

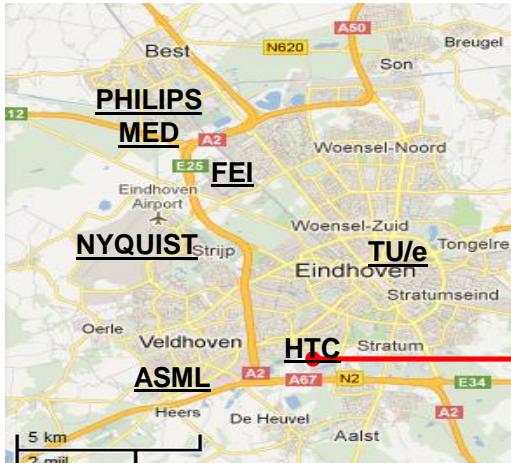
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HEIN MAnagement & DEvelopment

HEINMADE
supplier piezo ceramic solutions

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High Tech Campus:
PHILIPS R&D
NXP
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ESO, October 2012

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Way of Working

Big through collaboration

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Distributorships
Nanomotion
Noliac
Piezomechanik

R&D know-how
TU Eindhoven
High Tech Consultants
High Tech Campus

High Tech Suppliers
High Speed Milling,
Wire EDM, coatings

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R&D
Consultancy
Prototyping
Qualified supplier

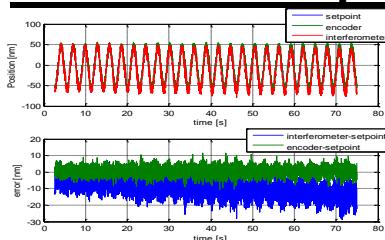
Customers
Semicon
Optics
Medical
Space

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Overview competences



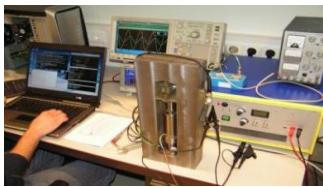
High Force Positioner :

- Max speed 10 mm/sec.
- Min speed 1 nm/sec.
- Maximum load 1000 N.
- Stiffness 5e7 N/m.
- Sine ampl 50 nm, 0.3 Hz.
- RMS error enc. 2.2 nm.



Active damping:

- Mass ~ 1000 kg.
- Stiffness ~ 3e8 N/m
- Vibration reduction to sub-nanometer
- Cross talk >10e-6 (sensor/actuator).



Fast Tool Servo:

- Stroke 100 µm
- Full stroke freq. 200 Hz
- Stiffness 5e8 N/m

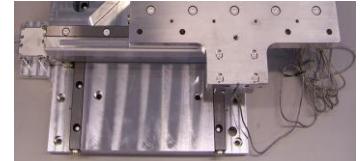
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Nanostages:

- Stroke XY 400 µm
- Rotation Z 1 deg
- Stiffness 1e6 N/m
- UHV compatible



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Long Stroke XY :

- XY stroke 200 mm.
- Load 25 kg, UHV 10-6 Torr.
- Max speed 50 mm/sec.
- Error 100 µm/sec < 50 nm.

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