



New Possibilities in Drug Delivery through Elliptec Technology

Innovate conventional ways with a new approach



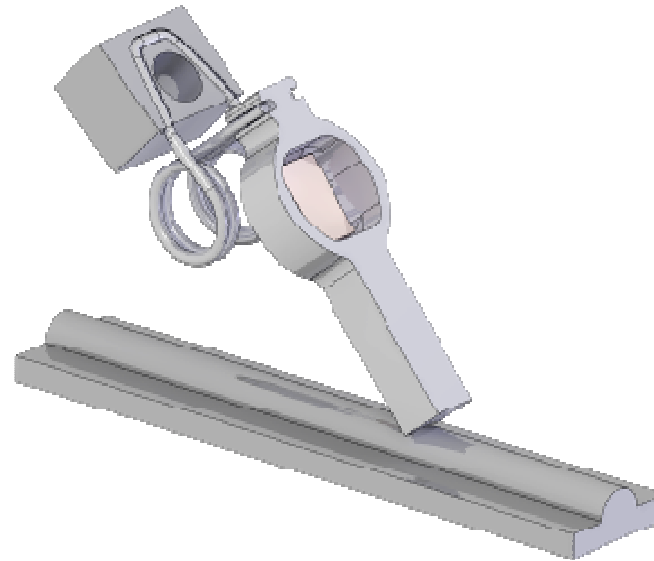


The Elliptec Motor X15G offers direct linear movement

with high precision

35 μ m, 15 μ m, 2 μ m and less, depending on sensor

without the need for a gearbox
without backlash



in a small form factor
measuring only 28x9x12mm for
the standard model

with high dynamic

acceleration to 100mm/s in ~5ms for masses ~1g

at low voltages

requiring only 5V DC by using a
multilayer piezo stack



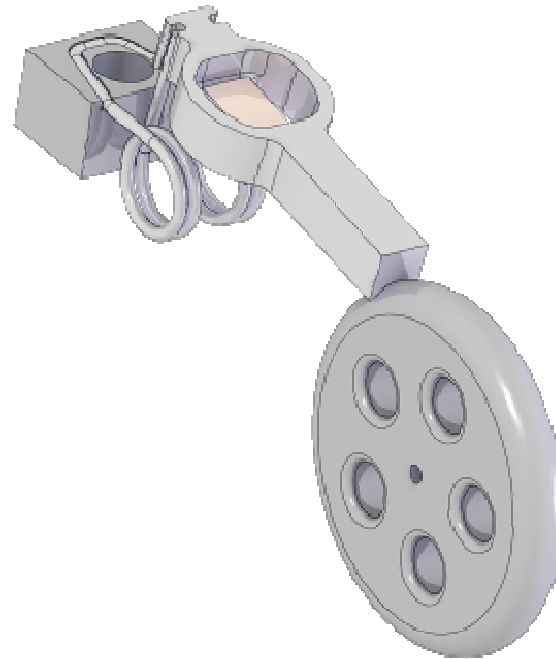


The Elliptec Motor X15G offers direct rotation movement

with high precision

1200, 2800 and even 320k steps/rotation, depending on sensor and Ø wheel

without the need for a gearbox
without backlash



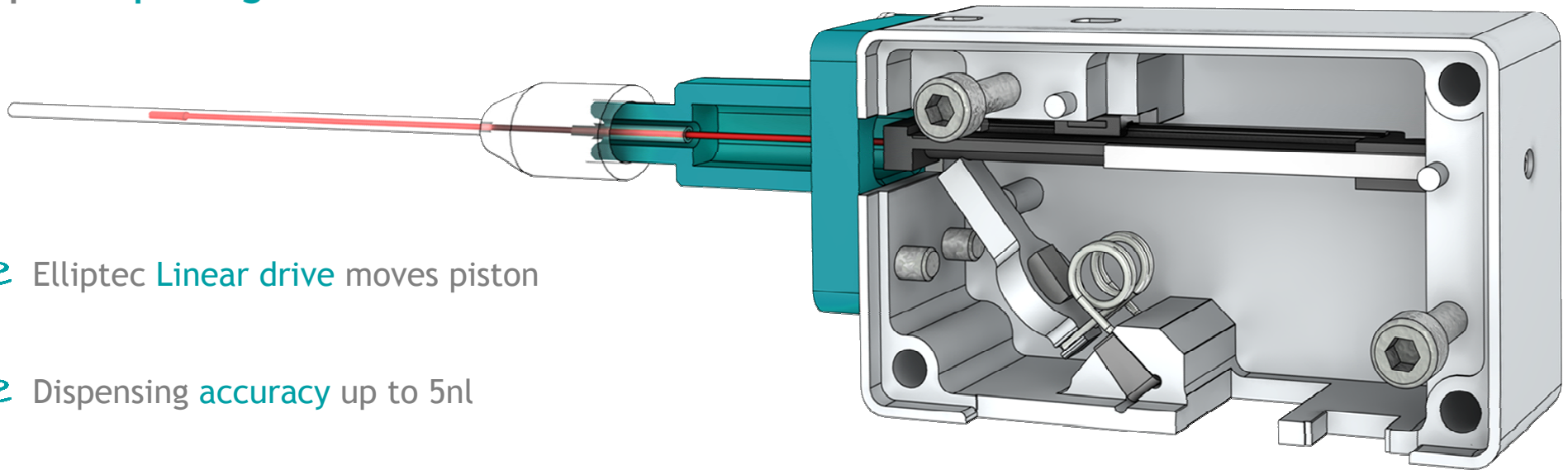
in a small form factor
measuring only 28x9x12mm for the
standard model

