Evaluation of FibreLux Micron Meter

John Walker, Ronald Pope, Monica Ebert and Faron Pfeiffer

Bill Sims Wool & Mohair Research Lab
Introducing FibreLux Micron Meter, a hand held unit that can be used in the field or shearing shed to measure wool fibres allowing the quality wool producers to be sorted at the time of shearing, increasing revenue and breeding programmes.

- Affordable and user friendly
- Measures wool samples between 15 and 25 μm with accuracy better than 0.8 μm
- More than 500 measurements can be taken from a fully charged battery.
- Unit is housed in a carry case along with a comb, scissors, ACDC charger, sample holders, USB cable, operating manual and CD.
- Use of this unit is simple, anyone is capable of using the unit and a sample can be prepared and measured within 2 minutes.
- Wool fibres do not have to be cleaned before being tested, can be used directly from the sheep as a standard grease factor for your farm can be applied.
- Measurement readings are automatically recorded and up to the last 500 measurements can be downloaded onto a computer.
- Power Input: 100~240VAC or 12VDC
- Unit Weight ~870g
- Warranty – 12 months
- Nekan Trading (Pty) Ltd provides advanced technical support, after service sales

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Manufacturer Claims

- Measures average fiber diameter based on diffraction of light passing through a wool sample.
- Measurement Range 15 - 25μm
- Accuracy 0.8μm
- Cost: ≈ $2,000
Staple Pulled from Side Sample
Loaded into Slide for FibreLux
Read on FibreLux
Same Staple Loaded on OFDA2000 Slide and Read
Average Fiber Diameter

![Bar chart showing Average Fiber Diameter for OFDA2000 and FibreLux.](image)

<table>
<thead>
<tr>
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<th>AFD (μm)</th>
<th>Standard Deviation (μm)</th>
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<tbody>
<tr>
<td>OFDA2000</td>
<td>22.03</td>
<td>1.94</td>
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<tr>
<td>FibreLux</td>
<td>22.45</td>
<td>2.04</td>
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Comparison of OFDA2000 to FibreLux

Greasy Staples **No** Grease Correction Factor

\[
y = 0.8841x + 2.1746
\]

\[R^2 = 0.87\]

\[\text{SEP} = 0.73\mu\text{m}\]
Percent of Samples Within Categorical Differences of OFDA2000

- 38% < 0.5
- 34% 0.5 < 1.0
- 20% 1.0 < 1.5
- 6% 1.5 < 2.0
- 2% > 2.0

Difference in μm Between OFDA200 and FibreLux
Determination of Instrument Error
Instrument Error

[Bar chart showing root mean square error and 95% confidence interval for OFDA2000 and FibreLux, with error bars indicating uncertainty.]
FibreLux Manufacture’s Future Goals

- 25 and 32 micron for mohair and strong wool
- Lithium-Ion Battery
- Calculating the CV
- Ability to enter an ID number – will require computer
Questions?