

# MatchRite® iVue™

Color Spectrophotometer



**User Manual**



P/N VS205-500 Rev. G





## CE Declaration

**CE** Hereby, X-Rite, Incorporated, declares that this VS205 (iVue) Series is in compliance with the essential requirements and other relevant provisions of Directives 2014/35/EU (LVD), 2014/30/EU (EMC), and RoHS 2011/65/EU.

## Federal Communications Commission Notice

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## Industry Canada Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## 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.



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

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Patents: [www.xrite.com/ip](http://www.xrite.com/ip)

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## Warranty Information

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.

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## 1. Introduction and Setup

The MatchRite® iVue™ instrument is used to measure the color of the customer's sample. This color information is then sent from the instrument to the host computer, where the formulation software computes the paint formula to match the customer's sample. All of these functions are accomplished in a matter of seconds. Each function is displayed on the computer screen where the customer can view the entire process.

The instrument reads color samples from a variety of materials including paper, plastic, textiles, and various painted objects. The instrument can be set to measure a 6 mm or 12 mm spot on a sample. The MatchRite® iVue™ requires an AC adapter and USB communication to the host computer. Connections are located on the bottom of the instrument.



### How to Use this Manual

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

## Packaging Contents

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

- iVue™ instrument with integrated calibration reference
- USB interface cable
- Power supply (X-Rite P/N SE30-209) and line cord
- Sample holder
- Sample clip
- Four (4) sample backing sheets
- Cleaning Kit
- Documentation and registration material

## Connecting the Power Supply

1. Verify the voltage indicated on the power supply complies with the AC line voltage in your area.
2. Insert the small plug from the power supply into the input connector at the bottom of the instrument.

AC adapter input



### AC Adapter Ratings

Input: 100-240 V 50/60 Hz

Output: 24 VDC @ 1.25 A

3. Plug the detachable line cord into the power supply and plug the line cord into the wall receptacle.



**Operational hazard exists if a power supply other than X-Rite SE30-209 is used.**

## Connecting the USB Cable

**IMPORTANT:** You must install the software before connecting the instrument to your computer.

1. Install the software application if not already installed. Refer to the software documentation for additional information.
2. Plug the square end of the USB cable into the connector at the bottom of the instrument.
3. Plug the USB cable into an available port on your computer.



## Cable Clips

The cable clips located on the bottom of the instrument are used to secure the cables for the power supply and USB as needed. The clips help prevent the cables from inadvertently disconnecting or interfering with sample measurements.



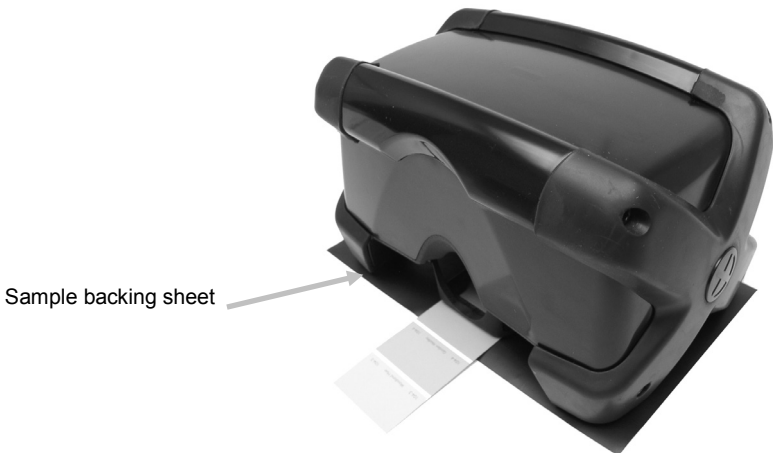


## 2. Measuring Samples

The instrument measures samples under the sample rail at the bottom. It can take color measurements from almost any clean, dry surface that is reasonably flat. The sample should rest flat and steady below the sample rail. The instrument illuminates a ring through the sample rail to allow for easy sample positioning.

### Important Sample Information

- Depending on instrument setting, the sample area to measure must be at least 6 mm or 12 mm in diameter.
- The sample color should be uniform and consistent across the measurement area, with no fading or blemishes.
- The sample should be opaque (solid), not clear or translucent.
- For thin samples, ensure that the sample is placed on one of the supplied sample backing sheets before measuring. The sheet provides the proper background color to ensure measurement accuracy. To install, simply peel off the paper backing and adhere to a flat countertop. Then position the instrument directly over the sheet. The sheet should be replaced once a week or when it becomes dirty, paint stained or damaged.



