

## Compact Linear Stage

For Loads to 200 N



### L-408

- Travel range 25 mm
- Stepper motor, DC or DC gear motor
- Precision leadscrew
- Crossed roller guides for high load capacity and precision
- Integrated Hall effect limit switches
- Hall effect reference point 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 guiding accuracy and load capacity. Force-guided rolling element cages prevent cage creep.

#### Application fields

Precision microassembly, Research, Automation

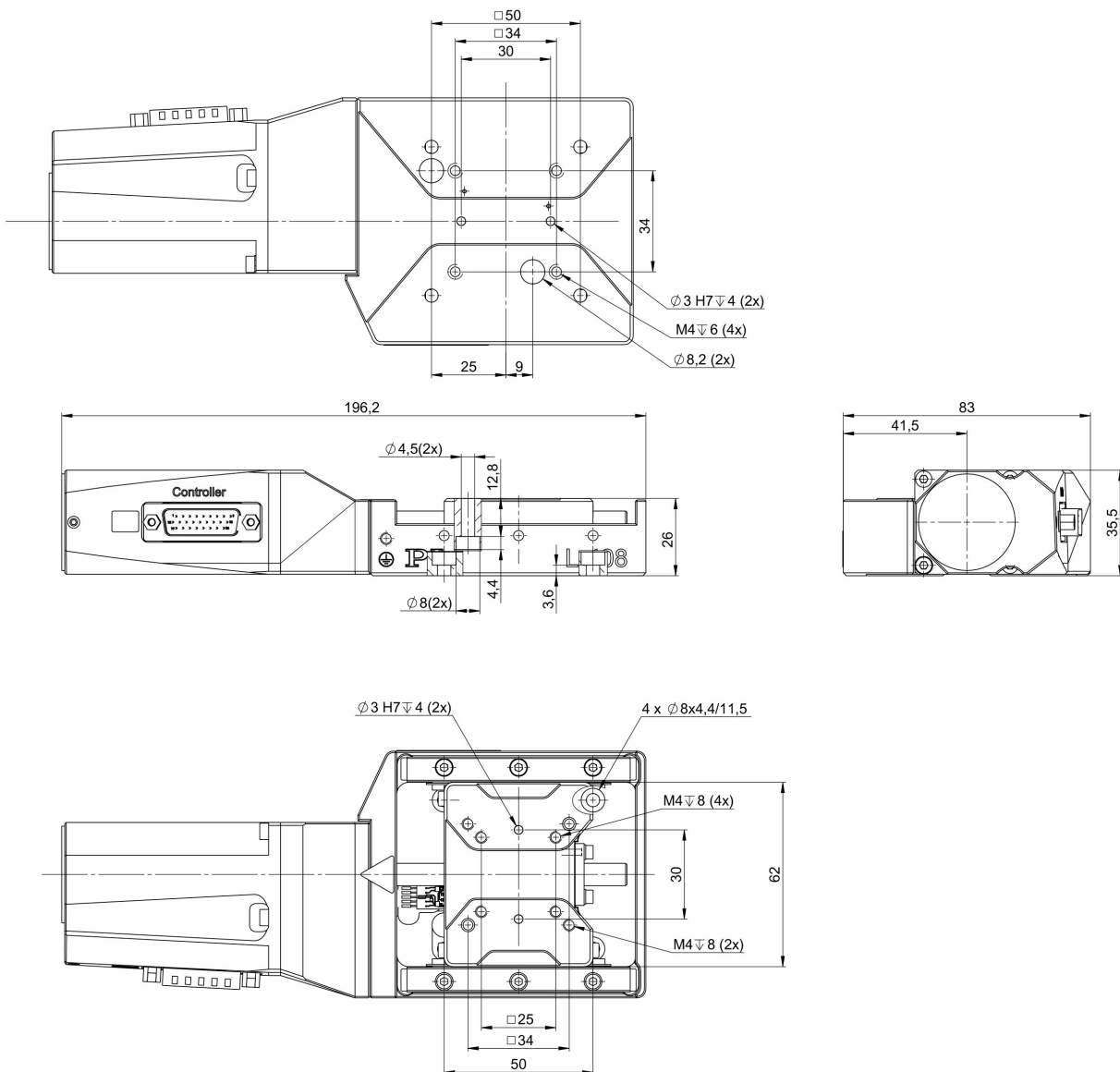
## Specifications

|  | L-408.504232                                | L-408.503232                                | L-408.501200                                | Unit            | Tolerance |
|--|---|---|---|-----------------|-----------|
| Active axes                                | X   | X   | X   |                 |           |
| <b>Motion and positioning</b>              |   |   |   |                 |           |
| Travel range                               | 25  | 25  | 25  | mm              | max.      |
| Integrated sensor                          | Rotary encoder                              | Rotary encoder                              | –   |                 |           |
| Sensor resolution                          | 2048  | 4096  | –   | Cts./rev.       |           |
| Design resolution                          | 0.008                                       | 0.122                                       | 2.5   | μm              |           |
| Minimum incremental motion                 | 0.1   | 0.5   | 0.1   | μm              | typ.      |
| Unidirectional repeatability               | 0.5   | 0.5   | 0.5   | μm              | typ.      |
| Bidirectional repeatability                | ±5  | ±5  | ±5  | μm              | typ.      |
| Pitch / yaw                                | ±100  | ±100  | ±100  | μrad            | typ.      |
| Straightness / flatness                    | ±2  | ±2  | ±2  | μm              | typ.      |
| Max. velocity                              | 1.1   | 10  | 10  | mm/s            | max.      |
| Reference and limit switches               | Hall effect                                 | Hall effect                                 | Hall effect                                 |                 |           |
| Reference point switch repeatability       | 1   | 1   | 1   | μm              | typ.      |
| <b>Mechanical properties</b>               |   |   |   |                 |           |
