

Penguin

Portable, noninvasive, wireless skin impedance research instrument

General Description

The NOVA Penguin is a hand-held multifunctional non-invasive wireless instrument that provides a quick, objective and reproducible relative measurement to quantify biophysical hydration characteristics of the skin. In addition, the Penguin also measures force and skin surface temperature. Penguin data can be readily correlated with other skin analysis techniques.



Penguin Features

- self-calibration – calibrates immediately and automatically at startup;
- automatic sensor switch – activates system directly upon sensor contact with the skin;
- collects data for skin hydration, surface temperature and force;
- stores all collected data internally; can store data on multiple subjects prior to PC upload;
- transmits collected data wirelessly via IrDA to PC for further analysis.

Operational Functions

- Clear numerical depiction of DPM, temperature and force with each reading
- Button icons allow for quick and easy transition between screens and data transmission to PC
- User adjustable sampling time from 1-22 seconds
- Large bar graph icon ensures user data collection at appropriate force level
- Easy to read, large numerical DPM data display
- Penguin may be set to emulate DPM 9003 data collection graph
- Date and time stamp clearly shown on Penguin screen
- Battery icon graphic indicates battery charge level
- Penguin probe accepts and stores multi-subject information for data input

Computer Capability

The Penguin can transmit stored data to the PC wirelessly using IrDA transmission. When uploaded to the PC data will appear as an Excel file, which can then be printed out in a graphic or data format for further evaluation by the researcher. Contact NOVA for Windows operating system capabilities.

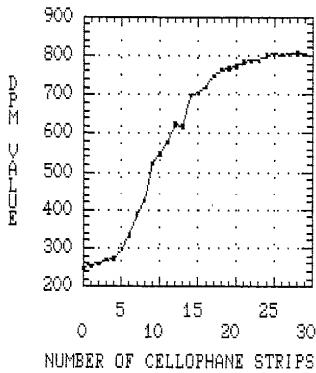
Optional Features

Optional features are available at extra charge, and include: interchangeable special purpose probes; articulated probes. Check with NOVA for availability, pricing and delivery details.

SAMPLE DERMAL PHASE METER MEASUREMENTS

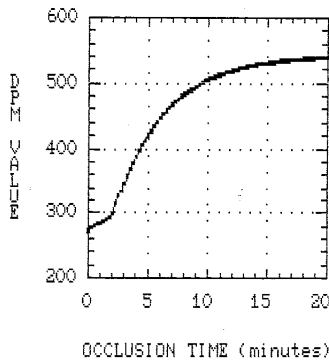
1. STRATUM CORNEUM (LAYERS)

Cellophane tape sequentially applied and removed from forearm, strips away layers of skin. As deeper and more hydrated layers of stratum corneum are measured, DPM values increase towards apparent saturation level.



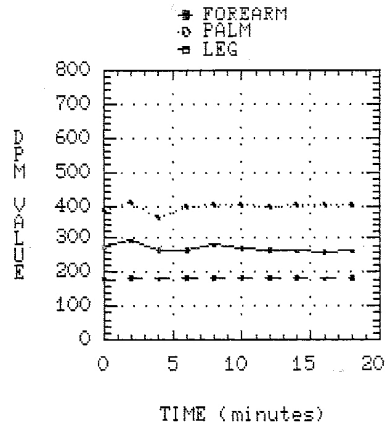
2. "TEWL"- SKIN OCCLUSION

DPM electrode prevents trans-epidermal water loss (TEWL) when in contact with forearm skin. As duration of occlusion increases under electrode, DPM values increase towards apparent saturation level.



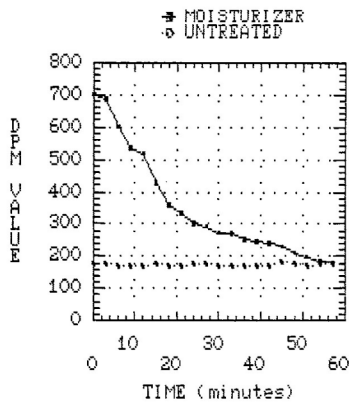
3. PALM, FOREARM, LOWER LEG

DPM values for untreated skin vary depending on skin location measured on body. Ten 5 second readings were taken over 20 minutes test time.



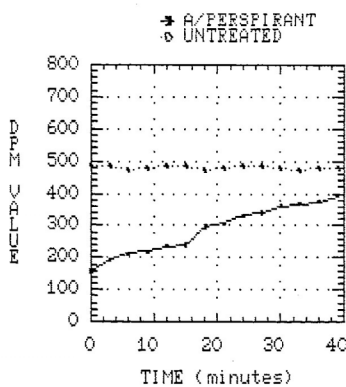
4. MOISTURIZER

Application of moisturizer to forearm initially produces high DPM value. As moisturizing effect decreases with time, DPM values gradually decline towards level of untreated skin.



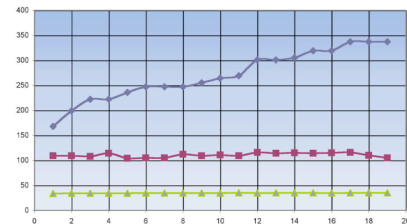
5. ANTI-PERSPIRANT

Application of anti-perspirant to moist palm initially produces low DPM value. As drying effect decreases with time, DPM values gradually increase towards level of untreated skin.



6. PENGUIN GRAPH

Example of hand hydration data taken at .25 second intervals. Top line indicates DPM value, middle line shows pressure values, and bottom line show temperature values.



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NOTE: DPM sample measurements are provided for guidance purposes only. Actual user data may vary due to differences in test environment, laboratory protocol, and individual test subjects.

nova™ technology corporation

Web: www.novatechcorp.com
 Email: inform@novatechcorp.com
 Telephone: 1-800-376-6682