

# H Series Integrated Manual Probe Stations

Manual Wafer Test Platform Integrating Three-stage Lifting Probe Holder

## 1. Product Overview

H series probe stations have excellent mechanical properties and testing function. The industry's innovative Chuck Air bearing move™ meets customers' needs for efficient testing of the whole wafer, and is a function that other brands of manual probe stations cannot have. At the same time, based on the UPStart™ modular open design, the H series can be matched with different kits to realize a wider range of test functions, and the H series 6" 8" 12" probe stations are ideal for one-time budget purchases in research and development laboratories.

### > Main features

1. Rich optional configurations enable a wider range of testing functions, including options such as various chucks, probe holders, probes and fixture microscopes; optional: anti-vibration station system, shielding box.
2. Equipped with metallographic microscope, to realize electrode Pad test of more than 1 $\mu$ m. Laser can be equipped for FA/laser cutting.
3. Industry's innovative Chuck Air bearing move™, which can rapidly pull out the chuck, convenient for rapid replacement of samples and mobile search for Die, efficiently meeting the needs of some customers for testing the whole wafer.
4. Three-stage lifting probe holder platform, to realize precise and rapid wafer positioning to prevent accidental damage to wafers and probes.
5. The chuck can be lifted to facilitate rapid sample separation from the probe.



### > Test application

Test device	Wafer level diode and triode test	●	Test application	DC/ (IV、CV) test	●	
	Power device (IGBT, MOSFET) test	●		Low current (100fA level) test	●	
	MEMS device test	●		1/f Noise test	●	
	LD (VSCSEL) PD、LED optoelectronic device test	●		FA failure analysis test	●	
	PCB component test	●		Device characterization test	●	
	LCD -TFT test	●		WLR、aging test	●	
	Storage device (fast pulse test) test	●		RF	to 67GHz RF test	●
	RF device	●			mmW/sub THz test	●
	Silicon optical device test	○			THz and load traction test	○
					High power/High voltage/high current test	●
			low temperature test	○		
			Vacuum extremely、 low temperature test	○		
			Silicon Photon/Light Coupling Test	○		
			Photonics VSCSEL test	○		

●Support Recommended, ◐ Support but not recommended, ○Not supported N/A

## 2. Product Structure

### Microscope

- Compatible with metallographic microscope/monocular video microscope, equipped with high power/high resolution objective lens for micron/sub-micron level observation
- LED coaxial/ring lighting, high contrast, laser loadable for FA/laser cutting
- Arch bridge structure, with stability and good rigidity
- Microscope translation table, which can adjust the microscope to move in the 2" × 2" range of X-Y plane, the moving accuracy is 1μm

### Microscope pneumatic rapid lifting

- 50mm stroke, one-click fast operation, convenient for rapid replacement of the microscope and probe card fixture

### Probe holder platform

- Larger probe holder loading space
- Thickened alloy steel material, with good rigidity and fastening stability
- The brand new surface treatment process has stronger probe holder adsorption force than the chrome plating process, improving the testing accuracy.
- The probe card fixture can be installed, to be compatible with the probe card test

### Three-stage lifting probe holder platform

- Z-direction fine tuning lifting maximum stroke up to 40mm, moving accuracy up to 2μm, suitable for probe card/DC pin header test
- 2-speed rapid lifting regulation function, one-speed rapid lifting stroke up to 0-300μm, toggle switch 0-5mm rapid lifting, which can rapidly separate the probe or probe card from the sample surface

### CCD camera

- C/CS interface high-definition CCD/CMOS camera, optional 2 million/5 million/1200 pixels, resolution up to 1920\*1080 and above
- SD card interface, to store pictures or videos
- HDMI video cable, which can be connected to the display for real-time observation

### Chuck

- The sample is fixed with ring adsorption hole and multi-vacuum adsorption ring, each vacuum channel is independently controlled, the chuck is electrically and independently suspended, with a banana head socket, which can be used as the back electrode
- Optional porous adsorption common slide holder (Chuck) or high and low temperature slide holder system, with coaxial/triaxial/gold-plating chuck options
- Available with different precisions/strokes of probe holders, optional magnetic adsorption and vacuum adsorption

### Chuck adsorption channel control

- Centralized arrangement, independent control of adsorption holes of different channels

### Air-controlled moving platform

- Rapid pull-out mechanism design, convenient for rapid sample replacement and for protecting the sample surface from damage when testing with the probe card
- The slide holder can be controlled by one hand to realize rapid positioning along the X-Y plane
- The slide holder includes fine regulation function and has excellent hand feeling
- The left side is the Y-axis of the slide holder, the right side is the X-axis of the slide holder, and the moving accuracy is 1μm
- The chuck X/Y moves without clearance and travels 1mm per rotation
- Rotation angle of the chuck: 360 degrees
- The chuck can fine-tune the rotation angle and the adjustment accuracy is 0.01°



## 3. Technology Highlights

### > TMCS product customization based on UPStart™ modular design

The UPStart™ modular structure design is to provide customers with an economical and reasonable equipment purchase guidance scheme, and customers can configure the modules according to the functions they currently need, without paying more for the functions they do not yet need. More importantly, the UPStart™ can be adapted to the structural design, and fully consider customers' future potential needs. Whenever customers' testing environment and testing needs are improved, increased or changed, customers can also perform field upgrade at any time to adapt to new requirements.

Therefore, the UPStart™ modular design aims to not only help customers purchase suitable equipment for the moment properly, but also better reduce the budget and the early equipment acquisition cost.

