

## KS 301-DW Medium-sized upright metallographic






# 19 YEARS

Development Base of Advanced Testing Machine Of China

# 1. Application

This device is computerized metallographic microscope is a three lens transparent reflection upright metallographic microscope, suitable for microscopic observation of opaque or transparent objects. Adopting excellent infinite distance optical system and module functional design concept, it can provide excellent optical performance and product system upgrades, achieving independent lighting, polarized light observation, light and dark field observation, etc. The product has the characteristics of beautiful appearance, easy operation, clear images, etc. It is an ideal instrument for research in biology, metallurgy, mineralogy, precision engineering, electronics, and other fields.

<p><b>Mechanical loading platform</b> Double layer mechanical loading platform, size: 210 * 140mm; The design concept of 63 * 50mm movement range and visibility makes it more convenient and comfortable for users to operate the loading platform.</p>	
<p><b>Fallout lighting system</b> The use of halogen lamps (with adjustable brightness) not only provides clear and distinct microscopic observation images for conventional bright field observation methods, but also for polarized and dark field observation methods. Equipped with built-in field of view and aperture apertures, it can effectively control the field of view range, adjust the field of view contrast, and the center of the field of view aperture can be adjusted</p>	
<p><b>Transmission lighting system</b> Built in halogen lamp lighting device: using 12V30W halogen lamp (adjustable brightness), it can provide clear and distinct microscopic observation images. The collector is equipped with a built-in field of view aperture and an Abbe condenser lens N A. 1.25, adjustable up and down for lifting.</p>	

# 2. Main Specifications

Standard configuration		Model
Item	Specification	KS 301-DW
Optical system	Infinite color difference correction optical system	▪
Observation tube	Trinocular tube, 30° inclined.	▪

Eyepiece	Wide filed of view WF 10X/22mm	▪
Objective lens	PL L5X/0.12 BD WD9.7mm	▪
	PL L10X/0.25 BD WD9.3mm	▪
	PL L20X/0.40 BD WD7.20mm	▪
	PL L40X/0.60 BD WD3.00mm	
Converter	Fiver-hole converter	▪
Focusing mechanism	Coarse and micro coaxial focusing, micro grid value: 2 μ m. Adjustable coarse elasticity with locking and limiting devices	▪
Stage	Double-layer mechanical mobile type (size:210*140mm, moving range: 63*50mm)	▪
Fallout lighting system	12V50W halogen lamp with adjustable brightness, equipped with yellow, blue, green filters and frosted glass sheets	▪
	Built in field of view light bar, aperture light bar, filter conversion device, push-pull polarizer and polarizer	▪
Transmission lighting system	Abbe spotlight NA.1.25 can be raised and lowered	▪
	Built in field of view light bar in the spotlight, 12V30W halogen lamp, adjustable brightness	▪
metallographic analysis system	FMIA2023 genuine metallographic analysis software, 12 megapixel Sony chip camera device, 0.65X adapter mirror interface, micrometer.	▪
<b>Optional configuration</b>		
<b>Item</b>	<b>Specification</b>	
Eyepiece	Wide field of view WF10X/22mm, differentiated eyepiece	O
Optional objective lens (Infinite flat field light and dark field objective)	PL L50X/0.70 BD WD2.50mm	O
	PL L60X/0.75 BD WD1.90mm	O
	PL L80X/0.80 BD WD0.80mm	
	PL L100X/0.85 BD WD0.40mm	
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

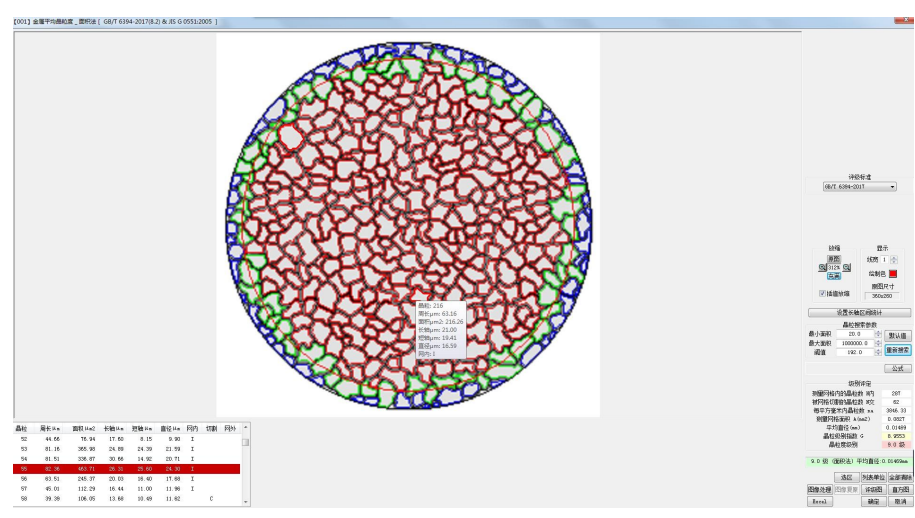
plants\_Characteristics of ferrite plus pearlite spheroidization

