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MPI-SC608

LNTELLIGENT IMAGE UV FLAW DETECTION LIGHT

OPERATION MANUAL

PLEASE SCAN QR CODE TO WATCH THE OPERATION VIDEO OF PRODUCTS.

VIDEO

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1.Product Information

1.1 Products

Intelligent Image Handheld UV LED Lamp has been designed especially for NDT testing application to assist the visual inspection and identification of cracks, inclusions and other forms of surface defects in components undergoing florescent liquid penetrant and magnetic particle inspection. It is also extremely effective in identifying proper rinsing result during the penetrant testing rinsing process.

Besides, it can be used for the following applications:
*Fluorescent leaking testing
*Curing for printing and glue
*Security and forensics
*Mineral, art, antique examination
*Clean room inspection

Gauge is our new intelligent UV Flaw Detection Lamp, the new product incorporates more latest technology: OTG expansion, compatible with smart accessories, real-time display and crack size measurement. Intelligent camera UV Flaw Detection Lamp is not only a UV lamp that can take pictures, but also an intelligent operation platform.

The Gauge is our defect photography and measurement accessory, built-in customized high-definition camera, white and violet light switching and adjustable brightness according to demand. It can be connected to an intelligent camera UV flaw detection lamp or a computer, and through the measurement software developed by Magnetic Ocean, it can realize the accurate measurement of defect size. At the same time, the gauge can also be used as an endoscope.

RoHS

MPI-SC608 is CE and RoHS certified.

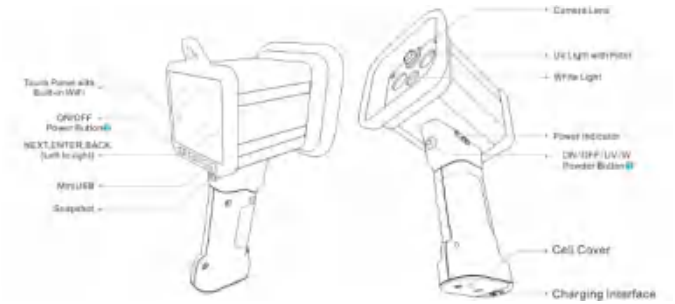
1.2 Unique Features

- Android based smart operating system for unlimited online software. Wi-Fi, Bluetooth and USB transmission.
- HD camera with UV filter
- Real-time data streaming between a PC and the Intelligent Image UV Flaw Detection Light
- Crack dimension measurement as precise as 0.01mm
- OTG extension for other potential features

1.3 Specification

UV (Light) Lux	about 4000μW/cm²
Light source	9 UV LED's, 1 white LED
Covering area	Ø180mm (at 381mm distance)
White light content	<5LUX
Minimum working distance	≤13cm
Camera pixels	13M
Display	3"touch LCD
Display resolution	720*720
Camera focus	auto focus or manual focus
White balance	adjust white balance automatically
Internal storage	32GB
Data transmission	USB, WIFI, Bluetooth
Operating system	Android 9.0
Power supply	rechargeable lithium battery(4hours, power adapter (for continuous use)
Dimension	175*80*185mm
Weight	840g (including battery)

1.4 Operation Instruction



1.5 How to Turn on/off and switch the UV and the White Light

- Press *Power Button 1* for more than 3 seconds to turn on the light.
- When lamp is on, press the *Power Button 1* for 1 second to switch between the UV light and the white light.
- Press the *Power Button 1* for more than 3 seconds to turn off the light.

1.6 How to Turn on/off the Android System

- Press the *Power Button 2* for more than 3 seconds to turn on the Android system.
- Press the *Power Button 2* for more than 3 seconds and follow the instruction on the screen to turn off the Android system.

*After turning on the Android system, you can operate the system either by the buttons below the screen or by touching screen.

