



Science TFM-201
Art. No. 5750800



Science TFM-301
Art. No. 5750900



Science Infinity
Art. No. 5760700

ATTENTION!

Remove the transport
lock before use!
For more information,
please read the chapter
"Removing the
transport lock".

Microscope ·

Science TFM-201/301 & Infinity

EN Instruction manual

DE Besuchen Sie unsere Website über den folgenden QR Code oder Weblink um weitere Informationen zu diesem Produkt oder die verfügbaren Übersetzungen dieser Anleitung zu finden.

EN Visit our website via the following QR Code or web link to find further information on this product or the available translations of these instructions.

FR Si vous souhaitez obtenir plus d'informations concernant ce produit ou rechercher ce mode d'emploi en d'autres langues, rendez-vous sur notre site Internet en utilisant le code QR ou le lien correspondant.

NL Bezoek onze internetpagina via de volgende QR-code of weblink, voor meer informatie over dit product of de beschikbare vertalingen van deze gebruiksaanwijzing.

ES ¿Desearía recibir unas instrucciones de uso completas sobre este producto en un idioma determinado? Entonces visite nuestra página web utilizando el siguiente enlace (código QR) para ver las versiones disponibles.

IT Desidera ricevere informazioni esaustive su questo prodotto in una lingua specifica? Venga a visitare il nostro sito Web al seguente link (codice QR Code) per conoscere le versioni disponibili.



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GARANTIE · WARRANTY · GARANTÍA · GARANZIA



www.bresser.de/warranty_terms

ATTENTION! Remove the screws for transport lock before using the microscope. Refer to chapter "Removing the transport lock" for more information.

ACHTUNG! Entfernen Sie die Schrauben zur Transportsicherung bevor Sie das Mikroskop benutzen. Lesen Sie das Kapitel "Transportsicherung entfernen" für weitere Informationen.

ATTENTION ! Retirez les vis du verrou de transport avant d'utiliser le microscope. Reportez-vous au chapitre "Retirer le verrou ransport" pour plus d'informations.

¡ATENCIÓN! Retire los tornillos de bloqueo de transporte antes de usar el microscopio. Consulte el capítulo "Retirar el bloqueo de transporte" para obtener más información.

LET OP! Verwijder de schroeven van de transportvergrendeling voordat u de microscoop gebruikt. Raadpleeg het hoofdstuk "De transportbeveiliging verwijderen" voor meer informatie.

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1 Imprint

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For any warranty claims or service inquiries, please refer to the information on "Warranty" and "Service" in this documentation. We ask for your understanding that unsolicited returns cannot be processed.

Errors and technical changes excepted.

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2 Validity note

This documentation is valid for the products with the following article numbers:

5750800 5750900 5760700

Manual version: 0423

Manual designation:

Manual_5750800-5750900-5760700_Science-TFM-Infinity_en_BRESSER_v042023a

Always provide information when requesting service.

3 About this Instruction Manual



NOTICE

These operating instructions are to be considered a component of the device.

Read the safety instructions and the instruction manual carefully before using this device.

Keep these instruction manual in a safe place for future reference. If the device is sold or passed on, the instruction manual must be passed on to any subsequent owner/user of the product.

4 Intended use

- This device is not intended for use by persons (including children) with impaired physical, sensory or mental abilities, or for lack of experience and/or knowledge, unless they are supervised by or have received instructions from a person responsible for their safety on how to use this device.
- This device is for personal use only.
- It was developed for an magnified representation of nature observations.
- The device is intended only for indoor use.

5 General safety instructions



DANGER

Risk of an electric shock!

This device contains electronic parts that are powered by a power source (AC adapter and/or batteries). Improper use of this product may result in electric shock. Electric shock can cause serious or fatal injuries. It is therefore imperative that you observe the following safety information.

- Disconnect the power supply by pulling the mains plug when the appliance is not in use, in case of a longer interruption of operation and before any maintenance and cleaning work.
- Place your device so that it can be disconnected from the power supply at any time. The power outlet should always be near your appliance and should be easily accessible, as the plug of the power cord serves as a disconnect device from the mains supply.
- To disconnect the unit from the mains, always pull the mains plug and never pull the cable!
- Check this device, cables and connections for damage before use.
- Never attempt to operate a damaged device, or a device with damaged electrical parts! Damaged parts must be replaced immediately by an authorized service agent.
- Operate the device only in a completely dry environment and do not touch the device with wet or damp body parts.



