

Thin Sections. Great Insights.

GRN40 Grinding Machine



High precision $\pm 1 \mu\text{m}$ ~ 40 samples per batch

Fast automatic processing ~ No abrasive ~ Low Maintenance

"As an university lab, precision and thin section quality are very important to us. Astera machines have proven to be an outstanding solution, allowing very precise and detailed sample analysis."

Irina Maria Dumitru, Research Technician
Institute for Earth Science, University of Bergen

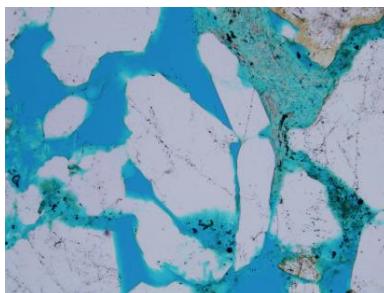
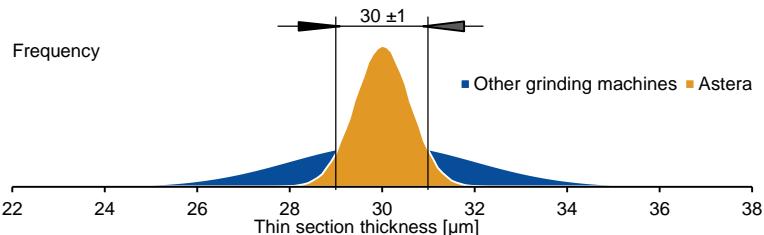
High quality with minimum effort

At Astera Solutions we understand that the most precious resource in the lab is your valuable time. Since 1994, we have designed our solutions in close collaboration with leading experts to deliver unprecedented thin section quality and accuracy, while increasing efficiency and ease-of use. High precision, high reliability and trouble free processing let you focus on what really matters – great sample results.

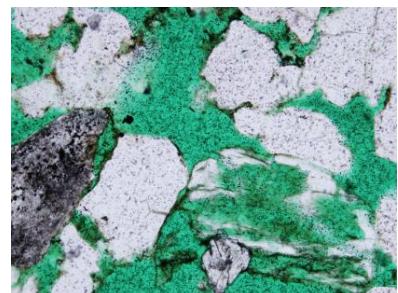
Higher Quality

High precision is of utmost importance to ensure robust thin section analysis. Astera Solutions provides best in class precision of $\pm 1 \mu\text{m}$ through our breakthrough machine design.

Since no abrasive is needed, your thin sections remain clean and don't necessarily need to be lapped. You will notice a distinct quality improvement from day 1, easing the thin section analysis.



State-of-the-art Astera Solution - pore spaces are clear and evenly colored, allowing highest quality analysis.



Previous thin section equipment - pore spaces contain large quantities of abrasive powder, the dark grains on the picture, thereby complicating analysis.

Improved Productivity

Consistently high quality ensures high yield by reducing rejects. With up to 40 1"x2" samples per batch and fast and automatic processing, the GRN40 offers truly outstanding performance. In addition, other sample sizes can be processed with the GRN40, e.g. 1" x 3" or 2" x 3". The two spindles allow to use different grinding wheels, with different surfaces. It allows a faster and more precise processing, eliminating the need of operator intervention, while the color touch screen interface ensures constant control over the process.