- 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:**

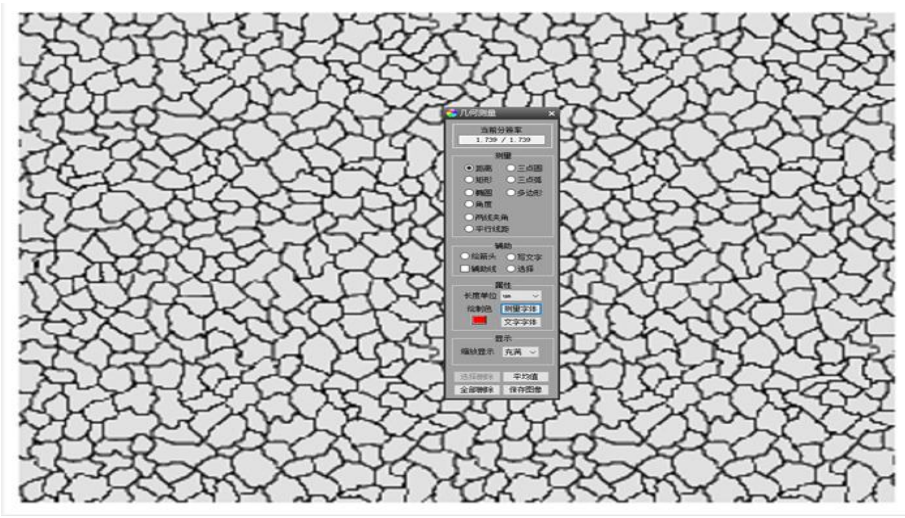
**1. Organizational analysis:**



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

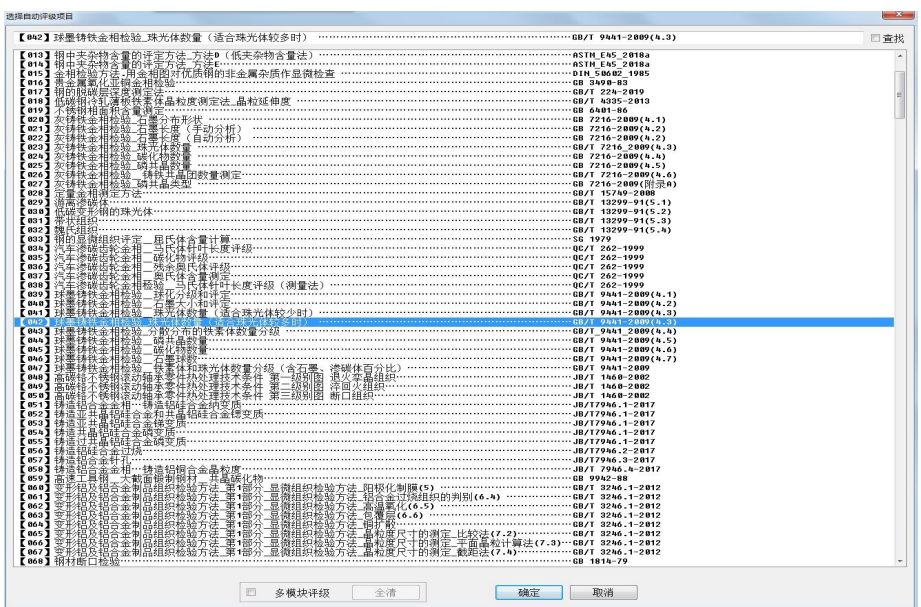
## 2. Image measurement:



The software provides various image 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.

