

HARDNESS PRIME

HARDNESS IMAGE ANALYSIS SOFTWARE



KNOOP



VICKER



BRINELL



MEASUREMENT



SETTINGS

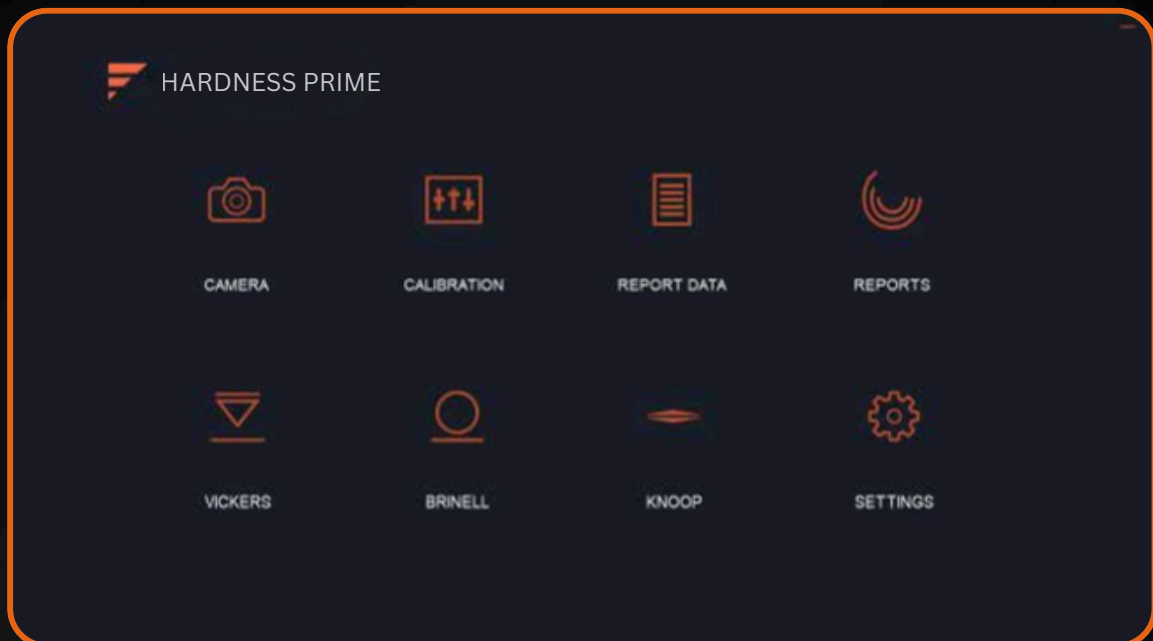


CALIBRATION

INTRODUCTION OF HARDNESS PRIME

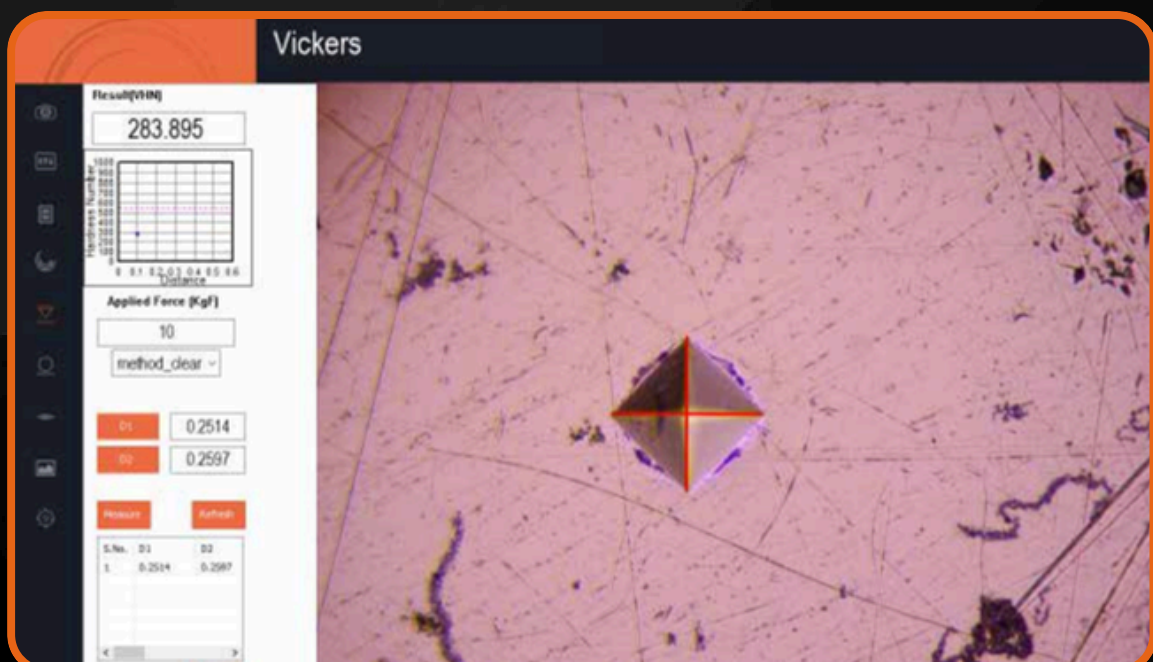
It is new generation image analysis software, meant for scientist to do analysis in the simplest way. It is a single screen Window based system. The system is flexible and independent to adopt capture cards, cameras and microscopes.

