

Property	Typical Value / Specification	Standard / Notes
Product Type	Tapered Carbon Fiber Tube (Conical Tube / Telescopic Compatible)	Precision-shaped hollow composite structure
Material	High-strength carbon fiber (e.g. T300, T700) + Epoxy Resin Matrix	Aerospace-grade CFRP
Tapered Shape	Cone, straight-cone, or custom profile taper	Customizable taper ratio and profile
Inner Diameter (ID)	Start ID: 5 - 50 mmEnd ID: 2 - 45 mm	Customizable
Outer Diameter (OD)	Start OD: 6 - 60 mmEnd OD: 3 - 50 mm	Precision roll-wrapped or pultruded
Length	300 mm - 3000 mm (11.8" - 118")	Custom lengths available
Taper Ratio	1:10 - 1:100	Defines rate of diameter reduction
Wall Thickness	0.5 - 3.0 mm	Uniform or variable thickness depending on application
Surface Finish	Glossy / Matte / Natural Weave	UV-resistant clear coat optional
Weave Type	3K Twill / Plain Weave / UD (Unidirectional)	Outer cosmetic layer; inner functional layer customizable
Tensile Strength	≥600 MPa	ASTM D3039
Tensile Modulus	≥70 GPa	ASTM D3039
Flexural Strength	≥550 MPa	ASTM D790
Impact Resistance	High (non-fracturing, energy-dissipating)	Ideal for load-bearing and crash-resilient structures
Thermal Operating Range	-40 ° C to +120 ° C	Continuous service temperature
Corrosion Resistance	Excellent (non-metallic, rust-proof)	Suitable for marine or humid environments
Electrical Properties	Semi-conductive or insulating (based on fiber type)	Optional anti-static treatment available
Connection Type	Overlapping insert, adhesive bond, mechanical sleeve	Compatible with telescopic or hybrid assemblies
Weight	~50 - 70% lighter than aluminum equivalent	High strength-to-weight ratio
Manufacturing Method	Roll-wrapped or filament-wound on precision mandrel	CNC trimming and polishing optional
Customization Options	Taper profile, fiber type, resin system, finish, length	OEM/ODM available
Certifications	ISO 9001 / RoHS / REACH / Material Safety Data Sheet (MSDS)	Export-ready documentation
Applications	UAV arms, camera booms, RC vehicles, sporting equipment, robotics	Lightweight, aerodynamic, vibration-dampening