

BHT-1500

Busek

Hall Effect Thruster



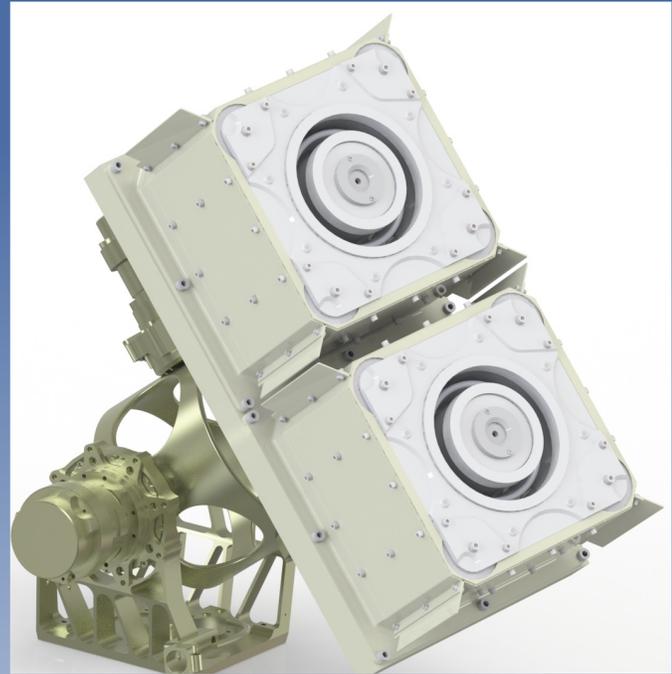
Efficient and high-performance propulsion system designed for use with xenon and iodine propellants.

Busek's BHT-1500 is a 2kW-class Hall Effect thruster with innovative center-mounted cathode. The center-mounted cathode precludes performance degradation and outperforms all other competitive designs. Independent testing at The Aerospace Corporation demonstrated the thruster has 10% higher specific impulse and 15% higher thrust efficiency than the nearest competitive HET product available on the market. This performance advantage can generate hundreds of kilograms in mass savings (launch mass savings) for the average medium class GEO communications satellite, or millions of dollars in added revenue over the life of a given spacecraft (added mass capacity).

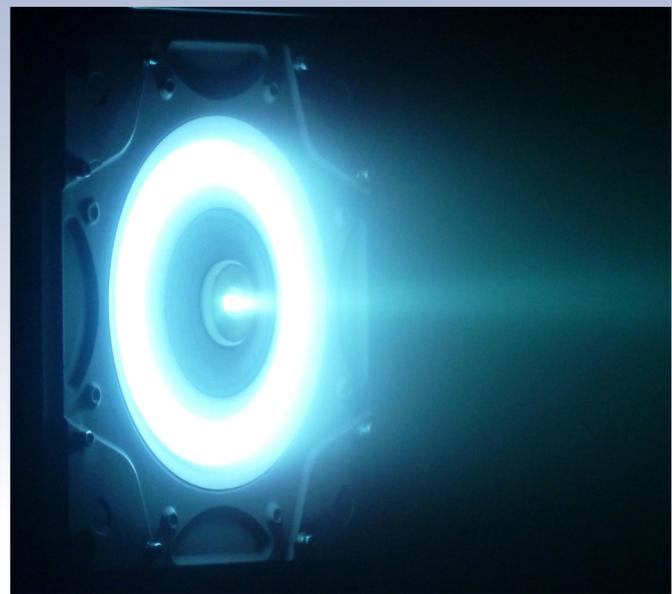
The BHT-1500 provides high performance with 103mN thrust at 1800W power and a specific impulse of 1,820 seconds.

Busek provides Hall Effect thruster configurations in circular, clustered, racetrack, and nested arrangements. Busek Hall Effect thrusters operate with plasmas composed of various elements, from xenon to advanced high-energy solids. Busek research has developed metallic propellants for in-situ resource utilization that can dramatically benefit interplanetary missions.