DANGER

Danger of suffocation!

Improper use of this product may result in suffocation, especially for children. It is therefore imperative that you observe the following safety information.

- Keep packaging materials (plastic bags, rubber bands, etc.) away from children! There is a danger of choking!
- This product contains small parts that can be swallowed by children! Choking hazard!
- If small parts are swallowed, consult a doctor immediately!



DANGER

Explosion hazard!

Improper use of this product may result in fire. It is essential that you observe the following safety information in order to avoid fires.

- Do not expose the device to high temperatures. Use only the supplied AC adapter. Do not short-circuit the device or batteries or dispose of in fire! Excessive heat and improper handling can cause short circuits, fires and even explosions!



CAUTION

Risk of body injury!

This device contains components and/or accessories that can cause minor or serious body injury if used improperly. It is therefore essential that you observe the following safety information in order to prevent body injuries.

- Sharp-edged and pointed tools are often used for working with this device. Therefore, keep this device and all accessories and tools in a place inaccessible to children. Danger of body injury!

-
- Chemicals and liquids do not belong in children's hands! Don't drink! Clean hands thoroughly under running water after use. In case of accidental contact with eyes or mouth, rinse with water. In case of complaints, consult a doctor immediately and show the substances.



⚠ CAUTION**Fire hazard!**

Improper use of this product may result in fire. It is essential that you observe the following safety information in order to avoid fires.

-
- Never cover the ventilation slots or cooling fins of the device during operation or until it has cooled down completely!



NOTICE**Danger of material damage!**

Improper handling may result in damage to the unit and/or accessories. Therefore, use the device only in accordance with the following safety information.

-
- Do not disassemble the device! In the event of a defect, please contact your dealer. They will contact the Service Center and can arrange the return of this device for repair if necessary.
 - Do not expose the device to high temperatures and protect it from water and high humidity.
 - Do not subject the device to excessive vibrations.
 - Only use accessories and spare parts for this device that comply with the technical specifications.