1.7 How to Take the Photos

- Select the *Camera Icon* on the screen or press the *Snapshot Button* to quick start the camera
- In camera mode, select the *Camera Icon* or press the *Snapshot Button* to take photos.

1.8 How to Share the Data

- Data Transmission by USB Cable

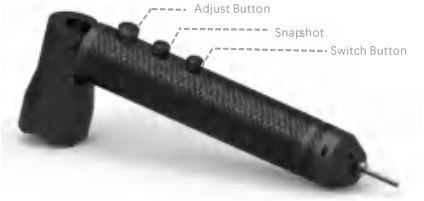
1.Open the USB cover from the left side.
2.Connect the MPI-SC608 to the PC by USB.
3.Open the You will see “USB for charging”, click it and choose “File transfers “.Then you can open the “SD card” from your computer or PC.
4.A window may pop out on your terminal and indicate to install a driver, close the window directly or select “Cancel”.

- Data Transmission by Wi-Fi

1.Select the *Setting* and then connect the Wi-Fi.
2.Send the data via apps such as E-mail, Google Drive, Whatsapp, Skype, etc.

- Data Transmission by Bluetooth

1.Select the *Setting* and select *Bluetooth*
2.Pair the lamp with the terminal
3.Select the data, and transmit by Bluetooth
4.Accept the transmission on your terminal
*Note: The lamp can **ONLY** be paired with ***Android terminal*** via Bluetooth, can **NOT** be paired with *ISO terminal*.



1.9 Crack Dimension Measurement by Intelligent Image UV Flaw Detection Light and Phoenix Eye

- **Take Photos with the Phoenix Eye**

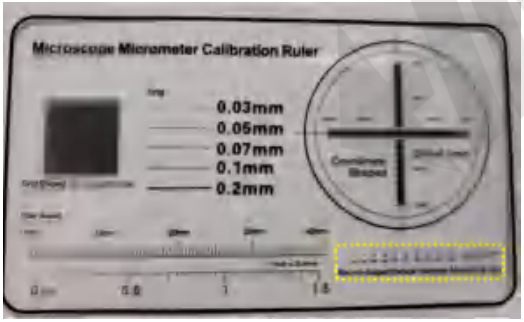
1.Connect the Phoenix Eye with the lamp by the cable
2.Select the APP *Crack Check Phoenix Eye* and the Phoenix Eye will automatically connect with the lamp.

3.Press the *Switch Button* to choose white light or the UV light as needed.
4.Rotate the *Adjust Button* to adjust the intensity as needed.
5.Press the *Camera Icon* on the screen to take the photos.(The snapshot button can only be used when the phoenix eye connect with PC)

● **Calibration**

1. Select Snapshot and start shooting

2. Put the calibrating tap (as below, in the standard package) under the Phoenix Eye.



**Note: We provide the standard calibrating tap in the package for calibration, but users can also choose their own calibration objects. The calibration object should be flat and large enough to ensure that the phoenix eye can be close to it.*

3. Locate the circle with diameter of 1000μm at the center of the view, and press shooting icon to take the photo and select the photo at the bottom left corner of the screen.

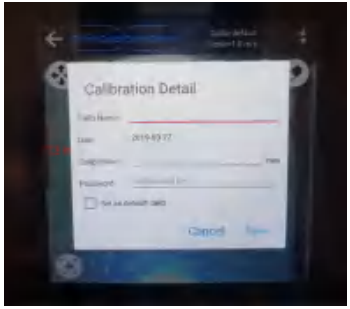
**Note: If users use our calibrating tap, we recommend to take the photo of the circle with diameter of 1000μm (marked in Yellow in above picture) as calibration base.*

4.Open the New Calib and put the default password: 111111

5.Select to zoom in and zoom out, and then Select to draw the circle along with the edge of the 1000μm circle.

**Note: There is a value shown on the screen, it is OK the value is not right at this point.*

6. Select *Finish Calib* and enter the information input page.
7. Input the calibration name, Calib value and password for this calibration, select for the *as the default calib* and save.



