

Hubble

QUICK START GUIDE



Quick Start Guide



This is a CLASS IIIa, visible laser light Wavelength 630 – 680nm, Max output 4mW. Laser Radiation – Do Not Stare into Beam or View Directly with Optical Instruments.

Regulatory Statements:

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.

Quick Start Guide

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 an explosive environment.

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.

Copyright © 2006 by X-Rite, Incorporated. "All Rights Reserved"

X-Rite® is a registered trademark of X-Rite, Incorporated, All other logos, brand names and trademarks mentioned are the property of their respective holders.

Quick Start Guide

Limited Warranty:

X-Rite, Incorporated (“X-Rite”) warrants each instrument manufactured to be free of defects in material and workmanship for a period of 12 months. This warranty shall be fulfilled by the repair or replacement, at the option of X-Rite, of any part or parts, free of charge including labor, F.O.B. its factory or authorized service center.

This warranty shall be voided by any repair, alteration, or modification, by persons other than employees of X-Rite, or those expressly authorized by X-Rite to perform repairs, and by any abuse, misuse, or neglect of the product, or by use not in accordance with X-Rite’s published instructions.

X-Rite reserves the right to make changes in design and /or improvements to its products without any obligation to include these changes in any products previously manufactured. Correction of defects by repair or replacement shall constitute fulfillment of all warranty obligations on the part of X-Rite.

Quick Start Guide

THIS WARRANTY IS EXPLICITLY IN LIEU OF ANY OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. THIS WARRANTY OBLIGATION IS LIMITED TO REPAIR OR REPLACEMENT OF THE UNIT RETURNED TO X-RITE OR AN AUTHORIZED SERVICE CENTER FOR THAT PURPOSE.

This agreement shall be interpreted in accordance with the laws of the State of Michigan and jurisdiction and venue shall lie with the courts of Michigan as selected by X-Rite, Incorporated.

Warranty Registration:

To receive technical support, obtain warranty service, and get the latest software updates and product news, you should register your Hubble at: www.xrite.com.

Quick Start Guide

Package Contents

- **Hubble** colorimeter
- 20' USB A to B cable
- Software CD
- Quick Start Guide

Hubble Overview

Hubble is a highly accurate non-contact colorimeter for use with LCD, FDTV, CRT and Plasma displays.

The rear panel contains two buttons and a USB "B" port. The two buttons allow you to:

- Illuminate the laser reticle to help aim **Hubble** (Red)
- Make a measurement when the **Hubble Display** program is running (Blue)

Quick Start Guide

In order to use Hubble you will need to:

1. Install the application software on the CD.
2. Mount the **Hubble** on a tripod.
3. Connect the **Hubble** to your PC using the supplied USB cable.
4. Run the **Hubble Display** software.
5. Select the proper calibration setting from the list box.
6. Click the **Measure Dark** button and follow the instructions.
7. Remove the lens cap.
8. Display a test color.
9. Aim **Hubble** at the display to be measured.
10. Make a measurement.

Quick Start Guide

Hubble Display Program Features

- Select measurement units (Yxy or XYZ)
- Select Luminance units (Cd/m² or Ft-Lamberts)
- Toggle between “continuous measure” and “single measure” modes
- Specify a file name and begin logging subsequent measurement data into a comma delimited text file
- Turn on an audible tone for each measurement
- Show a large numerical display of measured data in a separate window
- Change the integration time that is used to make measurements
- Adjust the white point on a display to a given color temperature

Software Installation

Please read these instructions before using your **Hubble**.

1. Insert the **Hubble** software disk in your Windows XP or Windows 2000PC.
2. Double-click the installers and follow the instructions on your screen.

Hubble Display and **Hubble Manager** will be installed on your computer and program icons will be added to your **Start Menu**.

Quick Start Guide

Hubble installation and operation

1. Locate the 1/4 -20 mounting hole on the bottom of **Hubble**.
2. Insert the tripod mounting screw (do not over tighten).
3. Connect the USB A/B cable to Hubble and a powered USB computer port. For best performance, allow **Hubble** to warm up for 30 minutes. Allowing **Hubble** to warm up will ensure more accurate measurements.
4. Run the **Hubble Display** application by clicking the **Hubble Display** icon in the Windows **Start Menu** (the software will locate the device.)
5. Put the lens cap on **Hubble** and click the **Measure Dark** button. Wait until the hourglass cursor disappears.
6. Remove the lens cap.
7. Select the appropriate calibration setting.
8. Select the desired measurement and luminance units.
9. Display the patch to be measured.
10. Press the red laser reticle button on **Hubble** and aim it at the patch to be measured. Be sure that the patch to be measured fully and uniformly fills the circle indicated by the reticle. Release the laser reticle button before making any measurements.
11. Click **Measure** button or press the blue button on the rear panel of the **Hubble**.

Quick Start Guide

Hubble measures with an eight degree field of view. The measurement area is a circle that increases in size as the distance from Hubble to the display being measured increases.

Tables 1a and 1b show the diameter of the measuring spot for different distances.

See the detailed **Hubble Display** instructions in the document **Hubble Display** software manual for more information about other program options and how to use them. The manual is located on the CD as a PDF file.

Quick Start Guide

Measurement Spot Size (Metric)	
Distance (meters)	Field Diameter (cm)
1.0	14
1.5	21
2.0	28
2.5	35
3.0	42
3.5	49
4.0	56
4.5	63
5.0	70
5.5	77
6.0	84
6.5	91
7.0	98
7.5	105

Table 1a

Measurement Spot Size (Imperial)	
Distance (feet)	Field Diameter (in)
3	5
4	7
5	8
6	10
7	12
8	13
9	15
10	17
11	18
12	20

Table 1b



Corporate Headquarters - USA

4300 44th Street
Grand Rapids, MI 49512
Phone 1 800 248 9748

Corporate Headquarters - Europe

Althardstrasse 70
8105 Regensburg
Switzerland
Phone (+41) 44 842 24 00
Fax (+41) 44 842 22 22

Corporate Headquarters - Asia

Room 808-810
Kornhill Metro Tower, 1 Kornhill Road
Quarry Bay, Hong Kong
Phone (+852) 2 568 6283
Fax (+852) 2 885 8610

