

TSRI 微縮光阻處理系統

CLEAN TRACK ACT-8Z

塗佈 / 顯影整合製程設備簡介

Coating & Developing Service Introduction

給第一次送委託的您 / For First-Time Service Users

這份簡介只聚焦於「設備可以替您的樣品做什麼」，不介紹設備內部結構。您可先確認樣品尺寸、材質與想進行的製程，再與設備人員討論實際可行條件。

This guide focuses only on what the equipment can do for your sample. Internal equipment structure is intentionally omitted. Start with your sample size, material and requested process, then confirm the detailed process conditions with the equipment team.

核心能力 / Core Capabilities	適用對象 / Typical Use
自動光阻塗佈 Automatic photoresist coating	微影製程前段樣品 Lithography pre-process samples
自動顯影與清洗 Automatic development & rinse	曝光後顯影需求 Post-exposure development
烘烤、熱處理與冷卻 Bake, thermal treatment & cooling	需搭配 bake / cool 的製程 Processes requiring bake / cool
25 mm × 25 mm 晶片自動塗佈 / 顯影 Automatic coating & development for 25 mm × 25 mm chips	小尺寸晶片委託 Small-chip service requests

中英文對照 | External Service Quick Guide

1. 這台設備能幫您做什麼？ / What Can ACT-8Z Do for You?

ACT-8Z 是用於光阻塗佈、顯影、烘烤與冷卻等微影相關前後處理的整合式設備。對外委託時，最重要的是先確認您的樣品尺寸、材質，以及希望完成的製程步驟。

ACT-8Z is an integrated track system for photoresist coating, development, baking and cooling. For external service requests, the key information is your sample size, material and the process steps you need.

您想做的事 / Your Need

ACT-8Z 可提供 / Available Capability

在樣品表面塗上光阻

Coat photoresist on the sample

自動旋轉塗佈

Automatic spin coating

曝光後進行顯影

Develop after exposure

自動顯影、DI Water 沖洗

Automatic development and DI-water rinse

塗佈前後進行烘烤

Bake before/after coating

多種熱板製程，最高可至 350°C 的 HHP

Multiple hot plates; HHP up to 350°C

製程後快速降溫

Cool after thermal processing

HCP 高速冷板，15–30°C

HCP high-speed cool plate, 15–30°C

處理小尺寸晶片

Process small chips

提供 25 mm × 25 mm 晶片自動塗佈與顯影製程

Automatic coating and development for 25 mm × 25 mm chips

快速判斷 / Quick Check

如果您的需求是「塗光阻 → 烘烤 → 曝光（其他設備）→ 顯影 → 清洗 / 冷卻」這類流程，ACT-8Z 可負責其中的塗佈、烘烤、顯影與冷卻步驟。

If your flow is “coat resist → bake → expose (on another tool) → develop → rinse/cool,” ACT-8Z can provide the coating, baking, development and cooling steps.

2. 可處理的樣品尺寸 / Supported Sample Formats

樣品格式 / Sample format

說明 / Notes

6 吋晶圓 / 6-inch wafer and transparent-material wafers

可使用設備既有 6 吋及透明材質晶圓製程能力。

Supported by the installed 6-inch wafer and transparent-material wafers process capability.

8 吋晶圓 / 8-inch wafer and transparent-material wafers

可使用設備既有 8 吋及透明材質晶圓製程能力。

Supported by the installed 8-inch wafer and transparent-material wafers process capability.

25 mm × 25 mm 晶片 / chip

提供自動塗佈與自動顯影製程。

Automatic coating and automatic development are available.

3. 阻劑塗佈能力 / Photoresist Coating Capability

設備可進行自動旋轉塗佈，適合需要在晶圓或可受理晶片表面形成光阻膜的製程。實際可使用的阻劑種類、目標厚度與 recipe 條件，需在委託前確認。

The tool provides automatic spin coating for forming photoresist films on wafers or accepted chip samples. The actual resist type, target thickness and recipe conditions must be confirmed before service.

