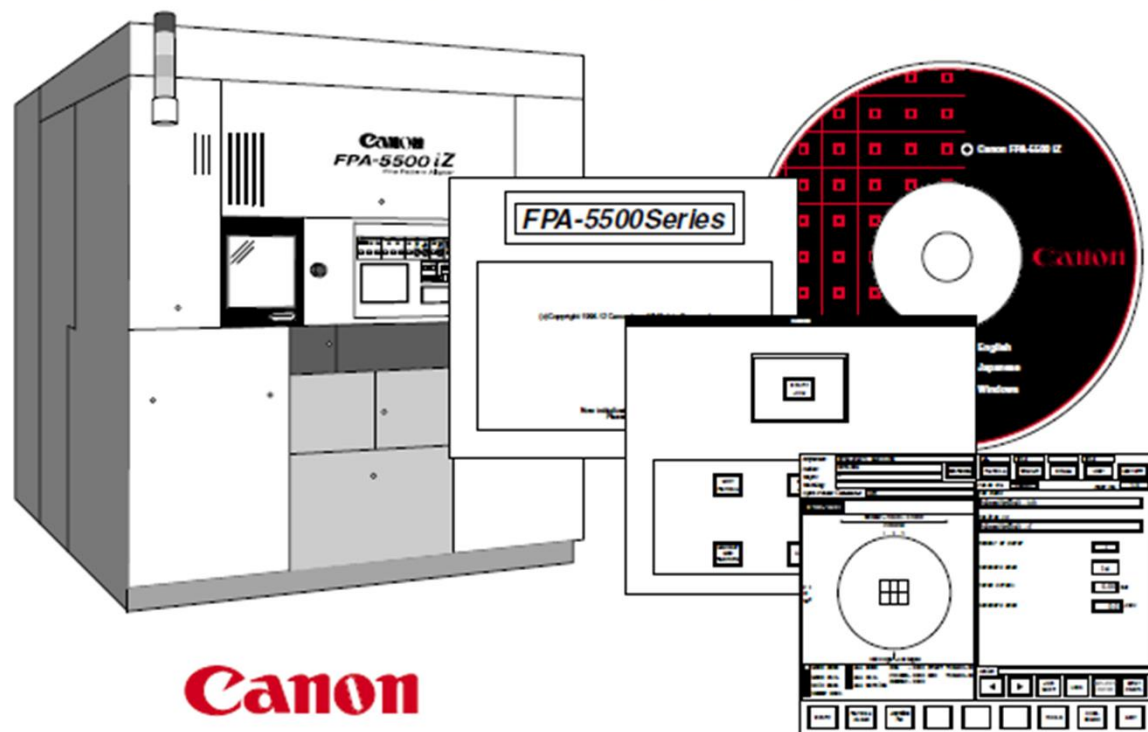


# ***FPA-5500 iZ***

Fine Pattern Aligner

## **OPERATION MANUAL**



CANON 5500iza

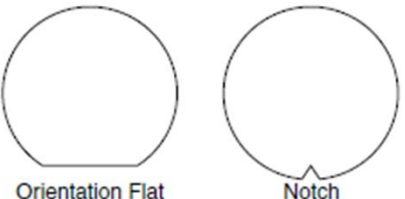




## 2.2 Performance Specifications

Items	Specification	Remarks
Exposure	<ul style="list-style-type: none"> <li>•Attention Line width: 0.35[<math>\mu</math>m] (NA 0.57, <math>\sigma</math> 0.70=Normal illumination)</li> <li>•Depth Of Focus (DOF)/CD: <math>R \geq 1.2</math>[<math>\mu</math>m] (Normal illumination)</li> <li>•Image Field Deviation (IMF): <math>R \leq 0.30</math>[<math>\mu</math>m] (Normal illumination)</li> <li>•HV Difference: <math>R \leq 0.22</math>[<math>\mu</math>m] (Normal illumination)</li> <li>•Coma (left-right line width difference): <math>R \leq 0.30</math>[nm] (Normal illumination)</li> <li>•CD Uniformity: <math>R \leq 30</math>[nm] (Normal illumination)</li> <li>•Distortion: Within +/-30[nm] (Normal illumination)</li> </ul>	0.35[ $\mu$ m] L&S attention 0.35[ $\mu$ m] L&S attention, T/B focus 0.35[ $\mu$ m] L&S attention 0.35[ $\mu$ m] L&S attention 0.35[ $\mu$ m] L&S attention
Illumination System	<ul style="list-style-type: none"> <li>•Image-plane Illumination Intensity: 14000[W/m<sup>2</sup>] or more (Normal illumination)</li> <li>•Image-plane Illumination Uniformity: Within +/-1.0[%] (Normal illumination)</li> <li>•Light Integration Control Accuracy: Within +/-1.0[%] (Normal illumination) (Overall accuracy = repeatability + linearity)</li> <li>•Masking Accuracy: +/-100[<math>\mu</math>m]</li> </ul>	On wafer
Alignment	<ul style="list-style-type: none"> <li>•Reticle Rotation Accuracy: Within +/-0.5[ppm]</li> <li>•Reticle Rotation Repeatability: <math>R \leq 1.0</math>[ppm]</li> <li>•Overlay Accuracy: <math>B^2</math>[m]+3 <math>\sigma \leq 40</math>[nm] He-Ne[m]+3 <math>\sigma \leq 40</math>[nm]</li> </ul>	On wafer On wafer Off axis auto alignment
Auto Focus	•Driving Measurement Repeatability: 3 $\sigma \leq 100$ [nm]	
Leveling	•Driving Measurement Repeatability: 3 $\sigma \leq 7$ [ppm]	
Wafer XY Stage	•Step accuracy: 3 $\sigma \leq 25$ [nm]	Adjacent shot overlap exposure
Prealignment	<ul style="list-style-type: none"> <li>•Mechanical Prealignment Accuracy: 3 <math>\sigma \leq 30</math>[<math>\mu</math>m] (X,Y)</li> <li>•TV Prealignment Accuracy: <math>R &lt; 2.0</math>[<math>\mu</math>m]</li> </ul>	
Throughput	<ul style="list-style-type: none"> <li>•Wafer Process Resist Sensitivity 1000[J/m<sup>2</sup>] or so: Illumination Mode (NA 0.57, <math>\sigma</math> 0.70) <math>\phi 12</math>[inch] Wafer Feeding Unit - L, R 100 wafers or more <math>\phi 8</math>[inch] Wafer Feeding Unit - L, R 160 wafers or more</li> </ul>	Off axis wafer alignment Measurement mode: AGA (B <sup>2</sup> ) $\phi 12$ [inch]:64 shot $\phi 8$ [inch]:30 shot AGA sample shot Main: 4, Sub: 0
Pellicle Particle Checker (Option)	<ul style="list-style-type: none"> <li>•Detectivity: 15[<math>\mu</math>m] (Blank face) 20[<math>\mu</math>m] (Pellicle face)</li> <li>•Detection Repeatability: 95[%] or more (Blank face, Pellicle face)</li> <li>•Detection Range: 112x134[mm] (Blank face, Pellicle face)</li> </ul>	

