MSP

Sputter solutions for high precision optical layers
THE NEW MSP
MORE PRECISION, MORE THROUGHPUT & LOWER PRODUCTION COSTS

From smart consumer devices that keep us in touch 24/7 to head up displays or GPS satellite navigation systems that keep us safe on the road, our world relies on the mass production of high precision (HP) optical coatings.

The MSP batch sputter coater family delivers new performance levels in sputter mass production with larger coating areas, higher throughputs, and higher precision over the complete coating area.
MSP MEANS MORE POSSIBILITIES

Integrated plasma source enables precleaning or new coating process options

Flexible drum carrier with usable coating area up to 2.2m²

Integrate up to 6 cathodes for more sputter material options

MORE...

SPUTTER CAPABILITY
- Up to 6 cathodes in DC / Dual Magnetron Operation
- Deposition of TCOs, dielectrics and metals

LAYERS
- Higher Stack thickness up to >20μm without compromise in stability
- Better surface qualities

PROCESS CHOICES
- Integrate ple-cleaning steps
- Add DLC or antismudge layers
- Achieve better adhesion on plastics

CONTROL
Advanced Process Control (APC) technology for:
- Shift free coatings with edge repeatabilities <0.2% in mass production

FLEXIBILITY
- Simple exchange between substrate sizes
- Up to a maximum of 560 x 380mm with better uniformity then ever

THROUGHPUT
- The MSP 1232 offers useable area of 2.2m² without compromise in optical performance
- Longer target lifetimes, quicker target changes
Twin turbo pumping configuration on chamber top and bottom for rapid pumping with easy access for maintenance.

MSP MEANS MORE PRODUCTIVITY
MSP’s combination of system architecture and cathode technologies is designed for true mass production of high precision (HP) optical stacks. Swapping between different production processes is easy, with no set up time or test runs. Elimination of internal uniformity masks means higher deposition rates, no shedding and no particles for the best cosmetics. Evatec’s production proven KHAN system and process controller gives you real time and historical trending run data from 25 user selected values for quality control.

MSP MEANS MORE UPTIME
The new MSP design means access for all control racks and maintenance via the grey room with no disruption to clean room operations. Maintenance actions themselves have been reduced to a minimum with no shields to swap out. Hinged source access means rapid target change for the sputter sources or grid changes for the plasma source.
ADVANCED PROCESS CONTROL (APC) FOR THE BEST OPTICAL LAYERS

Evatec’s proven rectangular sputter cathode technology lies at the heart of the MSP. The tunable magnet systems keep uniformity under control over the whole target life for maximum utilisation.

Advanced Process Control (APC) technologies specifically for high precision optical coatings enable your technology roadmap. Whether its developing complete new complex processes, or enhancing production yields for lower production costs, MSP with “Optics Toolbox” at its heart keeps your processes on track.

“OPTICS TOOLBOX”
Delivers fast track process development
- Integrate all steps from initial theoretical film design to final coating recipe generation
- Eliminate errors and accelerate development

BROADBAND OPTICAL MONITORING
Broadband monitoring for layer termination
- Complex stacks in UV, VIS and NIR
- Direct substrate measurement and control

IN SITU REOPTIMISATION
Automatic “tuning” of your thin film recipe during deposition
- Reduce process set up times
- Achieve narrower tolerances
- Recover from unexpected errors, e.g. power outages

PLASMA EMISSION MONITORING
Precise control of film stoichiometry for the most repeatable optical properties
- Closed loop control at high deposition rates
- Full tool integration

UNI-TUNE
Uniformity adjustment without shapers
- Achieve < ±1% uniformity over whole target life
- Simple adjustment during pumpdown
ENABLING YOUR ROADMAP IN OPTICAL COATINGS

From RGB to photopic filters, let the new MSP do the work at new levels of throughput and yield for the lowest cost of ownership in true mass production.

Key Drivers:
- High reflectivity over whole spectral range
- Cost of ownership in mass production

3nm Bandpass filter
- Accuracy and repeatability for edge tolerances < ±0.25%
- No transmission losses
- Management of stack thicknesses >100 layers

Multibandpass
- Accuracy and repeatability of all edges <± 0.25%
- Cost of ownership in mass production

Enhanced Aluminium Mirror
- Deposition on plastics
- Cost of ownership in mass production

Wide bandpass filter
- Steep filter edges
- Management of stack thicknesses >200 layers
The MSP 1232 tool provides precision in edge position over the whole coating drum.

<table>
<thead>
<tr>
<th>Substrate size</th>
<th>MSP 1232</th>
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<tbody>
<tr>
<td>4” / 100mm</td>
<td>160</td>
</tr>
<tr>
<td>6” / 150mm</td>
<td>66</td>
</tr>
<tr>
<td>8” / 200mm</td>
<td>32</td>
</tr>
<tr>
<td>10” / 250mm</td>
<td>24</td>
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<tr>
<td>12” / 300mm</td>
<td>10</td>
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<td>110 x 180mm</td>
<td>90</td>
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<tr>
<td>136 x 180mm</td>
<td>72</td>
</tr>
<tr>
<td>136 x 270mm</td>
<td>48</td>
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ABOUT EVATEC
Evatec offers complete solutions for thin film deposition and etch in the optical and semiconductor markets. Evatec engineers are able to offer practical production advice from R&D to prototyping and mass production. We recognize that no single technique offers the answer to all problems.

With a technology portfolio including standard and enhanced evaporation as well as sputter, we are ready to offer sampling services and custom engineering to meet our customers individual needs.

We provide sales and service through our global network of local offices. For more information visit us at www.evatecnet.com or contact our head office.

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