

Precision XY Scan Stages

4.118 Cross Stage CS-430



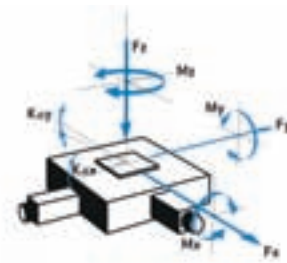
FACTS

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-071	110	110	300	80	80	80	120	120



KEY FEATURES

- Travel range 350 mm x 300 mm
- Uni-directional repeatability down to 0.1 μm
- Maximum speed 100 mm/sec
- Load capacity up to 30 kg
- Integrated optical limit switches
- Option: Linear scale



The CS-430 XY stage was developed for industrial test- and inspection systems. The travel ranges in XY are 350 x 300 mm. The CS-430 XY stage is equipped with recirculating ball screws and precision cross-roller bearings. All CS-430 stages are motorized with 2-phase stepper motors and are equipped with two mechanical limit switches per axis. For higher positioning accuracy the CS-430 XY stage can be optionally equipped with linear scales. Optical or inductive limit switches as well as a certificate of performance can be supplied on request.

TECHNICAL DATA

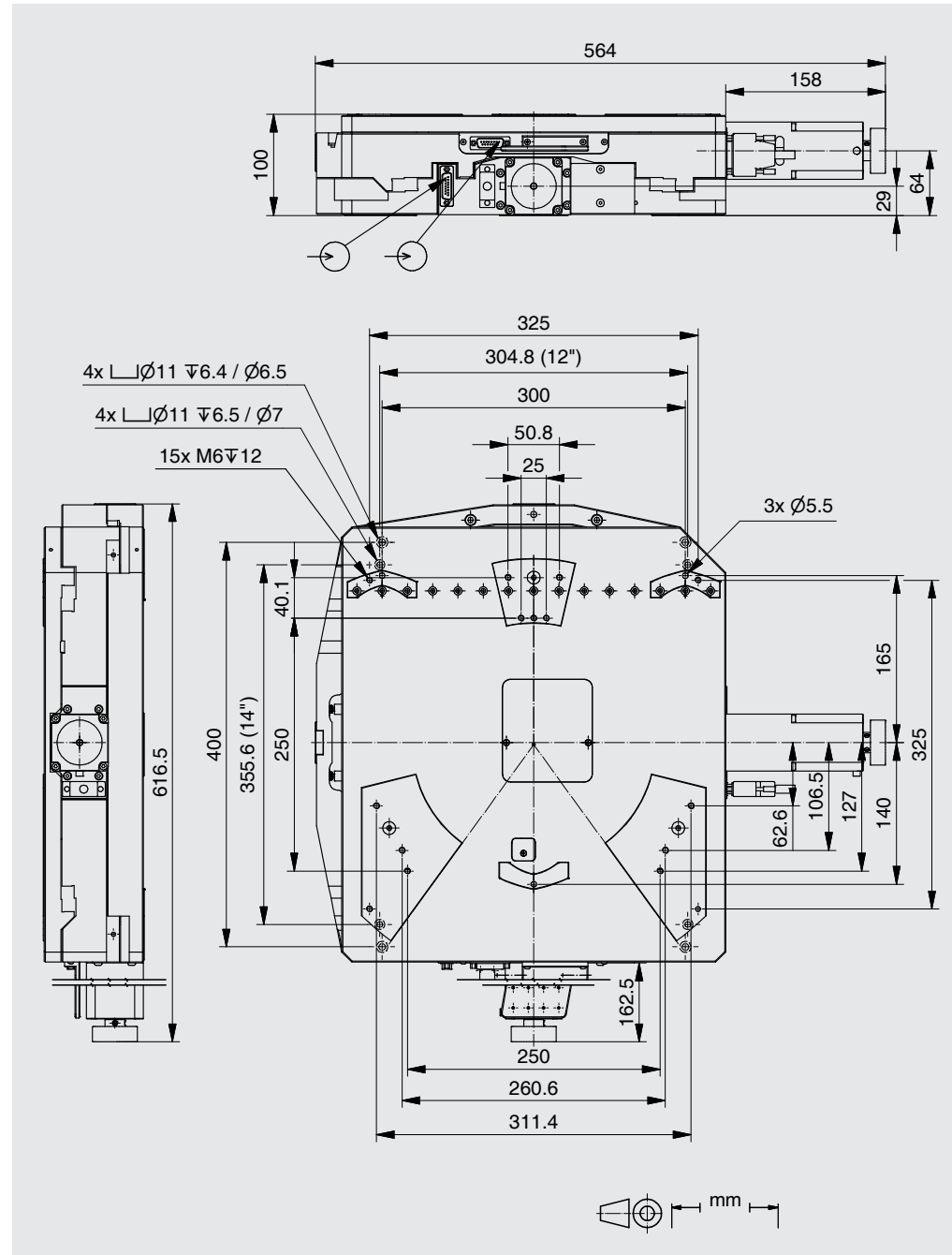
Travel range (mm)	350 x 300	
Straightness / Flatness (μm)	± 6	
Pitch (μrad)	± 80	
Yaw (μm)	± 80	
Orthogonality (μrad)	90	
Weight (kg)	23	
Motor (Pitch 10 mm)	2Phase-071	
Linear scale		LS-010
Speed max. (mm/sec)	100	
Resolution calculated (μm)	25 (FS)	0.05
Resolution typical (μm)	0.5	0.1
Bi-directional Repeatability (μm)	± 4	± 0.1
Uni-directional Repeatability (μm)	0.5	0.1
Nominal Current (A)	2	
Accuracy	on request	
Velocity range (mm/sec)	0.001 ... 100	
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
- APPENDI

