

INCUTM

Incubator Analyzer

Technical Data



Faulty incubator controls jeopardize the health of critical-care babies, lengthen hospital stays, and increase healthcare costs, making thorough incubator testing essential.

The INCUTM Incubator Analyzer is the only device on the market today that accurately measures seven key parameters at once in a single, integrated unit, saving time and ensuring more accurate results.

Designed around AAMI and IEC standards that specify incubator and radiant warmer sound levels and thermal characteristics, the INCU simultaneously measures airflow, relative humidity, sound, and four independent temperatures. Adjustable measurement intervals allow technicians to configure the unit to meet their facilities' testing requirements. Technicians are free to do other work while the device collects and records data.

The INCU is compatible with both closed, forced-convection incubators, and open infant warmers, including transportable, air-controlled, and baby-controlled units. Lightweight and portable, the INCU fits inside the incubator and operates as a stand-alone device or with a personal computer for automated testing. In stand-alone mode, the INCU displays measured parameters repeatedly in cycle fashion.

INCU software lets technicians upload setup parameters and download the test results to a PC file, or print the data in reports with full-color charts and graphs.

Key features

- Simultaneous measurement of humidity, airflow, sound, and 4 independent temperatures
- 24-hour continuous testing (battery); 35-hour continuous testing (main power)
- Battery operated
- Adjustable measurement intervals
- Compatible with closed, forced-convection incubators and open infant warmers
- Stand-alone measurement or automated testing with PC
- Windows® compatible INCU software for easy data collection, analysis, and documentation
- Numerical and full-color graphical reports

Technical specifications

Power supply

Maximum over-voltage
264 V ac

Input voltage range
100 V ac to 240 V ac

Input frequency range
47 Hz to 63 Hz

Power consumption
< 60 V A

Fuse rating
2 A slow blow

Battery
Rechargeable sealed lead-acid type NP7-6
YUASA, 6 V, 7 Ah; operates for 24 hours
continuously; low-battery alert

Charger
600 mA minimum, 8 V ac/dc (charger must be
agency-approved, depending on the country)

Dimensions (WxHxD)
151 mm x 34 mm x 101 mm

Sound level

Measuring range
30 dbA to 80 dbA

Resolution
0.1 dbA

Accuracy
+ 5 dbA @ 30 dbA to 80 dbA

Relative humidity (without condensation)

Measuring range
0 % to 100 % RH, non-condensing

Resolution
0.1 % RH

Accuracy
 $\pm 5\%$ RH for 0 % to 90 % RH at 25 °C to 40 °C
(77 °F to 104 °F) or $\pm 5.3\%$ RH for 0 % to
100 % RH at 25 °C to 40 °C (77 °F to 104 °F)

Temperature measurement

Measuring range
5 °C to 70 °C (41 °F to 158 °F)

Resolution
0.1 °C (32 °F)

Accuracy
+ 0.5 °C (+ 0.9 °F) + 1 LSB of range from
25 °C to 40 °C (77 °F to 104 °F)

Conduction
One sensor in contact with mattress

Convection
Inside the incubator
Three sensors (T1, T3, T4)
Inside or outside the incubator
One sensor (T2)

Radiation
One sensor for radiation head that can be used
also for external temperature

Airflow

Measurement range
0.1 m/s to 0.7 m/s

Resolution
0.01 m/s

Accuracy
From 0.1 m/s to 0.5 m/s reading ± 0.1 m/s at
temperature 25 °C to 40 °C (77 °F to 104 °F) and
humidity 50 % RH $\pm 15\%$ RH

Measurement interval

Via PC
Adjustable from one minute
to ten minutes

Internal memory

Capacity
1470 measurements (210 records of seven
parameters)

Controls

Display (HxW)
2 in x 16 in super twist LCD

Temperature

Storage

-20 °C to 50 °C (-4 °F to 122 °F)

Operating

10 °C to 40 °C (50 °F to 104 °F)

Dimensions (LxWxH)

27 cm x 20 cm x 14 cm

(10.6 in x 7.8 in x 5.5 in)

Weight

3 kg (6.6 lb)

INCU software PC system requirements

- Pentium 133 MHz microprocessor
- 16 MB free hard disk space
- SVGA color monitor
- Serial port or USB port (may require serial to USB adapter, ICON USB 2.0 to RS-232 cable recommended (sourced separately))
- Mouse compatible with Microsoft® operating system
- 1 CD ROM disk drive
- Microsoft Windows 95B, Windows 98, Windows NT® 4.0, or Windows 2000
- Laser or inkjet printer



Ordering information

Model

2250148 INCU™ Incubator Analyzer

Standard accessories

2206965 User Manual

2248900 Soft-Sided Carrying Case

2239025 Airflow Sensor

2391761 Universal AC Battery Charger with worldwide mains adapter set

2391866 Serial Cable DB9F to DB9F

2391789 Serial Adapter DB9M to DB25F

2213928 Outside-Temperature Probe Holder

2239002 Adapter for Radiant Infant Warmer Assembly

2213919 INCU PC Software (1 CD)

About Fluke Biomedical

Fluke Biomedical is the world's leading manufacturer of quality biomedical test and simulation products. In addition, Fluke Biomedical provides the latest medical imaging and oncology quality-assurance solutions for regulatory compliance.

Today, biomedical personnel must meet the increasing regulatory pressures, higher quality standards, and rapid technological growth, while performing their work faster and more efficiently than ever. Fluke Biomedical provides a diverse range of software and hardware tools to meet today's challenges.

Fluke Biomedical Regulatory Commitment

As a medical test device manufacturer, we recognize and follow certain quality standards and certifications when developing our products. We are ISO 9001 certified and our products are:

- CE Certified, where required
- NIST Traceable and Calibrated
- UL, CSA, ETL Certified, where required
- NRC Compliant, where required

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Better products. More choices. One company.

Fluke Biomedical

6045 Cochran Road
Cleveland, OH 44139-3303 U.S.A.

Fluke Biomedical Europe

Science Park Eindhoven 5110,
5692EC Son, The Netherlands

For more information, contact us:

In the U.S.A. (800) 850-4608 or

Fax (440) 349-2307

In Europe/M-East/Africa +31 40 267 5200 or

Fax +31 40 267 5436

From other countries +1 (440) 248-9300 or

Fax +1 (440) 349-2307

Email: sales@flukebiomedical.com

Web access: www.flukebiomedical.com

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