

CS02-500 Digital Microscope User Manual

([English](#))

([中文](#))

Prepared by Coolingtech Digital Engineering Dept.

2010.3.25

前 言

首先非常感謝貴司（您）購買了**CS02-500X**數碼顯微鏡
數碼顯微鏡應用範圍非常廣泛,主要有以下方面.

1工業方面:

- a 工業檢視, 例如電路板、精密機械等
- b 印刷檢視, SMT焊接檢查
- c 紡織檢視
- d IC表面檢查

.....

2美容方面

- a皮膚檢視
- b發根檢視
- C紅外理療（特定產品）

.....

3生物應用

- a微生物觀察
- b動物切片觀察

.....

4其他

- a擴視器, 協助視障人士閱讀
- b寶石鑒定

.....

CS02-500數碼顯微鏡使用簡單, 只需要同電腦**USB**接口連接就可以使用, 本產品還配備測量軟體, 可做簡單的量測, 非常的方便。爲了更詳細的介紹本產品, 敬請耐心的閱讀產下麵的產品介紹, 使用方法, 注意事項。

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部位說明規格



規格：

傳感器：高性能感光芯片

主控芯片：專用主控16Bit DSP

放大倍率：50X ~ 500X

拍照/錄影：內置

輔助光源：8顆白光LED燈

靜態解析度：640x480,最高可達1600x1200(可按需定制)

數碼變焦：5段式

成像距離：手動調節0~40mm

影像解析度：標準640*480

- 固定底座：萬向金屬底座
- 光 盤：內含驅動，測量軟體，說明書
- 支持系統：WIN XP/VISTA; WIN 7 32位和64位
- 電 源：USB (5V DC)
- 電腦界面：USB 2.0 & USB 1.1 相容
- 動態幀數：30f/s Under 600 LUX Brightness
- 照度範圍：0 ~ 30000LUX線控可調
- 硬體需求：奔騰 主頻700M Hz或以上；1G硬碟 CD ROM 光碟機；
64MB 內存
- 支持語言：中文（簡體）,中文（繁體）,英(其他語言需要定制)
- 產品顏色：磨砂黑色，其他顏色可定制
- 主體尺寸 112 mm (長) 33 mm (外徑)
- 單機包裝重量 380g

安全警告及注意事項

1. 勿自行拆解本產品，以避免靜電擊穿精密晶片。
2. 勿用酒精等有機溶劑清潔產品。
3. 勿用手指觸摸鏡頭，以免表面造成刮痕和臟污。
4. 戶外使用時應避免高溫和高濕環境中，防電子器件短路。
本產品不具有防水功能，請應避免淋雨和進水。
5. 本產品的使用和存儲溫度範圍：0°C ~ 40°C，相對濕度：45%RH ~ 85%RH
6. 若不慎使異物或水份/液體 進入數產品內部，請先拔除USB 線。並送至維修中心檢修，切勿自行處理。
- 7 设备測量精度僅供參照，由測量误差引起的糾紛与本產品無關。

配件說明

1. 數碼顯微鏡主體 (1台)
2. USB 連接線 (1.5m)
3. 萬向底座 (1個)
4. 光碟(驅動程式，測量軟體，安裝說明書)

