ATMOS
MedizinTechnik

Operating Instructions

# ATMOS i View

English



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# 1 Introduction

## 1.1 Notes on the operating instructions



This operating information contains important notes on how to operate your product safely, appropriately and effectively.

This manual is used to train and instruct operating personnel and is also intended as a reference manual. This document may be reprinted, either in part or in whole, only with the written permission of ATMOS.

**These operating instructions must always be kept available near the product.**



Care, period tests, regular cleaning and appropriate application are essential. They ensure the operational safety and usability of the product.

Maintenance, repairs and period tests may be carried out only by persons who have the appropriate technical knowledge and are familiar with the product. The person in question must possess the test devices and original spare parts required to carry out these measures.



This product bears the CE marking CE in accordance with the European Medical Device Regulation (MDR) no. 2017/745.

The product ATMOS i View meets all applicable requirements of Directive 2011/65/EU to restrict the use of certain hazardous substances in electrical and electronic equipment (“RoHS”).

You can find declarations of conformity and our general terms and conditions on our website at www.atmosmed.com.

The quality management system used at ATMOS has been certified according to the international standard EN ISO 13485.

Before putting the device into service for the first time, please read chapter 2.0 “For your safety” to avoid any dangerous situations.

Report any serious incidents that occur in connection with this product to the manufacturer and the national authority responsible for you.

These operating instructions apply to the following products:

| | |
|---|---|
| ATMOS i View 21 | REF 538.0000.0 |
| ATMOS i View 31 | REF 539.0000.0 |

## 1.2 Explanation of pictograms and symbols

### In the operating instructions

| | |
|---|---|
| **⚠ DANGER** | Warning of a danger resulting directly in fatal or serious injury. Observe the necessary measures. |
| **⚠ WARNING** | Warning of a danger of fatal or serious injuries. Observe the necessary measures. |
| **⚠ CAUTION** | Warning of a danger of minor injury. Observe the necessary measures. |
| ***ATTENTION*** | Notice of a danger of damage to the product or other objects. Observe the necessary measures. |
| ⚠ | Warning of a danger of serious or fatal injury. |
| ℹ | Notice of potential material damage that can be caused. |
| ☞ | Useful information on handling the device. |
| 1. | Call for action. Proceed step by step. |
| » | Result of an action. |
| → | Move/plug in this direction. |
| click | Engage and check for tight fitting. |

### On the device, type plate and packaging

| | |
|---|---|
|  | Follow the operating instructions (blue) |
|  | Observe the operating instructions |
|  | Warning! Pay special attention. |
|  | Warning! Pay special attention (yellow). |
|  | This product meets the relevant requirements of the EU regulations. |
| SN | Serial number |
| REF | Item number |
|  | Manufacturer |

| | |
|---|---|
|  | Date of manufacture |
|  | Date of manufacture<br>Country of manufacture: Germany |
|  | This product meets the relevant requirements of the Eurasian Economic Union. |
|  | Medical product |
|  | Unique identifier of a medical product |
|  | Weight setting for carrier arm |
|  | No domestic waste |
|  | Alternating current |
|  | Fuse |
|  | Do not reuse |
|  | Do not look directly into the light source of the ATMOS i View |
|  | UL listing test mark |
|  | Store in a dry place |
|  | Temperature limit |
|  | Humidity limit |
|  | Atmospheric pressure limit |
|  | This side up |
|  | Fragile! Handle with care. |

| | |
|---|---|
|  | Mobile stand transport position Do not lean against the device! |

## UDI application identifier

| ATMOS i View / ATMOS i View 31 | |
|---|---|
| (01) | UDI-DI: identification of the manufacturer and product |
| (11) | Date of manufacture |
| (21) | Serial number |

## ATMOS i View 31 control panel buttons

| | |
|---|---|
|  | Video recording (Start/Stop) |
|  | Light on/off (independent of automatic light control) |
|   | With built-in HD camera: camera light mode setting |
|  | Freeze frame |

## ATMOS i View 21 supply module

| | |
|---|---|
|   | Output for the power supply of the electronics in the microscope |
|  | Fuse protection |
|  | Potential equalization according to IEC 60417-5021 |

## ATMOS i View 31 supply module

| | |
|---|---|
|  | Fuse protection |
|  | Potential equalization according to IEC 60417-5021 |
|  | Microscope |
|  | Foot switch |
|   | Output signals of the tilt sensor in the carrier arm system |
|   | USB port |
|   | Internal/external video signal input<br>(only with built-in HD camera) |
|   | Video signal output<br>(only with built-in HD camera) |

## 1.3 Intended use

| | |
|---|---|
| **Product name:** | ATMOS i View 21<br>ATMOS i View 31 |
| **Main function:** | The device is a microscope intended to give a magnified illuminated spatial view of human tissue. For diagnostic and therapeutic purposes. |
| **Intended use:** | Standard ENT examinations and ear, nose and throat treatments |
| **Intended users / user profile:** | Physicians and medical specialists |
| **Intended patient group:** | All patients without any restrictions |
| **Medical conditions to be diagnosed, treated or monitored:** | Diagnostic examination of anatomy of all kinds |
| **Application organ:** | Without restrictions (mainly ear/nose/throat) |
| **Application time:** | < 60 min. |
| **Application environment:** | Outpatient medical facilities, e.g. ENT practices, hospital outpatient departments, medical care centres |
| **Criteria for patient selection:** | None |
| **Indications:** | Standard ENT examination and/or therapy |
| **Medical contraindications:** | None |
| **Other contraindications:** | None |
| **Warnings:** | None |
| **The product is:** | Active |
| **Sterility/specific microbial condition:** | Non-sterile |
| **Single-use product/ re-sterilization:** | Not a single-use product; re-sterilization according to operating instructions. |

## 1.4 Function

The ATMOS i View is a comprehensive microscope system consisting of optics and lighting, which produces excellent images for examination purposes by means of the latest LED technology and patented optics. The interaction between the built-in, fanless, high-transmission, high-performance LED, the achromatic optics and the precisely adapted options offers best working quality.

The ergonomically arranged function knobs, two selectable handle versions and the built-in control panel provide the user with the highest level of ergonomic comfort.

Suitability for daily use as well as excellent and intuitive handling. The individual options of the ATMOS i View can be activated on the control panel. Besides triggering the camera (freeze frame) and starting/stopping possible video sequences, the user can use a mode knob to switch between the individual light functions and also switch the LED lighting on and off manually despite the activated automatic light control. Due to the variety of options the ATMOS i View has to offer, the user is able to configure a microscope adapted to meet their requirements. The following functions can be chosen optionally:

- 4 objective lenses with different fixed focal distances (200, 250, 300 and 400 mm) with or without fine focussing or a 200–500 mm VarioFocus
- Fivefold magnification changer, exact setting due to locking screws on both sides or gradual magnification
- Binocular tube (0° or 45° angle)
- Pivoting colour filter
- Measuring scale
- Shadowless illumination

Due to the lighting and the integrable camera solution (integrated full HD integrated or as HD or endoscope adapter for connection of an external camera), the ATMOS i View ensures best image quality.

In combination with the mechanical carrier arm and the numerous connection possibilities to units and stands, the ATMOS i View offers countless system options that can be customized to suit the user's environment.

*These operating instructions describe all functions for maximum configuration of the ATMOS i View 31.*

## 1.5 Scope of delivery

The ATMOS® i View was subjected to an extensive functional check and carefully packed prior to dispatch. Nevertheless, please check the contents of the shipment for completeness immediately upon receipt (see delivery note).

