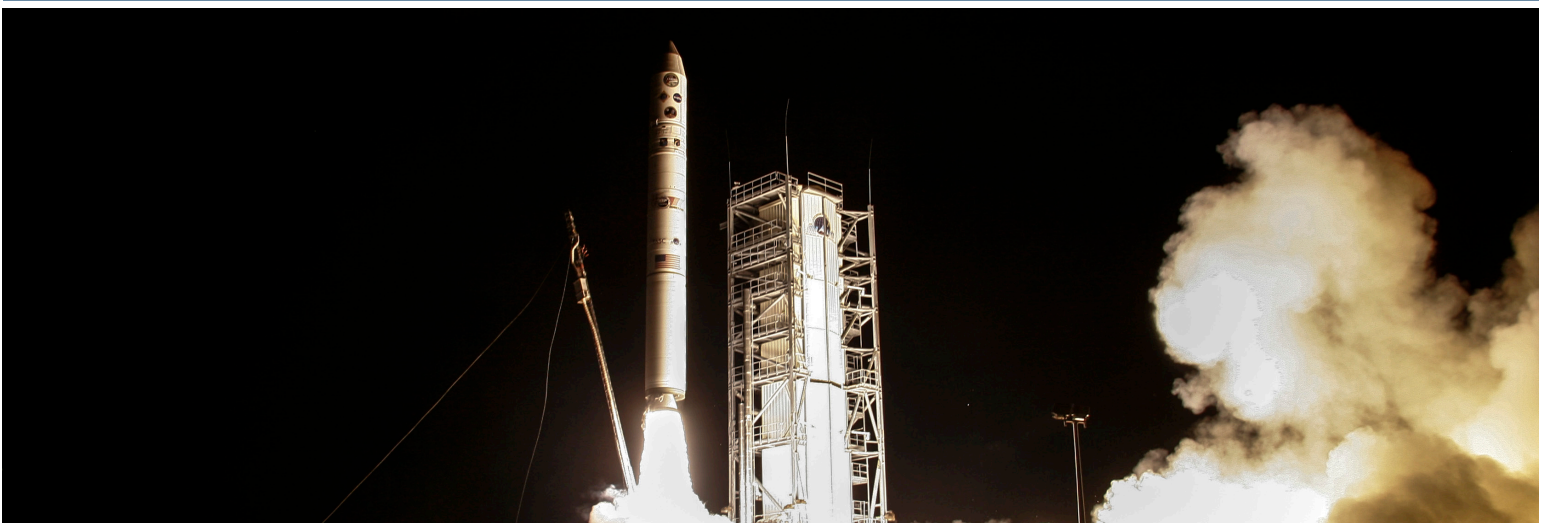


Minotaur V

Space Launch Vehicle for High Energy Missions

FACT SHEET



Overview

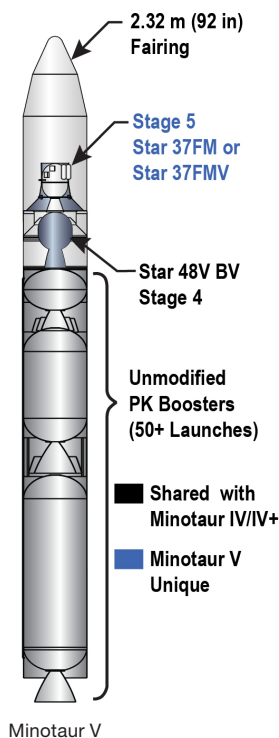
The flight proven Minotaur V is a five stage evolutionary version of the Minotaur IV Space Launch Vehicle (SLV) to provide a cost-effective capability to launch U.S. Government-sponsored small spacecraft into high energy trajectories, including Geosynchronous Transfer Orbits (GTO) as well as translunar and beyond.

The Minotaur V leverages Orbital ATK's flight proven heritage of the Minotaur family of launch vehicles to create a low-risk, dependable launch system.

The Minotaur V avionics, structures, and fairing are common with the Minotaur IV SLV, with relatively minor changes to create the five stage configuration. Moreover, the avionics and flight software are highly common across all Minotaur family vehicles.

The first three stages of the Minotaur V are former Peacekeeper solid rocket motors with over 50 flights of each stage. The fourth and fifth stages are commercial STAR™ motors. The stage four motor is a STAR™ 48BV configuration. The fifth stage can be either attitude controlled or spinning. For a spin-stabilized upper stage, a STAR™ 37FM is used while a STAR™ 37FMV, with gimbaled, flexseal nozzle, is used for 3-axis stabilized control.

