



MULTIFLO INSTRUMENTS

Advanced Analytical & Materials Testing Solutions

SINCE 1990

About Multiflo Instruments

Multiflo Instruments is a leading supplier of **High-Quality Analytical and Material Testing Instruments** from reputed overseas brands in **USA, UK, Europe, Russia, South Korea & Japan**. With a focus on innovation and customer satisfaction, we offer a wide range of instruments designed to meet the needs of laboratories and industries across a variety of fields.

Multiflo Instruments was established in **1990**, and our portfolio includes a comprehensive range of **advanced analytical and testing instruments**, such as **Optical Emission Spectrometers, XRF Analyzers, X-ray Diffractometers, Scanning Electron Microscopes, Thermogravimetric Analyzers, Fusion Bead Making Machines**, along with various material testing systems, **Universal Testing Machines, Plasma Cleaners, Environmental Chambers, and Laboratory Furnaces** to support diverse laboratory requirements. All our instruments are sourced from reputable international manufacturers with a proven track record of quality, performance, and reliability.

Whether it's advanced laboratory equipment, precision measurement tools, or cutting-edge analytical instruments, we cater to the diverse needs of industries spanning **oil & gas, petrochemicals, pharmaceuticals, power, cement, minerals, research and development, manufacturing, defense, space science and more**.



MULTIFLO INSTRUMENTS

Directors
Experience

7 Years

Experience with Atomic Energy in India, specifically in Analytical Chemistry involving Optical Emission Spectrometry, Mass Spectrometry, Atomic Absorption Spectrometry, Wet Chemical Analysis and Health Physics.

4 Years

Professional experience in the NDT disciplines of Gamma and X-ray Radiography (including pipeline crawler x-ray), Magnetic Particle Testing, Dye Penetrant Testing, and Ultrasonic Testing in Saudi Arabia.

5 Years

Expertise in marketing and installation of Baird USA - OES, gained from his role at a private marketing company based in Mumbai.

32 Years

Director at Multiflo Instruments Pvt. Ltd.

Overall

40 plus years of expertise in the sale and distribution of force measuring instruments, coating thickness measuring instruments, x-ray fluorescence instruments, and spectrometers.

Clients

Automotive

Hyundai
Hyundai Mobis
Tata Motors
Honda Two Wheelers
Renault India
Mando India
Motherson Auto Parts

Consumer Electronics

LG India
Samsung India
Panasonic India
Videocon Industries
Legrand

Petrochemicals

Reliance Industries
ExxonMobil India
Dow India
HMEL
GAIL
LG Chemical

Oil & Gas

BPCL
Reliance
Total Oil
IOCL
Savita Oil
Castrol
Gulf Oil

Defense & Space

Indian Navy
Indian Air Force
DRDO
Bharat Electronics (BEL)
Hindustan Aeronautics Limited (HAL)
Indian Space Research Organization (ISRO)

Research & Others

IIT Delhi
IIT Mumbai
National Metallurgical Laboratory
BITS Pilani
Cement Corporation
Hindalco, JSW
NTPC, MAHAGENCO, Other Power Plants
And Many More.....

PRODUCTS

ANALYTICAL INSTRUMENTS



ISP, South Korea

ENERGY DISPERSIVE X-RAY FLUORESCENCE (XRF) ANALYZERS

Applications: RoHS Screening, Plating Thickness, Bulk Analysis

ED-XRF iEDX 120A

- **Features**
 - RoHS + Halogen Free, Antimony(Sb), Tin(Sn) Screening
 - Elemental Range: Al - U
 - Plating Thickness: 0.2, 0.5, 1mm Collimator Option
 - Energy Resolution of SDD : 125eV FWHM at Mn K α .
 - Optional : 10ch Auto Sample Changer
 - Multi-ray and Fundamental Parameters Software



ISP, South Korea

ENERGY DISPERSIVE X-RAY FLUORESCENCE (XRF) ANALYZERS

Application: Plating Thickness

ED-XRF iEDX 150T

- **Features**
 - Elemental Range: Aluminum (Al) – Uranium (U)
 - Plating Thickness: 0.2, 0.5, 1mm Collimator Option
 - Energy Resolution of SDD : 125eV FWHM at Mn K α .
 - Stage: XYZ Auto
 - Multi-ray and Fundamental Parameters Software



SPECTRON, Russia

WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE (WD-XRF)

Applications: Cement, Mining, Geology, Oil & Gas, Petrochemicals, Pharma

Spectroscan Maks-GVM

■ Features

- Quantification of elements from Sodium (Na) to Uranium (U) in a single measurement.
- 10 position autosampler.
- No Helium purge or other gas purge, No external cooling.
- Integrated cooling system, no water supply needed.
- Built-in PC; user-friendly interface with 8" color touch-screen.

SPECTRON, Russia

WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE (WD-XRF)

Applications: Oil & Gas

Spectroscan SW-D3

■ Features

- Quantification of elements Sulphur and Chlorine in Oil as per ASTM D2622, ASTM D6334 and ISO 20884.
- Limit of detection for 200 s: 0.5 mg/kg (ppm)
- No Helium purge or other gas purge, No external cooling.
- Integrated cooling system, no water supply needed.
- X-ray tube capacity: less than 200 W





SPECTRON, Russia

ENERGY DISPERSIVE X-RAY FLUORESCENCE (ED-XRF)

Applications: Oil & Gas

Spectroscan SE

■ Features

- Quantification of Sulphur in Oil as per ASTM D4294.
- Limit of detection for 200 s: 1.5 mg/kg (ppm)
- No Helium purge or other gas purge, No external cooling.
- Measurement range: 5 ppm – 5.0 %
- Lateral position of the sample: Error due to water and air bubbles are excluded.



Torontech, Canada

HANDHELD XRF ANALYZER

Applications: Ferrous and nonferrous alloys sorting, RoHS, WEEE, Lead determination in paint, toys, furniture, and clothing, Soil and sediments analysis, Precious metals analysis, Mining and geology, General laboratory, Scrap sorting, Archaeometry, Catalytic converters analysis

Portable EDXpert XRF

- **Features**
 - Element Detection Range: From Mg (Z=12) to U (Z=92)
 - Battery Operation Time: Over 8 hours
 - Detector Type: Si-PIN 6mm, SDD or Fast SDD 25 mm
 - X-ray Target: W anode, 50 kV max, 100 uAmp max
 - Energy Resolution: <165 eV at 5.9 keV Mn Ka line (<140 eV for SDD)
 - Weight (with a Battery): 1.4 Kg



Linev Systems, USA/ Europe

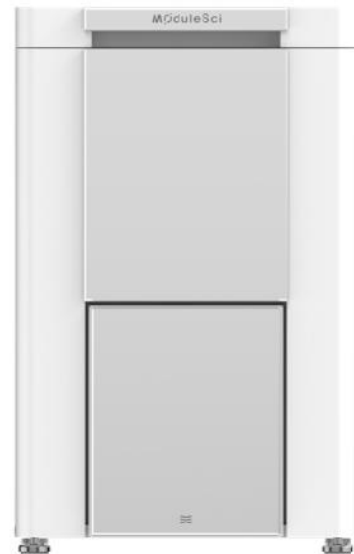
X-RAY DIFFRACTOMETER (XRD)

