

## *ConSole, ConSole+*

Flat-roof mounting system for PV-modules and -laminates



## Customized system alternatives for fast, simple and cost-effective mounting on flat-roofs and ground areas

### ConSole mounting systems

ConSole mounting systems are the ideal solution for installing solar modules quickly and cost-effectively on flat-roofs. The ConSole system also withstands high wind loads thanks to the simple and customized weighing down approach using ballast such as gravel, footway flagstones or similar materials. The respective ballast weight depends on the height of the building, the location, the local wind conditions and snow loads and the state of the foundations.

- For flat roofs with a roof pitch of up to 5°.
- Also suitable for ground mounted systems, waste sites, rocky foundations, conversion sites, etc.
- Suitable for most commercially available solar modules due to the range of product sizes.
- Requires no roof penetration or damage to the roof covering.
- Free positioning on the roof.
- Optimal load distribution without concentrated loads.
- Made from 100% recycled chlorine-free polyethylene (HDPE), robust, durable and weather-proof.
- Complies with fire protection requirements DIN 4102, class B2.
- Low product weight, according to type 5.0–7.2 kg.
- All round mounting edge for simple and fast modular installation.
- Large air slots for optimal air circulation for cooling the modules.
- Boreholes included for drainage.
- Stackable for efficient storage and transport.
- Maintenance-free system.
- 10-year product warranty.

### ConSole, features

- Suitable for framed PV-modules.
- Available in 4 sizes for various module dimensions.
- Angle set at 25°.
- TÜV certified.
- One of the premier flat-roof systems on the market.

### ConSole+, features

- Very low ballasting and suitable for roofs with a bearing load reserve from 15 kg/m<sup>2</sup>.
- Optional Streamliner+ (wind deflector) for ballast reduction on the roof edge.
- Yield-optimized system with an angle of 15° for minimum distance between rows.

### ConSole DS, features

- Suitable for frameless PV-laminates with a module size of 1,100 x 1,300 mm.
- Angle set at 20°.
- TÜV certified.



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### TriSole

- Triangular mounting system for flat-roofs, including those of corrugated and trapezoid sheet metal.
- Suitable for nearly all normal and particularly oversized framed PV-modules.
- Variable mounting system for module frame heights of 34–51 mm and 31 mm.
- Durable components made of high-grade aluminium and stainless steel.



## ConSole 4.1, 4.2, 5.2, 6.2, 4 Size variants for installing PV-modules

### Determining the ballast

The respective ballast weight depends on the local conditions such as building height and wind load zone conditions. Pebbles, stones, footway flagstones or similar materials are all suitable for properly ballasting a ConSole system.



### Fixing U-profiles

Each PV-module requires 2 U-profiles in order to fasten the module onto the ConSole. The U-profiles are installed on the underside of the module using the boreholes in the module frame.



### Preparing the ConSole

The PV-module is placed using the U-profiles on the ConSole assembly edge and centered in the width. The clips on both sides of the U-profile have boreholes that also serve as drilling templates.



### Installing the PV-module

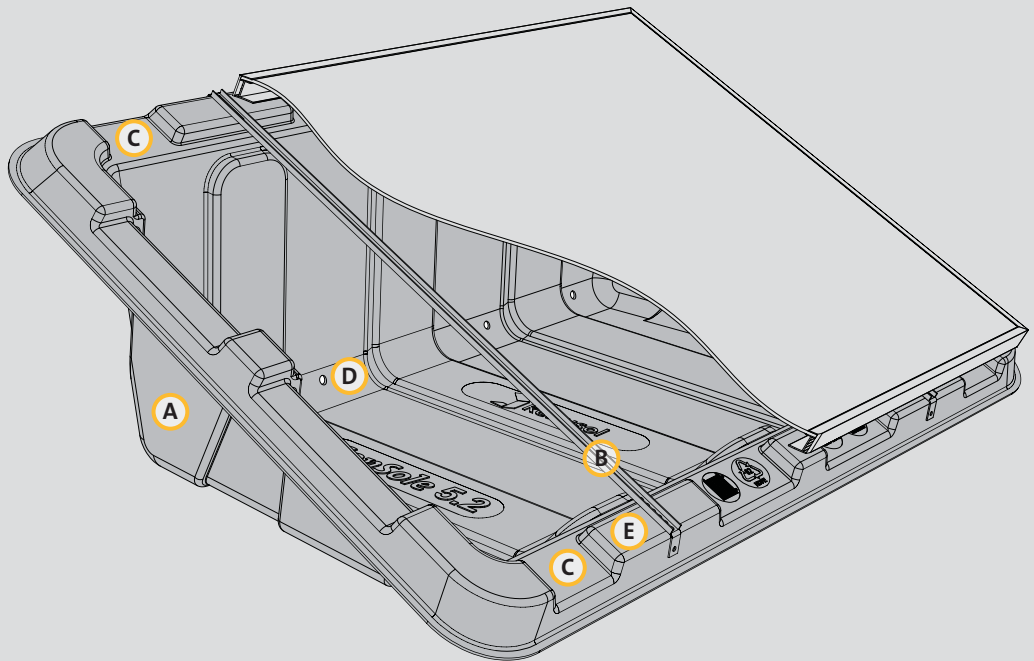
The upper clip on each U-profile are first fastened on the upper ConSole mounting edge in order to prevent the module from slipping. Both clips are then drilled and fastened to the lower assembly edge.



