

Ultra Precision Elevation Stages



Nano Precision Elevation Stage



Ultra Precision Elevation Stage UPL-120

4.128 Nano Precision Elevation Stage NPE-200



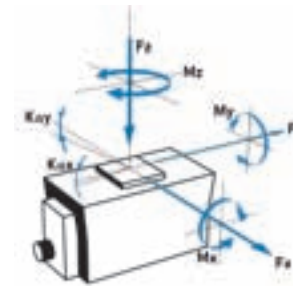
FACTS

Load characteristics	$F_x(N)$	$F_y(N)$	$F_z(N)$	$M_x(Nm)$	$M_y(Nm)$	$M_z(Nm)$	$k^{+x}(\mu rad/Nm)$	$k^{+y}(\mu rad/Nm)$
2Phase-034	100	80	300	100	50	100	3	1



KEY FEATURES

- Travel range 13 mm (1/2")
- Uni-directional repeatability down to 0.04 μm
- Maximum speed 0.2 mm/sec
- Load capacity up to 30 kg
- Integrated mechanical limit switches
- Integrated linear scale (center mounted)



inspection. High-quality, double cross-roller bearings mounted on a stress-relieved, tempered aluminum-alloy body guarantee a non-warping stage structure, high stiffness and smooth motion. Position stability of less than 5 nm over a period of 1 minute can be achieved. The NPE-200 is equipped with a 2-phase stepper motor using a backlash-free gear-head (ratio=50:1), two mechanical limit switches and a linear scale which is center mounted for highest accuracy. All nano-precision elevation stages are supplied with a certificate of performance (flatness, pitch, yaw, straightness & accuracy).

TECHNICAL DATA

Travel range (mm)	13	
Straightness / Flatness (μm)	± 0.7	
Pitch (μrad)	± 20	
Yaw (μm)	± 20	
Weight (kg)	9.2	
Motor (Pitch 2 mm)	2Phase-034	
Linear scale		LS-040
Speed max. (mm/sec)	0.2	
Resolution calculated (μm)	0.2 (FS)	0.001
Resolution typical (μm)		0.005
Bi-directional Repeatability (μm)		± 0.04
Uni-directional Repeatability (μm)		0.04
Nominal Current (A)	1.2	
Accuracy	on request	
Velocity range (mm/sec)	0.00001 ... 0.2	
Material	Aluminum, black anodized	

