



# Zoomstar-II

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.
- Interpupillary distance from 54mm to 76mm.

### Eyepieces

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

### Mechanical Stage

- Track stand with fan type base.
- Lateral zoom control movement.
- Incident and transmitted light system with LED lamp. The system regulated with transformer has separate intensity control knob.
- On/off switch provides flexibility to use either both light or any of them.
- Clip for holding specimen. Base size is 240mm X 280mm.

### Zooming Range & Ratio

Zoom 0.7X to 4.5X with magnification ratio of 1:6.4

### Magnification Range

7X-45X.

### Working Distance

100 mm.

## Optional 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, Sldco Women's Industrial Park, Vellanur Post, Thirumullavoyal, Chennai - 600 062.**

**Branch Off : No.64, Modern Villa, Kongu Nagar, Kanlyur, Colmbatore - 641 659.**

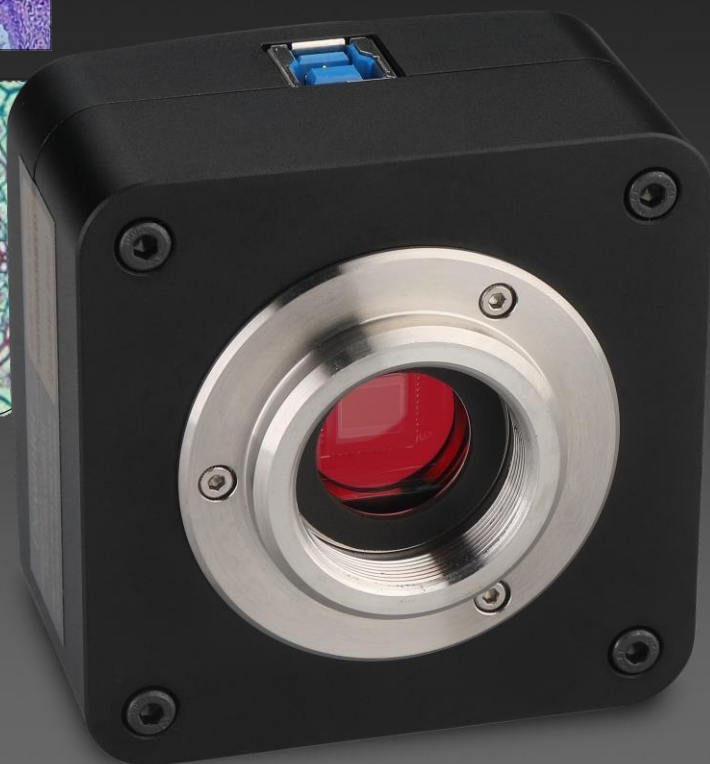
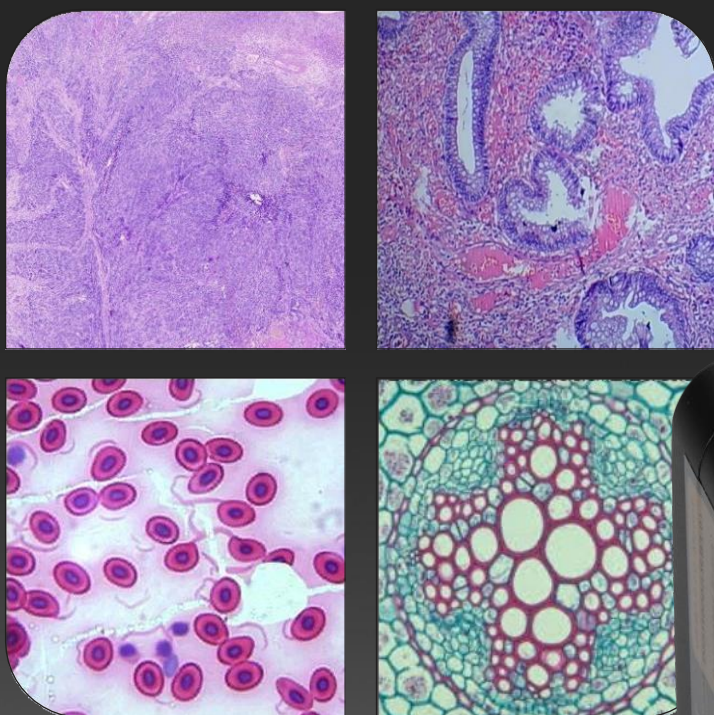
**☎ 044 - 2657 2473 | 96771 00992 | 96770 58570 ✉ mmss\_metal@yahoo.co.in**

