

SPECTROPHOTOMETER CM-3630A

System Diagram

ΚΟΝΙζΑ ΜΙΝΟΙΤΑ

En INSTRUCTION MANUAL

Before using this read this manual. Before using this instrument, please < CAUTION > KONICA MINOLTA WILL NOT BE LIABLE FOR ANY DAMAGES RESULTING FROM THE MISUSE, MISHANDLING, UNAUTHORIZED MODIFICATION, ETC. OF THIS PRODUCT, OR FOR ANY INDIRECT OR INCIDENTAL DAMAGES (INCLUDING BUT NOT LIMITED TO LOSS OF BUSINESS PROFITS, INTERRUPTION OF BUSINESS, ETC.) DUE TO THE USE OF OR INABILITY TO USE THIS PRODUCT.

Names and Functions of Parts

Standard Accessories



300

315

Specifications

	CM-3630A	
Illumination/	Reflectance d: 0°	
viewing system	(diffused illumination, 0-degree viewing)	
Integrating sphere	ø 152 mm (6 inch)	
Detector	Silicon photodiode array (dual 40 elements)	
Spectral separation device	Diffraction grating	
Wavelength range	360 nm – 740 nm	
Wavelength pitch	10 nm	
Half bandwidth	Approx. 10 nm	
Reflectance range	0 to 200%; Display resolution: 0.01%	
Light source	Pulsed xenon lamp ×3	
Illumination area	LAV : ø 34 mm; MAV : ø 11 mm	
Measurement area	LAV : ø 30 mm; MAV : ø 8 mm	
Measurement time	Within 1.5 sec	
Minimum measurement interval	Within 2 sec (UV 100% measurement) Within 3 sec (UV 0%/UV adjusted measurement)	
Repeatability	Colorimetric values : Standard deviation within ∆E*ab 0.02 (White Calibration Plate) Spectral reflectance : Standard deviation within 0.1% (When a white calibration plate is measured 30 times at 10-second intervals after white calibration)	
Inter-instrument agreement	Within ∆E*ab 0.2 (Based on average for 12 BCRA Series II color tiles; compared to values measured with a master body under Konica Minolta standard measurement conditions)	
UV setting	100% / 0% / Adjusted (Instantaneous numerical adjustment of UV with no mechanical filter movement required); 400 nm and 420 nm UV cutoff filters	
Applicable standards	LAV measurements conform to ISO 2469, JIS P8148, DIN 53145-1 and DIN 53145-2 standards.	
Viewfinder function	Using built-in camera; Software (not included) required.	
Interface	USB2.0 Full speed	
Power	Dedicated AC adapter	
Operating temperature/ humidity range	Temperature: 13 to 33°C, Relative humidity: 80% or less (at 33°C) with no condensation	
Storage Temperature/ humidity rang	Temperature: 0 to 40°C, Relative humidity: 80% or less (at 35°C) with no condensation	
Size (W×H×D)	Approx. 300 ×612 ×315 mm	
Weight	Approx. 16 kg	

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Measurement Procedure

This manual explains how to prepare the CM-3630A and how to set a specimen.

Setting a Specimen

The specimen should be held in place with the sample holder.

Pull down the sample holder and hold it open.

- When it is turned right at the bottom position, the sample holder will be locked in that position. Turn it left to release it.
- **2** Hold the specimen in place with the sample holder.

• When adjusting the position of the specimen, the sample holder must be pulled down to open it.

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Note

power to the instrument.

2 Insert the output plug of the AC adapter into the AC adapter input socket on the side of the CM-3630A.

Connecting the AC Adapter

Insert the power plug fully and securely.

Make sure that the power

switches of both CM-3630A and

host computer are set to OFF

• Use the AC-A312F AC adapter included with the CM-3630A to supply

3 Insert the input plug of the AC adapter into an AC wall outlet.

Note

- Before disconnecting the AC adapter, the power switch must be set to OFF (" \bigcirc ").

Cleaning the CM-3630A and Accessories

Zero Calibration Box

- Remove any dust from inside the zero calibration box with a blower.
 For stubborn dirt, moisten a soft piece of cloth with a little ethanol and wipe surfaces.
- Be careful not to leave fingerprints, etc.

White Calibration Plate

- If dirty, carefully wipe the white calibration plate with a clean soft piece of cloth.
- For stubborn dirt, moisten the cloth with a little ethanol and wipe surfaces.
- If areas outside the calibration plate are dirty, moisten a soft piece of cloth with water or soap and water, and carefully wipe surfaces.

Note

- · Be careful not to damage the calibration plate.
- Never use benzine, thinner or other solvents to clean the calibration plate.
- Damage and dirt on the white calibration plate can affect measurement results.

