

Solar Carport Mounting System

Waterproof Design | Flexible Configurations | Structural Reliability



Solar Carport System Overview

Winsun solar carport mounting systems combine vehicle protection and solar power generation within a single structure, helping maximize the use of available parking areas.

Designed for residential, commercial and industrial applications, our solutions are available in a wide range of configurations, from standard modular systems to fully customized structures tailored to specific project requirements.

Whether for small private installations or large commercial developments, the systems can be adapted to different layouts, dimensions, module specifications and project requirements.

Material Options

- Aluminum Structures

Excellent corrosion resistance and a clean, modern appearance.

- Steel Structures

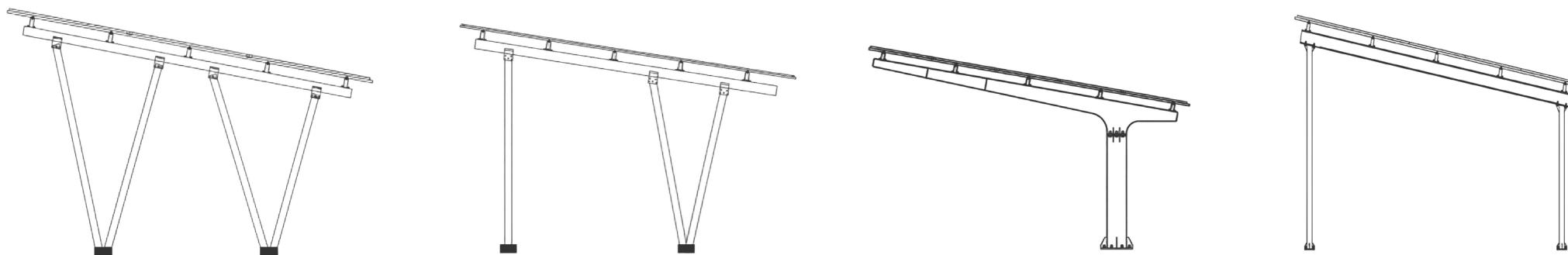
Robust structural performance and reliable support.

- Hybrid Structures

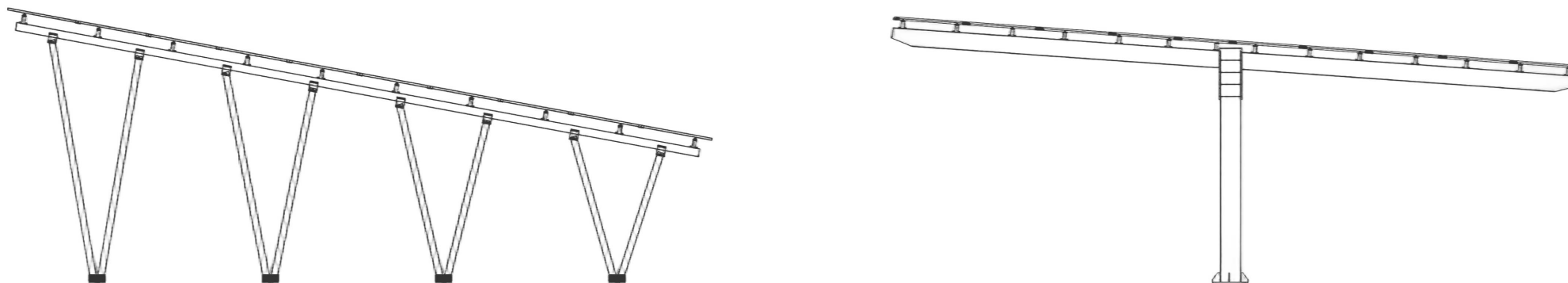
Steel support structure with an aluminum waterproof roof system.

Structural Styles

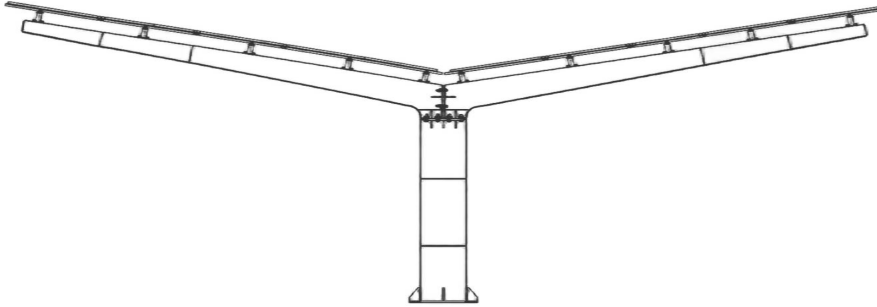
Single Row



Double-Row (Mono-Pitch)



Double-Row (Dual-Pitch)



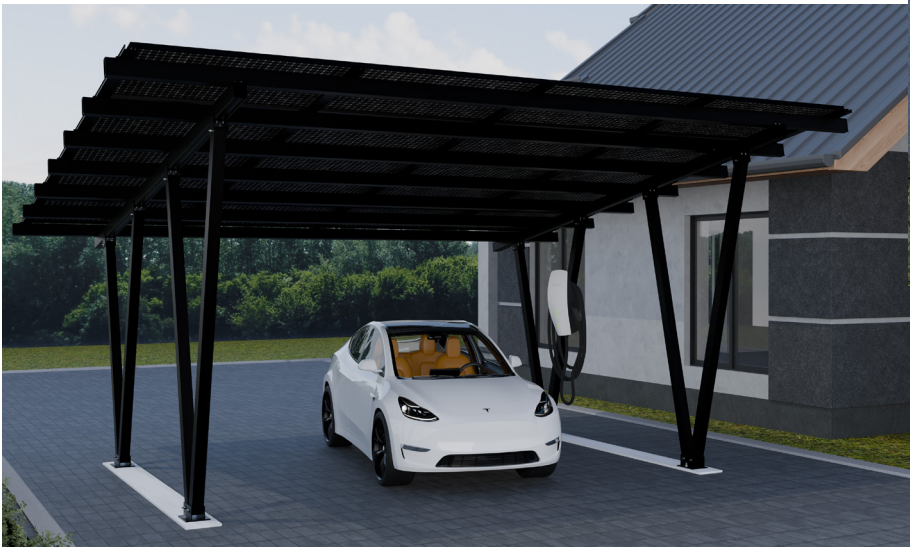
Applications

Residential Applications

Solar carports integrate renewable energy into residential living by providing sheltered parking while supporting home electricity generation. They are well suited to modern homes where vehicle protection, EV charging and efficient use of outdoor space are increasingly valued.

Typical Use Cases

- Private Homes
- Villas
- Residential Developments



Commercial Applications

Commercial parking areas can be transformed into productive spaces by integrating solar carports, combining covered parking with on-site solar power generation. They are well suited to office buildings, retail parks and business developments requiring efficient land utilization and EV charging infrastructure.

