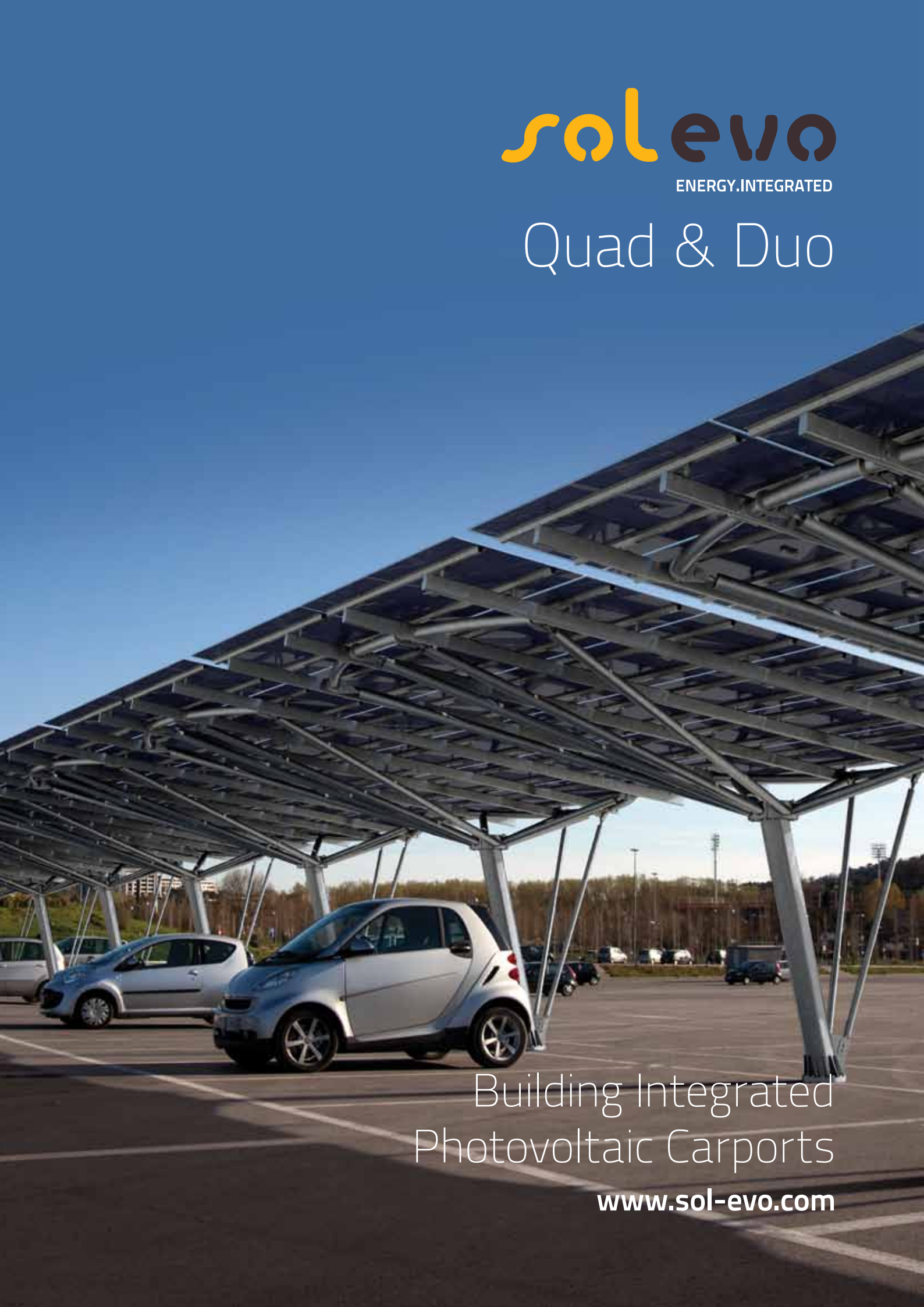


The background of the entire page is a photograph of a large, modern solar carport. The carport is constructed with a metal frame and is covered with a grid of solar panels. Several small, silver, two-seater cars are parked underneath the carport. The sky is clear and blue, and the overall scene is bright and sunny.

solevo

ENERGY.INTEGRATED

Quad & Duo

Building Integrated
Photovoltaic Carports

www.sol-evo.com



Sol.evo

The Sol.evo canopy structure is a building integrated photovoltaic (PV) carport, specifically designed for rapid and cost effective deployment across existing car parks in urban areas such as airports and retail or industrial complexes.

