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LINEAR STAGES

4.082 Ultra Precision Elevation Stage UPM-160 Vacuum



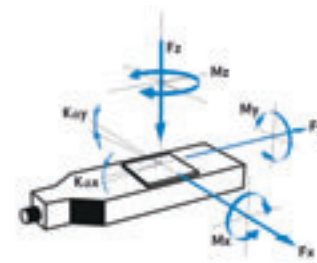
FACTS

Load characteristics	$F_x(N)$	$F_y(N)$	$F_z(N)$	$M_x(Nm)$	$M_y(Nm)$	$M_z(Nm)$	$k_{ax}(\mu rad/Nm)$	$k_{ay}(\mu rad/Nm)$
FV	150	100	350	100	200	100	5	3
HV	150	100	350	100	200	100	5	3
UHVG	150	100	350	100	200	100	5	3



KEY FEATURES

- Vacuum up to 10⁻⁹ hPa
- Travel range up to 205 mm (8")
- Uni-directional repeatability down to 0.035 μm
- Maximum speed 6 mm/sec
- Load capacity up to 35 kg
- Integrated limit switches
- Integrated linear scale (center mounted)



positioning accuracy and reliability are absolutely mandatory. All UPM-160 Vacuum stages are equipped with an integrated linear scale that is center mounted between the guides. High-quality cross-roller bearings mounted on a stress-relieved tempered aluminum-alloy body guarantee maximum load capacity and smooth motion. The UPM-160 Vacuum stage is offered with a special 2-phase stepper vacuum motor and is equipped with two limit switches. All ultra precision linear stages are supplied with a certificate of performance (flatness, straightness & accuracy).

The UPM-160 Vacuum ultra-precision linear stage was specifically designed for wafer inspection, fiber alignment or for any other tasks where the highest

TECHNICAL DATA

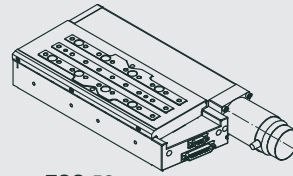
Travel range (mm)	52	105	155	205
Straightness / Flatness (μm)	± 0.5	± 0.75	± 1	± 1.25
Pitch (μrad)	± 15	± 20	± 25	± 30
Yaw (μrad)	± 20	± 20	± 20	± 20
Weight (kg)	5	6	7	8

Vacuum type	FV	HV	UHVG	
Linear scale				FV
Speed max. (mm/sec)	6	2	2	
Resolution calculated (μm)	5 (FS)	12.5 (FS)	12.5 (FS)	0.05
Resolution typical (μm)				0.04
Bi-directional Repeatability (μm)				± 0.05
Uni-directional Repeatability (μm)				0.05
Nominal Current (A)	2.5	2.5	2.5	

Accuracy	on request
Velocity range (mm/sec)	0.001 ... 6
Material	Aluminum or Stainless steel, suitable for vacuum

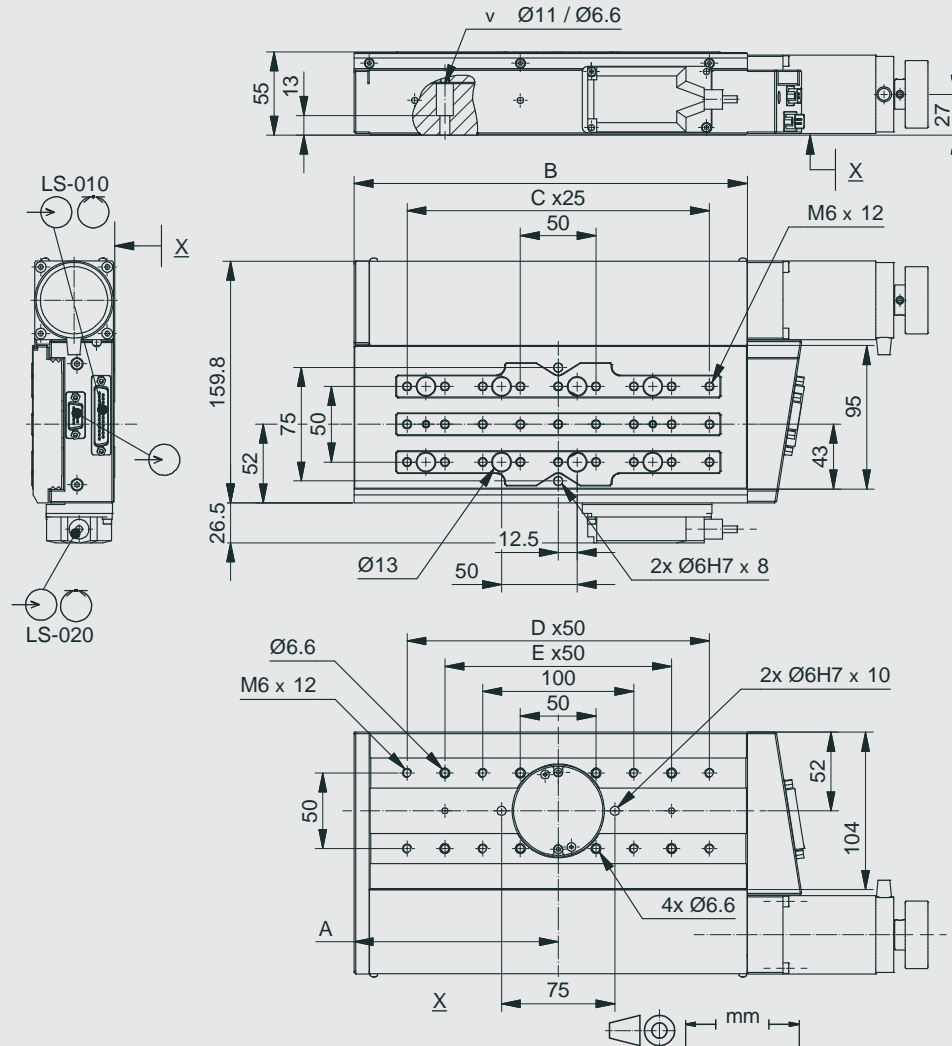
Vacuum Note: FS = full step, RE = rotary encoder
More info: Detailed information concerning motors and encoders, see appendix.

