EKLAVYA TECHNO SOLUTION PVT. LTD.

Precision Testing & Calibration Equipment Manufacturer



ETS-LCB-3000AT

Load-Cell Closed-Loop Automatic Brinell Hardness Tester

Product Catalogue

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PRODUCT OVERVIEW

ETS-LCB-3000AT — Load-Cell Automatic Brinell Hardness Tester

Hardness is among the most important mechanical characteristics of engineering materials, and Brinell testing remains the preferred method for coarse-grained, heterogeneous, and large-grain materials such as castings, forgings, and soft alloys. Because the Brinell method uses a large indenter and high test force, it averages hardness over a representative area, giving values that correlate well with tensile strength and machinability.

The Eklavya **ETS-LCB-3000AT** is a fully motorized, closed-loop Brinell hardness tester built around a high-accuracy load cell. Instead of stacked dead-weights, force is generated electronically and held under real-time feedback throughout the load–dwell–unload cycle — eliminating weight changeover, simplifying installation, and delivering precise, repeatable force across the full 62.5 kgf to 3000 kgf range. An automatic indenter turret and a digital eyepiece with built-in encoder let the operator measure indentations and read hardness directly on the touch screen with minimal effort.

The instrument is suitable for cast iron, steel and steel products, non-ferrous metals and soft alloys, and certain non-metallic materials such as rigid plastics and Bakelite. It complies with ISO 6506, ASTM E10-12, JIS Z2243 and GB/T 231.2.

KEY FEATURES

Closed-loop load-cell force control (no dead weights)	Wide test-force range: 62.5 – 3000 kgf
Automatic indenter turret	Touch-screen LCD interface
Digital eyepiece with built-in encoder — one-click diagonal input	Automatic indentation measurement, no manual focusing
On-screen hardness value with built-in conversion function	Adjustable dwell time: 1 – 60 seconds
One-piece cast body, 130 kg for high stability	Modular design for easy maintenance & low-noise operation

APPLICATIONS

Cast iron & foundry products • Steel & forged components • Non-ferrous metals & soft alloys • Heat-treatment verification • Incoming material inspection • Rigid plastics & Bakelite • Automotive & aerospace components • Tool & die manufacturing • Research & development laboratories • Quality control departments

TECHNICAL SPECIFICATIONS

General Specifications

Model	ETS-LCB-3000AT
Test Method	Brinell (load-cell, closed-loop)
Indenter Turret	Automatic
Test Force Range	62.5 – 3000 kgf (612.9 – 29420 N)
Test Force Steps	10 steps, electronically controlled
Hardness Measuring Range	8 – 650 HBW
Microscope Magnification	20×
Minimum Measuring Unit	0.125 μm
Dwell Time Control	1 – 60 seconds, adjustable
Display / Data Output	Touch-screen LCD with hardness conversion
Test Space (Height × Depth)	200 × 135 mm
Power Supply	AC 220V ± 5%, 50–60 Hz
Overall Dimensions (L×W×H)	550 × 210 × 750 mm
Net Weight	130 kg (approx.)
Standards Compliance	ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2

Test Force Steps

kgf	Newton (N)	kgf	Newton (N)
62.5	612.9	500	4903
100	980.7	750	7355
125	1226	1000	9807
187.5	1839	1500	14710
250	2452	3000	29420

Available Brinell Scales

HBW2.5/62.5	HBW2.5/187.5	HBW5/62.5	HBW5/125
HBW5/250	HBW5/750	HBW10/100	HBW10/250
HBW10/500	HBW10/1000	HBW10/1500	HBW10/3000

Indenters

Ball Indenters (Carbide)	φ2.5 mm, φ5 mm, φ10 mm tungsten-carbide ball indenters

ACCURACY & TOLERANCE

Brinell Hardness Tolerance (per ISO 6506)

Hardness Range (HBW)	Permissible Error	Repeatability
≤ 125	± 3.0 %	≤ 3.0 %
125 < HBW ≤ 225	± 2.5 %	≤ 2.5 %
> 225	± 2.0 %	≤ 2.0 %

Closed-loop load-cell control maintains test force within tolerance throughout the complete load–dwell–unload cycle, ensuring stable and traceable results across the full force range.

STANDARD ACCESSORIES

Sr.	Description	Qty
1	φ2.5 mm Carbide Ball Indenter	1 Pc
2	φ5 mm Carbide Ball Indenter	1 Pc
3	φ10 mm Carbide Ball Indenter	1 Pc
4	Testing Tables (Large flat, Medium flat, V-type)	3 Pcs
5	Standard Brinell Test Blocks (High & Low)	2 Pcs
6	Digital Eyepiece with Built-in Encoder	1 Pc
7	Power Cord	1 Pc
8	Fuse 2A	2 Pcs
9	Spirit Level	1 Pc
10	Levelling Foot Screws	4 Pcs
11	Screwdriver & Spanner Set	1 Set
12	Dust Cover	1 Pc
13	Instruction Manual	1 Pc

OPTIONAL ACCESSORIES

Sr.	Description
1	Additional ball indenters (φ1 mm, φ1.5875 mm)
2	Extra certified Brinell test blocks (selected scales)
3	External LED light source
4	PC connectivity & data-export software
5	Built-in / external thermal printer

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