

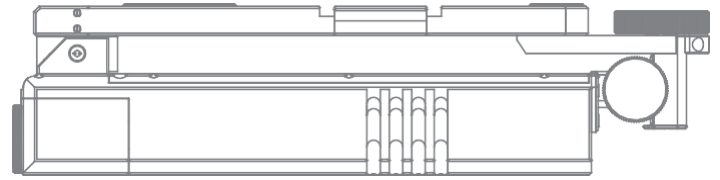
HPI-3D



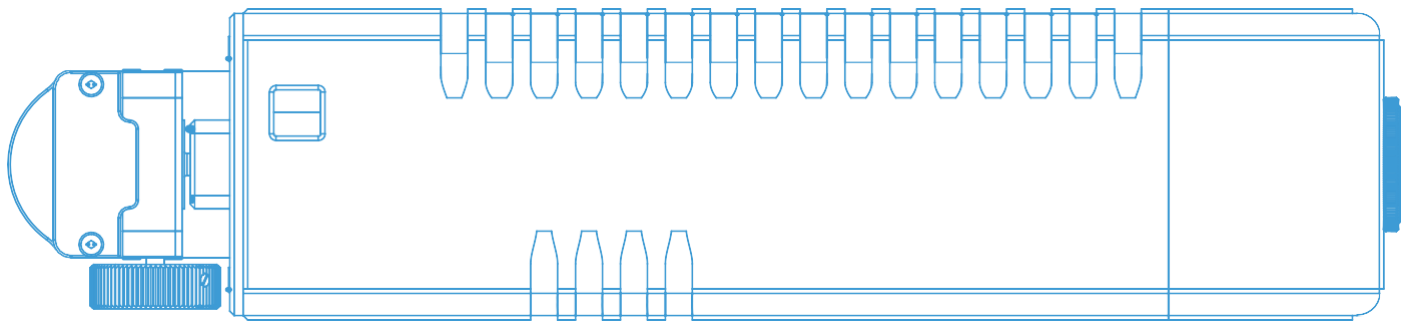
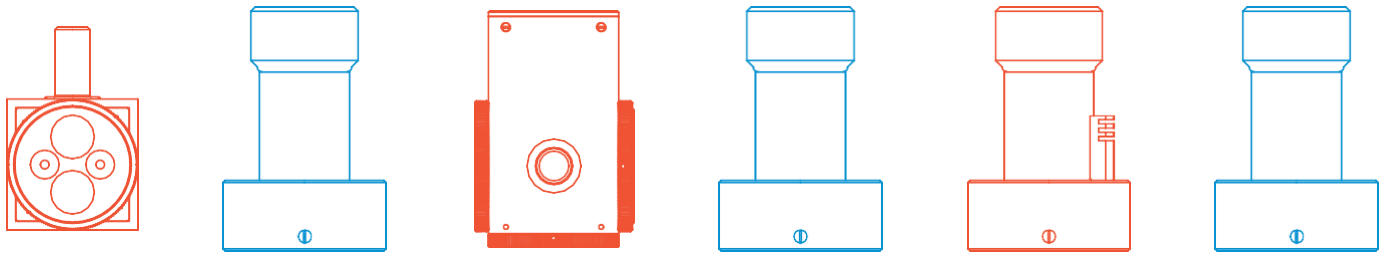
Standard set



HPI-3D



Heterodyne laser measurement system

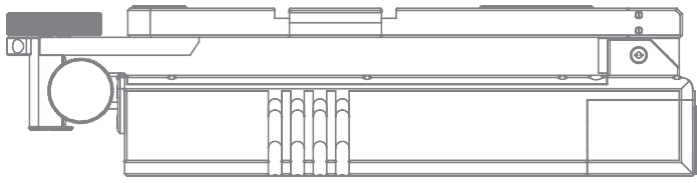
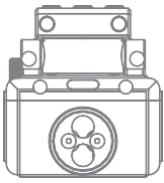


Laser Measurement System HPI-3D is the most advanced laser interferometer available on the market. Being 1 Hz two frequency heterodyne system, it offers plenty new options for users with unprecedented measurement precision and resolution. Really **easy to use**, it can be applied both in research laboratories as well as for machine geometry measurements.

Precise machine **calibration** is essential to provide quality products. With our system you can perform accurate calibration **quickly** and easily. Basic configuration enables **measurements** of linear displacement, vibrations, velocity and positioning. The **3D system** offers the unique function of vertical and horizontal **straightness** measurement that are performed **simultaneously**

with **positioning**.

