

Order Card

SEEDiA Solar Bench

- Invention
- Urban
- Urban Classic
- Urban Bike
- City
- City Classic
- City Bike
- Future
- Future Charging Kiosk

Basic functionalities

- Solar panel
- Battery
- Telemetry module + Client Panel
- 2 USB chargers
- Branding of bench
(advertisement)
- Warranty for 1 year

Extended functionalities

- Inductive charger x 1
- LED lighting
- Speaker
- E-paper screen

Color

RAL.....

Solar bench SEEDiA

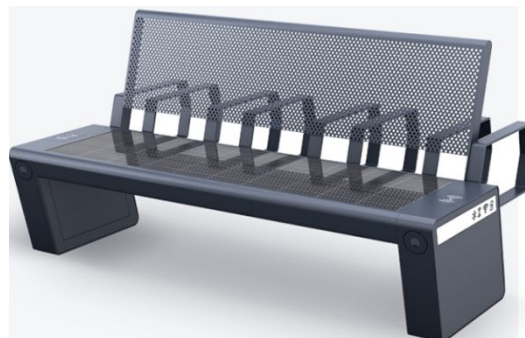
Models: City / City Classic / City Bike



City



City Classic



City Bike

Description:

The City bench family consists of three models:

- City,
- City Classic, with a backrest
- City Bike, with a backrest and an integrated bike rack

SEEDiA solar family benches City are external benches designed for use in open space, outside buildings.

Each solar bench in a standard configuration is equipped with an autonomous, ecological power source - photovoltaic panel, electronic system and accessories enabling:

- charging battery of electronic devices through 2 USB 2.0 ports,
- use of a wireless network

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- telemetry module

Optionally, the bench can be equipped with:

- LED lighting;
- induction charger in the Qi standard
- Airly air quality sensors
- Kontakt.io beacons

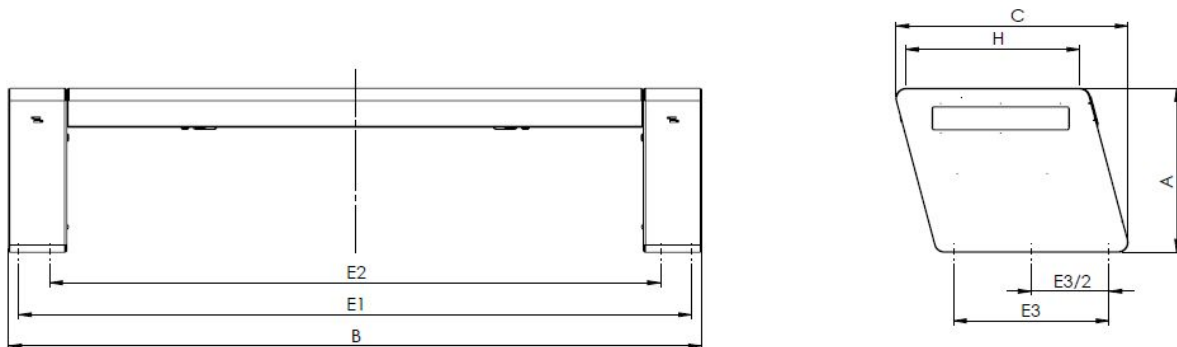
The benches are adapted for outdoor installations in open spaces. They do not require roofing. The design, the selection of construction materials and the construction of benches ensure their ergonomics, safety and comfort of users, functionality, durability and reliability.