- To prevent curling of thin paper samples, install the sample holder before measuring. Refer to the following page for the installation procedure.

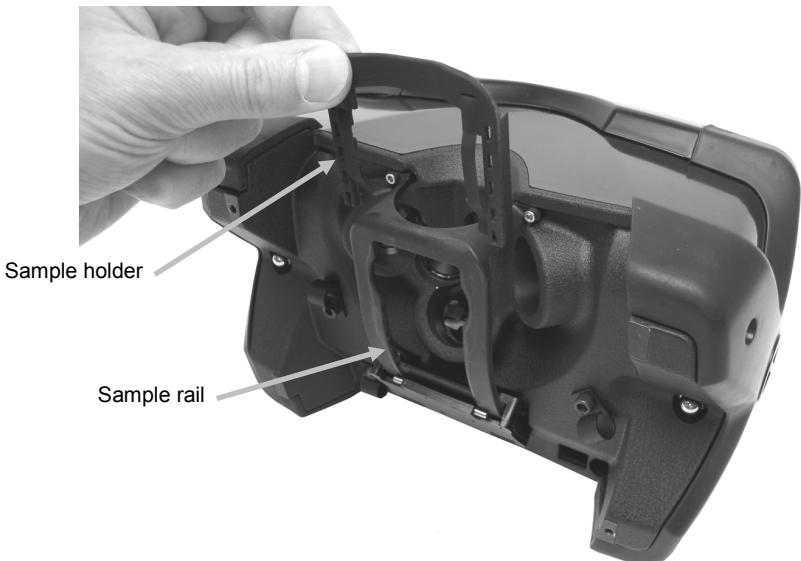
## MatchRite® iVue™

- To measure samples with a physical size that is slightly smaller than the opening at the bottom of the sample rail, you will need to install the sample clip. The clip secures the small sample at the precise location below the sample rail. Refer to the following pages for installation and use of the sample clip.
- For best color measurement results, position the sample surface so that it is parallel (or flat) with respect to the instrument's four feet.
- The measurement of wet paint samples is not recommended. Wet paint (especially latex) will dry to a significantly different color, resulting in an unsatisfactory color.

### Installing the Sample Holder

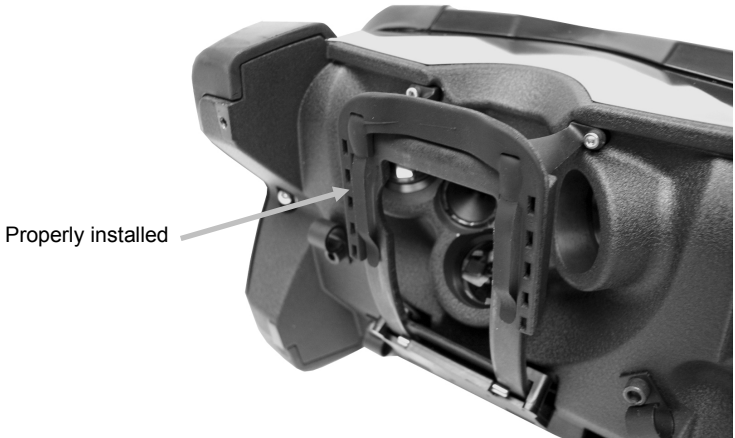
Your instrument includes an easy to install sample holder. The holder is designed to hold thin paper samples flat that may tend to curl. The holder presses the sample flat to the counter allowing for a more precise measurement.

1. Carefully tilt the instrument so that it is resting on its back.
2. Position the sample holder over the sample rail with the metal spring clips facing outward.



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3. Slide the sample holder down on the sample rail until it is fully seated.