Additionally, the HPI-3D software offers a unique electronic alignment tool. Thanks to this function the alignment becomes fast and easy. Also, the cosine error influence is greatly reduced. Laser interferometer HPI-3D simplifies the measurements even further thanks to Bluetooth communication with PC and wireless sensors.



HPI-3D

Features

High resolution and accuracy

Over 30 years of experience in production of laser measurement systems allows us to offer resolution and accuracy of the laser tailored to customers most demanding needs.

Competitive price

We make the HPI-3D a good choice for demanding clients as well as clients on a budget. That is why we offer a complete laser system for the price of competitor's single component.

Wireless operation

Thanks to wireless PC connection and wireless environment and basis temperature sensors usage of the laser system becomes more flexible and fast.

Electronic alignment tool

This useful option not only speeds up usually toilsome beam alignment procedure but also allows reducing cosine errors improving the overall performance of the system.

Results traceable to national standards

HPI-3D was successfully tested multiple times in a variety of National Standards Laboratories. Moreover, in some laboratories it is used as a standard for length comparison.

Operation at any angle

The unique mounting system makes the laser head operation at any angle a trifle. Our software also provides information about laser head pitch and yaw position.

Portability

Rugged and light case with pressure valve helps to transport the system with ease and care. The whole system is so compact not to be a problem on a business trip what is really important for machine calibration service.

Ease of use

We work with our customers as well as provide calibration service in central Europe to improve usability of our equipment and make the tool work but not stand in your way.

Unique optics

The HPI-3D interferometer has quartz fused optics that is characterised by unrivalled thermal stability.

G-codes generator

To simplify and speed up the measurement process our software has builds in G-code generator. The generator supports most widely used controllers and is completely free of charge. Extra controllers can be added on request.

3D measurements

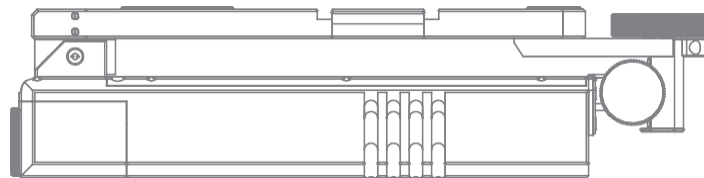
Each HPI-3D unit is equipped with unique 3D system that makes simultaneous measurement in three axes possible even with standard linear optics.

Direct mount on machine tools

Each laser head is equipped with a magnetic base. As, the laser head can be placed anywhere inside the machine that greatly reduces beam alignment time.



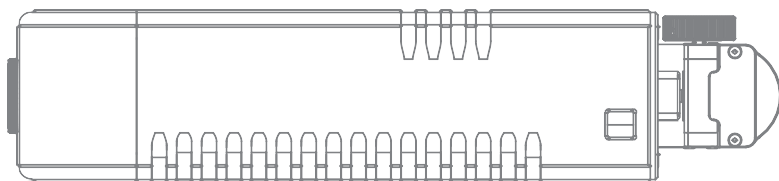
HPI-3D



Application

- The positioning of CNC and CMM machines
- Machine geometry inspection
- Flatness measurements *
- Axes parallelism measurements *
- Vibration measurements
- Straightness measurements *
- Squareness measurements *
- Small angle measurements *
- Angular positioning *
- Ball screw inspection *
- Dynamic measurements with a strobe
- Variety of laboratory applications

