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(Rev. 10/2019)

i1 PRO 3

x-rite PANTONE®

i1 PRO 3

User Manual
Benutzerhandbuch
Manuel de l'utilisateur
Manuale dell'utente
Manual de uso
Manual do Usuário
ユーザーマニュアル
사용 설명서
用户手册



x-rite PANTONE®

CE Declaration
Hereby, X-Rite, Incorporated, declares that this device is in compliance with the essential requirements and other relevant provisions of Directive(s) EMC 2014/30/EU, LVD 2014/35/EC, and RoHS EU 2015/863.

FEDERAL COMMUNICATIONS COMMISSION NOTICE

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.

INDUSTRY CANADA COMPLIANCE STATEMENT

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

NOTE: USB interface cable shipped with this device must be used in order to maintain compliance with the desired CE mark requirements, FCC Part 15 Rules, and Canadian ICES-003.

EQUIPMENT INFORMATION

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

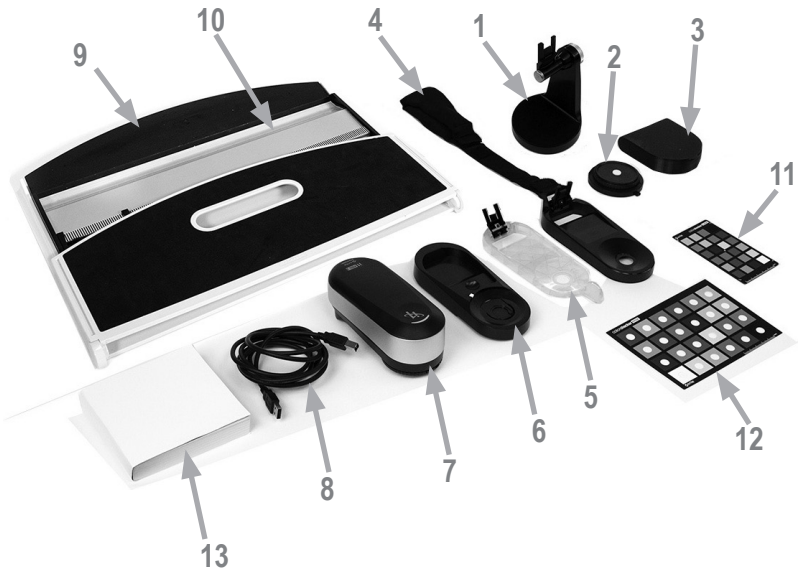
WARNING: This instrument is not for use in explosive environments.
ADVERTENCIA – NO use este aparato en los ambientes explosivos.
AVVERTIMENTO – NON usare questo apparecchio in ambienti esplosivi.
WARNUNG: Das Gerät darf in einer explosiven Umgebung NICHT verwendet werden.
AVERTISSEMENT: Cet instrument ne doit pas être utilisé dans un environnement explosif.

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.

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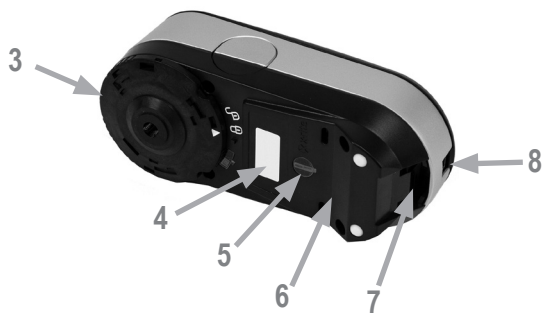
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1. Tripod Holder (optional)
2. Ambient Light Measuring Head (optional)
3. Ambient Light Measuring Head Case (optional)
4. Display Holder
5. Positioning Target
6. Calibration Plate
7. i1Pro 3 Device
8. USB Cable
9. Backer Board (optional)
10. Ruler (optional)
11. ColorChecker Proof (optional)
12. ColorChecker Classic (optional)
13. User Manual
14. Certificate of Performance (not shown)
15. Carrying Case (not shown)





1. Status indicator

2. Measurement button

3. Limiting aperture

4. Type label with serial number

5. Positioning sensor

6. Reference gap for ruler mount

7. Mounting interface for accessories

8. USB connector port



Before you can use your device or see its status, you need to install the software application on your computer. Please do not plug the device‘s USB cable into your computer until after you have installed the software application.

