



PAS 5500/300 Master PM

WD
Non

critical tools (DUV1)

Tool. DUV1

Date: 11/6/2023

Manager sign off of PM Completion

PM Type : QUARTERLY PM

Master

Sequence	Subject	Frequency	Action	Time	Procedure	Specification	Result	Verification	Comments
	BEFORE STARTING PM, PERFORM MACHINE CONSTANTS BACKUP	Monthly	Perform	0:05	Specific Backup MCs Run MCBBackup script	Completed Y / N? Recommended backup filename example "PrePM_21Sep2016"	y		
	Image Quality Control	Monthly	Check	0:05	Image Quality Control	3 sigma image sensor measurements: Magnification: ≤ 0.3 ppm (Scanner) /// ≤ 2.0 (Stepper) Rotation: ≤ 0.3 μ rad (Scanner) /// ≤ 2.0 (Stepper) Translation X: ≤ 3 nm Translation Y: ≤ 3 nm Image Tilt Rx: ≤ 2.0 μ rad Image Tilt Ry: ≤ 1.5 μ rad (Scanner) /// ≤ 2.0 (Stepper) Focus: ≤ 20 nm (Scanner) /// ≤ 50 (Stepper)	0.22 0.27 3.34 4.39 1.09 1.49 46.52		
	Edge Sensor repro	Monthly	Check	0:20	Edge Sensor Reproducibility 1x25 Wh_EdgSnsRep251.PER	Standard dev. Xalign: < 1.5 μ m (Computed results) Standard dev. Yalign: < 1.5 μ m Standard dev. Rot: < 30 μ rad mean X align < 10 μ m (absolute value) mean Y align < 10 μ m (absolute value) mean Rotation < 100 μ rad (absolute value)	0.28 0.6 17.5 2.53 2.37 -80.76		
	Mark Sensor repro	Monthly	Check	0:20	Mark Sensor Reproducibility 1x25 WhMasRpr251.PER	Standard dev. Xtrans: < 4 μ m (Computed results) Standard dev. Ytrans: < 4 μ m Standard dev. Rot: < 30 μ rad mean X align < 10 μ m (absolute value) mean Y align < 10 μ m (absolute value) mean Rotation < 100 μ rad (absolute value)	0.18 0.51 10.27 0.73 -0.87 -23.74		
	Uniformity - Conventional (Stepper only test , /300) NA =0.57, sigma = 0.75 Field size X=22, Y =22 is enough	Monthly	Check	0:10	Uniformity I2IUIUni.PER	Uniformity: $0 \pm 1.0\%$ Intensity: > 225 mW/cm2 (Energy sensor)	2.81% 189		
	Uniformity - Annular (Stepper only test , /300) NA =0.54, sigma outer =0.75, sigma inner = 0.45 Field size X=22, Y =22 is enough	Monthly	Check	0:10	Uniformity I2IUIUni.PER	Uniformity: $0 \pm 1.4\%$ Intensity: > 225 mW/cm2 (Energy sensor)	2.60% 187		
	Check C&T performance (Stepper only test , /300)	Monthly	Check	0:05	Check C&T performance CiChk.PER1	TCU water flow: 42.5 ± 0.5 Tiens - Tincoming water: < 0.4 $^{\circ}$ C Incoming Air Pressure: 1000 ± 10 Pa	42.5 0.05 1094.5		
	Fine Tune Q above P for Wafer In dependency. (Use coated wafer)	Quarterly	Check/Adjust	0:10	Fine Tune Q above P for Wafer In dependency Ls_QxPxWaflnd.ADJ	Q-Branch: mcc_q > 0.95 P-Branch: mcc_p > 0.95 Q above P : New Value < 10 μ m Standard Deviation < 50 nm	5.073 0.9		
	Determine RIS to Wafer Offset	Quarterly	Check/Adjust	0:05	Determine RIS to Wafer Offset RisWafOff.ADJ	Q-Branch: mcc_gRIS > 0.95 P-Branch: mcc_RIS > 0.95	na na		
	Monitor and Re-Adjust Q Above P Machine Constant	Quarterly	Check/Adjust	0:10	Monitor and Re-Adjust Q Above P Machine Constant Ls_QxPxCal.ADJ	Measured Difference < 50 nm If less than 50 select YES to update and run IQC	0 y		
	Check Level Sensor Coarse and Fine Performance	Quarterly	Check	0:15	Check Level Sensor Coarse and Fine Performance Ls_CrsFin.PER1	See procedure for specifications: Within Specification Y / N?	y		
	Straylight w/ Rema O/C (Stepper only test , /300)	Monthly	Check	0:10	Straylight IpStrLgt.PER1	Performed Y / N? Maximum Straylight Number $< 5\%$	2.46%		
	Focal plane adjustment	Quarterly	Check/Adjust	1:00	Focal plane adjustment MetlqFocLat.ADJ1	Adjusted Y / N? Focus: < 0.100 μ m Image Tilt Rx: < 10 μ rad Image Tilt Ry: < 10 μ rad	39nm 2.57966 -0.71333		
	Clean wafer table manually (Stepper only test , /300)	Monthly	Perform	0:15	Clean wafer table using granite stone	Inspect surface with flashlight and make sure no particles / lint			