- 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-21 S
- 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
- ASS SE



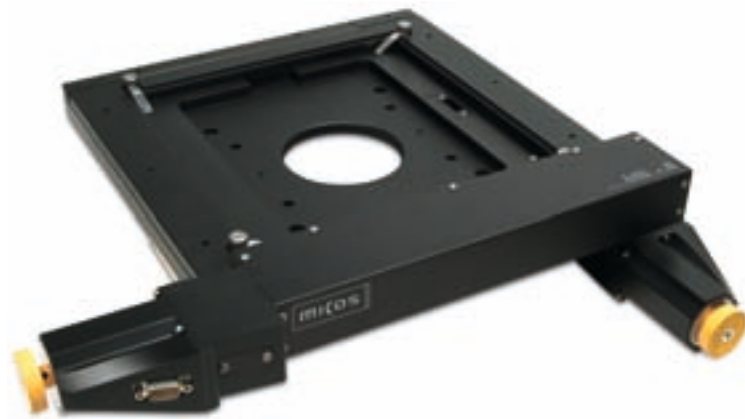
Order No.	6330-9-				0
2Phase-071		2			
350 mm x 300 mm		1			
without LS-010		0			
LS-010, Linear steel scale		1			

4.120 Scan Table MS-8



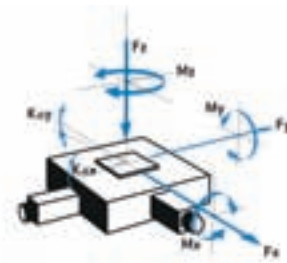
FACTS

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-032	20	20	40	0.5	0.5	0.5	400	400
2Phase-044	20	20	40	0.5	0.5	0.5	400	400



KEY FEATURES

- Travel range 205 mm (8") x 205 mm (8")
- Clear aperture 205 x 205 mm
- Uni-directional repeatability down to 0.25 μm
- Maximum speed 60 mm/sec
- Load capacity up to 4 kg
- Integrated mechanical limit switches
- Option: linear scale



inspection systems and microscopy. Travel ranges in XY are 205 x 205 mm (8" x 8"). Due to its low profile, the MS-8 scan stage is suited for tasks using reflected and/or transmitted light microscopy. With the MS-8 scan stage samples with a dimension of 205 x 205 mm can be tested and measured. The MS-8 is equipped with re-circulating ball screw and two limit switches on each axis. Motor drive options are DC or 2-phase stepper motors. For higher positioning accuracy and repeatability, the MS-8 scan stage can be optionally equipped with linear scales.

