EVIDENT

Incubation Monitoring System

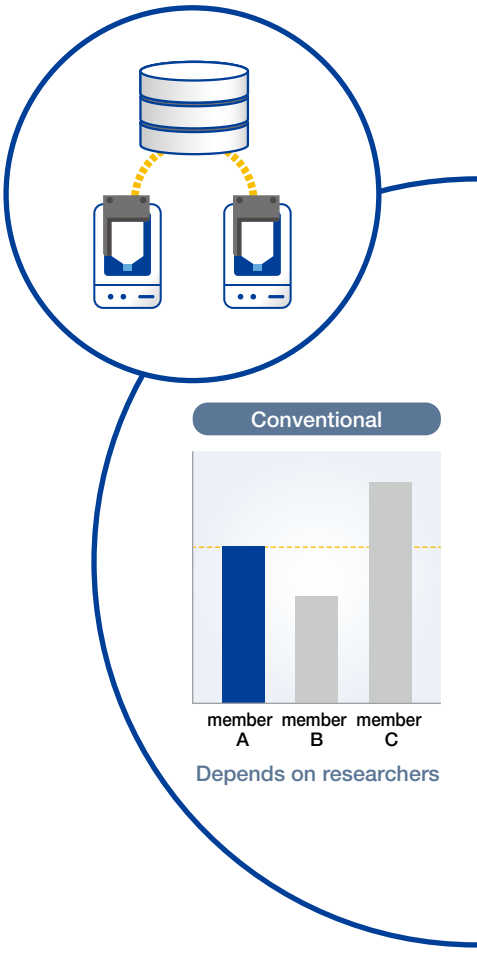
CM20

OLYMPUS Provi

Cell Culture Just Got Smarter

24/7 Remote Cell Culture Incubator Monitoring

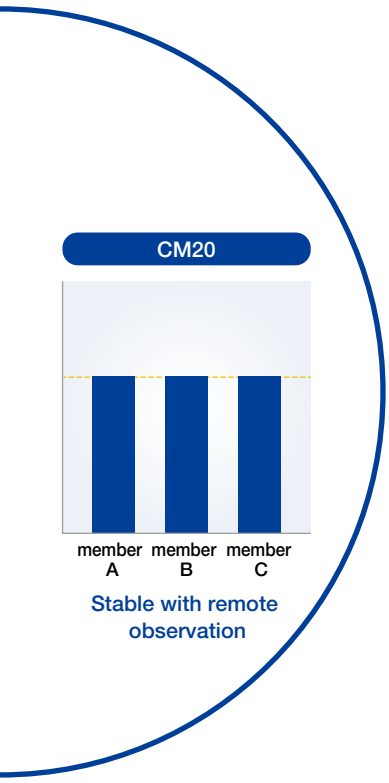
Label-Free, Quantitative Results



Consistent Results

Cultivating cell cultures can be a costly, complicated, and time-consuming process. Now, there's a simpler way with the CM20 incubation monitoring system.

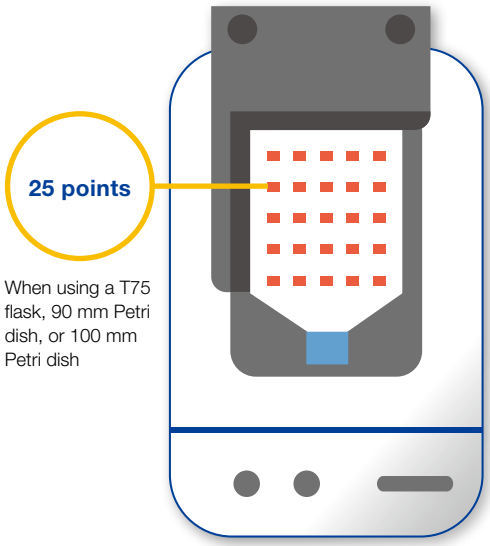
The CM20 system provides quantitative data remotely—place the CM20 with your cell cultures in the incubator, and the system will periodically scan it, count the number of cells, and determine confluency. The data are wirelessly communicated to a PC or a tablet through an optional router, so you can monitor your cultures' progress without entering the clean room.



