



INSTRUMENT

CLC-ARS TESTING SYSTEM



VICKERS



KNOOP

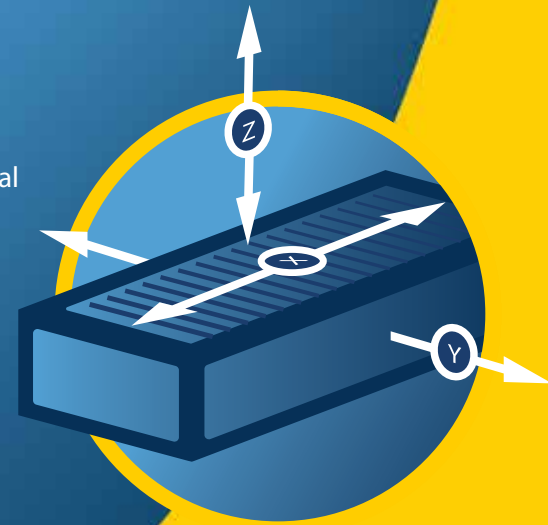


BRINELL



SUN-TEC
HARDNESS TESTING SPECIALISTS

The **CLC-10** and the **CLC-50** are designed with an expansive work area for testing large samples. Each utilizes a motorized Z-axis system that can accommodate up to 110mm (CLC-10) or 210mm (CLC-50) sample heights. Models are available with either a manual X-Y stage ((X) 50mm x (Y) 50mm) or an automatic motorized X-Y stage((X) 225mm x (Y)) 180mm, for greater control.



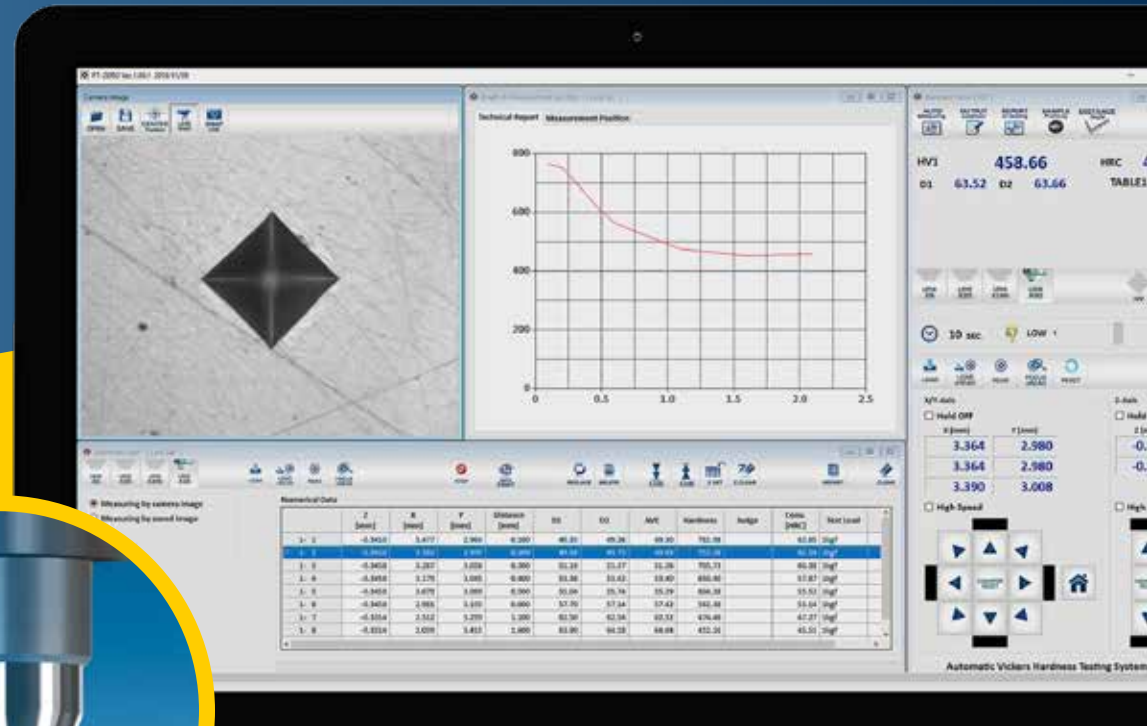
Shown with optional
single-sample holder

FULLY-AUTOMATIC VICKERS / KNOOP HARDNESS TESTING SYSTEM



The ARS System is a fully automatic testing system that allows for programming, indenting, auto-reading, viewing and recording data all from one convenient station. It offers a variety of platforms ranging from standard auto-read measuring and reporting to fully automatic; making reading, conversions and reporting easier than ever before.

