Universal Mounting System

Photovoltaic Solutions for Every Roof

S4 CONFIGURATOR

Complete User Guide for Installers

Solar Panel Mounting System Configuration

S4 RooFit™
Universal Mounting System

Table of Contents

IMPORTANT DISCLAIMER

All values and calculations provided by this configurator are indicative only. All results MUST be verified and validated by a qualified structural engineering office before installation. S4 Mounting System accepts no liability for errors in calculations or embedded parameters.

1- INTRODUCTION & VERSION MODES

The S4 Configurator is a professional tool designed to help installers design, calculate, and quote solar panel mounting systems based on Eurocode EN 1991-1-4:2005 wind load standards.

COUNTRY-SPECIFIC PARAMETERS

The configurator includes country-specific wind zone parameters for several European countries. When you enter an address, the system detects the country and applies the appropriate parameters.
Contact S4 Support to confirm which countries and National Annexes are currently fully supported.

UK: MCS 012 COMPLIANCE

For installations in the United Kingdom, the configurator includes MCS 012:2021 (Microgeneration Certification Scheme) compliance option.
Enable the «MCS Compliance» checkbox in the configurator for UK installations requiring MCS certification.

REMINDER:
All calculations are for guidance only and must be validated by a qualified structural engineering office. S4 cannot be held responsible for any errors.

1.1 THREE VERSION MODES

LIGHT

Quick configuration

- Configurator tab
- Quote tab
- Basic calculations

ENRICHED

Full workflow

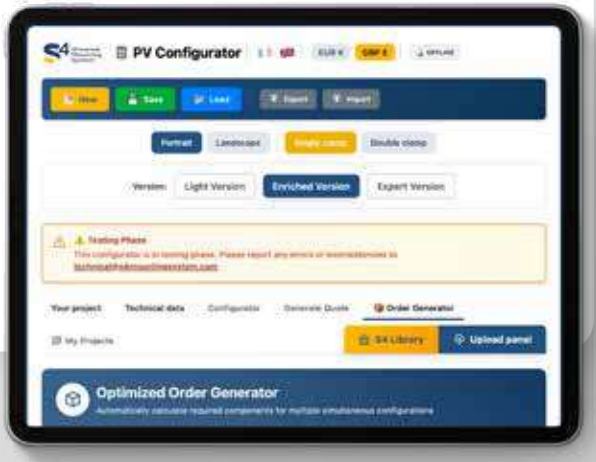
- Your Project tab
- Technical Info tab
- Configurator + Quote
- Weather forecast

EXPERT

Full + Structural

- Everything in Enriched
- Eurocode calculations
- qp, wd, Ed formulas
- Design parameters

REMINDER:
Select your mode using the buttons at the top of the interface.
Expert mode displays detailed Eurocode EN 1991-1-4 structural calculations.



2. LANGUAGE, CURRENCY & GLOBAL SETTINGS

2.1 LANGUAGE SELECTION

The configurator supports two languages:

- French (Français) – Full interface in French
- English – Full interface in English

2.2 CURRENCY SELECTION

Two currencies are available with automatic exchange rate:

- **€ EUR –** Euro (default)
- **£ GBP –** British Pound (automatic conversion)

3. PANEL LIBRARY

The S4 Configurator includes a comprehensive Panel Library with over 2,000 solar panels and their technical datasheets, shared between all users.

3.1 ACCESSING PANEL DATA

- **Search and select** from 2,000+ panels by brand, model, or specifications
- **View technical datasheets (**PDF) directly in the configurator
- **Auto-fill panel dimensions** (width, height, frame thickness, power)
- **Correct specifications** if you notice any errors in the database

3.2 ADDING NEW PANELS

1. Upload the panel's technical datasheet (PDF)
2. The system automatically extracts key specifications (OCR + AI analysis)
3. Verify and confirm the extracted data
4. The panel is now available to all users

AI ANALYSIS
When available, use the «Analyze with AI» button for more accurate data extraction from PDF datasheets using Claude Vision.

3.3 BROOF T4 CERTIFICATION

A dedicated section allows you to identify panels that have passed BROOF T4 fire resistance tests. This certification is required in certain countries and installation contexts.

4. PROJECT SAVE & LOAD

The configurator allows you to save and load complete projects, preserving all your configuration data.

