

Compact Linear Stage

For Loads to 200 N

L-408



- Travel range 25 mm
- Stepper motor, DC or DC gear motor
- Precision threaded spindle
- Crossed roller guides for high load capacity and precision
- Integrated Hall effect limit switches
- Hall effect reference switch with direction sensing

Crossed roller guide

With crossed roller guides, the point contact of the balls in ball guides is replaced by line contact of the hardened rollers. Consequently, they are considerably stiffer and need less preload, which reduces friction and allows smoother running. Crossed roller guides are also distinguished by high guide accuracy and load capacity. Force-guided rolling element cages prevent cage creep.

Application fields

Precision microassembly. Research. Automation.

Motion	Unit	Tolerance	L-408.501200	L-408.503232	L-408.504232
Active axes			X	X	X
Travel range in X	mm		25	25	25
Maximum velocity in X, unloaded	mm/s		10	10	1.1
Straightness (Linear crosstalk in Y with motion in X)	μm	Typ.	±2	±2	±2
Flatness (Linear crosstalk in Z with motion in X)	μm	Typ.	±2	±2	±2
Pitch (Rotational crosstalk in θY with motion in X)	μrad	Typ.	±100	±100	±100
Yaw (Rotational crosstalk in θZ with motion in X)	μrad	Typ.	±100	±100	±100

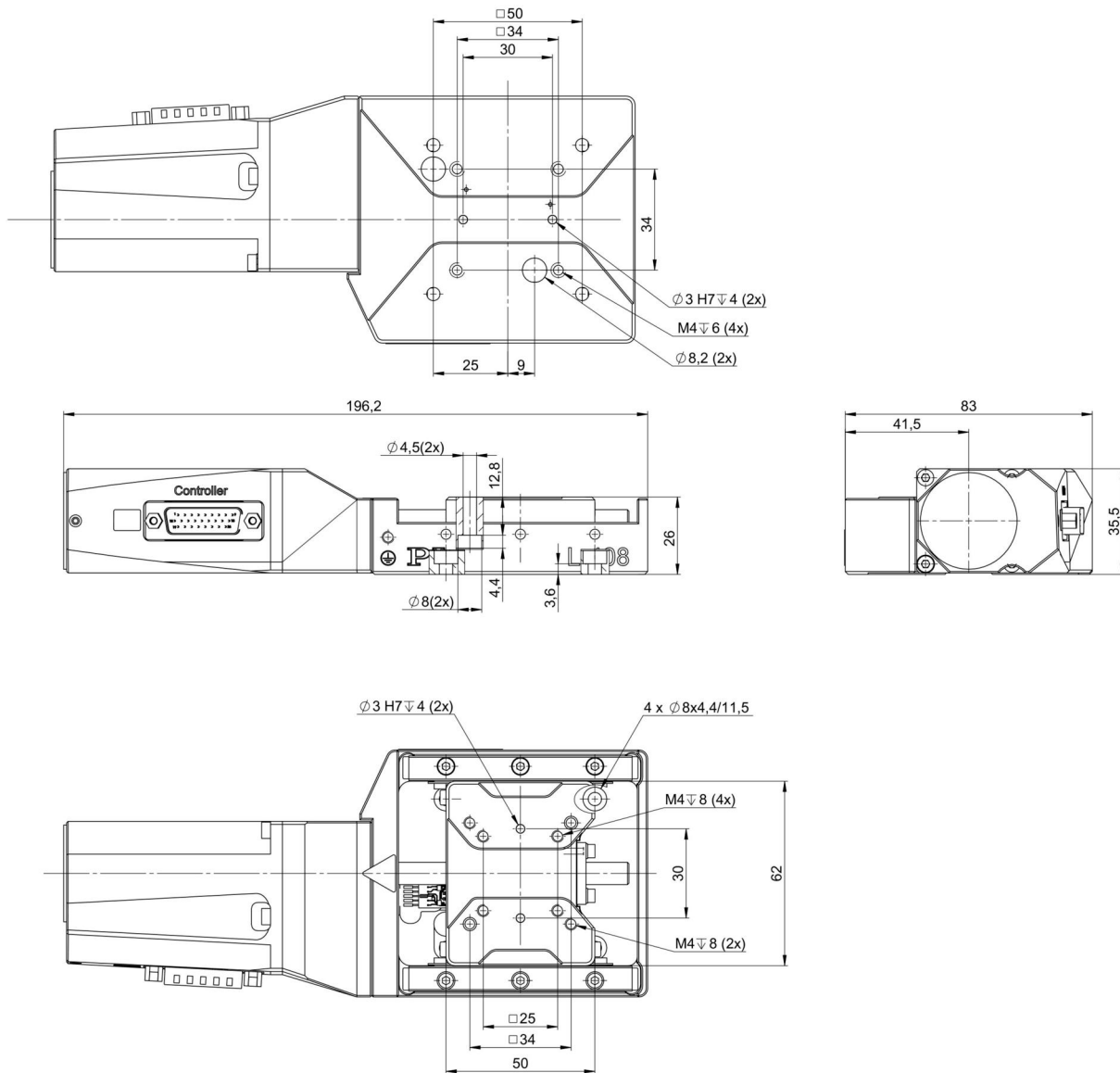
Positioning	Unit	Tolerance	L-408.501200	L-408.503232	L-408.504232
Integrated sensor				Incremental rotary encoder	Incremental rotary encoder
Unidirectional repeatability in X	μm	Typ.	0.5	0.5	0.5
Bidirectional repeatability in X	μm	Typ.	±5	±5	±5
Minimum incremental motion in X	μm	Typ.	0.1	0.5	0.1
Sensor resolution	Cts./rev.			4096	2048
Reference switch			Hall effect, N/C contact, 5 V, NPN	Hall effect, N/C contact, 5 V, NPN	Hall effect, N/C contact, 5 V, NPN
Reference switch repeatability	μm		1	1	1
Limit switches			Hall effect, N/C contact, 5 V, NPN	Hall effect, N/C contact, 5 V, NPN	Hall effect, N/C contact, 5 V, NPN

