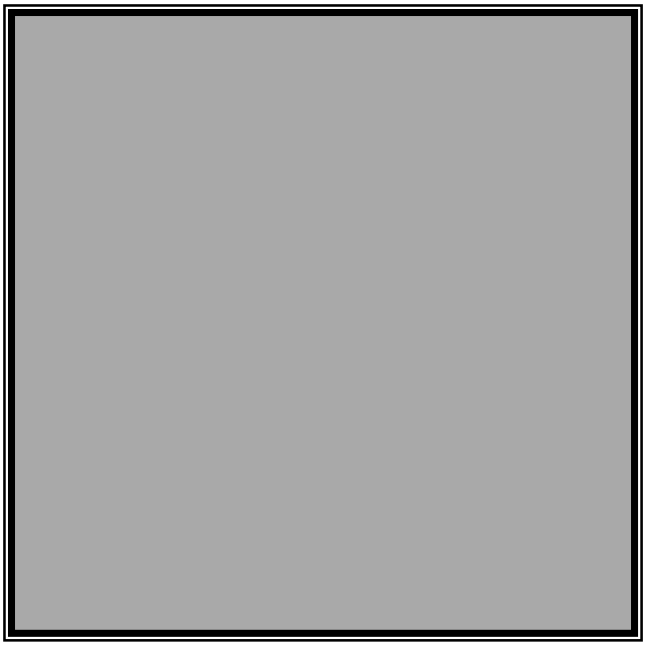
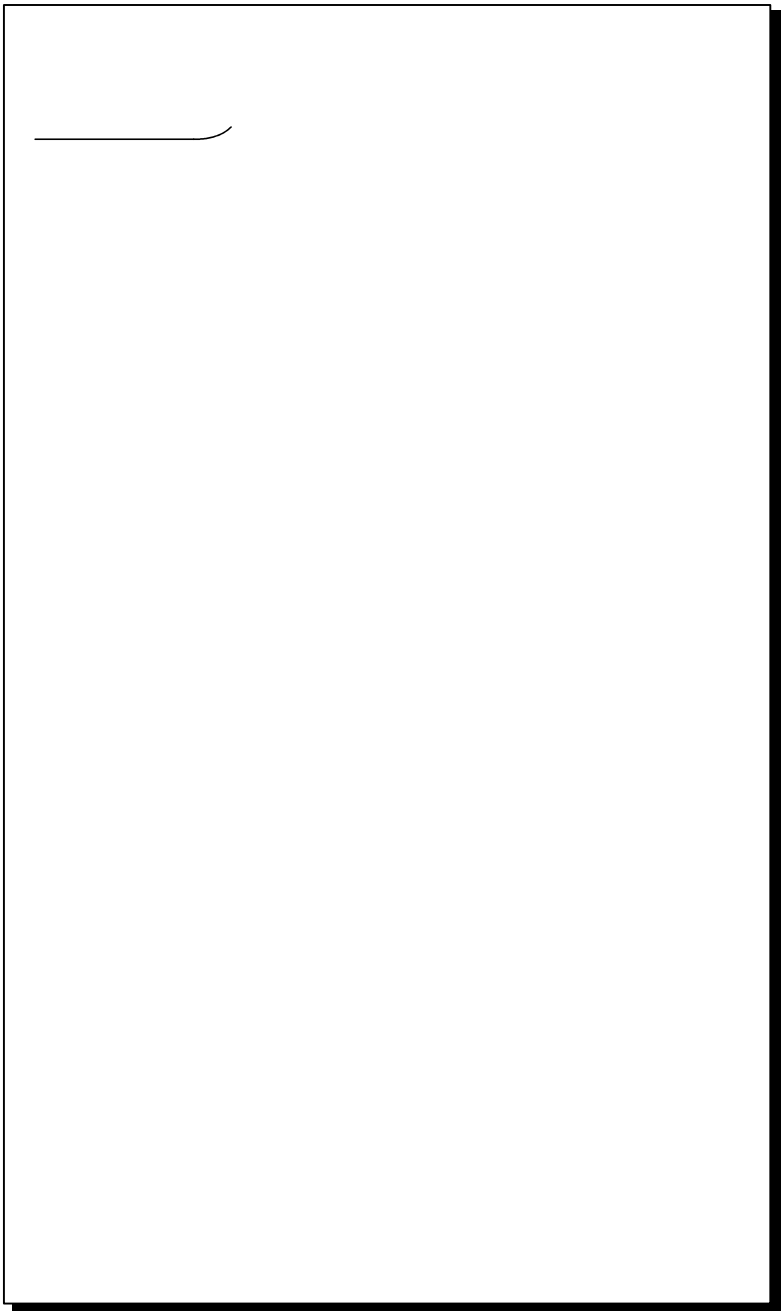
S P H S P P H