Applications: Pharmaceutical and Cosmetics, Forensics, Cement, Mining, Geology, Chemical, Oil & Gas, Petrochemicals, Automotive, Research

Benchtop Tellus XRD

■ Features

- TELLUS equipped with the most advanced DECTRIS* MYTHEN2 R 1D detector what drastically speed up the measurement.
- With the high resolution of the detector and the precise positioning of goniometer the accuracy better than $\pm 0.02^\circ$ (2θ) over the full angular range is achieved.
- Tube power: 600/300 W (on request)
- Goniometer: θ - θ vertical, radius 150 mm
- Scanning range: $-3^\circ \div +154^\circ$ (2θ); Scanning speed: 0.01-600°/min



ModuleSci, South Korea

SCANNING ELECTRON MICROSCOPES (SEM)

Benchtop PicoVision-100 (PV-100)

- **Features**

- High-resolution **Tabletop Scanning Electron Microscope (SEM) with stage motorized along 5- axis (X,Y,Z,R,T).**
- Both SE and BSE imaging detectors
- Magnification: 15X - 300,000X
- Optional : Sputter Coater, STEM, CoolStage, Panorama 2.0
- Optional : EDS (Oxford, Bruker)
- Experience upgraded functions and new features with the new NanoStation 4.0 Gui - MiniMap, Panorama Shot, Chamber Scope.



ModuleSci, South Korea

SCANNING ELECTRON MICROSCOPES (SEM)

Floor Model PicoEye-100 (PE-100)

■ Features

- **Full-size Patented Floor Scanning Electron Microscope (SEM)** that both new and experienced users will find suitable for many type of demanding research and quality control requirements.
- Both SE and BSE imaging detectors
- Stage is motorized along 5-axis (X,Y,Z,R,T).
- Magnification: 15X - 300,000X. Resolution of 3nm.
- Optional : Sputter Coater, STEM, CoolStage, Panorama 2.0
- Optional : EDS (Oxford, Bruker)



ModuleSci, South Korea

FIELD EMISSION SCANNING ELECTRON MICROSCOPES (SEM)

FE-SEM Model PicoEye-300 (PE-300)

- **Features**

- **Patented Field Emission (Schottky Type) Scanning Electron Microscope (SEM).**
- Both SE and BSE imaging detectors
- Stage is motorized along 5-axis (X,Y,Z,R,T).
- Magnification: 15X - 300,000X. Resolution of 3nm.
- Optional : Sputter Coater, STEM, CoolStage, Panorama 2.0
- Optional : EDS (Oxford, Bruker)



Navas Instruments, USA

MULTI-SAMPLE THERMOGRAVIMETRIC ANALYZERS (TGA)

TGA 1000A / 2000A

■ Features

- **Determination of: Moisture, Volatile Matter, Ash Fixed-Carbon, and LOI (Loss On Ignition).**
- Single furnace or dual furnace controlled by one single PC.
- The **dual carousel (Patented)** configuration allows automatic placement and removal of the upper crucibles or covers inside the furnace.
- Integrated high precision balance with display.
- Number of Samples : 1 - 46.



SCINCO, South Korea

THERMOGRAVIMETRIC ANALYZERS (TGA)

Applications: Thermal Stability, Pyrolysis, Oxidation, Dehydration, Decomposition, Kinetics, Combustion, Moisture, Residue or Ash.

TGA N-1000/1200/1500

- **Features**

- The SCINCO's TGA Series utilize a small micro furnace with a very small swept volume. This allows for rapid heating rates and excellent atmosphere control.
- Temperature Range: **Ambient to 1000 °C or Ambient to 1200 °C or Ambient to 1500 °C.**
- Programmed Rate: **0.1 – 300 °C/min or 0.1 – 60 °C/min.**
- High Sensitivity Micro Balance.
- Options: Automatic GSA (Gas Switching Accessory) up to 4 gases, Step ISO Software, Heated Transfer Line and Controller for EGA.



OKB Spectr, Russia

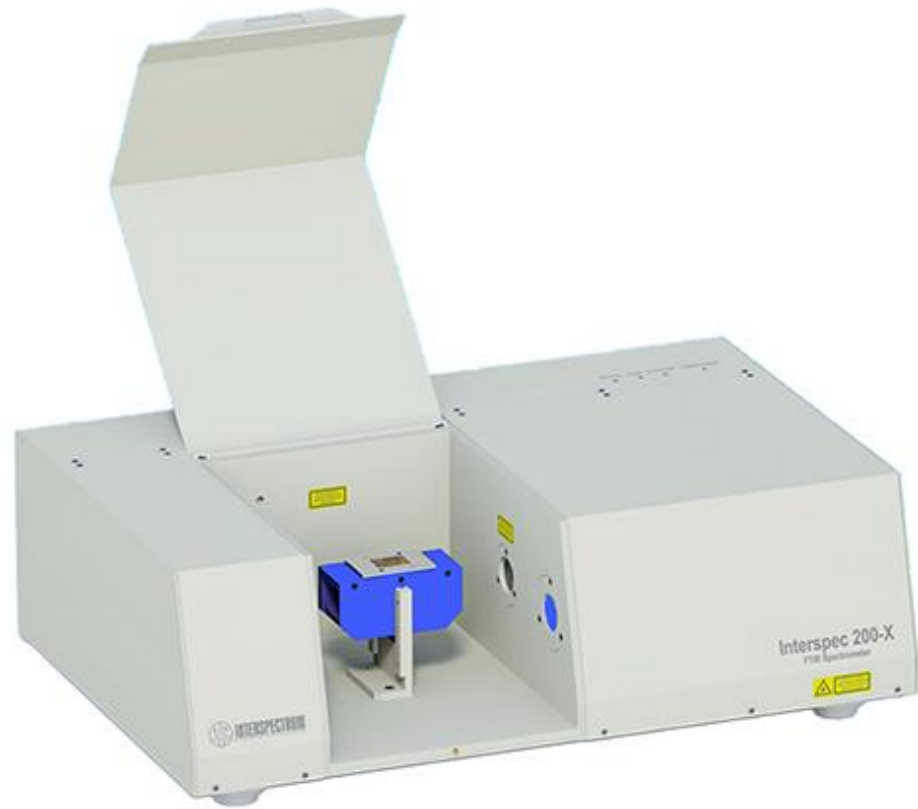
OPTICAL EMISSION SPECTROMETERS (OES)

Applications: Steel, Foundry, Alloys, Metals

DFS-500

- **Features**

- DFS-500 is a compact, reliable modern device for the analysis of both ferrous and non-ferrous metals for all alloying elements and impurities, including sulphur, phosphorus, carbon.
- Concentration range: 0.0001% - tens of %
- Spectrometer design: Pashen-Runge, Ar purged (0.05 l/min)
- Detectors: **11 (optional -12) linear CCD arrays, 4096 each.**
- Digital generator of low-voltage controlled shape spark in argon.