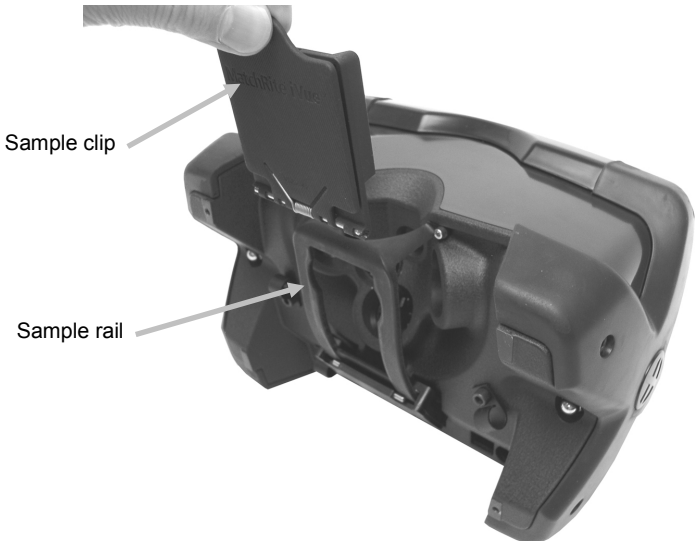


4. Rotate the instrument back to its normal position and refer to the Measurement Procedure on the following pages.

### Installing the Sample Clip

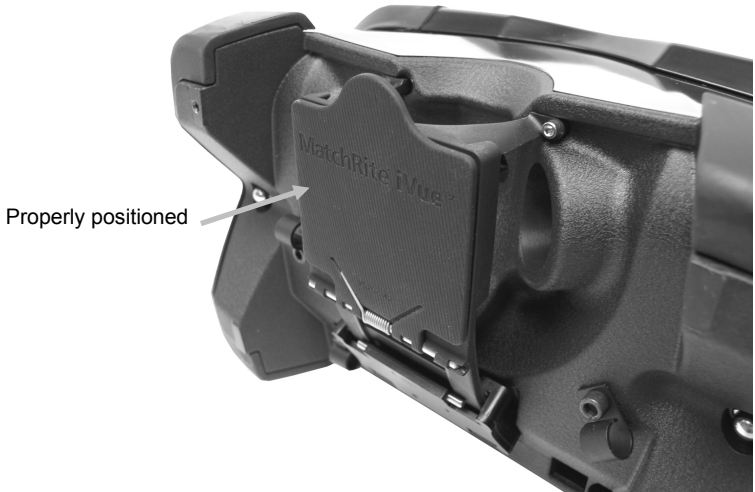
The clip secures small samples (similar to a Counter Top 700/750 instrument) at the precise location below the sample rail.

1. Carefully tilt the instrument so that it is resting on its back.
2. Position the sample clip over the sample rail with the hinged clamp facing outward.



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3. Slide the sample clip holder down on the sample rail until it is fully seated.

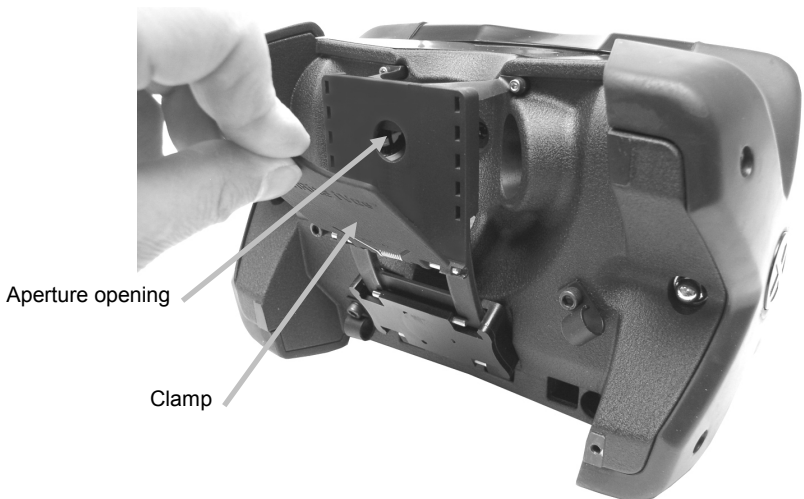


### Using the Sample Clip

For measurements that require the sample clip, the instrument will remain positioned on its back.

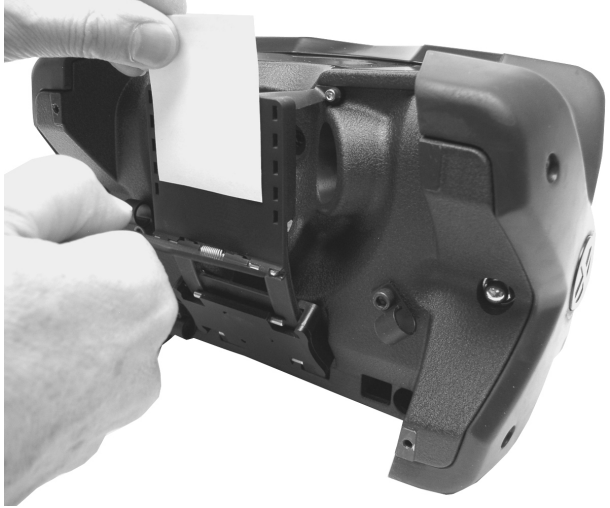
**NOTE:** The aperture setting for the instrument must be set to 6 mm when using the sample clip.