Please enter [www.semishare.com](http://www.semishare.com) for TMCS customized service content.

### > Innovative Chuck Air bearing move TM in the industry

The air-controlled moving platform has the function of rapid chuck movement, which meets the testing needs of some customers for the whole wafer efficiently; through the corresponding air-controlled switch, the sample table is controlled by one hand to move rapidly in the whole plane.

Efficient wafer test requires the ability to easily and rapidly move and pull out the sample table to load the wafer, and the ability to perform precise positioning test on individual DIE in the X/Y direction. The traditional ball/bearing sample table can only realize X/Y unidirectional movement, and the moving speed is slow and the moving range is limited;

Although the common air-floating sample table can realize rapid movement in the whole plane, it cannot realize precise movement positioning in the full range, and efficiently measure the whole wafer in sequence. However, SEMISHARE air-controlled sample table combines such two functions.

### > Three-stage lifting probe holder platform

Probe holder platform lifting: Rapid (0, 300μm) + fine tuning (40mm, moving resolution of 10μm). All parts of the platform can be lifted simultaneously (asynchronous phenomena do not exist). After rising and falling, the repeatability of the x, y and z directions of the probe marks on the pad is superior to  $\pm 1\mu\text{m}$ . The repeated (1μm) probe holder platform has three independent positions for contact, separation (300μm) and loading, and a safety lock device, which can prevent accidental damage to the probe or wafer while ensuring accurate contact positioning for most accurate measurement results. This function is crucial in high frequency and high power tests.

### > Chuck moving platform with an accuracy of 1μm

The chuck moving platform is equipped with coarse tuning and fine tuning functions, and the fine tuning knob uses the industry's high-quality large handle drive component, and the stroke can be accurate to 1μm. Compared with the traditional small micrometer head adjustment, the operation feels more comfortable, and the adjustment is more smooth, completely realizing the super smooth manual efficient test, comprehensively improving the testing efficiency, and saving customers' testing cost.

### > Thickened rigid metal frame structure

The hard mechanical frame structure design is one of the important factors to improve product stability. The frame of any SEMISHARE product includes the microscope bridge, probe holder platform, probe holder platform support column, base, etc., and the materials are all thickened aluminum composite rigid material. Compared with similar brands, the cost investment is higher. However, these small material selection details reflect SEMISHARE's high attention to product quality.

## 4. Specification

Model		H6	H8	H12
Shape (L*W*H/mm)		756*759*800	756*759*800	1046*987*828
About Weight (KG)		260 kg	280 kg	300 kg
Power requirement		220VC,50~60Hz		
Chuck Normal temperature standard	Chuck size	6"	8"	12"
	Sample fixing method	Ring vacuum adsorption (customised porous adsorption)		
	Back electrode test	Yes, sample stage electrically independent suspension		
	Chuck material	316# stainless steel (optional copper nickel-plated OR gold-plated)		
Chuck moving platform	Theta Stroke	360° rotation (coarse adjustment); fine adjustment range $\pm 8^\circ$ , fine adjustment precision 0.002°		
	Chuck lift	Chuck table can be up and down quickly lift 5mm, fine-tuning lift stroke 6mm, precision 1 $\mu$ m		
	X-Y Stroke	160*160mm	210*210mm	310*310mm
	Movement accuracy	< 1.0 $\mu$ m (~1 mm/rev)		
	Rapid chuck pull-out	/		
	Control method	Large handle knob drive		
Probe holder platform	Dimensions(L*W)	510mm*740mm	510mm*740mm	580mm*1030mm
	Distance from chuck to platform	8mm (top surface of chuck to bottom surface of headstock platform)		
	Maximum number	Holds up to 8 holders		
	Platform lift	3-stage lift: separation (300 $\mu$ m), chuck loading (5mm), uninterrupted lift (0-40mm)		
	Positioning method	Magnetic or vacuum attachment		
Optical characteristics	Optical characteristics	Standard PSM-1000 metallographic microscope / optional (GX-6 metallographic, stereo, video) microscope		
	Lens Specifications	20-2000X		
	Magnification	3 types of CCD available: 200W (digital) / 500W (digital) / 650W (digital)		
	CCD Pixels	Z-axis travel 50.8 mm, coaxial knob adjustment, fine-tuning accuracy better than 1 $\mu$ m		
	Motion control	Microscope 2 inch XY panning stage range of movement		
	Microscope travel	1 $\mu$ m		
Probe Specifications	X-Y-Z stroke	12mm-12mm-12mm		
	Mechanical accuracy	10 $\mu$ m/2 $\mu$ m/0.7 $\mu$ m		
	Leakage accuracy	Coaxial 1pA/V @25°C; Triaxial 100fA/V @25°C; Triaxial 10pA@3kv @25°C.		
	Interface form	Test conditions: grounded and shielded dry environment (air dew point below -40°C)		

## 5. Chuck specification performance

### >Normal temperature coaxial chucks (Coax)

Technical parameters (Coax)	
Interface Type	Coax BNC(m)
Product Diameter	4"/6"/8"
Material	Stainless steel/brass nickel plating (gold plating optional)
Chuck surface	Flat center pinhole and vacuum groove
Vacuum hole cross-section diameter	4" chuck: 4, 27, 45, 69, 93, 117 mm 6" chuck: 4, 27, 45, 69, 93, 117, 141 mm 8" chuck: 4, 27, 45, 69, 93, 117, 141, 164, 195 mm
Vacuum drive	3-stage vacuum adsorption control
Supported DUT size	Single grain 4×4mm, or 50mm to 200mm wafer
Surface flatness	<±5μm
Rigidity	<15μm/10N at the edge of the chuck
Electrical Specifications (Coax)	
Operating Voltage	Operates at -200V to +200V DC
Maximum voltage between chuck surface and GND	500v DC
Insulation	>2GΩ

