HST102-AW Trinocular Inverted Metallurgical Microscope

HST Group Co.,LTD.

Development Base of Advanced Testing Machine Of China

Introduction

The computerized metallographic microscope is a trinocular inverted metallographic microscope, which is used to identify and analyze the combined structure of various metals and alloy materials. It is widely used in factories or laboratories to identify the quality of castings, inspect raw materials, or inspect materials after processing. Metallographic structure analysis, as well as research on some surface phenomena such as surface spraying; metallographic analysis of steel, non-ferrous metal materials, castings, coatings, petrographic analysis of geology, and microscopic research on compounds, ceramics, etc. in the industrial field effective means.

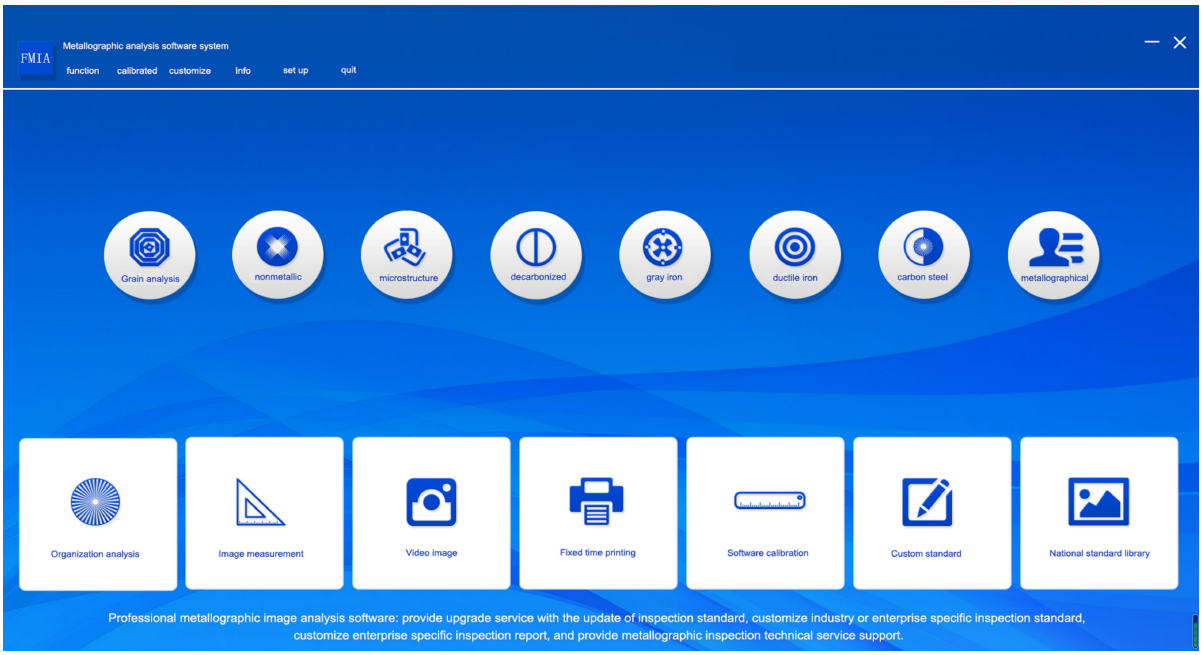
Focusing mechanism It adopts a bottom-hand position coarse and fine adjustment coaxial focusing mechanism, which can be adjusted on both left and right sides. The fine adjustment accuracy is high, and manual adjustment is simple and convenient. Users can easily obtain clear and comfortable images. The coarse adjustment stroke is 38mm, and the fine adjustment accuracy is 0.002mm.	
Mechanical mobile platform It adopts a large size platform of 180×155mm and is set in the right hand position, which is in line with the operating habits of ordinary people. During user operation, it is convenient to switch between the focusing mechanism and platform movement, providing users with a more efficient working environment.	
Lighting system The epi-illumination Kolar lighting system has a variable aperture diaphragm and a central adjustable field diaphragm, using an adaptive wide voltage 100V-240V, 5W high brightness, LED lighting or 6V30 halogen lamp.	

