HIWIN®
Motion Control and System Technology

Linear motor stage

1.5 um
Straightness & flatness

37 mm
Low profile

- High stiffness cross roller bearings
- Ironless direct-drive linear motor

AC servo motor stage

100 nm
Minimum incremental motion

- Precision ground ball screws
- High stiffness crossed roller bearings
- Available for Z axis application

NPS Series
Nano Precision Stage

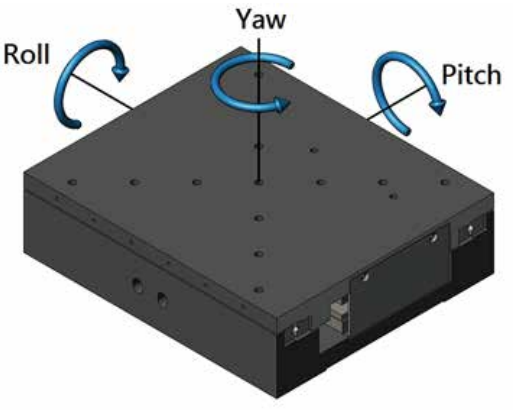
www.hiwinmikro.tw

Load Characteristics

NPS series

LM stage

Model	Stroke	Roll(N-m)	Yaw(N-m)	Pitch(N-m)
HUB1	50	145	160	170
	100	175	220	210
HUB2	50	218	314	302
	100	254	455	472
CB4	50	610	513	488
	100	784	759	729
CB6	50	865	759	729
	100	1230	1390	1350
CB8	50	1230	1390	1350
	100	1680	1780	1730



Model Description

NPS- L - UB1 - 05A - 03

Model Series

Nano Precision Stage
- Linear motor

Motor Type

UB1 : LMC-HUB1
UB2 : LMC-HUB2
CB4 : LMCB4
CB6 : LMCB6
CB8 : LMCB8

Stroke

05: 50mm
10: 100mm

Linear Encoder Type

A: Optical, Analog 1Vpp Sin/Cos, Stainless steel scale
B: Optical, Analog 1Vpp Sin/Cos, Invar scale
C: Optical, Digital, Resolution 0.1μm, Stainless steel scale (standard)
D: Optical, Digital, Resolution 0.1μm, Invar scale

