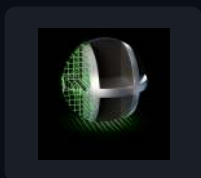


NEWSPACE MARKET · COMPANY PROFILE



Howe Industries

United States · founded 2018 · howeindustries.net

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PRODUCTS

newspacemarket.com/companies/howe-industries-thermasat/

as of 20 August 2026

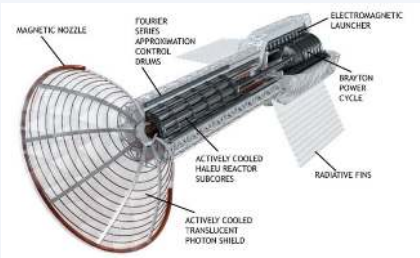


Howe Industries

Howe Industries was founded by Dr. Troy Howe in the Phoenix metro area to develop advanced propulsion and power technologies for the space sector. Dr. Howe holds a PhD in mechanical engineering from the University of Idaho (2015), with expertise spanning nuclear rocket fuel, thermoelectric converters, solid-state cooling, and space propulsion systems. The company flagship near-term product is ThermaSat, a solar thermal CubeSat propulsion system developed through NSF SBIR Phase I and II funding. ThermaSat uses water as a non-toxic, green propellant stored as a solid or liquid and vaporized through resistojet heating before being expelled through a nozzle, providing meaningful delta-V for 3U to 12U CubeSat platforms while avoiding the regulatory burden of conventional propellants like hydrazine. The system operates at a minimum of 8 W input power and is scalable with higher power inputs, offering a specific impulse advantage over cold-gas thrusters while maintaining the safe-handling profile critical for university and commercial integrators. Beyond ThermaSat, Howe Industries has spun out ThermaSat Inc for near-term orbital mobility and ISAM products, while continuing to advance longer-horizon concepts including the Pulsed Plasma Rocket (NASA NIAC Phase II, 2024), the SPRINTR nuclear thermal rocket, the SPEAR deep-space nuclear power probe, and the SEPTIR radioisotope electric thruster. The ROAMER in-space servicing robot was developed through a USSF Orbital Prime STTR award, and the ICARuS coulomb-particle heat radiator enables large-scale nuclear spacecraft designs. Howe Industries is led by Dr. Troy Howe, who simultaneously serves as CEO of ThermaSat Inc and CTO of Tesseract 4D Energy, bridging near-term CubeSat propulsion products with far-horizon nuclear propulsio

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Product catalogue



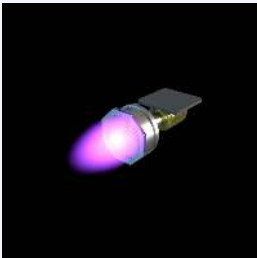
HOWE INDUSTRIES

Pulsed Plasma Rocket (PPR)

NASA NIAC-funded nuclear pulsed-plasma propulsion concept aiming to cut crewed Mars transit time to about two months — 100,000 N thrust, 5,000 s specific impulse, 282 MW power.

Thrust	100,000 N (100 kN)
Specific impulse	5,000 s
Reactor power	282 MW
Spacecraft total mass	80,000 kg
Payload capacity	18,500 kg
Delta-V	45.5 km/s
Crewed Mars transit time	~2 months

price on request



HOWE INDUSTRIES

SEPTIR

Radioisotope-powered electric thruster delivering 3,048 s specific impulse at only 3 W power draw, targeting small satellite and deep space platforms that require long-duration, ne

Specific impulse	3,048 s
Power draw	3 W
Thrust	0.295 mN
System mass	10 kg
Propulsion type	Electric (radioisotope-powered ion)

price on request



HOWE INDUSTRIES

SPEAR Probe

Compact deep-space nuclear power and propulsion probe delivering 3 kW electric at 20% conversion efficiency over a 14-year mission, targeting CubeSat deployment to Europa and other

Electric power output	3 kW
Thermal power output	15 kW
Conversion efficiency	20%
Wet mass	1,540 kg
Payload capacity	70 kg
Fuel type	U10-Mo (Uranium-Molybdenum)
Mission duration	14 years

price on request



HOWE INDUSTRIES

SPRINT

Nuclear thermal rocket engine achieving 843 s specific impulse at 9,930 N thrust and 40 MW reactor power, using a scored plate reactor design with liquid hydrogen as propellant.

Specific impulse	843 s
Thrust	9,930 N
Reactor power	40 MW
Core mass	2,730 kg
Propellant	Liquid hydrogen
Propulsion type	Nuclear thermal

price on request



HOWE INDUSTRIES

ThermaSat

Solar thermal CubeSat propulsion system using water as a non-toxic green propellant, delivering resistojet-heated steam thrust for 3U-12U platforms at minimum 8 W input power. NSF

Propellant	Water (H2O)
Propulsion type	Solar thermal resistojet (electrothermal)
Minimum input power	8 W
Target platform	CubeSat 3U to 12U
Propellant storage	Solid or liquid (ambient pressure)
Program status	NSF SBIR Phase II; USSF D2P2 ThermaSat+ OTV

price on request

Contact Howe Industries

Open the company profile on NewSpace Market to see full specifications and datasheets, and to send a request for quotation that reaches the manufacturer directly.

<https://newspacemarket.com/companies/howe-industries-thermasat/>

<https://www.howeindustries.net>

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