

HST402-AW Medium-sized upright metallographic microscope



(Picture just for reference)

Introduction

HST402-AW computerized metallographic microscope is a trinocular upright metallographic microscope. This machine has excellent imaging performance and comfortable operating experience, and provides customers with cost-effective metallographic analysis and industrial inspection solutions.

Observation tube

The observation tube adopts the optimal and comfortable angle of the newborn bed (30°), which can relieve the user's tension and fatigue during long working conditions and ensure the best observation state. The scale on the observation tube allows users to adjust the optimal interpupillary distance range by themselves.



Epi-illuminator

Adopt Kohler illumination system with field diaphragm, aperture diaphragm and oblique illumination device; preset polarizer, analyzer and color filter slot.

Single 5W LED warm white lighting (3000-3300K), compared with



similar LED lighting, can minimize the observer's visual fatigue.

The field diaphragm and aperture diaphragm adopt a pull rod device with an adjustable center, which can flexibly adjust the size of the illumination range and effectively avoid the impact of stray light on the image.

The polarizer and analyzer can realize simple polarized observation. You can also choose color filters of different colors according to your needs to obtain the ideal observation effect.

Main Specifications

Standard Configuration		Model
Item	Specification	HST402-AW
Optical system	Infinity chromatic aberration correction optical system	●
Observation tube	30° tilt, hinged trinocular observation tube, 360° rotation; interpupillary distance adjustment: 54mm~75mm, unilateral diopter adjustment: ± 5 diopters, two levels of splitting ratio, binocular: trinocular = 100:0, 50: 50	●
Eyepiece	High eye point and large field of view plan eyepiece PL10X/22mm	●
	High eye point and large field of view plan eyepiece PL15X/16mm	●
Infinity long distance plan achromatic objective lens	LMPL 5X /0.15 WD10.8mm	●
	LMPL 10X/0.30 WD12.2mm	●
	LMPL 20X/0.45 WD4.00mm	●
	LMPL 50X/0.55 WD7.9mm	●
Converter	Internal positioning five-hole converter	●
Focusing mechanism	Reflective frame, low hand position coarse and fine coaxial focusing mechanism, coarse adjustment stroke 28mm, fine adjustment accuracy 0.002mm. Equipped with an adjustable elastic device and a random upper limit device to prevent sliding. With platform position up and down adjustment mechanism, the maximum sample height is 78mm.	●
Stage	Double-layer mechanical mobile platform, coaxial adjustment in X and Y directions for low hand position; platform area: 175X145mm, moving range: 76X42mm, can be equipped with a transreflective glass stage	●

Upper lighting system	Adaptive wide voltage 100V-240V_AC50/60Hz, reflective lamp chamber, single high-power 5W LED, warm color, Kolar illumination, with field diaphragm and aperture diaphragm, center adjustable, with oblique illumination device	●
Metallographic Analysis System	Metallographic analysis software, 12 million Sony chip camera device, 0.5X adapter mirror interface. Micrometer	●
Optional configuration		
PC	HP	O
Eyepiece	High eye point and large field of view plan eyepiece PL10X/22mm (adjustable diopter, with micrometer)	O
	High eye point and large field of view plan eyepiece PL15X/16mm	O
Objective lens	Infinity long field plan achromatic objective: LMPL 100X/0.80 WD2.1mm	O
Focusing mechanism	Transflective dual-purpose frame, low-hand position coarse and fine coaxial focusing mechanism, coarse adjustment stroke 28mm, fine adjustment accuracy 0.002mm. Equipped with an adjustable elastic device and a random upper limit device to prevent sliding. With platform position up and down adjustment mechanism, maximum sample height 28mm,	O
Lower lighting system	Adaptive wide voltage 100V-240V_AC50/60Hz, transmitted light chamber, single high-power 5W LED, warm color	O
Condenser	Swing-out achromatic condenser for transmission (N.A0.9) with variable aperture diaphragm, center adjustable	O
Color filter	Yellow, green contrast filters, neutral color filters	O

Note: "●" is standard configuration; "O" is optional

Metallographic image analysis software system

Features:

- Software installation is more intuitive and concise

The new software installation, registration, and calibration guide mode are simple and clear, and can be completed by default prompts.