1. Visit https://www.xrite.com/i1profiler to download the i1Profiler application and install the software application on your computer.

2. Review all instructions in this user manual before you start using your new device.

3. After you have completed the software installation process, attach your **i1**Pro 3 device to your computer‘s USB port. If connected successfully the status indicator lights up solid white.

The X-Rite **i1**Pro 3 will not work if it is connected to the USB port on your keyboard or to a USB hub without external power supply.
i1Pro 3 power rating: 5 V ⎓ 500 mA.



The i1Pro 3 device is equipped with a device status indicator on its top housing. The device status indicator provides feedback on the current status of the device, and guides you through the measurement process.

General device status:

off	The device is either not connected to your computer, or the latest software to control the device is not installed or running on your computer.
solid white	The device is connected to power/USB.
pulsating white	The device is connected and ready for measurement.
solid red	The calibration of the device failed due to a hardware problem (see troubleshooting section for further information).
short green pulse	Indicates that the measurement button has been pressed and the scanning motion can be started.

To avoid interference of the device status indicator with the measurement process, the device status indicator is turned off during measurement.



If you own multiple devices make sure that the serial number on the front and back of the calibration plate matches the serial number of your **i1**Pro 3 device. Refer to the user guide of your measurement software for additional information on the calibration process.

1. In the center of the calibration plate is a slider to protect the white calibration tile. Open this protective slider until it clicks into place to access the white reference ceramic tile on this calibration plate.

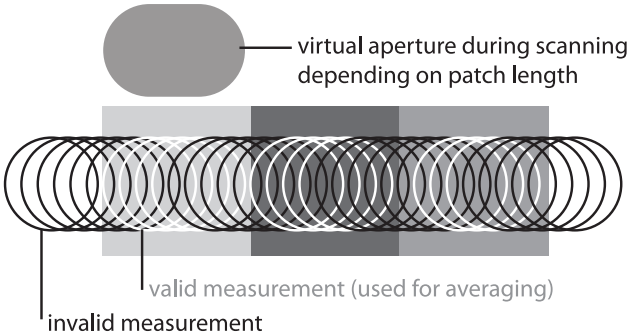
2. Place the **i1**Pro 3 measurement device on the calibration plate. The device must seat firmly on the calibration plate.

3. Start the calibration mode in the software, and press the measurement button on the device or in the software. Status indicator light switches off during calibration. Once the device is successfully calibrated the status indicator light pulsates white. If the calibration fails the status indicator light pulsates red and then returns to solid white.

4. When the calibration is finished you should close the protective slider for the white reference ceramic tile.

A clean white reference ceramic tile is essential for providing accuracy of your measurements. The protection cover should always be closed when the white reference ceramic tile is not in use. If necessary you can clean the white reference ceramic tile with isopropyl alcohol and a soft clean cloth.

Virtual aperture technology



During a scan measurement the **i1**Pro 3 device is performing 400 measurements per second. The automatic patch detection of the device identifies useable measurements made on a patch and unusable measurements made between two patches. Valid measurements on a patch are averaged and the device reports the averaged result to the software. Thanks to this technology the virtual aperture of the **i1**Pro 3 device adapts to the length of a patch. For best measurement results the length of the patches on your test chart should be selected based on the resolution of your printer. In some cases, increasing the width of the patches will yield more accurate results.

