

MicroLens Array Molds

Light management using MicroLens Arrays - MLA

MicroLens arrays control the light output of lighting elements to achieve homogenisation or beam shaping. Unlike most other micro lens arrays, HT-MLAs have no dead area between the lenses. They are arranged in a honeycomb geometry with three-dimensional intersections between the single lenses. Customer specified HT-MLAs can be made in a variety of lens diameters and lens heights, and even with an elliptical light control. HT-MLA-09 series was specifically designed as a generic microlens array for R&D work, as well as for product and process development.

How HT-MLA works

MicroLens arrays are flat optical elements, that can be used to control the directional output of light sources and backlight units. The shape of HT-MLAs redirects incident light in a controlled and efficient way in order to achieve a homogenisation effect. In backlight units additionally a recycling effect is used for homogenisation. HT-MLAs can also be used for coupling out of light from LEDs / OLEDs and for coupling of solar radiation into flexible solar cells.

HT-MLA applications

- Homogenisation of light output
- Control of the angular distribution in lighting systems
- Optical films
- Multifunctional films in backlight units for flat panel display applications
- Outcoupling from light emission in LED / OLED / Laser applications
- Thin-film and organic photovoltaics

Users of HT-MLA molds

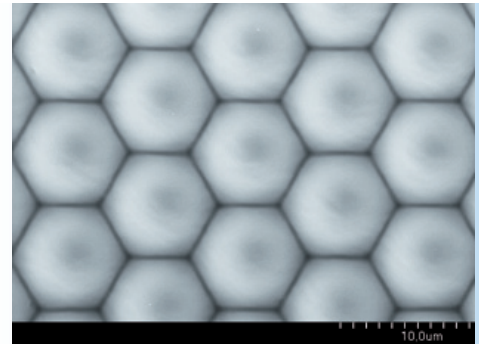
- Film manufacturers – for product and process development work
- R&D institutes – for research activities on micro-optical structures
- Equipment manufacturers for injection molding, thermal embossing and Roll-to-Roll production equipment – as a reference to demonstrate the technical capabilities and homogeneity of their production processes

HT-MLA standard molds are for use in Research & Development.
Commercial use requires a royalty agreement.

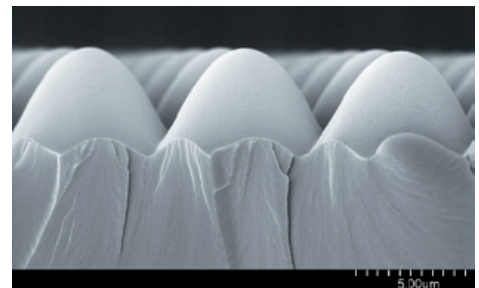
Specifications

	HT-MLA-09B	HT-MLA-09D
Structure type	Microlens Array	Microlens Array
Structure geometry	Hexagonal/Honeycomb	Hexagonal/Honeycomb
Lens diameter	9 µm	9 µm
Average lens height	5.5 µm	5.5 µm
Material	Nickel	Nickel
Mold thickness	100 µm – 300 µm	100 µm – 300 µm
Mold size	70 mm x 70 mm	120 mm x 120 mm
Active area	50 mm x 50 mm	100 mm x 100 mm

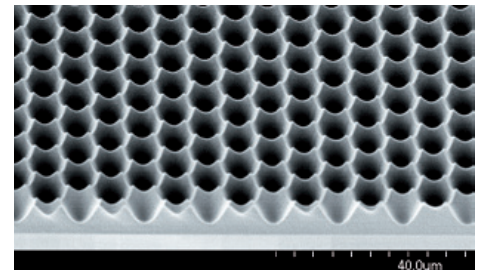
HT-MLA-09



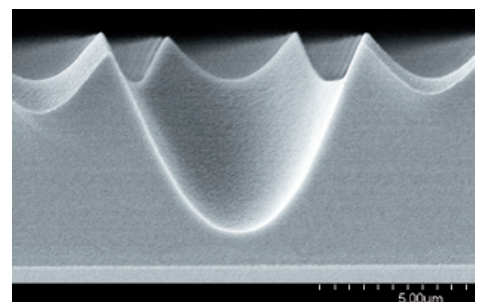
MLA Profile Shape



MLA Mold Surface



MLA Mold Cross Section



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