MODERN

Zoomstar- III

Trinocular stereozoom microscope

Technical Specifications

Trinocular Observation Head
- Observation head inclined at 45° rotatable at 360°.
- Vertical phototube for micro photography.
- Diopter adjustment ring on ocular tube.
- Interpupilary distance from 52mm to 76mm.

Eyepiece
Wide field 10X (paired) F.O.V. 22mm.

Zooming Range & Ratio
Zoom 0.8X to 5.0X with magnification ratio of 1:6.3.

Magnification Range
8X-50X.

Working Distance
115 mm.

Mechanical Body
- Lateral zoom control movement.
- Track Stand with fan type base.
- Reflected & transmitted LED illuminator.
- Clip for holding specimen.
- Base size is 285mmX258mm.

Illumination System
- Incident and transmitted light system with LED lamp.
- Both lights are regulated with power supply and has separate brightness controls.

Standard Accessories
Operating Manual, dust cover and styrofoam molded pack.

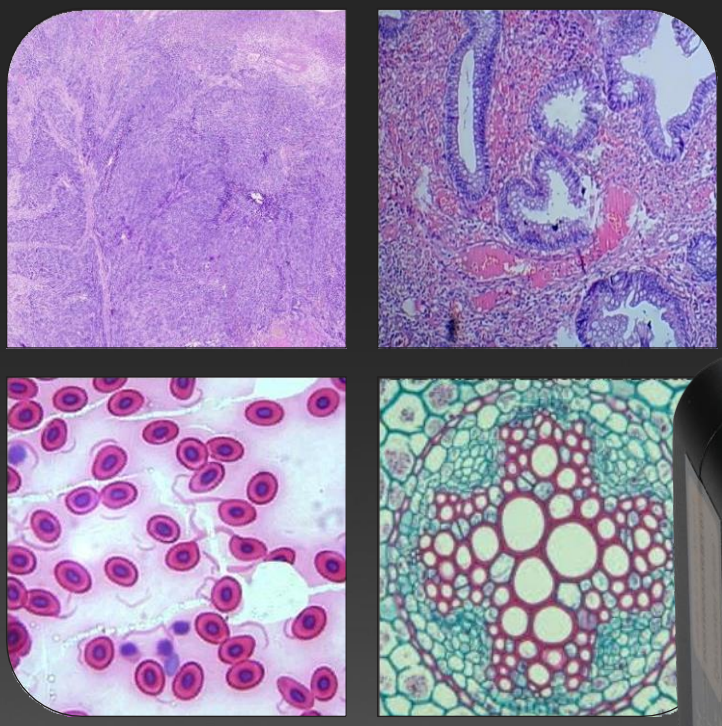
Optinal Accessories

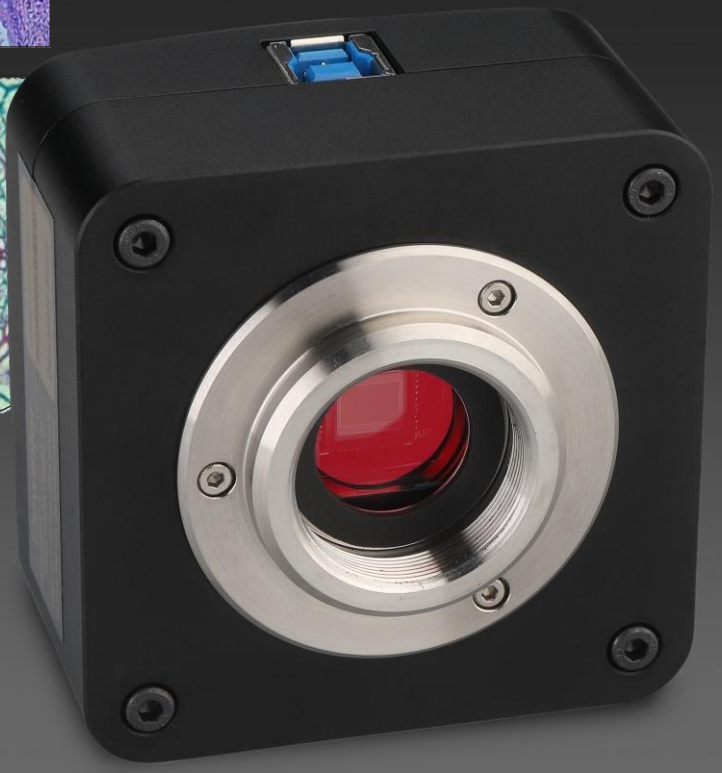
Digital camera attachment | Polarizer analyzer attachment | Dark field attachment | Phase contrast attachment

(LEADING MANUFACTURER AND EXPORTER OF METALLOGRAPHIC EQUIPMENTS)
Head Office & Factory : T-73 Phase-2, Sidco Women's Industrial Park, Vellanur Post, Thirumullaivoyal, Chennai - 600 062.
Branch Off : No.64, Modern Villa, Kongu Nagar, Kaniyur, Coimbatore - 641 659.
044 - 2657 2473 | 96771 00992 | 96770 58570 mmss_metal@yahoo.co.in
Branches : Coimbatore | Kolhapur | Delhi | Banglaore
www.modernmetallurgical.com

MODERN

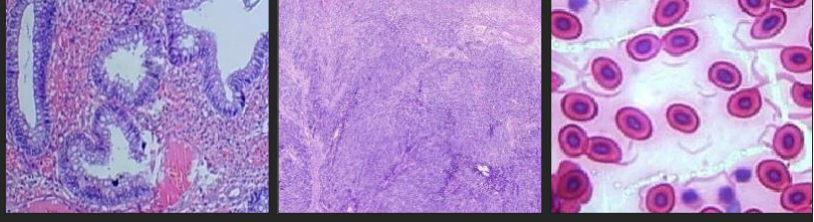
Digital USB CMOS Microscope Camera





MODEL: DIGI 510+

MODERN



DIGITAL CAMERA

Feature:

- 5.0 Megapixels with progressive scanning CMOS image sensor.
- No compression, no interpolation.
- Support still image capture (JPG, BMP)
- **USB 3.0** interface, up to 480MPS, external power no need.
- Interfaced to a computer via **USB 3.0** technology for rapid image download.
- Plug-to-use, suitable for shooting of any standard biological, stereo and metallurgical microscopes.
- Ease of operation; only take 5 minutes to master the friendly software.
- Standard C-Mount makes connection to any microscope easy. Macro lens setups are also supported
- Fully integrated package with digital camera and imaging software for managing your imaging work ·ow.
- Data can be shared, stored and edit, real-time preview function offers you the greatest experience with the microscope.
- Video taping is available, simple to store and transfer when compression mode is selected;

Speci▫cation:

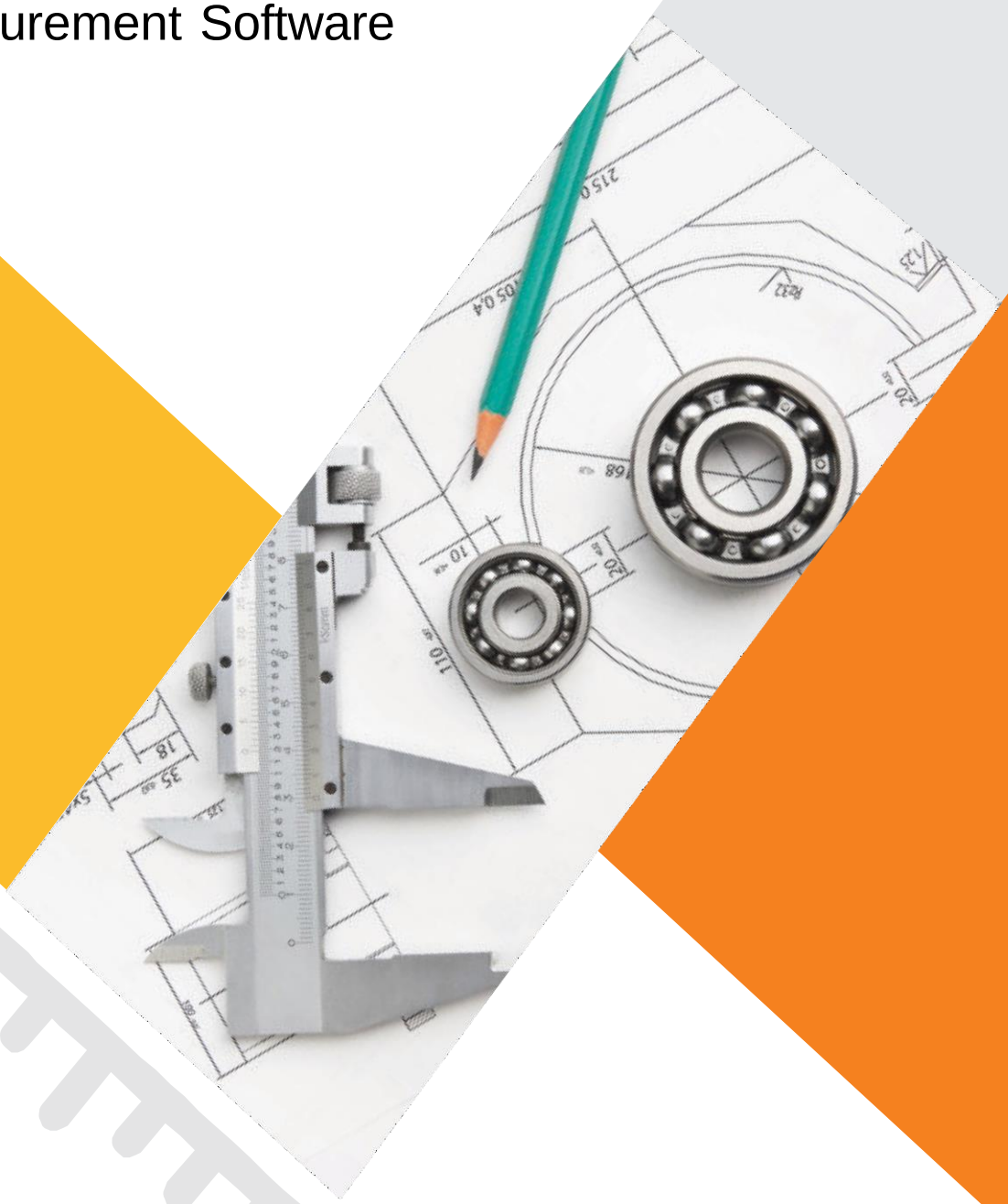
Sensor:	1/ 2.5" CMOS, MICRON (MT9P031)
Resolution:	2592×1944(8bit)
Pixels Size:	2.2μm×2.2μm
Frame Rate:	8fps@2592×1944, 30fps@640 ×480
Shutter:	Electronic
S/N Ratio:	43 dB
Scanning Mode:	Progressive scanning
Sensitivity:	1.0 V/ lux-sec (550nm)
Data Interface:	USB 3.0 (480 Mbit / sec)
Power Supply:	DC 5V ± 5%
Electricity:	≈200 mA
White Balance0:	Manual/Auto one-touch
Exposure control:	10μs–32ms,Auto exposure
Software:	Display/Film/Video
Operating Temp:	0°C ~ 60°C