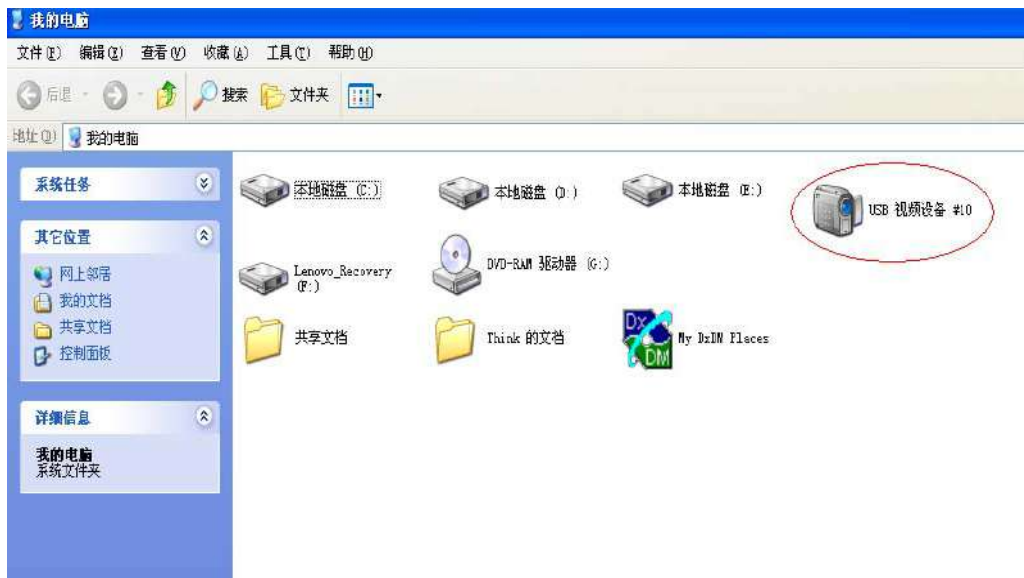
硬體要求

Windows 2000、XP、VISTA、WIN 7 操作系統。奔騰 IV 1.5G, Celeron, AMD 或以上的CPU。64MB 內存。150MB 以上之硬盤空間(安裝驅動程式及應用軟體) 支援16-bit的顯示卡，CD-ROM 光機，USB2.0或USB1.1

安裝說明

CS02數碼顯微鏡為無驅動產品，如果不需要一些特殊操作的話，在windows2000以上版本可直接運行。

1直接將本產品同過USB線連接到電腦上，然後點擊



2雙擊紅色標示內的設備圖標就可以正常使用。

如需要特殊的操作，請參考本產品附送光碟，安裝步驟（以Win XP為例）將安裝光盤放入光驅後，安裝程式將自動執行，出現如下畫面（如果無法自動執行，可點擊光驅圖標手動操作）



1 驅動安裝



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幾秒鐘后




2选择'下一步'



3.选择'安装'



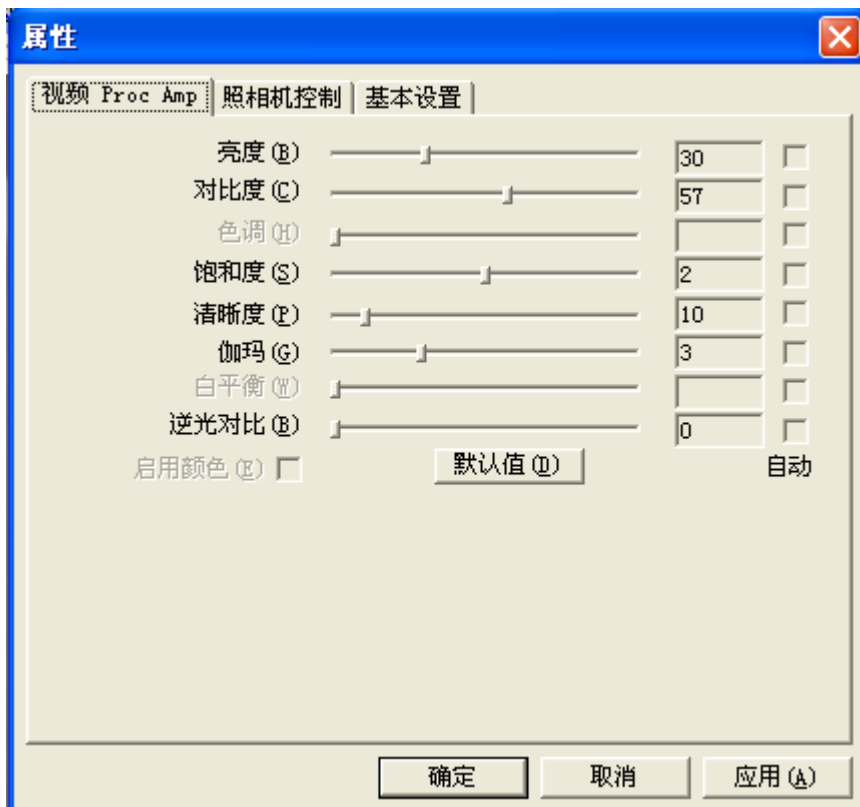
4, 驱动“完成”，驱动安装完成，如果是初次安装，建议重启电脑。若在驱动安装过程中出现警告资讯，请直接點選“仍然继续”即可

