TECHNICAL SPEC FOR Stepper

System Model:

Canon FPA 3000 i5 SN 0112664

Tool has been shut down by Litho tech.

Electricity, cooling water, Vacuum and CCA are closed.

Cables between Main unit and power box are still connected, locking kit and demounting for transport to be provided by buyer.

Wafer size: 6 inch

Wafer type: Jeida flat

Chuck type: 6 inch pin chuck

Reticle changer type: Canon standard

Inline right or left: left

Particle checker (PPC): Yes

Touch panel type: Canon standard

Options:

Reticle size: 6 inch

Reticle alignment: see specs below

Wafer alignment: see specs below

Auto focus:see specs below

Auto feeder: Yes

Wafer tilt:

Wafer feeder: Yes

Track interface: Yes, tool was used inline, interface is track part

Laser: Hene

SW Version:

OS:

Vintage: 2014

Missing/defective parts: none

Canon

FPA-3000i5+

Lens Replacement Check Results

For: ON Semiconductor

User ID : Stepper 18

Serial No).	0112664
Work	Begin	29-Sep-14
Period	End	12-Dec-14
Staff in Cha	irge	A.Day, C.Perry & P.Wells

	Classification	Item		Res	ults	Spec.	Judge	Remark
1	Exposure	Resolution		0.35	μm	0.35µm	0	
	Performance	CD DOF	0.35um L&S	1.2	μm	≥ 1.2µm	0	
		IFD	0.35um L&S	0.19	μm	≤ 0.30µm	0	
		Distortion	DX	0.030	μm			
		Normal (63,65)	DY	0.019	μm	DX,DY ≤ +0.035µm	0	
2	Illuminator	Illumination Intensity	Normal (63,65)	11553	W/m²	≥ 10000W/m3	0	New Lamp
			SiB	5341	W/m²	≥ 5500W/m2	X	With in 50 hours
		Illumination Uniformity	Normal (63,65)	0.952	%	≤ 1.0 %	0	New Lamp
			SiB	0.796	%	≤ 1.3%	0	With in 50 hours
		Dose Control Accuracy		0.57	%	≤ 1.0%	0	80,250,500,1000mse
		Masking Accuracy	Total	73	μm	≤ +100µm	0	
3	Alignment	Reticle Rotation A	ccuracy	4.7	nm	≤ 10nm	0	
	Accuracy	Reticle Rotation Re	peatability	10.2	nm	≤ 20nm	0	
		He-Ne AGA Overlay	x	25.9	nm	m +3sigma	_	Center/32 shot
		Mode 1	Υ	32.8	nm	≤ 40nm	0	5 wafers
		Broad Band AGA Overlay	х	33.9	nm	m +3sigma	_	Center/32 shot
		Mode 4	Υ	27.5	nm	≤ 40nm	0	5 wafers
4	Auto Focus	Focus Leveling Rep	eatability	0.06	μm	3sigma ≤ 0.10µm	0	
5	Die by Die	Leveling	3sigma X	2.5	ppm	0-1	_	
	Leveling	Repeatability	3sigma Y	2.8	ppm	3sigma ≤ 7ppm	0	
6	XY Stage	Stepping	XX	13.7	nm	2-1	_	0
	Accuracy	Accuracy	YY	12.6	nm	3sigma ≤ 30nm	0	Sample 3 Wafers data
		Orthogonality		-0.05	ppm	≤ 0.5ppm	0	
		Scaling	X	-0.35	ppm		_	
			Υ	-0.15	ppm	≤ 0.5ppm	0	
7	PreAlignment		XI	8.3	μm			
	Accuracy	Mechanical Pre Alignment	Xr	9.0	μm	Onlaws - DO	_	
		Accuracy	YI	5.7	μm	3sigma ≤ 30µm	0	
			Yr	5.0	μm			
		TV PreAlignment	X	0.26	μm	40		Man IVI ManiPRI
		Accuracy	Υ	0.55	μm	≤ 3 µm	0	Max X +Max DR
8	Throughput	-	DXD Tilt On	125.7	wph	≥ 120 wafers / hour	0	32shot 90msec shutter
			DXD Tilt Off	128.8	wph	≥ 120 wafers / hour	0	time (Sub=0, main=4)
-		The second secon						The second second