					WsStn.CLE FOLLOW MMM PROCEDURE		na		
	Measure Stone to Lens Tilt (Stepper only test , /300)	Monthly	Check/Adjust	0:10	Matching stone to lens tilt MetMatTilt.ADJ2 MODELLING and UPDATING FOR "STONE TO LENS" ONLY NEED TO RUN 2 WAFERS	Adjusted Y / N? Delta STOLE Rx: < 10 µrad Delta STOLE Ry: < 10 µrad UPDATE (Y/N) , VERIFY AGAIN IF UPDATED.	na 0 -0.8 na		
	Ris white offset tilt (Stepper only test , /300)	Monthly	Check/Adjust	0:10	Ris white offset tilt MetRisWhiOff.ADJ	MCs Updated Y / N?	y		
	Red-Blue	Quarterly	Check/Adjust	1:00	Red-Blue MetIqSet.ADJ8	Reticle Tilt X < 50 µrad Reticle Tilt Y < 50 µrad Reticle Height < 20 µm	-33.817 -15.67 -1.339		
	AFTER COMPLETING PM, PERFORM MACHINE CONSTANTS BACKUP	Monthly	Perform	0:05	Specific Backup MCs POST MCBACKUP	Completed Y / N? Recommended filename "PostPM_DDMMYY"	y		
	DISK TO DISK IMAGE	Monthly	Perform	1:00	Disk to Disk Backup script CsSw_D2dBck.ADJ	Completed Y / N?	y		
	HOT NMP STRIP ALL METROLOGY WAFERS (F6STRP RECIPE, ~22min)	Monthly	Perform	0:25	Strip wafer during DISK to DISK image.	Completed Y / N?	na		
	Clean/inspect reticle library ports	Monthly	Perform	0:10	Wipe with 100% IPA all library ports and surrounding areas	Completed Y/N? Inspect for broken, bent, or loose pins/screws	y		
	Clean/inspect wafer reject ports	Monthly	Perform	0:10	Wipe with 100% IPA reject carriers/covers and surrounding area	Completed Y/N? Inspect for broken, bent, or loose pins/screws	y		
	ABSOLUTE WAVELENGTH REFERENCE (AWR) CALIBRATION. ELS 6610 Ops manual p. 160 of 224 absolute wavelength reference calibration.	Monthly	Check	0:15	List the pre/post values as seen on the Cymer paddle. If there was an error, record it. If there was no error, type in "N"/Can be completed during Disk2disk back up.	Delta Coarse < 2.0 Delta Fine < 1.0 Post_Coarse Post_Fine	na na na na	#VALUE! #VALUE!	
	ANY MISC WORK DONE, NOTE HERE.	Monthly	MISC	TBD		SPECS:			