

# Order Sheet

## SEEDiA Solar Bench

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- Invention
- Urban
- Urban Classic
- Urban Bike
- City
- City Classic
- City Bike
- Future

## Basic Functions

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- PV panel
- Acumulator
- Customer panel & telemetry unit
- 2 x USB charger
- Branding (Advert)
- Warranty for 1 year

## Additional Functions

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- Induction fast charger x1
- LED lighting
- Loud speaker
- OLED screen

## Colours

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*RAL*.....

# Product Data Sheet

## SEEDiA Solar Bench

Model: FUTURE



### Description:

Solar bench SEEDiA FUTURE for outdoor and indoor installation

In standard configuration, solar bench is equipped with:

- Autonomous, green power source – PV panel;
- Electronic system and accessories, which allows:
  - Charging batteries of electronic devices (smart phones, tablets etc.) by 4 USB ports;
  - LED illumination;

Optionally, solar bench can be equipped with:

- Induction fast chargers, Qi standard;
- Connection to the network by wi-fi ;
- Telemetric module
- Loud speaker
- ePaper screen

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Solar bench can be installed in open spaces, no roofing is needed. Design, materials selection and manufacturing processes assure maximum safety, comfort and ergonomic for users. Additionally, aesthetics, durability and robustness of construction is assured.

## Technical Specification

### 1. Mechanical Specification

#### a) Dimensioning

FUTURE solar bench dimensions are show on Fig. 1. and in Table 1

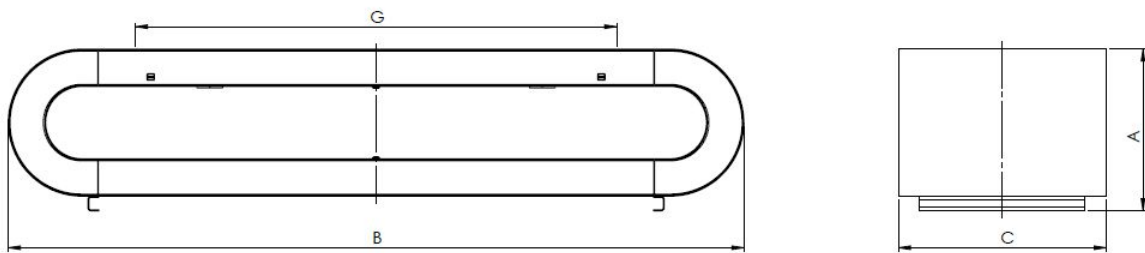


Fig.1 – Front view and profile view of FUTURE solar bench

Table 1 Dimensions of FUTURE solar bench

Parameter	Value
Height A	440 mm
Width B	2000 mm
Depth C	565 mm
Weight	136 kg
Width of seat G	1310 mm

#### b) Materials

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FUTURE solar bench is manufactured of materials which are professionally protected against any environmental influence. It gives guarantee for years of continuous exploitation even in hard environmental and climate conditions.

Main elements of the bench are made of powder painted steel, which gives corrosion protection and aesthetic for years. Materials specification is covered by Table 2.

Table 2. Materials specification:

Bench element	Material	Characteristic
Seat	Tempered glass/PV Panel	Tempered Glass according to PN-EN: 12150 Integrated with polycrystalline silicon PV panel
Foots	St 12 (DC01) steel, powder painted	3mm thick steel element
Box	St 12 (DC01) steel, powder painted	3mm thick steel plate
Front panel	Polycarbonate	3mm thick plate
Fasteners	Stainless steel / Zinc coated steel	Fasteners with protective coatings

Bench is made of non flammable materials. All materials applied are refractory for flame and high temperature. Thanks to that Solar Bench FUTURE can be also used for indoor installation

### c) Endurance properties

Max static load for FUTURE Solar Bench is equal to 300kg / 661lbs.

Seating place is made of safe, tempered and laminate glass and can load 300kg / 661 lbs max.

Due to physical nature of tempered glass, it's not refractory for dynamic, point load by sharp tools. Such impact can damage the glass panel. But even broken glass isn't danger for potential user, there is no sharp particles created by breakage.

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Bench construction guarantee refractory for natural load like snow, wind, high and low temperature etc.

Producer of the bench is not responsible for any kind of damage which is result of vandalism.

## 2. Electrical specification

SEEDiA solar benches are electrical devices, therefore, despite the low voltages present in the system, they should be handled in a manner appropriate for electrical devices.

In the closed internal electrical system of the device there is a voltage of 12 V only, but depending on the configuration, the bench can be equipped with an external 230 V power supply (input voltage / output voltage in the situation in which the external socket is available).

In this arrangement, the only device operating at 230V is battery charger.

Output voltage - charging of mobile devices - is realized with 5V DC, generated by a specialized device designed for this purpose. For a typical design, the charging current through the USB socket is 1A. On individual order, systems with an intensity of up to 2A can be used.

The bench has standard USB 2.0 ports

Approximate working time of the bench devices (charger, wi-fi), if there is no charge from the PV panel (cloudy weather, snow or dirt on PV panel) is: 72 hours.

