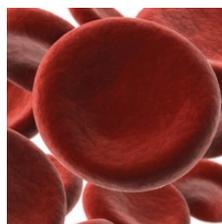
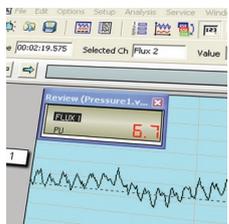


# High power tissue blood flow and temperature monitoring with moorVMS-LDF1-HP™



**moor instruments**  
laser Doppler blood flow assessment

# High Power Laser Doppler Monitoring

The moorVMS-LDF1-HP™ laser Doppler monitor is optimised specifically to enable measurements to be taken from the tissue surface down to deeper vascular beds relative to standard laser Doppler monitoring. The higher laser power together with wider separation of transmitting and receiving fibres in the probe head enable a larger volume to be monitored and also reduces site to site variations. The system can be used together with the standard moorVMS-LDF system to provide a comparison between deeper and more superficial changes.

## Probes

For soft tissue measurements we recommend the VP1-HP which is fixed to tissue with double sided adhesive discs (order code PAD). For bone measurements or surgical applications the VP7BS-HP is a robust blunt needle probe (diameter 3.3mm, fibre separation 2mm) that can be held in place either by hand or inserted into a burr hole. All probes are for human use and are sterilisable and bio-compatible.



VP1-HP wide fibre separation (4mm) probe (left) and VP7BS-HP (right) with probe head inserts.

## Applications

Applications include measurements from bone during surgery (e.g. assessment of flow in the femoral head) or

non invasive measurements of deeper structures through skin e.g. adipose tissue measurement. PC software (moorVMS-PC) is available to offer statistics such as average LD blood flow, standard deviation, min, max etc) as well as more advanced assessments of cardiac pulse wave amplitude and frequency, using the FFT function (Fast Fourier Transform). The latter is useful where cardiac synchronous pulsatility, as well as amplitude are used as indicators of vitality (femoral head assessments).

## References

Notzli HP, Siebenrock KA, Hempfing A, Ramseier LE, Ganz R. Perfusion of the femoral head during surgical dislocation of the hip. Monitoring by laser Doppler flowmetry J Bone Joint Surg Br. 2002 Mar;84(2):300-4

Bøgehøj M, Emmeluth C and Overgaard S. Blood flow and microdialysis in the human femoral head. Acta Orthopaedica 2007; 78 (1): 56–62

Clough G, Chipperfield A, Byrne C, Frits de Mul, Gush R. Evaluation of a new high power, wide separation laser Doppler probe: potential measurement of deeper tissue blood flow. Microvascular Research, 78, (2), 155-161

## Specifications:

### Optics

Temperature stabilised output laser diode; 785nm.  
Maximum output power 20mW.

### Laser Safety Classification

Class 3R per IEC 60825-1:2007.



Moor Instruments reserves the right to change specifications without notice.

For full details and specifications please see the moorVMS-LDF brochure.



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