* additional optics required

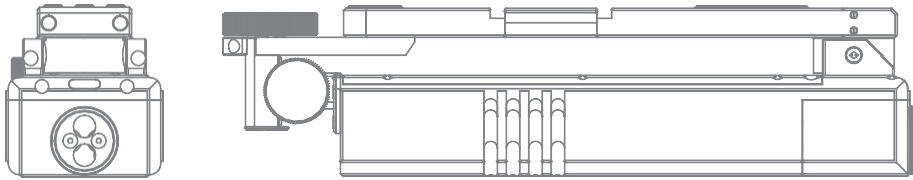


Specification

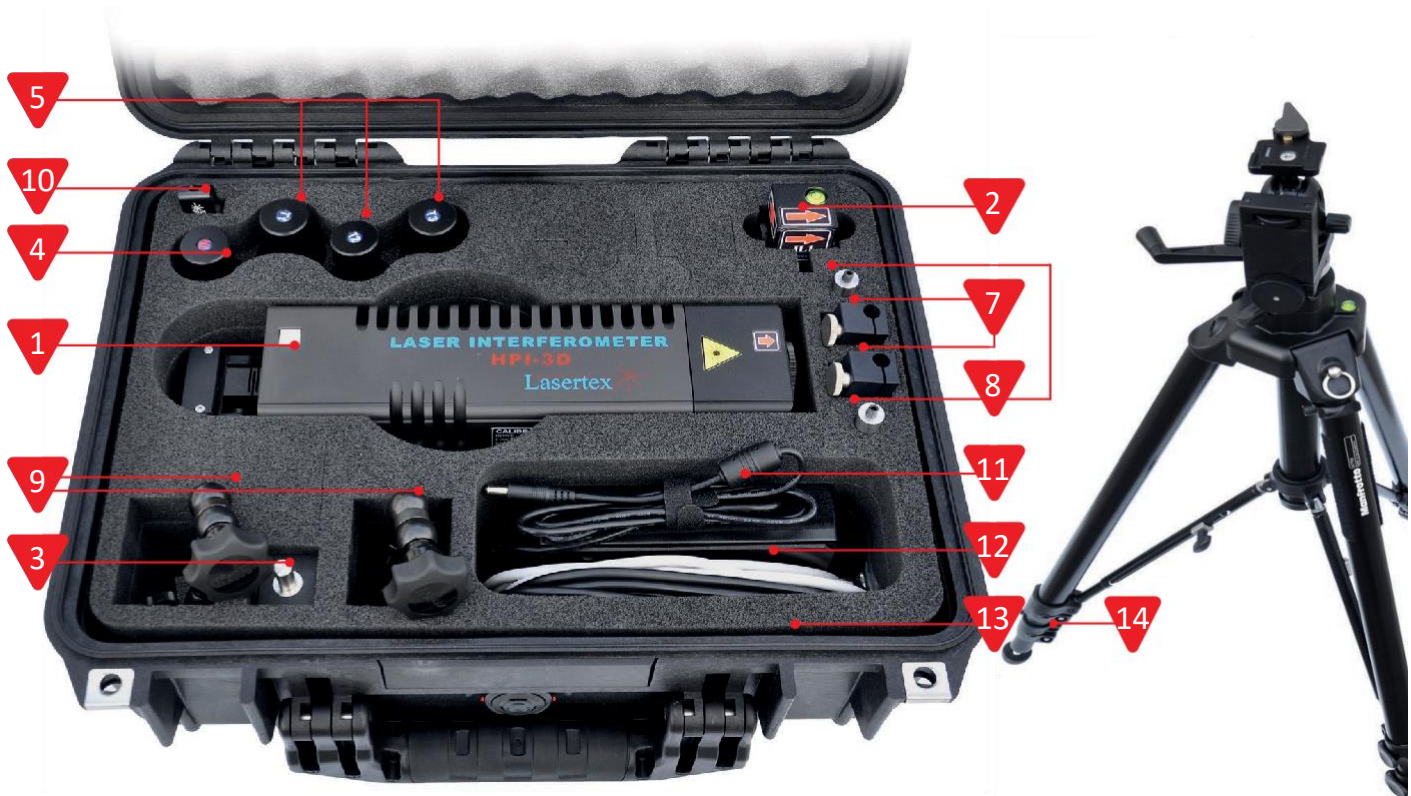
Measurement type	Range	Resolution	Accuracy
Distance	0 - 30 m	100 pm	0.4 µm/m
Velocity	0 - 7 m/s	0.25 µm/s	± 0.1 %
Angular *	0 - 3600 arcsec	0.01 arcsec	± 0.1 % * A ± 0.06 * L ± 0.1 µm *
Straightness angular *	0 - 25 m	0.01 µm (for 100 mm base)	± 0.1 % * A ± 0.06 * L ± 0.1 µm *
Straightness Wollaston *	0.3 - 9 m ± 30 mm	0.01 µm	± 0.5% * A µm ± 0.1 *
Straightness 3D *	0 - 4 m	0.1 µm	± (5+5 * L) µm
Flatness *	0 - 15 m ± 2 mm	0.01 µm/m	± 0.1 % * A ± 0.06 * L ± 0.1 µm *
Squareness *	± 1000 arcsec	0.01 µm	± 1 arcsec *
Rotary *	± n * 360°	0.1 arcsec	± 1 arcsec *


L - the distance between optical components in [m] • A - measured value in [m] • * with electronic adjustment • * additional optics required

