

EXCALIBUR METEOROLOGICAL ROCKET



OVERVIEW

Excalibur is simple to adopt since it interfaces directly with existing 10D and 12A dart payloads, and is 100% compatible with existing spiral launch rails. The Excalibur rocket motor is ideal for meteorological rocket missions. It is also a proven ballistic missile training target when used with Magellan's radar augmented dart.

PROPELLANT

The motor uses a case-bonded, non-aluminized hydroxyl-terminated polybutadiene (HTPB) propellant. The propellant grain configuration is a four-slotted finocyl which provides a high initial thrust with a subsequent regressive thrust-time trace.

MOTOR CASE

The motor case is made from 4130 steel with steel fins welded to the cylindrical section.

NOZZLE

The nozzle is made from glass/phenolic, and is molded into a steel attachment ring which threads into the motor case.

MOTOR INTERFACES

The motor payload interface allows for direct integration of an existing 10D and 12A dart payloads.

OPERATIONS

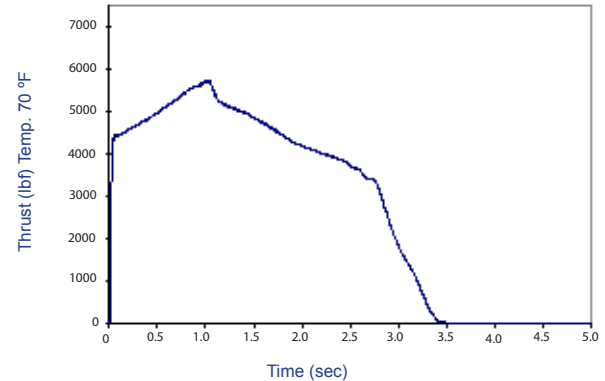
In some cases, the dart is deployed at apogee, and the payload performs its science while drifting downwards supported by an inflatable balloon/parachute. The nominal payload volume is 5 cm diameter by 79 cm in length, however, new designs for the payload are possible for each flight.

The Excalibur motor/10D/12A dart combination is 100% compatible with existing Viper IIIA/10D spiral launch rails.

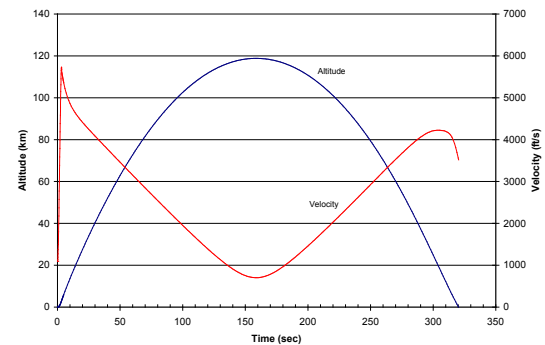
EXCALIBUR MOTOR MASS AND PERFORMANCE PROPERTIES

Property	Pre-Fire
Propellant Mass	56.7 lbm
All-Up Motor Mass1	86.3 lbm
Post-Fire Mass	28.3 lbm
Length	93.7 in
Diameter	4.5 in
Total Impulse at 70°F	13700 lbf-sec
Operating/Storage	Exceeds 0°F to +115°F

EXCALIBUR MOTOR THRUST TIME CURVE



Excalibur with 12A Dart



ABOUT MAGELLAN AEROSPACE

Magellan Aerospace is a global aerospace company that provides complex assemblies and systems solutions to aircraft and engine manufacturers, and defence and space agencies worldwide. Magellan designs and manufactures aeroengine and aerostructure assemblies and components for aerospace markets, advanced proprietary products for military and space markets, and provides engine and component repair and overhaul services worldwide. Magellan is a public company whose shares trade on the Toronto Stock Exchange (TSX: MAL), with operating units throughout North America, Europe, and India.

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