with high dynamic
acceleration to 100mm/s in ~5ms for
wheels with ~2g of mass

at low voltages
requiring only 5V DC by using a
multilayer piezo stack



Elliptec Pipetting Solution



e Elliptec Linear drive moves piston

e Dispensing accuracy up to 5nl

e Dispensing resolution up to 0,5nl

e Total dispensable volume 20 μ l (values depending on size of cappilary)

e Multi Channel pipetting possible



Elliptec Dynamic Linear Pump

- e Pneumatic unit for a **compact** and **robust** **handheld** measuring instrument
- e For **advanced screening** applications, used by police as well as by commerce and industry
- e Can alternatively be adapted to **dose gases** and **liquids** (e.g. **Insulin**)
- e High positioning **resolution**
- e High acceleration & braking speed
- e Highly **flexible integration** for custom pump displacement and stroke



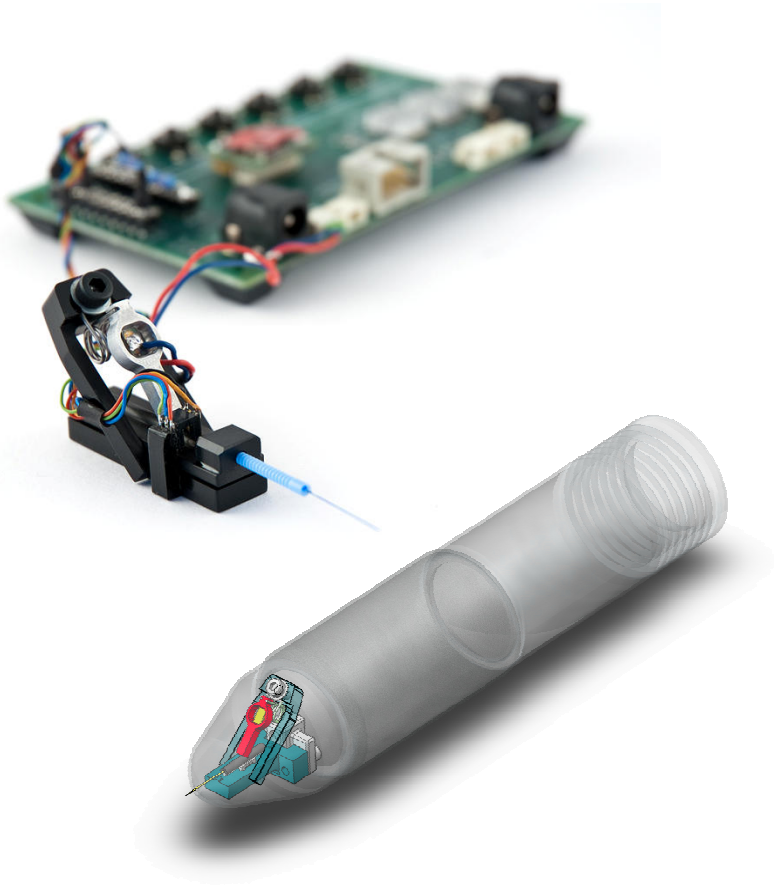
Elliptec Drive for Lock-Out solutions

Elliptec Technology offers inherent manipulation safety:

- Immune to simple electrical manipulation attempts
- Easily defensible against high impact forces
- High unpowered holding force
- Integrated sensor capabilities
- Reverse movement for returning to home position



Make-Up pen, tactile feedback etc.
one dimensional movement



Current solutions are:

- Noisy
- Difficult to guide because of vibrations
- Dept of penetration is not accurate and reproduce able
- Dept of penetration is not adjustable
- Mostly low quality products

Elliptec offers customer benefits:

- High stroke accuracy
- Number of punctures can be freely chosen
- Dept of puncture penetration adjustable
- Improved hygiene: disposable needle/linear drive unit



2D skin treatment
by rapid sequential positioning
two dimensional movement



Current solutions are:

- High cost
- Not for customer use
- Not intended for mass production market

Elliptec allows for:

- Low cost solution
- Performance unseen in mass market:
 - high speed
 - highly dynamic acceleration & brake
 - high positioning resolution
 - small package size
- New products previously impossible for consumer market
- Mass production availability





Contact

For questions and inquiries, please contact us at:

Elliptec Resonant Actuator AG
Meinhardstr. 3
44379 Dortmund, Germany

Tel: +49 (0) 231 292702-0

Fax: +49 (0) 231 292702-50

Mail: info@elliptec.com

Website: www.elliptec.com

Or for one of our sales representatives please see:

www.elliptec.com/company/contacts

