



A brand of **TECHLAB**SYSTEMS



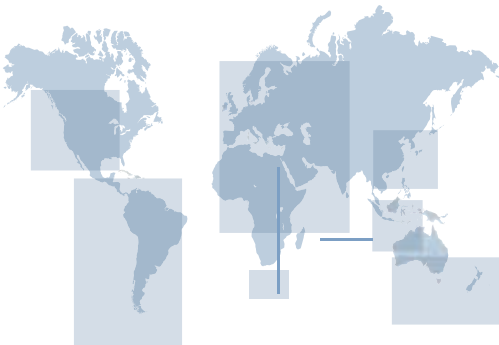
TLS ADVANCED SOLUTIONS FOR QUALITY CONTROL AND TESTING MATERIALS

- **TECHLAB SYSTEMS, S.L.** is a company which specialises in designing, developing, manufacturing and marketing advanced technologies for carrying out physical Quality Control tests and testing materials.

- **Through its industrial division and under the registered trademark TLS@**, **TECHLAB SYSTEMS, S.L.** works with the **packaging, cardboard, paper and pulping industries.**

- **TECHLAB SYSTEMS, S.L.** is also present in other industries related to food, adhesives, rubber, composites, wood, metals, plastics, etc., through another industrial division and its registered trademark **Metrotec®** (www.metrotec.es).

- **TECHLAB SYSTEMS, S.L.** as it exists today is the result of merger between its parent company **METROTEC S.L.** and **TECHLAB SYSTEMS, S.L.** itself, and its shareholders also include the North American company **TECHLAB INVESTMENT, LLC.**