**Branches : Colmbatore | Kolhapur | Delhi | Banglaore**

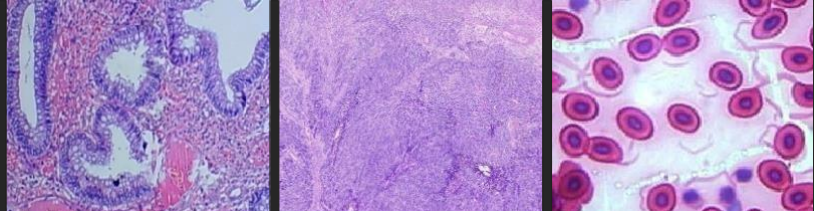
**🌐 www.modernmetallurgical.com**

MODERN 

# Digital USB CMOS Microscope Camera



MODEL: DIGI 510+



## ② 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 flow.
- 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;

### Specification:

|                   |                                |
|-------------------|--------------------------------|
| 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 Balance:    | Manual/Auto one-touch          |
| Exposure control: | 10μs-32ms,Auto exposure        |
| Software:         | Display/Film/Video             |
| Operating Temp:   | 0°C ~ 60°C                     |



MODEL: DIGI 510+



# WeldCheck

Weld Penetration System

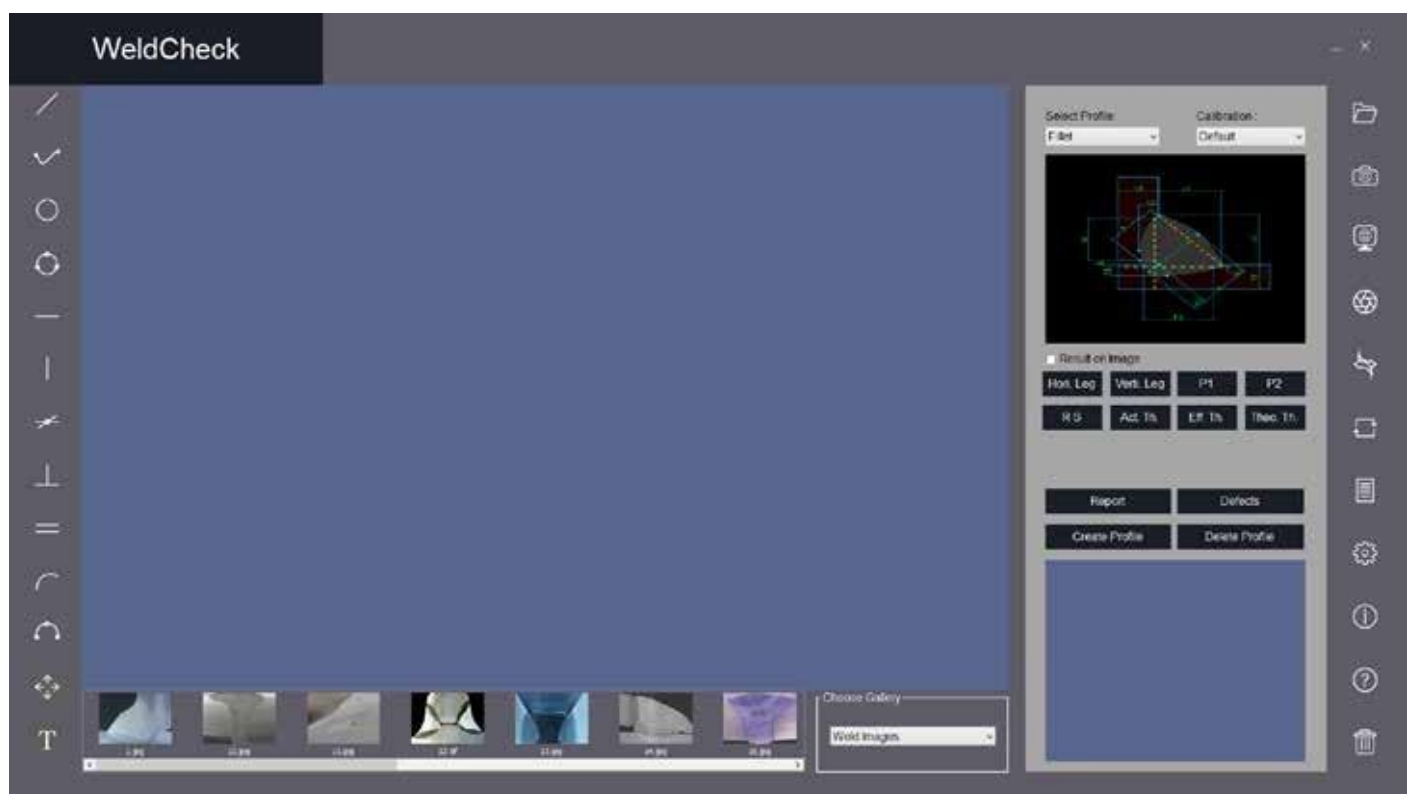


# Introduction of WeldCheck

Weldcheck is a new generation image analysis software, meant for welding inspectors, metallurgist and material scientist for analyzing weld dimensions. It is a single Window based system

Some components involve large numbers of welding joints. Weldcheck tool is used to record all the necessary testing procedures in measurement profiles represented in different colors.

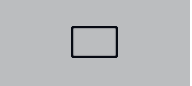
The Weldcheck software can handle both grey monochrome (8bit) and color (24bit) image. Multiple images of any size can be opened and displayed on the screen for analysis or comparison. The software supports the most common formats like BMP, JPEG, TIFF, PNG, GIF, and PSD. Live images also can be observed 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.