It can handle both gray monochrome (8 bit) and color (24 bit) images. Multiple images of any size can be opened and display on the screen for analysis or comparison. The software supports most common formats like BMP, JPEG, TIFF, PNG, GIF and PSD. Live images also can be observed and capture on the same platform. Since the system is made in Windows environment, graphs and charts display on the monitor can be quickly transferred into other Windows based programs like MS Word, MS Excel or any other commercial Windows based software for using reports and presentations.



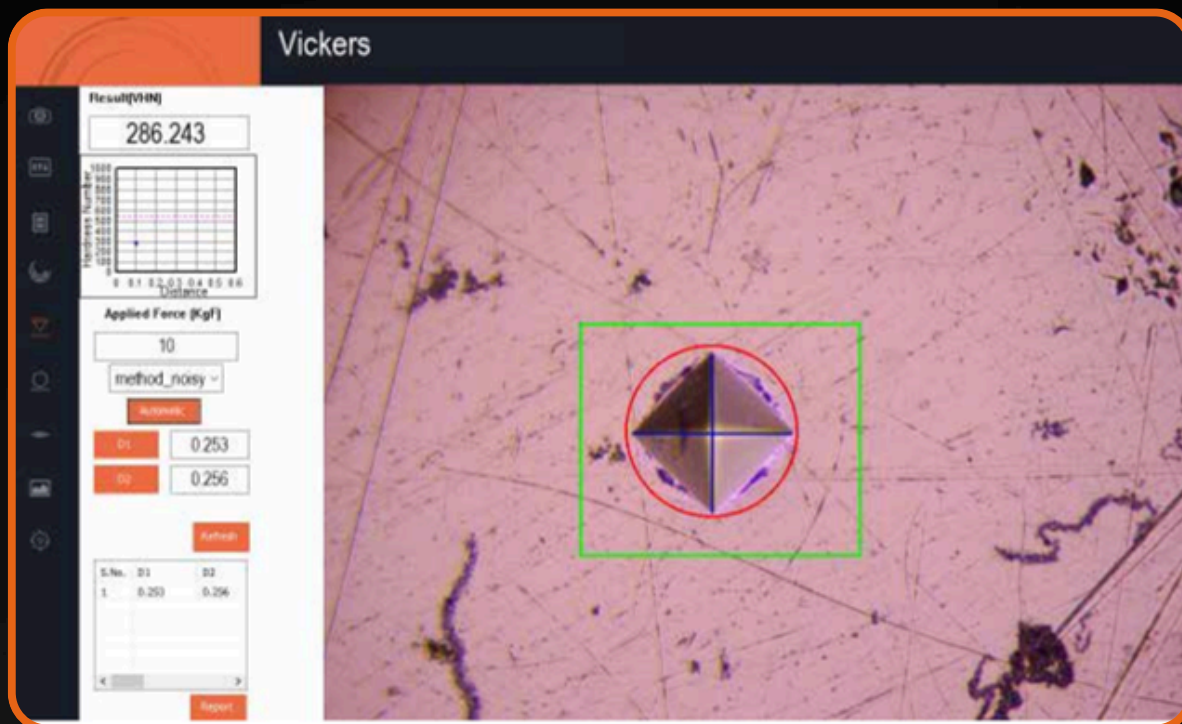
MANUAL VICKERS

The Vicker hardness test is an indentation hardness test in which a square-based diamond pyramid, having an angel of 136.5° between the opposite faces at the vertex, is forced into the surface of a test piece and the length of the diagonals of the indentation