



ADVANCED MATERIALOGRAPHY

# Saphir 250 Series

Manual & Automatic Grinders & Polishers



SAPHIR 250 AI-ECO

part of **VERDER**  
scientific

# New generation design and operating concept for the SAPHIR 250 machine series

Clever functions for more comfort and safety

**The grinding & polishing machines of the SAPHIR 250 M and A-ECO series are characterised by their high quality, robust yet modern design and new functionalities.**

The machine design with its new splash guard ring, clearly laid out working area, water tap and sloping control panel convincingly meets all the requirements for comfortable operation. The direction of rotation of the working wheel can be selected via a switch on the back of the machine. The new mounting system for the working wheel (single disc principle) saves time when changing the grinding and polishing media and cleaning the machine. The machines are available with one or two spindles.

## WATER TAP

The pull-out flexible hose extension allows the tap to be used for cleaning the entire working area and the basin. It can be conveniently operated with one hand.

## ERGONOMICALLY SHAPED SPLASH GUARD RING

The ergonomically shaped splash guard ring significantly reduces splashing. It may also be used as a hand rest for longer preparations.

The recessed grips allow the grinding and polishing medium to be changed while the ring is still attached.

The modified working wheel, the generously designed basin and a loosely fitted splash guard ring ensure a high degree of operator safety.

## SINGLE-DISC DESIGN

After the splash guard ring is removed, the working wheel is freely accessible. Thanks to the innovative mounting system, it locks itself automatically. After lifting it off, all parts underneath are readily accessible for easy and time-saving cleaning of the machine.

## BOOST FUNCTION

The start/stop button with illuminated status display and the rotary switch with scale and integrated boost button allow for intuitive operation of the manual machines.

The set speed remains constant throughout the entire grinding and polishing process.

At the end of the preparation procedure, the boost function may be activated to discharge any liquid left on the grinding and polishing medium in 3 seconds at 750 rpm.

The boost function of the automatic machines is controlled by the machine software.



Saphir 250M1



Saphir 250M2



Saphir 250A1-ECO



Saphir 250A2-ECO



## New features at a glance

1. Sturdy, pull-out water tap
2. Ergonomically shaped splash guard ring with recessed grips for easy cleaning and changing of grinding & polishing media
3. Single disc design means operation without carrier wheel
4. Boost function: Spin cycle feature to remove any liquids left on grinding & polishing media



# SAPHIR 250 M

## Manual Grinders & Polishers

**The SAPHIR 250 M1 and M2 are manual single or twin wheel grinders & polishers for working wheels with Ø 200/250 mm.**

The start/stop button with illuminated status display and the rotary switch with scale and integrated boost button allow for intuitive operation.

At the end of the preparation procedure, a cleaning boost function spins the grinding and polishing medium in 3 seconds at 750 rpm and then switches the machine off.

### Product Advantages

- ◊ Spin cycle feature (Cleaning Boost)
- ◊ Aluminium case, powder coated
- ◊ Working wheel with clockwise / counter-clockwise rotation
- ◊ Easy cleaning / rinsing of bowl by lifting the working wheel (single-disc design)
- ◊ Impact-proof plastic bowl

[www.atm-m.com/saphir-250-m1](http://www.atm-m.com/saphir-250-m1)



Saphir 250 M1

The particularly powerful, speed-controlled drive makes the machine suitable for all work step and materials. The working wheel can be set to rotate clockwise or counter-clockwise. Thanks to the impact-proof plastic basin, powder-coated aluminium case and sophisticated machine technology, the Saphir M series runs very smoothly and ensures excellent preparation results.

In combination with the TOPAS M dosing system, the grinder/polisher SAPHIR 250 M offers a high degree of flexibility for sample preparation as well as ease of operation.



# TOPAS M – Dosing unit

Automatic dosing unit for manual grinders & polishers

**The TOPAS M automatic dosing unit may be used in combination with all manual grinders & polishers.**

The 4 screwable 500 ml glass bottles can be filled through a separate lid, even during operation, and are quickly removed for easy cleaning.

A backflushing function keeps the hoses clean.



Dosing arm



Topas M

## DOSING

The dosing arm with dosing nozzles may be freely positioned on the grinding & polishing machine. The dosing is controlled via the TOPAS M operating panel.