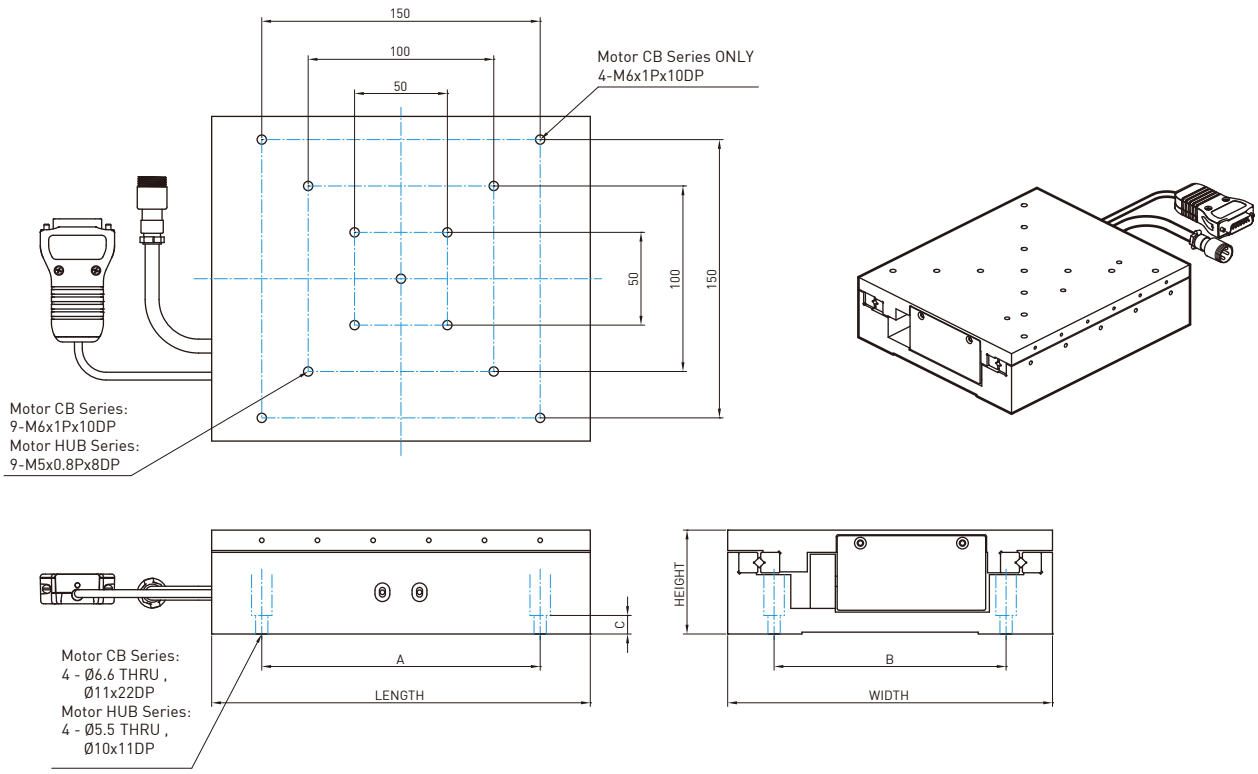
Cable Length

N: No Cable
03: 3m
05: 5m
07: 7m

Dimensions

NPS series

LM stage



Model	Stoke	Dimension					
		LENGTH	WIDTH	HEIGHT	A	B	C
LMC-HUB1	50	127	125	37	100	75	6
	100	195	125	37	100	75	6
LMC-HUB2	50	195	125	37	135	75	6
	100	245	125	37	135	75	6
LMCB4	50	204	175	60	160	125	12
	100	260	175	60	160	125	12
LMCB6	50	270	175	60	215	125	12
	100	324	175	60	215	125	12
LMCB8	50	334	175	60	280	125	12
	100	388	175	60	280	125	12

All dimensions are in millimeters.

Mechanical Specifications

NPS series

LM stage

Specifications	Unit	CB4		CB6		CB8	
Stroke	mm	50	100	50	100	50	100
Peak Force	**N**	**292**		**436**		**580**	
Continuous Force	N	73		109		145	
Peak Current	**A**	**8**		**8**		**8**	
Continuous Current	A	2		2		2	
Resolution	**μm**	**0.1**		**0.1**		**0.1**	
Bi-directional Repeatability*1	μm	±0.2		±0.2		±0.2	
Accuracy*1	**μm**	**±1**	**±1**	**±1**	**±1**	**±1**	**±1**
Straightness*1	μm	1.5	2	1.5	2	1.5	2
Flatness*1	**μm**	**1.5**	**2**	**1.5**	**2**	**1.5**	**2**
Pitch*1	arc-sec	±5	±5	±5	±5	±5	±5
Yaw*1	**arc-sec**	**±5**	**±5**	**±5**	**±5**	**±5**	**±5**
Normal Load Capacity	kg	30		40		50	
Maximum Acceleration*2	**(m/s²)**	**2**		**2**		**2**	
Maximum Velocity*2	(m/s)	0.2		0.2		0.2	
Material	**-**	**Aluminum With Black Hard Anodized Finish**					
Stage Weight	kg	7	8	8	10	10	12

Specifications	Unit	HUB1		HUB2	
Stroke	mm	50	100	50	100
Peak Force	**N**	**80**		**160**	
Continuous Force	N	20		40	
Peak Current	**A**	**6.2**		**12.3**	
Continuous Current	A	1.5		3.1	
Resolution	**μm**	**0.1**		**0.1**	
Bi-directional Repeatability*1	μm	±0.2		±0.2	
Accuracy*1	**μm**	**±1**	**±1**	**±1**	**±1**
Straightness*1	μm	1.5	2	1.5	2
Flatness*1	**μm**	**1.5**	**2**	**1.5**	**2**
Pitch*1	arc-sec	±5	±5	±5	±5
Yaw*1	**arc-sec**	**±5**	**±5**	**±5**	**±5**
Normal Load Capacity	kg	10		20	
Maximum Acceleration*2	**(m/s²)**	**2**		**2**	
Maximum Velocity*2	(m/s)	0.2		0.2	
Material	**-**	**Aluminum With Black Hard Anodized Finish**			
Stage Weight	kg	1.5	2	2	1.5