left in the surface after removal of the test forced is measured. In manual mode, the user measures the diagonals of the Vickers indentation by marking points directly on the captured image. This method gives the operator full control for precise measurement on samples that may have unclear edges.



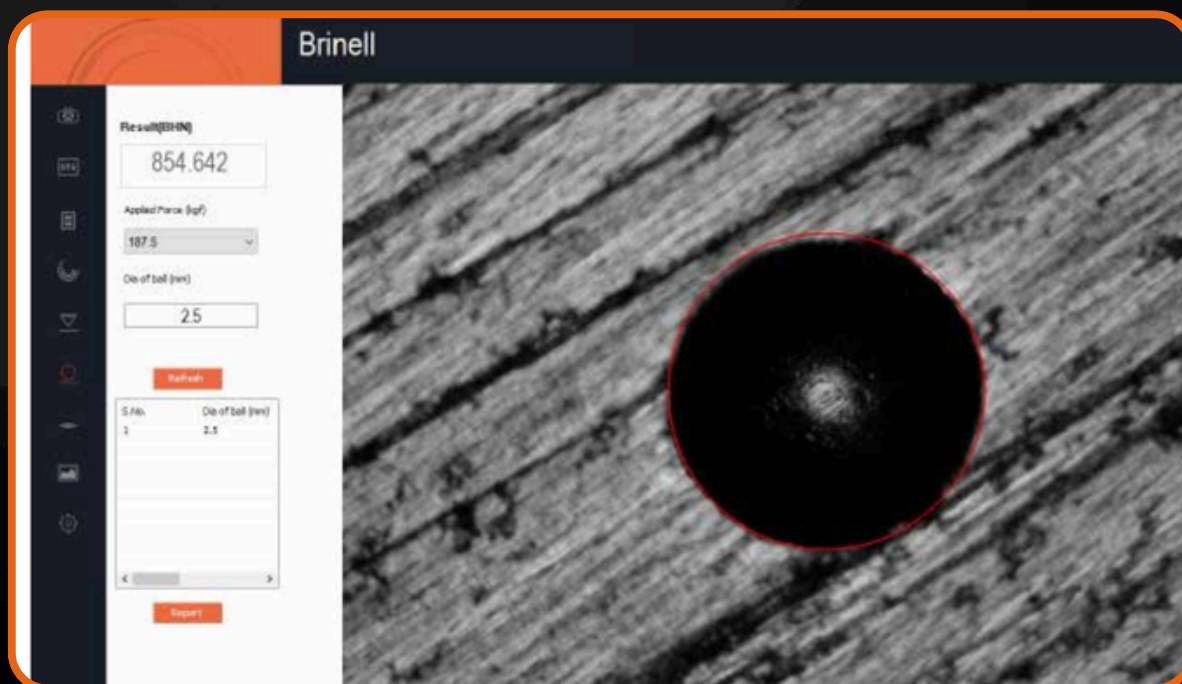
AUTOMATIC VICKERS

The Vicker hardness test is an indentation hardness test in which a square-based diamond pyramid, having an angle of 136.5° between the opposite faces at the vertex, is forced into the surface of a test piece and the length of the diagonals of the indentation left in the surface after removal of the test force is measured. In automatic mode, the software detects the indentation diagonals automatically using smart edge detection. This speeds up the test, improves repeatability, and reduces manual effort for routine testing.