Metrolac
QUALITY CONTROL TECHNOLOGIES
TLS
Pectolastic Tablets

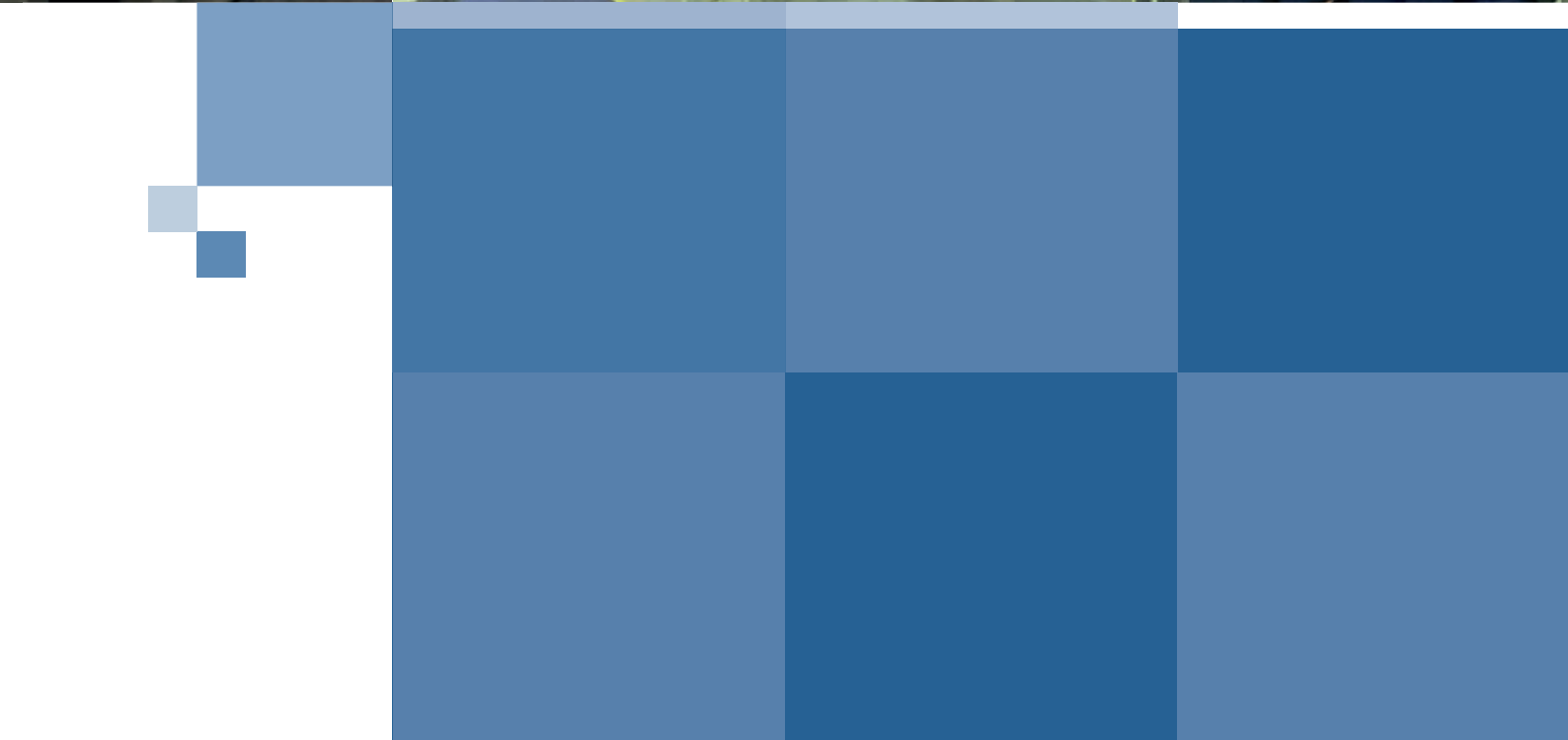
TLS
W



- With its **TLS® brand**, **TECHLAB SYSTEMS, S.L.** is a global leader in the pulp, paper, corrugated cardboard and packaging industries, as well as in various associated sectors. Its international network of distributors and representatives covers fifty different countries.

- Some of the measuring and testing equipment available through its **TLS® brand** includes Mullen burst testers, puncture testers, SCT short-span compression testers, Thickness meters for paper and corrugated board, Cobb testers, internal bond testers, grammage scales, humidity analysers, sample preparation solutions, Samples Crush Testers (ECT, PAT, FCT, RCT, CCT, CMT & CLT), as well as a full range of Compression Testing systems for packaging evaluation.

- For any further information you can check our website www.techlabsystems.com



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PACKAGING TESTING



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CORRUGATED BOARD TESTING



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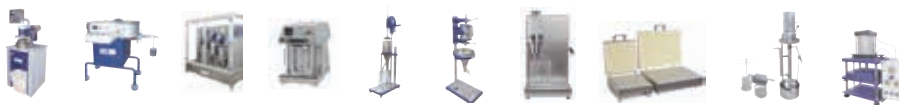
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PACKAGING TESTING

1



A



B



C

1

PACKAGING TESTING

PACKAGING COMPRESSION TESTERS:

Our Compression Testers have become the industry standard for determining the maximum compression resistance and long-term stacking strength of individual boxes, bulk containers, pallets and at times, even the manufactured goods contained within the packaging.

All Techlab Systems™ Compression Testers are supplied with: our Floating Platen System which provides a user

selectable fixed or floating upper platen, our powerful but user-friendly LYNX™ Software for control, analysis, data acquisition, and our exclusive Video Capture System.

All Techlab Systems™ Compression Testers comply with test specifications described in the International Standards: ASTM D642, ASTM D4169, TAPPI T804, DIN EN 22872, ISO 12048, FEFCO 50 and ISTA.

Notice: In addition to the standard Compression Testers, TLS also manufactures Compression Testers with special features depending on the size of the platens, maximum opening and force capacity required by the user.

MINI-VAL™

A

Compression Tester with 500 x 500 mm (19.6" x 19.6") compression platens and 500 mm (19.6") stroke, with a maximum force capacity of 10KN (2,248 lbf).

VALIDATOR™

B

Compression Tester with 800 x 800 mm (31.4" x 31.4") compression platens and 800 mm (31.4") stroke, with a maximum force capacity of 25KN (5,620 lbf).

VALIDATOR™ PLUS

C

Compression Tester with 1000 x 1000 mm (39.3" x 39.3") compression platens and 1000 mm (39.3") stroke, with a maximum force capacity of 30KN (6,744 lbf).

