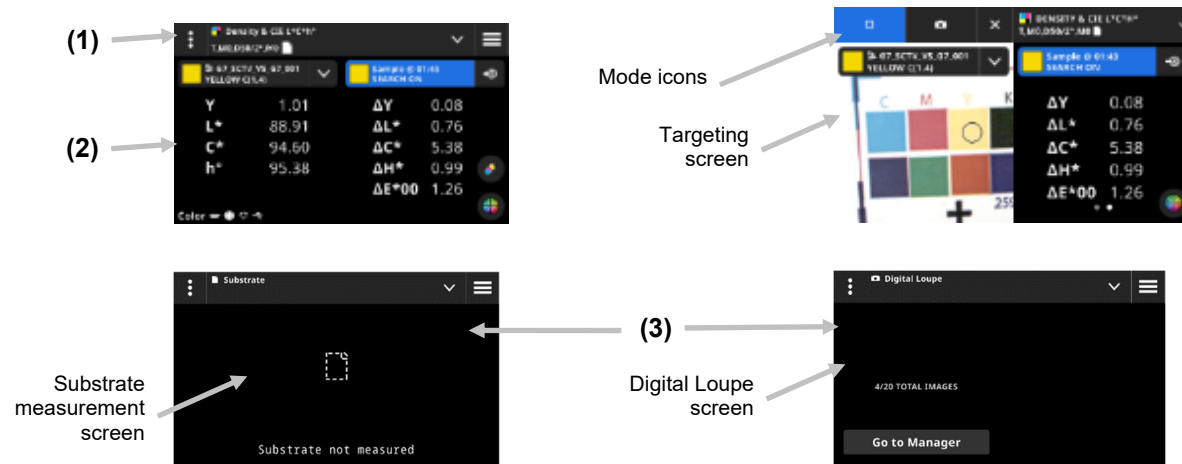
1. Tap Color in the eXact 2 menu to access the main screen.
2. Refer to the following pages for information on working with Color.



Main Screen

The screen consists of three main areas:

- (1) Top Bar
- (2) Data View area (with targeting if active)
- (3) Function screens (when selected)

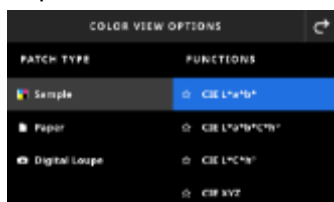


Top Bar

Used to access the eXact 2 menu, view the current function, select other color view options (patch type and functions), select a standard, and access color settings.

Patch Type Screens and Digital Loupe

Tap the  icon to access the Color View Options screen and select a Patch Type screen or the Digital Loupe:





Sample: The sample patch type contains a variety of functions that you can select here. Refer to the section Sample Functions later in this manual for additional details.

Paper: Select Paper and then select Substrate on the right. If you have not measured the substrate or your substrate measurement is outdated, please measure your substrate now. If your substrate measurement is current, the screen will display the time of the substrate measurement.

Digital Loupe: Select Digital Loupe to view the images you captured of the targeting area. Tap **Go to Manager** to manage your stored images. Refer to the section Digital Loupe Manager later in this manual for additional details on capturing and using digital loupe images.



Targeting Screen and Measurement Mode Selection

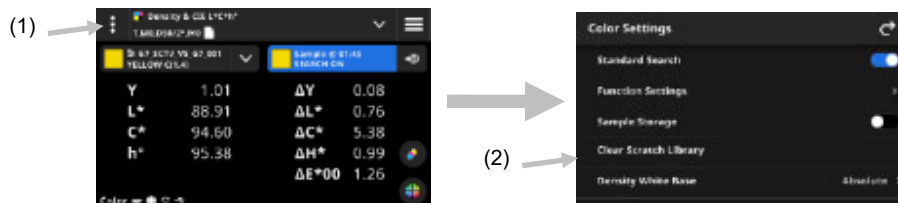
The targeting screen displays the targeting area and last measurement (patch/time). The top of the screen indicates what mode is currently selected, along with an option to select the standard or a library. The Spot  icon is the default mode and is highlighted during spot measurements. Tap the Camera  icon to activate **Loupe Mode** to capture an image. Tap **Go to Manager** to manage your stored images. Refer to the section Digital Loupe Manager later in this manual for additional details on capturing and using digital loupe images.

Color Settings

This option is used to define the settings for color or the selected “My Tool” in the Color tool. Settings can be configured for each tool as needed. Color is the default tool that is selected. You should review the settings before measuring.


To access the settings:

1. Select Color or the tool from the eXact 2 menu that you want to configure. Color is the default that is selected.
2. Tap  (1) in the upper left corner of the screen to open the Color Settings screen.
3. Tap the setting (2) you want to change. Additional settings can be accessed by swiping up on the screen. A description of each available setting follows below.
4. Tap  to return to the main screen.



Standard Search

When this option is set to On, the device looks for the standard that is closest to the sample measurement.

Standard search can only search for the closest standard in the selected color library. Tap the switch icon  to turn on the setting. Refer to Color Library and Standard Selection section that follows for information on selecting a library.

Function Settings

Used to set the parameters for the various functions.

BestMatch Substrate: Used to set the type of substrate that is used for BestMatch measurements. Options are: Uncoated and Coated.

BestMatch Press: Used to set the press type used for BestMatch measurements. Options are: Offset and Flexo/Gravure.

Density Display Settings: Used to configure which color responses are shown. Auto color picks the dominant color response and also displays the last measurements for the other colors (C, M, Y, and K). Spot color picks the dominant spectral density wavelength.

All Densities Display Settings: Used to select the displayed density values. Options are: CMYK and CMYK+SPOT.

Metamerism: Used to set the illuminant/observer combinations for metamerism function measurements. By determining the metamerism index you define the mutual color modification of two colors when the illuminant changes. You can set a maximum of three illuminants.

Color Strength Calculation Method: Used to set the calculation method. Options are: Max. K/S and Mean xyz. Max K/S is calculated at Point of minimum reflectance in the spectral curve.


Mean xyz calculates color strength by average mean xyz values across the visible spectrum.

Color Strength Colorant: Used to select the type of ink that is used to determine the color strength.

Options are: Transparent ink, Opaque ink or Textile dye.

Reflection Graph Y Axis Scale: Used to set the Y-Axis scale for reflectance measurements. Options are: 0..100% and 0..1.

Sample Storage

When this option is set to On, the device stores your sample measurements. Tap the switch icon  to turn on sample storage.

Clear Quick Standards Library

Used to clear the stored quick standards used for sample comparison. Standards appear in the From Library option under Add Standard.

Density White Base

Used to set a paper or absolute requirement for various density functions. If you select Minus Paper, as white base, all subsequent measurements will refer exclusively to the printed ink layer, while the paper color effect will not be included. If you select Absolute the measurement will also include the paper effect.

To select a paper measurement requirement for all densitometric functions, select Minus Paper. To select no paper requirements, select Absolute. The functions include Density, All Densities, Density Trend, Density & L*a*b*, Density & L*C*h°, Hue Error & Grayness, and BestMatch.

Density Status

Used to select the status for all densitometric functions. Options are: ISO Status A, E, I, T, and G.

Density Measurement Condition

Used to select the measurement condition for densitometric (e.g. Density, TVI, Trapping, etc.) functions. Options are:

- M0(No) – No Filter
- M1(D50)
- M2(UVC) – UV Cut Filter
- M3(Pol) – Polarization Filter (not in eXact 2 Xp).

Illuminant Observer

Used to select the illuminant and observer combination.

Colorimetric Measurement Condition

Used to select the measurement condition for colorimetric (e.g. CIE L*a*b*) functions. Options are:

- M0(No) – No Filters
- M1(D50)

- M2(UVC) – UV Cut Filter
- M3(Pol) – Polarization Filter (not in eXact 2 Xp).

Active Delta E Method

Used to select the ΔE method for color measurements. Options are: CIE ΔE^*76 , ΔE_{cmc} , CIE ΔE^*00 , and CIE ΔE^*94 . When using ΔE_{cmc} , CIE ΔE^*00 , or CIE ΔE^*94 , you can adjust the belonging constants.

Delta E Constants

Used to adjust the ΔE_{cmc} , CIE ΔE^*00 , and CIE ΔE^*94 constants.



Averaging

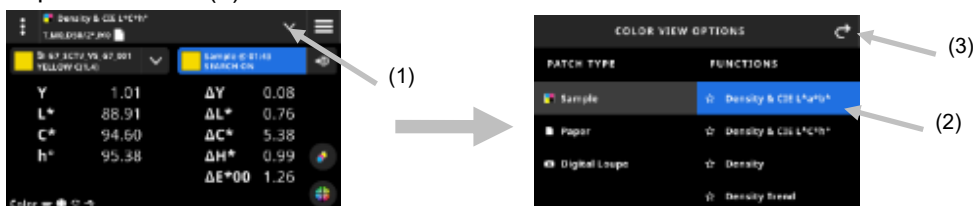
Used to set the number of measurements required to obtain an average. The number of Measurements can be set from 2 to 5 and Off.

Sample Functions

The functions determine what measurement values are displayed after a measurement. The available functions are specific to color measurements.

To select a sample function:

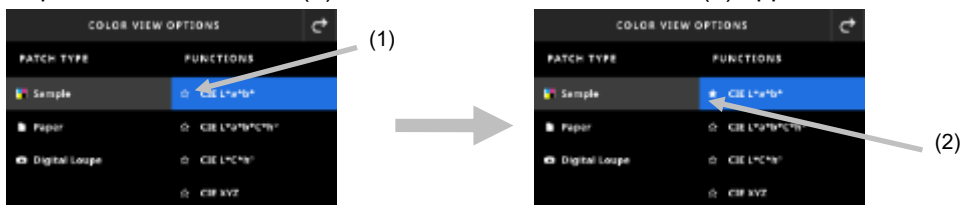
1. Tap the  icon (1) next to the function name at the top of the screen to open the Color View Options.
2. Tap the desired sample function (2). Additional functions can be accessed by swiping up on the screen. A table with the available functions is shown below.
3. Tap the  icon (3) to return to the Color screen.



If you have a function that you use often, you have the option to select this function as a favorite. Once selected, the favorite function appears at the top of the function list. You can set multiple favorites.

To favorite a function:

1. Tap the star outline icon (1) to favorite a function. The star (2) appears solid now.



2. To unfavorite a function, tap the filled star icon again.

Available Color Functions

CIE $L^*a^*b^*$
 CIE $L^*a^*b^*C^*h^\circ$
 CIE $L^*C^*h^\circ$
 CIE XYZ
 CIE Yxy

Hue Error & Grayness
 Delta E Trend
 BestMatch
 Brightener Index
 Metamerism

Density & CIE L*a*b*

Density & CIE L*C*h°

Density

Density Trend

All Densities

Opacity

Printing Plate

Absolute Color Strength

Relative Color Strength



NOTE: Refer to the Color and My Tool section in the Appendix for a description of each function.

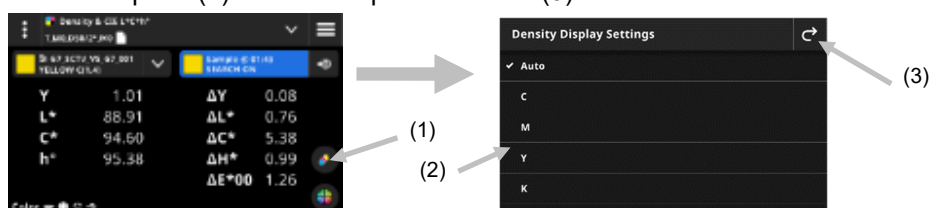
*Some advanced functions are only available in the eXact 2 Plus model.

Density Display Settings

This option is used to choose a density display option for density functions. Options are: Auto, C, M, Y, K, or Spot. Selecting Auto displays the dominant process color measured. Selecting C, M, Y, or K displays the density value for the measured sample. For Spot selection, the result is given as the density value at the wavelength of maximum density for the spectral curve.

To select a density display setting:





1. Tap the  icon (1) at the bottom right of the screen to open the Density Display Settings.
2. Tap the desired option (2) and then tap the  icon (3) to return to the data view screen.

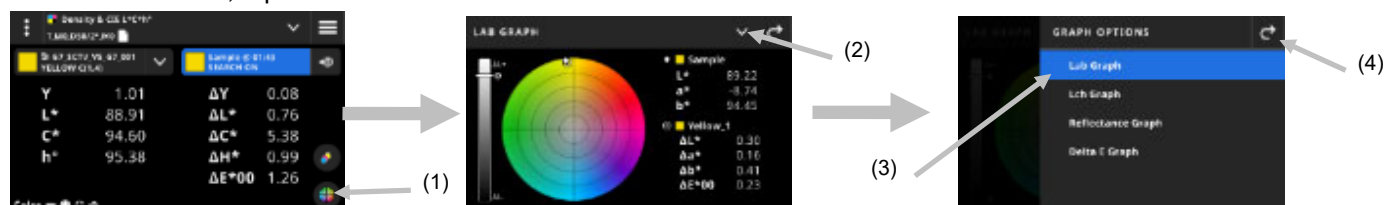


Graph View

Color and tools have an option for viewing measurement data in a graph. The graph selection is independent of the selected function. The last used graph is automatically re-selected.

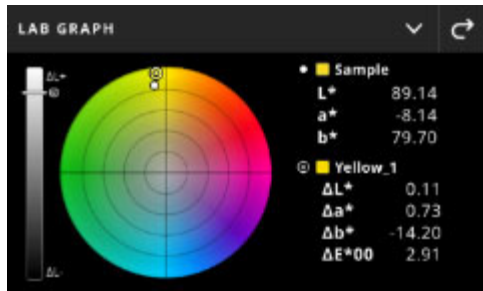
To select a graph:

1. Tap the  icon (1) at the bottom of the screen to open the Graph screen.
2. Tap the  icon (2) to open a list of available graph views.
3. Select the desired graph view (3) and tap the  icon (4) to see the measurement values displayed as the selected graph.
4. When finished, tap the  icon to return to the data view screen.