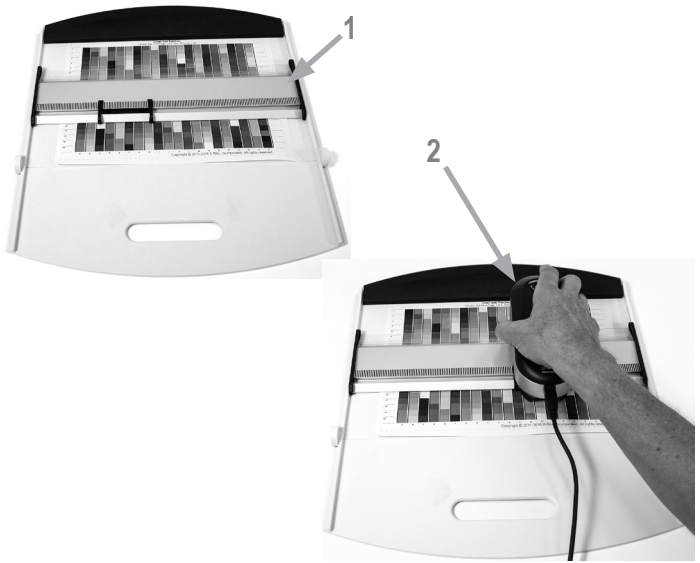
Measurement conditions

The **i1**Pro 3 measurement device supports multiple measurement conditions. In a single pass scan measurement, the patches are illuminated with the LEDs in the **i1**Pro 3 device.

Single Pass Measurement is required for measurement condition

- ISO 13655 M0 | Tungsten filament lamp with UV included (NoFilter)
- ISO 13655 M1 | D50
- ISO 13655 M2 | Illumination with UV excluded (UVcut)
- OBC | X-Rite Optical Brightener Compensation

The status indicator on the **i1**Pro 3 device guides you through the measurement process.



To prepare your **i1**Pro 3 device for a scan measurement you need to mount the i1Pro 3 device on the ruler. Make sure your device is calibrated and the status indicator is pulsating white before you mount it.

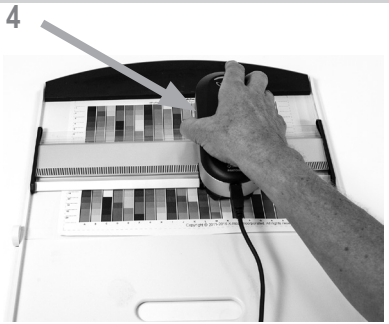
1. Place the ruler on the backer board.

2. Position the **i1**Pro 3 device in the carriage on the ruler. Make sure that the positioning pins on the carriage slide into the reference gaps on the bottom of the **i1**Pro 3 device. Double-check that the **i1**Pro 3 device seats firmly in the carriage.

3. During scanning measurement make sure that the device's limiting aperture glides smoothly on the guide rail of the ruler.

4. Align the backer board for ease of use during scanning. Only apply light pressure to the device when scanning.

The distance between the **i1**Pro 3 device and the surface of the printing substrate is critical for the accuracy of your measurements. If the limiting aperture of the device or the edge of the ruler‘s guide rail is worn out you should replace them. Spare parts can be ordered through X-Rite‘s Service Centers.



1. Make sure that your device is calibrated and the status indicator is pulsating white.

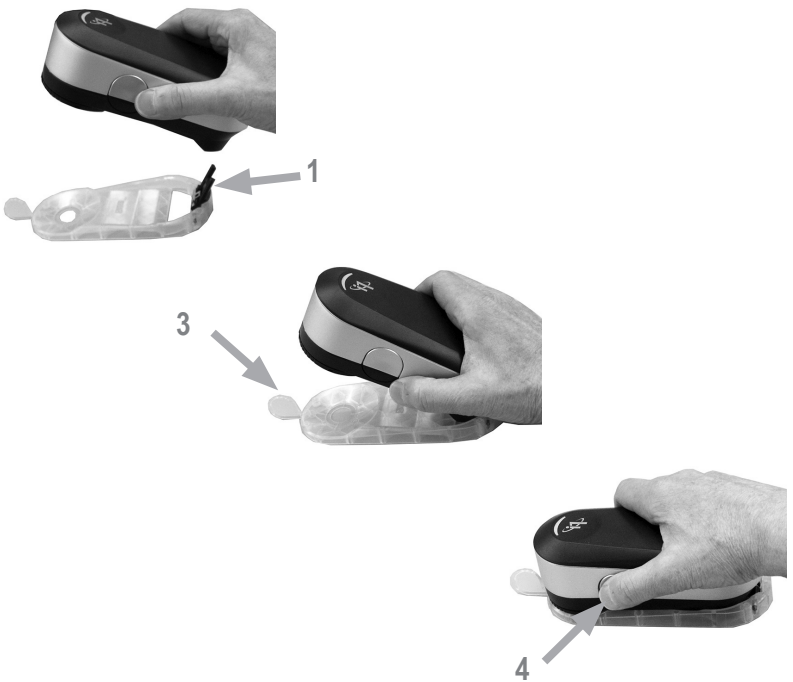
2. Position the ruler with the device on the substrate in front of row #1 of your test chart. It does not matter if you scan the row from left to right or right to left.