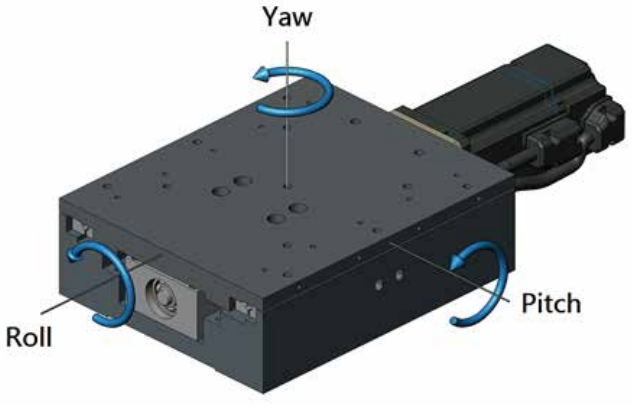
Note1:All measurement is measured in the center of stage.
Note2:Maximum velocity and acceleration are measured with payload.
Note3:After error compensation.

Load Characteristics

NPS series

AC stage

Model	Units	Pitch	Roll	Yaw
NPS-AC-20-05	N-m	488	576	513
NPS-AC-20-10	N-m	729	698	759
NPS-AC-40-05	N-m	488	576	513
NPS-AC-40-10	N-m	729	698	759



Model Description

NPS- AC - 40B - 05 3 - 03

Model Series

Nano Precision Stage
- AC servomotor

Motor Type

20: 200W
20B: 200W with Brake
40: 400W
40B: 400W with Brake

Stroke

05: 50mm
10: 100mm

Encoder Type

5: 13 bit incremental encoder
4: 17 bit absolute encoder
6: HIWIN17 bit incremental encoder

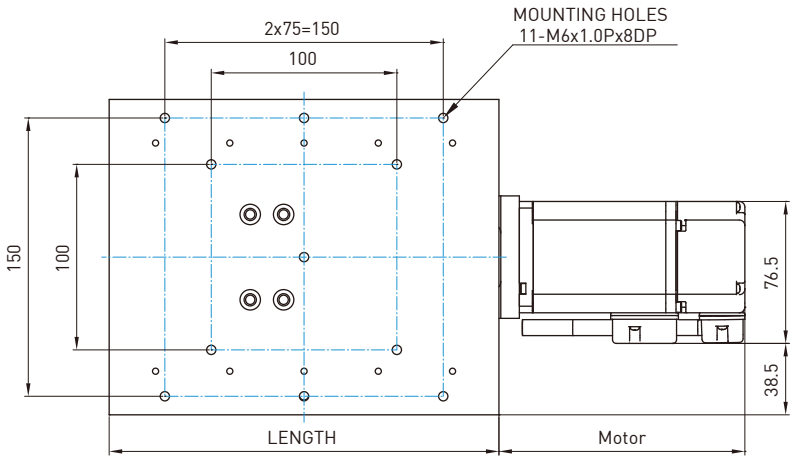
Cable Length

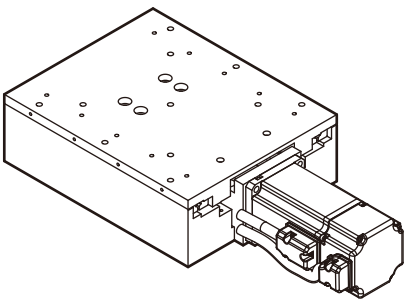
N: No Cable
03: 3m
05: 5m
07: 7m

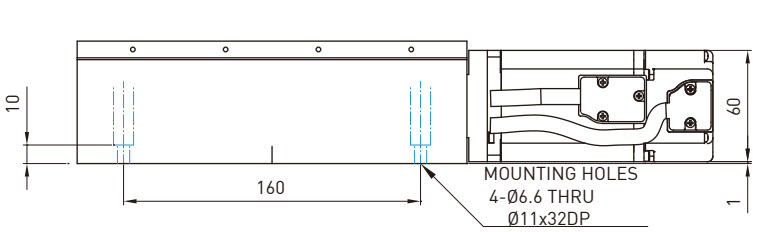
Dimensions

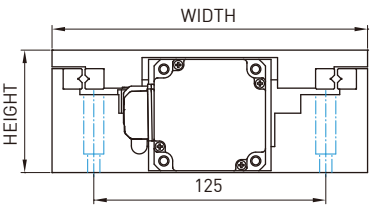
NPS series

AC stage









Model	Stoke	Dimension			
		LENGTH	WIDTH	HEIGHT	MOTOR
NPS-AC-20-05	50	210	170	67	111(144)
NPS-AC-20-10	**100**	**265**	**170**	**67**	**111(144)**
NPS-AC-40-05	50	210	170	67	137(170)
NPS-AC-40-10	**100**	**265**	**170**	**67**	**137(170)**

1.All dimensions are in millimeters.
2. ( ) include brake size.