## 1.6 Transport and storage

After transporting the ATMOS i View at temperatures below 0 °C, it should be kept at room temperature for at least six hours before putting it into service for the first time. The ATMOS i View must not be operated if it is not acclimatized, because damage to the electronic components may occur.

Transport the product only in a padded shipping box that provides sufficient protection.

If you notice any transport damage:

- Document and report the transport damage and send the device to ATMOS; see chapter "6.2 Sending in the device" on page 36.

### Ambient conditions for transport, storage and operation

See chapter "9 Technical data" on page 41.

# 2 Notes on your safety

## 2.1 General safety instructions

- To safely disconnect the device from the mains, the power cord must be removed from the IEC connector of the supply module!
- The ATMOS i View is a device of protection class I, designed in line with IEC 60601-1-1/EN60601-1. To avoid the risk of electrical shock, this device may be connected only to a mains supply with a properly installed earth conductor.
- The ATMOS i View, power cord, accessories, and connection cables must be checked for damage before putting the device into service. Damaged cables must be replaced immediately.
- The ATMOS i View may only be operated by qualified personnel.
- The ATMOS i View is not intended to be operated in **potentially explosive** zones. Potentially explosive areas may be caused by using flammable anaesthetics, skin cleansing products and skin disinfectants.
- If fluid enters the ATMOS i View, the device must be sent in for inspection and may be used only after being checked by a person authorized by ATMOS.
- After transporting the ATMOS i View for a prolonged time at temperatures below zero, it should be kept at room temperature for at least six hours before putting it into service. The ATMOS i View must **not** be used if it is **not** acclimatized.
- Do not plug in electric connections (plugs, jacks) with force. If this is not possible, check whether the plug fits the jack. If you notice damage to the connection, have it repaired by our service department.
- Never look straight into the sun with the objective lens or eyepiece lenses.

**⚠ CAUTION**

- Always make sure that you do not blind patients with the light source! Watch out that patients do not look directly into the light source!
  Never look directly into the light source yourself!
  > Damage to the eyes due to the strong glare.
- Observe the information on period tests in chapter “6 Maintenance and service” on page 36.
- Each time before putting the device into service, the microscope suspension (including all joints) must be checked for safe mounting.

**⚠ WARNING**

- Make sure the patient does not touch or come into contact with the device.
- Please observe the EMC directives. Failure to follow them can result in a hazard.
- Dispose of packaging material properly.
- Before connecting the ATMOS i View, check whether the line voltage and frequency specified on the ATMOS i View match the values of the power supply.
- Use only appropriate and undamaged mains connections and extension cables.
- To disconnect the ATMOS i View from the mains, first remove the plug from the wall outlet. Then disconnect the connection cable from the ATMOS i View. Never touch plugs or cables with wet hands.
- The ambient conditions specified in the technical data (see chapter “9 Technical data” on page 41) must be observed.
- The ATMOS i View complies with the electromagnetic immunity requirements of the standard IEC 60601-1-2 / EN 60601-1-2 “Electromagnetic Compatibility – Medical Electrical Devices.”

- ATMOS are not liable for personal injury and damage to property if:
  - No original ATMOS parts are used and/or the advice for use in these operating instructions is ignored
  - Assembly work, new settings, alterations, extensions and repairs are carried out by persons not authorized by ATMOS.
- Pull the power plug immediately if you notice any fumes, sparks or unusual noises at your device.
- After lengthy use of the ATMOS i View with an ear speculum, the patient may feel dizzy!
- Every light source may cause warming of tissue due to absorption. Please make sure to reduce the duration of use to a minimum, switch off the light source when not in use and check the heat development of the light source if necessary.
- The ATMOS i View may be operated only in rooms used for medical purposes, but not in areas subject to explosion hazards and in oxygen-rich environments.

**⚠ CAUTION**

- Take into consideration that the elastic force of the arm without the microscope head is very high when putting the device into service or in a service case. Use the set screw to adjust the height with appropriate caution. Before removing the microscope head in a service case, the set screws on the microscope arm must be tightened.

**⚠ WARNING**

- Please observe that only PCs and monitors with IEC 606010-1 / EN 60601-1 / DIN EN IEC 62368-1 approval are allowed to be connected to the video outputs of the ATMOS i View supply module!
- During operation, the user is obliged to regularly check that the microscope is in working order. In the unlikely event of failure the user must take precautions to continue the treatment of the patient with suitable methods.
- Make sure the device is positioned in such a manner to allow all the operating elements and the on/off switch to be accessed at all times.
- Report any serious incidents that occur in connection with this product to the manufacturer and the national authority responsible for you.

## 2.2 Danger to users, patients and third parties

**⚠ CAUTION**

**Danger of injury!**

- Take care not to roll the device over your feet when moving the mobile stand.

**⚠ CAUTION**

- Please always make sure that you do not point the light source into the eyes of the patient and that the patient does not look directly into the light source! Never look directly into the light source yourself!

» Damage to the eyes due to strong glare!

# 3 Setting up the device and putting it into service

## 3.1 Device overview

| Description | ATMOS i View 21 | ATMOS i View 31 |
|---|---|---|
| |  Examination microscope with built-in, fanless, high trans-mission, high-performance LED lighting in the microscope head |  Examination microscope with integrated, fanless high-transmission, high-performance LED lighting in the microscope head and (internal or external) integrated camera solution |
| Built-in high-performance white light LED | ✓ | ✓ |
| Automatic light control | ✓ | ✓ |
| Optimized stereo effect | ✓ | ✓ |
| Measuring scale | Optional | Optional |
| Colour filter | Optional | Optional |
| Built-in full HD camera | X | Optional |
| Adapter for external camera | X | Optional |
| Endoscope adapter | X | Optional |
| LED lifespan | 50 000 hours | 50 000 hours |
| Scope of delivery | Dust cover, operating instructions | Dust cover, operating instructions |

☞ You can find more technical data in chapter “9 Technical data” on page 41.

## 3.2 Set-up

⚠ The static conditions specified by ATMOS MedizinTechnik must be fulfilled before the device is put into service and confirmed by an authorized expert. For this purpose, the respective assembly instructions for the ceiling or wall mount must be observed and the forms attached to the assembly instructions filled in. You can obtain this document from your ATMOS sales and service partner upon request.

**Mains voltage and fuse:**

See chapter “9 Technical data” on page 41.

Please observe that only PCs and monitors with IEC 606010-1/EN 60601-1 approval are allowed to be connected to the video output of the ATMOS i View supply module!

### 3.2.1 Connecting to the mains supply

To safely disconnect the device from the mains supply, the power cord must be removed from the IEC connector of the supply module!

**Potential equalization:**

The ATMOS i View's supply module has a rear connection for potential equalization, which can be connected to the potential equalization rail in the room if necessary. This allows the user or patient safety to be increased, especially in the case of a defective earth conductor. Use the potential equalization cord with REF 530.0030.0 to connect the device's potential equalization plug to the potential equalization rail of the room.