6 Product images

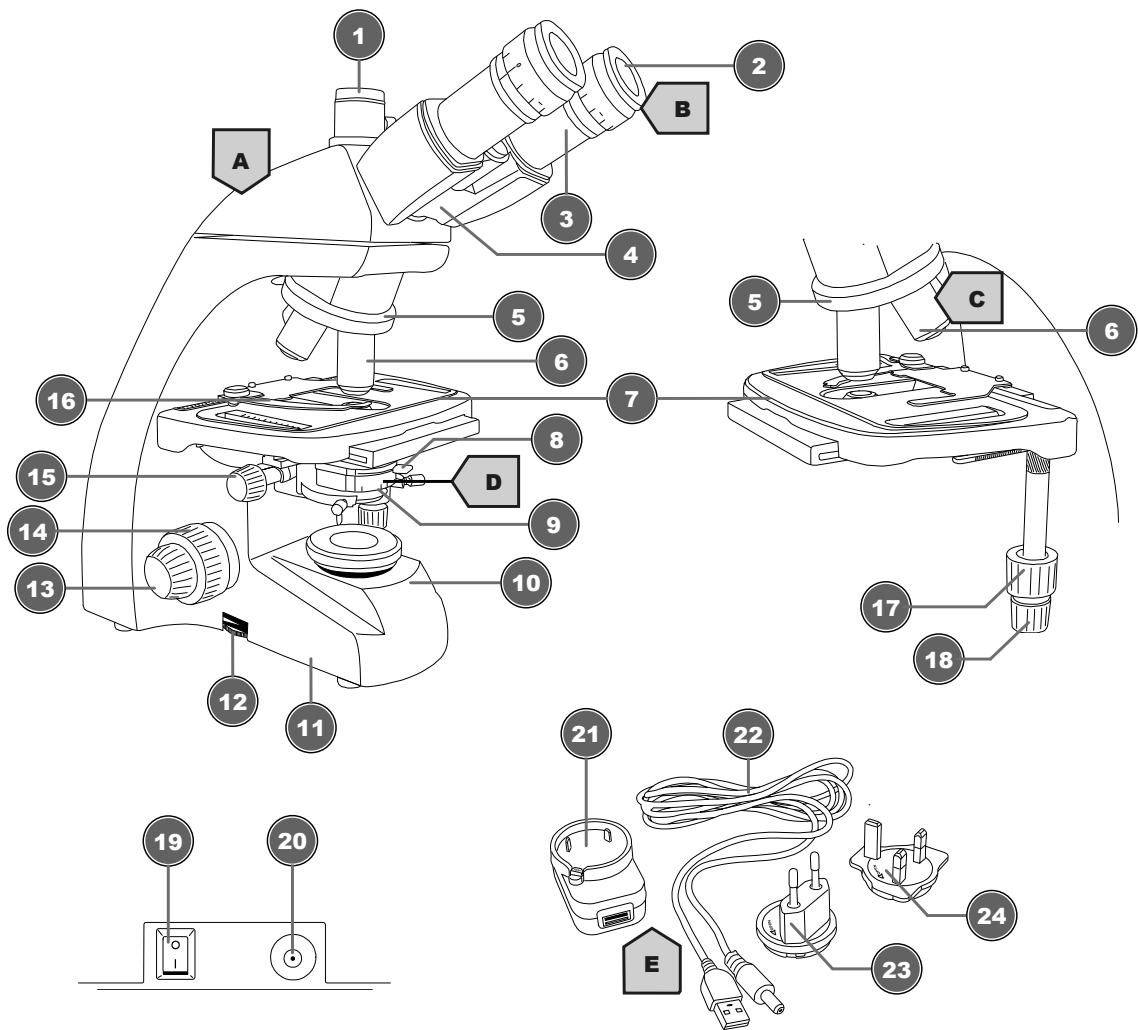


Illustration 2: Product images

7 Parts overview

1	Trinocular extension* / Photo adapter*
2	Eyepiece
3	Eyepiece holder
4	Microscope head
5	Objective nosepiece
6	Objective
7	Object stage
8	Adjusting lever for iris diaphragm
9	Condenser
10	Lighting unit
11	Microscope foot
12	Rotary wheel for brightness control
13	Fine focus

14	Coarse focus
15	Condenser height adjustment
16	Object clamping
17	Cross table longitudinal adjustment (Y-axis)
18	Cross table transverse adjustment (X-axis)
19	On/Off switch
20	DC connection socket
21	Universal USB power adapter
22	USB power cable with barrel connector
23	Mains adapter attachment (EU)
24	Mains adapter attachment (UK)

*not for model TFM-201

8 Scope of delivery

Microscope (A); 10x WF Eyepiece (B); 4 Objectives (pre-assembled) (C); Condenser (pre-assembled) (D); Power adapter with plug and cable (E)

9 Choice of location

Choose a suitable location before installation and commissioning.

Place the device on a stable, level and vibration-free surface.

10 Removing the transport lock

Your BRESSER microscope is secured with one or more screws, depending on the model, to prevent transport damage.

NOTICE! REMOVE THE TRANSPORT SCREWS (T1 OR T1,T2 AND T3) BEFORE USE.

NOTICE! Please refer to the following illustrations for the position of the screws. Use the Allen key included in the scope of delivery for this purpose.

Model "Science TFM-201" (Art. No. 5750800)

Model "Science TFM-301" (Art. No. 5750900)

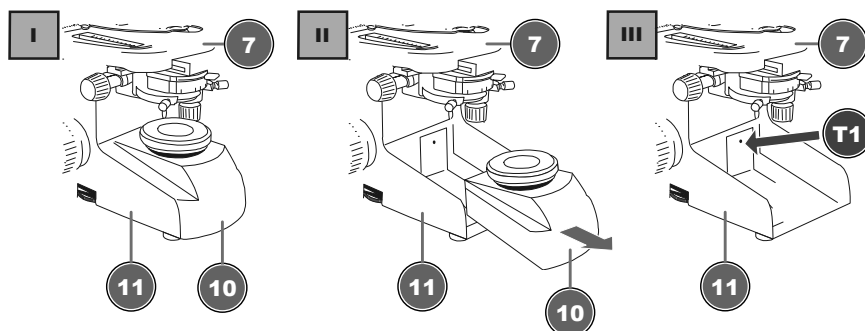


Illustration 3: Position of the one transport screw (T1) that blocks the focusing mechanism.

1. Pull the lighting unit (10) out of the microscope base (11).
2. Loosen the screw (T1) in the rear area of the microscope foot and remove it completely.