5, 驱动安装完成后，桌面上会出现如下图标 ，双击显示

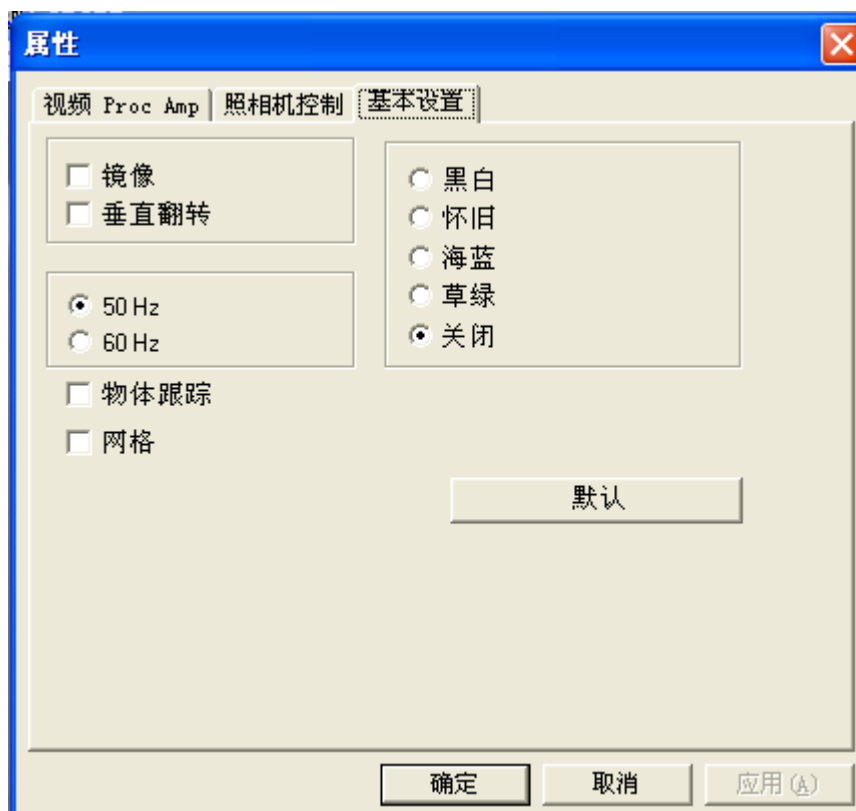




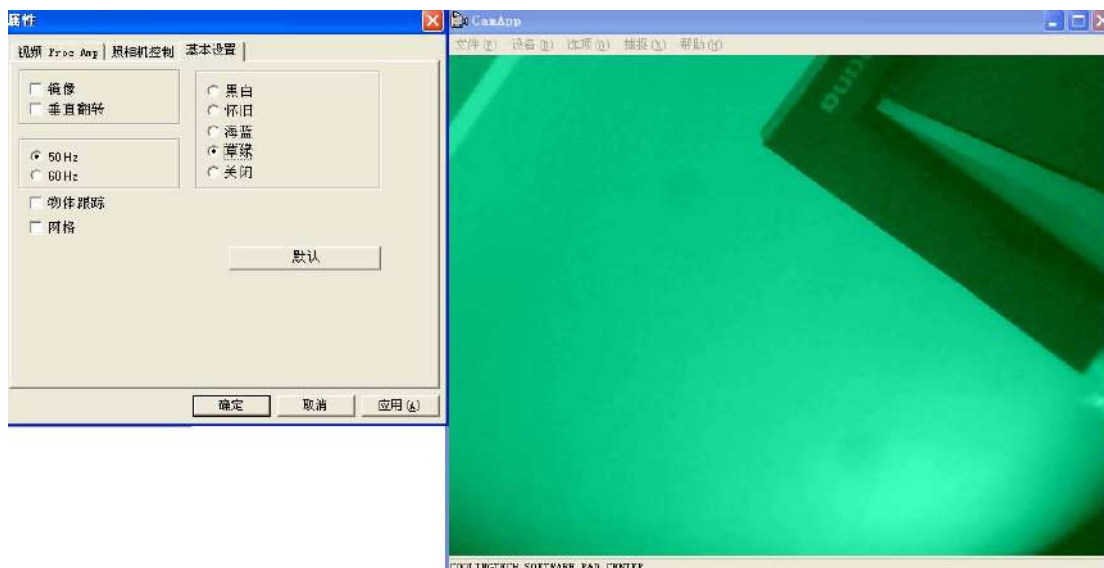
5. 菜單欄中的選項可根據自己的需求設定，例如點擊“選項”—“視頻捕捉篩檢程式”，出現