Throughout Your Lab

Cost Effective

Label-Free, Quantitative Results



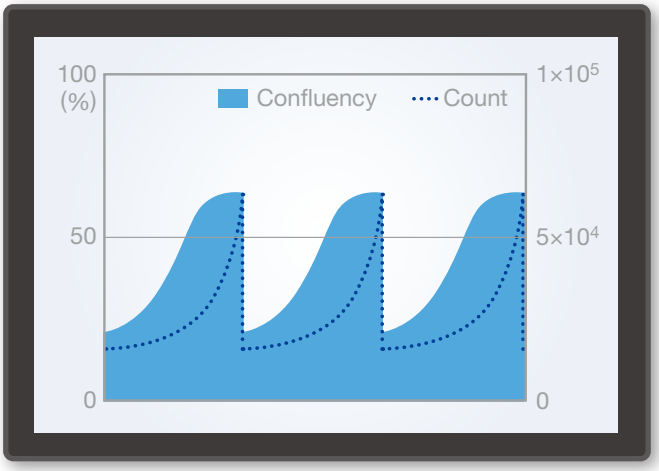
When using a T75 flask, 90 mm Petri dish, or 100 mm Petri dish

Multipoint Cell Culture Monitoring

Creating and maintaining a standardized cell culture workflow can help mitigate grow rate variations caused by factors such as contamination, user bias, and cell culture media. The CM20 system's visual information and quantitative records enable you to identify these problems early in the culture process. The monitor scans multiple points or the entire surface in your culture vessel to track the health and confluency of your cell cultures. It is also possible to scan multiple wells in a microplate. Choose your own customized positions to monitor, or use the predefined templates.

Label-Free Cell Monitoring

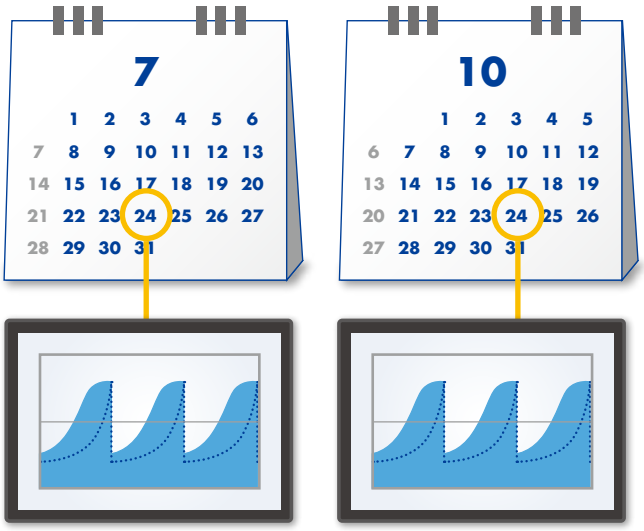
With the CM20 system, there is no need to stain or dissociate the cultures to check their status. It acquires quantitative data from label-free cells, reducing the chance of harm to your cultures.



Leave Your Cultures in the Incubator

The monitor lets you track the health of cell cultures without removing them from the incubator, reducing the risk of contamination or damage from temperature changes and vibration. Its unique design enables you to fit up to four head units inside a standard incubator for greater efficiency.

Consistent Results Throughout Your Lab

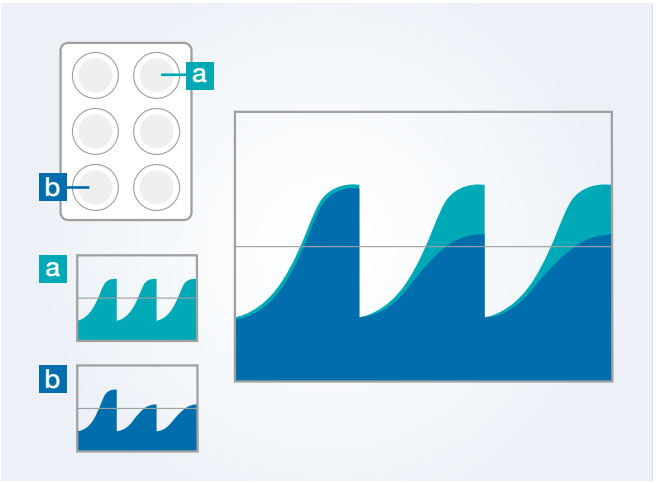


Reproducible Cell Observation Data

The monitor automatically records observation data that can be easily stored, reused, and transferred to reduce training time and help ensure that different users are applying the same analysis parameters.

