

NANO Dragsail

Effective deorbiting for Nanosatellites in LEO

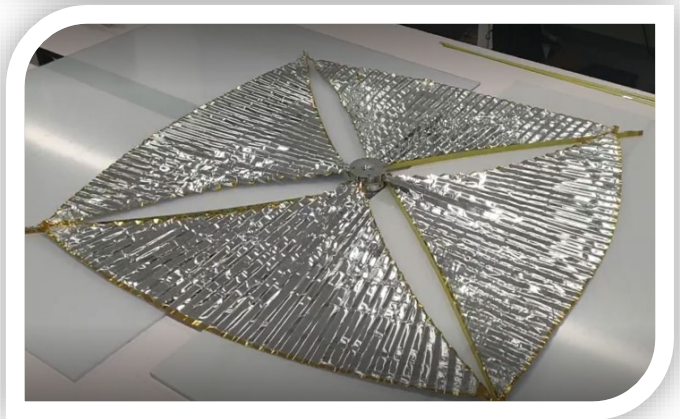
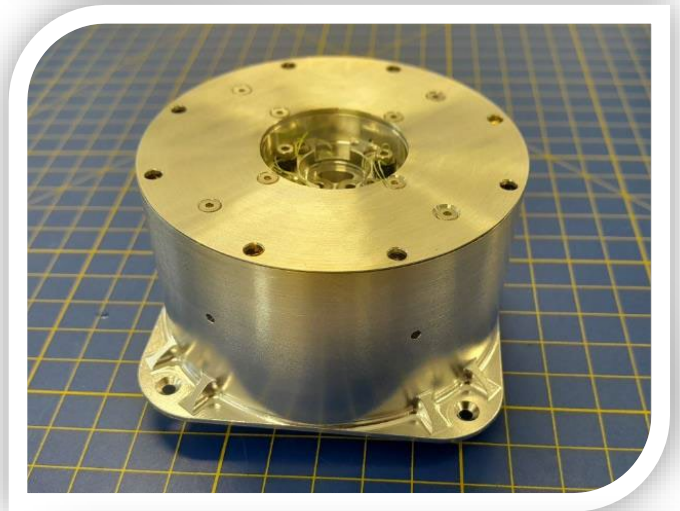
Systems For Sustainable Use Of Space

Recent changes in US FCC policy requires all satellites licensed or launched from the US to deorbit within 5 years of end of mission. The NANO dragsail system has been designed as a cost-effective and reliable solution for accelerated disposal from LEO.

The system is robust to spacecraft anomalies that may compromise the ability to deorbit with propulsion systems, whilst not impinging on payload volume due to its extended volume “tuna-can” form factor

Key Features

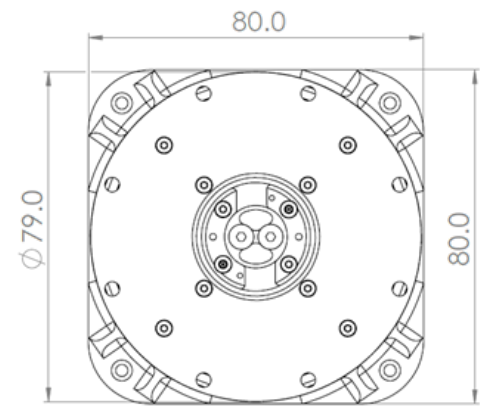
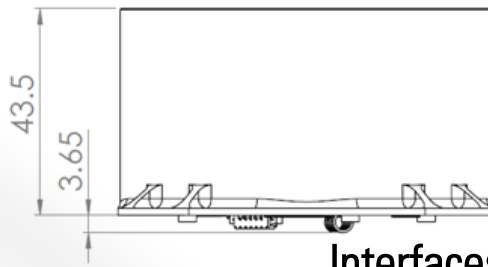
- 1m² deployed drag area
- Tuna can form factor compatible with standard COTS deployers – preserves the full payload fraction of CubeSats
- Electrical feedthrough and recess for platform sun sensor allowing full AOCS complement
- Low mass (250g)
- Optimised for 2U-12U CubeSats in rideshare orbits
- Power line activation or watchdog
- Designed for last minute integration
- Qualified to 14.1g_{rms} (GEVS)
- -30°C to +60°C Operational temperature range



Pioneering The Future Of Deployable Technology In Space

With extensive expertise in deployable space technology and mission delivery, our team is equipped to offer customers both off-the-shelf systems and tailor-made solutions to meet their unique requirements in Earth orbit and beyond.

FronD Space Systems has grown out of the University of Auckland’s Space Institute, Te Pūnaha Ātea at the heart of New Zealand’s emergent and energetic space eco-system and has the benefit of over a decade of combined experience in delivering deorbiting systems.



Options

Spacecraft actuated - The NANO sail requires only an activation power signal from the spacecraft EPS to deploy

Watchdog with spacecraft power – The NANO sail is powered from the EPS and incorporates a watchdog to be kicked periodically from the ground. Deployment occurs on timeout (configurable duration).

Watchdog with battery power – The NANO sail is powered by an internal long-life primary cell, switched into circuit by a separation switch or spacecraft signal and incorporates a watchdog to be kicked periodically from the ground. Deployment occurs on timeout.(configurable duration).

Talk to us about your needs – we can accommodate configuration changes whilst retaining the critical system performance and for factor

Indicative Performance

Performance of dragsail systems is dependent on atmospheric density, which varies significantly based on Sun-Earth interactions. We offer a free analysis service before purchase to make sure our products are right for your mission.

Deorbiting time for a typical 4kg 3U CubeSat in a Sun-Synchronous Orbit, in a random tumble in 2027 demonstrates efficacy of the NANO sail system

Contact Us

To find out more about the range of products from Frond, or to discuss your needs, contact us at

Interfaces

Electrical interface:

3.3V-8.4V (selected on order), 10s duration
5-way Molex Picoblade

Pod Deployment (watchdog with battery power configuration only)

Pull to ground
4-way Molex Picoblade

Data interface (watchdog configurations only):

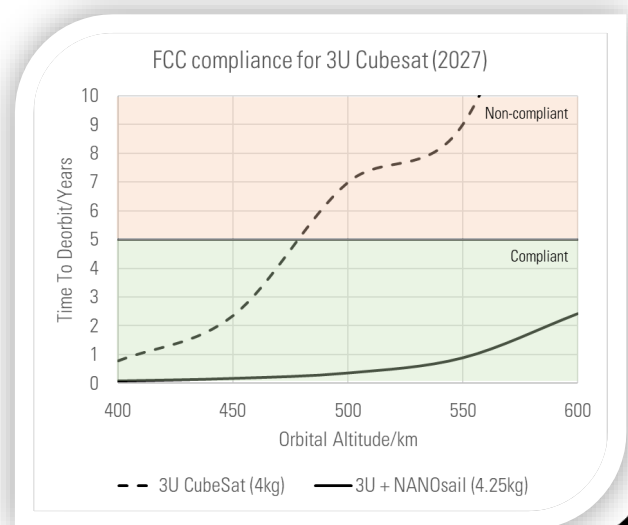
I2C, CAN
4-way Molex Picoblade

Mechanical interface:

4x M3 Countersunk

Sun Sensor (optional):

2x M2 Mounting interface, electrical feedthrough



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