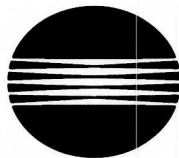


Spectrophotometer

CM-3220d

INSTRUCTION MANUAL



KONICA MINOLTA

Safety Symbols

The following symbols are used in this manual to prevent accidents which may occur as result of incorrect use of the instrument.



Denotes a sentence regarding a safety warning or note.
Read the sentence carefully to ensure safe and correct use.



Denotes a prohibited operation.
The operation must never be performed.



Denotes an instruction.
The instruction must be strictly adhered to.



Denotes a prohibited operation.
Never disassemble the instrument.












Denotes an instruction.
Disconnect the AC power cord from the AC outlet.





Notes on this Manual

- Copying or reproduction of all or any part of the contents of this manual without MINOLTA's permission is strictly prohibited.
- The contents of this manual are subject to change without prior notice.
- Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. However, should you have any questions or find any errors, please contact a Minolta-authorized service facility.
- MINOLTA will not accept any responsibility for consequences arising from the use of the instrument.
- The name MINOLTA or MINOLTA CO.,LTD and its associated logo used in this manual (or on the product or any included materials) has been superseded by the new name KONICA MINOLTA or KONICA MINOLTA SENSING, INC.

Safety Precautions

To ensure correct use of this instrument, read the following points carefully and adhere to them. After you have read this manual, keep it in a safe place where it can be referred to anytime a question arises.

 WARNING (Failure to adhere to the following points may result in death or serious injury.)	
 <p>Do not use the instrument in places where flammable or combustible gases (gasoline etc.) are present. Doing so may cause a fire.</p>	 <p>Do not disassemble or modify the instrument or the AC adapter. Doing so may cause a fire or electric shock.</p>
 <p>Always use the AC adapter supplied as a standard accessory or the optional AC adapter, and connect it to an AC outlet of the rated voltage and frequency. If the AC adapters other than those specified by MINOLTA, this may result in damage to the unit, fire or electric shock</p>	 <p>The instrument should not be operated if it is damaged or AC adapter is damaged, or if smoke or odd smells occur. Doing so may result in a fire. In such situations, turn the power OFF immediately, disconnect the AC adapter from the AC outlet and contact the nearest Minolta-authorized service facility.</p>
 <p>If the instrument will not be used for a long time, disconnect the AC adapter from the AC outlet. Accumulated dirt or water on the prongs of the AC adapter's plug may cause a fire and should be removed.</p>	 <p>Do not disassemble or modify the instrument. Doing so may cause a fire or electric shock.</p>
 <p>Take special care not to allow liquid or metal objects to enter the instrument. Doing so may cause a fire or electric shock. Should liquid or metal objects enter the instrument, turn the power OFF immediately, disconnect the AC adapter from the AC outlet, and contact the nearest Minolta-authorized service facility.</p>	 <p>Do not insert or disconnect the AC adapter with wet hands. Doing so may cause electric shock.</p>

 CAUTION (Falling to adhere to the following points may result in injury or damage to the instrument or other property.)	
 <p>Do not perform measurement which the measurement aperture directed towards your face. Doing so may damage them.</p>	 <p>Do not place the instrument on an unstable or sloping surface. Doing so may result in its dropping or overturning, causing injury. Take care not to drop the instrument when carrying it.</p>
	 <p>Make sure that the AC outlet is located near the instrument and that the AC adapter can be connected to and disconnected from the AC outlet easily.</p>

Notes on Use

<Operating Environment>

- The CM-3220d should be used at ambient temperatures of between 5 and 40°C at relative humidity no higher than 80% (at 35°C/no condensation).
- Do not use it in areas of rapid temperature change.
- Do not leave the CM-3220d in direct sunlight or near sources of heat, such as stoves etc. The internal temperature of the instrument may become much higher than the ambient temperature in such cases.
- Do not use the CM-3220d in areas where dust, cigarette smoke or chemical gases are present. Doing so may cause deterioration in performance or breakdown.
- Do not use the CM-3220d near equipment which produces a strong magnetic field (such as speakers etc.).
- The CM-3220d is designed for indoor use only, and should never be used outside.
- The operating environment for this instrument should conform to "Pollution Degree 2" (i.e. where there is no possibility of metal dust and condensation), "Installation Category II" (i.e. the specified commercial power voltage should be used) and altitude of below 2000m.

<White Calibration Plate>

- The calibration data for the white calibration plate was measured at 23°C. To achieve the highest accuracy when measuring absolute values (colorimetric values), calibration and measurement should be performed at 23°C.
- Do not allow the white calibration plate to get scratched or stained.
- If you are not going to use the white calibration plate, store the white calibration plate unit in the main body to prevent entry of ambient light.

<Power Source>

- Make sure that the power switch is set to OFF ("O") when the CM-3220d is not in use.
- Always use the AC adaptor (AC-A17) supplied as a standard accessory and connect it to an AC outlet of the rated voltage and frequency.

<System>

- Do not subject the CM-3220d to strong impact or vibration. Doing so may cause deterioration in performance or breakdown.
- Since the specimen measuring port (measuring section) is an extremely precise optical component, great care should be taken to prevent it getting dirty or being exposed to impact. When the instrument is not in use, be sure to attach the sample holder to the measuring port to prevent entry of foreign matter.
- The CM-3220d may cause interference if used near a television, radio, etc.
- This instrument uses a microcomputer. It may malfunction if it is exposed to strong external electromagnetic noise. In this case, turn the power OFF, and then turn it ON again after 30 seconds or more have elapsed.

Notes on Storage

- The CM-3220d should be stored at temperatures of between 0 and 45°C. Do not store it in areas subject to high temperatures, high humidity, or rapid changes of temperature, or where condensation may occur. For added safety, it is recommended that it be stored with a drying agent (such as silica gel) at near room temperature.
- Do not leave the CM-3220d inside a car or in the trunk of a car. Under direct sunlight in summer, the increase in temperature can be extreme and may result in malfunction.
- Do not store the CM-3220d in areas where dust, cigarette smoke or chemical gases are present. Doing so may cause deterioration in performance or breakdown.
- Accumulation of dust inside the specimen measuring port will hinder accurate measurement. Block the sample holder to prevent entry of the dust.
- The white calibration plate may become discolored if it is left exposed to light. So, make sure that it is placed into the main body to prevent entry of ambient light when it is not in use.
- Be sure to keep all packing materials (cardboard box, cushioning material, plastic bags, etc.). They can be used to protect the instrument during transportation to service facility for maintenance (re-calibration etc.).

Notes on Cleaning

- If the CM-3220d becomes dirty, wipe it with a soft, clean dry cloth. Never use solvents such as thinner and benzene.
- If the white calibration plate becomes dirty, wipe it gently with a soft, clean dry cloth. If dirt is difficult to remove, contact a Minolta-authorized service facility.
- Should the CM-3220d break down, do not try to disassemble and repair it by yourself. Contact a Minolta-authorized service facility.