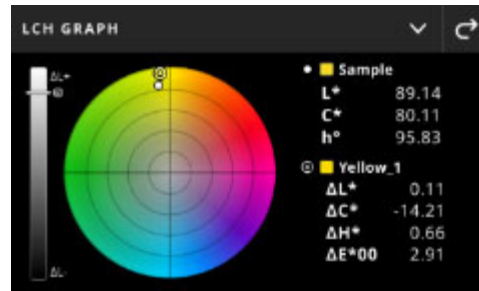




The following graphs are available for selection:

Lab Graph

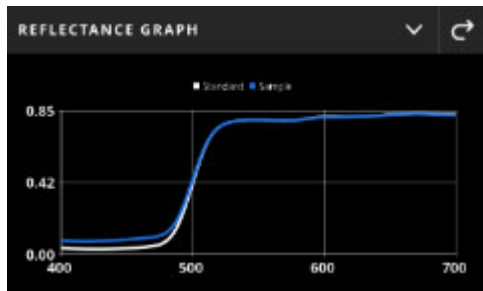


Lch Graph



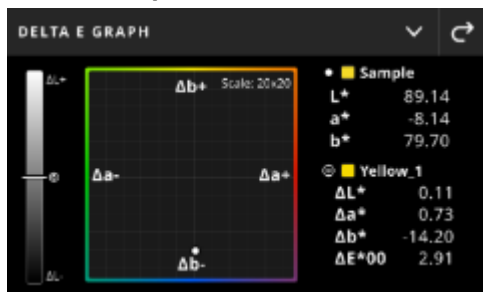
These two graphs visualize the measurement values on a color wheel and brightness bar graph. The sample  and the standard  (if using) are displayed relative to each other and show their location on the color wheel and the L bar.

Reflectance Graph




The Reflectance Graph visualizes the measurement values in a plot over the visible spectrum from 400 nm to 700 nm. The blue curve shows the sample values, and the white curve shows the standard values (if using).

Delta E Graph

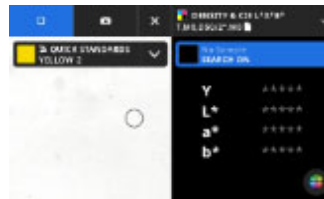



The Delta E Graph contains the bar graph showing brightness and a diagram that has the standard as the center. The samples are plotted relative to the center. This is an easy-to-read visualization to see if a sample is darker/lighter, redder/greener etc. than the standard.

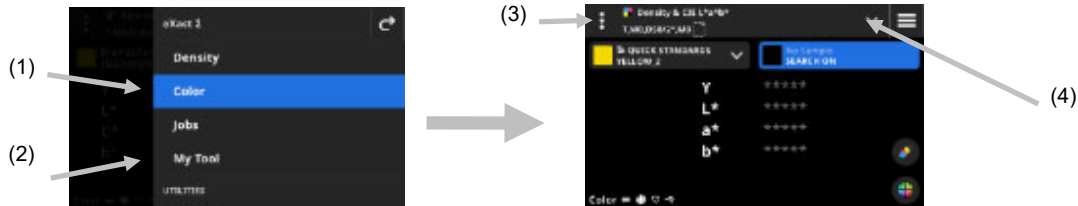
Measurement Procedure


1. Select Color (1) to select the measurement tool you want to use.
2. Review or edit the settings (3) if required. See Color Settings section earlier for additional information.
3. Press the Measure button to enter targeting mode.
4. Tap the  icon next to the function name at the top of the screen to access the Color View Options.

5. Select Paper as the patch type, to take a substrate measurement (if required). Position the device on the substrate and press the Measure button to take a measurement.






6. After substrate measurement, tap the  icon (4) to select the color function from the Color View Options screen for measuring and viewing data. See the Color Functions section earlier for additional information.



7. If a standard comparison is required, refer to the Color Library and Standard Selection section that follows for additional information.
8. Position the device on the sample and take a measurement as explained in the Basic Sample Measurement Technique section earlier.
9. Continue with additional measurements as required for the function or tap the  icon to close the targeting window and view the measurement data.

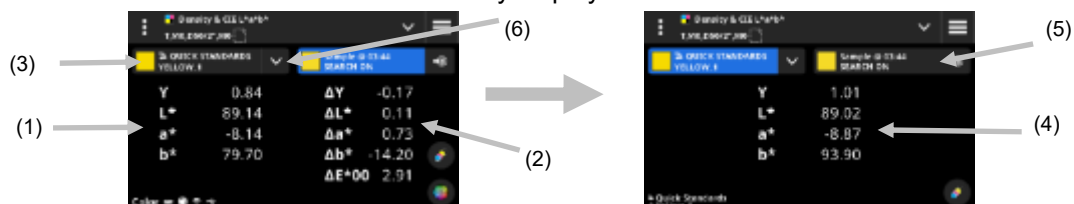



NOTE: If the selected color library has tolerances included on the standards, status icons will appear on the standard patch and next to the ΔE value on the measurements. See examples below.



Pass: ΔE^*76 0.69  Fail: ΔE^*76 10.05  Warning: ΔE^*76 0.83 

Data Display

After a measurement, the display shows the measured sample values (1) and the delta values (2) compared to the current standard. You can switch the view to show the actual standard values. The blue highlight in the header indicates what values are currently displayed.



1. Tap the standards drop down (3) to switch the data display from showing the sample values to showing the values of the current standard (4). The values are displayed for the currently selected function.
2. Tap the tab with the sample information (5) to switch the data display back to the sample and delta values.
3. Tap the  icon (6) next to the current standard to open the library and standard selection. See the next section Color Library and Standard Selection for additional information.



NOTE: You can tap the  icon (5) to open the Density Display Settings to see other density responses or the  icon (1) at the bottom of the screen to open the Graph view. See sections Density Display Settings or Graph view earlier for additional information.

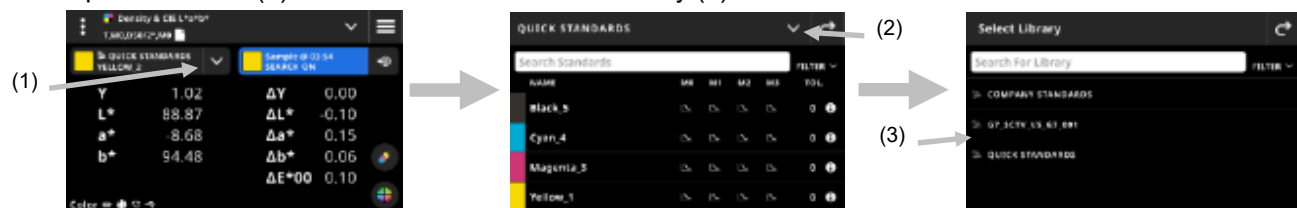
Color Library and Standard Selection

This function is used to select a color library or standard that will be used for comparing standards to sample measurements without storing data. The first step is to select a color library or standard. Each measurement thereafter is compared to the selected standard or the closest standard in the color library until changed (unless the Standard Search option is activated in the Settings).

Selecting a color library


This option is used to select a color library. By default, the library “Quick Standards” is selected.

1. Tap the  icon (1) next to the current color library.
2. Tap the  icon (2) and select a different color library (3) from the list.





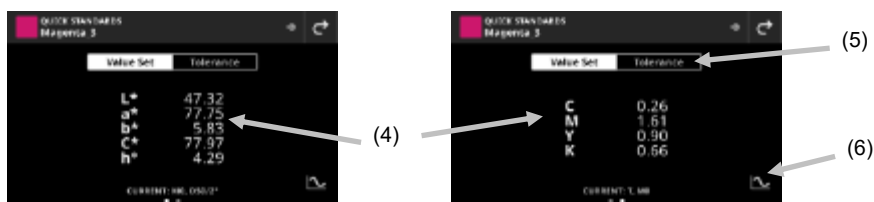
Selecting a Standard from a Color Library

This option allows you to choose a standard from the selected library.

1. Tap the  icon (1) next to the current color library.
2. Tap a standard (2) in the list to use.




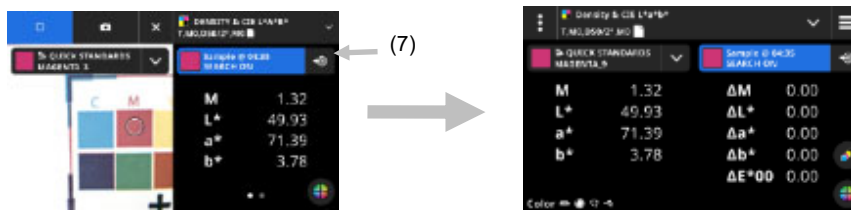
3. Tap the View Standard icon  (3) to view a value set (4). The default value set contains LabCh values. Swipe left to view the density values of the standard. If available, swipe left to view additional value sets (if using).
4. Tap Tolerance (5) to view the tolerances associated with the standard (if available). Tap the icon  (6) to see the source of the values.



Use Sample as Standard

This option allows you to use the next sample measurement as the current standard for sample comparison. This standard is then saved to the Quick Standards library. This standard is stored until cleared in the Color Settings.







1. Measure the sample you want to use as a standard.
2. Tap the  icon (7) to replace the active standard data with the current measurement. The standard is added to the Quick Standards list.

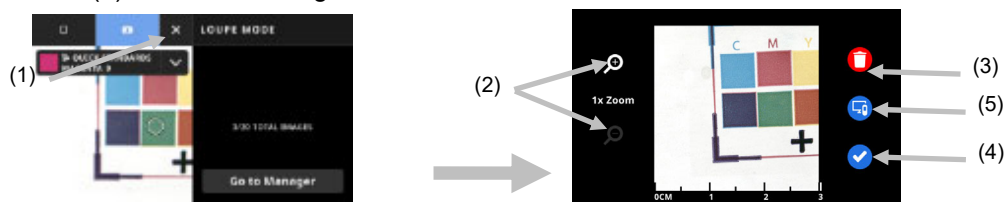


Digital Loupe

This function is used to capture a high-resolution image of the targeting area. Once an image is captured, you can view and enlarge the area. The device can store up to 20 images in the device.

To capture an image:

1. Activate targeting mode by pressing the **Measure** button once
2. Tap the  icon (1) to open the **Loupe Mode**.
3. Position the device on sample and press the **Measure** button again to capture the image.
4. Tap the  or  icons (2) to zoom in and out of the image. You can also use your finger to pan around the image.
5. Tap the  icon (4) to save the image to the device. Tap the  icon (3) to delete the image. Tap the  icon (5) to send the image to the eXact 2 Suite.



6. Take additional images if required.
7. Refer to the Digital Loupe Manager section later in this document for additional information.

JOBS

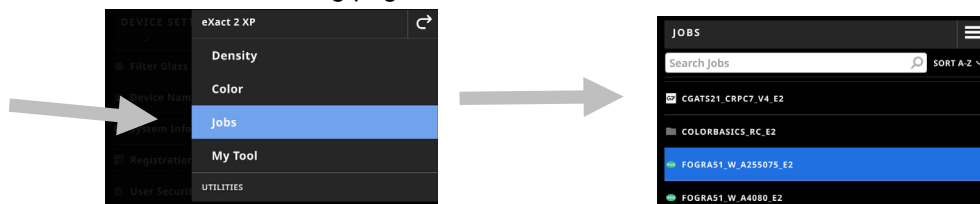
Jobs are collections of color specifications, specifically grouped to run a print job. Jobs include tolerances, pass/fail tolerances, measurement parameters and contain the standard values for the different patch types (paper, solids, tints, overprints, gray balance, and black CMY).

Jobs can contain the standards for industry standard printing processes like G7, PSO and JapanColor. Jobs can also be created to measure custom color bars for scanning.

You also have the option to create an OK sheet from a job. The “Make an OK sheet” option creates a copy of the current job but replaces the standard values with the last sample taken per patch.

To access Jobs:

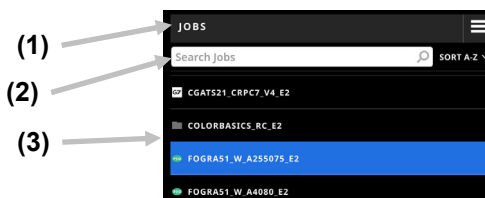
1. Tap Jobs in the eXact 2 menu to access the screen.
2. Refer to the following pages for information on Jobs.



Main Screen

The screen consists of three main areas:

- (1) Top Bar
- (2) Search and sort field
- (3) Job folders



Top Bar

Used to access the eXact 2 menu, create a new job, and access job options.

Search and Sort Field

This area is used to perform a search for a job.

Job Folders


This area shows a list of your jobs. Tap the **SORT A-Z** icon, to sort your jobs. Available filter options: Sort A-Z, Sort Z-A, Generic (jobs you created), G7, PSO, and JapanColor.

The device includes several pre-installed jobs. You can create and add custom jobs using the eXact 2 Suite.


Job Settings

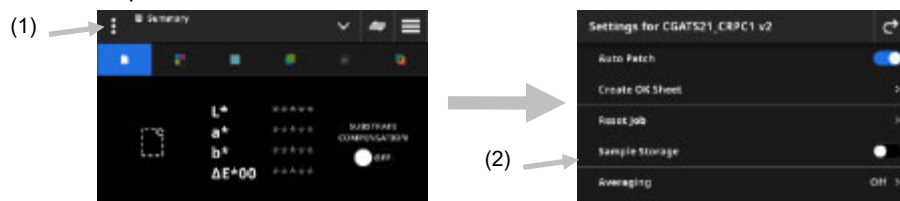
This option is used to define the settings for jobs. Settings can be configured for each job as needed. Color is the default tool that is selected. You should review the settings before measuring.

To access the settings:

1. Select Jobs or the job from the eXact 2 menu that you want to configure.
2. Tap  (1) in the upper left corner of the screen to open the Color Settings screen.

3. Tap the setting (2) you want to change. Additional settings can be accessed by swiping up on the screen. A description of each available setting follows below.

4. Tap  to return to the main screen.



Auto Patch

The Auto Patch feature allows you to perform various density and color measurements by using the automatic patch recognition for CMYK jobs.

The device will detect the type of patch and learn as each measurement is taken. The device will only auto-detect process colors (C, M, Y, K). Below is the list of patch types supported by the Auto Patch.

