



CANON STEPPER FPA2000i1 INSTALLATION CHECK (REV. 3)

CUSTOMER : On Semi	SYSTEM ID : Stepper 14	S / N : 104141i1
RETICLE # :	WAFER # :	DATE : November 2010

NO	CHECK ITEM		INITIAL	FINAL	SPEC.	√
1	PRESS ROLLER TENSION	XL	4		4 ± 0.5 Kgf	
		XR	4			
		YF	4			
		YB	4			
2	X-Y STAGE LASER POWER : (HP)		419		≥ 200 μW	
	(ZYGO)				≥ 300 μW	
3	X-Y STAGE : (OFFSET) PST - COM	X	-0.6	.1	0 ± 1 mV	
		Y	1.3	0		
	(OFFSET) XP - XM YP - YM	X	-18	0	0 ± 10 mV	
		Y	288	0		
	(SPEED) VAJ - COM	X	1.98		1.975 ± 0.02 KHz	
		Y	1.98			
	(HIGH GAIN) DA - COM	X	2	1	½ ~ 1 Cycle	
		Y	1	1		
	(LOW GAIN) DA - COM	X	2-3	1 ½-2	2 ± 1 Cycle	
		Y	1 ½-2	1 ½-2		
4	A/F : (P/A) CCD	X	.8		.8 ± 0.2 V	
		L	.8			
		R	.8			

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6	EDDY CURRENT SENSOR VOLTAGE	Z0	97.2	95.0	95 ± 3 mV	
		Z1	96.8	95.0		
		Z2	97.1	95.0		
		Z3	94.4	95.0		
7	UNIFORMITY		.8	.8	≤ 1.2 %	
8	INTENSITY		937	937	≥ 600 mW / cm ²	
9	LIRC ACCURACY (OVERALL)		0.349		≤ 1.2 %	
10	FRA MEASUREMENT STABILITY (3 σ) (1/1000 th mode)	XL		.004	≤ 0.01 μm	
		YL		.002		
		XR		.004		
		YR		.003		
11	Z-DRIVE (PIEZO) GAIN	Z0	1.257	1.0075	1.00 ± 0.01	
12	5-CHANNEL OPAF GAIN	CH1		.999	1.00 ± 0.01	
		CH2		1.0		
		CH3		1.0		
		CH4		1.0		
		CH5		1.0		
13	TILT-DRIVE (PIEZO) GAIN	Z1		.9943	1.00 ± 0.01	
		Z2		.9967		
		Z3		.9988		
14	GTOC STABILITY (3 σ)	X		2.2	≤ 5 ppm	
		Y		2.7		
15	GTOC REPEATABILITY (3 σ)	X		2.5	≤ 10 ppm	
		Y		3.8		
16	FOCUS & TILT STABILITY (3 σ)	F		.038	≤ 0.12 μm	
		X		3.320	≤ 10 ppm	
		Y		2.980		
17	FOCUS & TILT REPEATABILITY (3 σ)	F		.11	≤ 0.15 μm	
		X		3.24	≤ 15 ppm	
		Y		3.77		

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18	MASKING BLADE ACCURACY (9 mm) (ROTATION $\leq 40 \mu\text{m}$ ON ANY BLADE)	BU		.04	$0 \pm 100 \mu\text{m}$	
		BL		-.02		
		BD		.03		
		BR		.01		
19	UNEVEN FOCUS (TILT OFF, AUX NWF)	X	-39.75	-3.5	$0 \pm 10 \text{ ppm}$	
		Y	-7.25	3.5		
20	UNEVEN FOCUS (TILT ON)	X	-14.71	-2.94	$0 \pm 10 \text{ ppm}$	
		Y	-20.59	2.94		
21	TOC STABILITY (HENE , MODE 1) (3σ)	X		.03	$\leq 0.04 \mu\text{m}$	
		Y		.00		
	TOC STABILITY (HENE , MODE 2) (3σ)	X		.01	$\leq 0.04 \mu\text{m}$	
		Y		.01		
22	TOC STABILITY (B-B , MODE 3) (3σ)	X		.01	$\leq 0.04 \mu\text{m}$	
		Y		.01		
	TOC STABILITY (B-B, MODE 4) (3σ)	X		.01	$\leq 0.04 \mu\text{m}$	
		Y		.02		
23	SCALING & ORTHOGONALITY (3σ)	X		-.03	$\leq 1.0 \text{ ppm}$	
		Y		-.01		
		θ		.13		
24	RETICLE ROTATION : (MEAN)		-.065	-.003	$0 \pm 0.02 \mu\text{m}$	
	(RANGE)		.025	.022	$\leq 0.03 \mu\text{m}$	
25	LENS DISTORTION	DX		-0.039	$\leq 0.08 \mu\text{m}$	
		DY		-0.037		
26	ABBE	AX	.198	.259	N.A.	
		AY	.569	.278		
27	N-STEP (TILT OFF) (3σ)	X	0.068		$\leq 0.07 \mu\text{m}$	
		Y	0.041			
28	STEPPING REPEATABILITY (TILT ON) (3σ)	X	0.066		$\leq 0.07 \mu\text{m}$	
		Y	0.038			