Drive Properties	Unit	Tolerance	L-408.501200	L-408.503232	L-408.504232
Drive type			2-phase stepper motor	DC motor	DC gear motor
Motor resolution	Full steps/rev.		200		
Nominal voltage	V		24	24	12
Peak voltage	V		48	48	24
Drive force in positive direction of motion in X	N	Typ.	80	40	80
Drive force in negative direction of motion in X	N	Typ.	80	40	80

Mechanical Properties	Unit	Tolerance	L-408.501200	L-408.503232	L-408.504232
Guide			Crossed roller guide	Crossed roller guide	Crossed roller guide
Drive screw type			Fine-threaded spindle	Fine-threaded spindle	Fine-threaded spindle
Drive screw pitch	mm		0.5	0.5	0.5
Gear ratio i					2401 : 81
Holding force in X, passive	N		80	80	80
Moved mass in X, unloaded	g		155	155	155
Permissible push force in Y	N	Max.	100	100	100
Permissible push force in Z	N	Max.	200	200	200
Permissible torque in θ_x	N·m	Max.	15	15	15
Permissible torque in θ_Y	N·m	Max.	4	4	4
Permissible torque in θ_Z	N·m	Max.	4	4	4
Overall mass	g		980	870	870
Material			Aluminum, black anodized, steel	Aluminum, black anodized, steel	Aluminum, black anodized, steel

