

Self-Unwinding Reflector Array Antenna

MODEL GSA-06

TRL 4–5

PATENTED · MOTORLESS DEPLOYMENT

OVERVIEW

Our patented, revolutionary lightweight and ultra-compact self-deployable antenna. It uses state-of-the-art composite materials to allow the antenna to roll up like a carpet and deploy in space without using motors.

It brings incredible value to our customers in terms of super high compactness, significant mass reduction, and improved reliability — positioned as a future moat for the company's sustainability.



Motorless & compact

- Rolls up like a carpet for stowage
- No motors, gears, or actuators
- Target $\geq 8:1$ stow ratio

Precision surface

- Sub-mm RMS surface accuracy target
- Composite rib-and-mesh construction
- Patented deployment mechanism

Mass & reliability

- Significant mass reduction vs. rigid reflectors
- Aperture-scalable by mission
- Fewer moving parts, higher reliability

TECHNICAL SPECIFICATIONS

ENGINEERING SPECIFICATIONS		MECHANISM	
Deployment method	Motorless, composite self-unwinding	Structure	Composite rib and reflective mesh
Mass	3 – 8 kg (aperture-scalable)	Actuation	Stored strain energy — self-erecting
Stow ratio	Compact roll-stow (target $\geq 8:1$ stowed:deployed)	IP status	Patented
Surface accuracy target	Sub-mm RMS	Scalability	Aperture-scalable by mission requirement

HOW IT WORKS

The reflector mesh and rib structure are rolled into a compact stowed volume around a central hub. On deployment command, stored strain energy in the composite ribs drives the structure to unroll and self-erect into its final parabolic shape — with no motors, gears, or actuators required.

Application examples: high-gain reflector antennas for Earth observation and communication satellites, deployable large-aperture antenna systems, compact-stow antenna payloads

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Specifications are representative target values for the current development configuration, pending formal qualification test data. Customizable to application aperture and mass requirements.