

HST402-BW Large upright metallographic microscope microscope



Application

This device computerized metallographic microscope is a trinocular metallographic microscope with a flexible system combination, excellent imaging performance, and stable system structure. Each operating mechanism is designed according to ergonomics to minimize operator fatigue. The modular component design allows for free combination of system functions. The MX series is specialized in industrial testing and metallographic analysis.

Observation tube

Wide field of view hinge type a trinocular observation tube, suitable for use with 4-inch platforms.



Reflective illuminator

Single high-power 5W white LED illumination with oblique lighting mechanism. When switching to oblique lighting, it can present three-dimensional patterns on different material parts of the object surface, increasing the contrast and visual effect of observation.



High performance objective lens converter

The converter adopts a precision bearing design, with a light and comfortable rotating feel, high repeated positioning accuracy, and good control of the concentricity of the objective lens after conversion. Different hole positions of the converter can be configured according to requirements.

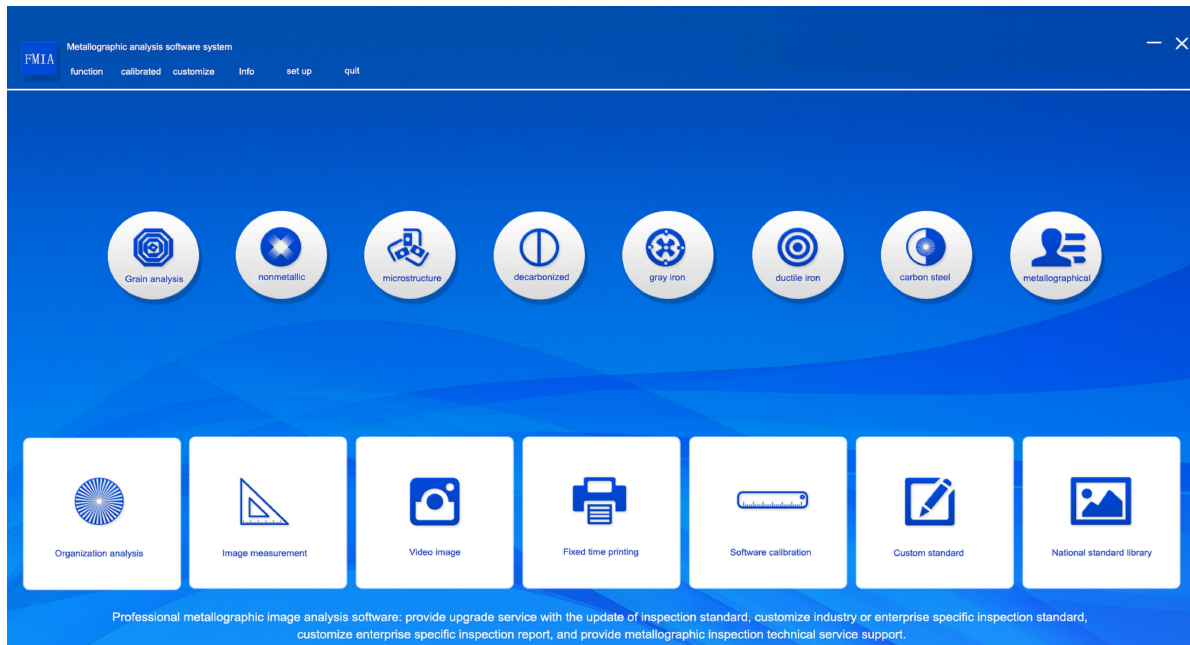


Main Specifications

Standard configuration		Model
Item	Specification	HST402-BW
Optical system	Infinite color difference correction optical system	■
Observation tube	30 ° tilt, hinged trinocular observation tube, 360 ° rotation; Pupil distance adjustment range: 54-75mm, unilateral diopter adjustment: ± 5 diopters; Two level splitting ratio: binocular: trinocular s=100:0 or 50:50	■
Eyepiece	High Eye Point Large Field Flat Field Eyepiece PL10X/22mm	■
Objective lens	LMPL 5X /0.15 DIC WD10.8mm	■
	LMPL 10X/0.3 DIC WD12.2mm	■
	LMPL 20X/0.45 DIC WD4.0mm	■
	LMPFL 50X/0.55 WD7.9mm	
Converter	Fiver-hole converter, with DIC slots	■
Focusing mechanism	Coarse adjustment coaxial, coarse adjustment stroke 30mm, fine adjustment accuracy 0.001mm, equipped with coarse adjustment mechanism upper limit and elasticity adjustment device. Built in 100-240V wide voltage transformer, dual power output	■