Typical Use Cases

- Shopping Centers
- Office Buildings
- Business Parks
- Hotels

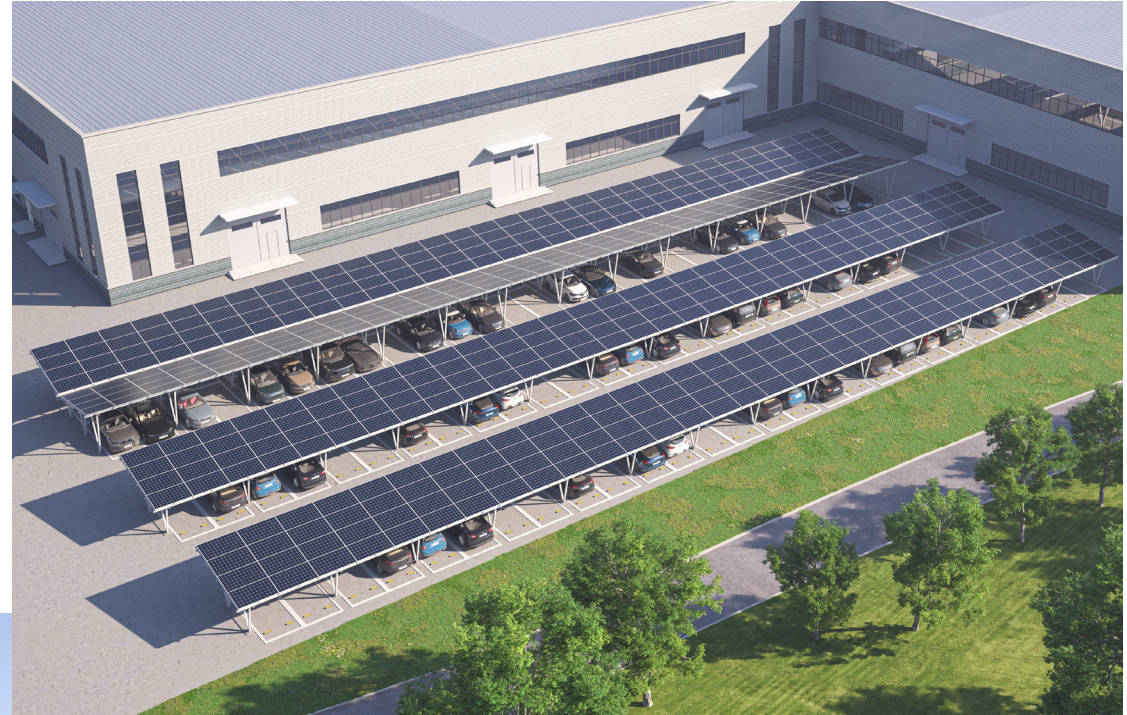


Industrial Applications

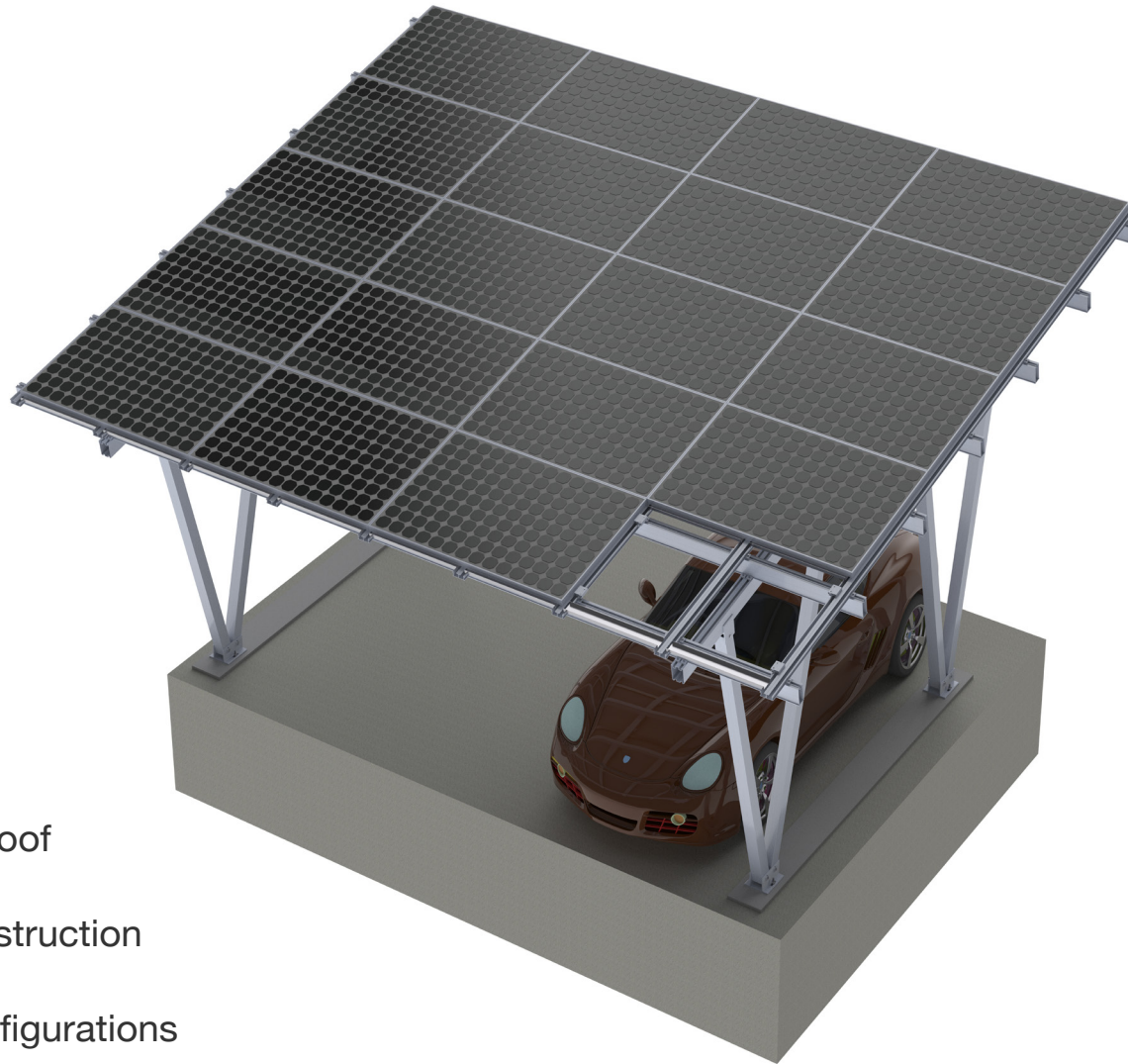
Industrial solar carports make productive use of large parking areas by combining covered parking with on-site solar power generation. They are well suited to manufacturing facilities, logistics centers and industrial parks where renewable energy, high electricity demand and employee parking are important operational considerations.

Typical Use Cases

- Manufacturing Facilities
- Logistics Centers
- Warehouses



Waterproof Aluminum Solar Carport System



- Structural Waterproof
- All-Aluminum Construction
- Customizable Configurations

👉 See How It Works



Scan to watch video

WCS-A Standard

Product Overview

The WCS-A Standard is a waterproof aluminum solar carport system designed for residential, commercial, and industrial parking applications.

It features an integrated waterproof design where PV modules act as the roof structure, providing reliable weather protection and efficient space utilization without additional roofing sheets.

Key Features

◆ Structural Waterproof System

PV modules act as the roof structure, providing integrated waterproof performance without additional roofing sheets.

◆ All-Aluminum Structural System

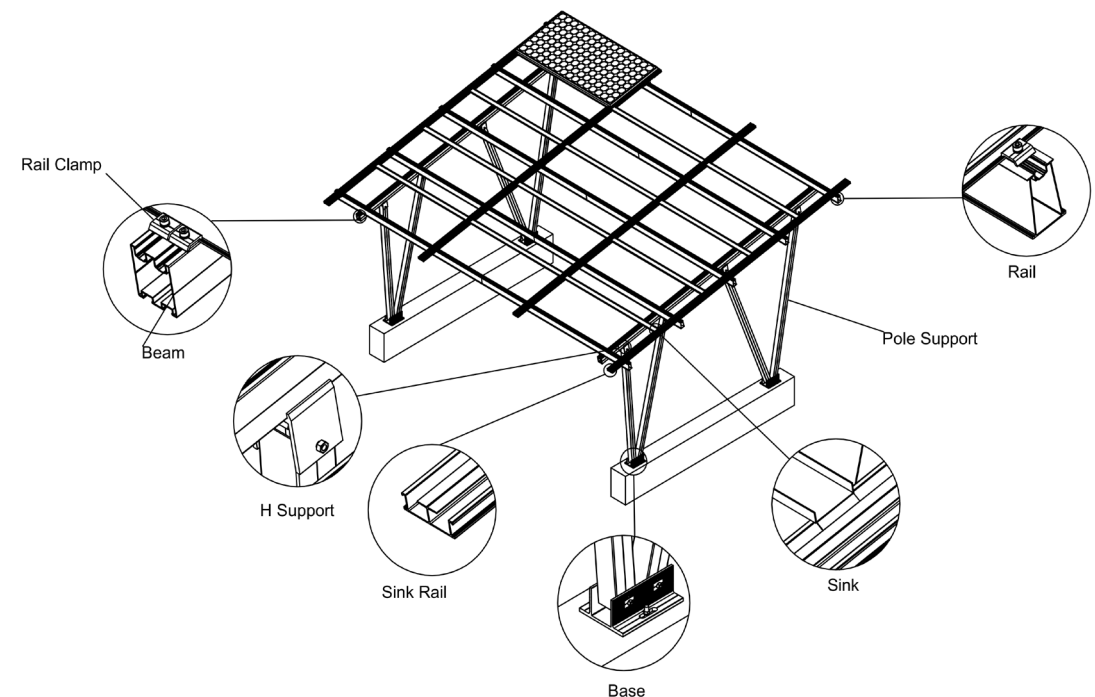
High-strength aluminum structure delivers long-term durability, corrosion resistance, and reliable load-bearing capacity for stable performance in outdoor environments.

◆ Highly Customizable Design

Flexible configurations tailored to project requirements and parking layouts.