The MS-8 scan stage with a clear aperture of 205 x 205 mm was developed for

TECHNICAL DATA

Travel range (mm)	205 x 205		
Straightness / Flatness (μm)	± 10		
Pitch (μrad)	± 500		
Yaw (μm)	± 500		
Orthogonality (μrad)	150		
Weight (kg)	9.5		

Motor (Pitch 2 mm)	DC-B-032	2Phase-044	
Linear scale			LS-010
Speed max. (mm/sec)	60	35	
Resolution calculated (μm)	1 (RE)	10 (FS)	0.05
Resolution typical (μm)	1	0.5	0.2
Bi-directional Repeatability (μm)	± 5	± 5	± 0.5
Uni-directional Repeatability (μm)	2	2	0.25
Nominal Current (A)	2.3	1.2	
Voltage Range (V)	24		

Accuracy	on request
Velocity range (mm/sec)	0.001 ... 60
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

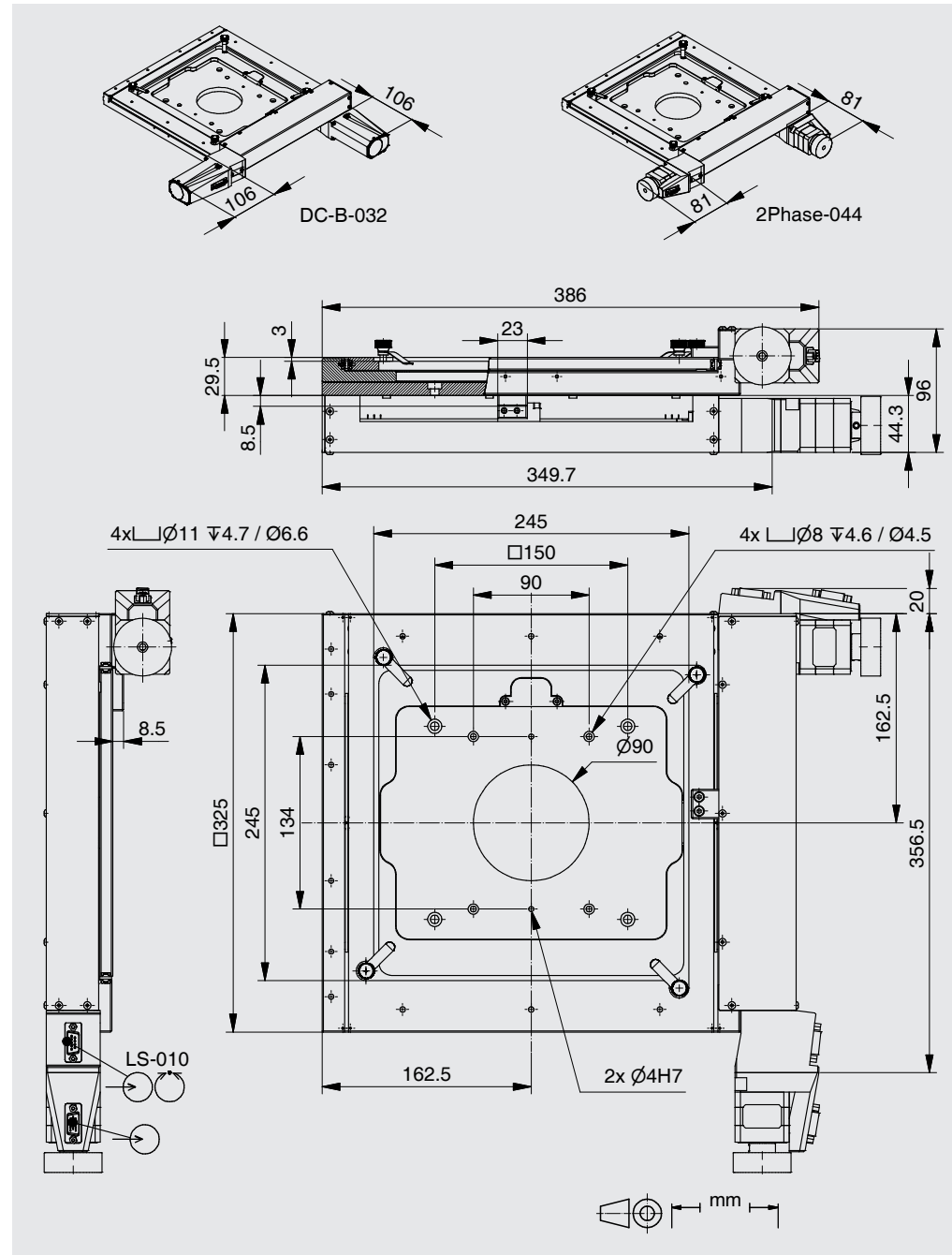
ROTATION STAGES
 PIEZO STAGES
 MANUAL STAGES
 ACCESSORIES