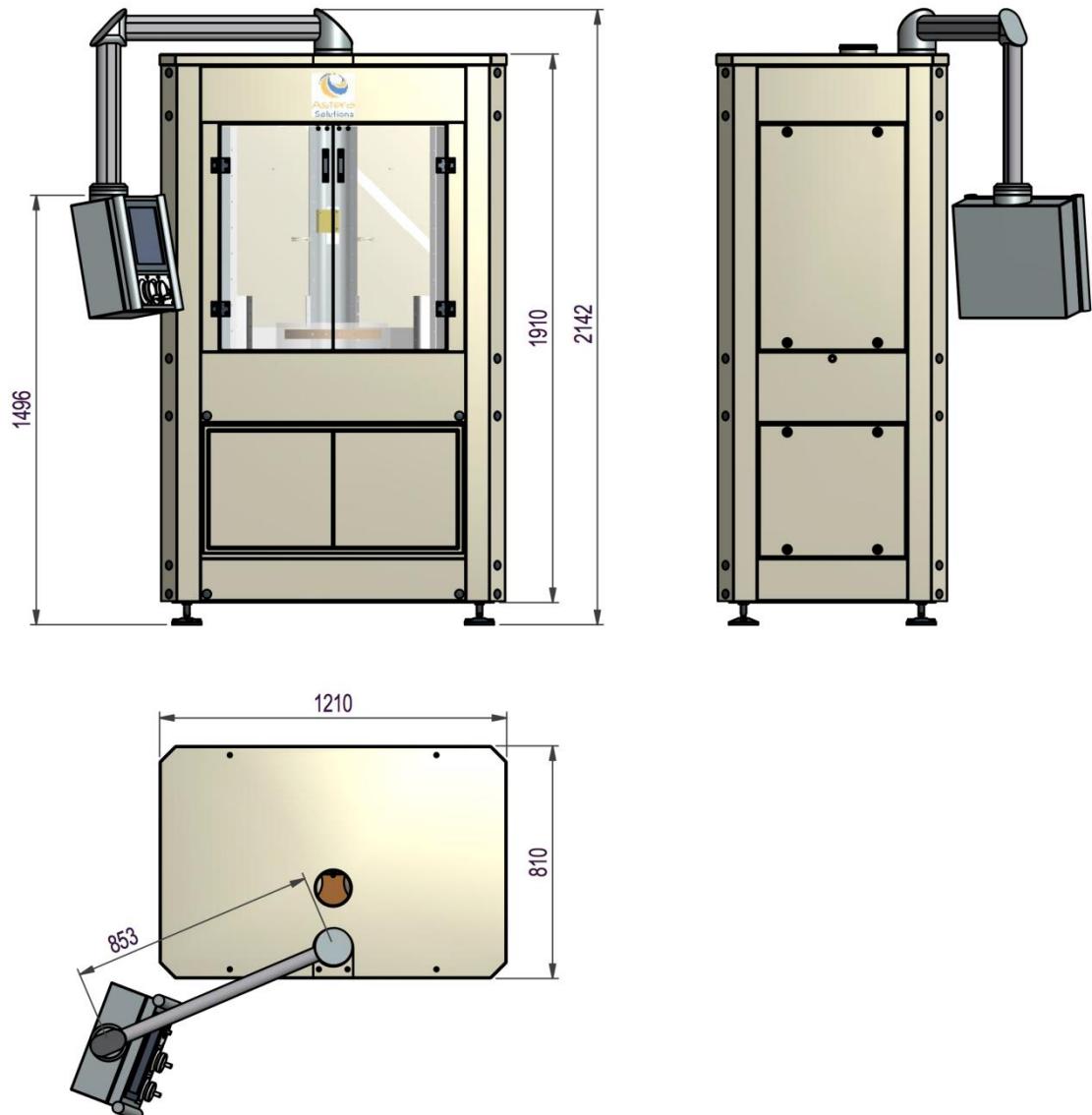
Higher Reliability

Almost 20 years of continuous trouble-free operational experience in thin sample preparation makes Astera™ the industry standard for reliability. Process control includes a semi-automatic calibration, increasing consistency and diminishing the need for maintenance by a service technician. Absence of abrasive also means lower maintenance, as machine wear and tear is reduced. Nevertheless, in the event of any technical issue, our support team is available on the phone and can even provide direct support through the remote web-based connection.

Lower Cost

The high productivity of Astera machines combined with low operating costs will result in the lowest cost per sample in the industry. Full automation reduces processing time. Low operating costs are achieved through the absence of abrasive in the process and negligible maintenance. In addition, the high precision makes lapping unnecessary, thus saving the need for an additional machine.

Astera GRN40 Specifications



Characteristics

Capacity	40 samples
Standard sample size	1" x 2"
Other sample sizes	2" x 3" and 2" x 4"
Cycle time per batch	40'
Spindle speed	0-1600 rpm, adjustable
Stroke z-axis	100 mm
Grinding cup wheel	400 & 1500
Mounting	Stand alone
Dimensions	1200 x 800 x 2060 mm
Weight	1200 kg
Power supply	400V -N 50Hz 3P
Vacuum system	Included
In-line measuring system	Included
Remote support	Web connection

Accessories & options

- Other grinding cup wheel (140, 800, 2500)
- Polishing wheel
- Circulation system for silicon oil and water
- Plate for other sample size on request

The Astera Family

Astera Solutions offers a suite of complimentary machines and products to enable the preparation of consistently outstanding quality thin sections. Compatible machine designs mean our equipment works better together, saving precious processing time in the lab. Plus, our **precision ground glass slides GLA** provide accurate, off-the-shelf substrates and eliminate lost glass grinding time and machine wear.

Astera Cutting, Vacuum and Grinding machines

- **Astera Vacuum machine VAC12** delivers thorough impregnation, even for the most demanding materials. Able to handle 12 samples, the VAC12 machine can reach pressures as low as 5 millibar.
- **Astera Gluing machine GLU20** allows high quality gluing without hassle. The GLU20 comes in a standalone unit with precisely controlled heating plate included.
- **Astera Cutting machine CUT8** guarantees precision from the beginning. Able to handle 8 samples at a time, the CUT8 was designed to avoid saw bending and enable an even cut.
- **Astera Grinding machine GRN16** delivers high sample capacity and productivity, with low unit cost. Designed for 16 sample batches in a compact design that suits on a desktop, it allows high productivity, without compromising on quality.

Astera Precision Ground Glass Slides, GLA

Before bonding samples to glass slide substrates, slides have to be accurately ground down to meet precise thickness tolerances. Astera accelerates thin section processing by delivering pre-ground 1mm and 1.5 mm slides, precisely calibrated to $\pm 0.5\mu\text{m}$.

Astera Consumables

Astera Solutions also offers the following consumables: diamond spray, high quality silicon oil, epoxy resin, fluorescent resin and standard glass slides.

Astera Family Specifications

		samples number per batch	Cycle time per batch [min]	precision [μm]	Fit research needs	Fit Industry needs	Weight [kg]	Dimension, WxDxH [mm]
Vacuum machine	VAC12	12	25'	-	•	•	80	505 x 403 x 600
Ground glass slides	GLA	-	-	± 0.5	•	•	-	50.8 x 25.4
Gluing machine	GLU20	20	600	-	•	•	10	654 x 130 x 182
Cutting machine	CUT8	8	3'	± 10	•	•	70	705 x 550 x 350
Grinding machine	GRN16	16	40'	± 1	•		250	800 x 600 x 750
Grinding machine	GRN40	40	40'	± 1		•	1200	1200 x 800 x 2060

Contact

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"Prior to 1994 our thin sections had abrasive residue which degraded their quality, especially for impregnated sandstone. Working together, Statoil and Astera Solutions solved the problem. The innovative technology co-developed with Astera has been a game changer, allowing us to prepare samples with no abrasive residue. With the Astera machine, we are now able to prepare clean thin sections of superior quality that fully meet our demanding specifications."

Geir Torkildsen, Laboratory Manager, Statoil



Astera
Solutions