



ArF Immersion Scanner

NSR-S622D

Proven Solutions Through Evolution



Ultra-high throughput with enhanced overlay accuracy

The NSR-S622D ArF immersion scanner was developed for high-volume multiple patterning applications at the sub-20 nm generation through further enhancements to the accuracy and productivity of the proven *Streamalign* Platform. The S622D builds upon S621D *Streamalign* technology, and delivers crucial enhancements to mix-and-match overlay (MMO) through improvements in lens performance and the autofocus mechanism. The S622D delivers ultra-high productivity with throughput greater than 200 wafers per hour and MMO that is 3.5 nm or less, to support chip makers' cutting-edge production lines.

NSR-S622D

Performance

Resolution	≤ 38 nm
NA	1.35
Exposure light source	ArF excimer laser (193 nm wavelength)
Reduction ratio	1:4
Maximum exposure field	26 mm × 33 mm
Overlay	≤ 2 nm (SMO ^{*1}), ≤ 3.5 nm (MMO ^{*2})
Throughput	≥ 200 wafers/hour (300 mm wafer, 125 shots)

*1 Single machine overlay: machine-to-self overlay accuracy (NSR-S622D#1 to S622D#1)

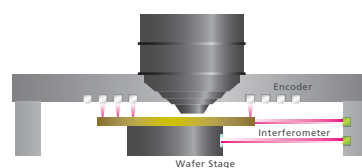
*2 Mix and match overlay: machine-to-machine overlay accuracy (NSR-S622D#1 to NSR-S622D#2)

Main Characteristics of the *Streamalign* Platform

• Bird's Eye Control

Enabling superior yield

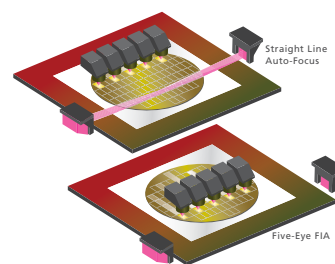
- Hybrid encoder/interferometer system delivers optimal stage performance.
- Dramatically improves accuracy and stability.
- Provides superior focus control.
- Overlay capabilities of 2 nm or less



• Stream Alignment

Enabling optimal affordability

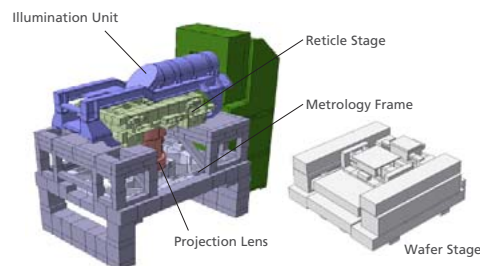
- Straight Line Auto-Focus generates dense map of the wafer surface to enhance focus control (using a wide AF beam span).
- Enables increased alignment sites with minimal productivity impact using Five-Eye FIA.
- Greatly reduces wafer overhead time.
- Throughput capabilities of 200 WPH or more



• Modular² Structure

Enabling rapid production ramps

- Modular design enables efficient installations and simplifies maintenance.
- Provides optimal uptime with modular design and replacement of individual components.
- Extendible platform enables multigenerational use.



CLASS 1 LASER PRODUCT



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. April 2013
©2013 NIKON CORPORATION

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

NIKON CORPORATION

Precision Equipment Company

Planning Headquarters

Business Planning Department

Shin-Yurakucho Bldg., 12-1, Yurakucho 1-chome, Chiyoda-ku, Tokyo 100-8331, Japan

Tel: +81-3-3216-1344 Fax: +81-3-3216-1059

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.

17-24 Singal-Dong, Giheung-Gu, Yongin-Si, Gyeonggi-Do, Korea

Tel: +82-31-288-5601 Fax: +82-31-288-5609

NIKON PRECISION TAIWAN LTD.

3F-1, 2, 3, 5 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

29 Woodlands Industrial Park E1, Northtech Lobby 3 #4-17, Singapore 757716

Tel: +65-6367-4020 Fax: +65-6367-4021

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

ISO 9001
BUREAU VERITAS
Certification



This product was developed and manufactured in the factory certified under ISO 9001.