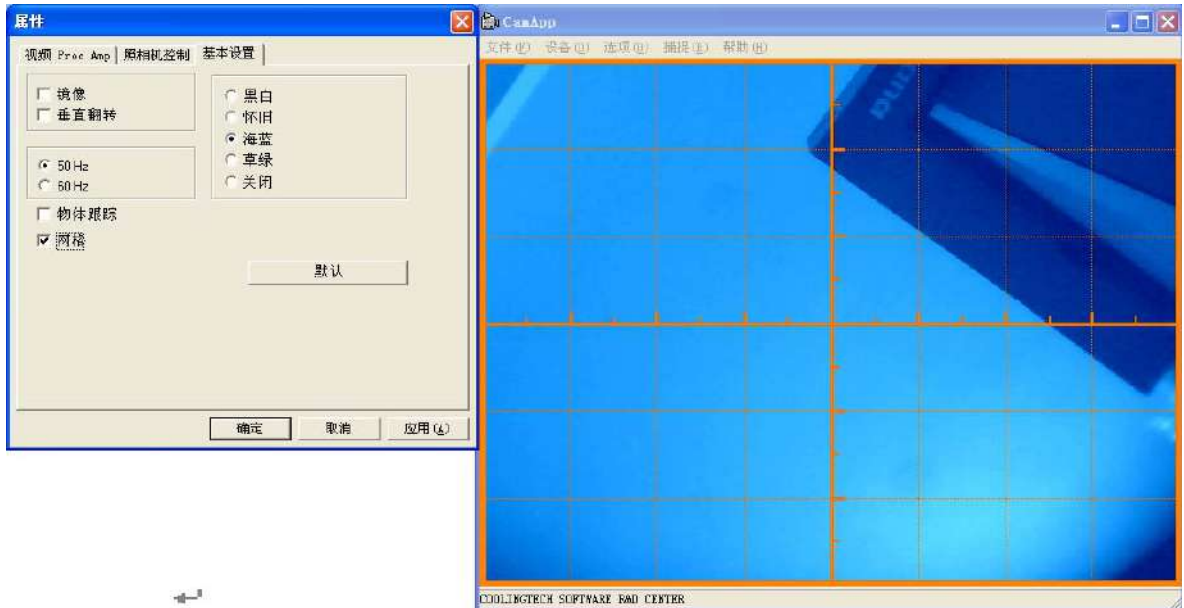


顯微鏡光學參數做些簡單的設置。點擊“基本設置”，出現：



根據需求，可對對圖形特效處理，如下





如需要回復到初始參數，請點擊“默認”。

2 測量軟體安裝

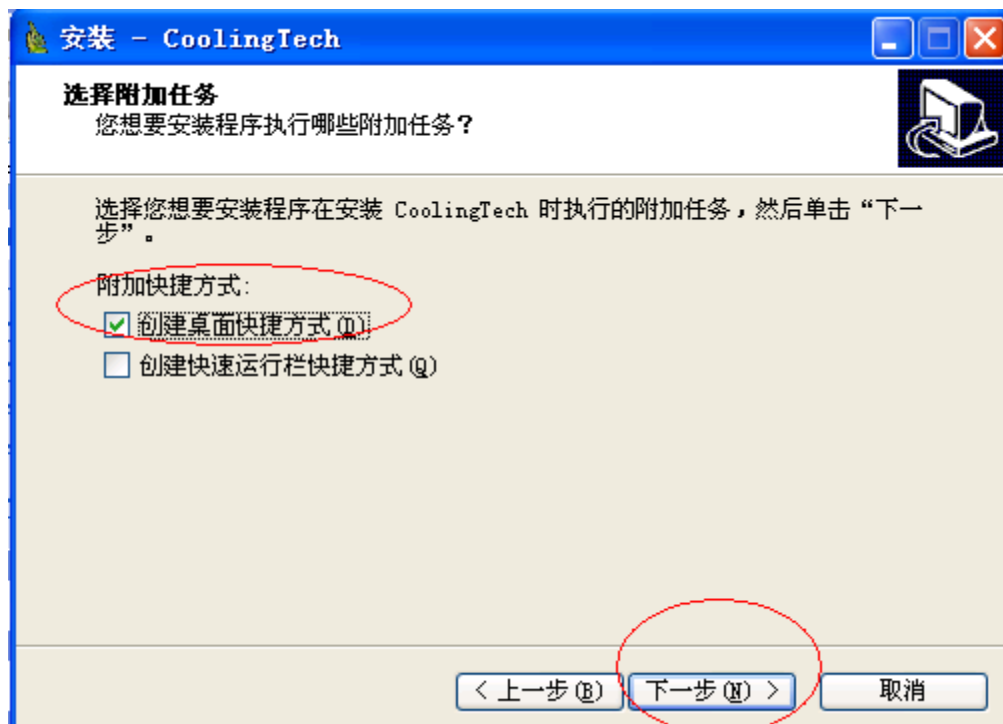