- Paper Patch
- Solids (Cyan, Magenta, Yellow, Black, or Spot colors)
- 3 Overprints (C+Y, C+M, M+Y)
- 1-5 tint patches per solid (depending on the Tint Patch Percents under Job Template Settings)
- 1-5 Gray Balance patches (depending on the Gray Balance Patch Percents under Job Template Settings)
- Black CMY (only G7)


Create OK Sheet

Used to create an OK sheet from the current sheet. Refer to the Create OK Sheet section later in this document for additional information.

Reset Job

This option allows you to clear out the current job measurements if you want to start over.

Sample Storage

When this option is set to On, the device stores your sample measurements. Tap the switch icon  to turn on sample storage.

Averaging

Used to set the number of measurements required to obtain an average. The number of Measurements can be set from 2 to 5 and Off.

Function Settings

Used to set the parameters for the various job functions.

BestMatch Substrate: Used to set the type of substrate that is used for BestMatch measurements. Options are: Uncoated and Coated.

BestMatch Press: Used to set the press type used for BestMatch measurements. Options are: Offset and Flexo/Gravure.

Density Display Settings: Used to configure which color responses are shown. Auto color picks the dominant color response and also displays the last measurements for the other colors (C, M, Y, and K). Spot color picks the dominant spectral density wavelength.

All Densities Display Settings: Used to select what density values the device displays. Options are: CMYK and CMYK+SPOT.

CMY Balance Tolerance: Used to set the value for the density balance. The value can range from 0.01 to 0.99.

Tone Value Formula: Used to set the tone value formula for dot calculation. The formulas are individually configurable for C, M, Y, K and Spot Colors. Spot Color Tone Value (SCTV) provides tone values of colors that correlate well with visual appearance. If a tone ramp is printed with visually equidistant steps the corresponding SCTV values should have approximately equidistant percentages from 0 to 100%. For the Murray-Davies formula, the degree of light optical absorption is predefined. For Yule-Nielsen formula, this can be adapted for different conditions. When Yule-Nielsen formula is selected for the color, you set the coefficient. Options are: Murray-Davies, Yule-Nielsen, or SCTV (ISO 20654).

Trapping Formula: Used to set the trapping formula for trapping. This function determines how well one solid ink prints over another solid ink (overprinting). Better coverage ensures a better color gamut. Setting the color response to Auto mode will operate Trapping with the process inks; use the Spot setting if using spot colors instead. Options are: Preucil, Brunner, and Ritz.

Paper Indices Functions: Used to select the paper indices that appear after a measurement. Up to four indices can be selected for the function. Refer below for available options.

Metamerism: Used to set the illuminant/observer combinations for metamerism function measurements. By determining the metamerism index you define the mutual color modification of two colors when the illuminant changes. You can set a maximum of three test illuminants.

Color Strength Calculation Method: Used to set the calculation method. Options are: Max. K/S and Mean xyz. Max K/S is calculated at Point of minimum reflectance in the spectral curve.

Mean xyz calculates color strength by average mean xyz values across the visible spectrum.

Color Strength Colorant: Used to select the type of ink that is used to determine the color strength.

Options are: Transparent ink, Opaque ink or Textile dye.

Reflectance Graph Y Axis Scale: Used to set the Y-Axis scale for reflectance measurements.

Options are: 0..100% and 0..1.

TVI Table Spread: Used to set the TVI Table Spread setting. This is a job function that has a table to view the TVI (Tone Value Increase, also called dot gain) results of the last tint measurements of a job at once. Additionally, it shows spread values between the process inks (CMY).

Spread is calculated by subtracting the largest TVI value from the smallest TVI value across the Process color Inks (CMY) at a given screen % (i.e., 50%). The smaller the spread, the better the gray balance. G7 and PSO differ slightly in how they calculate spread. Options are: Middle and All.

Job Template Settings

These are the settings that were selected for the current job. They are usually locked by the template and cannot be changed. The parameters include:

Density White Base

Used to set a paper or absolute requirement for various density functions. If you select Minus Paper, as white base, all subsequent measurements will refer exclusively to the printed ink layer, while the paper color effect will not be included. If you select Absolute the measurement will also include the paper effect.

To select a paper measurement requirement for all densitometric functions, select Minus Paper. To select no paper requirements, select Absolute. The functions include Density, All Densities, Density Trend, Density & $L^*a^*b^*$, Density & $L^*C^*h^*$, Hue Error & Grayness, and BestMatch.

Density Status

Used to select the status for all densitometric functions. Options are: ISO Status A, E, I, T, and G.

Density Measurement Condition

Used to select the measurement condition for densitometric (e.g. Density, TVI, Trapping, etc.) functions. Options are:

- M0(No) – No Filter
- M1(D50)

- M2(UVC) – UV Cut Filter
- M3(Pol) – Polarization Filter (not in eXact 2 Xp).

Illuminant Observer

Used to select the illuminant and observer combination.

Colorimetric Measurement Condition

Used to select the measurement condition for colorimetric (e.g. CIE L*a*b*) functions. Options are:

- M0(No) – No Filters
- M1(D50)
- M2(UVC) – UV Cut Filter
- M3(Pol) – Polarization Filter (not in eXact 2 Xp).

Active Delta E Method

Used to select the ΔE method for color measurements. Options are: CIE ΔE^*76 , ΔE_{cmc} , CIE ΔE^*00 , and CIE ΔE^*94 . When using ΔE_{cmc} , CIE ΔE^*00 , or CIE ΔE^*94 , you can adjust the belonging constants.

Delta E Constants

Used to adjust the ΔE_{cmc} , CIE ΔE^*00 , and CIE ΔE^*94 constants.


Job Functions

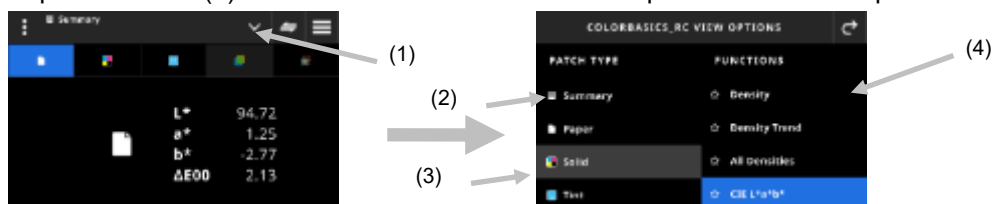
The functions determine what measurement values are displayed after a measurement. The available functions are specific to density measurements, and they display information per patch type.


In addition, the Density Summary function requires the measurement of Paper, Solid, and Tint patches and then shows all the results on one screen.

NOTE: Jobs can also contain color bars. Refer to the Scan section later in this document for additional information.

To select a job function:

1. Tap the  icon (1) next to the function name at the top of the screen to open the View Options for your job.



2. Tap Summary (2) to see a summary of the measurements in your jobs.
3. Tap the desired patch type (3) on the left to see the available function (4). Additional patch types and functions can be accessed by swiping up on the screen. A table with the available functions is shown below.
4. Tap the  icon (3) to return to the Job screen.

Available Functions by Patch Type


Paper	Solids	Tints	Overprints	Gray Balance
All Densities	BestMatch	Tone Value	All Densities	Gray Balance QC
Lab	Density	Tone Value Increase	Trapping	CMY Balance
LCh	Density Trend	Lab	Lab	Delta E Trend
Brightener Index	All Densities	Density & Lab	LabCh	All Densities
LabCh	Lab	LabCh	Delta E Trend	Lab
Paper QC	Density & Lab	Delta E Trend	LCh	LabCh
Delta E Trend	LabCh	LCh	Inks QC	LCh
XYZ	LCh	Density & LCh	XYZ	XYZ
Yxy	Density & LCh	Density	Yxy	Yxy
	Delta E Trend	Density Trend		
	Metamerism	Contrast		
	Hue Error & Grayness	XYZ		
	Absolute Color Strength	Yxy		
	Relative Color Strength			
	Inks QC			
	XYZ			
	Yxy			

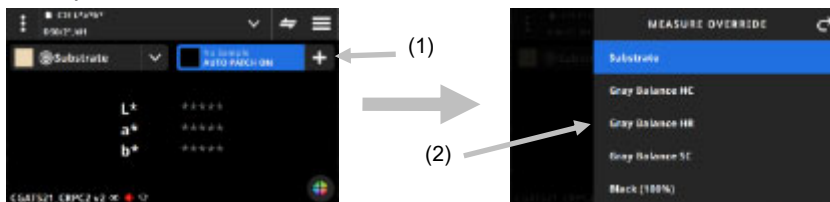
* Functions in gray are only available in eXact 2 Plus

Measure Override

This feature allows you to override a measurement for a selected patch with a new measurement. The override deactivates the Auto Patch function for the next measurement. It can be used on any patch measurement that is difficult to identify. You can also add a spot color with this feature.

To perform an override measurement:

1. Tap the  icon (1) at the top of the screen to open the Measure Override screen.
2. Select the desired patch (2) from the list. The screen automatically changes to the measurement screen for the selected patch.

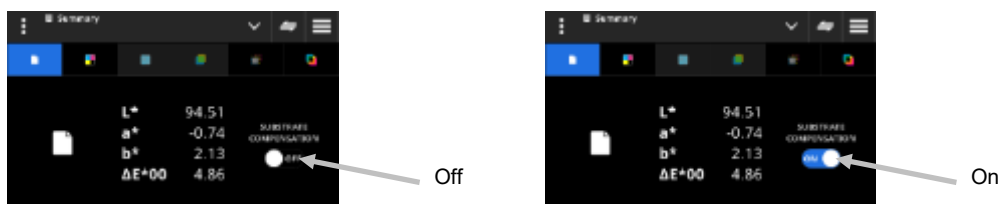


3. Measure the selected patch.

G7, PSO, and Japan Color Information**G7 Substrate Compensation**

This function allows you to adjust the targets related to the process colors (CMYK) based on the substrate measurement. When set to On in the selected job, the target values will be adjusted. Substrate compensation can also be activated after a paper measurement during a G7 job.

Tap the Compensation icon to toggle On.



NOTE: If the CMY 100 patch is not measured and the job uses paper compensation, the job is running in G7 Static mode. If the CMY 100 patch is measured, the job is running in G7 Dynamic mode.

G7 Gray Balance

The G7 job function provides $w\Delta L$ (Weighted Delta L) and $w\Delta Ch$ (Weighted Delta Ch) along with the black channel density. An indication is provided for per-channel density adjustments to get closer to the gray balance standard.

G7, PSO and Japan Color

These jobs behave the same as the standard job, with the following differences.

The settings of these jobs use the definition of its process specifications. These jobs do not get preset with the regional settings. However, the settings can be changed manually by the user.

The following functions are preset and cannot be changed.

G7 Job

Paper QC: Color Space CIE $L^*a^*b^*$ is preset to CIE $L^*a^*b^*$

Gray Balance QC: Display is preset to ΔL^* , ΔE^* , ΔCh

TVI Table Setting: Spread is preset to All

PSO Job

Paper QC: Color Space CIE $L^*a^*b^*$ is preset to CIE $L^*C^*h^\circ$

Gray Balance QC: Display is preset to ΔL^* , Δa^* , Δb^* , ΔE^*

TVI Table Setting: Spread is preset to Middle

Japan Color Job

Paper QC: Color Space CIE $L^*a^*b^*$ is preset to CIE $L^*C^*h^\circ$

Gray Balance QC: Display is preset to ΔL^* , Δa^* , Δb^* , ΔE^*

TVI Table Setting: Spread is preset to Middle

Select a Job

The function is used to select a job to open in the corresponding tool.

1. Select Jobs (1) from the eXact 2 menu.
2. Tap the search field (2), enter the job name using the virtual keyboard
3. Tap Enter or swipe the screen until you see the desired job folder.

NOTE: You can also tap Filter and select the job sort option.


4. Swipe the screen until you see the desired job folder.
5. Tap the job (3). The selected job (4) opens in the corresponding tool.

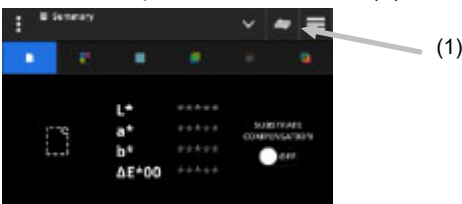


6. Refer to the Density section for information on running the job in the Density tool.
7. Refer to the Scanning section for information on how to scan a color bar.

Spot Check

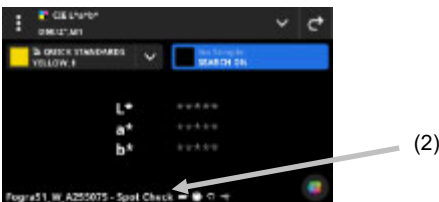
The function is used to measure a spot color “on the fly” without the need to customize an existing job. The measurements are temporary and the values are deleted once the user leaves this screen and returns to the Job tool.


1. Start the job you want to measure and measure your job colors.
2. Click the Spot Check icon  (1) to measure a spot color that is not included in your job.



3. The screen temporarily switches to the Spot Check tool. The status bar (2) at the bottom shows the job you are still measuring and the title Spot Check.

NOTE: The settings in Spot Check are the same as the active job.




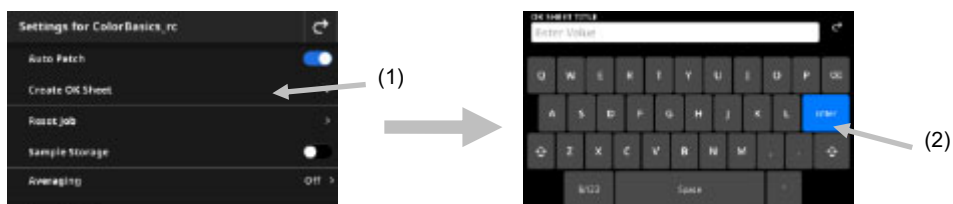
4. Position the device on the sample and take spot measurements as explained in the Basic Sample Measurement Technique section earlier.
5. Tap  after all spot colors have been measured to return to your job.

Create OK sheet

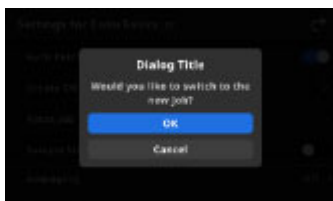
After all patches for a job have been measured, you have the option to save the last measured sheet as an OK sheet. When using this function, a copy of the current job is created. The standard values in the job are replaced with the last sample measurement taken per patch.