## 2.1 System Specifications

Items		Specification	Remarks
Wafer		<ul style="list-style-type: none"> <li>•Size: <math>\phi 8</math> [inch], <math>\phi 12</math> [inch]</li> <li>•Type: Orientation Flat, Notch</li> </ul>  <p style="text-align: center;">Orientation Flat                  Notch</p>	The shape adheres to SEMI or JEIDA standard.
Reticle		<ul style="list-style-type: none"> <li>•Size: <math>\square 6</math> [inch], <math>t = 0.25</math> [inch]</li> <li>•Material: quartz</li> <li>•Film: 2-layer Cr, 3-layer Cr</li> <li>•Pellicle: To be attached on the pattern side only</li> </ul>	
Exposure system	Projection Lens	<ul style="list-style-type: none"> <li>•Magnification: 1:4</li> <li>•NA: 0.57 Max. Automatically variable (0.45 to 0.57, 0.01 resolution)</li> <li>•Field Size: 26[mm]x33[mm]</li> <li>•Exposure Light: i-line (<math>\lambda</math>: 365[nm])</li> <li>•Light Source Protection Parts: CDA purge</li> <li>•Atmospheric Change Compensation: Supported (Atmospheric compensation range: 969 to 1033 [hPa])</li> <li>•Projection Magnification Compensation: Supported (Magnification compensation range: -5 to +10[ppm])</li> <li>•Exposure History Focus Compensation: Supported</li> </ul>	0 to 200[m] above sea level (adjustable to the altitude of the installation site)
	Illumination Optical System	<ul style="list-style-type: none"> <li>•Exposure Dose Control: Light Integration System</li> <li>•Masking Blade: Opening Range (<math>\square 0.4</math>[mm] to X: 26[mm], Y: 33[mm])</li> <li>•Available Illumination Mode: Selected from normal illumination</li> <li>•Effective Light Source Range: <math>\sigma 0.75</math> to 0.40 (NA 0.57)</li> <li>•<math>\sigma</math> Aperture: Not provided</li> <li>•Optical Parts Protection: <math>N_2</math> Purge</li> <li>•Beam Monitor: Visual Inspection</li> <li>•Absolute Intensity Meter: Available to install on the wafer stage</li> </ul>	Changeable to the customer's specific shape on request)  Automatic setting Special shape on request  Only one aperture installable.  Fixing folder is optional.
	Light Source	<ul style="list-style-type: none"> <li>•Light Source: 4.5[kW] ultra high pressure mercury lamp</li> <li>•Manufacturer/type: USHIO Mercury Lamp : SUV-4500CI Power Supply Unit: SB-45251AP</li> <li>•Lamp Position Adjustment: three-axis (XYZ) automatic direction adjustment</li> </ul>	

