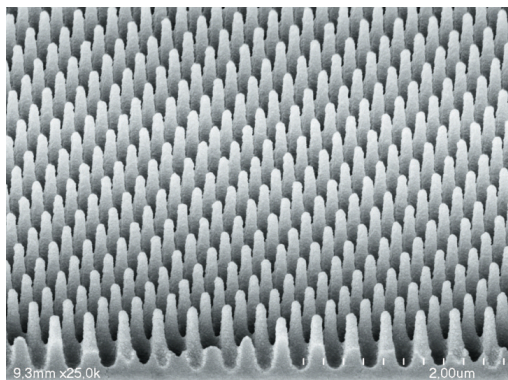# HT-AR-02

High Performance Antireflective Molds

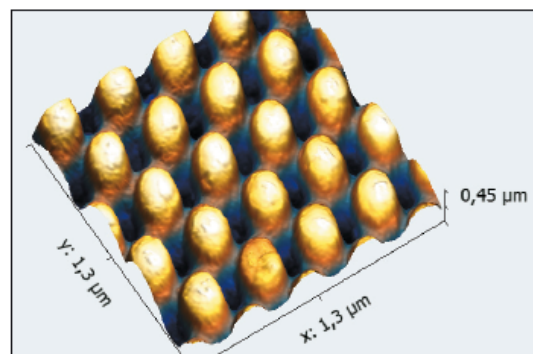# 高性能减反模具

High-performance AR structures
高性能减反结构

HT-AR-02 surface structures reduce the specular reflectivity from polymer surfaces down to below 0.2%. Our state of the art nano-optical imprinting molds represent the result of years of optical design work and cutting edge origination process development.

HT-AR-02 表面结构可使聚合物表面的镜面反射率减小并低于 0.2%。我们先进的纳米光学压印模具代表了我们多年的光学设计工作的成果和前沿的模具工艺发展。

HT-AR-02 molds have been specifically designed for high-performance AR applications used in R&D work, as well as for product and process development. Molds are available up to a size of 250mm x 250mm. HT-AR-02 is a successive development of HT-AR-05 and HT-AR-06 with improved structure shape and parameters.

HT-AR-02 模具是专为高性能 AR 应用设计的，可用于科研，也可用于生产和工艺改进。可提供的尺寸为 250 mm x 250 mm。HT-AR-02 是 HT-AR-05 和 HT-AR-06 的延续发展，其结构形状和参数都得到了改进。

How HT-AR works 工作原理

Imprinted HT-AR nanostructures are able to modify the optical properties of any formable material and reduce the reflection from this surface. As opposed to AR-coatings no additional material is required to be applied. Thus there is no costly coating process required. The AR effect is just achieved by modification of the surface topography on a sub-wavelength scale through nano-imprinting. HT-AR nanostructures make use of the bio-inspired moth-eye effect. The surface topography creates a graded index profile, which reduces visual reflectance of a

surface with n=1.5-surface from 4% down to below 0.2% specular reflectance graded index profile in the HT-AR-02 version.

压印后的 HT-AR 纳米结构能够改变任何可成形材料的光学性质，减少从材料表面的反射。与减反涂层相反，无需涂覆其他的材料。因此，不需要高成本的沉积工艺。AR 效应是通过纳米压印来改变表面形貌到亚波长尺度来实现的。HT-AR 纳米结构利用了受生物启发的蛾眼效应，表面的高低起伏形成了渐变折射率剖面，使 n=1.5 的表面的视觉反射率从 4%降低到低于 0.2%。

HT-AR applications 应用

- Optical components, windows and covers in optical systems
- Surfaces and covers of flat panel displays and other display surfaces
- Transparent covers used in industrial equipment, automotive, consumer electronics, architecture
- Optical films
- Thin film and organic photovoltaics

- 光学系统中的光学元件、窗口和覆盖层
- 平板显示器和其他显示表面的表面和覆盖层
- 用于工业设备、汽车、消费电子，建筑上的透明覆盖层
- 光学薄膜
- 薄膜和有机光伏

Users of HT-AR molds 用户

- Film manufacturers and component manufacturers – for product and process development work
- R&D institutes – for research activities on nanostructured surfaces
- Manufacturers of equipment for injection molding, thermal embossing and roll-to-roll production – as a reference to demonstrate the technical capabilities and homogeneity of their production processes

HT-AR-standard molds are for use in Research & Development.
We offer royalty arrangements for commercial use upon request.

- 薄膜和组件的制造商-用于产品和工艺开发工作
- 研发机构-用于纳米结构表面的研究活动
- 注塑、热压以及卷对卷生产的设备制造商－作为演示他们生产工艺的技术能力和重复性的参考.

HT-AR 标准模具用于研发。
按用户要求，商业用途需要特许权使用协议。

Specifications

	HT-AR-02A	HT-AR-02C
Optical function	AR High Performance	AR High Performance
Grating type	Hexagonal Array	Hexagonal Array
Pitch	250 nm	250 nm
Average depth	>350 nm	>350 nm
Peak-to-peak	290 nm	290 nm
Material	Nickel	Nickel
Mold thickness*	300 µm	300 µm
Expected %R PMMA**	Less than 0.2%	Less than 0.2%
Mold size*	**120 mm x 120 mm**	**250 mm x 250 mm**
Active area*	**100 mm x 100 mm**	**200 mm x 200 mm**

* Customised sizes and thicknesses upon request ** averaged visual specular single-side reflectance)

Specular Reflectance
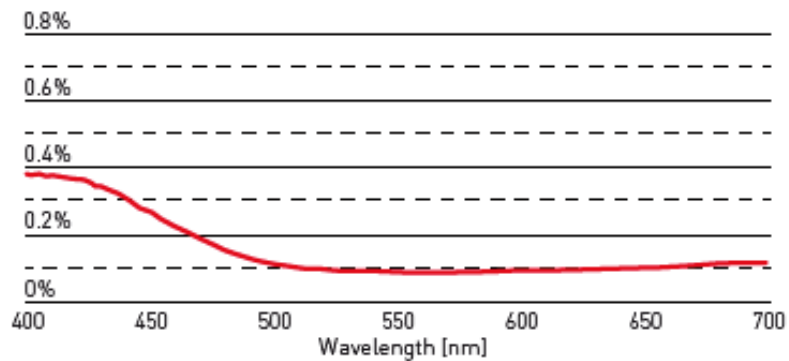
联系人：孙晓玉
Tel: +86-10-82867920/21/22-120   +86-13701029478
E-Mail: xysun@germantech.com.cn

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北京市海淀区学院路30号 科大天工大厦B座1408室www.germantech.com.cn