### >Normal temperature triple axis chucks (Triax)

Technical parameters (Triax)	
Interface Type	Triax(m)
Product Diameter	4"/6"/8"
Material	Stainless steel/gold plated brass (gold plated optional)
Chuck surface	Vacuum-absorbed pinhole in the center of the plane (0.5 mm)
Vacuum hole cross-section diameter	4" chucks: 4, 27, 45, 69, 93, 117 mm
Vacuum drive	6" chucks: 4, 27, 45, 69, 93, 117, 141 mm
Supported DUT size	8" chucks: 4, 27, 45, 69, 93, 117, 141, 164, 195 mm
Surface flatness	3-stage vacuum clamping control
Rigidity	Single grain 4 x 4 mm, or 50mm to 200 mm wafer
Electrical specifications (Triax)	
Chuck Insulation	Measured at 10V DC>100
Force to guard	>2TΩ
Guard to shield	>7TΩ
Force to shield	>15TΩ

## >RF chuck(Triax)

Technical parameters (Triax)	
Interface Type	Kelvin Triax (f)
Product Diameter	6"、8"、12"
Material	Stainless steel/copper alloy brass (custom gold plating available)
Chuck surface	Flat centre vacuum grooves and pinholes (0.5mm)
Vacuum drive	Multi-zone independent vacuum adsorption control
Supported DUT size	Single grain 4 x 4mm, or 50mm to 300mm wafer
Surface flatness	$< \pm 10\mu\text{m}$
Rigidity	$< 15\mu\text{m}/10\text{N}$ near disc edge
Electrical Specifications(Triax)	
Chuck Insulation	Measured at 10V DC $>100$
Force to guard	$>2\text{T}\Omega$
Guard to shield	$>7\text{T}\Omega$
Force to shield	$>15\text{T}\Omega$

## >Normal temperature and high pressure chuck

Technical parameters (Triax)	
Interface Type	10 kV Coaxial (Banana or SHV)
Product Diameter	6"、8"、12"
Material	Stainless steel/copper alloy nickel plated (gold plating optional)
Chuck surface	Flat centre vacuum grooves and pinholes
Vacuum drive	Multi-zone independent vacuum adsorption control
Supported DUT size	Single 4 x 4mm, or 50mm to 150mm wafer
Surface flatness	$< \pm 10\mu\text{m}$
Rigidity	$< 15\mu\text{m}/10\text{N}$ at chuck edge
Electrical Specifications(Triax)	
Operating voltage	Operates at -200V to +200V DC
Maximum Voltage	10kv DC
Insulation	$>2\text{T}\Omega$



## >High and low temperature chuck

Specification	Coaxial high and low temperature chucks (Coax)	Three-axis high and low temperature chuck (Triax )
Temperature range	-60°C to +200°C	-60°C to +200°C
Temperature control method	Resistance heaters	Resistance heaters
Cooling method	water	water
Minimum temperature adjustment resolution	0.1°C	0.1°C
Temperature display resolution	0.01°C	0.01°C
Touch screen operation	Yes	Yes
Temperature stability	±0.1°C	±0.1°C
Temperature Accuracy	±0.5°C	±0.5°C
Control method	Low noise DC/PID power supply	Low noise DC/PID power supply
Communication control interface	RS232C	RS232C
Test cable interface	Coaxial cable (BNC)	Coaxial cable (BNC)
Chuck surface plating	Nickel/gold plated	Nickel/gold plated
Temperature sensor	RTD	RTD
Temperature uniformity	Resistance heaters	Resistance heaters
Surface flatness	Room temperature heating to 200°C. ±1% for any one zone. Temperature >200°C, ±1.5%	
Electrical insulation, coaxial/BNC(m)/SHV triaxial	<±10µm	<±10µm
Heating rate	>5TΩ	>5TΩ
Cooling rate	25°C to 200°C <28min 200°C to 300°C < 40min	25°C to 200°C < 28min
Leakage current at 10V Kelvin triaxial, Test conditions: dry environment for grounding shield (air dew point lower than - 40 ° C)	200°C to 25°C <20min/50min	200°C to 25°C <20min/50min
Residual Capacitance	25°C to -60°C < 65min	25°C to -60°C < 65min
Maximum voltage between chuck surface and GND	N/A	<100fA
Vacuum adsorption type	N/A	<200fF
Vacuum area	500V	500V
Temperature range	Ring adsorption (optional porous adsorption)	Ring adsorption (optional porous adsorption)
Temperature control method	6"/8"/12" (4 zones optional)	6"/8"/12" (4 zones optional)

\* All data is related to the environment in which the chuck is located

## >High temperature and high pressure chucks (ERS)

Temperature range	25°C to 200°C	25°C to 300°C
Connection interface	Kelvin Triaxial (M), 3kV or 10kV Coaxial	
Temperature control method	Cooling Air/Resistance Heater	
Cooling method	Air (user supplied)	
Minimum temperature range	0.1°C	
Temperature display resolution	0.01°C	
External touch screen display (optional)	YES	
Temperature stability	±1°C	
Temperature accuracy	±0.1°C	
Control method	Low Noise DC Power Supplies/PID Power Supplies	
Communication control interface	rs232c	
Temperature Sensor	Pt1001/3DIN 4-wire wiring	
Temperature uniformity	Kelvin Triaxial (M), 3kV or 10kV Coaxial	
Surface flatness	<±0.5°C at ≤200°C	<±0.5°C at ≤300°C
Heating and cooling rate	<±10μm	<±10μm
Connection interface	25°C to 200°C<30min 200°C to 25°C<30min	25°C to 300°C<35min 300°C to 25°C<35min
<b>Leakage at 3kV Kelvin triaxial (M)</b>		
25°C	5pA	5pA
200°C	10pA	10pA
300°C	--	15pA
<b>Leakage @ 10kVCoaxUHV/SHV(M)</b>		
25°C	6nA	6nA
200°C	6nA	6nA
300°C	--	6nA
Maximum voltage between top of chuck and GND	3kV or 10kV DC	3kV or 10kV DC