2. Main Specifications

Standard configuration		**Model**
Item	**Specification**	**HST102-AW**
Optical system	Finite chromatic aberration optical system	Included
Observation tube	45° tilt, trinocular observation tube, interpupillary distance adjustment range: 54-75mm, split ratio: 80:20	Included
Eyepiece	High eye point and large field of view plan eyepiece PL10X/18mm	Included
Objective lens (long distance plan achromatic objective lens)	LMPL5X/0.13WD15.5mm	Included
	LMPL10X/0.25WD8.7mm	Included
	LMPL20X/0.40WD8.8mm	Included
	LMPL50X/0.60WD5.1mm	Included
Converter	Internally positioned four-hole converter	Included
Focusing mechanism	Low hand position coarse and fine adjustment coaxial focusing mechanism, coarse motion stroke per revolution 38 mm; fine adjustment accuracy 0.002mm	Included
Stage	Three-layer mechanical mobile platform, area	Included

	180mmX155mm, controlled by the lower hand of the right hand,Stroke: 75mm×40mm	
Work surface	Metal stage plate (center hole Φ12mm)	Included
Lighting system	Epi-illuminated Kolar lighting system, with variable aperture diaphragm and center-adjustable field diaphragm, adaptive wide voltage 100V-240V, single 5W warm LED light (color temperature 2850K-3250K), continuously adjustable light intensity	Included
Metallographic analysis system	FMIA2023 genuine metallographic analysis software, Sony chip 5 million camera device, 0.5X adapter mirror interface, micrometer.	Included
Optional configuration		
Item	**Specification**	
Eyepiece	High eye point, large field of view plan eyepiece PL10X/18mm, can be equipped with a micrometer	O
	High eye point, wide field of view eyepiece WF15X/13mm, can be equipped with a micrometer	O
	High eye point and wide field of view eyepiece WF20X/10mm,	O
Objective lens	LMPL100X/0.80 WD2.00mm	O
Converter	Internally positioned five-hole converter	O
Lighting system	Epi-illumination Kolar lighting system, with variable aperture diaphragm and center-adjustable field diaphragm, adaptive wide voltage 100V-240V, 6V30W halogen lamp, continuously adjustable light intensity	O
Polarizing accessories	Polarizer insert plate, fixed analyzer insert plate, 360° rotating analyzer insert plate	O
Camera device	12-megapixel Sony chip camera device	O
Computer	HP Business Jet	O

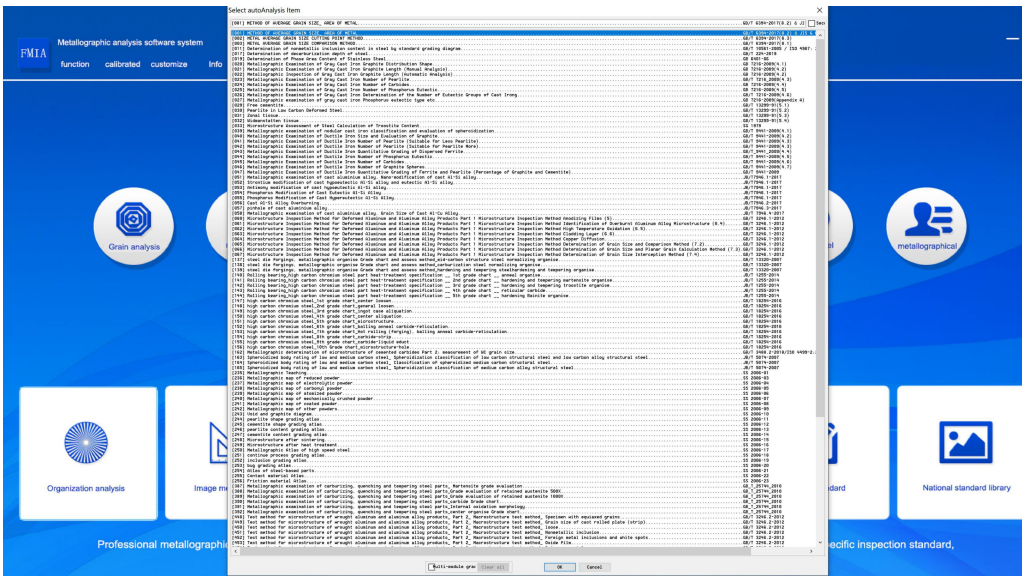
3. Metallographic image analysis software system



