

FPA-6300ES6a KrF Scanner for Logic & Memory Applications



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

The FPA-6300ES6a [ES6a] is a DUV Scanner that offers scalability to support next-generation semiconductor manufacturing. The ES6a is an all-in-one solution providing high throughput, high alignment accuracy and fine resolution for both 200 and 300 mm wafer processes.

ES6a Scanners help reduce total cost of ownership by continuously upgrading the reliable and extendable single stage 6300 platform.

FPA-6300ES6a FEATURES

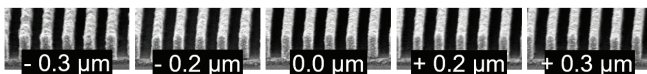
- Resolution ≤ 90 nm (2/3 Ann.)
- High-Throughput Mode*
- High-Overlay Mode*
- Advanced stage, alignment scope and precise temperature help control improve overlay accuracy
- Canon Built-In Metrology (CANOMAP)

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

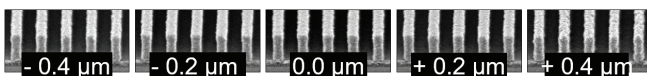
80 nm L/S @ 1:1.5 Pitch

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

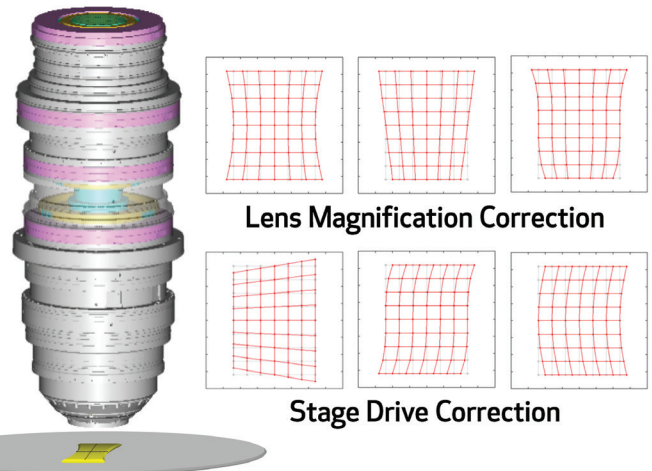


90 nm L/S @ 1:1 Pitch

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



The Shot-Shape High-Order Correction (SSHOC) option can improve overlay matching by actively controlling lens magnification and stage position during scan exposure.

SPECIFICATIONS

Technology	KrF Scanner (248 nm)
Resolution	≤ 90 nm (2/3 Ann.)
Overlay	≤ 5 nm*
Numerical Aperture	0.50 – 0.86
Lens 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

* = Option Required

Canon Lithography Systems

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).

LITHOGRAPHY PRODUCTS & TARGET APPLICATIONS

Lithography Products	Technology	Resolution	Lens Red. Field Size [mm]	Substrate Options [mm]	MRAM	Logic & MPU/GPU	Medical	HDD & SCM	Power & Automotive	Waveguide & RF	Advanced Packaging	Optics & Photonics	MEMS, Sensors & IoT	PC & Mobile	5G & Data Centers	Wearables	AR/VR & Display	LED, MicroLED	Artificial Intelligence
FPA-1200NZ2C	Nanoimprint Lithography	≤15 nm	1:1 26 x 33	300	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FPA-8000iW	i-line (365 nm) Stepper	≤ 0.8 μm	2:1 55 x 55	510 x 515			✓				✓	✓	✓	✓	✓	✓	✓	✓	✓
FPA-3030i6	i-line (365 nm) Stepper	≤ 350 nm	5:1 22 x 22	≤ 200			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
FPA-3030iWa	i-line (365 nm) Stepper	≤ 0.8 μm	2:1 52 x 52	≤ 200			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FPA-3030EX6	KrF (248 nm) Stepper	≤ 150 nm	5:1 22 x 22	≤ 200			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
FPA-5520iV LF2	i-line (365 nm) Stepper	≤ 0.8 μm	2:1 54 x 68	300	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FPA-5550iZ2	i-line (365 nm) Stepper	≤ 350 nm ≤ 280 nm (2/3 Ann.)	4:1 26 x 33	200 300	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FPA-5510iX	i-line (365 nm) Stepper	≤ 0.5 μm	2:1 50 x 50	300			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
MS-001	Overlay Metrology	---	---	300	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Compatible with application

All options may not be available on all models. Contact Canon for details.



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