

FPA-6300ES6a DUV Scanner for Logic & Memory Applications



High-Resolution, High-Productivity KrF Scanner for 200 & 300 mm Wafer Fabrication

FPA-6300ES6a DUV Scanners offer scalability and a variety of options supporting leading-edge and next-generation semiconductor manufacturing.

The FPA-6300ES6a is an optimized lithography solution that is designed to balance high throughput, high alignment accuracy and fine resolution for 200 and 300 mm wafer processes.

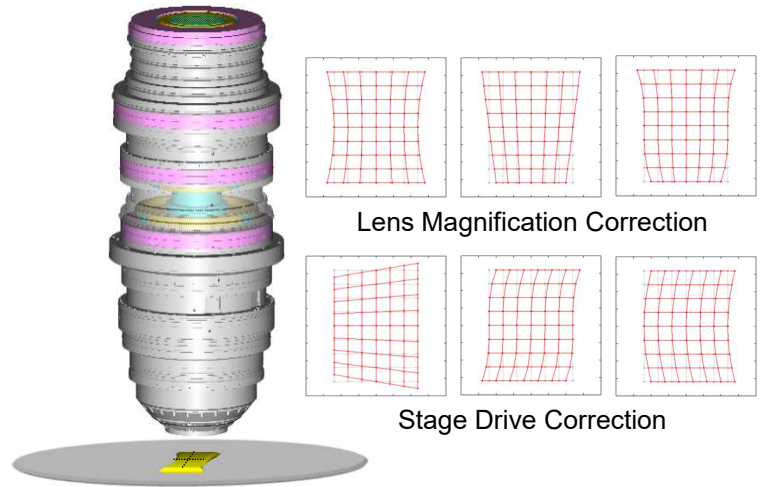
FPA-6300ES6a Scanners provide Cost-of-Ownership (CoO) by applying upgrades to the reliable and extendable single stage 6300 platform.

FPA-6300ES6a Features

- Resolution ≤ 100 nm (≤ 90 nm @ 2/3 Annular)
- High-Throughput Mode Option
 - ≥ 260 wafers per hour* for 200 or 300 mm wafers
- High-Overlay Mode Option
 - Mix-&-Match Overlay ≤ 5 nm*
 - Single Machine Overlay ≤ 3 nm*
- Canon Built-In Metrology (CANOMAP)

Key Options

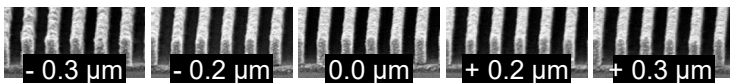
- Wide-Band Off-Axis Scope (WB-OAS)
- Shot-Shape High-Order Correction (SSHOC)
- Each-Shot High-Order Correction (ESHOC)
- Focus Accuracy Improvement (F-MAP)
- Advanced Flexible Illumination System (AFIS)
- 200, 300 mm wafer handling
- Pellicle Particle Checker
- GEM-compliant Online Software



Shot-Shape High-Order Correction (SSHOC) option can improve overlay matching by actively controlling of lens magnification and stage position during scanning

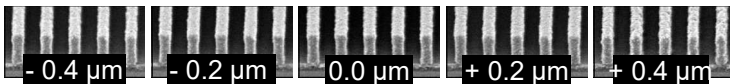
80 nm L/S @ 1:1.5 Pitch

NA 0.86, 30° dipole, outer- σ 0.90,
6% halftone mask



90 nm L/S @ 1:1 Pitch

NA 0.86, 3/4 annular, outer- σ 0.93,
Attenuated phase shift mask



FPA-6300ES6a provides a large depth of focus for processes requiring resolution as fine as 90 nm

FPA-6300ES6a Specifications

Technology	KrF Scanner (248 nm)
Resolution	≤ 100 nm (≤ 90 nm @ 2/3 Annular)
Throughput	≥ 260 wph*
Single Machine Overlay	$\leq 3^*$ nm
Mix-&-Match Overlay	$\leq 5^*$ nm
Numerical Aperture	0.50 – 0.86
Reduction Ratio	4:1
Exposure Field	26 x 33 mm
Substrate Size Options*	200, 300 mm
Dimensions (W x D x H)	2.3 x 5.2 x 2.9 m

* = Options Required

Canon Lithography System Lineup

Canon Photolithography equipment is designed to help provide exceptional quality, performance, and cost of ownership for your wafer imaging applications.

Canon FPA (Fine Pattern Aligner) Series Nanoimprint, i-line and Deep Ultraviolet (DUV) lithography systems are used in the fabrication and heterogeneous integration of high-tech devices including integrated circuits, hard disk read/write heads, microelectromechanical systems (MEMS) devices, image sensors, displays, power devices and light emitting diodes (LED).

Litho Product	Technology	Resolution	Lens Reduction Field Size [mm]	Substrate Options [mm]
FPA-6300ES6a	KrF (248 nm) Scanner	≤ 100 nm (≤ 90 nm 2/3 Ann)	4:1 26 x 33	200 300
FPA-6300ESW	KrF (248 nm) Scanner	≤ 130 nm	3.125:1 33 x 42.2	200 300
FPA-5550iZ2	i-line (365 nm) Stepper	≤ 350 nm (≤ 280 nm 2/3 Ann)	4:1 26 x 33	200 300
FPA-5520iV LF2	i-line (365 nm) Stepper	≤ 0.8 μm	2:1 52 x 68	300
FPA-5510iX	i-line (365 nm) Stepper	≤ 0.5 μm	2:1 50 x 50	300
FPA-8000iW	i-line (365 nm) Panel Stepper	≤ 0.8 μm	2:1 52 x 68	515 x 515 (panels)
FPA-3030EX6	KrF (248 nm) Stepper	≤ 150 nm	5:1 22 x 22	50, 75, 100, 125, 150, 200
FPA-3030i5a	i-line (365 nm) Stepper	≤ 350 nm	5:1 22 x 22	50, 75, 100, 125, 150, 200
FPA-3030iWa	i-line (365 nm) Stepper	≤ 0.8 μm	2:1 52 x 52	50, 75, 100, 125, 150, 200
FPA-1200NZ2C	Nanoimprint Lithography	≤ 15 nm	1:1 26 x 33	200 300
MS-001	Wafer Overlay Metrology System	----	----	300

All options may not be available on all models. Contact Canon for details
* = Options Required

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