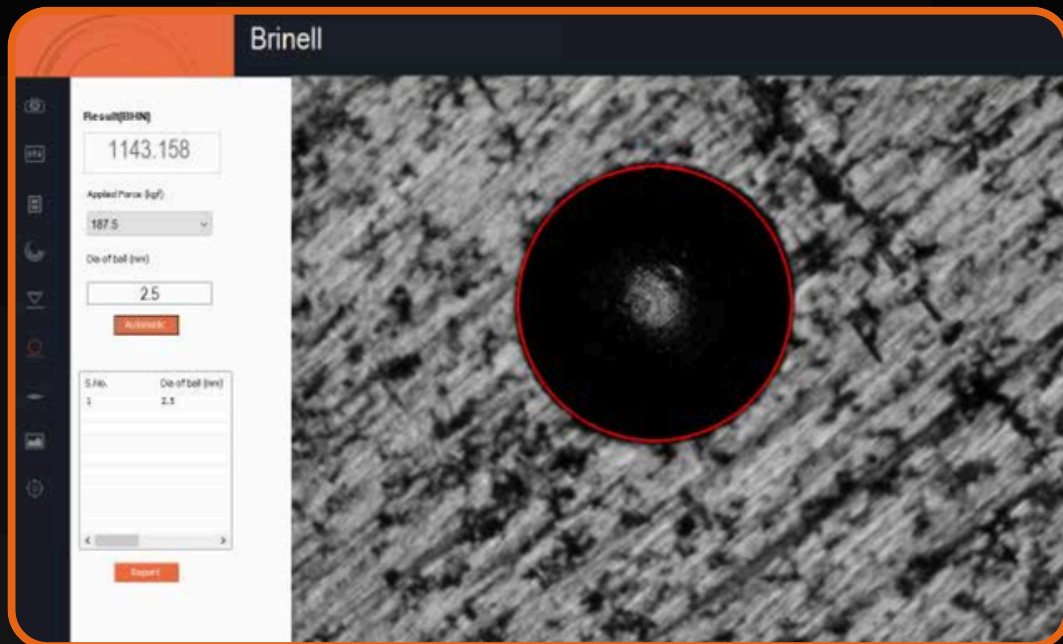
MANUAL BRINELL

The Brinell hardness test is an indentation hardness test in which a hard metal ball is forced into the surface of a test piece and the mean diameter of the indentation left in the surface after removal of the test force, is measured. The manual Brinell test lets the user mark the edges of the round indentation made by the ball indenter and measure its mean diameter on screen. It's useful for complex or irregular surfaces where manual verification is needed.