(Models: SP60, SP62, and SP64)



CE DECLARATION

Manufacturer's Name:	X-Rite, Incorporated
Manufacturer's Address:	3100 44th

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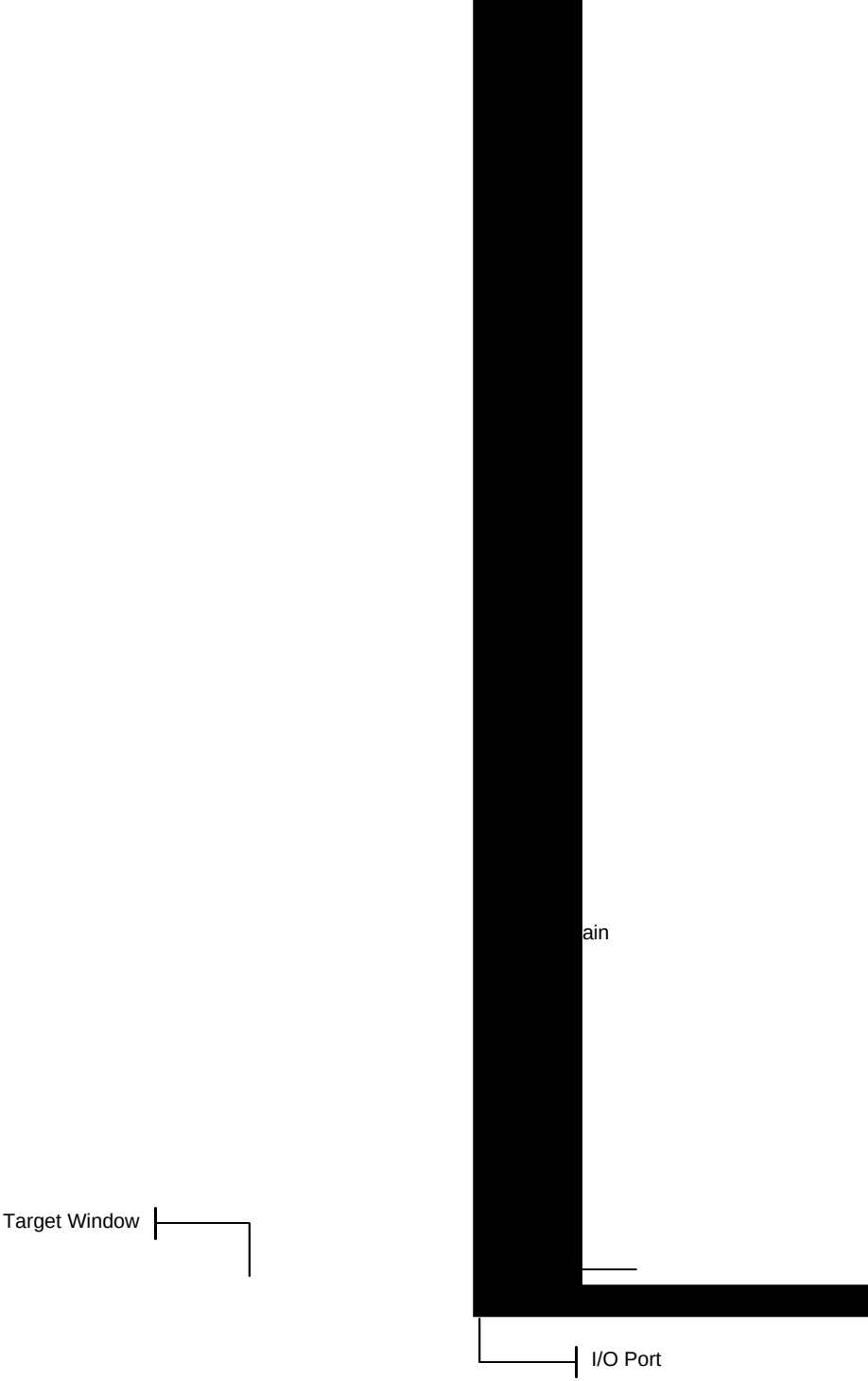
Proprietary Notice


