



THE *SAPPHIRE*  77 SERIES

# PRESSURMAXX<sup>®</sup>


ULTRA LIGHT — SUPER STRONG — UNMATCHED VALUE



10"x16" cryogenic pressure vessel, 0.7-cuft volume, 1000-psi burst, 2.5-lb weight

***SAPPHIRE*  77 state-of-the-art unibody all-composite construction with seamless carbon fiber polar bosses integration. Proprietary *SAPPHIRE*  77 cryogenic resin system with expanded performance range.**

## FEATURES

- All-composite technology
- Carbon fiber polar bosses
- Unibody construction
- *SAPPHIRE*  77 resin system
- Unmatched weight/performance
- Superior robustness
- Low thermal and pressure expansion ratios
- Compatible with LOX, LN<sub>2</sub>, petroleum- or alcohol-based fuels, methane
- Available as commercially listed line item at fixed price
- Integrated attachment features available

## APPLICATIONS

- Propulsion systems
- Pressurization systems
- Oxygen & air supplies
- Cryogenic fluids
- Launch vehicles
- Spacecraft, satellites
- Lunar and Mars lander vehicles
- Aircraft, commercial/military\*
- Man-carried breathing apparatus\*
- Unmanned aerial vehicles
- Medivac vehicles\*
- Special ops diving\*



## SAPPHIRE 77 SERIES CRYOGENIC TANKS

### 10" Diameter All-Composite Cryogenic Tank

Tank Diameter (in)	Length (in)	Operating Pressure (psi)	Boss Material	Weight (lbs)	Volume (ft <sup>3</sup> )	Volume (in <sup>3</sup> )	Safety Factor (-)	PV/W (10 <sup>6</sup> in)
10	16	250	Carbon Fiber	2.62	0.70	1210	2.0	0.231
10	16	500	Carbon Fiber	2.84	0.70	1210	2.0	0.426
10	16	1500	Carbon Fiber	4.62	0.70	1210	2.0	0.785
10	16	3000	Carbon Fiber	5.11	0.70	1210	2.0	1.419
10	24	250	Carbon Fiber	3.64	1.00	1728	2.0	0.237
10	24	500	Carbon Fiber	3.96	1.00	1728	2.0	0.436
10	24	1500	Carbon Fiber	6.48	1.00	1728	2.0	0.800
10	24	3000	Carbon Fiber	7.21	1.00	1728	2.0	1.438

### 25" Diameter All-Composite Cryogenic Tank

Tank Diameter (in)	Length (in)	Operating Pressure (psi)	Boss Material	Weight (lbs)	Volume (ft <sup>3</sup> )	Volume (in <sup>3</sup> )	Safety Factor (-)	PV/W (10 <sup>6</sup> in)
25	59	250	Carbon Fiber	21.4	14.3	24,760	2.0	0.578
25	59	500	Carbon Fiber	30.5	14.3	24,760	2.0	0.812
25	59	3000	Carbon Fiber	76.8	14.3	24,760	2.0	1.933

### 42" Diameter All-Composite Cryogenic Tank

Tank Diameter (in)	Length (in)	Operating Pressure (psi)	Boss Material	Weight (lbs)	Volume (ft <sup>3</sup> )	Volume (in <sup>3</sup> )	Safety Factor (-)	PV/W (10 <sup>6</sup> in)
42	136	250	Carbon Fiber	80.7	97.5	168,500	2.0	1.044
42	136	500	Carbon Fiber	131	97.5	168,500	2.0	1.287
42	136	3000	Carbon Fiber	455	97.5	168,500	2.0	2.224

### 53" Diameter All-Composite Cryogenic Tank

Tank Diameter (in)	Length (in)	Operating Pressure (psi)	Boss Material	Weight (lbs)	Volume (ft <sup>3</sup> )	Volume (in <sup>3</sup> )	Safety Factor (-)	PV/W (10 <sup>6</sup> in)
53	170	250	Carbon Fiber	126	196	338,700	2.0	1.345
53	170	500	Carbon Fiber	204	196	338,700	2.0	1.663
53	170	3000	Carbon Fiber	890	196	338,700	2.0	2.284



**Other Sizes Available  
Please Visit Our Website**

### POINT OF CONTACT

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