4.1 SAVING A PROJECT

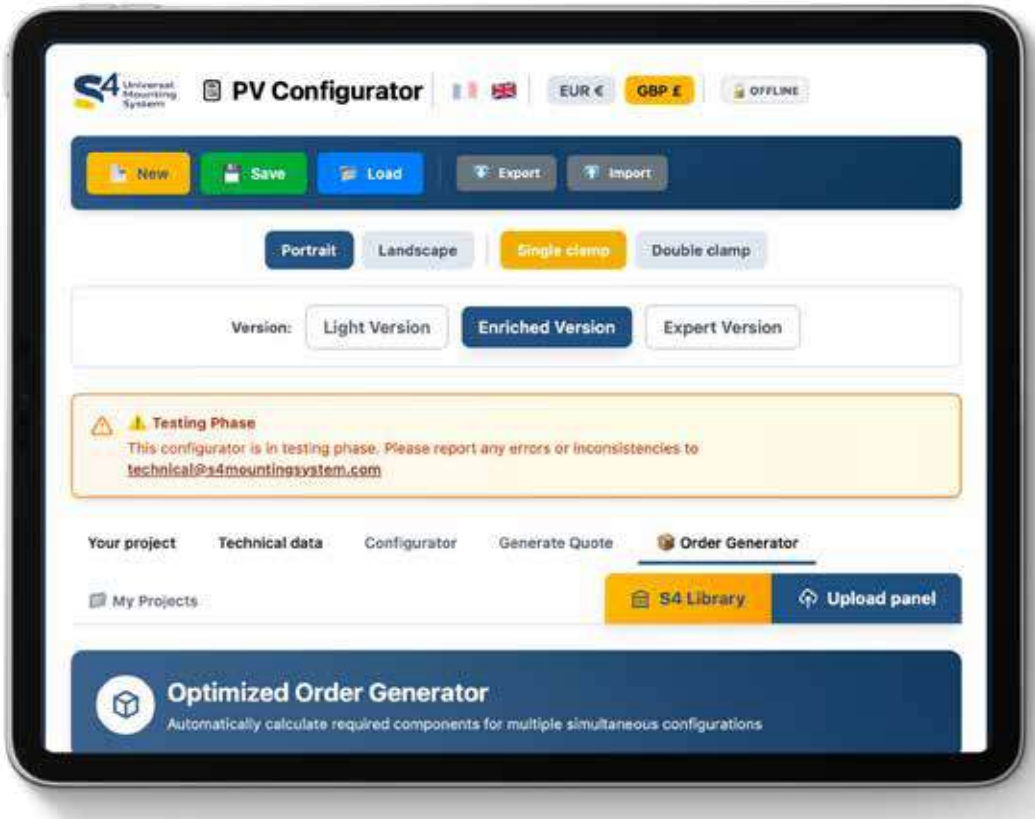
1. Click the « Save» button in the toolbar
2. Enter a project name (required)
3. Optionally add client name and date
4. Click «Save» to store all configuration data

WHAT IS SAVED:

- Project address, wind zone, altitude, GPS coordinates
- Building dimensions (width, depth, heights, roof angle)
- Panel specifications (dimensions, power, frame thickness)
- Configuration (rows, columns, orientation, clamp mode)
- Language, currency, discount rate, active tab

4.2 LOADING A PROJECT

1. Click the «Load» button in the toolbar
2 Browse your saved projects list
3. Click «Load» to restore all configuration data
4. Use to delete projects you no longer need



TAB 1: YOUR PROJECT

(Available in Enriched and Expert modes)
This tab collects essential project information and automatically determines critical wind parameters.