Technical Specifications

1. Mechanical specification

a) Dimensions

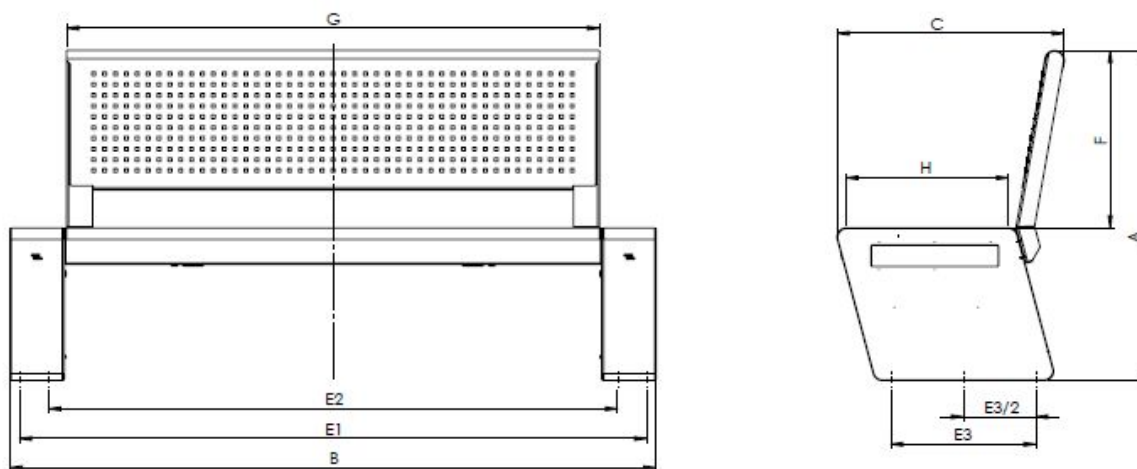
The dimensions of City benches are shown in Figure 1 and Table 1.



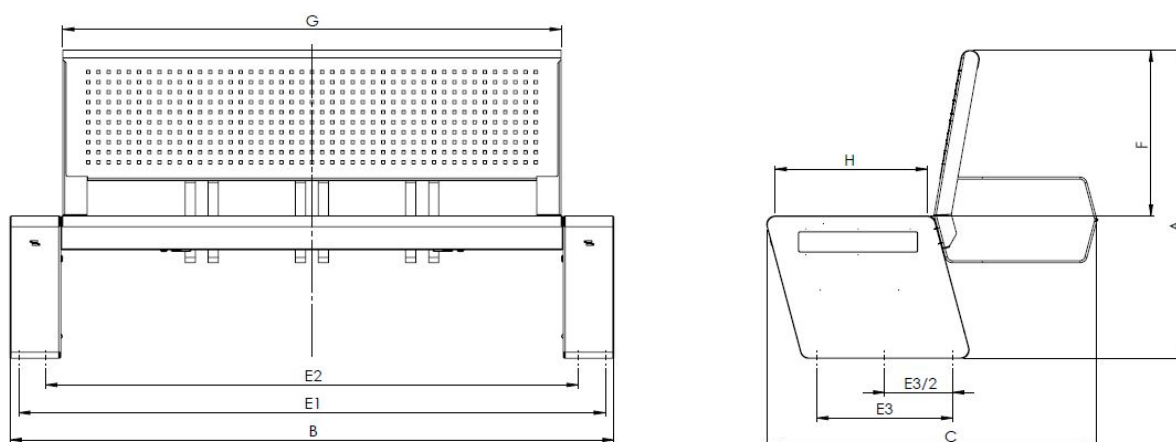
a) City

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b) City Classic



c) City Bike

Fig.1 – Front view and bench profiles: a) City, b) City Classic c) City Bike;

Table 1 Dimensions and weight of the City Classic bench

Parameter	City Value	City Classic Value	City Bike Value
Height A	420 mm	908 mm	908 mm
Width B	1780 mm	1780 mm	1780 mm
Depth C	600 mm	627 mm	973 mm
Height of the backrest F	-	490 mm	490 mm

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Width of the seat G	1470 mm	1470 mm	1470 mm
Depth of the seat H	450 mm	450 mm	450 mm
Mounting width (external)	1730 mm	1730 mm	1730 mm
Mounting width (external)	1570 mm	1570 mm	1570 mm
Installation depth	400 mm	400 mm	400 mm
Mass	60 kg	75 kg	85 kg

b) Materials

City benches are made of materials that provide them with the opportunity of many years of work in outdoor conditions in the region of Central and Eastern Europe. The main structural elements are made of powder-coated steel, which ensures adequate strength properties, durability and aesthetics. The material specification is given in Table 2.

