

FACT SHEET

PLASMA ETCHED ILLUMINATED STRUCTURES



FACTS

POG presents new capabilities for production of Etch & Fill illuminated patterns using a dry plasma etching process.

POG has unique expertise in the development and production of sophisticated, customized optical microstructures.

All of the necessary technologies are available in-house and under POG control including:

- Layout design according to customers' specifications
- Production of photomasks

- Photolithographic replication
- Metallic coatings and broad-band-AR coatings
- Machining of substrates to final shapes & sizes
- Cementing and assembly

Our process allows for production of single pieces, trial batches as well as serial quantities with consistently high quality.

COMPANY

POG Precision Optics Gera develops, produces and distributes client-specific, precision optical components and systems for applications covering the entire spectral range.

POG's product portfolio varies from conventional precision optical components and microstructures to complex optical and optoelectronic systems that are utilized in machine vision & lighting, metrology, industrial image processing, medical, sports optics and

military applications. Owing to the high quality standard and competitiveness of our products and services, POG has won a worldwide reputation as a technology company leveraging valuable partnerships with research institutions in Germany and abroad.

POG is DIN EN ISO 9001 certified.

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Quality management system
ISO 9001

- Customer focus
- Customer satisfaction
- Continuous improvement
- System/process effectiveness

ID 15 100 8470

www.tuev-thueringen.de

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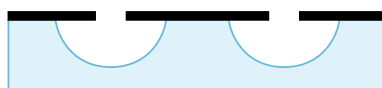
Etch and Fill Process

- Illuminated reticles for telescopic and other optical sights, also in combination with chrome pattern
- Chrome cover of the etch and fill pattern to avoid forward stray light is available as an option
- The filled structures can be illuminated from the side by using LED and will scatter the light towards the eye
- Improved profile of etched pattern and reduced minimum pattern size compared to wet etching process

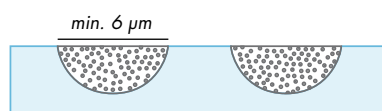
Wet Etching



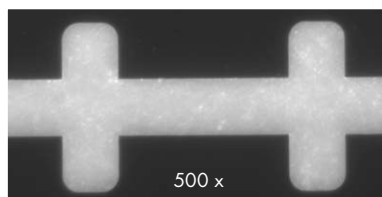
masking of the pattern



etching of glass

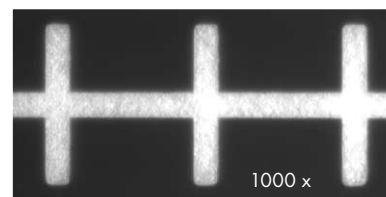
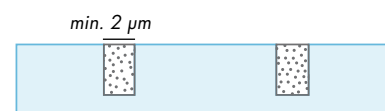
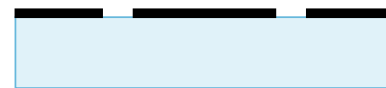


removal of the mask and filling the structure with special white paint



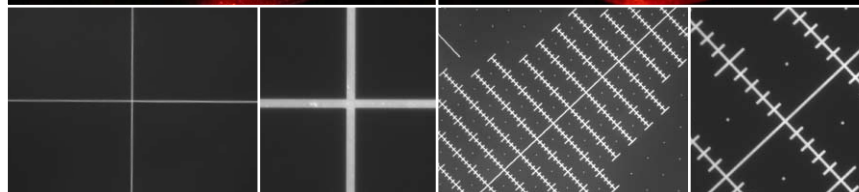
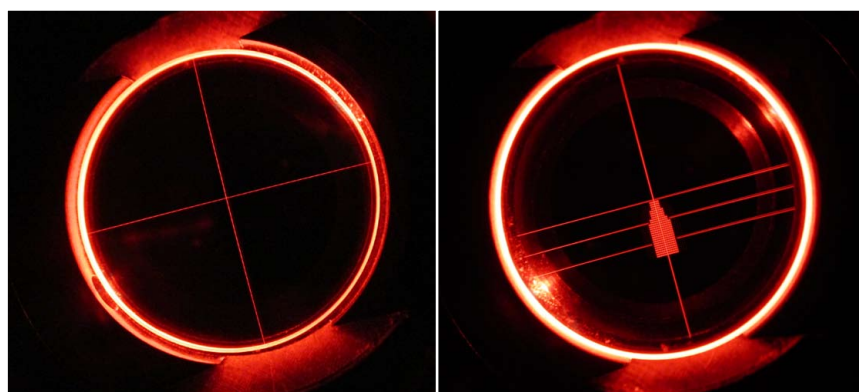
typical pattern details

Plasma Etching



Properties

- Substrate material: fused silica (standard thicknesses: 1.5 mm, 2.0 mm, 3.0 mm)
- Reduction of feature size of illuminated etch and fill structures down to 2.0 μm possible
- Contrast ratio > 0.6 (values comparable to wet etching process)
- Testing samples can be supplied with adapted diameter



width 2,41 μm