- Instant HV or HK Hardness Chart Display
- Multi-data Measurements
- Quick Measurement Indentation for Easy Edits and Image Archives
- Convenient Data Transfers, Reports and Storage
- Z-Axis Memory Feature



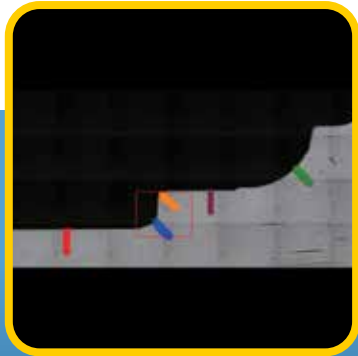
PRECISION INDENTER ASSEMBLY

Consistently produces accurate indentations test after test



REAL-TIME HARDNESS TEST RESULTS AT YOUR FINGERTIPS

The ARS provides a robust software solution with a familiar interface for easy navigation; simply set your test point, input your parameters and let the system do the rest. The ARS will analyze the sample-surface incline and automatically compensate for the angle. Depending on your configuration, the ARS is capable of processing either Vickers, Knoop or Brinell test results, in a variety of patterns, such as: straight, zigzag, circle, arc, line set, matrix or random. All test results can then be output and stored internally for future analyzation and reference.



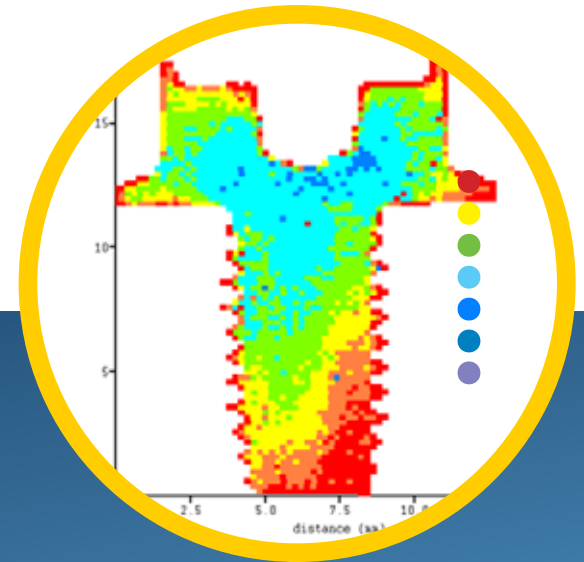
LINE SET PROGRAM

This program allows for a number of line tests to be setup and conducted on a single sample. Each test can be uniquely spaced apart, displaying both indentations and quantities of indentations across the sample to evaluate the range of hardnesses



CASE DEPTH VALUE GRAPH

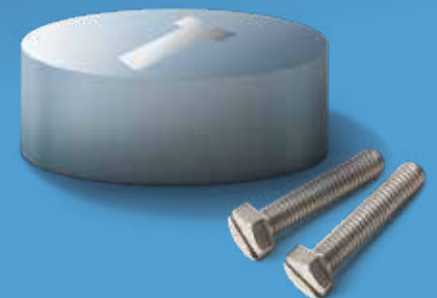
The data points (lines of tests) and case depth value are used to determine the depth to which the hardness of the exterior has been increased over that of the interior of a part. The effective case depth is the distance where the hardness falls below the defined effective case depth value.



AUTO-MATRIX FEATURE

The CLC can perform a series of indentations on a single sample, and through the ARS software, outputs a color map of the data based on variable hardness test results. This provides a graphic representation that greatly simplifies the analyzation of the part.

MOUNTED SAMPLE



The ARS is available in four different configurations:

The CLC-10 and CLC-50 are available in manual and fully automatic systems, configured for either Vickers (HV) or Knoop (HK) testing.

The CLC series utilizes highly accurate load cell feedback technology that can span multiple loads that range from 0.01gf to 10kgf (CLC-10) or 0.05gf to 50kgf (CLC-50). This broad range allows for both Micro and Macro indentation tests from a single hardness testing machine.

For accuracy, productivity and flexibility, the ARS software system is the perfect all-in-one system for Quality Control to R&D application.

Z-axis safety sensor protection

Hold up to 4 samples
(optional accessory)

OPTIONAL DUAL-INDENTER TURRET

The optional dual-indenter auto-turret allows for up to four objectives, each protected by auto-stop safety guards



PRECISE CONTROL FEATURES

For precise sample positioning, ARS Software allows for either mouse and /or joystick control



