

PELCO® LatticeAx® Scribing & Cleaving

Now manufactured & available from Ted Pella, Inc.



#54305 Large Sample Platform available for all PELCO® LatticeAx® Models

NEW PELCO® LatticeAx® 420

The PELCO® LatticeAx® 420 (formerly from LatticeGear™) provides the Highest level of Accuracy and Performance in the PELCO® LatticeAx® Indent and Cleaving System model lineup. The PELCO® LatticeAx® 420 delivers our highest cleaving accuracy of 10µm in less than 5 minutes making it ideal for any lab that values speed and high accuracy while at the same time needing to accommodate a variety of sample sizes, thicknesses and material types. The patented PELCO® LatticeAx® base is integrated with a complete vision package that includes a monocular microscope with 4µm optical resolution, color CCD camera and real-time image acquisition and display software, and an X-Y stage. This dedicated cleaving workstation is designed so any trained user can easily survey, align, micro-indent, cleave, and inspect processed samples.

Features:

- Ultra high accuracy positioning of target ($\pm 10\mu\text{m}$)
 - Focus mount with coarse and fine focus control
 - Monocular, parfocal, zoom lens (0.58-7x mag) with color CCD camera*
 - Indent position control with 5µm step size
 - Polished tip diamond indenter
 - 5 minute process sample setup to cleave
 - Simple to use, ergonomic design and small footprint
 - Cleaves a wide range of materials and sample sizes
 - Clock dial for indent depth calibration
- * computer and monitor not included

54300
54300-220

PELCO® LatticeAx® 420 Sample Cleaving System.....each
PELCO® LatticeAx® 420 Sample Cleaving System, 220Veach



NEW PELCO® Small Sample Cleaver™

Using simple mechanics, the PELCO® Small Sample Cleaver™ (formerly from LatticeGear™) uses a novel sample holder and a cleaving platform to safely cleave samples into chips as small as 2 x 2mm. The novel sample holder allows samples from 4-10mm to be held during indenting and cleaving. No more handling samples directly with fingers – gloved hands are ok. The holder has no screws, springs or pins. Accepts samples from 3-15mm in width and 200-900µm in thickness.

Features:

- Four magnetic hold-downs for various sample thicknesses
- Securely transfer the sample to the PELCO® LatticeAx® for indent, then back to the Small Sample Cleaver™ for cleaving
- Two cleaving pins for cleaving a variety of sample types
- Gauge sets the sample for an 0.5mm indent versus the standard 1mm indent on the PELCO® LatticeAx®

54367

PELCO® Small Sample Cleaver™ Cleaving Systemeach

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Microscopy Products for Science and Industry

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NEW PELCO® LatticeAx® 225

The PELCO® LatticeAx® 225 (formerly from LatticeGear™) Precision Indent and Cleaving System builds on the patented PELCO® LatticeAx® 120 base system with the addition of high magnification imaging, enabling increased precision of indenter positioning. This resulting in samples cleaved with increased accuracy. The PELCO® LatticeAx® 225 can deliver 20µm positional accuracy with high quality cleaved surfaces in approximately 5 minutes for a trained operator. The imaging package includes a focusing mount, a digital microscope with polarizer and real-time image acquisition and display software. Through realtime imaging, the indent is placed accurately with respect to the target making cleaving the sample target simple and fast for all trained users. The PELCO® LatticeAx® 225 accepts samples of multiple material types through a wide range of surface area sizes and thicknesses.

Features:

- ±20 microns cleaving accuracy
- Robust workstation platform designed for indenting and cleaving
- USB2 digital microscope with realtime digital imaging interface*
- Microscope mount with fine focus control
- Vacuum pump to secure sample with pneumatic valve switch

*computer and monitor not included

54310
54310-220

PELCO® LatticeAx® 225 Sample Cleaving System.....each
PELCO® LatticeAx® 225 Sample Cleaving System, 220Veach



NEW PELCO® LatticeAx® 120

The PELCO® LatticeAx® 120 base system (formerly from LatticeGear™) comprises a scribeless cleaving instrument with fine, adjustable control of the indentation action on the sample surface, followed by a precision controlled 3-point cleaving step for the production of a high-quality cleaved sample cross-section.

