Highest Storage Density

The RS is a family of automated standalone reticle stockers which support SMIF I/O’s for manual pod handling by operators. In addition, an OHT interface and light curtains can be added to enable the system to be integrated in fully automated litho bays. Alternatively, 6” Nikon / Canon I/O’s can replace the SMIF I/O’s for manual handling. The RS products are available in different sizes, to enable the maximum density for the given fab ceiling height.

Advanced Reticle Protection

The reticles are safely stored within Tec-Cell modules (TCM). These modules are designed to store each reticle within a controlled ISO Class 1 micro environment, safe from ESD effects. To protect the reticle from chemical contamination, the Tec-Cell module can be purged by nitrogen (N₂) or extreme clean dry air (xCDA).

Progressive Reticle Management

The RS provides high throughput capability and quick reticle access while ensuring reliable and safe handling. Optional features for particle detection and removal maintain cleanliness and increase reticle reliability.
RS 1700 / 1900 / 2300 / 2900 High Density Reticle Stockers

**Tool Overview**

- **FFU Fan Filter Unit**
- **Carousel inside**
- **Machine frame and cover**
- **Inside: reticle handler, PDS, RRU, Reticle ID reader**
- **GUI**
- **Manual load ports RS P150**

**Model Overview**

<table>
<thead>
<tr>
<th>Model</th>
<th>TCMs in carousel</th>
<th>Reticles max. storage capacity</th>
<th>Tool height with FFU</th>
<th>Tool height with AMC filter on FFU</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS1700 w/slim FFU</td>
<td>144</td>
<td>1728</td>
<td>2.73m</td>
<td>2.9m</td>
</tr>
<tr>
<td>RS1900 w/slim FFU</td>
<td>160</td>
<td>1920</td>
<td>3.1m  2.97m</td>
<td>3.3m  3.14m</td>
</tr>
<tr>
<td>RS2300 w/slim FFU</td>
<td>192</td>
<td>2304</td>
<td>3.57m  3.44m</td>
<td>3.77m  3.61m</td>
</tr>
<tr>
<td>RS2900</td>
<td>240</td>
<td>2880</td>
<td>4.28m</td>
<td>4.42m</td>
</tr>
</tbody>
</table>
## Options

| Manual load ports for cassettes (instead of RSP150) | Cassette I/O manually operated  
| Device to insert the cassette and clamp it  
| Sensing unit to detect the cassette presence and reticle presence in cassette  
| Cassette opening mechanism  
| 6" Canon or Nikon cassette I/O stations are available |
|---|---|
| AMHS for RSP150 load ports | SEMI84 compliant optical I/O communication interface between tool load port RSP150/ MRSP150 and OHT system.  
| To avoid collision of OHT and manual intervention (with E84) safety light curtains are required. |
| Particle Detection System (PDS) | To automatically inspect particles on reticles, glass and pellicle side  
| Detectability of particles: ≥ 10 µm (Effective Sphere Diameter)  
| Repeatability  
| Particles 10...20 µm ≥ 90% of particle count  
| Particles > 20 µm ≥ 98% of particle count  
| Auto-focus system for different pellicle heights of 2 to 8mm |
| Air Knife | Particle blow-off on the fly with nozzles on glass and pellicle sides at the ID reading station / handover.  
| An optional second air knife set is located between the handover and the PDS. This enables a faster cleaning process in the event a reticle is rejected at PDS due to particles. |
| Reticle Rotary Unit (RRU) | Rotation table to orient the reticle by 180° for different steppers.  
| Reticle presence sensors |
| AMC filtering of handling area | Optional AMC filter package to add on the FFU  
| Absorbs acids, bases and organic compounds |
| AMC filtering of reticle storage modules | AMC filter package on the purge inlet  
| Absorbs acids, bases and organic compounds |
| **Gas purifier** | • Absorbs acids, bases, organic compounds and $\text{H}_2\text{O}$  
• Ensure quality of xCDA  
• Optional break through sensor to detect filter life time |
| **SECS/GEM interface** | • Host communication software via HSMS interface |
| **Label Printer** | • Direct thermal transfer label printer (Zebra SL105 plus)  
• Prints 76mm/3" per second with a resolution of min. 300 dpi (12 dots/mm)  
• Prints clean room suitable labels which easily adhere to the reticle carriers and can be easily removed with gloves.  
• Prints Code39, Interleaved 2 of 5, Code128, EAN-8, EAN-13, EAN 2 & 5, Code93, DataMatrix, |
| **Hand held scanner** | • Scanner linked to the keyboard to log on to the system and to read in reticle ID if required |
| **Ionization for incoming reticles** | • Corona discharge ionization using xCDA mounted at opener for technology nodes greater than 100 nm  
• Additional shielding to allow use of this system for technology nodes greater than 30 nm  
• Alternative photon ionizer for technology nodes greater than 10 nm |
Layout:

1. Exhaust box can be mounted under raised floor.

Note: If local space standards and guidelines require larger maintenance areas for safety purposes, these should be applied.
For more information, please contact your local Brooks Automation sales representative or visit www.brooks.com.