

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	7/19/2022
Machine ID: 1SAS4	Date:	2021/12/9

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 ²	1.620		
	低壓 Low pressure	0.4~0.6kg/cm ²	0.550	<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 ²	1.600		
	低壓 Low pressure	0.4~0.6kg/cm ²	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	12.000	<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	14.000	<input type="checkbox"/> V		
Pure Water	≥5cm	13.000	<input type="checkbox"/> V		

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

Item	SPEC	Mes. data	Replace	After data	Note
Rsistance	≥1MΩ	2.360	<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	0.32	<input type="checkbox"/> V		

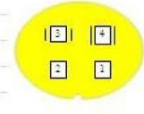
Pure Water 2 (P)	0.25~0.45MPa	0.33	<input type="checkbox"/>	V		
C-OIL(ZT-150) (P)	0.25~0.45MPa	0.35	<input type="checkbox"/>	V		
5.Halogen Lamp Use Time Check						
Item	Spec	Time	Replace	Time	Note	
Halogen Lamp	≤2700 hrs	1684	<input type="checkbox"/>	V	超過Lift Time進行更換,並將時數歸零 (Lamp:12V 100W) Change over 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="checkbox"/>	<input type="checkbox"/>	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		13.240	<input type="checkbox"/>	V	大於12%需開始安排Lens更換或Clean	
Varannular2	≤15%	14.050	<input type="checkbox"/>	V	When more than 12% need to start Lens replacement or Clean	
Illumination Name		Scan IUC			Note	
	Spec	Mes. data	Adjust	Adj. data		
Conventional2		5.32	<input type="checkbox"/>	V		
Varannular2	≤7%	6.22	<input type="checkbox"/>	V		
NA60_S50		5.19	<input type="checkbox"/>	V		
	X position	Spec	Mes. data	Adjust	Adj. data	
	-12.25		0.010	<input type="checkbox"/>	V	
	-11.27		0.230	<input type="checkbox"/>	V	
	-10.29		0.140	<input type="checkbox"/>	V	
	-9.31		-0.160	<input type="checkbox"/>	V	
	-8.33		-0.080	<input type="checkbox"/>	V	
	-7.35		-0.030	<input type="checkbox"/>	V	
	-6.37		0.160	<input type="checkbox"/>	V	
	-5.39		0.270	<input type="checkbox"/>	V	
	-4.41		0.330	<input type="checkbox"/>	V	
	-3.43		0.110	<input type="checkbox"/>	V	
	-2.45		0.090	<input type="checkbox"/>	V	
	-1.47		0.250	<input type="checkbox"/>	V	
NA60_S50 Point to Point Diff	-0.49	±5%	0.190	<input type="checkbox"/>	V	
	0.49		0.060	<input type="checkbox"/>	V	
	1.47		0.070	<input type="checkbox"/>	V	
	2.45		0.260	<input type="checkbox"/>	V	