ain
Target Window
I/O Port

Install the Battery Pack

The instrument is shipped from the factory with the battery pack removed. The battery pack is located in a carrying case compartment and must be installed before the instrument is used.

1. Hold the shoe next to the instrument housing and lift upward on the spring-loaded latch *(refer to Unlatching the Instrument Shoe)*. Open the shoe perpendicular to the instrument housing.
2. Carefully rotate the instrument over and rest it on its top.
3. Slide the battery pack into the compartment with the battery connector facing down and to the back of the instrument.
4. Press down on the pack until the connector is properly seated and the tabs click into position.

Changing the Aperture Setting (SP64 only)

The standard SP64 can take measurements using either a 4mm aperture or 8mm aperture. Simply rotating the aperture knob and switching target windows changes the setting.

NOTE: The large spot SP64 instrument (14mm) does not have an aperture changing knob.

To change the Aperture Setting and Target Window:

1. Turn the instrument over and rotate the knob to the left for 8mm (large circle indication) setting and to the right for 4mm (small circle indication) setting. The instrument's display informs you of the aperture change. Press the Enter key # to accept the change.

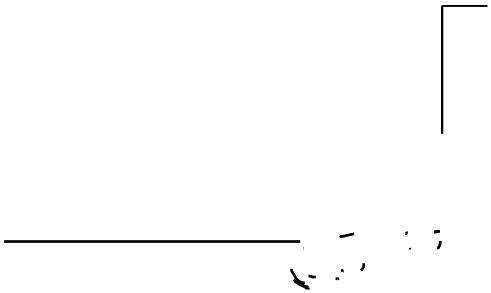
2. Using your fingers, press the target window out from the topside of the shoe. Press against the ring and not the clear window.
3. Note the alignment of the new window and snap it into place from the bottom side of the shoe.
4. Calibrate the instrument to the new aperture setting.

NOTE: The instrument only needs to be calibrated once for each aperture setting. Thereafter, the instrument does not require calibration when switching between aperture settings, until the calibration time expires.

Apply Power

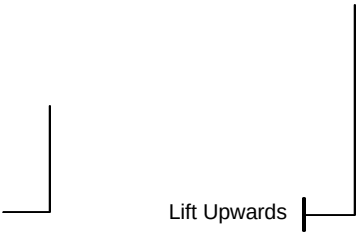
The Battery switch—located on the back of the instrument—turns the instrument off and on during battery operation. When the AC adapter is attached, the instrument remains on and the

As an added feature to conserve battery life, the instrument automatically powers down when it is not in use. You can define the amount of time it takes to initiate a power-down within the instrument configuration options



Unlatching the Instrument Shoe

The shoe can be pivoted open 180° from its closed position. This feature is useful when taking measurements on a surface that does not allow room for the shoe, or a measurement fixture that does not require the shoe. Meas



User Interface

What to Expect 2-1
Navigation – Basic Key Operation

Tab Down key

Advances the highlighted bar (reverse image) to the next

Measurement Mode Screen

The QA, Analyze, Compare, Strength, and Opacity measurement screens consist of three main areas: Data Storage

Depending on the mode and configuration settings, data

Opening the Alphanumeric Editor

Several functions that utilize names and values are edited using the alphanumeric editor. Selecting `Clear` in the editor provides a quick method of removing all values or characters in the string. Pressing the Tab keys `$@` simultaneously clears the selected character. Below is an example of the editor.