The pre-dosing and backflushing function may also be started manually. After the Topas M has been activated, the liquids are dispensed / dosed automatically during the entire preparation procedure.

In combination with other ATM grinders & polishers, the dosing is also started automatically without the need for manual activation.

## Product Advantages

- ▶ Automatic dosing of 3x diamond suspensions and 1x lubricant or 4x diamond suspension Dia-Complete
- ▶ Dosing intervall adjustable
- ▶ Reverse rinsing function
- ▶ Single or automatic mode
- ▶ For all grinders & polishers
- ▶ Glass bottles for suspensions refillable and removable

[www.atm-m.com/saphir-250-m1](http://www.atm-m.com/saphir-250-m1)

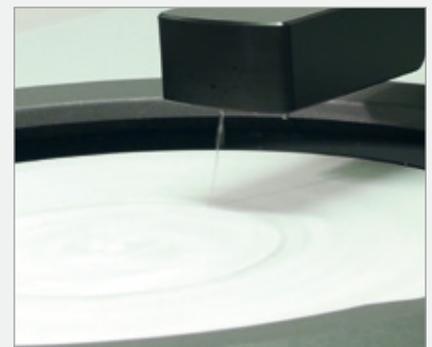
## Dosing



Dosing adjustable



Dosing arm freely placeable on device



Dosing



## Highlights

- ▶ Fully automatic dosing of 3x diamond suspensions and 1x lubricant or 4x diamond suspension Dia-Complete
- ▶ Dosing intervall adjustable
- ▶ Reverse rinsing function
- ▶ Controlled by software of SAPHIR 250 A grinders & polishers
- ▶ For grinders & polishers SAPHIR 250 A series
- ▶ Glass bottles for suspensions refillable and removable

# TOPAS A-ECO

Fully automatic dosing unit for Saphir 250 A-ECO devices

The **TOPAS ECO** fully automatic dosing unit is designed for use with the automatic grinding machines of the **SAPHIR 250 A series**, and seamlessly fits into the design line. The 4 screwable 500 ml glass bottles can be filled through a separate lid, even during operation, and can be quickly removed for easy cleaning. After manual activation, a backflushing function flushes back the hose contents and keeps all the hoses clean.

## DOSING

The dosing nozzles of the TOPAS ECO are easily attached to the grinding and polishing head of the SAPHIR ECO. The dosing is controlled fully automatically by the SAPHIR 250 A-ECO software.

## SUSPENSION TANK

The glass bottles have a capacity of 500 ml. They may be filled through a separate inlet in the lid any time once they have been inserted. They automatically lock into place when being inserted and are easily removed.

## MAGNETIC STIRRER (OPTIONAL)

The control of the magnetic stirrer is integrated in the SAPHIR 250 A machine series. It has 4 stirring stations, and prevents the suspension from settling in the bottles. The speed can be varied as required with a knob on the back of the machine.

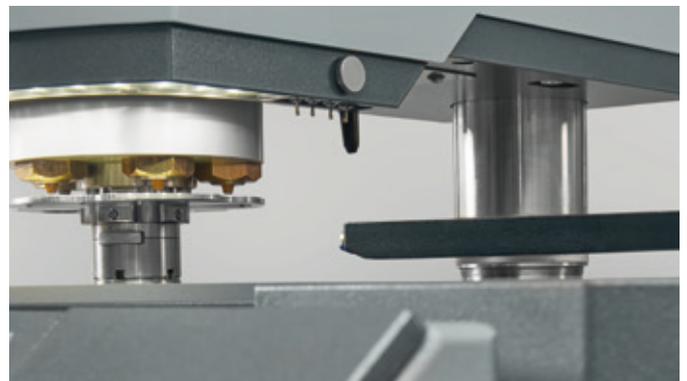
The automatic stirring of the suspensions by a **MAGNETIC STIRRER** ensures optimum distribution of the abrasive particles in the suspension before use. This homogenisation substantially improves the preparation result.