### 3.2.2 Microscope overview





T-handle (optional)

Adapter for SONY digital camera (optional)

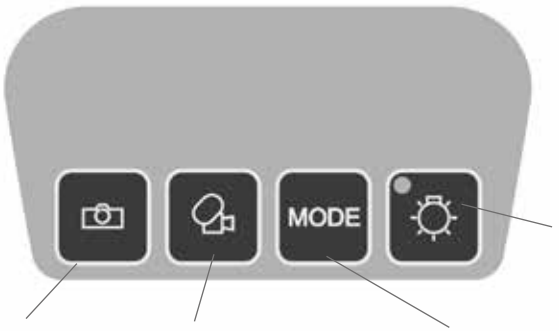




Endoscope adapter (optional)

Control panel

### 3.2.3 Operating elements on the microscope




Light on/off (independent of automatic light control)

Freeze frame*

Video recording (Start/Stop)

With built-in HD camera: camera light mode setting

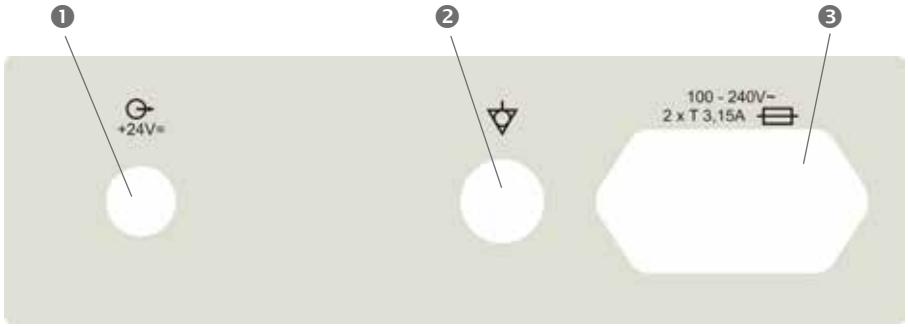
*Keep the freeze frame recording button pressed to open the menu for the setting of the freeze frame function.

Use the freeze frame recording button to specify which of the two following actions is to be initiated with the button:

- Picture freeze ENABLED: freezing and simultaneously recording of the image. The live image is switched back to by pressing the button again.
- Picture freeze DISABLED: image recording without freezing the image each time the button is pressed.

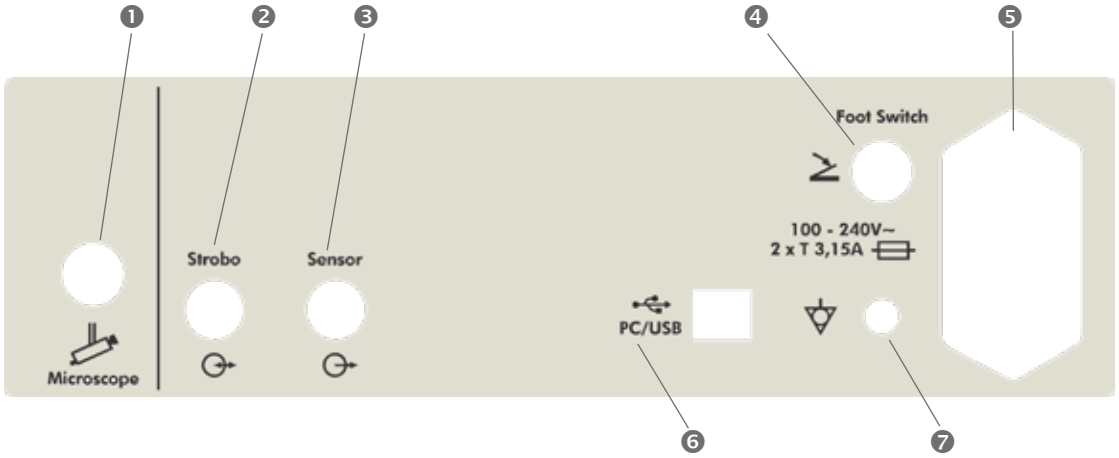
Press the MODE button and hold it down to exit the menu and store the setting.

### 3.2.4 Rear view of the ATMOS i View 21 supply module



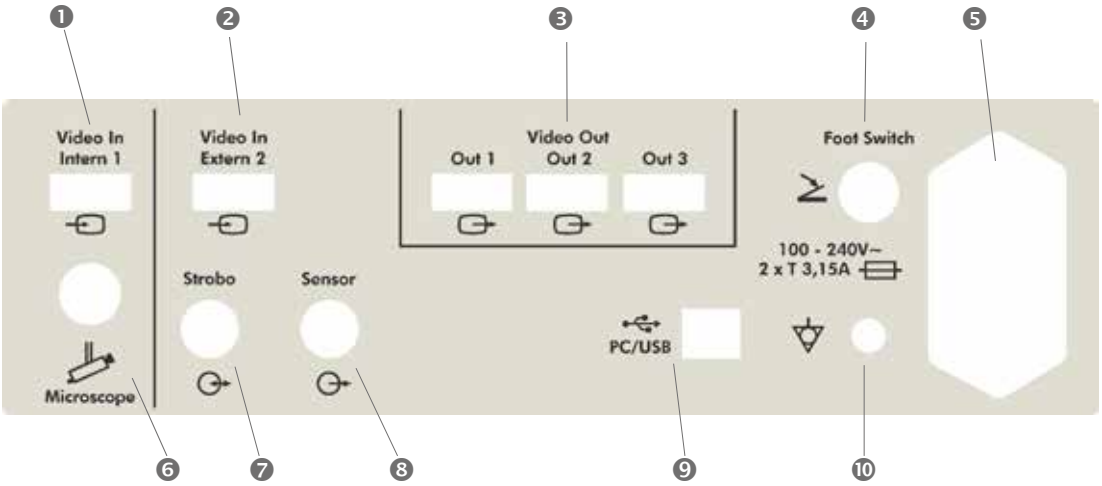

1. Output for the power supply of the electronics in the microscope
2. Connection for potential equalization line in accordance with IEC 60417-5021
3. IEC power plug with fuse inlay for connection to the mains supply

### 3.2.5 Rear view of the ATMOS i View 31 supply module (not with built-in HD camera)




1. Connection for the supply of the microscope electronics and the control line.
2. Not assigned
3. Output signals of the tilt sensor in the carrier arm system
4. Connection for the foot switch used to activate the image or video signal
5. IEC power plug with fuse inlay for connection to the mains supply
6. USB port for the transfer of the button status of the freeze frame and video recording functions.
7. Connection for potential equalization line in accordance with IEC 60417-5021

### 3.2.6 Rear view of the ATMOS i View 31 supply module (with built-in HD camera)




❶ HD video input. Use only for the built-in HD camera module.

❷ HD video input of an external HD video source

❸ HD video output of the internal 1 or external 2 video source

❹ Connection for the foot switch used to activate the image or video signal

❺ IEC power plug with fuse inlay for connection to the mains supply

❻ Connection for the supply of the microscope electronics and the control line.

❼ Not assigned

❽ Output signals of the tilt sensor in the carrier arm system

❾ USB port for transfer of the button status of the freeze frame and video recording functions.

❿ Connection for potential equalization line in accordance with IEC 60417-5021

## 3.3 Integration options

☞ Observe the set-up instructions for the integration options.

### 3.3.1 ENT treatment units

For integration into ENT treatment units

- ATMOS S 61 Servant
- ATMOS C 21 / C 31 Economy
- ATMOS C 11 Systema



Integration into ATMOS S 61 Servant

Your ATMOS sales and service partner will be happy to inform you about any integration options for the ATMOS ENT treatment units.

**⚠ WARNING**

☞ Please observe that a safe combination of the ATMOS i View can be guaranteed only with the aforementioned units.

### 3.3.2 ENT mobile stand

**⚠ WARNING**

When transporting the mobile stand, please make sure the microscope arm is always in a retracted position and the set screws are tightened.

**For your safety!**

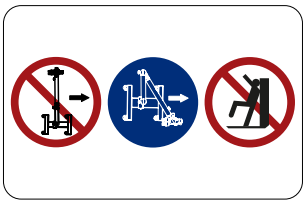
Including accessories, the maximum weight of 160 kg must not be exceeded.

**⚠ WARNING**

**Danger of injury!**

Take care not to roll the device over your feet when moving the mobile stand.