MODEL: DIGI 510+

MODERN

Caliper Plus

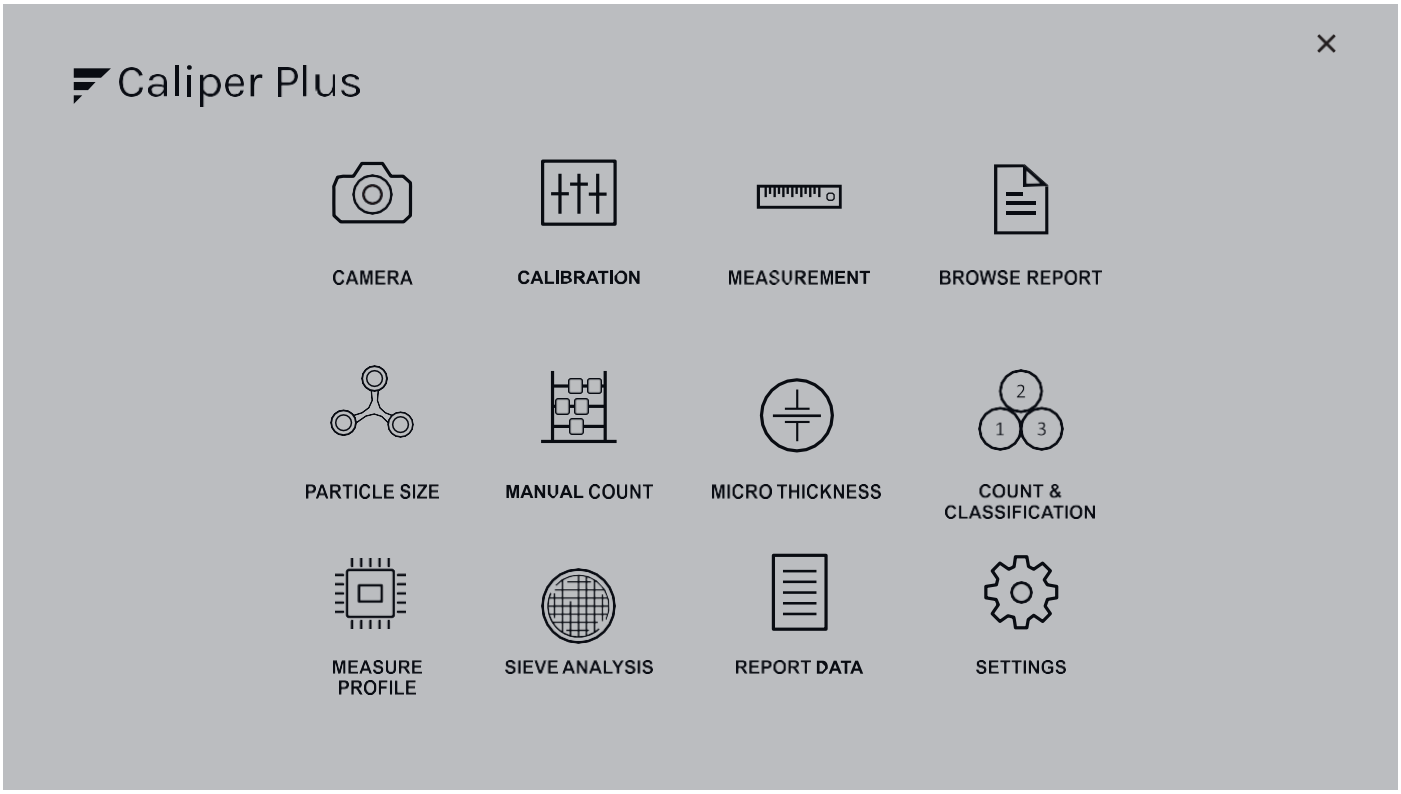
Micro Measurement Software



Introduction of Caliper Plus

Caliper Plus is a new generation image analysis software, meant for metallurgist and material scientist for analyzing Caliper dimensions. It is a single Window based system

The Caliper Plus software can handle both grey monochrome (8bit) and color (24bit) image. Multiple images of any size can be opened and displayed on the screen for analysis or comparison. The software supports the most common formats like BMP, JPEG, TIFF, PNG, GIF, and PSD. Live images also can be observed and captured on the same platform. Since the system is in a Window environment, graphs and charts displayed on the monitor can be quickly transferred into other Windows based programs such as, MS Word, MS Excel or any other commercial Windows based software for the purpose producing reports and presentations.



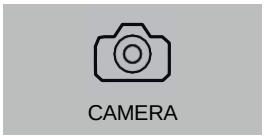
Software Interface

Modules of Caliper Plus

Some of the major modules in Caliper Plus are as follows:

CAMERA

One can select different display/capture sizes along with other setting like white balance, brightness, contrast, Hue, Saturation can be changed on live displayed image. Once all setting are done, image can be captured in appropriate folder for appropriate analysis.

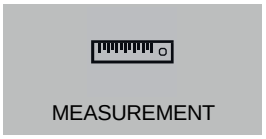


CALIBRATION

Calibration should be performed on all the objectives of the microscope, where Digital Camera is installed. Calibration should be performed only when all hardwares are finally fixed. In case of readjustments or replacement of any part, calibration should be done again.

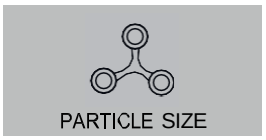
MEASUREMENT

With the Measurement module one can obtain measurement on manually drawn lines on traces, shapes or by outlining an object Which can be accumulated and logged on to the results worksheet from where they can be stored to a file, printed or transferred to spread sheet for further analysis or statistics.



PARTICLE SIZE

Manual, Auto bright and Auto dark methods to identity intensity range defined object to be measured. Various calculation & measurements available for selected Particle are; Dimensions, Area, Perimeter, Ferrite Length, Min/Max Radius, Thread Length, Thread Width, Fiber Length, Fiber Width.



MANUAL COUNT

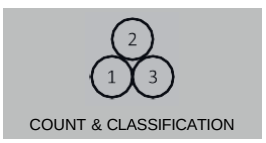
Pores, due to their contrast with the rest of the image, are relatively easy to detect automatically the module allows a user to recognize and measure the porosity in the material according to ASTM B276 Standard Thresholding readily accomplished using gray scale techniques. The dark phase of porosity is detected in red bitplanes.

MICRO THICKNESS

Plating or coating thickness is determined by cross-sectional microscopy method. The specimen is cross- sectioned, mounted, polished and microscopically evaluated for measuring the plating or coating thickness, sometimes, etching of the core base metal may be necessary to accurately measure the coating or plating thickness.

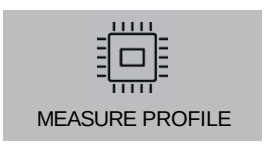
COUNT & CLASSIFICATION

Identification of objects in an image, count them, obtain several features measurements. Objects identification by user or automatically. User defined classification on basis of size or intensity.



COMPONENT PROFILE

This module is related to inspection of appearance and profile measurement of DIODE for automobile, robot & Computer industries. The Software is one button automatic profile measurements based on edge detection using image processing algorithms. It plays an important role in making pass/fail Judgments (with min/max acceptance range decided by user anytime) whether DIODE is manufactured according to specifications. It can be further customized as per customer requirements for extra charges as per mutually agreed terms.



SIEVE/MESH ANALYSIS

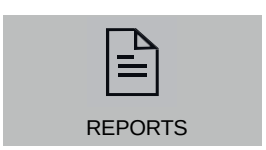
Sieve has rectangular or round mesh openings. This module has automatic measurements based on edge detection in image processing. The sieve measurement parameters are; Aperture size and wire diameter & pitch. Measurements are done to NIST traceable standards. Test sieve can be supplied according to ASTME-11-20 or ISO 3310 Specifications. Reporting is presented graphically in a Histogram. It also included statistical summary information. Automation reduces approximately 92% of the time spent on the Calibration process, when compared to traditional methods, with better accuracy.

REPORT DATA

All reports are saved in the folder and can be retrieve anytime in future.

