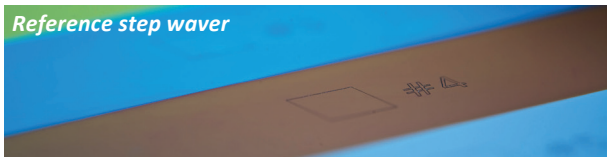
Thin film measuring devices

OTFP ST50


Reference step waver

The OTFP series of measuring devices (optical thin film probe) allow fast, precise and contactless measurement of film thicknesses in the nanometer and micrometer range. The films must be smooth, transparent or slightly absorbent. The measurement process is based on the principle of thin film interference. Reflectometric thin film measurement is already widespread in sectors such as semiconductors, solar power, medical products and optics. This technology is typically used to measure the thicknesses of semiconductor films, anti-reflective coatings or coatings on medical implants.

The OTFP measuring devices feature an integrated Windows PC. They can be used as a single workstation solution or as a server. This makes it possible to contact one or more software clients via a simple TCP/IP connection. The results can therefore be simultaneously displayed or used at various points, such as for process control.

The devices are delivered with all necessary parts, such as fiberglass cables, measuring head and user software, as well as an axis system or measuring station depending on the configuration. A reference sample can be supplied upon request.


Measuring head

Selection of measurable films

Silicon, SiO_2, SiN_x, DLC, polymer films, polyimides, polysilicon, amorphous silicon

Typical applications

Production of semiconductors:
photoresist, oxides, nitrides

Liquid crystal displays:
cell spacing, polyimides, ITO

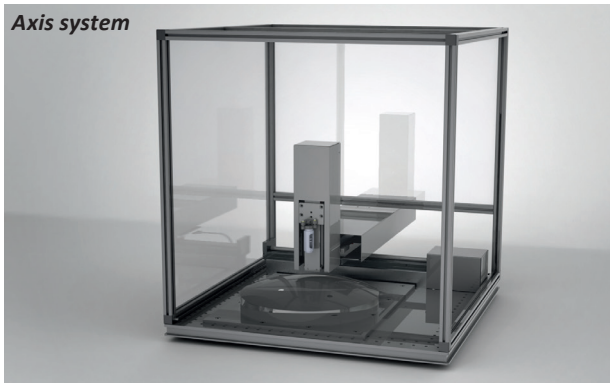
Optical coatings:
hardening coatings, anti-reflective coatings, filters

Technical data

Measuring range (depending on film arrangement)	50 nm - 50 µm
Spectrometer wavelength range	200 - 1100 nm
Spectrometer resolution	2048 Pixel
Precision (without axis system, depending on film arrangement)	+/- 1 nm
Reproducibility (without axis system, depending on film arrangement)	+/- 0,1 nm
Electrical output of light source (tungsten halogen lamp, optional color temperature compensation filter)	50 W

Optional axis system

An axis system makes it possible to create mappings or surface profiles, for example. All axes are driven using stepper motors. Axis systems larger than 300 x 300 mm can also be produced on request.

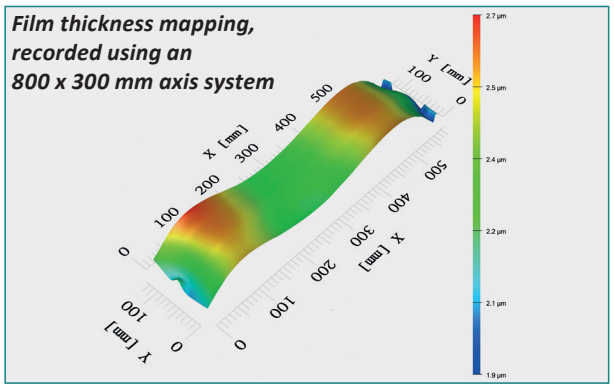


Technical Data:

Dimensions (height x width x depth)	600 mm x 600 mm x 993 mm
Max. sample size (height x width x depth)	70 mm x 300 mm x 300 mm
Weight	Approx. 55 kg

Measurement parameters:

	Travel (mm)	Precision (µm)	Reproducibility (µm)
X-axis (scan)	300	20	3
Y-axis (scan)	300	20	3
Z-axis (focus)	80	20	3



About the manufacturer

Based in Leipzig, Germany, OPTEG has been a reliable supplier of devices for optical real-time monitoring for many years (double-beam photometers based on a monochromatic measurement of reflection or transmission). OPTEG also develops and produces precise measurement technology for optical low-coherence interferometry (OLCI, HP OLCI), according to customer specifications.

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