Interspectrum, Estonia

FOURIER-TRANSFORM INFRARED SPECTROMETER (FT-IR)

INTERSPEC 200-X

■ Features

- Wavelength range, IR: 7000 to 400 cm^{-1}
- Signal to Noise ratio, 15000 (20000) : 1
- The 200-X series of spectrometers represent a cost-effective Fourier transform infrared spectrometers and employ a number of unique features that ensure high performance from a compact instrument.
- Resolution, 0.5 cm^{-1}
- Beamsplitter, standard IR: Multicoated KBr
- Geometry: Compact Michelson self compensating optical system



Skyray Instruments, USA

GAS CHROMATOGRAPH MASS SPECTROMETER

GC-MS 6800

■ Features

- Product screening international environmental regulations : **Phthalates (DBP/DIBP, BBP, DEHP); Brominated flame retardants (DBDE).**
- Full scan (SCAN) and selective ion monitoring (SIM) modes.
- Quadrupole with pre-filter and high energy dynode electron multiplier.
- Quick display of total ion current (TIC) and mass spectrogram.
- GC-MS 6800 Gas Chromatograph Mass Spectrometer (GC-MS) system is widely used in industrial inspection, food processing, environmental protection and pharmaceutical industries.



Lumex Instruments, Canada

ATOMIC ABSORPTION SPECTROMETER (AAS)

MGA-1000

- **Features**

- MGA-1000 is a Graphite Furnace Atomic Absorption Spectrometer based on Zeeman High Frequency Polarization Modulation (ZHFPM) technique. Spectral range: 185 – 900 nm
- It is intended for determination of a wide range of elements in various types of samples (water, soil, foodstuffs, fodders, pharmaceuticals, etc).
- Quasi-double beam optics eliminating drifts and enabling direct operation with no warm-up needed.
- Smart 47-position autosampler.
- «Eltherm» software compliant with 21 CFR part 11.



NLIR, Denmark

MIDWAVE SPECTROMETER

MIDWAVE

■ Features

- Designed for applications requiring high-speed and accurate spectral measurements, it captures full spectra in milliseconds.
- NLIR's MIDWAVE Spectrometer is a fast, portable and versatile tool for measuring mid-infrared light.
- 2.0 - 5.0 μm Bandwidth
- Resolution $< 6 \text{ cm}^{-1}$
- 400 Hz Full-Spectrum Readout Rate
- SMA-905 Fiber Connector
- Bit Depth 16
- Sensitivity 130k counts/(ms μW)

Linev Systems, USA/ Europe

ELECTRON SPIN/ PARAMAGNETIC RESONANCE SPECTROMETER (ESR/EPR)

Applications: Dosimetry, Physics, Life Sciences, Research and Education, Chemistry, Food Analysis



Benchtop Spinscan-X

■ Features

- The SPINSCAN X Spectrometer is intended for EPR spectra registration in liquid or solid phases to detect paramagnetic species or free radicals.
- Cavity Q factor and MW power measurement.
- Magnetic field modulation: 10 kHz - 250 kHz
- Operating frequency: 9.2 - 9.55 GHz
- Sensitivity: 8×10^9 spin/0.1mT
- Microwave cavity power: 250 mW; Magnetic field: 0.01 – 0.65 T



iClueBio, South Korea

SURFACE PLASMON RESONANCE SPECTROMETER (SPR)

Applications: Materials & Bio-sensor Development, Life Science, Pharmaceutical

iMSPR-ProX & iMSPR-Mini

■ Features

- Sustainable U-type fluidics module.
- Automated sustainable SPR system for drug discovery and precise kinetics.
- Automatic qualification check of sensor chip.
- In-line degassing system.
- Optional: Temperature control unit and cooling unit



DVT Devotrans, Turkey

DIFFERENTIAL SCANNING CALORIMETER (DSC)

Applications: Corrugated Pipes, Film, Food, Footwear, Geo-Textiles, HDPE Gas Pipes, HDPE Valves, HDPE Water Pipes, Medical, Packaging, Plastic Raw Materials, PVC, Textiles

DSC, OIT

■ Features

- Up to 500C; Temperature accuracy 0.1 C.
- According to ASTM D3895, ISO11357, EN728, ASTM D3418.
- Sensitivity: 3.6 to 4.0 V/mW; Sensor time constant: 2.5 s
- Calorimeter accuracy of $\pm 2\%$; Calorimetric precision of ± 0.5 .
- N2 and O2 rotameter mass flow controller.
- Connection for purge gas flow to the sample for 2 gas types.
- DSC measuring cell according to the heat flux principle.



Paint Test Equipment, UK

PORTABLE COATING THICKNESS METER

Handheld C5001 Meter

■ Features

- Measures all coatings on metallic substrates using the magnetic induction or eddy-current principles.
- Compliant to ISO 2808, ISO 19840, ISO 2360, ISO 1461, ISO 2063, ASTM D7091, ASTM E376 and ASTM G12.
- Measurement accuracy ± 1 to 3%.
- The Ferrous Probes will measure all non-ferromagnetic coatings on steel and iron. The Non-Ferrous Probes will measure all non-conductive, non-ferromagnetic coatings on conductive non-ferrous substrates.

OKO NDT, Ukraine

ULTRASONIC FLAW DETECTORS

Applications: Aerospace and Automotive, Weld Testing in the Power Generation and Petrochemical Industries, Forgings Testing, Corrosion Measurement in the Power Generation and Petrochemical Industries.



Sonocon Series

- **Features**
 - Manual ultrasonic testing defects such as dis-continuities and in-homogeneities of material of finished items, semi-finished products and welded (soldered) joints.
 - Measuring the defects depth and coordinates.
 - Assessing the sound velocity in different materials. Measurement of the equivalent defect sizes and ratio of echo signals amplitudes.



Murakami Color, Japan

COLOR & GLOSS METER

Applications: Automobiles, painted surface, building materials, electric materials, resin molding, dental materials, metal plates, plated surface, tiles, porcelains and ceramics.

GMX Series

■ Features

- The GMX is a portable gloss meter conforming to ISO 2813, ASTM D523 and JIS Z8741.
- Available in 60deg, 20deg and 75deg.
- Built-in rechargeable batteries, compact size and light weight.
- 1,000 data can be saved.
- Directly print to small printer by RS-232C output.



MicroDigital Co., South Korea

UV-VIS SPECTROPHOTOMETER

Applications: Bio-Medical & Environmental

Nabi UV-Vis

■ Features

- Nabi - UV/Vis Nano Spectrophotometer is a miniature spectrophotometer that can measure cuvette and microvolume samples.
- Measurement of single wavelength as well as spectrum analysis using spectrometer technology.
- Wavelength Range: 190 – 1100nm, Resolution: 0.3nm
- Stand-alone system with easy-to-use 7.0" LCD touch screen.
- Modes: DNA/RNA, protein, cells, end point, kinetic, spectrum

Bristol Instruments, USA

PRECISION NON-CONTACT THICKNESS MEASUREMENT

Applications: Tubing, Multilayer Thickness, Glass, Medical Balloons,
Ophthalmic



157/137 Series

■ Features

- Determine the EXACT THICKNESS of your transparent and semi-transparent materials.
- Materials as thin as 12 μm and as thick as 80 mm. Accuracy $\pm 0.1 \mu\text{m}$.
- Automatic calculation of thickness of individual layers and total overall thickness.
- Up to 31 layers simultaneously, including air gaps
- Connect up to 8 total measurement probes via optical switch.