To create an OK sheet:

1. Tap the  icon next to the function name at the top of the screen to open the Job View Options.
2. Tap Create OK Sheet.



3. Enter a name for the OK Sheet using the virtual keyboard (2).



4. Tap OK to switch to the job created from the OK Sheet and make this the active job.
NOTE: If you tap Cancel, the OK Sheet is saved but you remain in the current job.
5. Start measuring your production job within the OK Sheet job.

MY TOOL

My Tool is a custom tool you can create. It can contain color libraries and different settings. You can edit, copy, and delete tools under My Tool.

A tool selected under My Tool is opened as a custom color tool.

To access My Tool:

1. Tap My Tool in the eXact 2 menu to access the main screen.
2. Refer to the following pages for information on My Tool.

Main Screen

The screen consists of three main areas:

- (1) Top Bar
- (2) Search and sort field
- (3) My Tool folders



Top Bar

Used to access the eXact 2 menu, create a new tool, and access tool options.

Search and Sort Field

This area is used to perform a search for a tool. Tools can be sorted alphabetical in ascending or descending order by tapping the **FILTER** icon and selecting Sort A-Z, or Sort Z-A.

My Tool Folders

The highlighted tool is the currently selected tool. You can swipe the screen upwards to view additional tools. Tap a tool to open it in the Color tool screen.

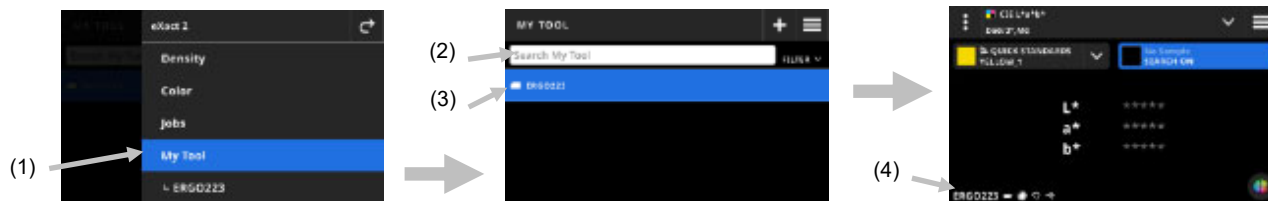
Select a Tool

The function is used to select a tool you created.

1. Select My Tool (1) from the eXact 2 menu.
2. Tap the search field (2), enter the tool name using the virtual keyboard.
3. Tap **Enter** or swipe the screen until you see the desired Tool folder.

NOTE: You can also tap **Filter** and select the tool sort option.

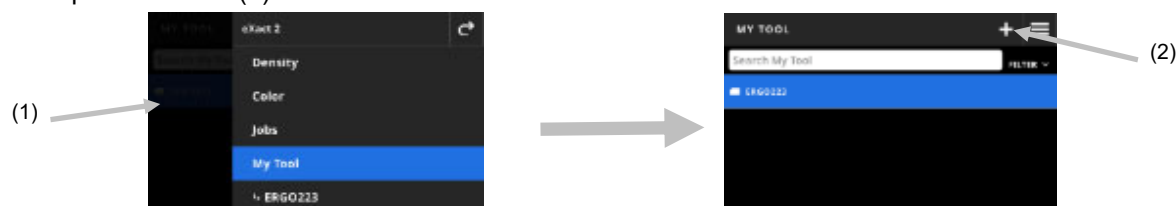
4. Tap the tool (3) to open it.



5. Refer to the Color section for information on running the tool in the Color tool.

Create a Tool

1. Select My Tool (1) from the eXact 2 menu.
2. Tap the **+** icon (2).



3. Enter a new tool name using the virtual keyboard (3).



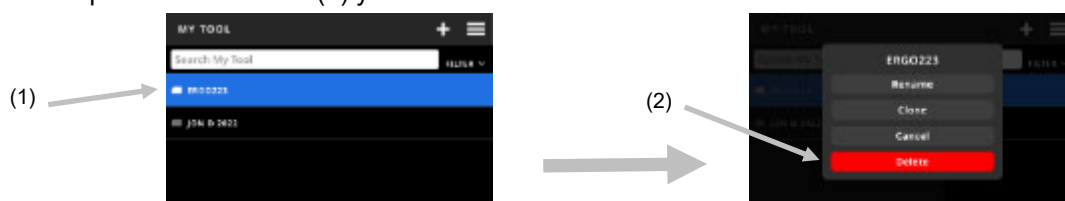
4. Tap **Enter** (4) to save the tool and open it in the Color tool.

Delete a Tool

The function is used to delete the selected tools from the device.

NOTE: Deleted tools cannot be restored to the device.

1. Select My Tool from the eXact 2 menu.
2. Tap and hold the tool (1) you want to delete.



3. A list with options to edit the tool opens.
4. Tap **Delete** (2) (highlighted in red) to delete the tool.

NOTE: Tap Cancel if you do not want to delete the tool anymore

5. A confirmation screen opens. Tap **Delete** again to confirm that you want to delete the tool.

Clone a Tool

The function is used to make a copy of an existing tool.

1. Select My Tool from the eXact 2 menu.
2. Tap and hold the tool (1) you want to clone.



3. A list with options to edit the tool opens.
4. Tap Clone (2) to make a copy of the tool.
5. Enter a new tool name using the virtual keyboard (3).

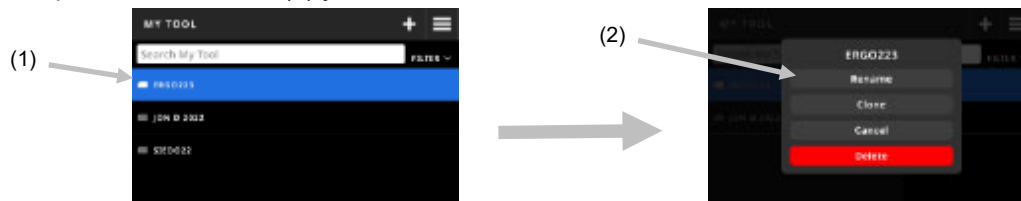


6. Tap **Enter** (4) to save the copy of the tool and open it in the Color tool.

Rename a Tool

The function is used to rename an existing tool.

1. Select My Tool from the eXact 2 menu.
2. Tap and hold the tool (1) you want to rename.





3. A list with options to edit the tool opens.
4. Tap **Rename** (2) to rename the tool.
5. Change the name of the tool using the virtual keyboard (3).



6. Tap **Enter** (4) to save the tool with the new name.

CALIBRATION

IMPORTANT: The white tile is dramatically affected by smudge marks and dust, and must be kept clean. It is recommended that the device is cleaned regularly. Refer to the Cleaning section later in this manual for procedure on cleaning the white tile and optics area.



The docking station has an integrated white tile. Device calibration frequency can be set from 1 to 24 hours. See section Calibration Settings for additional information. A white icon  indicates that the calibration is current, and the segments around the circle indicate when the next calibration is required. A red icon  indicates that a calibration is required. When this occurs, calibration must be performed before any measurements can take place.

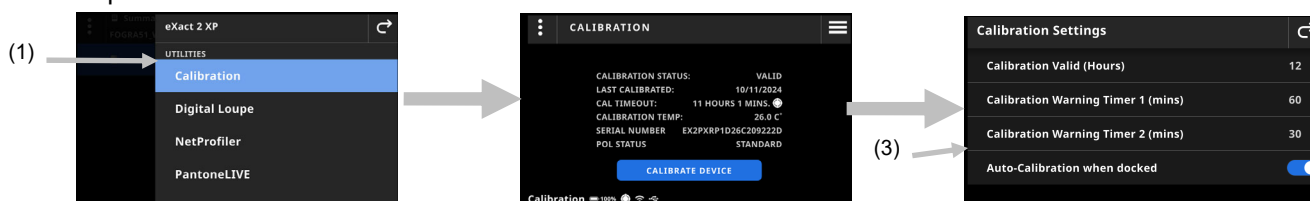
Any eXact 2 device can be calibrated on any docking station. The device is not tied to the calibration reference it came with. The device reads the QR code on the docking station to know the calibration information.

Calibration Settings

This option is used to define the settings for Calibration.

To access the Calibration Settings:

1. Select Calibration (1) from the eXact 2 menu. The Calibration screen displays the current calibration status, last calibrated, and other information.
2. Tap  (2) in the upper left corner of the screen to open the Calibration Settings screen.
3. Tap the setting (3) you want to change. A description of each available setting follows below.
4. Tap  to return to the main screen.



Calibration Valid (Hours)

Used to set the time required between calibrations. The calibration time can range from 1 hour to 24 hours in one hour increments. The default setting is 12 hours.

Calibration Warning Timer 1 (mins)

Used to set the amount of time before a first warning message appears to indicate a calibration is needed. The calibration warning timer 1 window can range from 2 to 60 minutes in 1 minute increments. The default setting is 60 minutes.

Calibration Warning Timer 2 (mins)

Used to set the amount of time before a second warning message appears to indicate a calibration is needed. The calibration warning timer 2 window can range from 0 to 60 minutes in 1 minute increments. The default setting is 30 minutes.

Auto-Calibration when docked

When this option is set to On, the device will automatically calibrate when it is placed in the docking station. This only occurs if the device requires calibration. When the option is set to Off, you will need to manually initiate a calibration when needed.

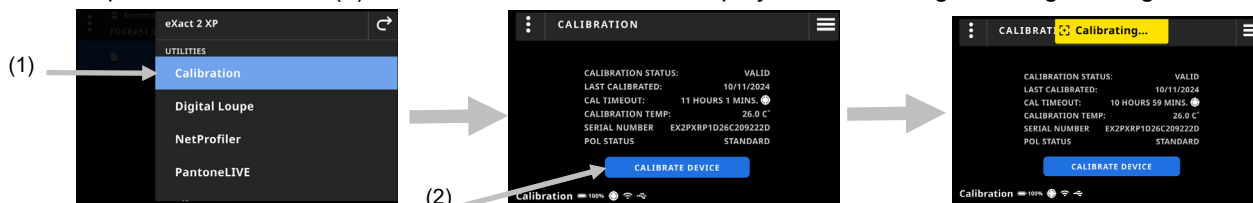
NOTE: If the docking station is not connected to power, the device does not automatically detect if it has been placed on the docking station. Tap Manual Calibration to start the calibration process manually. The device looks for the QR code in the docking station and calibrates the device.

Performing a Calibration

1. Make sure the media flattener located in the optical area is stored in its retracted position before calibration. Refer to the Media Flattener section earlier in the manual for additional details.
2. Place the device in the docking station.

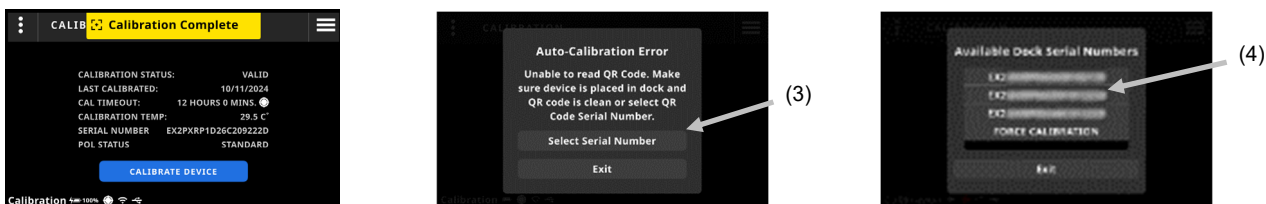


3. Select Calibration (1) from the eXact 2 menu. The Calibration screen displays the current calibration status, last calibrated, and other information.
4. Tap Calibrate Device (2) on the screen. The device displays a “Calibrating” message during calibration.



5. A “Calibration Complete” message briefly appears after calibration is successful.

NOTE: The docking station has a QR Code label located just above the white tile. If for any reason the device cannot scan the label before a calibration, an error message appears in the display. Make sure the QR code label is clean and retry the calibration. If the message still appears after cleaning, tap the Select Serial Number (3) and select the docking station serial number from the list (4) that appears to continue. The docking station serial number can be found on the bottom of the docking station.



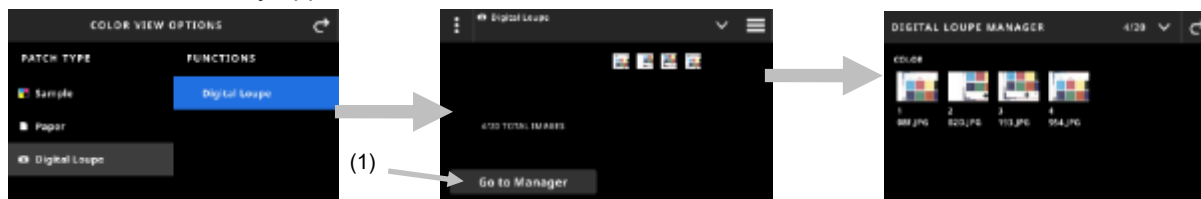
Use the manual calibration button to trigger the calibration process where it will look for the QR code

DIGITAL LOUPE MANAGER

The Digital Loupe Manager is used to manage the images that are stored on your device. Images can be selected and deleted from this screen.

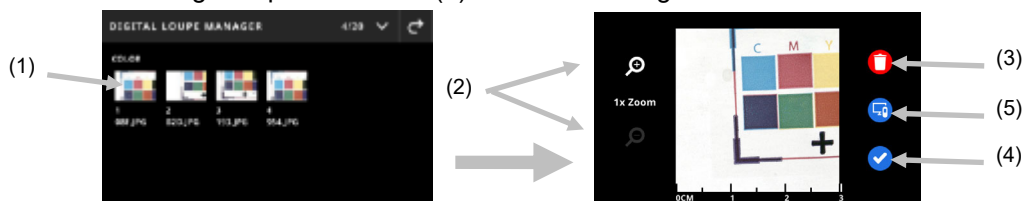
To access the Digital Loupe Manager:

1. Select **Digital Loupe** from the Color View Options or Density View Options screen.
2. Tap **Go to Manager** (1) to access the Digital Loupe Manager screen. Thumbnails of images taken with Color and Density appear.



