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NPT30 - A STAND-ALONE ELECTRIC PROPULSION SYSTEM FOR SMALL SATELLITES

Abstract

ThrustMe has developed a complete electric space propulsion system for next generation satellites. This system consists of a revolutionary ion thruster, power and control electronics, propellant storage and feed system, all integrated into a complete stand-alone product. Our lowest power system, the NPT30, has undergone a series of ground tests including direct thrust measurements, beam divergence and neutralization tests. The NPT30 is embedded into a 1U Cubesat module when operating on iodine and a 2U Cubesat module when operating on xenon. Operating with xenon, the NPT30 has a demonstrated thrust in the range 0.2-0.9 mN for a total input power (including all losses in the power processing units) of about 30-60 W. Theoretical and numerical models have been developed to describe the propulsion system operation, performance and lifetime, and predictions are in close agreement with experimental results.