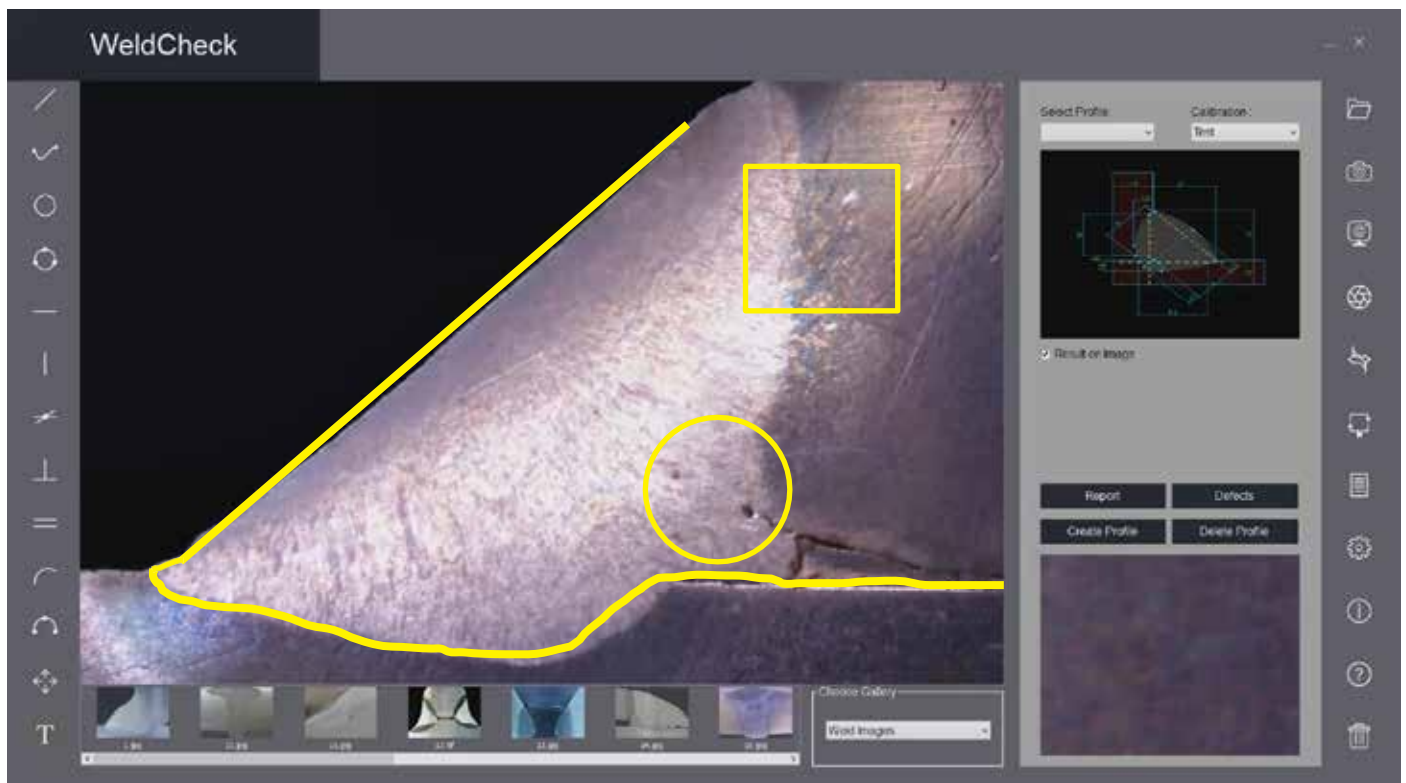


*This is the first look of UI of WeldCheck*

# 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.

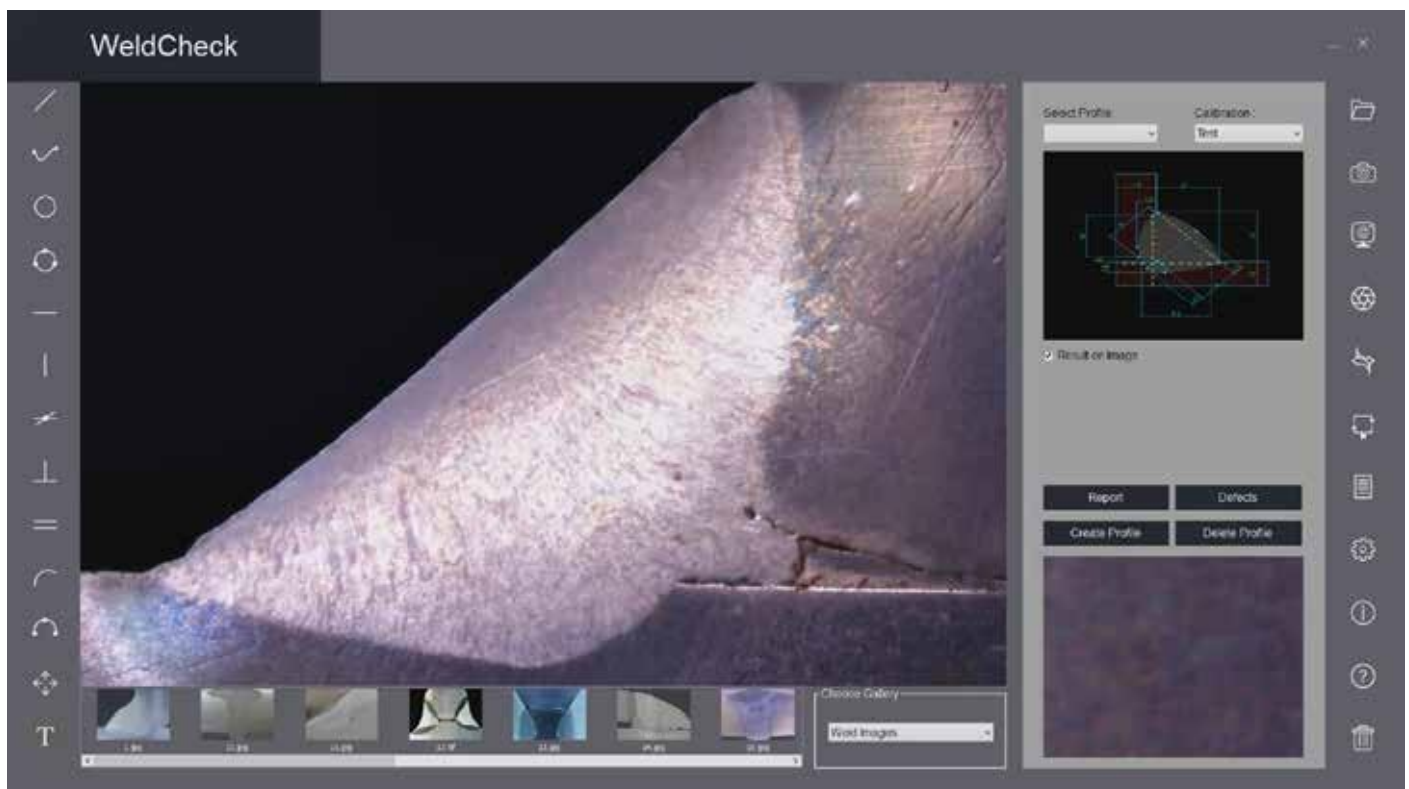
|                                                                                     |                 |                                                                                      |                   |
|-------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------|-------------------|
|    | Straight Line   |    | Rectangle         |
|    | Arrow Line      |    | Circle            |
|    | Horizontal Line |    | Directional Arrow |
|    | Vertical Line   |    | Grid              |
|    | Parallel Line   |    | Cross             |
|   | Free hand       |   | Text              |
|  | Arc             |  | Semi Circle       |