Sensadyne, USA

FLUID SURFACE TENSION METER

QC 6000 & IP 6000

■ Features

- QC 6000 Tensiometer is a high-precision instrument used to measure the surface tension of liquids.
- IP 6000 Tensiometer is a dedicated in-process and on-line tensiometer with all capabilities of lab model QC 6000.
- Measures both dynamic and static surface tension.
- Method: Patented differential bubble pressure.
- Accuracy: ± 0.1 dynes/cm; Range: 1-500 dynes/cm
- Temp. range: -50°C to 150°C



Geserco, France

PORTABLE OIL TEST KITS

- **Range of Rapid Portable Kits Offered:**
 - **Water content:** Digital WaterTest™, Water content: PreciWaterTest™
 - **Viscosity, Dilution:** ViscoBille™ V2T & V3T
 - **TBN:** BNTest™ & TAN: TANTest™
 - **Particle content:** Polluvision™, Contamination: PO9004™
 - **Soot content:** SootTest™, Sea water detection, Bacteria tests, **Color monitor** for petroleum products, **Density** of petroleum products, Fuel compatibility, TotalFuelWash biocide.



Geserco, France

WATER IN OIL KIT

DPOT (Digital Precision Oil Tester)

■ Features

- Applicable to any type of lubricating oils and fuel oils.
- No interference of the lubricant additives on the analysis result, even when the proportion of additives is massive.
- Digital result delivered in water volume or water mass within 90 seconds.
- 8 measuring ranges from 0 – 2000 ppm H₂O to 0 – 15 % H₂O.
- Sensitivity down to 1 ppm H₂O and sample required only 0.5 cc.



Qualitest, USA

WATER VAPOR PERMEABILITY TESTER (WVTR)

OXYGEN PERMEABILITY TESTER (OTR)

QT-WVP-500 & QT-OPT-210

- **Features**

- Water Vapor Permeability Tester QT-WVP-500 series is used to test the water vapor transmission rate (WVTR) of a wide range of materials by Gravimetric Method.
- Standards: ASTM E96, ASTM D1653, ISO 2528, TAPPI T464, DIN 53122-1, JIS Z0208
- Automatic test, auto judgment, auto stop.
- Qualitest's Oxygen Permeability Tester QT-OPT-210 is the ideal equipment for measuring oxygen permeability for research and quality control purposes.



Sofraser, France

ONLINE/INLINE VISCOMETERS

- **MIVI Sensor**

- MIVI Sensor results in efficient analysis such as dynamic or kinematic viscosity, density, concentration, phase detection, etc.
- Any range between 0,01 to 1.000.000 mPa.s and Available in 1.400 bars or 300°C or low temp. -55°C versions.

- **Soflux Sensor**

- Soflux Sensor is the only vibrating inline process viscometer with a dedicated shape allowing easy integration into any plastic, polymer or elastomer extruder.
- Measured directly in the main flow of the product, Measures viscosity over 10E12 Pa.s, Allows the measure at extrusion high temperature, Withstands high pressure (300 bars).

Other Analytical Instruments

- ICP-OES
- Mass Spectrometers
- High Performance Liquid Chromatograph (HPLC)
- Ion Chromatograph
- Amino Acid Analyzer
- Gas Analyzers

PRODUCTS

MATERIAL TESTING INSTRUMENTS (PLASTICS, RUBBER, TEXTILES, METALS)



SALT Co., South Korea

UNIVERSAL TESTING MACHINES (UTM)

ST-1001, 1002, 1003, 1004

- **Features**

- Electrical Testing Machines are designed for low (1 KN) to medium (300 KN) force applications.
- Hydraulic Testing Machines are designed for medium (300 KN) to high (3000 KN) force applications.
- Light-Salt Software - Tensile, Compression, Bending, Holding, ILD, IFD Test etc.
- Optional : Non-Contact Video Extensometer



Larson Systems, USA

SPRING TESTERS

CDHT, SDHT, Flash Series

■ Features

- Tension, Compression and Torsion Spring Testers.
- Manual & Fully Automatic Testers.
- Manual Tester: 2, 11, 22, 66, 110, 200, 750 and 1500 lbf load capacities.
- Automatic Testers Flash Series: upto 50,000 lbf load capacities.



Vived Management, Belgium

HOT TACK TESTER

J&B Hot Tack Tester

■ Features

- J&B Hot Tack Tester is a highly sophisticated instrument for testing sealing properties of packaging material as per ASTM F1921.
- Starting seal pressure of 0.05 N/mm².
- Hot tack, Peel only, Seal only and Rigid sample mode.
- Optional accessories: Auto sample feeder and Auto sample cutter, Safety door.



DVT Devotrans, Turkey

MELT FLOW INDEX TESTER

DVT EA DLC

■ Features

- MFR (melt flow rate) in g/10 min. and MVR (melt volume rate) in ccm/10 min. according to EN ISO 1133 method A/B, ASTM D 1238 method A/B
- Temperature range up to 400°C.
- Linear, high precision piston travel transducer.
- Automatic cutting device.
- User friendly and "all-included" Windows Software.



Qualitest, USA

AUTOMATIC MELT FLOW INDEX TESTER

QualiFi-5000

- **Features**

- MFR (melt flow rate) in g/10 min. and MVR (melt volume rate) in ccm/10 min. according to EN ISO 1133 method A/B, ASTM D 1238 method A/B/C
- Temperature range up to 450°C.
- Linear, high precision piston travel transducer.
- Automatic cutting device and auto lifting device.
- Touchscreen display, User friendly and "all-included" Windows Software.



