

Nickel Shims and Sleeves

Tools for micro replication

We offer electroformed nickel shims and nickel sleeves for the production of micro- and nano-structured films and plastic components made by any kind of micro-replication technology such as thermal and UV-embossing or roll-to-roll and roll-to-plate imprinting. The micro- and nanostructures are designed by customer demands for unique functions and applications. We offer UV lithography and laser interference lithography in house as well as the recombination of laser- and e-beam written structures by nano imprint lithography, creating larger sized tools. We can also handle masters made by micromachining, laser ablation and others.

Applications and markets

The nickel shims and sleeves we offer are typically used for the following applications and markets:

- **Lighting**
Optical elements for LED, OLED, daylight management (architecture), automotive
- **Displays**
Optical films for flat screens, touch displays, e-books
(e.g. antireflection, antiglare, light guide, nano wire grid, metal mesh)
- **Life Science**
Antibacterial surfaces, functional structures (e.g. lab-on-chip)
- **Solar**
Functional structures to increase efficiency of solar cells and photovoltaics
(e.g. light trapping, concentrators)

Our technology

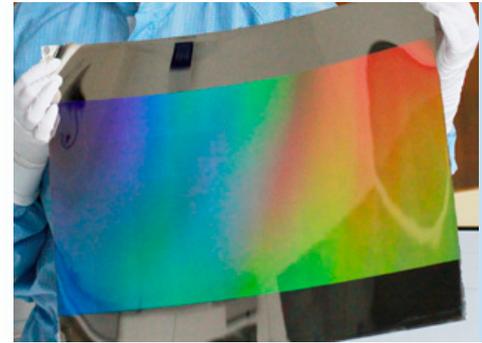
The structures are produced by either UV lithography, laser interference lithography or e-beam lithography followed by electroforming. Large e-beam structures can be realized by our UV recombination technology. These masters will be copied by electroforming into nickel, the so called nickel father. Starting from this father, several nickel-to-nickel copies are possible if larger volumes are needed, the so-called nickel family process. Finally the shims will be cut by laser to the final size or welded to a cylindrical sleeve to fit to individual drum diameters for roll-to-roll imprinting.

Specifications

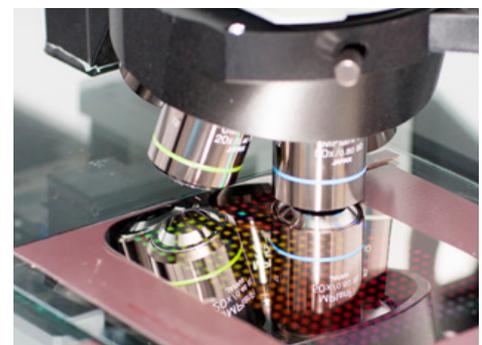
Sizes	Shims up to 500 mm x 600 mm (larger size planned for 2015) Sleeves: up to Ø 190mm x 500mm
Thickness	0,02 mm up to 1 mm
Material	nickel
Finishing	laser cut laser welding (cylindrical sleeve or multiple shim alignments)

To get an overview of possible micro and nanostructures please refer to our homepage

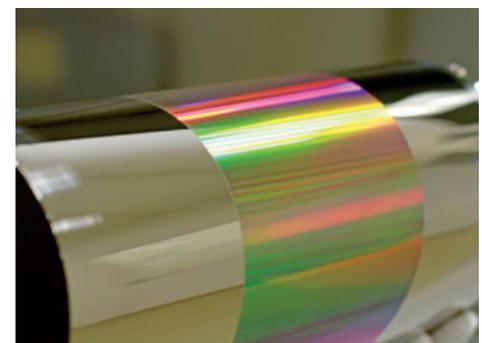
www.temicon.com



20" x 24" Nickel shim



Automised optical inspection



Nickel shim welded to a sleeve

temicon GmbH

Konrad-Adenauer-Allee 11
44263 Dortmund
Germany

☎ +49.231.47730-550
☎ +49.231.47730-555

info@temicon.com
www.temicon.com

temicon GmbH – holotools
design & mastering

Wiesentalstraße 29
79115 Freiburg
Germany

☎ +49.761.137 3155-0
☎ +49.761.137 3155-66

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