Software Interface

# Capture 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.

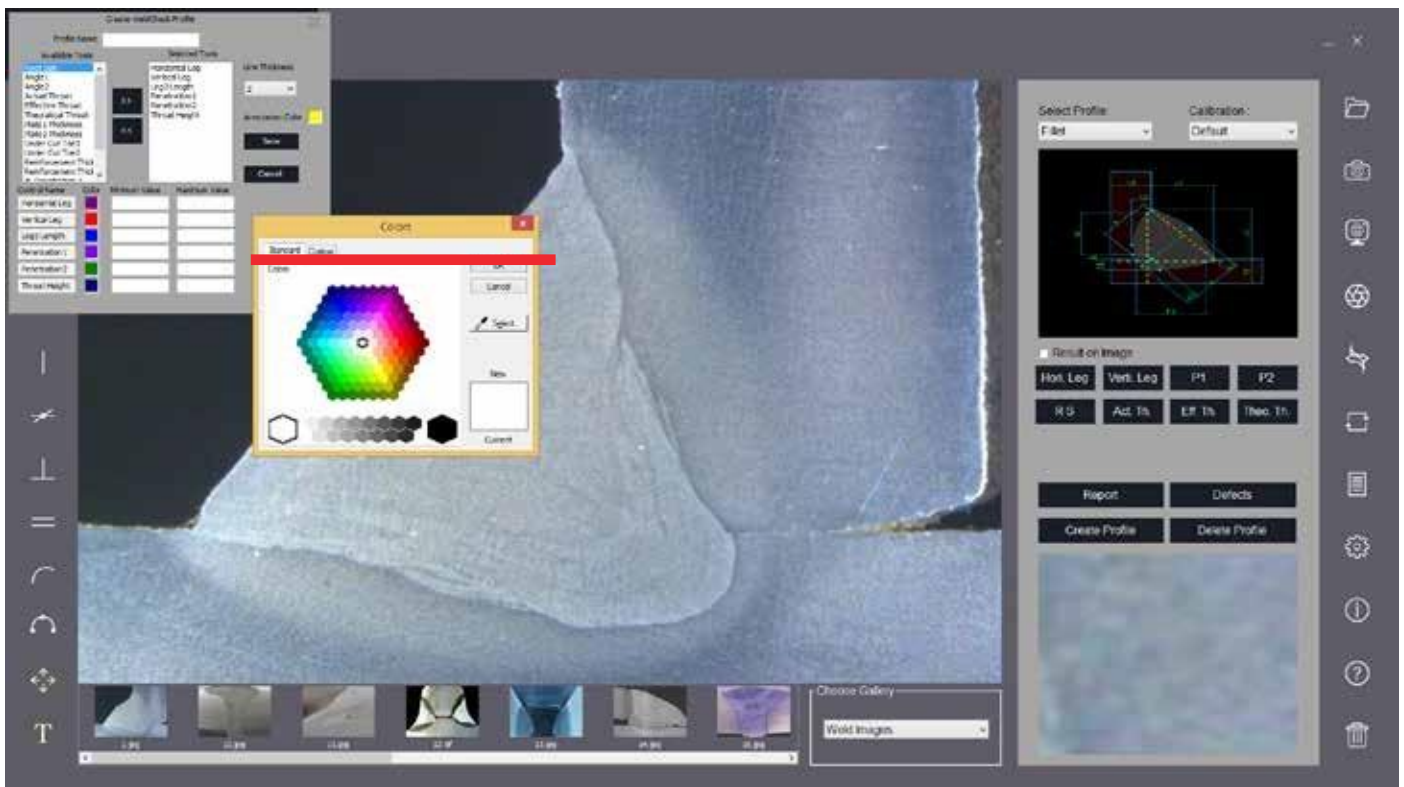


Software Interface



# Calibration

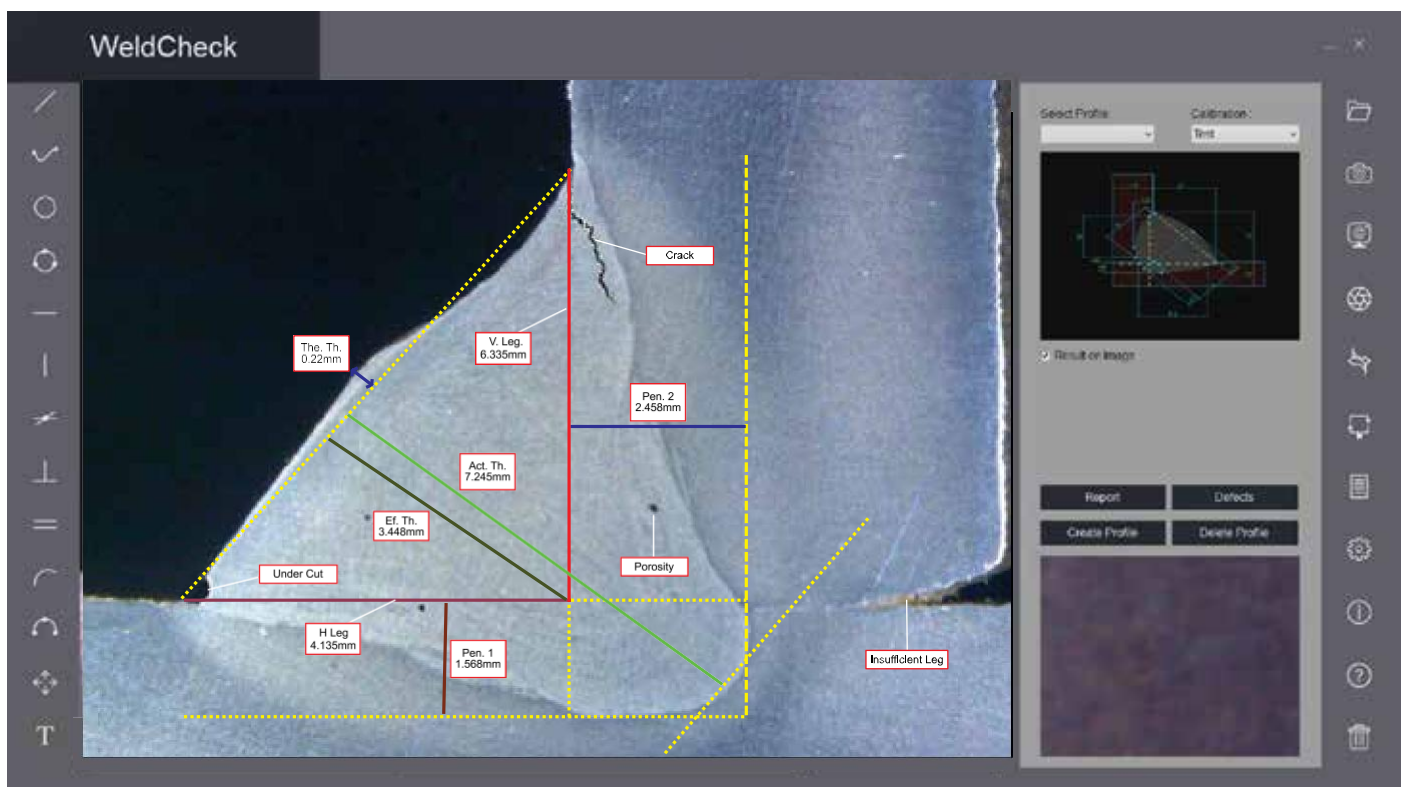
Calibration should be performed on all the objectives of the microscope, where Digital Camera is installed. Calibration should be performed only when all hardwares are finally fixed. In case of readjustments or replacement of any part, calibration should be done again.



