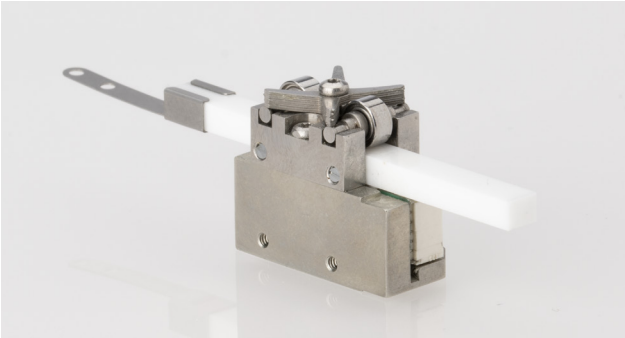
PiezoMotor
part of acuvi

# Piezo LEGS® LL10AD



## Key features

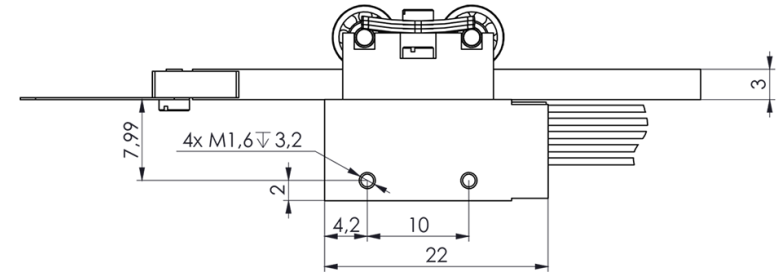
- Non-magnetic & vacuum versions
- 6.5 N force
- Sub nanometer precision
- Direct drive and no backlash
- No power draw in hold position
- Unparalleled size to force ratio

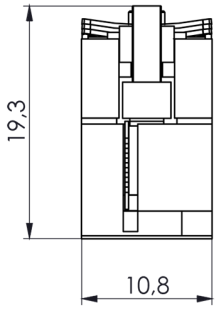
## Product Description

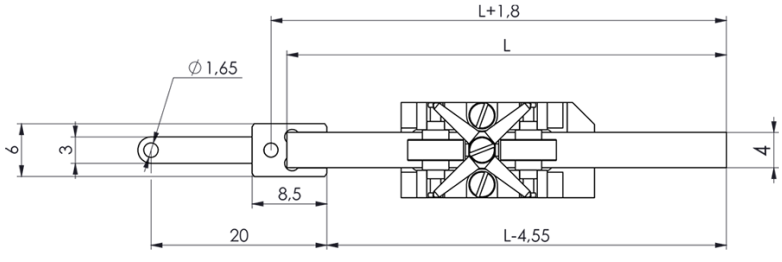
The LL10D linear motor is designed to cater to a diverse range of OEM applications, with a specific focus on achieving precise positioning in environments that necessitate a completely non-magnetic and/or vacuum-compatible motor.

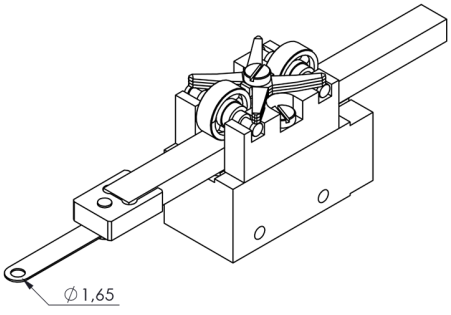
The direct drive principle of the Piezo LEGS ensures motion without any mechanical play or backlash. Sub-micrometer movement is effortlessly accomplished by this exceptionally compact and robust motor. It effectively replaces stepper motor assemblies when enhanced resolution and smooth linear movement are required. Available in two versions, Standard stainless steel for normal environments (A) and a Non-magnetic vacuum version (D).

## Product Dimensions




piezomotor.com

SWEDEN
Stationsgatan 14
SE-753 40 Uppsala

USA
4215 Pleasent Rd
Fort Mill, SC 29708

JAPAN
Acuvi KK, Ark Mori Bldg
West wing 16th floor
1-12-32 Akasaka, Minato-ku Tokyo
107-6016 Japan

# Piezo LEGS® LL10AD

| Type | Normal (A) | Non-magnetic, vacuum (D) |
|---|---|---|
| Maximum stroke | 74.5 mm | |
| Speed range @ Rhomb, no load, 20°C | 1 nm/s – 15 mm/s (check driver) | |
| Step length, full step @ Delta, no load, 20°C | 4.8 µm | |
| Maximum speed (driver and waveform dependent) | 15 mm/s | |
| Max operating frequency (driver dependent) | 3 kHz | |
| Movement resolution | <1 nm | |
| Stall force | 6.5 N | |
| Holding force | >6.5 N | |
| Vacuum | No | Yes ($10^{-7}$ torr) |
| Non-magnetic | No | Yes |
| Max operating voltage | 48 V | |
| Power consumption | 5 mW/Hz | |
| Mechanical size L x H x D | 22 x 19.3 x 10.8 | |
| Weight with 50 mm drive rod | 23 g | |
| Material in motor housing | Stainless steel | Arcap (non-magnetic) |
| Operating temperature (recommended) | -20 to +70 °C | |
| Storage temperature | -20 to +70 °C | |
| Built in encoder | No | |
| Connector motor (motor side) | JST BM05B-SRSS-TB | Soldered cable w. JST 05SR-3S |
| Connector encoder (motor side) | N/A | |
| Control | Open loop or closed loop | |
| Lifetime (Cycles), [Room temp,1ATM and Half Load] | 2,5 X $10^{9}$ WFM-S* | |
| Index | N/A | |
| Max. acceleration | 800 Hz/ms | |

All specifications are subject to change without notice.

## Controllers

**PMD301**
1-sxis micro-step driver/controller - max 3 kHz, RS485 or USB

**PMD401**
1-axis micro-step driver/controller - stackable PCB, max 1.5 kHz, RS485 or SPI

## Starter Kit

PMD301/401 controller, motor cables, USB-to-RS485 cable, and power supply

Piezo Drive lab software downloadable from acuvi.com

Standard lengths of drive rods are 30, 40, 50, 60 and 101 mm, Other drive rod lengths between 30 and 100.8 mm can made on request, at an extra charge.

*Wave Form Step

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