Custom Scientific Instruments, USA

ELMENDORF TEAR TESTER

CSI-117 Tear Tester

■ Features

- The CSI Elmendorf Tear Tester is designed for tearing resistance of paper board, textile, metal sheet materials, non-woven fabrics, paper, thin film, ventilation tape, etc.
- Touchscreen Display & Microcomputer system, for automatic tests, calculation, analysis of result, print test report, upload the test data.
- Standards: ASTM D1424, ISO 9290, ASTM D5734, ISO 13937-1, ASTM D689, TAPPI T414, ISO 4674-2, UNI 6444, ISO 6383-2, EN 21974, ISO 1974, BS 4468



Custom Scientific Instruments, USA

HDT-VICAT TESTER

CSI-107, HDT-III

■ Features

- The CSI Heat Distortion Tester provides a means of quickly and accurately determining the thermal softening properties of plastic/ polymer materials with precision and reproducibility.
- Test Stations: 3-6, VICAT Loads: 10N and 50N
- Temperature Rise Rates: $2 \pm 0.2^{\circ}\text{C}/\text{min}$, $50 \pm 5^{\circ}\text{C}/\text{hr}$ or freely selectable, 300°C Maximum Temperature.
- Test Standards: ASTM D648, ASTM D1525, ISO 75, ISO 306, DIN 53460, DIN 53461, BS 2782



Custom Scientific Instruments, USA

PENDULUM IMPACT TESTER

CSI-137 IZOD/ CHARPY

- **Features**
 - The CSI-137D Pendulum Impact Tester is a high-performance tester that precisely determines absorbed impact energy and resistance to breakage of plastic specimens.
 - Low Energy Kit: 0 - 5.4 J / High Energy Kit: 10.8 - 21.7 J.
 - Test Standards: ASTM D6110, ASTM D256, ASTM D4812, ASTM D1822, ISO 180, ISO 179, ISO 13802, ISO 20126



Custom Scientific Instruments, USA

DART IMPACT TESTER

CSI-126

■ Features

- Capable to meet both methods of ASTM D1709 and ISO 7765-1.
- Pneumatic specimen clamping with continuous feed.
- Pneumatic dart release exceeds 2kg capacity.
- Fully Adjustable Dart Drop Height.
- Optional Automatic Dart Lift (ADL) System with 2 position lift.
- Optional Total Energy System (TES) per ASTM D4274.
- Optional Cold Chamber System (CCS) for low temperature test.



Custom Scientific Instruments, USA

COEFFICIENT OF FRICTION (COF) TESTER

CSI-152SK

■ Features

- The CSI-152SK allows for the determination of the coefficients of starting and sliding friction of materials, such as plastic film, paper, soft trim, textiles, and other sheet materials.
- Automatically reports static and kinetic friction results after measurement. Up to 5N force capacity.
- Test standards: ASTM D1894, ISO 8295, TAPPI T549, TAPPI T816



Custom Scientific Instruments, USA

ABRASION TESTER

CSI-267

■ Features

- The CSI-267 is consists of: one specimen clamping disk; two grinding wheels; two vacuum nozzles
- 250g – 1000g Arm Weight
- Disk Speed: 1 to 100 RPM (adjustable)
- Digital Counter Display: 1 - 999999
- Digital LCD Display and Automatic test stop.
- Test standards: ASTM D3884, ASTM D4060, ASTM D1044, TAPPI T476, ASTM D3884, ISO 5470-1, ASTM D1175, ISO 9352

Other Material Testing Instruments

- CSI USA, Gelbo Flex Tester
- CSI USA, Environmental Stress Cracking Resistance (ESCR)
- CSI USA, Stress Crack Resistance Tester
- CSI USA, Film Blocking Apparatus
- CSI USA, Flexural Creep Tester
- CSI USA, Shrink Force Tension Tester
- CSI USA, Specimen Notcher
- CSI USA, Zero Time Strength Tester (ZST)

PRODUCTS

FLAMMABILITY TESTERS (TEXTILES, WOOD, RUBBER & PLASTIC)



Custom Scientific Instruments, USA

VERTICAL FLAMMABILITY CHAMBER

CSI-26

■ Features

- The CSI 26 is used to measure the vertical resistance of textiles that are exposed to a controlled flame for a specified period of time.
- SS cabinet, Heat resistant observation window, 10mm ID tube gas burner, Flame adjustment valve, Flame height gauge, Removable sample holder, Toggle valve, Needle valve.
- Standards: ASTM D6413, ASTM F1358, ASTM F1506, ASTM D6545, FTMS 191-5903.1, FTMS 191-5905, Boeing BSS 7230, NFPA 2112, Airbus AITM 2.0002, FAR Part 25 Appendix F Part I, GB/T 5455



Custom Scientific Instruments, USA

HORIZONTAL FLAMMABILITY TESTER

CSI-42

- **Features**

- Model CSI-42 is used for the determination of the comparative horizontal burning rate of cloth, and flexible cellular and rubber materials such as materials used in the interior vehicles.
- Materials that have not been flameproofed including pile and napped cloth can be tested using this Horizontal Flammability Chamber.
- Standards: ASTM D5132, FMVSS 302 (49 CFR 571.302), ISO 3795, CVMSS 302, Boeing BSS 7230, Airbus AITM 2.0003, IS 15061 Part A, DIN 75200



Custom Scientific Instruments, USA

UL 94 HORIZONTAL & VERTICAL FLAMMABILITY TESTER

CSI-27UL

■ Features

- The CSI-27UL provides a precise, safe, and repeatable method to perform the Bunsen Burner tests specified in UL 94.
- Standards: UL94: 94HB (ASTM D635, IEC 60695-11-10, IEC 60707, ISO 1210), UL94: V-0, V-1, or V-2 (ASTM D3801, IEC 60695-11-10, IEC 60707, ISO 1210), UL94: 5VA or 5VB (ASTM D5048, IEC 60695-11-20, IEC 60707, ISO 9772), UL94: VTM-0, VTM-1, or VTM-2 (ASTM D4804, ISO 9773), UL94: HF-1, HF-2 or HBF (ASTM D4986, ISO 9772)



Custom Scientific Instruments, USA

SMOKE DENSITY CHAMBER

CSI-115

■ Features

- The CSI-115 Smoke Density Chamber enables quantitative measurements of smoke by providing a light attenuation versus time plot for the specimen under test. The maximum quantity of smoke accumulation as well as the smoke production rate is obtained.
- The chamber features a wide Pyrex glass view window for observation of the specimen behavior during the test.
- Standards: ASTM E662, F814 ATS 1000.001/ABD0031, BS 6401, FAR 25.853 FAA, GB/T 8323.2, ISO 5659/IMO FTPC Part 2, NES 711, NFPA 258



Custom Scientific Instruments, USA

LIMITING OXYGEN INDEX (LOI) TESTER

CSI-178

■ Features

- The CSI-178 Limiting Oxygen Index Tester is used to determine the relative flammability of plastics and other materials in rod, film, or composite form.
- The relative flammability is determined by measuring the minimum concentration of oxygen in a slow-rising mixture of oxygen and nitrogen that will support combustion.
- Standards: ASTM D2863, BS ISO 4589-2 (BS 2782 Part 141), NES 714



Custom Scientific Instruments, USA

HEAT RELEASE RATE HRR3

CSI-208

■ Features

- The CSI-HRR3 is manufactured from FAA inspected components, the HRR3 fully complies with Chapter Five of the FAA Aircraft Material Fire Test Handbook.
- The HRR3 determines the heat release rate for qualification of interior aircraft materials as specified by the Federal Aviation Administration when exposed to a radiant heat flux of 35 kW/m².
- Standards: FAA Chapter 5 FAR 25.853 Appendix F Part IV, ASTM E906, Boeing BSS 7322, Airbus AITM 2.0006



Custom Scientific Instruments, USA

THERMAL PROTECTIVE PERFORMANCE (HTP/TPP) TESTER

CSI-206TPP

■ Features

- The CSI-206 is used to rate textiles and other materials for thermal resistance and insulation when exposed to convective and radiant energy at a level representing a flashfire or burning of solvent.
- The heat, which is transferred through the test material, is measured with a calibrated sensor having a response similar to that of human tissue. This heat is then compared with the thermal tolerance of human tissue to rate the test material.
- Standards: ASTM F2700, ASTM D4108, ASTM F2703, ISO 17492, NFPA 2112, NFPA 1976, NFPA 1971, GB/T 8965.1



Concept Equipments, UK

CONE CALORIMETER

CC

■ Features

- Standards: **ISO 5660, BS476 PART 15, ASTM E 1354, ASTM E 1550, ASTM E 1740, ASTM D 5485, ASTM D 6113, NFPA 271, NFPA 264, CAN ULC 135.**
- The Concept Cone Calorimeter is used for assessing the rate of heat release and smoke production of polymeric and other types of materials.
- The heat release rate is determined by measurement of the oxygen consumption derived from the oxygen concentration and the flow rate in the combustion product stream. The time to ignition (sustained flaming) is also measured in this test.