◆ Surface Finish Options

Available in natural anodized, black anodized, and custom RAL finishes for architectural compatibility.

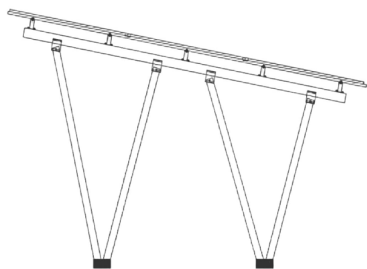


WCS-A System Structural Breakdown

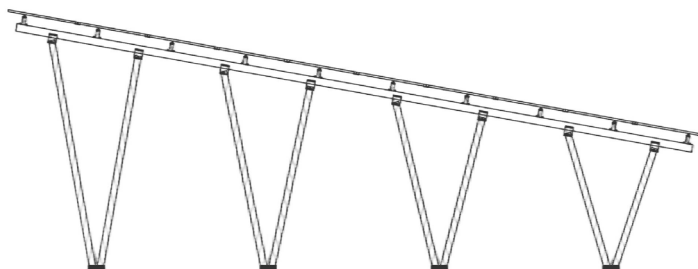
Technical Parameter

Material:	AL6005-T5 & SUS304
Surface Treatment:	Anodized
Color:	Natural Silver / Black / Custom RAL Color
Pitch:	0°–30°
Height (Minimum Clearance Height):	2100 mm or Customized
Module Compatibility:	Compatible with Wide Range of Framed PV Modules
Module Orientation:	Portrait or Landscape
Parking Spaces:	1+ Parking Spaces
Wind Load:	Up to 60 m/s
Snow Load:	Up to 2.5 kN/m ²
Foundation Type:	Concrete Foundation / Ground Screws

Available Structural Configurations



Single-Row



Double-Row (Mono-Pitch)



Double-Row (Dual-Pitch)

Reference Designs

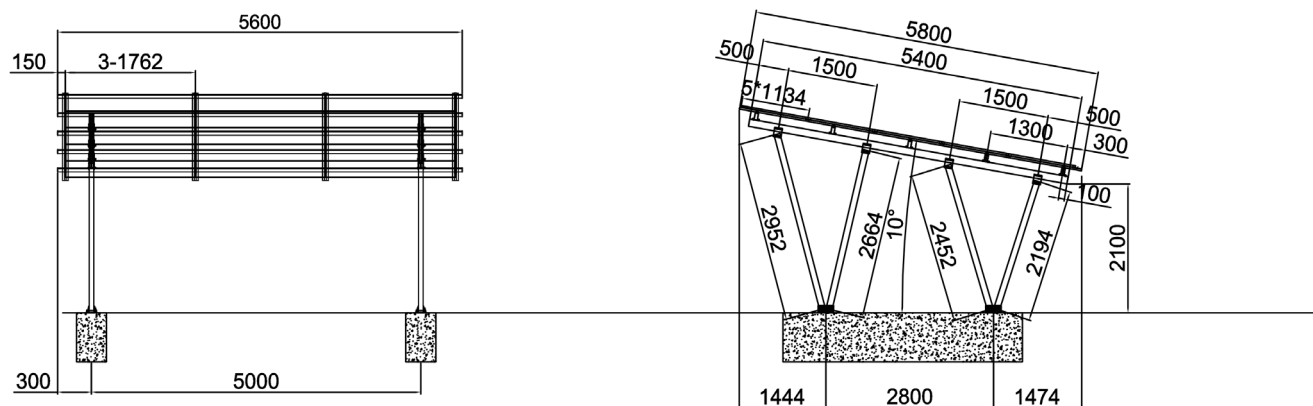
Reference Design Parameters

- Module Size: 1762 × 1134 mm
- Roof Pitch: 10°
- Snow Load: 1.25 kN/m²
- Wind Speed: 30 m/s

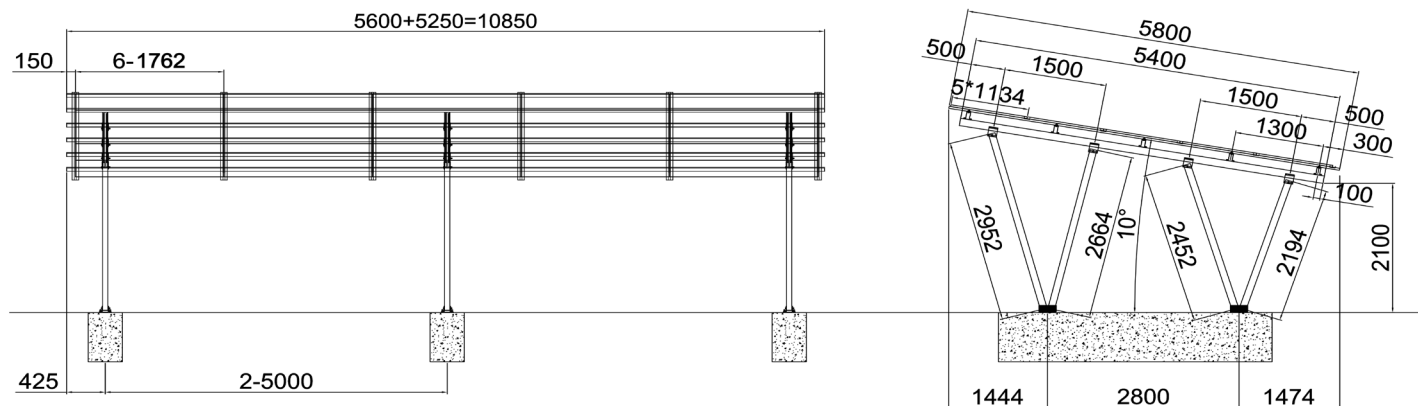
The reference designs are based on the design parameters listed above. Structural dimensions and configurations will be adjusted as required to suit different module dimensions, design loads and customer requirements.

Customized designs are available to meet specific requirements.

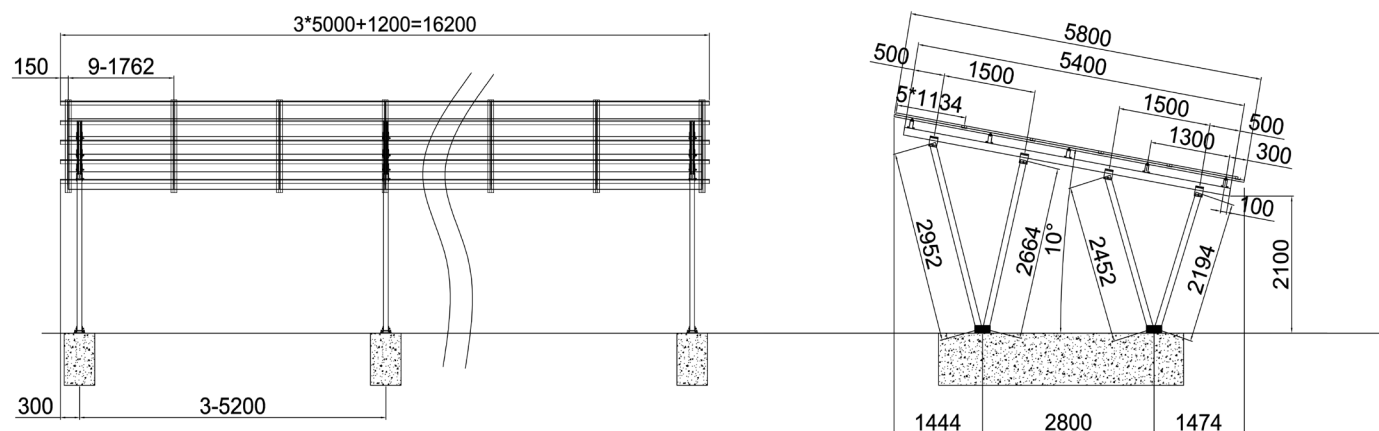
2-Parking Space Carport



4-Parking Space Carport



6-Parking Space Carport



Upgrade Options

Explore optional upgrades, including black finish, gutter system and more.