It includes a LatticeAx® vacuum stage to secure the sample during the indentation step; a precision, low-profile linear stage to accurately set the indentation position; a pre-installed diamond indenter; and a small vacuum pump with its connection hose.

It is a compact, versatile and powerful cleaving tool for downsizing and cross sectioning a wide range of substrates including Silicon, GaAs, InP, Sapphire, Glass, and Hard Disk Drive Platters. With the PELCO® LatticeAx® 120, you can cleave your samples as they are, without additional preparation or strict rules on the size, shape, thickness, edge quality and material type.

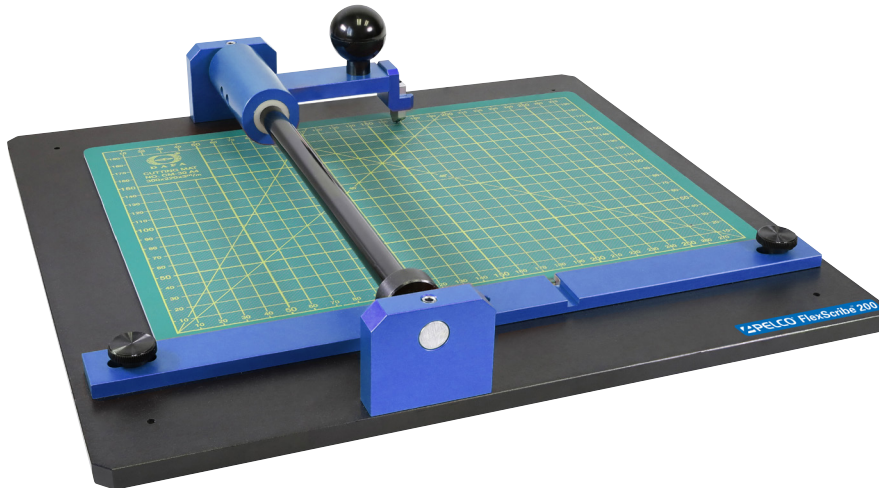
54320
54320-220

PELCO® LatticeAx® 120 Sample Cleaving System.....each
PELCO® LatticeAx® 120 Sample Cleaving System, 220Veach

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NEW PELCO® FlexScribe™

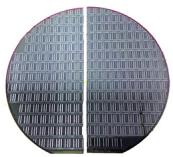
The PELCO® FlexScribe™ (formerly from LatticeGear™) is a super-fast, simple method for downsizing wafers and samples by scribing on the topside. It uses a scribing wheel mounted to a sliding scribing mechanism that always makes a straight scribe. This system is used to scribe a wide variety of materials without restrictions on shape, including glass slides, coverslips, silicon, III-V, sapphire and other crystalline and brittle materials. It can address very small samples down to 5mm up to 200mm wafers for the #54340 model, and up to 300mm wafers for the #54342 model.

The standard tungsten carbide cutter installed on the PELCO® FlexScribe™ is great for a wide variety of samples including silicon, glass, GaAs and other crystalline materials. Diamond and deep-cutting scribing wheels are also available.

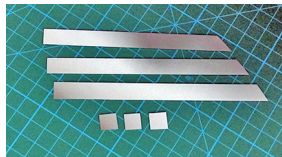
Indenter recommendations:

- #54346 Tungsten carbide scribing wheel is good for general purpose use.
- #54343 Diamond cutter for very thin glass, tempered glass and hard materials such as sapphire.
- #54344 Deep cutting wheel, for applications like thick glass or off-axis cleaving.

Application examples:



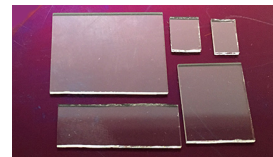
Break down wafers



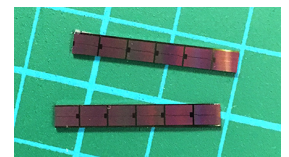
Cleave strips & dies



Cleave off crystal axis



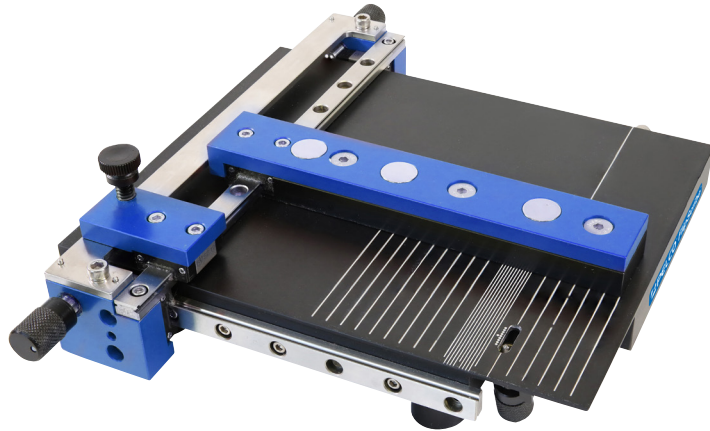
Cleave glass & sapphire



Cut coupons for section cleaving

54340	PELCO® FlexScribe™ 200 Front-Side Scribing Tool for up to 200mm Wafers	each
54342	PELCO® FlexScribe™ 300 Front-Side Scribing Tool for up to 300mm Wafers	each
54343	Diamond Scribing Wheel for PELCO® FlexScribe™	each
54344	Deep Cut Scribing Wheel for PELCO® FlexScribe™	each
54346	Standard Replacement Scribing Wheel for PELCO® FlexScribe™	each
54345	Double-Sided Ruled Mat for PELCO® FlexScribe™ 200	each
54348	Double-Sided Ruled Mat for PELCO® FlexScribe™ 300	each

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NEW PELCO® FlipScribe®

The PELCO® FlipScribe® (formerly from LatticeGear™) takes scribing to a new performance level, making clean, straight scribe lines on the back side to allow the user to accurately cleave front side targets, bonded wafers, glass, sapphire and other substrates. It integrates a robust diamond scribe into a sample platform with a fence guide design. The time required to align and scribe is about 1 minute. It allows users to accurately position the scribe mark relative to features on the front side, visualized either by eye or with a user-supplied high magnification microscope. The PELCO® FlipScribe® also offers a quick method for cleanly downsizing large area samples, by the use of a "scribe stop" which allows the operator to define the length of the scribe. The PELCO® FlipScribe® is a compact, stable, accurate, fast and low cost scribing and cleaving solution suitable for any lab; no utilities are required for its operation.

Features:

- Enables accurate cleaving through front side targets with a scribe made on the back side of the substrate
- Avoids damaging the front side of the sample
- Achieves an accuracy of $\pm 200\mu\text{m}$
- Maintains a flexibility with respect to sample size and shape
- Allows the length of the scribe can be varied from 1 to 100mm
- Enables precise and repeatable sample alignment and sizing with a ruler embedded in platform
- Retains a capability of scribing bonded crystalline and amorphous wafers and chips for subsequent cleaving

Operation:

The sample is placed face up on the bed of the PELCO® FlipScribe®, with the left rail being used to set the position of the scribe and being locked in place. The depth and angle of the scriber tip is adjustable, with the optimal depth and angle depending on the sample type. The stop is set to prevent the blue bar from impacting the sample, and the sample is drawn over the scriber tip to make the scribe. A variety of sample holders are available with many form factors including standard wafer sizes, down to individual small dies. After scribing, the cleave is made using cleaving pliers.

54330	PELCO® FlipScribe® Back-Side Scribing Tool	each
54331	PELCO® FlipScribe® Extension for Scribing Large Samples.....	each
54332	PELCO® FlipScribe® Holder for Small Samples from 5-25mm, 200-800 microns in thickness	each
54333	PELCO® FlipScribe® Kit for Sample Holding.....	each
54334	PELCO® FlipScribe® Sample Holder for 2" Wafers	each
54335	PELCO® FlipScribe® Sample Holder for 3" Wafers	each
54336	PELCO® FlipScribe® Sample Holder for 4" Wafers	each
54337	PELCO® FlipScribe® Sample Holder for 45° rotated lithography.....	each
54338	PELCO® FlipScribe® Replacement Scribe in Cartridge.....	each