\* All data is related to the environment in which the chuck is located

### System controller/cooler dimensions and power/air consumption


System type	W x L x H (mm)	Weight (kg)	Power supply power	Maximum airflow/1min
25 to 200°C	300x360x135	12	1300	220
25 to 300°C	300x360x135	12	1300	220



## 6. Product Selection Guide


### 6.1 Microscope-4 kinds of microscope options

#### 6.1.1 PSM-1000 high magnification metallurgical microscope/loadable laser (standard)


	Optical magnification	2000X (eyepiece*zoom magnification*objective lens)
	Eyepiece	10X
	Zoom	1X~2X
	Objective lens (standard)	5X(Operating Distance: 34.0mm,NA:0.14)
		10X(Operating Distance: 33.5mm,NA:0.28)
		20X(Operating Distance: 20mm,NA:0.42)
	Objective lens (optional)	2X(Operating Distance: 34mm,NA:0.055)
		50X(Operating Distance: 13mm,NA:0.55)
		100X(Operating Distance: 3mm,NA:0.8)
	Microscope focusing mechanism	Z-axis travel 50.8 mm, coaxial knob adjustment, fine tuning accuracy better than 1 $\mu$ m
Converter	4-hole manual objective switching nosewheel (4-hole motorized nosewheel can be customized)	
CCD interface form	1X C Mount	
Illumination system	150W high power white illumination source (sleepless brightness adjustment)	

**Note:** PSM-1000 can be equipped with a laser for FA failure analysis/laser cutting function and camera interface with laser safety positioning pins, leaving a position for mounting laser safety filters in front of the microscope binocular head and providing compensation spacers. The laser and safety filter can be easily installed without a special tool kit.


#### 6.1.2 GX-6 long working distance metallurgical microscope (optional)

	Optical magnification	2000X (Eyepiece*Zoom magnification*Objective lens)
	Eyepiece	10X/22X
	Zoom	1X
	Objective lens (standard)	2X(Operating Distance: 34.0mm)
		5X(Operating Distance: 45mm)
		10X(Operating Distance: 34mm)
		20X(Operating Distance: 30.8mm)
		50X(Operating Distance: 20.5mm)
	Objective lens (optional)	100X(Operating Distance: 12.5mm)
	Microscope Focusing Mechanism	Z-axis travel 50.8 mm, coaxial knob adjustment, fine tuning accuracy better than 1 $\mu$ m
Converter	5-hole manual objective switching nose wheel	
CCD interface form	1X C Mount	
Illumination system	Cold light source fiber optic reflector illuminator:12V/150W	

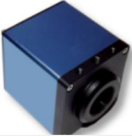

### 6.1.3 Stereomicroscope/SS-M (optional)

	Total magnification: 16X-100X
	Continuous zoom ratio of 6.3:1
	Eyepiece magnification: 20X
	Optical system, continuous zoom range 0.8X ~ 5X
	Objective magnification: 2X, working distance: 34mm, (this is optional)
	Binocular observation tilt 45 degrees, double pupil distance adjustment range of 52-75mm
	Ring LED light source (sleepless brightness adjustment)
	Microscope in the Z-axis adjustment range of 50.8 mm
	CCD interface C MOUNT can be configured with a PC to control the CCD for sample photo acquisition and video recording.

### 6.1.4 Video Microscope/70XL (optional)




	<ul style="list-style-type: none"> <li>• Microscope optical magnification range: 0.75 - 5.25X, with 19inch monitor magnification can reach 216X</li> </ul>
	<ul style="list-style-type: none"> <li>• Continuous zoom ratio: 7:1</li> </ul>
	<ul style="list-style-type: none"> <li>• Resolution: 72 - 240 lp/mm, highest resolution better than 4μm</li> </ul>
	<ul style="list-style-type: none"> <li>• NA value: 0.0240 - 0.080</li> </ul>
	<ul style="list-style-type: none"> <li>• Depth of field: 0.98 - 0.09 mm</li> </ul>
	<ul style="list-style-type: none"> <li>• Field of view at low magnification: 6.40 x 8.53 mm</li> </ul>
	<ul style="list-style-type: none"> <li>• Field of view at high magnification: 0.91 x 1.22 mm</li> </ul>
	<ul style="list-style-type: none"> <li>• Working distance: 89mm</li> </ul>
	<ul style="list-style-type: none"> <li>• 150W high power white illumination source (sleepless brightness adjustment)</li> <li>• Microscope focus mechanism: Z-axis travel 50.8 mm</li> </ul>