Compare Data Across Samples

The system can monitor a variety of vessel types, including dishes, 6- to 96-well microplates, and single-layer and multilayer flasks, enabling you to easily compare quantitative data across a range of culture vessels during expansion or experimental protocols. Culture status data can also be compared with past measurement data and shared with team members, facilitating control experiments and troubleshooting.



Efficiently Train Lab Members and Techs

The monitoring data and compare functions enable you to check whether lab members are following the correct protocols. Lab managers can also use the system to discuss these data with the team.

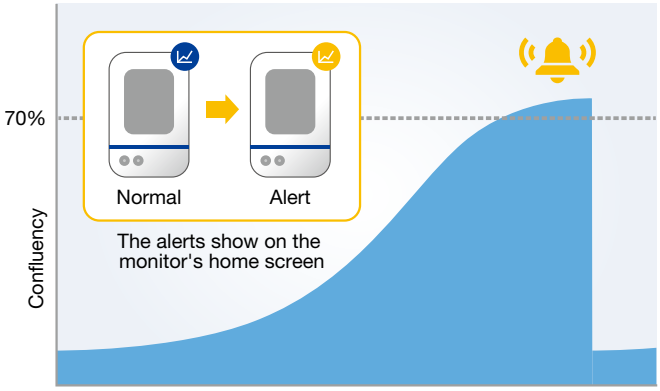
Cost Effective

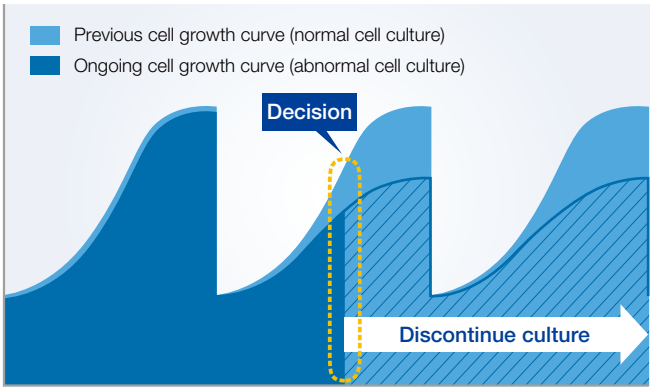
No Need to Enter the Clean Room for Monitoring

Every time you enter the clean room, there is an operational cost for consumables and qualifications. Reduce costs by remotely checking the status with your PC or tablet.

Accurately Time Cell Passage

Time cell passages consistently and without the subjectivity associated with manual counting. Based on your set standardized parameters, the system can notify you when your cells are ready for passage.



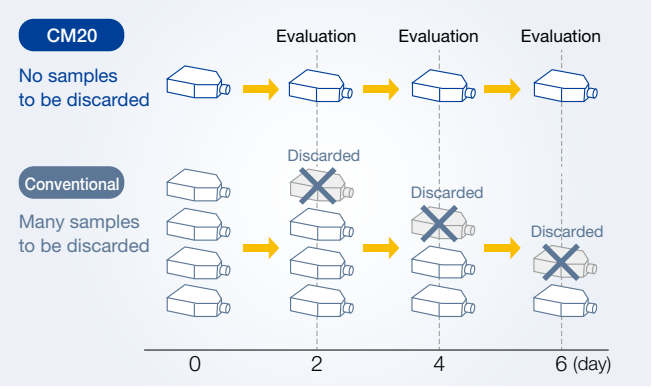


Identify Abnormalities Early in the Process

By comparing current and past data, you can detect an abnormal cell culture earlier in the process, saving time and reducing the use of expensive lab consumables on unusable cell cultures.

Reduce Your Sample Cost

Since the CM20 system collects data on label-free cells, there is no need to grow the extra samples that are normally destroyed during the staining and dissociation process.



Supports Various Vessels

Olympus' epi-oblique optical system enables the CM20 incubation monitoring system to have a compact, flat design that accommodates most standard cell culture vessels. Simply place the culture vessel you normally use on the CM20.

96-well microplate

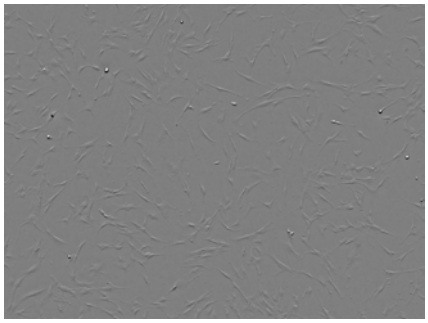
T175 flask

Multilayer flask

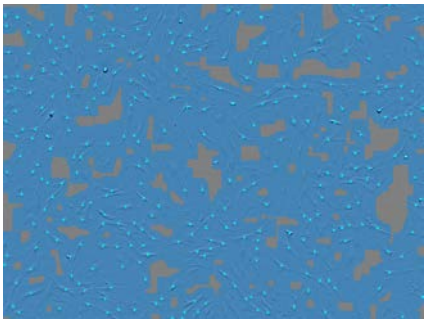
Sample Images

Raw images are analyzed based on the analysis parameters you prepared in advance.
The system's automatically created graphs make it simple to share and compare your results.

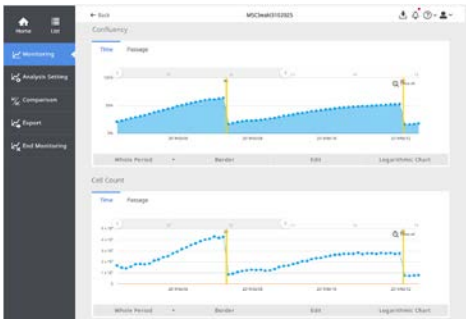
Mesenchymal stem cells (MSC)



Raw Image

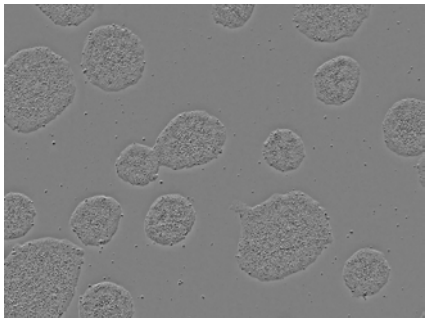


Analysis Image



Graph

Induced pluripotent stem (iPS) cells



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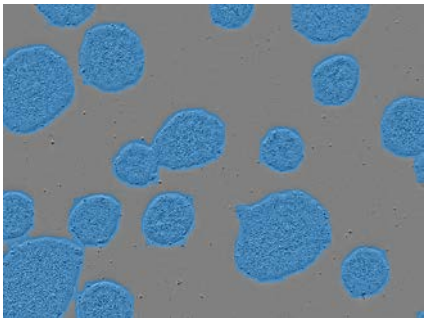
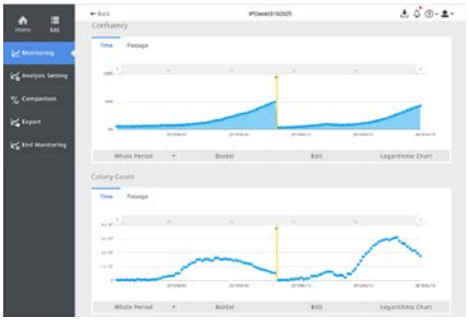


Analysis Image



Graph

CM20 System Specifications

Hardware

CM20H: Incubation Monitoring Head

Installation environment (inside the incubator)	Temperature: 37 °C (98.6 °F) + 0.3 °C (0.5 °F), humidity: 0—99%
Applicable vessels	Petri dish (90 mm (3.54 in.), 100 mm (3.94 in.)) Microplate (6 well, 12 well, 24 well, 48 well, 96 well) Multi-layer flask Flask (T25, T75, T80, T150, T175, T225)
Optical performance	Field of view (H × V): 2.84 mm × 2.13 mm (0.11 in. × 0.08 in.); (image size per one shooting) Image size: 1280 × 960 pixels Illumination wavelength: λ = 630 nm (LED) Illumination method: epi-oblique illumination
Cable length	Approx. 4.5 m (14.8 ft)
Sterilization resistance	Autoclave sterilization (for vessel holder and sponge rubber only) UV ray sterilization Hydrogen peroxide (H_2O_2) gas sterilization (CM20H only)
Disinfection resistance	Peracetic acid disinfection (cold sterilant) Alcohol disinfection
Weight	Approx. 3 kg (6.6 lb)