The metallographic image analysis software system is designed by our company to improve the product qualification rate by combining the current needs of foundry companies, auto parts companies, heat treatment companies, bearing steel industries, power system industries, railway parts industries, and related testing companies for metallographic testing. , to help improve the inspection level of various laboratories, we collected the needs and opinions of experts and teachers from various industries to develop this set of FMIA2023 version metallographic image analysis software system.

The national standard library of the software system contains about 700 commonly used sub-modules in 150 categories, basically covering commonly used metallographic standards and adapting to the metallographic analysis and inspection requirements of most units. Designate and open relevant categories according to the needs of different industries to meet industry testing requirements. All modules can be called for free for life, and standards can be upgraded for free for life.

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



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

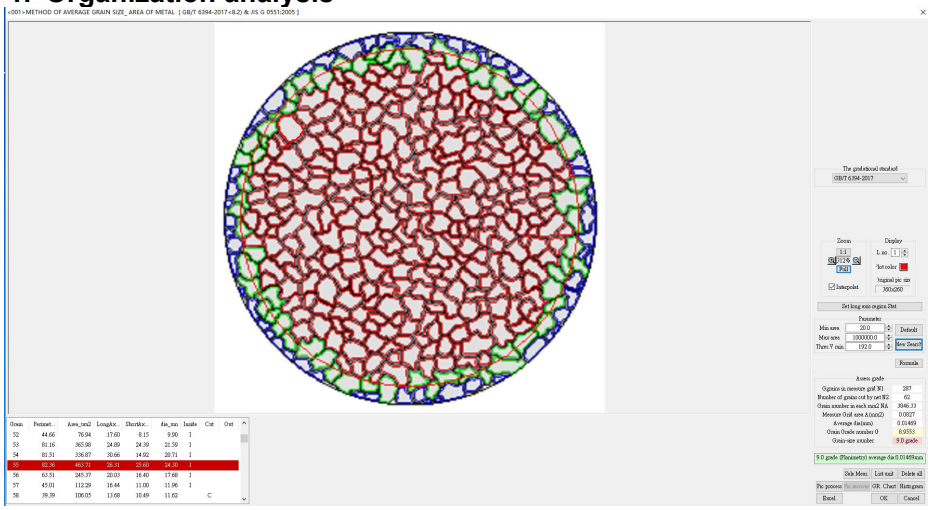
- GB/T 6394-2017 Grain size measurement rating (grain boundary extraction, grain boundary reconstruction, single phase, dual phase, grain size measurement, rating)
- GB/T 10561-2005/ISO 4967:1998 Determination of non-metallic inclusion content in steel
- GB/T 7216-2009 gray cast iron: graphite distribution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



