QUALITY CONTROL TESTING EQUIPMENT FOR TEXTILE
In 1952 Sir Daniele Messa established Mesdan company in Salò - a manufacturing workshop specialized in the production of textile hand knotters. In the 1960's the company became a qualified mechanical industry under the creative impulse of Sir Daniele Messa's son, Mr Pietro. During those years MESDAN was also very busy in developing reliable mechanical knotters suitable to meet the needs of the new automatic winding machines. In the 1970's MESDAN became a consolidated industrial reality of international prestige, and - in 1975 - its corporate structure was changed into a S.p.A. (joint-stock company) corporate form. Meanwhile MESDAN became the leading supplier of knotters to manufacturers of automatic winding machines all over the world. The 1980's are characterized by the 'knot free' yarn joining technology (the so called “splicing” technology), and Mr Renato Zanca (successor to Mr Pietro Messa as Managing Director) led the company to the realisation of an innovative range of splicing devices, soon becoming internationally recognisable thanks to the “JOINTAIR®” and “AQUASPLICER®” trademarks. Mr Zanca also decided to diversify the company activity by entering the business of textile laboratory equipment, to meet the growing demand for Testing and Quality control. In the 1990's MESDAN became established in the field of Laboratory equipment, and made commercial alliances with the most important companies in this sector. After the acquisition of “Osvaldo Fessia’s Omac snc” company - specialized in the production of Lab equipment for the control of yarns and fabrics - MESDAN opened its new division known as MESDAN LAB, and started the production and marketing of a wide range of testing equipment. In 2012 the division expanded further, following the acquisition of the controlling stake in Gavazzi S.r.l., an Italian manufacturer of top quality laboratory dyeing & finishing machines. In 2012 MESDAN celebrated its 60th anniversary, acquired the major stake of “Gavazzi S.r.l.” - a leading company in dyeing & finishing quality control - and launched the new MESDAN DYELAB line. In 2013 MESDAN joined the “Savio” group of companies.

Mesdan Italy has reached a leading position in the field of yarn joining technology in over sixty years of research & development. Nowadays the 100% “knotless” plied yarn concept leads inevitably to Mesdan splicers, which are considered as a point of reference, thanks to their vanguard technology, workmanship quality, performance reliability and consistency. At present the company consists of two different business units: "Mesdan Yarn Joining Solutions", and “MESDAN LAB” laboratory equipment line.

"Mesdan Yarn Joining Solutions” line includes the complete range of Mesdan splicers - characterized by their registered trademarks: JOINTAIR®, AQUASPLICER®, HOT JOINTAIR®, and MOISTAIR® - which are designed in the automatic version (for automatic winders) and in the semi-automatic version for trackmounted installations (for textile machines, where automatic splicing is not possible).

“MESDAN LAB” laboratory equipment line includes a wide range of instruments, suitable for testing fibers, yarns, fabrics and garments, in both traditional and technical textiles. With over two decades track in the field of testing, “MESDAN LAB” can be considered today one of the leading international manufacturers of laboratory instruments.
“MESDAN LAB” is a division of Mesdan S.p.A. renowned designer of yarn joining solutions.

Mesdan entered the textile laboratory business in the early nineties, to meet the growing demand in the market for quality control assurance with the acquisition of “OMAC snc”, a company located in Biella (Northern Italy) specialised in the production of testing equipment. Since then MESDAN has designed a complete range of equipment for the analysis of textile materials (fibres, yarns, traditional and technical fabrics), nonwoven, leather, etc., in compliance with International Standards.

“MESDAN LAB” instruments stand out for their industrial design and sound quality that guarantee accurate performances in the long run. The “MESDAN LAB” line is produced with particular attention to the environment, in conformity with the safety standards integrating operator-friendly solutions.

In 2004 Mesdan obtained from Det Norske Veritas (DNV) the certification about Quality and Environmental Management System in conformity to UNI EN ISO 9001 and UNI EN ISO 14001, with validity for design, manufacture and calibration of textile laboratory instruments.

Following the acquisition of “Gavazzi”, a new range of laboratory dyeing equipment called MESDAN DYELAB SYSTEMS was launched. This range is distinguished for its outstanding workmanship, top quality components/materials, unique technological solutions and excellent results in terms of dyeing accuracy and repeatability.
This catalogue is composed of 5 thematic sections illustrating the “MESDAN LAB” testing equipment range according to the material to be tested. More detailed information is available in dedicated brochures, which can be downloaded from our website, or obtained from our sales department.

Pictures and information about the instruments are merely indicative. Mesdan S.p.A. reserves the right to modify these specifications at any time, without notice.

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Pressley Fibre strength 231A

An equipment to determine the resistance of cotton fibres. It is fitted with clamps with 0” and 1/8” distance. The use of Pressley requires a torsion balance with capacity up to 10 mg and resolution 0.02 mg (code 259B).

Accessories: calibration cottons (code 199.22).

Reference standards:
ISO 3060, ASTM D1445, BS 5116, ASTM D2524

Weight: 3.2 kg
Dimensions: (L) 330 x (W) 100 x (H) 125 mm

Double Comb Sorter Fibre length 230A

For the production of staple diagrams for short spun fibres up to 100 mm (4”) length.
Determination of fibre length or staple diagram is a decisive factor in determining the spinning quality of raw material and for the setting of spinning machinery.

Reference standards:
ISO 920, ASTM D 1440/1575, IWTO 1-66

Weight: 4.5 kg
Dimensions: (L) 250 x (W) 150 x (H) 140 mm

Torsion Balance 259

For the weighing of small quantities of fibres or tufts.

Available with the following capacities:

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<td>From 0 to 250 mg, accuracy 0.50 mg</td>
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<td>From 0 to 500 mg, accuracy 1 mg</td>
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Weight: 2.5 kg
Dimensions: (L) 320 x (W) 240 x (H) 410 mm
### Fiber Tensolab 331A

Single fibre electronic strength tester suitable for natural and synthetic fibres.

- Complete with load cell of 500 cN, 0.5 class accuracy.
- Traction speed range from 0.001 to 1000 mm/min.
- 300 mm stroke.
- A "Kit Cotton Fibre Bundle", special 0" and 1/8" clamps for testing cotton fibres, Pressley method, 20 N load cell are available on demand.
- RS232 port and software are included (PC is optional).


Power supply: 115 V or 230 V, 50/60 Hz, single-phase

Weight: 46 kg
Dimensions: (L) 590 x (W) 450 x (H) 770 mm

### Micronaire 199C

Device for the control of the cotton fibre fineness.

- Measurement from 2.5 to 7 micronaire index.
- Calibration chart prepared using USDA cotton references.
- Test with 2.5 grams sample.
- Complete with electric vacuum-pump generating the air flow.
- Non hygroscopic plug for checking instrument.
- The use of MICRONAIRE requires an electronic scale with an accuracy of 0.01 g (**Code 165.708**).

Reference standards: ISO 2403, ASTM D1448, BS 3181-1

Power supply: 230 Vac, 50 Hz, or 115 Vac, 60 Hz (to be specified on order)

Weight: 25 kg
Dimensions: (L) 300 x (W) 300 x (H) 900 mm

### Air Flow 272C

Device for the control of the wool fibre fineness.

- Measurement from 16 to 36 microns.
- Test with 2.5 grams sample.
- Complete with electric vacuum-pump generating the air flow.
- Non hygroscopic plug for checking instrument and correction of reading.
- The use of AIR FLOW requires an electronic scale with an accuracy of 0.01 g (**Code 165.708**).

Reference standards: IWTO 6, IWTO 28, ISO 1136

Power supply: 230 Vac, 50 Hz, or 115 Vac, 60 Hz (to be specified on order)

Weight: 25 kg
Dimensions: (L) 300 x (W) 300 x (H) 900 mm
Calibration Cottons

Suitable for the calibration of cotton examination instruments, in accordance with USDA standards.

For calibration of fiber fineness:
- American Upland Micronaire 5.5
- American Upland Micronaire 4.5
- American Upland Micronaire 3.5
- American Upland Micronaire 4
- American Upland Micronaire 2.6
- American Upland Micronaire 5.0

For calibration of Micronaire, resistance, elongation and length:
- C39 American Upland: Micronaire 3.39, 25.1 g/tex, 7.1% elongation, 1.12 inch S.L. at 2.5%, 0.53 inch S.L. at 50%
  Code 199.22

For calibration of resistance and elongation:
- L2 American Upland: 18.0 g/tex, 5.6% elongation Code 199.28
- M1 American Upland: 30.8 g/tex, 6.4% elongation Code 199.26

Binocular Microscope 1000X

Binocular model, suitable for fibre analysis.
The combination of eyepieces and lenses enables a magnification range from 40X to 1000X.
Equipped with micrometric stage carrier for object prospecting.

- Power supply: 100 up to 240 Vac, 50/60 Hz, single-phase
- Weight: 4 kg
- Dimensions: (L) 120 x (W) 200 x (H) 350 mm

Microtome

Hand operated model to produce fibre samples of predetermined length for microscopic analysis.

- Reference standards: ISO 137, UNI 5423-64
- Weight: 0.16 kg
- Dimensions: (L) 120 x (W) 50 x (H) 10 mm

Fibre Microscope Kit

Complete kit of all accessories needed for the analysis of fibres length and section. It includes:
- 100 glasses and 200 glass covers
- one oil package
- tool kit (tweezers, scissors etc.)
- needles
- tool for preparation of section of fibres and yarns
High performance computerised system conceived for the analysis of fibres, yarns, non-wovens, etc.
Equipment suitable to: perform in a fast and easy way the fineness analysis of single fibres; identify the different fibres contained in a blend and analyse the composition percentage; check the purchased material and identify the type of fibre; analyse the yarn structure and detect possible defects; measure the count of circular section yarns and filaments in Dtex order; check and measure the quality and shape of Lycra or synthetic multifilament single threads; analyse the compactness of non-woven fabrics; analysis of yarn and fibre sections; measure section surfaces and perimeters; analyse mechanical parts (i.e. needle points, spinnerets, etc); process, store and print the produced measurements and the minimum, medium and maximum values, CV% and distribution graphs.

The system is composed of:

**LEICA biological Microscope:** magnification range on video from 252 to 1160x, with slide movement device with micrometric regulation, polarising light, for fibres and yarns analysis, etc.

**PC complete with, LCD monitor and photographic quality printer.**

**Professional Video-Camera with 1/2” CCD, 14 Mpixel,** receiving images from microscope.

**Software “Mesdan Video Analyser”** for the image acquisition, the production of measurements and comments on the stored images and measurements directly on the live images, the statistic analysis of the acquired measurements.

**Fibre Microscope Kit** (code 250,325) for the microscopic analysis (fibres and yarns) and instructions for sample’s preparation.


Power supply: 100 up to 240 Vac, 50/60 Hz
Weight: 50 kg
Dimensions: (L) 1600 x (W) 700 x (H) 700 mm

**Optional:**

63X LENS enable 2620X on screen magnification.

C-STEP CONNECTOR WITH 0.5X LENS allows you to halve the magnification on screen and double the sample field of vision.

Set of 50 slides
Set of 200 slide covers
Immersion oil bottle
Pack of paper for printer
Set of cartridges for printer

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Example of micronaire analysis of a blend made of 3 different fibres
Classifiber type W  Fibre length

Automatically measuring the length of any type of fibre (animal, vegetal or synthetic).
Specifically conceived for testing cashmere fibres or similar.
Measuring range up to 80 mm.

**Graphic data from each individual test:**
- Fibrogram
- Staple diagram
- Histogram

**Statistics:**
- Mean
- Minimum (Min.)
- Maximum (Max.)
- Range (R)
- Standard deviation (s)
- 95% confidence limits (Q965%)

**Testing results:**
- Mean length (ML)
- Upper half mean length (UHR)
- Span length at 2,5% (SL 2,5%)
- Span length at 50% (SL 50%)
- Span length at 66% (SL 66%)
- Uniformity ratio (UR%)
- Uniformity index (UI%)
- Short fiber content (SFC%)

Classifiber is PC dependent. PC and dedicated software are supplied with the instrument. Complete of flat carding for sample preparation and accessories kit. Fibre length readable in mm and inches. Excellent correlation with manual testing but faster (average of 3 tests): only 20 seconds.

Reference standards: ISO 6989, ISO 4913, ASTM 1447, UNI 10141

Power supply: 115 Vac or 230 Vac, 50 Hz or 60 Hz, single-phase
Weight: 50 kg
Dimensions: (L) 1600 x (P) 750 x (H) 720 mm
Suitable for cotton, synthetic and blended slivers as well as raw cotton material.

By means of an optoelectronic system, NATI measures Neps and Trash in different size classes:

- \( \geq 0.50 \text{ mm} \);
- \( \geq 0.70 \text{ mm} \);
- \( \geq 1 \text{ mm} \) for Neps

- \( \geq 0.25 \text{ mm} \);
- \( \geq 0.50 \text{ mm} \) for Trash.

Specifically designed to be fast, reliable and easily transportable to the production floor for continuous testing and assessment of Neps and Trash at different process stages.

NATI is the only instrument presently available on the market measuring and classifying automatically Neps and Trash content in samples of large size up to 6 m of sliver (30 g approximately, depending on sliver count).

NATI is the only Nep tester for which no manual preparation of the sample is required thus ensuring total reliability of results (it is known that the ability of the operator can lead to 25%-50% variation in the results).

Transportable and fast in testing large size samples (it takes less than 2 minutes to test 2 g of sliver), NATI makes daily control of carding department feasible, thus enabling a better quality of carding operation and a better planning of card maintenance.

User-friendly, NATI does not require any skill for operation and preliminary operation before testing.

Raw cotton testing: the use of the optional “Raw Cotton Selector” code 3282 enables you to prepare 2/2.5 g samples in short time and without the influence of operator’s ability on results.

NATI fits an enlarged fibre waste which box, especially conceived for testing large size samples, is recommended specifically for combed cotton and synthetic slivers due to the small content of Neps/g.

NATI is endowed with a brushless motor (of easy maintenance) granting unchanged performance even after several thousand hours of test.

Available in the version for PRINTER or PC connection (to be specified at time of order).

Optional:

- Opening roller B174N for Cotton Code 3280.168*
- Opening roller S43N for Polyester Code 3280.169*
- Printer, 220 V Code 3280A.136
- Raw Cotton Selector Code 3282
- Trolley Code 3280.900

* one opening roller at customer’s choice is already supplied with the instrument.

Power supply: 115 Vac or 230 Vac, 50 Hz or 60 Hz
Weight: 35 kg
Dimensions: (L) 400 x (W) 350 x (H) 640 mm
Top Tester  Nebs-impurities counting  328A
For quick and accurate counting of impurities and neps in wool, cotton and synthetic fibre tops.
Adjustable distance between rollers ranging from 42 to 260 mm.
Adjustable speed from 5 to 12 m per minute.
Predetermined drawing standard value: 6.35 (other values are available on request).
Impurities are counted and classified through a series of 6 electronic counters.
Magnifying lens, fitted with light, included  Code  328.2
Optional:
Printer for print-out of defects in tops  Code  3280A.136
Power supply: 115 Vac or 230 Vac, 50 Hz or 60 Hz, single-phase
Weight: 120 kg
Dimensions (L) 700 x (W) 800 x (H) 1400 mm

Trash Analyser  281C
To determine the percentage content of trash, lint, non-fibre material in raw cotton samples of about 100 g. Also used to determine non-fibre content of synthetic fibres and to open and clean fibres for further testing. The analyser uses the carding principle with air separation of lint and non lint content.
Power supply: 400 V, 50 Hz, three-phase + ground
Weight: 190 kg
Dimensions: (L) 640 x (W) 950 x (H) 1300 mm

Raw Cotton Selector  3282
Small laboratory carding machine to prepare a cleaned and homogenous sample of raw cotton, to be used with NATI for testing of neps content.
Raw Cotton Selector is ideal for the preparation of samples to be tested on a sticky cotton thermodetector (Honey Dew analysis). Generally speaking Raw Cotton Selector is ideal for preparation of clean fibre samples to be tested.
Power supply: 115 Vac or 230 Vac, 50/60 Hz, 30 VA
Weight: 25 kg
Dimensions: (L) 625 x (W) 420 x (H) 250 mm
Electronic Slivers & Rovings Reel 254A-254B

Available with a drum circumference of either 1 yard (code 254B) or 1 metre (code 254A). Adjustable drum speed from 0 to 100 m/min., with ±1 cm accuracy; equipped with cutter. Designed to prevent any possible drawing of the fibre sample.

Fitted with digital counter and cutter for accurate cutting of the sliver sample.

Power supply: 115 Vac or 230 Vac, 50/60 Hz single-phase
Weight: 52 kg
Dimensions: (L) 450 x (W) 300 x (H) 500 mm

Manual Slivers & Rovings Reel 159A-159B

Hand-driven reel for slivers and rovings.

Available with either 1 metre (code 159A) or 1 yard (Code 159B) drum circumference.

Fitted with digital counter and cutter for accurate cutting of the sliver sample.

Weight: 17 kg
Dimensions: (L) 330 x (W) 270 x (H) 600 mm

Oil Extractor 273B

Electronic apparatus with digital reading of set temperature for quick determination of oil/grease/lubricant percentage content in fibres and yarns. It takes about 15 minutes.

The use of an analytic balance with accuracy 0.0001 g is essential with this apparatus (code 165.702).

Accessories:

Set of 50 aluminium plates code 273B.2

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 8 kg
Dimensions: (L) 250 x (W) 150 x (H) 430 mm
Climatest  Lab conditioning chamber

Laboratory instrument for the conditioning of all textiles, such as raw fibres, yarns on spools and hanks, fabrics and garments in general, at constant temperature and humidity, according to ISO norms.

Climatest is supplied complete with two inner shelves. Equipped with inner glass door for inspection.

Adjustable temperature ranging from +5°C to +80°C, accuracy ± 0.5°C at 37°C.

Relative humidity ranging from 20% R.H. to 90% R.H., accuracy ± 3%. Digital reading of both temperature and humidity.

Automatic water inlet into the reservoir.

Reference standards: UNI EN ISO 139, ASTM D1776, UNI EN 12280-3

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase

Weight: 130 kg

Inner dimensions: (L) 593 x (W) 522 x (H) 633 mm

External dimensions: (L) 960 x (W) 760 x (H) 1390 mm

Melting Point Apparatus

To determine the melting point of fibres and synthetic yarns and classify them.

