

SPACECRAFT SYSTEMS

Low-Power Hall Thruster

The Low-Power Hall Thruster is designed for micro- and nanosatellite orbit transfer and station-keeping missions. It uses inert gas as the propellant and features a lightweight, compact design with high reliability and long operational life.

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	
power_et_h300_1	300 W
power_et_h600_1	600 W
dimensions_et_h300_1	144 × 114 × 91 mm
dimensions_et_h600_1	190 × 160 × 110 mm
mass_et_h300_1	1.2 kg
mass_et_h600_1	2.0 kg
propellant	High-purity Xenon
operating_temperature	−40 to +80 °C
mechanical_interface	6 × ϕ 4.5

Quick Overview

The Low-Power Hall Thruster is designed for micro- and nanosatellite orbit transfer and station-keeping missions. It uses inert gas as the propellant and features a lightweight, compact design with high reliability and long operational life. The 300 W and 600 W variants are optimized for low-Earth orbit (LEO) constellations, including broadband communication and remote-sensing satellite missions.

Key Specifications

ET-H300-1 Model

Parameter	Value
Power	300 W
Dimensions	144 × 114 × 91 mm
Mass	1.2 kg
Propellant	High-purity Xenon
Operating Temperature	−40 to +80 °C
Mechanical Interface	6 × ϕ 4.5

ET-H600-1 Model

Parameter	Value
Power	600 W
Dimensions	190 × 160 × 110 mm
Mass	2.0 kg

Parameter	Value
Propellant	High-purity Xenon
Operating Temperature	-40 to +80 °C
Mechanical Interface	6 × φ 4.5

Key Features

- Lightweight and compact structure
- High reliability and stable operation
- Long service life
- Suitable for orbit transfer and station-keeping missions
- Available in 300W and 600W variants
- Optimized for LEO constellations

Technical Details

Architecture & Design

The Low-Power Hall Thruster uses inert gas (high-purity Xenon) as propellant and employs Hall effect acceleration principles for efficient thrust generation. The design is optimized for micro- and nanosatellite applications with emphasis on:

- Compact form factor suitable for small satellite platforms
- High specific impulse for efficient propellant utilization
- Long operational lifetime for extended missions
- Stable performance across wide temperature ranges

Flight Heritage

- **ET-H300-1** and **ET-H600-1** achieved first flight in 2019
- Demonstrated stable and efficient in-orbit performance
- Validated for LEO constellation missions

Applications

- Micro- and nanosatellite orbit transfer
- Station-keeping missions
- Constellation adjustment in low Earth orbit
- Broadband communication satellites
- Remote-sensing satellite missions

Documentation & Resources

- [Technical Specifications](#)
- [Applications](#)