**Note: We recommend saving the name as "S/N of the phoenix eye + calibration date".*

● **Measurement**

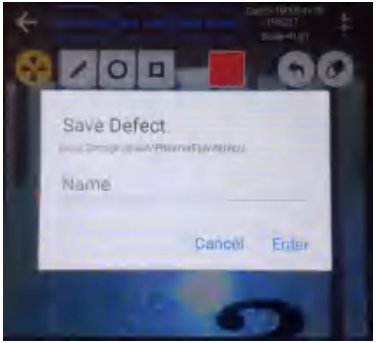
1.Use the Phoenix Eye to take a photo of the crack to be measured.

2.Click *Open Calibration* to select the calibration you will use and input the password accordingly

3.Click the Scale to set your preferred unit among mm, inch, mil.

4.Zoom-in or zoom-out to adjust the photo in proper size and position.
5.Select from *Line*, *Circle* or *Rectangle* accordingly.
6.Draw the selected shape along with the edge of the crack.
7.The dimension appears by the crack

8.Multiple cracks can be measured in the same photo is needed.
9.Select *Save Defect* a window will pop up, save the name of the defect



● Crack Dimension Measurement by Intelligent Image UV Flaw Detection Light and PC

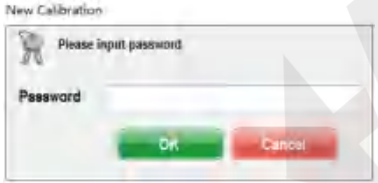
1.Take Photos with the Phoenix Eye

1.Connect the Phoenix Eye with the PC by the cable
2.Open the software “CrackCheck Phoenix Eye” and the Phoenix Eye will automatically connect with the lamp.
3.Press the *Switch Button* to choose white light or the UV light as needed.
4.Rotate the *Adjust Button* to adjust the intensity as needed.
5.Press the *Snapshot* or the *Camera Icon* on the screen to take the photos.

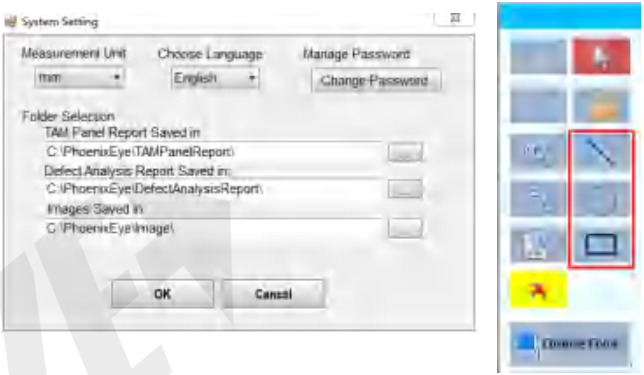
2.Calibration

1.Click *New Calib* to start a new calibration

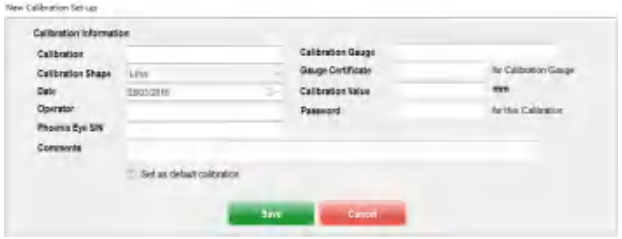
2.Input the password to enter calibration mode, the default password is “111111” and click *OK*.



3.Select the *options* to set your preferred setting such as unit (mm or inch), language, the storage path, etc.



