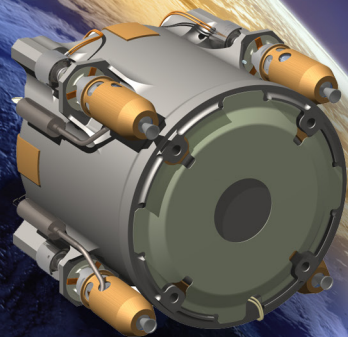
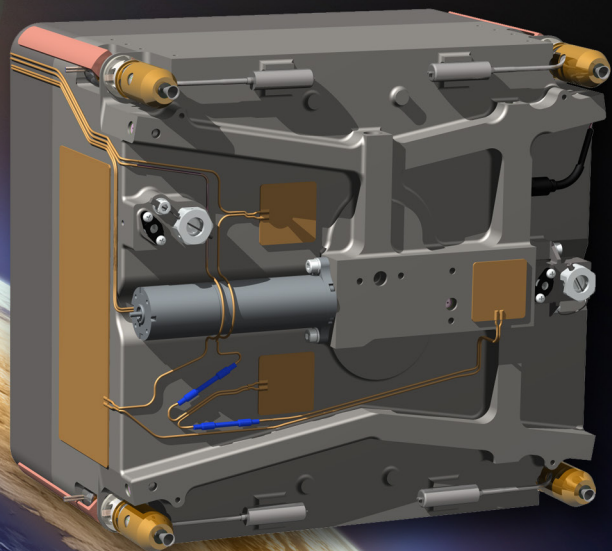


# Modular Propulsion Systems

Innovative Propulsion Solutions  
for CubeSats and SmallSats





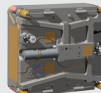
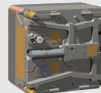
**AEROJET**  
**ROCKETDYNE**

[www.rocket.com](http://www.rocket.com)

## CubeSat Modular Propulsion Systems

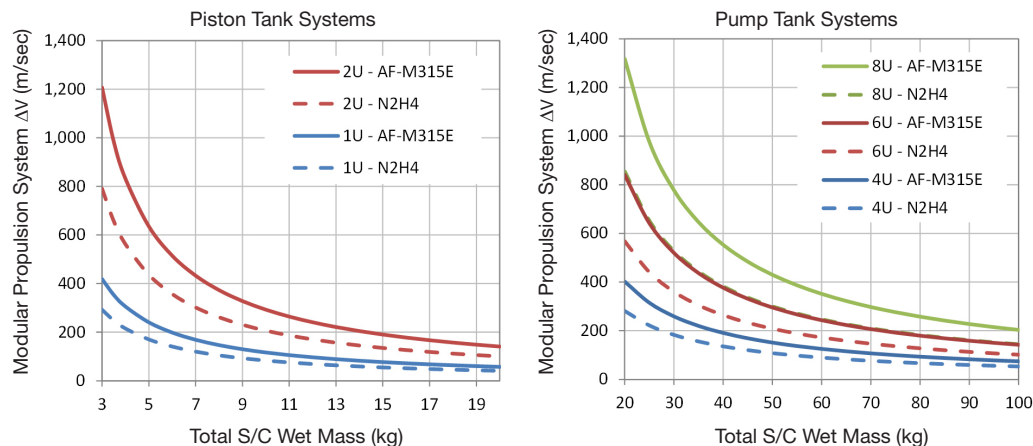
- High reliability, high delta-V propulsion for CubeSats and SmallSats
- Orbit maintenance, station keeping, and reaction control
- High density non-toxic green propellant and traditional hydrazine

### System Specifications

Thrust Range -0.25 – 1.0 N (per thruster)	1U	2U	4U	6U	8U
					
<b>Green (AF-M315E)</b>	<b>MPS-130-1U</b>	<b>MPS-130-2U</b>	<b>MPS-135-4U</b>	<b>MPS-135-6U</b>	<b>MPS-135-8U</b>
System Impulse* (N·s)	>1,130	>2,720	>7,290	>13,740	>19,360
System Dry Mass (kg)	1.1	1.4	3.5	4.3	5.1
System Wet Mass (kg)	1.7	2.8	7.2	11.2	14.7
<b>Hydrazine</b>	<b>MPS-120-1U</b>	<b>MPS-120-2U</b>	<b>MPS-125-4U</b>	<b>MPS-125-6U</b>	<b>MPS-125-8U</b>
System Impulse* (N·s)	>810	>1,960	>5,240	>9,890	>13,930
System Dry Mass (kg)	1.2	1.5	3.6	4.4	5.1
System Wet Mass (kg)	1.6	2.5	6.2	9.3	12.1

\*System impulse based on steady state firing operation. Actual total impulse will vary based on operational duty cycles.

### Performance Data



# Modular Propulsion Systems

## Innovative Propulsion Solutions for CubeSats and SmallSats

- High reliability, high delta-V propulsion for CubeSats and SmallSats
- Orbit maintenance, station keeping, and reaction control
- High density non-toxic green propellant and traditional hydrazine

### Propulsion System Designations:

**MPS - 135 - 6U**

#### Size of Propulsion System

- 1U = ~10 x 10 x 10 cm volume
- 2U = ~10 x 10 x 20 cm volume
- 4U = ~22 x 20 x 10 cm volume
- 6U = ~22 x 20 x 16 cm volume
- 8U = ~22 x 20 x 22 cm volume

*(U Designations for CubeSat systems only)*

#### Model Number Designator

- 0 = Piston fed with condensable pressurant
- 5 = Pump fed with PMD tanks

#### Propellant Type

- 1 = Cold gas
- 2 = Hydrazine *(most requested)*
- 3 = 'Green' AF-M315E *(most requested)*
- 4 = Electric Propulsion

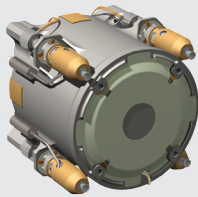
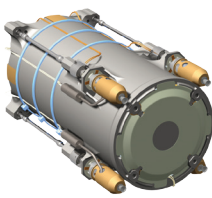
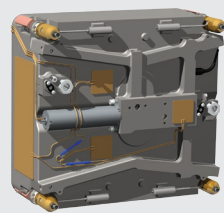
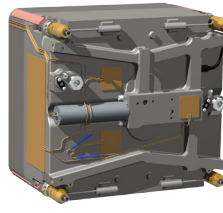
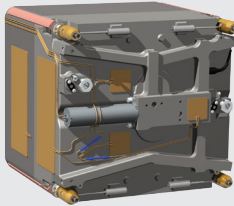
#### System Size Class

- 1 = CubeSat systems *(most requested)*
- 2 = SmallSat systems
- 3 = ESPA Ring systems

#### System Class

MPS = Modular Propulsion System

### CubeSat Modular Propulsion System Configurations

Figure	Models
	MPS-130-1U MPS-120-1U
	MPS-130-2U MPS-120-2U
	MPS-135-4U MPS-125-4U
	MPS-135-6U MPS-125-6U
	MPS-135-8U MPS-125-8U