There are two distinctive Sol.evo designs, supplied with a PV mounting system capable of incorporating a wide range of commonly available thin film and crystalline PV modules;

The Sol.evo 'Quad'

'Bumper to bumper' PV parking canopy for 4 cars.

The Sol.evo 'Duo'

Single row PV parking canopy for 2 cars.

Both products maximise pre-existing parking space without causing major obstructions to car parking or vehicular access.

The Sol.evo canopy is an efficient, modular system that can be rapidly assembled complete with solar modules at ground level without specialist tools or knowledge, and can be deployed without the requirement for extensive foundation works.

Both Quad and Duo designs have been carefully engineered to comply with Eurocode Standards for Snow and Wind Loading and Structural steel design, and are certified by TÜV.

Car Park Owners

Sol.evo carports enable clients to generate significant extra value from their under-utilised car parks while reducing their carbon footprint. By generating energy on site, building owners will also protect themselves from rising energy prices. Any open car park can be readily fitted with energy generating carports – key customers include: airports, supermarkets, shopping centres, hospitals, offices.

EPCs and Investors

Car parks represent a largely untapped solar PV market offering significant opportunity to capitalise on low levels of competition. Sol.evo carports give access to new customers and rapid, low complexity, site development – especially important in countries with steadily decreasing FiTs. Capital costs can be offset through additional revenue streams when carports are installed with complimentary technologies – such as e-mobility charging stations, rainwater harvesting and advertising.

Car Park Users

Sol.evo carports are inherently valuable to car park users, providing protection from adverse weather conditions for users and their vehicles. The Quad and Duo carports have been carefully designed to be ergonomic and safe to drive around and park under. If installed with e-mobility charging stations, the carports can recharge electric vehicles using zero carbon energy.

Two distinct products, One elegant design

The revolutionary and elegant Sol.evo photovoltaic (PV) car canopy is designed for rapid and cost effective deployment across car parks

Elegant design that enhances bland parking environments and real estate values

Open framework: Almost any module technology and type can be used with carports

Flexible options: available as carport structure alone or as a complete kit of structure, PV, inverter and cabling

Ultra-compact modular design for ease of shipping and rapid assembly

Optimized materials usage to reduce cost

TÜV type approved design – building code compliant across 6 European countries eliminating the need for country specific re-engineering

Rapid installation – structures can be assembled at ground level then quickly lifted for final fitting to main upright.

Flexible parking configurations: both the QUAD and DUO can be installed back to back or in single rows



Sol.evo Quad



Sol.evo Duo

CARPORT SOL.EVO QUAD & DUO

FOCUS ON

1. Attractive architectural design enhances carpark environments and real estate values.
2. Unique single upright column maximizes use of available parking space and vehicular access in areas of high density and intense traffic.
3. Available as structure only or as complete kit with PV mounting system included, Sol.evo accommodates a wide range of commonly available Crystalline and Thin Film PV modules.
4. The fully engineered structure is Type approved by TUV; The design is Eurocode compliant for 6 EU countries.
5. Flexible and modular design allows multiple configurations including single lane and back-to-back.
6. Rapid installation through use of fast assembly 'pin' joints, the entire Sol.evo roof canopy can be assembled complete with PV at ground level and installed in single lift.
7. Unique foundation approach causes minimal disturbance; each carport only requires a single micropile foundation with 0.3m³ of concrete and a hole diameter of 450mm
8. Design fully integrates both water and cable management
9. Options include powder or epoxy paint finishes, steel sheet sub roof, rainwater harvesting, LED floodlighting and pre-fitted car charging units for electric vehicles.
10. Highly efficient use of materials minimises embodied energy; nearly all materials used are fully recyclable.
11. Optimised for local conditions, available in heavy and light structures to suit load cases of 250kg/m² and 130kg/m².

