MSP
HIGH THROUGHPUT BATCH SPUTTER TOOL FOR PRECISION OPTICAL COATINGS
MSP

ENABLE YOUR TECHNOLOGY ROADMAP IN HIGH PRECISION SPUTTERED OPTICAL COATINGS

The MSP coater series delivers high precision, optical coatings on glass or polymeric substrates. Evatec “enhanced sputter technology” combined with new intelligent techniques for optical layer control enable high rate deposition, durable, shift free coatings and uniformities <±1% over the largest areas. Achieve thicker layers, better surface quality and tighter process tolerances than ever before. From smart consumer devices to the next generation automotive electronics, the MSP brings you new levels of precision and repeatability for true mass production.

Choose MSP for

- Combinations of sputter and ion sources opening up new possibilities in optical layer production
- Deposition of high precision dielectrics, TCOs and metal layers
- Simple adaptation between substrate sizes all the way up to 560 x 310mm without compromise in optical film quality
- Direct deposition of fully oxidised films
- Low processing temperatures for polymeric or cemented substrates
- Temperature shift free coatings with edge repeatabilities <0.2% in mass production

INCREASING PRODUCTION OUTPUT & LOWERING YOUR COSTS

MSP’s combination of system architecture, cathode and process control technologies is designed for mass production. Swapping between different production processes is easy, with no set up time or test runs. Eliminating internal uniformity masks means no shedding and no particles, simplified maintenance and increased throughout, while Evatec’s Khan system and process controller gives you real time and historical trending run data from 25 user selected values for quality control.

Typical multiple band pass filter application

Tuneable uniformity technology delivers uniformity over very large areas over extended target lifetimes with simple hinged cathode access for rapid tuning and target exchange

Flexible substrate handling around a central drum with easy exchange segments means rapid swap of substrate size and shape

Production Proven Khan system controller integrates all aspect of platform, pumping, source and process control seamlessly for 24/7 operation
ADVANCED PROCESS CONTROL (APC) FOR THE BEST OPTICAL LAYERS

Evatec’s APC technologies 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 increases your yields for even the most complex layers
— Reduce process set up times
— Achieve narrower process tolerances
— Recover from unexpected production errors eg 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

A typical triple bandpass filter application

Process repeatability: $T_{\text{avg}} \pm 0.18\%$ overall, even with nonconsecutive runs.
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TYPICAL LAYOUT

System dimension details on request

Door assembly relocates from position 1 to 2 for easy access during loading and maintenance operation

CAPACITY

Choose from the MSP 1001 or 1501 tools for the same precision in edge position over the whole coating drum

<table>
<thead>
<tr>
<th>Substrate size</th>
<th>MSP 1001 (usable area 1m²)</th>
<th>MSP1501 (usable area 1.5m²)</th>
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</thead>
<tbody>
<tr>
<td>100mm diameter</td>
<td>72</td>
<td>120</td>
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<tr>
<td>150mm diameter</td>
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<tr>
<td>Sheet 560 x 310mm</td>
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