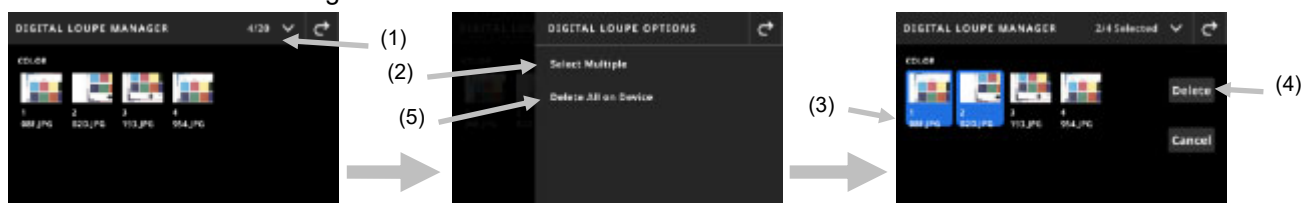
Selecting an Image to View

1. Tap an image (1) to open it in the screen.
2. Tap the or icons (2) to zoom in and out on the image. You can also use your finger to pan around the image.
3. Tap the icon (3) to return back to the Digital Loupe Manager screen. Tap the icon (4) to delete the image. Tap the icon (5) to send the image to the eXact 2 Suite.



Deleting Images

1. Tap the icon (1) in the upper right corner of the Digital Loupe Manager screen to view the Digital Loupe Options.
2. **To select multiple images:**
Tap **Select Multiple** (2) from the Digital Loupe Options screen. Tap individual images (3) to select them and then tap **Delete** (4) to permanently remove the selected images.
3. Tap **Delete All on Device** (5) option. A confirmation screen opens. Tap **Delete** again to confirm that you want to remove all images.

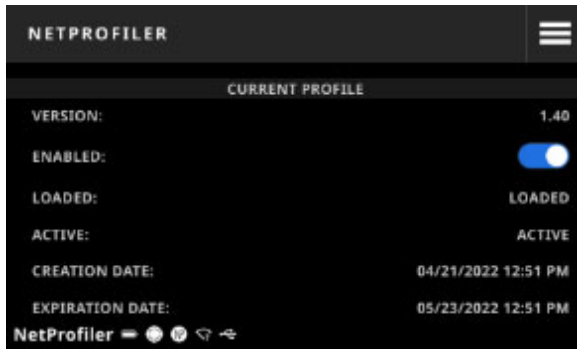


NETPROFILER

NetProfiler includes desktop software and calibration media, that verify and optimize the performance of your eXact 2. You need to purchase NetProfiler and create a NetProfiler account if you are a new user. You can find additional information in the NetProfiler user manual included with your purchase.

Once you have profiled your eXact 2, you can see information about your NetProfiler status. Select NetProfiler from the eXact 2 menu to see the following details:

- Version: xxx
- Enabled: Enable or disable an active NetProfiler profile. Enable to measure using NetProfiler optimization. Disable to measure in its native state.
- Loaded: After the NetProfiler workflow finishes, a profile is uploaded to the device and enabled. Use the NetProfiler desktop client to upload profiles to the device.
- Active: Status of the current profile. Active means the NetProfiler profile is valid. Inactive means the profile is expired.
- Creation Date: We recommend running NetProfiler every 30 days to create a new profile and maintain optimal device performance. This is the date your active profile was created.
- Expiration Date: Your profile is valid for 30 days. This is the date your profile expires. After this date you need to create a new profile to maintain optimal device performance.



For more information, please refer to the NetProfiler User Guide


PANTONELIVE

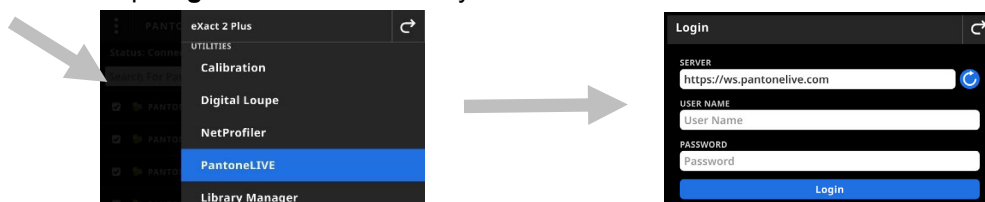
All eXact 2 devices come with free access to the Pantone Master libraries – Pantone Solid coated and uncoated and Pastels and Neons coated and uncoated. You need to login as a default user to access the pre-loaded libraries.

You need a license for additional color libraries from PantoneLIVE, that you would like to use. Once you have a license, you can select the color libraries you have a subscription for, to use them with your device.

NOTE: eXact 2 Plus devices receive a 1-year license to PantoneLIVE free of charge. Your device needs to be connected to Wi-Fi to access and load those PantoneLIVE libraries.

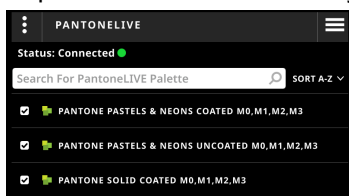
Access PantoneLIVE Account

1. Tap the  icon in the upper right corner of the screen to open the eXact 2 menu.
2. Swipe up on the eXact 2 menu and tap **PantoneLIVE**.
3. Enter <https://ws.pantone.live.com> in the Server field if not already entered.
4. Enter your **User Name** and **Password** into the appropriate fields.
5. Tap **Login** to access the library selection screens.



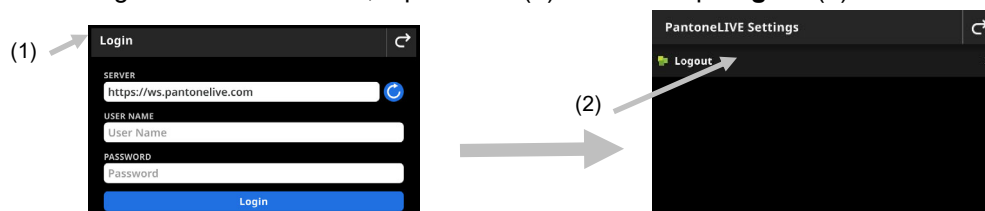
Selecting PantoneLIVE Libraries

1. After logging in, a list of Pantone libraries that you have access to appears. Tap the search field, enter the library name using the virtual keyboard
2. Tap **Enter** or swipe the screen until you see the desired PantoneLIVE library.
3. Tap the box next to the library you would like to select. A checkmark icon appears when selected.



Logging Out of PantoneLIVE

To log out of PantoneLIVE, tap  icon (1) and then tap **Logout** (2).




LIBRARY MANAGER

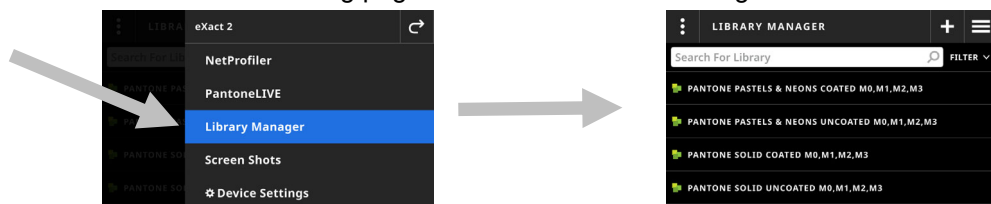
This feature is used to manage color libraries on the device. You can create and delete color libraries, duplicate existing libraries to edit them, or convert your Quick Standards library into a custom library.

When you select a Color Library, you can see all included color standards and their information, for example value sets and tolerances.

Settings and functions can be reviewed and edited as needed before using the Library Manager.

To access the Library Manager

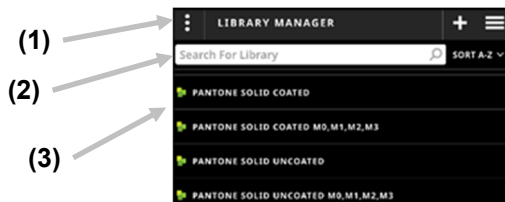
1. Tap the  icon in the upper right corner of the screen to open the eXact 2 menu.
2. Swipe up on the eXact 2 menu and tap **Library Manager**.
3. The **Library Manager** opens showing a list of the color libraries, that the device can use.
4. Refer to the following pages for information on working with Color.



Main Screen

The screen consists of three main areas:

- (1) Top Bar
- (2) Search and sort field
- (3) Libraries




Top Bar

Used to access the Library Manager options, create a new library, and return to the eXact 2 menu.


Search and Sort Field

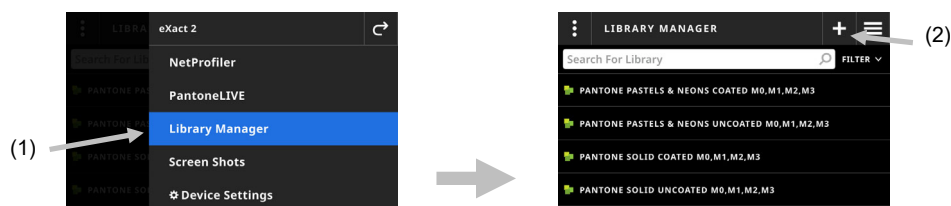
This area is used to perform a search for a library.

Libraries

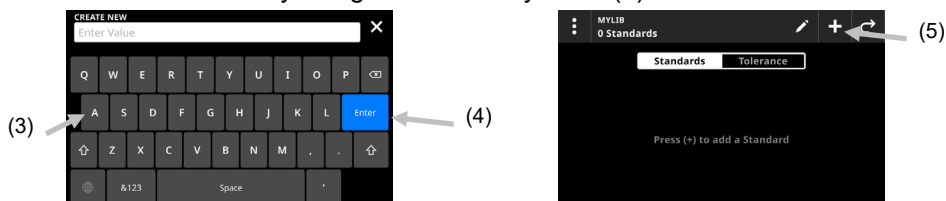
This area shows a list of your libraries. You can swipe the screen upwards to view additional libraries. Tap the **** icon, to sort your libraries. Available filter options: Sort A-Z, Sort Z-A, Custom Libraries and Pantone Libraries. Tap the desired library to open it.

Create a Library

1. Select Library Manager (1) from the eXact 2 menu.
2. Tap the  icon (2).



3. Enter a name for the library using the virtual keyboard (3).

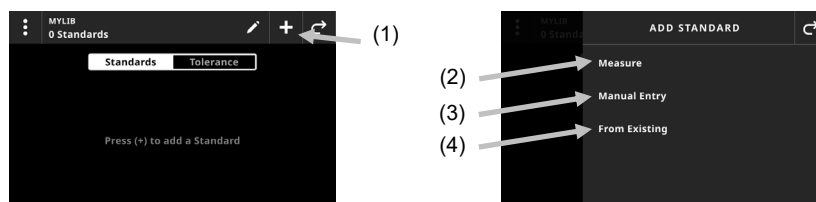


4. Tap **Enter** (4) to save the library and open the standard screen.
5. Tap the **+** icon (2). The **Add Standard** list opens. Add a standard to the library as explained in the **Add Standard** section below.
6. Tap the new standard to view the value set.
7. Tap the **Tolerance** header to view the tolerance associated with the standard (if available). Add a tolerance to the standard as explained in the **Add Tolerance** section below.

Add Standard

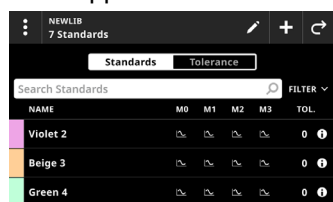
After you create a new library, you have to add standards to it.

Tap the library to open it. Tap the **+** icon (1). to open the **Add Standard** list. There are three methods to add a standard.



- Tap **Measure** (2) to create a new standard by measuring a sample as explained in the **Basic Sample Measurement Technique** section earlier. Each measurement is added as an individual standard to the library.
- Tap **Manual Entry** (3) to create a new standard by manually entering a value set and tolerance as explained in the **Add Value Set** section below.
- Tap **From Existing** (4) to add a standard from an existing library. The existing library remains unchanged.

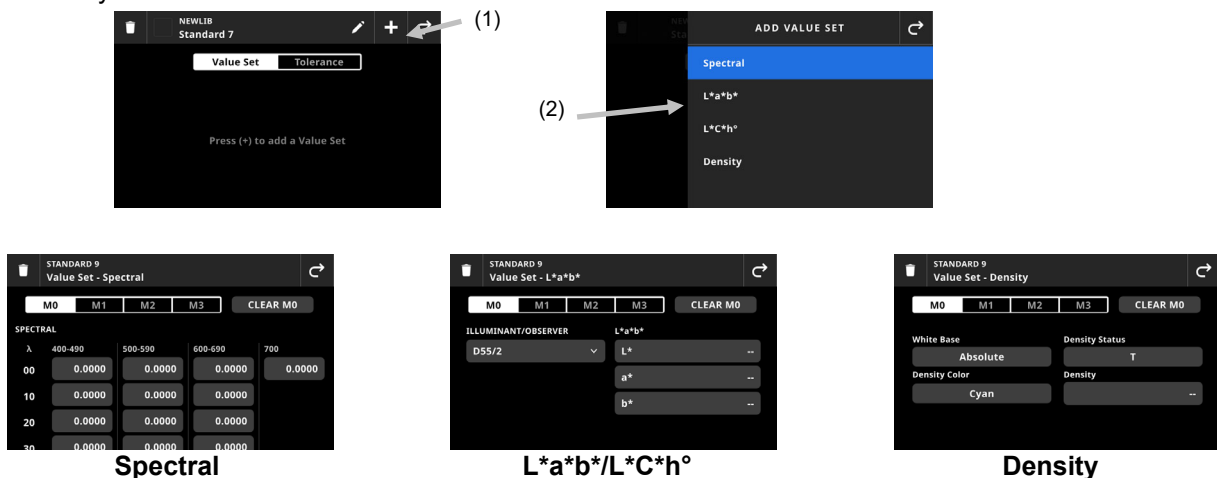
The new standard appears in the standard screen.



Add Value Set

When you use **Manual Entry** to create a new standard, you have to enter a value set and a tolerance (if applicable) manually.

