

Offshore PV Module Solutions

Reliable Solar Performance in Harsh Marine Environments

WHY OFFSHORE PV SYSTEM

Offshore PV is emerging as a key driver of the global energy transition, unlocking abundant solar resources in nearshore and offshore areas while enabling clean power generation closer to coastal load centers. As deployment expands, reliable module performance becomes essential to withstand harsh marine environments and maximize long-term energy yield.



Use Abundant Resources

Support strong energy generation potential.



Preserve Valuable Land

Reduce competition for scarce land resources.



Closer to Load Centers

Reduce transmission losses and costs.

CANADIAN SOLAR OFFSHORE PV MODULE SOLUTIONS

Engineered for saline, humid, and high-load environments, Canadian Solar's offshore PV modules are designed to optimize energy yield while minimizing maintenance and long-term operational risks.

BUILT FOR MARINE ENVIRONMENTS: These modules feature enhanced resistance to salt mist, humidity, and long-term corrosion.

READY FOR HARSH CONDITIONS: Specifically designed to endure the challenges posed by offshore winds, waves, and extreme weather.

PROVEN LONG-TERM RELIABILITY: Utilizing reinforced materials and advanced protective technologies, these modules significantly reduce the risk of performance degradation.

HIGHER ENERGY YIELD: Employing high-efficiency N-type TOPCon technology, these modules maximize project returns.

Lower O&M Cost

Durable materials, less replacement

Less Project Risks

Enhanced corrosion, moisture and insulation performance

Higher Lifetime Value

Reliable operation designed for the full project lifecycle



How We Enable Reliable Offshore Solar

Offshore modules encounter a unique set of environmental stresses that conventional modules are not equipped to withstand. Canadian Solar has developed specialized design, material, and validation strategies tailored to address these challenges. The specific technology upgrades enhance each critical component of the offshore module, including the glass, encapsulation, junction box, connectors, frame, and cell.

Reinforced Glass

Dual-coated glass improves moisture and corrosion resistance.

Advanced Encapsulation

High-barrier EPE/EPE helps suppress PID and moisture ingress.

TOPCon Cells

Low degradation and high bifacial energy generation.

Specialized Junction Box

IP68 design with enhanced waterproofing, insulation and heat dissipation.

Reinforced Connectors

Additional connector protection reduces contact resistance and corrosion risk.

High-strength Frame

Designed for demanding offshore mechanical loads.

Tiered Solutions by Distance from Sea

Canadian Solar offers four tiered configurations matched to the corrosion, humidity, and wind/wave intensity of each offshore scenario, ensuring the right balance of protection and cost for every project.



Freshwater Area
(>500 m)
High-Humidity Zone

Standard Installation
Anti-humidity



Coastal
(20~500 m)
Low-Corrosion Zone

Onshore Near-Shore
Anti-humidity, Anti-PID,
Mild Corrosion
Resistance



Tidal Zone
Medium Salt-Mist Zone

Fixed Pile Foundation
Anti-humidity, Anti-PID,
Severe Corrosion
Resistance, High
Mechanical Strength

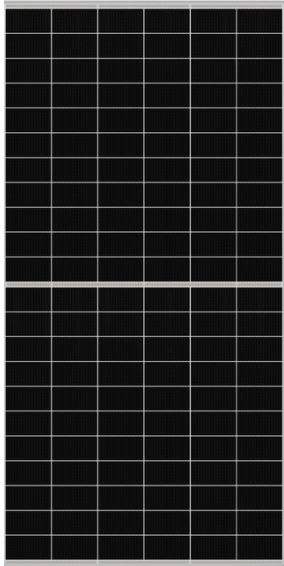


Offshore
(>1000 m)
**High Salt-Mist, High
Corrosion**

Floating-Dedicated
Anti-humidity, Anti-PID,
Severe Corrosion
Resistance, High
Mechanical Strength

Offshore Product Portfolio

C&I, Utility



CS6.2-66TB 600-660W

High-power modules designed for coastal, tidal-flat and floating PV applications

Management System Certificates

ISO 9001: 2015 / Quality management
 ISO 14001: 2015 / Environmental management
 ISO 45001: 2018 / Occupational health & safety
 IEC 62941: 2019 / PV module manufacturing quality

Reliability & Certifications

35 mm hail impact resistance
 +5400 / -2400 Pa mechanical load
 Seawater cycling and combined aging
 IEC 61215 | IEC 61730 | IEC 61701 | IEC 62716

Applications	C&I, Utility Projects
Module Types	CS6.2-66TB
Cell Technology	TOPCon
Module Power	600-660W
Module Efficiency	22.2%-24.4%
Module Size	2382 x 1134 x 30 mm
Module Weight	32.8 kg
Temperature Coefficient	-0.29%/°C
Operating Temperature	-40°C ~ +85°C
System Voltage	1500V (IEC)
Mechanical Load	+5400 / -2400 Pa

**Specifications are subject to the product datasheets. For additional product information, please contact support@csisolar.com*