- ☞ The brakes for the mobile stand must be locked when the device is placed in working position.
- ☞ Only monitors that do not exceed the following specifications can be adapted to the mobile stand.
- ☞ Maximum dimensions H x W x D: 60 x 40 x 10 cm, weight: 9.8 kg
- ☞ The stability of the mobile stand cannot be guaranteed for monitors that do not match these specifications.



### 3.3.3 Wall mount

**⚠ CAUTION**

The wall mount is mounted to the wall by means of a rail. The attachment of the microscope head is height adjustable.

- ☞ Please use a water level to align the wall mount!

### 3.3.4 Ceiling mount

**⚠ WARNING**

- Mounting on the ceiling by means of a mounting plate and pipe system. The structural requirements must be met.
- The ceiling mount is suitable for accommodating the ATMOS i View and a monitor of up to 10.5 kg. Only the supply module of the ATMOS i View and the monitor may be connected to the power supply outlets of the ceiling mount.

**⚠ WARNING**

**Danger of injury!**

Do not burden the ceiling mount with additional weight. Do not lean against the carrier arm or microscope and do not hang any objects on it. The ceiling mount may otherwise crash and seriously injure you or patients!

### 3.3.5 U stand

**⚠ WARNING**

When transporting the U stand, please make sure the microscope arm is always in a retracted position and the set screws are tightened.

The device may be used only on a flat surface.

The U stand has an attachment feature for a microscope. It is compatible with the ATMOS i View 21 as well as the ATMOS i View 31.

The monitor support (wall mount) (REF 538.3200.0) can be attached to the U stand if necessary.



**⚠ WARNING**

Only monitors and PCs with a weight that does not exceed 7 kg may be adapted to the U stand.

☞ The stability of the stand cannot be guaranteed for monitors and PCs that do not match these specifications.

The height of the fixed adjustable feet at the stand can be adjusted to allow the stand to be set in a horizontal position.

### 3.3.6 Headlamp holder, magnetic

The headlamp holder can be attached to the U stand if necessary (see chapter “3.3.5 U stand” on page 18).

## 3.4 Putting the device into service

1. Check whether the voltage values on the type plate match the available mains supply.
2. Check the scope of delivery.

☞ Make sure you observe the safety information in chapter “2.1 General safety instructions” on page 10 before putting the device into service for the first time.

☞ After transporting the microscope at low temperatures, it must be kept at room temperature for at least six hours before putting it into service for the first time. The microscope must not be used if it is not acclimatized.

☞ When putting the device into service, take into consideration that the elastic force of the arm without the microscope head is very high. Use the set screw to adjust the height with appropriate caution.

3. To activate the ATMOS i View, please actuate the on/off switch on the front side of the supply module.

## 3.5 Operating requirements

☞ Make sure the following requirements are met for the further operation of the device after installing it:

- All joints and connection parts used that are responsible for the safety of the device are securely mounted and fit properly.
- All electronic connections (cables, plugs, power cables etc.) are in perfect condition.
- The mains voltage and frequency specified on the microscope match the values of the supply network.
- The microscope is connected to an earthed socket installed appropriately with the power cable intended for this purpose.

***ATTENTION***

Please make sure you never point or direct the beam into the patient's eyes. Do not look directly into the light source.

☞ With every light source, the biological tissue may be warmed and, under certain circumstances, damaged by radiation and absorption. Please make sure you keep the luminosity and duration of use to a minimum, switch off the light source when not in use and check the heat development if necessary.

## 3.6 Set-up of the device at a glance

1. Bring the microscope into its initial position on the microscope suspension using the fixing wheel.
2. Adjust the microscope vertically and horizontally.
3. Set all the set screws on the microscope arm to ensure the arm meets the requirements for ease of movement!
4. Swing the microscope into the working area.
5. Adjust the interocular distance by pressing the lens tubes together or pulling them apart.

☞ The interocular distance is set correctly when you see a single circular picture with both eyes!

### 3.6.1 Adjusting the eyepiece lenses

☞ For a detailed description on how to put the device into service and operate it, refer to chapter “4 Operation” on page 20.

# 4 Operation

## 4.1 Microscope suspension

- The microscope head is connected laterally to the microscope arm by means of appropriate suspension.
- All connection cables run through the suspension – therefore no disturbing cables are visible from the outside (with exception of the attachment of the option of an external camera and direct connection to a monitor).
- Due to a locking screw attached to the suspension, the microscope can be adjusted vertically to meet the individual requirements of the user.

1. To fix the microscope head, turn the locking screw clockwise away from you.
2. To loosen the microscope head, turn the locking screw anti-clockwise towards you.

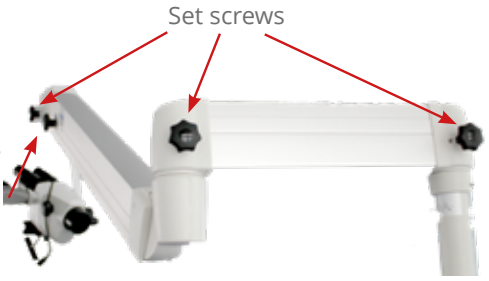



***ATTENTION***

Check the secure mounting of the microscope to the suspension each time before putting the device into service!

## 4.2 Mechanical arm

- The mechanical microscope arm can be set with four set screws according to the individual requirements.
- Choose the strength of the set screws so that the ease of movement of the arm meets your requirements.
- Turn the set screw clockwise to fix the arm.
- Turn the set screw anti-clockwise to loosen the arm.
- To align the arm, please observe the set-up instructions for the integration options.




**⚠ CAUTION**

Prior to use, make sure the set screws of the microscope arm are set correctly.

**Automatic light switching:**
The LED light of the microscope is switched off automatically when the arm is in upper position.

Balance the weight at a safe distance to the patient, other persons and devices each time before using the device. This will ensure that the microscope remains stable in all positions within the working area.

☞ Do not balance the weight until the microscope and all of its components, options and accessories have been installed.

If necessary, use a 6 mm hexagon socket key on the top of the microscope arm to adjust the compression spring on the microscope arm. The microscope should be in a balanced standing position as soon as it has been brought into position. If the microscope drops, the compression spring must be set stronger (hexagon socket key in “+” direction). If the microscope rises, the compression spring must be set weaker (hexagon socket key in “-” direction).

Check the weight balance of the microscope arm in several positions.



Set the vertical movement of the microscope arm with the set screws on the microscope arm and head so that it moves evenly as desired.

## 4.3 Handles

☞ You can choose between two handle versions when purchasing the ATMOS i View.

### 4.3.1 T handle



### 4.3.2 Lateral double handle

The position of the lateral double handle can be gradually adjusted by pulling it out to the side and simultaneously turning it.



## 4.4 Adjusting the interocular distance

The interocular distance can be set to 50 to 75 mm.

- Swivel the microscope into the working area.
- Look through the eyepiece lenses and push the binocular tubes together or pull them apart with both hands.

The correct interocular distance is set when you look through with both eyes and see a single circular picture.



## 4.5 Adjusting the eyepiece lenses

| | |
|---|---|
|  | **People without defective vision:**<br>• The eyepiece lens cups remain in their initial position.<br>Initial position = eyepiece lens cups are pulled out.<br>• Make sure the zero on the dioptre scale matches the index line of the eyepiece lenses. |
|  | **People with defective vision and glasses:**<br>• People with defective vision who keep their glasses on push the eyepiece lens cups in the direction of the binocular tube until they hear them engage. Make sure the dioptre scale is set to zero. |
|  | **People with defective vision but without glasses (refraction values known):**<br>• Take off your glasses.<br>• Set the dioptre scale to the respective number on the eyepiece lenses. Eyepiece lens cups are pulled out.<br>• The focussing process is described in chapter “4.10 Focussing” on page 25. |



**People with defective vision but without glasses (with unknown refraction values):**

- Take off your glasses.
- Set both eyepiece lenses to + 5 dpt.
- Remove the binocular tube, incl. the eyepiece lenses, from the microscope head and focus on a distant object*. At this point the object still looks blurred. Slowly turn the dioptre ring of the first eyepiece lens clockwise until the object appears sharp. Keep your other eye closed in the process. Repeat this procedure a few times to determine an average value. Use the same procedure for the second eyepiece lens.
- Reattach the binocular tube with the eyepiece lenses to the microscope head with the fastening screw.
- The focussing process is described in chapter “4.10 Focussing” on page 25.