MODEL	FPA-3000 i5	INSTALLATION CHECK LIST			
SN	8032195	START DATE	4/4/2011		
CUSTOMER	ON Semi	END DATE	8/11/2011		

	DESCRIPTION		Results	UNIT	SPECIFICATION
		DX	0.029		
	LENS DISTORTION (Normal)	DY	0.022	μm	≤ ± 0.04
Σ	Charles I Alberta Con	Uniformity	2.2	%	≤ 1.0
YSTE	Standard/Normal Illumination	Intensity	9118.0	W/m²	≥ 9000
ILLUMINATION SYSTEM	L.I. ACCURACY		0.3	%	≤ 1.0
NAT		θ	1818	ppm	≤ 3000
M	MASKING BLADE ACCURACY	GZW	15	μm	≤ 60
11		Total	55	μm	≤ ± 110
		F(3σ)	0.039	μm	3σ ≤ 0.08
	FOCUS - TILT STABILITY	Χ(3σ)	1.397	nnm	3 6
		Υ(3σ)		30 2 6	
		F(3σ) 0.068 μm		μm	3σ ≤ 0.10
Ψ	FOCUS - TILT REPEATABILITY	Χ(3σ)	(30)		30 < 7
SYST		Υ(3σ)	3.2	ppm	30 5 7
FOCUS TILT SYSTEM	GLOBAL - TILT MEASUREMENT REPEATABILITY	Χ(3σ)	0.4	nnm	3 4
LSUS	GLOBAL - TILT MEASUREMENT REPEATABILITY	Υ(3σ)	0.4	ppm	30 ≤ 4
Š.	GLOBAL - TILT ACCURACY	Χ(3σ)	1.0	nnm	30 < 9
	GLOBAL - TIET ACCORACT	Υ(3σ)	1.1	ppm	30 2 0
	TILT SENSOR UNEVEN FOCUS (DxD ON)	v	0.0	ppm	≤ ± 4
	UNEVEN FOCUS (TSOC) (DxD OFF)	v	0.3	ppm	≤ ± 6
	ALFC MEASUREMENT REPEATABILITY	3σ	0.06	μm	3σ ≤ 0.10
TVPA	TV DDE ALTONIMENT ACCURACY (DARK ETELD)	x	1.12		- 30
2	TV PRE-ALIGNMENT ACCURACY (DARK FIELD)	Y	1.55	μШ	\$ 3.0
		Ortho	-0.10		
	XYSA	Scal X	0.05	ppm	≤ ± .5
TAGE		Scal Y	0.08		
WAFER STAGE	STEPPING ACCURACY	XX (3σ)	0.031	μm	3σ ≤ 0.040
WAF		ΥΥ(3σ)	0.024		
	STEPPING REPEATABILITY	Χ(3σ)	0.026	μm	3σ ≤ 0.035
		Υ(3σ)	0.012	F	
SRC	SRC MEASUREMENT REPEATABILITY	3σ	0.26	ppm	3σ ≤ 0.5