3. Set your software to single scanning mode.

4. Press the measurement button on the device and wait for a short green pulse before you start moving the device to the opposite side of the ruler. Hold the measurement button pressed until you have reached the far end of your test chart. The short delay before the measurement process is required to warm up the LEDs. The status indicator on the device provides feedback if the measurement was successful:

2x green flash	the row was measured successfully.
2x red flash	the row was not measured successfully because not all patches could be recognized. Measure the row again, but reduce your measurement speed and make sure that the device starts and ends the measurement before and after the patches of the test chart.
4x red flash	the row was not measured successfully because you started reading the patches too early without giving the LEDs enough time to warm up. Measure the row again but allow the lamp time to heat up before you start moving the **i1**Pro 3 device.
1x green; 2x red flash	the row was measured successfully but the software expected the measurement of a different row. Check if the row you measured is the row the software is expecting.

5. Position the ruler with the device in front of the next row of your test chart and measure the next row.



To prepare your **i1**Pro 3 device for spot measurement you need to mount the **i1**Pro 3 device on the positioning target. Make sure your device is calibrated and the status indicator is pulsating white before you mount the device. Refer to the user guide of your measurement software for further details on the spot measurement process.

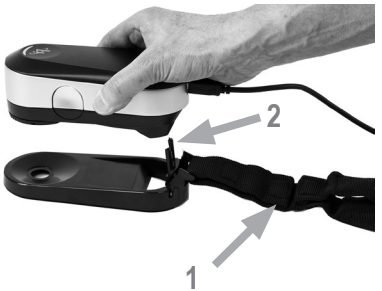
1. Mount the **i1**Pro 3 measurement device on the positioning target by inserting the mounting connector on the positioning target in the mounting interface at the rear of the **i1**Pro 3 device.

2. Configure your software to take spot measurements.

3. Position the device on the patch you would like to measure and press the device down to the positioning target.

4. Press the measurement button on the device. Status indicator light switches off during a measurement and pulsates green once the measurement has been successfully finished.

5. To remove the **i1**Pro 3 device from the positioning target, gently pull the mounting connector with the positioning target out of the mounting interface at the rear of the **i1**Pro 3 device.





To prepare your **i1**Pro 3 device for a display measurement you need to mount the **i1**Pro 3 device on the display holder. Make sure your device is calibrated and the status indicator is pulsating white before you mount the device.

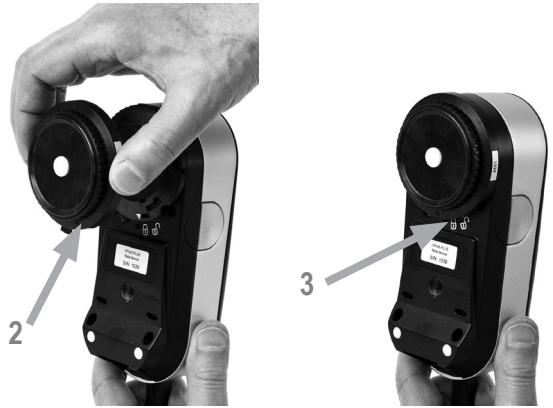
1. You can adjust the length of the counter weight of the display holder for the size of your screen. The counter weight is equipped with hook-and-loop fasteners on both ends which allow you to shorten and lengthen the display holder to the correct length.

