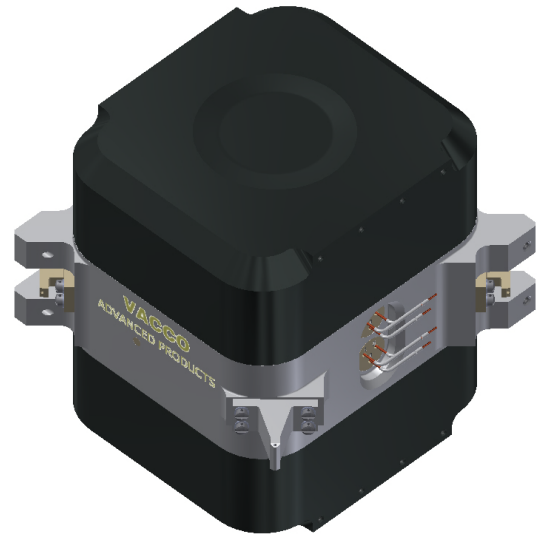


Reaction Control Propulsion Module

VACCO's Reaction Control Propulsion Module is a self-contained unit designed to occupy the center of a 3U CubeSat. A total of eight thrusters in groups of two at four corners of the module allows for precise rendezvous and proximity operations.

The Reaction Control Propulsion Module uses R134a propellant, which self-pressurizes over the normal operating temperature range and helps to ensure range safety. This smart system is designed to interface with the spacecraft through an RS422 data bus for command and control.

The Reaction Control Propulsion Module can be scaled down from 0.8U based upon the mission and payload requirements.



SPACE

Features

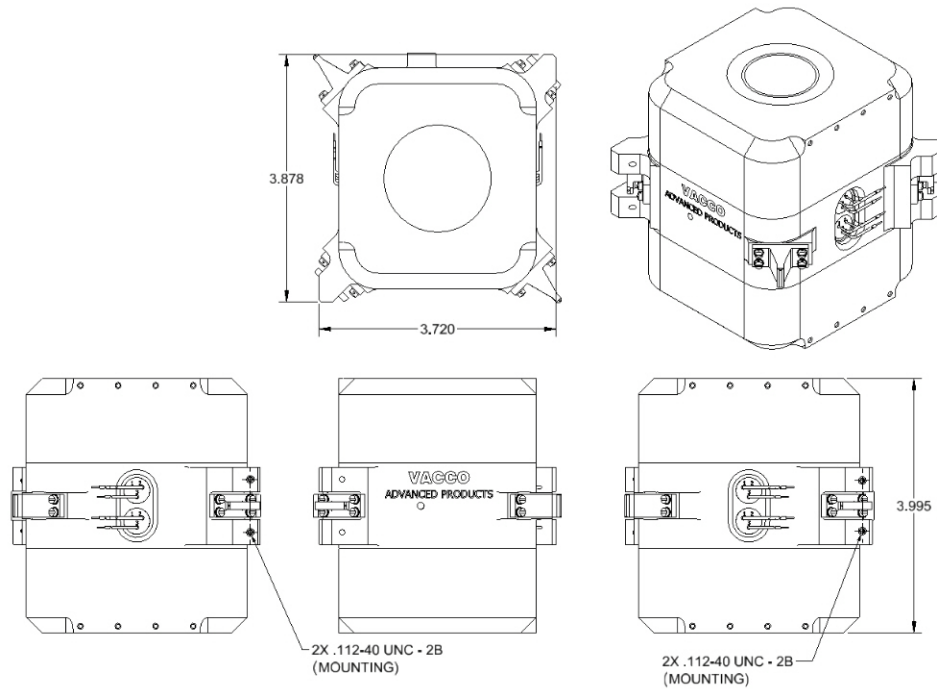
- Inherently safe non-toxic R134a propellant
- Two seals against leakage of propellant
- Eight fast response, low power 25 mN cold gas thrusters
- Smart system with integral electronic controller
- Aluminum construction
- Light weight
- Ensures destruction during re-entry
- Proportional heater and temperature sensor for precise control of propellant pressure

Operating Parameters

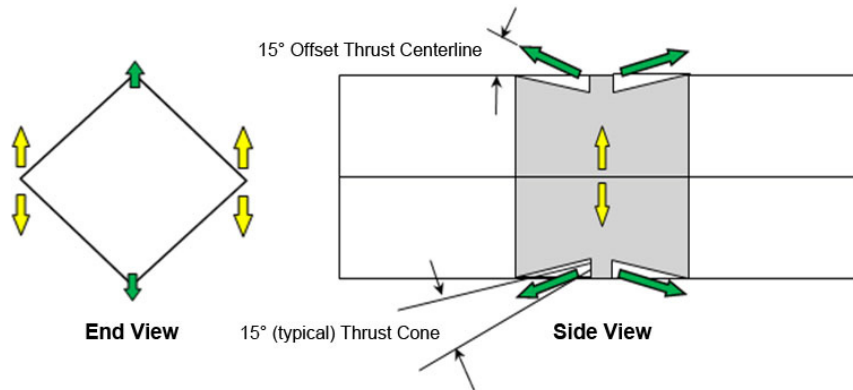
Operating Temperature Range 0°C to 60°C
Operating Voltage 9 to 12.6 vdc
Max Standby Power Consumption..... 0.25 watts
Max Steady-State Power 5 watts
Specific Impulse (I_{sp}) 40 s

Total Impulse 186 N-sec
Nominal Continuous Thrust 25 mN +/- 5 mN
Minimal Impulse Bit..... 0.20 mN-sec
Thruster Valve Response <2 mSec
Estimated Weight with Propellant 1,244 grams

Performance characteristics are based on customer requirements. As such, they are not representative of component capabilities or limitations.



Thruster Locations



Flow Schematic

