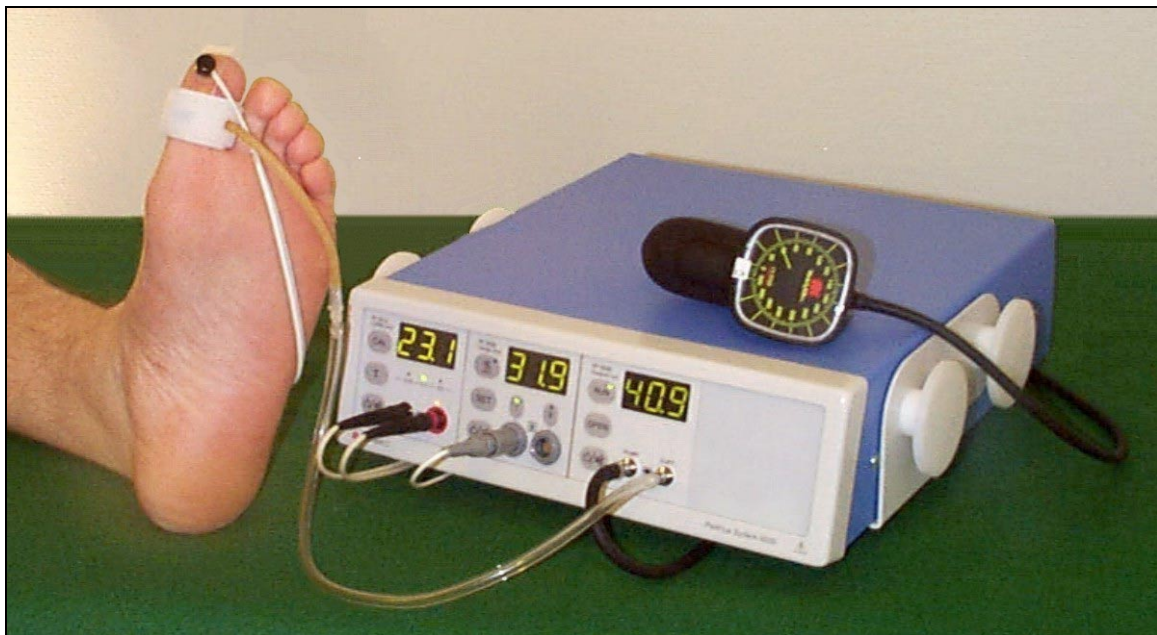




PF 5050 Pressure Unit for Vascular applications

The Laser Doppler in combination with the PF5050 Pressure Unit make vascular tests like Toe Pressure (Digital Systolic Blood Pressure), Skin Perfusion Pressure, Post Occlusive Reactive Hyperemia (PORH) and Pulse Volume Recording – PVR (Air Plethysmography) more accurate and reliable.



Toe pressure measurement using a digit cuff and the laser Doppler probe as flow detector.
Using a heated probe (PROBE 457) enables measurements on patients with cold feet.





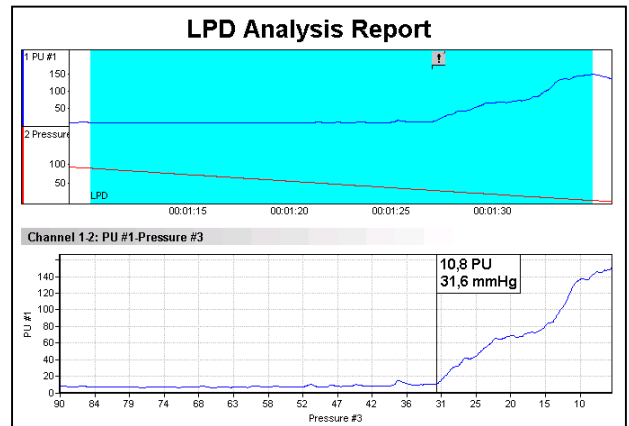
Introduction

When performing vascular tests with laser Doppler, different kinds of occlusions are often applied. The occlusions are mostly performed with a manually controlled blood pressure cuff and the result of the measurement may often vary depending on the operator since it is difficult to exactly repeat the deflation rate. The PF 5050 Pressure Unit has been developed to simplify and standardize these tests. The cuff connected to the PF 5050 Pressure Unit is inflated by the operator. The PF 5050 Pressure Unit then monitors and deflates the cuff pressure either linearly or instantly.