2. Mount the **i1**Pro 3 measurement device on the display holder by inserting the mounting connector on the display holder in the mounting interface at the rear of the **i1**Pro 3 device. Make sure that the nose of the **i1**Pro 3 device seats firmly in the display holder.

3. Fix the limiting aperture of the **i1**Pro 3 measurement device in the middle of your screen.

4. Set the software for display measurement and start the measurement process in the application. Status indicator lights switch off during measurement.

5. To remove the **i1**Pro 3 device from the display holder, gently pull the mounting connector with the display holder out of the mounting interface at the rear of the **i1**Pro 3 device.





Before you start measuring, please attach the ambient light measuring head on the limiting aperture of the **i1**Pro 3 device. If you own multiple devices make sure that the serial number on the ambient light measuring head matches the serial number of your **i1**Pro 3 device. The ambient light measuring head can also be used in conjunction with the tripod holder.

1. Check that the instrument is calibrated to measure ambient light. (i.e. pulsating white when ambient measurement mode is selected.) Calibrating ambient has to be performed on white calibration base. The ambient light measuring head is stored in the ambient head storage case.

2. Attach the ambient light measuring head on the limiting aperture of the **i1**Pro 3 device. The arrow on the ambient light measuring head must point to the "unlocked" marking on the **i1**Pro 3 device.

3. Rotate the ambient light measuring head clockwise until it stops. The arrow will stop slightly beyond the "locked" mark on the **i1**Pro 3 device.

4. Configure your application software to ambient light measurement mode and press the measurement button on the device to take measurements.



To prepare your **i1**Pro 3 device for projector measurements you can use the device on the tripod holder, or mount the tripod holder on a tripod with one of the two standard screws you supply (1). Next you need to mount the **i1**Pro 3 device on the tripod holder. Make sure that your device is calibrated and the status indicator is pulsating white before you mount the device.

1. If you are mounting the tripod holder on a tripod, follow the instructions for mounting a tripod head in the user manual of your tripod.

2. Mount the **i1**Pro 3 measurement device on the tripod holder by inserting the mounting connector on the tripod holder in the mounting interface at the rear of the **i1**Pro 3 device.

3. To remove the **i1**Pro 3 device from the tripod holder, gently pull the mounting connector with the tripod holder out of the mounting interface at the rear of the **i1**Pro 3 device.





Setup the **i1**Pro 3 device for projector measurements.

1. Place the **i1**Pro 3 device on the tripod holder next to the projector or at a distance in front of your screen.

2. Open the locking screw on the tripod holder and adjust the angle of the **i1**Pro 3 device. The limiting aperture of the **i1**Pro 3 should point towards the center of your screen. Close the locking screw once the device is in the right position.

3. Adjust the lighting of your room to the same conditions as you will use for the projector and presentation.

4. Configure your software for projector measurement and follow the instructions on the screen.



To maintain the measurement performance of your **i1**Pro 3 over its life time, it is important to observe some rules and to periodically clean certain parts that are critical for measurement performance. A clean white tile and protective glass are absolutely critical for measurement accuracy.

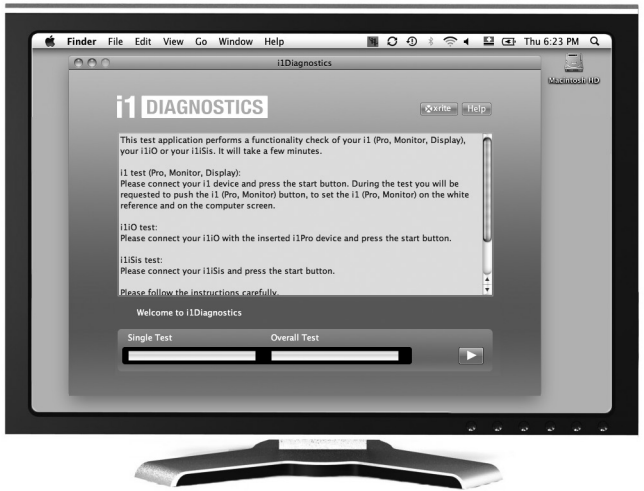
- The i1Pro 3 device is sensitive to mechanical shocks. To avoid damage during transport the **i1**Pro 3 must be always shipped in its original packaging.