## 6.2 CCD camera - 2 options

Model Parameters		
Model	O200C	ZX-201HC
Pixel Size	2.75 (H) $\mu$ m * 2.75(V) $\mu$ m	3.75 (H) $\mu$ m * 3.75(V) $\mu$ m
Optical Size	1/2.5 inch	1/2.8 inches
Resolution	1920 * 1080	1920 * 1080
Output Color	8:8:8 24-bit true color	12/12/12 36-bit true color output
Output Frame	60fps	60fps
Output Method	HDMI pure digital output	HDMI pure digital output
Adjustment	OSD menu adjustment	Mouse operation UI adjustment
Storage method	SD card	U-Drive
Wide Dynamic	3 levels of wide dynamic adjustment	1-10 level adjustable
Edge	3 levels of edge enhancement	1-10 level adjustable
Exposure method	Manual/Auto	Manual / Auto
White Balance	One button white balance	One button white balance
Color Adjustment	R, G, B adjustable respectively	R, G, B are adjustable
Lens interface	C-Mount	C-Mount
Power supply	DC-5V	12V/1A
Appearance size	61mm*61mm*72mm	98mm*65mm*50mm
Working Humidity	20%~80%	20%~80%
Working	0~80°C	0~80°C
Weight	270g	350g

## 6.3 Probe Selection Guide

### >DC Probe Selection Guide

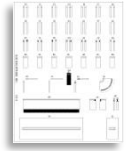
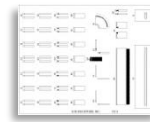
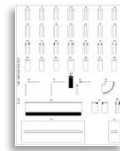
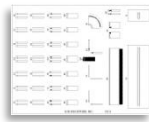
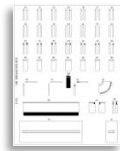
			
Specification	Coaxial probes	Triaxial probes	Kelvin probes
Maximum Voltage	500V	500V	500V
Temperature Range	150°C	150°C	-60°C 至 300°C
Leakage current	<10pA	<100fA	<20fA
Interface Type	Coaxial male connector	Triaxial male connector	SSMC female to triaxial connector male
Characteristic impedance	50Ω	50Ω	50Ω
Residual Capacitance	<200fF	<200fF	<200fF
Probe holder material	Brass	Brass	Brass
Probe material	Tungsten wire alloy	Tungsten wire alloy	Tungsten wire alloy
Probe tip size	0.2μm–25μm	0.2μm–25μm	1μm–100μm

### >High Voltage / High Current Probe Selection Guide

	High Voltage Probe			High Current Probe
Product Model	SHV-C-3kV	HV-T-3kV	UHV-C-10KV	HC-B-500V
Maximum Voltage	3kV	3kV	10kV	500V
Max. current value	1ADC/30A Pulsed Electric	120mA DC	20mA DC	10A DC/100APulsed Electric
Temperature range	-60°C to 300°C	-60°C to 300°C	-60°C to 300°C	-60°C to 300°C
Leakage current	<200pA@3kV <5pA@10V	<1pA@3kV <100fA@10V	<100pA@10kV	N/A
Interface type	SHV	High pressure triaxial	UHV Coaxial	High Voltage Banana
Probe material	Tungsten Probe	Tungsten Probe	Tungsten Probe	BeCu or Tungsten Probe

## >RF Probe Selection Guide

	40a	50a	67a	110A	145A
Usage frequency	DC Power -40GHz	DC Power -50GHz	DC Power -67GHz	DC Power -110GHz	DC Power -145GHz
Connection	2.92mm	2.4mm	1.85mm	1.0mm	0.8mm
Needle tip configuration	GS/SG/GSG	GS/SG/GSG	GS/SG/GSG	GS/SG/GSG	GSG
Pitch range	50μ-2540μ	50μ-1250μ	50μ-1250μ	50μ-1250μ	50μ-200μ
Insertion loss	<.8db	<1.0db	<1.1db	<1.5db	<1.75db
Loop loss	>18db	>18db	>14db	>15db	>15db



## >Calibration substrates





GSG	CS-5	CS-9	CS-10	SC-18
PAD Size	50μX50μ	100μX100μ	150μX150μ	300μX300μ
	100μX100μ			
	150μX150μ			
Pitch range	75μ-250μ	250μ-600μ	600μ-1250μ	1250μ-2540μ
GS	CS-8	CS-14	CS-11	CS-17
PAD Size	50μX50μ	100μX100μ	150μX150μ	300μX300μ
	100μX100μ			
	150μX150μ			
Pitch range	50μ-200μ	200μ-400μ	400μ-1250μ	750μ-2540μ
GSG>110GHz	CS-15			
PAD Size	25μX25μ			
Pitch range	40μ-150μ(SOLT)			
	30μ-150μ(LRM)			

## 6.4 Micropositioner-4 different precision options

Model				
	SS-700 Sub- $\mu$ m circuits/RF	SS-100 Sub- $\mu$ m circuits/RF	SS-125-m Sub- $\mu$ m circuits/RF	SS-40 Optical Testing
	Sub- $\mu$ m Process IC Circuit Testing			Affordable price
	Linear, recoil-free movement			Linear Motion
	Can be used with coaxial/three-axis probe fixtures			
	Tungsten probes can be used			Optical device spot measurement
	Can be configured for four directions of east/south/west/north RF probe holders			Small footprint
	RF test capability: DC to 40GHz ~ 120GHz			I/O Pad Spot Test

Model	SS-700	SS-100	SS-125-M	SS-40
X-Y-Z Trip	8 x 8 x 8mm	12 x 12x 12mm	14 x 14 x 14mm	12 x 12x 12mm
Movement method	Linear movement	Linear movement	Linear movement	Linear movement
Screw accuracy	700 Thread / Inch	100 Thread / Inch	125 Thread / Inch	40 Thread / Inch
Movement accuracy	0.1 $\mu$ m	0.7 $\mu$ m	< 1 $\mu$ m	10 $\mu$ m
Size (L*W*H)	148*120*140	115*100*112	110*51*100mm	64*47*55
Weight (g)	1500	1000	1100g	175