- Genuine Software Assurance System

After the software installation is completed, the original software activation is performed first, and then the computer hardware ID registration is performed to ensure the legitimate rights of the customer.

- Quick access to 7 inspection categories

Statistical production of 7 categories of quick entry: grain size, non-metallic inclusions, steel microstructure, decarburization layer analysis, gray iron, ductile iron, carbon steel spheroidization, etc., plus a metallographic teaching.

- Demand standards can be customized

In addition to the standard testing modules, special testing modules can be customized according to customer needs, such as: corporate standards, special industry standards, etc.

- The report template can be modified

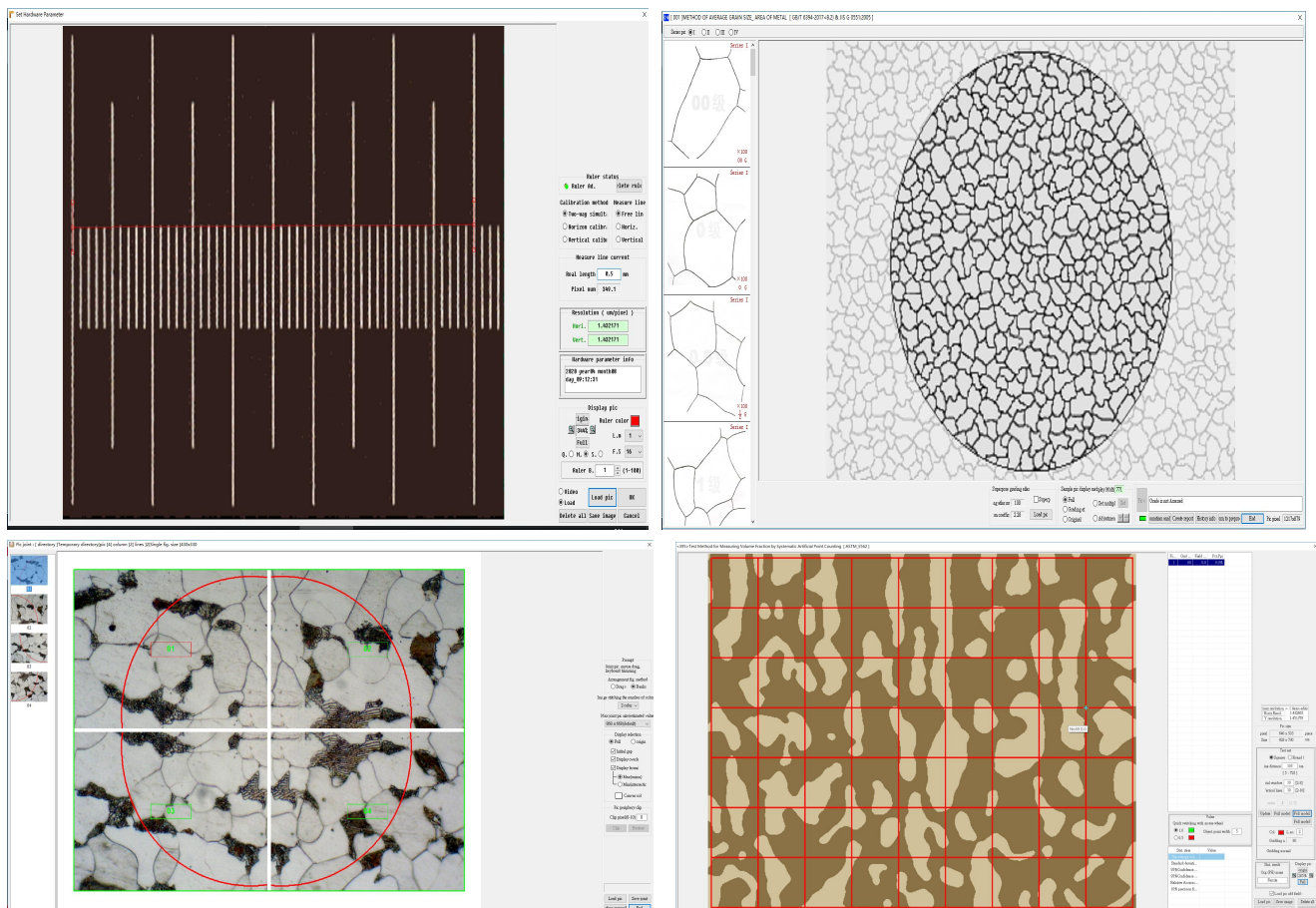
Report templates can be customized for different companies.