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-21 S
- 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
- ASS 5E



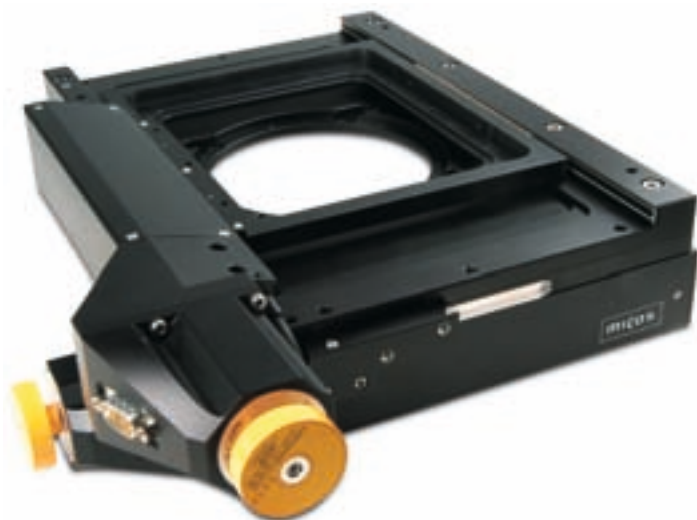
Order No.	6316-9-		
DC-B-032		1	
2Phase-044		2	
205 mm (8") x 205 mm (8")		1	
without LS-010		0	
LS-010, Linear steel scale		1	

4.122 Scan Table MS-4



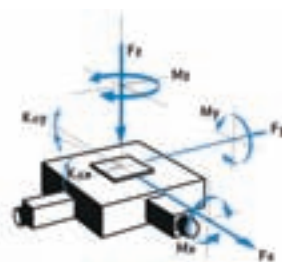
FACTS

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-032	15	15	30	0.5	0.5	0.5	350	350
2Phase-044	15	15	30	0.5	0.5	0.5	350	350



KEY FEATURES

- Travel range 102 mm (4") x 102 mm (4")
- Clear aperture 102 x 102 mm
- Uni-directional repeatability down to 0.25 μm
- Maximum speed 90 mm/sec
- Load capacity up to 3 kg
- Integrated mechanical / hall limit switches
- Option: linear scale



The MS-4 scanning stages with a clear aperture of 100 mm were developed for inspection and microscopy applications. Travel ranges in XY are 102 x 102 mm (4" x 4"). Due to their low profile, they are suited for tasks using reflected and/or transmitted light microscopy. The MS-4 scan stages are equipped with recirculating ball screw and two limit switches on each axis. Optionally, the MS-4 scan stages can be equipped with linear scales for higher accuracy.

