

# MICOS

## MOTION CONTROL & OPTICS USA

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◀◀ 2.010 ▶▶ Ultra Precision Linear Stage UPM-160

Positioners



### Key features

- Travel range up to 205 mm (8")
- Bi-directional repeatability +/- 0.1  $\mu\text{m}$
- Linear scale centrally mounted
- Load capacity in lifetime
- Maximum speed 100 mm/sec
- Crossed-roller bearings
- Strength stress-relieved Aluminium
- Load capacity up to 100 kg
- 20.000 hour MTBF
- Module combination
- [Download PDF data sheet ...](#)

### FACTS

Load Characteristics	Fx (N)	Fy (N)	Fz (N)	Fx (N)	Mx (Nm)	Mz (Nm)	kax ( $\mu\text{rad}/\text{Nm}$ )	kay ( $\mu\text{rad}/\text{Nm}$ )
<a href="#">DC-B-040</a>	150	100	350	100	200	100	5	3
<a href="#">2Phase-051</a>	150	100	350	100	200	100	5	3

### DESCRIPTION

The **Ultra Precision Linear Stage UPM-160** of the structural series 160 is especially employed for the Wafer Sub Surface Inspection, Fiber Alignments, High Precision Robotic and for all tasks where a maximum of positioning accuracy and reliability is absolutely necessary. All Ultra-Precision-Linear Stages UPM-160 are equipped with a linear length linear system that is centrally installed between the guide. Due to high-quality crossed-roller bearings a

maximum of load capacity and smooth move is guaranteed. A special, stressfree, tempered AL-alloy guarantees a homogeneous non-warping structure. The structural series 160 are offered with 2-phase-micro-step (SMC-series) technology or with DC-motor-tacho combination. System accuracy of less than  $1\mu\text{m}/100\text{mm}$  respectively a



bi-directional repeatability of  $0.1\mu\text{m}$  is guaranteed. All UPM-160 components are standard fitted out with two mechanical limit switches. Additionally contactless limit switches can be mounted. The positioning accuracy of the structural series 160 is only guaranteed with MICOS control systems. The Ultra-Precision-Linear Stages are supplied calibrated with standard certificate (flatness, straightness & position). The measurement is made mounted and unloaded on granite with a flatness  $< 1\mu\text{m}$ .

#### Technical data

Travel Range (mm)	55	105	155	205
Bi-directional Repeatability ( $\mu\text{m}$ )	+/- 0.1			
Accuracy per 50 mm ( $\mu\text{m}$ )	+/- *0.25 ... 0.5			
Velocity Range (mm/sec)	0.001 ... 100			
Straightness / Flatness ( $\mu\text{m}$ )	< +/- 0.5	< +/- 0.75	< +/- 1	< +/- 1.25
Pitch ( $\mu\text{rad}$ )	< +/- 15	< +/- 20	< +/- 25	< +/- 30
Yaw ( $\mu\text{rad}$ )	< +/- 20			
Ballscrew Pitch (mm)	2.5   5.0			

Speed max. 2.5   5.0 mm pitch (mm/sec)				
<u>DC-B-040</u>	50   100			
<u>2Phase-051</u>	20   35			

Resolution Closed-Loop ( $\mu\text{m}$ )				
<u>LS-010</u> , Linear steel scale	0.1			
<u>LS-020</u> , Linear glass scale	0.005 ... 0.1			

Current (Amps) / Voltage (Volts)				
<u>DC-B-040</u>	3.8   24			
<u>2Phase-051</u>	2.5   -			

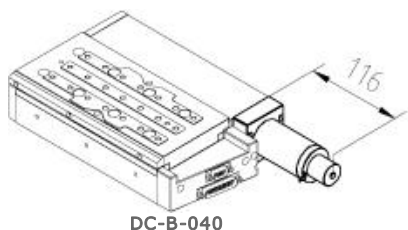
<b>Material</b>	Special Alu, black anodized			
<b>Weight (kg)</b>	5	6	7	8

**More info:** Detailed information, concerning motor and connectors, see: Appendix

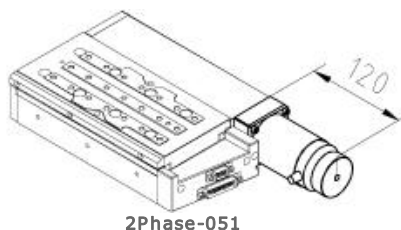
\*=Two point slope correction

MOTION CONTROL Systems Positioners MiniPos DirectDrives Controllers ManPos Accessories Vacuum MAC PhotonX M A C