1. Measurement | 2. Grain Size | 3. Porosity | 4. Decarburization | 5. Segmentation | 6. SG Iron |

7. Gray Iron

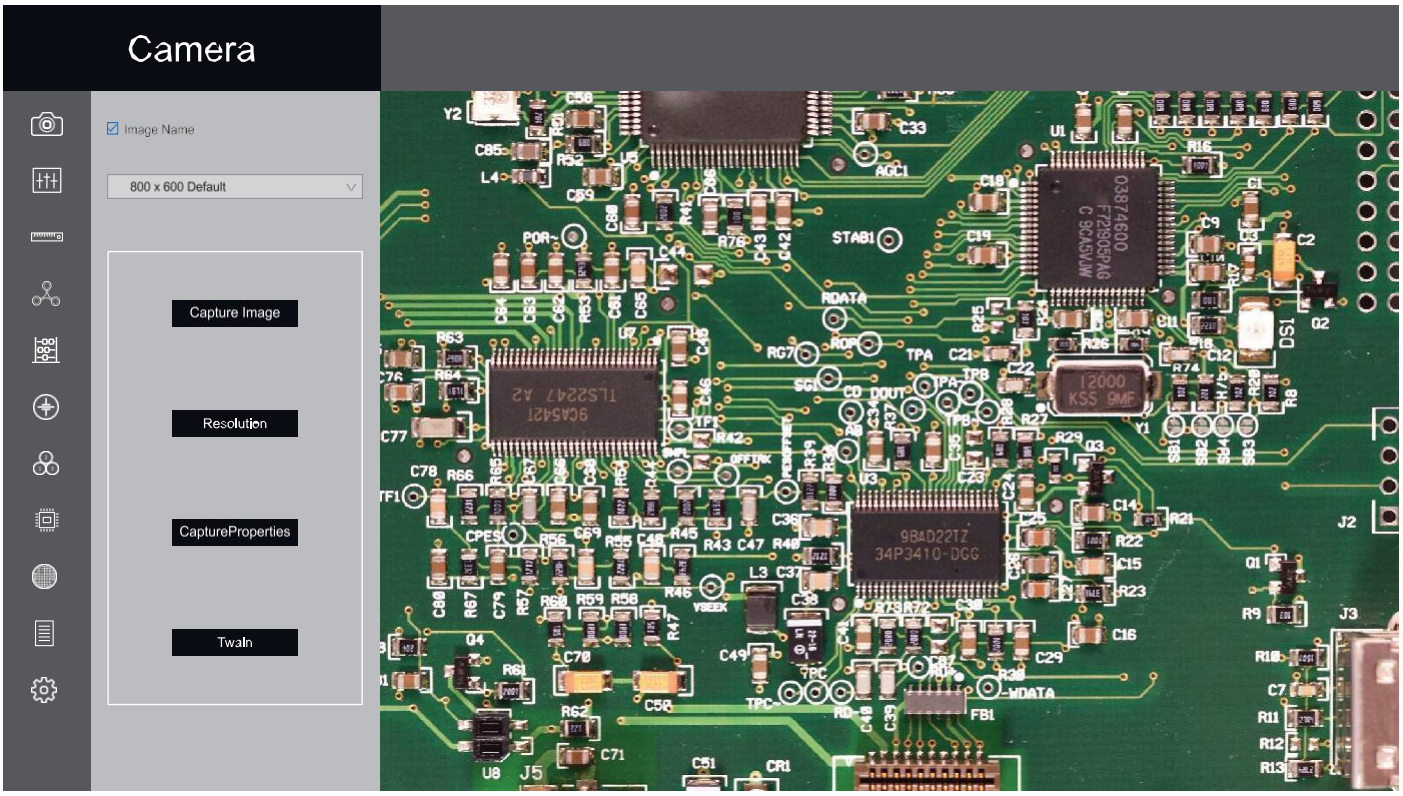


SETTINGS

The Module SETTING is designed to set various parameters for first time when software is installed. The setting options are available to choose ISO/ASTM standard calibration, setting in report format, setting of various parameter on printed image in report. Once all settings are done, you need one button click for all Analysis. All settings are stored till you change them in future. Do not change them in routine, it is not necessary.

Camera

One can select different display/capture sizes along with other setting like white balance, brightness, contrast, Hue, Saturation can be changed on live displayed image. Once all setting are done, image can be captured in appropriate folder for appropriate analysis.



Software Interface

Calibration

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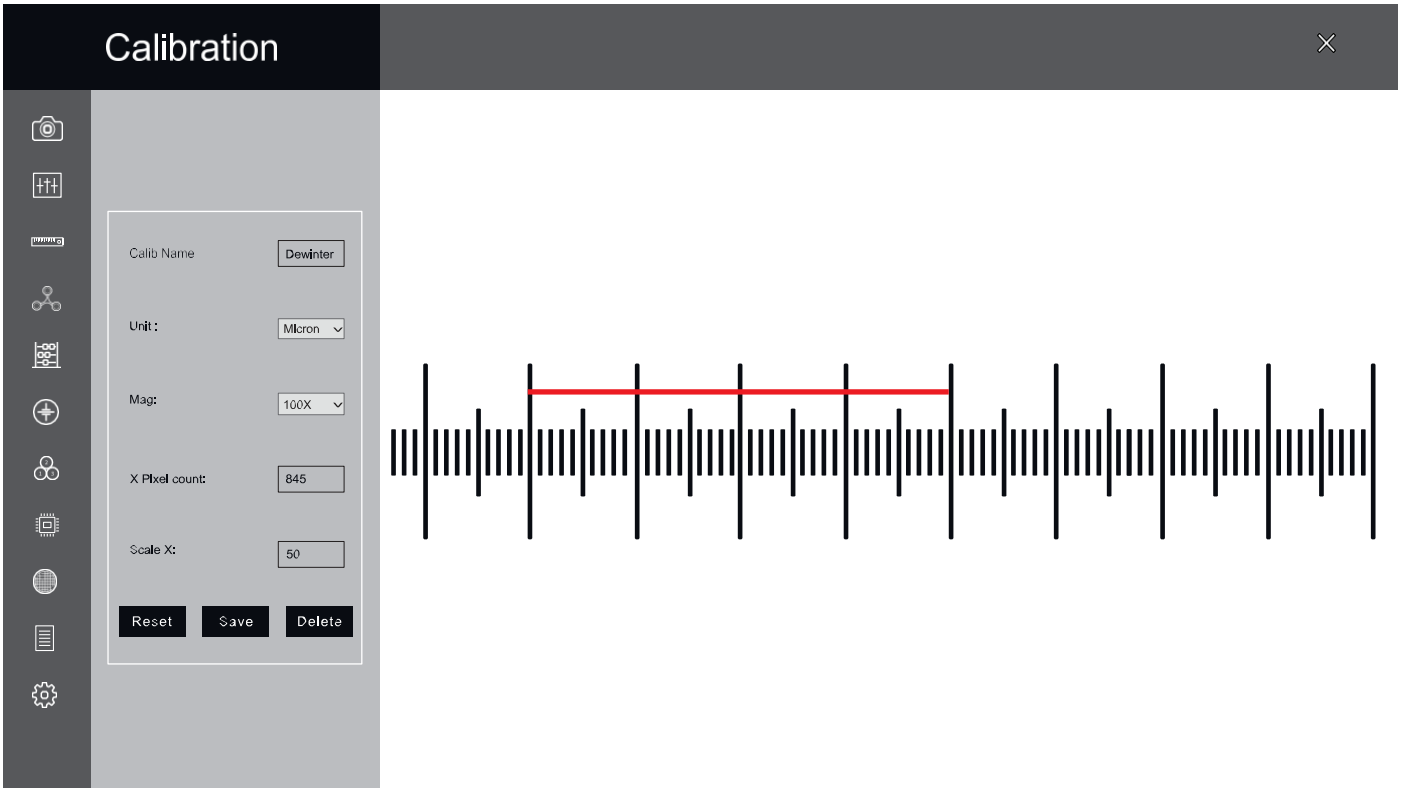
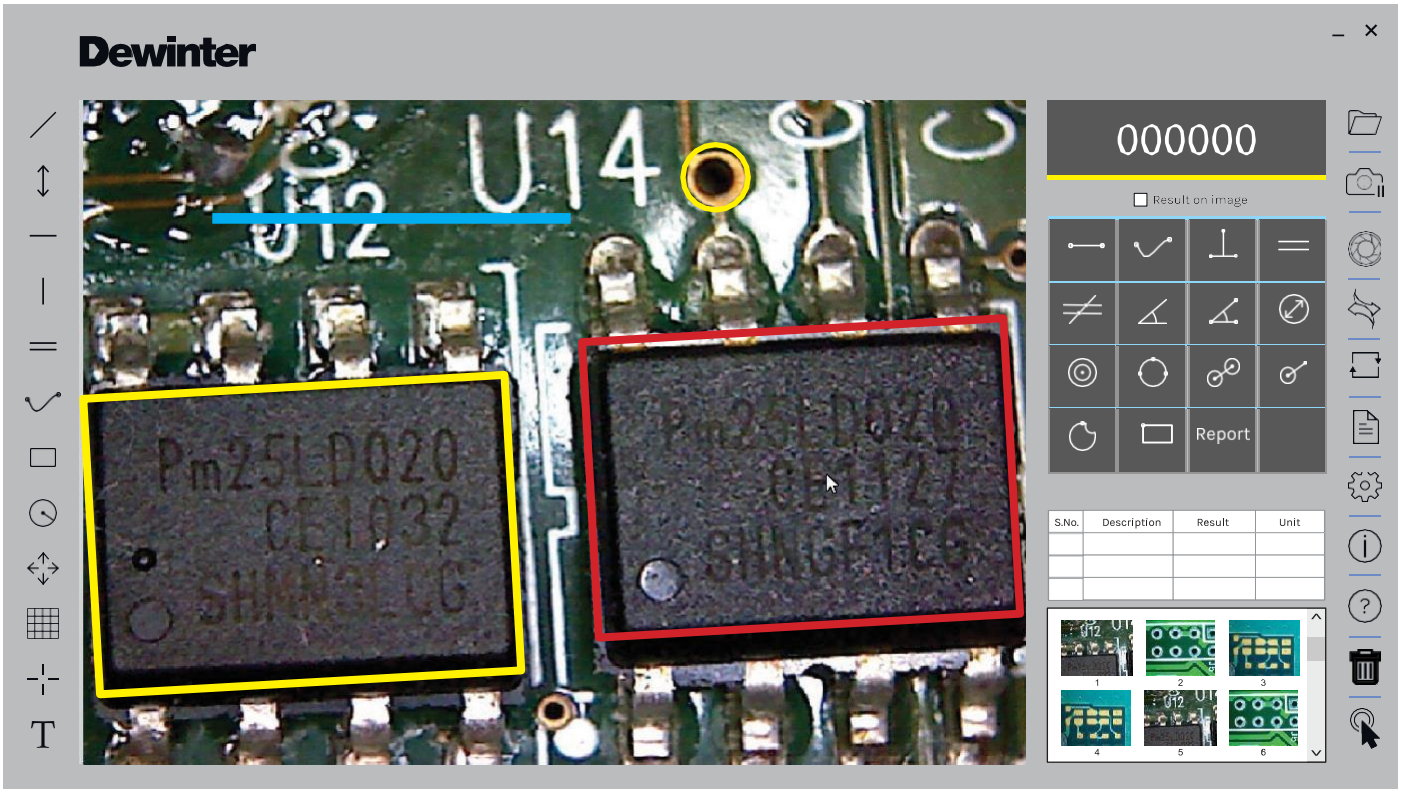


Software Interface

Annotation

Annotation features allows quick and easy Documentation of your image tools. The available tools are: line between two points, horizontal line, vertical line, freehand line, two parallel lines, perpendicular lines, Square, Circle, Text, Arrow, Grid, Cross lines from center, scale bar, highlighter. The text color & Thickness of line can be designated.