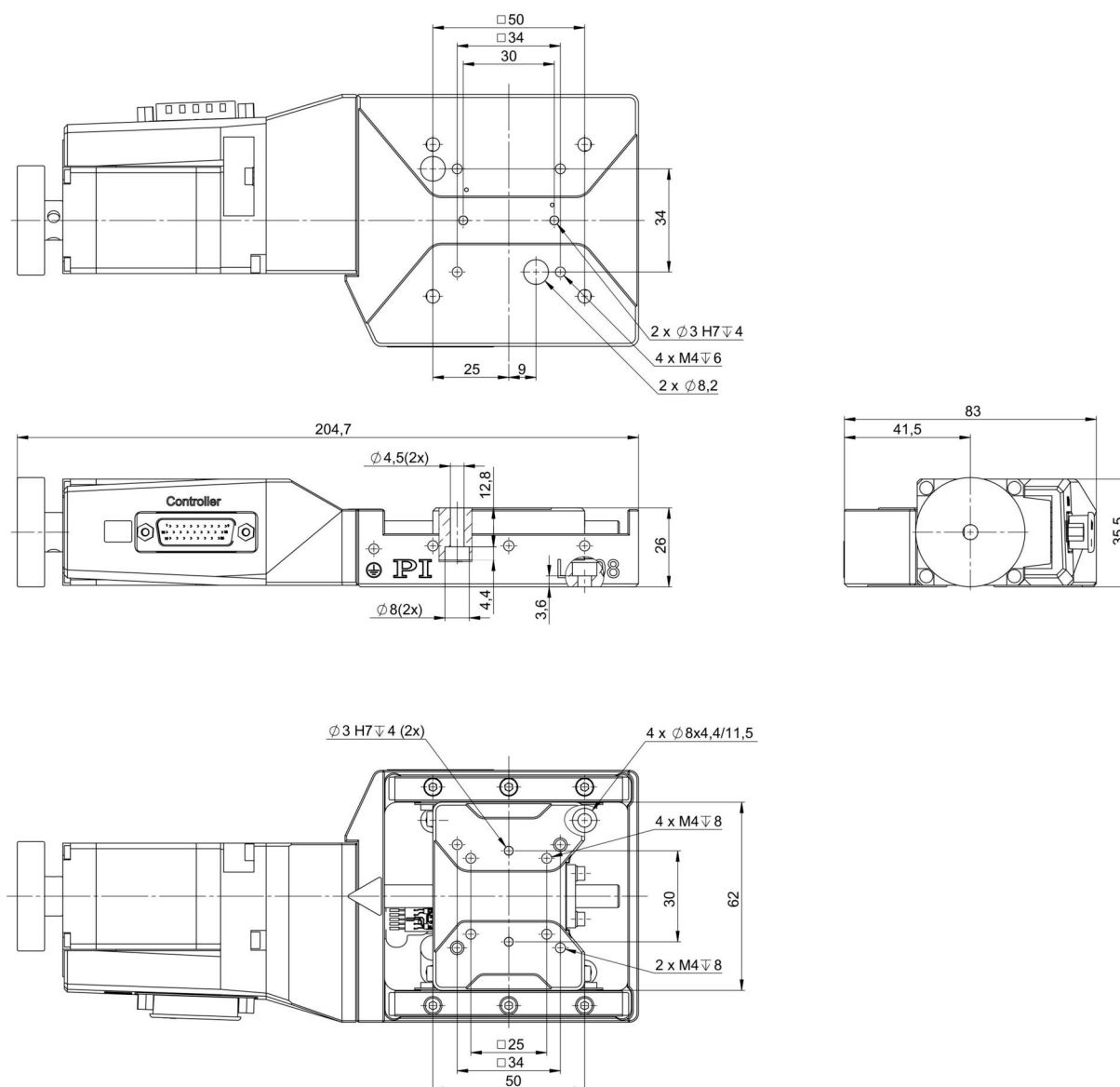
Miscellaneous	Unit		L-408.501200	L-408.503232	L-408.504232
Operating temperature range	°C		5 to 40	5 to 40	5 to 40
Connector			HD D-sub 26-pin (m)	HD D-sub 26-pin (m)	HD D-sub 26-pin (m)
Recommended controllers / drivers			C-663.12 C-885 with C-663.12C885 ACS modular controller	C-863 C-885 with C-863.20C885 C-884 ACS modular controller	C-863 C-885 with C-863.20C885 C-884 ACS modular controller

Drawings / Images



L-408.503232 and L-408.504232, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Drawings / Images



L-408.501200, dimensions in mm. Note that a comma is used in the drawings instead of a decimal point.

Order Information

L-408.501200

Compact linear stage; 2-phase stepper motor; 25 mm travel range; 200 N load capacity; 10 mm/s maximum velocity; fine-threaded spindle

L-408.503232

Compact linear stage; DC motor; 25 mm travel range; 200 N load capacity; 10 mm/s maximum velocity; fine-threaded spindle; incremental rotary encoder, 4096 counts/rev. sensor resolution

L-408.504232

Compact linear stage; DC gear motor; 25 mm travel range; 200 N load capacity; 1.1 mm/s maximum velocity; fine-threaded spindle; incremental rotary encoder, 2048 counts/rev. sensor resolution