Measuring range: from +30°C to +300°C, accuracy ± 0.1°C.

Complete with magnifying lens to check the melting point, and 100 slides.

Reference standards: ASTM D789, ASTM D2117, FIAT 50568

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase

Weight: 6 kg

Dimensions: (L) 280 x (W) 190 x (H) 220 mm
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<td>Dye Scanner / Yarn-knit (Dye) uniformity</td>
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<td>37</td>
<td>Laboratory Carding Machine</td>
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<td>Stiro Roving Lab / Miniature draw frame</td>
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<td>Twister Lab / Two for one lab twister</td>
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</table>
Electronic Wrap Reel for Yarns

To prepare yarn skeins of a preset length, that will then undergo testing for the determination of the related count. Equipped with electronic pre-selector for the automatic stop at the preset length. Supplied complete with a 7-position support creel (spool and small bobbin holder). Adjustable double-bar yarn tensioner.

Reference standards:
UNI EN ISO 2060, ASTM D 1907, ASTMD2260

The electronic wrap reel is available in the following models:
- 1 m reel circumference - 7 positions
- 1 m reel circumference - 10 positions
- 1 yd reel circumference - 7 positions
- 1.5 yd reel circumference - 7 positions

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 40 kg
Dimensions: (L) 900 x (W) 600 x (H) 600 mm

Hand Driven Wrap Reel

Available reel circumferences:
- 1 meter Code 160M
- 1 yard Code 160Y

Equipped with digital counter for yarn length reading. Supplied with support creel and double-bar yarn tensioner.

Reference standards:
UNI EN ISO 2060, ASTM D 1907, ASTMD2260

Weight: 35 kg
Dimensions: (L) 900 x (W) 600 x (H) 600 mm
Optional for Wrap Reels

Stationary Adjustable Yarn Tensioners 161M.330

Suitable in case of very coarse yarns for which a very high pretension is required (for example carpet yarns), or in case of preparation of textured synthetic fibres skeins for Crimp value testing.

This optional should be fitted on the reel feeding creel in place of the standard double-bar tensioner, or on the yarn guide support.

Fixed Tensiometer 161M.334

Conceived for synthetic yarns which require an accurate and continuous control of pre-set pretension during wrapping.

Available reading ranges (to be indicated when placing the order):

- 3-12 cN
- 5-20 cN
- 5-30 cN
- 10-50 cN
- 10-100 cN

Mobile Vertical Creel 3102

Suitable for feeding different instruments such as wrap reel, automatic strength tester, automatic twist tester, Attrifil, evenness tester etc., where it is necessary to simultaneously use large size bobbins.

Weight: 22 kg
Dimensions: (L) 600 x (W) 600 x (H) 2000 mm
Count Analyser II

To determine the count of slivers, rovings, yarns and fabric weight per m². Outputs: single result, minimum, maximum and average, CV%, range%, sigma, I.C. (95%), results out of tolerance. Standard measurement scales are available: Nec/m, Nec/yd, Nm, Den, Tex, dTex, grain/yd, g/m². Sample length from 1 cm (1 inch) up to 999 m (yard).

According to the weight of the sample to be tested, following balances are available:

- Sartorius balance - 820 g capacity - 0,01g accuracy - pan size ø 150 mm (suitable for yarns) Code 165.708
- Sartorius balance - 320 g capacity - 0,001g accuracy - pan size ø 115 mm (ideal for synthetic filaments and fine yarns count testing) Code 165.704

Other models available on request.

Reference standards: ISO 3374, UNI EN 29073, UNI 8014-2-3-4, ISO 2060, UNI 5114, BS 2471, ISO 3801, ASTM D1907/D3776, UNI EN ISO 2060, UNI EN 12127

Power supply: 115 up to 230 Vac, 50/60 Hz, single-phase
Weight: 4.3 kg
Dimensions: (L) 700 x (W) 400 x (H) 200 mm

Count Lab Software

Suitable to determine the count of sliver, roving, yarn and fabric weight per m². Standard measurement scales are available: Nec/m, Nec/yd, Nm, Den, Tex, dTex, Grains/YD, Gr/m². Outputs: single result, minimum, maximum and average, CV%, range %, I.C. (95%), results out of tolerance. Test results are exported to Excel for automatic calculation of statistics (average, minimum, maximum count, C.V.%, sigma, range %, IC%, upper and lower IC% limits).

Output report can be printed and saved. PC minimum features required: Windows Xp, Excel (2000 or Xp) program, one serial and one USB port.

Supplied with connection cables.

Optional: Sartorius electronic balance with different capacity and accuracy depending on the textile to be tested. Count Lab Software can be connected to Sartorius balances only. PC available on request.

Reference standards: ISO 3374, UNI EN 2973-1, UNI 8014-2-3-4, UNI EN ISO 2060, UNI 5114, BS 2471, ISO 3801, ASTM D1907/D3776, D2646, ISO 2060, UNI EN 12127, ISO 9073-1
**Air-Texturlab Yarn air texture 320C**

To determine the percentage of crimp in all types of textured synthetic yarns.

Air-Texturlab requires the use of an electronic wrap reel of 1 m circumference (code 161M), a forced ventilation oven with internal capacity 250 litres (code 251P) - supplied complete with skein support. The most suitable pretension weights (optional) can be selected from the ones listed in the table below, according to the nominal count.

Reference standards: DIN 53840-1 (up to 500 dtex), DIN53840-2 (over 500 dtex), UNI EN 14621, ASTM D4031, ASTM D225

Weight: 10 kg
Dimensions: (L) 500 x (W) 20 x (H) 800 mm

---

**Water-Texturlab Yarn water texture 320D**

To determine the percentage of crimp in all types of textured synthetic yarns; particularly suitable for nylon textured yarns for stockings. Equipped with a Plexiglas cylinder to be filled with water and a skein holder millimetre bar with 1 mm accuracy.

Water-Texturlab requires the use of an electronic wrap reel of 1 m circumference (Code 161M) and a set of pretension weights (optional) to be selected according to the nominal count.

Built according to: BS 6663

Weight: 8 kg
Dimensions: (L) 120 x (W) 120 x (H) 800 mm

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**Optional pretension weights for Air and Water Texturlab 320C 320D**

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Weights with simple hook

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**Thermal Shrinkage 326C**

To determine the shrinkage (%) of synthetic yarns and cords at closely controlled temperature according to ASTM D4974 and UNI EN ISO 13844, ASTM D5591.

Reading of shrinkage on the mechanical scale.
Adjustable temperature range: from +25°C to +250°C.
Software included. Personal computer optional.

Power supply: 115 Vac or 240 Vac, 50/60 Hz
Weight: 30 kg
Dimensions: (L) 520 x (W) 550 x (H) 460 mm
Fully automatic twist tester to be connected to a personal computer for the control of the loading phase, the twist testing, the change of the yarn length of the bobbin under test, the processing of a complete series of statistical data and for the printing of the related reports.

The instrument, unique for its high quality, can automatically perform serial twist tests on a single package (max. 999 tests) or, if connected to the Auto Cop Changer (ACC) device, code 299A, it can perform multiple tests on several packages (up to 24), automatically.

Suitable for all types of spun (ring and open-end) yarns and synthetic filament yarns, both “S” and “Z” twist.

Technical features:
- Automatic testing either on one package or on 24 packages by means of the Auto Cop Changer (ACC), which guarantees high accuracy and repeatability of results, also eliminating the human error.
- Three preselection test methods:
  - Traditional method: untwisting and retwisting on single yarns.
  - “Schutz” method: untwisting, retwisting and double counter-check, automatically performed on O.E. spun and combed wool yarns.
  - Direct method: untwisting for single yarns and multi-filament yarns.
- Twist testing on certain yarn lengths at preset intervals.
- Statistical results: average value, minimum value, maximum value, C.V.%., range, standard deviation and alpha coefficient.
- Twist results available either in rotations per metre (RPM) or rotations per inch.
- Distance between clamps is fixed at 50 cm.
- PC connection through RS232C serial output.
- PC and Printer are available on request.
- Reference standards: UNI EN ISO 2061, UNI 9277, UNI 9069, ASTM D1422, ASTM D1423, UNI 9067
- Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
- Air supply: 6 bar
- Weight: 25 kg
- Dimensions: (L) 1060 x (W) 330 x (H) 330 mm

“Auto Cop Changer” (ACC), up to 24 positions, can be connected to Twistmatic Plus, Attrifil, Autodyn and Dye Scanner for multiple tests on a lot of packages (up to 24) without operator’s attendance.

Very easy to use and suitable for a wide range of yarns.

Available also a 36-position model

Code 299B

Along the ACC, a creel is required

Code 3102

Power supply: 12 V, DC
Air supply: 6 bar
Weight: 17 kg
Dimensions: (L) 570 x (W) 250 x (H) 230 mm
Manual twist tester for twist measurement on single and plied yarns (S/Z). Two test methods are available:

Traditional “untwist/retwist” method for single spun yarns.
Direct “untwist” method for plied yarns, threads and multifilament yarns.

Adjustable test length (distance between clamps) from 1 to 50 cm (0.39-19.6 inches). Built-in digital tachometer (battery supplied) and optical sensor with led showing correct zero starting and ending position. (±1 turn of accuracy). Supplied Pretension system with pulleys with 9-weight kit, up to 70 cN, adjustable clamp speed, up to 2000 rpm.

Accessories included: magnifying lens, fixed calliper, pretension weights, bobbin holder, software and cable.

Optional: additional pretension weights (1 N, 1.5 N and 2 N), code 2531C.104.
Power supply: 1.5 V battery x 6
Weight: 9 kg
Dimensions: (L) 1000 x (W) 340 x (H) 220 mm

Electronic Twist Tester to determine twist of single, twisted (S&Z) and Open End yarns.

Three methods available to be selected by the operator:
traditional “untwist/retwist” method for single yarns.
”Schutz” method (untwist, retwist and double countercheck) for OE yarns, worsted and slippery yarns.
Direct “untwist” method for plied yarns, threads and multifilament yarns.

Adjustable test length (distance between clamps) from 1 to 50 cm (0.39-19.6 inches).
Built-in digital tachometer and optical sensor with led showing correct zero starting and ending position. (±1 turn of accuracy). Very accurate elongation index with built-in mechanical clamp.

Pretension system with pulleys with 9-weight kit, up to 70 cN. Adjustable clamp speed, up to 2000 rpm.
Endowed with two serial ports, for connection to PC (software and cable included) and to printer (optional).
Accessories included: magnifying lens, fixed calliper, pretension weights, bobbin holder, software and cable.

Optional: printer, additional pretension weights (1 N, 1.5 N and 2 N), code 2531C.104.
Power supply: 115 Vac or 230 Vac, 50/60 Hz
Weight: 11.5 kg
Dimensions: (L) 1060 x (W) 300 x (H) 220 mm
Computerised instrument for automatic measurement of the friction coefficient of yarns. Recommended for wax selection and control of waxing process (wax distribution on the yarn and wax duration).

It enables automatic execution of multiple tests on a single package of yarn without operator attendance. Continuous control of test parameters affecting the friction coefficient such as input pretension (value and tolerance) and yarn speed which can be adjusted by the operator up to 50 cN and from 50 to 300 m/min.

Very accurate reading of the input and output tension by means of two electronic tensionmeter heads.

Pre-selection of the yarn length to be measured.

Pre-selection of the yarn length between two consecutive measurements in alternative to random testing.

Software (O.S. Windows) for data saving and elaboration. Print-out listing test results, statistics, graphical representation of single test coefficient of friction and average value.

Optional:

Pc, printer

Attrifil II (code 233B) can be connected with the Auto Cop Changer (code 299A) to automatically perform tests on 24 different bobbins.

Along the Auto Cop Changer (ACC), a creel is required (code 3102).

Reference standards: ASTM D3108

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase

Air supply: 6 bar

Weight: 29 kg

Dimensions: (L) 460 x (W) 310 x (H) 290 mm
Autodyne II Plus Automatic strength tester

Modular strength tester automatically performing tensile tests and hysteresis cycles on yarns; it semi-automatically executes traction, compression, tearing tests on fabrics, covering adhesion tests, tensile test on yarn and hanks (lea test).
The exclusive Auto Cop Changer system (ACC code 299A) enables to test automatically up to 24 different yarns according to the parameters set in the PC by the operators.
Automatic single column strength tester, adjustable speed up to 5000 mm/min, with movement resulting from a ball bearing screw; it is controlled by a software which runs all the functioning phases.
Thanks to the specific modular software, Autodyne II Plus allows performing tests in compliance with the main international standards or according to parameters set by the operator which can be saved for future need.
Autodyne II Plus can fit different load cells easy to change with maximum capacity of 1000 N, and a huge range of pneumatic and mechanical clamps.
Modular design specifically conceived for textile industries requiring both automatic and semiautomatic testing of yarns, hanks, fabrics, covering cloths and seams.
Available also in one position automatic version code 2514 (see “Fabrics” section for more details).

**Optional:** PC, printer, LCD monitor
- Interchangeable load cells of 20 N
  - Code 2510.276
- Interchangeable load cells of 100 N
  - Code 2510.993
- Interchangeable load cells of 1000 N
  - Code 2510.282
- Mini autoclamps for low tenacity yarns
  - Code 2513.918
- Maxi autoclamps for high tenacity yarns (also sewing threads)
  - Code 2513.920
- LEA clamps for hanks (manual mode)
  - Code 2510.990
- Scott 100 clamps for yarns and industrial small ropes (mechanical)
  - Code 2510.995
- Mobile vertical creel
  - Code 3102

Other clamps for yarns and fabrics are available on request.
Reference standards: ISO, DIN, ASTM, BS, UNI, M&S standards

Power supply: 115 Vac or 230 Vac, 50/60 Hz
Air supply: 6 bar
Weight: 118 kg
Autodyne dimensions: (L) 600 x (W) 660 x (H) 1630 mm
ACC dimensions: (L) 570 x (W) 250 x (H) 230 mm - 17 kg
Tensolab 3  Tensile strength tester

Electronic semi-automatic single column strength tester suitable for the analysis of the tensile strength of all types of materials up to 300 kg (3000 N).
C.R.E. tensile strength measuring system.
Zero self-resetting after every test.
Automatic settable pretension of the sample under test.
Adjustable distance between clamps ranging from 50 to 500 mm.
Adjustable tensile speed ranging from 10 to 1000 mm/min. with return of the moving clamp at the maximum speed.
Tenso Lab 3 is directly controlled by a Personal Computer (available on request) enabling an accurate control of the functioning and statistical processing of results, in a smart Windows system.
The following basic data can be obtained: resistance, elongation, single values, average, C.V.%, RKM, hysteresis cycle tenacity.

- Interchangeable load cells of 20N Code 2510.276
- Interchangeable load cells of 100N Code 2510.993
- Interchangeable load cells of 1000N Code 2510.282
- Interchangeable load cells of 3000N Code 2510.283

Reference standards: ISO, DIN, ASTM, BS, UNI, M&S

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 99 kg
Dimensions: (L) 610 x (W) 610 x (H) 1550 mm

Available interchangeable mechanical and pneumatic clamps for yarns:
- Mechanical clamps for standard yarns Code 2510.994
- Scott 100 clamps for yarns and industrial small ropes (mechanical) Code 2510.995
- With pneumatic clamps for slippery, delicate or high elasticity yarns for pneumatic clamps, the foot switch is required Code 2510.300
- Silent-Compressor (available on request) Code 3390
- LEA clamps for hanks (manual mode) Code 2510.990

Other clamps for yarns and fabrics are available on request.

Example of Hysteresis cycle test
Portable electronic strength tester built in accordance with ISO, UNI, ASTM, DIN norms. Endowed with printer and USB port. Conceived to measure strength and elongation of yarns and splices. Compact and light, specifically designed for testing in the production area near the machines (winding, spinning and O.E. frames for example). Test results can be printed and downloaded by means of a USB memory stick and used for further processing.

Measure force: from 0 to 60 N (0-6 kg); elongation from 0.5% to 45% (0-110 mm)

Electro-magnetic clamps with automatic closure are supplied with the instrument.

Clamps distance: 250 mm

Testing speed: adjustable up to 1000 mm/min

Pretension: automatically adjustable according to the pre-set value.

Output: force and elongation results, statistics (min., average, max. force of elongation, CV%), tenacity

The “Splicer” mode is ideal for splicers’ control on automatic winders, measuring force and elongation of spliced yarns (up to 64 drums/splicers), elaboration of statistics for each splicer and for the complete winder: indication of out tolerance joints for each drum/splicer.

Reference standards: UNI EN ISO 2062, ASTM D2256

Power supply: 115 Vac or 230 Vac, 50/60 Hz

Weight: 10 kg

Dimensions: (L) 450 x (W) 330 x (H) 140 mm

Optional:

Battery kit with built-in feeder 115 Vac

Battery kit with built-in feeder 230 Vac

Manual clamps for slippery yarns

Movable Trolley

Code 2553.3244

Code 2553.3240

Code 2550.120

Code 2550.150
For the evenness control of slivers, rovings and yarns made of both natural and synthetic/manmade fibres. Thanks to the use of capacitive sensors, the instrument can measure, analyse, calculate and display (with related printout) the following data:

- Mass variation diagram
- 160 channels spectrograph to analyse the wave length spectrogram
- CV% and U% of mass variations
- AVE% (relative yarn count)
- I.P.I. with an indication of thin places, thick places and neps
- D.R.% (deviation rate %)
- C.V.% (L) referred to 4 lengths
- Diagram of mass variation both in “inert” and “1/2 inert” way

The instrument is composed of:

- Measuring frame
- Personal computer with monitor and printer
- Windows OS software
- Technical features:
  - Count range from 30 g/m (sliver) to Nm 250 (yarn)
  - Sample speed: from 8 to 400 m/min.
  - 160 channels spectrograph
  - 6 bar compressed air is required

**Optional:**

- 24-position Auto Cop Changer (ACC) **Code 299A**
- H-Sensor, hairiness sensor to evaluate the yarn hairiness **Code 2342**
- Yarn creel up to 24 spindles **Code 3102**
- UPS for power stability **Code 2341.900**

Power supply: 115 up to 230 Vac, 50/60 Hz, single-phase
Weight: 51 kg
Dimensions: (L) 490 x (W) 320 x (H) 730 mm
Planofil  Yarn conical table  2520

Electrical instrument to assess yarn regularity. Endowed with electronic speed adjustment.
Equipped with 2 black anodised aluminium trapezoidal tables (dimensions: 255 x 600 x 155 mm).
For very coarse and bulky woollen and blended yarns, a particular model is available, PLANOFIL PLUS, equipped with a set of special pulleys for a wider separation of coils.