[See Upgrade Options](#)

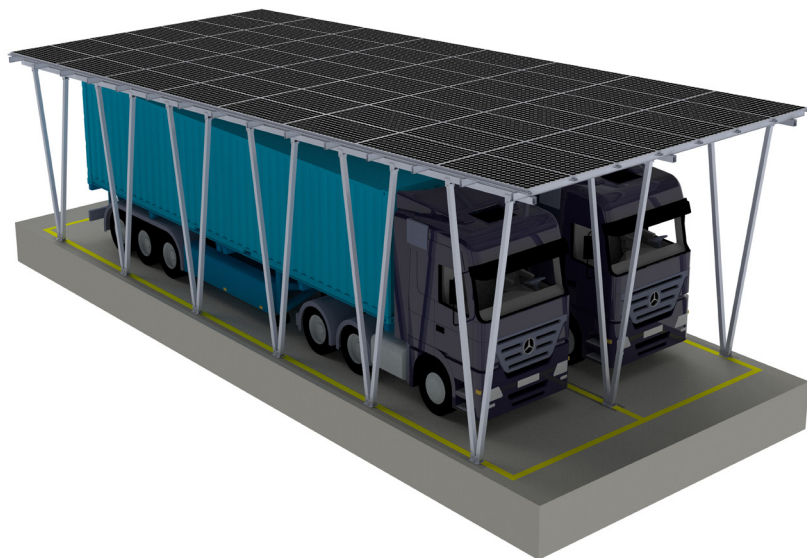
Project Gallery

See the system in real-world applications.

[Visit Installation Gallery](#)

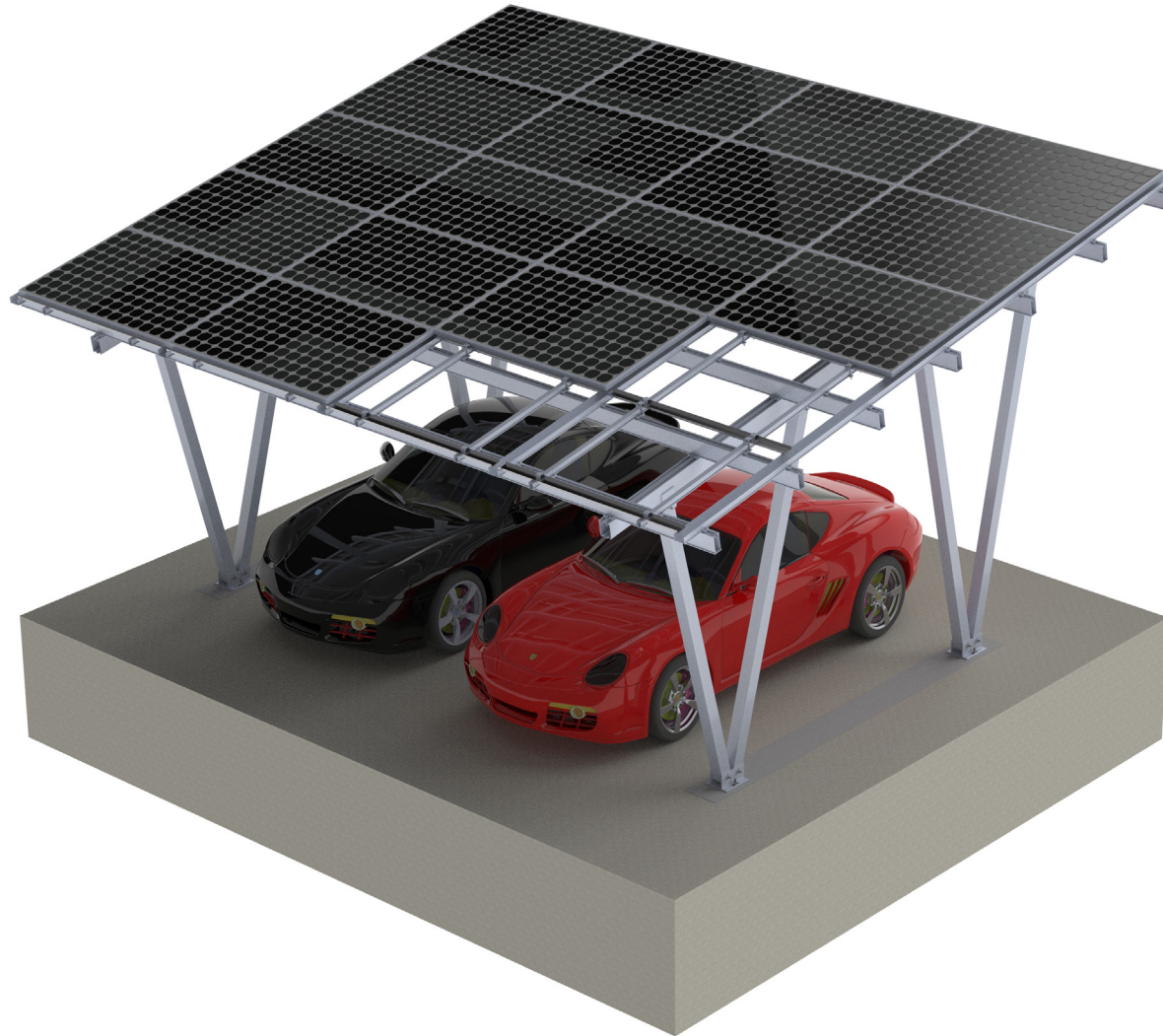
Large Vehicle Applications

The WCS-A system can also be designed for truck, bus and other large vehicle parking applications.



Waterproof Aluminum Solar Carport System

Designed for applications requiring increased snow load capacity, supporting snow loads up to **3.5 kN/m²**.



Product Overview

The WCS-A Heavy Duty is a waterproof aluminum solar carport system designed for applications with higher structural load requirements.

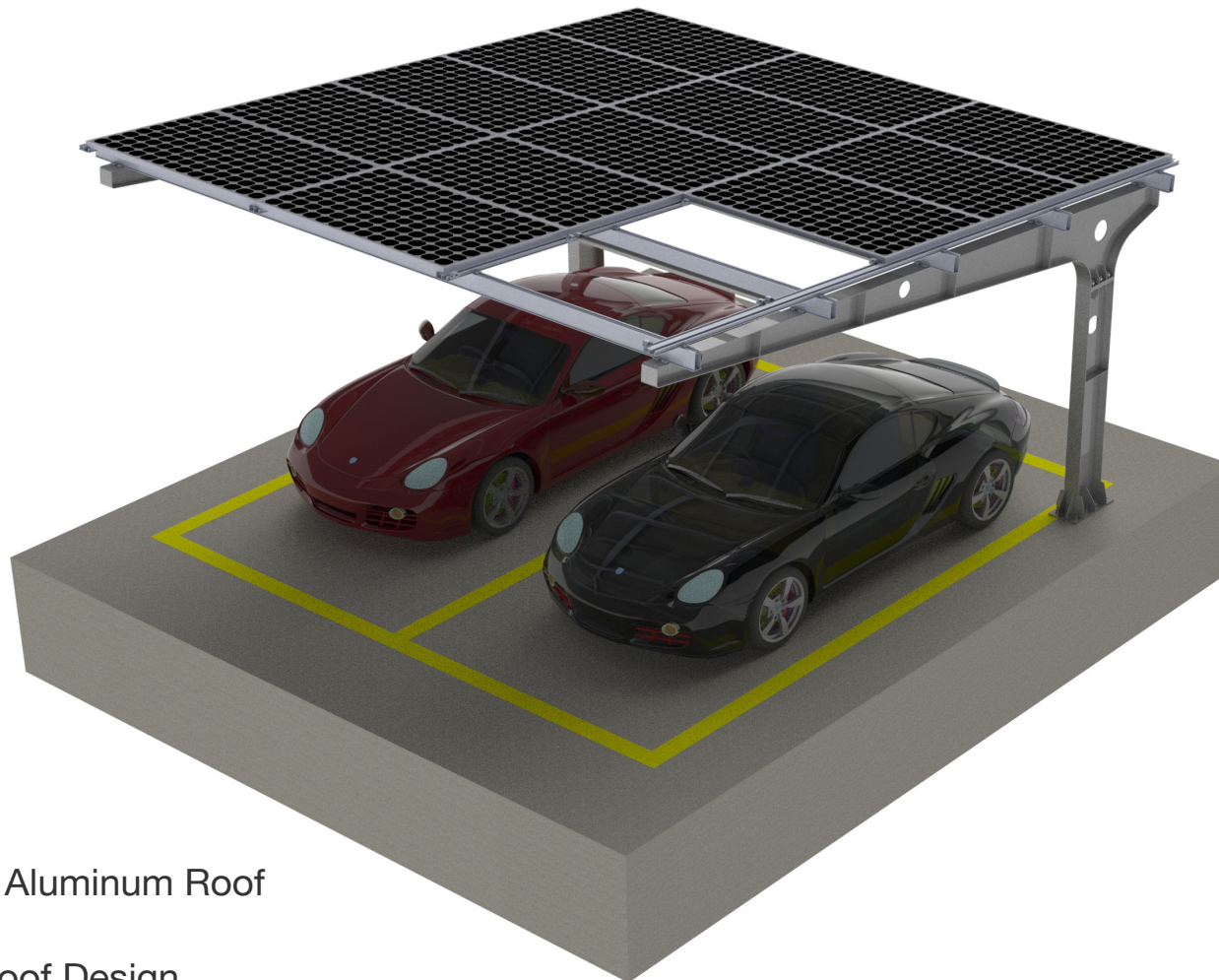
Its enhanced structural design supports snow loads up to **3.5 kN/m²** while maintaining the same integrated waterproof system, making it suitable for demanding environmental conditions.