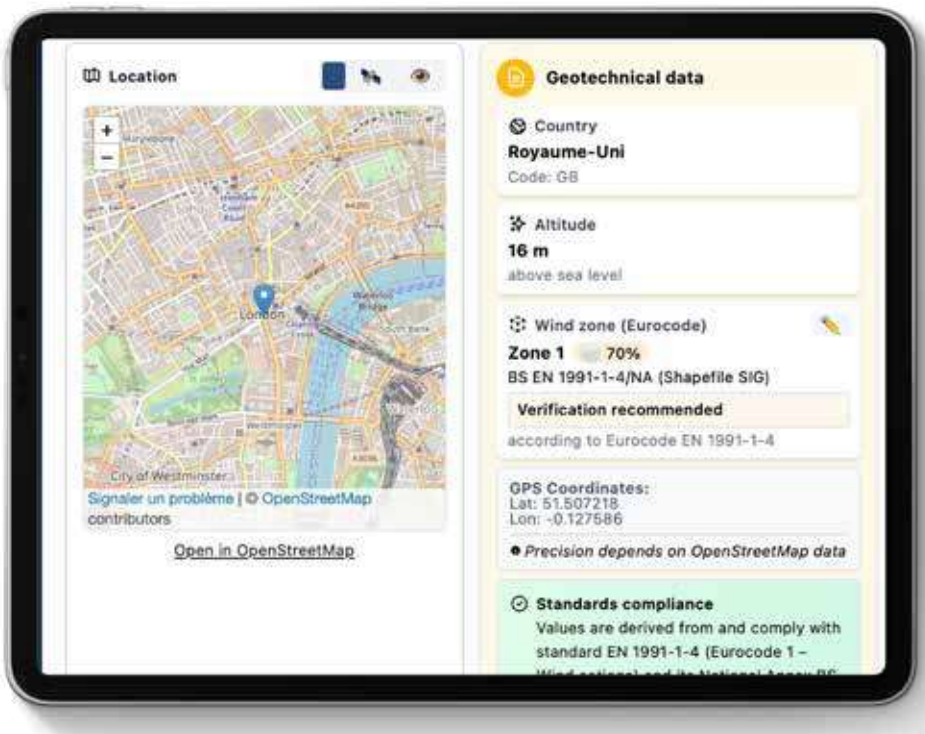
5.1 ADDRESS & LOCATION

Enter the full installation address. The configurator automatically:

- Determines exact GPS coordinates
- Calculates altitude above sea level
- Identifies the country and corresponding National Annex
- Detects the wind zone with reliability indicator

WIND ZONE RELIABILITY

100%: Exact postal code match
90%: Department/region match
75%: Estimated - verify with structural engineer
You can manually override the wind zone using the edit button



5.2 WEATHER FORECAST

When you set an installation date, the configurator displays weather forecast including:

- Expected temperature (min/max)
- Precipitation probability
- Wind speed forecast
- If date is too far, historical data from previous year is shown

5.3 MAP VIEWS

- **Map:** OpenStreetMap view
- **Satellite:** Google satellite imagery
- **Street View:** Ground-level view

6. TAB 2: TECHNICAL INFORMATION

(Available in Enriched and Expert modes)

6.1 BUILDING DIMENSIONS

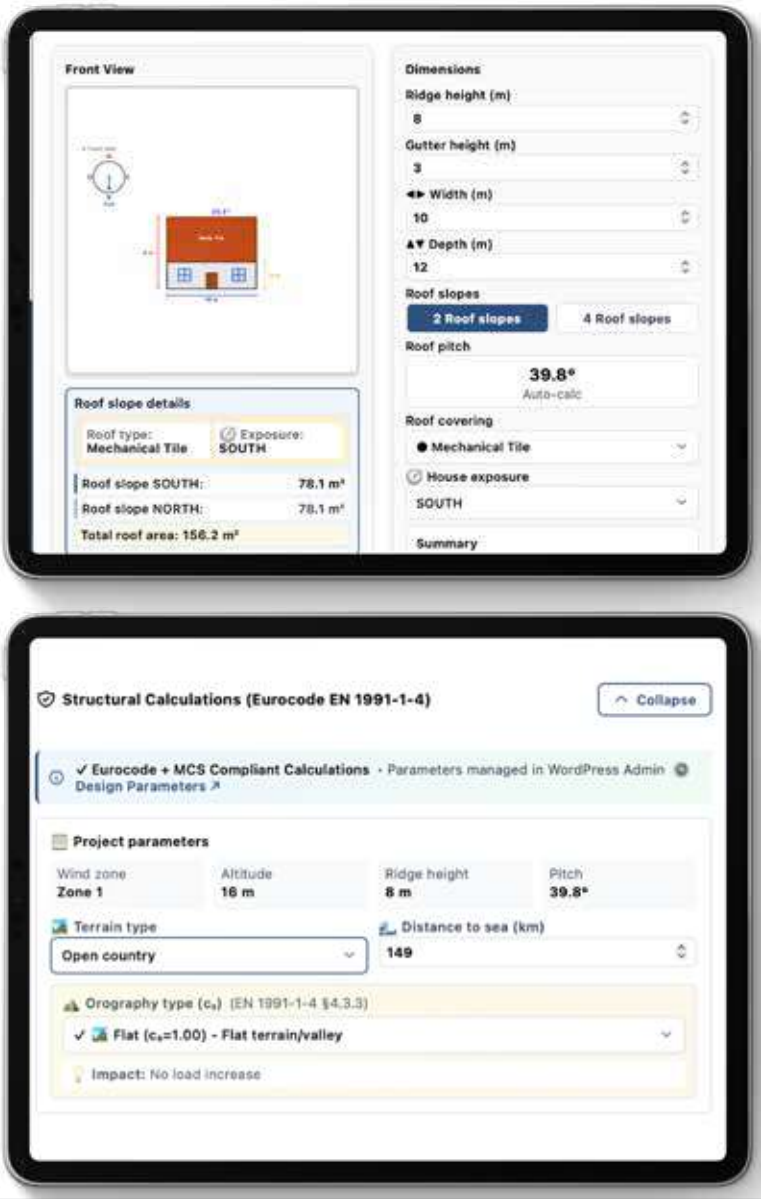
PARAMETER	DESCRIPTION
House Width (m)	Width of the building facade
House Depth (m)	Depth from front to back
Ridge Height (m)	Height to roof peak - reference height (z) for wind
Gutter Height (m)	Height to roof edge/gutter
Roof Angle (°)	Pitch angle - affects Cpe pressure coefficients

