

### Green Propulsion System

VACCO’s Green mono-propellant Micro Propulsion System (MiPS) provides a highly reliable solution for a fully self-contained CubeSat attitude control and main propulsion system.

*Performance density: 969 N-sec/L*

The VACCO Green MiPS is approximately 3U in volume and uses four 100 mN thrusters to develop 3,320 N-sec of total impulse that provides 237 m/s of delta-V for a 14 kg CubeSat. Each thruster independently operates to perform both delta-V and ACS maneuvers controlled by an integrated microprocessor controller.



Flight systems currently in production.

### Features

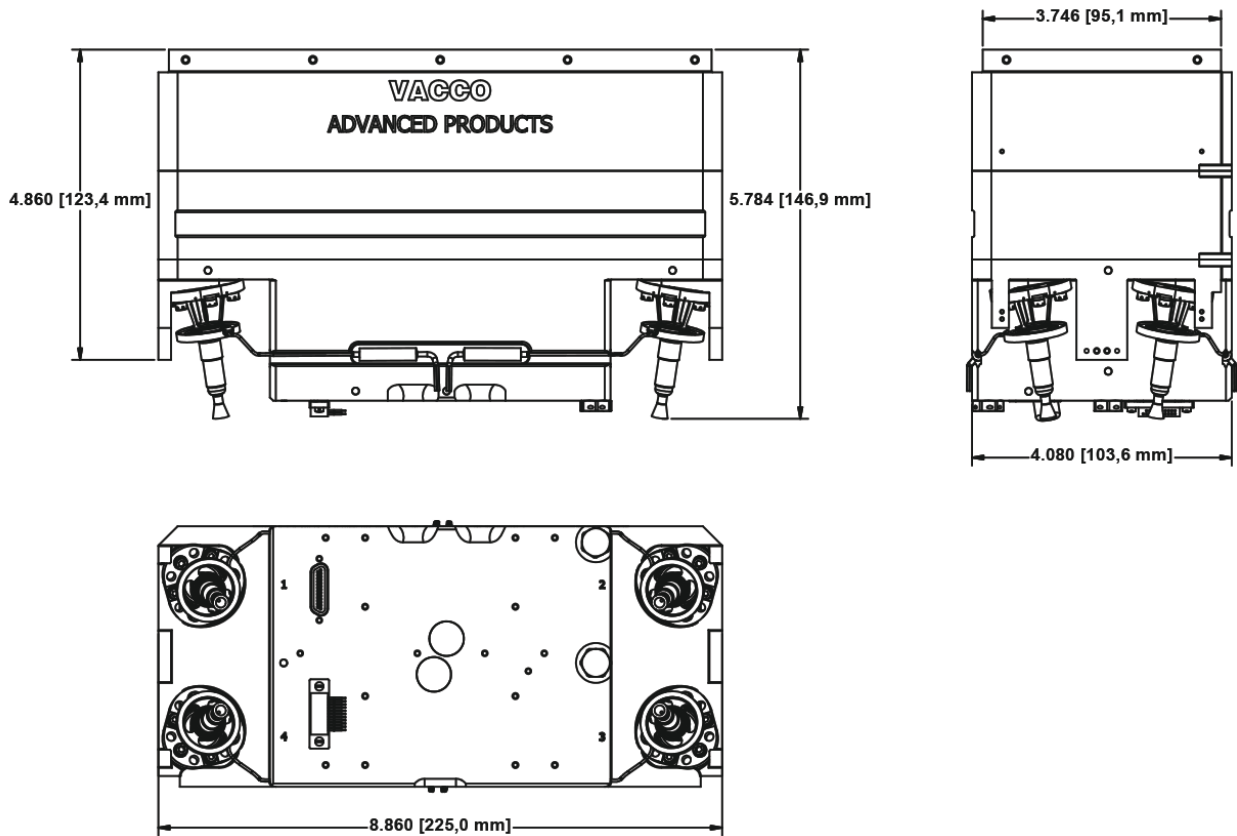
- Integral titanium fluid control manifold and low friction, space grade valves
- All welded tank construction contains 2 kg of propellant
- Integrated microcontroller and RS-422 interface enable high-level commands from the host spacecraft
- Low power with < 1 Watt for health and status monitoring
- Easily configured for different mono-propellants
  - ADN green (LMP-103S/LT)
  - Air Force green (AF-M315E)
- Performance density: 969 N-sec/L

### Operating Parameters

Propellant MDP.....	5.17 Bar (75 psia)	Total Impulse @10°C.....	3,320 N-s
Propellant Proof Pressure.....	7.76 Bar (150 psia)	Dry Mass.....	3.0 kg Max
Propellant Burst Pressure.....	2.18 Bar (300 psia)	Wet Mass 95% Fill @ 10°C.....	5.0 kg Max
GHe MDP.....	29.1 Bar (422 psia)	Operating Voltage For Telemetry.....	5±0.25 V <sub>DC</sub>
GHe Proof Pressure.....	43.66 Bar (633 psia)	Operating Voltage For Heaters & Valves.....	9.5-12.6 V <sub>DC</sub>
GHe Burst Pressure.....	58.21 Bar (844 psia)	Standby Power.....	10 W Max
Internal Leakage.....	1.0 x 10 <sup>-4</sup> sccs GHe	Warmup Power.....	1W
External Leakage.....	1.0 x10 <sup>-6</sup> sccs GHe	Thruster Operating Power (4 thrusters).....	15 W Max
Operating Temp.....	10°C to 40°C	Data Interface.....	RS-422
Non-Operating Temp.....	-34°C to 60°C		

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

Envelope Drawing



Flow Schematic