To open the editor:

1. Use the Tab keys `$@`

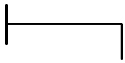
Selecting Color Data Parameters

Measured data can be viewed under varying illuminant

Positioning the Instrument on the Reference

The calibration reference consists of a ceramic disk for white calibration measurements and a trap opening for black calibration measurements. The instrument shoe fits snuggly in both positions. *Refer below for proper positioning.*

NOTE: Make sure the calibration reference is clean before use. *Refer to the calibration cleaning procedure in Section Six.*



Calibration Procedure

A calibration procedure consists of a white measurement followed by a black measurement. The instrument features a built in calibration timer that can be set from 1-96 hours. *Refer to Instrument Configuration for procedure*. The instrument then notifies you when a calibration is required.

NOTE:

CHAPTER THREE

2. Press the Enter key # to open the Edit Averaging # menu.

3. Use the Tab keys $@ to highlight the averaging

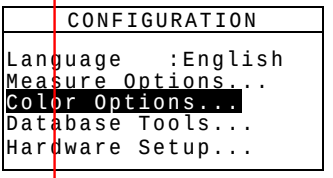
Color Options

The Color Options configuration allows you to determine the following settings:

- **Active Functions** –

To open the Color Options menu:

1. Use the Tab keys $@ to highlight `Color Options`.

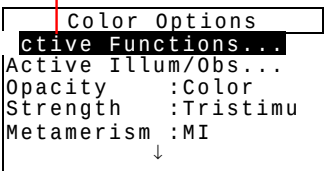


2. Press the Enter # key to access the `Color Options` menu.

Active Functions

To enable or disable functions:

1. Use the Tab keys $@ to highlight `Active Functions`.



2. Press the Enter # key to access the `Act. Functions` editor.
3. Use the Tab keys $@ to highlight the desired function.
4. Press the Enter key # to toggle the function active or inactive. The > indicates the function is enabled.
5. After edits are complete, press the Escape key ! to save and exit.

Active Illum/Obs

To enable or disable illum/Obs combinations:

1. Use the Tab keys $@ to highlight `Active Illum/Obs`.

2. Press the Enter # key to access the `Act. Illum/Obs.` editor.
3. Use the Tab keys $@ to highlight the desired combination.

4. When editing is complete, use the Tab keys $@ to highlight `Save & Exit` and press the Enter

5. Use the Tab keys $@ to highlight the desired number and press the Enter # key to exit the editor.
6. When editing is complete, use the Tab keys $@ to highlight `Save & Exit` and press the Enter # key.

DE94 Factors

To access the DE94 Factors:

1. Use the Tab keys [redacted]

To open the Database Tools menu:

1. Use the Tab keys $@ to highlight `Database Tools`.

2. Press the Enter # key to access the `Database Tools` menu.

View Tags

To view and edit tags:

1. Use the Tab keys $@ to highlight `View Tags`.

2. Press the Enter key # to open the `Tag Viewer` menu.

Deleting a Tag:

1. Use the Tab keys $@ to highlight `Next`. Continually press

Clear All Standards

To clear all standards:

1. Ut06.04 71.

Std Printout – Enables (on) or disables (off) the

Security – When security is activated (on) the Configuration options menu will not appear on the instrument screen.

Baud Rate Selection

1. Use the Tab keys $@ to highlight Baud Rate. Press the Enter # key to access the Baud Rate editor. Baud RateUse the

3. Press the Enter key # to toggle the data type active or inactive. The > indicates the data type is enabled.

2. Press the Enter # key to open the `Set Cal Interval` menu.

3. Use the Tab keys $@ to choose the desired cal interval digit (arrows above and below designate selection). Press the

2. Press the Enter # key to open the `Display` menu.

Contrast Setting

1. Use the Tab keys $@Display

Orientation Selection

1.
   1.