Model "Science Infinity" (Art. No. 5760700)

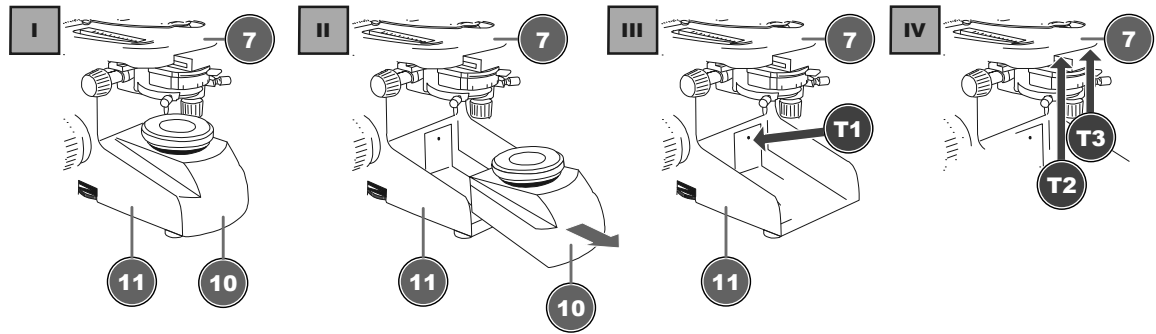


Illustration 4: Position of the three transport screws (T1, T2 and T3) that block the focusing mechanism and the stage.

3. Pull the lighting unit (10) out of the microscope base (11).
4. Loosen the screw (T1) in the rear area of the microscope foot and remove it completely.
5. Loosen the two screws (T2 and T3) below the object stage (7) and remove them completely.

11 Installing the USB power adapter

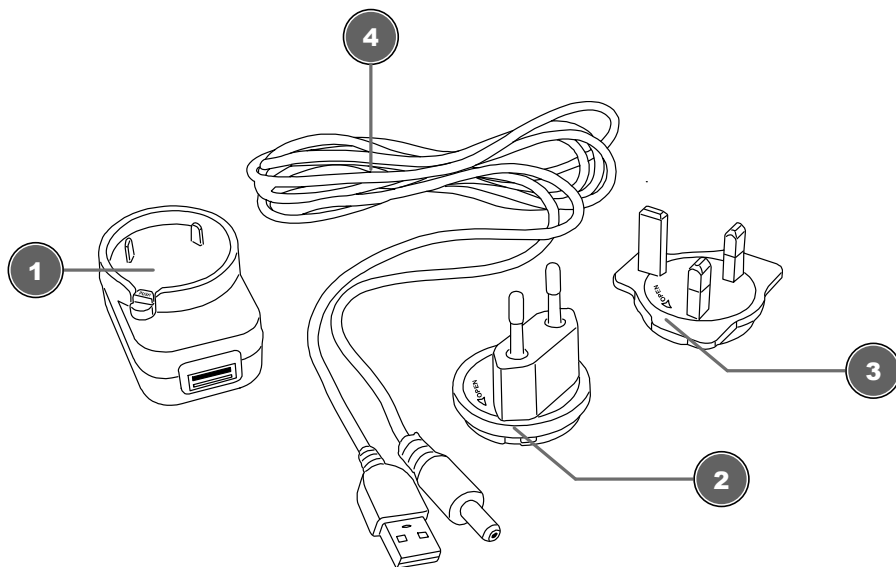


Illustration 5: USB power adapter with exchangeable attachment

- | | |
|---------------------------|-------------------------------------------------|
| 1 USB power adapter | 2 Adapter attachment (EU) |
| 3 Adapter attachment (UK) | 4 USB power cable with coaxial/barrel connector |

1. Place suitable adapter attachment with its notches on the pins of the USB power adapter.
2. Turn adapter attachment in LOCK direction until it is locked.
3. Put the USB plug of the power cable into the USB port of the power adapter.
4. To remove the adapter attachment, push the PUSH button and turn the attachment in OPEN direction.



NOTICE

Using the USB power cable with a computer

Alternatively the device can be powered by a computer via the included USB power cable: Put the USB plug into a free USB port of the computer.

12 Setting up power supply

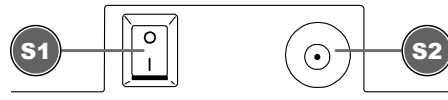


Illustration 6: DC connection socket for coaxial/barrel connector

1 On/Off switch

2 DC connection socket

1. Put the DC connector of the power cable into the DC connection socket of the device.
2. Put the mains plug of the power cable into the power outlet.

