

FPA-5550iZ2 i-line Stepper for Logic, Memory & Photonics Applications



High-Productivity and High-Overlay Accuracy i-line Stepper for Low-CoO Fabrication

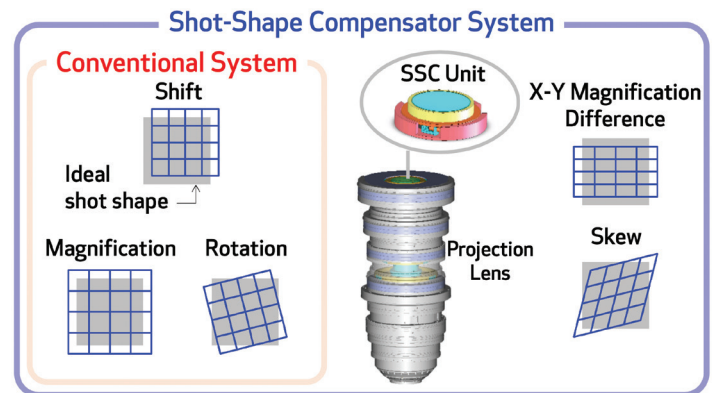
Memory, advanced packaging, CMOS Image Sensor (CIS) fabrication and support the growing demand for Internet-of-Things (IoT) device fabrication on both 200 and 300 mm wafers. FPA-5550iZ2 Steppers offers a balance between productivity and alignment accuracy. Throughput upgrade options include calibration, alignment, exposure & wafer transfer sequence optimization, and reduced wafer lot exchange times. Overlay matching can also be improved through shot-specific intra-field compensation options.

FPA-5550iZ2 FEATURES

- Shot-Shape Compensator (SSC) Unit improves overlay matching accuracy by adjusting intra-field magnification and skew of each shot
- Canon Built-In Metrology (CANOMAP)

KEY OPTIONS

- Off-Axis Scope 2 (OAS2) Infrared (IR) Alignment scope for Color Filter (CF) & Backside Illuminated (BSI) applications
- Oxygen Concentration Control System (OCCS)
- Reticle Thermal Expansion Compensation (RTEC)
- Die-by-Die Overlay Compensation (EAGA)
- 200, 300 mm wafer handling
- Pellicle Particle Checker
- GEM-compliant online software



Shot-Shape Compensator (SSC) Unit compensates for intra-field X & Y Mag and Skew differences

	No Compensation	w/ EAGA Compensation	w/EAGA & SSC Compensation
Overlay Error 3σ [nm]			
X	99.1	37.0	22.7
Y	93.4	42.5	19.5

FPA-5550iZ2 steppers can reduce overlay error using optional shot-by-shot overlay (EAGA) and SSC options

SPECIFICATIONS

Technology	i-line Stepper (365 nm)
Resolution	≤ 280 nm (2/3 Ann.)
Single Machine Overlay	≤ 18 nm (Front) ≤ 150 nm (Back, TSA)*
Numerical Aperture	0.45 – 0.57
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 3.66 x 3.0 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.



CANON U.S.A., INC.
Industrial Products Division
 3300 North 1st Street • San Jose, CA 95134
 Email: semi-info@cusa.canon.com

usa.canon.com/semiconductor (Lithography & ANELVA Products)
usa.canon.com/industrial (Optoelectronics & Motion Control Products)

Canon is registered trademark of Canon Inc. in the United States, and may also be registered trademarks or trademarks in other countries. ANELVA is a registered trademark of Canon Anelva Corporation in the United States, and may also be a registered trademark or trademark in other countries. All other referenced product names and marks are trademarks of their respective owners. **Specifications and availability subject to change.** Not responsible for typographical errors.
 ©2024 Canon U.S.A., Inc. All rights reserved.