### Select the visual appearance

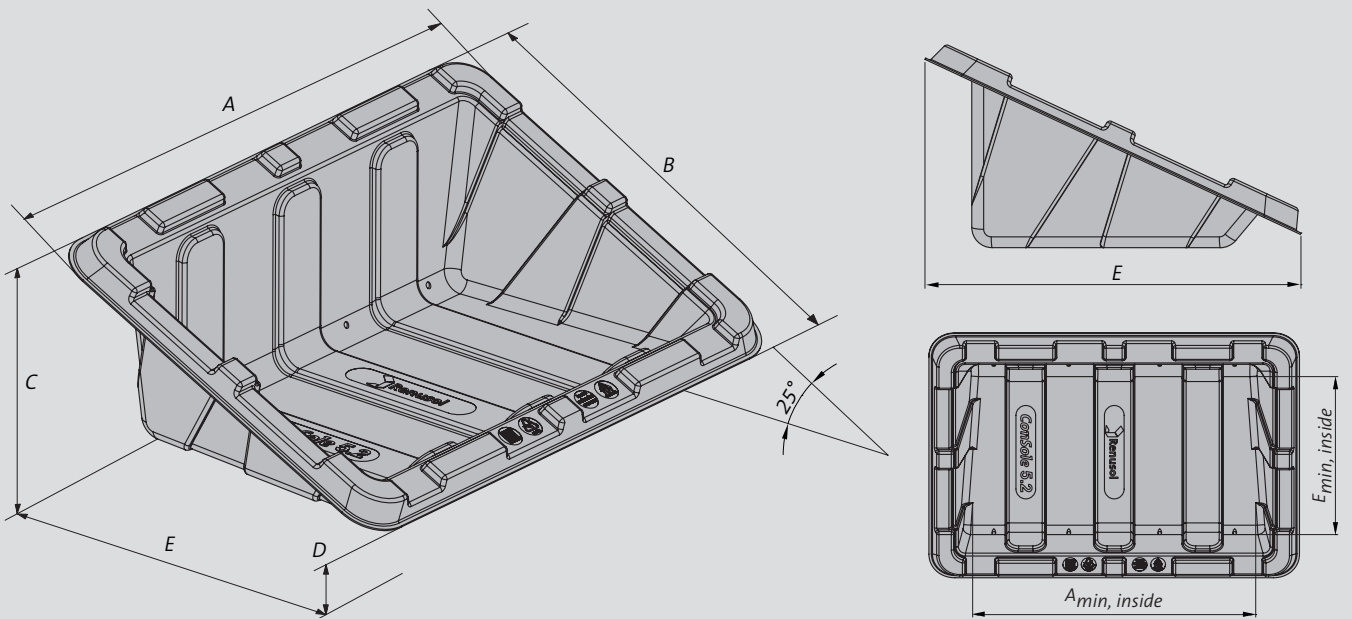
Black module frames achieve a high level of visual uniformity.





