

## Product Sheet: AD-Series

Creating Performance Technology is CarbonVision’s mission. All its breadboards refine high quality products and allow for more efficient use in science and industries. This enhances the quality of research and preserves the continuous development. In addition, CarbonVision combines the beneficial material properties with a modern manufacturing technology to high-end breadboards. All of our breadboards follow exactly the needs of our customers and present state-of-the-art products in carbon fiber technology.

### Light Weight

- high stiffness by reduced weight
- up to 75% less weight compared to steel breadboards

### Thermal Stability

- only 1÷2/10 of thermal expansion of steel
- heat dissipation by use of heat pipes mounted into inserts
- beneficial applications at varying thermal environments

### Precision

- raised or flushed mounting surfaces
- flatness possible up to 0.05 mm on entire working surface

### Vacuum

- low evaporation rates by space approved materials
- core materials ventilated

### Damping

- facilitate damping coefficients of up to 60 % higher than steel
- modulation of natural frequencies and excitations by supplementary added elements

### Non-Magnetic

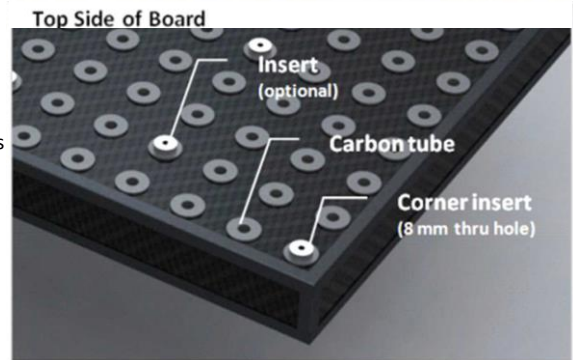
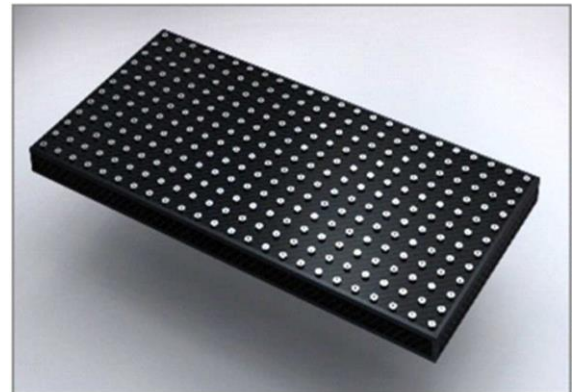
- CFRP materials are inherently non-magnetic and permeable to X-ray

### Clean Room

- limited risks of contamination by open design
- easy cleaning possibilities through Carbon-Fiber-Reinforced Polymer (CFRP) tubes

### Flexibility

- potential to mount components on backside



Bottom Side of Board

Dimension	Typical breadboard sizes, maximum size 2000 x 3000 mm
Thickness	Typical thickness ranges from 25, 50, 75 to 100 mm or according to structural requirements or customer needs
Flatness	Flatness of entire mounting surface AD- Version $\leq 0.05$ mm, ADI- Version $\leq 0.2$ mm
Mounting Grid	Typical mounting grid: 25x25, 50x50 mm or customized
Mounting Holes	Metric and imperial threads, inserts made from stainless steel, Aluminum, Titanium or INVAR
Damping	Nominal damping
Thermal Expansion	Lateral directions $CTE_{x,y} = 2.5 \cdot 10^{-6}$ [mm/mm·K] @ 273 K for plane plate
Stiffness	Nominal stiffness
Weight	Area weight approximately 15 kg/m <sup>2</sup> (50 mm grid)
Design	<ul style="list-style-type: none"> <li>- Honeycomb structure with skins made from multi-layered Carbon fiber fabrics cured with Epoxy Resin</li> <li>- Skins are designed typically to meet quasi-isotropic behavior or according to structural/thermal requirements</li> <li>- High rigidity Aluminum or closed cell foam</li> <li>- CFRP tubes between upper and lower plate</li> </ul>

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