ArF Immersion Scanner

NSR-S635E

Proven Solutions Through Evolution
Industry-leading ArF Immersion Scanner for High-volume Manufacture of Devices at the 5 nm Process Node Improves Overlay Accuracy and Throughput

The NSR-S635E ArF immersion scanner with integrated inline Alignment Station (iAS) developed for high-volume 5 nm node application manufacturing.

Adopting the Streamlining platform efficiency, the NSR-S635E delivers improved overlay accuracy under 2.1 nm MMO and remarkable throughput of more than 275 WPH (96 shots) simultaneously.

**Performance**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>≤ 38 nm</td>
</tr>
<tr>
<td>NA</td>
<td>1.35</td>
</tr>
<tr>
<td>Exposure light source</td>
<td>ArF excimer laser (193 nm wavelength)</td>
</tr>
<tr>
<td>Reduction ratio</td>
<td>1:4</td>
</tr>
<tr>
<td>Maximum exposure field</td>
<td>26 mm × 33 mm</td>
</tr>
<tr>
<td>Overlay</td>
<td>SMO<em>1: ≤ 1.5 nm, MMO</em>2: ≤ 2.1 nm</td>
</tr>
<tr>
<td>Throughput</td>
<td>≥ 275 wafers/hour (96 shots)</td>
</tr>
</tbody>
</table>

*1 Single Machine Overlay: machine-to-self overlay accuracy (NSR-S635E#1 to S635E#1)
*2 Mix and Match Overlay: machine-to-machine overlay accuracy (NSR-S635E#1 to S635E#2)

**Features of the inline Alignment Station (iAS)**

The alignment station performs high-speed, ultra-precise measurement of all wafers, and then corrects problematic grid errors without reducing the throughput of the lithography system. The iAS enables comprehensive, multi-point alignment for all shots on the wafer, realizing remarkable overlay improvements, as well as maximized scanner throughput.

**WARNING**

TO ENSURE CORRECT USAGE, READ MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT.

The export of this product is controlled by Japanese Foreign Exchange and Foreign Trade Law and International export control regime. It shall not be exported without authorization from the appropriate governmental authorities.

Performance and equipment are subject to change without any notice or obligation on the part of the manufacturer. Products and brand names are trademarks or registered trademarks of their respective companies. March 2019 ©2019 NIKON CORPORATION

NIKON CORPORATION
Semiconductor Lithography Business Unit
Business Planning Department
Shinagawa Intercity Tower C, 2-15-3, Konan, Minato-ku, Tokyo 108-6290, Japan
Tel: +81-3-6433-3638 Fax: +81-3-6433-3759

NIKON PRECISION INC.
1399 Shoreway Road, Belmont, CA 94002-4107, U.S.A.
Tel: +1-(650)-508-4674 Fax: +1-(650)-508-4600

NIKON PRECISION EUROPE GmbH
Robert-Bosch-Strasse 11, D-63225 Langen, Germany
Tel: +49-6103-973-0 Fax: +49-6103-973-333

NIKON PRECISION KOREA LTD.
2, Singal-dong 144beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, 16968 Korea
Tel: +82-31-288-5601 Fax: +82-31-288-5609

NIKON PRECISION TAIWAN LTD.
3F No. 28, Tai Yuen Street, Chu Pei City, Hsin Chu Hsien, Taiwan
Tel: +886-3-552-5888 Fax: +886-3-552-5858

NIKON SINGAPORE PTE LTD.
Precision Division
60 Anson Road, #09-01 Mapletree Anson, Singapore 079914
Tel: +65-6559-3618 Fax: +65-6559-3665

NIKON PRECISION SHANGHAI CO., LTD.
RM. 601, Xin Jin Qiao Tower, No. 28 Xin Jin Qiao Road, Pudong New District, Shanghai 201206, China
Tel: +86-21-5899-0266 Fax: +86-21-5899-1660

http://www.nikon.co.jp/pec