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NORTHROP GRUMMAN



Minotaur V

*Space Launch Vehicle for
High Energy Missions*

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 Northrop Grumman'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 gimballed, 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 Northrop Grumman'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

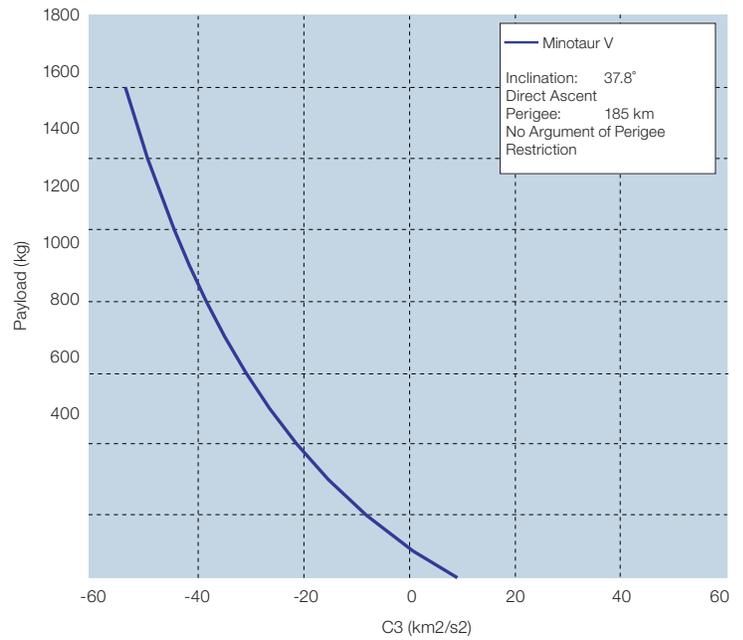
Performance

Minotaur V has a GTO capability of 532 kg
- 185 km x 35786 km @ 28.5o inclination,
180 AoP

Minotaur V has a MTO capability at 39o of 650 kg
from CCAFS
- 185 km x 20,200 km at 39o inclination,
180 AoP

Minotaur V has a MTO capability at 55o of 603 kg
from WFF
- 185 km x 20,200 km at 55o inclination,
no AoP constraint

Minotaur V has a TLI capability of 342 kg



Payload Accommodations

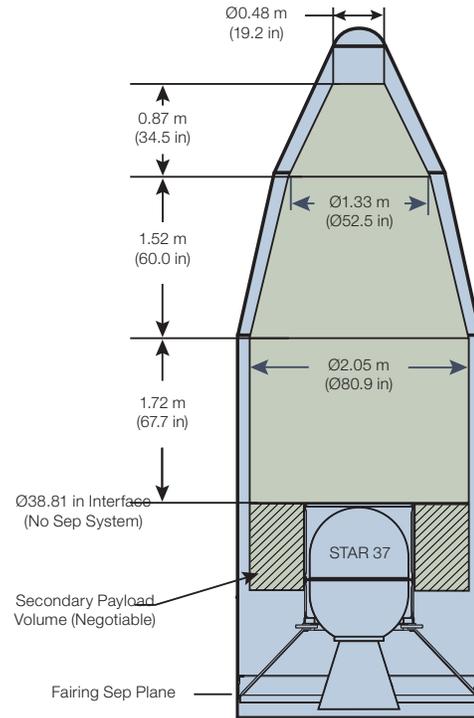
Flight proven fairing shared with Minotaur IV

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



More Information

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