



UMA 90

UMA 90 is an easy-to-use single cure resin with enhanced toughness, appropriate for use in prototypes and manufacturing jigs and fixtures.



CarbonResin UMA 90

DOC #103257 REV E
TECHNICAL DATA SHEET, LAST UPDATED 08/14/2017

Tensile Properties ASTM D638, Type V, 10 mm/min	GREEN STATE		UV-CURED	
	Metric	U.S.	Metric	U.S.
Tensile Modulus	731 ± 120 MPa	106 ± 17 ksi	2000 ± 100 MPa	290 ± 15 ksi
Ultimate Tensile Strength	25 ± 2 MPa	3.6 ± 0.3 ksi	46 ± 3 MPa	6.7 ± 0.4 ksi
Tensile Strength at Yield			46 ± 3 MPa	6.7 ± 0.4 ksi
Tensile Strain at Yield			5.7 ± 0.2%	
Elongation at Break	33 ± 2%		17 ± 2%	

Flexural Properties ASTM D790-B	GREEN STATE		UV-CURED	
	Metric	U.S.	Metric	U.S.
Flexural Stress at 5 % strain	26 ± 2 MPa	3.8 ± 0.3 ksi	79 ± 5 MPa	11.4 ± 0.7 ksi
Flexural Modulus (chord, 0.5-1 % strain)	656 ± 51 MPa	95 ± 7 ksi	2010 ± 119 MPa	291 ± 17 ksi

Impact Properties	UV-CURED	
	Metric	U.S.
Notched Izod (Machined), ASTM D256	33 ± 4 J/m	0.62 ± 0.07 ft-lb/in
Unnotched Izod, ASTM D4812	496 ± 141 J/m	9.29 ± 2.64 ft-lb/in

Thermal Properties ASTM D648	UV-CURED	
	Metric	U.S.
Heat Deflection Temperature @ 0.455 MPa/66 psi	51 °C	124 °F
Heat Deflection Temperature @ 1.82 MPa/264 psi	44 °C	111 °F

General Properties	UV-CURED	
	Metric	
Hardness, ASTM D2240	86, Shore D	
Density, ASTM D792	1.200 g/cm ³	
Density (liquid resin)	1.10 g/cm ³	



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