



Mini-Doppler Flow System

GAMMEX1430 LE

The 1430 LE is designed to provide a sonographer with advanced design features that allow for both Doppler and B-Mode ultrasound system tests in one unit. This product consists of the flow system, phantom, and electric flow controller meter.

The B-Mode Phantom component of the 1430 LE is based on our 404GS LE model that provides advanced technology for measuring image quality on small parts and intra-cavity ultrasound scanning systems. With added grey scale targets this small parts phantom also measures contrast, temporal resolution and system linearity. The phantom incorporates the Gammex Tissue Mimicking gel which provides a smoother back-

ground texture and composite film scanning surface that has improved transmission properties.

Unique to the 404GS LE phantom are the closely spaced pin targets. By spacing them closer together, our targets are ideal for testing a range of high frequency transducers. Resolution patterns and all vertical and horizontal pins are made of 0.1 mm nylon fibers for better detail definition and spatial resolution. Three grey scale targets of -6 dB, +6 dB and +12 dB relative to the background material are included. A series of anechoic cysts with diameters of 1, 2, 4 and 7 mm permit easy evaluation of system noise and distortion parameters.

continued

Gammex



GAMMEX 1430 LE

ULTRASOUND

continued from front...

Two 4 mm vessels are incorporated into the system to meet with FDA Doppler sensitivity recommendations. One vessel is parallel to the scan plan at 2 cm, and the other vessel descends 35 degrees from the surface and is used for measuring Doppler sensitivity and for developing scanner techniques.

This self-contained system provides a broad range of available flow rates and test objects. The enhanced microprocessor-based flow controller meter produces accurate flow rates from 1 to 17 ml/sec corresponding to 0 to 174 cm/sec measurable velocities with a 1% full scale (FS) accuracy.

The 1430 LE provides a realistic test medium for assessing:

- Maximum signal penetration
- Channel isolation of directional discrimination
- Registration accuracy of duplex sample gates and similarities between B-Mode and color flow images.
- Flow rate readout accuracy

The Gammex 1430 LE is an all-in-one portable system powered by a built-in LI-ion rechargeable battery. The universal charger is included with the system.

SPECIFICATIONS

Tissue Mimicking Material

Speed of Sound . . . 1540 ±10 m/s
Attenuation 0.5 or 0.7 ±0.05 dB/cm/MHz

Grey Scale Targets

Contrast -6, +6, and +12 dB relative
to background

Diameter 7 mm

Speed of Sound . . . 1540 ±10 m/s
Attenuation 0.5 or 0.7 ±0.05 dB/cm/MHz

Anechoic Cysts

Diameters 1, 2, 4, and 7 mm

Speed of Sound . . . 1540 ±10 m/s
Attenuation 0.05 ±0.01 dB/cm/MHz

Blood Mimicking Fluid

Density 1.03 g/cc
Speed of Sound . . . 1550 ±10 m/sec
Scatter Size 4.7 micron average

Vessels

Size. 4 mm inside diameter
Location horizontal 2 cm below surface;
diagonal at 35 degrees from 1.5 cm
below surface

Electronic Flow Control System

Measurable
Velocities 0-174 cm/sec
Pulsatile
Flow Mode preprogrammed for
0.25-2 seconds/pulse

Pin Targets

Diameter of
nylon lines 0.1 mm (0.004 in)
Vertical Spacing. . . 5 mm at 1 cm to 9 cm deep
Horizontal
Spacing 10 mm at 1 cm and 5 cm deep

Container Construction

Size. 22.9x15.9x21.9 cm (9x6.25x8.625 in)
Weight. 4.4 kg (9.5 lbs)
AC input voltage . . 110 VAC - 240 VAC, 50 - 60 Hz
Battery LI-ion, rechargeable,
universal charger and plugs included
All acoustic measurements at 4.5 MHz, 22° C