- Do not store or operate the **i1**Pro 3 device in dirty, greasy or dusty environments. Do not use the **i1**Pro 3 in environments with temperatures higher than 35°C (95ºF) or less than 10°C (50ºF). Do not store the **i1**Pro 3 in environments with temperatures higher than 50°C (122ºF) or less than -10°C (14ºF).The plastic housing of the device may be cleaned using a cloth dampened in water with a soap solution if necessary.

- The protection glass in the limiting aperture of the **i1**Pro 3 device may become dusty after some time. You can remove the protective glass to clean it and the inside of the limiting aperture:

1. Turn the limiting aperture counter-clockwise until the arrow points to the “unlocked” position on the **i1**Pro 3 device.
2. Remove the limiting aperture from the device. Avoid touching the optics.
3. Remove the protection glass from the aperture by rotating counter-clockwise until the recessed arrow inside the protective glass points to the "unlocked" icon.
4. Clean both sides of the protection glass and the inside of the limiting aperture with isopropyl alcohol on a soft clean cloth. This same cleaning method applies to the optional polarization filter.
5. Re-assemble the protection glass in the limiting aperture by rotating it clockwise until it stops (arrow pointing to the "locked" icon).
6. Mount the limiting aperture back on the device with the arrow pointing at the “unlocked” position on the **i1**Pro 3 device.
7. To lock the limiting aperture turn it clockwise until the arrow points to the “locked” position on the **i1**Pro 3 device.

- Keep the white reference ceramic tile clean at all times. You can clean the white reference ceramic tile with isopropyl alcohol on a soft clean cloth if required.
- Do not touch the diffuser disc of the ambient light measuring head. If necessary, clean it with compressed air or isopropyl alcohol.
- The guide ruler including the "zebra stripe" can be cleaned with isopropyl alcohol when required.



Diagnostic Software

Use the **i1**Diagnostics software if you believe your **i1**Pro 3 is not functioning properly. If the status indicator turns solid red after calibration the **i1**Pro 3's internal sensor diagnostic has discovered a problem.

In this case please perform the following steps:

1. Download the i1Diagnostics software at www.xrite.com/i1diagnostics and install the software on your computer.

2. Launch **i1**Diagnostics Software.

3. Perform a functionality check by following the instructions given from the **i1**Diagnostics Software.

4. If **i1**Diagnostics software reports an error store the test report and contact your nearest X-Rite Support Center. As an alternative you can also take a look at our online support resources **http://xrite.com/support/i1Profiler** to troubleshoot your issue.

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.

THESE WARRANTIES ARE GIVEN SOLELY TO BUYER AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR APPLICATION, AND NON-INFRINGEMENT. NO EMPLOYEE OR AGENT OF X-RITE, OTHER THAN AN OFFICER OF X-RITE, IS AUTHORIZED TO MAKE ANY WARRANTY IN ADDITION TO THE FOREGOING.

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.

RECERTIFICATION

X-Rite recommends an annual recertification of i1Pro 3 spectrophotometer. Contact your X-Rite dealer or the nearest X-Rite Service Center to find out more about recertification.

SERVICE CENTERS

Visit our i1Pro 3 website at **http://xrite.com** to locate the nearest X-Rite Service Center or contact your X-Rite dealer for more information.

SUPPORT OPTIONS

We are confident you will be pleased with your new X-Rite product. At the same time, we understand your need for on-demand support and training in today's complex and rapidly evolving workflows. Because of this we are making the following on-line and free support tools available to registered users.

