

Real Time Cultured Cell Monitoring System

Long-term observation of Cultured cells is now possible with programmable multiple points and focuses all in Incubator. Specimens always safely rest in our well reputable incubator while being monitored without any environmental stress. Time-lapse images can be conveniently compiled into movie files, which enables phenomena previously unseen to be readily observed and documented. With programmable Multi-point image capturing technique, not only the kinetics, but the screenings of multiple specimens with different protocol configurations can be performed in one single incubator all at the same time.



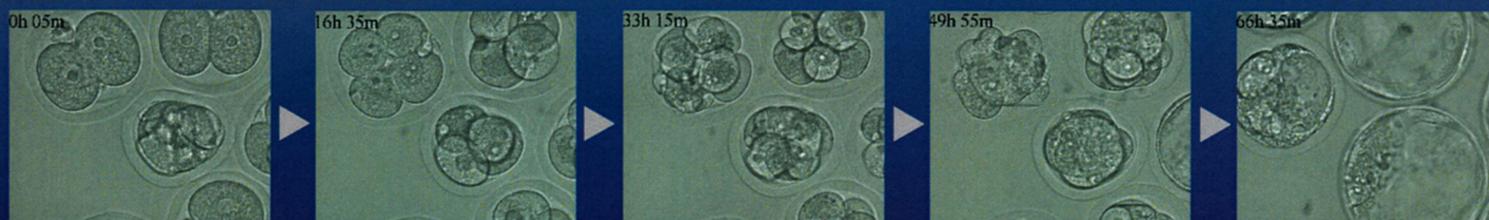
※ Computer sold separately

Completely Sealed Camera unit equipped with our proven quality incubator (80L, Air-jacketed) provides the optimal environment for specimen to be cultured and monitored without any environmental change for a long period. Newly added Multiple Points Image Capturing system enables to observe samples in micro plates with 96 wells or multiples points in a single dish.

The software allows to set any points in the field of view that a user wishes to continuously observe with any intervals from 1 min to 24 hours of choice. Images taken with the software can be easily compiled to a movie file.

The motorized objective lens operates with a stepper motor which enables the objective lens to move vertically with 0.5 micrometer increments. It allows a specimen to be precisely focused, and the software automatically selects the most focused images.

Rat Embryos expressions: Monitored with 20x objective lens, 5 minutes interval



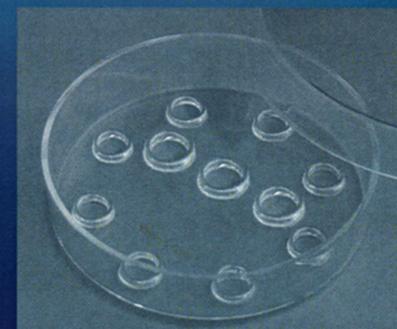
0h 05m
2-4 Cell Stage. Polar Body can be seen

16h 35m
4 Cell Stage

33h 15m
8 Cell Stage

49h 55m
Post-8 Cell Stage embryos with compactions of inner cells

66h 35m
All the embryos are developed to Blastocyst Stage.



Specially made IVF dish, was used to monitor the embryos.

■ Specifications : Incubator

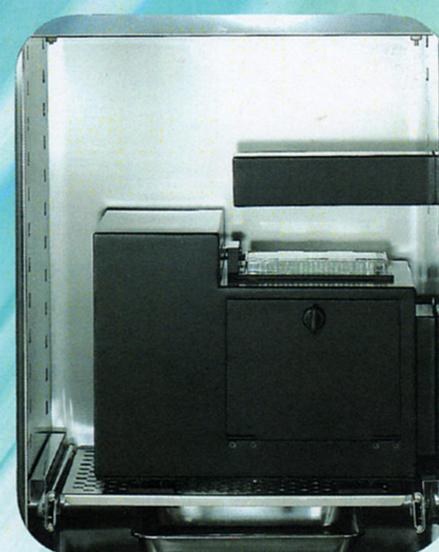
Interior Volume	80 Liters
Exterior Dimensions	W735 x D510 x H760 (mm)
Interior Dimensions	W418 x D377 x H510 (mm)
Shelf Dimensions	W350 x D350 x H11 (mm)
Insulation	Direct heating, Air-Jacket, Fiberglass insulation
Controller	PID Independent Electronic Control
Temperature Range	5°C above ambient to 50°C (122F)
Control Accuracy	±0.3°C
Humidifying Method	Natural evaporation with Humidity pan
RH	Ambient to 95% @37.0°C (98.6F)
CO ₂ Control Range	0~20%
CO ₂ Control Accuracy	±0.1%
O ₂ Control Range	2~18% (Optional)
O ₂ Control Accuracy	±0.5% (Optional)
Weight	78kg (172lbs)
Power (Incubator)	AC117V, Max 7A 50/60Hz
Power (Camera unit)	AC117V, Max 5A 50/60Hz



Control panel for Temperature in the camera unit

■ Specifications : Camera Unit

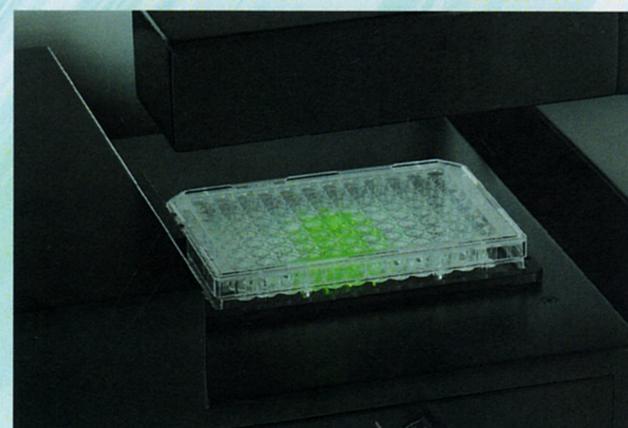
Resolutions	1.4 Mega Pixels (1392X1040)
Camera Type	Monochrome Cooled CCD
Cooling	Peltier Device, Ta -25°C
Objective Lens	4x (NA0.2) , 10x (NA0.22) , 20x (NA0.45)
Field of View	640um x 480um with 10x objective lens
Image Capture Intervals	1min~24 hours
Light Sources	Green LED for Bright Field Imaging, Transmitted Lighting. Blue LED for Fluorescence Imaging, Epi-fluorescence Illuminator
Excitation Filter	Peak:472.5nm (±30nm)
Fluorescence Filter	Peak:520.0nm (±35nm)
Dichroic Mirro	503nm to 730nm



■ Specifications : Sample stage

Objective lens control Drive	Stepper Motor
Increments (X axis)	0.05um
Increments (Y axis)	0.05um
Increments (Z axis)	0.5um
Positioning Repeatability	Less than 10um (XY axis)
Sample holder travel range	104X68mm

※ Sample movies available at <http://www.astec-bio.com>



ASTEC

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※ Specifications are subjected to change without notice.