Straight Line		Rectangle	
Arrow Line		Circle	
Horizontal Line		Diectional Arrow	
Vertical Line		Gird	
Parallel Line		Cross	
Free hand		Text	

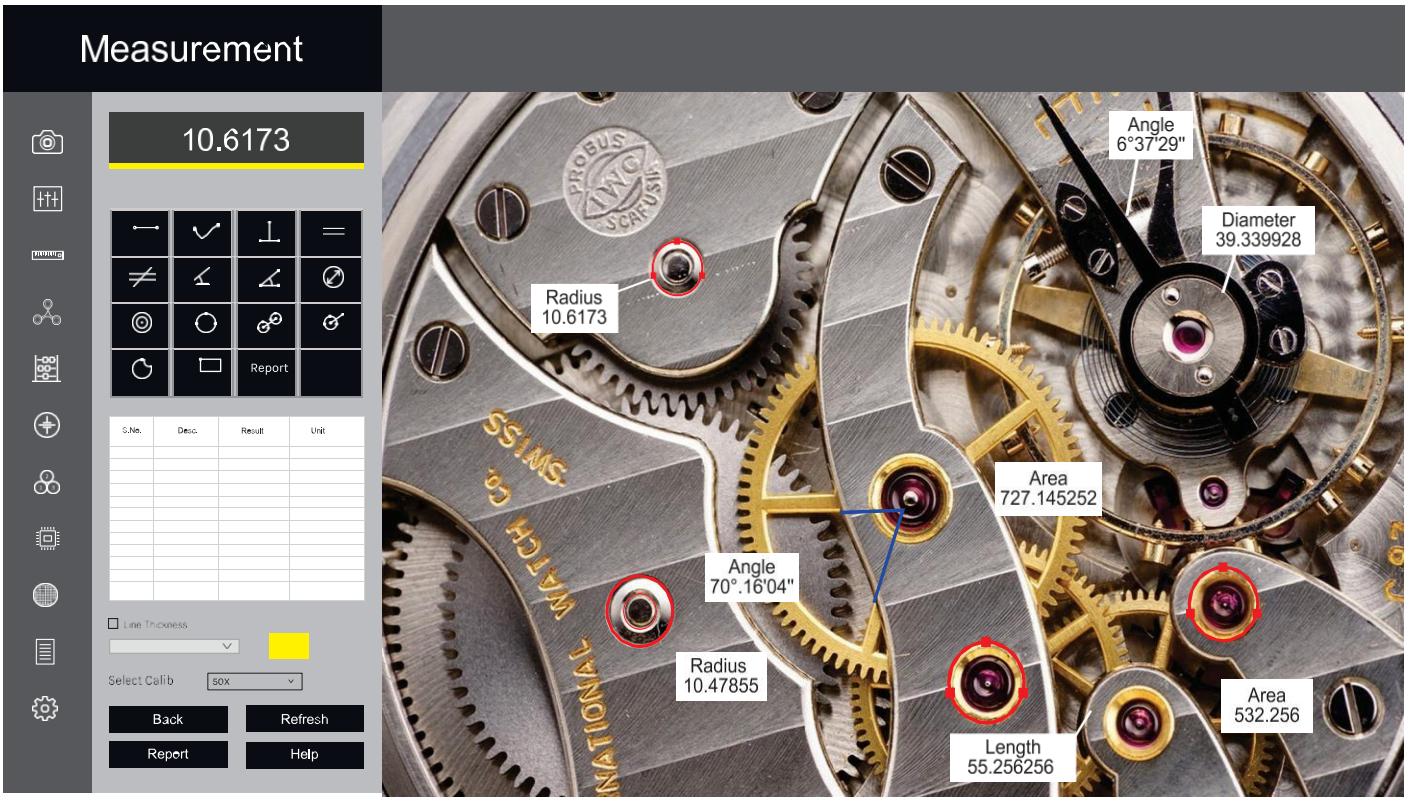


Software Interface

Measurement

With the Measurement module one can obtain measurement on manually drawn lines on traces, shapes or by outlining an object which cannot be accumulated and logged on to the results worksheet from where they can be stored to a file, printed or transferred to spread sheet for further analysis or statistics.

Line	Freehand	Perpendicular line	Parallel lines
Intersecting point	Line angle	3 Point angle	Circle diameter
Annulus circle	3 Point circle	2 Circle distance	Line from center
Freehand area	Rectangle	Report	



Software Interface

Particle Size

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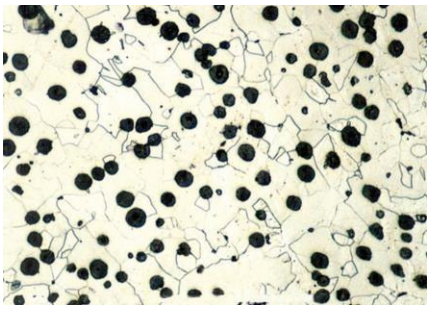
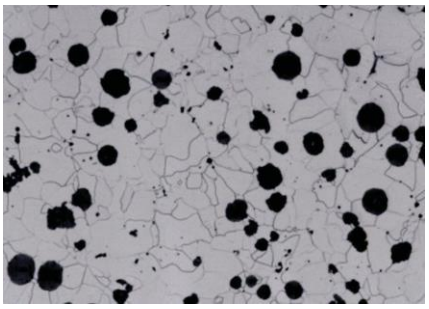
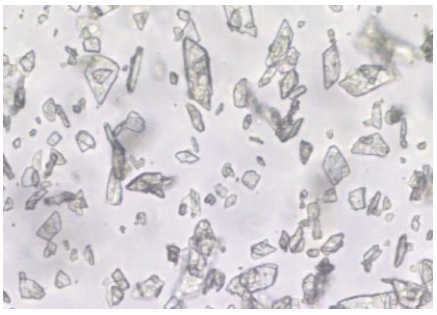
Software Interface