☞ * Never use the sun as an object!

To use the soft eyepiece lens cups, the previous eye cups must be removed and replaced by the soft eye cups in accordance with the supplied instructions. Please observe the correct setting of the eyepiece lenses according to chapter “4.5 Adjusting the eyepiece lenses” on page 22 as soon as the soft eye cups have been applied.

## 4.6 Exchanging the objective lenses

The designated thread on the microscope head makes it easy to exchange and fixate the different objective lenses.

The objective lenses can be loosened by turning them anti-clockwise and fastened by turning them clockwise due to the integrated threads.



## 4.7 Exchanging the objective lenses with manual fine focussing

Screw on the objective lens as previously described and lock it with the intermediate screw ring.

## 4.8 Exchanging the VarioFocus objective lens

To undo the VarioFocus objective lens from the microscope head, turn it anti-clockwise. To mount the VarioFocus objective lens on the microscope head, turn it clockwise onto the thread.

### Positioning the setting dial

The setting dial can be positioned on either side of the VarioFocus objective lens.

**Attention!** Hold the VarioFocus objective lens tight during the entire process to prevent it from coming loose from the microscope head and falling down.

Loosen the three grub screws on the objective lens. Continue to hold the objective lens and turn the setting dial in the desired position. Fasten the three grub screws.




## 4.9 Setting the fivefold magnification changer

The fivefold magnification changer from ATMOS allows the magnification to be changed between 0.5x and 2.0x.

- Select the desired zoom factor on one of the lateral locking screws.
- Make sure you hear the chosen magnification factor engage in the respective groove.
- The magnification factors 2.0 – 1.4 – 1.0 – 0.7 – 0.5 are freely selectable.
- The magnification factor currently set points in the direction of the eyepiece lenses.
- The total magnification and the visual field are specified according to the set magnification factor in chapter 4.14.



## 4.10 Focussing




- Set the maximum magnification factor (2.0) on the magnification unit.
- Approach the object with the microscope until the image is sharp.
- If the magnification factor is changed, the pre-set degree of sharpness will be maintained.
- The total magnification and the visual field are specified according to the set magnification factor in chapter “4.15 Microscope magnification and visual field sizes” on page 27.

### 4.10.1 Objective lens with manual fine focussing

The optional fine focussing allows for sensitive and precise focussing within a range of 17 mm. Fine focussing is necessary to focus accurately at a high zoom factor.

- Replace the respective objective lens with fine focussing with the objective lens already installed (simply unscrew it and screw it on again using the thread in the microscope head and secure it with the intermediate screw ring).
- Conduct the focussing as described before.
- Adjust the focus with the setting dial mounted on the side of the objective lens.




### 4.10.2 VarioFocus objective lens

The optional VarioFocus objective lens allows sensitive and precise focussing within a working range of 200-500 mm by means of the setting dial on the side of the objective lens.

## 4.11 Exchanging the binocular tube

The tube's focal distance of 160 mm allows comfortable and observation of the object with both eyes without getting tired. Work is made considerably easier due to the exceptionally large exit pupil and an increased stereo base of 24 mm.

Please hold the tube tight with one hand while undoing the screw. Otherwise, the tube could drop.

- Undo the screw on top of the binocular tube and remove the tube from the microscope head.
- Make sure the gudgeons and grooves of the dove tail fixation engage and the tube lies flat.
- Then tighten the screw again.
- Check for secure fitting.







You can find all suitable binocular tubes provided by ATMOS and the 45° adaption in chapter “8 Options and accessories” on page 39.

## 4.12 Pivoting colour filter

The pivoting colour filter enhances the contrast of the microscopic picture for better visibility of the vessel structures.

- Turn the locking screw 90° clockwise on the side to swivel in the colour filter.
- The bacterial filter is swivelled out of the optical beam path of the microscope again by turning the screw 90° anti-clockwise.




## 4.13 Shadowless illumination

The shadowless illumination option prevents instruments from causing shadows in the field of view. This option cannot be retrofitted.

- No operating steps are required for the shadowless illumination.

## 4.14 Brightness

The brightness can be regulated with the locking screw on the underside of the microscope head if necessary.



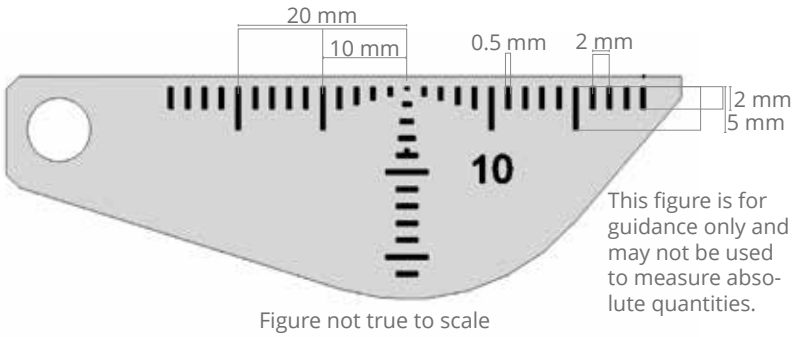
## 4.15 Microscope magnification and visual field sizes

| Objective lens f in mm is equivalent to the approximate working distance | Factor display on the magnification unit | | | | | Eyepiece lenses with tube f = 160 mm |
|---|---|---|---|---|---|---|
| | 0.5 | 0.7 | 1.0* | 1.4 | 2.0 | |
| | Total magnification / visual field Ø in mm | | | | | |
| 200 | 4 / 41 | 5.6 / 30 | 8 / 21 | 11.2 / 14 | 16 / 11 | 10x |
| 250 | 3.2 / 52 | 4.5 / 38 | 6.4 / 26 | 9 / 19 | 12.8 / 13 | 10x |
| 300 | 2.7 / 62 | 3.7 / 46 | 5.3 / 32 | 7.5 / 22 | 10.7 / 16 | 10x |
| 400 | 2 / 80 | 2.8 / 62 | 4 / 43 | 5.6 / 30 | 8 / 22 | 10x |

* Read the values at factor 1 when using the microscope magnification without the magnification unit.

## 4.16 Measuring scale




A true-to-scale dimension scale can be faded into the examination level of the illumination light path using a small locking screw beneath the objective lens. This documentation-capable display enables the measurement of objects, regardless of the selected magnification. The scale is displayed in both the 3D picture and all camera pictures and can be faded out at any time if necessary.

- To show the scale, turn the locking screw 45° clockwise.
- The measuring scale can be swivelled out of the illumination path again by turning it 45° anti-clockwise.

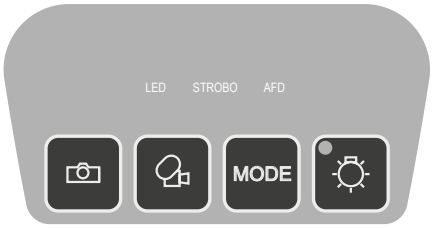
☞ The following dimensions must be observed:

- Distance of 2 mm
- Line width of 0.5 mm

Please observe that these specifications apply only to the following combinations:
Measuring scale for objective lens 300 and 10x wide-angle eyepiece lens.