Principle of the magnetic stirrer



Topas A-ECO



# SAPHIR 250 A-ECO

Automatic grinders & polishers in a new design

**The SAPHIR 250 A1 and A2 ECO are single or twin wheel grinders & polishers for working wheels with  $\varnothing$  200/250 mm and sample holders with  $\varnothing$  130 mm. The machines, which can be operated intuitively using a 4.3" touch screen, offer the greatest possible reproducibility for sample preparation and operating convenience.**

Entire preparation methods may be edited and saved, protected by a User Account Management function, implemented in the control software.

At the end of the preparation procedure, the cleaning boost function integrated in the software spins any liquid left on the grinding & polishing medium in 3 seconds at 750 rpm.

The contact pressure of the sample holder, as well as the speed and direction of rotation of the head and working wheel, may be adjusted.

The robust machine is combinable with the TOPAS ECO dosing system and may also be operated manually.

In addition to the single-disc principle and the LED illumination of the working area, the machine features functions such as **automatic dosing**.



Saphir 250 A1-ECO



## Highlights

- ▶ Spin cycle feature (Cleaning Boost)
- ▶ 4,3" Touch screen with intuitive ATM user software
- ▶ 200 customized programs storable
- ▶ Easy cleaning / rinsing of bowl by lifting the working wheel (single-disc design)
- ▶ Variable speed of working wheel and polishing head
- ▶ Working wheel and polishing head with clockwise / counter-clockwise rotation
- ▶ Impact-proof plastic bowl
- ▶ Aluminium case, powder-coated
- ▶ Energy-saving LED illumination of working area



250 A1-ECO

# SAPHIR 250 A-ECO with dosing unit TOPAS ECO

Perfect combination of performance and design

## Polishing head ECO

- Two-handed operation for operator safety
- Grip recesses on both sides for easy swivelling and movement
- Integrated buttons for unlocking
- Adjustable swivel limits
- Automatic water supply
- Energy-saving LED illumination of the working area
- Variable speed control for the polishing head
- Polishing head with clockwise / counter-clockwise rotation
- Holder for 4x dosing unit TOPAS-ECO integrable
- For sample holders with  $\varnothing$  130 mm

## Working wheel

- For working wheels  $\varnothing$  200/250 mm
- Single-disc design
- Variable speed control
- Clockwise / counter-clockwise rotation
- Easy, fast and tool-free change of working wheel

## Control

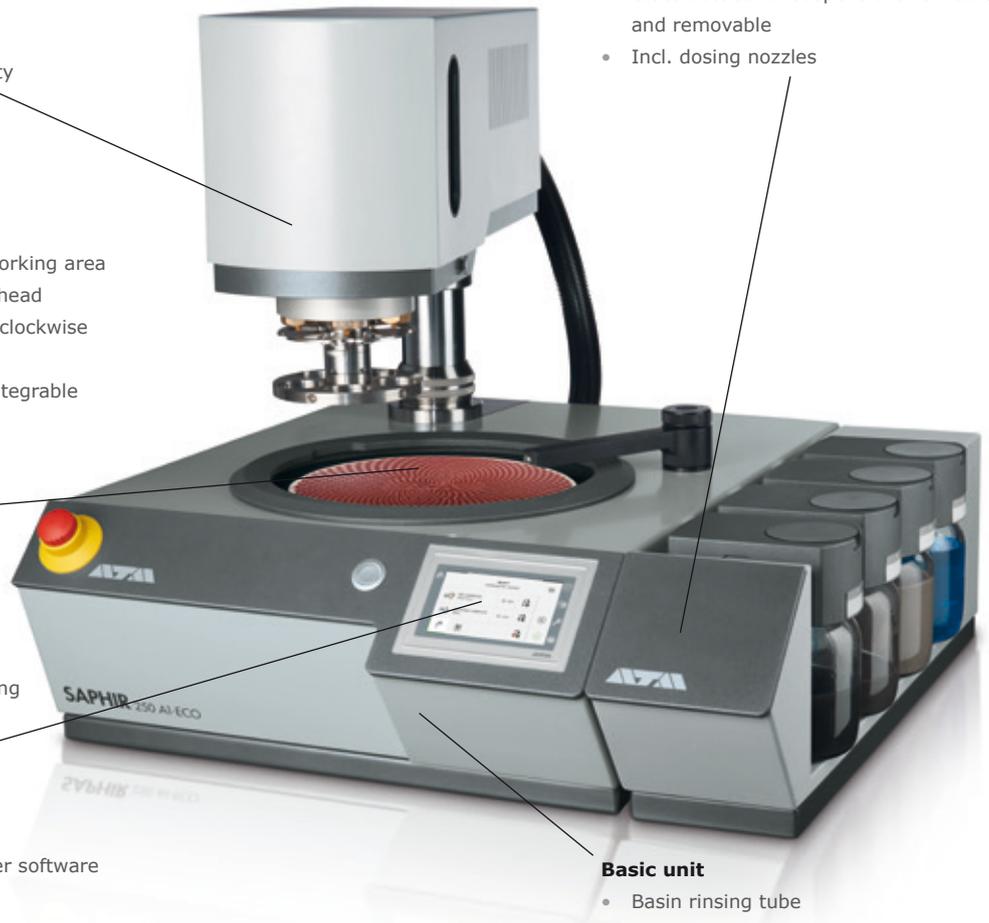
- 4,3" Touch screen with intuitive ATM user software
- 200 customized programs storable
- Spin cycle feature (Cleaning Boost)
- USB plug for data transfer and software updates
- Ethernet plug for online-diagnostics and user support