6.2 ROOF CHARACTERISTICS

- **Roof Type:** Mechanical Tile, Flat Tile, or Slate
- **Roof Slopes:** 2 slopes (gable) or 4 slopes (hip roof)
- **Exposure:** Cardinal direction (N, NE, E, SE, S, SW, W, NW)

6.3 TERRAIN CATEGORY

IIIa - Country	Rural areas, isolated buildings, sparse vegetation
IIIb - Town	Suburban areas, villages, low-rise buildings
IV - City	Urban areas, city centers, buildings > 15m average



7. TAB 3: CONFIGURATOR

This is the main design interface where you configure the panel layout and calculate all mounting components.

7.1 PANEL SPECIFICATIONS

Enter your panel specifications from the datasheet or select from the Panel Library:

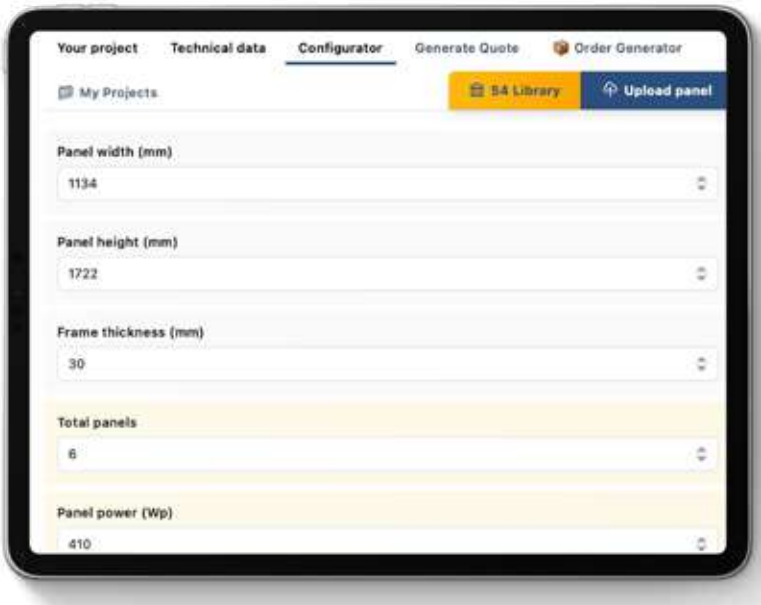
S4 Universal Mounting System

The S4 system adapts to ALL panel sizes. Simply enter your panel dimensions and the configurator will calculate the correct components.

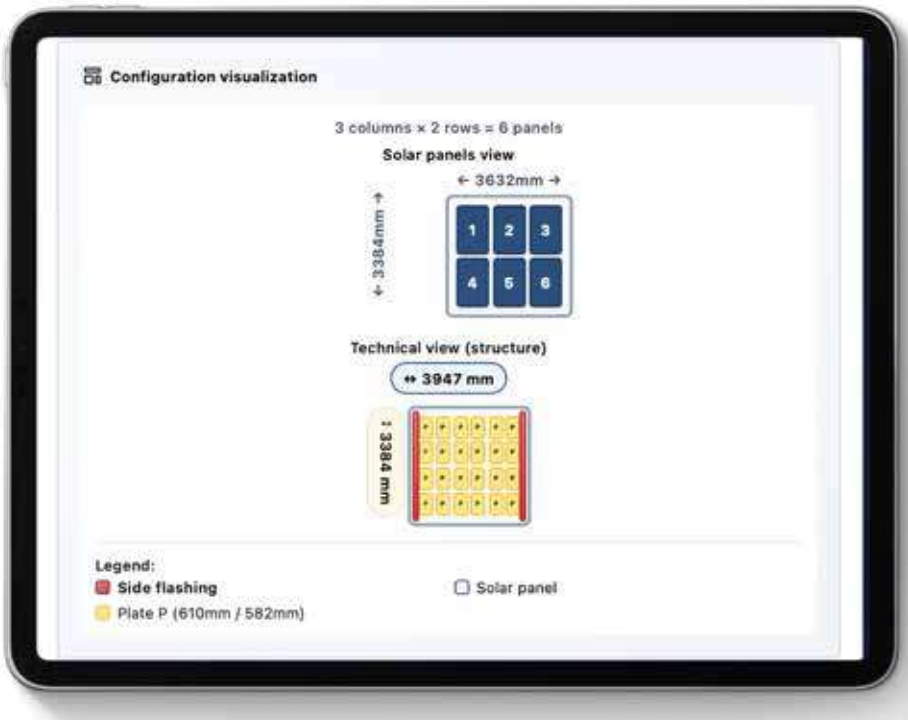
PARAMETER	DESCRIPTION
Panel Width (mm)	Width of your solar panel module (from datasheet)
Panel Height (mm)	Height of your solar panel module (from datasheet)
Frame Thickness (mm)	Aluminum frame thickness - select matching clamp height
Panel Power (Wp)	Watt-peak rating - used for price/Wp calculation

FRAME THICKNESS:

Standard clamps are available for 25, 26, 30, 32, and 35mm frames. 30mm is the most common (~90% of modules). Contact S4 for other thicknesses.



7.1 PANEL SPECIFICATIONS



7.2 ORIENTATION (PORTRAIT / LANDSCAPE)

PORTRAIT	LANDSCAPE
• Panel height vertical	• Panel width horizontal
• Clamps on left/right	• Clamps on top/bottom
• Min height: 400mm	**• Min width: 170mm**

7.3 FRAME RETURNS (DEFAULT VALUES)

Large Side Return	**30 mm (default)**
Small Side Return	**12 mm (default)**

7.4 CLAMP MODE SELECTION (USER CHOICE)

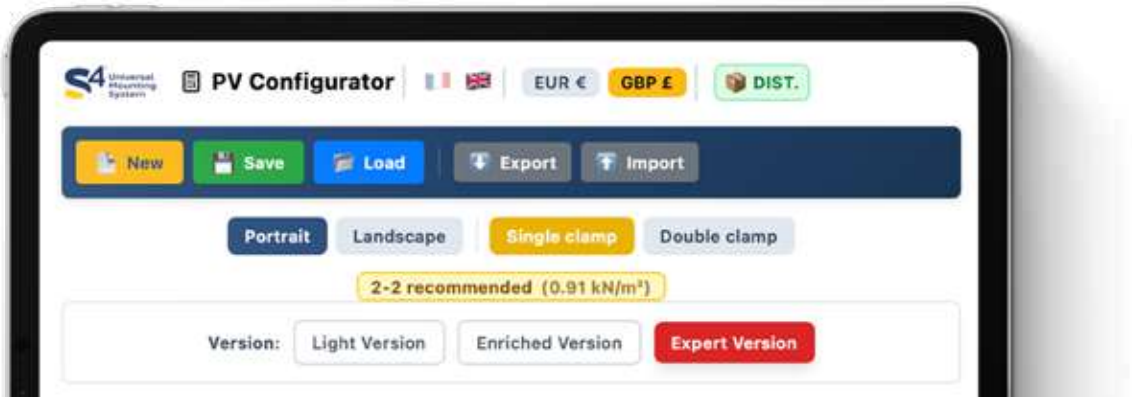
The clamp mode is a user choice that determines the type of clamps used:

SIMPLE MODE	DOUBLE MODE
Each panel has its own clamps	Adjacent panels share clamps
Uses ART2630 (single clamp)	Uses ART2632 (double clamp)
Panels secured individually	Double clamp at junctions

AUTOMATIC CLAMP CALCULATION

Based on your chosen clamp mode, the configurator automatically calculates the number of clamps considering:

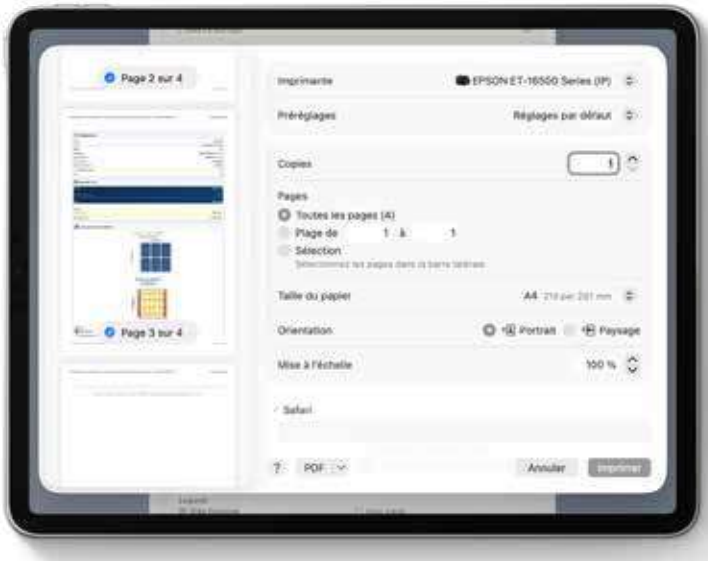
- The wind zone detected from your installation address
- The position on the roof (center, edge, or corner - different wind loads)
- Panel dimensions and orientation



8. CONFIGURATION VISUALIZATION & PRINTING

At the bottom of the Configurator tab, you will find a visual representation of your configuration.

> **FOR YOUR INSTALLATION TEAMS**
>
> Print this visualization and give it to your installers!
>
> They can see the exact order of installation for plates and extensions.



8.1 WHAT THE VISUALIZATION SHOWS

- Panel layout: Exact arrangement in rows and columns
- Plate positions: Where each universal plate (ART2600) is placed
- Extension locations: Horizontal and vertical extensions
- Overall dimensions: Total width and height (mm)
- Clamp positions: Where clamps should be installed

9. TAB 4: QUOTE GENERATION

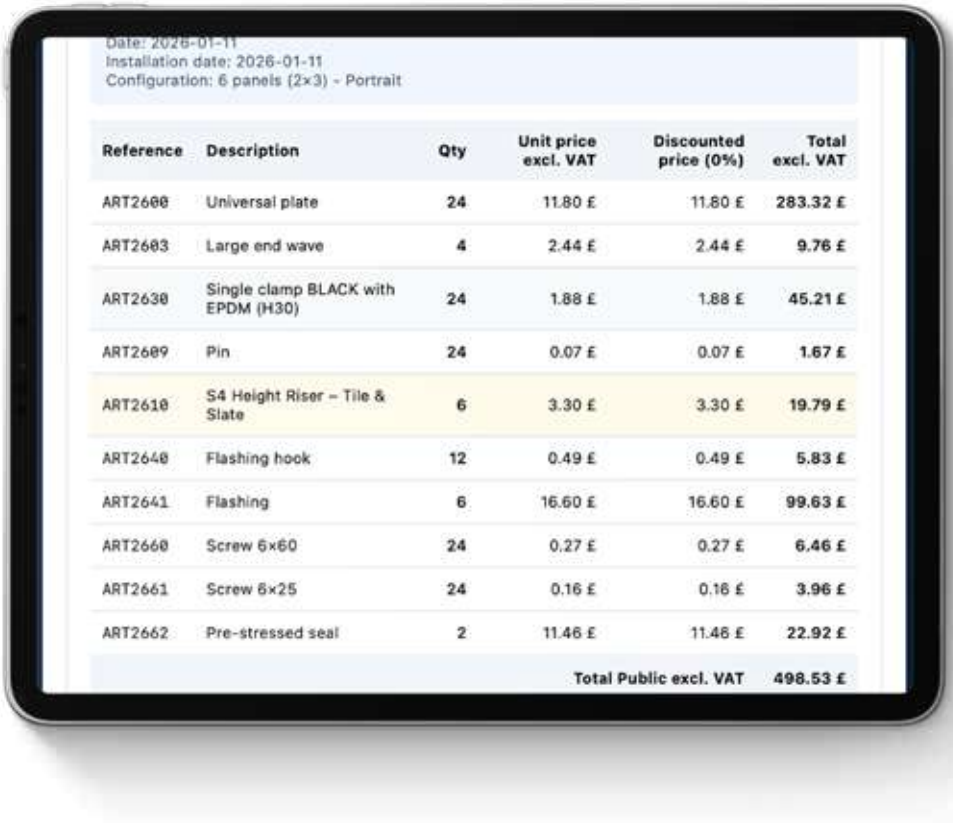
This tab generates a professional quotation with all components and pricing.

9.1 QUOTE CONTENTS

- Article reference codes (ART26XX)
- Component descriptions and quantities
- Unit prices (public and discounted)
- Line totals and grand total
- Price per Watt-peak (€/Wp or £/Wp)

10. S4 COMPONENT REFERENCE GUIDE

REFERENCE	DESCRIPTION	USAGE
ART2600	Universal Plate	Base mounting plate
ART2601	Large Horizontal Extension	Wide panel spacing
ART2602	Small Horizontal Extension	Fine horizontal adjustment
ART2604	Vertical Extension (200mm)	Height extension
ART2608	Mini Vertical Extension (60mm)	Landscape low-end mount
ART2610	S4 Height Riser - Tile & Slate	First row elevation
ART2630	**Single Clamp BLACK with EPDM**	**SIMPLE mode**
ART2632	**Double Clamp BLACK with EPDM**	**DOUBLE mode**
ART2641	Flashing	Weather sealing
ART2662	Pre-compressed Seal (roll)	Waterproofing



Date: 2026-01-11
Installation date: 2026-01-11
Configuration: 6 panels (2×3) - Portrait

Reference	Description	Qty	Unit price excl. VAT	Discounted price (0%)	Total excl. VAT
ART2600	Universal plate	24	11.80 £	11.80 £	283.32 £
ART2603	Large end wave	4	2.44 £	2.44 £	9.76 £
ART2630	Single clamp BLACK with EPDM (H30)	24	1.88 £	1.88 £	45.21 £
ART2609	Pin	24	0.07 £	0.07 £	1.67 £
ART2610	S4 Height Riser – Tile & Slate	6	3.30 £	3.30 £	19.79 £
ART2640	Flashing hook	12	0.49 £	0.49 £	5.83 £
ART2641	Flashing	6	16.60 £	16.60 £	99.63 £
ART2660	Screw 6×60	24	0.27 £	0.27 £	6.46 £
ART2661	Screw 6×25	24	0.16 £	0.16 £	3.96 £
ART2662	Pre-stressed seal	2	11.46 £	11.46 £	22.92 £
				Total Public excl. VAT	498.53 £

11. TROUBLESHOOTING & SUPPORT

11.1 COMMON ISSUES

WIND ZONE NOT DETECTED

- Ensure address includes street number and city
- Try a nearby address if location is rural
- Use manual override if automatic detection fails

INVALID CONFIGURATION WARNING

- Check that Rows × Columns = Total Panels
- Portrait: min height 400mm / Landscape: min width 170mm

FINAL REMINDER

All values provided by this configurator are for guidance only.
Results MUST be verified by a qualified structural engineering office.
S4 Mounting System cannot be held liable for any errors.

11.2 CONTACT SUPPORT

S4 MOUNTING SYSTEM SUPPORT

- Technical: technical@s4mountingsystem.com
- Sales: info@s4mountingsystem.com
- S4mountingsystem.com

MULTI ARRAYS SUB-TAB

CONFIGURATOR GUIDE - VISUAL PANEL PLACEMENT SYSTEM

OVERVIEW

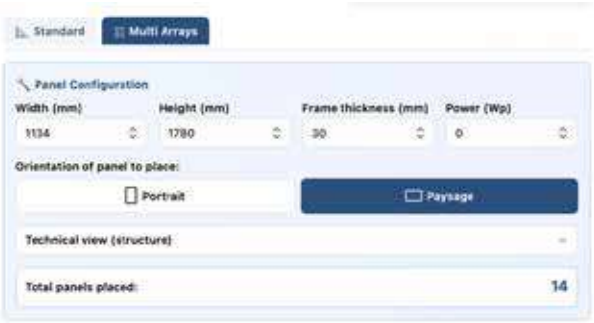
The Multi Arrays sub-tab provides a visual interface for placing solar panels directly onto roof slope representations. Unlike the Standard mode which uses a simple grid layout, Multi Arrays allows you to precisely position individual panels while respecting obstacles, margins, and roof geometry. This is ideal for complex roof layouts with skylights, chimneys, vents, or irregular shapes.

HOW TO ACCESS

Within the Configurator tab, you will see two sub-tabs at the top of the panel configuration section:

- **Standard:** Traditional grid-based configuration (rows × columns)
- **Multi Arrays:** Visual drag-and-drop panel placement on roof slopes

Click the **Multi Arrays** button to switch to the visual placement mode.



INTERFACE COMPONENTS

1. PANEL CONFIGURATION PANEL

At the top, configure the panel you want to place:

FIELD	DESCRIPTION
Width (mm)	Panel width in millimetres (synced with Standard tab)
Height (mm)	Panel height in millimetres (synced with Standard tab)
Frame thickness (mm)	Panel frame thickness for clamp compatibility
Power (Wp)	Panel wattage for total power calculation
Orientation	Portrait (vertical) or Landscape (horizontal) - select before placing

INTERFACE COMPONENTS

2. TECHNICAL VIEW (STRUCTURE)

An expandable section shows the S4 mounting structure for a single panel with the current dimensions and orientation.

This visual diagram displays:

- Universal Plates (P) - shown in amber/yellow
- Large Horizontal Extensions (H) - shown in purple
- Small Horizontal Extensions - shown in light grey
- Vertical Extensions (V) - shown in cream
- Short Extensions (S) - shown in teal
- Mini Vertical Extensions (M) - shown in orange (landscape only)

3. ROOF VISUALIZATION AREA

The main area displays your roof slopes (2 or 4 depending on roof type configured in Technical Data). Each slope shows:

ELEMENT	COLOUR	DESCRIPTION
Top/Bottom Margin	Red	Ridge and eaves margins (R = tile rows). Panels cannot be placed here.
Left/Right Margin	Orange	Side margins for verge clearance. Panels cannot be placed here.
Velux (Skylight)	Blue dashed	Skylight obstacles defined in Technical Data. Panels snap around them.
Chimney	Red dashed	Chimney obstacles. Panels cannot overlap.
Vent	Grey dashed	Ventilation obstacles. Panels snap around them.
Placed Panels	Blue/Green	Your placed panels. Blue = Portrait, Green = Landscape.

PLACING PANELS

ADDING A PANEL

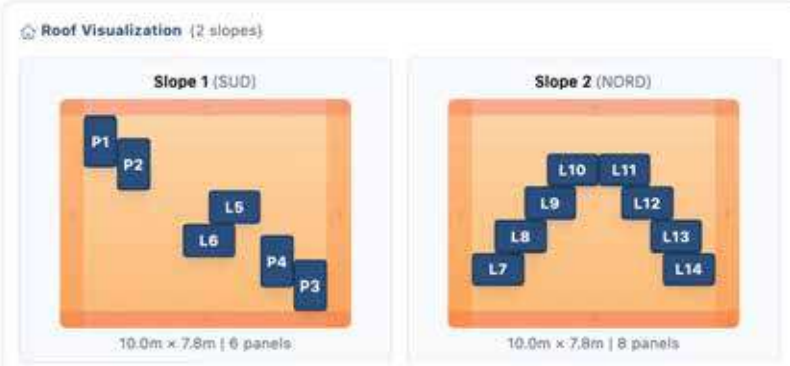
1. Select the desired orientation (Portrait or Landscape) in the configuration panel
2. Click anywhere on a roof slope where you want to place the panel
3. The panel will be added at that position if the space is valid (no overlap with margins, obstacles, or other panels)

MOVING A PANEL

1. Click and hold on any placed panel
2. Drag to the desired position
3. Release - the panel will snap to adjacent panels or edges automatically

DELETING A PANEL

Right-click on any panel to remove it from the roof.



MAGNETIC SNAP FEATURE

Panels automatically snap together when dragged near each other or near the usable area edges. This ensures:

- Perfect alignment between adjacent panels
- Consistent spacing according to S4 specifications
- Optimal use of available roof space

The snap threshold is 15 pixels - panels will «attract» when within this distance.

PANEL COUNTER

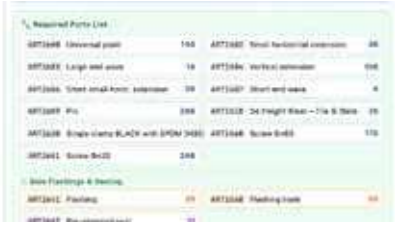
Below the configuration panel, a counter displays:

- Total panels placed: Sum of all panels across all roof slopes
- Total power: Calculated as (number of panels × panel power) in kWp

S4 PARTS CALCULATION

Below the roof visualization, click **« S4 Parts Calculation (Multi Arrays)»** to expand the component summary. This calculates all required S4 mounting components based on the panels you have placed, considering:

- Individual panel orientations (portrait/landscape)
- Number of arrays (groups of adjacent panels)
- Stirrup mode (simple or double)



USING MULTI ARRAYS WITH GENERATE QUOTE

When generating a quote, you can choose the data source:

- **Standard:** Uses the traditional rows × columns configuration
- **Multi Arrays:** Uses your manually placed panels from the visual interface

Select **«Multi Arrays»** as the data source in the Generate Quote section to create quotes based on your visual layout.

PRO TIPS

- **Configure obstacles first:** Set up your skylights, chimneys, and vents in the Technical Data tab before placing panels.

- **Set margins accurately:** Configure ridge, eaves, and side margins in Technical Data to match your actual roof constraints.

- **Mix orientations:** You can place both portrait and landscape panels on the same roof to maximize coverage around obstacles.

- **Use multiple slopes:** For 4-slope roofs, place panels on each slope independently to simulate a complete installation.

Universal Mounting System

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