13 Turning on/off the device

1. Move On/Off switch to position 'I' to turn on the device.
2. Move On/Off switch to 'O' position to turn off the device.

14 Adjusting the lighting

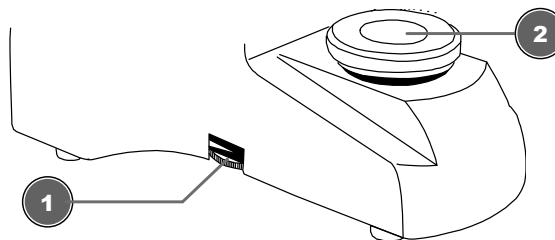


Illustration 7: Lighting unit

1 Rotary knob for brightness adjustment

2 Illumination

This device provides an illumination with a permanently installed LED light source.



NOTICE

Do not operation the device on highest brightness over a longer time!

This will reduce the lifetime of the LED.

To control the brightness proceed as follows:

1. Turn on the device.
2. Turn/Move the dimmer control to adjust the brightness of the light source.



NOTICE

Illuminating the object optimally

Adjust the brightness of the light source so that the illumination works at its optimum. Depending on light influences from outside and the object being observed, the illumination needs regular adjustments.

15 Inserting slides

1. Move the object plate downwards completely by turning the focus wheel.
2. Press the object clamping outwards.
3. Insert the slide straight into the fixture's angle.
4. Let the object clamping fall back carefully until the slide is fixed in the fixture.

16 Observation



NOTICE

Using eyepieces and objectives

When using a specific eyepiece or objective, you will get the individual magnification of an object being observed. The magnification is imprinted on the eyepiece and objective with a large number (e.g. 10x for 10-fold magnification, 4 for 4-fold magnification).

1. Move the object plate downwards completely by turning the focus wheel.
 2. Insert a slide and place it in the middle under the objective.
 3. Set an objective with lowest magnification below the object plate.
 4. Insert an eyepiece with lowest magnification in the eyepiece holder.
 5. Turn on the device and the illumination.
 6. Look through the eyepiece and move the object plate upwards by turning the focus wheel until a sharp image is visible.
 7. If necessary, adjust the image sharpness by turning the fine focus adjustment.
-



NOTICE

Avoid damages to the specimen!

Make sure you turn the focus wheel very slowly, to avoid the objective touch the slide or specimen, and thus to avoid damages to either of them, or to both. Only turn the focus wheel until it stops and do not apply excessive pressure.

17 Adjusting the eye distance

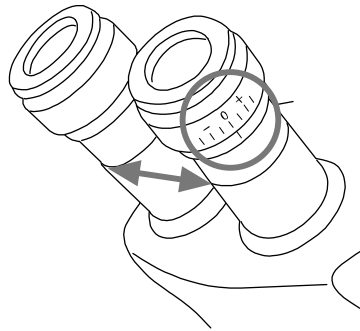


Illustration 8: Distance between the eyepieces and diopter adjustment

1. With the eyes look through both eyepieces.
2. Change the distance between the eyepieces by pushing them together or pulling apart until a circular image of the observed object is visible.

18 Diopter adjustment

1. Turn the diopter adjustment ring to position '0'.
2. With the left eye, look through the left eyepiece and turn the focusing wheel until a sharp image of the observed object is visible.
3. With the right eye, look through the right eyepiece and turn the diopter adjustment ring until a sharp image of the observed object is visible too.

The diopter adjustment can also be done in the opposite way on the left eyepiece.

19 Using the iris diaphragm



NOTICE

The iris diaphragm is used to increase the depth of focus.

With an open aperture more light is getting through but the depth of focus is less. With partially closed aperture the depth of focus is higher but it is necessary to increase the brightness of the illumination then.

It is recommended not to close the iris diaphragm too much when working with higher magnifications. Otherwise the image resolution will decrease.

Move the lever for the iris diaphragm to right or left to change the aperture setting.