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

Error and technical modifications are subject to change

APPLICATIONS

CONTROLLERS

ROBOTICS

LINEAR STAGES

ROTATION STAGES

PIEZO STAGES

MANUAL STAGES

ACCESSORIES

APPENDIX

UPS-150

UPM-160

HPS-170

LS-270

LMS-230

LMS-180

LS-180

LS-120

LS-110

LMS-80

LMS-60

PLS-85

LS-65

MTS-65

MTS-70

VT-75

VT-80

LS-40

VT-215

CS-430

MS-8

MS-4

KT-120

MS-bio

NPE-200

UPL-120

ES-100

ES-82

ES-70

ES-50

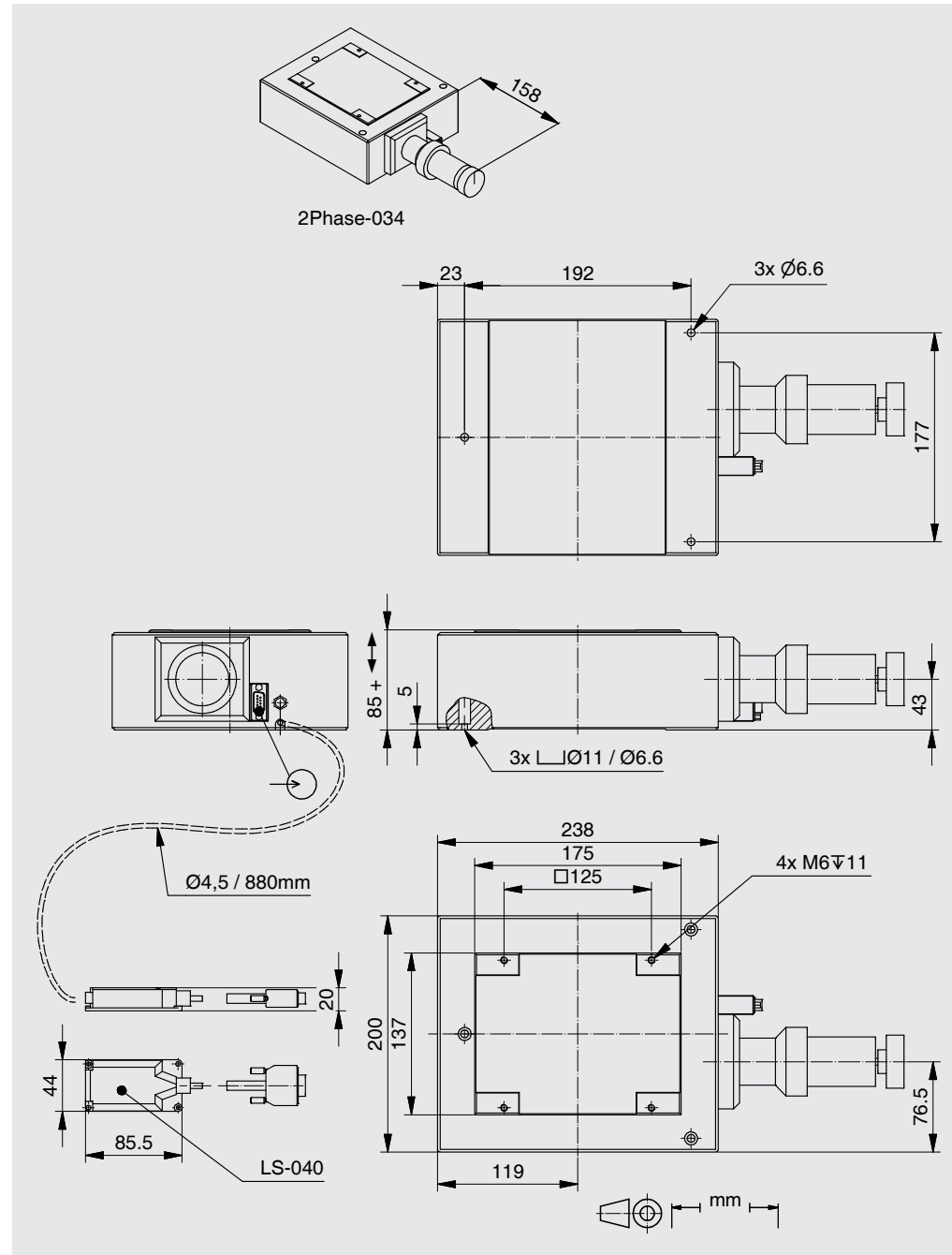
MA-35

MP-20

MP-20 B

MP-15

ASS5E



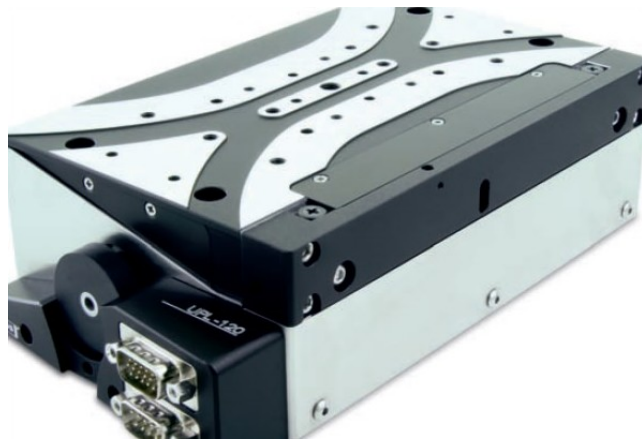
Order No.	6283-9-		
2Phase-034		2	
13 mm (1/2")		0	
LS-040, Linear Zerodur scale		0	

4.130 Ultra Precision Elevation Stage UPL-120



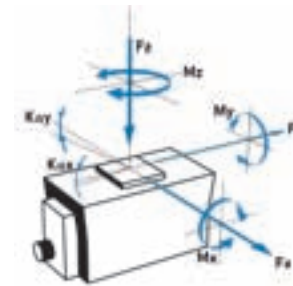
FACTS

Load characteristics	$F_x(N)$	$F_y(N)$	$F_z(N)$	$M_x(Nm)$	$M_y(Nm)$	$M_z(Nm)$	$k^{+x}(\mu rad/Nm)$	$k^{+y}(\mu rad/Nm)$
DC-B-028	200	150	200	130	38	150	35	65
2Phase-025	200	150	150	130	38	130	35	65



KEY FEATURES

- Travel range 13 mm (1/2")
- Uni-directional repeatability down to 0.05 μm
- Maximum speed 6 mm/sec
- Load capacity up to 15 kg
- Integrated optical limit switches
- Option: linear scale (center mounted)



was specifically designed for wafer inspection, fiber alignment and any other task where maximum positioning accuracy and reliability are absolutely mandatory. The UPL-120 stage can be equipped with an integrated linear scale.

High-quality cross roller bearings mounted on a stress-relieved tempered aluminum alloy body guarantee a maximum load capacity and smooth motion.

The UPL-120 stage is offered with a 2-phase SM motor or with a DC-motor and is equipped with two optical limit switches.