PRODUCTS

WATER ANALYSIS, WASTE WATER TREATMENT APPLICATIONS



AquaLabo, France

ONLINE UV-VIS ANALYZER - BOD / COD / TOC / TSS/ NITRATES

Applications: Wastewater treatment plant (follow-up purification performance, input, discharge, etc.), Drinking water plant (pumping station, tank management), Natural water, Process water, River monitoring, Aquaculture

STAC2

■ Features

- Fingerprint capability: scanning from 190 up to 800nm with unique 1 nm bandwidth. Secomam UV-Vis technology since 1966!
- Versatile sampling: 4 channels and 10 parameters available per channel
- Data connectivity: both local and cloud based data collection by means of a WiFi connection
- Real-time visualization of the water's fingerprint: BOD / COD / TOC / Nitrates / *detection Pesticides / *detection Aromatic Hydrocarbons



AquaLabo, France

PH, ORP, TEMPERATURE

Applications: Treatment of urban wastewater (entrance, aeration basin, exit),
Industrial effluent treatment (process optimization nitrification / denitrification)

EHAN Sensor

■ Features

- The EHAN sensor incorporates a reference electrode, used for ORP measurements, such as Ag / AgCl in saturated KCl electrolyte plasticized Optical Technology without calibration.
- Range of measure: ORP: - 1000 to + 1000 mV;
T°C: -10.00 to + 50.00°C;
pH : 0 to 14 units
- Combined sensor: Redox & Temperature
- Cartridge changeable with plastogel
- Digital communication Modbus RS-485



AquaLabo, France

OPTOD : OPTICAL DISSOLVED OXYGEN

Applications: Urban wastewater treatment, Industrial effluent treatment, Surface water monitoring, Sea water monitoring, fish farming, aquarium, Drinking water

DIGISENS Sensor

■ Features

- The OPTOD (Optical Dissolved Oxygen technology) is based on luminescent optical technology. The OPTOD sensor is approved by the ASTM International Method D888-05.
- Optical Technology without calibration
- Digital Technology (Modbus RS-485)
- No drift, Reduced maintenance
- Body in Stainless steel (316 L) or Titanium



AquaLabo, France

MULTIPARAMETERS DIGITAL TRANSMITTER IN THE FIELD

Applications: Waste water treatment plant (aeration basins to control / regulation processes Nitrification /Denitrification), Drinking water (raw water control), Industrial effluent treatment (waste controls, regulation), Monitoring of surface water, Fish farming

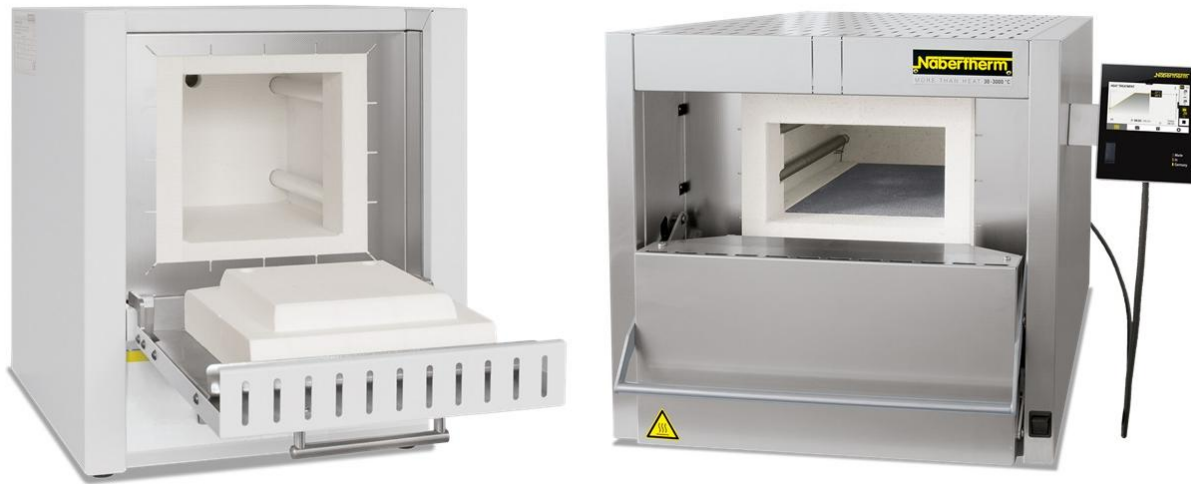
ACTEON 5000 Transmitter

■ Features

- For monitoring parameters pH, ORP, temperature, dissolved oxygen (optically), conductivity, salinity, turbidity (NTU, mg / L), UV254, TOC, COD, BOD, Suspended Solid (g/L), Sludge Blanket detection (%).
- 2 inputs sensor
- 2 analog input, 2 relay input
- Digital technology (Modbus RS-485)
- Large graphics screen: visualization upto 4 measures

PRODUCTS

CHAMBERS, OVENS & FURNACES



Nabertherm, Germany

MUFFLE FURNACES & OVENS

- **Furnaces**

- Nabertherm offers chamber furnaces, tube furnaces, ashing furnaces, muffle furnaces, and high-temperature furnaces for advanced materials processing.
- Temperature Range: 30°C to 3000°C

- **Ovens**

- Nabertherm ovens are designed to provide excellent temperature uniformity, ensuring consistent heat treatment across all parts of the load
- Temperature Range: 30°C to 1400°C.



SALT Co., South Korea

SALT SPRAY CHAMBERS

SS Series

- **Features**

- SS series simulates the effects on your product from salt and sea mist. Tests are designed to evaluate corrosion properties and resistance to corrosion of your product. Complying with the requirements of relevant national and international standards such as DIN, ISO, ASTM, DEF, MIL-STD, etc.
- Temperature Range: RT ~ +60°C; - Spray Volume: $1.5 \pm 0.5 \text{ ml}/80 \text{ cm}^2/\text{h}$ with 5~20 micron droplet fog
- Capacities in Litres: 100, 200, 480, 600, 1000



GTPS Co., South Korea

THERMAL SHOCK CHAMBERS

TS Series

- **Features**

- ETSP-TS series (basket moving type) are designed for thermal shock test of components or equipment, submitting them to rapid temperature changes as defined in IEC 60068-3-5:2001, MIL STD 810G, NATO STANAG 4370.
- Low level of vibration when basket movement by using pneumatic cylinder and guide rail.
- Temperature Range: Cold zone $-70^{\circ}\text{C} \sim -10^{\circ}\text{C}$, Hot-zone Ambient $\sim 200^{\circ}\text{C}$; Temperature Accuracy: less than $\pm 0.3^{\circ}\text{C}$.