- Genuine software can be upgraded

According to the standard implementation time of the National Standardization Committee, the software will be upgraded for free.

- Wide application of computer systems

This software can be installed and run under Windows 7, Windows 10.



The latest metallographic software standard:---partial excerpt

- GB/T 6394-2017 Grain size measurement rating (grain boundary extraction, grain boundary reconstruction, single phase, dual phase, grain size measurement, rating)
- GB/T 10561-2005/ISO 4967:1998 Determination of non-metallic inclusion content in steel
- GB/T 7216-2009 gray cast iron: graphite distribution shape, graphite length, pearlite quantity, carbide quantity, etc.
- GB/T 9441-2009 Ductile Iron: Spheroidization Rate, Graphite Size, Pearlite Quantity, Carbide Quantity, etc.
- GB/T 26656-2011 Vermicular graphite cast iron: graphite morphology, creep rate, pearlite quantity, phosphorus eutectic quantity, carbide quantity, etc.
- GB/T 18254-2016 Metallographic examination of high carbon chromium bearing steel
- GB/T 34891-2017 Rolling bearings_Technical conditions for heat treatment of high carbon chromium bearing steel parts
- GB/T 1499.2-2018 Steel for reinforced concrete Part 2: Hot-rolled ribbed steel bars
- GB/T 1299-2014 tool steel
- GB/T 3246.1-2012 Microstructural test methods for wrought aluminum and aluminum alloy products_Part 1_Microstructure test methods
- GB/T 13925-2010 cast high manganese steel: grades of undissolved carbides, grades of precipitated carbides, grades of superheated carbides
- JB/T 7946-2017 Metallography of cast aluminum alloys
- JB/T 1255-2014 Rolling bearings_Technical conditions for heat treatment of high carbon chromium bearing steel parts
- JB/T 9986-2013 Tool Heat Treatment Metallographic Examination
- QC/T 262-1999 Metallographic examination of automobile carburized gears: martensite needle length, carbide, austenite rating, austenite content
- QC/T 502-1999 metallographic inspection of automobile induction hardening parts
- QC/T 553-2008 Metallographic Examination of Cast Aluminum Pistons for Automobile Engines
- TB/T2942.2-2018 Steel Castings for Locomotives and Rolling Stock Part II: Metallographic Examination Chart.
- TB/T 2478-1993 Metallographic Structure Grading Chart of Spring Bar
- TB/T 2451-1993 Metallographic examination of non-metallic inclusions in cast steel
- TB/T 2944-1999 Carbon steel forgings for railway
- DL/T 773-2016 Standard for spheroidization rating of 12Cr1MoV steel for thermal power plants_Characteristics of ferrite plus pearlite spheroidization

- DL/T 773-2016 Spheroidization rating standard for 12Cr1MoV steel for thermal power plants_Features of ferrite plus bainite or bainite spheroidization
- DL/T 1422-2015 18Cr-8Ni series austenitic stainless steel boiler tube microstructure aging rating standard
- ISO 4499-2016 Cemented carbide -- Metallographic determination of microstructure
- ASTM A262-2015 Test procedure for susceptibility to intergranular corrosion of austenitic stainless steel
- ASTM E45-2013 Evaluation method of inclusion content in steel

The national standard library contains about 700 commonly used sub-modules in 150 categories, basically covering the commonly used metallographic standards and meeting the requirements of metallographic analysis and inspection in most units; the software randomly releases about 120 commonly used sub-modules, and the others are all Lifetime free upgrade calls.

Basic skills:

1. Organization analysis

Correctly select the execution standard of the material, capture and take pictures of the metallographic structure of the sample through the camera system of the metallographic microscope, and enter the evaluation level interface:

(1) Automatic grading: If there are quantitative standards in metallographic standards (such as calculation formulas, percentage ranges, etc.), the software automatically grades, gives metallographic grades, and generates metallographic inspection reports.

(2) Comparison and rating: The software can also compare the sample map with the map in the gallery, and manually determine the level.