1. Pull the hinged clamp away from the sample rail to expose the aperture opening in the sample clip.



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2. Position the sample (measurement side facing the instrument) over the aperture opening. Carefully return the clamp back to its closed position. Do not let the clamp snap back.



3. Refer to the Measurement Procedure on the following pages.

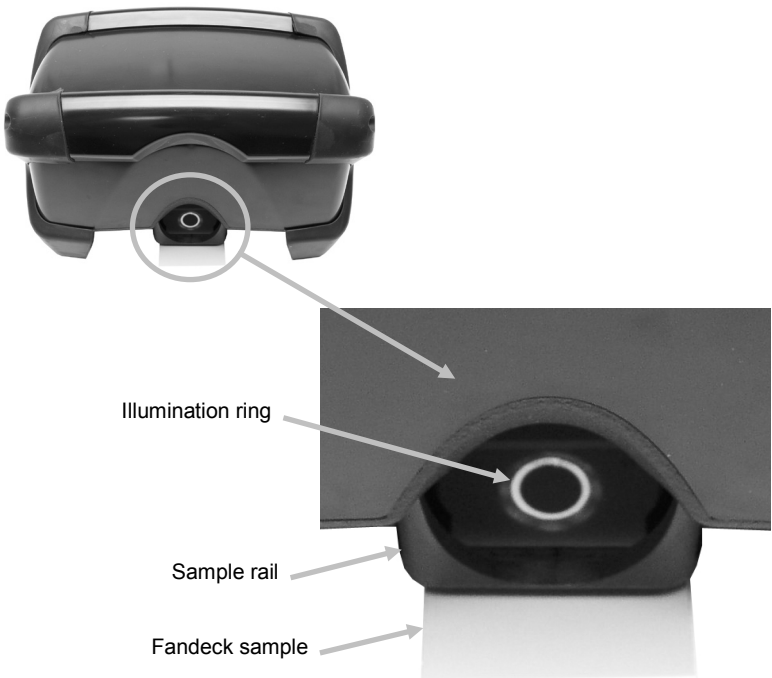
## **Illumination Ring Descriptions**

- **Slow flashing illumination ring (1 per second)** – Indicate the instrument is up and running and ready to take a measurement.
- **Solid green illumination ring** – Indicate that the instrument is not ready to measure. This could typically occur when the instrument is first powered up and is waiting to stabilize. You must wait until the illumination ring starts flashing before you can take a measurement.
- **Rapid flashing green illumination ring (8 per second)** - Indicates a system error/failure. If this occurs, the instrument is not functioning and cannot be used until the problem is resolved.

## Measurement Procedure

**NOTE:** If required, install the sample holder, sample clip, or sample backing sheet as previously explained.

1. From the software application, set the aperture size (6 mm or 12 mm) that is to be used for sample measuring. In ColorDesigner, the default setting is 12 mm. If 6 mm is selected, you need to reselect it after the measurement screen is exited.
2. If the sample is flat (similar to a fandeck card), slide it under the sample rail or previously installed sample holder until the area to measure is positioned within the illumination ring.



If the sample is large or oddly shaped, lift the instrument and position it on the sample, or rest the instrument on its back and position the sample below the sample rail. Use the illumination ring to guide the spot to the desired location.

3. Initiate the measurement from the software application.

### 3. Cleaning the Instrument

Your instrument requires very little maintenance to achieve years of reliable operation. However, to protect your investment and maintain measurement accuracy, a few simple cleaning procedures should be performed once a week.

#### General Cleaning

The exterior of the instrument may be wiped clean with a cloth dampened in water or mild cleaner.



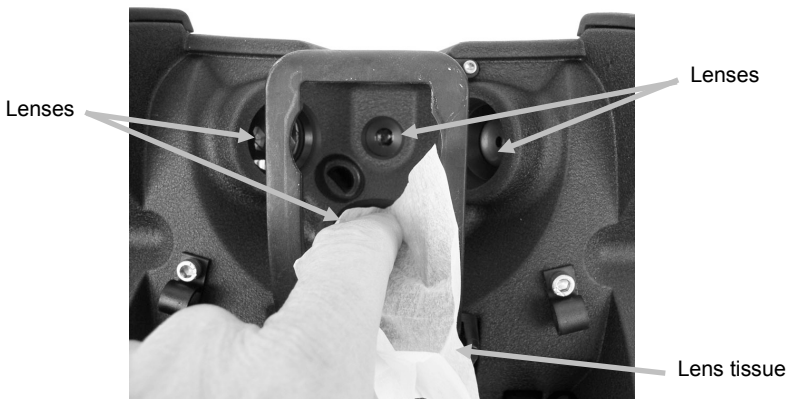
**NOTE:** DO NOT use any solvents to clean the instrument, this will cause damage to the cover.