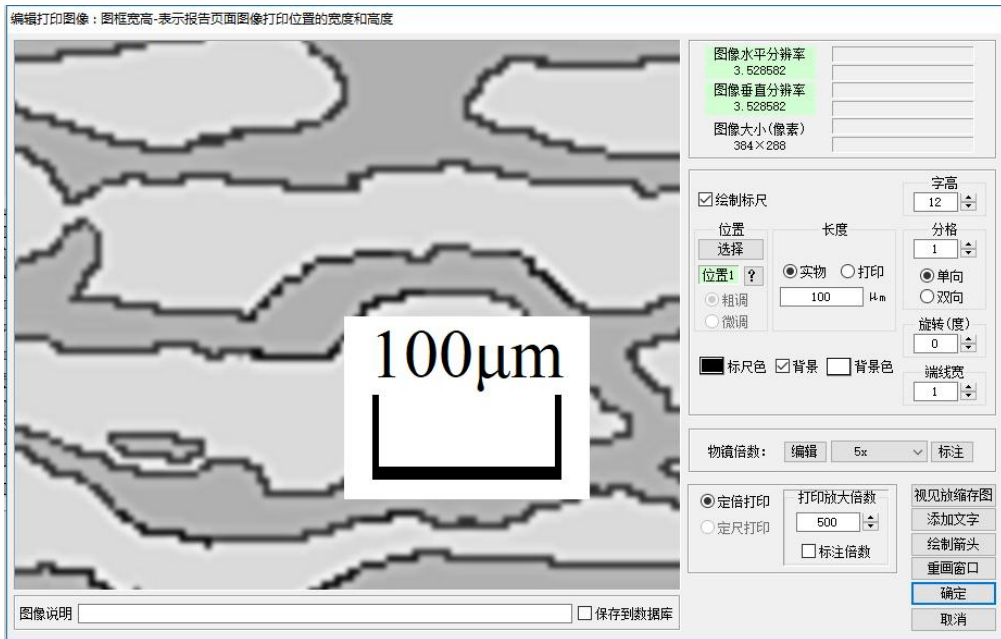
- (1) Data export: The measured data can be generated into a dedicated graphic and textual measurement report, or directly imported into Excel.
- (2) Save Image: The measured data can be automatically fused with the image, providing a clear and intuitive display of the accuracy of the measured area.

## 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.

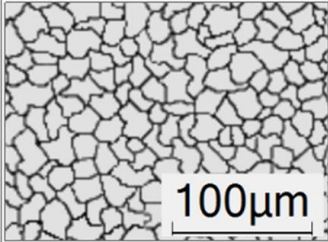
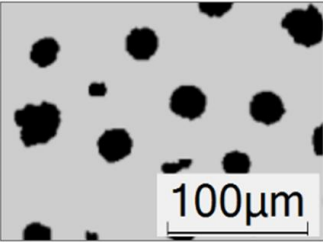
#### 5. Inspection report

(报告名称)

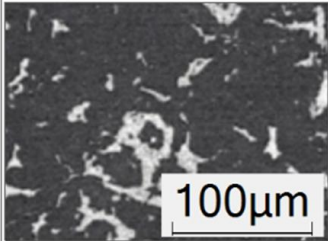
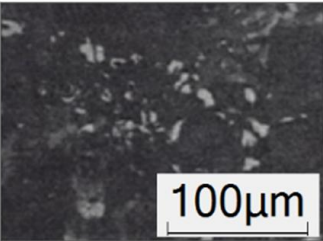
送检单位: (送检单位)      送检日期: 2016/03/03

检验单位: (检验单位)	(检验单位)
试样种类: (试样种类)	(试样种类)
试样编号: (试样编号)	(试样编号)
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试样编号1图片: (打印放大倍数: 400)      试样编号2图片: (打印放大倍数: 400)

试样编号3图片: (打印放大倍数: 400)      试样编号4图片: (打印放大倍数: 400)

备注: (备注)

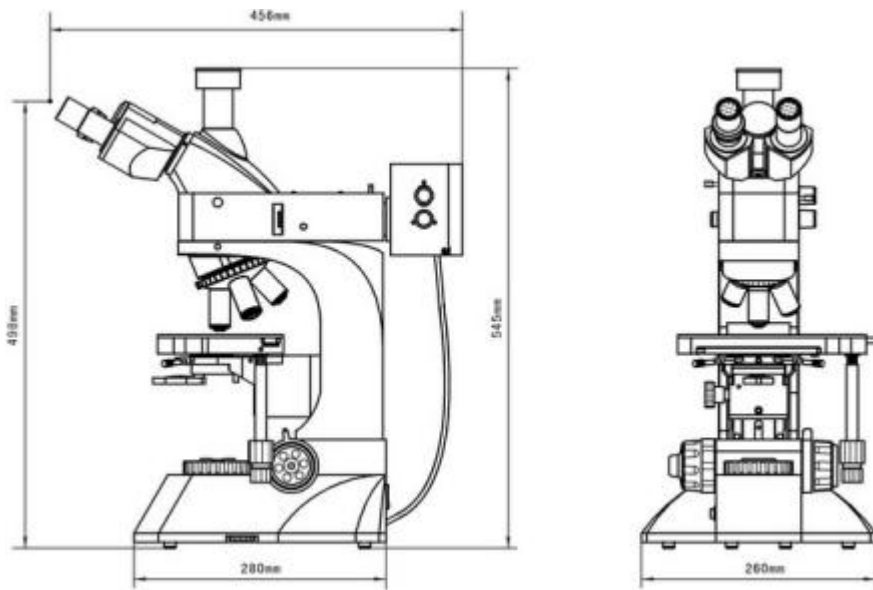
检验人: (检验人)      校对: (校对)      检验时间: 2016/03/03