Technical Parameter

Material:	AL6005-T5 & SUS304
Surface Treatment:	Anodized
Color:	Natural Silver / Black / Custom RAL Color
Pitch:	0°–30°
Height (Minimum Clearance Height):	2100 mm or Customized
Module Compatibility:	Compatible with Wide Range of Framed PV Modules
Module Orientation:	Portrait or Landscape
Parking Spaces:	1+ Parking Spaces
Wind Load:	Up to 60 m/s
Snow Load:	Up to 3.5 kN/m²
Foundation Type:	Concrete Foundation

Steel & Aluminum Solar Carport System

Hybrid structure with steel support and an aluminum waterproof roof system.



- Steel Support with Aluminum Roof
- Integrated Waterproof Design

Product Overview

The WCS-SA is a waterproof solar carport system featuring a hybrid steel and aluminum structure.

It combines a steel supporting structure with an aluminum waterproof roof system, providing an effective balance of structural strength, roof weight, and corrosion resistance. Its hybrid structural design is particularly well suited to commercial and industrial applications.

Key Features

◆ Steel Support Structure

Carbon steel support columns with a hot-dip galvanized finish provide high structural strength and long-term corrosion resistance.

◆ Greater Parking Flexibility

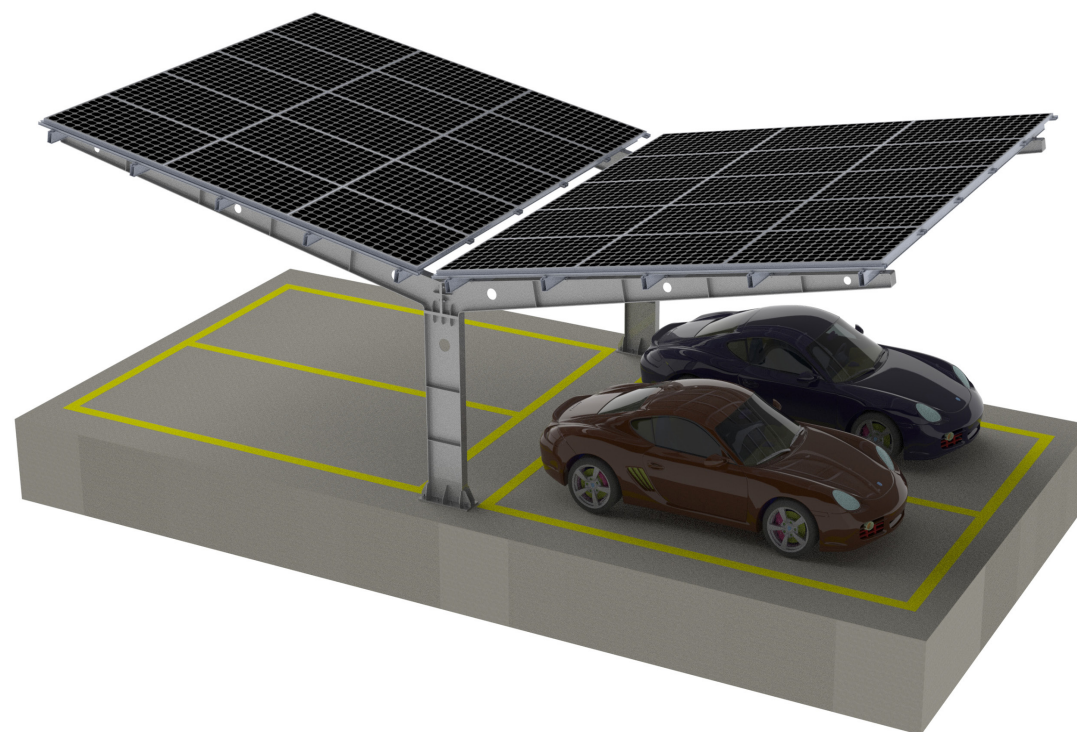
Provides greater flexibility for parking layout and vehicle access.

◆ Integrated Waterproof Design

The integrated waterproof roof system provides reliable weather protection without additional roofing sheets.

◆ Flexible Configurations

Available in multiple layouts and customizable to project requirements.

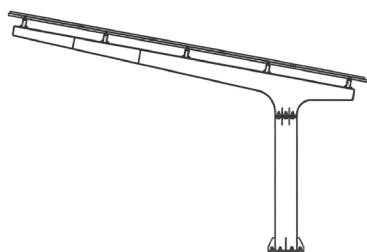


Double-Row (Dual-Pitch)

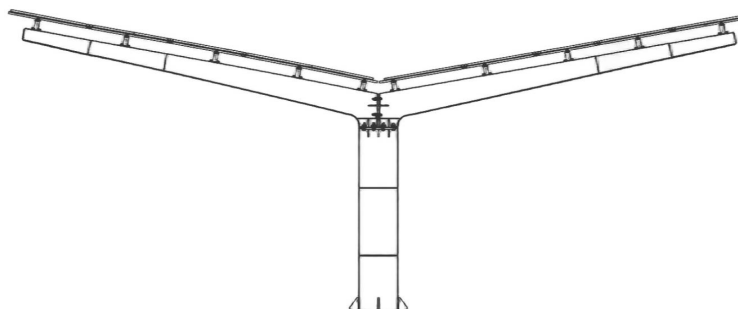
Technical Parameter

Material:	Carbon Steel / AL6005-T5 / SUS304
Surface Treatment:	Steel: Hot-Dip Galvanized; Aluminum: Anodized
Color:	Natural Silver / Black / Custom RAL Color
Pitch:	0°–30°
Height (Minimum Clearance Height):	2100 mm or Customized
Module Compatibility:	Compatible with Wide Range of Framed PV Modules
Module Orientation:	Portrait or Landscape
Parking Spaces:	1+ Parking Spaces
Wind Load:	Up to 60 m/s
Snow Load:	Up to 2.5 kN/m ²
Foundation Type:	Concrete Foundation

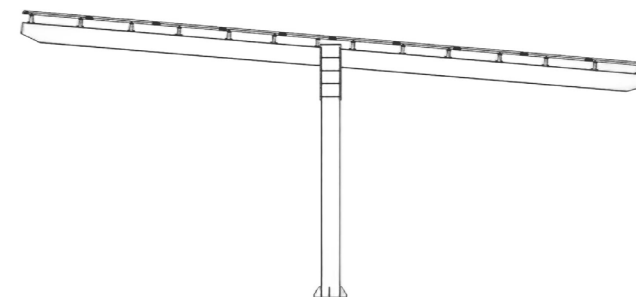
Available Structural Configurations



Single-Row



Double-Row (Dual-Pitch)



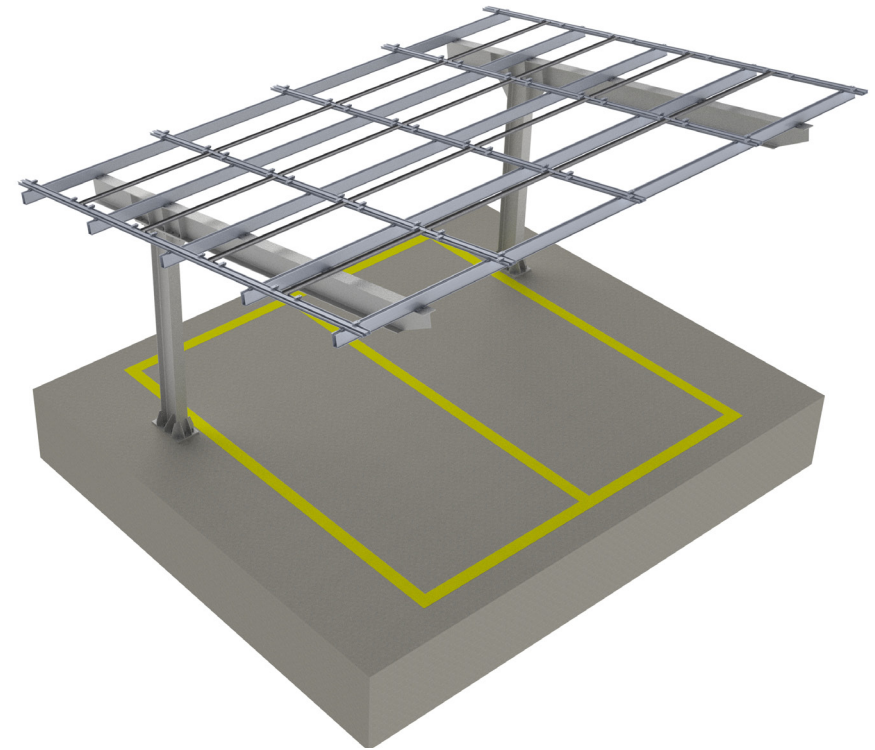
Double-Row (Mono-Pitch)

Design Options

Different column and beam designs are available to match various architectural styles and project requirements.