**ConSole system overview:**

- A ConSole
- B U-profile of aluminium
- C Air slots, top and bottom
- D Borehole for drainage
- E All round mounting edge



**Recommended measurement of ConSole/PV-module**

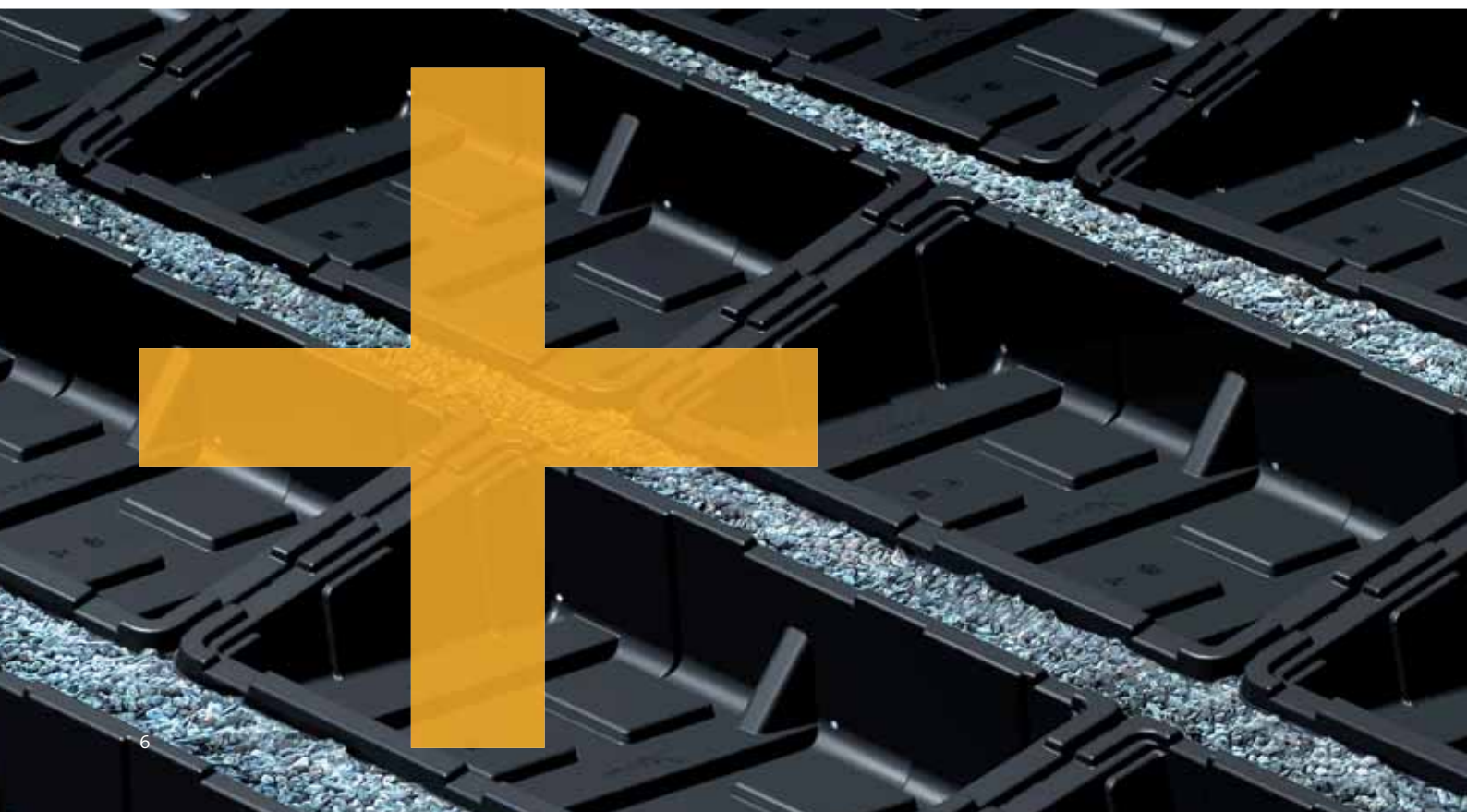
Measurement	A mm	B mm	C mm	D mm	E mm	A <sub>min, inside</sub> x E <sub>min, inside</sub> mm
ConSole 4.1	1,680	840	400	50	740	1,300 x 400
ConSole 4.2	1,240	1,090	530	50	960	890 x 490
ConSole 5.2	1,520	1,080	500	40	960	1,140 x 630
ConSole 6.2	1,740	1,070	500	50	970	1,380 x 630