Travel (mm)	52	105	155	205
A	110	135	160	185
B	210	260	310	360
C	6	8	10	12
D	-	4	4	6
E	3	3	5	5



ZSS 52

drawings for the corresponding vacuum class must be requested separately.
The installed motor types are:
ZSS 52.200.1.2-E for FV
VSS 52.200.1.2-E for HV & UHVG



Order No.	6270-V-				0	0
FV					1	
HV					2	
UHVG					3	
55 mm (2")					1	
105 mm (4")					2	
155 mm (6")					3	
205 mm (8")					4	
open loop					0	
closed loop					1	

- APPLICATIONS
- CONTROLLERS
- ROBOTICS
- LINEAR STAGES**
- ROTATION STAGES
- PIEZO STAGES
- ACCESSORIES
- APPENDIX

UPM-160
HPS-170
LS-270
LS-180
LS-120
LS-110
PLS-85
LS-65
MTS-65
MTS-70
VT-80
LS-40
MCS
NPE-200
UPL-120
ES-100
ES-82
MA-35
MP-20
MP-20 B
MP-15

4.084 High Precision Stage HPS-170 Vacuum



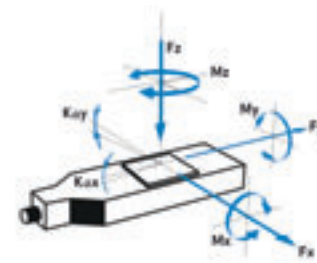
FACTS

Load characteristics	$F_x(N)$	$F_y(N)$	$F_z(N)$	$M_x(Nm)$	$M_y(Nm)$	$M_z(Nm)$	$k_{ax}(\mu rad/Nm)$	$k_{ay}(\mu rad/Nm)$
FV	150	150	350	300	400	300	12	8
HV	150	150	350	300	400	300	12	8
UHV	150	150	350	300	400	300	12	8



KEY FEATURES

- Vacuum up to 10⁻⁹ hPa
- Travel range up to 305 mm (12")
- Uni-directional repeatability down to 0.05 μm
- Maximum speed 10 mm/sec
- Load capacity up to 35 kg
- Integrated limit switches
- Option: linear scale (center mounted)



precision positioning. Due to its precise and smooth operation this linear stage is perfectly suited for measuring and inspection equipment. High-quality cross-roller bearings mounted on a stress-relieved, tempered aluminum alloy body guarantee maximum load capacity and long-time stability. The HPS-170 Vacuum stage is equipped with a special 2-phase stepper vacuum motor and with limit switches. A linear scale with a resolution of less than 0.05 μm is optional. Optical and inductive limit switches as well as a certificate of performance can be supplied on request.

The HPS-170 Vacuum precision stage was developed to meet the demands of high

TECHNICAL DATA

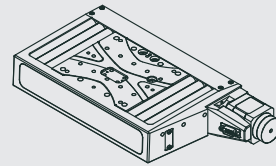
Travel range (mm)	52	102	155	205	305
Straightness / Flatness (μm)	± 0.75	± 1	± 2	± 3	± 4
Pitch (μrad)	± 20	± 25	± 30	± 35	± 40
Yaw (μrad)	± 40	± 40	± 40	± 40	± 40
Weight (kg)	5	5.5	6	6.5	7

Vacuum type	FV	HV	UHV	FV	UHV
Linear scale				FV	UHV
Speed max. (mm/sec)	10	4	4		
Resolution calculated (μm)	10 (FS)	10 (FS)	10 (FS)	0.05	0.05
Resolution typical (μm)	0.1	0.1	0.1	0.05	0.05
Bi-directional Repeatability (μm)	± 1	± 1	± 1	± 0.05	± 0.05
Uni-directional Repeatability (μm)	0.2	0.2	0.2	0.05	0.05
Nominal Current (A)	1.5	1.2	1.2		

Accuracy	on request
Velocity range (mm/sec)	0.001 ... 10
Material	Aluminum or Stainless steel, suitable for vacuum

