

THE *SAPPHIRE*  77 SERIES

PRESSURMAXX[®]

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 boss integration. Proprietary **SAPPHIRE**  77 cryogenic resin system with -321°F to 175°F temperature range.

FEATURES

- All-composite technology
- Carbon fiber polar bosses
- Unibody construction
- **SAPPHIRE**  77 cryogenic resin system
- Unmatched weight/performance
- Hydrazine and HAN AF-M-315E compatible
- Low thermal and pressure expansion ratios
- Compatible with LOX, LN₂, petroleum- or alcohol-based fuels
- 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 | Wall Thickness (in) | Volume (ft ³) | Volume (in ³) | Safety Factor (-) |
|--------------------|-------------|--------------------------|---------------|---------------------|---------------------------|---------------------------|-------------------|
| 10 | 16 | 250 | Carbon Fiber | 0.08 | 0.70 | 1,210 | 2.0 |
| 10 | 16 | 500 | Carbon Fiber | 0.09 | 0.70 | 1,210 | 2.0 |
| 10 | 16 | 1500 | Carbon Fiber | 0.14 | 0.70 | 1,210 | 2.0 |
| 10 | 16 | 3000 | Carbon Fiber | 0.16 | 0.70 | 1,210 | 2.0 |
| 10 | 24 | 250 | Carbon Fiber | 0.08 | 1.00 | 1,728 | 2.0 |
| 10 | 24 | 500 | Carbon Fiber | 0.09 | 1.00 | 1,728 | 2.0 |
| 10 | 24 | 1500 | Carbon Fiber | 0.14 | 1.00 | 1,728 | 2.0 |
| 10 | 24 | 3000 | Carbon Fiber | 0.16 | 1.00 | 1,728 | 2.0 |

25" Diameter All-Composite Cryogenic Tank

| Tank Diameter (in) | Length (in) | Operating Pressure (psi) | Boss Material | Wall Thickness (in) | Volume (ft ³) | Volume (in ³) | Safety Factor (-) |
|--------------------|-------------|--------------------------|---------------|---------------------|---------------------------|---------------------------|-------------------|
| 25 | 59 | 250 | Carbon Fiber | 0.08 | 14.3 | 24,757 | 2.0 |
| 25 | 59 | 500 | Carbon Fiber | 0.12 | 14.3 | 24,757 | 2.0 |
| 25 | 59 | 3000 | Carbon Fiber | 0.29 | 14.3 | 24,757 | 2.0 |

42" Diameter All-Composite Cryogenic Tank

| Tank Diameter (in) | Length (in) | Operating Pressure (psi) | Boss Material | Wall Thickness (in) | Volume (ft ³) | Volume (in ³) | Safety Factor (-) |
|--------------------|-------------|--------------------------|---------------|---------------------|---------------------------|---------------------------|-------------------|
| 42 | 136 | 250 | Carbon Fiber | 0.08 | 97.5 | 168,480 | 2.0 |
| 42 | 136 | 500 | Carbon Fiber | 0.13 | 97.5 | 168,480 | 2.0 |
| 42 | 136 | 3000 | Carbon Fiber | 0.45 | 97.5 | 168,480 | 2.0 |

53" Diameter All-Composite Cryogenic Tank

| Tank Diameter (in) | Length (in) | Operating Pressure (psi) | Boss Material | Wall Thickness (in) | Volume (ft ³) | Volume (in ³) | Safety Factor (-) |
|--------------------|-------------|--------------------------|---------------|---------------------|---------------------------|---------------------------|-------------------|
| 53 | 170 | 250 | Carbon Fiber | 0.08 | 196 | 338,688 | 2.0 |
| 53 | 170 | 500 | Carbon Fiber | 0.17 | 196 | 338,688 | 2.0 |
| 53 | 170 | 3000 | Carbon Fiber | 0.55 | 196 | 338,688 | 2.0 |

* Estimated values with IM7

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**Other Sizes Available
Please Visit Our Website**

POINT OF CONTACT

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