Tap the **+** icon (1). The **Add Value Set** (2) list opens. Available types of value sets: Spectral, $L^*a^*b^*$, $L^*C^*h^\circ$, and Density.



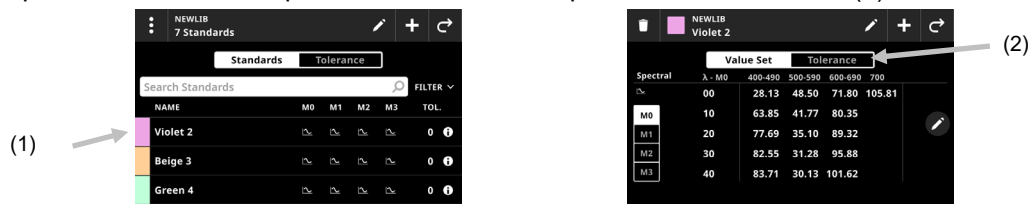
- **Spectral:** Select the measurement condition. Enter the spectral values for your standard into the corresponding wavelength fields. Swipe up to access additional wavelengths. Tap **Clear** to erase all entered value for this standard.
- **$L^*a^*b^*/L^*C^*h^\circ$:** Select the measurement condition. Select an Illuminant/Observer. Enter the $L^*a^*b^*$ or $L^*C^*h^\circ$ values for your standard into the corresponding fields. Tap **Clear** to erase all entered value for this standard.
- **Density:** Select the measurement condition. Select White Base, Density Status, and Density Color. Tap **Density** to enter a density value, and tap **Enter**. Tap **Clear** to erase all entered value for this standard.

Tap the **↶** icon (3) to return to the standards screen.

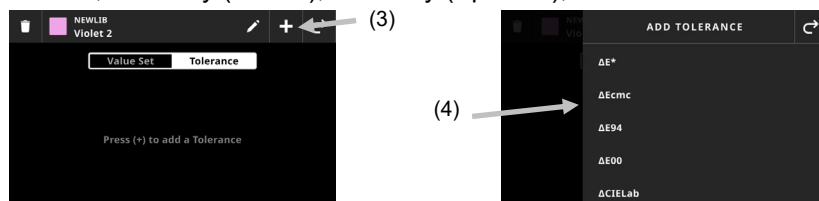
Add Tolerance

You can manually add a tolerance (if applicable) to a standard.

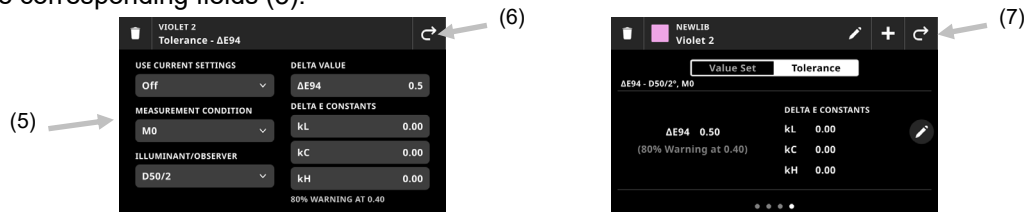
Tap the standard that requires a tolerance and tap the Tolerance header (2).




Tap the **+** icon (3). The **Add Tolerance** (4) list opens. Available tolerances: ΔE , ΔE_{cmc} , ΔE_{94} , ΔE_{00} , $\Delta CIELab$, $\Delta CIELCh$, $\Delta \text{Density (CMYK)}$, $\Delta \text{Density (Spectral)}$, ΔCh



Select the desired tolerance. The tolerance screen opens. Enter your tolerance values, warning limits etc. into the corresponding fields (5).

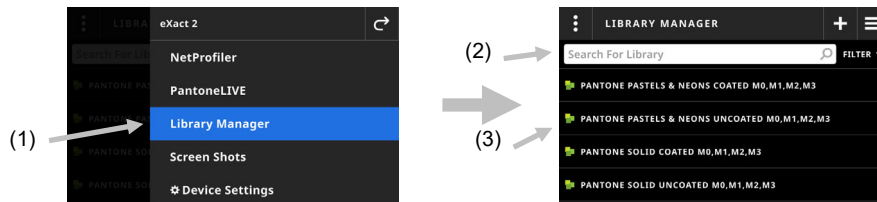


Tap the  icon (6) to return to the tolerance screen where you can review your tolerance. Swipe right to view additional tolerances (if applicable).

Tap the  icon (7) to return to the standards screen.

Select a Library

1. Select Library Manager (1) from the eXact 2 menu.



2. Tap the search field (2), and enter the library name using the virtual keyboard.
3. Tap **Enter** or swipe the screen until you see the desired library.

NOTE: You can also tap **Filter** and select a library sort option or filter the list to only show **Custom Libraries** or **Pantone Libraries**.

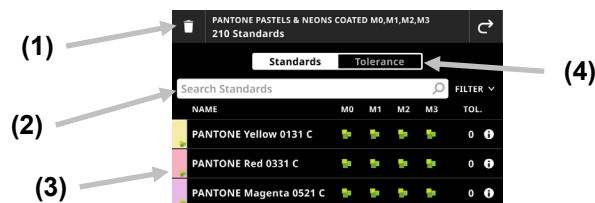
4. Tap the library (3) to open it.

Standards Screen

This screen shows the standards that are included in the selected library. Tap on a standard to see more information.

The screen consists of four main areas:

- (1) Top Bar
- (2) Search and sort field
- (3) Standards
- (4) View Type



Top Bar

Shows additional information about the library, like name, available measurement conditions and the number of standards in this library. You can also delete the library or return to the eXact 2 menu.

Search and Sort Field

This area is used to perform a search for a standard.

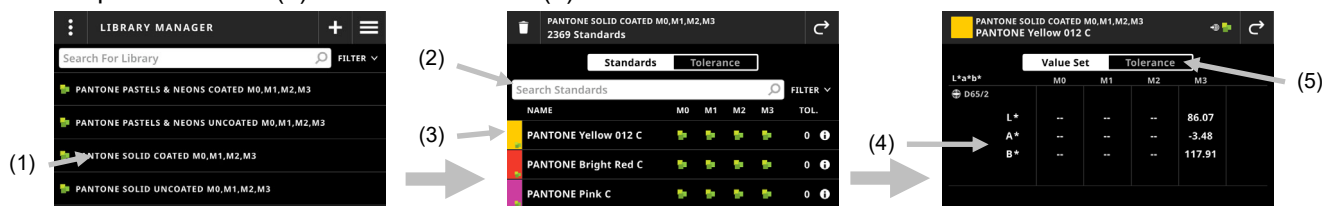
Standards

This area shows a list of the standards in the selected library. You can swipe the screen upwards to view additional standards. Tap the **SORT A-Z** icon, to sort your standards. Available filter options: Sort A-Z, Sort Z-A, and Clear to reset the filter.

Select a Standard

The Standards Screen shows the standards that are included in the selected library.

1. Open a library (1) from the Library Manager.
2. Tap the search field (2) to enter the standard name using the virtual keyboard.
NOTE: You can also tap **Filter**, and select a standard sort option.
3. Tap **Enter** or swipe the screen until you see the desired standard.
4. Tap the standard (3) to view a value set (4). The default value set contains L*a*b* values.



5. Tap Tolerance (5) to view the tolerances associated with the color.

Library Manager Options

This option is used to define the settings for the Library Manager. You can also access the Bulk Edit function from here.

To access the Library Manager Options:

1. Select Library Manager from the eXact 2.
2. Tap **⋮** (1) in the upper left corner of the screen to open the **Library Manager Options** screen. The Options are **Library Settings** and **Bulk Edit**.

Library Settings

1. Tap **Library Manager Options** (1) to open the **Library Manager Settings** (2).



2. Tap the setting you want to change. Additional settings can be accessed by swiping up on the screen. A description of each available setting follows below.
3. Tap **↶** (3) to return to the main screen.

Function Settings

Used to set the parameters for the various job functions.

Density Display Settings: Used to configure which color responses are shown. Auto color picks the dominant color response and also displays the last measurements for the other colors (C, M, Y, and K). Spot color picks the dominant spectral density wavelength.

All Densities Display Settings: Used to select what density values the device displays. Options are: CMYK and CMYK+SPOT.

Density Status

Used to select the status for all densitometric functions. Options are: ISO Status A, E, I, T, and G.

Density Measurement Condition

Used to select the measurement condition for densitometric (e.g. Density, TVI, Trapping, etc.) functions. Options are:

- M0(No) – No Filter
- M1(D50)
- M2(UVC) – UV Cut Filter
- M3(Pol) – Polarization Filter (not in eXact 2 Xp).

Illuminant Observer

Used to select the illuminant and observer combination.

Colorimetric Measurement Condition

Used to select the measurement condition for colorimetric (e.g. CIE L*a*b*) functions. Options are:

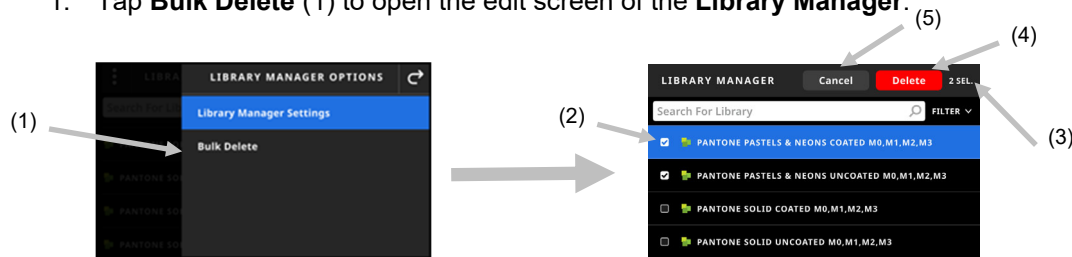
- M0(No) – No Filters
- M1(D50)
- M2(UVC) – UV Cut Filter
- M3(Pol) – Polarization Filter (not in eXact 2 Xp).

Averaging

Used to set the number of measurements required to obtain an average. The number of measurements can be set from 2 to 5 and Off.

Bulk Delete

1. Tap **Bulk Delete** (1) to open the edit screen of the **Library Manager**.




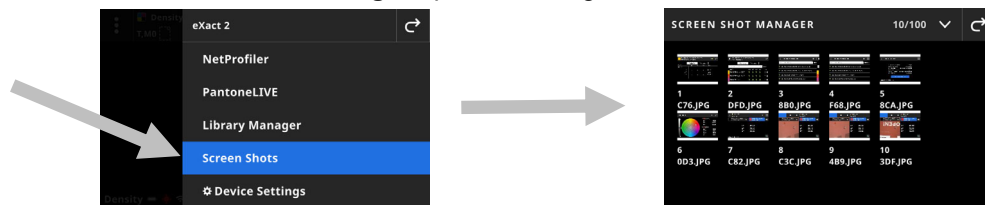
2. Tap the box (2) next to the library you would like to delete. A checkmark icon ☒ appears when selected.
3. The top right corner indicates the number of selected libraries (3).
4. Tap **Delete** (4) to delete the selected libraries.
5. Tap **Cancel** (5) if you do not want to delete the tool anymore and return to the **Library Manager**.

SCREENSHOT MANAGER

This feature is used to open the Screenshot Manager where you can manage screenshots taken with the device. You can view and delete screenshots, and you can transfer one or more screenshots to the eXact 2 Suite. The device can store up to 100 screenshot images in the device.


To access the Screenshot Manager:

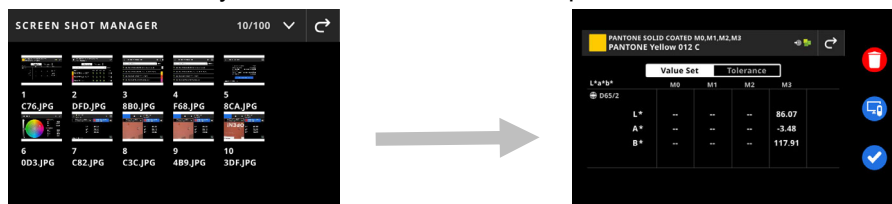
1. Tap the  icon in the upper right corner of the screen to open the eXact 2 menu.
2. Swipe up on the eXact 2 menu and tap **Screenshots**.
3. The **Screenshot Manager** opens showing a thumbnail list of screenshots taken with the device.






Viewing a Screenshot

1. Tap an image (1) to open it in the viewer.

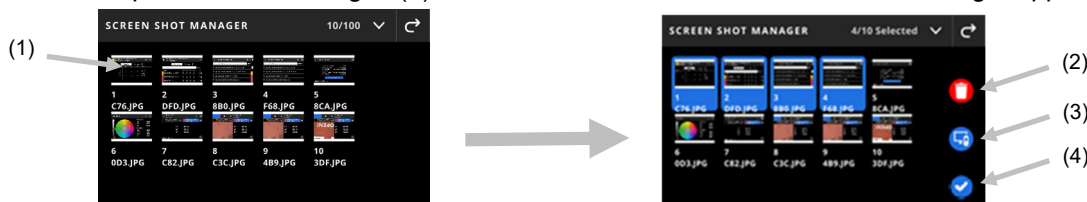
NOTE: Make sure you are in viewing mode and not in selection mode. If the **Screenshot Manager** shows control elements, you are in selection mode. Tap  to close the selection mode.






2. Tap  (2) to delete the selected image.
3. Tap  (3) to transfer the selected image to the eXact 2 Suite.
4. Tap  (4) to close the viewer.


Selecting a Screenshot

1. Tap one or more images (1) to select them. The control elements on the right appear.



2. Tap  (2) to delete the selected image or images.
3. Tap  (3) to transfer the selected image or images to the eXact 2 Suite.
4. Tap  (4) to cancel the selection.

SCAN

Jobs can include color bars that require a scan measurement. This is indicated by the color bar icon  above the targeting area. In the scan targeting mode, the device display shows guide bars to help you scan the color bars with your eXact 2 device. Refer to the software application for procedures on creating color bars.


Operation

The following instructions describe the procedures required to measure a color bar using the eXact 2 device.