Toe Pressure

Toe pressure is a technique to display the systolic blood pressure in the digits, particularly the toes. This pressure plays an important role in the diagnosis of critical limb ischemia, especially in diabetic patients with calcified vessels, as these patients often show falsely elevated ankle pressures. The toe pressure is used for assessment, follow-up and treatment of these patients. The laser Doppler is used as flow detector because of its high accuracy in the low pressure range.

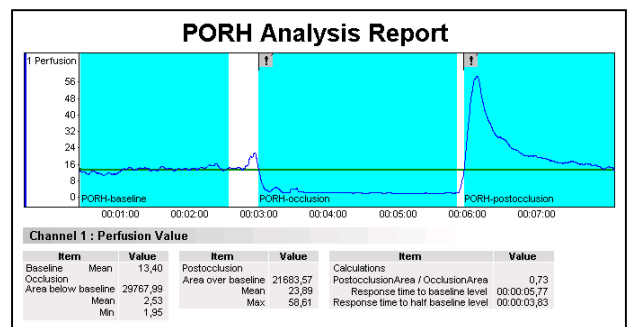
The toe pressure measurement is performed by placing the cuff on the toe and attaching the laser Doppler probe distal of the cuff. The cuff is first inflated to a pressure well above the systolic blood pressure. The cuff pressure is then deflated linearly until the laser Doppler probe detects the return of blood perfusion. The pressure at the return of the blood perfusion is known as the toe pressure. The results can be presented in a Linear Pressure Deflation (LPD) report.



Skin Perfusion Pressure

Skin perfusion pressure is a technique to display the micro-circulatory pressure (“capillary pressure”).

The skin perfusion pressure measurement is performed almost identical to the toe pressure measurement. The difference is that the laser Doppler probe is placed underneath the cuff. The pressure is first inflated and then linearly deflated. The pressure at the return of the blood perfusion is the skin perfusion pressure. The results are presented in a Linear Pressure Deflation (LPD) report.



Post Occlusive Reactive Hyperemia (PORH)

PORH is used to study the microcirculatory reaction after an occlusion.

The PORH measurement is performed by placing the cuff on the limb and attaching the laser doppler probe distal of the cuff. The cuff is first inflated to a pressure well above the systolic blood pressure for typically 3 to 5 minutes and then the pressure is released instantly and the laser Doppler signal is evaluated. Studied parameters are e.g. percent change from baseline, risetime, slope and time to peak. The results are presented in a PORH report.

Pulse Volume Recording (PVR)

PVR is a technique to display the shape of the heartbeats (amplitude, frequency, risetime and form) in the local macro circulation. PVR is also known as airplethysmography.

The PVR measurement is performed by placing the cuff on the limb. The cuff is inflated (50 mmHg for digits and 60 mmHg for larger limbs). The arterial pulsations in the limb is transferred to the cuff as minute changes in cuff pressure which is the PVR.

For further information – see PeriFlux System 5000 Users Handbook

Technical specifications

The function Unit PF 5050 Pressure Unit is placed in a PF 5001 or PF 5002 main Unit.

- Type: PF 5050 Pressure Unit.
- Classification: Type CF.
- Output: Cuff pressure 0-300 mmHg. PVR (available on digital and analogue output).
- Deflation rate: 3,4 mmHg/sec.
- Accuracy: 0-100 +/-2 mmHg, 101-200 +/-3 mmHg, 201-300 +/-4 mmHg.
- Display: 3 digit LED display.