

VIS Fab3 黃光對準機台Canon AS4 CHECK LIST(三級)  
 VIS Fab3 Photo alignment machine Canon AS4 CHECK LIST (level 3)

※ 機台PM前注意事項&安全注意事項：

- 1). 確認機台清機後(機台上無任何產品閒置)，始可掛PM；PM時需將機台狀態牌置於PM 位置。
  - 2). 人員禁止在辦公室掛PM。
  - 3). Clean Machine與附屬設備(use IPA,酒精,FC-3283) 時需佩帶護目鏡。
  - 4). Replace Lamp 時要配帶防護目鏡(有interlock)，Lamp Off 後0.5小時後，再進行更換作業。
  - 5). PM後所產生之廢棄物,請依照廠內廢棄物清除流程相關規定處理。
- 1)After confirming that the machine has been cleared (no product is idle on the machine), you can hang the PM and PM to place the status card of the machine in the PM position.  
 2)Persons are prohibited from hanging PMs in the office  
 3)Wear goggles when using Clean Machine (Use IPA, Alcohol, FC-3283)  
 4) Wear protective eyepiece (with interlock) when replacing Lamp, and replace it after 0.5 hour after Lamp off.  
 5) Waste generated after PM should be treated in accordance with the relevant provisions of the waste removal process in the factory

PM測量量具名稱 PM measurement tool name	序號 Serial number	有效日期 Effective date
三用電表 Multimeter	75460246 84581792	11/11/2023
Machine ID: 8SAS4	Date:	2023/05/11

1.CPSU Refrigerator Performance Check

Item	Spec	Check	Refill	After data	Note
C-OIL & Brine(Right)	高壓 high pressure	1.5~1.7kg/cm <sup>2</sup>	1.600		
	低壓 Low pressure	0.4~0.6kg/cm <sup>2</sup>	0.500	<input type="checkbox"/> V	
	冷媒 Refrigerant	氣泡(OK/NG) bubble(OK/N)	ok		
Pure Water(Left)	高壓 high pressure	1.5~1.7kg/cm <sup>2</sup>	1.550		
	低壓 Low pressure	0.4~0.6kg/cm <sup>2</sup>	0.500	<input type="checkbox"/> V	
	冷媒 Refrigerant	氣泡(OK/NG) bubble(OK/N)	ok		

2.CPSU Coolant Tank Liquid Level Check

Item	Spec	Level	Refill	Level	Note
C-OIL	≥5cm	11.000	<input type="checkbox"/> V		特別注意Pure wafer 是否有少太多 Pay special attention to whether Pure wafer has too much
BRINE	≥5cm	20.000	<input type="checkbox"/> V		
Pure Water	≥5cm	16.000	<input type="checkbox"/> V		

3.CPSU Resistance Of Pure Water Check (Ion Exchanger)

Item	SPEC	Mes. data	Replace	After data	Note
Rsistance	≥1MΩ	2.500	<input type="checkbox"/> V		

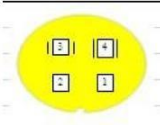
4.Machine Room Coolant Pressure Check (Pressure unit:MPa)

Item	SPEC	Mes. data	Adjust	Adj. data	Note
Pure Water 1 (P)	0.25~0.45MPa	0.37	<input type="checkbox"/> V		

Pure Water 2 (P)	0.25~0.45MPa	0.36	<input type="checkbox"/>	V		
C-OIL(ZT-150) (P)	0.25~0.45MPa	0.41	<input type="checkbox"/>	V		
5.Halogen Lamp Use Time Check						
Item	Spec	Time	Replace	Time	Note	
Halogen Lamp	≤2700 hrs	2182	<input type="checkbox"/>	V	超過Lift Time進行更換,並將時數歸零 (Lamp:12V 100W) Change over Lift time and zero hours (Lamp:12V 100W)	
6.Laser Optic Check (LADJ)						
Item	Spec	Yes	No	Note		
光軸確認 Optical axis confirmation	中心 Circle interlaced	<input checked="" type="radio"/>	<input type="radio"/>	1.確認長方形是否在中心 2.確認4個圓圈是否交錯成星形 1.Check if the rectangle is in the center 2.Confirm 4 circles are staggered into a star		
7.Check Illumination Uniformity (IUC) & Scan Illumination						
Illumination Name	Static IUC				Note	
	Spec	Mes. data	Adjust	Adj. data		
Conventional2	≤15%	13.200	<input type="checkbox"/>	V	大於12%需開始安排Lens更換或Clean When more than 12% need to start Lens replacement or Clean	
Varannular2		14.200	<input type="checkbox"/>	V		
Illumination Name	Scan IUC				Note	
		Mes. data				
Conventional2	3.90	前次Level	L3	本次Level	L3	L1<1 1≤L2<1.2
Varannular2	4.20	前次Level	L3	本次Level	L3	1.2≤L3<5
NA60_S50	4.60	前次Level	L3	本次Level	L3	5≤L4<7 7≤L5
Point to Point Diff	X position	Spec	Mes. data	Adjust	Adj. data	
	-12.25		0.240	<input type="checkbox"/>	V	
	-11.27		0.110	<input type="checkbox"/>	V	
	-10.29		0.460	<input type="checkbox"/>	V	
	-9.31		0.630	<input type="checkbox"/>	V	
	-8.33		0.080	<input type="checkbox"/>	V	
	-7.35		0.250	<input type="checkbox"/>	V	
	-6.37		0.600	<input type="checkbox"/>	V	
	-5.39		0.150	<input type="checkbox"/>	V	
	-4.41		-0.130	<input type="checkbox"/>	V	
	-3.43		-0.210	<input type="checkbox"/>	V	
	-2.45		-0.220	<input type="checkbox"/>	V	
	-1.47		-0.170	<input type="checkbox"/>	V	
	-0.49	≤+5%	-0.050	<input type="checkbox"/>	V	