#### Cleaning the Instrument Lenses (weekly)



**NOTE:** Use of an abrasive material or unnecessary rubbing may scratch the lens surface and eventually cause permanent damage.

1. Turn the instrument over so that it is resting on its top.
2. If you are using the ColorDesigner application, click the Custom Match or Color Match button. This will illuminate the LEDs in the instrument to 50% strength, allowing you to see any finger prints or dust on the lenses.
3. Using one of the supplied lens cleaning tissues, clean all four lenses by wiping in a circular motion.

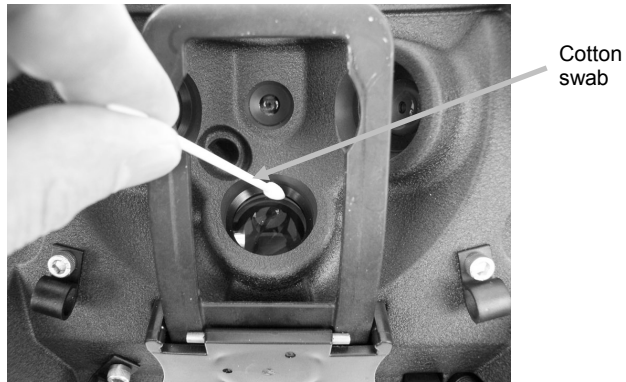


After performing step 3, a certain amount of debris will accumulate around the outer edge of the lens that must be removed. Continue with step 4.



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- Using one of the supplied cone shaped cotton swabs, clean the outer edge of each lens ring to remove remaining accumulated debris.



- Turn the instrument back over and clean the calibration reference. Refer to Cleaning the White Calibration Reference that follows.

### **Cleaning the White Calibration Reference (weekly)**

Caution should be used when cleaning the cal plaque. Do not touch the white reference.

- Use clean, low-pressure air to remove any dust or debris from the white reference. If a more thorough cleaning is required, clean with one of the supplied wipes.



**Caution:** If the calibration reference is cleaned with the supplied wipes, wait at least 20-30 minutes before performing a calibration.

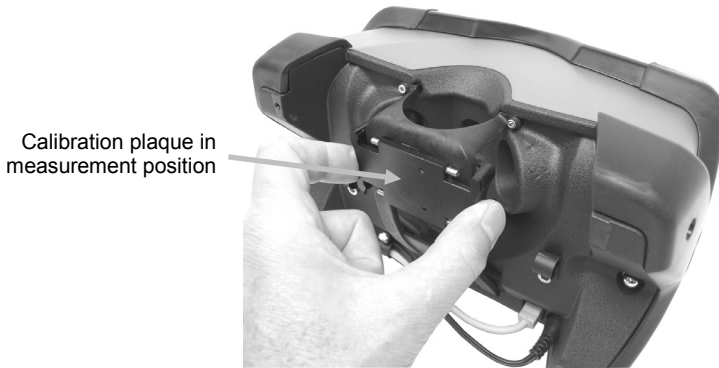
- Perform a white calibration. Refer Section 4 for procedure.

## 4. Calibrating

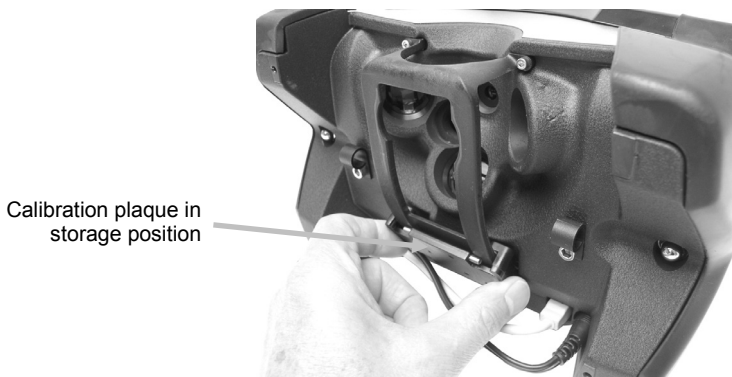
Normally, the software application prompts you for an instrument calibration when required. This typically occurs once a week. The calibration reference is mounted on the back side of the sample rail. Refer below for calibration procedure.