These support tools are found at: **www.xrite.com/support/i1Profiler**

- Free and unlimited access to the i1Profiler interactive training video; available within the i1Profiler software too.
- Free and unlimited access to the X-Rite on-line Help Desk, which includes detailed and helpful support articles related to frequently asked questions.
- Free access to X-Rite's e-mail support and call center during the warranty period for issues resulting from general product use provided:
  - You are the original registered user of the product
  - You are using the current version of i1Profiler software
  - You are using currently supported hardware and supported platform (operating system)

Because we recognize the need for advanced support related to using i1Profiler and X-Rite products in various workflows, as well as support in post warranty time periods, we are happy to offer fee based support programs and training options delivered by X-Rite's highly experienced Color Experts.
For complete information, please visit **www.xrite.com/i1Profiler/Supportoptions**

Specification

Spectral engine:		i1Pro 3: i1® technology (holographic diffraction grating with 128 pixel diode array) with built-in wavelengths check
	Spectral range:	380 - 730 nm
	Physical sampling interval:	3.5 nm
	Optical resolution:	10 nm
	Spectral reporting:	380 nm ... 730 nm in 10 nm steps
	Measurement frequency in scanning mode:	400 measurements per second
Optics:	Measurement geometry:	45°/0° ring illumination optics, ISO 13655:2017
	Measurement aperture:	5 mm (0.20") diameter (effective measurement aperture during scanning is depending on the patch size and measurement speed)
	Illumination spot size:	3 mm (0.12")
	Light source:	i1Pro 3 LED Illumination (including UV)
Reflectance measurement:		spectral reflectance [dimensionless]
	Measurement conditions:	M0: UV included - ISO 13655:2017 M1: D50 - ISO 13655:2017 M2: ISO 13655:2017
	OBC:	Optical Brightener Compensation (OBC) with i1Profiler software
	Calibration:	Manual on external ceramic white reference
	Measurement background:	white, ISO 13655:2017; for measurements on backup board
	Minimal patch size in spot mode (Width x Height):	6 x 6 mm (0.23" x 0.23)
	Minimal patch size in scanning mode (Width x Height):	16 x 16 mm (0.63" x 0.63") with i1iO 16 x 16 mm (0.63" x 0.63") with sensor ruler 20 x 16 mm (0.79" x 0.63") without sensor ruler
	Maximum scan length:	260 mm (10.24")
	Inter-Instrument-Agreement:	0.4 ΔE00* average, 1.0 ΔE00* max. (deviation from X-Rite manufacturing standard at a temperature of 23°C (73.4°F) on 12 BCRA tiles (D50, 2°))
	Short-term repeatability:	0.1 ΔE94* on white (D50,2°, mean of 10 measurements every 3 s on white)
Emission measurement:		spectral radiance [mW/nm/m^2/sr], luminance [cd/m^2]
	Measurement range:	0.2 - 5000 cd/m^2 on a typical LCD-Monitor
	Short-term repeatability:	x,y ±0.002 typ. (5000 K, 80 cd/m^2)
Ambient light measurement:	i1Pro 3:	spectral irradiance [mW/nm/m^2], illuminance [lux] cosine corrected diffusor light measurement head
Interface:		USB 1.1

Specification

Power Supply:		Device powered by USB. No additional charger or battery required. USB 1.1 high power device.
Operating Conditions:	Temperature:	10°C (50°F) – 35°C (95°F)
	Humidity:	0% – 80% non-condensing
Physical Dimensions:	i1Pro 3 Device:	Length 162 mm, width 69 mm, height 64 mm (6.37” x 2.71” x 2.51”)
	i1Pro 3 Ruler:	Length 337 mm , width 102 mm (13.3” x 4.0”)
	i1Pro 3 Backer Board:	Length 355 mm x 265 mm (14.0” x 10.4”) folded 355 mm x 400 mm (14.0” x 15.7”) unfolded
	Weight i1Pro 3 Device:	285 g (10.05 oz)