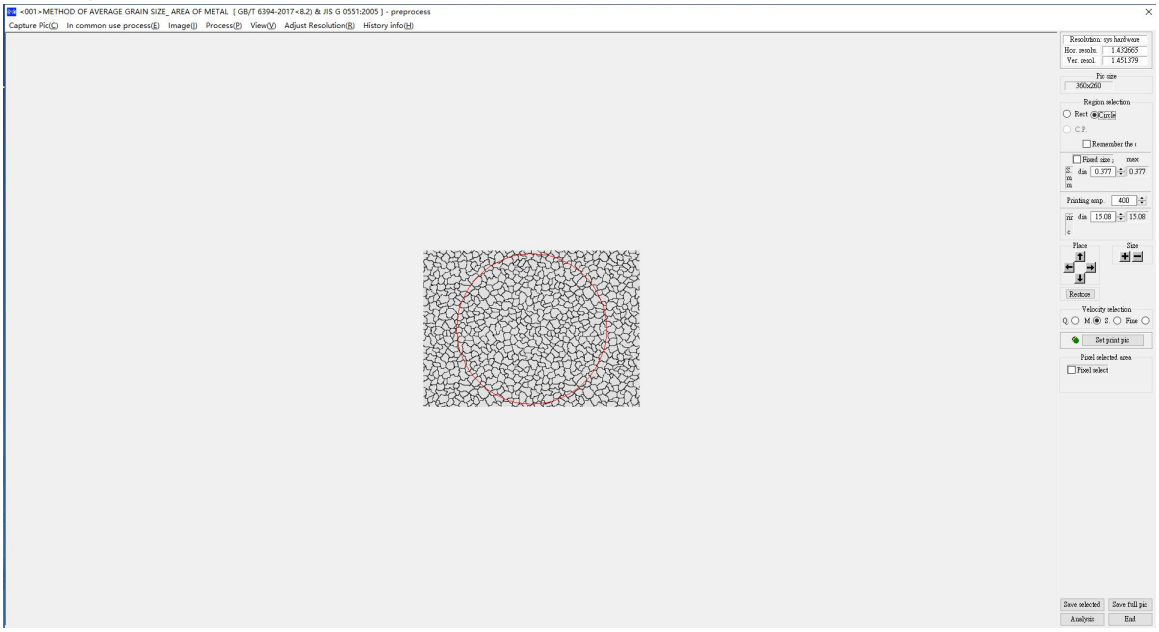
Correctly select the execution standard of the material, capture and take pictures of the metallographic structure of the sample through the camera system of the metallographic microscope, and enter the evaluation level interface:

(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

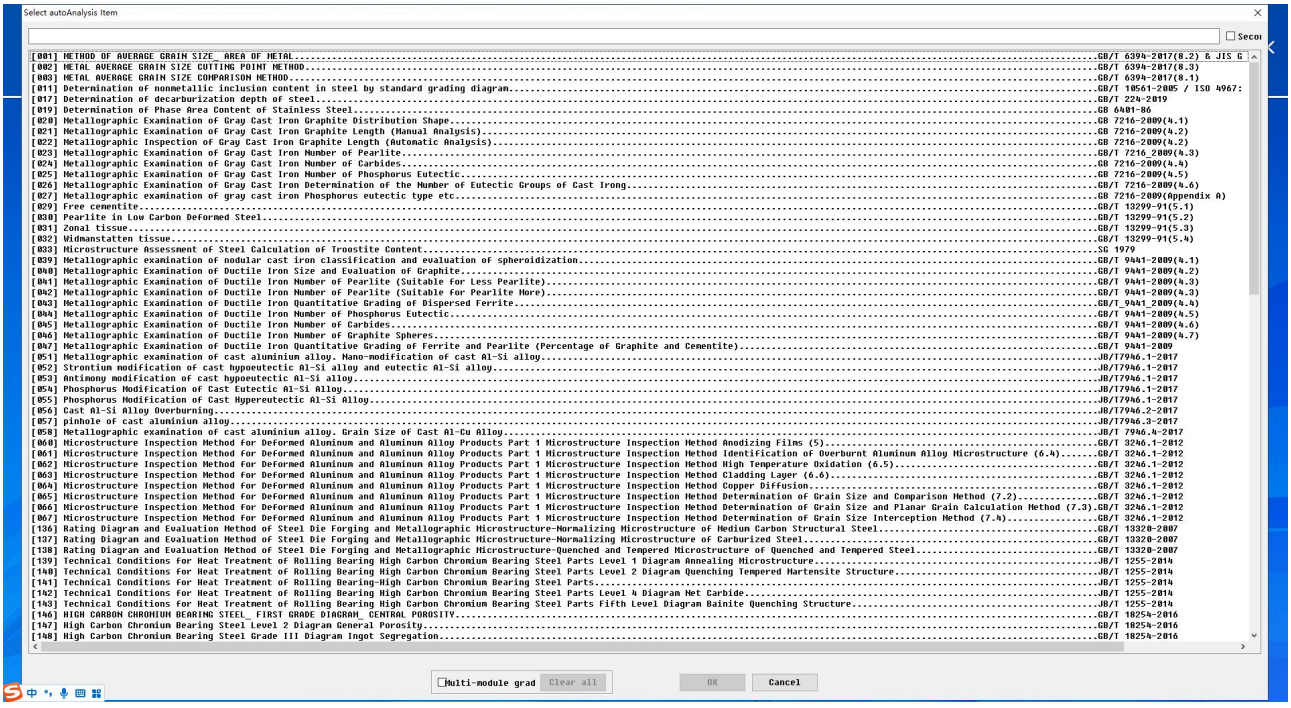


The software provides a variety of measurement tools such as distance, rectangle, circle, polygon, polyline length, angle, line angle, radian, point to circle center measurement, etc., to meet the user's basic geometric measurement functions and obtain relevant measurement data.

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

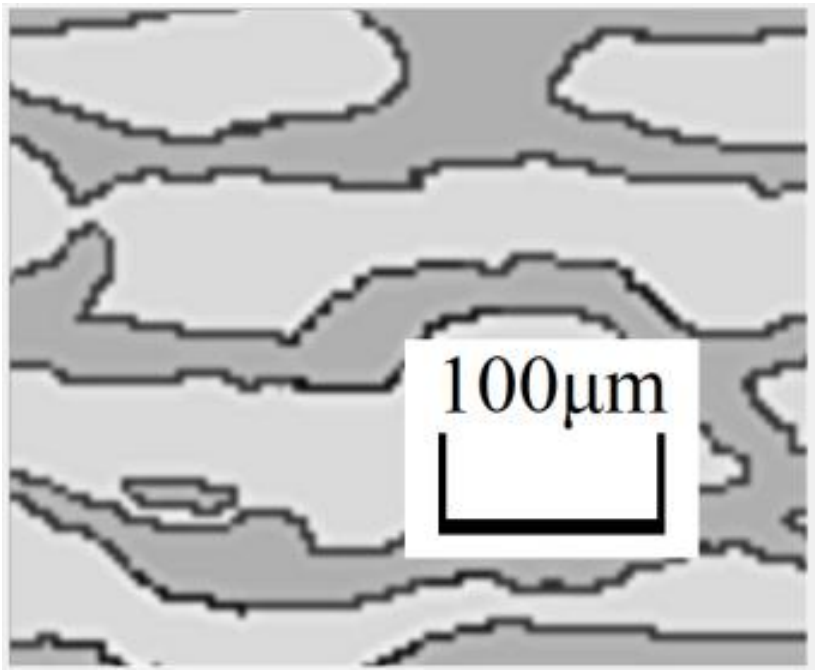
(2) Save the image: the measured data can be automatically fused with the picture, and the accuracy of the measured part can be displayed intuitively and clearly.