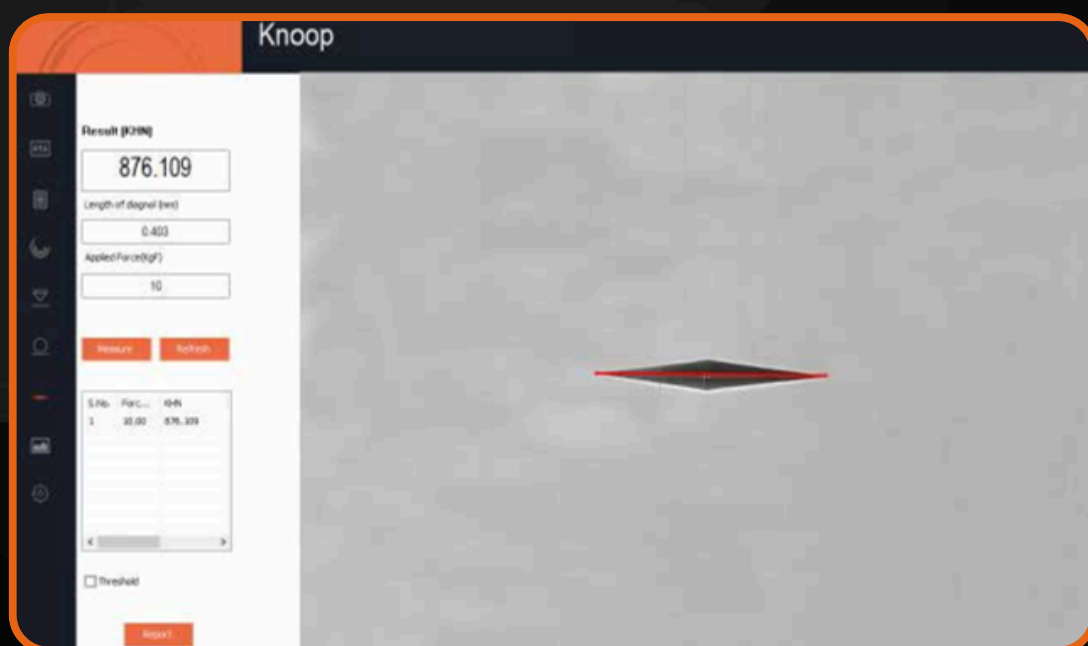
AUTOMATIC BRINELL

The Brinell hardness test is an indentation hardness test in which a hard metal ball is forced into the surface of a test piece and the mean diameter of the indentation left in the surface after removal of the test force, is measured. In automatic mode, the software identifies the edges of the Brinell impression and calculates the diameter instantly. This saves time and ensures accurate, consistent results with minimal operator involvement.



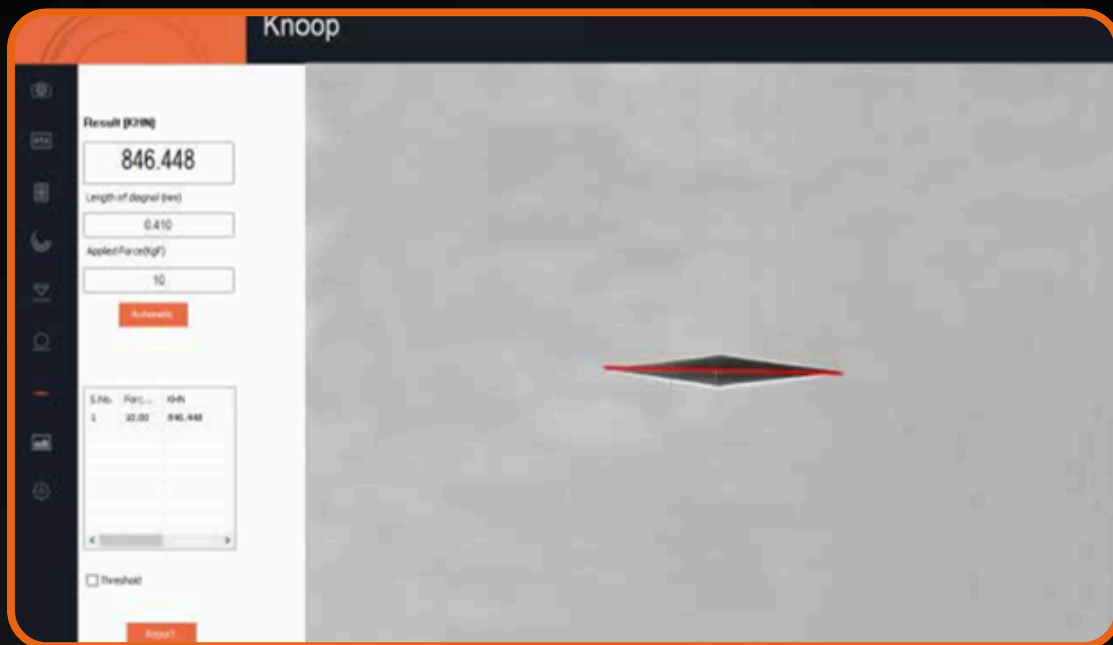
MANUAL KNOOP

The Knoop hardness test is an indentation hardness test in which a rhombic-based diamond pyramid, having an included longitudinal edge angle of 172.5° and an included transverse edge angle of 130° , is forced into the surface of a test piece and the length of the long diagonal of the indentation left in the surface after removal of the test force is measured. With manual Knoop testing, the operator marks the ends of the long diagonal of the rhombic indentation on the image to get an accurate reading, ideal for delicate microhardness tests.