## Chapter 2 Specifications

Items		Specification	Remarks
Main Unit System	Main Unit	<ul style="list-style-type: none"> <li>Main Unit Structure: 5500 body (low temperature-expansive material)</li> <li>Damper: LM+ Air Hybrid</li> <li>Man-Machine Interface: Touch panel color LCD</li> </ul>	
	Chamber	<ul style="list-style-type: none"> <li>Model: CD160 (Standard) CD 160RS (Reticle SMIF supported)</li> <li>Signal Tower: 3-color, 4-color</li> <li>Recorder</li> </ul>	Select Option Option
Focus System	Focus/Leveling	<ul style="list-style-type: none"> <li>Detection Method: Optical auto focus system</li> <li>Driving Method: Wafer stage drive system</li> </ul>	
	Focus Calibration	<ul style="list-style-type: none"> <li>Detection Method ALFC: Image processing method by TTR</li> <li>Atmospheric Pressure Focus Change: Automatic compensation</li> <li>Exposure Focus Change: Automatic compensation</li> </ul>	
AA System	Reticle Alignment	<ul style="list-style-type: none"> <li>Alignment Method: Relative position alignment matching a reticle reference mark through FRA</li> <li>Detection Method: Image processing method</li> <li>Alignment Illumination: i-line (<math>\lambda=365</math>[nm]) pass-through illumination</li> <li>Reticle Holding Method: Vacuum-lock of a reticle holder on a Reticle Stage</li> </ul>	
	OFF AXIS Wafer Alignment System	<ul style="list-style-type: none"> <li>Alignment Illumination: 632.8 [nm] (He-Ne laser) 590<math>\pm</math>80[nm] (Broadband (B<sup>2</sup>) illumination) 560<math>\pm</math>30[nm] (Broadband (B<sup>2</sup>) illumination)</li> <li>Detection Method: Image processing method</li> <li>Measurement Mode: AGA</li> <li>Baseline Offset: Stage reference mark method</li> </ul>	(Equipped with wavelength switching mode)
	Mechanical Prealignment	<ul style="list-style-type: none"> <li>Detection Method: Periphery non-contact method</li> </ul>	
	TV Prealignment	<ul style="list-style-type: none"> <li>Detection Method: TV image processing method</li> </ul>	Using the off axis alignment scope (magnification switchable)
Stage System	Wafer Stage	<ul style="list-style-type: none"> <li>Mode: FLATII Improved stage</li> <li>Movement Range at Exposure: X: <math>\pm</math>165[mm], Y: <math>\pm</math>166.5[mm]</li> <li>Correction for Laser Wavelength Variation: Correction with barometer Real time correction with wavelength tracker</li> <li>Laser Interferometer: 6-axis control measurement</li> </ul>	Standard Option
Wafer System	Wafer Feeding Unit (IX Unit)	<ul style="list-style-type: none"> <li>Wafer surface/edge Others: Non-contact system</li> </ul>	
	Inline Unit	<ul style="list-style-type: none"> <li>Line Method: Right Inline</li> </ul>	Left Inline (option)
	Wafer Carrier	<ul style="list-style-type: none"> <li>One of followings is selectable.</li> <li>Open Cassette Elevator Unit</li> <li>Semi Built-in Open Cassette Elevator Unit</li> <li>Reject Carrier Unit</li> </ul>	Option
	Wafer Chuck Maintenance Unit	<ul style="list-style-type: none"> <li>Maintenance Place: Machine front access</li> <li>Replacement Method: Automatic wafer chuck replacement method</li> <li>Cleaning Method: Automatic wafer chuck cleaning method</li> </ul>	
Reticle System	Reticle Changer	<ul style="list-style-type: none"> <li>Reticle Storage Capacity: 14 pieces (standard)</li> </ul>	A SMIF reticle changer is an alternative.
	Additional Library	<ul style="list-style-type: none"> <li>Reticle Storage Capacity: 15 pieces</li> </ul>	Option
	Pellicle Particle Checker	<ul style="list-style-type: none"> <li>Check both blank face and pellicle face of reticle simultaneously</li> </ul>	Option
	Reticle Bar Code Reader	<ul style="list-style-type: none"> <li>Bar Code Reading Method: 3-of-9 bar code</li> </ul>	Option
	Cassette Bar Code Reader	<ul style="list-style-type: none"> <li>Bar Code Reading Method: 3-of-9 bar code</li> </ul>	Option
	SMIF-compatible Reticle Changer	<ul style="list-style-type: none"> <li>Reticle Storage Capacity: 7 pieces in SRP use 10 pieces in MPP use</li> </ul>	A standard reticle changer is an alternative.

## 2.3 Utility

## 2.3.1 Chamber/Stepper

Items	Specification	Remarks
Power Supply	<ul style="list-style-type: none"> <li>•Voltage: 3-Phase 200VAC<math>\pm</math>10%] 50/60[Hz]</li> <li>•Power Consumption: 24.0[KVA] MAIN1 (for stepper) 24.3[KVA] MAIN2 (for chamber)</li> </ul>	
Ground	<ul style="list-style-type: none"> <li>•Primary ground or ground registration value 10[Ω] or less</li> </ul>	
High Pressure Air (Dry Air Port Name: P)	<ul style="list-style-type: none"> <li>•Input Pressure: 0.35 to 0.9[MPa]</li> <li>•Flow Rate: <math>7.10 \times 10^{-4}</math>[m<sup>3</sup>/s] or more</li> <li>•Inlet Temperature: 18 to 28[°C]</li> <li>•Dew Point Temperature: -60[°C] or less</li> <li>•Piping Inlet: Rc1/2</li> <li>•Oil Content: 0.06[mg/m<sup>3</sup>] or less</li> <li>•Dust: Allowable to exist 100[pcs/m<sup>3</sup>] (3500 [pcs/m<sup>3</sup>]) or less whole contaminant with its size 0.3[μm] or larger (Based on standard atmospheric pressure)</li> </ul>	
Clean High Pressure Air (Clean Dry Air Port Name: CDA)	<ul style="list-style-type: none"> <li>•Input Pressure: 0.6 to 0.9[MPa]</li> <li>•Flow Rate: <math>3.6 \times 10^{-4}</math>[m<sup>3</sup>/s] or more</li> <li>•Temperature: 19 to 26[°C]</li> <li>•Dew Point Temperature: -60[°C] or less</li> <li>•Organic Gas on Input Side: Organic gas (C<sub>6</sub> to C<sub>30</sub> organic substance) Total amount less than 10[μg/m<sup>3</sup>] (toluene conversion)</li> <li>Inorganic Gas (NH<sub>3</sub>, SO<sub>2</sub>, NO<sub>x</sub>) Total amount less than 5[μg/m<sup>3</sup>] (for each substance)</li> <li>Particle (whole contaminant with its size 0.3[μm] or larger) 100[pcs/m<sup>3</sup>] (3500 [pcs/m<sup>3</sup>]) or less (based on standard atmospheric pressure)</li> <li>•Piping Inlet: Rc1/4</li> </ul>	
Vacuum Air (Port Name: V)	<ul style="list-style-type: none"> <li>•Input Pressure: <math>-7.0 \times 10^{-2}</math>[MPa] or less (-8.0x10<sup>-2</sup>[Mpa] or less in the case of using a wafer thermal control plate)</li> <li>•Flow Rate: <math>5.0 \times 10^{-4}</math>[m<sup>3</sup>/s] or more</li> <li>•Piping Inlet: Rc3/8</li> </ul>	A wafer thermal control plate is optional.
N2 (nitrogen) gas (Port Name: N <sub>2</sub> )	<ul style="list-style-type: none"> <li>•Input Pressure: 0.25 to 0.90[MPa]</li> <li>•Flow Rate: <math>-2.5 \times 10^{-4}</math>[m<sup>3</sup>/s] or more Maximum Momental Flow <math>7.9 \times 10^{-4}</math>[m<sup>3</sup>/s] or more</li> <li>•Piping Inlet: Rc3/8</li> </ul>	
Cooling Water	<ul style="list-style-type: none"> <li>•Water Pressure: 0.30<math>\pm</math> to 0.10[MPa]</li> <li>•Quantity: <math>1.05 \times 10^{-3} \pm 10\%</math>[m<sup>3</sup>/s] (water temperature 34<math>\pm</math>1[°C]) <math>0.43 \times 10^{-3} \pm 10\%</math>[m<sup>3</sup>/s] (water temperature 25<math>\pm</math>1[°C])</li> <li>•Water Quality: Electric resistance: 250000[Ω·cm] or less Particle Size : 200[μm] or less Hardness : 100[ppm] or less (calcium consistency) pH : 6 to 8</li> <li>•Piping Inlet: Rc3/8</li> </ul>	Both Inlet and outlet
Installation Environment Condition	<ul style="list-style-type: none"> <li>•Room Temperature: 20 to 25[°C]</li> <li>•Temperature Change: <math>\pm 1</math>[°C] or less (19 to 26[°C]) (Temperature change for 30 minutes is 1[°C] or less. Note that the instantaneous change of 0.2[°C] or under is acceptable.)</li> <li>•Humidity: 45<math>\pm</math>10[%] (Relative humidity)</li> <li>•Cleanliness: 0.1[μm], Class 10000 or less</li> </ul>	



