Applications

RTA (Rapid Thermal Annealing)
RTO (Rapid Thermal Oxidation)
Ohmic contact annealing
Implant annealing
RTCVD of graphene and hBN
Selenization, sulfurization
Crystallization and densification

Specifications

The AS-One systems are available with two sizes of reactors to process substrates up to 100 mm (4”) or 150 mm (6”) diameter. The machine has been specially developed to meet the requirements of universities, research laboratories and small-scale production up to 10,000 wafers per year. The high reliability guarantees low cost of ownership.

Pyrometer and thermocouple temperature measurements are standard features. The fast digital PID temperature controller provides accurate and repeatable thermal control across the temperature range.

The clam shell style design of the process chamber gives full access to the bedplate and provides easy access for loading and unloading the substrates and allows practical cleaning of the chamber.

AS-One RTP - SYSTEM

100 mm (4”) and 150 mm (6”) systems
Cold wall chamber technology
Standard vacuum capability
Floor standing machine for reduced footprint
## Basic features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
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</thead>
</table>
| **Substrate size**                | Up to 100 mm diameter (4-inch) for AS-One 100  
Up to 150 mm diameter (6-inch) for AS-One 150  
Small substrates using susceptors |
| **Process chamber**               | Stainless steel cold wall chamber technology                             |
| **Temperature range**             | AS-One 100 (AS-One 150)  
Standard version: up to 1250°C (1200°C)  
High temperature version: up to 1450°C (1300°C) |
| **Temperature control**           | Thermocouple and pyrometer temperature control  
Fast digital PID / RTP temperature controller |
| **Vacuum and gas**                | Up to 5 process gas lines with digital mass flow controllers  
One purge gas line  
Vacuum valve and vacuum gauge |
| **Control**                       | Full PC control, up to 100 steps per recipe  
Human interface designed in respect of SEMI E95-0200  
Full data logging and process historicals |

## Optional features

Graphite and silicon carbide coated susceptors  
Rough vacuum pump and turbo pump, automatic pressure control with throttle valve  
Fast cooling system, Selenization kits

## Customer support

Outstanding customer support for hardware, software and process  
Efficient remote support using software diagnostic capabilities  
High expertise in RTP processes of our process engineers  
Capability to support customer for process optimization

## Physical specifications

### Facilities

- **Voltage:** 3x400V+N+Gr / 3x220V+Gr  
- **Power:** 30 kW (34 kW)  
- **Water:** 2 to 4 bars, pressure drop 1 bar, 10 l/mn (12 l/mn)  
- **Compressed air:** 6 bars (valve actuation)  
- **Process gas fittings:** double ferrule ¼” or VCR ¼” (option)

### Dimensions and weight

<table>
<thead>
<tr>
<th>Feature</th>
<th>AS-One 100</th>
<th>AS-One 150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>530 mm</td>
<td>530 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>800 mm</td>
<td>800 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1,425 mm</td>
<td>1,425 mm</td>
</tr>
<tr>
<td>Mass</td>
<td>194 kg</td>
<td>206 kg</td>
</tr>
<tr>
<td></td>
<td>21.0”</td>
<td>21.0”</td>
</tr>
<tr>
<td></td>
<td>31.5”</td>
<td>31.5”</td>
</tr>
<tr>
<td></td>
<td>56.1”</td>
<td>56.1”</td>
</tr>
<tr>
<td></td>
<td>428 lbs</td>
<td>455 lbs</td>
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