

# MODEL FH-4

## Vickers/Micro Vickers/Knoop Hardness Tester

**FH-4 digital Micro-Vickers  
and Knoop and analogue  
microscope**



The FH-4 series allows for testing a wide variety of workpieces. The test force can be selected with the help of an easy-to-operate selector knob on the side of the tester. It is not necessary to replace any weights. The tester does the full range up to 2kg (4.4lbs) by just turning the selector knob to the required force position. The FH-4's test range is quite unique for a traditional micro-hardness tester and is distinguished by high accuracy, flexibility and operational efficiency.

The FH-4 series also has the option of an analogue or digital electronic microscope, which enables enhanced functionality and high resolution readings. Obtained diagonal measurements can be transferred automatically and calculated to the actual Vickers or Knoop value.

The system shows real-time statistic values and converts to Rockwell, Brinell, Leeb and UTS (tensile strength), making the FH-4 one of the most advanced traditional Micro-Vickers systems currently available.



**FH-4 Series with Horizon software and digital microscope (Option 4)**

### Features and benefits

- Motorized turret.
- Optional analogue or digital microscope.
- Conversion to other hardness scales (option 3).
- Motorized load control.
- Statistics and conversions.
- X-Y stage with 0.01mm (.00039in) resolution.
- Built-in high speed printer.
- Dual channel optical system.

### FIVE LEVELS OF INCREASING AUTOMATION

#### First level

- Horizon on-screen measurement
- CCD camera
- Touchscreen display

#### Second level

- Horizon on-screen measurement
- CCD camera
- Automatic measure
- Touchscreen display
- Manual XY stage with one digital micrometer for either X or Y axis

#### Third level

- Horizon on-screen measurement
- CCD camera
- Automatic measure
- Touchscreen display
- Manual XY stage with two digital micrometers

#### Fourth level

- Horizon on-screen measurement
- CCD camera
- Automatic measure
- Touchscreen display
- Precision motorized XY stage 257x205mm with travel of 120x100mm, resolution 0.001mm, repeatability 0.002mm
- Virtual Mouse

#### Fifth level

- Horizon on-screen measurement
- CCD camera
- Automatic measure
- Touchscreen display
- Precision motorized XY and Z stage 257x205mm, with travel of 120x100mm, resolution 0.001mm, repeatability 0.002mm
- Virtual Mouse
- Pattern Test Module

# Specifications

## FH-4 SPECIFICATIONS

Test force selection	Manual
Test procedure	Automatic, loading/dwell/unloading
Hardness value	Five digits
Turret	Four positions over 360°, fully automatic, memorized start position, one indenter and three objectives
Test force accuracy	<1% for test force 200g-2kg (.44-4.4lbs) <1.5% for test force below 100g (.22lbs)
User display	6.5in touchscreen, length of diagonals, hardness value, converted value, test force, online statistics
Display resolution	0.1 HV, HK
Hardness conversion	Rockwell, Rockwell Superficial, Brinell, Leeb and Tensile
Standardization	EN, ISO 6507, EN ISO 6506, ASTM E-92, ASTM E-384, ASTM E-10-08
Statistics	Total test, max, min, average, range, standard deviation, all in real time after each test
Control panel	Start test, stop test, light intensity, dwell time, print, clear. Menu operation for date, time, scale and load settings, language
Firmware	V2.01, German, English, French (standard) V2.02, English, Italian, Spanish
Memory	Memory for batch testing results (20 results)
Data output	USB connectivity
Dwell time setting	Default 10 seconds, user defined 1 to 60 seconds (1 second increments)
Printer	Built-in, silent high speed thermal printer
Eyepiece microscope	Optional analogue or digital microscope with Bright Dual line filar eyepiece with 15x magnification, 0.1µm reading
Light source	Halogen 12V, 30W, green filter, dimmable
Optical path	Dual channel optical system
Vertical capacity	90mm/3.54in (maximum specimen height)
Horizontal capacity	120mm (from center-line)
Stage dimensions	100 x 100mm (3.93 x 3.93in), travel 25 x 25mm (.98 x .98in), reading 0.01mm (.00039in)
Operating temperature range	5-40°C (41-104°F)
Operating humidity range	10-90% non-condensing
Weight	38kg (83.8lbs)
Power requirements	100VAC to 240VAC, 50/60Hz, single phase
Power consumption	390W

## MODEL DETAILS

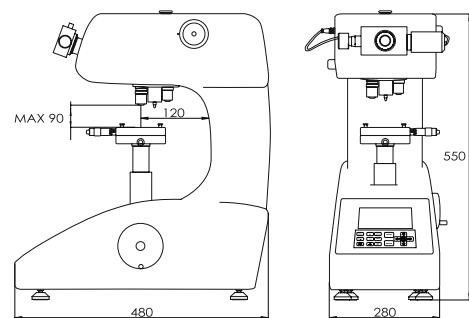
- **FH-004-0050** 2kgf Micro-Vickers

## STANDARD ACCESSORIES

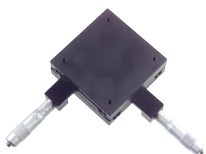
- Manual X-Y stage
- Standard objectives 10x, 20x and 40x
- Digital electronic microscope 15x
- Built-in silent thermal printer
- USB connectivity
- Set of workpiece fixtures, vice, chuck, clamp
- Level gage
- Four adjustable feet
- Spare halogen lamp
- Installation and user manual
- Certificate

## OPTIONAL ACCESSORIES

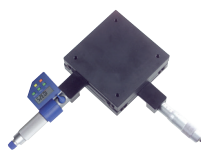
- Objectives at choice
- Horizon – manual or automatic measuring and filing systems
- Motorized X-Y stage
- Motorized X-Y-Z stage (auto focus)
- Certified indenters and hardness test blocks
- Solid tester table and storage cabinet
- Manual X-Y stage with digital micrometers
- Analogue or digital microscope (15x magnification)



FH-4 dimensions - all measurements are in mm



**Table option 1**  
Analog stage micrometers, supplied as standard with base machine



**Table option 2/3**  
Digital stage micrometers, single axis or double axis



**Table option 4/5**  
Motorized stage



Optional digital electronic microscope