TECHNICAL DATA

Travel range (mm)	102 x 102		
Straightness / Flatness (μm)	± 5		
Pitch (μrad)	± 200		
Yaw (μm)	± 200		
Orthogonality (μrad)	150		
Weight (kg)	3.8		
Motor (Pitch 2 mm)	DC-B-032	2Phase-044	
Linear scale			LS-050
Speed max. (mm/sec)	90	35	
Resolution calculated (μm)	1 (RE)		0.05
Resolution typical (μm)	1	0.5	0.2
Bi-directional Repeatability (μm)	± 5	± 5	± 0.5
Uni-directional Repeatability (μm)	2	2	0.25
Nominal Current (A)	2.3	1.2	
Voltage Range (V)	24		
Accuracy	on request		
Velocity range (mm/sec)	0.001 ... 90		
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

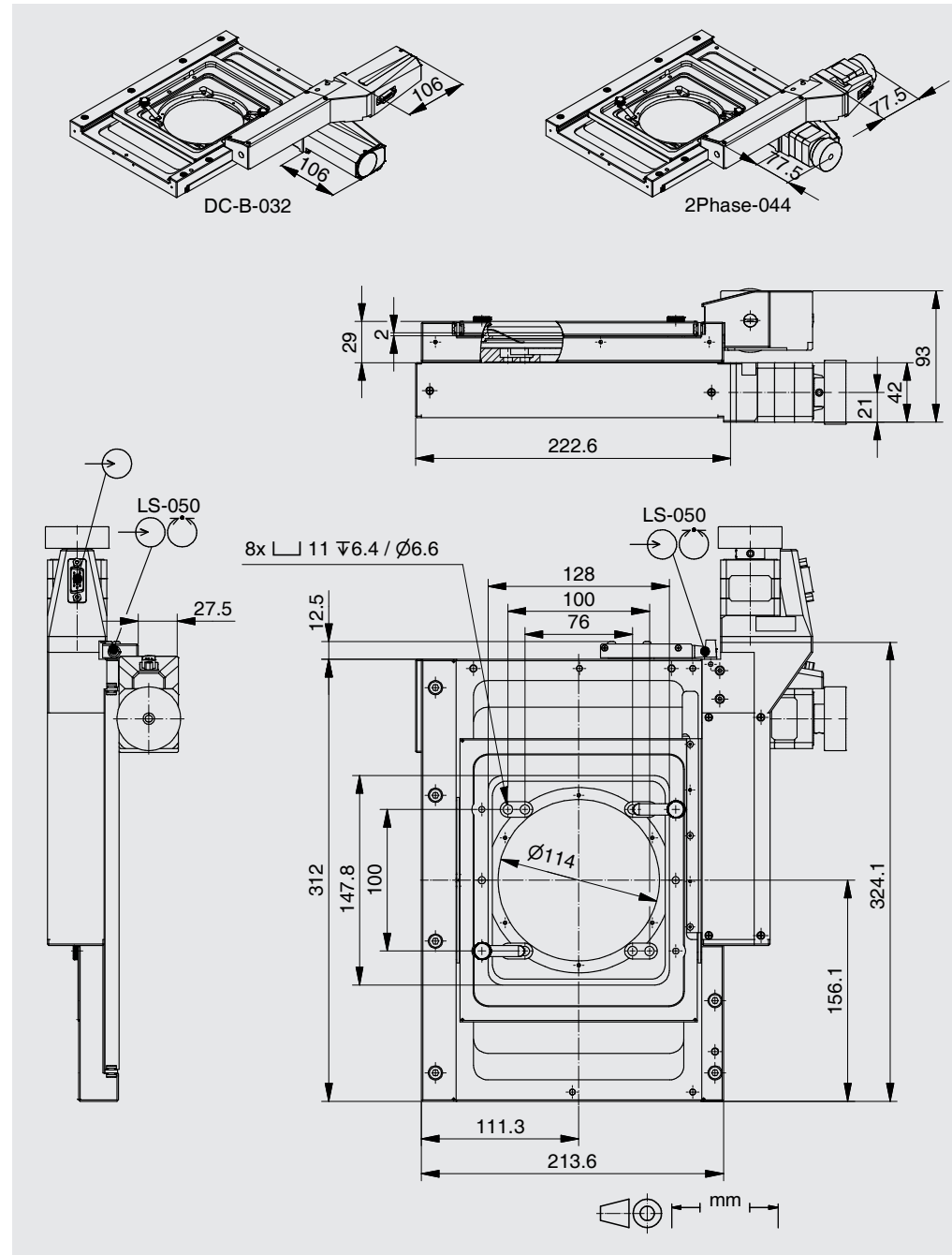
APPLICATIONS
 CONTROLLERS
 ROBOTICS

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-21 S
- 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
- ASS 5E



