

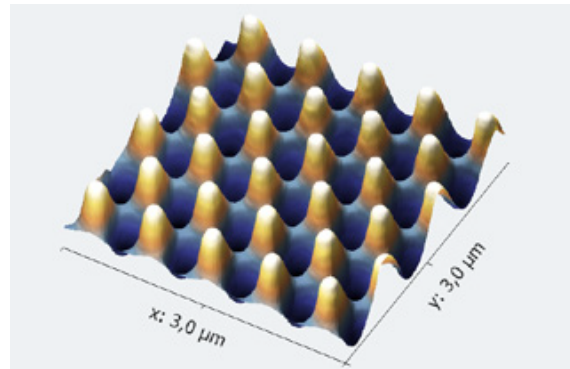
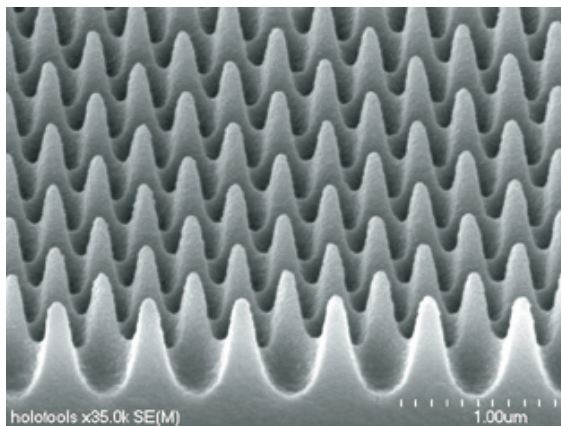
HT-NIR-02

Near Infrared Antireflection Mold

近红外减反模具

High-performance AR structures

高性能减反结构



HT-NIR-02 is an expansion of our antireflection solution portfolio towards wavelengths in the infrared. Its surface structures reduce the specular reflectivity from polymer surfaces down to an average of 0.2% in the NIR-A range. 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-NIR-02 molds have been specifically designed for infrared applications used in R&D work, as well as for product and process development. Molds are available up to a size of 100mm x 100mm.

HT-NIR-02 是我们减反解决方案产品向红外波长的扩展。其表面结构降低聚合物表面的镜面反射率在近红外光谱范围内下降到平均 0.2%。我们先进的纳米光学压印模具代表了我们的光学设计工作的成果和前沿的模具工艺发展。HT-NIR-02 模具是专为科研中的红外应用设计的，也可用于生产和工艺改进。可提供尺寸为 100 mm x 100 mm 的模具。

How HT-AR works 工作原理

Imprinted HT-AR and HT-NIR nanostructures are able to modify the optical properties of any formable material and reduce the reflection from this surface. As opposed to ARcoatings, 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. All HT-AR nanostructures make use of the bio-inspired moth-eye effect. The surface topography creates a graded index profile, which reduces the reflectance of

a surface with $n=1.5$ at a wavelength of 900nm in the near IR-A from about 4.2% down to below 0.2% reflectance in the HT-NIR-02 version.

压印后的 HT-AR 和 HT-NIR 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，它将近红外波段 900 纳米处 $n=1.5$ 的表面的反射率从约 4.2%降低到 0.2%以下。

HT-NIR-02 applications 应用

- Low-loss in- and outcoupling of NIR signals for optical fibers and other wave guides
- Wireless communication systems using NIR
- Detector devices like NIR photodiodes, photoresistors or phototransistors
- High efficiency NIR-LED
- Optical films

- 光纤和其他波导的近红外信号的低损耗输入和输出耦合
- 使用近红外的无线通信系统
- 探测器装置，如近红外光电二极管、光敏电阻或光电晶体管
- 高效近红外发光二极管
- 光学薄膜

Users of HT-NIR-02 molds 用户

- Manufacturer of optoelectronic devices
- Film producer – for product and process development work
- R&D institutes – for research activities on micro-optical structures
- Manufacturer of optical components using NIR light

HT-AR standard molds are for use in Research & Development.

Commercial use requires a royalty agreement.

- 光电器件的制造商
- 薄膜制备者-用于产品和工艺开发工作
- 研发机构-用于微光学结构的研究活动
- 近红外光学元件制造商

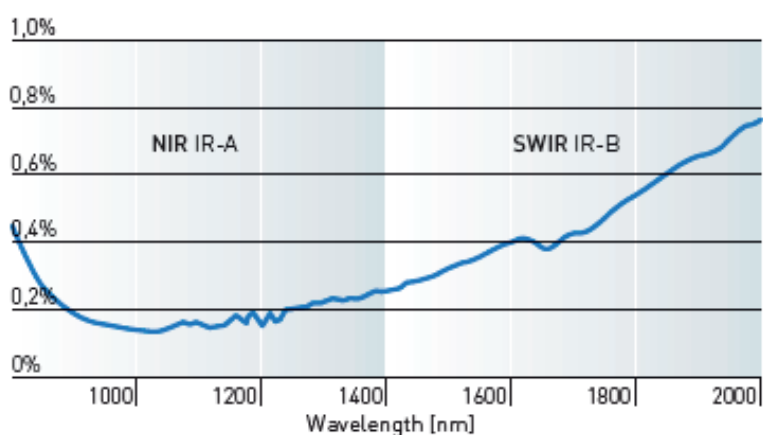
HT-AR 标准模具可用于研发。商业用途需要特许权使用协议。

Specifications

	HT-NIR-02
Optical function	Near Infrared AR High Performance
Grating type	Hexagonal Array
Pitch	500 nm
Average depth	> 700 nm
Material	Nickel
Expected %R acrylic polymer (@900nm)	Less than 0.2%
Expected %R acrylic polymer (@1500nm)	Less than 0.3%
Mold size*	100 mm x 100 mm
Active area*	80 mm x 80 mm
Mold thickness*	300 μ m

*Customised sizes and thicknesses upon request

Specular Reflectance



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