

HT Diffraction Grating Molds

Light management using Diffraction Gratings – DG

Diffraction gratings can be used to optimize the performance of optical systems. Applications include for instance the enhancement of light extraction out of light emitting devices, such as LED or OLED sources, through efficient light outcoupling. Besides technical applications, diffraction effects can also be used as rainbow pattern for decorative purposes for instance in the packaging industry. HT-DG gratings are designed to be used in mass production replication processes for fast and cost-effective production.

How HT-DG work

Our surface diffraction gratings are planar optical elements with a microscopical, regular, sinusoidal pattern. They split incident light into a number of diffraction orders. The number of diffraction orders and their respective diffraction efficiency depend on the wavelength and on the angle of incidence of the incoming light, as well as on the refractive indices of the materials involved.

By choosing the appropriate setup, diffraction gratings can be used to couple light into or out of Waveguides. Therefore, they increase the performance of optical systems or split light into several light beams.

HT-DG applications

- Outcoupling of photon from light emitting devices, such as LED / OLED
- Decorative effects for covers in the packaging industry
- Incoupling of light into waveguides
- Thin-film and organic photovoltaics
- Optical films
- Optical instruments

Users of HT-DG molds

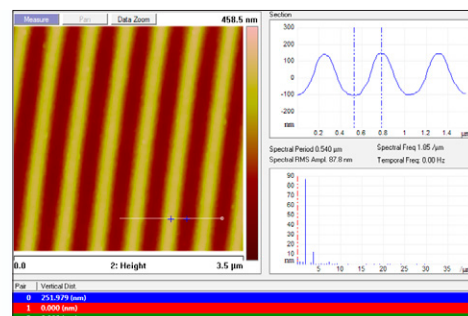
- Film manufactures in product and process development
- Manufacturers of light emitting devices
- Institutes in research and development of micro-optical structures

Specifications

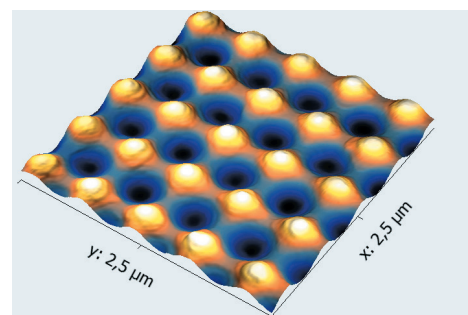
	HT-DG-L500	HT-DG-C500	HT-DG-C Rainbow	HT-DG-H Rainbow
Grating type	Linear	Crossed	Crossed	Hexagonal
Profile shape	Sinusoidal	Sinusoidal	Sinusoidal	Sinusoidal
Pitch	522 nm	522 nm	1316 nm	1316 nm
Average depth	250 nm	250 nm	375 +/-50 nm	375 +/-50 nm
Material	Nickel	Nickel	Nickel	Nickel
Mold size*	100 x 100 mm	100 x 100 mm	300 x 300 mm	300 x 300 mm
Active area*	80 x 80 mm	80 x 80 mm	250 x 250 mm	250 x 250 mm
Mold thickness*	300 µm	300 µm	300 µm	300 µm

* Customised sizes and thicknesses available upon request

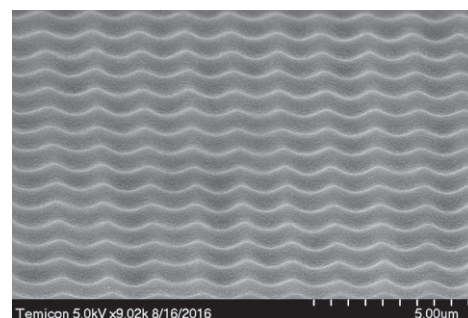
HT-DG



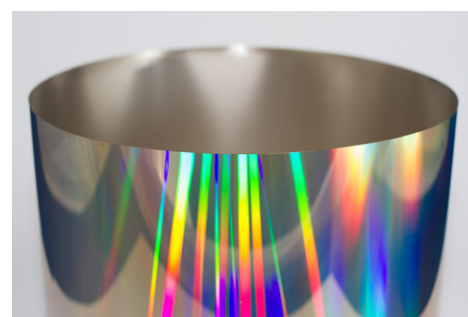
HT-DG-L500



HT-DG-C500



HT-DG-C Rainbow



HT-DG-H Rainbow

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

08.2018