Order No.	6315-9-				
DC-B-032		1			
2Phase-044		2			
102 mm (4") x 102 mm (4")		0			
without LS-050		0			
LS-050, Linear steel scale		1			
MLS-020, Mechanical limit switches		1			
HLS-010, Hall limit switches		2			

4.124 Scan Table KT-120



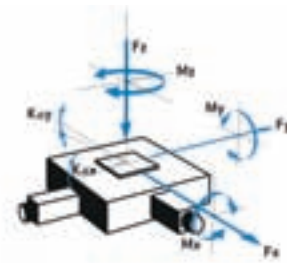
FACTS

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-010	20	30	50	0.5	0.4	0.4	200	200
2Phase-010	20	30	50	0.5	0.4	0.4	200	200



KEY FEATURES

- Travel range 26 mm (1") x 26 mm (1")
- Clear aperture 45 mm
- Uni-directional repeatability down to 2 μm
- Maximum speed 3.5 mm/sec
- Load capacity up to 5 kg
- Integrated hall limit switches



The KT-120 XY stage with a clear aperture of 45 mm was developed for test and inspection systems. Travel ranges in XY are 25 x 25 mm (1" x 1"). Due to its low profile, it is suited for tasks using reflected and/or transmitted light microscopy. The KT-120 scan stages are driven by MP-20 actuators with recirculating ball screws and equipped with limit switches. Geared DC- and 2-phase stepper motors are available.

TECHNICAL DATA

Travel range (mm)	26 x 26	
Straightness / Flatness (μm)	± 4	
Pitch (μrad)	± 110	
Yaw (μm)	± 90	
Orthogonality (μrad)	130	
Weight (kg)	1.2	

Motor (Pitch 1 mm)	DC-B-010	2Phase-010
Speed max. (mm/sec)	3.5	0.8
Resolution calculated (μm)	0.0221608 (RE)	0.5490171 (FS)
Resolution typical (μm)	0.2	0.2
Bi-directional Repeatability (μm)	± 5	± 5
Uni-directional Repeatability (μm)	2	2
Nominal Current (A)	0.32	0.25
Voltage Range (V)	12	