## Dosing unit TOPAS ECO

- Automatic dosing of 3x diamond suspensions and 1x lubricant or 4x diamond suspension Dia-Complete
- Dosing intervall adjustable
- Reverse rinsing function
- Controlled by software of SAPHIR 250 A grinders & polishers
- Glass bottles for suspensions refillable and removable
- Incl. dosing nozzles

## Basic unit

- Basin rinsing tube
- Aluminium case, powder-coated
- Impact proof plastic bowl
- Incl. ergonomically shaped splash ring and cover



## Accessories - choice of standard or customized solution



Sample holders for Saphir 250 A-ECO

For the Saphir 250 A-ECO grinders & polishers, sample holders with a diameter of 130 mm are available for 5 samples of  $\varnothing$  40 mm. Matching distance rings also allow smaller diameters to be ground and polished. Drop-shaped sample holders are suitable for samples with  $\varnothing$  20-40 mm.

ATM offers a large portfolio of standard sample holders in different diameters for various tasks and machines. Samples with unusual dimensions can be clamped using special sample holders.

# Customer benefits redefined

## User comfort guaranteed

The design of the new ATM control software guarantees an intuitive and user-friendly operation.

All **standard preparation methods** for commonly used materials, including the respective consumables, are already pre-installed. It is possible to store up to **200 user-defined methods**.

The possibilities for setting grinding and polishing times and dosing of suspensions or lubricants are virtually unlimited.

The progress of an ongoing preparation step is indicated by a **status bar**. An **acoustic signal** at the end of each grinding and polishing step may be activated in the service menu.

In the **User Account Management** the machine operator can set **variable user rights**, to regulate, for example, access to the program parameters.

At the end of the preparation process, the software-controlled **cleaning boost function** spins the grinding and polishing medium in 3 seconds at 750 rpm and then switches off the manual machines.

With the automatic machines the preparation is continued with the next preparation step.

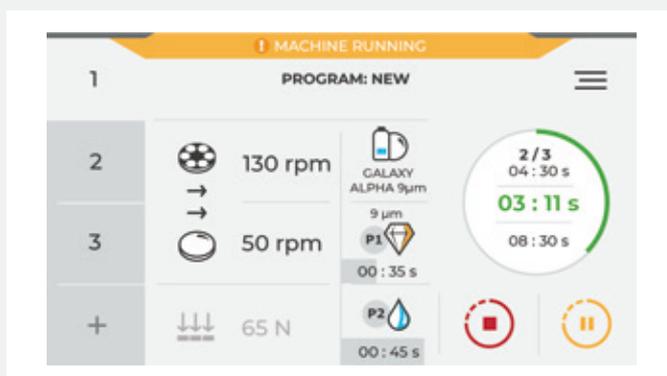
The **TOPAS ECO dosing system** (optional) is controlled via the 4.3" touch screen; the **magnetic stirrer function** for homogeneous distribution of the grinding and polishing particles in the suspension can also be activated in the software.