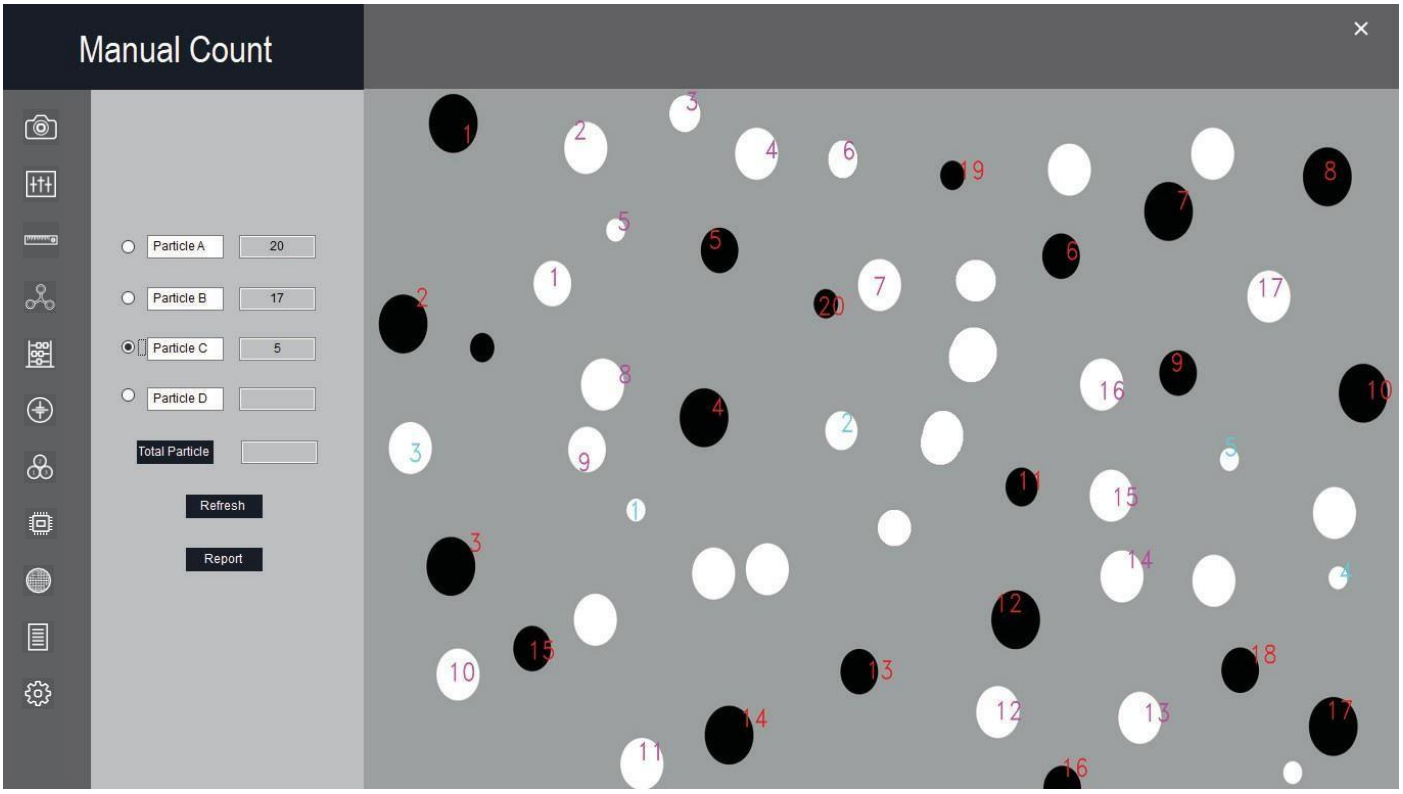




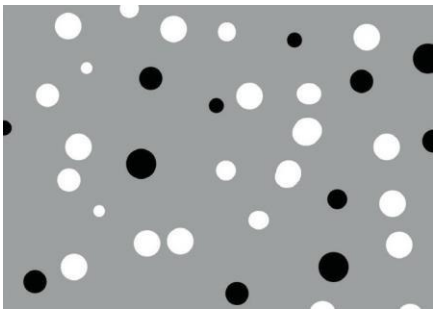
Sample Image

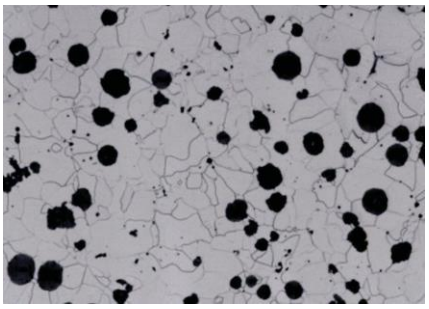
Manual Count

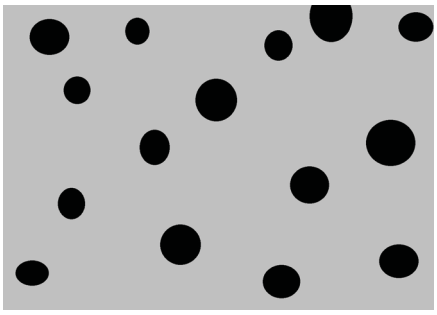
Identification of objects in an image, count them, obtain several features measurements. Objects identification by user or automatically. User defined classification on basis of size or intensity.



Software Interface



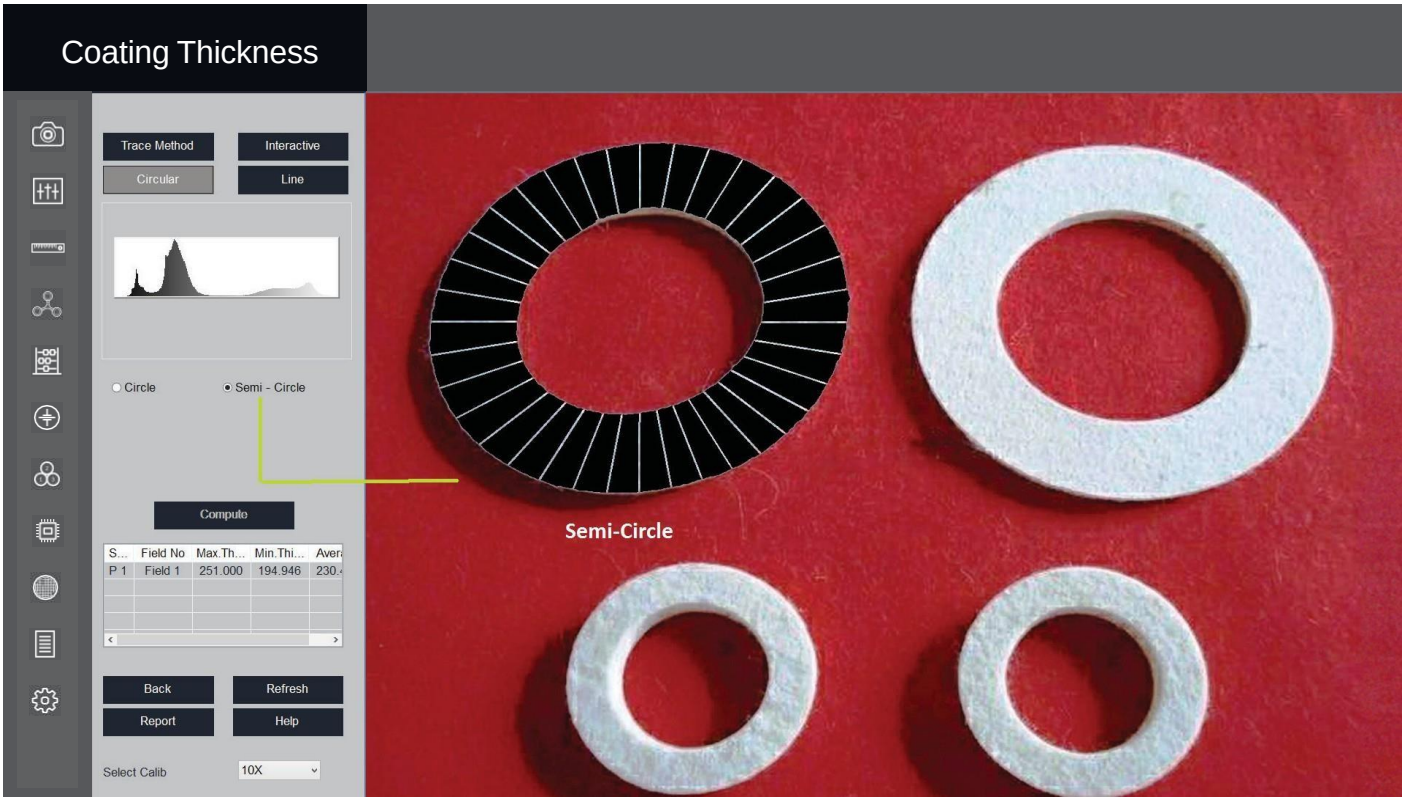




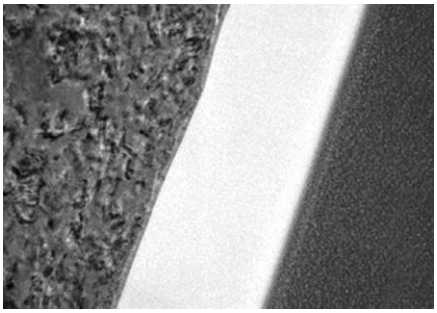
Sample Image

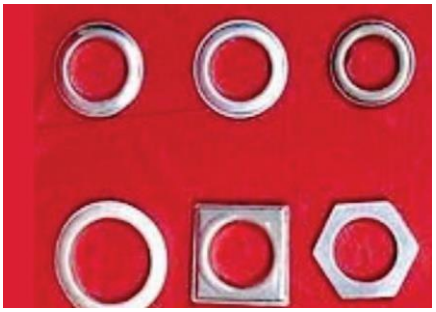
Micro Thickness

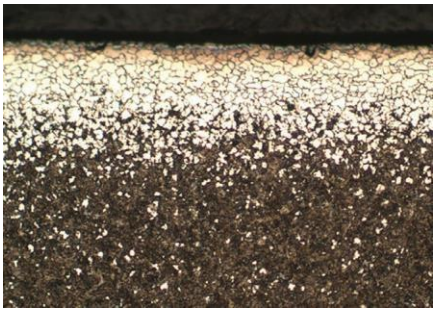
Plating or coating thickness is determined by cross-sectional microscopy method. The specimen is cross- sectioned, mounted, polished and microscopically evaluated for measuring the plating or coating thickness, sometimes, etching of the core base metal may be necessary to accurately measure the coating or plating thickness. The test method covers measurements of the local thickness of mental and oxide coatings by the microscopical examination of cross sections using an optical microscope. Under good condition, when using an optical microscope, the method is capable of giving an absolute measuring accuracy of 0.8 mm. this with determine the suitability of the method for measuring the thickness of thin coating.