SPECIFICATIONS

CLC-10 AR / CLC-10 ARS

CLC-50 AR / CLC-50 ARS

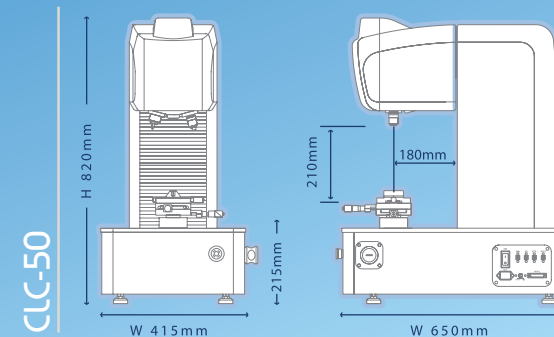
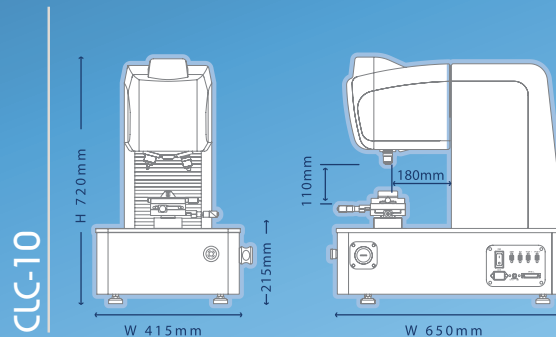
TEST LOADS	VICKERS (HV)	0.01, 0.02, 0.025, 0.05, 0.1, 0.2, 0.3, 0.5, 1, 2, 2.5, 3, 5, 10 kgf	0.05, 0.1, 0.2, 0.3, 0.5, 1, 2, 2.5, 3, 5, 10, 20, 30, 50 kgf
	KNOOP TEST LOADS (HK)	0.01, 0.025, 0.05, 0.1, 0.2, 0.3, 0.5, 1, 2 kgf	0.05, 0.1, 0.2, 0.3, 0.5, 1, 2 kgf
	BRINELL TEST LOADS (HBW)	1/1, 1/1.25, 1/2.5, 1/5, 1/10, 1/30, 2.5/6.25, 2.5/7.8125 mm/kgf	1/1, 1/1.25, 1/2.5, 1/5, 1/10, 1/30, 2.5/6.25, 2.5/7.8125, 2.5/15.6, 2.5/31.25, 5/25, 5/31.25 mm/kgf
	OPTIONAL LOAD SETTINGS	Max of 64 types of test loads – 0.01~10kgf (min 0.01kgf)	Max of 64 types of test loads – 0.05~50kgf (min 0.01kgf)
LOADING SYSTEM	Automatic Direct Loading System with Load-Cell feedback		
LOAD-CELL(s)	0.01~10kgf: using 2 Load-Cells	0.05~50kgf: using 2 Load-Cells	
FOCUSING METHODS	Automatic Operation or Manual Operation (using motorized Z Axis System)		
TURRET ROTATION	Automatic-Motorized		
MEASUREMENT OF INDENTATION	Automatic Reading/Manual Reading		
LOAD APPLYING SPEED	Initial Descending Speed Approximately 180µm/s Effective Loading Speed Approximately 30µm/s for under 1kgf Test Load and Approximately 80µm/s for over 1kgf Test Load		
DWELL TIME	5 ~ 99 sec		
INDENTER	Vickers Test (HV): 1pc (optional) Knoop Test (HK) and Brinell Test (HBW): Tungsten Ball ø1mm ø2.5mm		
OBJECT LENS	Infinity Corrected Long Working Distance (LWD) Lens 1pc: X10 & X50 (Optional X1.25, X2.5, X5, X20, X40 or X100)		
INDENT MEASUREMENT SYSTEM	Camera: automatic measurement using 1.3 MP		
SOFTWARE	ARS (Windows 10®/64bit)		
OUTPUT SIGNAL	USB (RS232C converter: built-in)		
DIMENSIONS	Manual 110X110 mm / Auto 150X150 mm		
X-Y STAGE MOVEMENT	Manual (X) 50mm x (Y) 50mm / Motorized (X) 225mm x (Y)180mm (mouse or joystick control)		
MAX. HEIGHT OF SPECIMEN	110 mm From Manual / Motorized Stage Top	210 mm From Manual / Motorized Stage Top	
MAX. DEPTH OF SPECIMEN	180mm		
LIGHT SOURCE	LED Illumination		
ACCURACY	Vickers(HV) / Knoop(HK) Test: Conforms to tolerances per ASTM E92 and ISO 6507-2, ISO 4545-2 Brinell(HBW) Test: Conforms to tolerances per ASTM E10 and ISO 6506-2		
SAFETY DEVICE	Protection Cover on Turret for indenter(s) & Each Objective Lens(s)		
DIMENSIONS	H 720 (28.3") X W 415(16.3") X D 650(25.6") mm	H 820 (32.3") X W 415 (16.3") X D 650 (25.6") mm	
WEIGHT	Approximately 100kg (220 lb.)		
POWER SUPPLY	1P AC100~120V / AC240V(50/60Hz): selectable by switch		

STANDARD ACCESSORIES

- Hardness Standard
- Diamond Indenter(s)
- Objective Len(s)
- Machine Cover
- Accessory Box
- Leveling Leg Set
- Operator Manual

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Some aspects are subject to change.



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HARDNESS TESTING SPECIALISTS



Divisions of STC

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