PRODUCT SPECIFICATION

GENERAL DESIGN	SOL.EVO DUO	SOL.EVO QUAD
PARKING CONFIGURATION	SINGLE ROW PARKING	BUMPER TO BUMPER PARKING
CAR SPACES	2	4
STRUCTURE LENGTH (SIDE ELEVATION)	5.7-6.3M	5.7-6.3M X 2 CANOPIES
STRUCTURE WIDTH (FRONT ELEVATION)	4.8-5.2M	4.8-5.2M

DESIGN LIFE & LOADS		
PRODUCT DESIGN LIFE	25 YEARS	25 YEARS
SNOW LOAD RESISTANCE	130KG/M ² (50 YEAR RETURN)	130KG/M ² (50 YEAR RETURN)
WIND LOAD RESISTANCE	28 M/S (50 YEAR RETURN)	28 M/S (50 YEAR RETURN)
TOTAL COMBINED LOAD CAPACITY INCLUDING PV MODULES	250kg/m ²	250/130kg/m ²

CARPORT STRUCTURE DETAILS		
CANOPY HEIGHT LOWER END	3.1M	3.1M
CANOPY HEIGHT LOWER END	4.4M	4.4M
MAX AVAILABLE CANOPY AREA	34M ²	68M ²
CANOPY TILT ANGLE	12 DEGREES	12 DEGREES
POWER CAPACITY	UP TO 4.5KWP	UP TO 9KWP
CORROSION RESISTANCE	HOT DIP GALVANIZED TO EN ISO 1461 STANDARD	HOT DIP GALVANIZED TO EN ISO 1461 STANDARD
PAINT FINISH (OPTION)	POWER COATED TO ASTM D3451 OR EPOXY COATED	POWER COATED TO ASTM D3451 OR EPOXY COATED
SUB ROOF (OPTION)	1.2 MM POLY COATED FOLDED STEEL SHEET	1.2 MM POLY COATED FOLDED STEEL SHEET
FOUNDATION TYPE	STEEL MICRO PILE WITH CONCRETE REINFORCEMENT	
STRUCTURE MASS (INC FOUNDATION PILE)	1119KG	1277KG
FOUNDATION CONCRETE VOLUME / CARPORT	0.3 M ³	0.3 M ³

PV MOUNTING SYSTEM AND MODULES COMPATIBILITY	
MOUNTING SYSTEM	FULLY ADJUSTABLE 'COMMON RAIL' EXTRUDED ALUMINUM MOUNTING SYSTEM, COMPLETE WITH MOUNTING BRACKETS
MODULE COMPATIBILITY	VIRTUALLY ANY COMMON MODULE SIZE - THIN FILM AND CRYSTALLINE 35MM - 55MM THICKNESS.
WATER HANDLING	SIDE GUTTERS, REAR AND FRONT FAIRINGS

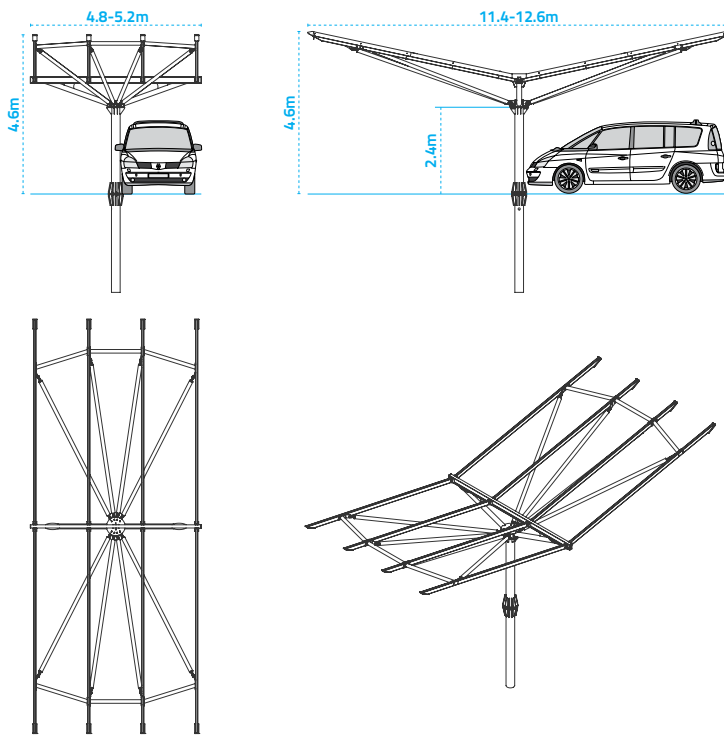
PRODUCT OPTIONS:
LOW ENERGY 'STAND ALONE' LED FLOODLIGHT WITH NO CABLES NEEDED
STEEL SUB ROOF WITH DIFFERENT COLOUR OPTIONS
EPOXY PAINTING WITH DIFFERENT COLOUR OPTIONS
POWDER COATING WITH DIFFERENT COLOUR OPTIONS
RAINWATER HARVESTING
STRUCTURE IS AVAILABLE WITH OR WITHOUT MOUNTING SYSTEM
CAR CHARGING (3 OR SINGLE PHASE)

