**VET HDO High Definition Oscillometry**

*“The Picture of Health”*

- Accurate
- Easy to Use
- Real Time Graph
- PC Software
- Vet Specific Algorithm
- 10,000X more sensitive than a human ear! “Doppler”!

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**Points for a Perfect Result**

<table>
<thead>
<tr>
<th></th>
<th>Invasive</th>
<th>Doppler</th>
<th>Oscillometric</th>
<th>HDO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic Pressure</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Diastolic Pressure</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>MAP (Mean Arterial Pressure)</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>✓</td>
<td>-</td>
<td>✓ (limited frequency)</td>
<td>✓</td>
</tr>
<tr>
<td>Speed (8-15 seconds, heart rate adapted)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Valve Accuracy (5-300 mmHg)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Gain (signal amplification)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Artifact Recognition</td>
<td>-</td>
<td>-</td>
<td>Max 30%</td>
<td>✓</td>
</tr>
<tr>
<td>Linear Cuff Deflation</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Veterinary Specific Algorithm</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Cardiac Assessment (CO, Rhythm, Arterial elasticity)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Telemedicine</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
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<tr>
<td>Measuring the Extreme</td>
<td>-/+</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
</tbody>
</table>

**VET HDO® MDPro**

**HDO® MDPro**

System includes:

- MDPRO
- 2 canine and 1 feline cuff
- MD Software for PC
- AC Power Supply
- HDO DVD
- Essential Facts Book

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VET HDO® is a patented technology for animal blood pressure measurement.
Be Innovative
High Definition Oscillometry
Blood Pressure Measurement and much more!

- Puls adapted deflation rate (3-18mmHg)
- Real-time programming of valves
- Gain for highest sensitivity (70 – 1280)
- Real-time visualisation of blood pressure
- Beat by beat assessment of cardio-vascular situation

New ways of cardio-vascular evaluation - Non invasively!

Visible assuredness of accuracy
Optimal representation of the arterial opening behaviour:
- pre-systolic waves followed by amplitudes with slightly increasing height: relaxation of the arterial wall
- further more dominant increase in height: initiation (SAP) and increase of blood flow. Due to turbulent flow, the amplitudes are further becoming higher up to a maximum, which is close to MAP.
- Decrease of amplitude size due to a change from turbulent to laminar flow – reaching DAP and finally a complete opening of the artery

Visible assessment of affected cardiac output
Height of the amplitudes represent Cardiac Output qualitatively:
- High amplitudes followed by lower ones: affected cardiac output. The more dominant the more severe
- Difference in height in combination with Gain: more detailed reflection of CO impact

Visible proof of linearity
Red line in the top window should be linear = linear deflation
- linearity is a key prerequisite for accuracy
- loss of linearity: curve instead of linear line

Visible detection of artefacts
Artefacts are strong signals which are misleading and need to be detected
- Artefacts are clearly detectable on screen
- Visible control how the technology takes care of them

Visible assessment of arterial elasticity/compliance
Pre-systolic waves represent arterial situation
- low amplitudes: good elasticity
- high amplitudes: impaired elasticity
  - arterial vasoconstriction
  - arterial remodelling
  - arterial calcification
  - etc.

Visible analysis of rhythm, dysrhythmia
Distance from one amplitude to the next should be equal.
- Differences in distance: dysrhythmia
  - respiratory sinus arrhythmia (usually CO not affected, continous increase and decrease of amplitude height)
  - extra beats (CO affected: also different height)
  - AV-block/sinus arrest/ etc. (CO affected: also different height)