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|------------------------------|------------------------|--------------------------|---------------------------|
| TANK TYPE PMD WRAP | MOUNT Bosses | LOCATION Polar | PMD DEVICE NONE |
|------------------------------|------------------------|--------------------------|---------------------------|

The Xenon Propellant Tank is a composite overwrapped pressure vessel (COPV) with a linear constructed of a center cylinder welded to end domes and overwrapped with T1000 carbon fiber. The commercially pure titanium liner has a nominal .032" membrane thickness. Mounting is provided by polar bosses located on the tank centerline axis.

ATK Part Number 80458-1
SIZE: 16.5" ID x 44.3" Long
ID is @ Ambient Temperature
SIZE: 419.1 mm ID x 1125.22 mm Long

ISO 9001 & AS 9100 REGISTERED

| APPLICABLE DOCUMENTS | TANK CHARACTERISTICS | QUALIFICATION TESTS |
|----------------------|----------------------|---------------------|
|----------------------|----------------------|---------------------|

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|--|---------------------------------------|-------------------------------------|
| Acceptance Test Procedure 50-000625 | Operating Pressure, psig 2,700 | Total Volume, in ³ 8,100 |
| Qualification Test Procedure 50-000626 | Proof Pressure, psig 3,375 | Prop Volume, in ³ 8,100 |
| LBB Test Procedure 50-000658 | Cryo Proof, psig N/A | Max Design Wt, lbs 45.00 |
| Stress Analysis 6-4 Liner 54-000215 | Burst Pressure, psig 4,130 | Minimum Wall, inch 0.032 |
| Fracture Analysis 54-000230 | Actual Burst, psig 5,926 | |
| Stress Analysis - CP Liner 54-000231 | TANK CHARACTERISTICS (Metrics) | |
| Qualification Test Report 56-000206 | Operating Pressure, bar 186.16 | Total Volume, l 132.74 |
| LBB Test Report 56-000207 | Proof Pressure, bar 232.69 | Prop Volume, l 132.74 |
| Fracture Analysis 327-1 | Cryo Proof, bar N/A | Max Design Wt, kg 20.41 |
| Cleaning CPP 3970 | Burst Pressure, bar 284.75 | Minimum Wall, MM 0.813 |
| | Actual Burst, bar 408.58 | |

- Notes:**
- All tooling belongs to ATK.
 - Acceleration of 12g's in any direction.
 - Compatible with xenon, helium, nitrogen, a IPA, PF-5060 mass sim & DI water.
 - Fracture Critical
 - Tube protector is SK 1589

| FORGINGS | | | |
|-------------|-----|----------|--------|
| HEMI P/N | QTY | SUPPLIER | Die No |
| 80-436061-1 | 2 | ARCTURUS | 3852 |

| TUBE TYPE AND SIZE | |
|--------------------|---------------------|
| Ti 3AL-2.5V | SIZE |
| 80-458001-1 | .375 OD x .035 Wall |

| TUBE SIZE (mm) | |
|----------------|-----------------|
| 80-458001-1 | 9.525 x .889 mm |

| VACUUM RATED | |
|--------------|--|
| YES | |

- Examination of Preliminary Product
- Autofrettage
- Volumetric Measurement
- Proof Pressure Test
- Volumetric Measurement
- Strain Data Correlation
- Volumetric Capacity @ MEOP
- External Leakage Test
- Weight Measurement and Inspection
- Propellant Flow Rate Test
- MEOP Pressure Cycle Life Test
- Proof Pressure Cycle Life Test
- External Leakage Test
- Dynamic Testing Approval
- Sinusoidal Vibration Test
- Sine Burst Test
- Random Vibration Test
- External Leakage Test
- Thermal Cycling Test
- Random Vibration Test
- External Leakage Test
- Weld Quality Inspection
- Examination of Final Product
- Burst Test

ACCEPTANCE TESTS

- Examination of Preliminary Product
- Autofrettage @ Ambient
- Volumetric Measurement @ Ambient
- Proof Pressure Test @ Ambient
- Volumetric Measurement @ Ambient
- Volumetric Capacity @ MEOP
- Boroscope Inspection
- Internal Vacuum Test
- External Leak Test
- Weld Quality Inspection
- Examination of Final Product
- Final Clean