Software Interface

# Fillet Measurement

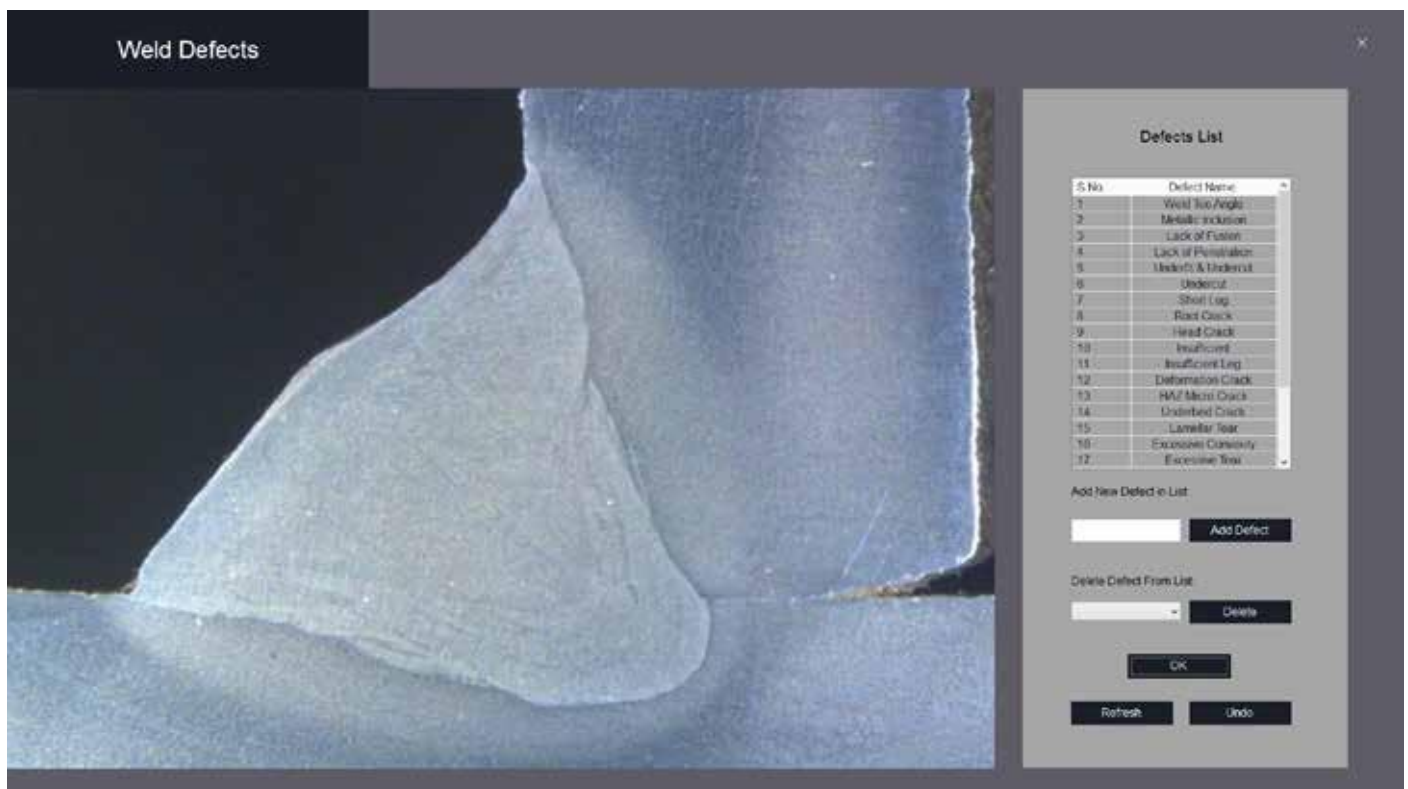
- All dimensional measurements.
- Programmable (Automatic) measurement
- Supports all weld quality parameters like depth/penetration, %penetration, leg lengths, throat lengths, root penetration etc.
- Can define Component and its parameters to be measured
- Can measure length, area, angle, diameter, radius, circumference in addition to weld penetration measurement
- Can set expected values and tolerances for each parameter
- Automatic edge detection



Software Interface

# Weld Defects

Weld defects such as cracking and porosity have a great effect on the performance of the weld bead. Samples taken after the LSM process, with different manufacturing parameters, were checked to verify the occurrence of porosity and cracking. shows a typical solidification crack and porosity in the weld bead. show the relationship between LSM parameters and porosity and cracking defects, respectively.



Software Interface

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| WELD PENETRATION ANALYSIS |                     |                                    |         |     |     |        |
|---------------------------|---------------------|------------------------------------|---------|-----|-----|--------|
| Mfg.Location              |                     | Techician Name                     |         |     |     |        |
| Date:                     | 2019-12-03-11-59-08 | Department                         |         |     |     |        |
| Company:                  |                     | Units                              |         |     |     |        |
| Part Number               | fdg                 | Weld Location/Number               |         |     |     |        |
| Line Number:              |                     | Section Number                     |         |     |     |        |
| Specification:            |                     | Type of Weld<br>(Automatic/Manual) |         |     |     |        |
| Revision Level:           |                     | Welder                             |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
| Color                     | SL. No.             | Parameter                          | Result  | Min | Max | Status |
| Purple                    | 1                   | Horizontal Leg                     | 155.332 |     |     |        |
| Red                       | 2                   | Vertical Leg                       | 197.546 |     |     |        |
| Green                     | 3                   | Actual Throat                      | 191.31  |     |     |        |
| Red                       | 4                   | Theoratical Throat                 | 120.394 |     |     |        |
| Blue                      | 5                   | Effective Throat                   | 10.181  |     |     |        |
| Green                     | 6                   | Penetration 1                      | 42.225  |     |     |        |
| Blue                      | 7                   | Penetration 2                      | 77.29   |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
|                           |                     |                                    |         |     |     |        |
| Remarks:                  |                     |                                    |         |     |     |        |

## Final Report



# 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