## 2.4 Outside Dimension, Weight

Unit	Width [mm]	Depth [mm]	Height [mm]	Weight [kg]	Remarks
Booth 1	2300	1470	2600	6600 500	Stepper (Main Unit) Chamber
Booth 2					
Pellicle Particle Checker: Not equipped	2300	950	2600	1650	
Pellicle Particle Checker: Equipped	2300	950	2600	1690	
Chamber Air-conditioner (Machine Room)	2300	1100	2600	2650	
Stepper main unit (after installing)					
Pellicle Particle Checker: Not equipped	2300	3400	2600	11400	
Pellicle Particle Checker: Equipped	2300	3400	2600	11440	

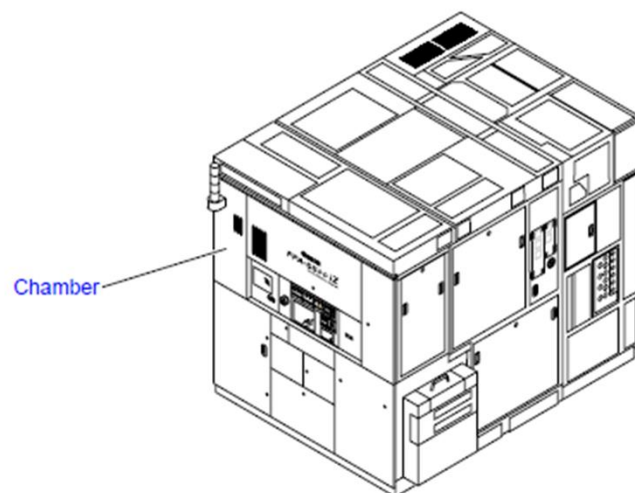
## 2.5 Machine Appearance

This section shows the machine appearance (control panel equipped on front).

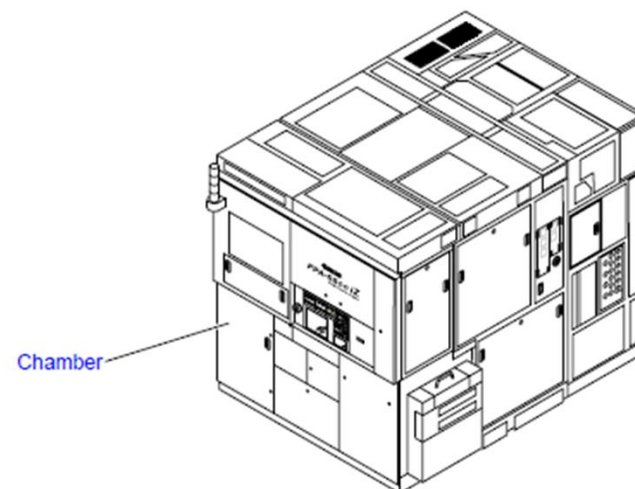
The chamber on the machine can be selected from the followings:

- CD160 (Standard Chamber)
- CD160RS (Chamber for Reticle SMIF)

<Machine Appearance>



CD160 (Standard Chamber)



CD160RS (Chamber for Reticle SMIF)



