iotaSciences

isoHub

TECHNICAL DATA SHEET

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INTRODUCTION

The isoHub is an automated microscope that can be combined with an isoCell or isoPick as part of either the Cloning Platform or scPicking Platform, respectively. Inclusion of the isoHub enhances workflows for both platforms, enabling quick and easy single-cell chamber selection when scanning through GRIDs, and seamless data transfer between devices. The isoHub also provides options to add imaging and fluorescence capabilities to your single-cell workflows.

SIMPLE SINGLE-CELL VERIFICATION

As GRIDs are made using only fluids, this eliminates the problem of optical edge effects that comes with the use of conventional plasticware. As a result, single cells are visible on the isoHub immediately in a single 10x objective field of view after plating, enabling quick and easy verification of singularity. Phase contrast microscopy with the isoHub makes visualisation and identification of single cells simple.

EASY-TO-NAVIGATE

The hand-held controller and automated stage make it easy to move between GRID chambers and select those containing single cells of interest. Eliminating the need for manual movements through sequential GRID chambers and manually noting chamber coordinates, this further streamlines your single-cell workflows. The isoHub automatically records the coordinates of selected chambers, saving time and reducing the chance of error.

SEAMLESS WIRELESS DATA TRANSFER

Wireless communication between paired isoHub and isoCell or isoPick instruments enables the automatic synchronisation of data, so you are always ready for the next step in the workflow.

FLUORESCENCE MICROSCOPY (OPTIONAL)

A compact, but highly efficient optional fluorescence module can be connected to the isoHub, allowing the screening of cells/colonies via fluorescence microscopy. With a 16-channel LED light source and simple on/off button operation, the addition of fluorescence to your single-cell workflow couldn't be easier.

IMAGE CAPTURE SYSTEM (OPTIONAL)

Do you need to record the morphology of your cells of interest, document single-cell confirmation, prove monoclonality or collect images of single-cell outgrowth? If so, an optional imaging system can be added to the isoHub to facilitate such requirements. Comprising of a high-resolution camera with PC, large touch screen, and our isoHub Image Capture App, you'll have everything you need to record visual information throughout your single-cell workflow. The system makes it easy to capture and store high-resolution photos, providing evidence of monoclonality during a cloning workflow for example.

SPECIFICATIONS

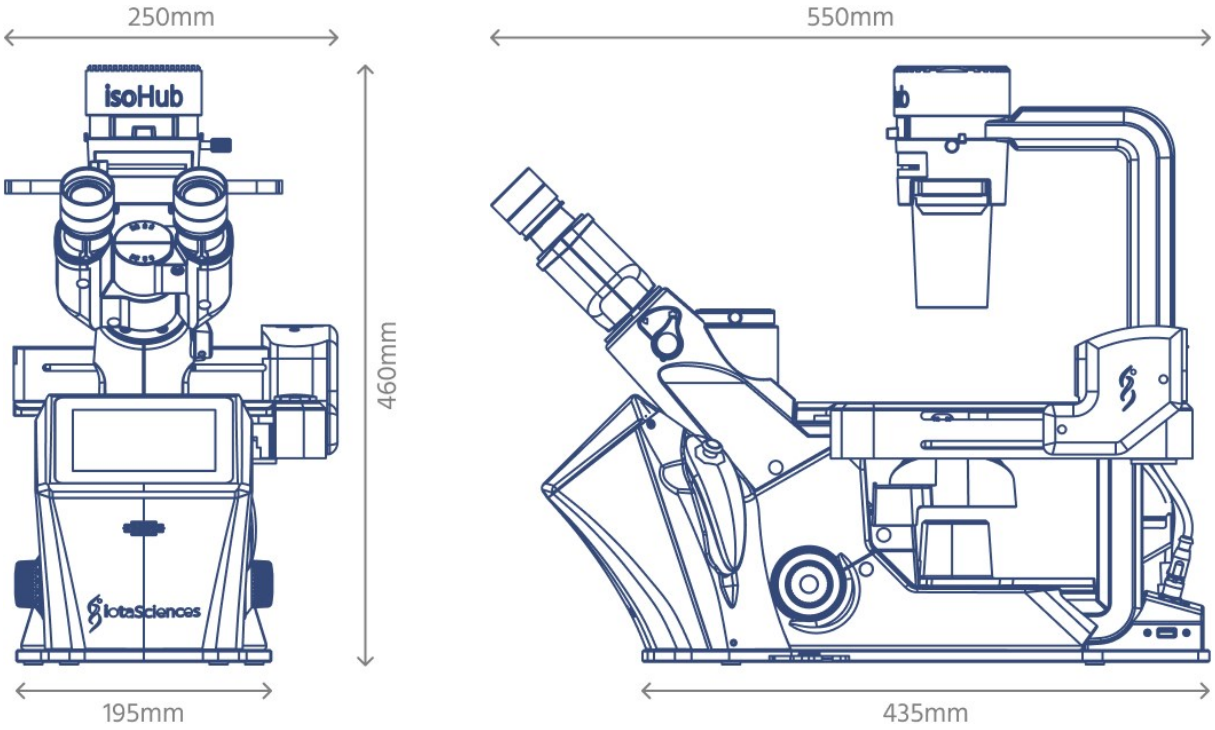
AUTOMATION	• Motorised microscope stage guides movement through GRIDs • Automated chamber coordinate recording and selection with hand-held controller • 2.4 GHz wireless data transfer between isoHub and isoCell/isoPick so GRID data is synchronised between devices automatically
INVERTED MICROSCOPE	• High-quality optics from market-leader Evident (previously Olympus) • Brightfield and phase contrast microscopy capabilities for clear visualisation of single cells • 4x, 10x and 20x objectives as standard • 1 additional space for a 4th objective (objective not provided unless requested)
OTHER ISOHUB FEATURES	• Compatible with standard cell culture plates, culture flasks and 60 mm dishes • Hand-held controller enables easy navigation between GRID chambers and selection of chambers of interest • Heated bed available (additional cost) • Easy-to-navigate touch interface • UV light- and ethanol-resistant • Camera port • USB port for easy software updates (requires Windows 10/11)