Table 2. List of materials from which bench components were made:

Bench component	Materials	Characteristic
Seat	Hardened glass / photovoltaic panel	Tempered and laminated glass in accordance with PN-EN: 12150 Polycrystalline silicon PV panel
Bench legs	Varnished Steel St 12 (DC01)	Steel sheet metal covered with lead-free coating
Central Box	Varnished Steel St 12 (DC01)	(as above)
Panel Box	Varnished Steel St 12 (DC01)	(as above)
Backrest - profiles	Varnished Steel St 12 (DC01)	(as above)
Frame for bicycles	Varnished Steel St 12 (DC01)	(as above)
Side panels	Milky polycarbonate 3 mm	
Screws / Blind rivet nuts	Stainless steel / Zinc plated steel	Bolts and nuts with anti-corrosive coatings

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The benches are made entirely of non-flammable materials. They are resistant to both fire and high temperatures. Therefore, they can also be installed indoors.

c) Endurance of benches

The maximum permissible static load on benches is: 300 kg

The seat made of tempered glass has a total load capacity of 300 kg. Due to its specificity, the glass seat is not resistant to dynamic point loads (impacts), especially sharp objects.

The construction of the benches ensures resistance to dynamic loads of natural origin (wind, snow).

The manufacturer is not responsible for damage to benches created as a result of vandalism.

In unfavorable weather conditions, condensation may occur on the inside of the glass pane. This is a natural phenomenon, has no effect on the functionality of the bench and fades automatically after changing weather conditions.

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 such devices.

In the closed internal system of the device there is a voltage of 12 V, but depending on the configuration, the bench can be equipped with an external 220 V power supply (input voltage / output voltage in the situation in which the external socket is lead out).

In this arrangement, the 220V battery charger operates ONLY within the charger that charges the battery.

Output voltage - charging of mobile devices - is implemented with 5V DC voltage, 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 benches have 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, panel snowy or obscured) is: 72 hours.

Table 3 Electric bench specifications

Component	Tension [V]	Intensity [A]	Description
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Charging output of mobile devices (port USB2.0)	5 DC	1- 2	2 pieces
Electronic internal system	12 DC	Max. 5	
Photovoltaic panel - arrangement	12 (max. 22)		Nominal power - 80 W
Battery	12 DC (max voltage of charge 15,6)	----	Lead-free deep discharge battery with a capacity 32 Ah
Distribution board	12 DC		At the output 12V or 5V or 3.3V DC
*) Router model: Teltonika	12 DC		Power consumption max. 20 W, working temperature -40 to 70 degrees Celsius, 300Mbps / 50Mbps bandwidth
*) SIM Card	The speed of the connection depends on the operator 40-60 Mbps / 20-30 Mbps.		
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 for the installer to properly perform the installation, the appropriate requirements must be met on the part of the Ordering Party. Their fulfillment determines the correct operation of the device, and at the same time its maximum effectiveness and fulfillment of the manufacturer's assumptions and declarations. 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 function is activated. Activation is done by SEEDiA. During the activation, all functionalities are run.

a) Location requirements

The requirements in Table 4 are requirements for 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.

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Table 4. Location requirements for City Classic bench

Name of the parameter	Indication	Range
Orientation of the bench	The benches should have the possibility of mounting so that the panel is facing south.	+/- 20 degree
Shadow	Benches should be located in non-shaded places	Shading max 20% of the surface of the panel within 24 hours
Area	Benches should be installed in a paved area, ensuring their stable position and allowing their Anchorage.	-----
The proximity of water	Due to the fact that SEEDiA benches are electrical devices, they should be installed away from reservoirs and watercourses	>15 m from the shoreline
Pollination	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.	-----
Temperature	The benches are designed for work in the East-European zone, whereby the operating temperature range is also limited. If you anticipate going out of the scope of work, please contact the manufacturer for the appropriate adaptation of the product	- 20 C deg. to 40 C deg.

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).

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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 situation 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 for 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, 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)

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. Current maintenance is within the responsibility of the Employer. It should consist in keeping the bench clean and preventing excessive dusting.

Any doubts noted during ongoing maintenance should be reported to the manufacturer's website.

4. Visualization of the product for the customer

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

5. Contact

If you have questions or any objections, please contact the Producer via the website or by phone:

www.seedia.city

Tel. +48 790 533 486

6. Standards, regulations and certificates

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The products comply with the following international regulations:
DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 2014/30/UE (about electromagnetic compatibility)
DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 2011/65/UE (on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

List of standards and certificates of benches 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
 - Polycarbonate boards - Types, dimensions and characteristics according to product safety data sheets

6. Register of changes

Technical card version 1.1

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Update: 06.2018 (information on condensation has been added)

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The card has been approved by: Piotr Hołubowicz, SEEDiA, CEO

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