## Highlights

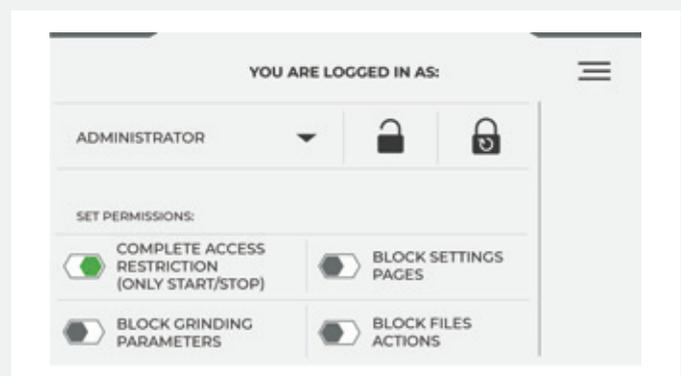
- ▶ Software
  - Pre-installed preparation methods for standard materials
  - User-defined methods
  - Complete preparation methods can be edited
  - Preparation methods can be saved and loaded
- ▶ User Account Management
  - Variable user rights
  - Editing protection for preparation methods
  - Editing protection for parameter settings
- ▶ USB/Ethernet interface
  - Data transfers
  - Data backup
  - Software updates
- ▶ Ethernet port
  - Remote Control / remote maintenance

Data can be saved and transferred to other machines via the **USB interface**. The **Ethernet interface** enables remote control for user support.

## New software design



Preparation with status display



Variable user rights in the User Account Management

## Operation made easy

Practical innovations for more comfort

### OPERATING COMFORT

The ECO grinding & polishing head with adjustable swivelling limits is equipped with recessed grips on both sides and integrated buttons for easy swivelling and adjustment. A large gap between the working surface and the polishing head ensures convenient changing of the sample holder.

### VARIABLE SPEED

The grinding & polishing head ECO exerts 5 - 80 N in single pressure and 20 - 350 N in central pressure mode. Up to 5 samples  $\varnothing$  40 mm can be moved at variable speed with sample holders  $\varnothing$  130 mm.

### ELECTRONIC CONTROL SYSTEM

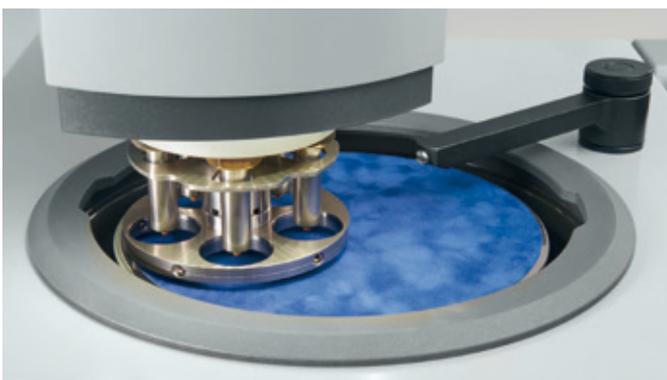
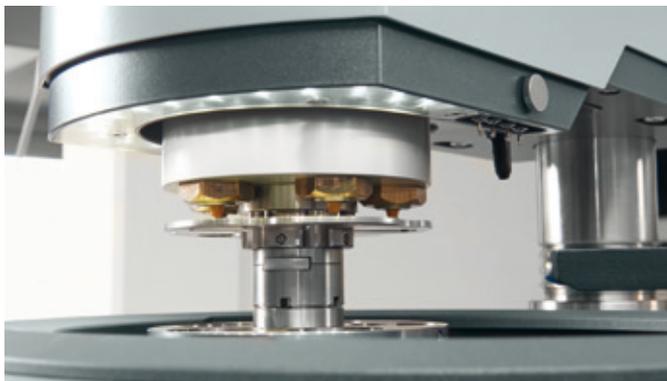
The machine is operated and programmed via the 4.3" touch screen. Preparation methods for sample preparation may be edited and saved.

It is also possible to prepare samples manually.

### ECO POLISHING HEAD

The ECO polishing head is equipped with LED illumination of the working area and a holder for the nozzles of the TOPAS ECO dosing system.

Water is supplied automatically via the head.