When a calibration is requested from the application:

1. Tilt the instrument towards the back and slide the calibration plaque to the front position on the sample rail until it stops.



2. Lower the instrument and select the appropriate option in the software application to initiate the calibration measurement.
3. After measurement is completed, tilt the instrument back again and slide the calibration reference back into its storage location.



4. If required, lower the instrument and initiate a second measurement. This measurement is to ensure that the calibration plaque has been slid back into its storage location.

## 5. Appendices

### Service Information

X-Rite provides repair service to their customers. Because of the complexity of the circuitry, all warranty and non warranty repairs should be referred to an authorized service center. For non warranty repairs, the customer shall pay shipping and repair cost to the authorized service center, and the instrument shall be submitted in the original carton, as a complete unaltered unit, along with all the supplied accessories.

X-Rite, Incorporated has offices around the world. You can contact us using one of the following methods:

- To identify the X-Rite service center nearest you, please visit our web site ([www.xrite.com](http://www.xrite.com)) and click the **Contact Us** link.
- For online help, visit our web site ([www.xrite.com](http://www.xrite.com)) and click the **Support** link. Here you can search for software or firmware updates, white papers, or frequently asked questions which can quickly resolve common user problems.
- Send an e-mail to Technical Support ([mrsupport@xrite.com](mailto:mrsupport@xrite.com)) detailing your problem and listing your contact information. Use "iVue" as the subject in your email.
- For sales questions or to order cables and accessories, visit our web site ([www.xrite.com](http://www.xrite.com)) or contact your nearest X-Rite dealer or service center.
- Problems and questions can also be faxed to your local X-Rite office listed on our web site. You may also contact X-Rite using one of the numbers listed on the back page of this manual.

## **Troubleshooting Tips**

Prior to contacting X-Rite support department for instrument 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.

### **Instrument not responding:**

- Ensure power supply is connected to the instrument and the AC wall receptacle.

### **Measurement error or results appear inaccurate:**

- Problem with the sample or sample positioning. Refer to Important Sample Information in Section 2.

### **Repeated calibration failures:**

- Clean the calibration reference. Refer to Cleaning the Calibration Reference.

### **Repeated sample measurement failures:**

- Ensure the sample is being positioned correctly. Refer to Important Sample Information in Section 2.
- Calibrate the instrument.
- Close and reset the software application.

### **Instrument and software not communicating:**

- Check the USB cable connection.
- Close and restart the software application. If this does not solve the problem, reboot the computer.
- Remove power from the instrument, reapply power and see if the condition is corrected.

## Technical Specifications

### General

Instrument Type:

Spectrophotometer

Geometry:

45°/0°

Monochromator:

Dual beam, 31 channel

Light Source:

Full System LED

Measurement Size:

6 mm or 12 mm

Measuring Distance:

1.5 in. (38.10 mm) nominal to measuring surface

Insensitivity to Depth of Measuring Field:

±0.10 in. (2.54 mm)

Operating Temp:

0° - 40°C (32° - 104°F)

Operational Humidity:

0 - 85% relative, non-condensing

Storage Temp:

-20° - 70°C (-4° - 158°F)

Operating Voltage:

24 VDC ±2 VDC @ 1.2 A Max.

Communication I/O:

USB 2.0 compatible

Overall Size:

L: 9.75 in. (24.80 cm), W: 6.0 in. (15.24 cm), H: 5.57 in. (14.60 cm)

Weight:

4.931 lbs. (2.24 kg)

### Performance

Warm up Time:

2 - 3 min. typical at 23°C (73.4°F)

20 minutes for calibration

Measurement Time:

750 ms

Cycle Time:

1 sec. time interval between measurements

Ambient Light Rejection:

2000 Lux

Repeatability:

0.04 dEab

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Inter-Instrument Agreement:

0.30 dEab

Calibration Interval:

Once a week or 1000 measurements

Measurement Range:

0 to 150% Reflectance

Spectral Range:

400 nm to 700 nm

Spectral Interval:

10 nm measured, 10 nm output

Product Life:

5 years minimum

LED Life:

> 20,000,000 measurements

### **Safety Compliance**

UL 61010-1, CSA 22.2 No. 1010.1 and IEC (EN) 61010-1

Usage:

Indoor Only

Altitude:

2000 m

Pollution Degree:

2

Overvoltage:

Category II

Design and specifications subject to change without notice.



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