	3.43		0.190	<input type="checkbox"/>	V	
	4.41		0.260	<input type="checkbox"/>	V	
	5.39		0.220	<input type="checkbox"/>	V	
	6.37		-0.160	<input type="checkbox"/>	V	
	7.35		-0.110	<input type="checkbox"/>	V	
	8.33		-0.090	<input type="checkbox"/>	V	
	9.31		-0.230	<input type="checkbox"/>	V	
	10.29		-0.180	<input type="checkbox"/>	V	
	11.27		0.070	<input type="checkbox"/>	V	
	12.25		0.100	<input type="checkbox"/>	V	
LIMC						
Illumination Name		SPEC	UC	Adjust	UC	Note
Conventional2			16578	<input type="checkbox"/>	V	1.請選擇RENEW
Varannular2		≥10000 W/m2	14892	<input type="checkbox"/>	V	2.UC 低於1000W/m2,需開始安排Lens更換或Clean
NA60_S50			17264	<input type="checkbox"/>	V	1. Please choose RENEW 2. UC is less than 10000W/m2, need to start Lens exchange or Clean
8.ADCM (ACTIVE DOSE CONTROLLER MEASURE)						
Item		Spec	Mes. data	Adjust	Adj. data	Note
Monitor		≤4.0%	2.55	<input type="checkbox"/>	V	1.使用Scan range:33mm , Test ID:C2/V2 平均值計算 2.Monitor超過2.5%需開始安排FG clean
Calibration		≤1.5%	0.74	<input type="checkbox"/>	V	1. Using Scan range: 33mm, Test ID: C2/V2 Average Calculation 2. Monitor needs more than 2.5% to start FG clean
9.EXTV mark Initial value :						
Item		SPEC	check data	Adjust	After data	Note
LEFT (CCD)		50%~99%	89	<input type="checkbox"/>	V	1.60≥Data≥50需開始安排更換Lens
RIGHT (CCD)		50%~99%	92	<input type="checkbox"/>	V	2.當差異大於25,需安排時間更換ND filter
CENTER X (HRD)		50%~99%	88	<input type="checkbox"/>	V	1.60 ≥ Data ≥ 50 need to start replacing Lens
CENTER Y (HRD)		50%~99%	93	<input type="checkbox"/>	V	2. When the difference is greater than 25, need to arrange time to replace ND filter
10.Baseline Check (BLC)						
Item		SPEC	check data	Adjust	After data	Note
Mean	X	≤±500nm	56.00	<input type="checkbox"/>	V	設定Repeat次數20次 Set Repeat frequency 20 times
	Y	≤±500nm	67.00	<input type="checkbox"/>	V	
3-Sigma	X	≤5nm	2.600	<input type="checkbox"/>	V	
	Y	≤5nm	3.300	<input type="checkbox"/>	V	
11.ALFC (A)						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
Mean		≤±0.05um	0.024	<input type="checkbox"/>	V	1.使用ID:Canon_Conventional2 量測 2.Out SPEC執行TFM renew
Tilt X		≤±1ppm	0.450	<input type="checkbox"/>	V	1 Use ID: Canon_Conventional2 Measurement 2. Out SPEC executes TFM renew

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12.Mechanical Pre-Alignment Accuracy Check						
Item		SPEC	check data	Adjust	After data	Note
Average	X	≤±0.015mm	0.008	<input type="checkbox"/> V		Repeat 10 次 Repeat 10 times
	Y	≤±0.015mm	0.009	<input type="checkbox"/> V		
	Theta	≤±30ppm	13.000	<input type="checkbox"/> V		
3-Sigma	X	≤±0.015mm	0.005	<input type="checkbox"/> V		
	Y	≤±0.015mm	0.006	<input type="checkbox"/> V		
	Theta	≤90ppm	42.00	<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	24.00	<input type="checkbox"/> V		使用FRC-44SHOT程式 Use the FRC-44SHOT program
Tilt X		≤3ppm	1.230	<input type="checkbox"/> V		
15.Scanning Synchronization Check(AUXSYNC)						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
Max MA	X	≤±10nm	5.36	<input type="checkbox"/> V		
	Y	≤±10nm	4.57	<input type="checkbox"/> V		
Min MA	X	≤±10nm	-4.33	<input type="checkbox"/> V		
	Y	≤±10nm	-5.21	<input type="checkbox"/> V		
Max MSD	X	≤10nm	3.20	<input type="checkbox"/> V		
	Y	≤10nm	4.39	<input type="checkbox"/> V		
16.AUXAGM Check & Bar Mirror Bowing Calibration						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
Bar Mirror X		≤±7nm	2.30	<input type="checkbox"/> V		
Bar Mirror Y		≤±7nm	4.60	<input type="checkbox"/> V		
Orthogonality		≤±0.2ppm	0.080	<input type="checkbox"/> V		
Scaling, X		≤±0.2ppm	0.120	<input type="checkbox"/> V		
Scaling, Y		≤±0.2ppm	0.094	<input type="checkbox"/> V		
17.Openflare Check						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
ETH 的能量 ETH energy		20~35 J/m2	32	<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="checkbox"/>	<input type="checkbox"/>		使用OPENFLARE recipe Use OPENFLARE recipe
18.Ghost Rate Check						