FLUORESCENCE (OPTIONAL)	• pE-4000 16-channel fluorescence module from CoolLED • Excitation wavelengths from 365-770 nm • Use up to 4 channels at the same time • Intensity of each channel can be adjusted from 0-100% • Simple on/off button operation
IMAGE CAPTURE SYSTEM (OPTIONAL)	• Imaging system to easily capture and store images of GRID chambers • 5.0 MP colour camera with heatsink • 14" full HD USB-C touch screen • Dell MFF Optiplex - minimum 1 TB SSD, 16 GB RAM & Intel i5 processor • Wired and wireless network compatible • Wireless keyboard & mouse
OPERATING REQUIREMENTS	• Temperature: 16–35°C (60–95°F) • Humidity: 40% to 60% • Power supplies input: 100-240 V AC, 50-60 Hz • isoHub power supply output: 24 V DC, 50 W • PC power supply output: 19.5 V DC, 90 W • CoolLED pE-4000 fluorescence power supply output: 12 V DC, 138 W max
DIMENSIONS	• isoHub only: 250 x 550 x 460 mm • isoHub + RFA unit + CoolLED pE-Universal Collimator: 250 x 620 x 460 mm (excluding light source and control panel) • isoHub + Image Capture System: 330 x 580 x

	610 mm
WEIGHT	• isoHub only: 8.0 kg • isoHub + RFA unit + CoolLED pE-Universal Collimator: 9.5 kg (excluding light source and control panel) • isoHub + Image Capture System: 13.0 kg