### 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:



## 19 YEARS

Professional focused on testing equipment

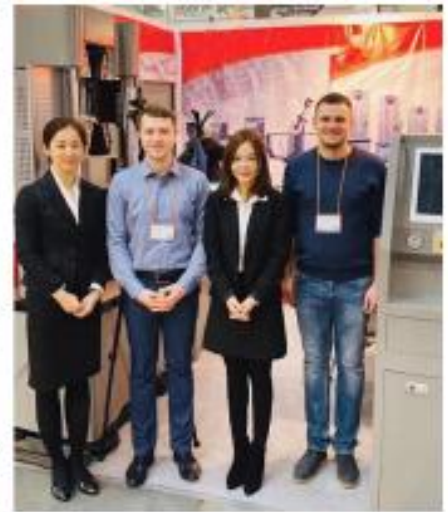
KASON is established in 2003,owns more than 8000 square meters factory.has a professional sales teams, modern enter prise technology center,scientific and technological research and development team.

Machines passed the European CE authentication,American FDA certificate and and ISO 9001.

Products sold to USA, Canada, Australia, Europe, Africa etc,more than 130 countries and supply OEM service for many customers

## PROFESSIONAL TEAM

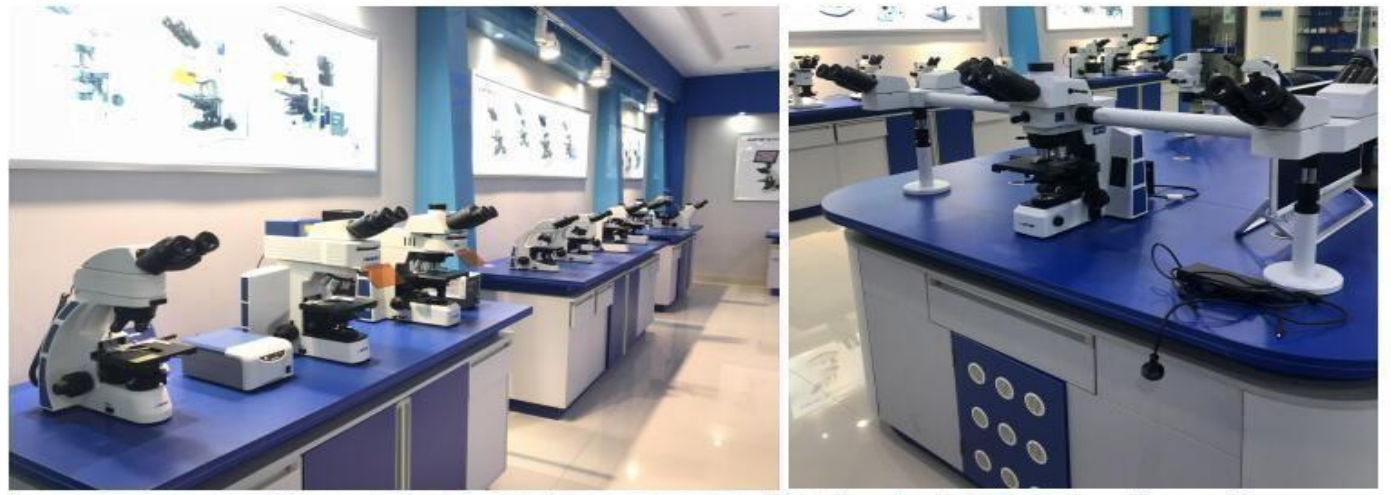
KASON has a professional sales teams, modern enter prise technology center,scientific and technological research and development team.



## OUR CERTIFICATE (CE / ISO / SGS)



# Our Products



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