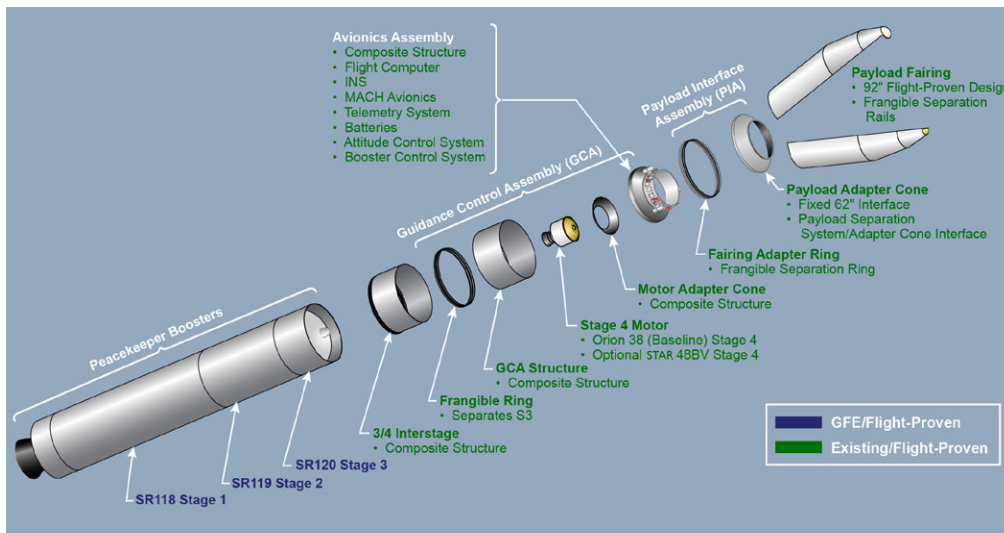




Minotaur IV

Space Launch Vehicle



Expanded view of the Minotaur IV launch vehicle

Overview

The Minotaur IV Space Launch Vehicle (SLV) provides an extremely cost-effective and capable space solution for U.S. Government-sponsored spacecraft. It builds on a long background of dependable launch systems with over 50 flights of each core stage. The combination of three government-furnished solid rocket stages, a commercial solid rocket upper stage, and Orbital'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's unique strengths from experience spanning several decades.

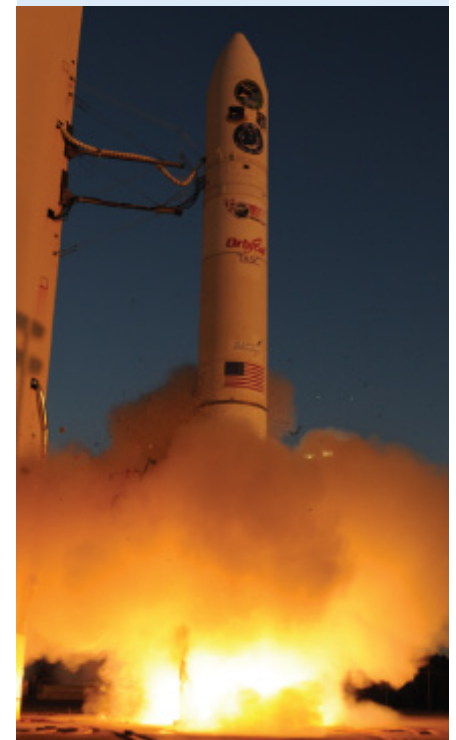
For the Minotaur IV, the standard Minotaur-family avionics, flight software, and subsystems are integrated into a Guidance Control Assembly (GCA) which also incorporates the Stage 4 solid motor. The baseline Stage 4 motor is the same Orion 38 design used on Minotaur I, Pegasus, Taurus, and other Orbital launch vehicles. An optional STAR™48BV motor 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), Space Development and Test Directorate (SMC/SD) Launch Systems Division (SMC/SDL) located at Kirtland AFB, NM.