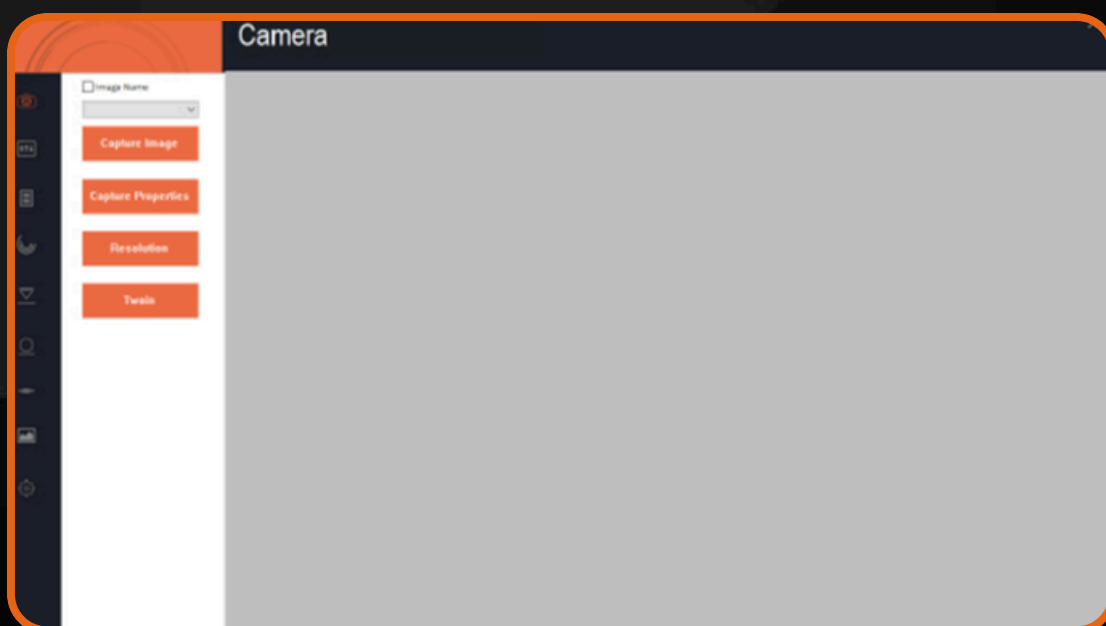
AUTOMATIC KNOOP

The Knoop hardness test is an indentation hardness test in which a rhombic-based diamond pyramid, having an included longitudinal edge angle of 172.5° and an included transverse edge angle of 130° , is forced into the surface of a test piece and the length of the long diagonal of the indentation left in the surface after removal of the test force is measured. In automatic mode, the software detects the long diagonal automatically, delivering fast and precise microhardness measurements while minimizing human error.