Software Interface







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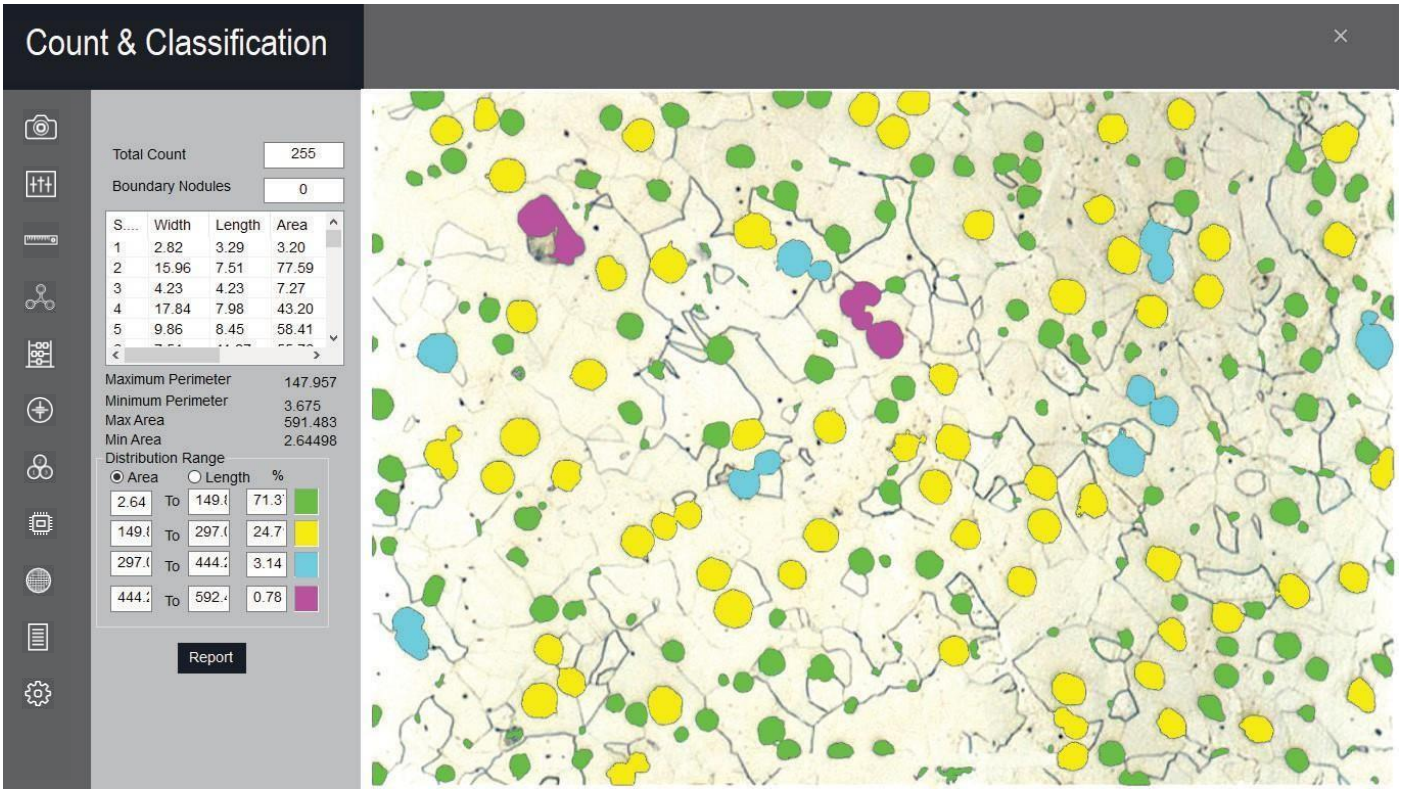
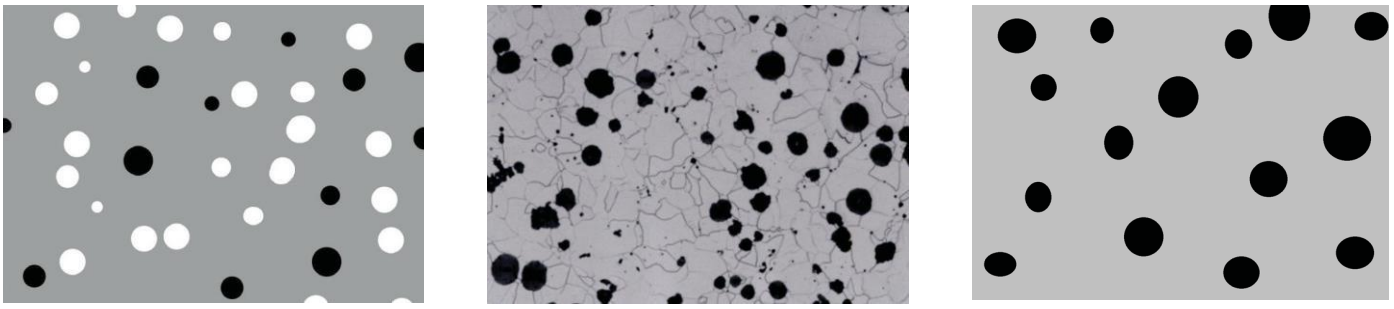


Software Interface



Sample Image

Component Profile

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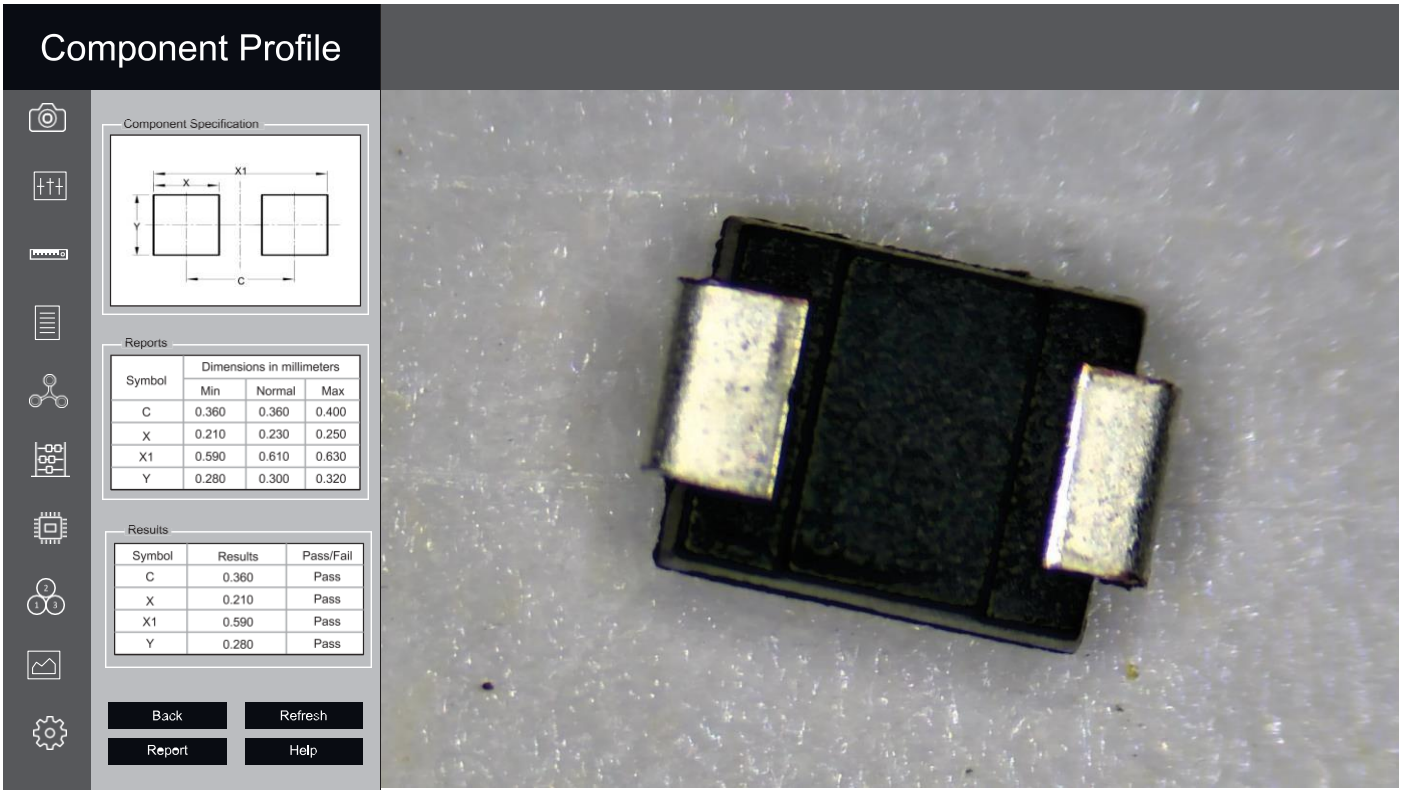
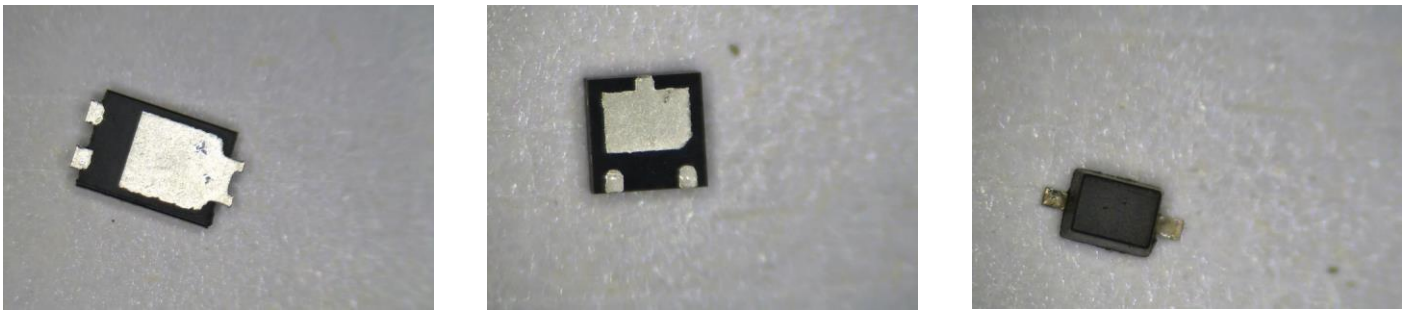