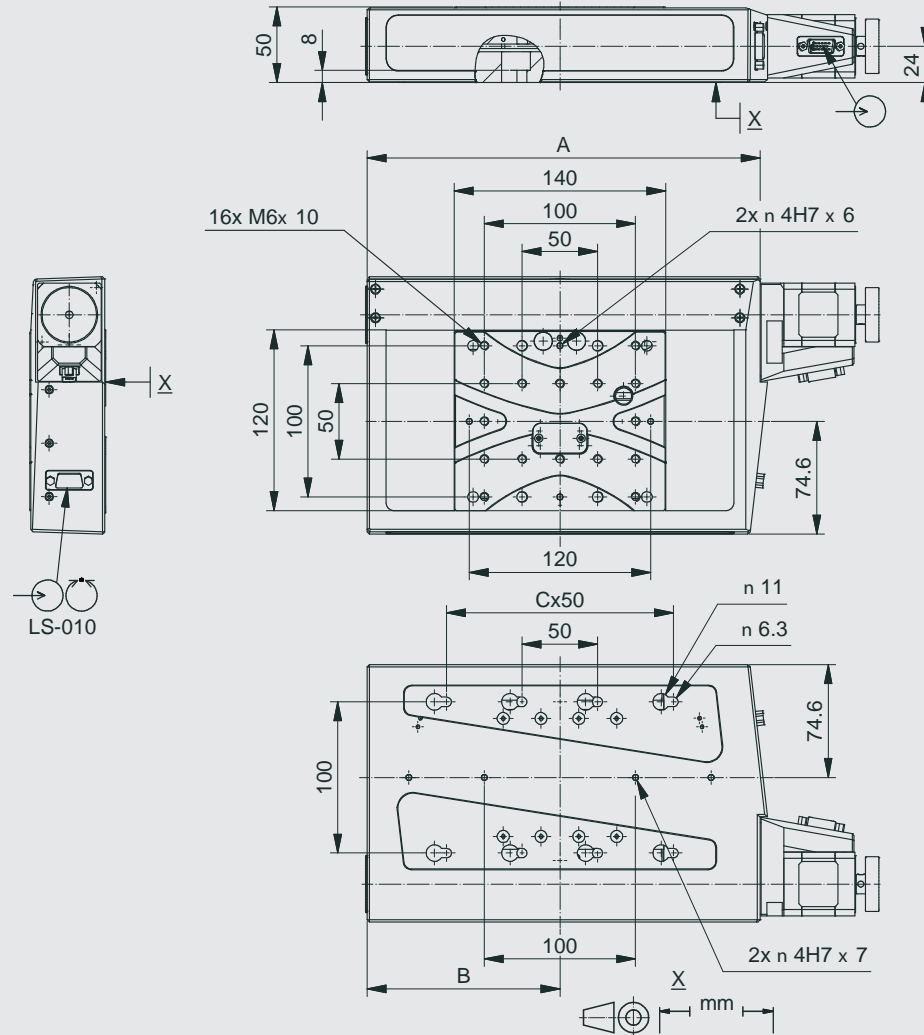
Vacuum Note: FS = full step, RE = rotary encoder
More info: Detailed information concerning motors and encoders, see appendix.

Travel (mm)	52	102	155	205	305
A	261	311	381	456	556
B	127,5	152,5	187,5	225	275
C	3	3	5	6	7



PK246

drawings for the corresponding vacuum class must be requested separately.
The installed motor types are:
PK246 for FV
VSS 43.200.1.2-E for HV & UHVG



Order No.	6262-V-				0	0
FV		1				
HV		2				
UHVG		3				
52 mm (2")		1				
102 mm (4")		2				
155 mm (6")		3				
205 mm (8")		4				
305 mm (12")		5				
open loop		0				
closed loop		1				

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HPS-170
LS-270
LS-180
LS-120
LS-110
PLS-85
LS-65
MTS-65
MTS-70
VT-80
LS-40
MCS
NPE-200
UPL-120
ES-100
ES-82
MA-35
MP-20
MP-20 B
MP-15

USA (East) & CANADA

PI (Physik Instrumente) L.P.
16 Albert St.
Auburn, MA 01501
Tel: +1 (508) 832 3456
Fax: +1 (508) 832 0506
Email: info@pi-usa.us
www.pi-usa.us

USA (West) & MEXICO

PI (Physik Instrumente) L.P.
5420 Trabuco Rd., Suite 100
Irvine, CA 92620
Tel: +1 (949) 679 9191
Fax: +1 (949) 679 9292
Email: info@pi-usa.us
www.pi-usa.us

GERMANY

Headquarters:
PI miCos GmbH
Freiburger Strasse 30
D-79427 Eschbach
GERMANY

Phone: +49 7634 50 57 0
Fax: +49 7634 50 57 393
e-mail: info@pimicos.com
home: www.pimicos.com

**Physik Instrumente (PI)
GmbH & Co. KG**
Auf der Römerstraße 1
76228 Karlsruhe/Palmbach
Tel: +49 (721) 4846-0
Fax: +49 (721) 4846-1019
Email: info@pi.ws
www.pi.ws

Call Us Today
508.832.3456 (East)
949.679.9191 (West)