Two Black tables are supplied with Planofil.

Optional:
Black table  Code  2520.580
White table  Code  2520.590

Reference standards: ASTM D2255 (for regular cotton yarns)
Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 24 kg
Dimensions: (L) 910 x (W) 330 x (H) 530 mm

Optional KIT “TWO”  2520.600

To wind at the same time on the same table two yarns with the same count, enabling a quicker preparation of the table (50% time saving) and a better and immediate visual comparison between the two wound yarns.

Optional:
With Kit “Two” it is necessary to use particular trapezoidal tables:
Black table  Code  2520.610*
White table  Code  2520.620

* Two black tables are supplied with Kit “Two”

Reference standards: ASTM D2255 (for regular cotton yarns)
Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 24 kg
Dimensions: (L) 910 x (W) 330 x (H) 530 mm

ASTM yarn standards

Available in the following count ranges:

<table>
<thead>
<tr>
<th>Ne</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-12</td>
<td>2520.630</td>
</tr>
<tr>
<td>12-24</td>
<td>2520.631</td>
</tr>
<tr>
<td>24-36</td>
<td>2520.632</td>
</tr>
<tr>
<td>36-50</td>
<td>2520.633</td>
</tr>
<tr>
<td>50-75</td>
<td>2520.634</td>
</tr>
<tr>
<td>75-135</td>
<td>2520.635</td>
</tr>
</tbody>
</table>

Reference standards: ASTM D2255
Dimensions: (L) 635 x (W) 100 x (H) 380 mm
“Standard” Yarn Sample Winder

Suitable for any type of card (max. length 320 mm, width 95 mm) and yarn count.
Automatic forward winding movement, and manual reverse winding movement.
Up to 12 different yarn colours can be wound simultaneously.
Width of winding can be predetermined.
Equipped with adjustable yarn pre-tensioner.

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 46 kg
Dimensions: (L) 700 x (W) 500 x (H) 450 mm

“Special” Yarn Sample Winder

Special high accuracy model with micrometric winding feed.
Particularly suitable for high production of coloured sample cards, especially medium-fine yarns such as sewing threads.
Fully automatic forward and reverse winding movement, preselectable through the built-in PLC programmer.
Adjustable spacing, automatic stop.
Maximum winding speed: 1000 turns/min.
Up to 12 different colours can be wound simultaneously. Suitable for any card type (max. length 320 mm, max. width 95 mm).

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 75 kg
Dimensions: (L) 800 x (W) 450 x (H) 560 mm

“Single” Yarn Sample Winder

Ideal for colour gauging or sampling for spectrophotometer analysis.
Micrometric highly accurate regulation of the yarn coils.
Fully automatic forward and reverse winding movement, preselectable through the built-in PLC programmer.
The following winding widths are available: 25 mm, 30 mm, 32 mm, 40 mm, 45 mm and 57 mm (to be selected when placing the order)

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 19 kg
Dimensions: (L) 360 x (W) 500 x (H) 500 mm
Scirocco  Automatic regain oven  172B

Automatic moisture regain oven designed to measure moisture content and regain percentage in textile materials, according to ISO ATSM IWS and UNI Standards.

PC operated.

Quick Sample drying (in about 10 min.) by suction cycle. Adjustable drying temperature ranging up to +140°C.

Testing procedure details: the cabinet automatically continues weighing until the sample attains a stable dry mass.

The computer evaluates the difference among consecutive weighings and stops when the figure is lower than 0,05%.

It is possible to determine the duration of the first drying cycle as well as the duration of further 9 cycles.

The basket tare is recorded according to the basket code.

Room humidity and temperature values can be entered in order to obtain automatically the correction of the dry mass being stored for this purpose the table of correction coefficient.

Equipped with PC, electronic balance (2200 g capacity/0,01 g accuracy), colour printer, and LCD monitor.

Printed report of test parameters and final results, such as:

- sample code
- basket code
- date of basket gauging
- weight of wet sample
- weight of dry sample
- dry percentage

Reference standards:
ISO 6741-1, 2, 3, 4, UNI 1335, UNI 9213-1, 2, 3, 4, 5, 6, ASTM D1576, ASTM D2495, IWTO 33-98, IWTO 34-98, UNI EN ISO 2060

Power supply: 230 V, or 400 V, three-phase, 50/60 Hz, 10kW

Weight: 209 kg

Dimensions: (L) 1000 x (W) 700 x (H) 1230 mm

Example of printout of Scirocco oven:

final results of a sample in stock to be shipped and invoiced at the official humidity regain rate.

<table>
<thead>
<tr>
<th>Customer Code</th>
<th>Test Code</th>
<th>Date 20/02/13</th>
<th>Time 14.38.31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
<td>Test</td>
<td>Lot lotto</td>
<td></td>
</tr>
<tr>
<td>Stock</td>
<td>Parcel</td>
<td>Operator</td>
<td>Material R.R.</td>
</tr>
<tr>
<td>Wool (worsted)</td>
<td></td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>Conditioning Temperature</td>
<td>105 °C</td>
<td>Number of Samples</td>
<td>1</td>
</tr>
<tr>
<td>Humidity</td>
<td>11,517 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Weight</td>
<td>360,75 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present Dry Weight</td>
<td>360,93 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corr. Coeff. of Net Mass</td>
<td>5,813 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Mass</td>
<td>180 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Mass</td>
<td>190,464 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testing Machine</td>
<td>SCIROCCO MESDAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testing Conditions</td>
<td>20 °C</td>
<td>Humidity</td>
<td>60%</td>
</tr>
</tbody>
</table>

Real Regain Rate at the Dryer
Scirocco MesdanLab

Example of printout of Scirocco oven:
Moisture content in fibres and yarns is of paramount importance in both textile trade and final product quality evaluation. Moisture variation can lead to serious quality issues such as “barré” defects, dimensional stability problems, etc. AQUA-LAB is an innovative instrument for fast and accurate measurement of the moisture regain and moisture content in textile materials. Its measurement speed allows HIGH VOLUME CONTROL OF MOISTURE throughout every stage of the textile chain increasing consequently the productivity & efficiency of the process as well as the final product quality. The measurement principle of Aqua-Lab is based on an innovative low power resonance technology. AQUA-LAB calibration algorithm associates the mass-independent microwave moisture values measured by AQUA-LAB with the moisture regain values measured by the drying oven (the only reference instrument for measuring the moisture content of textile fibers). Aqua-Lab absolute value correlation with the regain oven (drying system) makes Aqua-Lab indispensable for commercial transactions, pricing management and QC monitoring. Specific preset calibrations are available for different textile materials, that the operator can easily select in the starting menu. The complete AQUA-LAB, code 2450, is equipped with two sensors, one for fibres (loose fibres, tops, slivers, etc), one for yarn packages (cones, roving cops, etc). However, the system can be supplied equipped with one sensor only:

for fibres, code 2450A
for yarn packages, code 2450B

Ideal for Ginners, Top Makers, Spinning Mills, Wool Combers, Yarn Buyers, Dyeing Mills, Textile Laboratories.

Main features:
- Fast, real time measurement
- High repeatability and reproducibility of results
- Perfect correlation with oven-drying
- Suitable for any textile fibre such, for example, cotton, linen, wool, cashmere, viscose, silk, acrylic, synthetics as well as blends
- No sample weighing or preliminary preparation of the sample is required
- Non-destructive method, no waste of material
- Simple test execution which can be performed by unskilled personnel as well
- Results are not influenced by the weight of the sample, its dimensions, its density and environmental conditions (temperature and humidity)
- Very low power consumption
- Easy maintenance: no consumables, no wear
- Ethernet available (connection to central data collection system)
- Power supply: 115 up to 230 Vac, 50/60 Hz, single-phase
  Main Unit: (L) 200 x (W) 110 x (H) 150 mm 2.5 kg
  Yarn package Sensor: (L) 250 x (W) 170 x (H) 85 mm 2.5 kg
  Fibre Sensor: (L) 325 x (W) 375 x (H) 430 mm 17 kg

AQUA-LAB recognition
At the 32nd International Bremen Cotton Conference, the ITMF International Committee on Cotton Testing Methods (ICCTM) gave full recognition to AQUA-LAB
Libeccio Semiautomatic regain oven 245B

Semiautomatic moisture regain oven to measure moisture content and regain percentage in textile materials according to ISO, ASTM, IWTO and UNI Standards. Quick Sample drying (in about 10 min.) by suction cycle. Adjustable drying temperature ranging up to +140°C. Complete with electronic balance (2.200 g capacity/0,01 g accuracy). Automatic movement of the weighing basket by means of “up and down” button. High precision electronic thermo-regulator.

Reference standards: ISO 6741-1, 2, 3, UNI1335, UNI 9213-1, 2, 3, 4, 5, 6, ASTM D1576, ASTM D2495, IWTO 33-98, IWTO 34-85, UNI EN ISO 2060, ISO 2060, ISO 6348

Power supply: 230 V or 400 V, three-phase, 50/60 Hz, 8 kW
Weight: 150 kg
Dimensions: (L) 980 x (W) 700 x (H) 1350 mm

Humy Tester III 185C

Digital electronic portable instrument for the instantaneous measurement of the humidity percentage contained in textiles. Reading on LCD display with 17 pre-set reading scales for the most common fibres and blends (other reading scales are available). It can be fitted with interchangeable electrodes suitable for cones, hanks, cotton bales or wool and fabrics. Measuring accuracy: ±1%.

Optional probes (not supplied with the instruments):
- probe for cotton or wool bales (2 pins - 30 cm length) Code 185.412
- probe for hanks (2 pins - 10 cm length) Code 185.414
- probe with roller for fabrics Code 185.416
- probe for bobbins and cones (8 pins - 6 cm length) Code 185.418
- calibration unit (2 pcs) Code 185.422

Power supply: 9 V battery
Weight: 0,25 kg
Dimensions: (L) 95 x (W) 40 x (H) 220 mm

Hardness Tester

For checking packages and cops hardness. Measuring scale 0-100° Shore. Equipped with pressure control device.

Available in the following models:
- Mod. HP 2.5 for synthetic filaments Code 255A
- Mod. HP 5 for cotton and wool yarns Code 255B

To check beam hardness, the following flat base models are available:
- Mod. HP 2.5 F for synthetic filament Code 255E
- Mod. HP 5 F for cotton/wool yarns Code 255D

To check rubber, the following model is available:
- Mod. HP SA, scale: 0-100° Shore A Code 255F
Weight: 0,30 kg
High performance computerised system conceived for the analysis of fibres, yarns, fabrics, knits, non-wovens, spinnerets etc. Equipment suitable to perform in a fast and easy way the fineness analysis of single fibres, identify the different type of fibres contained in a blend and analyse the composition percentage. Ideal to check the features of purchased material, analyse yarn structure and detect possible defects. Suitable to: measure the count (dtex/ den) of yarns and round section filaments; analyse quality of Lycra filaments into the yarn; analyse the compactness of non-woven fabrics; analyse yarn and fibre sections; measure section surfaces and perimeters; analyse mechanical parts (i.e. needle points, spinnerets, etc); reduce warp and weft density of fabrics to a cm or a inch; process, store and print the produced measurements and the minimum, medium and maximum values, CV% and distribution graphs.

The system is composed of:

**LEICA biological Microscope:** magnification on video from 252 to 1160X with slide movement device with micrometric regulation, polarising light, for fibres and yarns analysis, etc.

**LEICA Stereo-Microscope** with magnification on video from 24X to 165X, illuminated base, for the analysis of fabrics, yarns and mechanical parts like traveller, needles and spinnerets.

**Led ring light (code 250L.416).**

**PC** complete with LCD monitor and photographic quality printer.

**Professional Video-Camera with 1/2” CCD, 14 Mpixel,** receiving images from microscope.

**Software “Mesdan Video Analyser”** for the image acquisition, the production of measurements and comments on the stored images and measurement directly on the live images, the statistic analysis of the acquired measurements.

**Fibre Microscope Kit (code 250.325)** for the microscopic analysis (fibres, yarns and fabrics) and instructions of use.

**Optional:**

**Optical fibre illumination device (for a perfect illumination of a sample from different adjustable angles).**

**63X LENS** (for biological Microscope): it enables a 2620X on screen magnification.

**C-STEP CONNECTOR WITH 0.5X LENS** (for biological Microscope). The installation of this connector allows you to halve the magnification on screen and double the sample field of vision.

**C-STEP CONNECTOR WITH 0.5X LENS** (for Stereo-Microscope). The installation of this connector allows you to halve the magnification on screen and double the sample field of vision.

**TRINOCULAR KIT** (for Stereo-Microscope) to display the sample image either on the PC monitor or in the oculars.

**Set of 50 slides**

**Set of 200 slide covers**

**Bottle of oil immersion**

**Pack of paper for printer**

**Set of cartridges for printer**


Power supply: 100 up to 240 Vac, 50/60 Hz

Weight: 50 kg

Dimensions: (L) 1600 x (W) 700 x (H) 700 mm
Example of Video Analyser analysis

Yarn section

Length view of cotton fibre and wool fibre

Viscose fibre (length and section view)

Analysis of non-woven fabric compactness

Analysis of Lycra filaments 1

Analysis of Lycra filaments 2

Analysis of Lycra filaments 3

Defect analysis: presence of foreign coloured fibres in the fabric

Defect analysis: presence of oil grease in a piece of yarn

Section of indigo yarn (denim)

Section of trilobal fibre

Section of round hollow fibres

Fibre perimeter and area measurement
Laboratory knitting machine for the automatic production of tubular knitted fabrics for checking dyeing uniformity and dye affinity, assessment among different yarn bobbins. Suitable for synthetic, natural and artificial yarns. Equipped with Auto Cop Changer (ACC) with 24 or 36 bobbins, electronic yarn feeder, electronic pretension device, automatic bobbin change marking device, 36-yarn conveyor.

**Main technical features:**
- Ergonomic panel with electronic counter, speed potentiometer and led indicators of machine functions.
- Rotation speed of cylinder adjustable from 0 to 450 rpm by means of an electronic potentiometer.
- High productivity: 1000-1200 samples (2.5 cm length) in about 10 hours.
- Electronic counter to set sample length and number of samples.
- Automatic oiling device for the cylinder.
- Endowed with fabric fineness adjustment mechanism.
- Interchangeable Cylinder φ 3, 3/4" diameter suitable for a wide range of yarns.
- Electronic automatic yarn pre-tensioner (0.1 cN accuracy) enabling constant and precise tension during operation.
- Electronic device marking the knitted fabric when bobbin is changed.
- Equipped with Auto Cop Changer (ACC) with built-in mechanical knотter.
- Yarn feeder enabling change of cop while machine is running a test.
- Yarn alignment device.

Two models available:
- 24-bobbin Auto Cop Changer (ACC); Code 2940B
- 36-bobbin ACC 36 yarns rack conveyor to the ACC (to speed-up creel change operation) Code 2940A

**Power supply:** 400 V, 50 Hz, three-phase + N, 1900 W
**Air supply:** 6 bar
**Weight:** 200 kg
**Dimensions:** (L) 1500 x (W) 4000 x (H) 1750 mm

In order to check and reveal dyeing uniformity, the tubular knitted fabrics produced by the DYE SCANNER have consequently to be dyed. GIOTTO HT 9000 is the ideal equipment for this purpose. In fact, it can dye up to about 300 g of tubular knitted fabric samples, and - thanks to its exclusive and innovative built-in automatic dosing system - GIOTTO HT 9000 can wash, dye, rinse, and - if necessary - soap the samples.

High-pressure bath at a temperature of +130°C, therefore ideal for dyeing of polyester fabric samples. Equipped with automatic dosing system, this instrument is also suitable for dyeing with reactive dyestuffs.

* Cylinder capacity should be confirmed by yarn testing as cylinder selection is affected by yarn count, composition and friction.
** cylinders with different capacity are available on request.
Mini Spinning

A real spinning mill in miniature to produce small lots of short and long staple yarn, ideal for:
textile institutes and research centres
spinning mills of blends
spinning mills of wollen yarn

Laboratory Carding Machine 337A

Miniature carding machine designed to produce a homogenous sample of fibres of different colour and/or nature.
It can process both short and long fibres.
Self-cleaning system to avoid dirtying of the sample.
Delivery speed: 10-15 m/min.
Safety devices: emergency stop, switch on moving panels, Plexiglas protective cover.
Average production: 4 kg/hour
Working width: 500 mm (19.69”)
Power supply: 230 Vac, three-phase or 400 Vac, three-phase, 50/60 Hz
Weight: 638 kg
Dimensions: (L) 1910 x (W) 850 x (H) 1440 mm

Stiro Roving Lab 3371

Miniature draw frame to double and draw in form of an even homogenous sliver the web coming from the Laboratory Carding Machine.
Suitable for short and long fibres.
Stiro Roving Lab is complete with a device to transform the sliver into a roving and wind it on a spool.
Adjustable draw from 2x up to 6x.
Adjustable distance between drawing rollers.
Adjustable drawing speed and pressure.
Power supply: 230 Vac, 50/60Hz
Weight: 180 kg
Dimensions: (L) 1600 x (W) 680 x (H) 1280 mm
Ring Lab  Mini ring spinning  3108A

Mini spinning frame with 6 spindles designed for spinning trials of cotton, wollen, synthetic and blended yarns. Special model to be supplied with slivers or roving produced by Stiro Roving Lab. Endowed with 5 rollers drawing the sliver up to 400X. Spinning capacity from Ne 8 up to Ne 80. Electronic setting of delivery speed, twist, draw and twist direction.

Technical details:
variable speed drive from 3500 to 25000 rpm
Ring diameter 45 mm; tube length 240 mm
Spindle speed: up to 18000 rpm
Special creel for sliver supply included

Optional kit for core-yarn available on request.
Digital control panel to show in real time: rpm – tpm – break draft - total draft - delivery speed in m/min - etc.

