AETHER SPACE

SOLAR SAIL PROTOTYPE

Ultra■Light Deployable Sail System

Aether Space develops deployable solar sail prototypes optimized for low■mass CubeSat missions. Designed for reliable mechanical deployment and maximum photon momentum transfer.

KEY FEATURES

- Ultra■light aluminized Mylar (PET) sail film
- Passive self■deployment architecture
- Compact stowed volume for CubeSat integration
- Modular 4■boom structure
- Scalable design (2×2 m → 4×4 m → 10×10 m)

TECHNICAL SPECIFICATIONS

Sail material	Aluminized Mylar (PET)
Sail thickness	2.5–12 µm (prototype range)
Reflectivity (estimated)	85–92%
Sail area (prototype)	4×4 m (16 m^2)
Sail shape	Square
Deployment structure	4 deployable booms
Boom type	Tape■spring / rolled boom
Deployment method	Passive (stored strain energy)

MASS BUDGET (EST.)

- Sail film (4×4 m, 2.5 µm): ~0.06–0.08 kg
- Boom structure: 0.20–0.60 kg
- Mechanism + mounting: 0.15–0.50 kg
- **Total prototype mass target:** 0.5–1.2 kg

CUBESAT INTEGRATION

Target bus	6U / 12U
Stowed volume	1U–2U (configuration dependent)
Mounting interface	CubeSat rails + internal bracket

OPERATIONAL ENVIRONMENT

- Orbit: LEO / Lunar transfer compatible
- Deployment: single■event, autonomous release

• Attitude: ADCS recommended for sail pointing

DEVELOPMENT STATUS

Status: Prototype hardware. Goal: low■cost deployable sail for technology validation.