| Guide type                                 | Crossed roller guide with anti-creep system | Crossed roller guide with anti-creep system | Crossed roller guide with anti-creep system |                 |           |
| Drive screw                                | Leadscrew                                   | Leadscrew                                   | Leadscrew                                   |                 |           |
| Drive screw pitch                          | 0.5   | 0.5   | 0.5   | mm              |           |
| Gear ratio                                 | 2401:81                                     | –   | –   |                 |           |
| Push / pull force                          | 50  | 50  | 40  | N               | max.      |
| Holding force                              | 50  | 50  | 40  | N               | max.      |
| Load capacity                              | 200   | 200   | 200   | N               | max.      |
| Permissible lateral force                  | 100   | 100   | 100   | N               | max.      |
| Permissible torque in $\theta_x$           | 15  | 15  | 15  | N·m             | max.      |
| Permissible torque in $\theta_y, \theta_z$ | 10  | 10  | 10  | N·m             | max.      |
| <b>Drive properties</b>                    |   |   |   |                 |           |
| Motor type                                 | DC gear motor                               | DC motor                                    | 2-phase stepper motor                       |                 |           |
| Operating voltage, nominal                 | 24  | 24  | 24  | V               | nom.      |
| Operating voltage, max.                    | 48  | 48  | 48  | V               | max.      |
| Step resolution                            | –   | –   | 200   | Full steps/rev. |           |
| <b>Miscellaneous</b>                       |   |   |   |                 |           |
| Operating temperature range                | 5 to 40                                     | 5 to 40                                     | 5 to 40                                     | °C              |           |
| Material                                   | Aluminum black anodized, steel              | Aluminum black anodized, steel              | Aluminum black anodized, steel              |                 |           |
| Mass                                       | 0.87  | 0.87  | 0.98  | kg              | ±5 %      |
| Moved mass                                 | 0.155                                       | 0.155                                       | 0.155                                       | kg              | ±5 %      |