Power supply: 115 Vac or 230 Vac, 50 Hz or 60 Hz
Weight: 335 kg
Dimensions: (L) 1000 x (W) 700 x (H) 2100 mm

Wind Lab  3374

Manual winder with two heads.
Adjustable winding speed from 300 up to 1000 m/min.
Winding traverse 6” (152 mm) and conicity 5° 57’.

Power supply: 230 V, 50/60 Hz
Weight: 71 kg
Dimensions: (L) 700 x (W) 500 x (H) 1250 mm

Mini Assembly Lab  3372A

Single head assembly winder to produce cylindrical cones to be twisted. Endowed with electronic panel to set parameters, such as length meter and automatic stop
Winding speed from 200 up to 1200 m/min.

Power supply: 230 V, 50/60 Hz
Weight: 100 kg
Dimensions: (L) 900 x (W) 900 x (H) 1300 mm
**Twister Lab** Two for one lab twister

Single head two-for-one twisting machine to produce cones of plied yarns in the laboratory. Endowed with touch screen display to set winding parameters: spindle speed, tpm., winding angle, S/Z direction. Display of quantity of processed yarn in meters. Spindle type 202B with adjustable speed from 5000 up to 13000 rpm. Twisting collecting from 8 to 100 m/min. 6” winding traverse and 4° 20’ conicity.

Power supply: 230 V, 50/60 Hz
Air supply: hose ø 6 mm, 6 bar
Weight: 130 kg
Dimensions: (L) 470 x (W) 650 x (H) 1450 mm

**Lab Knitter** Yarn-knit (Dye) uniformity

High precision single cylinder laboratory knitting machine for the production of tubular knitted fabric for checking dyeing uniformity and evaluate dye affinity. Interchangeable cylinder 3,3/4” diameter, suitable for a wide range of yarns, to be selected from the available ones listed in the attached chart

Endowed with fabric fineness regulation mechanism
Automatic oiling device
Ergonomic control pad complete with:
electronic yarn length meter
variable speed regulation by means of a potentiometer
Led indicators monitoring machine’s functions.

**Optional:**
electronic tensioner
Code 294E.1100
foot switch
Code 294E.80

Power supply: 400 Vac, 50/60 Hz, three-phase + N, 1.1 kW, or 230 Vac, 50/60 Hz, single-phase
Weight: 130 kg
Dimensions: (L) 450 x (W) 850 x (H) 1750 mm

List of available cylinders

<table>
<thead>
<tr>
<th>Code</th>
<th>No of needles for filaments</th>
<th>Needle gauge</th>
<th>Count range for filaments</th>
<th>Count range for spun yarn*</th>
</tr>
</thead>
<tbody>
<tr>
<td>294E 1320</td>
<td>320</td>
<td>75</td>
<td>Dtex 10-100</td>
<td>Ne 80-120</td>
</tr>
<tr>
<td>294E 1260</td>
<td>260</td>
<td>70</td>
<td>Dtex 30-150</td>
<td>Ne 60-80</td>
</tr>
<tr>
<td>294E 1240</td>
<td>240</td>
<td>48</td>
<td>Dtex 70-300</td>
<td>Ne 40-60</td>
</tr>
<tr>
<td>294E 1220</td>
<td>220</td>
<td>48</td>
<td>Dtex 100-400</td>
<td>Ne 20-40</td>
</tr>
<tr>
<td>294E 1140</td>
<td>140</td>
<td>36</td>
<td>Dtex 200-1000</td>
<td>Ne 12-20</td>
</tr>
<tr>
<td>294E 1112</td>
<td>112</td>
<td>24</td>
<td>Dtex 400-2000</td>
<td>Ne 8-12</td>
</tr>
</tbody>
</table>

* Cylinder capacity should be confirmed by yarn testing as cylinder selection is affected by yarn count, composition and friction.
Mini Spinning Layout

A Single yarn production

1 LAB CARDING MACHINE
code 337A

2 STIRO ROVING LAB
code 3371

3 RING LAB
code 3108A

B Assembly and twisting

5 WIND LAB
code 3374

6 MINI ASSEMBLY LAB
code 3372A

7 TWISTER LAB
code 3373

C Knitted tubular fabric production

4 LAB KNITTER
code 294E

4A DOUBLE LAB KNITTER
code 294F

RECOMMENDED CONFIGURATION

BASIC - TOP

Basic (for spinning mills):
- Single yarns assessment: 1+2+3+4
- Plied yarns assessment: 1+2+3+6+7+4

Top (for research centres and institutes):
- with manual winder: 1+2+3+5+6+7+4A
| p 42 | Tensolab 3 / Tensile strength tester | Code | 2512A |
| p 43 | Tensolab 5000 / Tensile strength tester | Code | 2515 |
| p 44 | Autodyn II / Automatic tensile strength tester | Code | 2514 |
| p 45 | Available clamps for Tensolab and Autodyn | Code | 2513 |
| p 46 | Available clamps for Tensolab and Autodyn | Code | 2514 |
| p 47 | Crease Recovery Tester | Code | 3109 |
| p 47 | Crimp Tester | Code | 320A |
| p 47 | Wrinkle Recovery Tester | Code | 3110 |
| p 48 | Martindale | Code | 2568 |
| p 49 | Burstmatic / Bursting tester | Code | 338E |
| p 50 | Digital electric-hydraulic Bursting Tester | Code | 338D |
| p 50 | ICI Pilling & Snagging Tester 4 positions | Code | 279G |
| p 50 | Spray Rating Tester | Code | 333A |
| p 51 | Elmendorf | Code | 275A |
| p 51 | Pneumatic Fabric Stiffness Tester | Code | 339E |
| p 51 | Thickness-Lab / Thickness tester | Code | 1880 |
| p 52 | Air Tronic / Air permeability | Code | 3240A |
| p 52 | Water Proof | Code | 3241C |
| p 53 | Elmatic / Elmendorf tearing tester | Code | 275D |
| p 54 | MacroLab / Yarn-fabric analysis | Code | 250F |
| p 55 | Circular Sample Cutter | Code | 175B |
| p 55 | Electronic balance per m² | Code | 165,664 |
| p 55 | Microscope for fabrics | Code | 191G |
| p 55 | Pick Counters | Code | 2604 |
| p 56 | ISO Flammability Lab | Code | 3392E |
| p 57 | 45° Flammability Tester | Code | 3392C |
| p 57 | Horizontal Flammability Tester | Code | 3392D |
| p 57 | Vertical Flammability Tester | Code | 3392G |
| p 58 | Sweating Guarded Hot Plate | Code | 3123 |
| p 59 | Crock Meter / Rubbing fastness | Code | 2540 |
| p 59 | Electric Crock Meter / Rubbing fastness | Code | 198B |
| p 60 | Forced Ventilation Conditioning Oven | Code | 251G |
| p 60 | “Hoffman” Press | Code | 3370A |
| p 60 | Sample Press Lab | Code | 1750A |
| p 61 | Incubator | Code | 251L |
| p 61 | Perspirometer | Code | 257A |
| p 61 | Scorch Fastness / Sublimation tester | Code | 312A |
| p 62 | Solarbox 1500 / Light fastness | Code | 325A |
| p 62 | Xenon Lab / Light fastness | Code | 325E |
| p 63 | Dry Cleaning Machine | Code | 310F |
| p 63 | Tumble Dryer | Code | 3111 |
| p 63 | Wascator | Code | 310B |
| p 64 | Autowash II / Wash-Dry fastness | Code | 3111 |
| p 64 | Front-loading Home Tumble Dryer | Code | 3111A |
| p 64 | Top-loading Home Laundry Washing Machine | Code | 310C |
| p 65 | Blue Scale | Code | 325.2 |
| p 65 | Grey Scales | Code | 325.2 |
| p 65 | Multifibre DW 010 | Code | 257,424 |
| p 65 | Multifibre TV | Code | 257,426 |
| p 65 | Standard Adjacent Fabrics | Code | 310.94 |
| p 66 | AATCC/ISO Crease Appearance Replicas | Code | 310.96 |
| p 66 | AATCC/ISO Seam Smoothness Appearance Replicas | Code | 310.74 |
| p 66 | AATCC/ISO Smoothness Appearance Replicas | Code | 310.74 |
| p 66 | ECE/IEC Reference Detergent | Code | 310.10 |
| p 66 | Soap Powder | Code | 257,426 |
| p 67 | Static Lab | Code | 291B |
| p 67 | Vapour Permeability Tester | Code | 3122 |
| p 67 | Water Vapour Test | Code | 339E |
| p 68 | Air & Water Leakage Lab | Code | 2571 |
| p 68 | Glove Tester / Glove cut tester | Code | 339A |
| p 68 | Impact Abrasion Lab | Code | 2563 |
Electronic semi-automatic strength tester for fabrics, ribbons, strings and yarns. C.R.E. tensile strength measuring system. Zero self-resetting after every test. Automatic pretension of the sample under test. Adjustable distance between clamps ranging from 50 to 500 mm. Adjustable tensile speed ranging from 10 to 1000 mm/min. with return of the moving clamp at the maximum speed. Tensolab 3 is directly controlled by a Personal Computer that enables an accurate control of its functioning and enables the operator to automatically perform, thanks to a wide number of software packages, a large number of tests according to the most recent international standards (ISO – ASTM – DIN – M. & S.). Tests are performed in an efficient and easy to use Windows environment.

The following tests can be performed according to specific norms: traction, compression, seam slippage, hysteresis cycle, adhesion and tearing. Hysteresis cycle test Seam slippage test.

A wide selection of mechanical and pneumatic clamps, built in accordance with international Standards, is available (please refer to the following pages).

Pc available on request.

Different interchangeable load cells can be chosen among the following models:

- maximum capacity: 2 daN (kg), accuracy: 0.1 cN (g)  
  Code 2512A,276

- maximum capacity: 10 daN (kg), accuracy: 0.1 cN (g) up to 1 daN (kg) and 1 cN from 1 daN (kg) to 10 daN (kg)  
  Code 2512A,993

- maximum capacity: 100 daN (kg), accuracy: 1 cN (g) up to 10 daN (kg) and 10 cN from 10 daN (kg) to 100 daN (kg)  
  Code 2512A,282

- maximum capacity: 300 daN (kg), accuracy: 10 cN (g) up to 30 daN (kg) and 100 cN from 30 daN (kg) to 300 daN (kg)  
  Code 2512A,283

- accuracy level of load cell: 0,05%

Reference standards: ISO, DIN, ASTM, BSi, UNI, M&S

Power supply: 115 Vac or 230 Vac, 50/60 Hz, 300 W

Weight: 83 kg (Pc excluded)

Dimensions: (L) 610 x (W) 600 x (H) 1340 mm
Two-column universal electronic strength tester (CRE) developed to meet the high quality testing requirements of universities, research institutes and leading companies. With a maximum capacity of 5000 kg (50 kN), it is suitable to test also technical textiles, geo-textiles, non-woven and industrial textiles in general. Twin ball screws ensure the smooth movement of the crossbar, sliding between two reinforced guide columns that prevent any deformation of the framework. Available a 1000 kg (10 kN) version, **code 2516**.

Working speed: from 0.5 to 500 mm/min

Maximum travel of the crossbar: 1200 mm (without clamps)

Inner distance between the columns: 400 mm

Developed to be used with a wide range of easily interchangeable load cells and clamps, both mechanical and pneumatic. Tensolab 5000 is PC controlled. Thanks to the different operating softwares available, it can perform traction, compression, tearing, delamination, adhesion, seam slippage tests and hysteresis cycles, according to specific international standards.

A Mechanical Extension Device is available as optional, for a further check of elongation on very rigid samples with low intrinsic elongation.

Available load cells:

- maximum capacity 2 daN (kg)
- maximum capacity 10 daN (kg)
- maximum capacity 100 daN (kg)
- maximum capacity 500 daN (kg)
- maximum capacity 1000 daN (kg)
- maximum capacity 5000 daN (kg)

precision of load cells: 0.05%

Several types of clamps, both mechanical and pneumatic, are available according to the type of standards. Pc available on request.

Reference standards: ISO, DIN, ASTM, BSi, UNI, M&S

Power supply: 115 Vac or 230 Vac, 50/60 Hz, 300 W

Weight: 260 kg

Dimensions: (L) 900 x (W) 600 x (H) 1900 mm
Autodyne II Automatic tensile strength tester

Modular strength tester designed to execute automatically tensile tests and hysteresis cycles on yarns; it semi-automatically executes traction, compression, tearing test on fabrics, covering adhesion tests, tensile test on yarns and hanks (lea test). Automatic single column strength tester with movement resulting from a ball bearing screw; it is controlled by a software which runs all the functioning phases. Thanks to the specific modular software, Autodyne II allows performing tests in compliance with the main international standards or according to parameters set by the operator which can be saved for future need.

Autodyne II can fit different load cells easy to be changed with maximum capacity of 1000N, and a wide range of pneumatic and mechanical clamps.

Working speed: from 10 to 5000 mm/min.

Modular design specifically conceived for textile industries requiring both automatic and semiautomatic testing of yarns, hanks, fabrics, covering cloths and seams.

Available also in the 24-position automatic version - code 2514A

Optional:

- PC, printer
- Interchangeable load cells of 20 N, 100 N, 1000 N
- Wide range of mechanical and pneumatic grips for yarns, hanks, and fabrics

Reference standards: ISO, DIN, ASTM, BS, UNI, M&S standards

Power supply: 115 Vac or 230 Vac, 50/60 Hz, 300 W
Air supply: 6 bar
Weight: 85 kg
Dimensions: (L) 610 x (W) 610 x (H) 1340 mm
Available clamps for Tensolab and Autodyne

Pneumatic clamps for delicate yarns such as POY, Lycra, cotton and worsted yarns (20N capacity)
Code 2510.978

Clamps for yarns (high tenacity) with conical introducer. Code 2510.980

Pneumatic clamps for standard yarns and sewing threads up to 50N maximum resistance
Code 2510.982

Mechanical clamps for normal yarns up to 30N
Code 2510.994

Mini clamps for yarns up to 20N (for Autodyne only)
Code 2513.918. Maxi clamps for yarns up to 50N (for Autodyne only) Code 2513.982

Mechanical clamps for high tenacity yarns
- Scott type 100 – Code 2510.995
- Scott type 300 – Code 2510.996

Ribbons high tenacity clamps Code 2510.920
(for Tensolab 1000-5000 only)

Self tightening clamps for high tenacity ropes
(for Tensolab 1000-5000 only)

LEA clamps for hanks Code 2510.990
Available clamps for Tensolab and Autodyne

Pneumatic maxi rubber clamps, 100mm wide Code 2510.130 for high tenacity and heavy fabrics (for Tensolab 1000-5000 only). Pneumatic standard rubber clamps, 100mm wide Code 2510.844 for light fabrics weight.

Mechanical rubber clamps, 100mm wide Code 2510.846

Mechanical clamps for non-woven 200 mm wide, with rubber grips Code 2510.904. Also available for geotextiles.

Example of interchangeable grips for body clamps 100mm
- rubber covered grips 100mm
- grab/rubber 25x25mm
- grab grips 25x25mm
- contact line grips 100mm
- knurled grips 100mm

Tool for perforation test of non-wovens in compliance with UNI and ISO Standards (for Tensolab 1000-5000 only) Type CBR Code 2510.690

Tool for perforation test of non-wovens Persoz type Code 2510.800

En 388 perforation test Code 2510.681

To ensure that zips are applied appropriately Code 194E.28
Crease Recovery Tester 3109
To determine recovery characteristics of fabrics undergoing a preset pressure for a specific period of time.
Reference standards: ISO 2313, AA TCC 66, BS EN 22313, M&S P22
Weight: 8 kg
Dimensions: (L) 250 x (W) 200 x (H) 350 mm

Wrinkle Recovery Tester 3110
To determine fabrics resistance to wrinkling.
Equipped with one standard comparative photo-kit, one 0.5 kg weight, one 1 kg weight, one 2 kg weight, and two fixing clamps with support.
Reference standards: AATCC 128, ISO 9867.
Weight: 9.5 kg
Dimensions: (L) 150 x (W) 150 x (H) 330 mm

Crimp Tester 320A
To determine crimp on yarns, caused by weaving and knitting processes.
The device is used also to measure with absolute accuracy the length of a yarn section, in order to determine, after weighing, the count.
Reference standards: ISO 7211, EN14970, IWSTM 31-169, UNI 9276
Weight: 2 kg
Dimensions: (L) 1500 x (W) 80 x (H) 40 mm
Instrument for the control of abrasion and pilling on all types of fabrics. **Model with 9 positions** with LCD touch screen display equipped with single and total rotation counter. Supplied with 2 sets of weights of 9 and 12 kPa. 3 types of test can be performed: abrasion, pilling, and straight-line motion.

Also a **six-position model, code 2568A**, available on request.

**Optional:**
- Standard Abradent Fabric (1.6x1m)  
  Code: 314.12
- Standard Backing Foam (pack of 25 pcs)  
  Code: 314.32
- Standard Backing Felt disc ø of 140mm (pack of 24 pcs)  
  Code: 314.8
- Standard Backing Felt disc ø of 90mm for Pilling test (pack of 24 pcs)  
  Code: 314.20
- Sample holder for Swiss Pilling test (EMPA)  
  Code: 2568,300
- Standard photographs SM50 for pilling test on woven fabrics (3x4 pcs)  
  Code: 314.14
- Standard photographs SM54 for pilling test on knitted fabrics (3x4 pcs)  
  Code: 314.16
- Standard photographs EMPA 991 (3x4 pcs)  
  Code: 314.18
- Standard photographs EMPA 992 (3x4 pcs)  
  Code: 314.24
- Sample cutter 38Ø mm  
  Code: 2560,322
- Sample cutter 90Ø mm  
  Code: 2560,324
- Sample cutter 140Ø mm  
  Code: 2560,320

Officially approved by Marks & Spencer for the following tests:
- Marks & Spencer P17 Pilling method P1
- Marks & Spencer P18C Enhanced Pilling
- Marks & Spencer P19 Martindale Abrasion Resistance of Apparel Fabrics
- Marks & Spencer P19A Martindale Abrasion Resistance of Handbags and Belt Fabrics
- Marks & Spencer P19B Martindale Abrasion Resistance of Upholstery
- Marks & Spencer P19C Martindale Abrasion Resistance for Shirtings


Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase

Weight: 100 kg

Dimensions: (L) 900 x (W) 660 x (H) 340 mm
Pneumatic bursting tester to determine the bursting resistance of woven and knitted fabrics, non-wovens and cardboard. The instrument measures the required pressure necessary to burst a tested specimen as well as the specimen extension prior to bursting.

