

SITAEEL

XR resistojet product family

SITAEEL resistojet thrusters are low power Xenon-fed or Argon-fed devices designed for a wide range of applications. The performance provided by the XR- series makes these thrusters suitable both as main propulsion system on mini- and micro-satellites and as auxiliary system for orbit maintenance and attitude control on larger platforms.



XR 50 Resistojet

SITAEEL resistojet thrusters (XR-50, -100 and -150) have been developed since 2003 adapting to different size, mass and performance requirements.

Design of the thruster has been ruggedized by substituting the original tungsten filament heater with an industrial COTS component for very harsh environments.

Their flexible design allows for additional optimization depending on specific mission profile or custom specifications.

SITAEEL XR-series thrusters, even if optimized considering Xenon as propellant, may be operated with any non-oxidizing gas or liquid droplets.

Each thruster configuration presents an embedded miniature conical nozzle and may be also operated in "cold-gas" mode with reduced performance and lower thermal regimes, thus ensuring an intrinsic redundancy of the system.

Technical Specifications

Thruster	XR-50	XR-100	XR-150
Propellant	Ar, Xe, N ₂ , blends...	Ar, Xe, N ₂ , blends...	Ar, Xe, N ₂ , blends...
Power	≤ 50 W	≤ 80 W	≤ 95 W
Bus	28 V unregulated		
Thrust	100 mN	125 mN	250 mN (with Ar) 100 mN (with Xe)
Specific Impulse	55 – 85 s	63 – 105 s	58 – 110 s
Thrust Efficiency	≤ 50 %	≤ 60%	≤ 65%
Lifetime	> 200 hours		
Total Impulse	≤ 72 KNs	≤ 90 KNs	≤ 180 KNs
Thruster Mass	220 g		
Thruster size	Ø 27 x 80 mm		
Technology Readiness Level (TRL)	5	5	6

All models are completely ITAR-free

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