項目 / Item	能力 / Capability
旋轉速度 / Spin speed	1–6000 rpm
加速度 / Acceleration	1–10000 rpm/sec
阻劑供應 / Resist supply	每組可搭載最多 8 條獨立阻劑供應線；各線含幫浦、0.1 μm 過濾器與噴嘴。 Up to 8 independent resist supply lines per unit, with pump, 0.1 μm filter and nozzle.
清洗相關 / Rinse functions	具溶劑、底側沖洗與邊緣沖洗相關功能。 Includes solvent, backside-rinse and edge-rinse functions.

25 mm × 25 mm 晶片 / 25 mm × 25 mm Chips

除 6 吋與 8 吋晶圓外，本設備亦提供 25 mm × 25 mm 晶片的自動光阻塗佈製程，適合小尺寸樣品委託。

In addition to 6-inch and 8-inch wafers, the equipment also provides automatic photoresist coating for 25 mm × 25 mm chips, supporting small-format sample requests.

4. 顯影能力 / Development Capability

設備可進行自動顯影與沖洗。對外送件時，請告知曝光後所使用的光阻系統、預計顯影液及希望達成的圖形結果，以利設備人員判斷 recipe 是否適用。

The equipment provides automatic development and rinsing. For service requests, provide the resist system, intended developer and expected pattern result so the equipment team can evaluate recipe suitability.

項目 / Item	能力 / Capability
旋轉速度 / Spin speed	1–5000 rpm
加速度 / Acceleration	1–10000 rpm/sec
顯影方式 / Development	Spray / Puddle
顯影液流量 / Developer flow	1–10000 ml/min
沖洗 / Rinse	DI Water 沖洗；設備另有 R200 / FIRM 相關供應配置。 DI-water rinse; installed R200 / FIRM related supply is also listed in the equipment configuration.

小尺寸晶片也可自動顯影 / Automatic Development for Small Chips

25 mm × 25 mm 晶片可搭配自動顯影製程，送件前請一併提供光阻種類、曝光條件與預計顯影需求。

25 mm × 25 mm chips can also use the automatic development process. Please provide the resist type, exposure condition and development requirement before service.

5. 烘烤、熱處理與冷卻 / Baking, Thermal Treatment & Cooling

ACT-8Z 整合多種熱板與冷板，可配合塗佈與顯影流程進行前烘、後烘、熱處理或冷卻。下表為設備既有溫度能力摘要。

ACT-8Z integrates multiple hot plates and cool plates for pre-bake, post-bake, thermal treatment and cooling. The table below summarizes the installed temperature capability.

模組 / Module	數量 / Qty.	溫度範圍 / Range	誤差 / Accuracy
ADH	2	50–180°C	±1.2°C
LHP	3	50–180°C	±0.8°C
HHP	3	90–350°C	±1.5°C
PHP	4	50–180°C	±0.6°C
HCP	4	15–30°C	±0.2°C

原始設備資料列出搬送 / 感測可對應 Glass、Sapphire、Si、SiC、GaN 等基板。實際是否能進行特定塗佈、烘烤或顯影製程，仍取決於樣品尺寸、表面狀態、藥液相容性與設備受理條件。

The equipment source material lists Glass, Sapphire, Si, SiC and GaN among substrates detectable by the handling/sensing system. Actual coating, baking or development acceptance still depends on sample size, surface condition, chemical compatibility and service rules.

常見材質 / Typical materials	委託前建議 / Before service
Si / SiC / GaN	提供材質、尺寸、厚度與表面狀況。 Provide material, size, thickness and surface condition.
Glass / Sapphire	請特別說明透明基板、尺寸與厚度。 Clearly state that the substrate is transparent, and provide size and thickness.
其他材料 / Other materials	請先洽設備人員確認化學與搬送相容性。 Confirm chemical and handling compatibility with the equipment team first.

7. 委託前請準備這些資訊 / Information to Prepare Before Service

資料越完整，設備人員越能快速判斷是否適合 ACT-8Z，以及是否已有可使用的標準 recipe。

The more complete your information is, the faster the equipment team can determine whether ACT-8Z and an existing recipe are suitable.