Such test can be carried out in two different ways:
- following a specific testing standard already present in the software;
- free adjustment of testing parameters.

Besides, Burstmatic can measure the hysteresis (fatigue cycling tests) as well, the specimen behaviour when subject to cycling extensions and relaxations. All settings are freely programmable. Next to this, on a colour wide touch-screen, all the testing parameters, statistic results, graphics showing the dynamic behaviour of the tested fabric either during bursting or cycling tests, can be displayed.

All testing parameters, results and graphics can be stored into the Burstmatic database. The sample distension height is measured by means of laser technology.

Possible Tests:
- Bursting tests using customised settings (freely programmable)
- Cyclical tests using customised settings

Power Supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Net Weight: 65 kg
Dimensions: (L) 370 x (W) 460 x (H) 530 mm

---

**Available test areas:**

<table>
<thead>
<tr>
<th>Area</th>
<th>Diameter</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.3 cm²</td>
<td>30.5 mm</td>
<td>ISO 13938-2, ASTM D3786, M&amp;S P27, WOOLMARK TM29</td>
</tr>
<tr>
<td>7.8 cm²</td>
<td>31.5 mm</td>
<td>ASTM D3786, WOOLMARK TM29</td>
</tr>
<tr>
<td>10 cm²</td>
<td>35.7 mm</td>
<td>ISO 13938-2</td>
</tr>
<tr>
<td>50 cm²</td>
<td>79.8 mm</td>
<td>ISO 13938-2, M&amp;S P27</td>
</tr>
<tr>
<td>100 cm²</td>
<td>112.8 mm</td>
<td>ISO 13938-2</td>
</tr>
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**Measurement range:**

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<thead>
<tr>
<th>Distension</th>
<th>mm</th>
<th>Pressure</th>
<th>bar</th>
<th>kPa</th>
<th>psi</th>
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<tbody>
<tr>
<td>Min</td>
<td>0.1</td>
<td>0.004</td>
<td>0.01</td>
<td>70</td>
<td>145</td>
</tr>
<tr>
<td>Max</td>
<td>70.0</td>
<td>2.756</td>
<td>7.00</td>
<td>1000</td>
<td>145</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1</td>
<td>0.004</td>
<td>0.01</td>
<td>0.1</td>
<td>0.02</td>
</tr>
</tbody>
</table>
**Spray Rating Tester**

To determine the surface wetting resistance of fabrics. As optional, a standard photo kit is available ([code 333.2](#)).

Reference standards: AATCC 22, ISO 4920

**Weight:** 5 kg  
**Dimensions:** (L) 280 x (W) 280 x (H) 500 mm

---

**ICI Pilling & Snagging Tester 4 positions**

Instrument particularly suitable for testing pilling on knitted fabrics. Upon request, 2-position model ([code 279H](#)) can be supplied.

**Optional:**

special set of nails, to perform snagging test ([code 279.16](#)).

Model with four boxes.  
Complete with revolution counter.  
Speed setting: 30/60 rpm

Reference standards: ISO 12945-1, BS 5811, IWS TM152

**Power supply:** 115 Vac or 230 Vac, 50/60 Hz, single-phase  
**Weight:** 69 kg  
**Dimensions:** (L) 980 x (W) 660 x (H) 800 mm

---

**Digital electric-hydraulic Bursting Tester**

To determine fabrics resistance to bursting. Pressurising device with precision volumetric pump. Safety valve for pressure control. Control lever for test execution, emptying operation and automatic zero setting at release. Control device run by an electric engine at variable speed, with automatic stopwatch to check test duration. Glycol fluid. Measuring range from 0 to 50 bar (0 to 5000 kPa). Subdivision: 0,01 bar. Supplied with: 12 membranes of pure para rubber, 12 O-rings, 1 bottle of liquid, 1 wrench for ring dismantling.

Complete with conformity certificate.

Reference standards: ISO 2960, ISO 13398-1 (except 6.1.3), ASTM D 3786

**Power supply:** 230 Vac, 50 Hz, single-phase  
**Weight:** 30 kg  
**Dimensions:** (L) 500 x (W) 400 x (H) 400 mm
Elmendorf 275A

Instrument to test tearing resistance of cloths, artificial leather, paper. Interchangeable pendulums having the following capacities can be supplied:

pendulum: 1.600 g  
Code 275A.126
pendulum: 3.200 g  
Code 275A.128
pendulum: 6.400 g  
Code 275A.130

Reference standards: UNI EN ISO 13937-1, ASTM D 1424, DIN 53862

Weight: kg 6 (pendulum excluded)  
Dimensions: (L) 380 x (W) 180 x (H) 380 mm

Pneumatic Fabric Stiffness Tester 3396

For the quick and accurate measurement of fabric stiffness. A plunger of 25,4 mm (1 inch) diameter pushes the fabric through a 38 mm (1,5 inch) diameter hole and the maximum force is recorded.

Selectable measurement units are: 50 kgf, 500N, 100lb.

Reference standards: ASTM D4032

Power supply: 100 up to 230 Vac, 50/60 Hz, + battery  
Weight: 18 kg

Dimensions: (L) 500 x (W) 500 x (H) 600 mm

Thickness-Lab Thickness tester 1880

Laboratory thickness tester, with digital reading, suitable for woven and knitted fabrics, non-wovens, geotextiles and leather. Reading capacity from 0 to 10 mm, with 0,01 mm accuracy. RS232 port available.

Available models:

accomplishing EN ISO 5084 standard (textiles) 20 cm² - 0.1 and 1 kPa  
Code 1880

accomplishing EN ISO 964-1 standard (geotextiles) 25 cm² - 2 and 20 kPa  
Code 1880B

accomplishing EN ISO 53855 standard (non-woven) 25 cm² - 0.5 kPa and 1 kPa or 10 cm² - 5 kPa  
Code 1880C

Other models for leather, rubber, paper, etc available as well. Pressure weights and additional plates for each model are available on request. A version with a measuring range from 0 to 25 mm is also available.

Optional: software for data acquisition and storage code 1880.2

Power supply: Battery, 3 V, Mod. CR2032, 190 mAh  
Weight: 23 kg

Dimensions: (L) 250 x (W) 310 x (H) 300 mm
**Water Proof**

Instrument for the analysis of the water permeability of textile materials. It enables to determine the hydrostatic pressure needed for water passage through samples. It also measures the resistance of the samples to water passage at a constant hydrostatic pressure. The tested sample has a surface of 100 cm² and it is fixed with a special air tight system.

Adjustable pressure: 0-9999 mm/H₂O.

**“Plus” model code 3241D** with adjustable pressure up to 20,000 mm/H₂O is also available.

Supplied complete with “touch screen” for setting and reading of the analysis results.

Software and cable are available on request.

Reference standards: EN ISO 20811, DIN 53886, AFNOR G-07057, ISO 811, BS 2823, BS EN 3424 part 26, AATCC 127, UNI 5123, ISO 1420-A

Power supply: 230 Vac, 50/60 Hz, single-phase

Weight: 50 kg

Dimensions: (L) 540 x (W) 540 x (H) 1700 mm

---

**Air Tronic**

Instrument to measure directly the air permeability (considered as the speed of the air flow passing vertically through a sample in specific set conditions) of woven and knitted fabrics, industrial and technical textiles, non-wovens, artificial leather, felts and paper.

Air permeability is measured in mm/s. Other available measuring units: m/s and l/min. The standard model fits head sample holder of 2, 5, 10, 20, 50 cm²

Reference standards: UNI EN ISO 9237, DIN 53887, ASTM D737, AFNOR G07-111

Power supply: 230 Vac, 50/60 Hz

Weight: 30 kg

Dimensions: (L) 390 x (W) 450 x (H) 540 mm

---

<table>
<thead>
<tr>
<th>code</th>
<th>Depressur 10Pa=1mm</th>
<th>Air flow</th>
<th>Mass meter</th>
<th>Test Area standard</th>
<th>Test Area optional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pa</td>
<td>mm H₂O</td>
<td>l/h (min-max)</td>
<td>l/h (min-max)</td>
<td>cm²</td>
</tr>
<tr>
<td>3240A</td>
<td>0-900</td>
<td>90</td>
<td>50-5800</td>
<td>10-100</td>
<td>2-5-10-20-50-100</td>
</tr>
<tr>
<td>3240B</td>
<td>0-2500</td>
<td>250</td>
<td>50-5800</td>
<td>10-100</td>
<td>2-5-10-20-50-100</td>
</tr>
<tr>
<td>3240C</td>
<td>0-2500</td>
<td>250</td>
<td>6500-100000</td>
<td>0-900</td>
<td>5-20-25-50-100</td>
</tr>
</tbody>
</table>

---

Depressur 10Pa=1mm

Air flow

Mass meter

Test Area standard

Test Area optional

---

52
The only ELMENDORF on the market able to automatically perform the following operations:

- Sample pre-cut
- Release of the laceration pendulum
- Reading of the laceration value
- Blocking of the pendulum
- Reset of the pendulum into the starting position

Suitable for all kinds of clothes, technical and protective fabrics, as well as for paper, cardboard, natural and artificial leather. Model with a high laceration capacity, ranging from 1600 to 30,000 g. Pendulum complete with additional check weights, supplied as standard with the instrument.

Instrument equipped with alphanumeric keyboard and digital reader for the measurement of the laceration values that can be printed or transferred to a PC through a RS 232 serial port. Instrument fully protected and complying with the strictest EC safety norms.


Power supply: 115 up to 230 Vac, 50/60 Hz, single-phase
Net weight: 66 kg
Dimensions: (L) 700 x (W) 400 x (H) 500 mm
High performance computerised system conceived for the analysis of fabrics and non-wovens, etc.
Ideal to analyse yarn structures, detect defects, reduce warp and weft density of fabrics to a cm or an inch, and to analyse mechanical parts.
It enables to elaborate, store and print the produced measurements, relating statistics (min., average, max. values, CV%) and distribution graphs.
The system is composed of:

**Stereo-Microscope** with video magnification from 24X to 165X, illuminated base, for the analysis of fabrics, yarns and mechanical parts like rings, needles and spinnerets.

**Led Ring Light**

**PC** complete with LCD monitor and photographic quality printer.

**Professional Video-Camera with 1/2'' CCD, 14 Mpixel**, acquiring images from microscope.

**Software “Mesdan Video Analyser”** for the image acquisition, on which measurements and comments can be produced, the measurement on the “live” images directly, the statistic analysis of the acquired measurements.

**Fibre Microscope Kit** for the microscopic analysis.

**Instructions for sample preparation** are available in the handbook for operating directions.

Power supply: 100 up to 230 Vac, 50/60 Hz
Weight: 50 kg
Dimensions: (L) 1600 x (W) 700 x (H) 700 mm

**Optional:**

**OPTICAL FIBRE ILLUMINATION DEVICE**
(for a perfect illumination of a sample from different adjustable angles)  
Code 250,318

**C-STEP CONNECTOR WITH 0.5X LENS**
The installation of this connector allows you to halve the magnification on screen and double the sample field of vision  
Code 250,334

**TRINOCULAR KIT**
To display the sample image either on the PC monitor, or in the oculars  
Code 250,340
**Portable Microscope** 2604
Pocket-size microscope with 40X magnification and grazing light.

**Pick Counters**
- Pick counter 10x10 mm and 12X Code 2601
- Pick counter 25x25 mm and 7X Code 2605

**Microscope for fabrics** 191G
Stereoscopic microscope with trinocular head frame, particularly indicated for fabric and yarn analysis. Standard magnification from 7X to 45X. Incident and transmitted illumination.

**Optional:**
- Pair of oculars 20X and additional lens 2X permit to have a maximum of 180 enlargements Code 191.66
- Additional lens 0.5X, to reach the standard magnification Code 191.70
- Adaptor for Reflex type camera (T2 ring not supplied) Code 191.64
- Power supply: 230 V, 50/60 Hz, single-phase
- Weight: 7 kg
- Dimensions: (L) 200 x (W) 250 x (H) 400 mm

**Circular Sample Cutter** 175B
Cutting area: 100 cm². Cutting depth: 5 mm. Model with 4 blades. Equipped with one cork support plate and four spare blades.
Reference standards: ISO 3374, BS 24 71, ISO 3801, UNI 5114, UNI 8014-2, ASTM D 3776

- Weight: 2 kg
- Dimensions: (L) 170 x (W) 170 x (H) 150 mm

**Electronic balance per m²** 165.664
Digital reading electronic balance particularly suitable to check the weight per m² of fabrics and paper, by means of pre-cut round cloth samples with a surface of 100 cm². The reading capacity of the balance, by using 100 cm² round cloth samples, allows the measurement of a maximum weight of the fabric up to 30000 g/m², with an accuracy of 1 g/m². Weighing capacity: 300 g and 0,01 g accuracy.
- Pan size ø 120 mm
- Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
- Weight: 1,9 kg
- Dimensions: (L) 200 x (W) 60 x (H) 220 mm
Instrument to determine the flammability resistance of textiles and the flame propagation rate onto vertically oriented textile materials.

Suitable to test:
- protective fabrics
- technical fabrics in general
- clothes and furnishing fabrics

The instrument can be also used with toys, as well as with both natural and artificial leather.

Iso Flammability Lab is fully automatic, since it is equipped with a PLC that controls and records the movement of the burner, the distance of the same from the samples, and the flame propagation time from one set distance to the other one. The PLC has a RS 232 serial port for connection with a Personal Computer, for the printing of test results.

Optional:
- Computer - Software - Printer

Radiator code 3392E40 to analyse the flammability resistance of textile materials exposed to the heat of a radiator (as required by the EN 13772).

Reference standards: EN ISO 15025 (part A), EN ISO 15025 (part B), EN ISO 6940 (part A), EN ISO 6940 (part B), EN ISO 6941 (part A), EN ISO 6941 (part B), EN 13772, EN 1101, EN 1102, EN 1103

Power supply: 115 Vac or 230 Vac, 50/60 Hz
Net weight: 50 kg
Dimensions: (L) 650 x (W) 750 x (H) 1200 mm
45° Flammability Tester 3392C

Laboratory instrument to determine the flammability resistance of fabrics exposed to a flame with an angle of 45°.
Automatic model with timer (in seconds) that automatically stops the flame application at the end of the pre-set time, and consequently measures the flame propagation time to reach the target zone.
Made of stainless steel.
Transparent panel made of fire-resistant glass.
Reference standards: CFR 1610, ASTM D1230, NFPA 702, CA TB 117, BIFMA
Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Net weight: 20 kg
Dimensions: (L) 400 x (W) 350 x (H) 500 mm

Horizontal Flammability Tester 3392D

Automatic instrument to determine the flammability resistance of all kinds of materials used both in the automotive and aircraft industries.
Equipped with a timer (in seconds) to control the ignition time.
Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Net weight: 12 kg
Dimensions: (L) 450 x (W) 200 x (H) 450 mm

Vertical Flammability Tester 3392G

Automatic instrument to determine the flammability resistance to a vertical flame of apparel fabrics, protective fabrics, curtains and children’s sleepwear.
Equipped with a timer (in seconds) to control the ignition time.
Reference standards: 16CFR part 1615-1616, ASTM D 6413, FTM 5903, FAA, BOEING, AIRBUS, CPAI 84
Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Net weight: 38 kg
Dimensions: (L) 330 x (W) 340 x (H) 850 mm
Highly accurate instrument to determine the physiological "comfort" of fabrics. Testing is performed by means of a transparent hot plate, called "skin model", that simulates the process of heat and humidity transfer occurring in proximity of the human skin. It provides the following data:

- Thermal resistance (RCT) with scale from 0.002 to 2.0 m² K/W
- Resistance to steam (RET) with scale from 5 to 1000 m² Pa/W
- Index of permeability to steam (IMT)
- Permeability to steam (Wd)
- Max flux 1100W/m²

The instrument is supplied complete with:
- Hot plate for fabric specimens up to 8"x8"
- Electronic interface with heating and conditioning sensors
- Heating device of the "skin model" plate
- Air control device
- Sensors for the measuring of air speed, temperature and relative humidity.
- Personal computer complete with operating software

To carry out testing the use of Climatest code 1722S is necessary.

Reference standards:

Power supply: 115 Vac or 230 Vac, 50/60 Hz
Net weight: 250 kg
Dimensions: (L) 650 x (W) 520 x (H) 1500 mm
Crock Meter  Rubbing fastness  2540

Instrument to determine colour fastness to rubbing, fitted with a digital reading counter. The instrument is supplied complete with a rubbing dowel with 1.6 cm diameter, a dowel with 1.9x2.54 cm dimensions, no. 2 interchangeable weights 9 N and 22 N, and one set of crocking clothes.

Optional:
1 set of no. 500 pieces of cotton crocking cloth  Code 198.422
Grey scale A03  Code 267A

Reference standards: ISO UNI EN 105X12, AA TCC 8/165, M&S C8, BS 1006

Weight: 8 kg
Dimensions: (L) 670 x (W) 220 x (H) 210 mm

Electric Crock Meter  Rubbing fastness  198B

Electric model to determine colour fastness to rubbing, fitted with a digital counter. The Crock Meter is supplied complete with a rubbing dowel with 1.6 cm diameter, a dowel with 1.9x2.54 cm dimensions, and one set of crocking clothes.

Optional:
no. 500 pieces of cotton crocking cloth  Code 198.422
Grey scale  Code 267A

Reference standards: ISO UNI EN 105, AA TCC 8/165, M&S C8, BS 1006.

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 20 kg
Dimensions: (L) 800 x (W) 250 x (H) 260 mm

Forced Ventilation Conditioning Oven  251G

High-tech oven suitable for crimp checking in yarns and for checking the dimensional stability of fabrics in hot air. Suitable for the hot cleaning of mechanical spinnerets, for drying and heating of any type of textiles.

Supplied complete with temperature digital regulator and two grid-type shelves made of stainless steel.