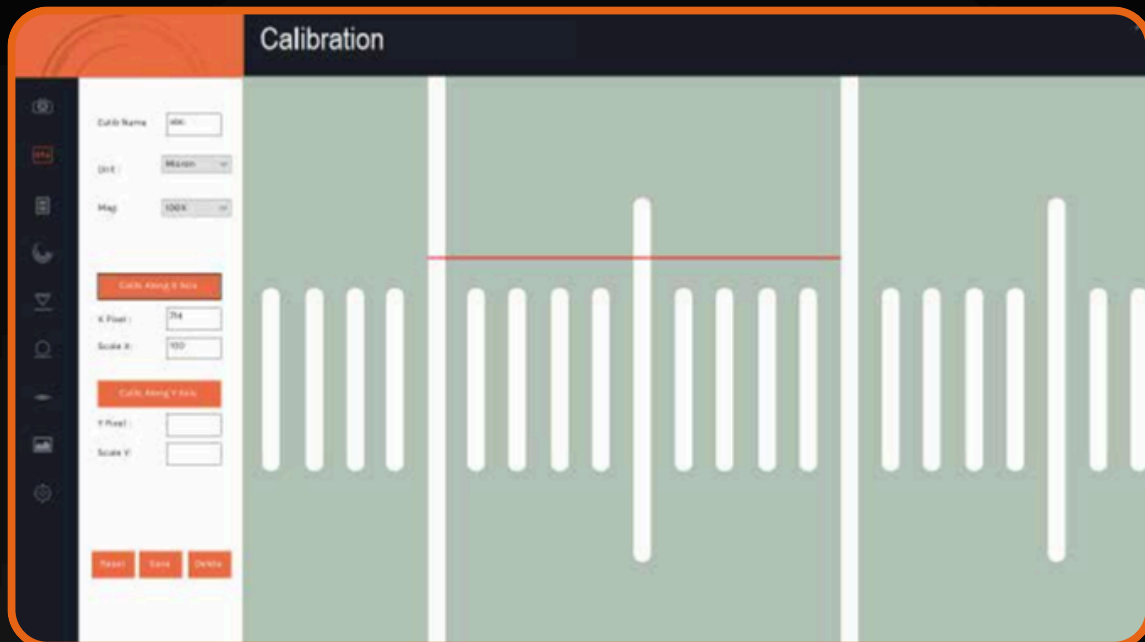
CAMERA

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



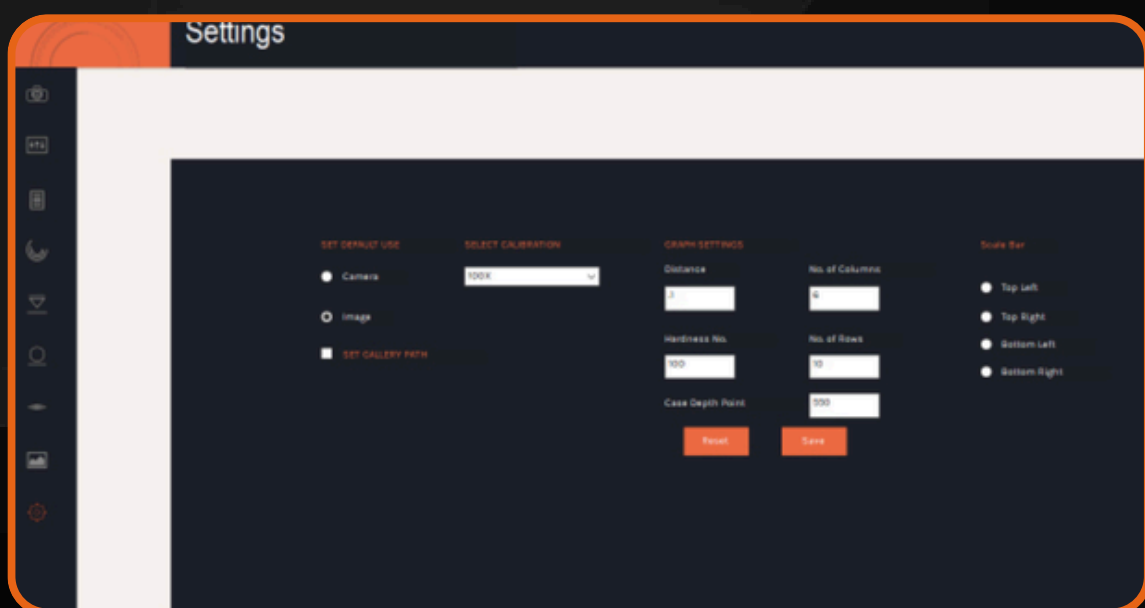
CALIBRATION

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



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.



REPORTING DATA

Report is available in this module for preview before print.

The 'Report Data' form is displayed within a software window. It features a sidebar on the left with various icons. The main area contains two columns of input fields. The left column includes fields for 'Customer Name' (filled with 'Seawater Optical Inc.'), 'Part No.' (filled with '001'), 'Material Spec.' (filled with '001g'), 'Add New Customer' (with a 'New Customer Name' field and a 'Save' button), and 'Report Logo Path' (with a file path and a 'Browse' button). The right column includes fields for 'Part Name' (filled with 'Seawater Pipe'), 'Report No.' (filled with '01g1g'), 'Date / Time' (filled with '2020-06-27 23:12:03'), 'Add New Part' (with a 'New Part Name' field and a 'Save' button), and a 'Remark' field (filled with '0000'). A 'Save Report Data' button is located at the bottom center.

SAVED REPORTS

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



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