DAWN
AEROSPACE



CUBESAT PROPULSION MODULES

Dawn's CubeSat Propulsion Modules are built for 3U to 36U+ CubeSats. They include a B1 Thrusters, tanks, valves, and control electronics. The structure is additively manufactured as a single monolithic piece per ECSS standards and includes both fuel and oxidizer tanks. Health monitoring instrumentation includes integrated and isolated thermocouples, pressure sensors.

Green propellants

Utilizes nitrous oxide (N2O) and propene (C3H6), which are safe to handle and widely available, unlike ADN or HAN.

High performance

Delivers 285 s of Isp, similar to bi-propellant hydrazine-based alternatives, but with less mass and smaller volume.

Superior reliability

Propellants are self-pressurizing and don't require complex controls or moving parts to maintain performance.

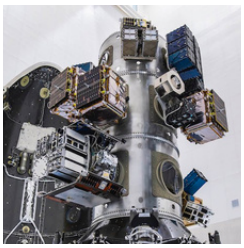
Suitable for any CubeSat

Dawn can provide stand-alone thrusters or a complete propulsion system including tank, feed, and instrumentation & control.

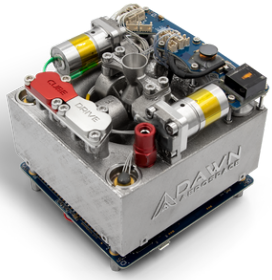
Flown on the world's busiest rideshares

CubeSat operators can now make use of low-cost rideshare options and high-performance propulsion to get to their desired orbit, months faster than electric alternatives.


Vega SSMS PoC Flight VV16

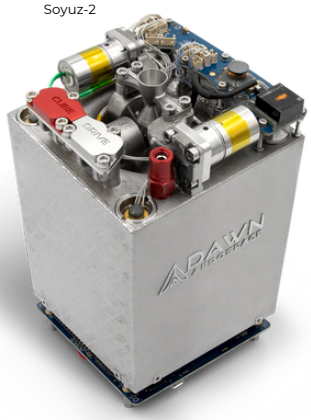

SpaceX Transporter-1


Soyuz-2









0.7U Module

- **Total impulse**
  >95.5 lbf.s
  >425 N.s
- **Propellant mass**
  0.37 lbm
  170 g
- **Mass (dry / wet)**
  2.20 lbm / 2.58 lbm
  1000 g / 1170 g
- **Dimensions**
  2.75 x 3.75 x 3.75 in
  70 x 95.4 x 95.4 mm

1U Module

- **Total impulse**
  >191 lbf.s
  >850 N.s
- **Propellant mass**
  0.68 lbm
  310 g
- **Mass (dry / wet)**
  2.43 lbm / 3.10 lbm
  1100 g / 1410 g
- **Dimensions**
  3.85 x 3.75 x 3.75 in
  95.4 x 95.4 x 95.4 mm

1.5U Module

- **Total impulse**
  > 337 lbf.s
  >1500 N.s
- **Propellant mass**
  1.96 lbm
  890 g
- **Mass (dry / wet)**
  2.87 lbm / 4.83 lbm
  1300 g / 2190 g
- **Dimensions**
  5.90 x 3.75 x 3.75 in
  150 x 95.4 x 95.4 mm

2U Module

- **Total impulse**
  >494.5 lbf.s
  >2200 N.s
- **Propellant mass**
  2.87 lbm
  1300 g
- **Mass (dry / wet)**
  3.53 lbm / 6.39 lbm
  1600 g / 2900 g
- **Dimensions**
  7.87 x 3.75 x 3.75 in
  200 x 95.4 x 95.4 mm



QUAD-THRUSTER MODULES

Sized from 4U to 8U+ for 12U+ CubeSats

Dawn's quad-thruster module includes four B1 Thrusters, tanks, valves and control electronics. Thrusters can be inset into the module for deployer compatibility or positioned above the main body for maximum total impulse. The structure is additively manufactured as a single monolithic piece per ECSS standards and includes both fuel and oxidiser tanks. Isolation valves are located upstream of the firing valves for added redundancy. Health monitoring instrumentation includes integrated and isolated thermocouples, pressure sensors.

B1 THRUSTER



Download specifications

Please refer to the B1 Thruster specifications document for physical, environmental, interface, and performance specifications

www.dawnaerospace.com/resources

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