## 2.6 Option

Items	Specification	Remarks
Pellicle Particle Checker	<ul style="list-style-type: none"> <li>•Check Area: X(112)[mm] x Y(134)[mm]</li> <li>•Check Time: 1[sec]</li> <li>•Check Sensitivity: Pellicle Face 20[<math>\mu</math>m] Blank Face 15[<math>\mu</math>m]</li> </ul>	Refer to 6" Reticle Design Guide for the specification of the reticle and pellicle.
Open Cassette Elevator Unit	<ul style="list-style-type: none"> <li>•Wafer Type: <math>\phi</math>8[inch], <math>\phi</math>12[inch]</li> <li>•Applied Wafer Carrier: 8- and 12-inch Standard Wafer Carrier</li> <li>•Installable Weight: 10[kgf]</li> </ul>	The shape adheres to SEMI or JEIDA standard.
Semi Built-in Open Cassette Elevator Unit	<ul style="list-style-type: none"> <li>•Wafer Type: <math>\phi</math>8[inch]</li> <li>•Applied Wafer Carrier: 8-inch Standard Wafer Carrier</li> <li>•Installable Weight: 6[kgf]</li> </ul>	The shape adheres to SEMI or JEIDA standard.
Reject Carrier Unit	<ul style="list-style-type: none"> <li>•Wafer Type: <math>\phi</math>8[inch], <math>\phi</math>12[inch]</li> <li>•Applied Wafer Carrier: Carrier for Reject Wafer (5-slot)</li> <li>•Installable Weight: 10[kgf] (Including a reject carrier top plate)</li> </ul>	The shape adheres to SEMI or JEIDA standard. The reset carrier of the Wafer Feeding Unit Type-VIII is not supported.
Wafer Thermal Control Plate	<ul style="list-style-type: none"> <li>•Thermal Control Place: Inline Station IN</li> <li>•Applicable Wafer Temperature: 20.5-28.0[<math>^{\circ}</math>C]</li> <li>•Target Temperature Spec.: Within a target temperature <math>\pm</math>0.2[<math>^{\circ}</math>C]</li> <li>•Target Thermal Control Time: Within 7 [sec]</li> <li>•Thermal Control Method: The thermal control chuck vacuum chucks a wafer for a certain time for thermal control.</li> </ul>	

# Inspection Sheet 1

■ Model : Canon FPA-5500 iZa

■ Serial No : 7027128

■ Machines ID : EXP001

■ Vintage : 2007 / 02

No	Unit	Inspect Item		Check Result
1	Console	Console	Linux Console, e-console	e-console (Left - 1ea)
		Main Version	V72.***	V72.04
		Touch Screen	Good, No Good	Good
		Mouse, Keyboard, USB	Good, No Good	Good
2	Auto Feeder	A/F Type	R Type, L Type	R Type
		W/F size	8, 12"	12inch
		W/F Type	Notch, Flat	Notch Type
		Inline	Yes, No	No
		中継 Unit	No, 中継 Unit, FOUN Unit	No
3	Reticle Changer	R/C Type	6INCH R/C	6INCH R/C
		Library Slot No.	Lib, SMIF	SMIF
		OPTION	PPC, BCR	PPC, BCR
		Cassette Type	Canon, Nikon	Canon
4	Wafer Stage	Laser INTERFEROMETER	ZYGO	ZYGO
		Chuck Type	PIN, RING	8inch PIN Chuck
5	UPPER C-Rack	PCB, P/S Missing	Missing, No Missing	No Missing
6	LOWER C-Rack	PCB, P/S Missing	Missing, No Missing	No Missing
7	Illuminator	SOURCE	i-Line(365nm) MERCURY LAMP 4.5KW	i-Line(365nm) MERCURY LAMP 4.5KW
8	CLEAN CHAMBER	C-oil Level	Lack, Enough	Enough
		S/N	CD162***	CD1626YR126
		배진반 Missing	Missing, No Missing	No Missing
9	外部 Cover		Missing, No Missing	No Missing
10	内部 Cover		Missing, No Missing	No Missing
12	主要 ERROR CODE	無		
<b>Remarks : Wafer Stage Chuck Type - 8inch Pin Chuck, 照度低下</b>				
a period of inspection		2013/4/22	check by	Cho Hyun Sung

## Inspection Sheet 2

■ Model : Canon FPA-5500 iZa

■ Serial No : 7027128

■ Machines ID : EXP001

■ Vintage : 2007 / 02

Item		Result	Condition	Specification	Judge	
1	Illumination Intensity	3531.0	NA0.57 $\sigma$ 0.70	$\geq 24000$ w/m2		
		5301.9	NA0.57 $\sigma$ 0.40	$\geq 17500$ w/m2		
		3724.2	NA0.50 $\sigma$ 0.70			
		6176.6	NA0.57 SIB			
2	Illumination Uniformity	4.328	NA0.57 $\sigma$ 0.70	$\leq 1.0$ %		
		3.333	NA0.57 $\sigma$ 0.40	$\leq 1.0$ %		
		4.498	NA0.50 $\sigma$ 0.70	$\leq 1.0$ %		
		3.622	NA0.57 SIB	$\leq 1.0$ %		
3	BLC Measurement Repeatability	X	3.90	OAS MODE-1 (BB)	3Sigma $\leq 10$	OK
		Y	3.40			
4	ALFC Measurement Repeatability	FOCUS	31.0		3Sigma $\leq 50$ nm	OK
		TILT X	0.066		3Sigma $\leq 3$ ppm	OK
5	SCAN_BM	X PITCH YAW	35.0		X $\leq 10$ nm	
		Y PITCH YAW	8		Y $< 10$ nm	OK
6	SRC/Y Measurement Repeatability	0.055			3Sigma $\leq 0.3$ ppm	OK
7	SRMOC Measurement Repeatability	X	0.014		3Sigma $\leq 0.25$ nm	OK
		Y	0.025		3Sigma $\leq 0.25$ nm	OK
8	KATABOKE	WX	解像力 Chart Copy 添附			
		WY				
a period of inspection		2013/4/22	check by	Cho Hyun Sung		

