The Brewer Science® 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).

Brewer Science is the 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**  
(Data collected with the 1300DB tool platform)

<table>
<thead>
<tr>
<th>Total Throughput</th>
<th>Est. 8-14 WPH for wafer is ≤ 150 mm in diameter*</th>
<th>Est. 4-8 WPH for wafer is 200-300 mm in diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wafer Breakage</td>
<td>&lt; 10% (≥ 90 Process Yield CS and Si)**</td>
<td></td>
</tr>
<tr>
<td>System Uptime</td>
<td>&gt; 90% over a 12-month period</td>
<td></td>
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<tr>
<td>MTBF [hours/cycles]</td>
<td>&gt; 600 hours, 6,000 cycles</td>
<td></td>
</tr>
<tr>
<td>MTTR</td>
<td>&lt; 24 hours***</td>
<td></td>
</tr>
</tbody>
</table>

*Throughput performance is dependent on substrate size  
** Based on beta site results and >10,000 wafer-pair separations  
*** Critical spare parts, as defined by the vendor, to be 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

**Tool Features**
- Network connection hardware/software: RJ-45 Ethernet & USB port
- Precision lower platen z-position control (closed-loop control/feedback): ± 5 µm accuracy
- 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
- Continue abort override operation for “super user”
- Optional exhaust chamber sensor (PC-monitored)
- Optional hinged rear and side access panels
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 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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