Software Interface



Sample Image

Sieve/Mesh Analysis

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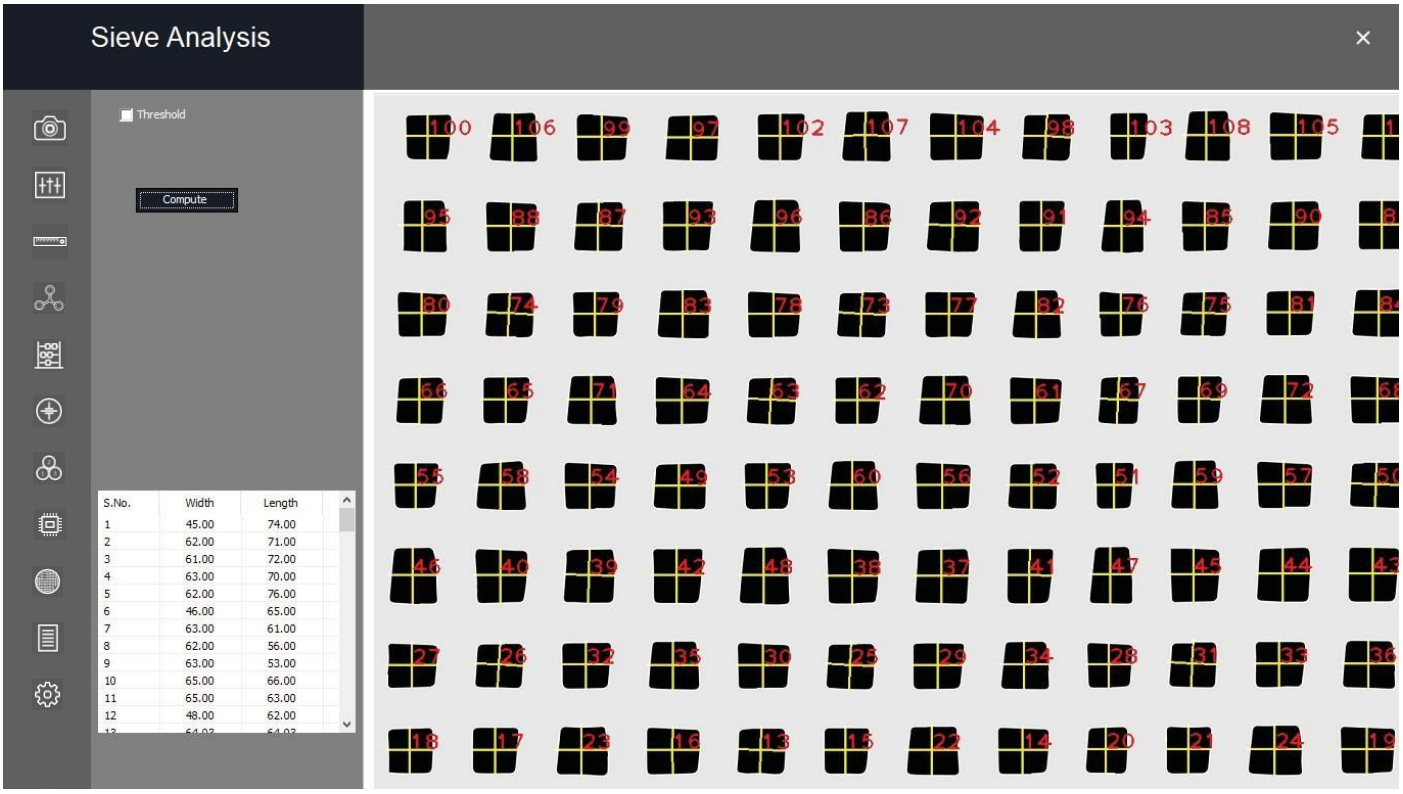
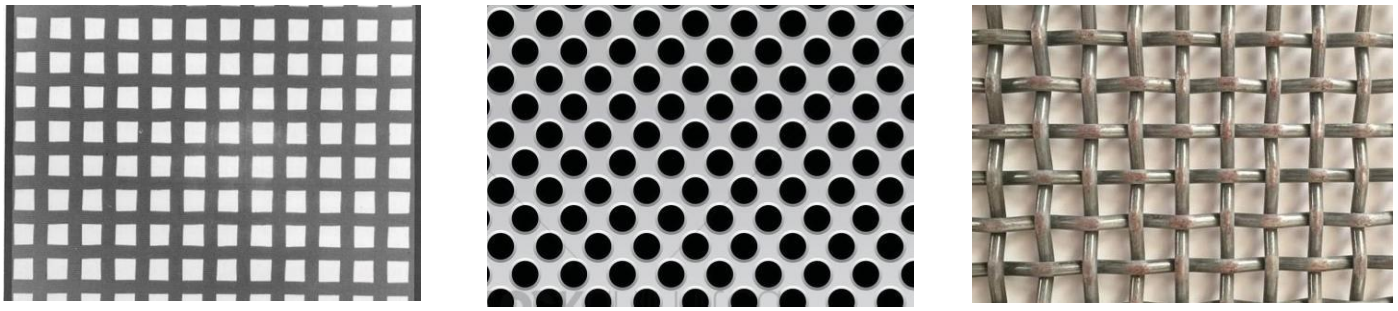


Software Interface

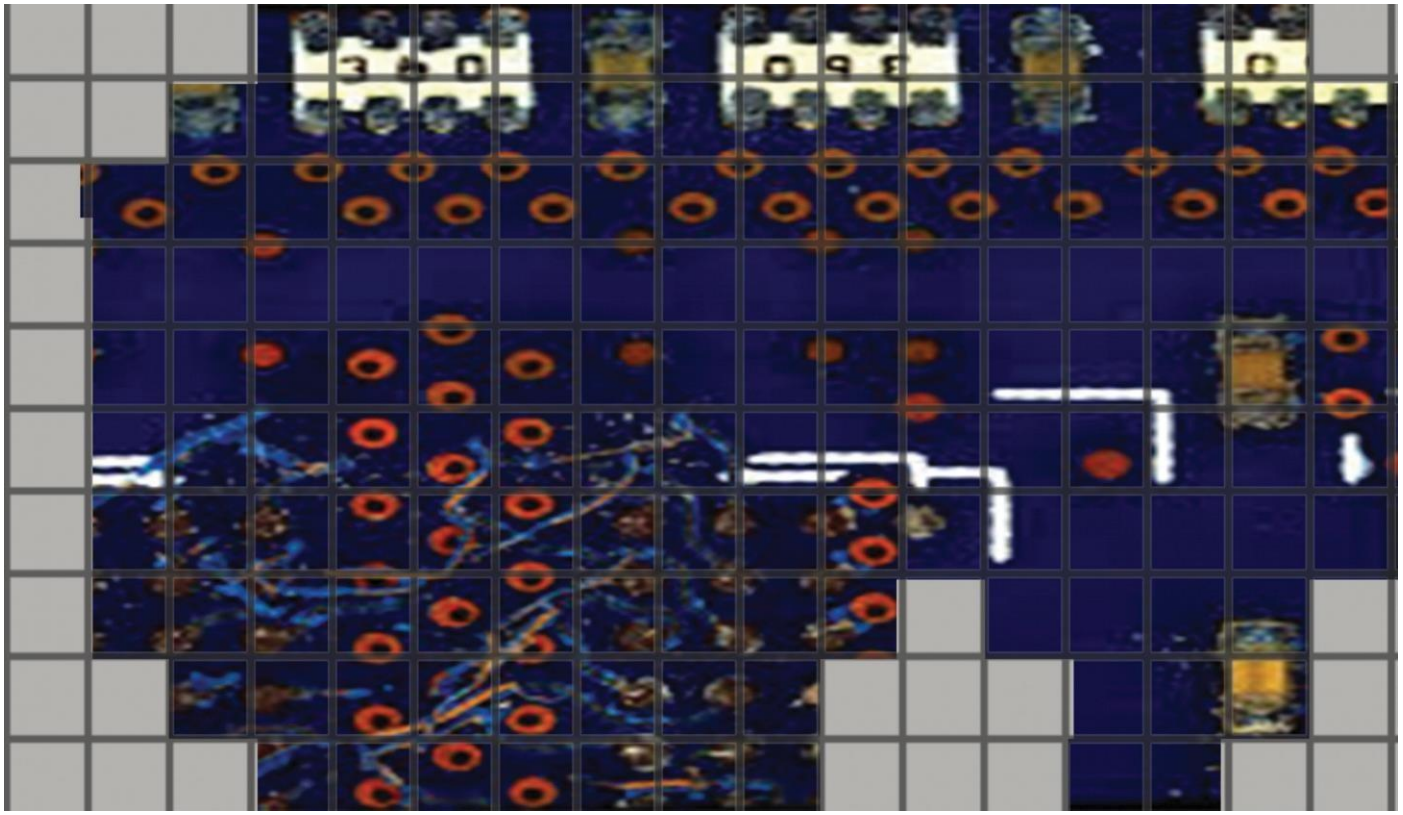


Sample Image

Manual Stitcher

The software is designed to stitch overlapped image tiles by moving stage precisely step by step to cover the entire specimen and sub segment stitching of the data blocks into one image. It has an automatic algorithm for homogeneous illumination using shading (back ground) correction. Stitching options are available for few images as well as for whole samples with resolution up to several gigapixel.

Ideal for large tissue samples, this ensures reproducibility while taking the guesswork out of tilting experiments.

