

Minotaur IV

Space Launch Vehicle

FACT SHEET



Overview

The flight proven Minotaur IV Space Launch Vehicle (SLV) provides an extremely cost-effective and capable space solution for U.S. Government-sponsored spacecraft. The combination of three government-furnished solid rocket stages, a commercial solid rocket upper stage, and Orbital ATK's flight-proven systems and processes provide an unmatched mix of value and performance. The integration of government motors with commercial boosters and state-of-the-art hardware is one of Orbital ATK's unique strengths from experience spanning several decades.

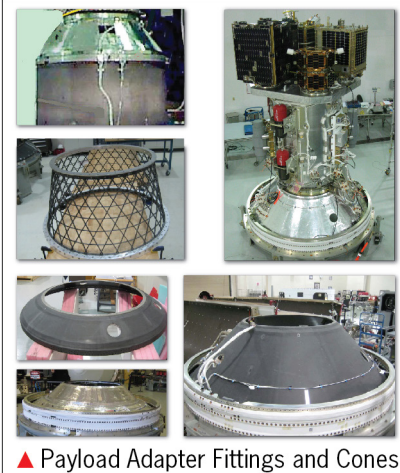
For the Minotaur IV, the standard Minotaur family avionics, flight software, and subsystems are integrated into a Guidance Control Assembly (GCA) which also incorporates the Stage 4 Orion 38 solid rocket motor. An optional Star™ 48BV motor has been flight demonstrated and is available for additional performance in the Minotaur IV+ configuration.

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.

Separation Systems



Payload Interface



▲ Payload Adapter Fittings and Cones

Additional payload accommodation details can be found in the Minotaur IV Users Guide.

FACTS AT A GLANCE

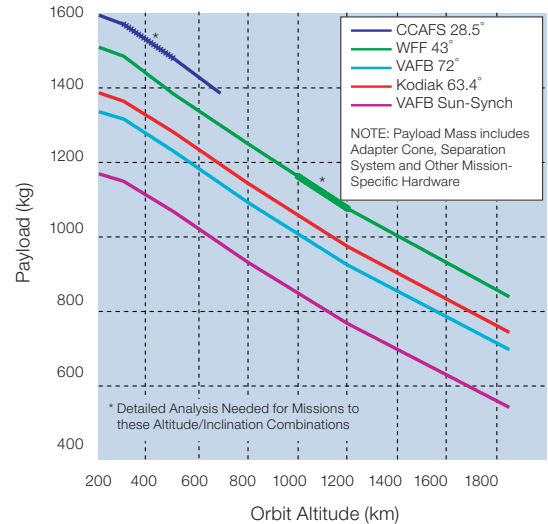
System Features

- Full spacecraft integration support, including mission management, spacecraft interface support (power, telemetry, sequencing, attitude control, and deployment), through launch operations and post-launch performance evaluation
- Flexible design enables multiple mission tailoring options
- Cost effective space launch
- Responsive launch solutions available
- 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
- Multiple spaceport launch capability (California, Florida, Alaska, Mid-Atlantic) using portable ground support equipment

Minotaur IV

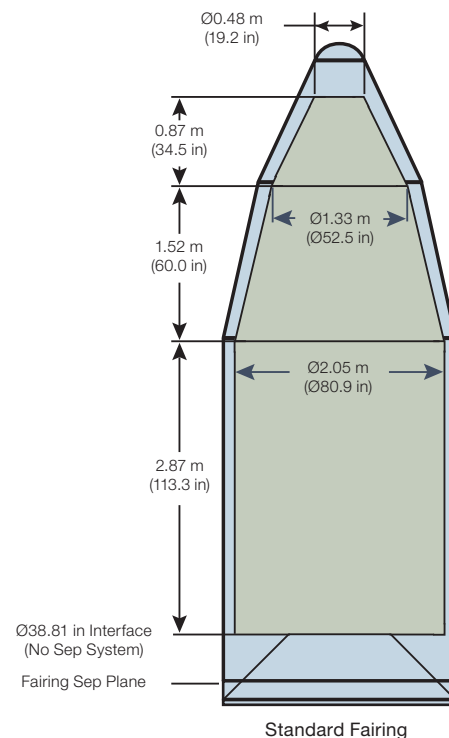
Performance

- System performance assured from extensive booster motor flight history of more than 50 flights each
- Typical orbit accuracy better than ± 5 km insertion apse, ± 25 km non-insertion apse, and $\pm 0.1^\circ$ inclination (3-sigma values)
- Optional enhanced insertion accuracy available
- Cold gas attitude control system readily accommodates a variety of spacecraft mission requirements, including precise separation pointing and post-boost maneuvers
- Minotaur IV with optional STAR™ 48BV Stage 4 provides up to 200 kg increased performance to LEO and support for HEO missions



Payload Accommodations

- Standard 2.34 m (92 in) diameter spacecraft fairing
- Mission-specific fairing access doors for spacecraft support
- Spacecraft and fairing assembly integrated independently from launch vehicle stages
- Well-defined launch environments derived from extensive flight data
- Temperature, humidity, and cleanliness control through lift-off
- Standard 986 mm (38.81 in) diameter bolted interface with optional spacecraft support options
 - Single and multiple spacecraft adaptors
 - Various flight-proven spacecraft separation systems available, including low-shock designs
- Multiple Payload Adapter Fitting (MPAF) option
- Hydrazine upper stage for multiple orbit altitude capabilities or increased orbital insertion accuracy



Technical Details

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