

QUANTITATIVE SENSORY TESTERS



Footrest shown with Vibratron-II vibrating posts

Foot Rest

The optional footrest is designed to be used with the Vibratron-II (shown at left). The footrest is 12" long x 8" wide x 4¼" high with adjustable non-slip leveling feet (feet are adjustable to add up to ½" of additional height if needed). Surface of the footrest is a white hygienic non-skid vinyl covering and can be easily cleaned between uses. The unit is large enough to accommodate both feet and may also be used as an armrest when testing upper extremities. The weight of the unit is approximately 4.5 pounds. The footrest can also be purchased as an option to the NTE-2A as shown in the photograph on page 33.

NTE-2A Thermal Probe and Controller

- **Non-invasive assessment of peripheral neuropathy or thermal pain thresholds**
- **Convenient hand held "thermode"**
- **Four second response time**
- **Computer control option**

The NTE-2A Thermal Probe is a sophisticated, non-invasive device for the clinical evaluation of neuropathy and the assessment of short-fiber neurological function. Individual thresholds are compared to statistical normals. These results provide an accurate means of tracking chronic changes in small fiber nerve function. It can also be used for pain studies and in any application where a variable, accurately-controlled temperature stimulus is required. The NTE-2A is often used in conjunction with the Vibratron II to assess peripheral neuropathies.

The equipment comprises a hand held pen-shaped probe with a smooth flat tip 13mm in diameter on a 5 foot lead, a digitally-set temperature control unit and a recirculating pump with a combined water reservoir, which is required to cool the probe during operation.

The Thermal Probe, or "thermode", utilizes a Peltier semiconductor heat pump to provide temperature stimuli above and below room temperature. The temperature range of the thermode extends from 0 to 50°C and the response time to a step change in temperature is extremely fast, less than 4 seconds in both the heating and cooling mode.

The Digital Control Unit incorporates proportional feedback to maintain accurate temperature control to within 0.1°C. Setting of



NTE-2A system

the control temperature is accomplished using three rotary switches providing switched steps of 5, 1 and 0.1° covering a range of plus and minus 20° about a base temperature that may be preset between 20° and 30°C. A digital display on the front panel indicates the temperature at the probe tip with a resolution of 0.1°.

An accessory D/A card and software program, the TPC-WIN Thermal Profile Controller, is available to provide the user with the ability to change the temperature of the probe under software control via a PC and create complex temperature profiles that can be recalled from file. The software will run under Windows'95 or '98®. (see page 22)

The equipment can be supplied for 110-120V or 200-240V AC operation. Please specify when ordering.

NTE-2 Thermal Sensitivity Tester

This instrument is similar to the NTE-2A, except that it has two controllers and two stationary Thermodes measuring 46mm x 48mm. It is useful in research requiring more complex algorithms than the NTE-2A.

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SPECIFICATIONS

CONTROLLER

Probe Operating	20°-30°C (initial set point adjustment)
Range:	and 20.5°C either side of set point in switchable 0.1°C steps.
Control Accuracy:	0.1°C
Digital Readout:	Resolution 0.1°C Accuracy 0.1°C, ± 1 least significant digit
Ambient Operating Range:	15°-45°C
Set Point:	Continuously adjustable with flat bladed screwdriver
Input Power Requirements:	100-120V AC, 60Hz, 100W, 200-240V AC, 50Hz, 100W
Size:	8" high x 7" wide x 15" deep
Weight:	28 lbs.
Other Features:	Spring loaded switch indication of set-point. Safety shut down with audible warning and flashing lamp in case of fault condition such as thermocouple sensor breakage, lack of cooling water or electronic failure. Self-sealing water connectors to prevent spills. Auxiliary 110V AC line switched output.

CE mark pending

THERMAL PROBE

Size:	6.5" long probe. Total length with 6' cable
Weight:	0.5 lbs.
Temperature Controlled Area:	13mm diameter
Range:	0-50°C Note: Sustained exposure to temperatures over 46°C can cause burns. This equipment is not intended for use at temperatures over 45°C.
Lead Length:	5 feet
Response Time:	Less than 4 seconds in heating or cooling
Other Features:	Built-in feedback sensor, Type T, copper-constantan thermocouple. Self sealing water connectors.

Pump & Tank Unit: PTU-110A

Size:	15"L x 15"H x 6.5"W
Weight:	10 lbs. unfilled
Power:	110VAC 60Hz 100 Watts (220VAC 50Hz available to special order)
Water connectors:	Quick-release self sealing type

A supply of water, required to cool the thermoelectric heat pump in the thermal probe head, is provided by a self contained pump and reservoir tank, PTU-110A. The reservoir tank holds up to 3 gallons of water and the pump is a magnetically driven oscillating type. Water connections are made using a quick-release self sealing fitting to avoid accidental water spillage. Power to the pump and tank unit is provided by a switched AC socket on the rear of the control unit so that it is activated as soon as the controller is turned on.

