

AUTONOMOUS SOLAR PANEL INSTALLATION ROBOTS



Utility-Scale, Commercial & Industrial (C&I), Community Solar, Agrivoltaics, and More



45-120s

Cycle Time

Cycle time for panel pickup, alignment, placement, and fastening.

30-80
pcs/h

Designed productivity

Designed productivity per robot under supervised field operation.

**Field Demonstrated.
Deployable Today.**

Robotic system
demonstrated in the U.S.

Panel Compatibility

Up to 100' x 60'
Up to 250 lbs

Racking Compatibility

Compatible with Mainstream
Racking Systems

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Web: librabots.com
Email: contact@librabots.com

Supported Mounting Systems & Fastening Methods



System Type	Clip-Based	Fixed Clamp (Bolt)	Fixed Clamp (Blind Rivet)	Fixed Clamp (Bobtail Rivet)
Fixed-Tilt	-	○	○	○
Single-Axis Tracker	●	○	●	●

* Level of Autonomy

	Pallet Loading	Navigation	Module Pick & Place	Module fastening
●	Full autonomous	Full autonomous	Full autonomous	Full autonomous
○	Full autonomous	Full autonomous	Full autonomous	Human-assisted



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Technical Specification Sheet

Libra - 001A



40 hours continuous runtime with auxiliary fuel tank.

Industrial-grade robotic arm with **210 kg payload** delivers smooth, stable motion with **0.1 mm precision**.

Floating protection module with **±3 mm travel absorbs** impact to prevent panel or rafter damage.

8-wheel tri-drive platform built for sand, slopes, and soft soil. Compact turning radius for confined sites.



15+ multi-sensor fusion combines vision, force, and motion sensing for full-scene awareness and precise alignment.

Hydraulic front-fork with **1.5-ton panel storage capacity** enables continuous, efficient handling and delivery.



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Technical Specification Sheet

Libra-002 Series

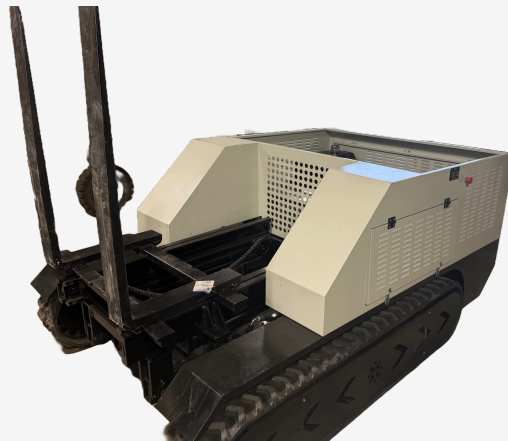
Independent Installation & Transportation Robots

Flexible Deployment. Continuous Module Supply

Tracked Mobile Base for Challenging Jobsites

Libra-002B Transport Robot

- Payload: 1,500 kg
- Power: Battery or Gasoline (Continuous Operation)
- Max Operating Slope: 45°
- Zero-Turn Radius
- Fork Lift Height: Up to 1.5 m
- Fork Tilt Range: -10° to 90°
- Autonomous Navigation
- Max Travel Speed: 5 mph



Libra-002A Installation Robot

- Payload: 210 kg
- Power: Battery or Diesel (Continuous Operation)
- Max Operating Slope: 45°
- Zero-Turn Radius
- Maximum Compatible Racking Height: 4 m
- Day & Night Operation
- Autonomous Navigation
- Max Travel Speed: 3 mph
- Installation Accuracy: ± 0.1 mm



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HOW IT WORKS

From panel pickup to field installation

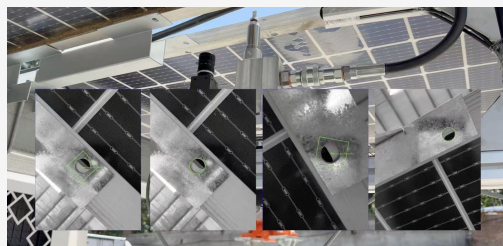
01 / PANEL PICKUP

Robotic suction end-effector lifts large-format PV modules from the staging area.



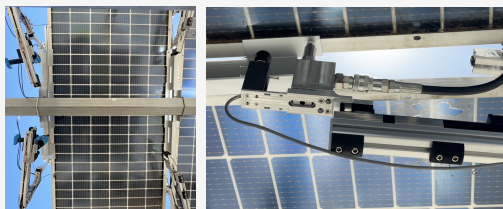
02 / RACK-RELATIVE ALIGNMENT

Vision and positioning systems align the module with the tracker structure.



03 / PANEL PLACEMENT

The robot places the module onto the rack with controlled motion and precision.



04 / FASTENING & VERIFICATION

Autonomous fastening and verification support a complete installation workflow.



Our robotic system is compatible with a wide range of commercial racking systems.

Not sure if your racking system is compatible?

We provide **complimentary compatibility evaluations and adaptation services** for racking systems not yet integrated with our robotic platform.

Compatibility demonstration in as little as two weeks.



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