Stage	4 "Double layer mechanical mobile platform, platform area 230X215mm, stroke 105x105mm, with glass platform, right hand X and Y mobile handwheel, equipped with platform interface	■
Reflective lighting system	Equipped with variable field of view and aperture apertures, both can adjust the center; Equipped with filter slots and polarizer slots; Equipped with oblique lighting switch lever. A single high-power 5W LED with warm colors and continuously adjustable light intensity.	■
		■
Transmission lighting system	Single high-power 5W LED, warm color (color temperature 2850K-3250K), continuously adjustable light intensity. N. A.0.5 spotlight with variable aperture aperture	■
		■
Other Accessory	Polarization mirror insertion plate, fixed polarization mirror insertion plate, 360 ° rotating polarization mirror insertion plate	
metallographic analysis system	FMIA2023 genuine metallographic analysis software, Sony chip 12 million camera device, 0.5X adapter mirror interface, high-precision micrometer (100x0.01mm, 100x0.01cm, calibration point: d=0.15mm, d=0.07mm).	■
Optional configuration		
Item	Specification	
Eyepiece	High eye point, large field of view, flat field eyepiece PL10X/22mm (adjustable visibility with micrometer)	O
	High Eye Point Large Field Flat Field Eyepiece PL15X/16mm	O
Optional objective lens	Infinite distance flat field achromatic objective LMPFL 100X/0.80 WD2.1mm	O
Differential interference	DIC differential interference component	O
Filter	Interference filter group for reflection	O
Computer	HP	O

Note: " ■ " is the standard configuration; " O " is the option



FMIA2023 New Edition Metallographic Image Analysis Software

Introduction:

The FMIA2023 version metallographic image analysis software system is a software system developed by our company that combines the current needs of casting enterprises, automotive parts enterprises, heat treatment enterprises, bearing steel industry, power system industry, railway parts industry, and various related testing companies for metallographic testing. It aims to improve product qualification rates and assist in improving the testing level of various laboratories. We collect the opinions and demands of experts and teachers from various industries, Develop this FMIA2023 version metallographic image analysis software system.

The software system national standard library contains 150 categories and approximately 700 commonly used submodules, basically covering common metallographic standards and meeting the requirements of metallographic analysis and inspection in the vast majority of units. Specify open related categories according to the needs of different industries and meet industry testing requirements. Lifetime free access to all modules, lifetime free upgrade standard.

Given the continuous increase in new materials and imported grade materials, materials and evaluation standards that have not yet been entered into the software can be customized and entered.

Characteristics:

Software installation is more intuitive and concise

A brand new software installation, registration, and calibration boot mode, simple and clear, can be completed through default prompts.

Genuine software assurance system:

After the software installation is completed, the first step is to activate the genuine software, followed by

registering the computer hardware ID to ensure the legitimate rights and interests of the customer.

Customizable requirement standards:

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

7 major inspection categories for quick entry

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

The report template can be modified.

Can customize report templates for different enterprises.

Genuine software can be upgraded

According to the implementation time of the National Standardization Committee standards, software upgrades will be provided for free.

Widely applicable to computer systems

This software can be installed and run on Windows 7 and Windows 10.

The latest metallographic software standard:---partial excerpt

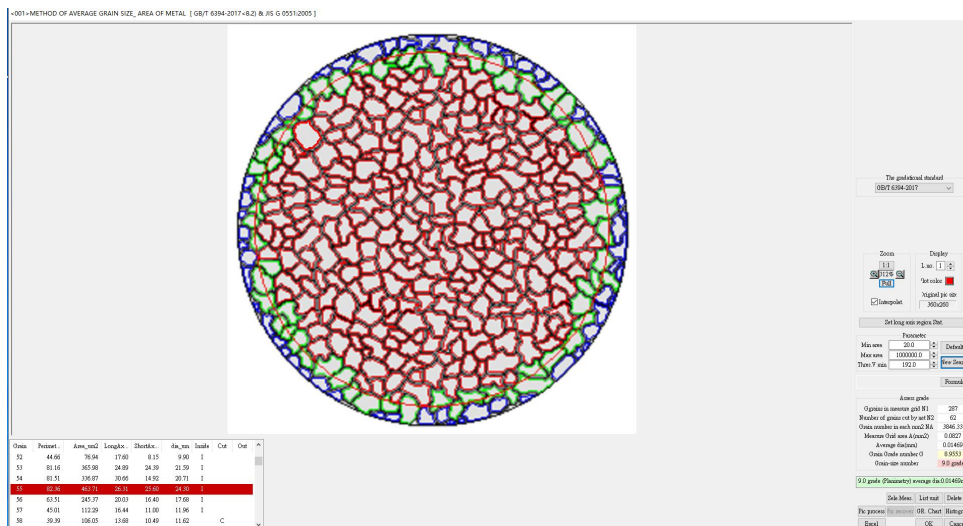
- GB/T 6394-2017 Grain size measurement rating (grain boundary extraction, grain boundary reconstruction, single phase, dual phase, grain size measurement, rating)
- GB/T 10561-2005/ISO 4967:1998 Determination of non-metallic inclusion content in steel
- GB/T 7216-2009 gray cast iron: graphite distribution 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 function:

1. Organizational analysis:



The execution standard for selecting materials correctly is to capture and take photos of the metallographic structure of the sample through the camera system of the metallographic microscope, and enter the evaluation level interface:

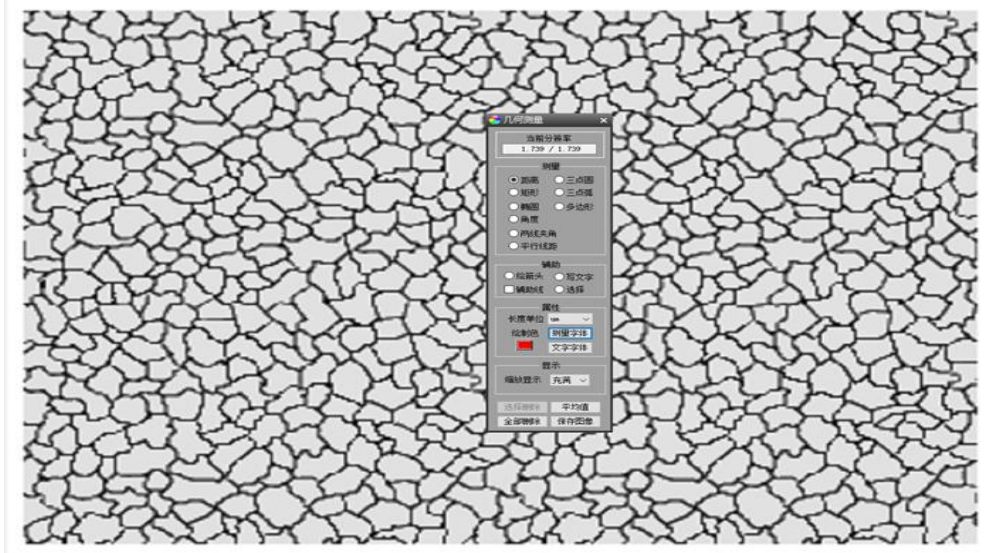
(1) Automatic rating: In the metallographic standard, there are quantitative standards (such as calculation formulas, percentage ranges, etc.), and the software automatically rates them to provide metallographic levels and generate metallographic detection reports.

(2) Comparative rating: The software can also compare the samples and graphs in the graph library to

manually determine the level.

(3) Multi module rating: can simultaneously count multiple modules

2. Image measurement:

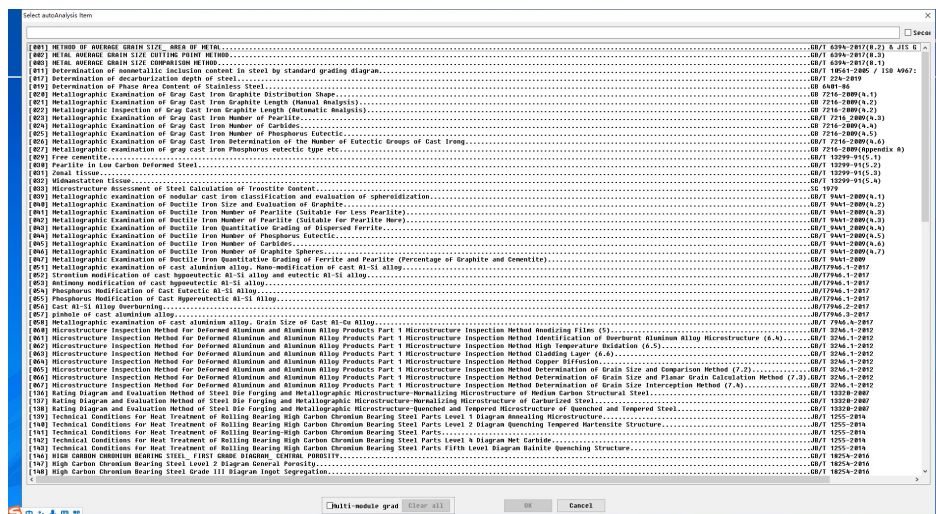


The software provides various measurement tools such as distance, rectangle, circle, polygon, line length, angle, line angle, radian, and point to center measurement to meet the basic geometric measurement functions of users and obtain relevant measurement data.