COLOURS

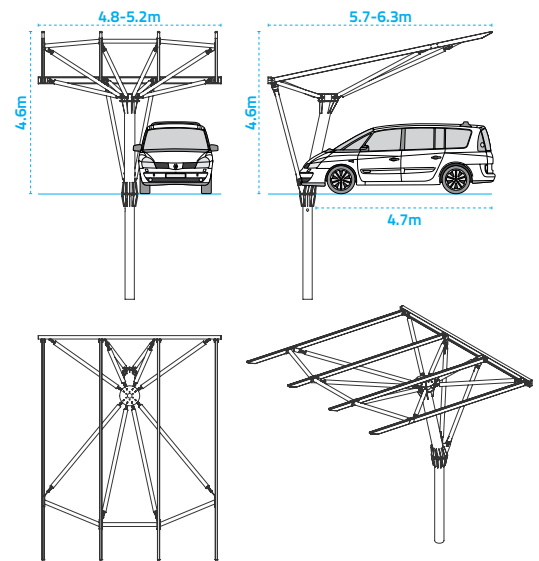
Galvanized	RAL 7040	RAL 7012	RAL 5014	RAL 1014	RAL 1006
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PRODUCT ENVELOPE DIMENSIONS

Sol.evo Quad



Sol.evo Duo



ENGINEERING DESIGN STANDARDS

EUROCODE 0 - BASIS OF STRUCTURAL DESIGN

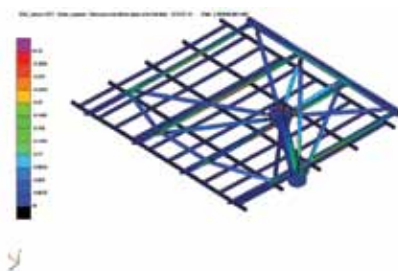
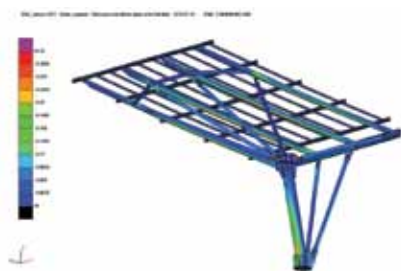
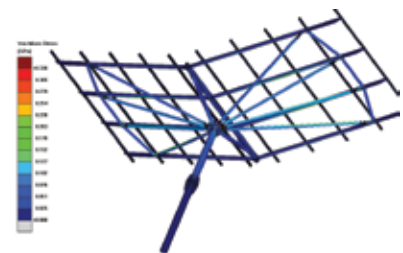
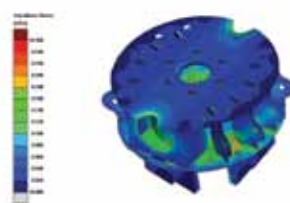
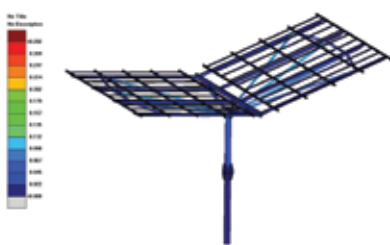
EUROCODE 1 - WIND & SNOW LOADS

EUROCODE 3 - DESIGN OF STEEL STRUCTURES

EUROCODE 7 - GEOTECHNICAL DESIGN

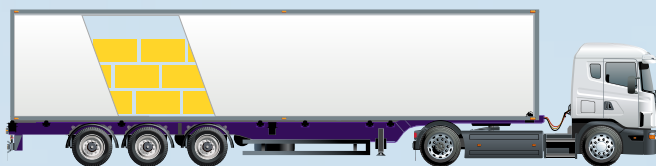
COUNTRIES: UK, DE, FR, IT, ES, BE

FEA

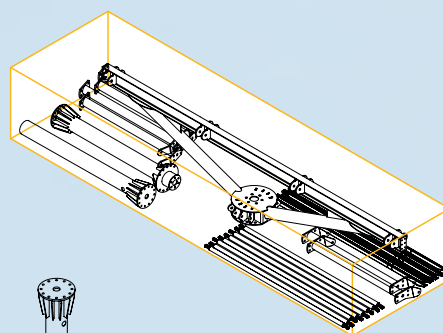
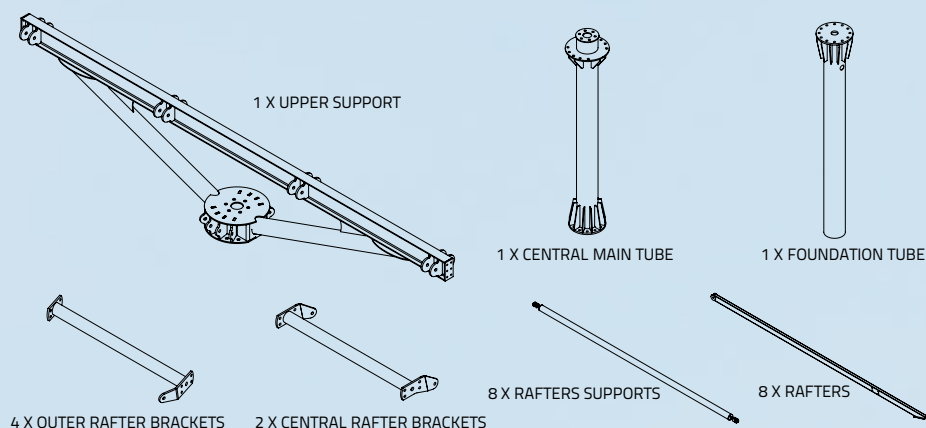


SOL.EVO – MODULAR DESIGN AND RAPID ASSEMBLY

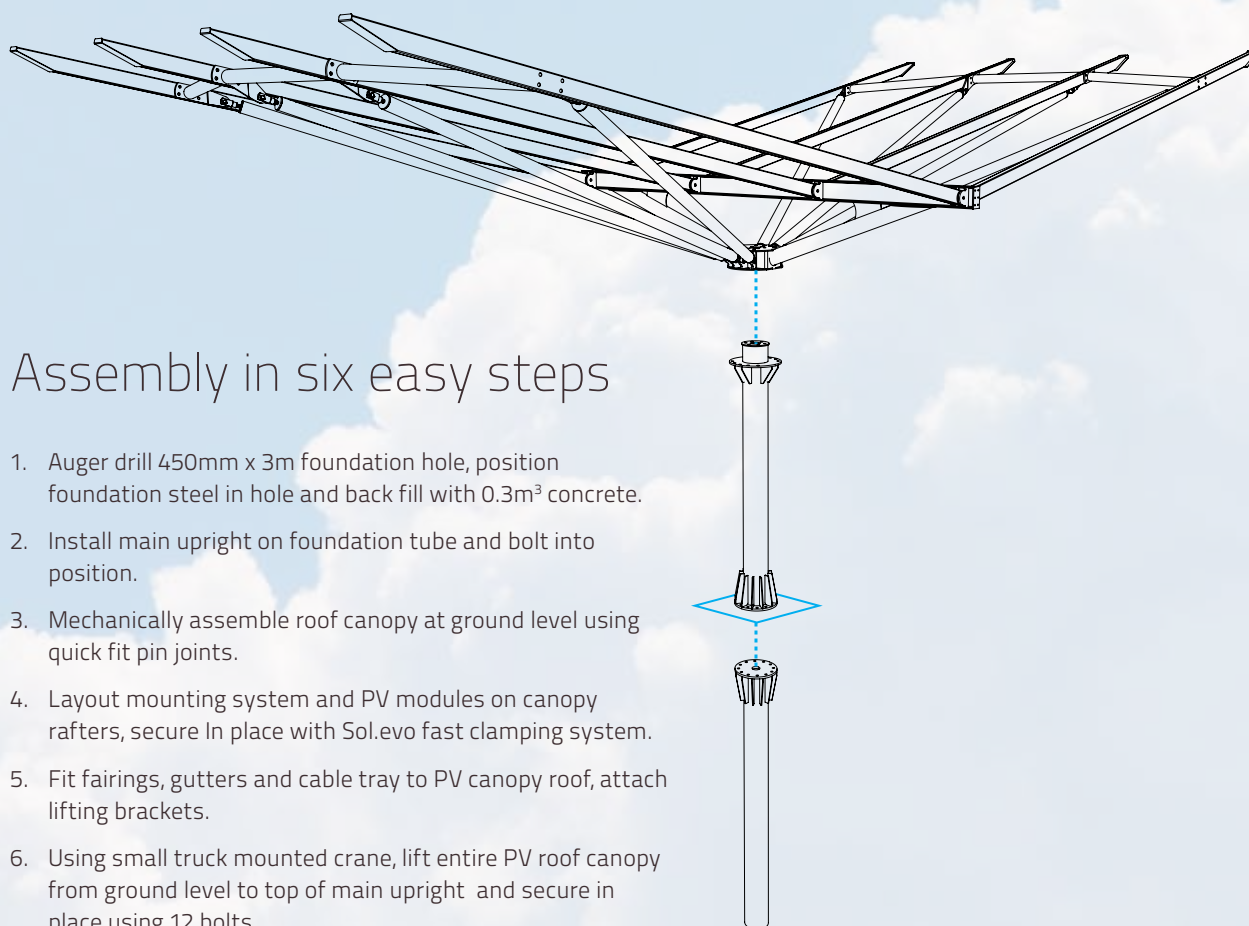
The ultra-compact modular design of the Sol.evo makes for easy and cost-effective delivery



Sol.evo Quad Inventory



Sol.evo Quad
Packaged View



Assembly in six easy steps

1. Auger drill 450mm x 3m foundation hole, position foundation steel in hole and back fill with 0.3m³ concrete.
2. Install main upright on foundation tube and bolt into position.
3. Mechanically assemble roof canopy at ground level using quick fit pin joints.
4. Layout mounting system and PV modules on canopy rafters, secure in place with Sol.evo fast clamping system.
5. Fit fairings, gutters and cable tray to PV canopy roof, attach lifting brackets.
6. Using small truck mounted crane, lift entire PV roof canopy from ground level to top of main upright and secure in place using 12 bolts.

SYSTEM FEATURES

A cost-efficient structure, pre-engineered for rapid installation

Optimised for local conditions

available in heavy and light structures to suit local load cases of 250kg/m² and 130kg/m²

Rapid assembly

using pin joints – no specialist tools required

Flexible mounting system

which can accommodate both thin film and crystalline PV modules

Integrated design

including water management, cable ducting and electric vehicle charging

Efficient

single stem design maximises available parking space

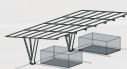
Low cost and quick

micropile foundation

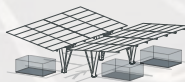


CONFIGURATION

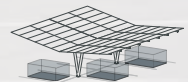
Carport in single line
(Sol.evo Duo)



Carport in parallel line
for pedestrian access
(Sol.evo Duo)



Double carport
(Sol.evo Quad)



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