Forced ventilation of the heating air.
Operating temperature range: from room temperature to +280°C.
Accuracy: ± 1°C.

Available models:
Inside dimensions (L) 408 x (W) 372 x (H) 422mm.
Capacity: 60 litres. Weight: 40 kg  Code 251G

Inside dimensions (L) 498 x (W) 477 x (H) 512mm.
Capacity: 120 litres. Weight: 50 kg  Code 251H

Inside dimensions (L) 593 x (W) 522 x (H) 797mm.
Capacity: 250 litres. Weight: 90 kg  Code 251P

Power supply: 230 Vac or 400 Vac, 50/60 Hz
Sample Press Lab

Hydraulic punch cutting machine with high cutting capacity. Ideal to cut textile, leather, rubber and soft plastic specimens, to be used for different types of testing (such as strength, weight per square metre, flexion, bursting tests, etc.).

Cutting capacity: 16,000 kg

Maximum cutting surface: 400x800 mm

Maximum cutting stroke: 80 mm

Cutting device can be activated by means of a safety button.

Reference standards: ASTM, ISO, DIN, AFNOR and UNI standards only.

Power supply: 400 V, three-phase, 50/60 Hz

Weight: 870 kg

Dimensions: (L) 980 x (W) 900 x (H) 1410 mm

Optional:

Punching knives

Circular, rectangular and square, with straight and jagged blade - different dimensions on demand.

Punch thickness: 30 mm

Cutting stroke: about 5 mm

“Hoffman” Press

Ironing machine to check fabrics dimensional stability during ironing tests.

Automatic execution of the pressing cycle, sample steaming and suction cycle.

Test programs are available in the control unit.

The operator can create and save new programs.

Boiler for vapour production code 3370.2 is available as optional.

Reference standards: ISO DIN 53894 and TM-290

Power supply: 400 Vac, 50/60 Hz, three-phase + N

Weight: 300 kg

Ironing board dimensions: 600 x 800 mm

Dimensions: (L) 1400 x (W) 1000 x (H) 1600 mm
Scorch Fastness  Sublimation tester  312A
To determine colour fastness to hot pressing and dry heat and to perform sublimation tests.
Heating plates dimensions: 125x125 mm (5"x5").
Temperature range: from +125°C to +230°C.
Pressure: 4 kPa
Reference standards: ISO 105 X11, AATCC 117, 133, BS 1006
Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 15 kg
Dimensions: (L) 260 (W) 460 (H) 240 mm
Available also code 312B: 5 plates, dimensions: 102x29 mm, (4"x1.13").

Perspirometer  257A

Incubator  251L

Instruments to check:
colour fastness to perspiration, in compliance with the following standards: UNI EN ISO 105- E04; BS 1006; BS EN 20105; AATCC 15; IWS TM 175
Colour fastness to swimming pool and sea water, in compliance with the following standards UNI EN ISO 105 E01; BS 1006; BS EN 20105; AATCC 106; AATCC 107; IWS TM 6.
Colour yellowing to phenol, in compliance with ISO and AATCC standards.
The system is composed of:
code 257A - Perspirometer; standard weight of 5 kg, optional;
set of plexiglas 21 plates (100x40 mm each), complete with one metallic container
code 251L - Incubator cabinet with measuring, temperature range: from +5°C above room temperature to +80°C; accuracy: ±0.5°C at 37°C
Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 45 kg
Inner dimensions: (L) 300 (W) 240 (H) 300 mm
Outside dimensions: (L) 550 (W) x 350 (H) 420 mm

Optional:
Multifibre fabrics DW 010 (ISO 105 e BS 1006)
Grey scale A03 (ISO 105 e BS 1006) to assess colour staining
Grey scale A02 (ISO 105 e BS 1006) to assess colour fastness
Kit of chemicals to reproduce acid and alkaline perspiration (in compliance with ISO, BSi, IWS, IWS TM)
Weight: 4.54 kg for AATCC standard
Set of glass: 10 plates (100x40x3 mm each)
Colour yellowing to phenol Kit for ISO (105x18 mm)
Weight: 5 kg for ISO standard
Solarbox 1500 Light fastness 325A

Equipment for the analysis of the colour fastness to the light of a 1500W Xenon lamp.

The following parameters are monitored, controlled and stabilized:
- temperature measured on the specimen with the B.S.T. method;
- lamp irradiance.

Possibility of specimen irradiance (one filter is included at customer’s choice); other filters are supplied as optional:
- UV 310 filter + IR (exposure behind the window) Code 325.34
- UV 280 filter + IR (outdoors exposure) Code 325.38
- UV 280 filter (outdoors exposure) Code 325.42
- UV 310 filter (exposure behind the window) Code 325.46

Timer included.

Optional: see optional accessories available for Xenon Lab code 325E.

Reference standards: ISO 105, BS 1006

Power supply: 230 Vac, 50/60 Hz, single-phase

Weight: 29 kg

Dimensions: (L) 750 x (W) 390 x (H) 400 mm

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Xenon Lab Light fastness 325E

Equipment for the analysis of the colour fastness to the light of a 1500W Xenon lamp in a chamber with preset humidity, controlled by ultrasonic device.

The following parameters are monitored, controlled, and stabilized:
- temperature;
- humidity;
- lamp irradiance.

Filter UV 310 nm for the simulation of indoors conditions.

Possibility of specimen irradiance: see Solarbox code 325A description for filter specifications.

Optional:
- Set of Blue standard scale for light fastness (50 units) Code 325.2
- Humidity test control fabric (Htc) Code 325.30
- Grey scale type A02 Code 267C
- Set of 3 sample holders 100 (x3) Code 193A.100

Reference standards: ISO 105 B02 (except A.1.4); BS 1006

Power supply: 230 V, 50/60 Hz

Weight: 60 kg

Dimensions: (L) 750 x (W) 390 x (H) 1000 mm

Specimen tray dimensions: 280 x 200 mm
**Wascator 310B**

High precision washing machine officially acknowledged as a standard reference for washing tests on fabrics. Wascator is also suitable for checking effects of washing detergents and chemical products. Equipped with microprocessor for setting several programs of different functioning cycles.

**Optional:**
- Polyester makeweight Code 310.72
- ECE reference detergent Code 310.4
- IEC detergent Code 310.16
- Stability template and percentage ruler for checking the dimensional stability Code 310.14
- Memory card UNI EN ISO 6330 Code 310B.90

Reference standards: UNI EN ISO 6330-5077, BS EN 26630, IWSTM 31

Power supply: 230 Vac or 400 Vac, three-phase, 50 or 60 Hz
Weight: 195 kg
Dimensions: (L) 720 x (W) 690 x (H) 1315 mm

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**Tumble Dryer 3111**

Recommended model to dry samples, washed with Wascator code 310B.

Capacity: 5 kg - Timer: 99,99 min. Equipped with electronic processor for accurate temperature control within ±1°C.


Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
Weight: 35 kg
Dimensions: (L) 600 x (W) 600 x (H) 850 mm

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**Dry Cleaning Machine 310F**

Dry cleaning machine internationally acknowledged as a standard reference to check the dimensional stability of fabrics to dry washing. Equipped with an electronic device for the control of the different washing programs. Complete with drying system.

Reference standards: ISO EN 3175, AATCC 158

Power supply: 400 Vac, 50/60 Hz, three-phase
Net weight: 1200 kg
Dimensions: (L) 1460 x (W) 2100 x (H) 2000 mm
Top-loading Home Laundry Washing Machine

Washing machine with loading system from the top, to simulate domestic washing cycles. Equipment selected and certified by AATCC.

Reference standards: AATCC 88C, 124, 130, 135, 142, 143, 150, 172, 179, 188

Power supply: 115 Vac, 60 Hz or 230 Vac, 50 Hz
Weight: 73 kg
Dimensions: (L) 685 x (W) 660 x (H) 1100 mm

Front-loading Home Tumble Dryer

Tumble dryer machine with loading system from the front, to dry samples after their washing with the Home Laundry Washing Machine code 310C. Equipment selected and certified by AATCC, to perform domestic drying cycles.

Reference standards: AATCC 88B+C, 124, 130, 135, 142, 143, 150, 172, 179

Power supply: 115 Vac, 60 Hz or 230 Vac, 50 Hz
Weight: 60 kg
Dimensions: (L) 740 x (W) 710 x (H) 1100 mm

Autowash II Wash-Dry fastness

Instrument to determine the colour fastness to dry-cleaning or washing. Fitted with a computerised electronic temperature controller, accuracy ±1°C. It can be used also for atmospheric dyeing up to +98°C. Structure wholly made of very strong stainless steel. Dual speed selection: 40 rpm (as requested by the standards for colour fastness) and 22 rpm (for dyeing tests). Model designed to contain up to 8 interchangeable beakers of either 550 cc or 1200 cc for colour fastness testing, depending on the specific standard (European or American) in use. Also suitable for soaping.

On demand available a 16-position model code 311M

Optional:
- Stainless steel beakers 550 cc for colour fastness Code 311L.18
- Stainless steel beakers 1200 cc for colour fastness Code 311L.20
- Support for instrument placement Code 311L.22

Reference standards: ISO 105, BS 1006, AATCC 2, 3, 28, 61, 62, 86, 132 Officially approved by Marks & Spencer (M&S)

Power supply: 400 Vac, 50/60 Hz, three-phase + N
Weight: 135 kg
Dimensions: (L) 1025 x (W) 757 x (H) 1127 mm
Grey Scales

For checking colour staining and fastness, according to ISO 105 (BS 1006).

Available in two models:

| Grey scale A02 for colour change tests | Code 267C |
| Grey scale A03 for colour staining tests | Code 267A |

AATCC grey scales for colour staining test and for colour fastness tests are also available:

| AATCC scale for colour change tests | Code 267D |
| AATCC scale for colour staining tests | Code 267E |

Blue Scale

Set of 50 cards in pure wool, each with 8 sticked blue scale gradations.

To test colour fastness of cloths exposed to light, in accordance with ISO Standard 105 (BS 1006), ATCC

Standard Adjacent Fabrics

Suitable for colour staining tests according to ISO 105 standards (BS 1006).

Available in the following versions:

| Code 323.8 |
| Code 323.6 |
| Code 323.10 |
| Code 323.12 |
| Code 323.14 |
| Code 323.16 |
| Code 198.422 |
| Code 323.4 |

Multifibre DW 010

Standard fabrics for colour staining tests, according to ISO 105 (BS 1006) norms, F10. The fabrics are made of fibres: secondary cellulose, acetate, cotton, polyamide, polyester, acrylic and wool. Supplied in packages of 10 m length each.

Multifibre TV

Same as DW010 code 257,424, but for washing tests at high temperature.
AATCC/ISO Crease Appearance Replicas 310.94
Set of 5 standard references to visually evaluate the crease in the fabrics after washing.
Reference standards: UNI EN ISO 15487, ISO 7769, AATCC 88C, AATCC 143, M&S P134

AATCC/ISO Seam Smoothness Appearance Replicas 310.96
Set of standard reference for the smoothness appearance of seams in fabrics after cleansing.
Reference standards: UNI EN ISO 15487, ISO 7770, AATCC 143

AATCC/ISO Smoothness Appearance Replicas 310.74
Set of 6 standard references for the visual assessment of the fabric smoothness after washing.
Reference standards: AATCC 124, AATCC 143, M&S P91, M&S P134, ISO 7768

Soap Powder 310.10
To perform tests of colour fastness to washing, as per the ISO 105 (BS 1006), C01-C05 standards.

ECE/IEC Reference Detergent
Detergent with or without bleaching agents, to be used for the colour fastness tests to washing, following the ISO standards.

- ECE without phosphate (A) 2 kg  Code 310.32
- ECE with phosphate (B) 2 kg  Code 310.4
- IEC without phosphate (A) 2 kg  Code 310.16
- IEC with phosphate (B) 2 kg  Code 310.40
**Vapour Permeability Tester 3122**

To check the resistance of textiles to water vapour penetration.

The system is composed of:
- no. 3 pots complete with covers and gaskets
- no. 1 laboratory glass dryer, diameter 300 mm
- no. 1 25 ml pipette
- no. 1 kg silica gel
- Electronic balance not included

Reference standards: UNI 4818 - 26

Weight: 20 kg
Dimensions: (L) 400 (W) 400 (H) 400 mm

**Water Vapour Test 3395**

Instrument to analyse the water vapour permeability of leather, industrial fabrics and all permeable materials. Sample rotation speed: 75 ± 5 rpm. Ventilation system: with 3 blades rotating at 1400 ± 100 rpm.

The equipment is composed of:
- set of rotating beaker holder for 6 positions, with rapid release system
- 6 glass beakers
- protection system for the operator


Power supply: 230 Vac, 50/60 Hz
Weight: 25 kg
Dimensions: (L) 550 x (W) 650 x (H) 500 mm

**Static Lab 2918**

Equipment suitable for checking the static electricity properties of clothes, protective fabrics, shoe fabrics and leather materials.

It is composed of:
- electronic control panel for the digital reading of the static electricity values (Ohm)
- connecting cables
- measuring heads for the static electricity reading as regards both the “surface” and “vertical” methods


Note: before the static electricity measurement, sample has to be conditioned at +23°C ±1° and R.H. 25% ± 5%, with ClimateSt code 1722.

Power supply: 230 Vac, 50/60 Hz, single-phase
Weight: 5 kg
Dimensions: (L) 500 x (W) 300 x (H) 300 mm
Glove Tester  Glove cut tester  3394A

Equipment for checking the resistance of protective cloths to cutting. Suitable to perform tests on protective gloves against accidents, according to the EN 388 standard.

Accessories supplied with the equipment:
- no. 1 pack of aluminium paper with 0.01 mm thickness
- no. 1 pack of paper (filter) 65 g/m²
- no. 1 pack of reference fabric
- no. 2 sample holders
- no. 10 blades

Consumables (not included):
- aluminium foil with 0.01 mm thickness  Code 3394A.2
- paper (filter) 65 g/m²  Code 3394A.4
- reference fabric  Code 3394A.6
- additional blade  Code 3394A.8

Power supply: 230 Vac, 50/60 Hz
Weight: 25 kg
Dimensions: (L) 500 x (W) 300 x (H) 420 mm

Impact Abrasion Lab  2563

Laboratory instrument suitable to:
- Determine quality of protective suits like motor rider suits (both one piece and detached), gloves etc. Made to protect motorbikers from injuries caused by impact against the road surface.
- Determine the resistance to abrasion of wrist, knee, elbow and hand protections.

Supplied complete with timer (in seconds), meter counter for abrasion, device to apply a pressure of 49N onto specimens, waste suction device, and safety device for the operator.

Reference standards:
- ISO EN 13595-2, ISO EN 14120, UNI EN 13594

Power supply: 400 Vac, 50/60 Hz, three-phase + N
Compressed air supply: 5 bar
Net weight: 150 kg
Dimensions: (L) 1500 x (W) 500 x (H) 1500 mm

Air & Water Leakage Lab  2571

Instrument to check the resistance of protective gloves and shoes to air or water pressure, and verify possible leakage points.

Supplied complete with accessories to support gloves and shoes and blowing device.

Reference standards: EN 374-2

Power supply: 230 Vac, 50/60 Hz, single-phase
Air pressure: 6 Bar
Net weight: 30 kg
Dimensions: (L) 800 x (W) 600 x (H) 600 mm
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High tech Spectrophotometer for bench use, for the accurate measuring of big volumes of samples. Model complete with inner self-testing and self-configuration to guarantee accurate and repeatable measurements. Complete with three measuring areas (of 22, 10 and 6 mm), automatically identified. It can work both in horizontal, and in vertical position. Spectro Lab can perform both reflection measurements (on fabrics, yarns, fibres, other), and transmission measurements (liquids).

Technical features:
- tri-beam diffused 8°, 6" sphere (15.24 cm), 2D array/holographic grading
- repeatability (on white ceramics): 0,03 RMS delta ECIELab
- inter-instrument agreement Avg 0,15 delta ECIELab
- pulsed Xeno lightening system, D65 calibrated
- spectro range: from 360 to 750 nm with 10 nm interval
- photometric range: 0% - 200%, accuracy: 0.01%
- measuring time: 2.5 seconds
- USB/RS-232 interface for connection to an external PC (optional)
- Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase
- Net weight: 12 kg
- Dimensions: (L) 230 x (W) 470 x (H) 250 mm

Optional:
- QC Quality Control software, code 3393A.10
  Basic software for the quality control in the laboratory. It runs in Windows. It permits you to display and save data, graphs, spectro-graphs, trend profiles, colour differences under the different CIE scales, L* A* B* 76, CMC, CIE94, FMC2 metamerism indexes, visual colour, whiteness and yellowness indexes.
  As alternative to the QC software:
- Colour Matching-Recipe software, code 3393A.12
  Innovative and advanced software consisting of the QC Quality Control software and a complete Colour Matching software to prepare and correct colours when preparing dyeing lab recipes. It includes the basic QC software and an easy and accurate method for the insertion of the dyeing agents with the related reflection curves, to ensure accurate recipe formulation. An easy reading method ensures the immediate display of the inserted colour, thus guaranteeing the identification of possible discrepancies. The recipe formulation program can formulate and correct recipes in an easy and accurate way. Most important: the colours and the recipes must be inserted directly by the operator; if an assistance of a Mesdan technician is required, it must be quoted separately.
Colormatic 323G

Laboratory equipment for the automatic dosing, preparation and weighing of chemical solutions and stock solutions. The instrument enables automatic weighing of powder dyestuff or liquid substance poured into the container and determination of perfect dosing according to the program included in the computer.

Colormatic, equipped with the available optional auxiliary dosing kit (code 323G.140), may be used for chemicals' collection and stock solutions' collection from maximum 4 bottles. Unit made of stainless steel.

Equipped with N 1 balance with weighing capacity up to 2.000 g, and 0,001 g accuracy.

Dosing selection with warm or cold water.

Personal Computer complete with monitor.

Configuration table of the dosing beakers.

Possibility to save the expiry date of the stock solutions.

Acoustic buzzer signal warning that the solution is ready.

Power supply: 230 Vac, 50 Hz, single-phase

Dimensions: (L) 1100 x (D) 720 x (H) 1000 mm

Rotabox 45/90 323GB Gravimetric dye-dosing dispenser

Laboratory equipment for the automatic dosing, preparation, weighing and drawing of chemical solutions and mother-solutions. The instrument enables automatic weighing of powder dyestuff poured into the beaker and determines a perfect dosage according to the set-up program on the computer.