(1) Data export: The measured data can be generated into a dedicated graphic and textual measurement report, or directly imported into Excel.

(2) **Save Image:** The measured data can be automatically fused with the image, providing a clear and intuitive display of the accuracy of the measured area.

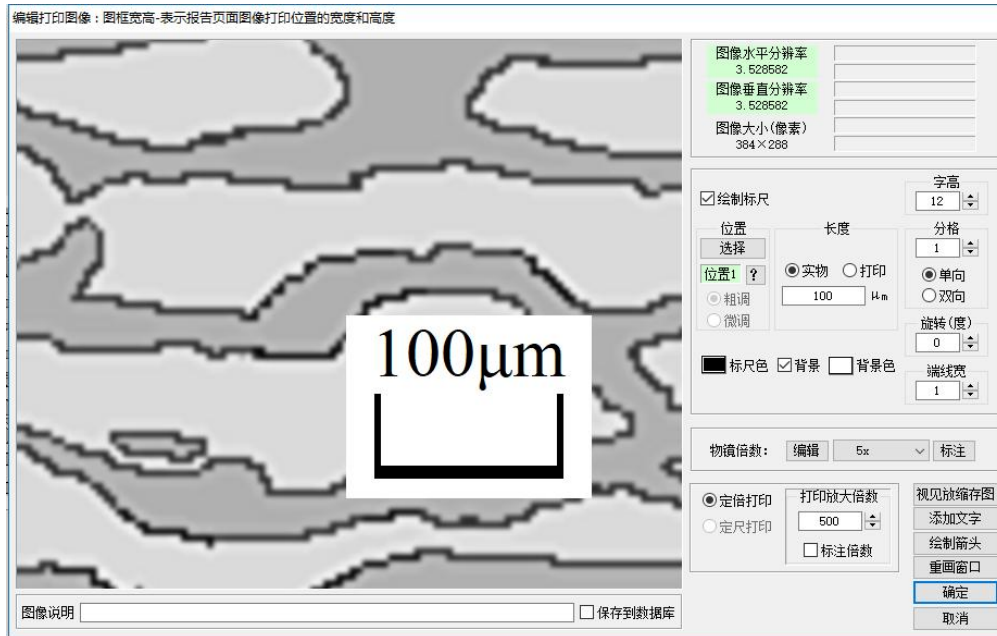
3. National Standard Library:



The software provides the function of viewing image libraries and provides users with the latest national

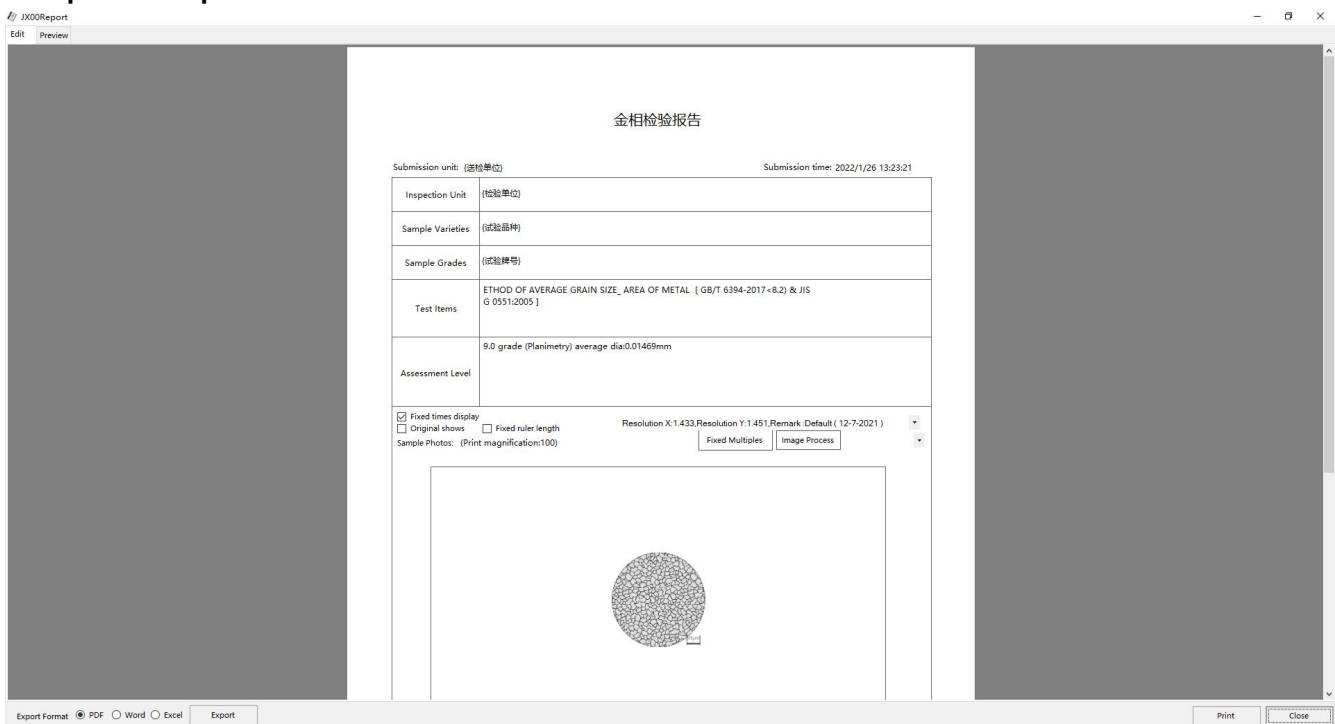
standard level image libraries.

