

Premium

for

Quality

Wool

### Optical Fibre Diameter Analyser: Measurement of Fibre Diameter

Produced for the CRC for Premium Quality Wool undergraduate program by; Mark Brims, BSC Electronics Pty Ltd., and Dr. Peter Auer, The University of New South Wales.

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### **Introduction to OFDA**

History

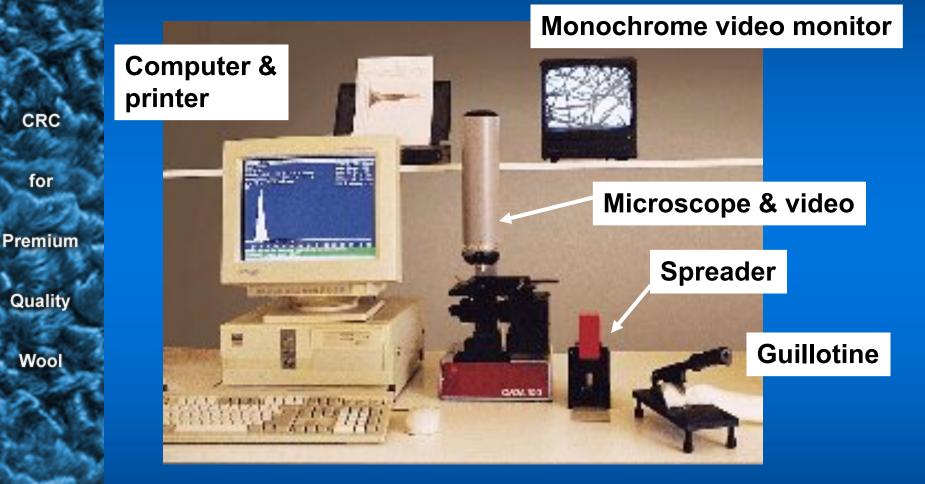
- introduced 1991
- used in 22 countries
- Capabilities
  - raw wool to fabric measurement
  - cashmere, mohair, alpaca, synthetics

- Measurement
  - diameter
  - medullation
  - curvature
  - ALONG fibre diameter
  - fibre cleanliness

Mark Brims & Peter Auer



## **OFDA** measurement system



Mark Brims & Peter Auer Source: http://www.ofda.com/products.htm

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**Standard** 

#### • IWTO-47-95

 Measurement of the mean and distribution of fibre diameter of wool using an Optical Fibre Diameter Analyser (OFDA)

Accepted as full standard at IWTO in 1995

 certified and applied in wool trading contracts.

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**Operating principles** 

cut sample into 2mm snippets

- spread fibre snippets onto open glass slide
- load slide onto OFDA microscope stage
- follow computer software instructions

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Measurement points are shown as lines crossing fibre

Mark Brims & Peter Auer Source: http://www.ofda.com/Operating Principles.htm

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### **OFDA** histogram

u. $5^{\circ}$ of fibres 8.8 u above $CV$ = 21.3 $\frac{3}{8}$ Sample size = 4684 u. $5^{\circ}$ of fibres 8.8 u above $CV$ = 21.3 $\frac{3}{8}$ MH = 2.62, wV = 1.4602 * MH = 0.09, DKFlash= $\frac{35}{35}$ 319 31 41 51 55 MH = 2.62, wV = 1.4602 * MH = 0.09, DKFlash= $\frac{1000}{33}$ 41 $\frac{1000}{33}$ $$		mean. 79.0 ///	
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# **Further Information**

http://www.ofda.com

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**Mark Brims**