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29	DEFOCUS (HENE, MODE 1)	Ka	B/S: 6	C/S: -6	0 ± 20 mrad	
		Kb	15	-6		
		Kc	4	0	0 ± 10 mrad	
30	DEFOCUS (HENE, MODE 2)	Ka	-7	4	0 ± 20 mrad	
		Kb	-8	3		
		Kc	0	0	0 ± 10 mrad	
31	DEFOCUS (B-B, MODE 3)	Ka	8	-1	0 ± 20 mrad	
		Kb	16	-1		
		Kc	3	0	0 ± 10 mrad	
32	DEFOCUS (HENE, MODE 4)	Ka	3	0	0 ± 20 mrad	
		Kb	1	-4		
		Kc	-1	1	0 ± 10 mrad	
33	BLCC (HENE, MODE 1) : MEAN	X		0.00	≤ 0.05 μm	
		Y		0.00		
	3 σ	X		0.02	≤ 0.05 μm	
		Y		0.00		
34	BLCC (HENE, MODE 2) : MEAN	X		0.00	≤ 0.05 μm	
		Y		-0.01		
	3 σ	X		0.00	≤ 0.05 μm	
		Y		0.02		
35	BLCC (B-B, MODE 3) : MEAN	X	N/A		≤ 0.05 μm	
		Y	N/A			
	3 σ	X	N/A		≤ 0.05 μm	
		Y	N/A			
36	BLCC (B-B, MODE 4) : MEAN	X		-0.01	≤ 0.05 μm	
		Y		0.02		
	3 σ	X		0.00	≤ 0.05 μm	
		Y		0.02		
37	TV P/A ACCURACY (mean + 3 σ)	X		0.61	≤ 2.0 μm	
		Y		0.74		
38	WAFER SETTING	X		-3.5	0 ± 40 μm	
		Y		-2.8		
		θ		-3.6	0 ± 40 μm	
39	MECHANICAL P/A ACCURACY (3 σ)	X		9.12	≤ 40 μm	
		Y		3.52		
		θ		100	≤ 400 ppm	

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40	AGA ACCURACY ($ \text{mean} + 3\sigma$) (HENE, MULTI-MARK , MODE 1)	X		.063	$\leq 0.12 \mu\text{m}$	
		Y		.081		
41	AGA ACCURACY ($ \text{mean} + 3\sigma$) (HENE, MULTI-MARK , MODE 2)	X		.090	$\leq 0.12 \mu\text{m}$	
		Y		.065		
42	AGA ACCURACY ($ \text{mean} + 3\sigma$) (B-B, MULTI-MARK , MODE 3)	X	N/A		$\leq 0.12 \mu\text{m}$	
		Y	N/A			
43	AGA ACCURACY ($ \text{mean} + 3\sigma$) (B-B, MULTI-MARK , MODE 4)	X		.082	$\leq 0.12 \mu\text{m}$	
		Y		.12		
44	THROUGHPUT (TILT OFF) : 21 shots			N/A	$\geq 80 / \text{hr}$	
	32 shots			82	$\geq 67 / \text{hr}$	
	45 shots			N/A	$\geq 57 / \text{hr}$	

NOTE :