

MEASUREMENT & INSPECTION SYSTEM FOR FIBRES, YARNS, FABRICS AND NON-WOVEN VIDEO ANALYSER



The most versatile and advanced high definition computerised system for microscopic analysis of fibres, yarns, fabrics, non-woven and small parts.

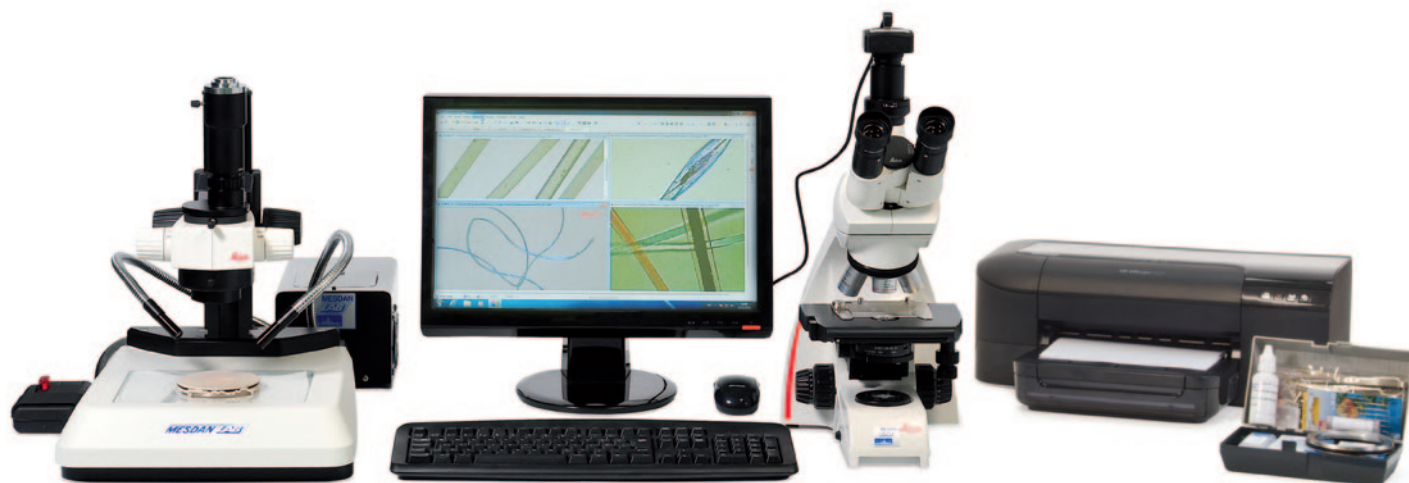
Suitable to perform a variety of analysis, such as:

- fibre fineness (conforms to ISO 137, UNI ISO 1130, UNI 5423, ASTM D276, ASTM D2130 standards);
- fibre identification;
- fibre and yarn cross section;
- research of foreign fibres and of the contamination particles;
- fabric structure (warp and weft density);
- fabric composition, conforms to IWTO 8, TWC TM24, ISO 137, ASTM D2130, NIKE (Section H, Fiber Content Testing Requirements) Standards;
- non-woven uniformity (evenness of fibre distribution);
- inspection of mechanical parts (i.e.: needles, spinnerets, travellers, zippers, etc.);
- monitor the quality of purchased raw materials.

The system is available in 3 versions:

- **Video Analyser (Code 250D)**, complete with both Biological and Stereo Microscope.
- **MicroLab (Code 250E)**, inclusive of Biological Microscope only.
- **MacroLab (Code 250F)**, inclusive of Stereo Microscope only.

