CLEARWATER COMPOSITES, LLC

Mechanical and Physical Properties of Carbon Fiber Laminates vs. Other Engineering Materials

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Material	Grade	Laminate	Type	Modulus			Poisson's		Density		CTE				Thermal Conductivity
				Tension	Flexural	Shear									
			Direction	Axial	Axial		Axial	Trans.			Axial		Trans.		Axial
			Symbol	Exy	Exy	Gxy	Nu (xy)	Nu (xy)			alpha (xy)		alpha (yx)		
			Units	Msi	Msi	Msi			lb/ft^3	g/cc	ppm/F	ppm/C	ppm/F	ppm/C	W/m-K
CF	StdMod	Lamina	Lamina	18.2	17.2	0.50			96.8	1.55	0.4	0.72	26.0	46.8	~6
CF	StdMod	.055 UD	Tube	14.9	13.7	0.50			96.8	1.55					
CF	StdMod	.035 TW	Tube	12.7	11.7	0.50			96.8	1.55					
CF	StdMod	.039 TW	Tube	13.0	12.1	0.50			96.8	1.55					
CF	StdMod	.058 TW	Tube	13.3	12.2	0.50			96.8	1.55					
CF	StdMod	.064 TW	Tube	13.9	12.8	0.50			96.8	1.55	0.8	1.5	2.8	5	~5
CF	StdMod	.079 TW	Tube	14.9	13.9	0.50			96.8	1.55					
CF	StdMod	.122 TW	Tube	14.6	13.4	0.50			96.8	1.55					
CF	IntMod	.062 TW	Tube	18.0	16.0	0.50			97.4	1.56					
CF	High Mod	.062 TW	Tube	22.1	22.5	0.60	0.055	0.012	98.0	1.57	0.08	0.1	4.0	7.2	~50
CF	High Mod	.122 TW	Tube	25.5	26.2	0.60	0.037	0.012	98.0	1.57	0.02	0.04	5.5	9.90	~50

Disclaimer: *This data and information shown should only be used for comparison purposes. It should not in any way be used for design purposes as actual properties will vary based on many factors including, but not limited, to material variation, size and thickness of product, loading conditions, environment exposure and others. The end user is ultimately responsible for ensuring the use of our products and/or information is safe for their application. Clearwater Composites, LLC strongly urges users of our products and/or information to seek suitable engineering guidance, including but NOT limited to determining an appropriate factor of safety, when using our products and/or information for any application.*