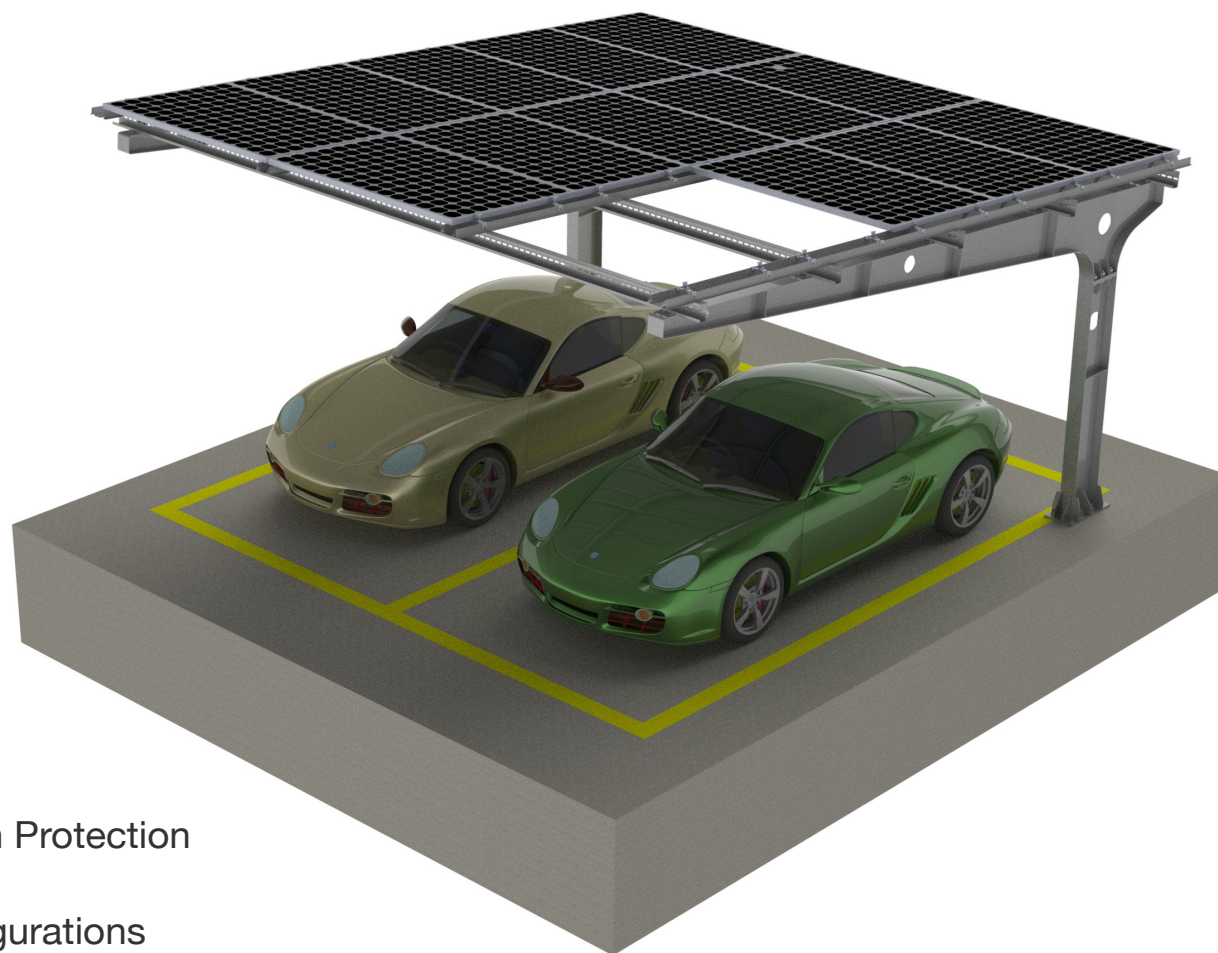
Style Option A



Style Option B

Heavy-Duty Steel Solar Carport System

Designed for demanding solar carport applications.



- Fully Steel Structure
- Optimized Corrosion Protection
- Customizable Configurations

Product Overview

The WCS-S is a heavy-duty steel solar carport system designed for projects requiring high structural capacity and reliable long-term performance.

Its fully steel structural design provides excellent rigidity and durability, making it suitable for applications with longer spans, higher wind and snow loads, and demanding project requirements.

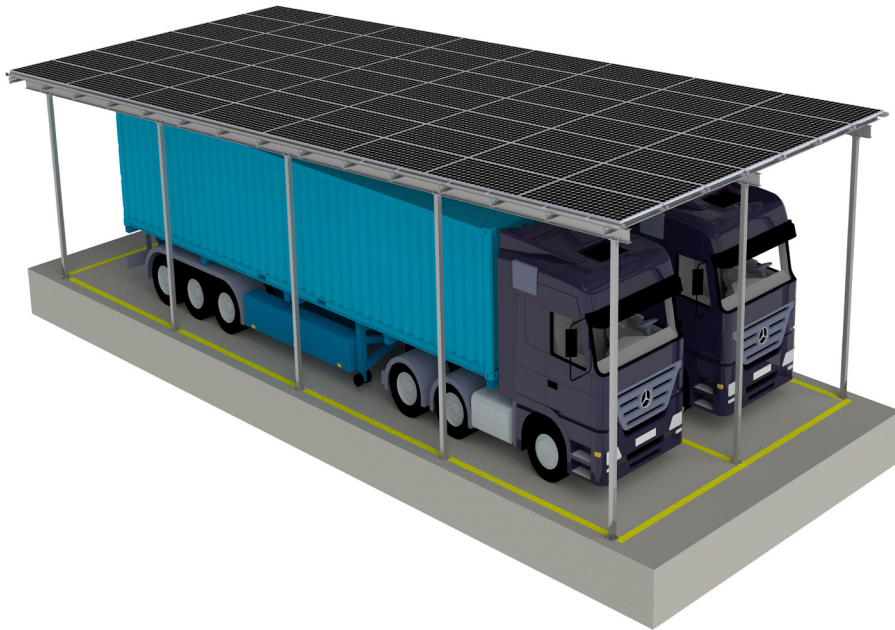
Available in multiple parking layouts, the system can be adapted to different module sizes, site conditions and project specifications.