## ConSole+, newly developed mounting system for flat-roofs with low load bearing capacities

### All the benefits of the ConSole product series + more benefits

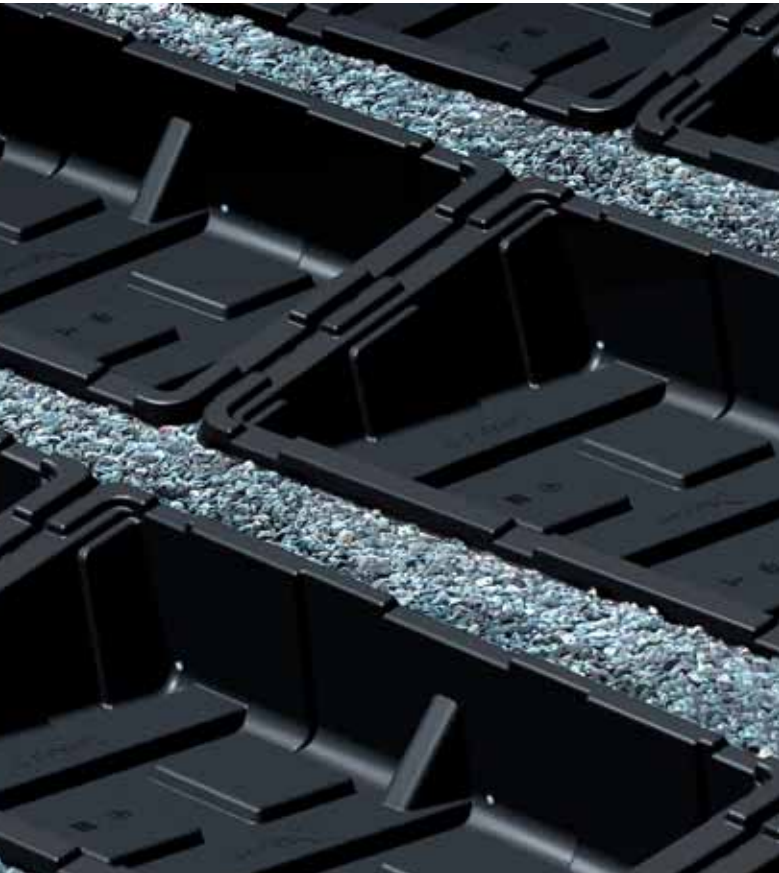
The ConSole+ is a targeted further development of the ConSole product series. Based on the lower ballasting achieved with the ConSole+, its use is also possible on flat-roofs with a load bearing capacity from 15 kg/m<sup>2</sup>.

- Yield-optimized system with an angle of 15° for minimum distance between rows.
- Optional Streamliner+ (wind deflector) for ballast reduction on the roof edge.
- Suitable up to wind load zone 4 and snow load zone 3.
- Fast and easy installation.
- For module sizes from 1,650–1,710 mm x 950–1,070 mm (width x height).
- Also suitable for ground mounted systems, waste sites, rocky foundations, conversion sites, etc.
- Wind loads tested and calculated according to Eurocode 1 „Effects on structures“ EN 1991-1-4:2005 (and national Annex).
- TÜV certification in preparation.
- Powerful and cost-effective system.
- Available from July 2011.



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ConSole+ with optional Streamliner+ (wind deflector)  
for reducing ballast in the roof edge area.



## ConSole DS for mounting PV-laminates

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### Preparing the ConSole DS

First weigh down the ConSole DS using ballast according to the static calculation. Drill a hole in the upper and lower ConSole DS mounting edge in order to fasten the optional central support for the laminate.



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### Fastening the central support

A screw should be inserted into both ends of the profile of the central support. Guide the screw through the holes drilled into the mounting edge and secure this from below using a screw nut. The rubber profiles, pre-mounted on top of the central support, protect the sensitive laminates.



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### Placing the PV-laminate

The ConSole DS has large anti-slip protection that facilitates the placing and centering of the laminates.