Programming of recipes with automatic drawing from 45 stock bottles. It includes the preparation unit of mother-solutions.

Equipped with n. 2 scales with weighing capacity from 0 to 2000 g. Reading precision 0,001 g.

Dosing choice with cold or warm water.

Electronic regulation of the water temperature.

Personal computer, monitor and printer included.

List of the weights of empty bottles used for dosing.

Possibility to execute in sequence the memorised recipes starting from any available recipe.

Possibility to memorise the expiry date of mother-solutions and dyestuffs.

Acoustic buzzer signal warning that the solution is ready.

Safety device for possible overflow of solution from the beaker.

Automatic drawing of liquid dyestuff from 45 stock bottles (capacity 600 cc.) and automatic weighing.

Quickly interchangeable beakers without preparatory operations of washing and drying.

Unit built in stainless steel.

A special model with 90 stock bottles, code 323GC, is available on request.

Power supply: 400 Vac, 50 Hz, three-phase + N
**Campiocolor 85/A**

Laboratory equipment, with two separate dyeing baths, with 5 positions each, suitable to dye - universally - at atmospheric pressure (+98°C max.) flocks, yarn skeins, or fabrics.

Ideal for dyeing with reactive, direct, and acid colours.

Available stainless steel beakers with 100-200-300-400-500 and 600 cc capacity.

The instrument can be equipped - on demand - with dyeing positions having different capacities, at the same time, e.g.: 5 beakers of 500 cc capacity and 5 beakers of 200 cc capacity.

Complete with PLC programmer with 50 selectable programs.

Indirect automatic cooling with water, by means of an electrovalve.

Special vertical and rotating movement of the samples.

Automatic water inlet system, in order to maintain the proper level of dye bath to be heated.

A special model equipped with round glass lid - to check the dye bath exhaust - is available on demand, code 85/A-V.

Power supply: 400 Vac, 50 Hz, three-phase + N

Weight: 130 kg

Dimensions: (L) 960 x (W) 600 x (H) 870 mm

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**Soft 4” Wind Lab**

Soft Manual Winder with 4” traverse for cylindrical bobbins - single head.

Ideal for dyeing laboratories.

Basic model, suitable for the preparation of small samples of cylindrical bobbins to be dyed.

Model with 6” traverse available as well.

Power supply: 230 Vac, 50/60 Hz

Weight: 70 kg

Dimensions: (L) 550 x (W) 750 x (H) 1400 mm
Auto-Chroma IR “click-valve”* Infra-red dyeing machine.

For the first time ever a Lab Infra-red dyeing machine that works on fill it & shut it principle. Very thoughtfully designed and tested by a set of expert dyers and chemists, for durability, repeatability, reproducibility, color rendering.

Main features:

Semi-automatic Laboratory IR dyeing machine with patented pot design
Programmed temperature control for raise, hold, and cooling
Total chemical dosing control

Thanks to these and other details further mentioned, users can achieve innovative and accurate performances for lab dyeing at reduced costs with the accuracy and uniformity never reached before with an IR machine

Ideal to dye pieces of fabrics, yarns, fibres and blends

Suitable for all types of dyes, and dyeing methods

This fully automatic chemical dosing and temperature & time control is achieved by a specially designed dye pot. Each pot has 2 special automatic dosing reservoirs with “click-valve”*. The temperature range for heating and cooling is ambient to +135°C, rate of heating from +0,1, up to +4°C/min.

Cooling by means of water heat exchanger and air circulation fan above 500 m³/hour

The automatic dosing eliminates the stop&start operations, e.g. stops to add dye, stop to add alkali, and so on

The Auto-Chroma IR patented “click - valve”* system will dose precise amounts of Dye, Auxiliaries, Alkali etc. as per the program set by the operator.

The instrument is equipped with an elegant colour “touch screen”. The machine is supplied with several dyeing programs designed by experts (e.g. Pes, Cot, Cot/Pes, Wool, etc.).

Note: stock solutions have to be manually prepared using the Meidan Automatic Dispenser, Rotabox 45/90 Code 323GB.

A special (patented) 300 cc pot is available, and can be used for any liquor ratio covering the following volumes: 100 - 150 - 200 - 250 and 300 cc, special volumes capacity pots to dye 500 cc to 1000 cc liquor are available on request.

The maximum number of pots on a standard machine is 12. On special request, 24-pot machines can be supplied.

With the elegant colour “touch screen” the operator can program, store, recall and run a number of dyeing sequences (temperature setting up to +135°C) and personalized programs. The saved programs can be easily recalled again for the next occasions of dyeing, so even a small change to a standard program is saved, e.g. if an additional auxiliary is added for turquoise shades, that program is saved in the machine and can be recalled when lab trials of turquoise colours is undertaken.

The essential innovative advantages of this dyeing machine are:

Easy of use

Touch screen control panel

Save and recall memory system

Low liquor ratio dyeing is possible

Auto-Chroma IR excludes the negative effect called “temperature dips and hot spots” which influences dyeing results among samples of the same type

Time factor: important dyeing time reduction due to the automatic dosing of dyestuffs alkali and auxiliaries

Dye accuracy factor: due to micro-metric step by step dosing and the fact that the machine does not need to be stopped (unlike other IR machines with manual/syringe dosing)

Reproducibility factor: due to the special (patented) pot design the sample absorbs the colour in an absolute perfect manner

Ergonomic factor: definitively the most silent IR machine nowadays available

Auto-Chroma IR is made in Europe and built entirely out of the best quality stainless steel, practically indestructible.

Power supply: 400 Vac, 50 Hz, three-phase + N

Weight: 150 kg

Dimensions: (L) 1250 x (W) 700 x (H) 700 mm

* Patented
Giotto HT Automatic dyeing machine

Fully automatic dyeing machine, from pre-treatment to washing off - Load unload principle (similar to bulk)
It can dye yarn skeins and fabrics made of any dyeable fibres and their blends
All Parameters are fully programmable, including Auto Dosing
Equipped with about 50 selectable different dyeing programs, each with graphic display.
Basic model endowed with 3 automatic dosing tanks.
To obtain a fully automatic version, 2 additional dosing pumps can be added to each dyeing unit.
Up to 6 dyeing positions, either H.T. (+135°C) or atmospheric (+98°C), or combined
Each dyeing position is independent
Also available models with different bath capacity (300 cc, 600 cc, 1600 cc, 6000 cc)
On demand, the instrument can be equipped with dyeing positions having different bath capacity
Suitable to create processes and plan batches online like for bulk machines
Thanks to the fully automation and to the very high precision, Giotto Dyeing Machine can obtain the same results reached by the production machineries on the laboratory samples dyed according to the same processes and recipes.

Liquor ratio from 1:7 up to 1:40 (depending on GSM of fabric to be dyed).
Continuous programmable Reduction clearance possible (for PES and its blends), allows for continuous dyeing of PES Blends
Excellent repeatability within one bath and reproducibility among baths - delta (<0,4 CMC 2:1) and RFT (> 95%)
Power supply: 400 Vac, 50 Hz, three-phase + N
Laboratory dyeing machine with 3 INDEPENDENT DYEING UNITS, suitable for both atmospheric dyeing (up to +98°C) and high temperature dyeing (up to +135°C), ideal for dyeing of small yarn cones, bulk fibres, fabrics wrapped on beams, and yarn skeins.

Available in different configurations (from manual to fully automatic version).

The dyeing process is achieved by dyeing static samples with a circulating dye bath flow, from inside-outside and vice versa, thanks to the reversible circulation pump supplied with the main instrument.

LODO HT main characteristic is its modular design, the possibility to increase its AUTOMATION level and dyeing REPEATABILITY to the top level, in order to reach the highest possible Right First Time (RFT). For this scope, some unique technological solutions have been developed, all available on demand as optional accessories.

Each single dyeing unit of LODO HT can be equipped with an AUTOMATIC DOSING SYSTEM consisting of 1 main tank (in which the dye bath is poured) and 3 additional smaller tanks, for auxiliary products.

Besides quality, when the time factor and dyeing quantity are involved, the addition of other accessories (such as the EXTRA PUMP D-4 and D-5 DOSING KITS) will ensure a COMPLETE AUTOMATION and guarantee the highest dosing ACCURACY (exclusion of human error) and the highest possible RFT.

**Technical features:**

Up to 6 independent dyeing positions (available on demand - a detailed offer can be provided in case of interest).

Models with 1000 cc or 2000 cc bath capacity are available (to be defined at the time of the tender).

Programmable built-in PLC microprocessor with touch screen display.

Automatic continuous washing.

Automatic drain of the dyeing bath.

Reversible circulation pump.

Automatic indirect water cooling system.

Power supply: 400 Vac, 50 Hz, three-phase + N
Giotto HT 9000

Dyeing laboratory equipment, ideal for a combined use with DYE SCANNER or with LAB KNITTER, to determine the dyeing affinity of texturized yarns.
Giotto HT 9000 is ideal to check, after dyeing, the presence of any faults inside the fabrics.
HT (+135°C) instrument, therefore also suitable for dyeing of polyester fabrics and yarns.
Fully automatic equipment to wash, dye, rinse, and - if necessary - to soap fabric and knitted fabric samples.
Giotto HT 9000 is also suitable for the final “stripping” on dyed polyester fabrics.
Suitable for samples with a max. dry weight of 300 g.
Power supply: 400 Vac, 50 Hz, three-phase + N
Weight: 80 kg
Dimensions: (L) 850 x (W) 680 x (H) 780 mm

Cone Dyeing Lab

Laboratory unit for dyeing of yarn cones of textile natural and synthetic fibres or blends.
Equipped with n. 1 glass container (inner diameter 180 mm) usable height: 250 mm.
With special sample holders it is also possible to dye raw fibres, hanks, and/or fabric wrapped onto the sample holder.
Temperature regulation (max. +98°C) controlled by microprocessor programmer, with maximum memory capacity of 20 programs, with 30 steps each.
Circulation pump with flow going from outside inwards and vice-versa.
Indirect heating by means of an electric resistance.
Indirect automatic cooling with water by means of an electro-valve.
Continuous washing in automatic.
Unit made of stainless steel.
Power supply: 400 Vac, 50 Hz, three-phase + N
Dimensions: (L) 800 x (W) 650 x (H) 1350 mm

Hotplate / Stirrer

Magnetic stirrer with ceramic plate.
Stirring speed: 50-1300 rpm.
Heating temperature: up to +540°C.
Top plate dimensions: 200x200 mm.
Heating surface dimensions: 115x115 mm.
Power supply: 230 Vac, 50 Hz, single-phase, 800 W
Weight: 3,9 kg
Dimensions: (L) 205 x (W) 335 x (H) 96 mm
Hydro Lab FV

Hydroextractor with vacuum blower system, suitable to quickly eliminate (in less than two minutes) the excess of water contained in yarn cones.

It can be used either with a big cone up to 1.5 kg, or with 4 smaller cones - at the same time - of max Ø 80 x 100 (H) mm each one.

Adjustable drying timer (in minutes).
Adjustable cone holder, according to the cone's height.

Power supply: 230 Vac, 50 Hz, single-phase
Weight: 45 kg
Dimensions: (L) 500 x (W) 500 x (H) 600 mm

Dryer Lab

Rapid dryer for fabric samples and yarn skeins. Drying cycle with first step 1 minute long with cold air, hot air step with adjustable duration, 1 minute final step with cold air to cool down samples and sample holder area. Possibility of drying with warm air or cold air.

Upper grid in stainless steel (500 x 500 mm)

A smaller model (200 x 500 mm) is also available, with upper grid in stainless steel, code 336F - DRYER LAB™.

Reference standards: DIN 51221/1, BS EN 10002/2

Power supply: 400 Vac, 50 Hz, three-phase + N
Weight: 80 kg
Dimensions: (L) 700 x (W) 740 x (H) 950 mm

Hydro Extractor

Laboratory water extractor for fast and gently drying of textile samples. Basket high rotation generating a centrifugal force, in order to remove the superficial and inside water from textile samples - like yarn skeins and fabrics.

Stainless steel casing and inner drum for improved robustness.

Maximum capacity: 8 kg

Power supply: 400 Vac, 50 Hz, three-phase
Weight: 67 kg
Dimensions: Ø 660 x (H) 850 mm
**Fabric Colour**

Instrument for dyeing of tubular fabrics and knitted cloths manufactured with the Double Lab Knitter code 294F and for other kind of orthogonal fabrics.

Dyeing capacity: 500 grams max. according to the textile technical characteristics, in drum of Ø 200 x 400 mm.

Max. temperature: +98°C.

Equipped with a program for cleaning, dyeing and rinsing, with hand-driven drain of the water used for the cleaning and rinsing cycle.

On request, models with different dyeing capacity (2 kg - 5 kg) are available.

Power supply: 400 Vac, 50 Hz, three-phase + N

Weight: 125 kg

Dimensions: (L) 1100 x (W) 700 x (H) 790 mm

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**Padder Lab**

HORIZONTAL Padder Lab. Laboratory equipment for the foulard dyeing of fabric samples. Fabrics are cold dyed, squeezed on rollers and then rolled up for the storage. It’s also possible to dye small A4-size fabric samples.

Roller length: 300 mm.

Adjustable speed from 0 to 12,5 m/min, by means of a potentiometer.

On request, the VERTICAL Padder Lab is available, ideal for the preparation of fabric auxiliary products in the process of printing and finishing.

Power supply: 400 Vac, 50 Hz, three-phase + N

Weight: 130 kg

Dimensions: (L) 1000 x (W) 600 x (H) 730 mm

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**Jigger Lab**

Laboratory equipment for dyeing fabric samples of natural and synthetic fibres or blends. During dyeing the fabric passes flat in a basin with repetitive cycles.

The dyeing bath can be heated up to +95°C. The fabric can be around 2 meters long.

Roller length: 600 mm.

Dyeing tank max capacity: 5 litres.

Adjustable temperature (max +95°C) by means of a microprocessor with display, with a memory capacity of 20 programs.

Power supply: 400 Vac, 50 Hz, three-phase + N

Weight: 150 kg

Dimensions: (L) 1600 x (W) 670 x (H) 800 mm
Coating Lab 3114

Laboratory equipment for spreading and coating of auxiliary and finishing substances.
Suitable for the finishing - at room temperature - of all type of fabrics and flat materials.
The sample holder rack (450 x 450 mm) is interchangeable with other Mesdan-Lab equipment: Fabric Lab Dryer (code 3106), Stenter (code 3106A), Fabric Vapour Lab (code 3107 and 3107A), to make the downstream heat treatments easier.

Weight: 40 kg
Dimensions: (L) 650 x (W) 550 x (H) 400 mm

Fabric Lab Dryer 3106

Hand operated instrument to dry, fix and vulcanise fabric samples after dyeing or impregnation.
The instrument is also suitable for thermo fixing fabric samples before washing, to check their shrinkage.
Equipped with two sample fastening tables (dimensions: 450x450 mm).
Hand-driven model.
Adjustable temperature from +50°C to +210°C.
Complete with timer.
On request, model at 1 position sample is available (code 3106B)

Power supply: 230 Vac, 50 Hz, single-phase
Weight: 152 kg
Dimensions: (L) 1060 x (W) 940 x (H) 820 mm

Stenter Lab Dryer 3106A

Small miniature RAMEUSE, suitable to dry dyed fabric samples, but especially to hot fix the fabrics.
High quality model, with separated heating and drying phases on the two fabric faces.
Forced air ventilation device to automatically control and preset the temperature up to +220°C.
Possibility to adjust the warm air flow from the blowers (separately for lower and upper blower).
Equipped with FABRIC HOLDER LOOM (450x450 mm) with pins (automatic extraction) and with an adjustable slider.
Control panel with timer for time test.

Power supply: 400 Vac, 50 Hz, three-phase + N
Weight: 350 kg
Dimensions: (L) 1130 x (W) 1345 x (H) 770 mm
Pad Steam Lab 3398

Ideal for the printing houses, which desire to reproduce in the laboratory the dyeing results obtained in production.

It is possible to work with self-produced saturated vapour (up to +100°C), or with high temperature heated vapour (up to +170°C) coming from an external source.

Roller length: 300 mm. Adjustable speed from 0.2 to 5 m/min, by means of a potentiometer.

Equipped with 1 dyeing basin – max capacity 1.5 litres. Staying time of sample under treatment: from 8 seconds to 30 minutes.

Electric or steam heating.

Equipped with 1 washing tank, with pertinent squeezer (additional washing tanks with pertinent squeezers are available on demand).

Power supply: 400 Vac, 50 Hz, three-phase + N

Weight: 350 kg

Dimensions: (L) 920 x (W) 1850 x (H) 1930 mm

Fabric Vapour Lab 3107

Instrument to fix and vulcanise fabric samples before printing.

The steaming cycle takes place in saturated steam at +98°C (heating through electric resistances), both with direct and indirect exposure.

Equipped with sample fastening table, dimensions 450 x 450 mm. Complete with timer.

A model with main vapour to be supplied by an external steam source is also available. code 3107A.

Power supply: 380 V, 50 Hz, three-phase

Weight: 110 kg

Dimensions: (L) 1100 x (W) 900 x (H) 500 mm
Soap Wash 323Q

Instrument suitable for soaping and washing of dyed fabric samples. Ideal for laboratories and production lines.
2-position model (also 4-position model available on demand).

Automatic water inlet of soaping bath
Automatic continuous washing
Temperature regulation (+98°C max.)
Soaping cycles setting (2 cycles max.)
Automatic drain of soaping bath

With Sapolav 2 a complete process of soaping and washing can be performed in less than 2 minutes.
Equipped with 2 stainless steel sample holders.
Completely made of stainless steel.

Power supply: 230 Vac, 50 Hz, single-phase
Weight: 120 kg
Dimensions: (L) 500 x (W) 750 x (H) 1400 mm

Light Lab 173B

Light chamber for sampling.

With the following 4 light sources:

- Daylight lamp D65 6500 K
- Fluorescent lamp 4000 K
- UV ultra violet lamp
- F Incandescent tungsten lamp

Complete with hour counter device.

