
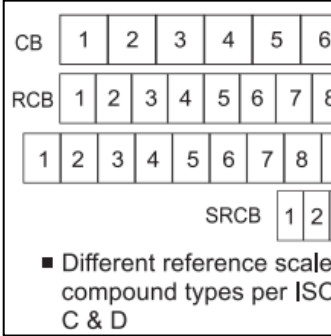


a measurable difference...



This instrument provides automatic visual analysis for rapid, comparative and quantitative assessment of filler dispersion in rubber, which may affect many properties including abrasion resistance, tensile strength, tear strength and fatigue resistance.

- By utilizing oblique illumination of 30 degrees on the sample, a rubber specimen freshly cut by razor blade, light hitting any agglomerates, is reflected into the sensor with magnification (optical range of 3-57 microns for standard model or 1-20 microns for high resolution model). The bi-level analysis with auto determined thresholds and particle diameter analysis are computed from the captured image.
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- The image shows the FDG-A ONE image analysis system, which consists of a white and orange unit with a sample stage and a camera. A computer monitor is visible in the background.
- Original image captured in colour with selectable exposure and colour channel allows the FDG-A1 to analyse macrodispersion of all types of fillers, such as carbon black, silica and mineral fillers for black and non-black compounds.
 - Designed with a super bright LED as lighting source for more illumination, energy saving, longer life and higher consistency.
 - Equipped with multi-light matrix and moving camera with autofocus function on precision rails allows multiple operator's scans per sample placement, either automatically or manually. This feature helps to reduce operator error and improves repeatability.
 - Selectable illumination direction helps eliminate influence of cutting lines for better dispersion analysis.
 - Built-in 5 sets, 4 kinds of ISO Philip 10-scale standard:
 - Carbon Black (CB) – 30X and 100X
 - Reinforcing Carbon Black (RCB) – 100X
 - Reinforcing Carbon Black with Silica (RCB/Silica) – 100X
 - Semi-Reinforcing Carbon Black (SRCB) – 100X for automatic assessing the level of dispersion of carbon black and silica in rubber (X and Y values)
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- The image shows the ISO Philip 10-scale standard reference scale, which is a grid of 10 squares. The squares are labeled with numbers 1 through 10. The scale is used for automatic assessing the level of dispersion of carbon black and silica in rubber (X and Y values).
- | | | | | | | | | |
|------|---|---|---|---|---|---|---|---|
| CB | 1 | 2 | 3 | 4 | 5 | 6 | | |
| RCB | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| SRCB | 1 | 2 | | | | | | |
- Different reference scale compound types per ISO C & D
- The system also provides 1000 groups of file establishment capacity for users to freely set up their own standards for automatic grading.

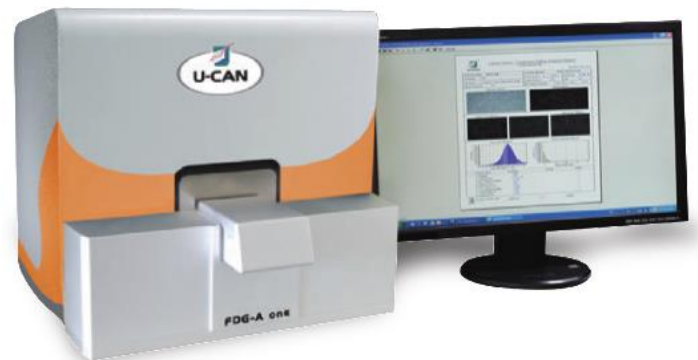


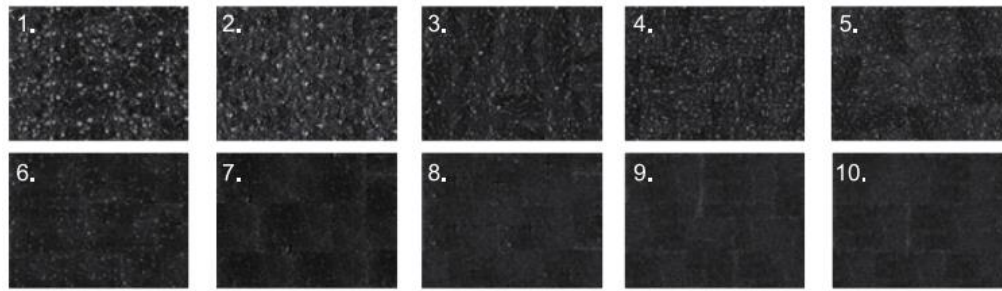
Diagram illustrating different reference scales for differing compound types per ISO 11345 methods C & D:

- CB: 1 2 3 4 5 6 7 8 9 10
- RCB: 1 2 3 4 5 6 7 8 9 10
- RCB/Silica: 1 2 3 4 5 6 7 8 9 10
- SRCB: 1 2 3 4 5 6 7 8 9 10

■ Different reference scales for differing compound types per ISO 11345 methods C & D

Filler Dispersion Grader FDG-A1

a measurable difference...

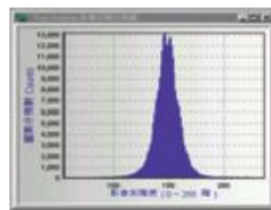


ISO philips 10-grade dispersion diagram

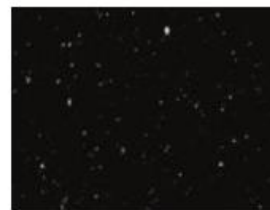
- Agglomerate sizes and statistical analysis as well as fillers dispersion (Dispersion%, Z%) are automatically computed as per ASTM D7723.
- The system automatically stores each captured image and testing result, which can be edited, deleted, saved or exported to Microsoft Excel.



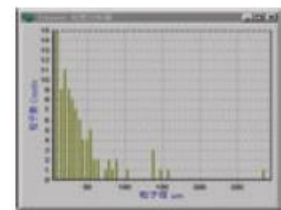
Captured Image



Grey Level Analysis



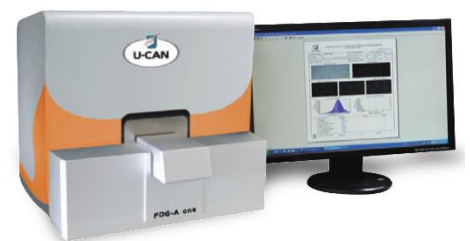
Bi-level Image



Pixels Diameter Analysis

Specifications:

PC System:	<ol style="list-style-type: none"> 1. IBM Compatible PC with Windows 7 2. 1TB HDD 3. Pre-Installed U-CAN FDG software 4. 21-inch LCD colour screen 5. Colour printer
Optical Range:	FDG-A1s : 3-57 microns FDG-A1h : 1-20 microns
Light Source:	Super bright LED
Dimensions:	L: 430 x W: 240 x H: 310mm
Environment:	10°C to 40°C
Electrical Requirements:	110V 2A or 220V 1.2A



Options:

- Standard model with optical range of 3-57 microns (FDG-A1s)
- High resolution model with optical range of 1-20 microns (FDG-A1h)
- High Manual cured sample cutter
- Unvulcanised sample preparation unit

Standards:

- ASTM D773
- ISO 11345 (methods C, D, E)