20 Using the Köhler illumination

Proceed as follows to adjust the Köhler illumination for an optimal illumination of the field of view:

1. Focus on the object with the 10x objective.
2. Close the condenser and the light field aperture. For microscopes with additional lens, fold it out.
3. Move the condenser up and down until the edge of the light field aperture is in focus.
4. If necessary, use the adjustment screws to move the condenser until the light field aperture is centered in the field of view.
5. Open the light field aperture as far as it is not visible in the field of view anymore.

21 Oil immersion

The oil immersion can be done with a suitable 100x objective only. For the purpose proceed as follows:

1. Focus on the object with the 40x objective.
2. Turn the 40x objective sideways.
3. Drop a drop of immersion oil onto the cover glass of the preparation.
4. Retract the 100x objective so that it is immersed in the oil.
5. Refocus the image.
6. Clean the 100x objective after each use.

22 Using the trinocular extension

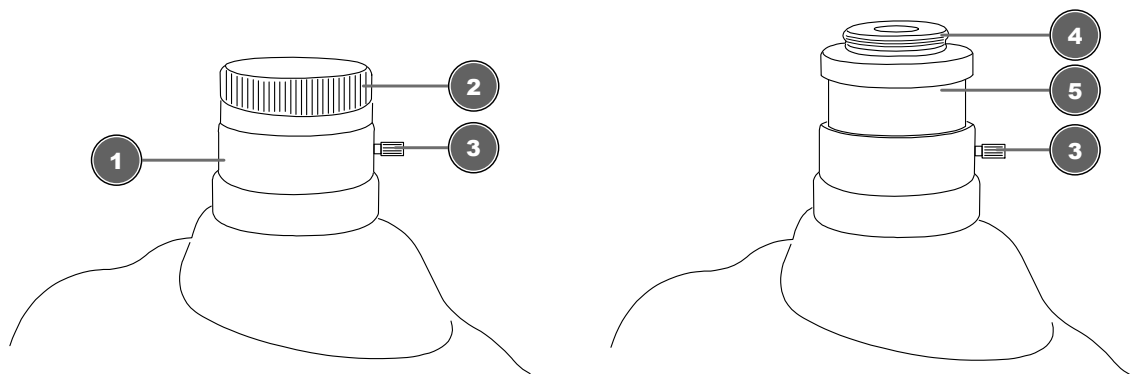


Illustration 9: Trinocular extension with pre-assembled photo adapter

1 Trinocular extension	2 Protection cap
3 Fixing screw	4 Photo adapter thread
5 Photo adapter	

The The trinocular extension of the microscope was specially designed for C-mount threads. For the camera mounting proceed as follows:

1. Remove the dust protection cap from the trinocular head.
2. Attach the camera* with its C-mount thread to the photo adapter thread and turn it on.
3. Loosen the clamping screw of the trinocular extension to move the photo adapter with the camera* within the extension tube. In this way the image sharpness and the position of the camera can be adjusted. Most camera models can be adjusted parfocal to the eyepieces when doing so.
4. Re-tighten the screw to fix the camera in the desired position.

*not included

23 Cleaning and maintenance

- Protect the device from dust and moisture!
- Avoid fingerprints and similar contamination of the optical surfaces.
- The residual moisture must be completely degraded before use.
- Disconnect the power supply by pulling the mains plug when the appliance is not in use, in case of a longer interruption of operation and before any maintenance and cleaning work.

- Only clean the device externally using a dry cloth. Do not use cleaning solution to prevent damage to the electronic parts.
- Do not use organic solvents (e.g. alcohol, ether, acetone, xylol or other dilutions) to clean lacquered parts or plastic parts!
- Disassemble optical elements (e.g. objective, eyepiece, etc) before cleaning.
- Blow away loose dust from the lens surfaces first.
- Use high quality lens cleaning towels or soft cloth and moisten it with a little bit of pure alcohol (available in a drug store). Wipe the lens surface with it.
- Pull a dust protection cover* over the microscope and store it in a closed container at a dry and mould-free place. Store the microscope and the accessories in the relevant containers when they are not used for a longer time. It is recommended to store also objectives and eyepieces in closed containers with desiccant.

(*depending on the model a dust protection cover and box can be part of the content)



NOTICE

Remember:

A well maintained microscope will keep its optical quality for years and thus maintain its value.

24 Disposal



Dispose of the packaging materials according to its type. Information on proper disposal can be obtained from the municipal waste disposal service provider or environmental agency.



Do not dispose of electronic devices in the household garbage!