The UPL-120 ultra-precision elevation stage replaces our older UPL-160 stage. It

TECHNICAL DATA

Travel range (mm)	13
Straightness / Flatness (μm)	± 2
Pitch (μrad)	± 35
Yaw (μm)	± 35
Weight (kg)	2.1

Motor (Pitch 0.268 mm)	DC-B-028	2Phase-025	
Linear scale			LS-025
Speed max. (mm/sec)	6	6	
Resolution calculated (μm)	0.0134	1.34	
Resolution typical (μm)	0.5	0.5	0.1
Bi-directional Repeatability (μm)	± 1.5	± 1.5	± 0.05
Uni-directional Repeatability (μm)	0.5	0.5	0.05
Nominal Current (A)	0.98		
Voltage Range (V)	24		

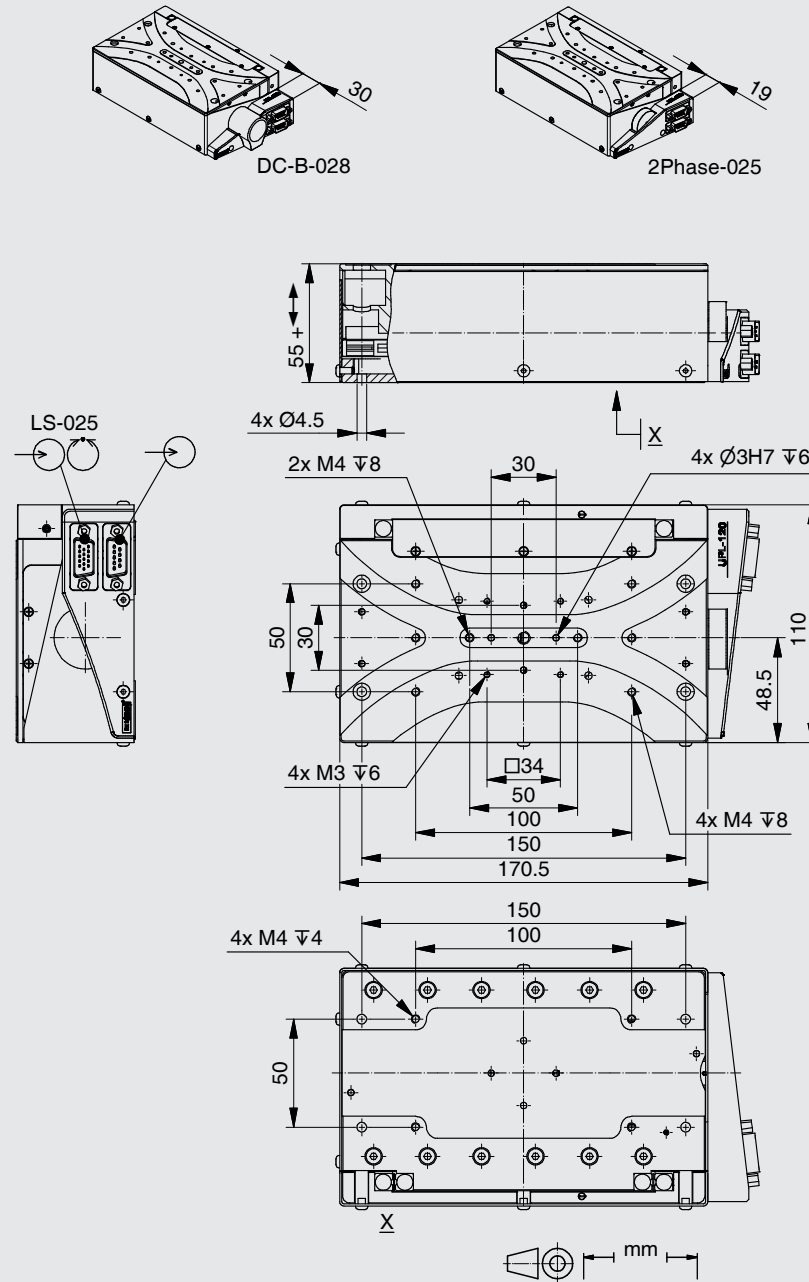
Accuracy	on request
Velocity range (mm/sec)	0.0001 ... 6
Material	Aluminum, black anodized

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

Error and technical modifications are subject to change

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

- UPS-150
- UPM-160
- HPS-170
- LS-270
- LMS-230
- LMS-180
- LS-180
- LS-120
- LS-110
- LMS-80
- LMS-60
- PLS-85
- LS-65
- MTS-65
- MTS-70
- VT-75
- VT-80
- LS-40
- VT-215
- CS-430
- MS-8
- MS-4
- KT-120
- MS-bio
- NPE-200
- UPL-120**
- ES-100
- ES-82
- ES-70
- ES-50
- MA-35
- MP-20
- MP-20 B
- MP-15
- ASS5E



Order No.	6635-9-			
DC-B-028		1		
2Phase-025		2		
13 mm (1/2")		1		
open loop		0		
LS-025, Linear steel scale		1		
OLS-010		3		

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)