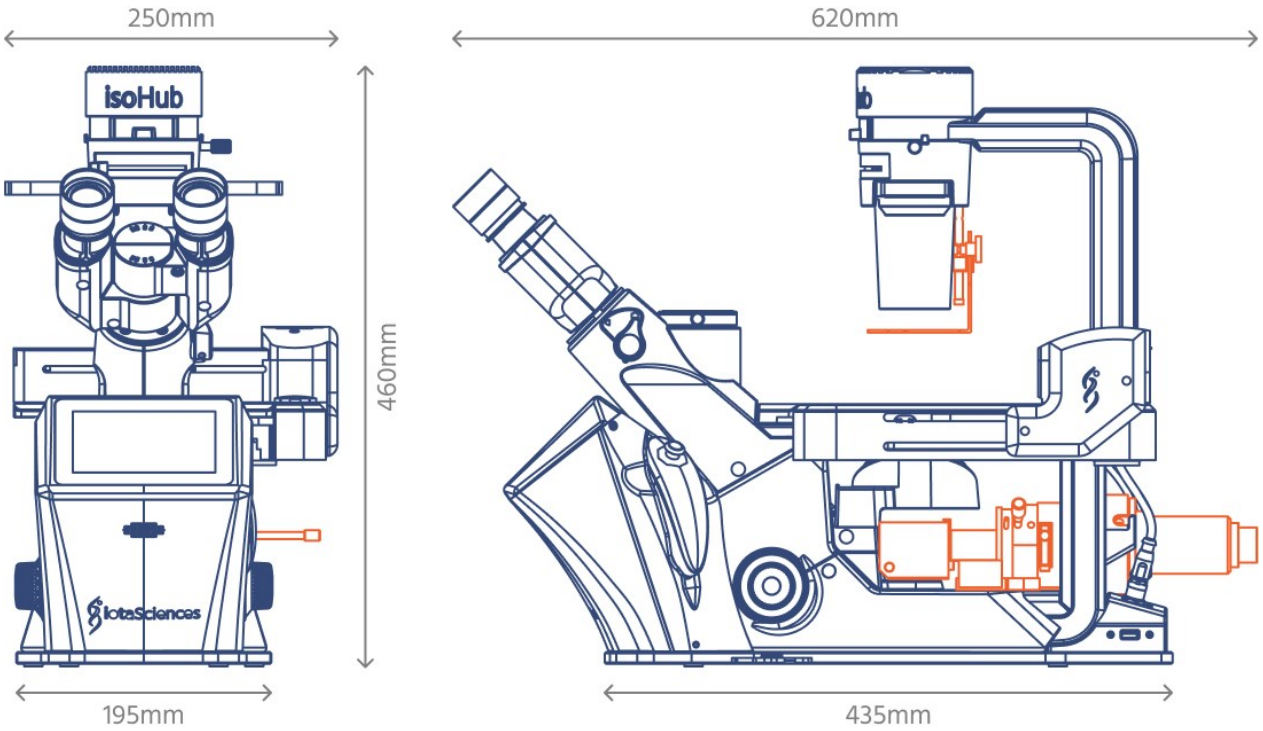
PRODUCT SCHEMATICS

ISOHUB WITHOUT OPTIONAL ADD-ONS

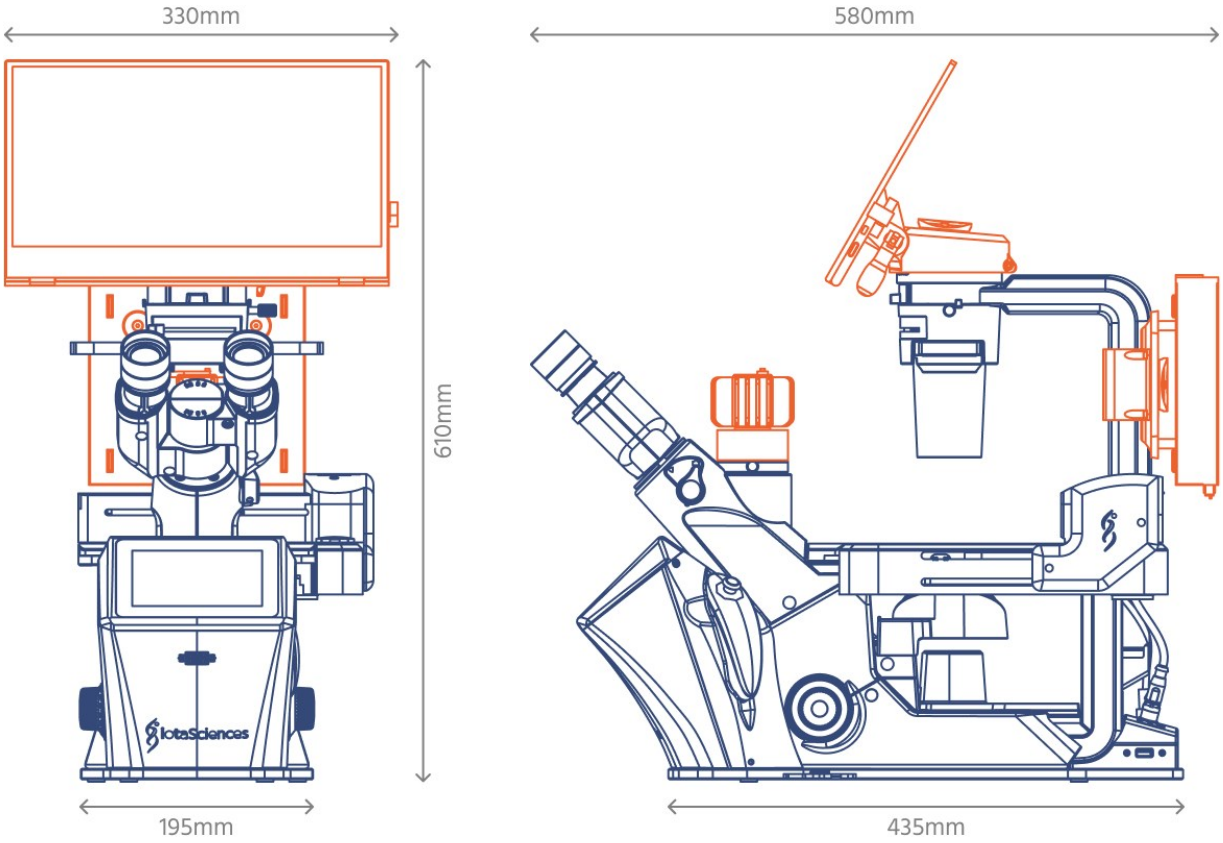


ISOHUB + RFA unit + CoolLED pE-Universal Collimator

(light source and control panel not shown)



ISOHUB WITH ADDITIONAL IMAGE CAPTURE SYSTEM



Additional Technical Data Sheets (available on iotaSciences website)

- For use of the isoHub alongside an isoCell instrument as part of the Cloning Platform, please see the isoCell Technical Data Sheet for additional technical specifications.
- If using the isoHub alongside an isoPick instrument as part of the scPicking Platform, please see the isoPick Technical Data Sheet for additional technical specifications.
- Further information regarding the CoolLED pE-4000 fluorescence module can be found in the CoolLED pE-4000 specifications document.