Attribute	Specification / Typical Value	Standard / Notes
Product Name	Carbon Fiber C- Channel	Pultruded or molded CFRP profile
Material Composition	100% Carbon Fiber (T300/T700) + Epoxy Resin	Aerospace/industrial grade fiber & matrix
Section Height (H)	20 mm – 200 mm	Custom heights, 1 mm increments
Flange Width (B)	10 mm – 100 mm	Custom widths available
Web Thickness (tw)	1.0 mm – 10 mm	Uniform or tapered
Flange Thickness (tf)	1.0 mm – 10 mm	± 0.1 mm tolerance
Lip Depth (L)	5 mm – 50 mm	Optional stiffening lip
Length	Up to 3000 mm continuous	Cut- to- length service
Dimensional Tolerance	± 0.1 mm	ISO 2768- m general tolerances
Straightness	≤ 0.3 mm/m	ISO 5286- 2 for pultruded FRP profiles
Density	1.55 g/cm³	ASTM D792
Tensile Strength	≥ 900 MPa	ASTM D3039
Tensile Modulus	≥ 70 GPa	ASTM D3039
Flexural Strength	≥ 600 MPa	ASTM D790
Flexural Modulus	≥ 60 GPa	ASTM D790
Interlaminar Shear Strength	≥ 60 MPa	ASTM D2344
Moment of Inertia (Iy)	500 – 20 000 mm⁴	Calculated per cross- section
Section Modulus (Zy)	50 – 2 000 mm³	Calculated per cross- section
Coefficient of Thermal Expansion	≈ 0 × 10⁻⁶/° C	ASTM E228
Service Temperature Range	-40 ° C to +120 ° C (continuous)	Short- term up to 150 ° C
Surface Finish	Matte or Gloss UV- resistant clear coat	One- or two- sided finish
Fire Resistance (optional)	UL 94 V- 0 epoxy system available	For electronics & aerospace
Electrical Conductivity	Conductive in- plane	EMI/RFI shielding potential
Corrosion Resistance	Excellent (non- metallic)	Ideal for marine/chemical environments
Certifications	ISO 9001, RoHS, REACH, MSDS	Test reports available upon request
Typical Applications	Structural channels, machine frames, conveyor guides, robotic arms	Where high stiffness- to- weight and precise C- section needed