



Alignment Station

# Litho Booster



# Pre-exposure, high-speed grid distortion measurement for all wafers

## Unprecedented accuracy with feedforward overlay correction

Litho Booster is an advanced Alignment Station that leverages proprietary Nikon technologies developed for semiconductor lithography systems. Absolute grid distortion values are measured quickly with ultra-high precision for all wafers prior to exposure. Correction values are then fed forward to the lithography system to greatly improve overlay accuracy without reducing throughput, contributing to enhanced yield and optimized equipment investments.

## Alignment Station **Litho Booster**

There are many types of distortion that can occur at the shot, wafer, lot, and layer level that all have significant adverse effects on overlay performance. This necessitates the ability to detect such errors in advance and compensate for them. Nikon developed the advanced inline Alignment Station (iAS), as a state-of-the-art measurement and correction module. 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. To make this ground-breaking iAS technology scalable and flexible for diverse manufacturing environments, Nikon transformed the iAS module into a standalone, independent alignment unit called Litho Booster. It combines innovative technologies to dramatically improve overlay accuracy. Litho Booster also provides the potential to augment and extend the capabilities of existing equipment, and push semiconductor processing to new limits.

### Key Features

#### • Grid measurement of all wafers prior to exposure

Absolute grid distortion values for all wafers are measured quickly with ultra-high precision prior to exposure. Litho Booster enables unprecedented overlay accuracy by feeding forward correction values for each wafer and every shot to the lithography system.

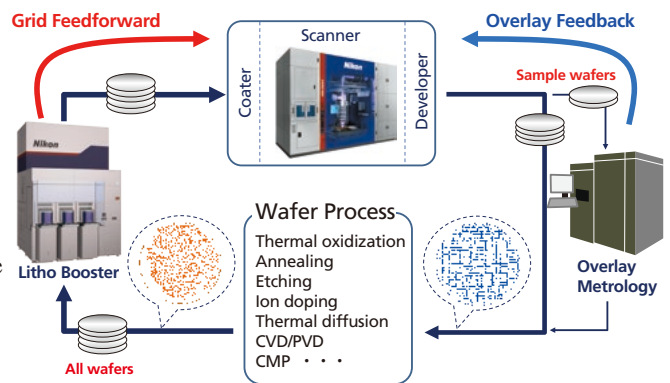
#### • Scalable platform solution with extensive development potential

Litho Booster is able to incorporate new hardware and software solutions. In addition to grid measurement capabilities, it can also integrate other hardware components and software functionalities for measurement and correction of a variety of processing errors.

Litho Booster allows the use of third-party applications and software, as well as Nikon software, to provide an optimal open platform solution for customers.

#### • Highly flexible connectivity

Litho Booster can be utilized with Nikon immersion and non-immersion scanners. Existing lithography systems can be optimized and their performance enhanced using feedforward Litho Booster measurement results and correction values.



**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.

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