QUICK FACTS:

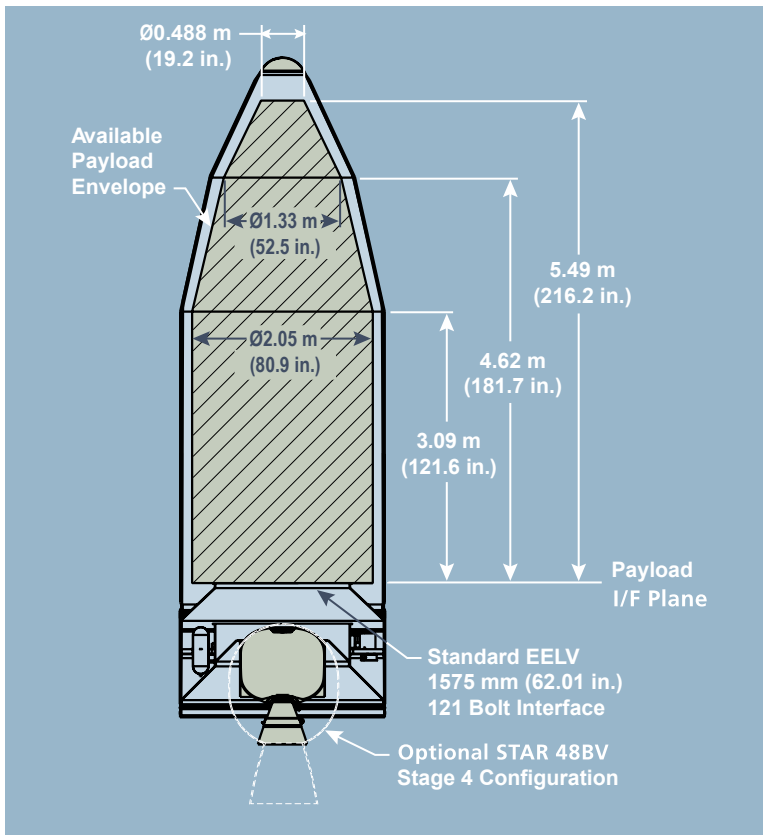
System Features

- 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
 - Orbital's rigorous mission assurance program
 - Full government insight and independent assessment
- Multiple spaceport launch capability (California, Florida, Alaska, Mid-Atlantic) using portable ground support equipment



Minotaur IV has a demonstrated success record

Minotaur IV



Standard 2.34 m (92 in.) fairing envelope supports various spacecraft configurations

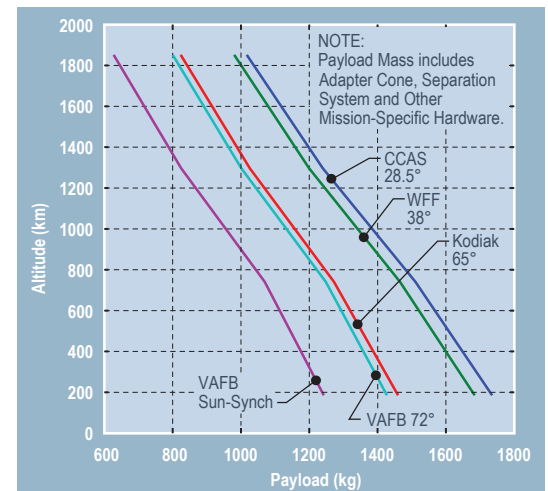
Payload Accommodations:

- Standard 2.34 m (92 in.) dia. 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 1575 mm (62.01 in.) dia. 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 platform option has hydrazine upper stage for multiple orbit altitude capabilities



Performance

- System performance assured from extensive booster motor flight history of more than 50 flights each
- Typical orbit accuracy of better than ± 5 km insertion apse, ± 25 km non-insertion apse, and ± 0.1 deg 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



Performance to orbit is assured by 50+ flights of Minotaur IV stages

For technical details, please contact:

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Additional information should be obtained from the USAF OSP Office

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