Saphir 250 A2-ECO

## Manual grinders & polishers at a glance

Manual grinders & polishers	
	
Model	Saphir 250 M1
	Saphir 250 M2

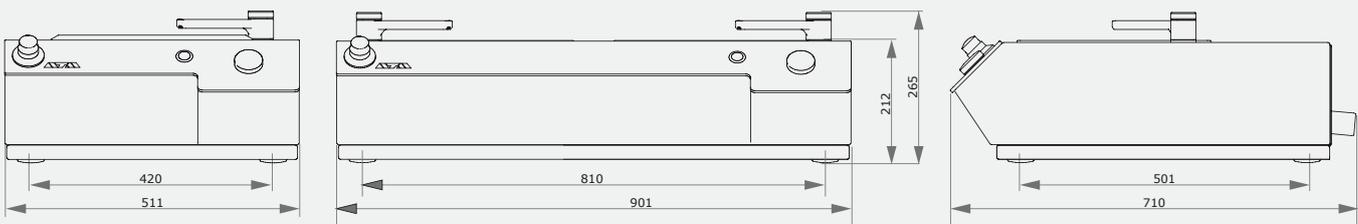
<b>Application</b>	Manual grinding and polishing of materialgraphic samples
<b>Fields of application</b>	Preparation of sample surfaces for the materialgraphic analysis

### Performance data

<b>Working wheels</b>	Ø 200/250 mm
<b>Rotational speed</b>	variable
<b>Rotation</b>	synchronous/counter

### Technical Data

<b>Power input</b>	1.6 kVA	
<b>Power supply</b>	200-240 V / 50/60 Hz (1Ph/N/PE) 100-120 V / 50/60 Hz (1Ph/N/PE)	
<b>Rotational speed</b>	30-600 rpm	
<b>W x H x D</b>	511 x 265 x 710 mm	901 x 265 x 710 mm
<b>Weight (depends on equipment)</b>	~ 25 kg ~ 30 kg	~ 45 kg ~ 49 kg
<b>Further information</b>	<a href="http://www.atm-m.com/saphir-250-m1">www.atm-m.com/saphir-250-m1</a>	<a href="http://www.atm-m.com/saphir-250-m2">www.atm-m.com/saphir-250-m2</a>



## Automatic grinders & polishers at a glance



<b>Application</b>	Automatic grinding and polishing of materialographic samples
<b>Fields of application</b>	Preparation of sample surfaces for the materialographic analysis

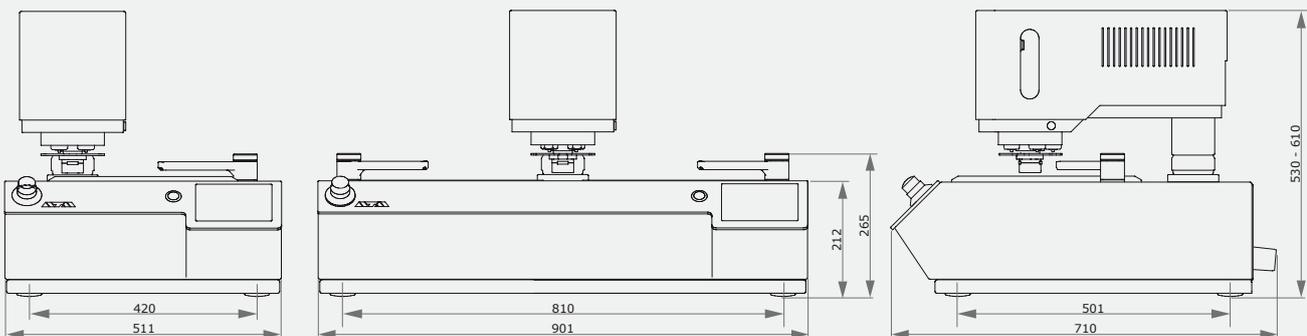
### Performance data

<b>Working wheels</b>	Ø 200/250 mm
<b>Rotational speed</b>	variable
<b>Rotation</b>	synchronous/counter

Polishing head ECO	
<b>Sample downforce</b>	variable
<b>Single pressure</b>	5 – 80 N
<b>Central pressure</b>	20 – 350 N