## 4.17 Image and video recording

Built-in camera: An HD camera can be integrated optionally into the ATMOS i View 31.




**Control panel buttons:**

- Save or freeze the image (see chapter “3.2.3 Operating elements on the microscope” on page 14).
- Start/stop recording a video frequency
- MODE Set the light mode of the built-in HD camera.

The data are transmitted to a connected PC (USB interface).

**Only with built-in HD camera:**

If an external video source is used in addition to the built-in HD camera in ATMOS i View 31 COLPO (connection via external 2 video input), you can switch between the two video sources by switching the LED light on or off. If the LED light goes out, the external video source (if connected) will be output at Video Out 1-3.

☞ Observe this also with the automatic light switching.

### 4.17.1 Setting the light mode of the built-in HD camera

The current light mode of the built-in HD camera is displayed on the monitor by pressing the MODE button once. The light mode can be changed by pressing the MODE button again.

| Light mode | Display on the monitor |
|---|---|
| Standard | • The default setting is automatically selected by switching on the power |
| Center | • The image is displayed with fewer reflexions (centre-weighted brightness control)<br>• Suitable for recordings through an ear speculum |
| Warm | • The image appears warmer |

## 4.18 Endoscope adapter

The standardized endoscope adapter makes it easy to connect an external endoscope camera to the microscope. The endoscope camera can be easily and swiftly connected to the endoscope adapter by means of a special clamping lock. Other endoscope cameras with a standardized connection interface can also be adapted without any difficulty.



## 4.19 Adapter for external camera

You can connect a SONY digital camera with e-mount connection to the ATMOS i View by means of the specially developed adapter. This camera enables you to take and archive HD-resolution pictures.

The adapter is equipped with a cover cap when supplied. This cap is used to protect against dirt and must be reattached whenever the camera is removed or the adapter is not used.



**⚠ WARNING**

Make sure the weight of externally connected cameras does not exceed 300 g.

# 5 Sterilization

## 5.1 Safety notes on sterilization

### 5.1.1 General safety instructions

We recommend that you always document any maintenance work and also any exchange of parts.

It is the responsibility of the user to ensure that the required cleaning and disinfection results are achieved. Validation and routine monitoring of the procedure are usually necessary.

The sterilization process may be carried out only by persons with the necessary expertise. The person in question must possess the equipment required to take the mentioned measures.

### 5.1.2 Sterilization instructions

| **Sterilization warnings** | |
|---|---|
| ⚠ WARNING | **Danger to the user, patient and third parties**<br>• Pull the mains plug before cleaning and disinfecting the microscope surface.<br>• Only trained specialist personnel may carry out cleaning and disinfection work.<br>• Danger of infection due to unsuitable sterilization. Make sure all surfaces are fully covered during the disinfection process. Incomplete coverage may result in insufficient reduction of germs.<br>• The described measures for cleaning and disinfection are no replacement for the valid regulations for operation!<br>• Risk of infection due to unsuitable accessories. Pathogens can be transmitted:<br>- Always wear your own personal protective equipment.<br>- Use only aids that are easy to sterilize or are disposable products. |
| ⚠ WARNING | **Avoiding damage to the device**<br>• The product is to be checked for visible damage each time before sterilization. Damaged devices must not be reused.<br>• Unsuitable cleaning agents and disinfectants can damage the product or impair the sterilization effect.<br>• Damage to the device due to cleaning with fixatives: Stains can no longer be permanently removed.<br>- Do not use any aldehydes either before or during cleaning.<br>- Do not expose the product to temperatures above 40 °C / 104 °F either before or during cleaning. |

| | |
|---|---|
| | • Do not use any aggressive or abrasive cleaning agents for the mechanical microscope surfaces.<br>• The inside of the optics may be cleaned only by a specialist workshop.<br>• Optical surfaces should be cleaned only if necessary.<br>• Never use acetone to clean the optical surfaces.<br>• Unsuitable aids: The product may become damaged.<br>- Use only lint-free, soft cloths.<br>- Follow the corresponding operating instructions for all aids and devices used.<br>• Do not put the device into service until the product is completely dry. |

| | **Instructions** |
|---|---|
| **Preparations prior to cleaning** | 1. Pull the power plug prior to cleaning and disinfection.<br>2. You can remove any dust that has accumulated on the objective lens with a compressed-air handle or a soft, clean brush. |
| **Manual cleaning** | **Optical surfaces**<br>☞ Optical surfaces, such as the objective lens, the eye-piece lenses and the glass cover of the endoscope mounting, should be cleaned only if necessary<br>☞ Wear gloves to avoid fingerprints<br>Use a clean, soft, lint-free lens cloth for the optical surfaces. Moisten the lens cloth with distillated water or apply a cleaning agent suitable for lenses. Alternatively, pre-soaked cleaning cloths can also be used for lenses. Use the cloth to wipe without pressure with spiral movements from the inside to the outside. Repeat the cleaning step, depending on how dirty the lens is.<br>☞ Leave out the openings in the adapter for the camera.<br>**Surface sterilization**<br>Wipe the colposcope/microscope and stand evenly. Use a moist (never wet) cloth soaked with cleaning solution. |
| | **Applies to all surfaces**<br>Repeat the cleaning process if there is visible dirt to avoid impairing the disinfection effect. Repeat the cleaning process if there is visible dirt to avoid impairing the disinfection effect. |

| | |
|---|---|
| **Manual disinfection** | **Optical surfaces**<br>☞ Optical surfaces such as the objective lens, the eyepiece lenses and the glass cover of the endoscope mounting should be cleaned only if necessary.<br>☞ Wear gloves to avoid fingerprints.<br>Use a clean, soft, lint-free lens cloth for the optical surfaces. Apply a few drops of ethanol/isopropanol to the lens cloth. Use the cloth to wipe without pressure with spiral movements from the inside to the outside.<br>Leave out the openings in the adapter for the camera.<br>**Surface sterilization**<br>Wipe the microscope and stand evenly. Use a moist (never wet) cloth soaked with disinfectant.<br>**Applies to all surfaces**<br>Please make sure the surfaces are covered completely and observe the prescribed exposure time of the disinfectant manufacturer. |
| **Drying** | Allow the device to dry completely before putting it back into service. |
| **Maintenance, check and inspection** | 1. Check the success of sterilization by means of visual inspection.<br>2. If the sterilization was unsuccessful, sterilize the device again.<br>3. Dispose of damaged accessories and replace them or have them repaired.<br>4. Subject the device to visual inspection each time before using it; see chapter “6 Maintenance and service” on page 36.<br>☞ If fluid enters the ATMOS i View, the device must be sent in for inspection and may be used only after being checked by a person authorized by ATMOS. |
| **Storage** | **Objective lenses, eyepiece lenses and optical accessories**<br>Optimum image quality is achieved by the multilayer T* coating of the optical components (e.g. eyepiece lenses, objective lenses).<br>The image quality could be impaired even by the slightest contamination such as fingerprints.<br>To protect the internal optics of the microscope from dust, the device must never be stored without a protective cover, adapter for external cameras, objective lenses, binocular tubes or eyepiece lenses.<br>The microscope should be protected from dirt with a suitable cover after using it. Any objective lenses, eyepiece lenses and additional optical accessories should be stored where they cannot become dusty to maintain their function and quality. |

| Additional information | Fogging of optical surfaces |
| --- | --- |
| | To prevent the eyepiece optics from fogging, we recommend using an anti-fogging agent.<br>Anti-fogging agents used by opticians for glasses are also suitable for the ATMOS i View's eyepiece lens optics.<br>☞ Please observe the operating instructions supplied with the respective anti-fogging agent.<br>☞ Anti-fogging agents not only ensure fog-free optics, they also clean and protect them against dirt, grease, dust, fluff and fingerprints. |