Optional: 45° inclined plane

Reference standards: BS 950 Pont: 1, DIN 6173

Power supply: 230 V, 50/60 Hz, single-phase
Weight: 30 kg
Inside dimensions: (L) 675 x (W) 395 x (H) 370 mm
External dimensions: (L) 715 x (W) 415 x (H) 600 mm

Lux 90L 173D

Instrument for textile laboratories suitable for sample control, entirely built in aluminium - therefore extremely light - and equipped with a controller for the automatic vision of metamerism.
Complete with a counter, to check the lamps’ wear and their remaining operating time.

Equipped with the following lamps:

- N. 1 UV ultra violet lamp
- N. 2 Daylight lamps D65 6500 K
- N. 2 Fluorescent lamps 4000 K
- N. 4 F Incandescent tungsten lamps

Power supply: 230 V, 50 Hz, single-phase
Weight: 34 kg
Inside dimensions: (L) 1315 x (W) 455 x (H) 330 mm
External dimensions: (L) 1430 x (W) 480 x (H) 500 mm
**Laboratory Table**

Laboratory table, convenient and practical support for all operations and for all needs you could have in chemical and physical laboratory tests, to be performed using chemicals, dyestuffs, wet and moist samples, etc.

Unit built in stainless steel to prevent rust. Easy to clean. Model equipped with two shelves, sink and tap, with a closed cabinet, manual pad and a warm air drying sample unit.

Power supply: 230 Vac, 50 Hz, single-phase

Net weight: 224 kg

Dimensions: (L) 2800 x (W) 700 x (H) 1180 mm

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**Double Lab Knitter**

High precision laboratory knitting machine for the production of tubular knitted fabric for checking dyeing uniformity and evaluate dye affinity. Therefore each cylinder is fed by ONE SINGLE yarn at a time.

Equipped with two cylinders 3, 3/4” diameter, selectable number of needles and fineness (see the chart below).

Endowed with fabric fineness regulation mechanism

Automatic oiling device

Ergonomic control panel complete with:

- electronic yarn length count meter
- variable speed regulation by means of a potentiometer
- Led indicators monitoring machine functions

**Optional:**

- Electronic tensioner
- Foot switch

Two cylinders fitted in the machine. Other cylinders are available on demand.

Power supply: 400 Vac, 50/60 Hz, three-phase + N, 1100 W

Weight: 180 kg

Dimensions: (L) 850 x (W) 600 x (H) 1750 mm

List of available cylinders:

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<th>Code Needle gauge</th>
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* Cylinder capacity should be confirmed by yarn testing, as cylinder selection is affected by yarn count, composition and friction.
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Electronic Tachometer 1810C
Digital contact reading from 0.1 to 25000 rpm and from 0.02 to 3810 m/min.
The incorporated microcomputer enables reading of values also in the following measuring scales:
revolutions per minute, revolutions per hour, yard/min., yard/hour, m/hour, feet and inches per min. and per hour.
Length: cm, m, inches, feet and yards.
Storage capacity of the last 10 measurements including minimum and maximum values.
Power supply: 1,5 V battery x 2

Electronic Tachometer 1810G
Contact reading.
Measuring range: from 1 to 25000 rpm and from 0,1 to 3810 m/min with ± 1 rpm accuracy (from 1 to 599 rpm),
and ± 0,01% of reading (from 600 to 25000 rpm).
Complete with accessories.
Equipped with a set of rubber ferrules.
Power supply: 1,5 V battery x 3

Electronic Tachometer 1810E
Optical model for contact and non-contact measurements.
Measuring range from 6 to 99999 rpm with ±1 revolution accuracy (non-contact) and from 1 to 25000 rpm (contact).
Measuring distance: 2 m max.
Equipped with built-in memory system for the storage of the last 10 measurements, minimum and maximum values included.
Power supply: 1,5 V battery x 2

Electronic Tachometer 1810H
Optical model for contact and non-contact measurements.
Measuring range from 6 to 99.999 rpm with ±1 rpm accuracy (from 6 to 599 rpm), and ±0,01% of reading (from 600 to 99999 rpm).
Measuring distance: 2 m max.
Available model for non-contact measurements only (code 1810L).
Power supply: 1,5 V battery x 3
Tensiometer Zivy

Available in the following scales:

- TEN 5K 1 - 5 g (cN)  
  Code 182A
- TEN 12K 2 - 12 g (cN)  
  Code 182B
- TEN 30K 5 - 30 g (cN)  
  Code 182C
- TEN 70K 10 - 70 g (cN)  
  Code 182E
- TEN 120K 20 - 120 g (cN)  
  Code 182F
- TEN 170K 50 - 170 g (cN)  
  Code 182G

Electronic Tensiometer ZEF/ZED

Digital reading. Recommended for knitting, hosiery, warping and assembling machines.

Available reading scales:

- from 0,5 to 100 cN with 0,1 cN accuracy  
  Code 1836
- from 1 to 500 cN with 1 cN accuracy  
  Code 1837

Warp Tensiometer DXK model

To determine correct tension on warps both statically and dynamically.

Measuring 10 mm roller, to simultaneously measure from 5 to 10 yarns.

Available in 3 versions:

- DXK-300 with scale from 20 to 300 cN  
  Code 2876
- DXK-1000 with scale from 100 to 1000 cN  
  Code 2877
- DXK-2000 with scale from 200 to 2000 cN  
  Code 2878

For dynamic analysis, the Tensiometer DXK complete with the optional “Air Damping” tension absorber is recommended  
Code 286.126
**Electronic Tensiometer DTMB**

Digital reading. Particularly suitable for winding, twisting, warping machines. Distance between the two outer rollers: 65 mm. Reading of the real working tension and of tension peaks. Equipped with rolls suitable for yarn speeds up to 2000 m/min. As optional, special rollers are available for yarn speeds up to 5000 m/min. The following reading scales are available:

- from 0 to 200 cN
- from 0 to 500 cN
- from 50 to 1000 cN
- from 200 to 2000 cN

Power supply: 1,5 V battery x 4

**Electronic Tensiometer ETB/ETPB/ETX**

Digital reading. Recommended for texturing machines, automatic winders, warping machines and any textile machine where the lack of space makes the measuring difficult. Distance between the two rollers: 24 mm. The following three models are available:

- ETB Model, from 1 to 200 cN with steel rollers suitable for yarn speed up to 2000 m/min. Resolution: 1 cN
- ETB Model, from 1 to 500 cN with steel rollers suitable for yarn speed up to 2000 m/min. Resolution: 1 cN
- ETPB Model, from 0,5 to 100 cN (0,1 cN accuracy) with ceramic heads, suitable for yarn speed up to 6000 m/min. Resolution: 0,1 cN

ETX Model, with software and USB port are available. Power supply: 9 V battery

**Mechanical Tensiometer DX2**

Particularly suitable for winders, twisters and warping machines. The following reading scales are available:

- from 10 to 50 cN
- from 20 to 200 cN
- from 20 to 400 cN
- from 50 to 1000 cN
- from 200 to 2000 cN
- from 400 to 5000 cN

**Mechanical Tensiometer ZF2/ZD2**

Particularly suitable for knitting and hosiery machines. The following reading scales are available:

- from 1 to 5 cN
- from 1 to 12 cN
- from 3 to 30 cN
- from 5 to 50 cN
- from 10 to 100 cN
- from 20 to 200 cN
Analogical reading, scale from 200 to 18000 rpm
Power supply: 115 Vac or 230 Vac, 50/60 Hz
Code 186A

Digital reading, scale from 30 to 30000 rpm
Power supply: 115 Vac or 230 Vac, 50/60 Hz
Code 186M

Digital reading, scale from 30 to 30000 rpm
Power supply: rechargeable battery
Code 186L

Analogical reading, scale from 200 to 18000 rpm
Power supply: rechargeable battery
Code 186D

Digital reading stroboscope with built-in rechargeable battery.
Complete with a special high luminosity lamp, for easier reading,
even in case of high frequencies.
Measuring range: from 300 to 25000 rpm.
Accuracy: ±1 rpm.
Power supply: 100 up to 230 Vac, 50/60 Hz, single-phase

Battery Powered Digital Stroboscope 186F
Special model with high luminosity lamp.
Reading range from: 0 to 30000 rpm with ±1 rpm accuracy.
Complete with built-in rechargeable battery.
Power supply: 115 Vac or 230 Vac, 50/60 Hz, + battery

Phonometer 243B
Digital instrument of class 2.
Measuring range: from 30 to 130 dB.
Features: instantaneous measuring, max hold and battery level.
Power supply: 1,5 V battery x 3
Thermo-anemometer 287F
Digital reading instrument to measure air speed and temperature. Measuring range: air speed from 0.01 to 30 m/sec (±3% of reading or ±0.015 m/s whichever is aerated) air temperature from -10°C to +70°C (±0.5°C). Equipped with telescopic probe.
Power supply: 1,5 V battery x 6

Electronic Psychrometer 288C
For the direct reading of the environmental temperature and humidity. Measuring range: from -20°C to +80°C, and from 5% to 98% R.H. (±1,5% R.H. accuracy in range from 10% to 90%).
Digital reading.
Different probes available. Standard probe code 288C.10 (to be added).
As optional the following calibration solutions are available:
33,0% Rh solution Code 288C.4
75,4% Rh solution Code 288C.6
Power supply: 9 V battery

Sling Psychrometer 196B
Portable model for reading of environmental humidity percentage and temperature.
Reading scale: from 0 to 100% R.H., and from 0°C to +45°C.
Measuring principle by means of a dry bulb thermometer and a wet bulb thermometer.

“Assmann” Psychrometer 196C
Portable model with dry or wet bulb to determine the environmental humidity and temperature.
Endowed with two mercury thermometers with measuring range from 0°C to +50°C (±0.2°C accuracy).
Complete with electric fan.
Power supply: 1,5 V battery
**Writing Thermo-hygrograph 180B**

For the graphic reading of the environmental temperature and humidity.

Measuring range from: 0°C to +40°C (±1.5% accuracy) and from 0 to 100% R.H. (accuracy ±3% from 0 to 40% R.H.; ±5% from 40 to 100% R.H.).

Complete with 52 weekly diagrams.

The measuring principle is achieved by means of a bundle of hair.

Power supply: 1.5 V battery

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**Electronic Thermohygrograph 180C**

Compact portable instrument (can be also used in fixed position) to determine and record the temperature and relative humidity in the environment.

Temperature range: from -20°C to +50°C with ± 1°C accuracy

Humidity range: 0-100% R.H. with ± 3% R.H. accuracy from 10% to 90% R.H. (temperature +25°C).

Recording step: selectable in 3 weeks, 6 weeks, 3 months, 6 months.

Power supply: 115 up to 230 Vac, 50/60 Hz, + built-in battery

Weight: 2.1 kg

Dimensions: (L) 300 x (W) 245 x (H) 105 mm

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**Digital Thermometer 244B**

Measuring range: -200°C to +1370°C

Resolution: ±0.1°C up to ±600°C

Instrument accuracy: ± 0.5°C from 0 to +200°C, ±2°C from +200°C over the end scale and from -0.1°C to -200°C.

Optional probes suggested:

- contact probe KTP 745  
  Code 244B.2

- immersion probe, KTP 741  
  Code 244B.4

Other types of probes are available on request.

Power supply: 1.5 V battery x 3

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**Optical Pyrometer 296D**

Electronic infrared thermometer for temperature measurement at distance.

Measuring scale: from -50°C to +1000°C, with ± 2% reading accuracy.

Adjustable emission with maximum peak function and acoustic alarm.

Power supply: 1.5 V battery x 2
### “Sartorius” analytic Balance 165.702

- 120 g weighing capacity and 0,0001 g accuracy.
- Digital reading. RS232 interface port.
- Pan size: ø 90 mm.
- Power supply: 100 up to 230 Vac, 50/60 Hz, single-phase
- Weight: 3.2 kg
- Dimensions: (L) 200 x (W) 270 x (H) 299 mm

### “Sartorius” precision Balance 165.704

- 320 g weighing capacity and 0,001 g accuracy.
- Digital reading. RS232 interface port.
- Pan size: ø 115 mm.
- Power supply: 100 up to 230 Vac, 50/60 Hz, single-phase
- Weight: 2.2 kg
- Dimensions: (L) 189 x (W) 251 x (H) 70 mm

### “Sartorius” multi-purpose Balance 165.708

- 820 g weighing capacity and 0,01 g accuracy.
- Digital reading. RS232 interface port.
- Pan size: ø 150 mm.
- Power supply: 100 up to 230 Vac, 50/60 Hz, single-phase
- Weight: 2.2 kg
- Dimensions: (L) 200 x (W) 270 x (H) 70 mm

### Thermo Balance 165.502

- 200 g weighing capacity and 0,001 g accuracy. RS232 interface port. Infrared heating system, with range from +40°C to +220°C.
- Main available information: dry material weight %, lost weight of the material (mg), humidity %.
- Power supply: 100 up to 230 Vac, 50/60 Hz, single-phase
- Weight: 5.5 kg
- Dimensions: (L) 200 x (W) 270 x (H) 160 mm

Other models are available on request.
Digital Force Tester 194D
To check the traction and compression strength; provided with RS 232 port.
Available measuring units: N, kgf, lbf.
Available also in the version with measuring range from 0 to 49.3N (0.01N accuracy).
Different models are available on demand.
Recommended for the control of the drawing rollers in the spinning frames.
Complete with built-in rechargeable battery.
Power supply: 115 up to 230 Vac, 50/60 Hz, rechargeable battery
Weight: 0.4 kg
Dimensions: (L) 215 x (W) 65 x (H) 51 mm

Refractometer 266A
Portable model, suitable for the determination of the percentage of dry material in a solution, such as sizing.
Measuring range: 0 - 32%.

Yarn Meter 298E
Equipment to measure yarn tension, length and speed at the machine.
Maximum yarn speed: 1000 m/min.
Length measuring unit: metre or inch (±1 cm or ±1 inch accuracy).
Tension measuring range: 0-50 cN.
Power supply: rechargeable battery

Yarn Meter 298D
Reading of two different values:
yarn speed from 0.1 to 1999 m/min.
quantity of absorbed yarn during a pre-set time, from 0.02 to 99999 m.
Digital reading.
Power supply: 9 V battery x 2
Weight: 0.22 kg
**Portable pH-meter**

Measuring scale: from 0.00 to 14.00 pH.
Probes on request.
Accuracy: 0.01 pH.
Application range: from -50°C to +400°C.
Power supply: 1.5 V battery x 3

**Stationary pH-meter**

Laboratory pH-meter, it can also measure the temperature.
Measuring range: from -2.00 to 16.00 pH. Accuracy: ±0.01
Measuring range: from -20°C to +120.0°C.
Resolution: ±0.1°C.
PH-meter is supplied with pH electrode, temperature probe, electrode holder, pH 4.01 buffer solution sachet, pH 7.01 buffer solution sachet, electrolyte solution (30 ml), cleaning solution sachet.
Weight: 1.3 kg
Dimensions: (L) 235 x (W) 222 x (H) 109 mm

**Viscosimeter**

Rotational viscosimeter for quick measurement of viscosity in compliance with ISO 2555 and with ASTM standards.
Rotational speeds: 54 between 0.01 rpm and 200 rpm.
Accuracy: ±1% FSD.
Viscosity range:
(R-Version): 100 mPas - 40,000,000 mPas
(L-Version): 15 mPas - 6,000,000 mPas
Power supply: 115 up to 230 Vac, 50/60 Hz

**UV Lamp**

“Triwood” portable model with 6 lamps of 6 W each.
Suitable for the visual assessment of fibre impurities in yarn lots (for example: cotton with polyester).
Power supply: 230 Vac, 50/60 Hz, single-phase
Portable Thickness Gauges

The following models are available:

- Measuring depth: 200 mm. Thickness reading range: 30 mm
  Accuracy: 0,1 mm  Code 188F
- Measuring depth: 200 mm. Thickness reading range: 10 mm
  Accuracy: 0,01 mm  Code 188R
- Measuring depth: 30 mm. Thickness reading range: 1 mm
  Accuracy: 0,001 mm  Code 188G
- Measuring depth: 200 mm. Thickness reading range: 30 mm
  Accuracy: 0,01 mm  Code 188Z

Other models are available on request.

Ultrasonic Cleaning Baths

Ultrasonic bath for a quick and perfect cleaning of glassware, spinnerets and texturing disks eliminating the toughest impurities hidden in holes and hollows.

The following models are available:

- 45 litres-22 kg – (L)500x(W)300x(H)520 mm  Code 3101C
- 28 litres-13.4 kg – (L)505x(W)300x(H)200 mm  Code 3101B
- 3 litres-3.2 kg – (L)240x(W)137x(H)100 mm  Code 3101A

Complete with heating system from +30°C to +85°C

Optional: lid, internal basket and detergent to clean the internal basket.

Power supply: 115 Vac or 230 Vac, 50/60 Hz, single-phase

Melt-Flow Index

Automatic model to determine the fluidity index of thermoplastic materials exposed to heat.

The instrument carries out a volumetric procedure (MVI) and, by means of an optical system, determines the volume of the material extruded at a pre-set time. Equipped with a microprocessor that acquires, elaborates and displays both the single values and the average values (max. 12 values), and RS232 port for PC connection.

Temperature range: from +50°C to +400°C with 0,1°C accuracy.

Reference standards:

Power supply: 230 Vac, 50/60 Hz, single-phase
Weight: 36 kg
Dimensions: (L) 250 x (W) 330 x (H) 630 mm
Certificates and Calibrations

In 2004 MESDAN S.p.A. obtained from Det Norske Veritas (DNV) the certification about Quality and Environmental Management System, in conformity to UNI EN ISO 9001 and UNI EN ISO 14001, with validity for design, manufacture and calibration of textile laboratory instruments.

Since then MESDAN S.p.A. has successfully undergone through the periodical audits of the Certifying Body and complete re-assessment of certification of its Quality Systems.

“MESDAN LAB” can issue calibration reports for its instruments, complying with UNI EN ISO 9001. In some countries also contractual calibration service for complete laboratories is available on demand.

MESDAN S.p.A. closely supports its international customers in more than 70 different countries by means of a capillary network of sales and service centres, which can provide qualified assistance, the most appropriate testing solutions, and specialised technical assistance (information of nearest contacts can be searched in our website).

Mesdan affiliations

[Images of affiliations logos]