VAL-30™

D

Compression Tester with 1250 x 1250 mm (49.2" x 49.2") compression platens and 1250 mm (49.2") stroke, with a maximum force capacity of 30KN (6,744 lbf).

VAL-50™

E

Compression Tester with 1250 x 1250 mm (49.2" x 49.2") compression platens and 1250 mm (49.2") stroke, with a maximum force capacity of 50KN (11,240 lbf).

VAL-100™

F

Compression Tester with 1550 x 1550 mm (61" x 61") compression platens and 1550 mm (61") stroke, with a maximum force capacity of 100KN (22,480 lbf).

VAL-150™

G

Compression Tester with 1550 x 1550 mm (61" x 61") compression platens and 1850 mm (72.8") stroke, with a maximum force capacity of 150KN (33,721 lbf).

VAL-300™

H

Compression Tester with 1850 x 1850 mm (72.8" x 72.8") compression platens and 2150 mm (84.6") stroke, with a maximum force capacity of 30KN (67,442 lbf).

Notice: In addition to the standard Compression Testers, TLS also manufactures Compression Testers with special features depending on the size of the platens, maximum opening and force capacity required by the user.



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G



***CORRUGATED
BOARD TESTING***

2

B

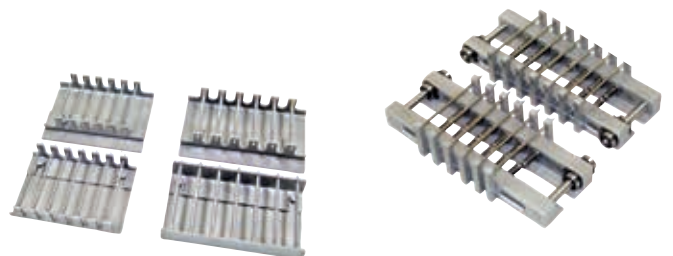
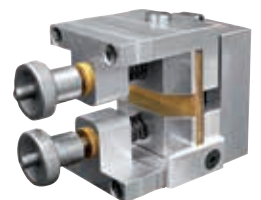


D



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CORRUGATED BOARD TESTING

Our Corrugated Board Testing instruments give you the ability to perform tests to a wide variety of International Standards that measure the specifications integrity, durability and many other properties of the materials. Techlab Systems™ and its vast array of test equipment and materials.

SAMPLES CRUSH TESTER – MODEL CDM-5

A

The samples crush tester is used to measure the compressive strength of corrugated board (ECT, FCT and PAT) and paper (RCT, CMT, CCT and CLT) samples. Complies with International Standards: ISO 3035 – ISO 3037 – ISO 13821, TAPPI T811 – T821 – T823 – T825 – T838 – T839, FEFCO 6 – 8 – 11 and DIN 53149.

PNEUMATIC ECT CUTTER – CN SERIES

B

The pneumatic cutters prepare accurate samples of corrugated board for ECT Testing, with twin cutting blades producing a clean and parallel cut sample. Complies with International Standards: ISO 3037, TAPPI T811 – T839, FEFCO 8 and DIN 53149.

ECT & PAT FIXTURES FOR SAMPLES CRUSH TESTING

C

Samples holders for corrugated board designed to be used with our Samples Crush Tester. Complies with International Standards: ISO 3037, TAPPI T811 – T821 – T839, FEFCO 8 and DIN 53149.

MULLEN BURSTING STRENGTH TESTER – MODEL BT-10

D

This tester is used to determine the Mullen bursting resistance index and/or burst energy absorption of corrugated board, paperboard, paper and films samples. Complies with International Standards: ISO 2759, TAPPI T807 – T810, FEFCO 4, SCAN P25, PAPTAC D19P and APPITA/AS 1301.438.

**SCORE BENDING STIFFNESS
MEASURER SQT-50**

E

Instrument to measure the score bending stiffness in paperboard and folding carton. According to International Standard TAPPI T577.