Mechanical Specifications

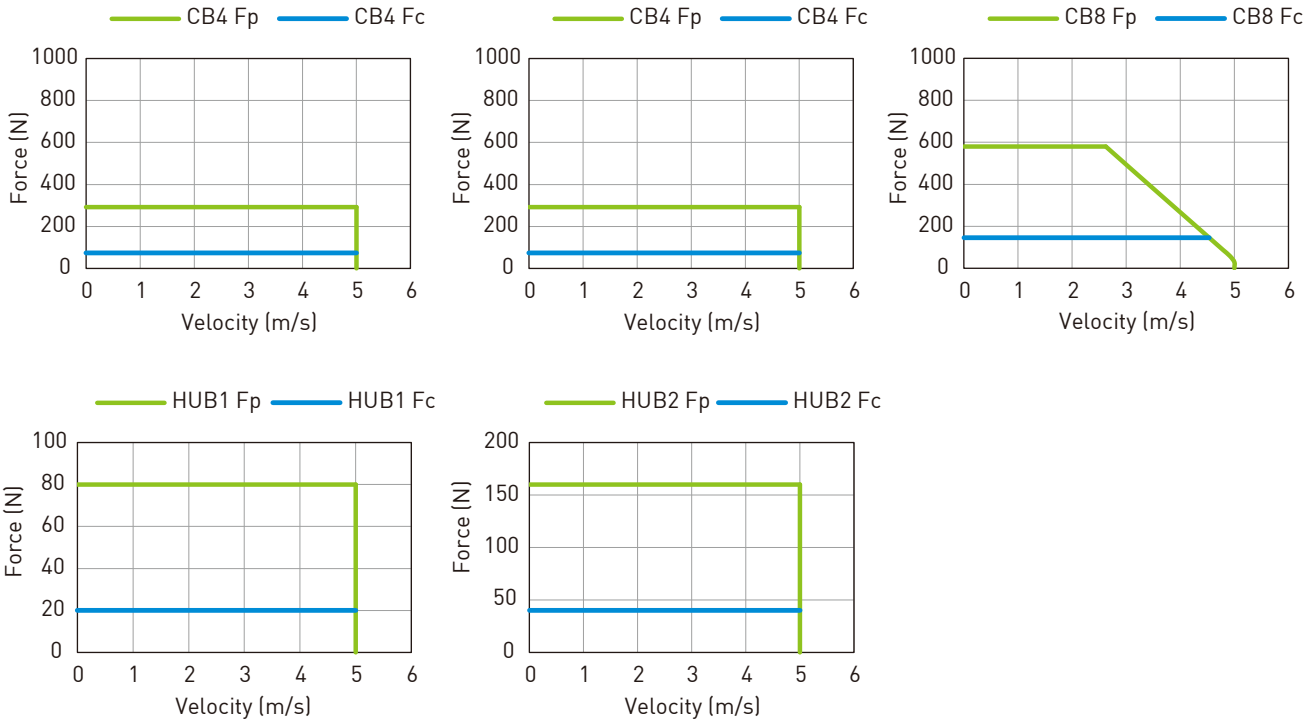
NPS series

AC stage

Specifications	Unit	200W		400W	
Stroke	mm	50	100	50	100
Ball Screw Pitch	mm	2			
Continuous Current	Arms	1.7		2.5	
Peak Current	Arms	5.1		7.5	
Maximum Velocity	(mm/s)	100		100	
Accuracy	μm	±3		±3	
Bi-directional Repeatability	μm	±0.3		±0.3	
Straightness & Flatness	μm	±1.5		±1.5	
Pitch	arc-sec	±5		±5	
Yaw	arc-sec	±5		±5	
Normal Load Capacity	kg	25		40	
Stage Weight	kg	6.5		8	
Moving Slide Material	-	Aluminum With Black Hard Anodized Finish			

Linear Motor Performance

Force / Velocity curve(DC bus = 325V)



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