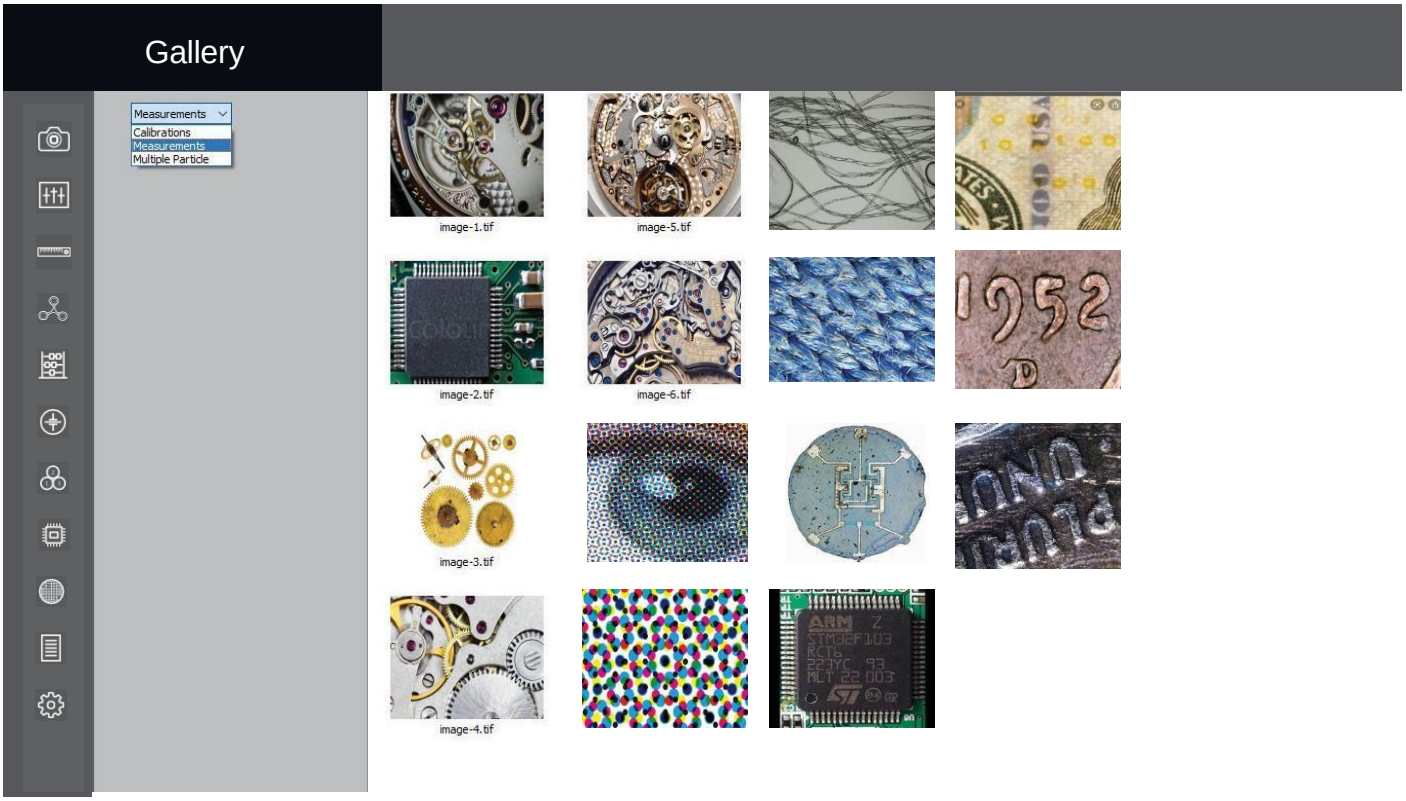


Sample Image

Gallery

Four Folders are available to view any Captured images. The folders are:

1. Measurement
2. Calibration
3. Multple Particle
4. Component Profile
5. Sieve/Mesh analysis



Software Interface

Settings

The Module SETTING is designed to set various parameters for first time when software is installed. The setting options are available to choose ISO/ASTM standard calibration, setting in report format, setting of various parameter on printed image in report. Once all settings are done, you need one button click for all Analysis.

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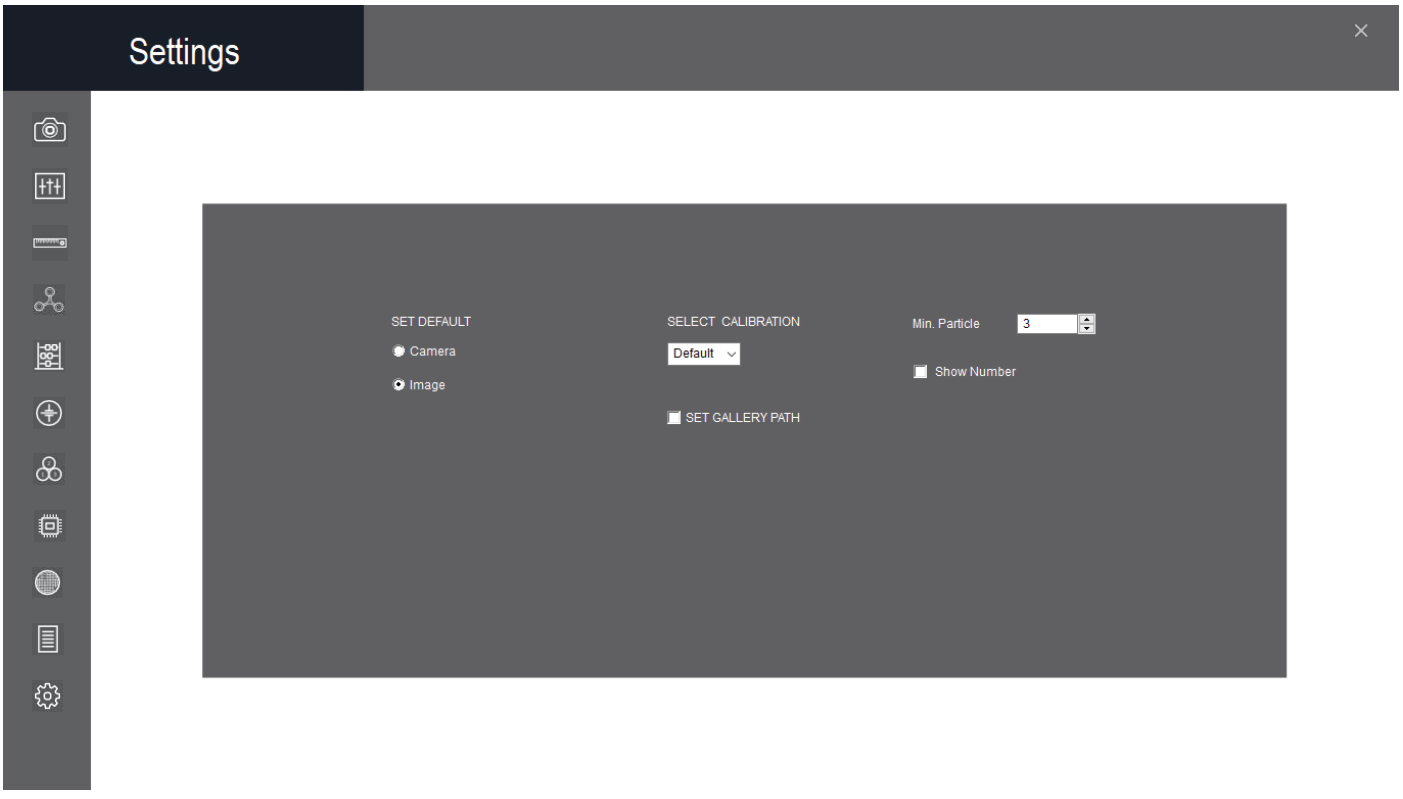
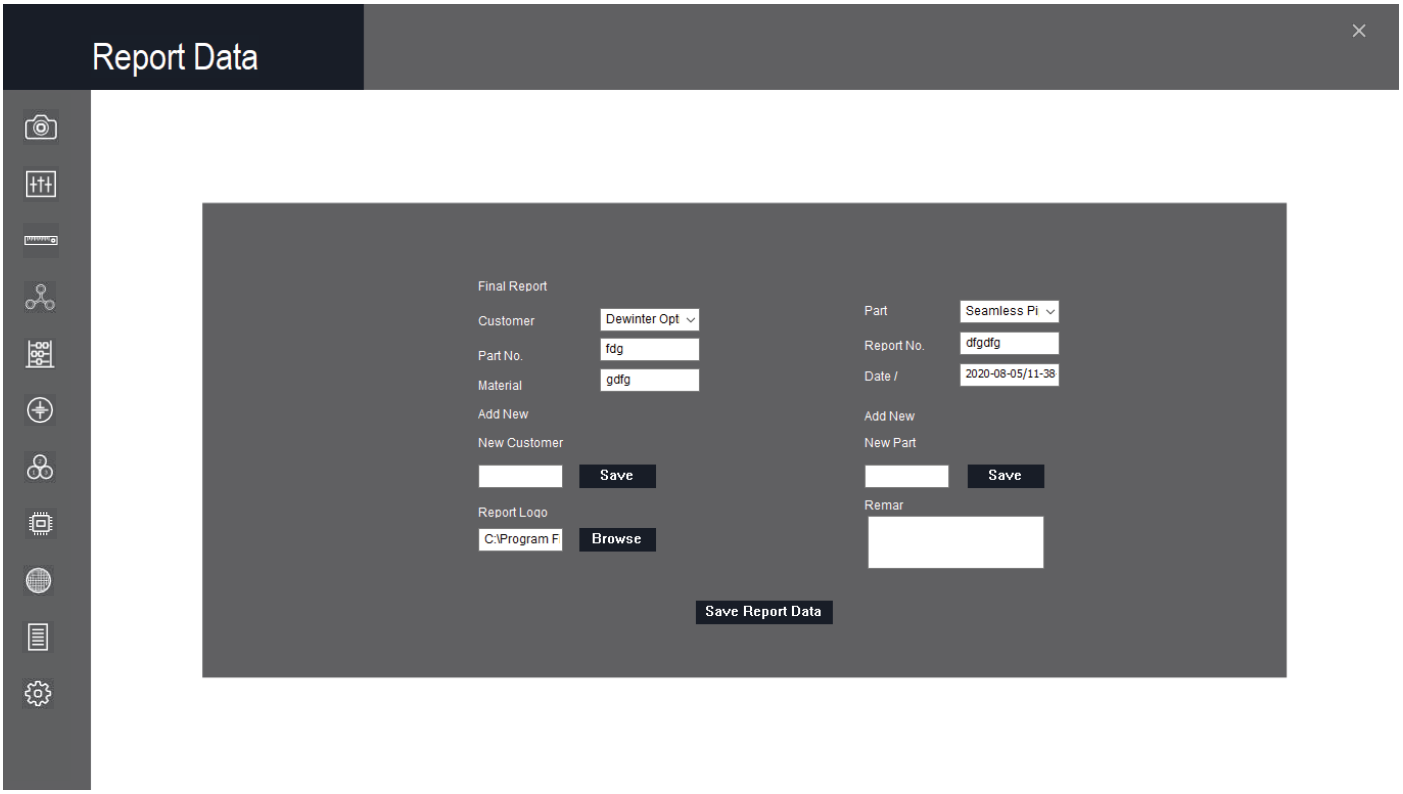


Software Interface

Report data

Report is available in this module for preview before print or if print is not required.



Software Interface

Our Software being Exported to more than 20 Countries

MODERN METTALLURGICAL & SCIENTIFIC SERVICE

Phase-2. Plot No.T-73, Women's Industrial Estate, Thirumullaivoyal,Chennai - 600062

Phone ; 044-26572473 | 9677111411 |9677100992 Email : mmss_metal@yahoo.co.in