**FOUR-POINTS BENDING STIFFNESS
TESTER – MODEL 4PF-50**

F

This tester is designed to determine the bending resistance of corrugated board by the “4-points Method”. Complies with International Standard ISO 5628.

**OPEN FORCE TESTER –
MODEL OP-50**

G

This tester is designed to determine accurately the force required for carton and case filling machinery to unfold and open carton and case “flats”.

**SCORE BENDING
QUALITY TESTER
– MODEL SQT-10**

H

This tester is designed to evaluate the quality of the scored lines in corrugated board boxes by measuring the resistance to bending removed by the score lines. Complies with International Standard TAPPI T829.

E



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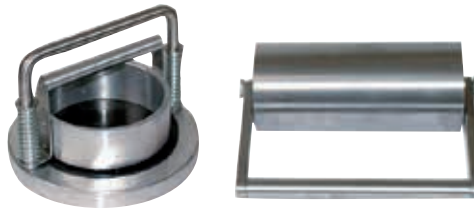


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**MANUAL DIGITAL THICKNESS
METER FOR CORRUGATED BOARD
– MODEL M5-CO**

I

This instrument easily and accurately measures the thickness of corrugated board. Complies with International Standards: ISO 3034 and FEFCO 3.

**COBB TESTER –
CT SERIES**

J

This bench-top tester, consisting of a cylinder with our innovative, one-handed quick clamping system and a stainless steel roller, is used to determine the liquid absorbance of paper and corrugated board. Complies with International Standards: ISO 535, SCAN P12, DIN 53132, TAPPI T441, FEFCO 7 and DIN EN 20535.

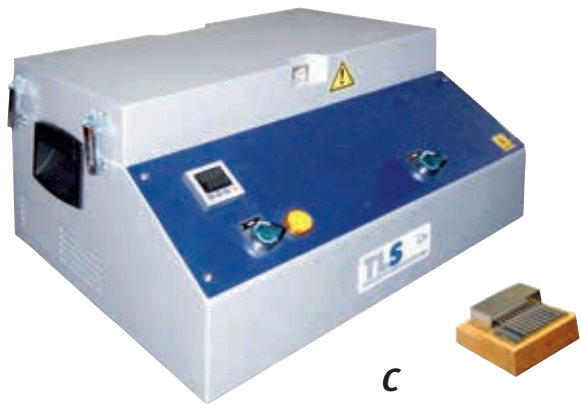
**PUNCTURE TESTER –
MODEL PM01-ED**

K

This tester is used to determine the energy absorbed in the puncture of a corrugated board sample, especially those of the type employed in the manufacture of packaging suitable for rugged transport. Complies with International Standards: ISO 3036, SCAN P23, TAPPI T803, FEFCO 5, DIN 53142 and ASTM D781.

PAPER TESTING

3



C



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PAPER TESTING

Our Paper Testing Machines offer the latest dimension in verification testing of material specifications integrity and other properties. Techlab Systems™ vast array of test equipment and instruments give you the ability

to perform tests to a wide variety International Standards that measure the specifications integrity, durability and many other properties of the materials.

SAMPLES CRUSH TESTER – MODEL CDM-5

A

The samples crush tester is used to measure the compressive strength of paper (RCT, CMT, CCT and CLT) and corrugated board (ECT, FCT and PAT) samples. Complies with International Standards: ISO 7263 – ISO 12192, TAPPI T809 – T822 – T843, DIN 53143 – DIN 53134, SCAN P27 – P34 – P42 and JIS.

RCT, CMT, CCT & CLT FIXTURES FOR SAMPLES CRUSH TESTING

B

Samples holders for paper designed to be used with our Samples Crush Tester. Complies with International Standards: ISO 7263 – ISO 12192, TAPPI T809 – T822 – T843, DIN 53143 – DIN 53134, SCAN P27 – P34 – P42 and JIS.

LABORATORY FLUTER – MODEL FT-07

C

This equipment manufactures fluted (A Flute) corrugated samples from medium paper strips by means of passing the strips between calibrated toothed discs under controlled pressure and temperature, for the CMT & CCT Tests. Complies with International Standards: ISO 7263, TAPPI T809, SCAN P27 and DIN 53143.

