

# Green Monopropellant Thrusters

**BUSEK**  
Space Propulsion  
and Systems



*Green monopropellant thruster delivers 505 N-s in 1 U volume  
for high performance space applications*

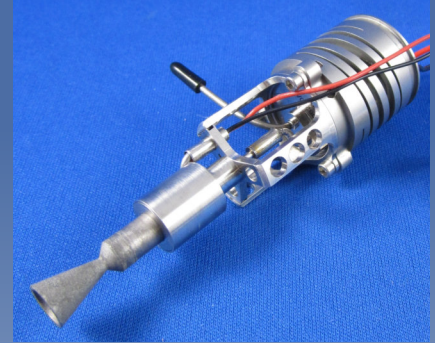
Busek's Green Monopropellant Thruster includes an integrated piezo microvalve, catalyst reactor and high temperature thruster body. Busek's all-welded microvalve and propellant management system enables the complete thruster system - including propellant tank and electronics - to be packaged into a 1U (0.5U minimum) volume for CubeSat applications. The system scales easily by increasing the size of the propellant tank to support multiple applications.

The thruster delivers 500 mN at 220 seconds specific impulse (nominal, assuming 200 psi combustion pressure). As a 1U system, it can deliver 130 m/s to a 4 kg CubeSat and features multiple start-stops for precision firing and delivery of short impulse bits on the order of 0.03 N-s.

The system uses a highly stable and non-toxic propellant AF-M315E that can be handled without a hazmat suit.

The system features a precision micro-valve, leveraged from ST7 design heritage, and rugged flight electronics.

Integrated DCIU enables communication via UART, I2C, SPI



**0.5N Monopropellant Thruster**

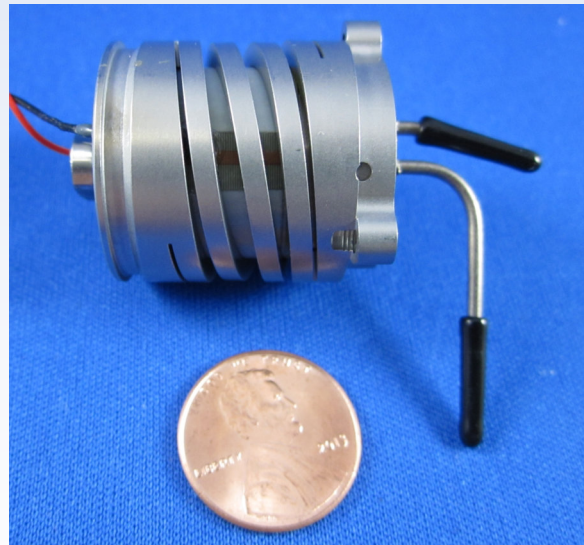


**0.5N Monopropellant Thruster  
under test (Busek)**

Busek Co. Inc specializes in providing complete electric space propulsion systems including but not limited to a wide range of thrusters, propellant management systems, power processing units and digital control interface units. Busek provides analytical, computational, experimental and product services to government and industry.

# Green Monopropellant Thruster Technical Specifications

	3U Application	6U Application	
<b>Electrical</b>	Total Input Power	< 15 W	
	Input Voltage	+ 12 VDC	
	Interface	UART, I <sup>2</sup> C, SPI	
<b>Mechanical</b>	System Mass	< 1.5 kg	
	System Volume	1 U	
<b>Performance</b>	Total Impulse	505 N-s	
	Nominal Thrust	0.5 N	
	Nominal ISP	220 s	
	Delta-V	130 m/s (for 4kg spacecraft)	> 251 m/s (for 10 kg spacecraft)
	TRL	5	



Monopropellant thruster features miniature NC high pressure PFCV that is long-term propellant compatible and extremely low power