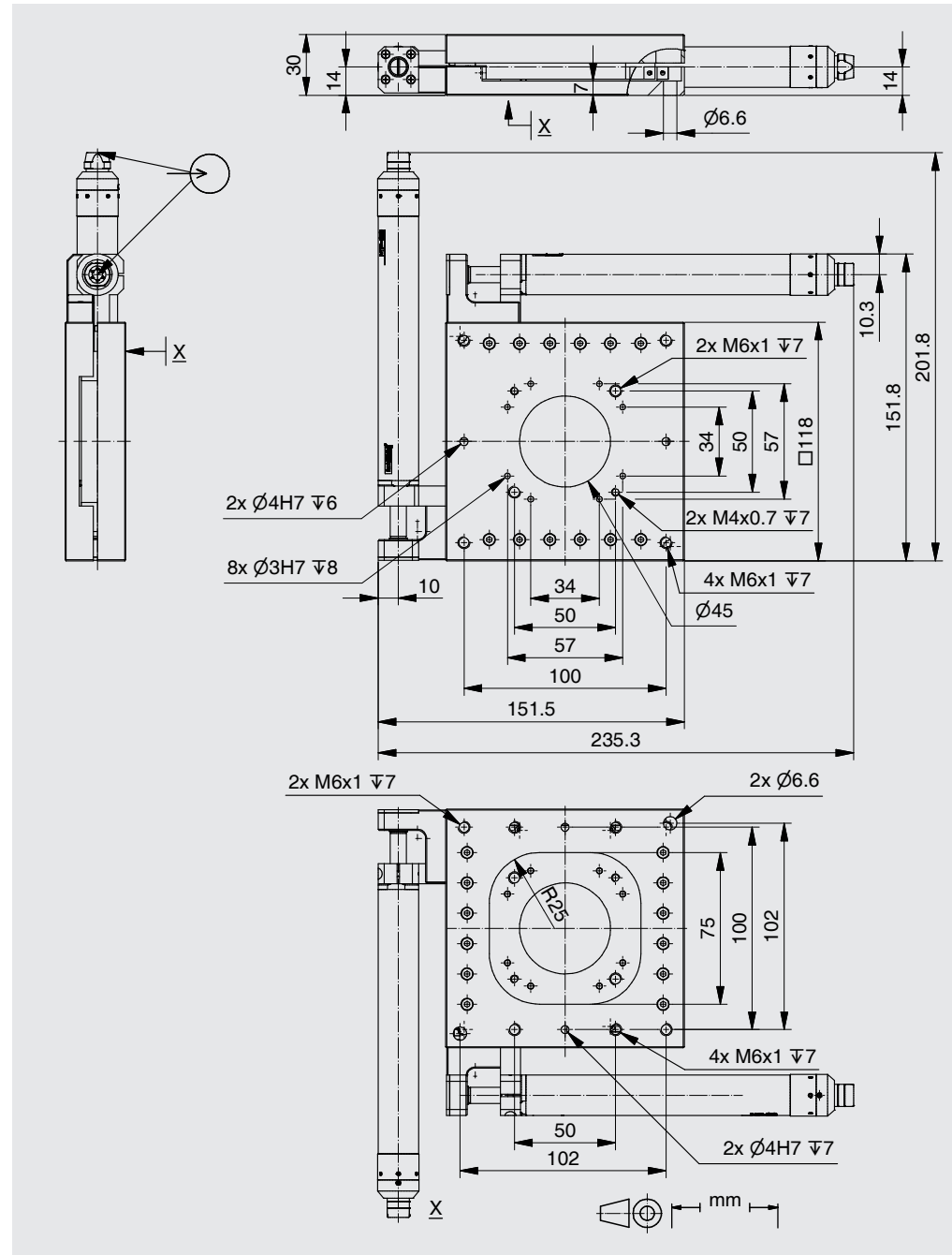
Accuracy	on request	
Velocity range (mm/sec)	0.001 ... 3.5	
Material	Aluminum, black anodized	

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

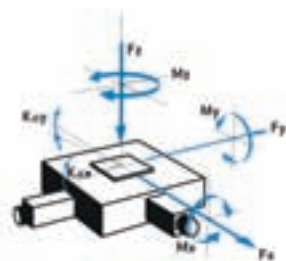
Error and technical modifications are subject to change

- 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.	6312-9-		2
DC-B-010		1	
2Phase-010		2	
26 mm (1") x 26 mm (1")		1	



drive. Advantages fast and precise positioning of compounds under the microscope. At any time immediately ready for operation without referencing. Integrated high-performance controller with minimal power consumption. Can run under a 65W table power supply unit. 100Mbit/s ethernet interface for fast communication with the application software. CAN bus to connect joystick or hand wheel.

High stiffness by the use of prestressed industrial guidings. Serially with object holder for compounds of 3x1" und 3x2" with automatic loading.

New microscope stage MS-bio with integrated controller and linear motor For reflected and transmitted light applications.

KEY FEATURES

- Travel range 76 mm x 52 mm
- Max. speed 1000 mm/s
- Uni-directional repeatability

TECHNICAL DATA

Travel range (mm)	76 x 52	
Weight (kg)	2.8	
Motor	LM-030	
Linear scale		LS-028
Speed max. (mm/sec)	1000	
Resolution calculated (µm)		
Resolution typical (µm)	0.05	0.05
Bi-directional Repeatability (µm)	± 1	± 1
Uni-directional Repeatability (µm)		
Nominal Current (A)	3	
Accuracy	on request	
Velocity range (mm/sec)	0.001 ... 1000	
Material	Aluminium, Plasmaceramic, black, min. 900 HV	