Item	Result	Condition	Specification	Judge
1 Illumination Intensity	3531.0	NA0.57 $\sigma$ 0.70	$\geq$ 24000 w/m2	
	5301.9	NA0.57 $\sigma$ 0.40	$\geq$ 17500 w/m2	
	3724.2	NA0.50 $\sigma$ 0.70		
	6176.6	NA0.57 SIB		

-- LIMC [Type:Custom, NA:0.57, Name:5732] --

L.I./U.C.[base] : 0.964  
 L.I./Abs.II. : 3.6[bit m2/J]  
 Dose Matching Coef. : 1.000

<Result>

L.I. Dose : 308.3[J/m2]  
 U.C. Dose : 308.2[J/m2]  
 L.I. Comp. : 1.000  
 U.C. Illuminance : 6176.6[U/m2]  
 U.C. Illuminance(bit) : 23066.1[bit/sec]

-- LIMC [Type:Conventional, NA:0.57, Sigma:0.70, Name:Canon\_Conventional1] --

L.I./U.C.[base] : 0.964  
 L.I./Abs.II. : 3.6[bit m2/J]  
 Dose Matching Coef. : 1.000

<Result>

L.I. Dose : 175.6[J/m2]  
 U.C. Dose : 176.2[J/m2]  
 L.I. Comp. : 0.996  
 U.C. Illuminance : 3531.0[U/m2]  
 U.C. Illuminance(bit) : 13186.4[bit/sec]

-- LIMC [Type:Conventional, NA:0.57, Sigma:0.40, Name:Canon\_Conventional2] --

L.I./U.C.[base] : 0.964  
 L.I./Abs.II. : 3.6[bit m2/J]  
 Dose Matching Coef. : 1.000

<Result>

L.I. Dose : 263.9[J/m2]  
 U.C. Dose : 264.6[J/m2]  
 L.I. Comp. : 0.997  
 U.C. Illuminance : 5301.9[U/m2]  
 U.C. Illuminance(bit) : 19799.6[bit/sec]

-- LIMC [Type:Conventional, NA:0.50, Sigma:0.70, Name:Canon\_Conventional3] --

L.I./U.C.[base] : 0.964  
 L.I./Abs.II. : 3.6[bit m2/J]  
 Dose Matching Coef. : 1.000

<Result>

L.I. Dose : 185.3[J/m2]  
 U.C. Dose : 185.8[J/m2]  
 L.I. Comp. : 0.997  
 U.C. Illuminance : 3724.2[U/m2]  
 U.C. Illuminance(bit) : 13907.8[bit/sec]



Item	Result	Condition	Specification	Judge
2 Illumination Uniformity	4.328	NA0.57 $\sigma$ 0.70	< 1.0 %	
	3.333	NA0.57 $\sigma$ 0.40	< 1.0 %	
	4.498	NA0.50 $\sigma$ 0.70	< 1.0 %	
	3.622	NA0.57 SIB	< 1.0 %	

```

machineID:
date:2013/04/22
time:12:04:20
rows:21
cols:21
uc0:3506

```

```
iucVal:4.328
```

```

maxVal:100.995
minVal:92.616
areaX:26.0000
areaY:33.0000
pitchX:1.3000
pitchY:1.6500

```

```
message:
```

```
Illumination Type      Conventional, NA:0.57, Sigma:0.70
```

```
Illumination Name     Canon_Conventionall
```

```
Illumination Status   Available
```

```
2nd Zoom = 34.3[%]
```

```
LampStage[mm]        (0.652, -0.164, 0.600)
```

```
SpecialFilter[mm]    (0.50, 0.52)
```

```
Dose Matching Coef. = 1.000
```

```
end:
```

```

machineID:
date:2013/04/22
time:12:15:19
rows:21
cols:21
uc0:5287

```

```
iucVal:3.333
```

```

maxVal:100.470
minVal:93.989
areaX:26.0000
areaY:33.0000
pitchX:1.3000
pitchY:1.6500

```

```
message:
```

```
Illumination Type      Conventional, NA:0.57, Sigma:0.40
```

```
Illumination Name     Canon_Conventionall2
```

```
Illumination Status   Available
```

```
2nd Zoom = 100.0[%]
```

```
LampStage[mm]        (1.523, -0.700, -0.400)
```

```
SpecialFilter[mm]    (-1.20, -1.50)
```

```
Dose Matching Coef. = 1.000
```

```
end:
```

```

machineID:
date:2013/04/22
time:12:26:23
rows:21
cols:21

```

uc0:3726

iucVal:4.498

maxVal:102.577

minVal:93.747

areaX:26.0000

areaY:33.0000

pitchX:1.3000

pitchY:1.6500

message:

Illumination Type Conventional, NA:0.50, Sigma:0.70

Illumination Name Canon\_Conventional3

Illumination Status Available

2nd Zoom = 100.0[%]

LampStage[mm] (1.533, -0.601, 0.000)

SpecialFilter[mm] (-1.20, -1.50)

Dose Matching Coef. = 1.000

end:

machineID:

date:2013/04/22

time:11:53:24

rows:21

cols:21

uc0:6088

iucVal:3.622

maxVal:100.769

minVal:93.725

areaX:26.0000

areaY:33.0000

pitchX:1.3000

pitchY:1.6500

message:

Illumination Type Custom, NA:0.57

Illumination Name 5732

Illumination Status Available

2nd Zoom = 100.0[%]

LampStage[mm] (0.583, -0.429, 0.100)

SpecialFilter[mm] (1.20, -1.50)