## 6.5 Probe Fixture - 4 different fixture options

SEMISHARE	<b>Triax Tip Holder for triaxial interface</b>	
T2H	Shield box with leakage accuracy up to 100FA	
	Wire length 2m One-way screwdriver for probe installation	
SEMISHARE	<b>Coax (male) Tip Holder</b>	
C2H	Leakage accuracy up to 10PA	
	Wire length 2m Screwdriver for probe installation	
SEMISHARE	<b>L shape Triax Tip Holder</b>	
T2L	Leakage accuracy up to 100FA with shield box	
	Wire length 2m Screwdriver for probe installation	
SEMISHARE	<b>L-shape Coax (male) Tip Holder</b>	
C2L	Leakage accuracy up to 10PA	
	Wire length 2m Screwdriver for probe installation	

## 7. Vacuum Pumps

### > Specifications

- ◆ Voltage: AC220V
- ◆ Flow rate: 7L/min
- ◆ Vacuum level: -60KPa
- ◆ Weight: 0.7Kg

### > Functions

- ◆ Provides a vacuum source.
- ◆ Combine with the vacuum adsorption hole on the CHUCK to hold the sample in place.
- ◆ Use with vacuum adsorption-type probe holder to fix the probe holder.

### > Features

- ◆ Oil-free and silent, especially suitable for laboratory and clean room use
- ◆ 7 L/min for 24-hour uninterrupted operation





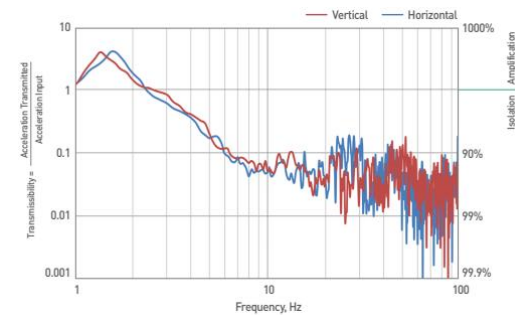
## 8. Air-floating automatic balance anti-vibration table

### (1) High precision type

The pneumatic support frame is designed and manufactured with a special two-chamber system design to ensure that the natural vibration frequency is kept low, excellent vibration isolation in both vertical and horizontal directions, and excellent damping with leveling valve design provides automatic leveling.

#### > Specifications

Reference Size (L*W*H)	600*900*600mm
Isolation System	Pneumatic isolation
Resonance frequency	Vertical/horizontal = 1.2 - 3.0 Hz
10 Hz Isolation	Vertical/horizontal = 80 - 99%
Leveling repeatability	Standard leveling valve = $\pm 1.0$ mm (0.04 in.)
Maximum load capacity	Precision leveling valve = $\pm 0.05$ mm (0.002 in.)
Automatic leveling	500 kg
Height adjustment	Yes
Required air supply	$\pm 20$ mm



### (2) Economy type

Through a series of design improvements of shock absorption systems, such as the shape and material of the air spring, the volume of the spring chamber and the volume of the auxiliary tank, the damping aperture, and the level adjustment valve, etc., it provides good overall stability.

#### > Specifications

- Size: L\*W\*H( 800\*800\*700mm) (Custom sizes available)
- Load-bearing: 500kg



Note: Anti-vibration table can be matched with an economic optical flat panel or high-precision honeycomb panel according to the budget. either one of the two

# 9. Lasers (FA failure analysis / laser cutting)

The multi-band laser cutting system can be mounted on most microscopes which can be used for FA (failure analysis), enabling precise cutting at the microscopic level and selective removal of specific materials without damaging the underlying layers. The sophisticated and reliable Advanced Laser Delivery System (ABDS) allows the selection of different wavelengths to cope with different material cutting and machining requirements. The maximum laser output energy is  $\geq 2.7\text{mJ}$ , and the energy can be adjusted in steps of  $\geq 300$ . The water circulation cooling structure makes the system more compact and maintenance-free.

## > Application

IV/CV characteristics testing and failure analysis of materials/devices, RF characteristics device failure analysis, IC/panel internal circuit modification/delamination, failure analysis lab special

## > Advantages of multi-band laser

Multi-band lasers provide quick IC design, failure analysis, and LCD repairs by switching between different wavelengths according to application requirements. For example, UV light can remove polyimide directly without causing damage to the underlying material. Infrared light can partially penetrate silicon and gallium arsenide to cut through metal lines with minimal damage to the substrate. Green light is the most widely used one, which can effectively cut metal and remove the oxide layer. There are often multiple materials on the device, so multi-band switching is required for different operations.



All actions, including the selection of output energy level, spot size, and wavelength, are done through the remote operation panel, which reduces the chance of bruising the microscope.

## > Features

- The ability to select different wavelengths to cope with a larger range of material cuts.
- Good laser machining, with good repeatability ranging in size from  $50\mu\text{m} \times 50\mu\text{m}$  (using 50X objective lens, 1064nm band) to  $1\mu\text{m} \times 1\mu\text{m}$  (using 100X objective lens, 532, 355nm band) with good uniformity.
- Continuous fast material cutting (10 seconds of operation at 5 Hz for every 10 seconds of rest), which can be operated intuitively from a remote control panel with LCD menu display panel HI/LO energy level control knob for precise control of a wide range of cutting energies while maintaining optimum beam performance.
- Easy installation and maintenance.