HPI-3D

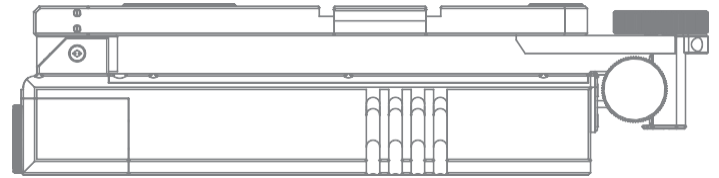


Standard set



1. Laser head with built-in compensation unit and Bluetooth adapter LH 02
2. Linear interferometer IL1
3. Linear retro-reflector RL1
4. Wireless environmental compensation sensor - TH
5. Wireless basis temperature sensors T1, T2, T3
6. Manual wireless trigger
7. Mounting element ME 01 x 2
8. Mounting element with crew thread diameter 5 mm x 2
9. Magnetic mounting base MM 01 x 2
10. PC software on Pen-drive
11. Power supply adapter PS 02
12. USB cable
13. Ultra-durable case
14. Tripod TS1
15. Software 

HPI-3D



Software

Easy yet functional

Lasertex software is easy to use yet with rich functionality. One software for all device applications with unified interface and simplicity in use. Extensive support for measurement results analysis. HPI-3D software returns reports in correspondence to standards: ISO 230-2, PN-93/M-55580/81, NMTBA, VDI/DGO 3441, BSI BS 4656 P16. The software also provide electronic adjustment of optical axes and linear displacement measurement, linear displacement registration, FFT analysis, measurement of the velocity.

Talks to your machine

HPI-3D software has integrat-

ed tool for CNC path generation. After the measurement is done, it is possible automatically generate CNC machine compensation files. The generator is compatible with most popular machine controls and extra controller can be added on request.

Integration

The software has direct linkage to Microsoft (c) Excel and/or LibreOffice Calc and supports data export to csv compatible file.

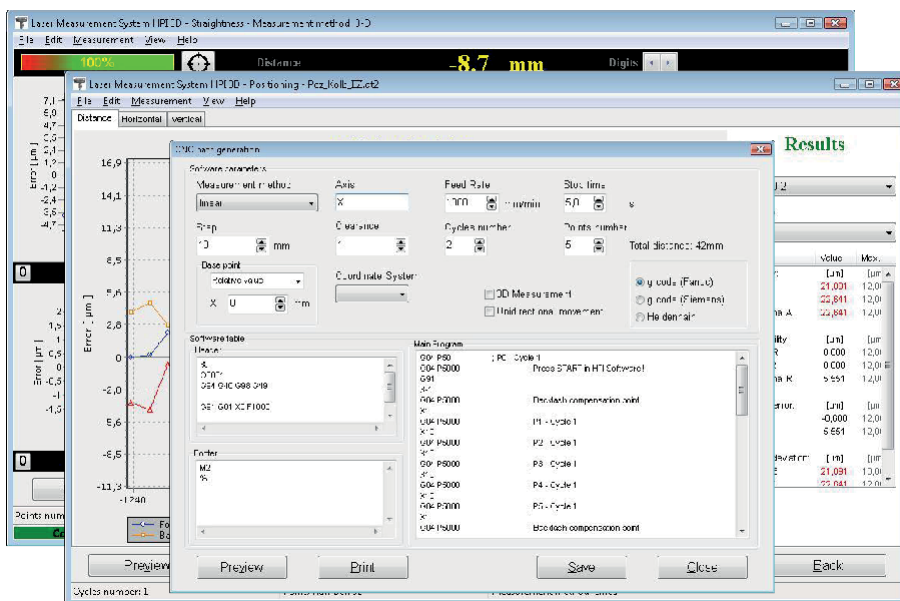
The application is provided in multiple languages in standard installation pack and a new language can be added easily on request.

The Software is distributed as free-ware and in case of purchasing the device you get free software updates available through our web page with no extra fee.

Software supports integration with high precision electronic spirit level μ Level made by Status pro.

Compatibility

The software is available for Microsoft (c) Windows operating system. Drivers are available for Linux, Android (c) and MacOS (c). Also our communication protocol description available for download on our web page. LabView (c) libraries are available.



DOWNLOAD

Operating system	Windows 32/64bit 7/8.1/10
CPU desktop	Intel i3 2375M 1,5 GHz / AMD A4-5000 1,5GHz or superior
CPU tablet	32bit Intel Atom Z3770 1,5 GHz or superior
Memory	2GB RAM
Hard drive	100MB of free hard drive space
Interfaces	USB 2, X/3, X or Bluetooth 4.X (Microsoft stack)
Graphics hardware	support OpenGL 4.X
Screen resolution	1280x768 or higher

Dimensions

HPI-3D