-		XL(3σ)	0.003			
RETICLE ALIGNMENT	ROC MEASUREMENT REPEATABILITY	YL(3σ)				
NDI	ROC PIEASUREPIENT REPEATABLELTY	XR(3σ)	0.004	μm	30 2 0.01	
LE A		YR(3σ)	0.001	Ī		
ETIC	RETICLE ROTATION ACCUARACY		0.000	μm	≤ ± 0.01	
~	RETICLE ROTATION REPEATABILITY		0.002	μm	≤ ± 0.02	
		Χ(3σ)	0.006		2- < 0.020	
	DLCC STARTLEDY (MODE 1)	Υ(3σ)	0.005	µm ≤ ± 0.01 µm ≤ ± 0.02 µm 3σ ≤ 0.03 µm Range ≤ 0.03 µm Range ≤ 0.03 µm Range ≤ 0.03 µm Range ≤ 0.03 µm mean + 3σ ⋅ µm mean + 3σ ⋅ µm mean + 3σ ⋅ µm 3σ ≤ 30 µm 3σ ≤ 40 >102	36 ≤ 0.030	
	BLCC STABILITY (MODE 1)	RNG(X)	0.008	hw hw hw		
		RNG (Y)	0.004 0.001 0.000	Range S 0.03		
		Χ(3σ)	0.007			
BASELINE	BLCC STABILITY (MODE 2)	Υ(3σ)	0.004	μш	36 ≤ 0.030	
BASE	BLCC STABLETT (MODE 2)	RNG(X)	0.012		Range < 0.03	
_		RNG (Y)	0.005	ріпі	Range S 0.03	
		Χ(3σ)	0.005		20 < 0.021	
	BLCC STABILITY (MODE 4)	Υ(3σ)	0.005	рш	22 2 01032	
	BLCC STABLETT (MODE 4)	RNG(X)	0.006	um	Range ≤ 0.03	
		RNG (Y)	X(3σ) 0.005 Y(3σ) 0.005 RNG(X) 0.006 RNG (Y) 0.007 X 0.038 μm	Range ≤ 0.03		
	AGA ACCURACY MODE 1 (m + 3σ)	X	0.038	LUPO	manel + 307 < 0.05	
Ē	AGA ACCORACT MODE I (IIII + 30)	Y	0.027	ріп	mean + 30 < 0.03	
IGN	AGA ACCURACY MODE 3 (Iml + 3ct)	х	0.037	um	mann + 20 < 0.05	
AUTO ALIGNMENT	AGA ACCURACY MODE 2 (m + 3σ)	Y	0.036	piii	mean + 30 < 0.05	
AUT	AGA ACCURACY MODE 4 (m + 3σ)	x	0.044	um	mean + 307 < 0.05	
	AGA ACCORDET FIODE 4 (IIII + 30)	Υ	0.035	piii	Integral + 30 C 0.03	
~		θ	3.92	μm	3σ ≤ 30	
WAFER REDER		XL	6.289			
# H	WAFER FEEDER ADJUSTMENT ACURACY (MECH PA)	XR	6.388	um	3σ < 40	
NAFE		YL	18.21	P'''	202 10	
		YR	5.951			
TPD	THROUGHPUT 6" WAFER TYPE-L WF	DxD ON	131.0	WPH	>102	
.,,,	THEODING OF WALK TIFE W	DxD OFF	129.4	******	>102	
	WAFER CHUCK FLATNESS	□ 22mm		μm		



MODEL	FPA-3000 i5	INSTALLATIO	N CHECK LIST	
SN	7122157	INSTALLATION CHECK LIST		
CUSTOMER	ON Semi	STEPPER NAME STEPPER		

	DESCRIPTION		Results	UNIT	SPECIFICATION	
	LENC DICTORTION (NUCS-CE)	DX	0.034		< +0.04	OW
N.	LENS DISTORTION (NA63065)	DY	0.029	μm	≤ ± 0.04	OK
OI.	LENS DISTORTION	DX 0.034 DY 0.029 DX 0.041 DY 0.057 DX 0.043 DY 0.064 DY 0.064 DY 0.064 DY 0.064 DY 0.064 DY 0.064 DY 0.032 DX				
TOR	Special Mode 1	DY	0.057	μm	NA NA	NA
LENS DISTORTION	LENS DISTORTION	DX	0.043		NA.	NA
LENS	Special Mode 2	DY	0.064	μm	NA NA	NA.
_	LENS DISTORTION	DX 0.034 DY 0.029 DX 0.041 DY 0.057 DX 0.043 DY 0.064 DX 0.024 DY 0.032 Initial 0.00 Heated -0.05 Range 0.10 Initial 0.00 Heated 0.10 Cooled 0.15 Range 0.15 Initial 0.05 Heated 0.05 Cooled 0.05 Range 0.05 Initial 0.05 Heated 0.05 Cooled 0.05 Range 0.15 Initial 0.05 Heated 0.05 Cooled 0.00 Range 0.05 Initial 3.22 Heated 2.61 Cooled 3.52 Range 0.92 Initial 3.32 Heated 3.25 Cooled 3.77 Range 0.51 Initial 3.34 Heated 3.25	NA			
	Special Mode 4	DY 0.057 DX 0.043 DY 0.064 DX 0.024 DY 0.032 Initial 0.00 Heated -0.05 Cooled 0.05 Range 0.10 Initial 0.00 Heated 0.10 Cooled 0.15 Range 0.15 Initial 0.05 Heated 0.05 Range 0.15 Initial 0.05 Heated 0.05 Cooled 0.05 Initial 0.05 Heated 0.05 Initial 0.05 Heated 0.05 Initial 0.05	NA			
		Initial	0.00			
	SP1	Heated	-0.05		≤±0.04 NA NA NA Range < 0.3µm Range < 0.3µm Range < 2.0 ppm	ок
	NA0.5200.60	Cooled	0.05	μm	Range < υ.sμm	OK
		Range	0.10			
STAB	SP2 NA0.55σ0.50	Initial	0.00		Range < 0.3mm	
Sno		Heated	0.10	μm		ok
8		Cooled	0.15			OK
EXPOSURE FOCUS STABILITY		Range	0.15			
8 8	Initial 0.00 SP2 NA0.55σ0.50 Cooled 0.15 Range 0.15 Initial 0.05 Heated 0.05 Cooled 0.00 Range 0.05 Initial 0.05	Initial	0.05		Panna < 0 3iim	
-		Heated	0.05			ок
		ļuiii	range < 0.5µm	OK		
		Range	0.05		NA NA NA Range < 0.3μm Range < 0.3μm Range < 2.0 ppm Range < 2.0 ppm	
		Initial	3.22			
>		Heated	2.61	nom	Range < 2.0 npm	ок
	ΝΑ0.52σ0.60	Cooled	3.52	PP	Range < 0.3μm Range < 0.3μm	OK
STAE		Range	0.92			
EXPOSURE MAGNIFICATION STABILITY		Initial	3.32			
IGA	SP2	Heated	3.25	ppm	Range < 2.0 ppm	ок
GNIF	NA0.55σ0.50	Cooled	3.77	,,,,,,		- N
MA		Range	0.51		Range < 0.3μm Range < 2.0 ppm Range < 2.0 ppm	
SUR		Initial	3.34			
0 A	SP4	DY 0.057 processor pro	nom	Range < 2.0 ppm	ок	
	NA0.63σ0.70	Cooled	2.77	P-P-III		- CN
		Range	0.57			

