THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

Minotaur IV

Space Launch Vehicle

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 Northrop Grumman'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 Northrop Grumman'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.

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 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

Multiple spaceport launch capability (California, Florida, Alaska, Mid-Atlantic) using portable ground support equipment

Performance

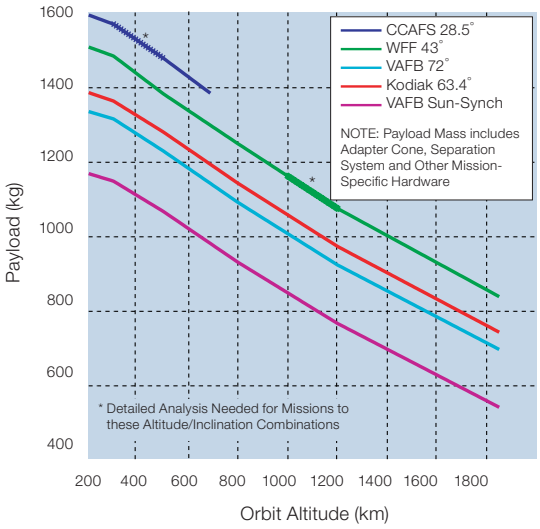
System performance assured from extensive booster motor flight history of more than 50 flights each.

Typical orbit accuracy better than ±5 km insertion apse, ±25 km non-insertion apse, and ±0.1° 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.

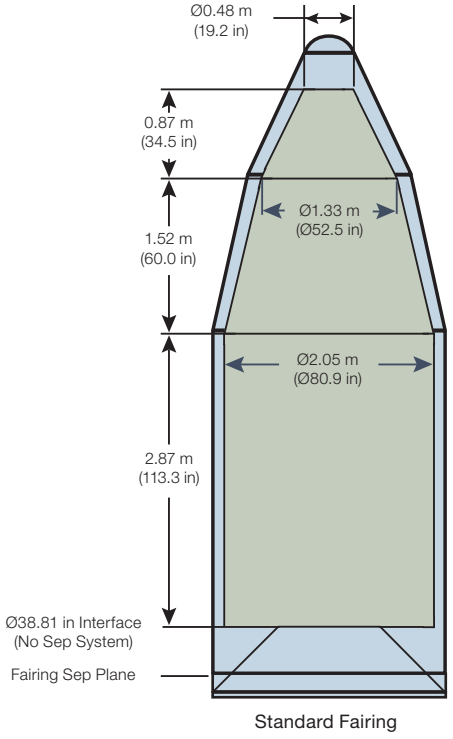
Temperature, humidity, and cleanliness control through lift-off.

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.



Standard Fairing

More Information

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