Best Practices

- Before scanning a color bar, inspect the patches for any defects or spots. Defects may cause inaccurate measurements.
- When scanning card stock, make sure to place an extra piece at the edge of the stock by the first and last patch. This will ensure that the device is level during the whole scan.
- For best results, always scan a color bar using steady, consistent speed. The display shows a speed indicator to show when the proper speed is maintained.

Performing a Color Bar Measurement

1. Select the required job from the Jobs list. See Jobs section for additional information.
2. Spot measure the substrate if requested. If the substrate is changed a new substrate measurement must be performed.
3. The color bar icon (1) on the top left indicates if a color bar scan is required.
4. Tap the  icon. In the results area on the right, the display shows the color bar's front and back patches (2) to help you identify the color bar to measure.

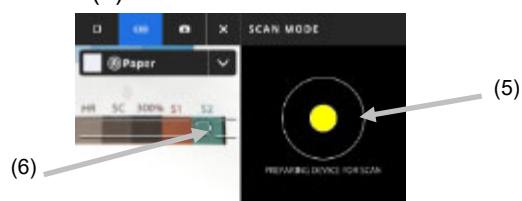


NOTE: If the job includes multiple color bars, the results area on the right shows the color bars included in the device. It also indicates the current color bar to measure.

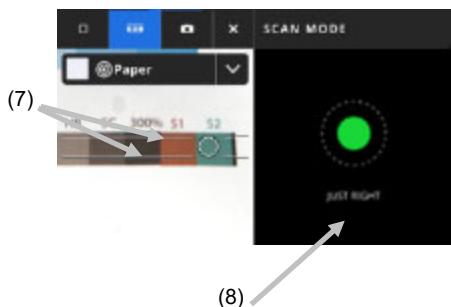
5. Press the brake button (3) on the side and hold. Slide the locking switch (4) below the brake button towards the back of the device to the On position. This will disengage the brake for scanning.



6. Press the Measure button on the device once. The device enters the Scan mode and is preparing to scan (5).



7. Viewing the targeting screen, position the circle (reticle) (6) in the targeting window over the first patch of the color bar.
8. Press and hold the Measure button and roll the device across the color bar in one continuous motion without stopping.
9. **NOTE:** Use the black guidelines (7) in the targeting window to align device over the color bar during the scan, while viewing the device display for scan speed indication (8). See below for details.



10. When the last patch is passed release the Measure button.
11. After a successful measurement of the color bar, the measurement results are displayed. The individual patch values are stored in the device as spot measurements.
12. Continue with additional scans as indicated for the job.

Scan Speed Indication

The right side of the screen provides feedback on your scanning speed. Scanning the color bar too fast or too slow for an extended period of time may produce inaccurate measurement results. Always try to maintain a steady scanning speed as much as possible for best results. The following text descriptions are displayed during a scan.

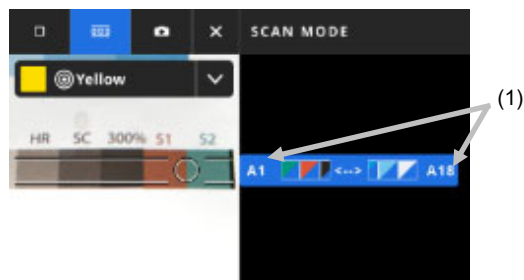
- **Just Right (green):** Indicates the correct speed is being used.
- **Too Slow (blue):** Indicates the scan speed is too slow and needs to be increased.
- **Too Fast (red):** Indicates the scan speed is too fast and needs to be reduced.

NOTE: Ideal scan speed depends on the aperture size of the instrument and the size of the measured patches.

Color Bar/Patch Screen Details

Each color bar displays the row letter and numbers i.e., A1 – A18 (1). If the color bar contains more than 6 patches, then only the three patches on each end will be visible, separated by an ellipsis (...). The highlighted strip indicates what color bar will be measured next.

	Displays simulated colors for standard and sample patches. The sample patch is located in the lower-right corner.
	This patch would indicate that no sample was measured.
	This patch would indicate that no standard was provided.



APPENDICES

Registration

It is important that you register your device as soon as possible. After registration, you will have access to:

- eXact 2 Suite software and updates
- Firmware updates
- X-Rite Link
- Training videos
- Technical support
- And more

To register your device, go to **my.xrite.com** or scan the QR code below.



Important Information

Recertification

X-Rite recommends an annual recertification of the eXact 2 spectrophotometer. Contact your X-Rite dealer or the nearest X-Rite Service Center to find out more about recertification.

Service

Do not try to disassemble the X-Rite eXact 2 for any reason. Unauthorized disassembly of the equipment will void all warranty claims. Contact X-Rite Support or the nearest X-Rite Service Center if you believe that the device does not work anymore or does not work correctly.

Cleaning the Device

Your device requires very little maintenance to achieve years of reliable operation. However, to protect your investment and maintain reading accuracy, a few simple-cleaning procedures should be performed from time to time.

IMPORTANT: Do not use solvents or cleaners of any kind.

General Cleaning

The exterior of the device should only be wiped clean with a cotton cloth dampened (not wet) in water or isopropyl alcohol.

Cleaning the Touch Display

The touch display should only be wiped clean with a cotton cloth dampened (not wet) in water or isopropyl alcohol.

Cleaning the Filters

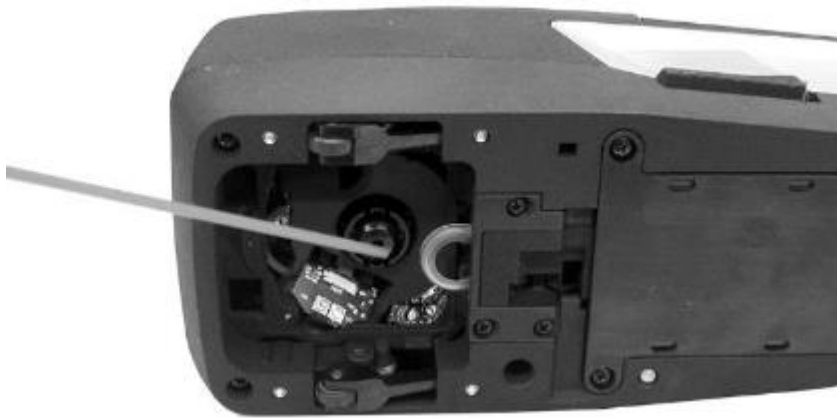
1. Remove the filter glass from the device. Refer to Installing the Xp Filter Glass section earlier in the manual for procedure.
2. Clean both sides of the filter with isopropyl alcohol on a soft clean cloth.
3. Reinstall the filter glass.

Cleaning the Optics Area

The optics should be cleaned once a week in a normal environment. If the device is used in a dirty or dusty environment, more frequent cleaning may be required.

Carefully lift the device and open the target base.

1. Remove the filter glass from the device. Refer to Installing the Xp Filter Glass section earlier in the manual for procedure.
2. Blow short bursts of clean, dry air into the optics area. This should remove any accumulated debris from the optics.



3. Reinstall the filter glass.

IMPORTANT: If can air is used for cleaning, do not invert or tilt the can during use. This could cause damage to the optics.

Cleaning the White Tile

The white tile should be cleaned periodically.

Do not use solvents or cleaners of any kind.

The white tile is located under the cover in the docking station.

1. Open the calibration cover using the lever (1) on the docking station and hold.
2. Blow short bursts of clean, dry air (2) onto the white tile. This should remove any accumulated debris.





3. Carefully return the calibration cover to its closed position.

Cleaning Device Wheels

The wheels (1) should only be wiped clean with a cotton cloth dampened (not wet) in water or isopropyl alcohol.



Replacing the Battery Pack

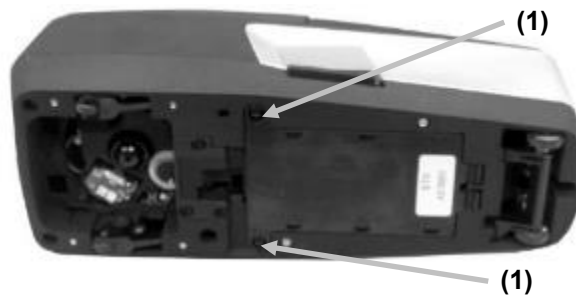


CAUTION: Risk of explosion if battery is replaced by an incorrect type. Replace only with X-Rite part number SE15-48, self-protected rechargeable lithium-ion battery pack.

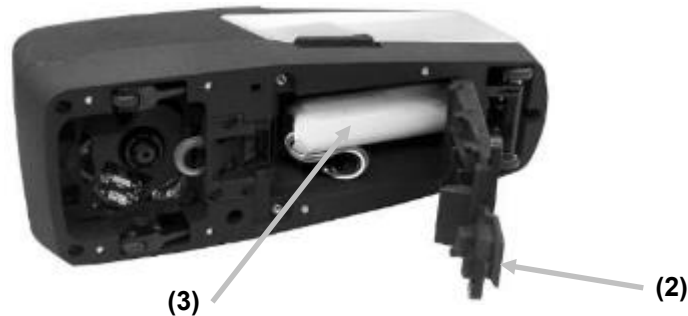
ATTENTION : Risque d'explosion si la batterie est remplacée par une batterie de type incorrect. Utilisez uniquement le bloc-batterie X-Rite au lithium-ion rechargeable et à autoprotection (n° de réf. SE15-48).

Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

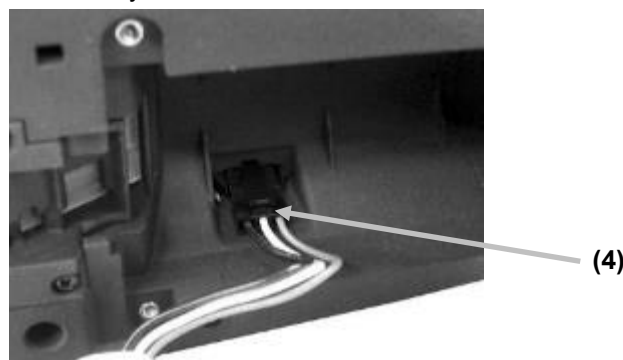
1. Carefully turn the device on its side.
2. Remove the two screws (1) from the battery cover.



3. Swing open the battery cover (2) and remove the battery pack (3) from the compartment.



4. Disconnect the battery connector (4) by pressing in on the locking tab and unplugging the connector. Do not disconnect by pulling on the battery wires.




5. Plug the new battery pack plug into the connector in the battery compartment. Press in until the connector is properly seated.
6. Insert the new battery pack into the battery compartment.
7. Swing the battery cover closed and reinstall the two screws.

Troubleshooting

Prior to contacting the support department for device problems, try the applicable solution(s) described below. If the condition persists, contact us using one of the methods listed in the Service Information section.

Problem	Cause/Solution
Wi-Fi network not available.	<p><i>eXact 2 supports only 2.4 GHz Wi-Fi networks. Select the corresponding 2.4 GHz SSID to connect the device to your network.</i></p> <ul style="list-style-type: none"> If your network uses a single SSID that combines the 2.4 GHz and 5 GHz bands, you have to temporarily disable the 5 GHz band in your router or network device settings to connect the device. Once the device is connected, you can reenale the 5 GHz band again.
Docking station does not charge properly	<p><i>The eXact 2 turns on when placed on the docking station to charge the battery. When the battery is charged, the eXact 2 turns the wireless transmitter in the docking station off.</i></p> <p>Every 20 minutes the transmitter turns back on, wakes up the device, and eXact 2 checks the battery charge</p> <ul style="list-style-type: none"> If the charge is less than 95%, the docking station charges the battery back up to 100% and turns off. If the charge is 95% or higher, the transmitter turns back off for another 20 minute cycle. <p>This cycle keeps the battery at a safe temperature while keeping the battery charged.</p> <p>NOTE: During this 20 minute window, you can NOT shutdown the device.</p>
Device not responding (no display).	<p><i>Device in sleep mode.</i></p> <ul style="list-style-type: none"> Touch display or take measurement. <p><i>Device in power down mode.</i></p> <ul style="list-style-type: none"> Press the power button until the splash screen appears. <p><i>Battery is very low.</i></p> <ul style="list-style-type: none"> Charge the battery.
Device and software not communicating (USB connection).	<p><i>Interface cable not connected.</i></p> <ul style="list-style-type: none"> Connect the interface cable between the computer and the device. Close and restart the software application. If this does not work, reboot the computer.
Device and software not communicating (Wi-Fi connection).	<p><i>Wi-Fi not activated.</i></p> <ul style="list-style-type: none"> Activate Wi-Fi connection in the device. Refer to the Device Settings section for information. Connect your device to a Wi-Fi network. Activate Wi-Fi connection on your computer. Refer to the manufacturer's manual of your computer. Close and restart the software application. If this does not work, reboot the computer.
Calibration procedure fails.	<p><i>Calibration tile is dirty or damaged.</i></p> <ul style="list-style-type: none"> Clean the plaque per procedure in Appendix.

Measurement error or results appear inaccurate.	<p><i>Sample being measured is dirty or damaged (e.g. scratched).</i></p> <ul style="list-style-type: none"> Obtain new sample. <p><i>Device requires calibration.</i></p> <ul style="list-style-type: none"> Perform a calibration on the device (see Calibration section). <p><i>Device optics are dirty.</i></p> <ul style="list-style-type: none"> Clean device optics (see General Cleaning).
Media Ring Recognition Problems.	<p><i>No Media Ring icon present in the device status bar</i></p> <ul style="list-style-type: none"> Install Media Ring using eXact 2 Suite 1.0.6 or higher and on an eXact 2 device with firmware version 1.3 or higher
Patch recognition problems.	<p>If the device has a problem properly detecting a particular patch the first time, you can manually change the patch (refer to Measure Override section earlier in the manual for details). The device will also automatically adjust what it estimates different patches will appear like based on the paper and solid measurements. Therefore, paper should be the first patch measured in any job and then a solid before other patch types. If a wrong measurement is “taught” to the wrong patch type, it could throw off the proper detection of other patches.</p> <p>Every effort is made to properly detect patches and predict other patches properly. However, if auto detection does not initially produce satisfactory results, the Measure Override feature should be used along with turning off auto patch. After the learning process is complete, auto patch can be turned back on.</p> <p>The device will prompt you to measure a particular (prerequisite) patch. Below is a list of typical prerequisite patch measurements.</p> <ul style="list-style-type: none"> Paper: First reading of the Job always needs to be paper. If a different patch is detected first, a popup message will occur. Solids: After Paper measurement, solids should be measured, as it is a prerequisite for tint and overprint measurements. Tints: Paper and solid patches need to be measured first. Overprint: Paper and both solid patches for each ink being measured needs to be measured before the overprint. Gray Balance: In some cases, it helps to measure the Black solid patch after paper as it assists in the patch detection. However, it is not always required. Black is not always used in a job.
Screenshot does not open	<p>If you tap a screenshot and it does not open for viewing, make sure you are in viewing mode and not in selection mode. Tap  to close the selection mode, and try to open the screenshot again.</p>
Setting or function greyed out/inactive	<p>Greyed out settings or functions are password protected. Tap the lock icon in the top bar and enter your password to unlock.</p>
Reset Password	<p>You can reset the device password for User Security in the eXact 2 Suite.</p>

Resetting the Device

To reset the device:

1. Unplug the USB cable and remove the device from the docking station.
2. Press and hold the power button until the screen appears with the Restart option.
3. Tap **Restart** to restart the device.