ILLUMINATION SYSTEM	C 1 1/10 1711 1 1 1 1	Uniformity	1.6	%	≤ 1.0	
	Standard/Normal Illumination	Intensity	8235.0	W/m²	≥ 9000	NG
	Constitution of the Marke 4	Uniformity	1.7	%	NA	
	Special Illumination Mode 1	Intensity	11478	W/m²	NA	NG
YSTE	Special Illumination Mode 2	Uniformity	2.1	%	NA	NG
S NO	Special Illumination Mode 2	Intensity	11908	W/m²	NA	NG
NATIO	Control Wheelers Made 4	Uniformity	1.3	%	NA	NG
MO.	Special Illumination Mode 4	Intensity	10890	W/m²	NA	NG
⊒	L.I. ACCURACY		0.45	%	≤ 1.0	ок
		θ	-113.6	ppm	≤ 3000	
	MASKING BLADE ACCURACY	GZW	20	μm	≤ 60	OK
		Total	32.5	μm	μm ≤ ± 110	
	FOCUS - TILT STABILITY	F(3σ)	0.038	μm	3σ ≤ 0.08	
		Χ(3σ)	2.909	ppm	3σ ≤ 6	ок
		Υ(3σ)	2.754			
5		F(3σ)	0.08	μm	3σ ≤ 0.10	
₩.	FOCUS - TILT REPEATABILITY	Χ(3σ)	2.7		3σ ≤ 7	ок
SYST		Υ(3σ)	3.8	ppm	30 2 7	
E	GLOBAL - TILT MEASUREMENT REPEATABILITY	Χ(3σ)	0.6		3σ ≤ 4	OK
FOCUS TILT SYSTEM	SEMBLE THE PERSONNEMENT REPEATABLETT	Υ(3σ)	0.7	ppm	3034	OK.
Š	GLOBAL - TILT ACCURACY	Χ(3σ)	1.8	nnm.	3σ≤8	ОК
	GEOBAL - TIET ACCORDET	Υ(3σ)	1.0	ppm	30 2 0	OK
	TILT SENSOR UNEVEN FOCUS (DxD ON)	V	0.0	ppm	≤ ± 4	ок
	UNEVEN FOCUS (TSOC) (DxD OFF)	V	1.5	ppm	≤ ± 6	ок
	ALFC MEASUREMENT REPEATABILITY	3σ	0.03	μm	3 σ ≤ 0.10	ок
IVPA	TV PRE-ALIGNMENT ACCURACY (DARK FIELD)	Х	1.94	1150	≤ 3.0	ОК
2	TV PRE-ALIGNPENT ACCORDET (DARK PIELD)	Y	2.55	μm	2 3.0	OK