VIDEO ANALYSER Code 250D



System composition

- **LEICA Biological Microscope**, equipped with:
 - Professional lenses, recommended for the longitudinal and sectional analysis of fibres and yarns.
 - Trinocular phototube viewing body with "Siedentopf" design, to adjust the interpupillary distance without changing the focusing.
 - Koehler illumination device for the phase contrast and micro photography (20W).
 - Objective image viewing.
 - Polarising filter for a better sample viewing.
 - High precision focusing system.
 - Slide movement device with micrometric regulation.
 - On screen magnifications from 195X to 2830X.
 - Highly accurate revolving lenses system.
- High quality **LEICA Stereo Microscope**, for the analysis of fabrics, yarns and mechanical parts like traveller, needles and spinnerets. Equipped with:
 - Illuminated base. Adjustable light intensity, particularly suitable for the analysis of fabrics.
 - High precision focusing device.
 - Videocamera connector (oculars supplied as optional).
 - 5 fixed focus lenses.
- Professional digital **colour camera**, 1/2.3", 25.0 Mpixel, USB 3.0, to acquire images from microscope
 - Image Sensor: 1/2.33" Aptina MN34120 CMOS (6.18X14.67 mm).
 - Pixel Size: 1.335 μm X 1.335 μm .
 - Color Rendering Technique: Ultra Fine HISP Color Engine.
 - A/D Converter: 12-bit Parallel, 8-bit R.G.B. to PC.
 - Max Resolution (Hardware): 4648x3506 (16MP).
 - Exposure: Normal; 0.2-2000 ms.
 - USB Cable: USB 3.0 cable, 2.5 m length.
 - Camera Body: Metal body painted in black, square type, 68x68x46 mm.
- **LED ring light illuminator**
 - Chromaticity coordinates (x, y): 0.320, 0.320 (pure white), 6300K.
 - Optical power: Luminous flux: 220 lumen.
 - Illuminance (at 10 cm distance): 30000 lux.
 - Adjustable brightness.
 - Illumination settings: omnidirectional (ring completely on), oblique (only a quarter or half ring switched on).

Lenses	Magnifications	Visual field (mm)
4x	195	1.5
10x	472	0.6
20x	943	0.3
40x	1887	0.15
63x (optional)	2830	0.1/0.09

Lenses	Magnifications	Visual field (mm)
0.63x	16	18
1x	44	6.4
1.6x	71	4
2.5x	113	2.5
4x	189	1.5

Note:

- Dimensions and final magnifications also depend on the hardware in use
- Magnifications and fields of vision have been calculated by using a 21,5" monitor with 1536x1160 pixels resolution.

- Fibres, yarns, fabrics **sample preparation, and microscope observation kit** (Code 250.325), composed by:

- a complete set for sample preparation (scissors, tweezers, blades, needles, yarn, slides, slide holders, and other accessories);
- immersion oil;
- sample holder for fabric analysis;
- plate for fibre section analysis;
- calibration slide, for the system routine calibration.

- **Personal computer and printer**

- Personal computer (Code 237.92), complete with LCD monitor (Code 250.300).
- Ink jet photographic quality A4 printer (Code 250.4), complete with a set of ink cartridges and high definition photographic paper, supplied as spare.

- **Software**

The Mesdan Video Analyser software is characterised by its high versatility and flexibility; it allows to measure length, surfaces, perimeters, angles, etc. The operator can scroll on screen the stored images for comparison with live pictures, create reports with comments, graphs, statistics, etc.

The software is provided with 5 ready-to-use Excel templates for the most common analysis, such as:

- perimeter and surface calculation;
- fibre count measurements;
- yarn/fabric composition (blend analysis);
- fabric density (cm/inch);
- generic length measurements.

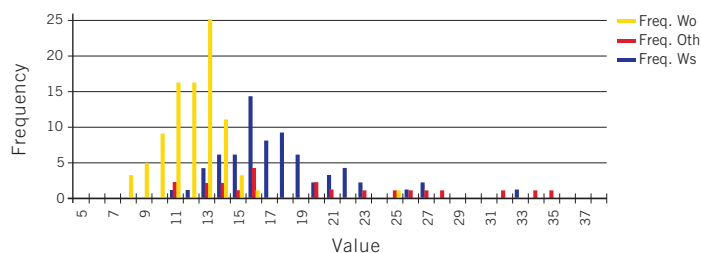
Customised Excel templates can be created by the operator following each specific requirement, making the Video Analyser an ideal tool to run all kind of claims.

