EVG®720

Automated UV Nanoimprint Lithography System

Introduction

EVG has consistently invented and implemented innovative features in its range of nanoimprinting tools. One of the recent developments is the EVG720 automated UV-nanoimprint lithography system.
Providing high throughput figures, the user-friendly EVG720 enables high volume mass manufacturing of optics, photonics, light emitting diodes (LED), microfluidics and other biotechnology devices, as well as advanced data storage solutions.
Scalability, unmatched throughput numbers, and at the same time maintenance friendly operation provide our customers with clear cost of ownership advantages.

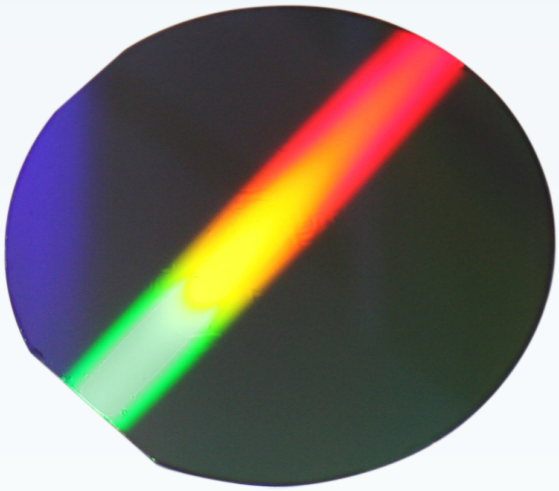
UV-NIL is a powerful next-generation lithography technique with almost unlimited structure size and geometry capabilities. Endurance and marathon test runs on the EVG720 have demonstrated its high-volume manufacturing suitability for a wide range of applications such as:

- Light Extraction
- Thin Film Solar Cell
- Biological Sensing

EVG®720 Automated UV Nanoimprint System

SmartNIL™

Providing full-field imprint lithography, the EVG720 automated UV nanoimoprint system enables throughput of more than 60 wafers per hour at lowest cost of ownership (CoO). The strongest differentiation factor in UV- nanoimprinting technology lies in its SmartNIL technology. The combination of SmartNIL and a multi-use soft-stamp technology enables unmatched throughput as well as cost of ownership advantages while maintaining scalability and maintenance friendly operation. EVG's SmartNIL redeems the long term promise of nanoimprinting being a low cost and high volume alternative lithography technology for mass manufacturing of micro- and nanoscale structures.



SmartNIL™ replicated 150mm substrate with 400nm dots

Features

- Optimized for high throughput → 60 uph
- Resolution down to 40 nm
- Integrated Stamp Manufacturing
- Inert gas printing
  - Better chemical resistance and adhesion
  - Faster cure speeds
  - Lower photo initiator levels
  - Increased production speeds
  - Reduced energy consumption and more consistent curing
- Small footprint → no additional rack required
- Integrated electrostatic discharge → reduced particle contamination
- Optical clearance → no vacuum lines visible in active imprint area
- Maintenance friendly operation → no additional tubing and plumbing
- Top side alignment
- Integrated separation of stamp and substrate → structure geometry independent
- Large area imprint → up to 150 mm square

Benefits

Most cost effective, high resolution production solution

- Enables mass manufacturing of ≥ 40 nm structures
- Integrated stamp manufacturing
- Smallest footprint for HVM manufacturing
- Scalability from R&D to Production
- Maintenance friendly (no tubings and plumbings)

Multi use polymer stamp technology

- No addition toolset required for stamp manufacturing
- Lowest cumulated processing cost

Technical Data

Parameter	EVG®720
Substrate Size	150 mm
Throughput	> 60 uph
Light Source	Broadband exposure
Automated Separation	Integrated
Inert Gas Printing	Integrated
Multi-use Polymer Stamps	> 100 imprints/ stamp
Stamp Fabrication	Integrated
Open Material Platform	Open for all commercially available imprint materials
Alignment	Optional top side alignment