The Minotaur family of launch vehicles are provided via the Orbital/Suborbital Program (OSP) and managed by the U.S. Air Force Space and Missile Systems Center (SMC), Launch Enterprise, Experimental Launch and Test Division (LE/LEX), Rocket Systems Launch Program (RSLP) located at Kirtland Air Force Base, New Mexico.



FACTS AT A GLANCE

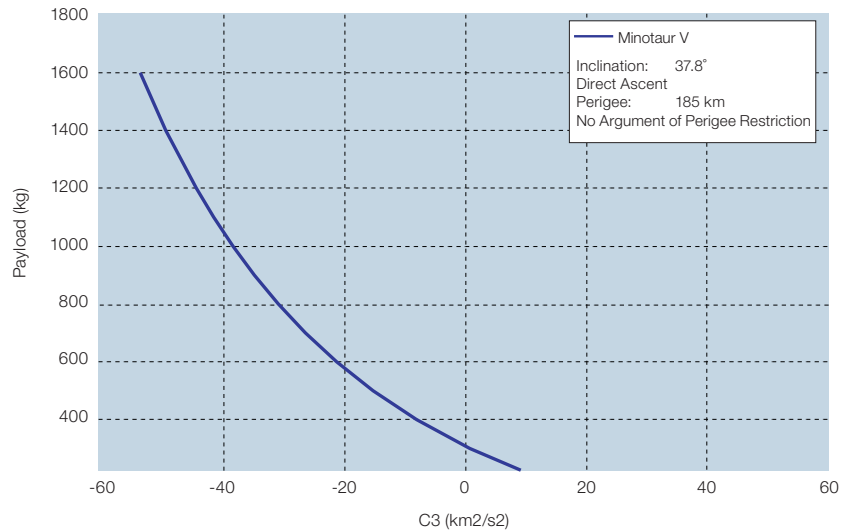
System Features

- Cost effective support of high energy trajectory missions
- Five stage evolution of Minotaur IV SLV
- Flight-proven boosters, subsystems, and software
- Inertially-guided or spinning Stage 5 configuration options available
- Portable ground support systems allow multiple spaceport launch capability (California, Florida, Alaska, Mid-Atlantic)
- Mission success is ensured by mature systems and processes that include Orbital ATK's rigorous mission assurance program and categories of mission assurance to meet customers' needs
 - Categories range from a basic FAA licensed launch to full Government insight and independent assessment

Minotaur V

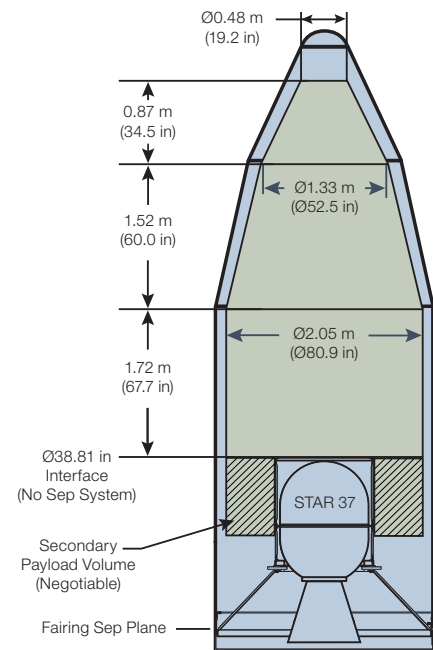
Performance

- Minotaur V has a GTO capability of 532 kg
 - 185 km x 35786 km @ 28.5° inclination, 180 AoP
- Minotaur V has a MTO capability at 39° of 650 kg from CCAFS
 - 185 km x 20,200 km at 39° inclination, 180 AoP
- Minotaur V has a MTO capability at 55° of 603 kg from WFF
 - 185 km x 20,200 km at 55° inclination, no AoP constraint
- Minotaur V has a TLI capability of 342 kg



Payload Accommodations

- Flight proven fairing shared with Minotaur IV
- Attitude controlled or spinning final stage
- Well defined environments from extensive flight data and well characterized upper stages
- ISO 8 (100 k) to ISO 7 (10 k) cleanliness with temperature and humidity control
- Various flight-proven separation systems available, including low shock designs



Technical Details

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