		Ortho	-0.05				
	XYSA	Scal X	0.01	ppm	≤ ± .5	ок	
		Scal Y	-0.03				
		XX (3σ)	0.011			ок	
	CTERRING ACCURACY WATER 1	ΧΥ (3σ)	0.011		3- < 0.040		
	STEPPING ACCURACY WAFER 1	ΥΧ (3σ)	0.011	μm	3σ ≤ 0.040		
		ΥΥ(3σ)	0.014				
AGE		XX (3σ)	0.010				
R ST		XY (3σ)	0.009	Ī			
WAFER STAGE	STEPPING ACCURACY WAFER 2	ΥΧ (3σ)	0.015	μm	3σ ≤ 0.040	OK	
>		ΥΥ(3σ)	0.015	Ī			
		XX (3σ)	0.011			OK	
	CTTTOWNS ASSURANCE TO THE TOTAL PROPERTY OF	ΧΥ (3σ)	0.009	İ			
	STEPPING ACCURACY WAFER 3	ΥΧ (3σ)		OK			
		ΥΥ(3σ)					
		Χ(3σ)	0.023				
	STEPPING REPEATABILITY	Υ(3σ)	0.013	μm	3σ ≤ 0.035	OK	
SRC	SRC MEASUREMENT REPEATABILITY	3σ	0.30	ppm	3σ ≤ 0.5	ОК	
RETICLE ALIGNMENT		XL(3σ)	0.004		3σ ≤ 0.5 3σ ≤ 0.01		
		YL(3σ)	0.002			O.K	
8	ROC MEASUREMENT REPEATABILITY	XR(3σ)	0.005	μm		30 ≤ 0.01	OK
E AI		YR(3σ)	0.002	Ī			
011	RETICLE ROTATION ACCUARACY		-0.003	μm	≤ ± 0.01	ок	
~	RETICLE ROTATION REPEATABILITY		0.001	μm	≤ ± 0.02	ок	
		Χ(3σ)	0.005		3- 40030	ок	
	DIC CTARTITO (MODE 4)	Υ(3σ)	0.008	μm	3σ ≤ 0.030	OK	
	BLC STABILITY (MODE 1)	RNG(X)	0.007		D		
		RNG (Y)	0.012	μm	Range ≤ 0.03	OK	
		Χ(3σ)	0.005		2- < 0.020	CW.	
¥.	DIG CTARRIETY (MORS 2)	Υ(3σ)	0.004	μm	3σ ≤ 0.030	OK	
BASELINE	BLC STABILITY (MODE 2)	RNG(X)	0.006				
		RNG (Y)	0.006	μm	Range ≤ 0.03	OK	
		Χ(3σ)	0.007		2- 40024		
	DIG CTION TO (MODE 1)	Υ(3σ)	0.006	μm	$3\sigma \le 0.031$	OK	
	BLC STABILITY (MODE 4)	RNG(X)	0.009				
		RNG (Y)	0.008	μm	Range ≤ 0.03	OK	
	I						

		X	0.023			
ENT	AGA ACCURACY MODE 1 (m + 3σ)	Y	0.026	μm	mean + 3σ < 0.05	OK
AUTO ALIGNMENT	ACA ACCURACY MODE 2 (I I + 2cr)	X	0.035		l 27 - 0.05	OK
O ALI	AGA ACCURACY MODE 2 (m + 3σ)	Y	0.027	μm	mean + 3σ < 0.05	OK
AG	AGA ACCURACY MODE 4 (m + 3σ)	X	0.024	um	1 1 2 005	ок
		Y	0.031	μm	mean + 3σ < 0.05	OK.
		XL 5.796	5.796			
		XR	6.016		3σ ≤ 40	ок
		YL	8.58	μm		OK.
		YR	7.315			
TPD	THROUGHPUT 6" WAFER TYPE-L WF	DxD ON	128.5	WPH	>120	ок
170	THROUGHPUT 6 WAPER TYPE-L WF	DxD OFF	130.1	WPH	>120	ок
	WAFER CHUCK FLATNESS	□ 22mm	0.44	μm		