MonTech Disper Tester 3000
Carbon black dispersion tester

Computer aided, advanced digital reflected light microscopy brought to the next level

The DisperTester 3000

is the most easy to use instrument for filler dispersion analysis; providing superior compliance, reproducibility and repeatability. The DisperTester provides accurate, repeatable results in seconds for both vulcanized and uncured rubber compounds that are applicable to the process, allowing quick and easy testing of dispersion compared to other optical techniques which often take hours to perform (less than 2 minutes with sample preparation).

The DisperTester 3000 is equipped with cutting edge digital image processing to automatically determine dispersion ratings, filler distributions and agglomerate sizes. Up to 5 individual readings can be taken in order to precisely evaluate the dispersion and detect possible variations along the surface of the sample.
To increase testing possibilities even further, the MonDispersion software features variable brightness, contrast and exposure, as well as focus control for every type of test material, allowing colored or even white samples to be tested.

The DisperTester 3000 system includes built-in reference scales and can be used for all filler types including Carbon Black, Silica and natural inorganic materials with fully automatic calculation of X value, Y value, Z %, Dispersion %, White area %, ... in accordance with international standards. All data is processed automatically by the MonDispersion software. Agglomerates are automatically highlighted and can even be manually measured by their diameter and normalized area. Test results are stored in an SQL database. PDF reports along with distribution spreadsheets and histograms are created and images are stored into an image database in a high-resolution JPEG format. Of course custom reference scales can be easily added by the user at any time.

The determination of filler dispersion in technical rubber goods and tire compounds is of great importance to the industry.

Dispersion quality has a direct impact on final product properties and is therefore widely used as a quality control parameter.

Many important properties of the cured compound are directly affected by filler dispersion including:

→ Tensile strength   → Tear strength
→ Fatigue resistance   → Abrasion resistance

The DisperTester 3000 is the only instrument that gives a direct measurement of dispersion in a fast and simple test, without requiring subjective assessment. The instrument is available in three models with different magnification levels:

→ **30x** with an optical range of **10 to 191 μm**
→ **100x** for particles from **1 to 58 μm**
→ **1000x** is specially designed for micro agglomeration measurement of silica compounds for particles from **100nm to 3μm**

Sample Preparation

Sample preparation simply involves cutting the sample to generate a "fresh face / gloss cut" for analysis. A simple cutter utilizing ultra-sharp razor blades is supplied to optimize sample preparation for cured samples. For further simplifying sample preparation, the DisperCut automatic sample cutter is optionally available.
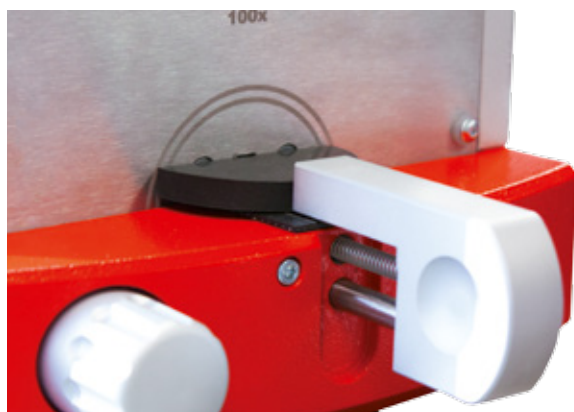
Elastocon®

Tvinnargatan 25 • SE-507 30 Brämhult
Tfn: +46 33 323 39 00 • info@elastocon.se
www.elastocon.se

Technical specification

International standards	ISO 11345 : 2006, ASTM D 7723
Electrical Requirements	80 - 250 VAC, 47 – 63 Hz, 1 Amps
Data Interface	USB
Dimensions	Height: 190 mm Width: 160 mm Depth: 460 mm
Weight	17.5 kg (net)
Magnification	DisperTester 3000 - 1000x = 1000 times magnification DisperTester 3000 - 100x = 100 times magnification DisperTester 3000 - 30x = 30 times magnification
Aperture Size	DisperTester 3000 - 1000x = 4 mm x 3.5 mm DisperTester 3000 - 100x = 4 mm x 3.5 mm DisperTester 3000 - 30x = 9 mm x 5 mm
Image resolution	5 Megapixel with Carl Zeiss telecentric optics
Data format	PDF, JPEG, ASCII

▶ MonDispersion software