4. Fixed scale printing:



The software provides a fixed magnification printing function, allowing users to achieve fixed magnification printing of images based on actual printing requirements.

5. Inspection report

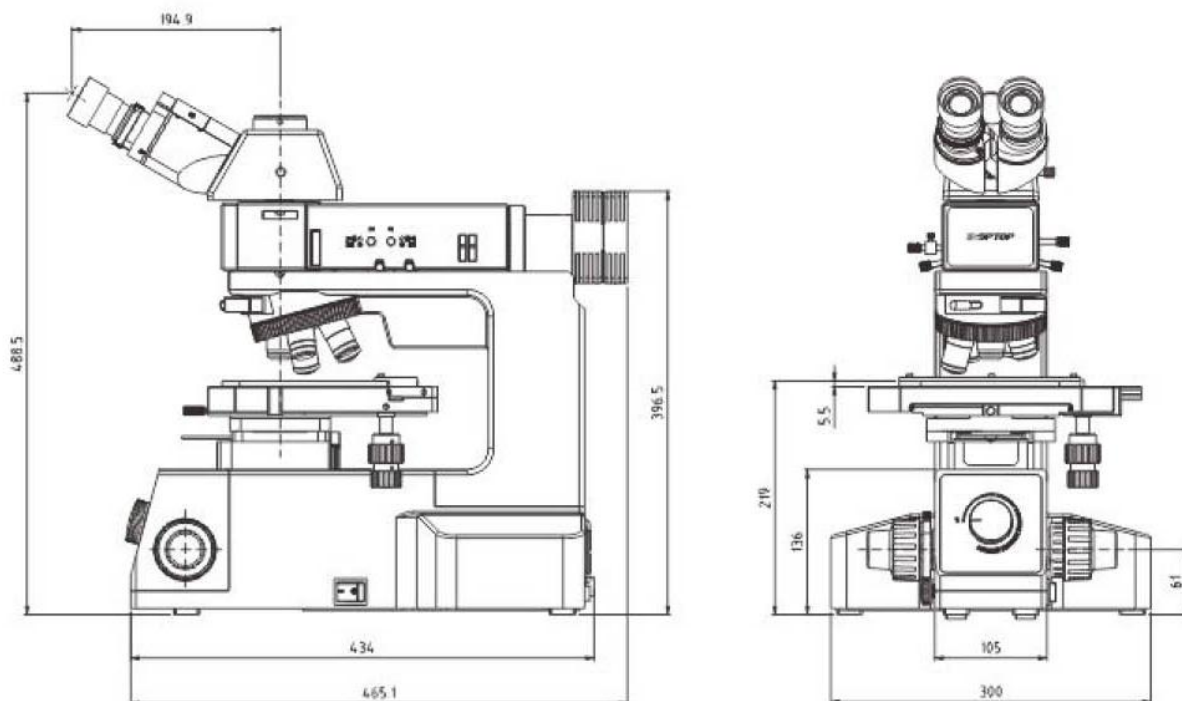


FMIA2023 metallographic analysis software system composition:

1. Software program FMIA2023 (USB flash drive);
2. Encryption lock: USB type+dynamic code verification;
3. Text materials: User Manual (on USB drive);
4. Micrometer scale: grid value 0.01mm.



Microscope drawing:



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