

Introducing the 8001 CO₂ Laser Ablation Wafer Eraser

Precision Material Removal with Minimal Thermal Impact

A Shuttle or Multi-Project Wafer (MPW) is a service model where multiple customers share the cost of a single mask set and wafer run to create prototype chips. ADT addresses this need with the 8001 Eraser, designed specifically to support shuttle fab services.

The ADT CO₂ laser ablation system enables precise removal of metal and Low-K layers with a typical 50–60 μm spot size, it ensures controlled ablation, minimal substrate interaction, and excellent thermal management.

CO₂ Laser Scribing Module Features

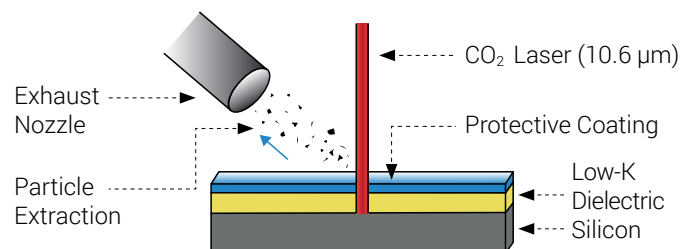
- 10.6 μm CO₂ laser head
- Typical 50-60 μm spot size
- Adjustable power by PWM method
- Precision motion system
- Real-time process monitoring

Key Advantages of ADT CO₂ Laser

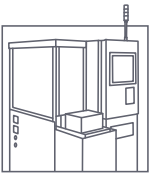
- Laser energy is absorbed mainly by the patch material, minimizing silicon substrate damage while delivering precise removal.
- Efficient removal of metals and non-Si materials
- Reduced laser penetration into silicon
- Lower risk of micro-cracks in silicon

Process Enhancements

1. Integrated pre-coating cycle
2. Post-process washing and drying for wafer protection, cleanliness, and process stability
3. High-power exhaust particle extraction removes debris immediately during laser ablation

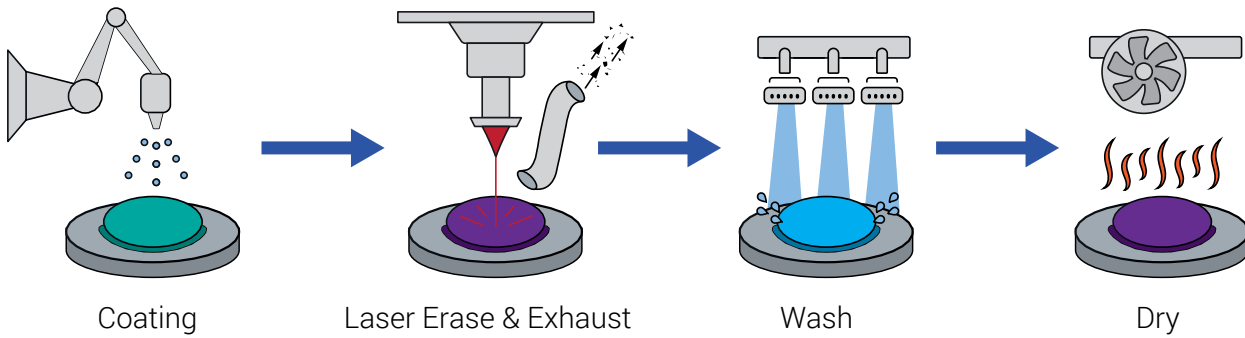


Maximize shuttle wafer efficiency with precise, low-impact CO₂ laser ablation



8001 Wafer Eraser

CO₂ Laser Eraser Process Flow



Thermal Laser Power Monitoring

The 8001 system includes a built-in thermal laser power sensor to measure the emitted laser power in real-time. This ensures that the software-set power aligns with the actual laser output, enabling stable production and consistent quality.

8001 CO₂ Laser Scribing System Specification

Specification	Value
Work piece Size	Up to Ø 300 mm
Laser	CO ₂ CW water cooled 4 L/Min
Power	60W
Indexing Axis (Y)	
Resolution	0.2 µm
Accuracy Cumulative	1.5 µm
Accuracy Indexing	1.0 µm
Feed Axis (X)	
Drive	Ball bearing lead screw with DC-brushless motor
Cut Depth Axis (Z)	
Resolution	0.2 µm
Rotary Axis (T)	
Accuracy	4 arc-sec (0.001 deg.)
Standard	CE Certification by default Semi-S2 as an option
Utilities*	
Electrical	200-240 VAC 50/60 Hz Single Phase 2000W
Laser coolant	4 L/min
Dimensions	1100 X 1740 X 1700 mm
Weight	1350 Kg

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