## > Specifications

Laser Characteristics	Waveband	Wavelength can choose 1064/532/355/266nm band
	Power	Output power 2.2mJ/pulse (upgradeable)
	Micromachining Capability	Processable materials: Cr/Al/ITO/Ni/TFT/RGB/Poly Silicon/Mo/SiN/CF internal impurities, etc.
	Accuracy	Minimum processing accuracy of $1 \times 1\mu\text{m}$ (when equipped with 100X lens)
	Cooling method	Air-cooled laser or water-cooled laser can be selected

## 10. Shielding box

### > Specifications and Features

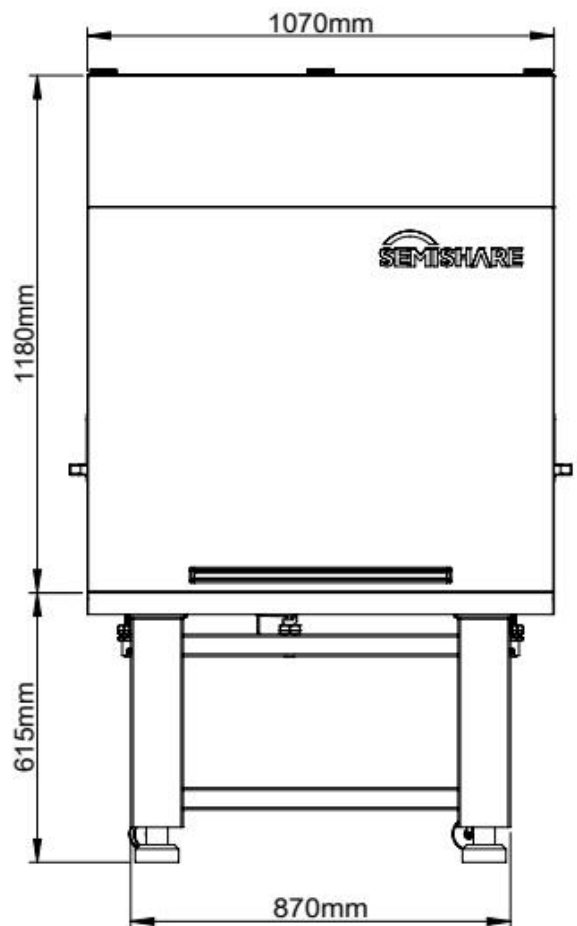
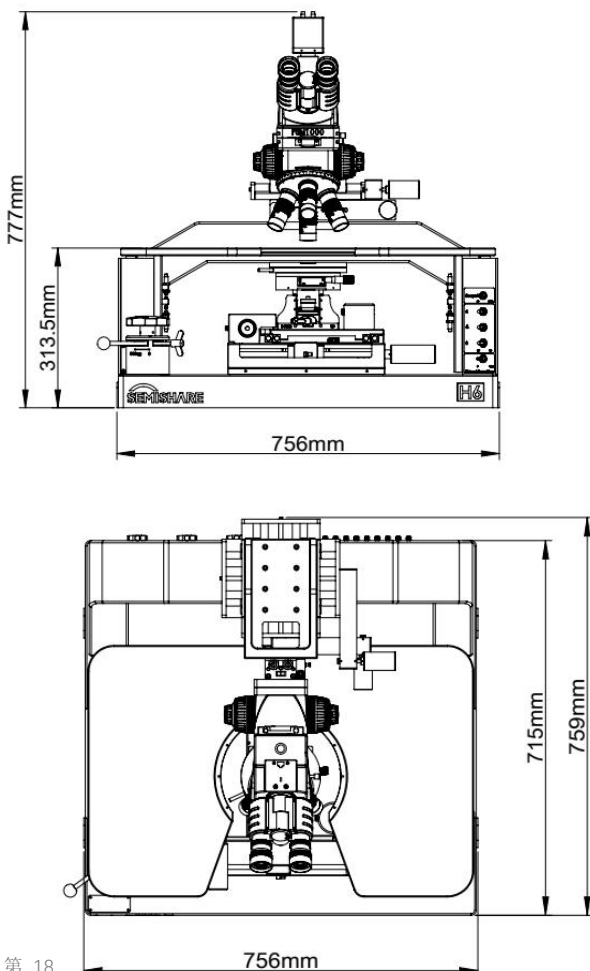
- ◆ Size (L\*W\*H) : 900\*800\*1000mm (**Custom sizes available**)
- ◆ With grounding terminal
- ◆ Shielding box door opening method: up-and-over door opening structure (as shown in the figure)
- ◆ The Left and right sides have 8 holes each for the adapter mounting plate
- ◆ The concealed cable outlet at the back
- ◆ Shielding box independent of the anti-vibration platform design
- ◆ Shielding light and electromagnetic interference.
- ◆ Matching probe table and anti-vibration table design.
- ◆ The probe fixture can test the electrical signal leakage accuracy to 100fa and resist 2000V high voltage.
- ◆ The shielding box is equipped with adapters to facilitate the good connection of lines inside and outside the box when the shielding box is closed.