Technical Parameter

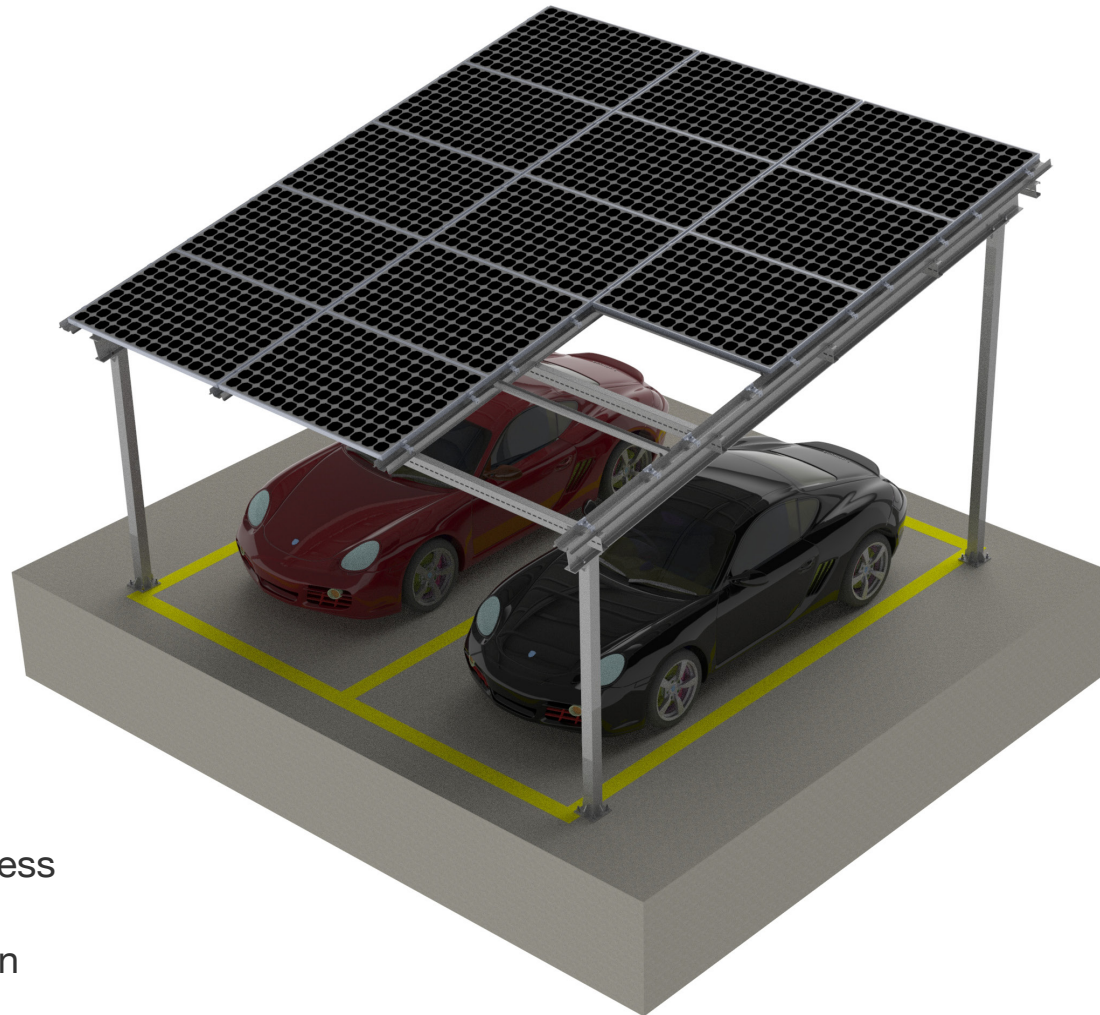
Material:	Carbon Steel / AL6005-T5 / SUS304
Surface Treatment:	Steel: Hot-Dip Galvanized / Zn-Al-Mg; Aluminum: Anodized
Color:	Natural Silver / Black / Custom RAL Color
Pitch:	0°–30°
Height (Minimum Clearance Height):	2100 mm or Customized
Module Compatibility:	Compatible with Wide Range of Framed PV Modules
Module Orientation:	Portrait or Landscape
Parking Spaces:	1+ Parking Spaces
Wind Load:	Up to 60 m/s
Snow Load:	Up to 3.5 kN/m²
Foundation Type:	Concrete Foundation

Large Vehicle Applications

Supporting truck, bus and other large vehicle parking applications.



Four-Post Solar Carport System



- Flexible Parking Access
- Multi-Purpose Design
- Structural Waterproof

Product Overview

The WCS-F is a structural waterproof solar carport system featuring a four-post structural design.

Its clean and open structural layout makes it suitable for solar carports as well as a variety of outdoor covered spaces.

Available in various dimensions and configurations, the system can be adapted to different project requirements and module specifications.

Key Features

◆ Flexible Parking Access

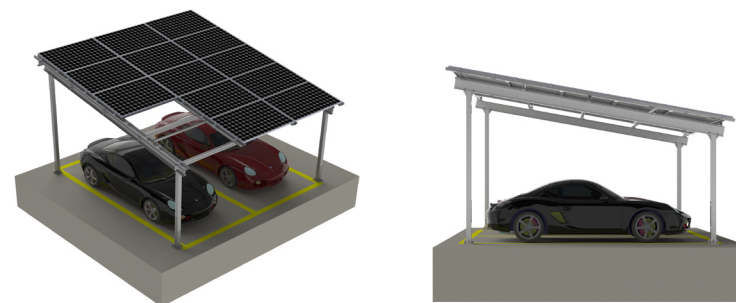
The open four-post layout allows convenient vehicle access from both the front and sides, providing greater flexibility for parking and daily use.

◆ Multi-Purpose Design

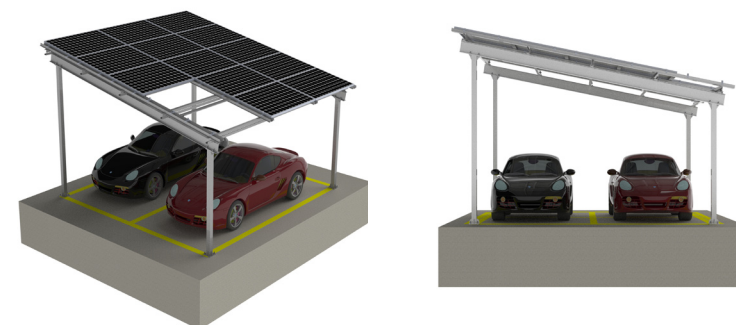
Beyond solar carports, the system can also be used for outdoor structures such as pergolas, garden pavilions and covered seating areas.

◆ Structural Waterproof Design

The integrated roof structure provides reliable waterproof protection without additional roofing materials.



Front & Rear Parking



Side Parking

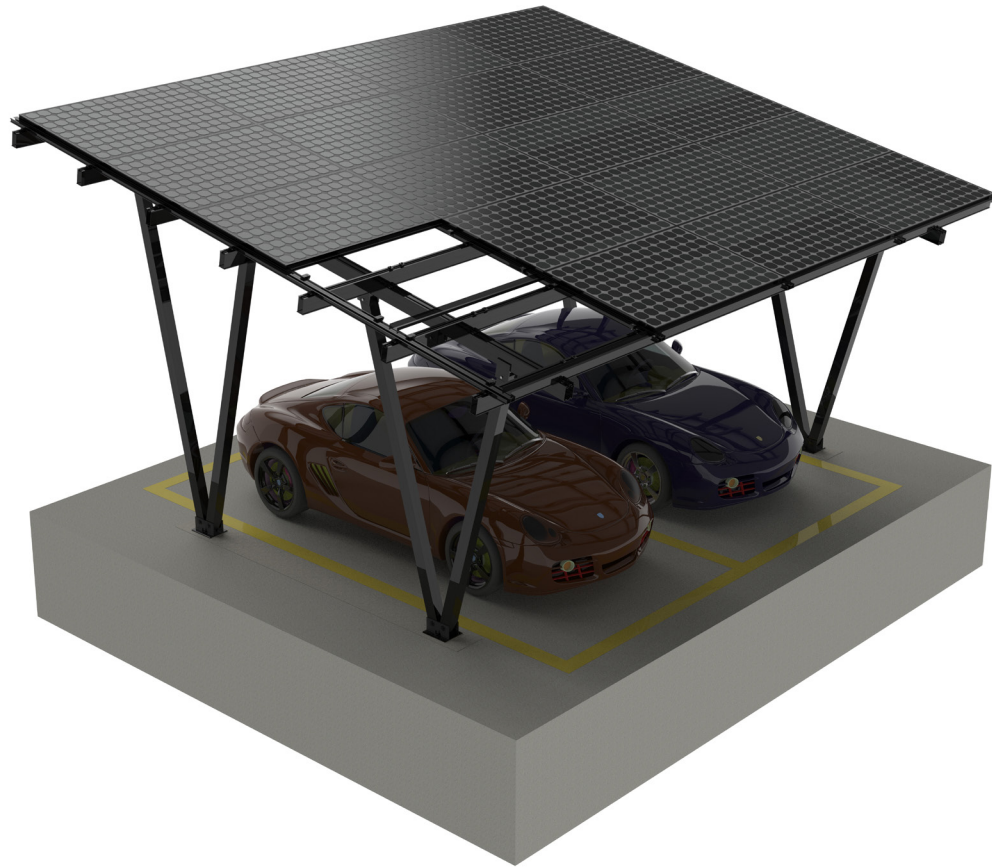
Technical Parameter

Material:	Carbon Steel / AL6005-T5 / SUS304
Surface Treatment:	Anodized
Color:	Natural Silver / Black / Custom RAL Color
Pitch:	0°–30°
Height (Minimum Clearance Height):	2100 mm or Customized
Module Compatibility:	Compatible with Wide Range of Framed PV Modules
Module Orientation:	Portrait or Landscape
Parking Spaces:	1+ Parking Spaces
Wind Load:	Up to 60 m/s
Snow Load:	Up to 2 kN/m ²
Foundation Type:	Concrete Foundation