MULLEN BURSTING STRENGTH TESTER – MODEL BT-10

D

This tester is used to determine the Mullen bursting resistance and/or burst energy absorption of paper, corrugated board, paperboard, and films samples. Our Burst Tester is unique in that the user can quickly interchange sample clamps and bursting membranes between those required for corrugate and board samples and those required for paper and films samples. Complies with International Standards: ISO 2758, TAPPI T403, ASTM D774, SCAN P24 and APPITA/AS 1301.403, PAPTAC D8 and JIS 8112.

**SCT – SHORT SPAN
COMPRESSION
TESTER – MODEL SCM-1**

E

This tester measures short span compression (SCT) strength of paper samples. Complies with International Standards: ISO 9895, TAPPI T826, DIN 54518, SCAN P46, UNE 57142, BS 7325 and APPITA/AS 1301.450

**MULTITESTER -
MODEL MTE**

F

This family of testers can measure the wet and dry tensile strength and elongation of paper samples. Using additional fixtures and load cells of different values you can perform additional tests such as friction, peel, zero-span and several others. Complies with International Standards: ISO 1924/2, ISO 3781, ASTM D828, ASTM D1894 method B, SCAN P38, PAPTAC D34, TAPPI T494 – T456 – T816 – T549 and BS 4415/2.

**MANUAL DIGITAL THICKNESS
METER FOR PAPER – M5/P SERIES**

G

This instrument easily and accurately measures the thickness of paper and cardboard. Complies with International Standards: ISO 534, BS 3983, SCAN P7, TAPPI T411, PAPTAC D4 and DIN EN 20534.

**INTERNAL BOND TESTER-
MODEL IBT**

H

This tester measures the internal bond strength of the fiber layers in cardboard, coated paper, kraft paper and other papers. Complies with International Standards TAPPI T569 and T833.

G



F



H



E





**COBB TESTER –
CT SERIES**

I

Our bench-top tester consisting of a cylinder with our innovative, one-handed quick clamping system and a stainless steel roller, is used to determine the liquid absorbance of paper and corrugated board. Complies with International Standards: ISO 535, SCAN P12, DIN 53132, TAPPI T441, FEFCO 7 and DIN EN 20535.

**FRICTION TESTER –
MODEL FT-10**

J

This tester measures the static and dynamic friction coefficients of paper, corrugate and films samples. Complies with International Standards: ASTM D1894 (method B), TAPPI T816 and T549.

***SAMPLES
PREPARATION***

4



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C

4

SAMPLES PREPARATION

Accurate sample preparation ensures a good testing result. Samples are punched or cut into strips according to dimensions stated in the International Standards chosen for conducting the

tests. Either manually or pneumatically, samples preparation with our Samples Preparation Equipment is fast, easy and reliable.

PNEUMATIC ECT CUTTERS – CN SERIES

A

Our series of pneumatic cutters prepare accurate samples of corrugated board for ECT Testing with twin cutting blades producing a clean and parallel cut sample. Complies with International Standards: ISO 3037, TAPPI T811 – T839, FEFCO 8 and DIN 53149.

CIRCULAR CUTTER FOR CORRUGATED BOARD – CD SERIES

B

Our series of manual circular cutters cut accurate samples of corrugated board up to 12mm thickness for FCT Tests and Basis Weight determination. Different models are available for 100 cm², 50 cm², 10 in² and 5 in² sample areas.

CIRCULAR CUTTER FOR PAPER AND BOARD – DISC SERIES

C

Our series of manual “punch and turn” circular cutters cut accurate samples of paper and board up to 7 mm thickness for FCT Tests and Basis Weight determination. Different models are available for 100 cm², 50 cm² and 10 in² sample areas.