CHAPTER FIVE

Measuring a Standard

1. Make sure Measure

To access tolerance entry menu:

1. Use the Tab keys $@ to highlight `Tolerances...` .

2. Press the Enter key # to access the tolerance entry menu.

3. Use the Tab keys $ @ to highlight the Tolerance type. Press the Enter key # to select the desired type.

4. If entering different plus and minus values for L*a*b*, L*C*h°, etc., use the Tab keys $ @ to highlight the plus/minus symbol in the upper left of the display. Press the Enter key #L*C*hccess the tole Tw (the Enter key) Tj 55f th
   the Enter key

8. Use the Tab keys $@ to choose the desired digit (arrows above and below designate selection). Press the Enter key # to access the alphanumeric editor.

CHAPTER FIVE

CHAPTER FIVE

This area displays sample measured values. Pass/Fail and 555 Shade

Selecting a Project

The instrument defaults to

CHAPTER FIVE

Strength Mode

sample's

Sample difference values o
words appear indicating
color direction.

This

Strength Measurement

The Strength mode displays the color strength of the measured sample. Difference data from the standard is also displayed if difference is activated in configuration. When strength is displayed for color at 100% or Strength @ Min ΔE, the difference values automatically recalculate.

Opacity Mode

The Opacity mode is used for making multiple measurement calculations to determine Contrast Ratio or Percent Opacity. Each measurement requires three readings (over-black, over-

Sample difference values or words appear indicating color direction compared to the current standard.

Compare Mode

The Compare mode is a quick method for comparing measurements without storing the data. After entering the mode, the first measurement is set as the standard and each measurement thereafter is compared to it. The standard can be remeasured whenever desired. Measured data can be automatically transmitted from the RS-

Run Job Mode (SP64 only)

The Run Job function is used to select a job sequence downloaded from X-Rite's QA-Master 2000 software program. A typical job would display measurement prompts on the instrument screen. The instrument can store a total of 10 jobs at one time.

Refer to QA-

Bar Code Reader (BCR) Part Number SP78-200

The optional Bar Code Reader is used to scan bar codes. When the BCR is used in conjunction with the instrument, a scanned bar code becomes a tag that is attached to a sample measurement. Sample data that is uploaded to the computer

BCR Troubleshooting

The factory default mode can be restored if the BCR is placed into an unusable or unknown configuration.

Id?

To restore the factory default mode:

1. Disconnect the BCR from the instrument.
2. Reconnect the BCR to the instrument.
3. Scan the default configuration bar codes shown in the SP78-200 Bar Code Reader instruction sheet (P/N SP78-510).

Does the BCR have power?

- A red light is visible at the tip of the BCR if it has power.
- Check the connection between the BCR and the instrument. Be sure the connector is correctly inserted.

Is the BCR configuration correct?

To restore the factory default mode:

1. Disconnect the BCR from the instrument.
2. Reconnect the BCR to the instrument.

5.

5. Scan the default configuration bar codes.

Does the BCR wavelength of light match the bar code?

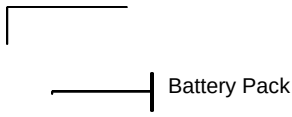
- The BCR will not read bar codes that are designed to be secure

Does the BCR tip need replacement?

Cleaning the Optics

The optics should be cleaned once a week in normal environments, and more often in dirty or dusty environments. Carefully lift the instrument and blow short bursts of clean, dry

LockinP 1yyyyyyyy


Battery Pack

SP60 SERIES
SPHERE SPECTROPHOTOMETER

Error Messages

Errors encountered during a measurement are displayed on the instrument screen. All errors are accompanied by a long beep and flashing yellow light. The error message is cleared from the instrument screen by pressing the Enter key # .

Parts List

Packaging