Dose Matching Coef. = 1.000

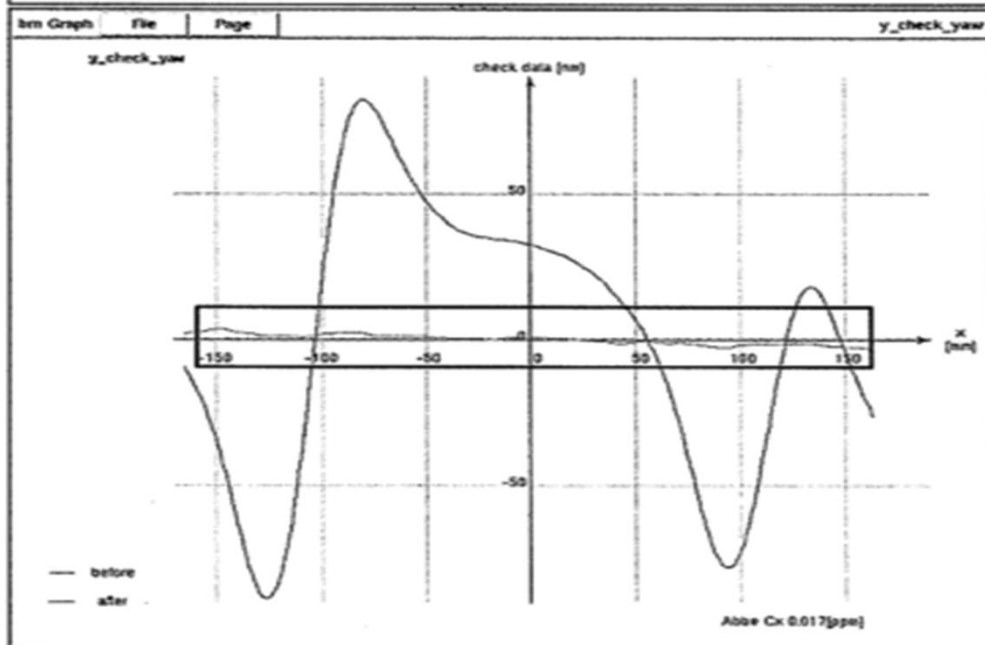
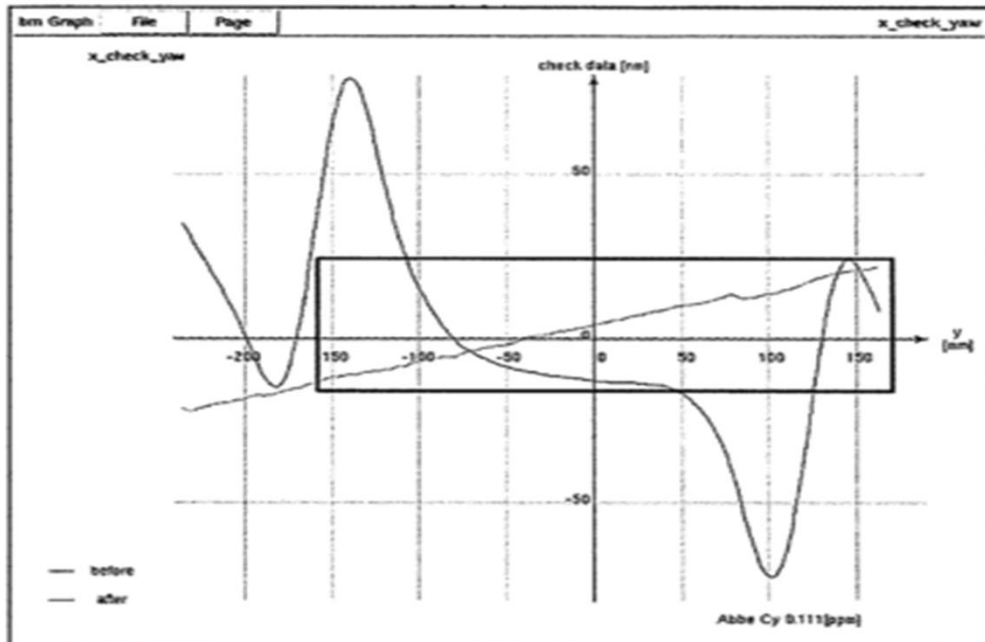
end:

Item			Result	Condition			Specification	Judge
3	BLC Measurement Repeatability	X	3.90	OAS MODE-1  (BB)			3Sigma ≤ 10	OK
		Y	3.40					
16	731.0	-586.6	-723.4	591.2	-31.0	44.1	0.8	-1116.8
17	724.2	-582.6	-729.0	595.0	-36.7	50.2	0.3	-1119.0
18	725.8	-591.0	-726.0	588.0	-33.4	43.7	-0.7	-1120.2
19	723.0	-589.2	-729.8	587.8	-39.7	42.4	2.3	-1118.1
20	728.4	-593.2	-724.8	584.0	-29.6	39.9	-2.6	-1119.5
21	727.8	-592.0	-723.4	586.2	-32.4	41.7	0.6	-1119.6
22	726.0	-593.2	-729.0	584.2	-35.6	41.2	0.1	-1120.7
23	728.0	-586.8	-724.6	590.6	-33.8	45.4	1.5	-1118.5
24	722.0	-590.8	-727.4	588.0	-35.1	44.1	-1.6	-1120.5
25	723.6	-588.8	-726.0	588.4	-36.1	46.6	0.9	-1121.8
Measurement Count			25					
	axl	ayl	axr	ayr	ogx	ogy	blx	bly [nm]
Ave	725.2	-589.0	-724.4	588.8	-34.0	44.5	0.4	-1119.5
3Sig	9.5	10.2	10.8	10.3	8.8	10.2	3.9	3.4
Max	731.4	-581.4	-714.6	597.0	-27.6	52.4	3.4	-1116.8
Min	719.2	-595.6	-729.8	582.8	-39.7	36.7	-2.6	-1121.8
Rng	12.2	14.2	15.2	14.2	12.1	15.7	6.1	5.0
Measurement END!								