DOUBLE BLADE CUTTER – DBC SERIES

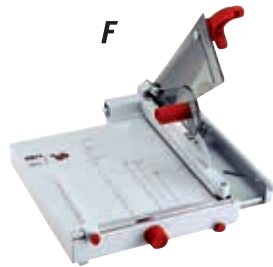
D

Our double blade cutters cleanly cut accurate samples of paper of a predetermined width. Different cutting widths are available: 12.7 (1/2 inch) – 15 – 20 – 25 – 25.4 (1 inch) and 50 mm.

E



F



**MANUAL DIE-PUNCH
PRESSES – MP SERIES**

E

These manual presses cleanly cut paper samples with high accuracy for Tensile, Basis Weight, SCT, CMT, RCT, CCT and CLT tests. Different models are available to cut rectangular samples 15 x 300 mm and 12.7 x 152.4 mm, and circular samples with 100 cm² sample area.

**CIRCULAR CUTTER FOR
PAPER AND BOARD -
DISC SERIES**

F

This Universal Cutter is economical and versatile, designed for general laboratory purposes with one guarded cutting blade and adjustable cutting width. This cutter is suitable for cutting most papers.

PULP TESTING

5



A



B



D



C

PULP TESTING

Our Pulp Testing Machines incorporate the latest design advances while maintaining compliance with their corresponding International Standards. Techlab Systems™ vast array of test equipment and instruments give you the ability to perform tests to a wide variety International Standards that measure the specifications integrity and many other properties of the tested materials.

LABORATORY BEATER, PFI TYPE – MODEL NPFI-02

A

Our PFI Mill-type beater is used in the laboratory for beating of chemical pulps under standardized conditions defined by the corresponding International Standard, and for the defibration of semi-digested raw material fibers. Complies with International Standards: ISO 5264/2, TAPPI T248, SCAN C24, DIN EN 25264/2 and PAPTAC C7.

LABORATORY BEATER, VALLEY TYPE – MODEL VB-20

B

Our Valley-type beater is used for laboratory beating of pulps under standardized conditions defined by the corresponding International Standard. Complies with International Standards: ISO 5264/1, SCAN C25, TAPPI T200 – T205 and PAPTAC C2.

FIBERS CLASSIFIER, BAUER MCNETT TYPE – CF SERIES

C

Our Bauer McNett apparatus, available with 4 or 5 stations, is used for determining the fiber lengths and their distribution in pulp. Complies with International Standards: TAPPI T233, SCAN M6 and PAPTAC C5V.

PULP DISINTEGRATOR – MODEL DI-05

D

Our pulp disintegrators provide a consistent and standardized disintegration of paper pulp suspension. Complies with International Standards: ISO 5263, SCAN C18/M2, TAPPI T205 and PAPTAC C6.

**MANUAL SCHOPPER-RIEGLER
TYPE FREENESS TESTER –
MOD. SR-10**

E

This is a manual tester for the determination of the degree of refining and to determine the de-watering time of a pulp suspension in water by the Schopper-Riegler method. Complies with International Standards: ISO 5267/1, SCAN C19/M3 and BS 6035/1.

**CANADIAN FREENESS TESTER
– MODEL CSF-20**

G

This tester will determine the degree of refining and determine the de-watering time of a pulp suspension in water by the Canadian method. Complies with International Standards: ISO 5267/2, TAPPI T227, SCAN C21/M4, PAPTAC C1 and BS 6035/2.

**PNEUMATIC SCHOPPER-RIEGLER
TYPE FREENESS TESTER –
MODEL SR-1**

F

This is a pneumatic tester for the determination of the degree of refining and to determine the de-watering time of a pulp suspension in water by the Schopper-Riegler method. Complies with International Standards: ISO 5267/1, SCAN C19/M3 and BS 6035/1.

**RAPID SHEET DRYER
– SRD SERIES**

H

Our compact electric dryer is designed to help determine the moisture content of paper sheets after specified drying times. Complies with International Standards: TAPPI, PAPTAC, ASTM and APPITA.





