REDWIRE

SOLAR ARRAYS – ROLL OUT SOLAR ARRAY (ROSA)

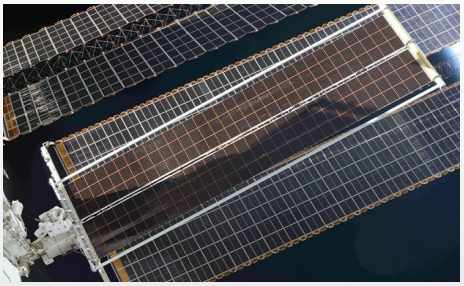
Redwire Space's state-of-the-art Roll Out Solar Array (ROSA) is a high-performance, lightweight, compact Solar Array solution.

ROSA offers a simple, modular, and highly scalable design with these unique features:

- Innovative Composite Booms utilize strain energy to produce significant deployment force; no motors or complex mechanisms are required. The Booms transform into the Solar Array's primary structure with high deployed strength and stiffness upon deployment.
- An Integrated Modular Photovoltaic Blanket Assembly (IMBA) manufactured with highly manufacturable Solar Power Modules (SPM), accommodating all PV cell types & sizes and flexible concentrators. The rolled configuration of IMBA has outstanding robustness for launch vibrations and eliminates any potential stiction during deployment.
- Mega-ROSA, which consists of multiple ROSA wings arranged on a deployable backbone structure, is used for ultra high power applications.

APPLICATIONS

- LEO, MEO, GEO, and interplanetary solar arrays
- Resilient Solar Arrays (retractable and high-temperature survivability)
- Lunar and Maritan Surface Solar Arrays (retractable and dust tolerant)
- Ultra-High Power Space Station or Space Tug Capability
- Constellation Arrays (low cost and high volume)
- Electric Propulsion Direct Drive (high voltage)



PARAMETERS

1 kW to 30+ kW

Single Wing Size Options

100 - 120 W/kg

Typical Power-to-Mass Ratio

20 kW to 400+ kW

Mega-ROSA Configuration

40 kW/m³

Typical Stowed Power Density

This product is controlled for export from the United States. Contact Redwire for details.

AS9100D CERTIFIED ISO 9001

MADE IN THE USA

FEATURES

- ROSA uses strain energy to deploy; no motors or complex mechanisms are required
- Rolls up and stows into a very compact volume, typically producing approximately 40 kW/m^3
- Very high deployed stiffness and strength
- Lightweight flex blanket array typically produces 100W-120 W/kg
- Modular PV blanket design provides scalability for any power requirement
- ROSA can be designed to retract and survive high temperatures
- Capable of all voltage ranges from 12V to >300V
- No latching is required for full deployed strength. Array maintains stiffness during entire deployment

MISSION HERITAGE

- IROSA ISS Roll Out Solar Array (Boeing /NASA)
- Double Asteroid Redirection Test (DART) Mission (APL/NASA)
- ISS ROSA demonstration mission with retraction (AFRL)
- PPE Power Propulsion Element (MAXAR)

For more information about our space capabilities,

CONTACT REDWIRE SPACE SALES

REDWIRE

HERITAGE

Redwire is a new leader in mission critical space solutions and high reliability components for the next generation space economy. With decades of flight heritage combined with the agile and innovative culture of a commercial space platform, Redwire is uniquely positioned to assist its customers in solving the complex challenges of future space missions. For more information, please visit **www.redwirespace.com**.