## 11. Dimension

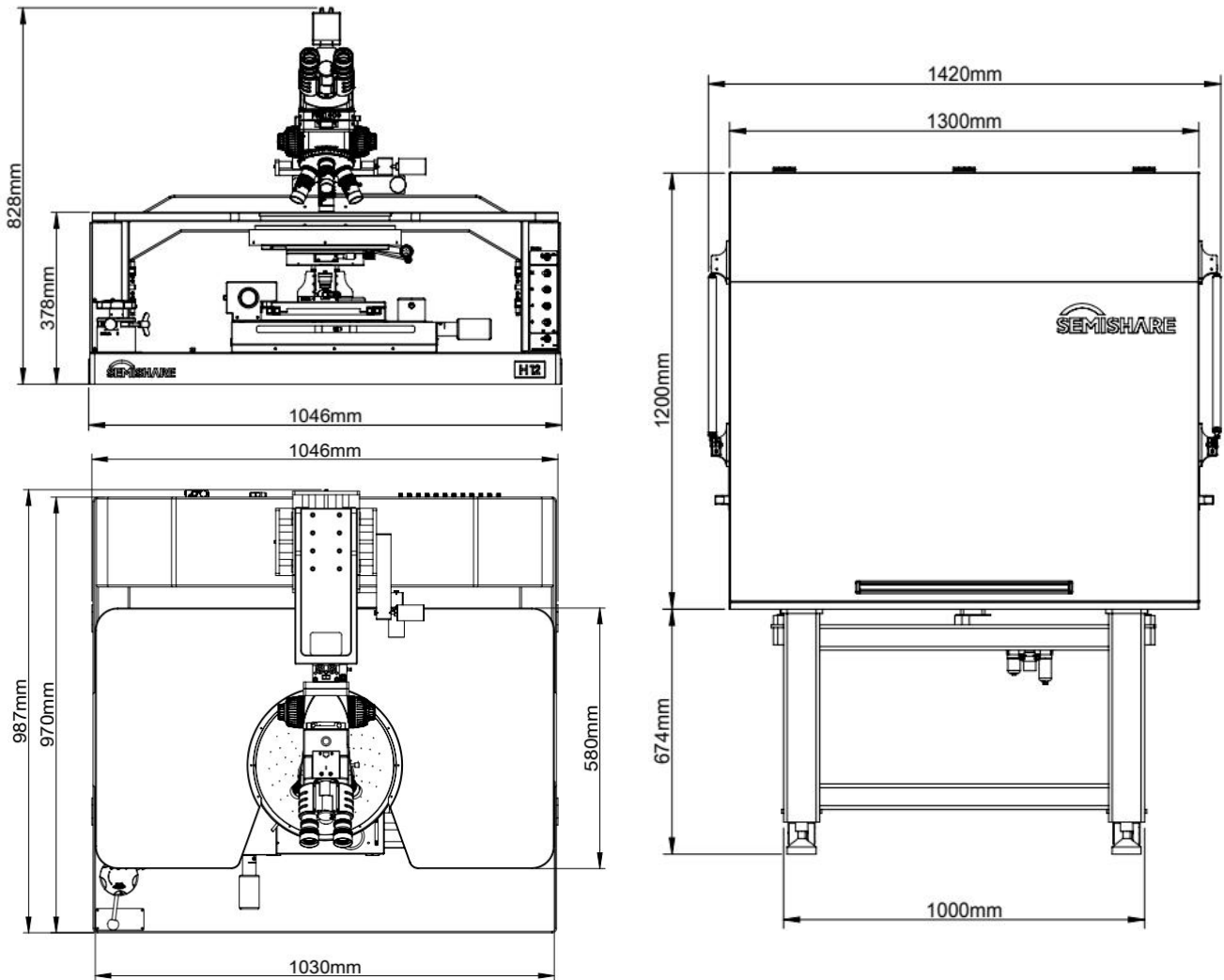
### > H6/H8 Size: 756\*759\*777mm

External dimensions with microscope and shock table, shielded case



> H12 Size: 1046\*987\*828mm

External dimensions with microscope and shock table, shielded case



## 12. Product Service

### Solution consulting service

Our experienced technical experts will provide professional advice on system testing according to your application requirements to help you quickly select satisfactory equipment to purchase.

### Warranty service

All SEMISHARE's products have passed strict factory inspection, and we also provide you with professional warranty service.

### Technical Training

To help you better understand SEMISHARE products and execute additional application solutions, we can provide customized, systematic technical skills training according to your specific requirements. Please apply to the website or contact us by phone if you require our service.

### Product Upgrade Service

Our technology provides value-added services for your products. SEMISHARE can provide hardware and software upgrade services when your testing needs change to help you get more value out of your equipment.

### Service Promise

SEMISHARE is committed to responding quickly to your requirements. We will value your every need if you contact us by any means. Online support: 7\*24h customer response supported by a professional FAE technical team.

Onsite Support:

- 1) For customers in Shenzhen, after-sales service personnel should arrive at the customer site within 4 hours
- 2) For customers in Guangdong Province, after-sales service personnel should arrive at the customer site within 24 hours
- 3) For customers outside Guangdong Province, after-sales service personnel shall arrive at the customer site within 48 hours

### Service Contact

You can easily reach us or our partners wherever you are.

#### After-sales Service

E-Mail: [service@semishare.com](mailto:service@semishare.com)

Customer Complaint

Telephone: 0755-2690 6952 to 808

E-Mail: [alvin@semishare.com](mailto:alvin@semishare.com)

---

### SEMISHARE Co. Ltd (Headquarter)

Address: 3F, Building 4, Innovation Port, Hanyuan District, Fuhai

Street, Baoan District, Shenzhen

Tel: 0755-2690 6952

E-mail: [sales@semishare.com](mailto:sales@semishare.com)

Web: [www.semishareprober.com](http://www.semishareprober.com)

This information is subject to change without notice. © SEMISHARE Technologies, 2020- 2022, Published in CN, 2022,V2.0