Order Card

SEEDiA Solar City Trash Can

☐ City Trash Can

Basic functionalities

☒ Photovoltaic panels

☒ Battery

☒ Telemetry module + Client Panel

☒ 2 USB chargers

☒ LED lighting

Extended functionalities

☐ E-paper screen

Color

RAL.....

SEEDiA City Trash Can

Models:

Description:

Project, execution and equipment of the trash cans are made based on Smart City philosophy.

SEEDiA trash cans are designed to solve city problems related to management of city cleaning services. Moreover, trash cans are products not only for cities but also for citizens - thanks to LEDs, they inform citizens which trash can is full and which one still can be used.

Devices installed in the trash can are powered by zero-emission renewable energy sources: a set of photovoltaic panels and battery that stores energy.

Modern solutions for management of energy, high-quality light source, used in trash cans, guarantee safety, as well as high class and efficiency use of energy.

The applied solutions in the field of corrosion resistance ensure long-term functioning provided regular use of basic maintenance procedure.

The recommended place for installation of the trash can is the well-lit, unshaded, urban and suburban place.

Trash cans can be installed on bus stops, at parks, city centres and type of places that need waste disposal.

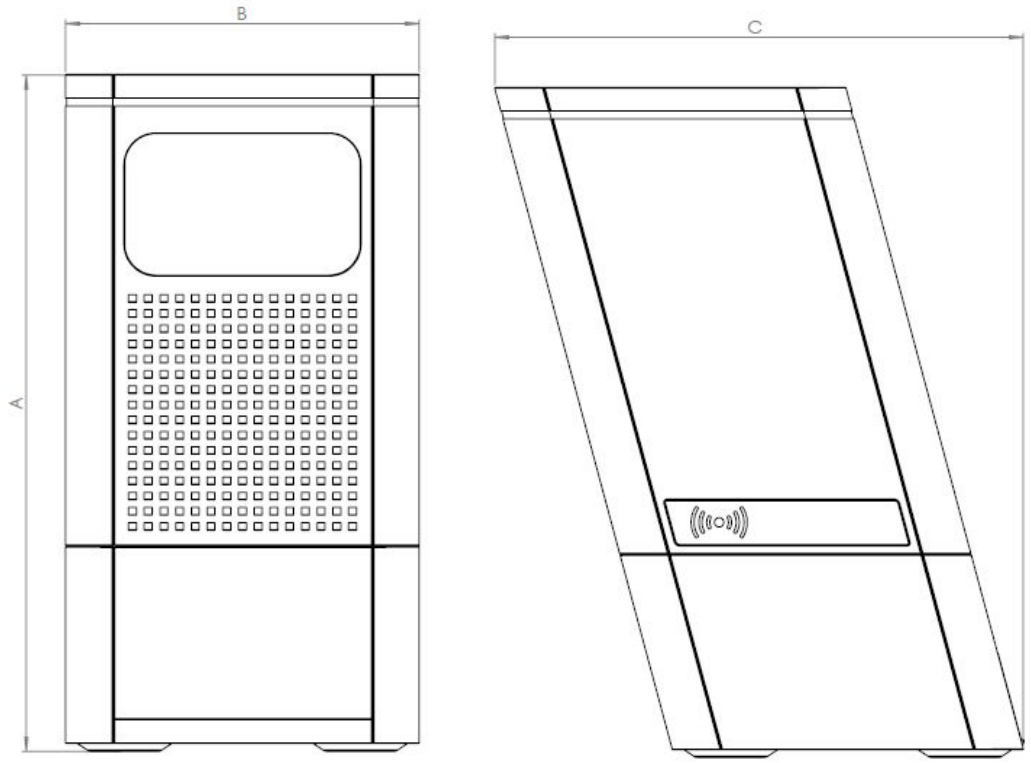
SEEDiA sp. z o.o.
Podole 60
30-394 Kraków

Technical Specifications

1. Mechanical specification

a) Dimensions

Dimensions of SEEDiA City Trash Can



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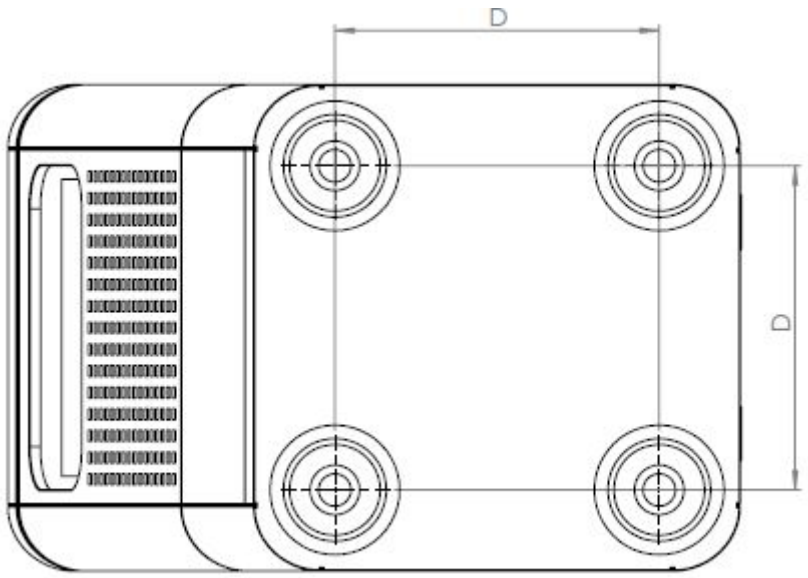

Fig 1 – Front, side and bottom view of the SEEDiA City Trash Can

Table 1 Dimensions of SEEDiA City Trash Can

Parameter	Value
Height A	860 mm
Width B	450 mm
Depth C	677 mm
Spacing of mounting feet D	300 x 300 mm
Capacity	85 l

b) Materials

SEEDiA City Trash Can is made of materials that allow it to work for a long time in changeable climatic conditions. Construction of the trash can is made of steel. Anticorrosive protection of the structure is a multilayer coating made with QualiCoat materials and technologies.
The casing is made of steel, illuminated elements of resistant to destruction polycarbonate, and the ashtray of acid-proof steel.
The material specification is given in table 2.

Table 2. List of materials from which trash can components are made:

Trash can components	Materials	Characteristics
Structural elements: supporting frame	Structural steel	
External casing	Black steel	St35
LED elements	Polycarbonate	milky, 4 mm, with additional protective layer
Ashtray	Stainless steel	AISI 304, 2 mm

SEEDiA City Trash Can is made entirely of non-flammable or slow-burning. All of the external materials used in trash cans are suitable for use in contact with people - the manufacturer has necessary certificates for that use - in particular regarding external surfaces and varnishes and other substances that they are covered with.

c) Endurance of the trash can

The whole structure is adapted to carry structural loads, wind pressure and snow load for all load classes occurring in Poland. In addition, the structure has been adapted for quick emptying thanks to hinged doors.

The manufacturer is not taking the responsibility for damages created as a result of acts of vandalism, for example hitting the glass walls with hard, sharp objects.

2. Electrical specification

SEEDiA trash cans 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 Trash Can can be equipped with an external 230V power supply (input voltage/output voltage in the situation in which the external socket is lead out).
In this arrangement, the 230V battery charger operates ONLY within the charger that charges the battery.

Output voltage - powering LEDs and sensors - is implemented with 5V and 3,3V DC voltage, generated by a specialized device designed for this purpose.

Approximate working time of the Trash Cans (sensors, LEDs), if there is no charge from the PV panel (cloudy, panel snowy or obscured) is 160 hours.

Table 3. Electrical specification of the trash can

Component	Tension [V]	Intensity [A]	Description
Electronic internal system	12 DC	Max. 5	
External socket (optional)	230 AV	Dependin g on the load	
Photovoltaic panel - arrangement	12 (max. 22)		Nominal power of one panel 20 W
Distribution board	12 DC		Output 12V or 5V or 3,3V DC
Battery	12 DC (max voltage of charge 15,6)	----	Deep discharge lead battery with 12Ah capacity
*) 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.		
LED	RGD, controlled diode after diod dioda po diodie, 30 diod na m		
Dusk sensor	Controlled remotely, resistant		

3. Installation

Location requirements are requirements for the general location of the device.
Their fulfillment is important primarily due to the proper operation of the electricity source of the system: photovoltaic panel.
Installation of the trash can in the target location is only performed by the installer authorized by Seedia.
After mechanical installation, the trash can 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.

Table 4. Location requirements for SEEDiA City Trash Can

Name of the parameter	Indication	Range
Anchoring the trash can	Anchoring and leveling the trash can i made by the manufacturer's service.	4 anchors with 300mm spacing
Orientation of the trash can	Orientation is determined by installation's place conditions. The trash can is adapted to work under different conditions of sunlight.	
Shadow	Trash cans should be located in non-shaded places.	Shading max 20% of the surface of the panel within 24 hours
Area	Trash cans 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 Trash Can are electrical devices, they should be installed away from reservoirs and watercourses	>15 m from the shoreline
Pollination	The trash can is equipped with the highest quality components having IP67, however excessive dustiness may make its work difficult.	----
Temperature	The trash can is designed for work in the wide temperature range, however the efficiency of power supply system is a function of external conditions.	-20 C deg. to 50 C deg.

b) Direct installation requirements

Requirements for direct installation:
- Aligned area (unevenness deviation of max. 2 cm). Responsible for the preparation of the area is the Customer, unless the contract says otherwise;
- the possibility of making foundations or embedding prefabricated elements
- No installations, pipelines etc. under the place of installation;
- A local inspection of the installer is necessary to assess the conditions for the trash can to be installed;

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 Customer.
It should consist of:
- keeping trash cans clean and preventing excessive dusting, gathering of leaves on the casing - clean casing has direct on effectiveness of powering system;
- regular rising of the steel structure, casing, walls/glass from salt in winter season;
- 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. +48 737 163 773

6. Standards, regulations and certificates

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 trash can 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

7. Register of changes

Technical card version 1.0
Prepared: March 2018
Authors: P. Hołubowicz, Z. Sierpiński

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