Tilt X		≤±1ppm	0.970	<input type="checkbox"/> V		2. Out SPEC executes TFM renew
12.Mechanical Pre-Alignment Accuracy Check						
Item		SPEC	check data	Adjust	After data	Note
Average	X	≤±0.015mm	0.005	<input type="checkbox"/> V		Repeat 10 次 Repeat 10 times
	Y	≤±0.015mm	0.007	<input type="checkbox"/> V		
	Theta	≤±30ppm	12.000	<input type="checkbox"/> V		
3-Sigma	X	≤0.015mm	0.009	<input type="checkbox"/> V		
	Y	≤0.015mm	0.007	<input type="checkbox"/> V		
	Theta	≤90ppm	23.00	<input type="checkbox"/> V		
13.Wafer Chunk Flatness Check						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
SFQR		≤0.15um	0.11	<input type="checkbox"/> V		注意是否有單點異常(單點勿超過0.16um) Pay attention to whether there is a single point of abnormality (do not exceed 0.16um in a single point)
14.Focus Drive Measurement Repeatability(AUXFRC)						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
Focus		≤50nm	28.00	<input type="checkbox"/> V		使用FRC-44SHOT程式
Tilt X		≤3ppm	1.070	<input type="checkbox"/> V		Use the FRC-44SHOT program
15.Scanning Synchronization Check(AUXSYNC)						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
Max MA	X	≤±10nm	2.50	<input type="checkbox"/> V		
	Y	≤±10nm	3.20	<input type="checkbox"/> V		
Min MA	X	≤±10nm	-1.24	<input type="checkbox"/> V		
	Y	≤±10nm	-1.54	<input type="checkbox"/> V		
Max MSD	X	≤10nm	4.12	<input type="checkbox"/> V		
	Y	≤10nm	3.21	<input type="checkbox"/> V		
16.AUXAGM Check & Bar Mirror Bowing Calibration						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
Bar Mirror X		≤±7nm	-2.50	<input type="checkbox"/> V		
Bar Mirror Y		≤±7nm	-1.50	<input type="checkbox"/> V		
Orthogonality		≤±0.2ppm	0.045	<input type="checkbox"/> V		
Scaling. X		≤±0.2ppm	-0.010	<input type="checkbox"/> V		
Scaling. Y		≤±0.2ppm	0.069	<input type="checkbox"/> V		
17.Distortion Check						
Item		Mes. data				
UP	X	Max	X,Y Max,Min  ≤ 0.015 um			
		Min	0.016 um ≤  X,Y Max,Min  ≤ 0.025 um OOC			
	Y	Max	X,Y Max,Min  > 0.025 um OOS			
		Min	若OOC, 請通知製程critical layer 綁機 run. 若OOS, 請停機立即改善.			
		Max	If OOC, please inform PP critical layer same tool run.			

	Min				
Y	Max				
	Min				
<b>18.Openflare Check</b>					
Item	SPEC	Mes. data	Adjust	Adj. data	Note
ETH 的能量 ETH energy	20~35 J/m2	23	<input type="checkbox"/> V		
Item	SPEC	Ok	NG		Note
Openflare Check	1倍ETH 是否全 開 1 times ETH is open	<input checked="" type="radio"/>	<input type="radio"/>		使用OPENFLARE recipe Use OPENFLARE recipe
<b>19.Ghost Rate Check</b>					
Shot	Dose(J/m2)	Rate(%)	邊框確認 Border confirmation		※Shot#1~#4 的 Total dose by machine recipe Ghost rate= ETH / Total exposure dose * 100% SPEC : Ghost rate ≥0.5%的Shot 不能有光罩的邊框 SPEC : Ghost rate ≥0.5%的Shot Can't have a mask border
1	2000	1.15%	<input checked="" type="radio"/> OK	<input type="radio"/> NG	
2	4000	0.58%	<input checked="" type="radio"/> OK	<input type="radio"/> NG	
3	8000	0.29%	<input checked="" type="radio"/> OK	<input type="radio"/> NG	
4	10000	0.23%	<input checked="" type="radio"/> OK	<input type="radio"/> NG	
<b>20.Step Accuracy Check</b>					
Item	SPEC	Mes. data	Adjust	Adj. data	Note
X-Step	X1	≤15nm	11.20	<input type="checkbox"/> V	
	Y1	≤15nm	10.28	<input type="checkbox"/> V	
	X2	≤15nm	9.23	<input type="checkbox"/> V	
	Y2	≤15nm	11.25	<input type="checkbox"/> V	
	X3	≤15nm	10.56	<input type="checkbox"/> V	
	Y3	≤15nm	11.25	<input type="checkbox"/> V	
Y-Step	X4	≤15nm	10.86	<input type="checkbox"/> V	
	Y4	≤15nm	9.82	<input type="checkbox"/> V	
	X5	≤15nm	8.80	<input type="checkbox"/> V	
	Y5	≤15nm	8.85	<input type="checkbox"/> V	
	X6	≤15nm	12.11	<input type="checkbox"/> V	
	Y6	≤15nm	10.56	<input type="checkbox"/> V	
Mag X	≤±0.3ppm	0.100	<input type="checkbox"/> V		
Mag Y	≤±0.3ppm	0.120	<input type="checkbox"/> V		
SKEW	≤±0.3ppm	0.070	<input type="checkbox"/> V		
R.R	≤±0.3ppm	0.050	<input type="checkbox"/> V		
<b>21.Overlay Check</b>					
Item	SPEC	Mes. data	Adjust	Adj. data	Note
X Shift	≤±0.01nm	0.002	<input type="checkbox"/> V		
Y Shift	≤±0.01nm	0.003	<input type="checkbox"/> V		
Wafer Scaling X	≤±0.3ppm	0.050	<input type="checkbox"/> V		

