

TECNIPLAST



DVC™
DIGITAL VENTILATED CAGE

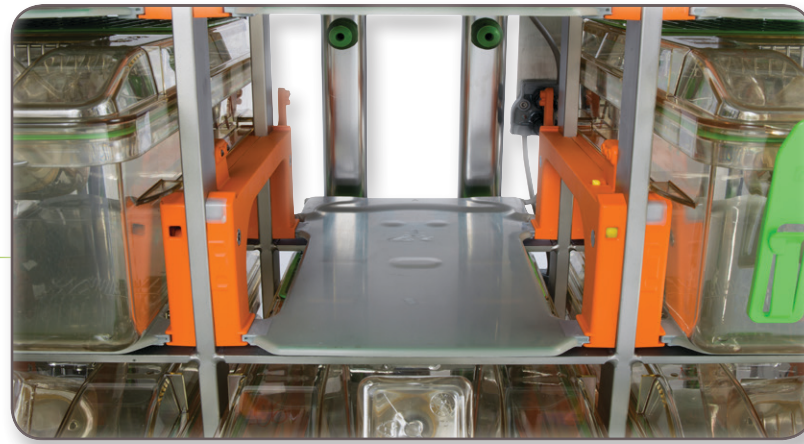
ABOUT THE SYSTEM



DIGILAB



DVC™
DIGITAL VENTILATED CAGE



By using digital technology, the DVC brings standardization for the improvement of animal welfare, facility operations, and research.

DVC has SEVEN MODULES which continuously capture and record data about conditions, events, and activity inside the cage without disturbing or affecting the animals.

An external capacitive sensor plate detects activity, captures the data and sends it to a central server where the DVC application is running.



Bedding Condition

- Reduce animal handling
- Avoid unnecessary washing and autoclaving
- Reduce bedding and labor costs

The Bedding Condition Module detects changes in moisture within the bedding.

This is a fully customized Module that requires a "learning phase" to define the parameters for what is considered a 'dirty' by the facility's standards. The Learning Phase takes place right after the system's installation.



Food & Water Levels

- Reduce the cost of supplies
- Minimize the risk of human errors
- Improve animal welfare

An infra-red system embedded in the runners detects food and water levels. It will also detect when a bottle is missing or misplaced. In either case, an alarm will go off to alert the staff plus an LED light on the runner will turn-on to signal the position of the that needs attention.



Animal Activity

- Expand the researchers' options
- Monitor animal activity without disturbing the animals

The DVC can monitor the animal activity inside the cage by means of a sensor plate externally located in each cage position. The system's software captures data daily and compares it against information obtained on previous days.

The Animal Activity Module doesn't replace the Guide's recommendations for daily checks, but greatly assists in daily observations and contributes to animal welfare.



Leak Detection

Prevent the loss of animals and reduce the risk of hypothermia due to AWS leakage or flood

DVC detects water leakage inside the cage as small as 100 to 150 ml.

When a leakage/flood occurs, the system sends an alarm to the operators for immediate action to save the animals.



Facility Planner

Improve your facility's daily workflow, task assignment, and utilization of resources

Facility Managers can assign tasks based on staff skills and availability.

This Module allows managers to prioritize the workflow during emergencies or when a breakdown occurs, and allocate workload based on health considerations and barrier restrictions.

Available cage space can be identified and reassigned to Principal Investigators (PI's) when needed.

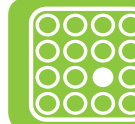


Cage Identification

Quickly identify cages that need attention or follow up based on study protocol

Sensors located on the rack runners activate an LED light to identify any cages in need of more follow up.

The interface will give the operator a snap shot of the rack identifying missing cages or cages that require attention.