UPM-160 Motors



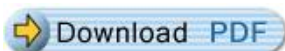
DC-B-040



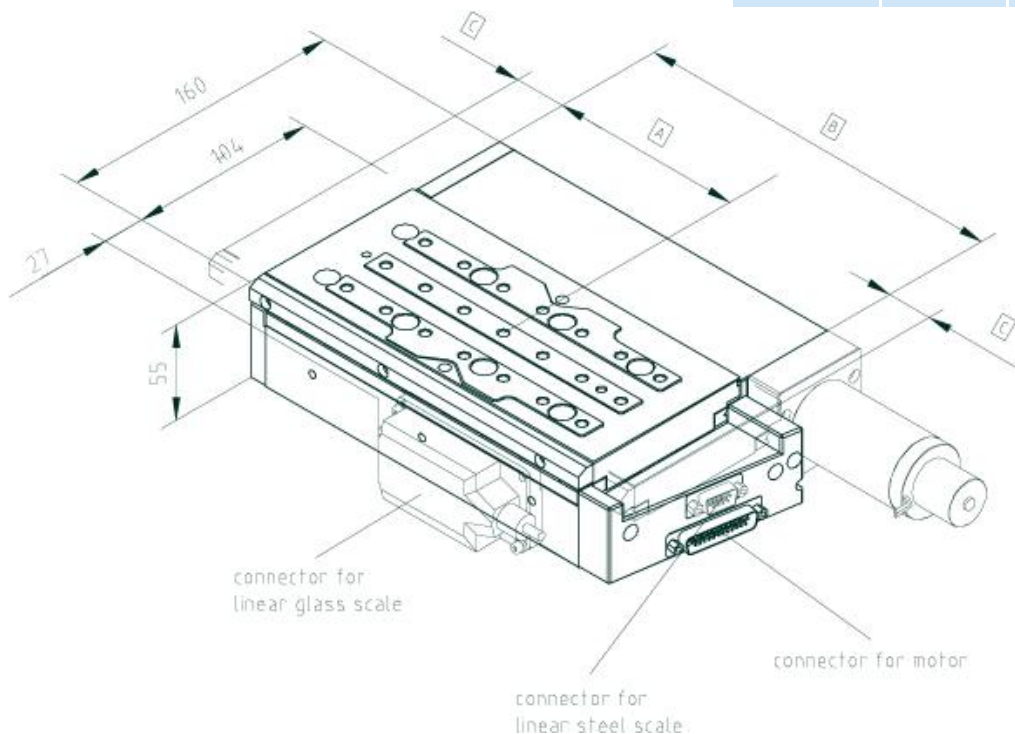
2Phase-051

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UPM-160 Base



Travel ranges	A (mm)	B (mm)	C (mm)
55 mm	110.5	211	27.5
105 mm	135.5	261	52.5
155 mm	160.5	311	77.5
205 mm	185.5	361	102.5

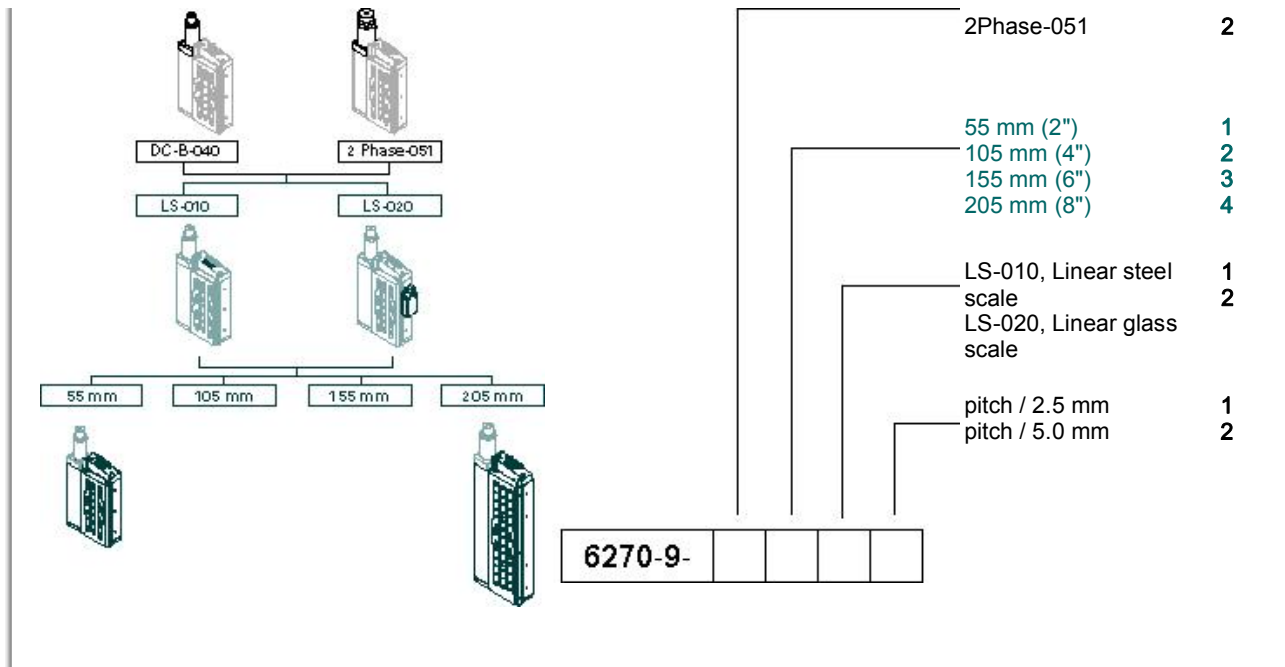


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UPM-160 Ordering information

DC-B-040

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Founded in 1990, MICOS specializes in the development, manufacturing and marketing of ultra-high precision positioning components and systems for research and industry. We are experts in vacuum, ultra-high vacuum, clean room, and extreme climate environments down to 77 Kelvin.

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