The obtained data allow to produce reports with statistics (CV%, mean values, composition percentages, etc.) and comparative graphs, that can be either printed or stored. In order to ease fibre identification, the software includes a “fibre database”, a comprehensible collection of known fibres represented by their cross section and longitudinal view.

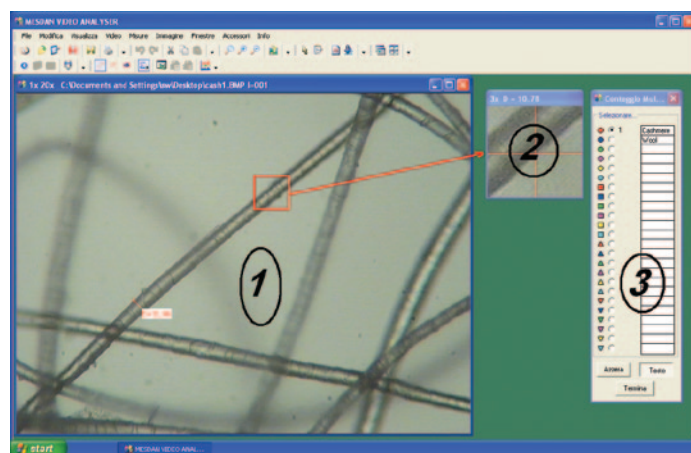
Example of fibre fineness analysis:

- 1.Window displays the live picture: it is possible to store/print a picture complete with comments and measurements and export them to an Excel template to obtain statistics.
- 2.“View finder” pop-up window on the area where measurements are taken, in order to guarantee the best accuracy.
- 3.Material chart: the name of the material to be tested is entered here (each material measurement is expressed in different colours); if necessary, each measurement will be exported automatically in pre-set Excel columns.

Available Languages: Italian, English, Spanish, Portuguese and Polish.



	N°	Mean	Mode	Min	Max	St.Dev.	CV%	IC.(95%)	%
Wo	76	18,43	17	12	34	3,79	34,54	2,06	26,09
Other	28	19,39	16	11	35	7,45	62,15	4,22	29,81
Ws	96	12,14	13	8	25	2,18	18,19	0,95	44,09



Optional

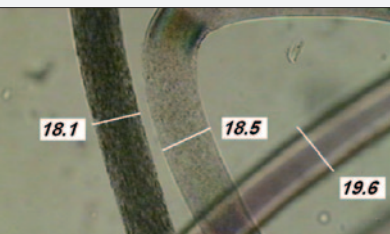
- **63X Lens (for the Biological Microscope)** as replacement of one of the 4 lenses supplied as standard with the microscope, it enables a 2830X on screen magnification. Code 250.336.
- **Optical fibre illumination device** (for both Biological & Stereo Microscope), 70000 lux illuminance (at 10 cm distance), equipped with two arms (each one 50 cm long), 14W LED, brightness control potentiometer. Code 250.318.
- **C-STEP Connector with 0.5X Lens (for the Biological Microscope).** The installation of this connector allows to halve the magnification on screen and double the sample field of vision. Code 250.338.
- **Trinocular Kit** (for the Stereo-Microscope), to display the sample image either on the PC monitor or in the oculars. Code 250.340.
- **C-STEP Connector with 0.5X Lens (for the Stereo-Microscope).** The installation of this connector allows to halve the on screen magnification and double the sample field of vision. Code 250.334.
- **Translator stage for the Stereo-Microscope.** Code 250.424.
- **Microtome**, Code 256A, (only for Code 250D, 250E).