Target Mask

- Use a blower to remove dirt and dust from the target mask.
- For stubborn dirt on the outer surface of the target mask, moisten a soft piece of cloth with a little ethanol and wipe clean.

Inside Integrating Sphere

Remove dirt and dust from inside the integrated sphere with a blower. Note

- Do not touch the white surfaces inside the integrated sphere compartment with your hands, wipe dirt and dust from them with a piece of cloth, or introduce objects into the compartment.
- If the white-coated surface gets so dirty that dirt cannot be removed using a blower, contact the nearest Konica Minolta-authorized service facility.

Switching Power ON and OFF

Switching Power ON

Set the power switch to the "I" side. When the CM-3630A is ready for use, the LED lights up green.

Note

Note

180

0

AC adapter

input socket



• The LED flashes until startup processing is completed. Measurements cannot be conducted until the LED remains lit.

Switching Power OFF

2 To switch the power OFF, set the power switch to OFF (" \bigcirc ").



• The LED flashes until the power shuts OFF. Do not disconnect the AC adapter while the LED is flashing.

Setting the MAV Target Mask

Set an appropriate target mask for the specimen.

If the MAV target mask will be used, fit the target mask snuggly over the measuring port.



- Note
- The measurement area must also be changed on the software. It takes about 15 sec for the lens inside the instrument to move and actually change the measurement area.

Troubleshooting

If a problem occurs with the Spectrophotometer, please check the following points before requesting service. If the problem continues to occur even after the suggested corrective actions have been taken, contact the nearest Konica Minolta-authorized service facility. For errors identified by the software, see the user's manual included with the software.

Condition	Checkpoint	Recommended action
The CM-3630A does not start when the power is turned ON.	Is the AC adapter correctly connected to the CM-3630A?	Correctly connect the AC adapter.
An image does not appear in the viewfinder area of the software.	Is the USB cable connected correctly to both the Spectrophotometer and the computer?	Correctly connect the included USB cable (IF-A36) to the USB ports on the CM-3630A and computer. If the viewfinder image still does not appear, contact the nearest Konica Minolta-authorized service facility.
	Is the software operating correctly?	By referring to the operation manual of the software, perform the operation correctly.
Data input/output between the Spectrophotometer and a computer cannot be performed.	Is the USB cable connected correctly to both the Spectrophotometer and the computer?	Correctly connect the included USB cable (IF-A36) to the USB ports on the CM-3630A and computer.
Abnormal measurement results are obtained.	Was specimen positioned correctly?	Set the specimen so that it correctly contacts the measuring port.
	Is the target mask set correctly (if used)?	Correctly set the target mask as explained in "Setting the Target Mask".
	Is the CM-3630A's white calibration data correct?	Register the calibration data of the white calibration plate you are using.
	Is there dust, dirt or foreign matter inside the integrated sphere?	Foreign matter in the integrated sphere compartment can affect measurement results. If foreign matter or dust is detected inside the integrated sphere compartment, remove it from the specimen measuring port using a blower because the barium sulfate coated inside the compartment is easily damaged. If the foreign matter and dust cannot be removed with a blower, the situation might be improved by performing zero calibration and white calibration.
	Was white calibration performed correctly?	Correctly perform zero calibration as explained in the user's manual of the software.
	Was zero calibration performed correctly?	Correctly perform white calibration as explained in the user's manual of the software.



Setting the Zero Calibration Box

The CM-3630A saves the most recent zero calibration data; therefore, it is not necessary to perform zero calibration again every time power to the instrument is turned ON.

However, if the measurement environment has changed considerably or the CM-3630A has not been used for an extended period of time, zero calibration must be performed prior to white calibration.

Pull down the sample holder and hold it open.

• When it is turned right at the bottom position, the sample holder will be locked in that position. Turn it left to release it.

2 Set the zero calibration box on top of the sample holder so that the pad of the sample holder fits into the indentation on the bottom of the zero calibration box and let the sample holder slide up to hold the zero calibration box in position.



Setting the White Calibration Plate

Note

- Perform white calibration at the same temperature planned for measurements.
- Wait until the CM-3630A has sufficiently acclimated to the surrounding temperature before performing white calibration.
- The message "Necessary calibration has not been executed." will be displayed when the power is turned on if the set calibration initiation time has passed since white calibration was last performed. Perform calibration before using the instrument.
- Pull down the sample holder and hold it open.
 - When it is turned right at the bottom position, the sample holder will be locked in that position. Turn it left to release it.
- **2** Position the white calibration plate on the sample holder so that the pad of the sample holder fits into the indentation on the bottom of the white calibration plate and let the sample holder slide up to hold the white calibration plate in position.

