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

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

FPA-5550iZ2 i-line Steppers offer a low cost Mix-&-Match lithography solution for Logic, 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.

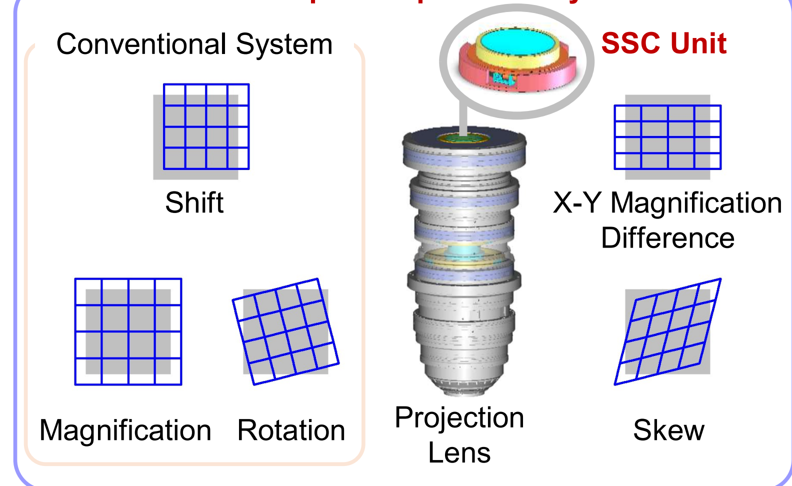
FPA-5550iZ2 Steppers offers a balance between productivity and alignment accuracy. Throughput upgrade options include calibration, alignment, exposure & wafer transfer sequence optimization, and reduced wafer lot exchange times. Overlay matching can also be improved through shot-specific intra-field compensation options.

FPA-5550iZ2 Features

- Resolution ≤ 350 nm
- Throughput ≥ 230 wafers per hour* for 200 or
- 300 mm wafers
- 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 Comp. (RTEC)
- Die-by-Die Overlay Compensation (EAGA)
- 200, 300 mm wafer handling
- Pellicle Particle Checker
- PC Remote Console
- GEM-compliant Online Software



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

	w/out Compensation	EAGA	EAGA with SSC
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

FPA-5550iZ2 Specifications	
Technology	i-line Stepper (365 nm)
Resolution	≤ 350 nm (≤ 280 nm @ 2/3 Annular)
Throughput	≥ 230 wph
Single Machine Overlay	≤ 18 nm (Front)
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

* = 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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