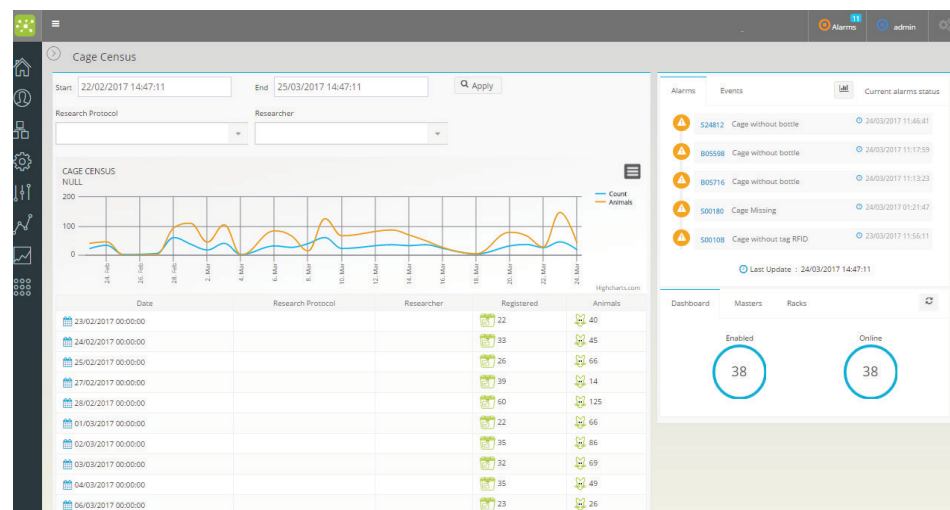
Cage Census & Location

Remotely detect and locate real-time cage occupancy

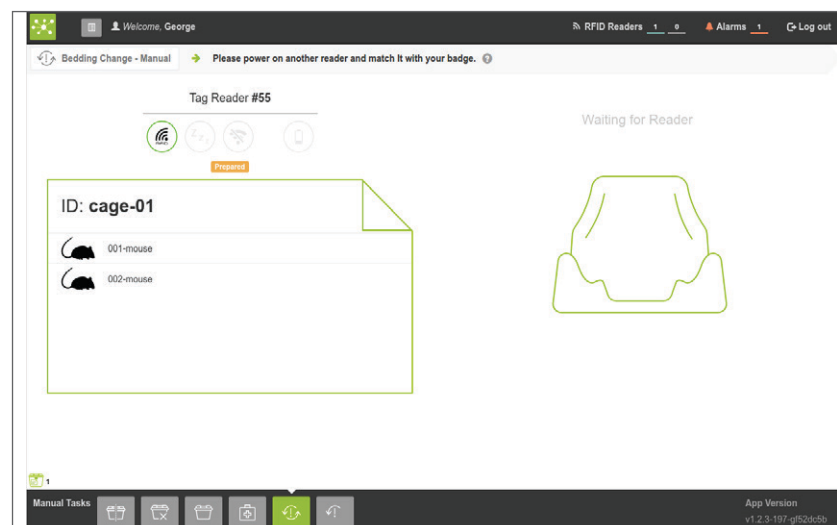
DVC can perform real-time cage inventory and generate occupancy and per diem reports.

The Cage Inventory Module can be integrated with the facility's existing Animal Management System (AMS) for optimized colony management, as well as billing and invoicing.

It is possible to automatically track cages over a period of time or for the duration of a study.



The web-based interface allows to remotely monitor and manage all the cages registered in the system and to generate real-time inventory reports.



Example of the Operator Interface during bedding changing



Filter top with RFID tag for cage identification and location



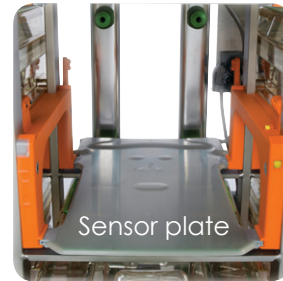
System Components

The standard components of DVC are:

- Cage rack with DVC plates and dedicated runners for each cage position
- RFID tagged cage tops for every cage on the rack
- DVC top holders
- RFID readers with a charger
- DVC master
- DVC software

Requirements

- Ethernet connectivity in the animal room where the DVC master will be installed
- Wireless or wired connectivity to the DVC server
- A laptop or tablet to access the DVC web application
- Additional IT requirements apply. Ask for details.



Sensor plate



Master

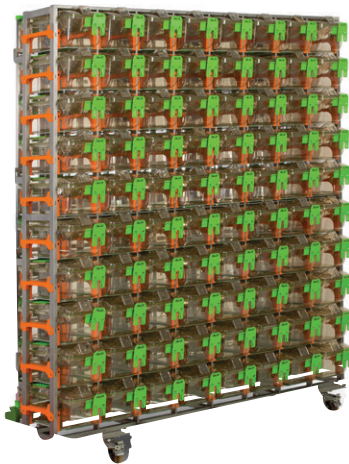


Top holder

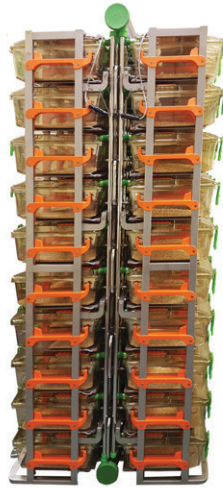


RFID reader

Single configuration



Double configuration



Charger with two readers



Reader in Top Holder



More Information

- One DVC master manages up to four (4) single-sided or two (2) double-sided racks.
- The DVC master is installed on the Air Handling Unite (AHU) and operates independently.
- The racks with DVC plates are washable and autoclavable. The plates have been tested through autoclave cycles at 121°C/250°F, simulating a life span of more than five years (three autoclaving cycles per year), while maintaining full functionality. A test report is available upon request. All the other system components are not autoclavable.
- The DVC rack and cages can be washed in a standard rack washer or a tunnel washer. Chlorine-based detergents should not be used. See recommended SOPs for details.
- When using DVC, the cage change can be done on a changing station, a biosafety cabinet, or even table top.