

Probe Card Sizes

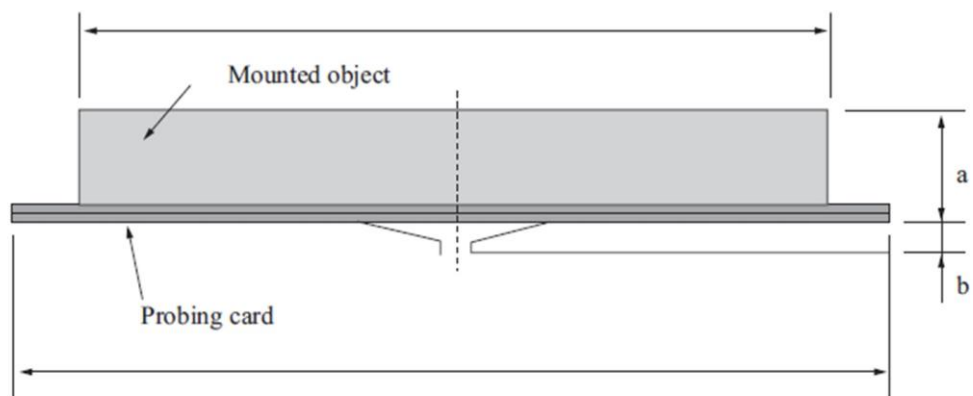
(The sizes differ depending on the specifications applied. For the details, contact TEL.)

Outline: Max. 350 mm Diameter

Thickness: a.Object height
Max. 40 mm (distance from the bottom face of the board)

b.Needle probe height
Max. 20 mm (distance from the bottom face of the board)

Weight: Max. 4 kg



Main Unit Dimensions

Overall dimensions:	(Units: mm)	1090 (W) × 1065 (D) × 930 (H)
		(Excluding the height of signal tower and LCD panel)
Weight:	(Units: kg)	Approximately 785 (standard specifications)

Utilities

Power:	voltage	AC 100 - 120 V (-15% - +10%)
		AC 200 - 240V (-10% - +10%)
	current (prober capacity)	AC 100 - 120 V 30 A
		AC 200 - 240 V 15 A
	power frequency	50/60 Hz
	momentary interruption retention time	50 ms
	power consumption	Max. 1.5 kVA (with the optional Hot Chuck and motor type Test Head Transfer Mechanism.)
Dry air:	pressure	Max. 0.4 MPa 39.2N (4 kgf/cm ²) - 0.7 MPa
	flow rate	18 l/min (standard) 48 l/min (2nd loader specifications)
	connections	1/4 inch fitting (uses outer shape $\phi 6$ /inner diameter $\phi 4$ tubes)
Vacuum:	pressure	Max. -50 kPa (-400 mmHg)
	flow rate	15 l/min
	connections	1/4 inch fitting (uses outer shape $\phi 6$ /inner diameter $\phi 4$ tubes)

Environmental Conditions

Ambient Temperature:	25°C ±3°C
Humidity:	Max. 65%
Vibration:	Frequency of vibration on the floor after installation of prober... The recommended value is 10 Hz or more.

Probing Unit Specifications

Positioning accuracy guarantee range:	X/Y = $\pm 4 \mu\text{m}$ Z = $\pm 3 \mu\text{m}$
Contact accuracy guarantee when using ASU:	X/Y = $\pm 4 \mu\text{m}$ Z = $\pm 5 \mu\text{m}$
Card holder attachment parallelism: (Standard: chuck surface)	25 μm /Max. $\phi 200$

XY Stage

XY probing area:	From Insert Ring Center X: $\pm 118 \text{ mm}$ Y: +230 mm -110 mm
Drive method:	AC servo motor Lead of ball screw: 4 mm
Accuracy:	$\pm 2 \mu\text{m}$
Control resolution:	0.4 μm
Maximum speed:	0.2 m/s