**MANUAL SHEET FORMER, TAPPI
– MODEL FTH-01**

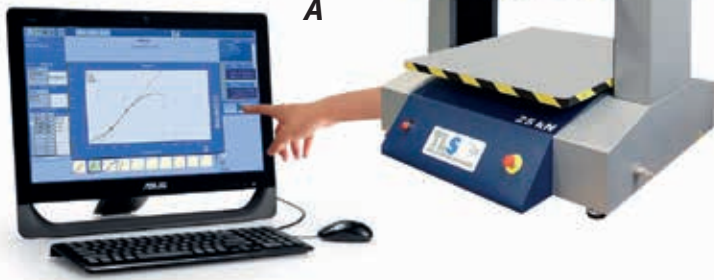
I

This manual apparatus is used to manufacture paper sheets on the laboratory according to TAPPI and others. Complies with International Standards: TAPPI T205, SCAN C26/M5 and PAPTAC C4.

**PNEUMATIC SHEET PRESS,
TAPPI – MODEL NPT-10**

J

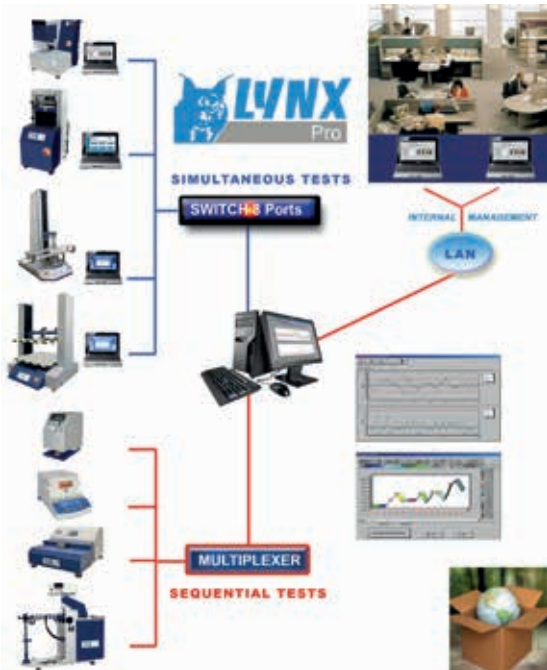
Our Pneumatic Press is designed for the process of press-drying the wet sheet of paper obtained from the FTH.01 sheet former. Complies with International Standards: TAPPI T205, SCAN C26/M5 and PAPTAC C4.



B



C





SOFTWARE

*Integrated test management, analysis and measurement in real time. Our **LYNX™** software system is a powerful system for testing equipment data collection with complete management of statistics, traceability, historical database access and much more. Easy to manage and fast access to your test results for a single machine, multiple machines or even multiple sites.*

*There are English, German and Spanish versions for the different levels of our **LYNX™** Software.*

LYNX™ SOFTWARE

A

*Provides Control Software management of the data obtained in one tester or instrument. It works as independent software module or integrated in other advanced solutions like **LYNX™ PLUS** and **LYNX™ PRO** Software.*

LYNX™ PLUS SOFTWARE

B

*Laboratory Management Testing Software for operating in **SEQUENTIAL** mode with Single Usersystems. It allows automating data acquisition in real time from the testing machines. Includes complete statistics like Gauss Bell, Tendencies, Statistical Process Control, Test Comparatives and Tolerances, Consulting of Historic Values, etc.*

LYNX™ PRO SOFTWARE

C

*Laboratory Management Testing Software for operating in **SIMULTANEOUS** mode with a Multi User system, including a Client/Server type Data Base. It provides automated data acquisition in real time from the testing machines. Includes complete statistics like Gauss Bell, Tendencies, Statistical Process Control, Test Comparatives and Tolerances, Consulting of Historic Values, etc.*