If you are still experiencing problems after a reset, contact X-Rite support using one of the methods listed in the Appendix Information section.

Technical Specifications

SPECTRAL ENGINE

Spectral analyzer:	DRS spectral engine
Spectral range:	400 nm - 700 nm with 10 nm interval

OPTICS

Measurement geometry:	45°:0° ring illumination optics, ISO 13655:2017
Measurement aperture:	1.5 mm, 2 mm, 4 mm or 6 mm
Light source:	LED (Full spectrum LED light source)

REFLECTANCE MEASUREMENT

Measurement Conditions:	According to ISO 13655:2017: <ul style="list-style-type: none"> • M0: UV included • M1: (method 2) D50 • M2: UV excluded • M3: Polarization (not in eXact 2 Xp).
Calibration:	Automatic on white reference
Inter instrument agreement:	Average: $0.25 \Delta E^*_{ab}$, Max: $0.45 \Delta E^*_{ab}$ (M3 $0.55 \Delta E^*_{ab}$) (Measurements using X-Rite manufacturing standards at a temperature of 23°C +/- 1°C, 40-60% RH for all measurement modes on 12 BCRA color tiles and a white ceramic reference (D50, 2°))

Short term repeatability

White:	$0.02 \Delta E^*_{ab}$, (standard deviation) White BCRA (Error compared to mean value of 20 measurements every 5 seconds)
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Short term repeatability

Density:	$\pm 0.01 D$ for CMYK measurements
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Scan Length:	Max: 1,120 mm (44")
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OPERATING CONDITIONS

Operating Temperature Range:	50° to 95°F (10° to 35°C) 30-85% relative humidity maximum (non-condensing)
Storage Temperature Range:	-4° to 122°F (-20° to 50°C)

INTERFACE, DIMENSIONS AND WEIGHT

Data Interface:	USB	USB-C port (delivered with adapter to connect to USB-A ports)
	Wi-Fi	Supports IEEE 802.11 b/g/n standards
		Supports 2.4 GHz ISM band only (not 5 GHz).

Supports IEEE 802.11 WEP, WPA, WPA2, WPA2-Enterprise Security

Power supply:	X-Rite P/N: SE30-377 100-240VAC 50/60Hz, 12VDC @ 2.5A
Battery:	X-Rite P/N: SE15-48 Lithium Ion, 3.60V, 4900 mAh
Physical Dimensions:	3.05"H (7.75 cm) 3.2"W (8.13 cm) 8.4"L (21.34 cm)
Weight:	1.46 lbs. (.665 kg)

ENVIRONMENTAL

Usage:	Indoor only
Altitude:	2000 m
Pollution Degree:	2
Overvoltage:	Category II

ACCESSORIES PROVIDED

USB-C Cable with USB-A Adapter, Power Supply, Docking/Charging Station, Quick Start Guide, Carrying Case, ISO 9000 Certificate

Design and specifications subject to change without notice.

Color and Density Functions

The following is a description of each function.

Absolute Color Strength

The absolute color strength "K/S" is a measure for the concentration of a color.

To determine the color strength you must first choose one of the available calculation methods: Max K/S: K/S is calculated at Point of minimum reflectance in the spectral curve.

Mean xyz: Calculates color strength by average mean xyz values across the visible spectrum. Next, select the type of ink that is used to determine the color strength. You can choose Transparent ink, Opaque ink or Textile dye.

All Densities

Used to display the density values for the measured sample for all filters (Cyan, Magenta, Yellow and Black). This function can be configured to show additionally the density value at the wavelength of maximum density for the spectral curve.

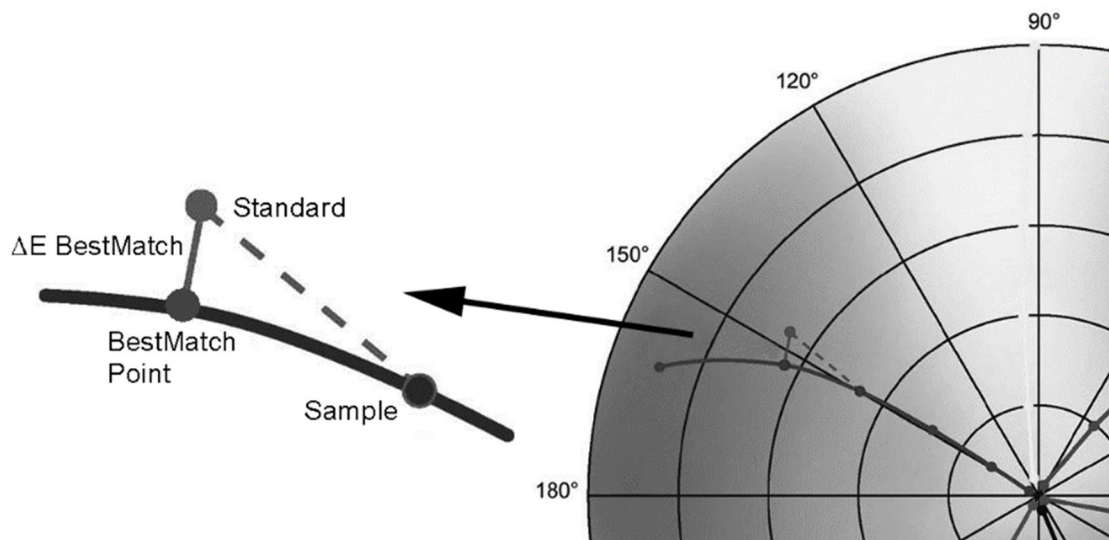
BestMatch

This function indicates if you can get a closer match (in ΔE) to a standard color by adjusting the ink thickness (offset printing) or concentration (flexo and gravure printing) on-press.

The illustration below shows the BestMatch function with the aid of the CIELAB color space using an example of two different shades of green.

Color axis: Colorimetric axis to adjust color by ink thickness.

BestMatch point: Best possible color (e.g. green) that can be achieved by adjusting ink thickness or concentration.



Brightener Index

This function is used to determine the amount of optical brightener (OBA) in the substrate according to ISO 15397. The value represents the difference between the CIE- b^* values of the M1 and M2 measurement condition.

CIE $L^*a^*b^*$

This function is derived from the CIE 1931 XYZ color space in an effort to be perceptually uniform. The L^* dimension related to Lightness while a^* (red/green) and b^* (yellow/blue) are for color. Perceptually uniform means that a change of the same amount in a color value should produce a change of about the same visual importance. When a valid standard is present, the delta values will be included along with the ΔE type that is configured.

CIE $L^*C^*h^\circ$

This function is a colorspace equivalent to CIE $L^*a^*b^*$, the main difference is that in $L^*a^*b^*$ the color values are plotted in a Cartesian coordinate system, while $L^*C^*h^\circ$ is polar coordinate system. L^* stays the same, but C^* refers to chroma or strength which is the radius and h° is the hue angle. When a valid standard is present, the delta values will be included along with the ΔE type that is configured.

CIE XYZ

These tristimulus values of a color are the amounts of three primary colors in a three-component additive model needed to match that test color. CIE XYZ serves as the basis from which many other color spaces are defined. Shows delta XYZ values if a valid standard is present.

CIE Yxy

This function is directly derived from XYZ values. Y still represents luminance or brightness of a color. The x and y are calculated from the XYZ values to define chromaticity of a color represent normalized values of X and Z. A plot of x and y values for solid and overprint patches can reveal the color gamut that can be achieved. The x and y values are also used as part of other functions for estimating appearances of inks at varying thickness/concentrations. Delta Yxy values are also shown if a valid standard is present.

Contrast

This function is used for checking the dot quality in the shadow areas. The contrast is calculated from the measured values of the solid ink density and the screen ink density in the shadow area. This function allows two auto color response settings, Auto and Spot; or you can manually set the color response to one of the process colors.

ΔE Trend

This function plots the ΔE (uses the active ΔE method setting) value of the current and past samples that have been measured to the current standard. The graph will show up to 10 of the latest readings.

Density

This function is the measure of the ink thickness. For the process colors Cyan, Yellow, Magenta, or Black the desired Density Status (A, E, I, T, G) needs to be configured. For spot inks the result is given as the density value at the wavelength of maximum density for the spectral curve. This function can be optionally configured to subtract the white base/substrate. Auto color picks the dominant color response and also displays the last measurements for the other colors (C, M, Y, and K). Spot color picks the dominant spectral density wavelength. You can manually select the color response as well (C, M, Y, or K). In Jobs, the color response shown depends on the particular patch measured.

Density & CIE $L^*a^*b^*$

This function allows you to view a density result as well as $L^*a^*b^*$ values in the same results area. The modes (Auto and Spot) will display either the dominant process ink (C, M, Y, or K) or the dominant spectral density response. When a valid standard is present, a Delta/Absolute button will appear that lets you change the results between absolute and delta results of the latest sample.

Density & CIE $L^*C^*h^\circ$

This function allows you to view a density result as well as $L^*C^*h^\circ$ values in the same results area. The modes (Auto and Spot) will display either the dominant process ink (C, M, Y, or K) or the dominant spectral density response. When a valid standard is present, a Delta/Absolute button will appear that lets you change the results between absolute and delta results of the latest sample.

Density Balance

This function is used to compare a Gray Balance Patch to a defined standard with easy to read graphical indication.

Density Trend

This function displays a bar graph of the density values of up to the last ten readings taken towards a particular density color response. An overall average for that particular density color response is shown at the top for all readings taken in the trend graph (even if more than 10 readings are taken).

G7 Graybalance

This function w ΔL (Weighted Delta L) and w ΔCh (Weighted Delta Ch) along with the black channel density. IAn indication is also provided for per-channel density adjustments to get closer to the gray balance standard.

Graybalance QC

This function provides C, M, and Y density values of the current sample and colorimetric data.

Hue Error & Grayness

Hue Error indicates the variation of a printed color from a theoretical pure color. Grayness indicates the presence of gray in a color that makes it appear less saturated. Hue Error and Grayness are used to check for color consistency throughout a press run.

Inks QC

This function shown the density response(s) of the current ink for the patch being measured. For solid inks, only a single density will be shown. For an overprint density responses, each ink of the patch will be shown. It also displays Delta Lab values, as well as the configured ΔE value.

Metamerism

The phenomenon where two colors appear to match under one light source, yet do not match under different light sources. Two such colors are called a metamer pair. Up to three Illuminant/observers can be compared to the current Illuminant/observer setting (color setting). The default settings for all regions is A, F2 and F11.

Opacity

This function is used to determine how opaque a given ink or material is. It looks at how different the luminance (Y from CIE XYZ) of a given sample changes when printed over a white or black substrate. Once the ink is measured over both substrates, the opacity % result is provided (0 = completely transparent, 100% = completely opaque).

Paper QC

This function is designed to check the appearance of the substrate when running a job. The options are: CIE $L^*a^*b^*$ (as used by G7) and CIE $L^*C^*h^\circ$ (as used by PSO).

Printing Plate

This function is used to determine the dot area coverage of a tint or halftone patch on a printing plate. Make sure the plate type (negative or positive) and Yule-Nielsen factor that is used to calculate the physical dot area coverage of your printing plate is set in the Ink Settings.

Reflectance Graph

This function displays a visual reflectance curve for measured data. Sample and standard are displayed with different colors: sample in white, standard in blue.

Relative Color Strength

- The relative color strength "DS" is a measure which compares the concentration of a color with the concentration of a standard. DS is the ratio between the absolute color strength K/S of a sample and the absolute color strength K/S of the standard color.
- The relative color strength DS indicates the extent to which a color is concentrated in comparison with the standard color. If for example DS = 50% means that the sample color is only half as concentrated as the standard color.
- Depending on the circumstances, different formulas can be selected for the calculation of the absolute color strength K/S. For transparent inks, the sample color must be applied in an equally thick layer as the standard color. Only in this way can a statement be made regarding the color concentration.
- Concentration (conc) indicates the extent to which a color should be concentrated to correspond as accurately as possible to the standard. Residual color difference (rs ΔE) is used to investigate whether the sample is actually the same as the standard. It compensates the sample to the concentration of the standard and calculates a CIE ΔE_{76} to it

Tone Value

This function (also called Dot Area) provides a way to determine the absolute ink coverage (%) of a tint or halftone patch by comparing the density value of the tint patch versus known 0% (Paper/Substrate) and 100% (solid patch) density values. The result can be calculated using either the Murray-Davies, Yule-Nielsen, or SCTV (ISO 20654) methods.

The Yule-Nielsen nFactor constants can be adjusted separately for each process ink and Spot colors.

Tone Value Increase (TVI)

This function (also called Dot Gain) is the difference between the actual Tone Value % and the theoretical screen % of a tint patch. The theoretical tint percents are configured by the TVI function settings (1 to 3 patches).

Trapping

This function determines how well one solid ink prints over another solid ink (overprinting). Better coverage ensures a better color gamut. Setting the color response to Auto mode will operate Trapping with the process inks; use the Spot setting if using spot colors instead.

Trap is calculated using one of three formulas:

Preucil (GATF) Trap formula (factory default). Brunner Trap formula, or Ritz formula.



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