Busek provides complete and fully integrated Hall Effect thruster systems, including cathode, power processing unit, digital control unit, and propellant management systems.



Two BHT-1500 Hall Effect Thrusters Mounted in Gimbal



BHT-1500 Hall Effect Thruster Firing

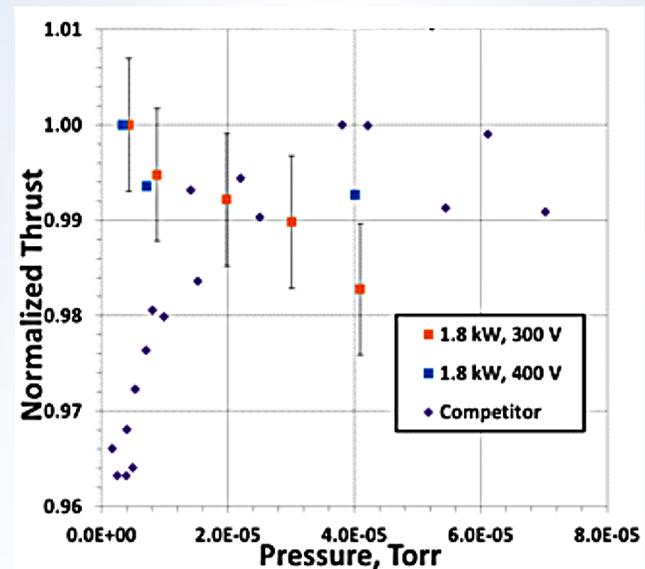
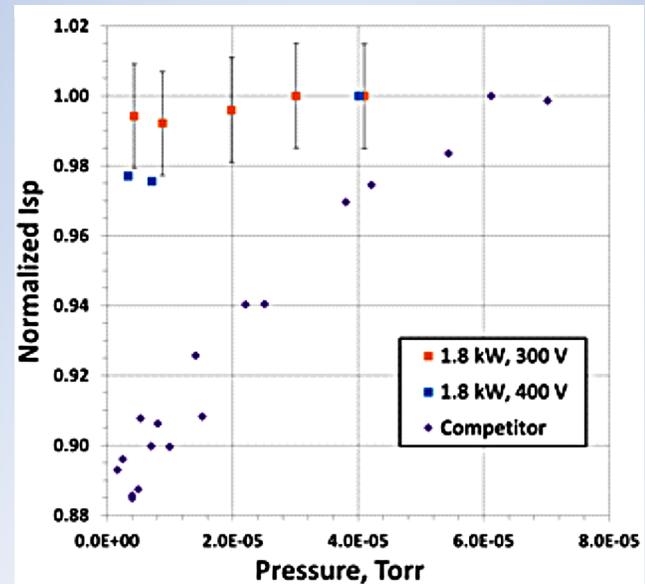
BHT-1500 System

Technical Specifications

Propellant	xenon, iodine, krypton
Cathode	BHC-2500
Cathode Location	Internal Center Mounted
Thruster Mass	6.8 kg
Cathode Mass	0.3 kg

Power (W)	High Thrust Mode		High I _{sp} Mode	
	Thrust (mN)	Total I _{sp} (s)	Thrust (mN)	Total I _{sp} (s)
1,000	68	1,615	58	1,860
1,500	101	1,710	87	1,895
1,800	120	1,740	103	1,940
2,000	134	1,700	118	1,915
2,400	158	1,735	143	2,045
2,700	179	1,865	154	2,035

BHT-1500 outperforms competition for high-vacuum operation:



Hall Effect thrusters require more mass flow to maintain constant power as pressure decreases. BHT-1500 thrust increases with additional mass flow, while competitor thrusters lose thrust. BHT-1500 thruster maintains near constant I_{sp} while competitors thrusters lose 150- 200s I_{sp}.