

POSEIDON SELECT TEM



SPECIFICATIONS

Platforms	Poseidon is compatible with most major transmission electron microscopes. Please contact Protochips or your local representative to verify compatibility of your instrument.	Poseidon Select TEM
Large E-chip Dimensions	6.0 mm x 4.5 mm	
Small E-chip Dimensions	2.0 mm x 2.0 mm	
Compatible Techniques	(S)TEM; EDS; EELS; Diffraction; Aberration Correction	
Resolution¹	2 ± 1 nm or better	
Tip Reservoir Volume	1.44 µL	
Alpha Tilt	Up to ± 37 ° (varies by manufacturer and pole piece)	
Number of E-chip Variations	39	
Number of O-Rings in Tip	One single sealing gasket optimized for EDS, safety, and ease of use	
Wetted Materials	PEEK, Titanium, 316 Stainless Steel, Silicon Nitride, SU-8	
Number of Ports	3 ports for mixing liquids at the holder tip	
Replaceable Tubing	All three lines are user replaceable without holder disassembly	
EDS Performance	Up to 3,000 Counts Per Second (CPS) ²	

POSEIDON HEATING PACKAGE SPECIFICATIONS

Maximum Temperature	100 °C	Heating
Heating Rate	5 °C per second	
Temperature Accuracy	< 4%	
Temperature Stability	± 0.01 °C	
Software Control	Temperature control and automatic data logging through Clarity™ software	
Temperature Control Method	Closed-loop or manual control with on chip sensor	

ELECTROCHEMICAL PACKAGE SPECIFICATIONS

Electrical Inputs on Holder	5 mini banana jack inputs, half cell and whole cell measurements		Electrochemical
Electrodes on Active E-chips	3 electrodes (WE, RE, CE)		
Potentiostat Current Ranges	60 pA - 600 mA		
Max Applied Potential	± 11 V		
Sampling Frequency	10 µHz - 1 MHz		
Electrode Materials	Platinum and glassy carbon		
Potential Accuracy (Potentiostat)	Applied	± 1 mV ± 0.2% of setting	
	Measured	± 1 mV ± 0.3% of reading	
Current Accuracy (Potentiostat)	Applied	± 10 pA ± 0.3% of range	
	Measured	± 10 pA ± 0.3% of range	
Electrode - E-chip Contact	Dry		
Modes of Operation	Electrochemical Impedance Spectroscopy, Cyclic Voltammetry, Chronoamperometry, Cyclic Polarization, Charge/Discharge Curves and Analysis.		

- Resolution calculated using R25-75 values of gold nanorods (10 x 40 nm) in 150 nm of liquid and an acceleration voltage of 120 kV, greater resolutions are possible depending on pole piece.
- EDS performance dependent on detector configuration and experiment conditions. Improved CPS obtainable with EDS-optimized E-chips and optional low-background Beryllium lid.