4.Zoom-in or zoom-out to adjust the photo in proper size and position.
5.Select from *Line*, *Circle* or *Rectangle* accordingly.
6.Click the mouse as starting point, and draw the selected shape, then click the mouse as the end point to finish drawing. There is a value shown on the screen, it is OK the value is not right at this point.
7.Click *Stop Calibration*, and a window will pop up.
8.Input the information as needed and click *Save*



3.Crack Dimension Measurement

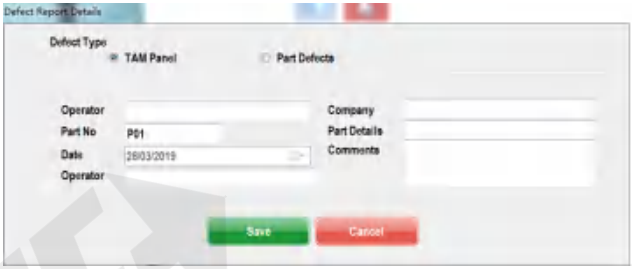
1.Use the Phoenix Eye to take a photo of the crack to be measured.
2.Click *Open Calibration* to select the calibration you will use and input the password accordingly

**Note: If you don't choose calibration, the system will automatically use your default calibration.*

3.Select the *options* to set your preferred setting such as unit (mm or inch), color of the drawing, the storage path, etc.
4.Zoom-in or zoom-out to adjust the photo in proper size and position.
5.Select from *Line*, *Circle* or *Rectangle* accordingly.
6.Click the mouse as starting point, and draw the selected shape, then click the mouse as the end point to finish drawing
7.The dimension appears by the crack
8.Multiple cracks can be measured in the same photo is needed.

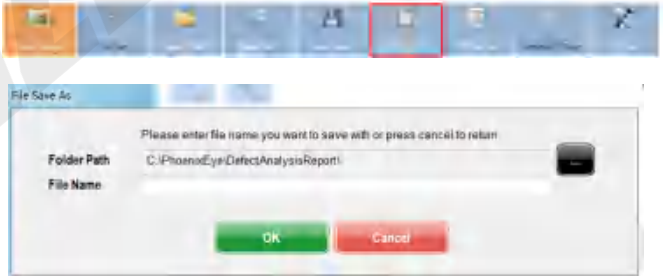
4.Save the defect Measurement

1.Click *Save Defect* and a window will pop up.



5.Report Generation

1. After saving he defect, click end report and a window will poop up.

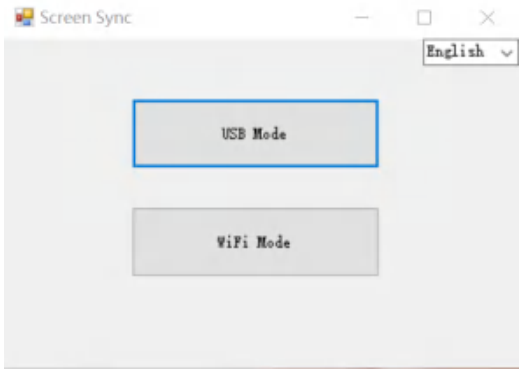


2. Name the file and click OK, the report will be automatically generated.

6. Real-time data streaming between a PC and the Intelligent Image UV Flaw Detection Light

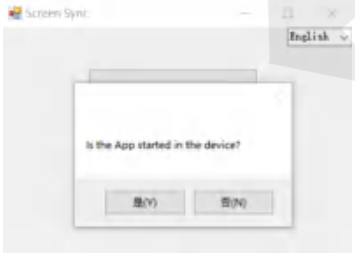
●Via USB

1.Connect the lamp with the PC by a USB cable
2.Open the software “Screen Sync” on the PC.
3.Click “*USB Mode*” on PC

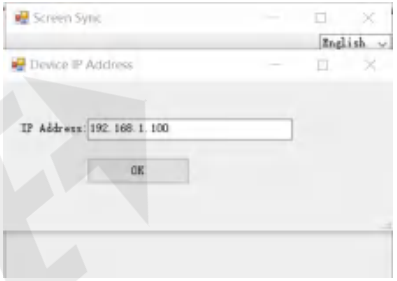


●Via Wi-Fi

1.Connect the lamp and the PC to the same Wi-Fi router
2.Open the Android-based APP Screen Sync on the lamp, an IP address will shown on the screen.
3.Open the PC-based software “Screen Sync” on the PC.
4.Click “WiFi” Mode, a window popping out “Is the App started in the device?” and click Yes.