Table 3. Electrical spec of the bench

Component	Voltage [V]	Current [A]	Description
Charging output of mobile devices (USB2.0 port)	5 DC	1 - 2	4 pcs
Electronic internal system	12 DC	Max. 5	
Set of PV panels	12 (max. 22)		Nominal Power 80 W
Battery	12 DC (max charging voltage 15,6)	----	Deep discharge lead-acid battery with a capacity of 30 Ah
Distributing plate	12 DC		12V or 5V or 3,3V DC at output
*) Router: Teltonika	12 DC		Power consumption max. 20 W, working range: -40 do 70 st. C., capacity 300Mbps/50Mbps

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* ) SIM Kart	Transmission speed dependent on Provider 40-60Mbps /20-30Mbps.
Ventilation system	Control triggered by temperature sensors

\* ) – additional equipment

### 3. Installation

Installation of the bench in the target location is only performed by the installer authorized by Seedia.

In order to perform the installation properly, the appropriate requirements must be met on the part of the Ordering Party. Their fulfillment of installation requirements determines the correct operation of the device and its maximum effectiveness.

Failure to meet the requirements described in p.3 may result in the inability to achieve parameters declared by the manufacturer.

After mechanical installation, the bench functions are activated. Activation is performed by SEEDiA authorized personnel, in most cases remotely. During the activation, all functionalities of the bench are started and tested.

#### a) Localization requirements

The requirements listed in Table 4 refers to the general positioning of the device. Their fulfillment is important first of all due to the proper operation of the electricity source of the system – photovoltaic panel.

Table 4. Location requirements for solar benches

Parameter	Indication / requirements	Range
Orientation	The benches should have the possibility of mounting so that the panel is oriented to south	+/- 20 deg.
Shadow	Benches should be located in non-shaded places	Shading max 20% of the surface of the panel within 24 hours
Installation Area	Benches should be installed in a paved area, ensuring their stable position and allowing their anchorage	-----
Water	Due to the fact that SEEDiA benches are electrical devices, they should be installed away from water reservoirs and watercourses	>15 m / 50 ft from the coastline

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Dust	The benches are equipped with the highest quality components having IP67, however excessive dustiness may make their work difficult. In particular, this applies to ventilation systems placed in the benches - high dustiness may cause faster clogging of the filters. If you need to install a bench in the place of high dustiness, please inform the Manufacturer in advance.	----
Temperature	The benches are designed for work in the East-European zone, so the operating temperature range is also limited. If you anticipate going out of the described range, please contact the manufacturer for the appropriate adaptation of the product	- 20deg. C to 40deg.C -4 °F to 104 °F

## b) Direct installation requirements

To meet the anti-theft requirements, and at the same time ensure the long-term functioning of the bench in the customer's location, the installer anchors the benches, unless the customer clearly indicates otherwise (does not apply to indoor locations).

In the case where the bench is not anchored, at the express request of the customer (or because it is not possible to perform such operations, eg in an unstable areas such as gravel, sand), it is recommended to additionally insure the bench against theft / destruction on its own, as well as purchase of additional monitoring systems (the manufacturer's system provides some internal monitoring, but it is not a specialized anti-theft system).

Requirements for direct installation:

- Aligned area (unevenness deviation of max. 2 cm)
- The area is additionally hardened at the corners, preferably with a concrete spout, to which the bench anchors will be fixed (arrangement of corners in accordance with the dimensions of the bench)
- No installations like cables, pipelines, etc. under the place of installation of the bench;
- In the absence of an additional spout, the necessary local vision of the installer, to assess the conditions and their suitability for installation
- Terrain leveled (for proper device operation). Permissible deviation from the level is max. 15 degrees - with a larger one, using the bench will not be convenient for users.

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The installer, after a previous local inspection, can do the work on behalf of the ordering party, however an additional fee will be charged for it, in accordance with the installer's price list - depending on the results of the local vision.

c) Maintenance

Seasonal maintenance / technical inspection is carried out by the manufacturer's service at least once a year. Daily maintenance is within the responsibility of the Customer. It should consist in keeping the bench clean and preventing excessive dusting.

Any doubts noted during maintenance and use, should be reported to the manufacturer's website.

#### 4. Product visualisation

According to the company's policy, the customer receives a visualization of the personalized product before ordering.

#### 5. Contact data

In case of questions or any objections, please contact the Producer via the website or by phone: [www.seedia.city](http://www.seedia.city)

Tel. +48 790 533 486

#### 6. Norms, regulations and standards applied

The product complies with the following international regulations:

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 2014/30 / EU (on electromagnetic compatibility)

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 2011/65 / EU (on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

List of norms and certificates of bench components.

- Paints: Qualicoat class 1 P-0570 (KABE)

- Steel: produced at the plant with the implemented ISO 9001: 2008 system

- Glass: PN: EN 12510

- Electronics: DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 2014/30/EU

- Batteries: DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 2013/56/EU on batteries and accumulators;

- PV panels: PN-EN 60904: 2008 Photovoltaic elements

- LED light: PN-EN 62031: 2010, LED modules for general lighting purposes - Security requirements

Polycarbonate: Plastics - PN-EN ISO 11963: 2013-05

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- Polycarbonate boards - Types, dimensions and characteristics according to product safety data sheets

## 7. Change register

Technical Data Sheet v. 1.0, translated from original polish version

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