請準備 / Please Prepare

- ☐ 樣品尺寸：6 吋、8 吋，或 25 mm × 25 mm 晶片。
Sample size: 6-inch, 8-inch, or 25 mm × 25 mm chip.
- ☐ 基板材質與厚度，例如 Si、Glass、Sapphire、SiC、GaN。
Substrate material and thickness, e.g. Si, Glass, Sapphire, SiC or GaN.
- ☐ 希望進行的製程：塗佈、烘烤、顯影、冷卻，或其組合。
Requested steps: coating, bake, development, cooling, or a combination.
- ☐ 使用的光阻名稱、型號或系列。
Photoresist name, model or series.
- ☐ 若要顯影：提供曝光方式 / 條件與希望使用的顯影液。
For development: provide exposure method/condition and intended developer.
- ☐ 目標結果，例如光阻厚度、烘烤溫度 / 時間、圖形需求等。
Target result, such as resist thickness, bake temperature/time or pattern requirement.
- ☐ 樣品是否有特殊材質、脆弱結構、背面污染或其他風險。
Any special material, fragile structure, backside contamination or other risk.

不知道 recipe 也可以先詢問 / You Do Not Need a Complete Recipe

第一次送委託時，至少準備「樣品尺寸 + 材質 + 想做的製程 + 想達到的結果」即可開始討論。

For a first inquiry, “sample size + material + requested process + target result” is enough to start the discussion.

8. 生手常見問題 / Frequently Asked Questions

Q1 | ACT-8Z 是曝光機嗎？ / Is ACT-8Z an exposure tool?

不是。ACT-8Z 主要負責光阻塗佈、烘烤、顯影與冷卻等製程；曝光通常由其他曝光設備完成。

No. ACT-8Z mainly performs photoresist coating, baking, development and cooling; exposure is normally performed on another exposure tool.

Q2 | 25 mm × 25 mm 晶片也可以做嗎？ / Can 25 mm × 25 mm chips be processed?

可以。本設備提供 25 mm × 25 mm 晶片的自動塗佈與自動顯影製程。

Yes. Automatic coating and automatic development are available for 25 mm × 25 mm chips.

Q3 | 我不知道要用多少 rpm 或烘烤多久怎麼辦？ / What if I do not know the rpm or bake time?

先提供光阻、樣品與目標結果，設備人員可協助判斷是否有合適的既有條件或需要進一步確認。

Provide the resist, sample information and target result first; the equipment team can check whether a suitable existing condition is available.

Q4 | 設備規格允許，就一定可以委託嗎？ / If the hardware supports it, is the service guaranteed?

不一定。實際受理仍需確認樣品風險、藥液相容性、設備既有條件與管理規範。

Not necessarily. Acceptance still depends on sample risk, chemical compatibility, installed process conditions and equipment rules.

9. 一頁看懂設備能力 / One-Page Capability Summary

類別 / Category

設備能力摘要 / Capability Summary

設備 / Equipment	TEL CLEAN TRACK ACT-8Z
主要用途 / Main purpose	光阻塗佈、顯影、烘烤、熱處理、冷卻 Photoresist coating, development, baking, thermal treatment, cooling
樣品尺寸 / Sample format	6 吋晶圓、8 吋晶圓、25 mm × 25 mm 晶片 6-inch wafers, 8-inch wafers, 25 mm × 25 mm chips
25 mm × 25 mm 晶片 / chip	提供自動塗佈及自動顯影 Automatic coating and automatic development
Coater	1–6000 rpm ; 加速度 1–10000 rpm/sec
Developer	1–5000 rpm ; Spray / Puddle ; DI Water rinse
最高熱處理溫度 / Max. thermal range	HHP 最高 350°C / HHP up to 350°C
冷卻 / Cooling	HCP 15–30°C
資料列出基板 / Listed substrates	Glass / Sapphire / Si / SiC / GaN

送件前最後確認 / Final Check Before Submission

請先準備：①尺寸 ②材質 ③光阻 / 顯影液 ④希望做的製程 ⑤目標結果。若為 25 mm × 25 mm 晶片，請直接註明需「自動塗佈」、「自動顯影」或兩者皆需要。

Please prepare: (1) size, (2) material, (3) resist/developer, (4) requested process and (5) target result. For 25 mm × 25 mm chips, specify whether you need automatic coating, automatic development, or both.

正式製程可行性、藥液使用、recipe 與樣品限制，請以設備管理單位確認結果為準。

Final process feasibility, chemical use, recipe and sample restrictions are subject to confirmation by the equipment team.