5.A new window will pop up and you will see an IP address, change the computer IP address to the same as the IP Address shown on the lamp and then click OK.



*Note: During the real-time streaming, users can operate the lamp screen via PC.

7. Notice

- ●Intelligent Image UV Flaw Detection Light has built-in Android as its operating system which is similar to your daily operation on your smart phone.
- ●The lamp is operated with Android system, users can download various apps in the Google Play. However, not all the apps are compatible with the system. In addition, some apps are blocked in certain nations and regions.
- ●**DO NOT** delete built-in folders, otherwise, some apps can't work well.
- ●The Bluetooth can **ONLY** be connected with the Android terminals, and can't be connected with ISO system.
- ●There are two data storage in the lamp, please save the photos in the SD card, which we've already done it for you, since the internal storage is of limited data space.
- ●When using the micro lens, the lens should be about 3cm away from the testing piece.
- ●To avoid potential damage to the toughing screen due to chemicals, oil, dirt, etc., a stylus is recommended.

●**DO NOT** use the instrument where there is lot of chemicals, oil, dirt, etc.

8. General Safety Instruction

1.Hazards when using Intelligent Image UV Flaw Detection Light UV source is hazardous to human beings. MUST read this instruction manual and refer to local or industrial safety regulation before use. It is strongly recommended that a corporate wide safety regulation on UV source be set up with EHS department before use, avoiding any potential injuries/ damages to humans, properties and environment.

2.Dangers caused by UV Radiation

The assessment of the risk depends on the following factors:

● Exposure time
● Radiation intensity
● Spectrum of the UV-LED light

Due to the fairly low penetration of energetic optical radiation, health hazards at the workplace are predominately confined to the eyes and skin. Particularly the hands and eyes of the inspector could be affected.

Ultraviolet/red laser radiation can cause damage to skin and eyes. See the following recommendations:

● Do not look directly into the ultraviolet/red laser light beam
● Never use optical focusing devices, such as magnifying glasses, tele-scopes or microscopes, to look into the light beam (In this context, corrective glasses are not included in focusing optical devices)
● Do not direct the UV-LED/laser beam against other people
● Avoid skin contact. Wear body-covering work clothes and suitable gloves or lotions with a high UV protection factor
● Access to the light's zone of activity should be restricted to trained personnel only
● Wear suitable eye protection (UV safety glasses) due to the reflection of UV-LED light, damage to the eyes can occur without looking directly into the lamp.

The operator of the device should identify document and mark area of increased exposure, he/she should ensure that:

● Only authorized and trained personnel are active within the area
● Values defined for body part exposure are not exceed
● Personal protection devices are used in order to avoid over exposure.

3.Proper safety signs

The following safety signs are recommended to stick around working areas. Please refer to EHS department for more information.

4.Action to be taken in the event of an emergency

In case of an emergency, switch off the power supply of the light. The main operating switch disconnects the internal electronics from the power supply .However, parts of the light can still be carrying dangerous voltages, even if the main switch is OFF.

Switch off the external power of the light immediately if defects or damage have been detected to electrical equipment. Unplug the damaged light immediately and secure against further use.

9. Cautions

- The unit shall be used in an ventilated working environment
- Do not mount the unit in a closed environment or cover any part of the unit
- Do not use unit when the humidity is more than 90% or in a highly splash zone
- Stock the unit is a cool and dry environment
- For further issues, please contact the distributors or the manufactures for help
- Do NOT put the unit close to high temperature (fire) to avoid damage to batteries or explosion
- UV intensity may decrease with the aging of LEDs