Incubation Monitoring Station

Installation environment (outside the incubator)	Temperature: 10—35 °C (50—95 °F), Humidity: 10—80%
Number of connectable CM20H	Max. 4 heads
HDD capacity	4 TB

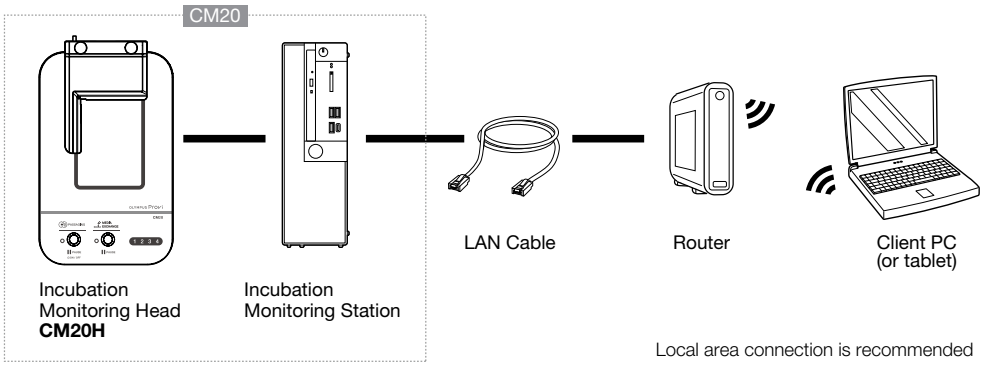
Software

User management	13 user licenses (max)
Project setting	Project creation: new or load Setting mode: standard or custom Culture conditions: vessel information, culture information etc. Cell analysis conditions: new or load Access authority: public or private Imaging interval: selection type
Analysis	Cell analysis: cell confluency, cell count iPS/ES cell analysis: colony confluency, colony count, colony size Data statistics: growth rate, doubling time
Browsing	Image: entire area (tiling), fixed points Analysis result: graph (time, passage)
Export	Data export: image file, movie file* (jpeg and avi), CSV file* *only for fixed points Import/Export project: the system or the selected data Create report (PDF)

Client PC (recommended system configuration for CM20 software)

OS	Microsoft® Windows® 10 (64-bit)
CPU	Intel® Core ™ i3 (2.1 GHz) or more
RAM	4 GB or more
HDD	Free space: 2 GB or more
Screen resolution	1366 × 768 or more
Web browser	Google Chrome ™

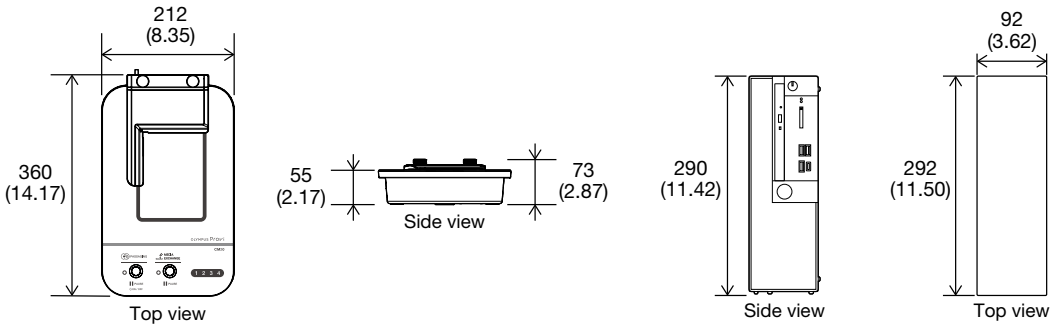
System Diagram



Local area connection is recommended

Dimensions

(unit: mm (inch))



*Dimensions may be different depending on your region.

Graphs are for example only and may vary from actual product.
Network access may be subject to customer IT department permission.

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