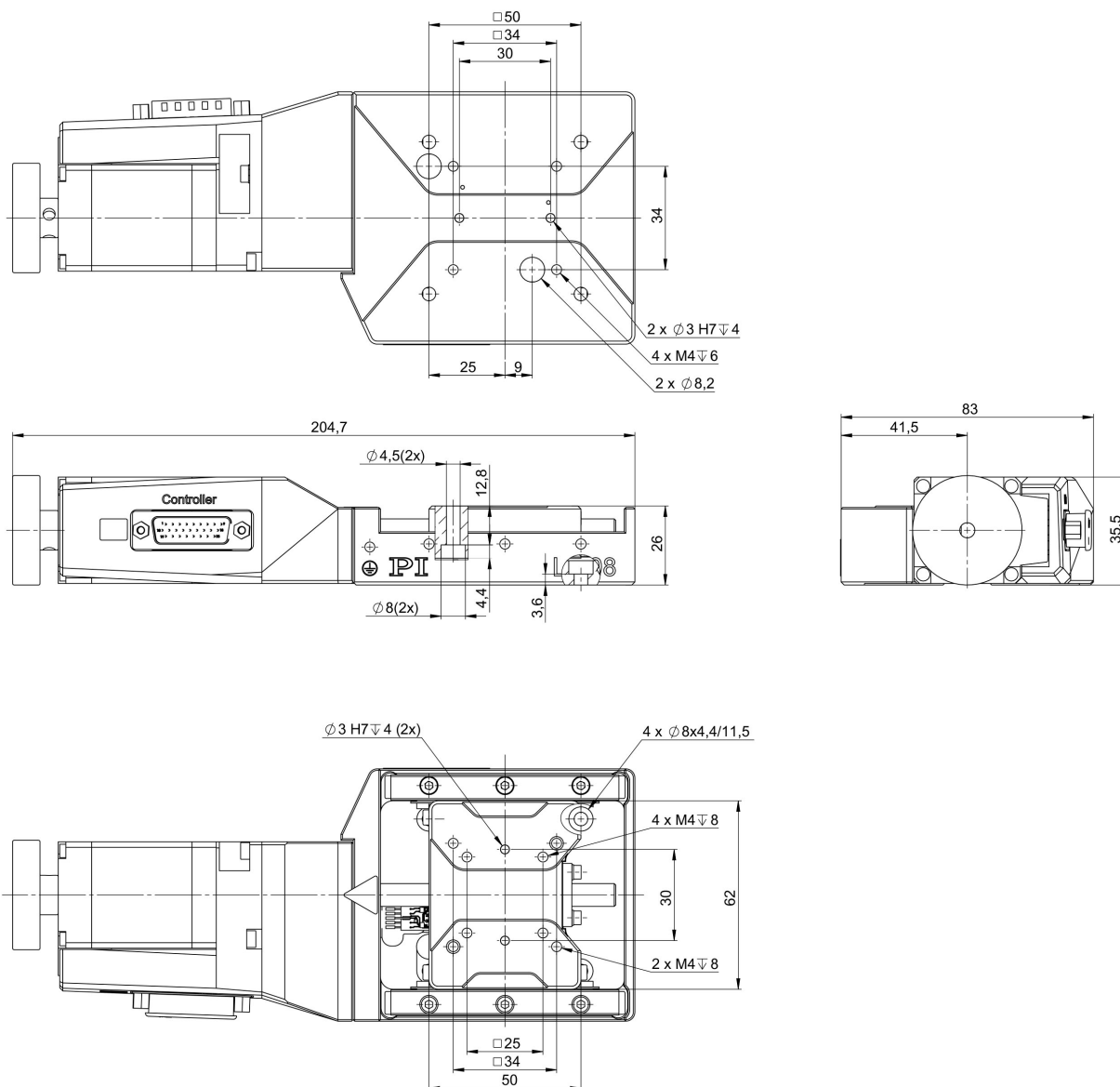
|                         | L-408.504232  | L-408.503232  | L-408.501200   | Unit | Tolerance |
|-------------------------|---|---|--|------|-----------|
| Connector               | HD Sub-D 26   | HD Sub-D 26   | HD Sub-D 26  |      |           |
| Recommended controllers | C-863 (single axis)<br>C-884 (up to 6 axes)<br>C-885 with C-863.20C885 (to 40 axes)<br>ACS modular controller | C-863 (single axis)<br>C-884 (up to 6 axes)<br>C-885 with C-863.20C885 (to 40 axes)<br>ACS modular controller | C-663.12 (single axis)<br>SMC Hydra (double axis)<br>C-885 with C-663.12C885 (up to 20 axes)<br>ACS modular controller |      |           |

Ask about customized versions.

## Drawings / Images



L-408.503232 and L-408.504232, dimensions in mm



L-408.501200, dimensions in mm

## Ordering Information

### L-408.501200

Compact linear stage, 83 mm width, 25 mm travel range, 200 N load capacity, stepper motor

### L-408.503232

Compact linear stage, 83 mm width, 25 mm travel range, 200 N load capacity, DC motor, rotary encoder

### L-408.504232

Compact linear stage, 83 mm width, 25 mm travel range, 200 N load capacity, DC gear motor, rotary encoder