Wafer Scaling Y	$\leq \pm 0.3\text{ppm}$	0.030	<input type="checkbox"/>	V	
Wafer Rot.X	$\leq \pm 0.3\text{ppm}$	0.032	<input type="checkbox"/>	V	
Wafer Rot.Y	$\leq \pm 0.3\text{ppm}$	-0.012	<input type="checkbox"/>	V	
Shot Mag.X	$\leq \pm 0.3\text{ppm}$	0.120	<input type="checkbox"/>	V	
Shot Mag.Y	$\leq \pm 0.3\text{ppm}$	0.230	<input type="checkbox"/>	V	
Shot Rot.X	$\leq \pm 0.3\text{ppm}$	-0.150	<input type="checkbox"/>	V	
Shot Rot.Y	$\leq \pm 0.3\text{ppm}$	-0.180	<input type="checkbox"/>	V	
22.Focus Check (9P)					
Item			check data		
IFD Up		0.16			
前次Level/本次Level	L1 < 0.1 0.1 ≤ L2 < 0.18 0.18 ≤ L3 < 0.28	前次Level	L2	本次Level	L2
IFD Down	0.28 ≤ L4 < 0.3 0.3 ≤ L5 < 0.45 L6 ≥ 0.45(um)	0.14			
前次Level/本次Level		前次Level	L2	本次Level	L2
Focus dif (Up-down)	$\leq \pm 0.02\text{um}$	0.010			
Focus	$\leq \pm 0.03\text{um}$	0.027			
Tilt X	$\leq \pm 1\text{ppm}$	-0.090			
Tilt Y	$\leq \pm 1\text{ppm}$	0.400			
23.Masking Blade Accuracy check					
	Unit	Spec	check data	Adjust	After data
Xr average		0.055 ± 0.03	0.050	<input type="checkbox"/>	V
Xl average	mm	-0.055 ± 0.03	-0.045	<input type="checkbox"/>	V
Yt average		0.055 ± 0.03	0.060	<input type="checkbox"/>	V
Yb average		-0.055 ± 0.03	-0.055	<input type="checkbox"/>	V
			<b>*1.注意data是有正負號</b>		
24.Check HD Capacity					
Item		SPEC	check data	clean	After data
Log		≤ 90%	32	<input type="checkbox"/>	V
Console		≤ 90%	18	<input type="checkbox"/>	V
Home		≤ 90%	52	<input type="checkbox"/>	V
25.System Parameter Back Up					

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Item	Parameter	Config	Reticle	Recipe	Note
BACK UP	<input checked="" type="checkbox"/> V	<input checked="" type="checkbox"/> V	<input checked="" type="checkbox"/> V	<input checked="" type="checkbox"/> V	1.命名方式：1SAS4-20150805 2.保留5筆DATA
DATA CLEAN	<input checked="" type="checkbox"/> V	<input checked="" type="checkbox"/> V	<input checked="" type="checkbox"/> V	<input checked="" type="checkbox"/> V	1. Name the way: 1SAS4-20150805 2. Keep 5 DATA
26.6S check					
Item	clean				Note
6S 環境整理 6S environment finishing	<input checked="" type="checkbox"/> V				
27.檢查三節燈 Check three lights					
Item	SPEC	正常 normal	不正常 abnormal		Note
三節燈 three lights	是否正常 Is it normal?	<input checked="" type="radio"/>	<input type="radio"/>		
28.機台接地匯流排與廠務接地阻抗量測 Measured impedance of machine grounding bus bar and plant grounding					
Item	SPEC	阻抗值 Impedance v			Note
阻抗量測 Impedance measurement	< 0.1Ω	0.0500			