JSR Co., South Korea

CLIMATIC CHAMBERS (TEMP. & HUMIDITY)

JSTH-Series

- **Features**

- JSTH series are climatic (temperature & humidity control) version chamber for durability or operating status of parts and products in extreme conditions as defined in IEC 60068-3-5:2001, IEC 60068-3-6:2001, MIL STD 810G, NATO STANAG 4370.
- Temperature Range: -40°C ~ $+150^{\circ}\text{C}$. Temperature Accuracy: less than $\pm 0.3^{\circ}\text{C}$.
- Humidity Range: 35% ~ 95% RH. Humidity Stability: less than $\pm 1.5\%$ RH.

PRODUCTS

OTHER EQUIPMENTS



Digit Concept, France

IC ACID DECAPSULATOR

iSA 777 Acid

- **Features**

- Electronic Control Unit with a iPanel™ User Interface.
- Compatible Nitric Acid / Sulfuric Acid / Mixed Acid / $Ki+I2$ & Nitric Acid.
- Acid temperature range: 10°C to 250°C
- New Nozzle Detector Module.
- Metal Etch Head compatible with Bonding detection.
- Improved Chamber Pressure System.



Digit Concept, France

LASER DECAPSULATOR

SLP 500 & SLP 1000

- **Features**

- 10W, 20W, 30W IR Fiber LASER.
- 3:1 tool:- Decapsulation, marking, cross section.
- Laser ablation area up to 170 x 170mm.
- Atmospheric Plasma Assisted, Works with Al, Au, Cu, Cu/Pd, Ag wires.
- Quick assisted focus with its lateral camera, Real time vision during ablation with wide choice of FOV.



Digit Concept, France

PLASMA DECAPSULATOR

iMIP-Dcap II

- **Features**

- 4 gas channels with mass flow controllers.
- 200 watts generator operating at 2,45GHz.
- Auto matching network.
- Color Camera Keyence.
- XYZ Automatic control.
- LASER Etching rate measurement by LASER Keyence.

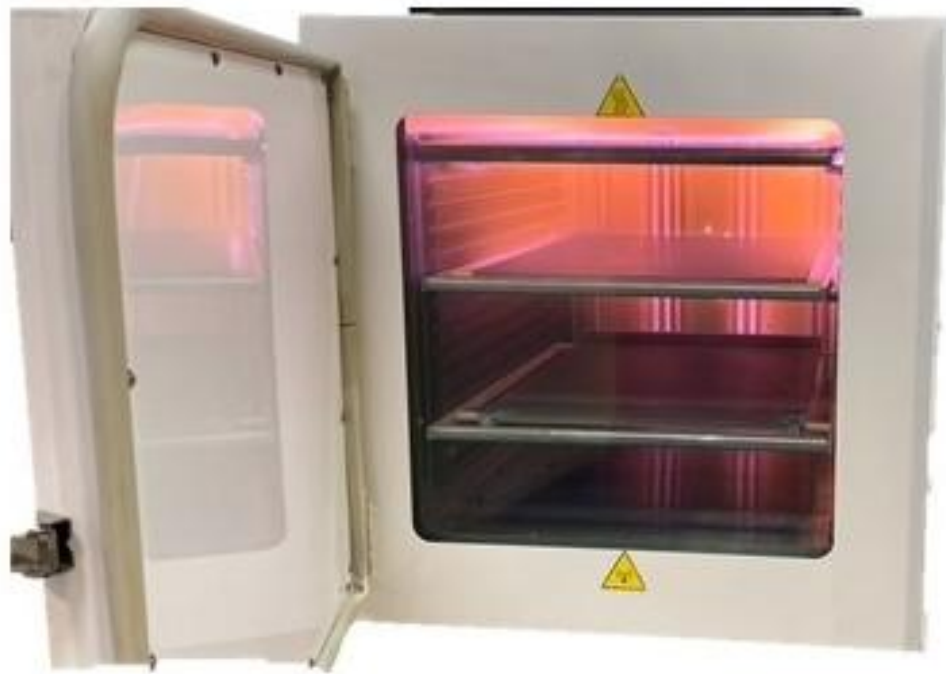
Digit Concept, France

PLASMA CLEANERS

iSP 3 Plasma

■ Features

- iPanel™ user interface with IP67 protective box and Tempered-Glass Screen Protector.
- Compatible with all type of RF Generators.
- Improved Electronic Control Unit: More robust connector vs dust.
- 2-4 Gas channels with mass flow controllers.
- 300 Watts generator operating at 13,56MHz.
- Auto matching network, 3 Shelves (more in option)





Navas Instruments, USA

ELECTRIC FUSION BEAD MAKING MACHINE / TGA

Applications: Cement, Sands, Ferroalloys, Raw materials

FTA-2000: Fusion Thermogravimetric

■ Features

- Provides Fused Beads + LOI/LOF for Several Samples Simultaneously.
- Automated fusion and handling of 4-16 samples; weights recorded via external balance.
- Temperature range: 0 - 1050 °C.
- Electric furnace with automatic temperature control for safe operation.
- Internal balance for real-time weight tracking.



PD Instruments, Poland

GAS OPERATED FUSION BEAD MAKING MACHINE

Applications: Cement, Sands, Ferroalloys, Raw materials

Vulcan Fusion

■ Features

- Vulcan Fusion is an automatic microprocessor controlled Bead Making Machine for XRF, AAS and ICP sample preparation.
- Number of stations: 2, 4 or 6.
- Temperature range: 0 - 1600 °C.
- Number of samples per hour: 6 - 18.
- Touchscreen interface and can save 10 different fusing programs.



Carmar Accuracy, Taiwan

VIDEO MEASURING SYSTEMS

VMM-D Series

■ Features

- VMM series are compact and reliable video measurement system combining fully automatic measurements with easy to use manual stage motion.
- 3-axis (X, Y, Z) measurement capability.
- Digital megapixel color camera coupled with a motorized zoom lens.
- Programmable all LED backlight, square-on surface light, and VectorLight™ programmable ring light for the ultimate lighting flexibility.



Carmar Accuracy, Taiwan

OPTICAL PROJECTORS & COMPARATORS

PV Series

■ Features

- Carmar Projector® systems are high quality, full-function 14” optical comparators with the most advanced technology available.
- Vectored light control – Versatile TruLight® LED lighting illumination.
- Keep lenses safe and ready for use – 3 position internal lens turret.
- Optional VidiProbe video measurement, optional motorized servo drives, and optional Projection automatic internal edge detection.



