WESTERN OPTRONICS

Product Brochure



CA-LAP-300

AUTOMATIC PRECISION POLISHING SYSTEMS

PRECISE AUTOMATIC SAMPLE PREPARATION FOR A WIDE RANGE OF MATERIALS

Quality Products for Semiconductor Wafer, IC Components, Metallurgical Sample Preparation & Analysis

The CA-LAP-300 is a programmable machine that enables precise semi-automatic and automatic sample preparation of a wide range of materials for microscopic (optical subtract, semiconductor wafer, Fiber Optical, TEM, AFM, etc.) evaluation.

Capabilities include parallel polishing, angle polishing, site-specific polishing or any combination thereof. It provides reproducible results by eliminating inconsistencies between users, regardless of their skill.

Sub-micro accuracy micrometers control (pitch and roll) precision polishing Jig allow precise sample tilt adjustments relative to the abrasive plane. A rigid Z-indexing spindle maintains the predefined geometric orientation throughout the grinding/polishing process. Digital indicators enable quantifiable material removal, which can be monitored real-time (front), or preset (rear) for unattended operation. Variable speed rotation and oscillation maximize use of the entire grinding/ polishing disc and minimize artifacts. Adjustable load control expands its capability to handle a range of small (delicate) to large samples.

Precision/magnetic platens, accessories and consumables are sold separately.

Item	Description
CA-LAP- 300	**One Station System**, 300mm Dia., 100-240 V
CA-LAP-334	**Three Station System**, 334mm Dia, 100-240 V

Dims: 15" W x 27" D x 22" H (381 x 685 x 560 mm)
Weight: 95 lb. (?? kg)

Positioning Head



Grinder/Polisher Features:

- Variable platen speed: 5-500 RPM (5 RPM increments)
- 7" color LCD touchscreen with keypad entry to control all functions
- Intuitive interface optimized for productivity and function
- Seamless integration with optional Fluid Dispenser for fully automatic operation
- Stable RIM, aluminum and stainless steel construction
- Timer for count-up or countdown operation
- Clockwise/counterclockwise platen rotation
- Electronic coolant control with adjustable valve
- Retractable coolant nozzle to allow quick and easy sample/bowl cleaning
- Overflow diversion protects internal components
- Emergency shut-off switch
- Two (2) year warranty
- Designed and manufactured in the USA

Precision Polishing Jig Features:

- Front digital indicator to display real-time material removal (sample advancement) with zeroing function, 1 µm resolution
- Precision spindle that indexes the sample perpendicular to the platen and can rotate simultaneously
- Dual axis, micrometer controlled angular positioning of the sample (pitch and roll): +10° / -2.5° range (0.02° increments)
- Rear digital indicator to display vertical positioning (static) with zeroing function, 1 µm resolution
- Automatic sample oscillation, adjustable sweep with 4 speeds
- Full or limited automatic sample rotation with 4 speeds
- Cam-locking system that eliminates the need for tools and allows for precise repositioning of fixtures
- Variable sample load: 0-600 g (100 g increments)

Specification

Items	Description
Model #	CA-LAP-300
Arm Swept Frequancy	9 times/Min
Loading Weight	500 g（Customer Selectable）
Drive Motor Power	1 kW
Clean Water On/off Control	Enable
Polishing Plate(mm)	ϕ300
Speed（r/min）	5-500
Rotation Direction	Anti Clock/Clock Select-able
Manual Control	V1=10、V2=50、V3=100、V4=500 （r/min）（Customer Selectable）
Auto-Polishing Parameters Setting	Max. 64 Sets (Includes：Speed、Time and rotation direction)
Polishing Parameters Setting	Customer Setting and Recall Programmable
Power	AC：100 - 240V，Frequency：50-60 Hz
Dimension	760 x 430 x 360（L*W*H）mm
Weight	30kg

Accessories

Items	Qty	Items	Qty
Anti-Adhesive Plate（254mm）	1	Magnetic Working Plate（254mm）	1
Sand Paper（w/Self-adhesive，Dia.250） 180#、800#、1500#	2 each	Diamond Polishing Solution 6 um 200 ml	1
Plishing Cloth（w/Self-adhesive，250mm）	1	Solid Polishing Cloth（w/Self-adhesive，250mm）	1
Anti-adhesive Moving Pod （For anti-adhesive plate remove and locate）	1		

Accessories

A wide variety of standard fixtures and accessories are available. The cam-locking interface offers tool-free attachment and removal for ease of use. Custom fixtures are available for various applications. Contact Allied for more information.



CA-LC-150
Precision Sample Slicer for 150 mm



CA-LC-250
Precision Sample Slicer for 250 mm Dia.



CA-LHM-2000
自动金相镶嵌机



CA-120-30015
Digital Indicator Measurment System



CA-WSBU-075
Wafer Substract Wax Bonder - 75mm Dia.



CA-GI20-150
Wafer Flatness Tester



CA-DH2-200
Non-contect XYZ Precision Measurment Microscope



CA-DSU-4
Automatic Fluid Dispenser



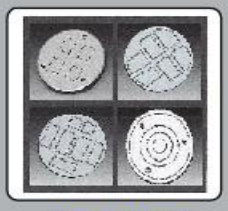
CA-PPJ-075/CA-PPJ-150
Precision Polishing Jig of 75mm Dia/150mm Dia



CA-RAA-075
Half Circle Roller Arm Assembly



CA-LPP-200/CA-LPP-800
8 inch/34 inch Polishing Machine Plate



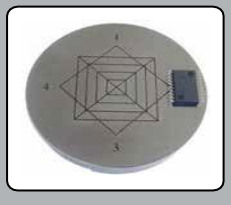
Varial Chucks
Different chucks for Precision Polish Jigs



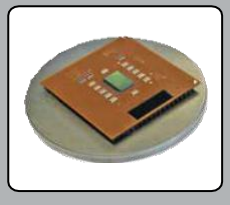
15-1014
TEM Wedge/FIB Thinning Fixture



15-1018
Sample Thinning Fixture



15-1020
Parallel Polishing Fixture, 2.25" (57 mm)



15-1020-80 or 15-1020-100
Parallel Polishing Fixture, 80 or 100 mm

Common Applications

3 ~ 6 inch Dia. Wafer Precision Polishing





3 in ~ 6 in Dia. Semiconductor wafer and Optical Subtract precision polishing

SIMS Thinning



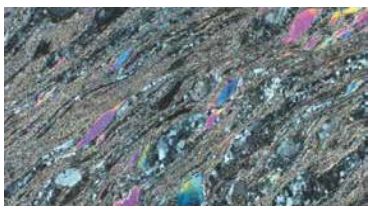
Thin semiconductor or other substrates to less than 200 nm to enable backside SIMS analysis.

TEM Wedge Thinning



Prepare wedge specimens of bulk materials for TEM analysis.

Thin Sectioning



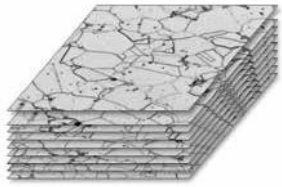
Prepare thin sections for petrography/geology.

Precision Cross-Sectioning



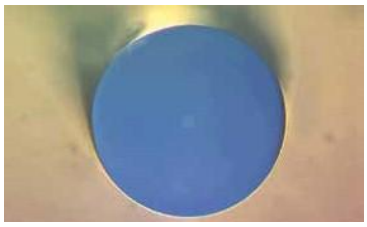
Prepare precise encapsulated or unencapsulated cross-sections of die or package level semiconductor devices, as well as a wide variety of other materials.

Serial Sectioning



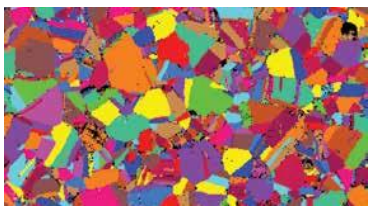
Prepare polished regions of 2D structures at specific intervals to allow 3D reconstruction of materials for analysis.

Optics/Optical Device Polishing



Polish a wide variety of optical components and bare fiber.

EBSD Preparation



Prepare artifact-free surfaces on a wide variety of materials for EBSD analysis.

Consumable Materials



Sand Paper w/Self-adhesive



Polishing Pad w/Self-adhesive



Al_2O_3 / SiO_2 Polishing Solution

Order Information

SiC Sand Paper：

03.04.203	SiC Sand Paper（Self-adhesiv）	200mm,120#	03.03.103	SiC Sand Paper（Non-adhesiv）	50pcs
03.04.204	SiC Sand Paper（Self-adhesiv）	200mm,180#	03.03.104	SiC Sand Paper（Non-adhesiv）	100pcs
03.04.207	SiC Sand Paper（Self-adhesiv）	200mm,400#	03.03.107	SiC Sand Paper（Non-adhesiv）	100pcs
03.04.209	SiC Sand Paper（Self-adhesiv）	200mm,800#	03.03.109	SiC Sand Paper（Non-adhesiv）	100pcs
03.04.211	SiC Sand Paper（Self-adhesiv）	200mm,1200#	03.03.111	SiC Sand Paper（Non-adhesiv）	100pcs
03.04.213	SiC Sand Paper（Self-adhesiv）	200mm,2000#	03.03.113	SiC Sand Paper（Non-adhesiv）	100pcs
03.04.214	SiC Sand Paper（Self-adhesiv）	200mm,2500#	03.03.114	SiC Sand Paper（Non-adhesiv）	100pcs
03.04.215	SiC Sand Paper（Self-adhesiv）	200mm,2400#	03.03.115	SiC Sand Paper（Non-adhesiv）	100pcs
03.04.216	SiC Sand Paper（Self-adhesiv）	200mm,4000#	03.03.116	SiC Sand Paper（Non-adhesiv）	100pcs

Al_2O_3 Sand Paper：

03.02.403	Al_2O_3 Sand Paper（self-adhesive）	200mm,120#	03.01.103	Al_2O_3 Sand Paper（Non-adhesive）	50pcs
03.02.404	Al_2O_3 Sand Paper（self-adhesive）	200mm,180#	03.01.104	Al_2O_3 Sand Paper（Non-adhesive）	100pcs
03.02.405	Al_2O_3 Sand Paper（self-adhesive）	200mm,320#	03.01.105	Al_2O_3 Sand Paper（Non-adhesive）	100pcs
03.02.407	Al_2O_3 Sand Paper（self-adhesive）	200mm,600#	03.01.107	Al_2O_3 Sand Paper（Non-adhesive）	100pcs
03.02.408	Al_2O_3 Sand Paper（self-adhesive）	200mm,800#	03.01.108	Al_2O_3 Sand Paper（Non-adhesive）	100pcs
03.02.410	Al_2O_3 Sand Paper（self-adhesive）	200mm,1200#	03.01.110	Al_2O_3 Sand Paper（Non-adhesive）	100pcs

Order Information

Diamond Polishing Solution and Paste

Diamond Polishing Solution		um	Diamond Polishing Paste		Diamond Spray
Single Crystal （500ml）	Multi Crystal （500ml）		Single Crystal （5g）	Multi-crystal （10g）	SingleCrystal （350ml）
06.01.110-1	06.02.210	0.25um	-	-	-
06.01.120-1	06.02.220	0.5um	-	-	06.03.115
06.01.130-1	06.02.230	1um	06.10.030（Blue）	06.10.110（Black）	06.03.320
-	-	2.5um	-	-	06.03.325
06.01.140-1	06.02.240	3um	06.10.040（Green）	06.10.130（Black）	-
-	-	3.5um	-	-	06.03.330
-	-	5um	-	-	06.03.335
06.01.150-1	06.02.250	6um	06.10.050（Yellow）	06.10.160（Black）	-
06.01.160-1	06.02.260	9um	06.10.060（Red）	06.10.190（Black）	-
-	-	10um	-	-	06.03.340

Fine Polishing Solutio and Powder

	0.05μm	0.3μm	1μm
AO-P Al_2O_3 Polishing Solution(500ml)	06.04.210	06.04.220	06.04.230
AO-PAl_2O_3 Polishing Powder(1LB)	06.13.011	06.13.021	06.13.031
	500ml	1000ml	5000ml
SO T401 Al_2O_3 Polishing Solution (50nm)	06.05.310	06.05.320	06.05.330
SO A539 Al_2O_3 Polishing Solution(50nm)	06.07.520	06.07.523	
100C30 Al_2O_3 Polishing Solution (50nm)	06.08.310	06.08.311	06.08.312

Polishing Lubrication

PL-W **Polishing Lubrication**	-	06.09.510	06.09.520	500ml/1000ml
PLW-B **Polishing Lurcation**	06.09.630	06.09.640	06.09.650	500ml/1000ml/5000ml

CA-DSU-4 Fluid Dispenser

The CA-DSU-4 fluid dispenser provides automatic, unattended application of abrasive polishing suspensions and lubricants. Its functions are programmed using the touchpad switches on its face plate, and activated through the MultiPrep™, and can also be used with **ANY** brand polishing machine as a standalone system.

Timed, volume-controlled, variable frequency dispensing delivers reproducible results by eliminating inconsistencies between operators. This increases productivity and efficiency, while reducing consumables usage. Intuitive menu navigation and simple logic programming make the dispenser easy to use.

The CA-DSU-4 features five (5) dispensing positions, two of which include a flush cycle to prevent clogging when using colloidal suspensions. Peristaltic pump technology offers mist-free drip delivery to the polishing surface.

Features:

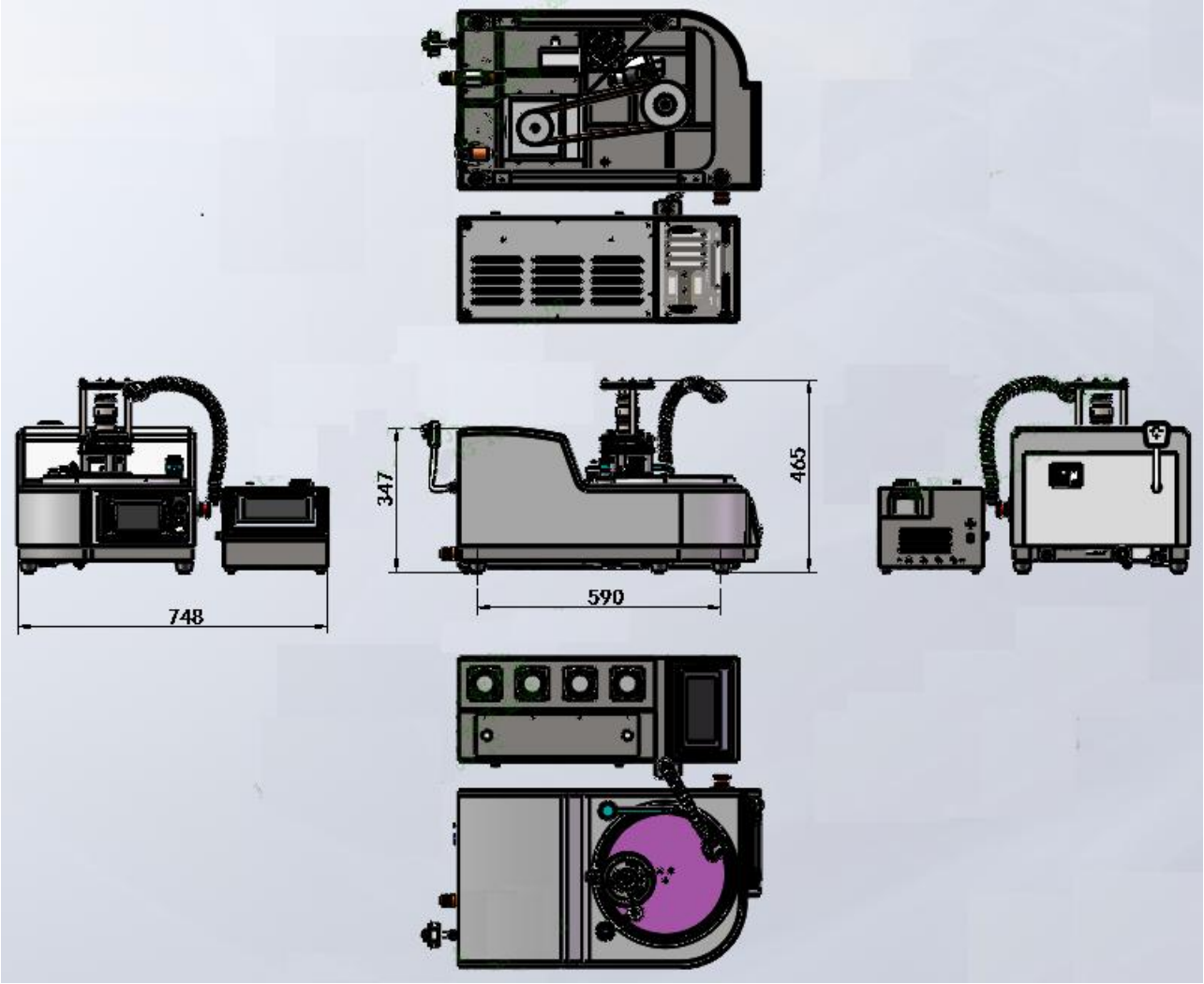
- Five (5) dispensing positions, 16 oz. (500 mL) capacity (128 oz. [3.8 L] adapter kit available)
- User-defined menu labeling (abrasive type & size, lubricant, cloth, material and menu name)
- Pump reverse after cycle to prevent dripping/ contamination
- Remote function enabling seamless integration and automatic activation with Allied's grinding and polishing systems
- Local function to allow standalone operation with any grinder/polisher
- Pulse duration: 0.5-6 seconds (0.5 second increments)
- Pulse frequency: 1-10 per minute
- In-cycle priming that allows temporary "full rate" dispensing onto polishing surface
- One-touch priming function for quick, initial charging of new cloths
- One-touch activation independent of menu for simple operation
- Pre-start charging of new/dry polishing cloths
- Allows dispensing of colloidal suspensions (silica, silica/alumina and alumina) with rinse/flush function to avoid clogging
- Four (4) positions with high-speed pumps for oxide polishing
- 25 programmable menus
- Touchpad switches to control all functions
- Backlit 4-line LCD
- Two (2) year warranty
- Designed and manufactured by in the USA



Item	Description
CA- DSU-4	**Fluid Dispenser**, 100-240 V

Dims: 8" W x 25" D x 9" H (203 x 635 x 228 mm)
Weight: 28 lb. (13 kg)

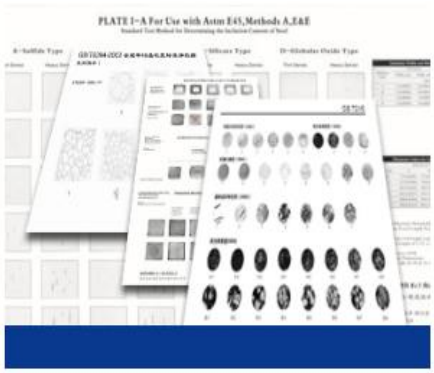
Dimensions















Brochure #: 110000001

Equipment is subject to change due to innovations/improvements at any time.

Designed by Western Optronics Inc. in the USA

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