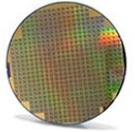


Intelligent Edge Gripper

No More Wafer Backside Contamination and Breakage



- The IEG 200/300 features **slim design**, specifically for use with FOUPs and standard cassettes.
- The **rotating distal** tips allow random wafer access in the cassette with small inter-wafer gaps (down to 5mm).
- Our **soft-touch mechanism** with programmable gripping force enables the gripping tips to gently touch (hug) the wafer thus minimizing particle generation while maintaining secure hold with a constant gripping force, helping you achieve higher throughput.
- The gripper's **fail safe wafer interlock** mechanism prevents costly losses by holding wafers securely at accelerations exceeding 5G and during power failures.
- The IEG 200/300 is the industry's only gripper that comes with a **self-centering feature**, allowing exact placing of the wafer on a stage or chuck, thus minimizing particle creation associated with friction present during wafer shifts and drops.
- Modular design for **easy customization**



	IEG-300B	Three point contact self-centering Edge Grip Wafer Handling Gripper for 300 mm wafer. Basic Model
	IEG-3200C	Combines three point self-centering Gripper for 300 mm wafer with a Vacuum Chuck for 50/100/150/200 mm calibration (test) wafers. Perfect for metrology applications
	IEG-300U	U-shaped Edge Grip for 300 mm wafer enhanced by built-in through-beam mapping sensor
	IEG-200B	Three point self-centering Edge Grip Wafer Handling Gripper for 200 mm wafer.
	IEG-200SL	Super Low profile 1.6mm (0.063") Edge Grip Wafer Handling Gripper for 200 mm wafer with flat
	IEG-300D	Dual gripper

COMPARISON BETWEEN ELECTRICAL VS. PNEUMATIC EDGE GRIPPER

ADEM's Electrical Edge Gripper	Other Vendors' Pneumatic Edge Gripper
Requires only 4 electrical wires (6 max), simplifies robot and equipment design	Requires air line, exhaust line and electrical wires to send confirmation signals
Implemented active gripping force	Active gripping force control is difficult and expensive to implement
Programmable gripping force available via RS-232, RS-485, CAN or Ethernet. Enables handling thin and thick wafers with the same device	Impossible to program gripping force
Wafers with variable diameter, ranging from 298mm to 302mm, are held with the programmed constant gripping force	Impossible to hold wafers with varying diameter with the constant force, which could result in wafer damage due to overstress or unsecured holding
Allows implementing of soft-touch mechanism, thus practically eliminating generation of particles and stress	Grips wafers via spring that could cause stress and/or particle generation
Sealed mechanism/control box allows usage in any type of harsh environment and vacuum	Not reliable in harsh environment or vacuum
Works with any robot. Tested with 6 coordinate robot, with 5G acceleration	Not suitable for high speed 4+ coordinate robots
Certified for cleanliness ISO Class 1	Difficult and expensive to achieve cleanliness ISO Class 1

TECHNICAL SPECIFICATION OF SELECTED MODELS

Features	IEG-300	IEG-300U	IEG-200	IEG-200UT
	Spade shape 300mm	U-shape 300mm	Spade shape 200mm	Ultra thin spade shape 200mm
Fail safe interlock	Yes	Yes	Yes	Yes
Programmable gripping force	Yes (2-12N)			
Wafer placing accuracy	Angular <0.1°		Linear <10µm	
Compatible with variable wafer diameters	Yes (300mm ±2mm)		Yes (200mm ±2mm)	
Allowable wafer misalignment	±5mm	±3.5mm	±3.5mm	±3mm
Grip / un-grip	0.25sec	0.40sec	0.25sec	0.30sec
Backside contact zone	0.3mm	0.3mm	0.25mm	0.25mm
Maximum blade height envelop	4.8mm	4.3mm	2.6mm	1.6mm
Minimal wafer cassette pitch	10mm	8mm	6.3mm	5mm
Particles and contamination	ISO class 1 compliant			
Operating environments	Atmosphere, wet, CMP			
Power consumption	0.35A/24V			
Compatible with all robotic interfaces	RS232, RS485, RS422, CAN, Ethernet			
Static discharge (E78 level 1 compliant)	Yes	Yes	Yes	Yes
Cassette compatibility (SEMI E 1.9 - 0699)	Yes	Yes	Yes	Yes
MTBF	30 million cycles			
Gripper mass (base model)	490g	450g	540g	450g
Wafer mapping capability (laser class 1 through beam)	Optional	Optional	Optional	N/A
Wafer self-centering	Yes	No	Yes	No

ADEM, LLC/ 1040 Di Giulio Avenue, Santa Clara, CA

boris.k@ademllc.com/ Tel: (408) 727-8955 ext. 151/ Fax: (408) 7272055/ www.ademllc.com