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-21 S

CS-430

MS-8

MS-4

KT-120

MS-bio

NPE-200

UPL-120

ES-100

ES-82

ES-70

ES-50

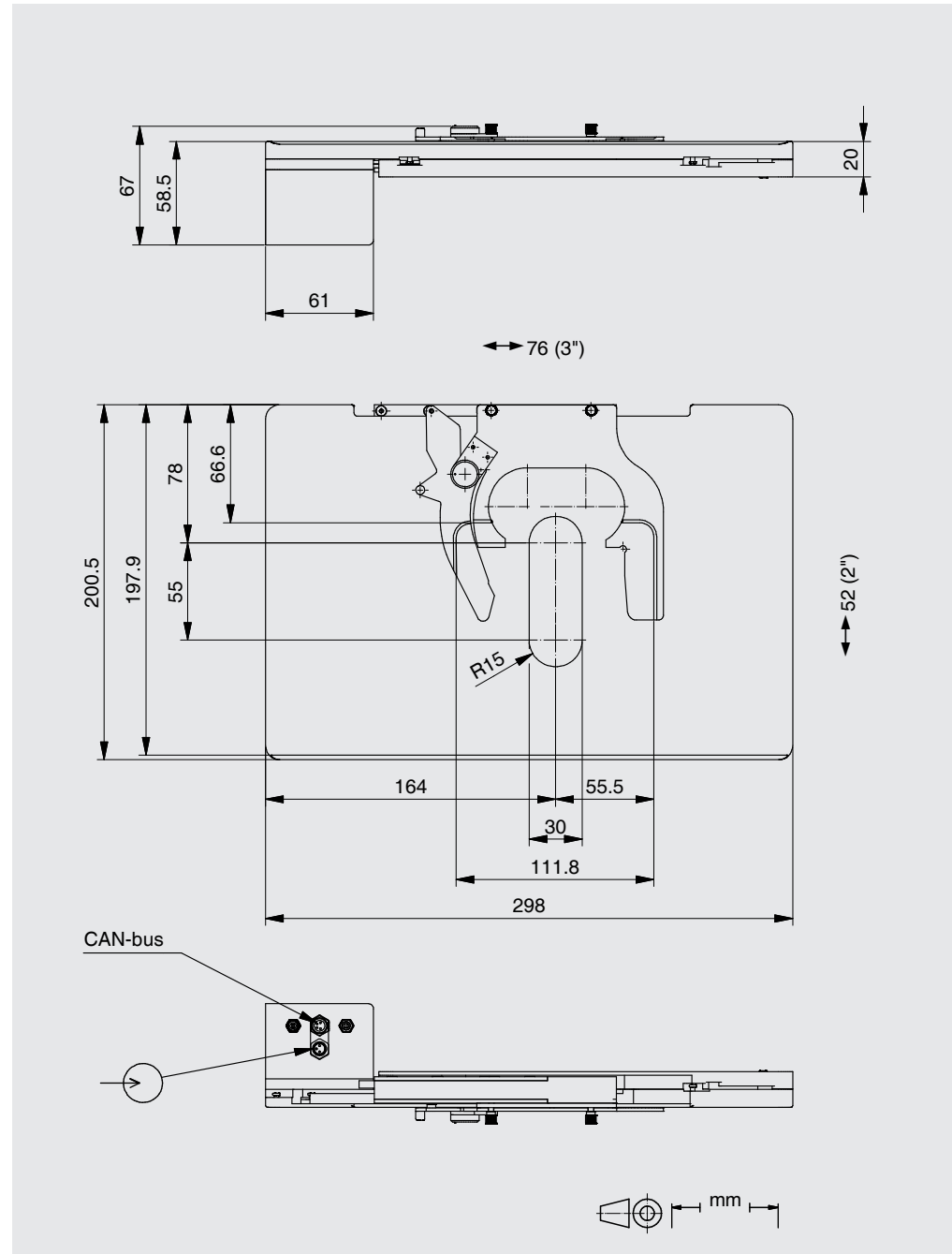
MA-35

MP-20

MP-20 B

MP-15

ASS 5E



Order No.	6319-9-				0	0
LM-030		2				
76mm (3") x 52mm (2")		1				
LS-028 Linear absolut encoder		1				

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)