Upgrade Options

Surface Finish Options

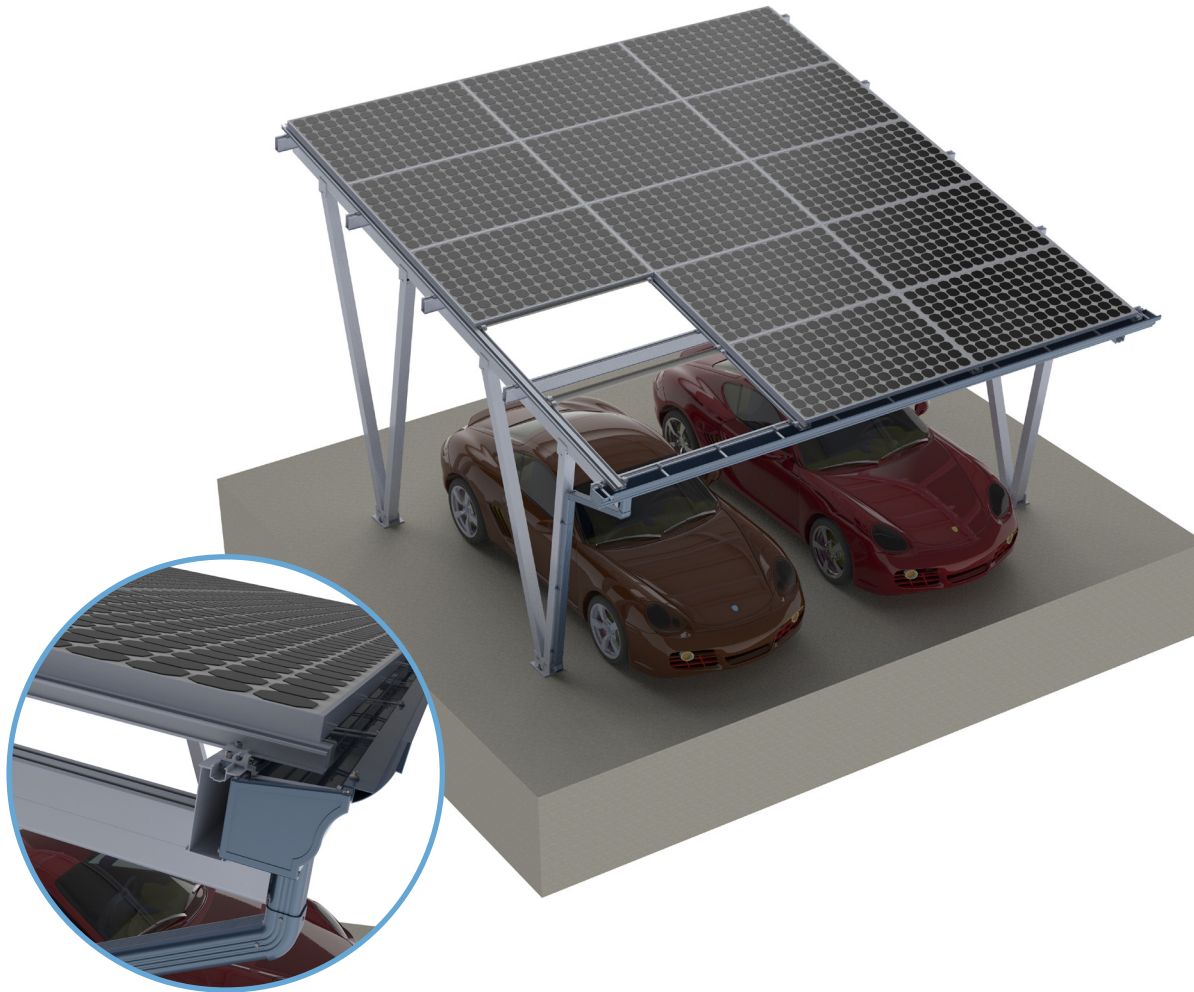
Custom RAL finish options are available to meet different appearance requirements.



Optional Black Finish

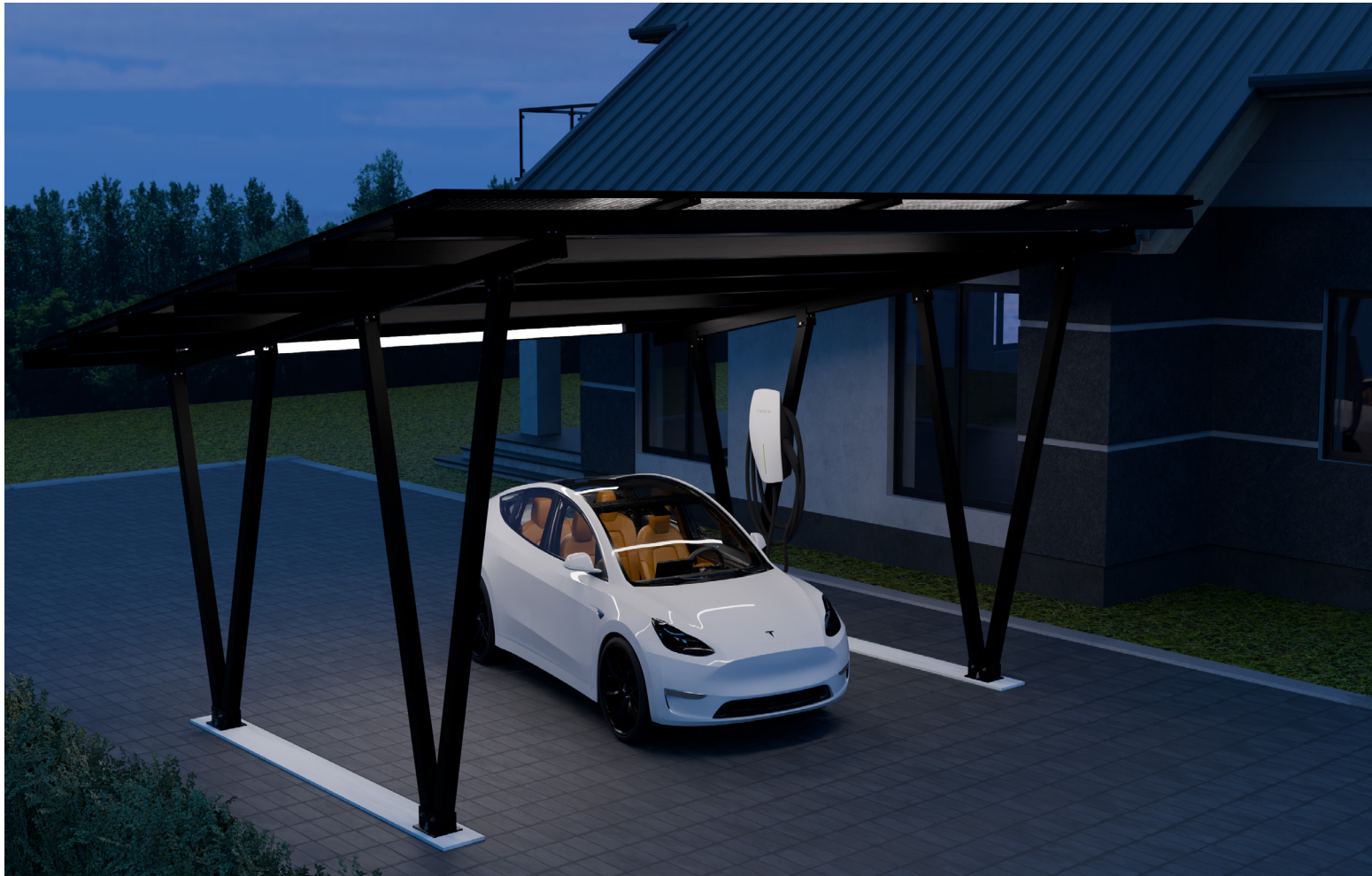
Optional Rain Gutter System

Optional gutter system helps direct rainwater to designated drainage points, keeping parking areas cleaner and improving water management.



LED Lighting Optional

LED lighting can be added to provide improved nighttime visibility and greater convenience after dark.



Contact us to discuss your next solar carport project.

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