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Shot	Dose(J/m2)	Rate(%)	邊框確認		※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	
			Border confirmation			
1	8000	0.4	<input checked="" type="radio"/> OK	<input type="radio"/> NG		
2	10000	0.32	<input checked="" type="radio"/> OK	<input type="radio"/> NG		
3	11500	0.27	<input checked="" type="radio"/> OK	<input type="radio"/> NG		
4	13000	0.24	<input checked="" type="radio"/> OK	<input type="radio"/> NG		
19.Step Accuracy Check						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
X-Step	X1	≤15nm	9.52	<input type="checkbox"/> V		
	Y1	≤15nm	8.54	<input type="checkbox"/> V		
	X2	≤15nm	7.14	<input type="checkbox"/> V		
	Y2	≤15nm	9.67	<input type="checkbox"/> V		
	X3	≤15nm	10.52	<input type="checkbox"/> V		
	Y3	≤15nm	9.59	<input type="checkbox"/> V		
Y-Step	X4	≤15nm	9.67	<input type="checkbox"/> V		
	Y4	≤15nm	8.23	<input type="checkbox"/> V		
	X5	≤15nm	8.79	<input type="checkbox"/> V		
	Y5	≤15nm	9.67	<input type="checkbox"/> V		
	X6	≤15nm	8.66	<input type="checkbox"/> V		
	Y6	≤15nm	9.21	<input type="checkbox"/> V		
Mag X		≤±0.3ppm	0.120	<input type="checkbox"/> V		
Mag Y		≤±0.3ppm	0.097	<input type="checkbox"/> V		
SKEW		≤±0.3ppm	0.110	<input type="checkbox"/> V		
R.R		≤±0.3ppm	0.085	<input type="checkbox"/> V		
20.Overlay Check						
Item		SPEC	Mes. data	Adjust	Adj. data	Note
X Shift		≤±0.01nm	0.002	<input type="checkbox"/> V		
Y Shift		≤±0.01nm	0.004	<input type="checkbox"/> V		
Wafer Scaling X		≤±0.3ppm	0.095	<input type="checkbox"/> V		
Wafer Scaling Y		≤±0.3ppm	0.075	<input type="checkbox"/> V		
Wafer Rot.X		≤±0.3ppm	0.054	<input type="checkbox"/> V		
Wafer Rot.Y		≤±0.3ppm	0.110	<input type="checkbox"/> V		
Shot Mag.X		≤±0.3ppm	0.087	<input type="checkbox"/> V		
Shot Mag.Y		≤±0.3ppm	0.130	<input type="checkbox"/> V		
Shot Rot.X		≤±0.3ppm	0.110	<input type="checkbox"/> V		
Shot Rot.Y		≤±0.3ppm	0.100	<input type="checkbox"/> V		
21.Focus Check (9P)						
Item		SPEC	check data	Adjust	After data	Note
IFD Up		≤±0.1um	0.054	<input type="checkbox"/> V		
IFD Down		≤±0.1um	0.033	<input type="checkbox"/> V		
Focus dif (Up-down)		≤±0.02um	0.007	<input type="checkbox"/> V		
Focus		≤±0.03um	0.015	<input type="checkbox"/> V		

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Tilt X		≤±1ppm	0.540	<input type="checkbox"/> V	
Tilt Y		≤±1ppm	0.810	<input type="checkbox"/> V	
22.Masking Blade Accuracy check					
	Unit	Spec	check data	Adjust	After data
Xr average	mm	0.055±0.03	0.050	<input type="checkbox"/> V	
Xl average		-0.055±0.03	-0.060	<input type="checkbox"/> V	
Yt average		0.055±0.03	0.060	<input type="checkbox"/> V	
Yb average		-0.055±0.03	0.000	<input type="checkbox"/> V	
		*1.注意data 是有正負號			
23.Check HD Capacity					
Item	SPEC	check data	clean	After data	Note
Log	≤90%	57	<input type="checkbox"/> V		
Console	≤90%	46	<input type="checkbox"/> V		
Home	≤90%	49	<input type="checkbox"/> V		
24.System Parameter Back Up					
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
25.6S check					
Item	clean				Note
6S 環境整理 6S environment finishing	<input checked="" type="checkbox"/> V				
26.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"/>		
27.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					

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Item	SPEC	阻抗值 Impedance v	Note
阻抗量測 Impedance measurement	< 1 Ω	0.35	