Z Stage

Z Stroke:	77 mm
Contact point setting area:	75.3 mm
Drive method:	5 phase stepping motor Direct Coupling Lead of ball screw: 2 mm
Accuracy:	Within $\pm 2 \mu\text{m}$
Maximum speed:	0.04 m/s
Overshoot:	Within 4 μm (when raised at 500 μm)
Control resolution:	2 μm
Withstand load:	40 kg According as change the acceleration, correspond max. 60 kg
Z stage rigidity (When a chuck temperature is normal):	
Loading R90mm position	
Horizontal rigidity	6.6 $\mu\text{m}/98\text{N}$ (6.6 $\mu\text{m}/10 \text{ kgf}$)
Vertical rigidity	11.9 $\mu\text{m}/98\text{N}$ (11.9 $\mu\text{m}/10 \text{ kgf}$)
Loading center	
Vertical rigidity	8.4 $\mu\text{m}/98\text{N}$ (8.4 $\mu\text{m}/10 \text{ kgf}$)

Wafer Specifications

Sizes:	4, 5, 6 and 8 inches
Thickness:	150 - 1000 μm (Discuss separately in case of 350 μm or lower)
Die Size:	350 - 76000 μm (die size for parameter input: 300 μm or greater, die size that can be aligned: 350 μm or greater)
Number of Dies:	Up to 200 dies (in X-axis direction) \times 200 dies (in Y-axis direction) When control map is used, up to 250 dies (in X-axis direction) \times 250 dies (in Y-axis direction) (Discuss separately in any other case)
Warp:	Discuss separately
Weight:	Max. 110 g
Infrared Rays Transmissivity:	Less than 4% in the whole range between 860 nm and 900 nm

Cassette Specifications

Size:	Conforms to SEMI standards
Materials:	Plastics/Aluminum

Note: Ask about cassettes which do not conform to SEMI standards.

Use plastic cassettes which have electric prevention treatment.

Indexer Unit

Maximum speed:	Max. 100 mm/s
Drive method:	5 phase stepping motor Pulley & belt ratio 1:1 Lead of ball screw: 4mm
Accuracy:	$\pm 10 \mu\text{m}$
Control resolution:	8 μm
Wafer sensing method:	LED transmissive method

Display Unit

LCD Panel:	10.4 inch color display 640 × 480 dots Japanese/English/Alphanumeric Touch panel
------------	---

Built-in Hard Disk

FDD:	3.5 inch	1.4 MB	1 unit
HDD:	2.5 inch	2MB	1 unit

Theta Mechanism

Theta rotation mechanism:	$\pm 7.5^\circ$ when probing $+14.5^\circ$ when transferring wafer
Drive method:	5 phase stepping motor Direct coupling Lead of ball screw: 1 mm
Accuracy:	Within $\pm 0.5\mu\text{m}$
Control resolution:	0.00022° $0.5\mu\text{m}$ (8 inch top)

Chuck Top

Flatness:	$15\mu\text{m}$ (Ordinary temperature $\leq t \leq 100^\circ\text{C}$) $30\mu\text{m}$ ($100 < t \leq 150^\circ\text{C}$)
-----------	---

Alignment

Wafer alignment:	Pattern matching method (individual check is required in case of a special wafer pattern)
Card alignment:	Pattern matching method or needle point detection method (individual check is required in case of a special card)

Inker Drive

Inker drive circuits:	Equipped with 4 circuits
-----------------------	--------------------------

5 Autoloader Unit Specifications

Cassette:	Items conforming SEMI standards
Cassette setting:	1 loader (2nd optional loader possible)
Method of handling:	Wafer back side vacuum mechanical arm transfer Wafers in cassette can be randomly accessed.

Tweezers Unit

Tweezers Arm

Maximum stroke:	302 mm
Maximum speed:	355 mm/s
Drive method:	5 phase stepping motor Pulley & belt ratio 1:1
Accuracy:	$\pm 17 \mu\text{m}$
Control resolution:	50.8 μm

Tweezers Rotation Unit

Rotation time:	1s/90°
Drive method:	5 phase stepping motor Pulley & belt ratio 1:7.2
Accuracy:	$\pm 15 \mu\text{m}$
Control Resolution:	0.005° ($\pm 353 \mu\text{m}$ on the chuck top)

Prealignment Unit

Rotation speed:	1s/360°
Drive method:	5 phase stepping motor Direct drive
Prealignment method:	LED transmissive method
Accuracy:	X, Y $\pm 300 \mu\text{m}$
Control resolution:	theta $\pm 0.17^\circ$ ($\pm 314 \mu\text{m}$ on the chuck top)