Consumables

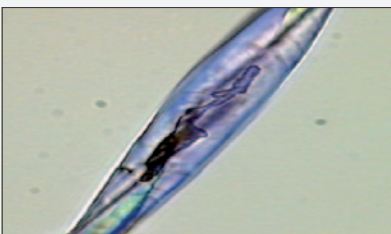
- Set of 50 slides, Code 191.50.
- Set of 200 slide covers, Code 191.52.
- Immersion oil bottle, Code 191.54.
- Pack of paper for printer, Code 250.18.
- Set of cartridges for printer, Code 250.322.

VIDEO ANALYSER

Some examples of the most typical applications of Video Analyser:



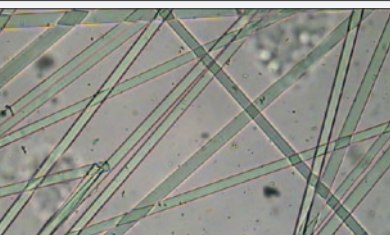
Fibre identification of fineness



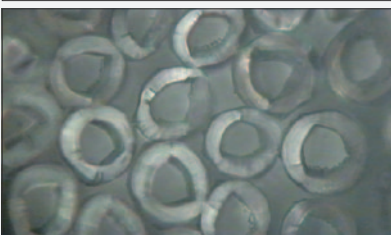
Length view of cotton fibre and wool fibre



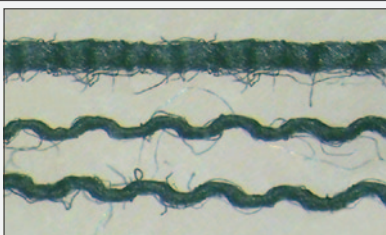
Viscose fibre (section view)



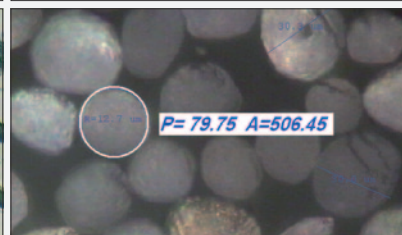
Glass fibre



Section of round hollow fibres



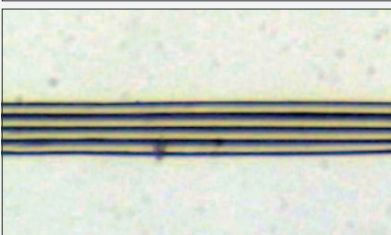
Yarn crimp evaluation



Perimeter & area



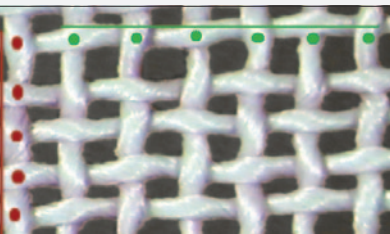
Lycra core protrusion



Analysis of Lycra filaments



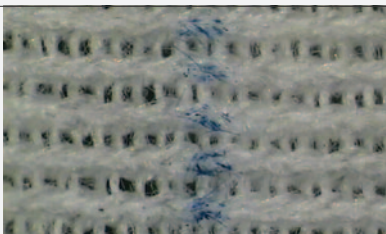
Non-woven regularity



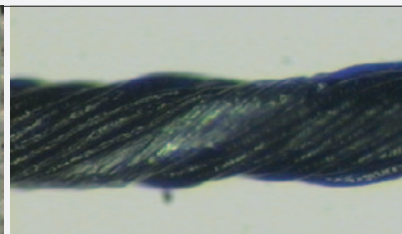
Fabric density assessment



Contamination analysis



Parts inspection - comparison



Section of indigo yarn

DIMENSIONS / POWER SUPPLY

Weight: 53 kg
Dimensions: (L) 1080 x (W) 700 x (H) 700 mm
Power supply: 100-240 Vac, 50/60 Hz

Photographs and descriptions of the present leaflet have to be considered as purely indicative and not binding

REFERENCE STANDARDS

ISO 137, UNI EN 12751, UNI 5423, UNI ISO 1130, ASTM D629, ASTM D2130, ASTM D276, AATCC 20, IWTO 8, TWC TM24, NIKE (section H, fiber content testing requirements).