### 5.1.3 Overview of the surfaces

For a visual overview of the following surfaces, see:

- Chapter “3.2.2 Microscope overview” on page 13.
- Chapter “4 Operation” on page 20.

| Surface | WHEN | | | | | HOW | | | Comment |
|---|---|---|---|---|---|---|---|---|---|
| | Each time after use | Daily | Weekly | Monthly | Whenever necessary | Pre-cleaning | Wipe cleaning | Wipe disinfection | |
| Housing | | X | | | | | X | X | |
| Mechanical arm with set screws | | | X | | X | | X | X | Cleaning if visibly dirty |
| Binocular tube with wide-field eyepiece lens | | X | | | | | X | X | Disinfect it when the user changes. |
| Eyepiece lens cups, soft | | X | | | | | X | X | Disinfect it when the user changes. |
| Control panel | X | | | | | | X | X | |
| Handles:<br>Lateral double handle or T handle (optional) | X | | | | | | X | X | |
| Applied parts* | X | | | | | | X | X | The respective parts should be cleaned and/ or disinfected after using them. |
| Objective lens | | | | | X | X | X | X | Optical instruments should be sterilized only if necessary to avoid material impairments and malfunctions due to chemical influences. |

* Applied parts consisting of:

- Pivoting colour filter (optional)
- Measuring scale (optional)
- Locking screw for fivefold magnification changer
- Brightness regulator
- Camera adapter (optional)
- Endoscope adapter (optional)
- Cover cap set (optional).

### 5.1.4 Material compatibility

***ATTENTION***

**Unsuitable cleaning agents and disinfectants.**

The product may become damaged.

Do **not** use any:

- Disinfectants that contain organic or inorganic acids or bases for stainless steel, because they can cause corrosion damage.
- Disinfectant with chloramides or phenol derivates for plastic parts, because they can cause tension cracks.

☞ Observe the specifications of the cleaning agent and disinfectant manufacturers with regard to material compatibility, concentration and exposure time.

**Only cleaning agents and disinfectants based on the following active ingredients should be used to sterilize the surfaces:**

**Cleaning of surfaces:**

- Enzymes
- Surfactants

**Specially for the optical surfaces:**

- Distillated water
- Cleaning agent/cloths for optics

**Disinfection of surfaces:**

- Quaternary ammonium compounds
- Amines (not applicable to housings, handles, pivoting bacterial filter, measuring scale)
- Aldehydes

**Specially for the optical surfaces:**

- Ethanol
- Isopropanol

☞ The article REF 538.4400.0 (eyepiece lens cups, soft) is not permanently resistant to disinfectants and cleaning agents. The ageing of the eyepiece cups is accelerated by using these agents! Replace the eyepiece lens cups if they exhibit signs of wear.

☞ The eyepiece lens cups must not be sterilized mechanically. Mechanical cleaning may make the material brittle. Please use only manual sterilization procedures to ensure the function and service life of the eyepiece lens cups.

# 6 Maintenance and service

**⚠ WARNING**

## 6.1 Basic instructions

- Subject the microscope and microscope connection to visual inspection each time before using it. **Damaged cables must be replaced immediately!**
- Maintenance, repairs, and periodic tests must **not** be carried out while the product is being used on the patient.
- Maintenance, repairs and period tests may be carried out only by persons who have the appropriate technical knowledge and are familiar with the product. The person in question must possess the test devices and original spare parts required to carry out these measures.
  **ATMOS recommend** assigning an authorized ATMOS service partner. This will ensure that repairs and inspections are carried out professionally, original spare parts are used and any warranty claims remain unaffected.
- Conduct a repeat test of the electrical safety in accordance with IEC 62353 at least every 24 months. ATMOS recommend in this respect conducting an inspection in accordance with the manufacturer's specifications.
- No warranty claims can be made in the event of damage or malfunctions caused by using non-ATMOS accessories or consumables.
- The instructions and regulations for the respective field of application should be observed.

**ATMOS can neither guarantee fault-free operation nor assume any liability for personal injury and damage to property if:**

- No original ATMOS parts are used.
- The instructions for use included in these operating instructions are disregarded.
- Assembly work, new settings, alterations, extensions or repairs are carried out by persons not authorized by ATMOS.

## 6.2 Sending in the device

- Remove all consumables and dispose of them properly.
- Clean and disinfect the product and accessories in accordance with the operating instructions.
- Submit any used accessories with the product.
- Fill in the form QD434 "Customer Complaint, Return Shipment, Decontamination" and the corresponding **decontamination certificate**.

☞ This form is enclosed with each product and can be found at www.atmosmed.com.

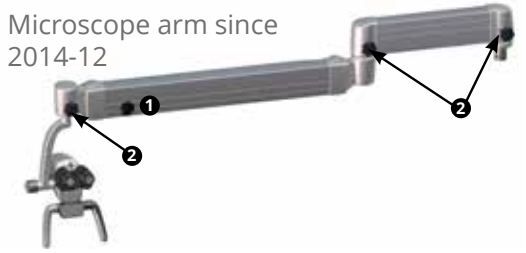
- Pack the product in a dust-proof, well-padded manner using suitable packaging.
- Place the form QD434 "Customer Complaint, Return Shipment, Decontamination" and the corresponding **decontamination certificate** in an envelope.
- Affix the envelope to the outside of the packaging.
- Send in the product to ATMOS or your dealer.

## 6.3 Exchanging spare parts

The handles can be replaced as soon as their function can no longer be ensured. Use the following spare part numbers for this purpose.

| | | |
|---|---|---|
| ❶ | Star grip for carrier arm | REF 538.2017.0 |
| ❷ | Brake star grip with POM | REF 538.2015.0 |

Microscope arm since 2014-12




## 6.4 Changing the fuse

Fuse T 3.15 A/H 250 V: REF 008.0751.0

The system must be disconnected from the mains supply before exchanging the main fuse. For this purpose it is necessary to unplug the power cord from the power outlet.




**Procedure:**

1. Switch off the device.
2. Remove the power cable from the device.
3. Pull the fuse holder from the mains supply.
4. Replace both fuses.
5. Mount the fuse holder.
6. Connect the device to the mains supply.

# 7 Troubleshooting

| Description | Possible causes | Measures |
|---|---|---|
| ATMOS i View cannot be switched on | • Power cable not connected.<br>• Defective fuse. | • Connect the power cable.<br>• Exchange the fuse. |
| ATMOS i View is hot | | • Please ensure sufficient air ventilation<br>• Switch it off and allow it to cool down for 2–3 hours. |
| ATMOS i View is overheated | | Please notify ATMOS's service department. |
| No function whatsoever | ATMOS i View is switched off. | Switch on the ATMOS i View at the connection box. |
| Fivefold magnification changer is defective | | Notify ATMOS's service department. |
| Arm lags behind | • Column is not vertically aligned.<br>• Coverings of the set screws worn out or not fixed in place | Bring the column into line, replace the coverings or fix them in place. |
| Insufficient light or no light at all | ATMOS i View swivelled into "parking position" and light thereby switched off | Pull the ATMOS i View into working position. |
| | Failure of the LED light source. | Notify ATMOS's service department. |
| | Extreme decline in the LED light source. | |
| | The light source is dimmed down too low. | Increase the brightness of the light source. |
| Text is displayed on the screen. | Only with built-in HD camera: Mode button pressed for a long time | Press the mode button again. |