**MERCURY NET MODULE
SOFTWARE**

D

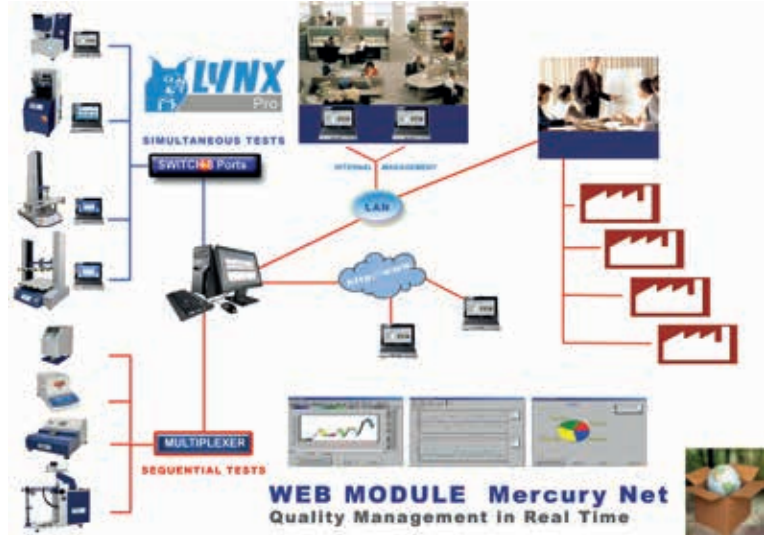
Internal (INTRANET) and External (INTERNET) management system that allows access to data and statistics of the tests and measurements performed in the laboratory. Integrates with LYNX™ PLUS and LYNX™ PRO Systems.

**LYNX™ VIEW REMOTE GRAPHIC
DISPLAY SOFTWARE**

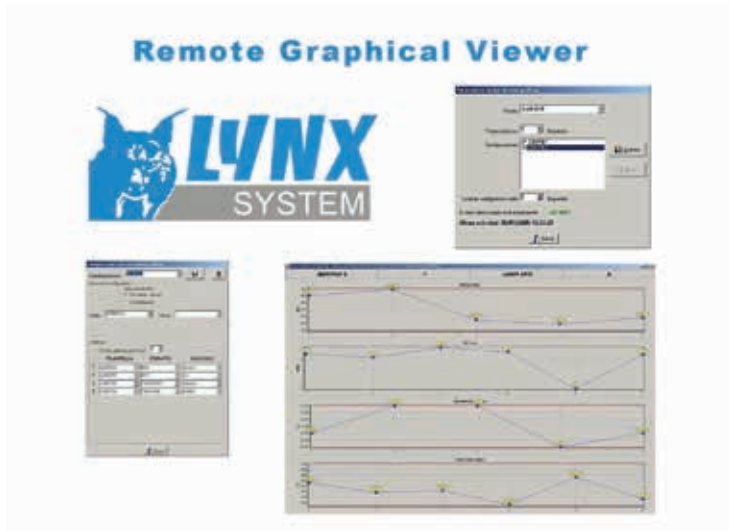
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This package allows viewing on remote displays the test results of your laboratory as Tendency graphs, and allows checking for adherence to the tolerances set by the user. Different viewers distributed throughout the facilities can be displayed customized information as individually required.

D



E



OTHER INSTRUMENTS

In addition to equipment of our manufacture, we can offer a wide range of laboratory instruments and equipment for the Pulp, Paper, Board and Packaging industries for general purposes:

- A) Portable Moisture Meters for Paper, Cardboard, Corrugate and Paper bales*
- B) Moisture Analyzers*
- C) Precision Analytical Balances and Basis Weight Balances*
- D) Dennison Wax Pick Tester*
- E) Climatic Chambers*
- F) Drying Ovens*
- G) Muffle Furnaces*
- H) Electric Incinerators*
- I) Capillary Meter "Klemm" Type*
- J) GURLEY Smoothness and Porosity Testers*
- K) TABER Stiffness Tester*
- L) ELMENDORF Tearing Tester*
- M) Ink Rub Tester*
- N) Pulp Homogenizer*
- O) Chips Classifiers*
- P) Laboratory Pulpers*
- Q) Twin Folding Tester*
- R) Viscometers*
- S) Optical Properties instruments*



www.techlabsystems.com

SPAIN

*Txatxamendi 10, Polígono 110
20100 Lezo - SPAIN
T +34 943 44 43 00
info@techlabsystems.com*

USA

*1549 Ardmore Avenue
Itasca. IL 60143 - 1108
T 630 595 8810
info@techlabsystems.com*

Local Representative: