

**Specification of Probe Station:**

Vacuum chamber with 110mm high IR transmission optical flange window  
 Radiation shielding with 100mm low IR transmission optical window  
 4inch chuck with  $\pm 5$  micron flatness  
 6 micropositioner flange adapters  
 1 KF40 vacuum port and 1 vent port for fast release  
 Coaxial Vapor-cooled shielding optimizes cryogen efficiency  
 Cryogen flowback design for radiation shielding  
 KF flange , System Ultimate vacuum better than  $5 \times 10^{-4}$  Pa (with 250L/s turbo pump)  
 Leak rate better than  $1.3 \times 10^{-10}$  Pa.M<sup>3</sup>/s  
 Cooldown time from RT to 80K ( LN<sub>2</sub> ) /10 K(LHe): <40 mins  
 Temperature stability:  $\pm 100$  mK

**Microscope**

10 micron tip diameter probe, 5PC/BOX  
 Triaxial (Female) HS adapter  
 Field-of-View (High-Mag.): 0.91 x 1.22 mm  
 Working Distance: 89 mm  
 150W High Power LED White Light Intensity Stepless Control LS-2

**Vibration Free Table**

Dimension: 75cm x 65cm ( For reference only, The actual size will be adjusted according to the probe station )

Vertical Natural Frequency 1.5Hz  
 Horizontal Natural Frequency 1.2Hz  
 Weight Around 400kg

**Leybold Turbo station**

Pumping rate(N<sub>2</sub>): 90l/s for NW40 bellow  
 Ultimate vacuum better than  $5 \times 10^{-8}$  mbar  
 Compression ratio(N<sub>2</sub>):  $> 1 \times 10^{11}$   
 For vacuum measurement (Pirani gauge and ionization gauge)

**Temperature Controlling systems**

Two PID channels output and 3 channels input  
 Loop1 Heater output 600 watts, current controlled  
 Loop2 Heater output 200 watts for radiation shielding

**Temperature range : 77K-770K(LN<sub>2</sub>)**

Temperature resolution : 0.001°C  
 Chuck surface temperature compensation function  
 Sensor Temperature deviation: 0.5%  
 3 PT100 Sensors for Chuck, radiation shielding and tip holder

**LN<sub>2</sub> flow rate automatic control**

LN<sub>2</sub> Dewar with rollers and brakes  
 LN<sub>2</sub> Flow modual and temperature module working together to control chuck temperature  
 Manual and automatic LN<sub>2</sub> control available

**21.5 inch HD display**

HDMI interface HD (2 megapixels) CCD 16

*Shingun*  
 22-Jan-2026