(3) Multi-module rating: Multiple modules can be counted at the same time

2. Image measurement

The software provides a variety of measurement tools such as distance, rectangle, circle, polygon, polyline length, angle, line angle, radian, point to circle center measurement, etc., to meet the user's basic geometric measurement functions and obtain relevant measurement data.

(1) Data export: The measured data can generate a dedicated measurement report with pictures and texts, and can also be directly imported into EXCEL.

(2) Save the image: the measured data can be automatically fused with the picture, and the accuracy of the measured part can be displayed intuitively and clearly.

3. National standard library

The software provides the function of viewing the gallery, providing users with the latest national standard gallery.

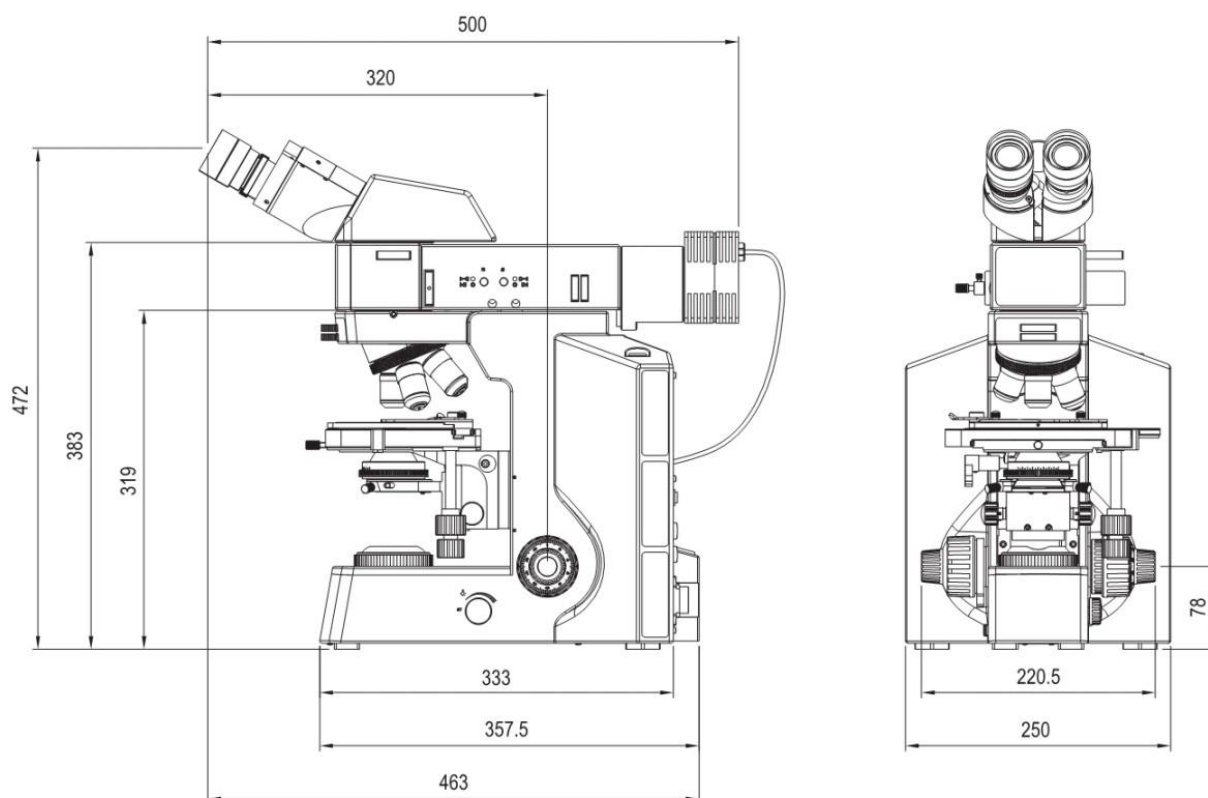
4. Fixed-time printing

The software provides a fixed-time printing function, and users can realize fixed-time printing of pictures according to the actual printing multiple requirements.

5. Inspection report

Metallographic analysis software system composition:

1. Software program FMIA2021 (U disk);
2. Dongle: USB type + dynamic code verification;
3. Text information: "Instruction Manual" (on the U disk);
4. 0.01mm micrometer ruler.





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