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### Positioning the clamp profile and the anti-suction profiles

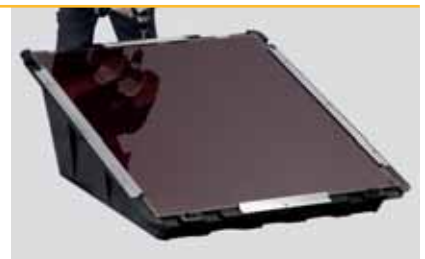
Each laminate is secured on its left and right sides by using a clamp profile and optionally from above and below by using an anti-suction profile. Clamp profiles and anti-suction profiles are fastened at equal distances on the assembly edge.



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### Fastening the PV-laminate

Drill through the assembly strip via the factory pre-drilled holes in the clamp profiles and anti-suction profiles and then insert the bolts here for securing this.







## TriSole for installing framed PV-modules on corrugated and trapezoidal sheet roofs

### Alternative system for flat-roof mounting

The TriSole system is ideal for installing solar systems on flat-roofs of corrugated and trapezoidal sheet or for mounting oversized framed PV-modules. The TriSole triangular mounting system is either fastened directly onto the north-south or east-west rails or heavy duty panels or attached to the corrugated or trapezoidal sheet roofs using hanger bolts. Many system parts are pre-assembled at factory and the other components are installed by simply sliding and clicking them on. The elevated mounting is possible on an installation width of up to 10 meters.

The TriSole components are also widely used with the field proven VarioSole system from Renusol and stand for simple, fast and secure assembly.



## Comprehensive training and planning support allowing for perfect mounting results

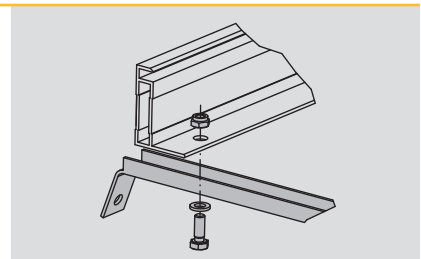
### Technical training

Renusol offers technical training for flat-roof mounting systems. Theoretical and practical specialist and product knowledge are also taught in the seminars. Upon request, Renusol also offers regional training courses at local distributors on site. For information about exact dates and individual courses email [info@renusol.com](mailto:info@renusol.com) or call: +49 221 788707-0.



### Detailed installation instructions

The ConSole and TriSole installation instructions explain each individual step of the installation in clear and understandable terms. The relevant mounting details are shown step by step and printed installation instructions are included with the delivery of every product. In addition, the latest version of the installation instructions can be downloaded via [www.renusol.com](http://www.renusol.com).



### Convenient project planning (in preparation)

With the online Renusol web configurator available around the clock, it will also be possible in the future to configure the ConSole and ConSole+ mounting systems for PV-installations with just a few mouse clicks. The user-friendly web configurator provides the maximum ease for individual planning and for generating an offer. Furthermore, all projects are clearly managed in a password-protected area.



## Renusol – From visions to solutions

### Mounting specialist

Based on the continuous dialogue with dealers and installers, our own development and design department, long years of market experience and durable system components, Renusol delivers well-thought-out mounting solutions for almost all areas of application. Solutions that are easier to plan and mount and that offer the security of perfected products.

### Mounting systems

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#### **IntraSole SR and CL**

Fully integrated mounting system for PV-modules and -laminates in pitched roofs

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#### **InterSole SE and XL\***

Integrated mounting system for PV-modules in pitched and industrial roofs

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#### **VarioSole SE and DS**

On-roof mounting system for PV-modules and -laminates in pitched roofs

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#### **ConSole and DS**

Flat-roof mounting system for PV-modules and -laminates

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#### **MetaSole**

On-roof mounting system for PV-modules on trapezoidal sheet roofs

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#### **TerraSole and DS**

Ground mounting system for PV-modules and -laminates

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\* The InterSole SE and XL are considered semi-integrated mounting systems in France and integrated mounting systems in all other European countries.

### Service

#### **Information: [www.renusol.com](http://www.renusol.com)**

For information about current trade shows, the latest installation instructions and the unique web configurator

#### **Contact: Tel. +49 221 788707-0 or e-mail [info@renusol.com](mailto:info@renusol.com)**

For details of future professional training as well as enquiries about individual regional professional training and sales visits