

# Nano/Micro Rotation Stage

## UMP1000R Series

The Nano / Micro Rotation Stage UMP1000R Series are small rotation stages developed for applications that require microscopic rotation and position detection in atmospheric and high-vacuum con-

### ● Features

- Compact design allows incorporation into a variety of scanning electron microscopes (SEM) and focused ion beam (FIB) systems. (Contact us for details)
- Models are also available with optional rotational single detection.
- Installing the UNISOKU XYZ 3-axis Nano-manipulator / prober' s Z-stage enables applications that requires a XYZ + R (Rotaion 4-axis stage).
- Simple operation from a Windows PC.

### ● Primary Applications

- Rotational operation and angle detection under SEM, FIB, and optical microscopy
- Nano / Micro-manipulation and probing combining XYZ and rotational operation.

### ● Line-ups

#### • Rotation Stage (R)

Consists of stage unit, controller, and control software (PC optional).

Selectable rotational angle detecting function.

Model No.

**UMP1000R** - No rotational angle detection

**UMP1000RE** - With rotational angle detection

#### • XYZ 3-axis + Rotation (R) Stage

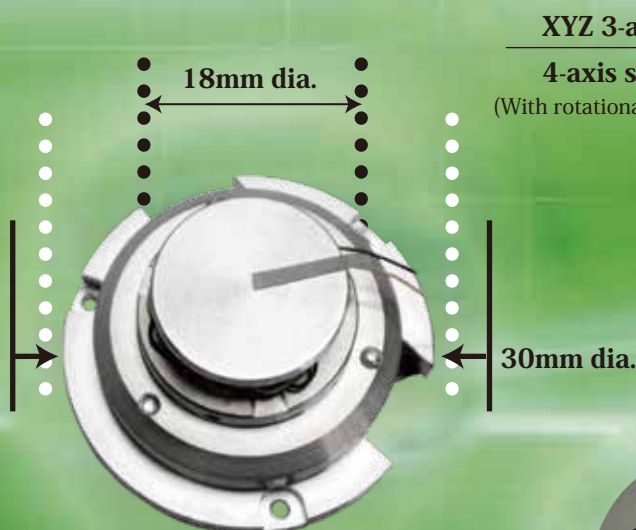
Consists of stage unit, controller, and control software (PC optional).

Selectable rotational angle detecting function.

Model No.

**UMP1000UR** - No rotational angle detection

**UMP1000URE** - With rotational angle detection



**XYZ 3-axis + R (Rotaion)  
4-axis stage UP-200URE**  
(With rotational angle detection function)



**XYZ 3-axis Stage**

**Rotation Stage**  
**UMP1000R, UMP1000RE**

\*Rotor shape can be modified

**22mm dia.**



**UMP1000UR Rotor**

\*Shape of rotor at tip can be modified  
(No rotaional angle detection function)



**Controller**

# Nano / Micro Rotation Stage

## UMP1000R Series

### Specifications

Model No.		UMP1000R	UMP1000RE	UMP1000UR	UMP1000URE	
Stage Type		Rotation Stage		XYZ + R (Rotation) 4-axis Stage		
Angle Detection Function		No Angle Detection	With Angle Detection	No Angle Detection	With Angle Detection	
Unit (Stage)	Max. Range of Motion	XYZ Coarse (Pulse) Mode	—	—	XY-axis: >5mm, Z-axis: >3mm *Modification possible by special order	
		XYZ Fine (DC) Mode	—	—	XYZ-axis: 1μm *Modification (ie: change to piezo element) possible by special order	
		Rotation (Pulse) Mode	>360°			
	Min. Resolution	XYZ Coarse (Pulse) Mode	—	—	<150nm *Modification (ie: change to piezo element) possible by special order - values may vary	
		XYZ Fine (DC) Mode	—	—	Variable Resolution: Max. Range of Motion in DC Mode / 20,000 Guaranteed Resolution: Max. Range of Motion in DC Mode / 2,000	
		Rotation (Pulse) Mode	<0.05°			
	Rotation Speed		Approximately 30s ~ 120s / 1 rotation (variable) *Varies with size / shape of rotor			
	Detection Angle Resolution		—	<0.25° *Higher resolution possible by special order	—	<0.25° *Higher resolution possible by special order
	Rotary Shaft Eccentricity		>100μm (±Stand)			
	Input	Voltage		±150V		
		Extraction Line		2 (twisted pair wire)		
		Connector		For Dsub terminal		
	Dimensions, Weight	Rotation Stage		Rotor OD: 18mm dia. Stator OD: 30mm dia.		Rotor OD: 22mm dia. Stator OD: 22mm dia.
		Dimensions (mm) Weight		<100g (Not including mounting base plate)	<120g (Not including mounting base plate)	<180g (Not including mounting base plate)
Operating Environment	Vacuum		In air & 10 <sup>-2</sup> ~ 10 <sup>-5</sup> Pa	In air & 10 <sup>-2</sup> ~ 10 <sup>-4</sup> Pa	In air & 10 <sup>-2</sup> ~ 10 <sup>-5</sup> Pa	
	Temperature Range		4°C ~ 40°C			
	Humidity Range		15% ~ 80% *Cannot be used under condensed conditions due to sudden changes in the service environment			
Controller	Input Voltage		AC 100VAC (50/60Hz) *If requested prior to shipping, this can be modified to AC110, 115, 120, 220, or 240 V			
	Power Consumption		Less than 100VA			
	Controller Output		±150V max.			
	Output Terminal		Dsub 9-pin female			
	Input Terminal		USB terminal			
	Dimensions, Weight	Dimensions		213(W) x 370(D) x 100(H) mm		
		Weight		Approx. 6kg		
	Operating Environment	Temperature Range		5°C ~ 40°C		
Humidity Range		15% ~ 80% *Cannot be used under condensed conditions due to sudden changes in the service environment				
Accessories	Standard Control Software CD-ROM		Windows 7 or 10 (32bit) Single user license : 1			
	Special Connection Cable (USB)		PC - Controller (3m) : 1			
	Special Connection Cable (1 side Dsub 15)		1.5m : 1			
Optional (Requested specifications for Notebook PC)	OS (32bit Version)		Windows 7 or 10			
	USB Port		At least one			
	CD-ROM Drive		Required			
	Memory		At least 512MB *To allow for optional OS operation			
	HDD		At least 10MB unoccupied			

Specifications and appearances are subject to change without notice.

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