

Product Sheet: CA-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

Damping

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

Non-Magnetic

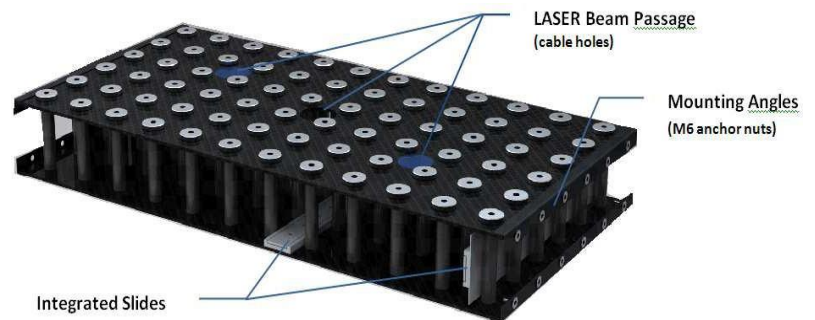
- CFRP materials are inherently non-magnetic and permeable to X-rays

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
- ability to install components "inside" the board
- easy routing of wires and optical fibers



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 CA- Version ≤ 0.05 mm, CAI- Version ≤ 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
	Vertical direction $CTE_z = -0.1 \div 0.5 \cdot 10^{-6}$ [mm/mm·K] @ 273K for CFRP tube in axial direction
Stiffness	Nominal stiffness
Weight	Area weight approximately 19 kg/m ² (50 mm grid)
Design	<ul style="list-style-type: none"> - Plate structure with spacer tubes and/or ribs. - Plates are designed typically to meet quasi-isotropic behavior or according to structural/thermal requirements - Tubes are designed typically for high axial stiffness

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