Diam Length

ACCURATE AND FAST DIAMETER, LENGTH AND CURL MEASUREMENT

Diamlength is an automated fibre diameter, length, and curl measurement instrument. Measuring fibre diameter less than 1 um and fibre length to 15 mm, it can measure up to 100,000 fibres in less than a minute. It is ideal for measuring glass, carbon, basalt, aramid and other synthetic fibres. This powerful instrument saves time and money while preventing measurement errors and improving quality control. The system reports and records its measurements for easy data logging and report writing.
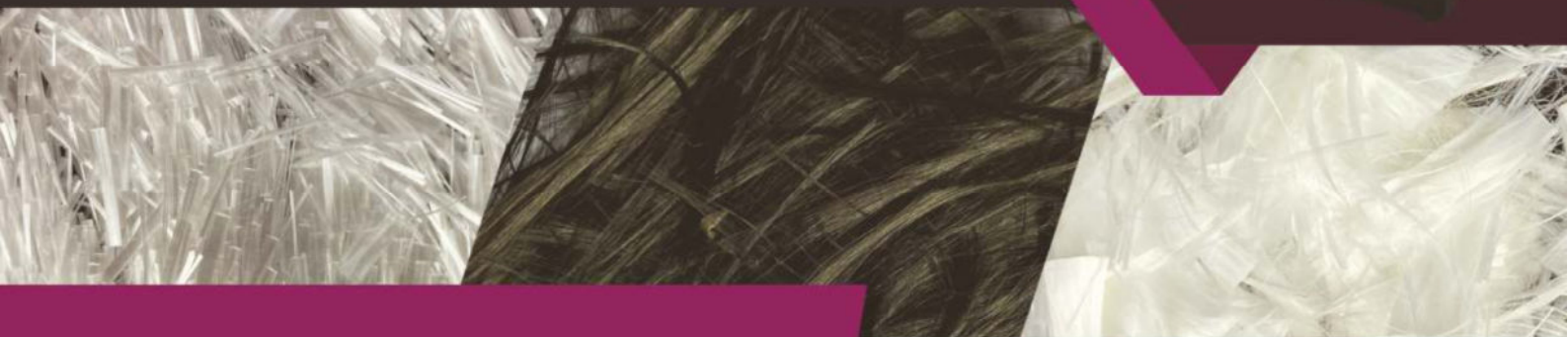
TECHNOLOGY FEATURES

Diameter and length measurement are typically measured using optical microscopes, optical comparators and rulers. Inevitably these methods involve errors due to individual differences among operators, measurement conditions and a small sample size. The process is also slow and tedious.

Diamlength uses digital camera technology and image processing technology. The fibres traverse across a set of imaging plates that also form as the flute to suck up the fibres from the beaker. The fibres are illuminated by a high-powered, precise LED light source in less than 1 microsecond for each image. Sophisticated software algorithms detect and measure all the fibres in the image. Each fibre is measured multiple times along its length to reduce any variations in the diameter.

Identifying long fibres

Accurate fibre following and analysis

14.2

5.9

Analysis of 6 mm chopped PP fibre

info@fibremetrics.com | www.fibremetrics.com | www.cottonscope.com

QUICK AND SIMPLE PROCESS

The measurement process starts by dropping the fibres into the water in the glass beaker. Diamlength will then do the rest: disperse, measure and self-clean.

☑ Simplicity with less chance of human error.

☑ Reliable with minimal maintenance.

KEY BENEFITS OF DIAMLENGTH

☑ Understand fibre properties to a level that has not been possible before.

☑ Greater control of fibre quality and avoidance of costly mistakes at the manufacturing stage.

☑ Reliable monitoring and timely detection of defects for scheduling repairs and maintenance.

☑ Easy to use with no operator bias.

☑ Accurate and repeatable results.

☑ Records images and generates trending information on fibre mean and distribution for research and development.

SPECIFICATION	DIAMLENGTH (standard)	DIAMLENGTH (Macro version)
Technology	Digital camera	Digital camera
Measurement medium	H2O	H2O
Length range	0.2 to 15 mm	0.02 to 3 mm
Diameter range	3 to 250 um	1 to 50 um
Maximum number of fibres per measurement	1,000,000	1,000,000
Precision of mean	0.1 um	0.1 um
Reproducibility	< 0.1 um	< 0.1 um
Image size	25 x 34 mm	7 x 10 mm
Typical measurement time including sample preparation	1 - 3 minutes	1 - 3 minutes
Operating system	Microsoft Windows software	Microsoft Windows software
Measurement parameters	Diameter, length, curl	Diameter, length, curl
Data files	.csv (text file) | .mes (proprietary file type)	.csv (text file) | .mes (proprietary file type)
Power requirements	120 or 240 V AC, 50/60Hz	120 or 240 V AC, 50/60Hz
Dimensions	420mm(W) x 400mm(H) x 225mm(D)	420mm(W) x 400mm(H) x 225mm(D)
HTC / HS code	90314990 / 9031	90314990 / 9031

COMPARISON	DIAMSCOPE	DIAMLENGTH	DIAMLENGTH M
Diameter (um)	0.2 - 170	3 - 250	1 - 50
Length (mm)	0.05 – 0.3	0.20 -15	0.02 - 3
Bowl capacity	100 -200	1000 - 2000	1000 - 2000