According to the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment and its transposition into national law, used electrical equipment must be collected separately and recycled in an environmentally sound manner.



Batteries and rechargeable batteries must not be disposed of with household waste. You are legally obliged to return used batteries and accumulators and can return them after use either at our sales outlet or in the immediate vicinity (e.g. in the trade or in municipal collection points) free of charge.

Batteries and accumulators are marked with a crossed-out dustbin and the chemical symbol of the pollutant, "Cd" stands for cadmium, "Hg" stands for mercury and "Pb" stands for lead.



Cd¹



Hg²



Pb³

25 Technical data

	Science TFM-201	Science TFM-301	Science Infinity
Article No.	5750800	5750900	5760700
Microscope head	binocular	trinocular (incl. photo adapter)	trinocular (incl. photo adapter)
Cross table	Yes, with Nonius scale	Yes, with Nonius scale	Yes, with Nonius scale
Eyepiece(s)	1 Pair of DIN WF 10x	1 Pair of DIN WF 10x	1 Pair of DIN WF 10x
Objective(s)	4x / 10x / 40x / 100x	4x / 10x / 40x / 100x	4x / 10x / 40x / 100x

Magnification	40x / 100x / 400x / 1000x	40x / 100x / 400x / 1000x	40x / 100x / 400x / 1000x
Power supply	DC 5V / 1000mA	DC 5V / 1000mA	DC 5V / 1000mA
Illumination	LED*	LED*	LED*

*The LED illumination used in this device has a very long lifespan and do not need to be changed. LEDs can not be changed due to technical reasons!

26 Warranty

The regular guarantee period is 10 years and begins on the day of purchase. You can consult the full guarantee terms and details of our services at www.bresser.de/warranty_terms.

27 EC Declaration of Conformity

CE Bresser GmbH has issued a "Declaration of Conformity" in accordance with applicable guidelines and corresponding standards. This can be viewed any time upon request.
www.bresser.de • info@bresser.de

28 UKCA declaration of conformity

UKCA A "Declaration of Conformity" in accordance with the applicable directives and relevant standards has been issued by Bresser GmbH The full text of the UKCA Declaration of Conformity is available at the following web address: https://www.bresser.de/download/science/ukca/science_ukca.pdf

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Service

DE AT CH BE

Bei Fragen zum Produkt und eventuellen Reklamationen nehmen Sie bitte zunächst mit dem Service-Center Kontakt auf, vorzugsweise per E-Mail.

E-Mail: service@bresser.de
Telefon*: +49 28 72 80 74 210

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Deutschland

*Lokale Rufnummer in Deutschland (Die Höhe der Gebühren je Telefonat ist abhängig vom Tarif Ihres Telefonanbieters); Anrufe aus dem Ausland sind mit höheren Kosten verbunden.

GB IE

Please contact the service centre first for any questions regarding the product or claims, preferably by e-mail.

E-Mail: service@bresseruk.com
Telephone*: +44 1342 837 098

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Enterprise Way
Edenbridge, Kent TN8 6HF
Great Britain

*Number charged at local rates in the UK (the amount you will be charged per phone call will depend on the tariff of your phone provider); calls from abroad will involve higher costs.

FR BE

Si vous avez des questions concernant ce produit ou en cas de réclamations, veuillez prendre contact avec notre centre de services (de préférence via e-mail).

E-Mail: sav@bresser.fr
Téléphone*: 00 800 6343 7000

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83170 Brignoles
France

*Prix d'un appel local depuis la France ou Belgique

NL BE

Als u met betrekking tot het product vragen of eventuele klachten heeft kunt u contact opnemen met het service centrum (bij voorkeur per e-mail).

E-Mail: info@bresserbenelux.nl
Telefoon*: +31 528 23 24 76

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7903 AX Hoogeveen
The Netherlands

*Het telefoonnummer wordt in het Nederland tegen lokaal tarief in rekening gebracht. Het bedrag dat u per gesprek in rekening gebracht zal worden, is afhankelijk van het tarief van uw telefoon provider; gesprekken vanuit het buitenland zullen hogere kosten met zich meebrengen.

ES PT

Si desea formular alguna pregunta sobre el producto o alguna eventual reclamación, le rogamos que se ponga en contacto con el centro de servicio técnico (de preferencia por e-mail).

E-Mail: servicio.iberia@bresser-iberia.es
Teléfono*: +34 91 67972 69





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