DDS Calorimeters, South Africa

OXYGEN BOMB CALORIMETER

Applications: Food/Feed Analysis, Alternative Energy, Scientific Determinations, Coal and Oil Production, Research, Universities and Quality Assurance

CAL3K

■ Features

- CAL3K is a flexible system for low to high throughput without compromising on accuracy and repeatability.
- No Water Required, Automatic & Variable Oxygen Filling.
- Temperature Range: +1°C to 72°C, Automatic Temperature Control.
- Three Operating Modes: Isothermal, Adiabatic, and Isobatic.
- Reproducibility/Repeatability: 0.1% RSD. Samples/hr: 2-6.
- Measuring Range Max: 99MJ, 99,000,00 Joules.



1865+ Megohmmeter/IR Tester



IET Labs, USA

MEGOHMMETER-HIGH RESISTANCE METER

1865 & 1888

■ Features

- A Megohmmeter/High Resistance meter with color touch-screen is used for accurate measurements of high resistance and insulation resistance.
- Resistivity Test Fixture for volume and surface resistivity per ASTM D257 and IEC 60093.
- Measurement range up to 100 T Ω .
- Programmable test voltage from 1 to 1000 Vdc.



TensileMill, USA

CNC MILLING MACHINE

CNC MINI

- **Features**

- CNC MINI- Compact Flat Tensile Test Sample Preparation.
- 2.2kW (3hp) Water Cooling Spindle.
- Easy to enter your desired tensile specimen size based on the parameters listed in your ASTM, ISO, DIN, JIS or other standard.
- Super User-Friendly & Perfect for Untrained CNC Machinist.
- TensileMill CNC MINI comes standard with a 10" LCD screen equipped with Tensile Software.



PD Instruments, Poland

PELLET PRESSING MACHINE

Applications: Cement, Sands, Ferroalloys, Raw materials

Hercules Series

■ Features

- Hercules is a top-bench manual/ automatic hydraulic press.
- Maximum pressure force of 25t or 40t – pressure regulated from 0.
- Dies enabling to form pellets of different diameters.
- Automatic versions: Microprocessor controlled, Regulated pressing time, Touchscreen interface.



Across International, USA

PLANETARY BALL MILLS

PQ-N04

■ Features

- PQ-N04 series planetary ball mills may be used for mixing, homogenizing, fine grinding, mechanical alloying, cell disruption, small volume high-tech material production and even colloidal grinding.
- PQ-N04 planetary ball mills have four grinding stations arranged on the "Sun Wheel" of the planetary ball mill.
- Minimum granularity of the final product can be as small as 0.1 micron.



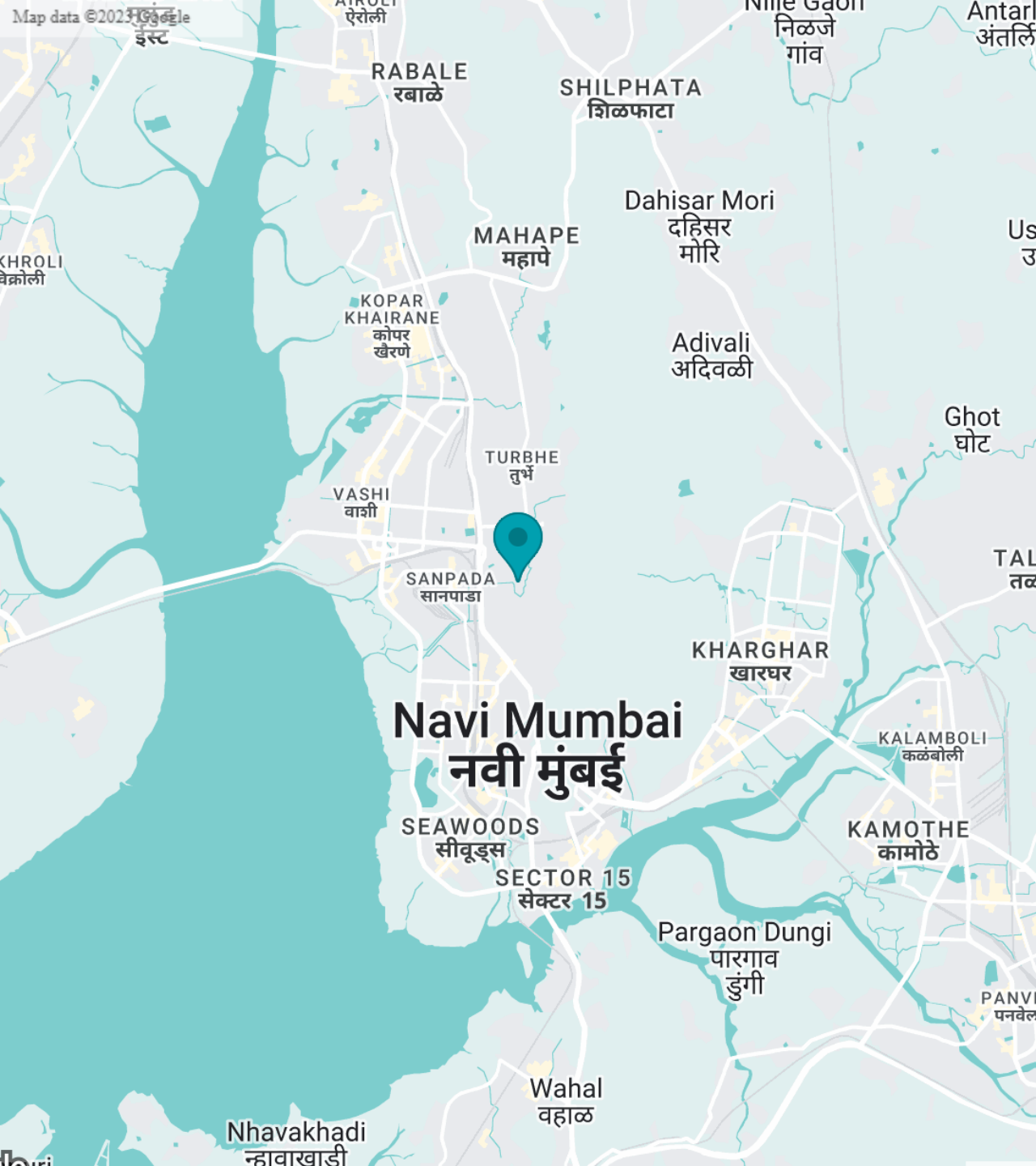
IDM Instruments, Australia

LABORATORY HEAT SEALER

L0001 PRO & L0001 PRO-S

■ Features

- An economic Laboratory Heat Sealer to help determine the sealing parameters of film, laminated films, coated paper and other flexible barrier materials as per ASTM F2029, ASTM F88.
- 5/ 10/ 25mm x 180mm Interchangeable Teflon-coated Sealing Bars.
- Temp Range: Ambient to 300 °C.
- Sealing Time variable by timer setting 0 - 999.9s.
- Maximum sealing force at 80 psi - 280 kg per 10cm².



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Open the floor to feedback and discussion.

