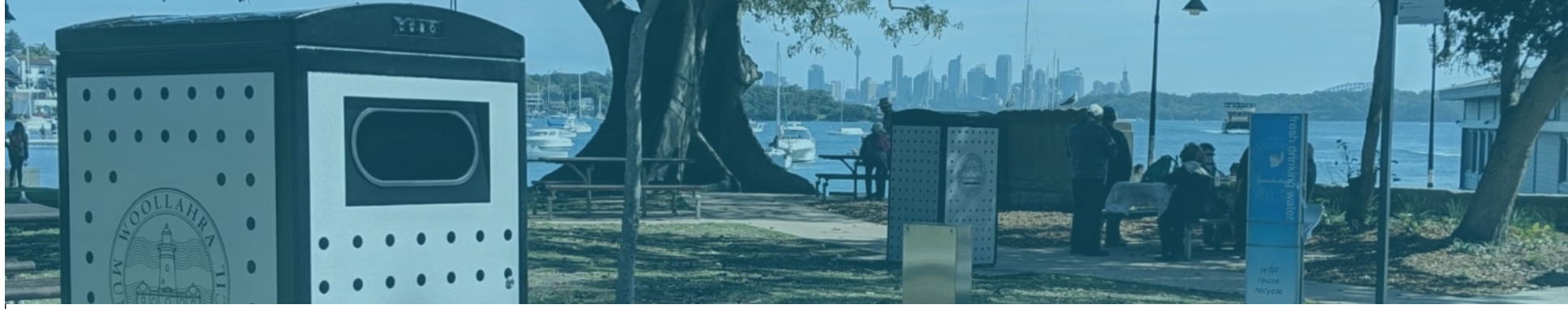
SMART
CITY
SOLUTIONS

Brochure

CleanCube

Solar-Powered, Fill-Level Monitoring,
Compacting Smart Waste Hub



CleanCube

Solar-Powered Waste Compactor

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- Waste Compaction
- Solar-Powered
- Customization Options
- Fire Detection

Powerful Waste Compaction and Fill-Level Monitoring

The CleanCube is a solar-powered self compacting bins that can hold up to 8 times more waste than conventional bin. Users can monitor estimated fill-levels and collections using the online platform, CleanCityNetworks to enhance their waste collection and reduce costs.

Customisation and Safety Features

Optional features are available including static and dynamic advertising panels, design modifications, and Wi-Fi hotspots. Compatible with industry-standard wheelie bins, the CleanCube comes in two sizes: 120L and 240L. Hand detection and special locking mechanisms provide safety while anti-rust coating and a shock resistant exterior ensure durability.

CleanCube

100 L

120 L

240 L

*CCN subscription is additional. Shipping & installation not included.

CleanCube Options

Hopper

Closed aperture operated by handle

Hopper + Foot Pedal

Closed aperture operated by handle or foot pedal

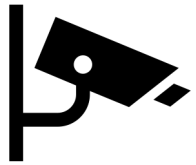
Ashtray

Safely stores smoldering cigarettes

CleanCube Options

Wi-fi Hotspot

* additional data rates apply



CCTV

Panel Vinyl Wrap

* price per panel

Full Vinyl Wrap

* frame, top cover and all panels

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CleanCube Ad Panel

Put the CleanCube to work by generating ad revenue or displaying public service announcements.

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The CleanCube has the option to come equipped with a print display for announcements or advertisements. Whether on one side or both, the ad panels are easy to change and offer a modern image that conventional trash cans lack.

A1 = 594 x 841 mm

A2 = 420 x 594 mm

CleanCube Ad Panel

Prices

100 L

A2 Print

120 L

A1 Print

240 L

A1 Print

*To order ad panels on both sides, simply double the price.

CleanCube Technical Specifications

Compactor

- Force: max 700kgf
- Compression Cycle: approx. 40 seconds
- Motor Size: 1/6-HP DC geared motor
- Drive System: geared motor with X-frame drive (patented)
- Control System: smart microcontroller-based automated system

Safety Features

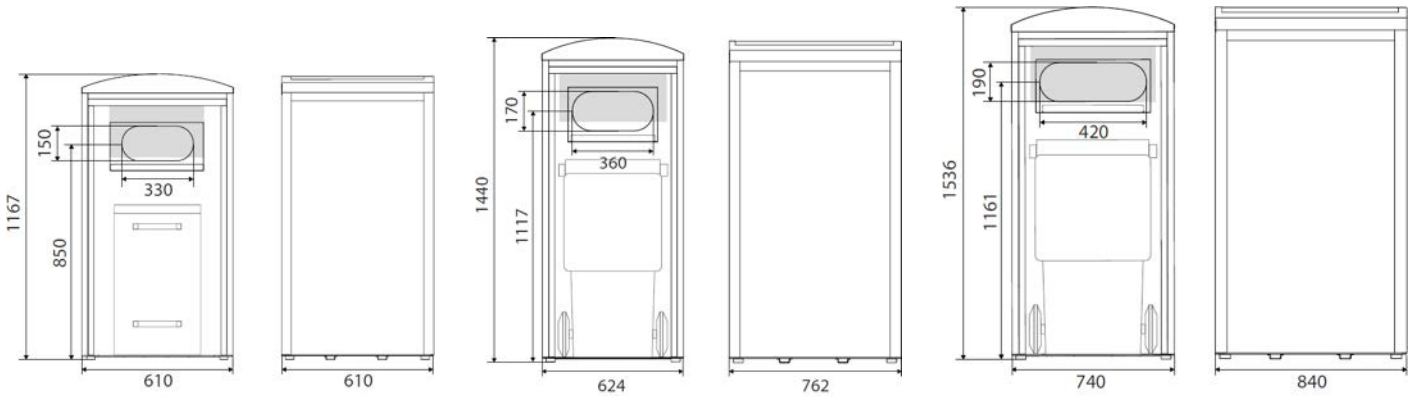
- Rated IP45 for ingress protection
- CE, FCC/IC, K-Mark certified
- Hand detection safety sensor
- Fire detection sensor and fire suppression
- Access locks for front door, top and side covers
- Optional stability mounting brackets
- RoHS compliant
- Polycarbonate protective cover for solar panel

Communication and GNSS Features

- Communication: GSM/WCDMA module
- Location: GPS module

CleanCube Technical Specifications

Available in three sizes, the 120L and 240L models are compatible with standardized 120L and 240L wheelie bins. Charging/power options are available in solar, AC, or hybrid (solar and AC).



100 L 120 L 240 L

Dimensions (mm)	610 × 610 × 1167	624 × 762 × 1440	740 × 840 × 1536
Net Weight	150 kg	170 kg	194 kg
Compacted Trash	100 L	120 L	240 L
Uncompacted Trash	500 L	600 L	1,200 L

Additional Options

- A1/A2 size advertisement panel with acrylic cover
- A1/A2 size LED backlit advertisement panel
- audio speaker
- wifi hotspot
- black and grey standard colors (custom colors available on large orders)
- custom graphic vinyl wraps available

Power

- System Voltage: 12 Volts DC
- Power Consumption: 15Wh/day average
- Battery: silicone
  - 100L : 12V 36Ah
  - 120L : 12V 46Ah
  - 240L : 12V 46Ah
- Solar panel: crystalline silicon solar module
  - 100L : 35W
  - 120L : 55W
  - 240L : 55W
- LED status indicator icons

Video CleanCube

Featuring a crisp motion picture display for a distinctively smart, modern and premium feel.

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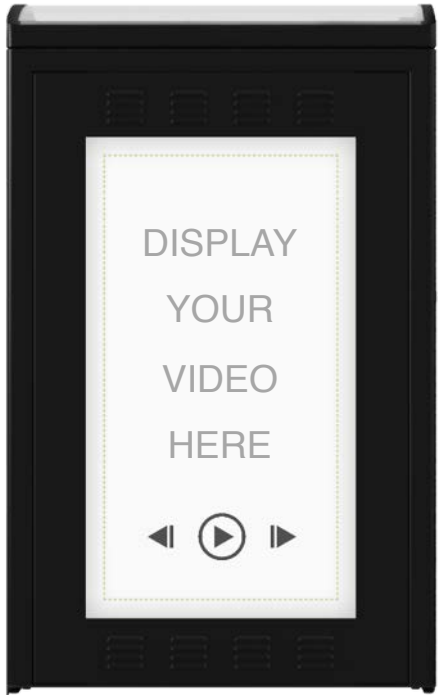
Ecube is the first to integrate video panels into smart trash bins. We also offer an online platform for remote management of all your multimedia content. Update your entire fleet from one convenient location. Outdoor or indoor models are available with varying levels of brightness for optimized visibility. Waterproof and dustproof to withstand elements.

*Due to its high power consumption, the Video CleanCube must be powered by an AC adapter.

Video CleanCube



100 L

Size: 648 x 692 x 1170 mm

Video Screen (32″): 413 x 719 mm

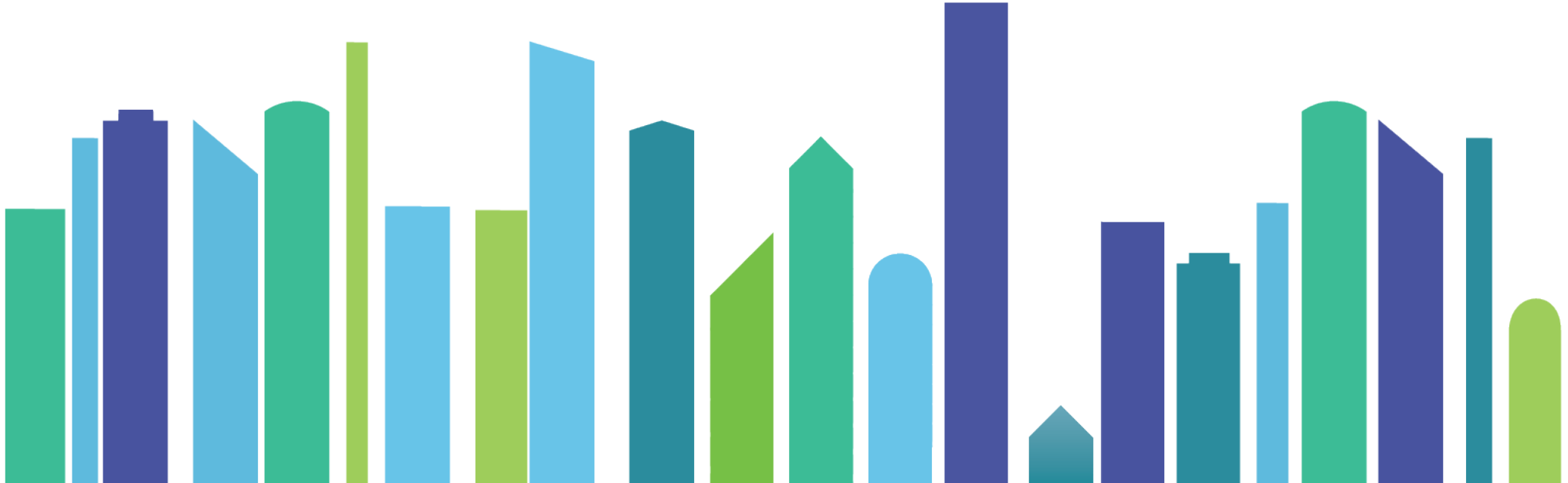
240 L

Size: 840 x 950 x1566 mm

Video Screen (43″): 530 x 942 mm

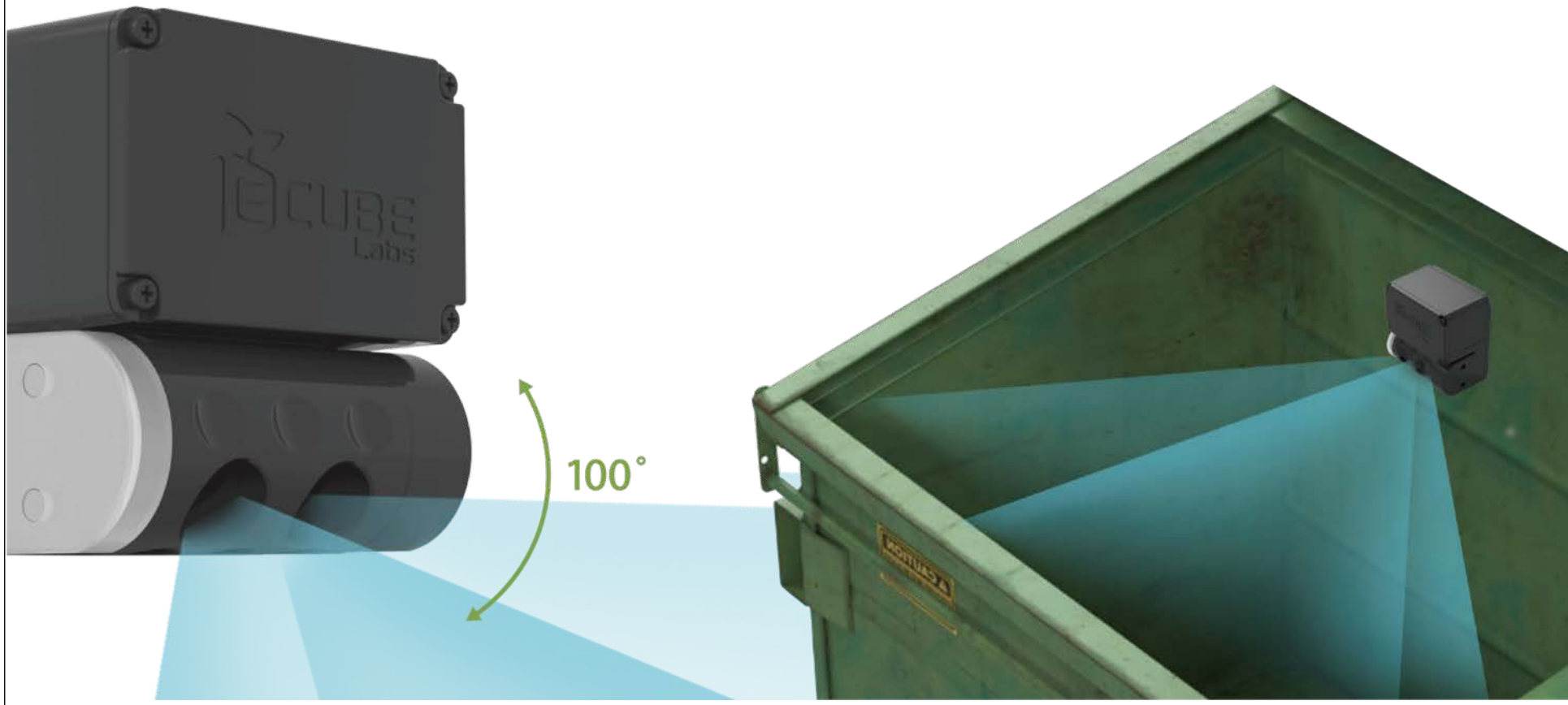
CleanFlex

Ultrasonic Fill-Monitoring Sensor



CleanFlex

Fill-Level Sensor



Fill Level

Communication

Fire Detection

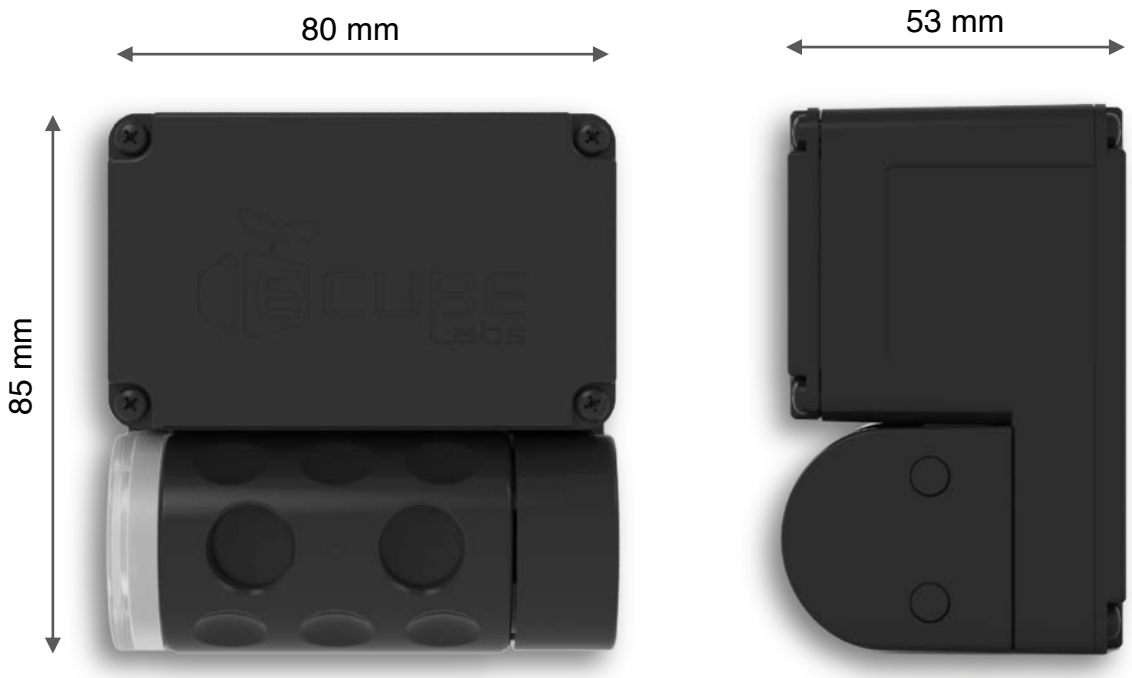
CleanFlex

Our ultrasonic sensor measures fill levels and sends it to our online IoT platform, CleanCityNetworks, where users can analyze data and optimize their collection schedules.

Versatile Applications

Attachable to various containers such as large dumpsters, public trash cans and clothes donation bins, the CleanFlex's rotating sensor allows for installations in a versatile range of settings.

CleanFLEX Technical Specifications



Size and Weight

- Size: 80 × 85 × 53 mm
- Weight: 350g

Fill Level Sensor

- Measurement technology: ultrasonic/sonar sensor 40KHz
- Range 2 to 400 cm
- Accuracy: solid materials ±4 cm, liquids ±1 cm[1]
- Resolution: 1 cm

Other Features

- Temperature sensor: for high heat or fire detection
- Location technology: GNSS GPS L1 C/A Code

Communication

- GPRS over GSM: 850/900/1800/1990 MHz
- WCDMA over UMTS: 800/850/900/1700/1900/2100 MHz
- LPWAN: LoRa / NB-IoT / LTE Cat.M1 available
- Subscriber Identity Module: USIM 2FF, 3FF

Durability

- Ingress protection rating: IP67
- Impact rating: IK10
- Operating temperature: -30 to 80 ºC

Power

- Battery type: 3.6V high performance lithium battery (D-type)
- Battery life: approximately 5 years[2]

Physical Properties

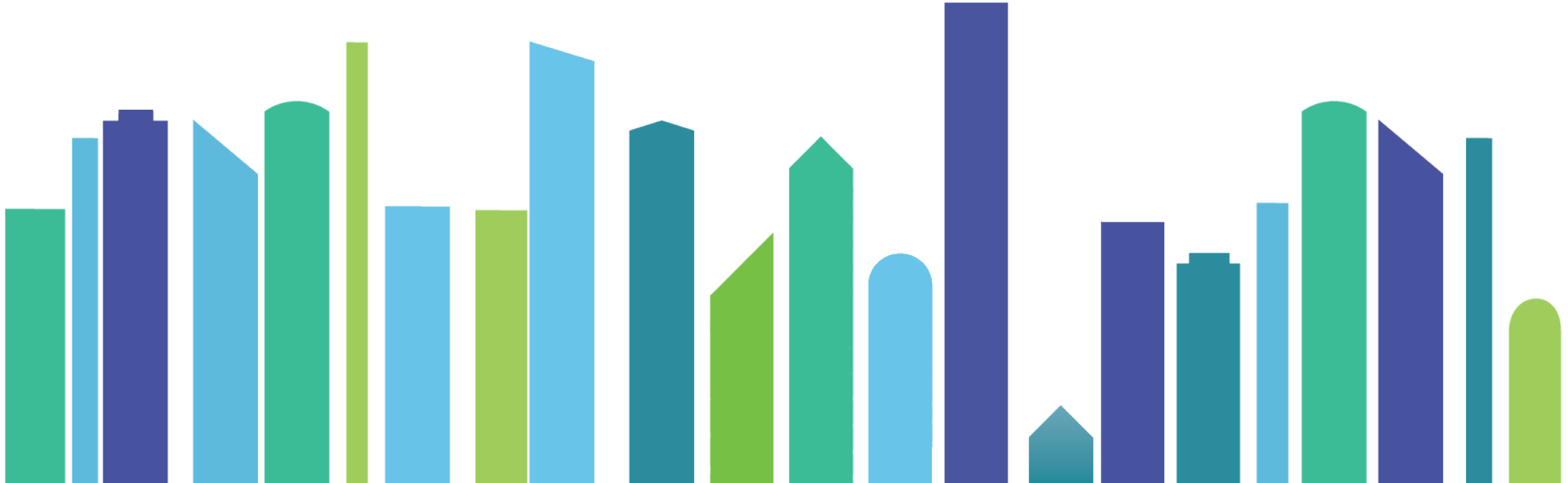
- Material: ABS/Polycarbonate
- Installation: optional mounting brackets available if needed

[1] Accuracy may vary depending on the configuration and the solid material being measured.

[2] At a setting of 4 transmissions per day with satisfactory network quality. Battery life will vary according to network strength and transmission frequency, anywhere from 1 to 10 years.

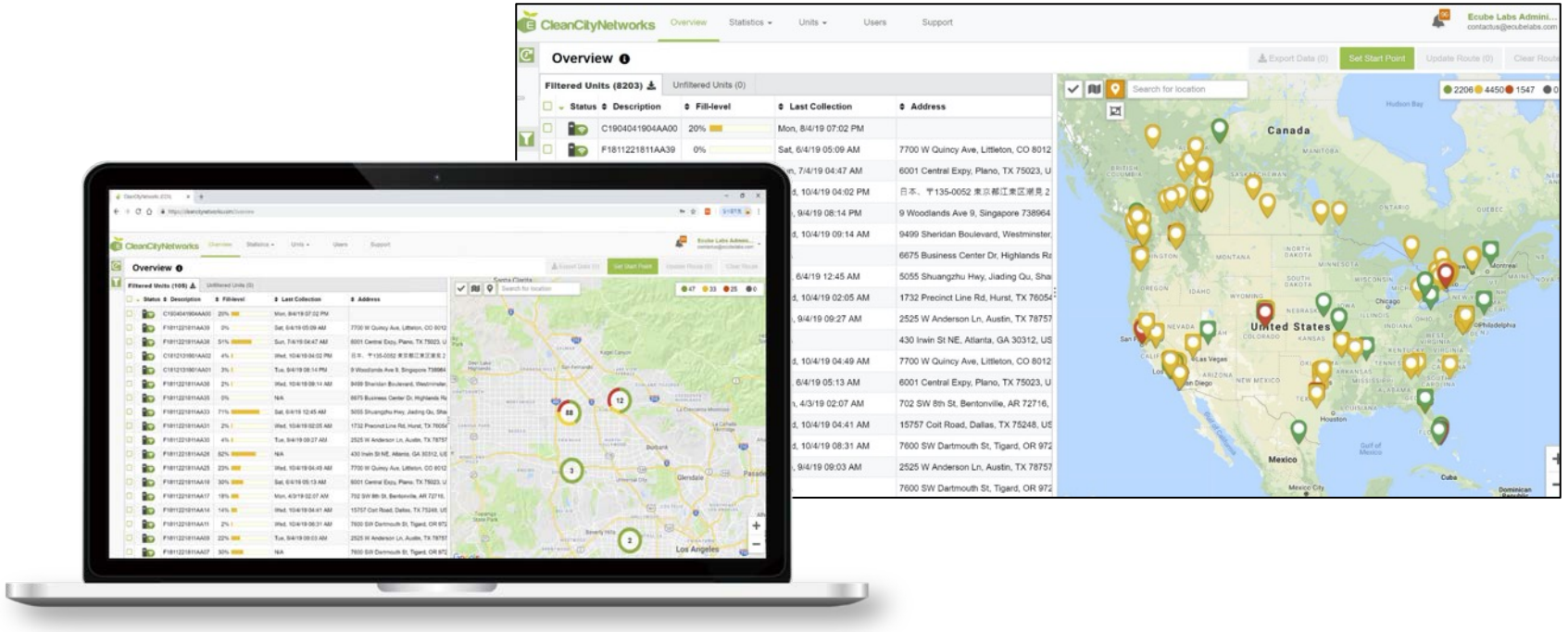
CleanCityNetworks

Cloud-Based Management Platform



CleanCity Networks (CCN)

Online platform for monitoring waste collections and fill levels from IoT devices.



Fill-Level Monitoring

Fill-Level Predictions

Reports and Statistics

Monitor Fill-Levels and Collections

CleanCityNetworks provides users the ability to monitor Ecube products and optimize collection routes based on current fill-levels. It also displays other product details (battery status, GPS location, collection history, etc.).

Globally Accessible Online Platform

CleanCityNetworks is accessible around the clock, anywhere in the world on a desktop (web browser) or smartphone (mobile app). Easy to use and maintenance-free as no installation is required.

CCN Pricing

Products Compatible with CleanCityNetworks

Increase operations efficiency with CCN

CleanCUBE

solar-powered

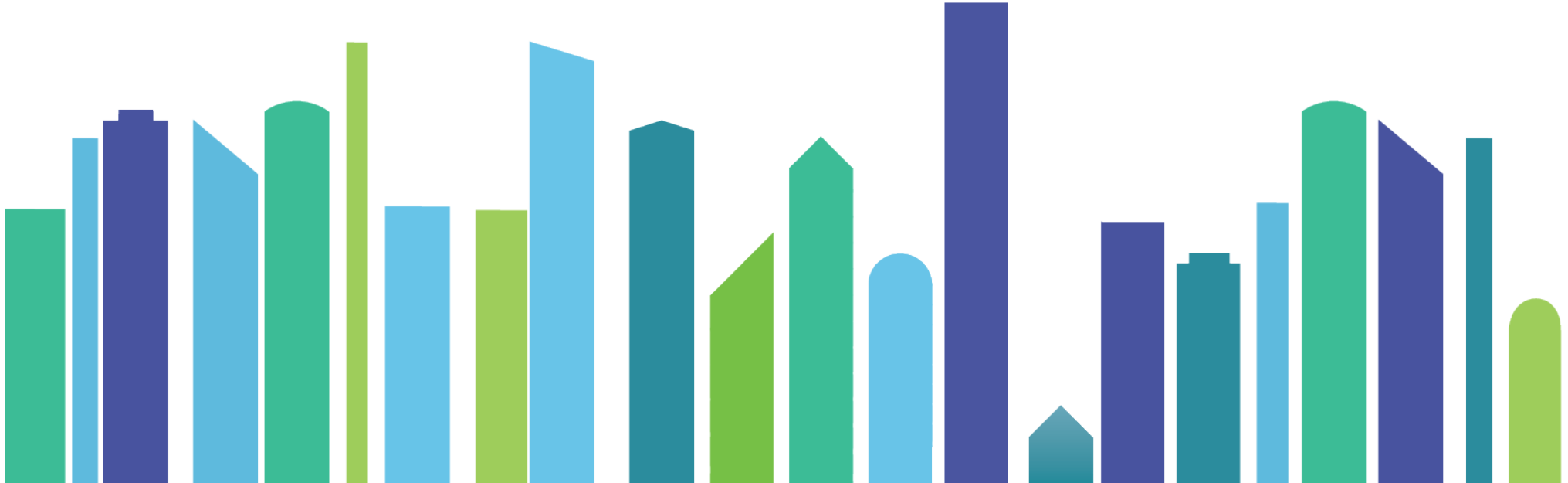
trash compacting bin

CleanFLEX

fill-level sensor

Ecube Labs

Our Key Technology Partner



Ecube's Visions

Smart solutions that empower cities to become clean and green.

SMART CITY SOLUTIONS

Global Leader in IoT Waste Solutions

Economic

Significant savings from optimizing waste operations

Smart

Arbitrary decisions replaced by data driven ones

Eco-Friendly

Low carbon footprint and less fuel emissions

Impact

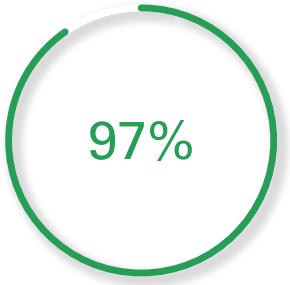
Our solutions make a distinct impact

SMART CITY SOLUTIONS

Our customers see substantial improvements

reflects actual data from current customers

Waste overflow minimized by as much as



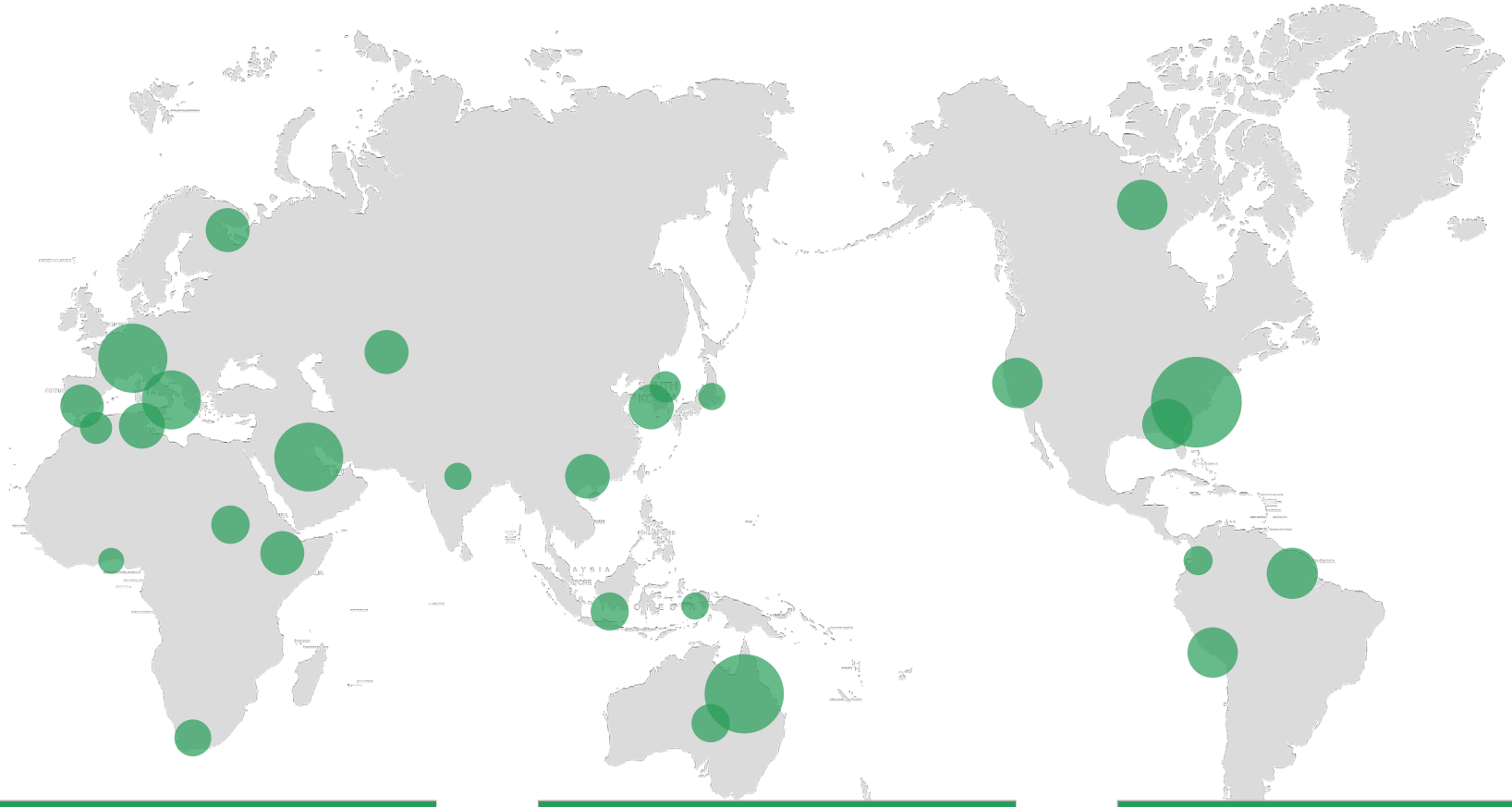
waste collection frequency reduced by up to

operational savings of at least

What are common operational issues in waste management?

1. Inefficient and unnecessary collections
2. High operational costs
3. Waste overflow

Ecube Labs Worldwide



worldwide deployment

9,010 units

companies we've served

244

cities with our products

127

*as of April 2019