

Cee® 1300CSX

Thermal Slide Debonder

Cee® 1300CSX thermal slide debonder enables high-temperature slide-off debonding of thinned compound semiconductor materials (GaAs, GaN, InP, and SiC) in a laboratory setting. This tool permits engineers to complete the final step of thinned full wafer processing in a developmental setting. Internal small-scale prototyping capability may be used to accelerate product development cycles and improve time to market for new compound semiconductor applications (high-power RF, LED, and solar).



Cost Effective Equipment

Serving the Semiconductor Industry Since 1987

Cost Effective Equipment is a predominant supplier of thin-wafer handling technology and is uniquely positioned to provide full process integration (materials, processes, and machines). The thermal slide debonder platform has successfully demonstrated industry-leading precision and performance during developmental stages.

Reliability and Throughput

Temporary Wafer Bonding Tool Platform Reliability

Total Throughput	Est. 8-14 WPH for ≤150-mm diameter* Est. 4-8 WPH for 200-300-mm diameter
Qualified Wafer Materials	SiC, GaN, GaAs, InP, sapphire, silicon, glass
System Uptime	>99% over a 12-month period
Mean Time to Repair (MTTR)	< 24 hours**
Mean Time Between Failures (MTBF; hours, cycles)	>600 hours, 6,000 cycles

*Throughput performance is dependent on substrate size

**If critical spare parts are kept at customer site per Brewer Science field service standard working schedule

Benefits

- ▶ Design permits in-house debonding of fully processed, proprietary ultrathin device wafers
- ▶ Enhanced data logging feature provides detailed process feedback and record keeping
- ▶ PC control allows virtually unlimited log storage
- ▶ Compact footprint permits installation flexibility



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Tool Features

- ▶ Network connection hardware/software: RJ-45 Ethernet & USB port
- ▶ Bond line axis precision ± 1.5 nm
- ▶ Specialized insertion and extraction end effectors with vacuum function (foot pedal control)
- ▶ Visual and audible light tree alarm
- ▶ Enhanced light curtain operation for seamless operation
- ▶ Continuous abort override operation for "super user"
- ▶ Optional exhaust chamber sensor (PC-monitored)
- ▶ Optional hinged rear and side access panels

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Other Specifications

Platen Maximum Temperature: 300°C

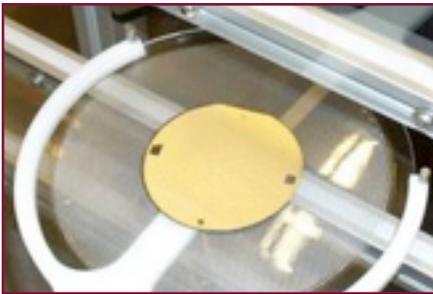
Substrate Sizes (round): 2 in, 3 in, 100 mm, 125 mm, 150 mm, 200 mm

Constant Force Mode: 0 to 100 lb (with maximum velocity limit of 100 mm/s)

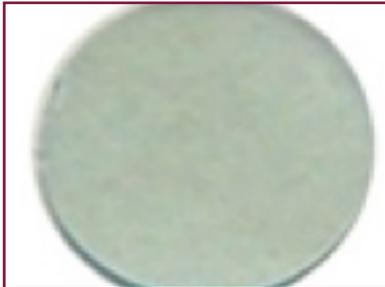
Logging: Critical force, distance, velocity, upper/lower platen vacuum, upper/lower platen temperature, z-position, and entire process duration time

Excess Force Sensing: Failsafe error recovery

Successfully qualified with the following device wafer types:



GaAs: diameter: 3 in, 100 mm, 150 mm; thickness: 50–170 μm



SiC*: diameter: 100–150 mm; and InP: diameter: 100 mm; thickness: 50–170 μm



Si: diameter: 3 in to 200 mm; thickness: 50–725 μm

*SiC image courtesy of Silicon Quest International, Inc.

Utility Requirements & Dimensions

Exhaust: 20–30 cfm at 1" W.G. (4" OD exhaust duct)

Electrical: Voltage range 208–240 V, single phase, 50/60 Hz, 3500 W

Power Requirements: 18 amps

Vacuum: –25" to –27" Hg (optimal vacuum: –27" Hg, 4.5 m³/h)

Nitrogen or CDA: 100 psi, 1 cfm

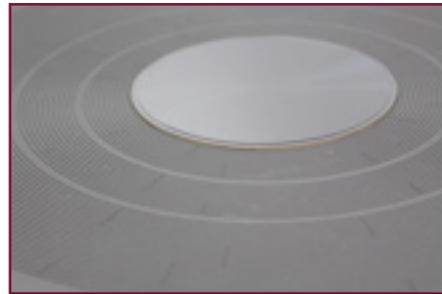
Optional Enclosure Purge: 3/8" push-to-connect (PTC tube) (20 psi)

Dimensions: 49" W x 39.5" D x 52.5" H (125 cm W x 100 cm D x 133 cm H)

Machine Weight: 415 lb (187 kg)

Shipping Weight: 1,280 lb

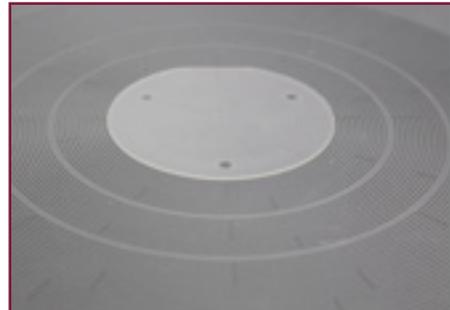
Compatible bonded-pair carrier materials and sizes:



Sapphire carriers: diameter: 3 in to 150 mm; thickness: 1–1.5 mm



Si carriers: diameter: 2 in to 200 mm; thickness: 280–725 μm



Glass carriers: diameter: 2 in to 200 mm; thickness: 280–725 μm

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