# 8 Options and accessories

## 8.1 Options

| Objective lens | REF |
|---|---|
| 200 mm objective lens | 538.1000.0 |
| 250 mm objective lens | 538.1100.0 |
| 300 mm objective lens | 538.1200.0 |
| 400 mm objective lens | 538.1300.0 |
| 200 mm objective lens with manual fine focussing (17 mm) | 539.1700.0 |
| 250 mm objective lens with manual fine focussing (17 mm) | 539.1800.0 |
| 300 mm objective lens with manual fine focussing (17 mm) | 539.1900.0 |
| 400 mm objective lens with manual fine focussing (17 mm) | 539.2000.0 |
| VarioFocus objective lens (200–500 mm) | 538.4500.0 |
| Fivefold magnification changer | 538.1700.0 |
| Variozoom | 539.2400.0 |
| PLUS depth of field | 538.4100.0 |

| Lens tube | REF |
|---|---|
| Binocular straight tube, 10-times | 538.3900.0 |
| Binocular straight tube, 16-times | 605.2000.0 |
| 45° adaption for binocular tubes | 606.1106.0 |

| General | REF |
|---|---|
| Binocular rotary disk | 538.3300.0 |
| Eyepiece lens cups, soft | 538.4400.0 |
| Shadowless illumination | 538.4300.0 |
| Colour filter, green | 539.1300.0 |
| Endoscope camera adapter | 538.1800.0 |
| Adapter SONY ALPHA camera | 539.2300.0 |
| Built-in full HD camera | 539.1500.0 |
| Measuring scale (200 mm) | 539.1200.0 |
| Measuring scale (300 mm) | 606.1200.0 |
| H.A.S.I. filter | 605.2200.0 |
| T handle | 538.1500.0 |
| Double handle | 538.1600.0 |
| ENT microscope arm | 538.2000.0 |
| Cover cap set | 538.3800.0 |

## 8.2 Accessories

| General | REF |
|---|---|
| Microscope add-on kit (ATMOS S 61 CORIAN® integral) | 532.0880.0 |
| Stand (S 61 Servant) | 534.0119.0 |
| Slanted microscope column | 534.0170.0 |
| Microscope add-on kit (ATMOS C 21 / C 31, single cabinet) | 506.7040.0 |
| Microscope add-on kit (ATMOS C 21 / C 31, double cabinet) | 506.7040.1 |
| Microscope column (ATMOS C 21/31) | 506.7826.0 |
| Stand (ATMOS C 11) | 541.2300.0 |
| ENT mobile stand | 538.2100.0 |
| Wall mount | 538.2800.0 |
| Wall mount, short | 538.2850.0 |
| Ceiling mount | 538.8500.0 |
| U stand | 538.9400.0 |
| Monitor support (wall mount) | 538.3200.0 |
| Headlamp holder, magnetic | 538.9450.0 |
| White Edition microscope column add-on kit, complete | 506.7090.0 |

# 9 Technical data

| | |
|---|---|
| Voltage | 100-240 V~ ± 10%; 50/60 Hz |
| Power consumption | Max. 45 VA |
| Fuses | 2 x T 3.15 A/H 250 V |
| Operating time | Continuous operation |
| Light intensity<br>F 200<br>F 250<br>F 300<br>F 400 | <br>Min. 120 klux<br>Min. 80 klux<br>Min. 55 klux<br>Min. 30 klux |
| Colour temperature | 5000 ± 500 K |
| Cooling | Fanless/passive |
| Protective earth conductor resistance<br>Earth leakage current<br>Housing leakage current<br>Patient leakage current | Max. 0.1 Ω<br>Max. 5 mA<br>Max. 0.1 mA<br>Max. 0.1 mA |
| Ambient conditions for transport/storage<br>- Temperature<br>- Humidity without condensation<br>- Pressure | <br>-10...+50°C<br>30...95%<br>500...1060 hPa |
| Ambient conditions for operation<br>- Temperature<br>- Humidity without condensation<br>- Pressure | <br>+10...+35°C<br>30...95%<br>700...1060 hPa |
| Maximum operating altitude | ≤ 3000 m |
| Contamination level | 2 |
| Overvoltage category | II |
| Weight | 3.65 to 5.6 kg |
| Period tests | Repeat test of electrical safety every 24 months.<br>Recommended: inspection according to manufacturer's specifications. |
| Protection class (EN 60601-1) | I |
| Degree of protection | No applied parts present |
| Type of protection | IP X0 |
| CE mark | CE |
| Ident no. (REF) | 538.0000.0 ATMOS i View 21<br>539.0000.0 ATMOS i View 31<br>538.9000.0 ATMOS i View 21 PRO<br>539.9000.0 ATMOS i View 31 PRO<br>605.0000.0 ATMOS i View 21 COLPO<br>606.0000.0 ATMOS i View 31 COLPO |

# 10 Disposal

- The ATMOS i View does not contain any hazardous materials.
- The housing material is fully recyclable.
- Pay attention to careful separation of the different materials.
- Observe the national disposal regulations (e.g. waste incineration).

**Disposal within the EU**

The device described before is a high-quality medical product with a long service life. The microscope must be disposed of professionally at the end of its life cycle. According to the EC directives (WEEE and RoHS), the device must not be disposed of in domestic waste. Please observe the applicable laws and regulations for the disposal of old devices in the respective country.

**Disposal in Germany**

In the Federal Republic of Germany the Electrical and Electronic Equipment Act (ElektroG) regulates the disposal of electrical devices. It must be assumed that these devices could be contaminated. According to the regulations of the EAR (Stiftung Elektro-Altgeräte Register), this type of device is therefore excluded from the ElektroG. To guarantee proper disposal of your old device, please either pass on your old device to your specialized dealer or send it directly to ATMOS MedizinTechnik for professional disposal.

**The surface of the device must be disinfected prior to disposal or transport.**

## 10.1 Expected service life

The device has an expected service life of 5 years if it is used according to the operating instructions. Regular, thorough cleaning and disinfection of the device and its applied parts as well as the operation of the device in line with the operating instructions are assumed.

# 11 Notes on EMC



☞ Electric medical devices are subject to special precautions with regard to EMC and must be installed according to the EMC instructions described in the following.

### Guidelines and manufacturer's declaration – Ambient conditions

The ATMOS i View 21/31 is suitable for operation in the following environments:

- At professional healthcare facilities, such as medical practices, clinics, first aid facilities and operating theatres.

The following environments are not suitable:

- Within the vicinity of HF surgical devices and in settings outside of an HF-shielded room of a magnetic resonance imaging system.
- The customer or user of the ATMOS i View 21/31 must ensure that the device is operated in a prescribed environment.

### Guidelines and manufacturer's declaration – Key features

☞ Observe the respective technical data in this manual. The key features are fully usable even in the presence of electromagnetic disturbances.

### Guidelines and manufacturer's declaration – Removable components that can be replaced by the operating company

The ATMOS i View 21/31 has the following removable components that can be replaced by the operator:

| Type | REF | Max. cable length |
|---|---|---|
| Power cable | 507.0859.0 | 3.0 m |

### Guidelines and manufacturer's declaration – Warnings

**⚠ WARNING**

The use of electrical components and accessories other than those specified or provided by the manufacturer can cause increased electromagnetic interference or reduced immunity to electromagnetic interference, resulting in faulty operation of the device.

**⚠ WARNING**

Portable RF communications equipment (e.g. radios, antenna cables) must not be used any closer than 30 cm* to any parts of the microscope, including cables, specified by the manufacturer. Otherwise, this could result in degradation of the key features of the device.

☞ *The distance may be reduced at higher immunity test levels.



MedizinTechnik

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