3. National standard library



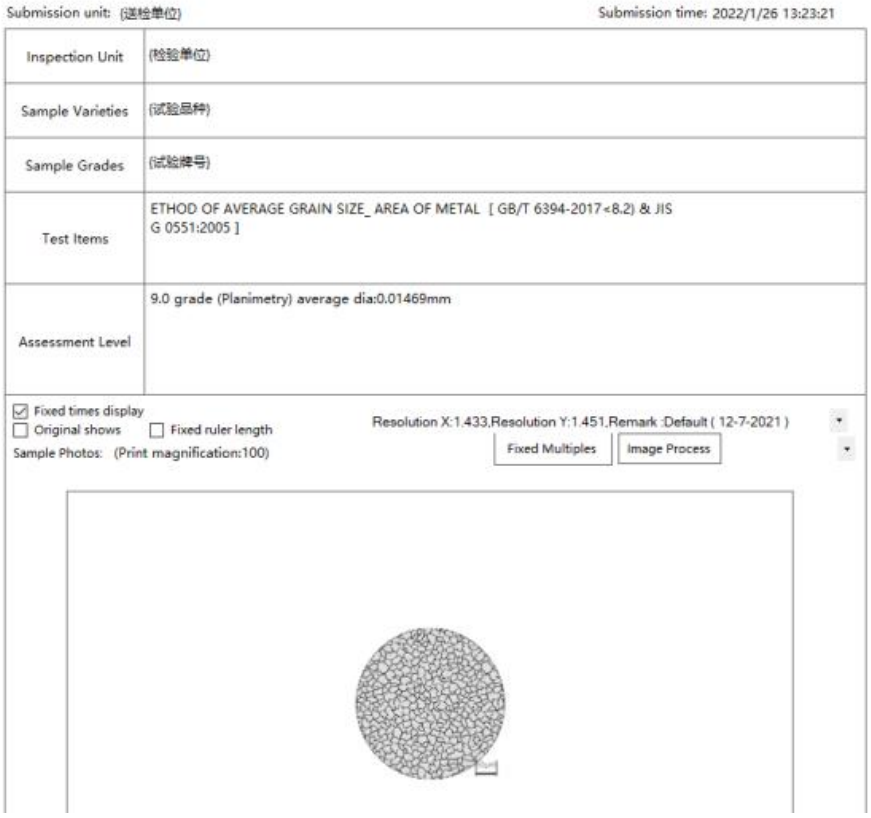
The software provides the function of viewing the gallery, providing users with the latest national standard gallery.

4. Fixed-time printing



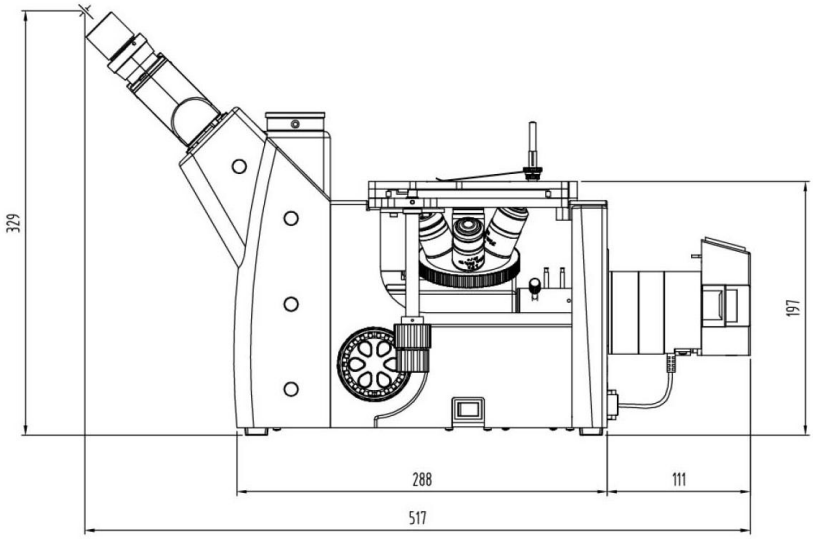
The software provides a fixed-time printing function, and users can realize fixed-time printing of pictures according to the actual printing multiple requirements.

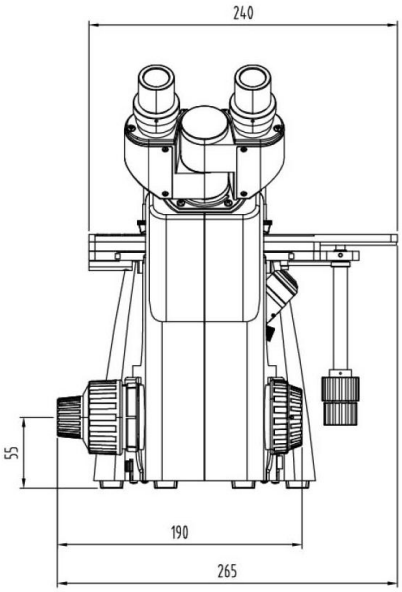
5. Inspection report



Metallographic analysis software system composition:

1. Software program FMIA2023 (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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