### Technical Data

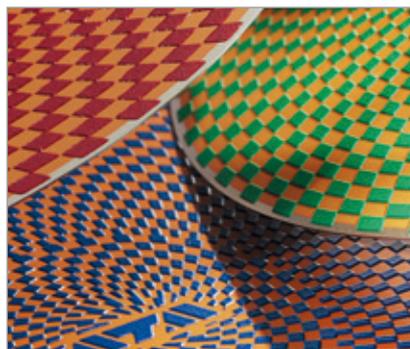
<b>Connected load</b>	1.6 kVA	
<b>Power supply</b>	200-240 V / 50/60 Hz (1Ph/N/PE) 100-120 V / 50/60 Hz (1Ph/N/PE)	
<b>Working wheel speed</b>	30-600 rpm	
<b>Sample holder speed</b>	30-160 rpm	
<b>W x H x D</b>	511 x 500-610 x 710 mm	901 x 500-610 x 710 mm
<b>Weight (depends on equipment)</b>	~ 64 kg ~ 72 kg	~ 78 kg ~ 85 kg
<b>Further information</b>	<a href="http://www.atm-m.com/saphir-250-a1eco">www.atm-m.com/saphir-250-a1eco</a> <a href="http://www.atm-m.com/saphir-250-a2eco">www.atm-m.com/saphir-250-a2eco</a>	



## ATM consumables for the materialographic lab



SiC-paper



Grinding &amp; polishing discs GALAXY



Polishing cloths

## Dosing units at a glance

Dosing units		
		
Model	TOPAS M	TOPAS ECO

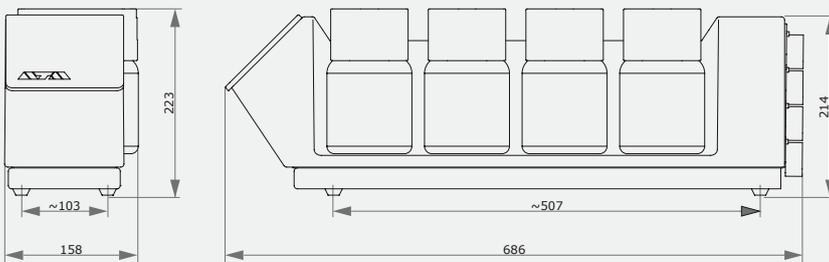
<b>Application</b>	Automatic dosing of suspensions and lubricant	Fully automatic dosing of suspensions and lubricant
<b>Fields of application</b>	all manual grinders & polishers	all grinders & polishers SAPHIR 250A-ECO series

### Performance data

<b>Number of containers</b>	4
<b>Filling capacity</b>	500 ml

### Technical Data

<b>Connected load</b>	0.2 kVA	via grinder & polisher
<b>Power supply</b>	100-240 V / 50/60 Hz (1Ph/N/PE)	via grinder & polisher
<b>W x H x D</b>	158 x 223 x 686 mm	
<b>Weight</b>	~ 9 kg	
<b>Further information</b>	<a href="http://www.atm-m.com/saphir-250-m1">www.atm-m.com/saphir-250-m1</a>	<a href="http://www.atm-m.com/saphir-250-a1eco">www.atm-m.com/saphir-250-a1eco</a>



Diamond suspensions



ATM Solution Boxes



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### ATM News Mounting 4.0: Opal X-Press

Good day,

with this newsletter we would like to introduce the world's most innovative hot mounting press **Opal X-Press**. Its modular design and innovative features based on proven ATM technology make this instrument highly flexible and user-friendly. The basic unit can be equipped with up to 3 additional pressing units - independent from each other. With the new **OPAL X-Press** maximum sample throughput for moderate cost can be taken for granted.



Click here to learn more:

Brochure

Video

### material 2018

The customer magazine "material 2018" is now available in English language.  
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ATM GmbH | Emil-Reinert-Str. 2 | 57636 Mammelzen, Germany  
Tel. +49 (0) 2681 9539-0 | E-Mail [info@atm-m.com](mailto:info@atm-m.com) | [www.atm-m.com](http://www.atm-m.com) | Privacy Policy



ADVANCED MATERIALOGRAPHY

#### ATM GmbH

Emil-Reinert-Str. 2  
57636 Mammelzen · Germany

Telefon +49(0)2681/9539-0  
Telefax +49(0)2681/9539-20  
E-Mail [info@atm-m.com](mailto:info@atm-m.com)  
Internet [www.atm-m.com](http://www.atm-m.com)

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