Item			Result	Condition			Specification	Judge
4	ALFC Measurement Repeatability	FOCUS	31.0				3Sigma $\leq$ 50 nm	OK
		TILT X	0.066				3Sigma $\leq$ 3ppm	OK
7	0.230	0.174	0.202	-0.113	0.214	0.050	0.051	3.21
8	0.226	0.175	0.201	-0.121	0.211	0.045	0.045	3.33
9	0.226	0.172	0.199	-0.116	0.208	0.046	0.046	3.13
10	0.221	0.172	0.196	-0.154	0.194	0.020	0.020	3.73
11	0.226	0.173	0.199	-0.108	0.232	0.062	0.062	3.53
12	0.228	0.172	0.200	-0.106	0.211	0.053	0.053	2.96
13	0.227	0.171	0.199	-0.127	0.201	0.037	0.038	3.23
14	0.223	0.177	0.200	-0.112	0.225	0.057	0.057	3.46
15	0.223	0.171	0.197	-0.117	0.220	0.052	0.052	3.43
16	0.227	0.176	0.202	-0.131	0.205	0.037	0.038	3.43
17	0.238	0.178	0.208	-0.099	0.217	0.059	0.059	2.91
18	0.223	0.170	0.196	-0.128	0.195	0.033	0.034	3.08
19	0.215	0.173	0.194	-0.106	0.215	0.055	0.055	3.06
20	0.213	0.167	0.190	-0.108	0.223	0.057	0.058	3.31
21	0.225	0.177	0.201	-0.107	0.225	0.059	0.060	3.33
22	0.229	0.179	0.204	-0.101	0.229	0.064	0.064	3.26
23	0.224	0.175	0.199	-0.125	0.211	0.043	0.043	3.43
24	0.231	0.179	0.205	-0.117	0.224	0.054	0.054	3.56
25	0.223	0.176	0.199	-0.122	0.210	0.044	0.044	3.33
No.	Riaf-L	Riaf-R	Riaf-Ave	Wiaf-L	Wiaf-R	Wiaf-Ave	Focus ofs	Tilt X
MAX	0.238	0.179	0.208	-0.099	0.232	0.064	0.064	3.73
MIN	0.213	0.167	0.190	-0.154	0.194	0.020	0.020	2.76
Range	0.025	0.012	0.018	0.056	0.038	0.044	0.044	0.97
AVE	0.226	0.174	0.200	-0.118	0.213	0.047	0.048	3.30
3S	0.017	0.009	0.012	0.038	0.029	0.031	0.031	0.66
Measurement END!								



Item	Result	Condition	Specification	Judge
5 SCAN_BM	X PITCH YAW	35.0	$X \leq 10 \text{ nm}$	OK
	Y PITCH YAW	8	$Y < 10 \text{ nm}$	



	Item	Result	Condition	Specification	Judge
6	SRC/Y Measurement Repeatability	0.055		3Sigma ≤ 0.3ppm	OK

### Src/Y Offset Check ###

No.	Src/Y [ppm]
1	-4.517
2	-4.491
3	-4.500
4	-4.483
5	-4.487
6	-4.452
7	-4.498
8	-4.495
9	-4.488
10	-4.480
11	-4.506
12	-4.485
13	-4.487
14	-4.508
15	-4.501
16	-4.491
17	-4.534
18	-4.489
19	-4.509
20	-4.513
21	-4.488
22	-4.492
23	-4.529
24	-4.525
25	-4.466

-----  
Measurement Count 25 / 25

Src/Y [ppm]

Mean : -4.497

3 Sigma : 0.055

MAX : -4.452

MIN : -4.534

Range : 0.082

-----  
Measurement END!

Quit

Item		Result	Condition	Specification	Judge
7	SRMOC Measurement	X	0.014	3Sigma $\leq$ 0.25 nm	OK
	Repeatability	Y	0.025		

File Viewer - /console/14/cur/data/srmoc/SRMOC\_20130422\_Deinstall.mdat

```

      X [um]   Y [um]
1 :   -11.885  26.135
2 :   -11.888  26.136
3 :   -11.878  26.147
4 :   -11.878  26.133
5 :   -11.883  26.145
6 :   -11.878  26.126
7 :   -11.878  26.129
8 :   -11.882  26.147
9 :   -11.878  26.135
10 :  -11.888  26.135
11 :  -11.878  26.135
12 :  -11.878  26.145
13 :  -11.878  26.135
14 :  -11.878  26.135
15 :  -11.878  26.131
16 :  -11.880  26.135
17 :  -11.878  26.145
18 :  -11.880  26.133
19 :  -11.871  26.135
20 :  -11.871  26.147
21 :  -11.871  26.143
22 :  -11.871  26.157
23 :  -11.880  26.145
24 :  -11.871  26.161
25 :  -11.882  26.148

```

EFFICIENT DATA COUNT : ( 25 / 25)

```

      X [um]   Y [um]
-----

```

```

MAX   :   -11.871  26.161
MIN   :   -11.888  26.126
RANGE :     0.017   0.035
-----

```

```

AVERAGE :   -11.878  26.140

```

```

3-SIGMA :     0.014   0.025
-----

```

Measurement END!

Quit

Item		Result	Condition	Specification	Judge
8	KATABOKE	WX	解像力 Chart Copy 添附		
		WY			