1 點擊 **Measurement** 出現：



2 點擊“下一步”



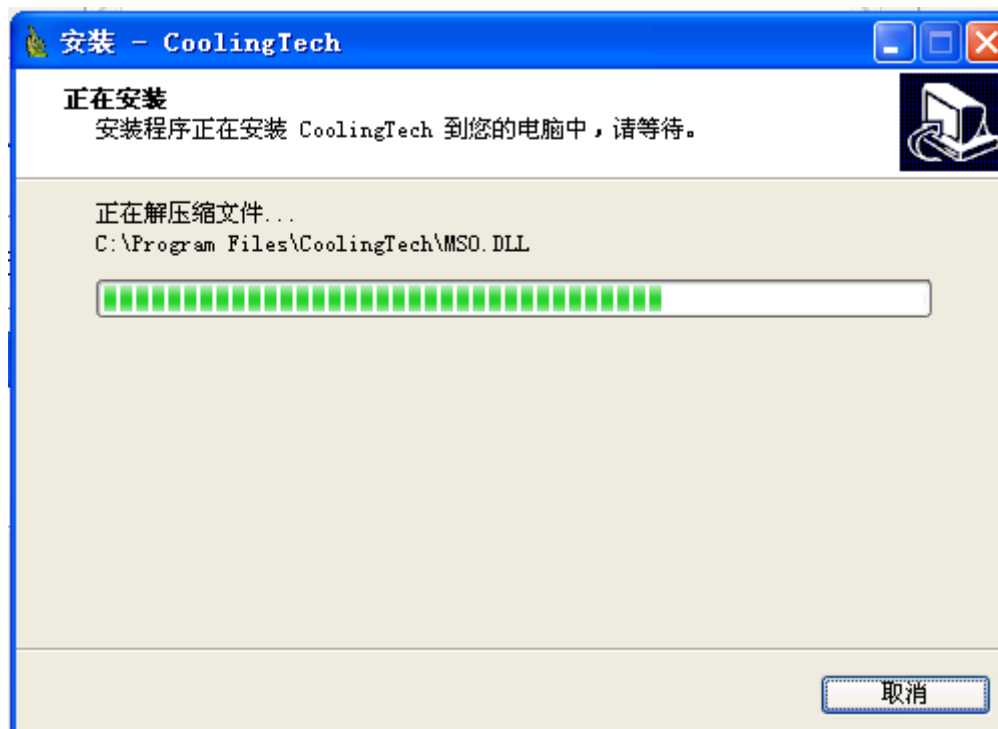
3 選擇程序安裝路徑，點擊“下一步”



4 如果需要在桌面上創建快捷方式，相應框中打‘√’，點擊‘下一步’




5 单击‘安装’，程序就进入安装状态

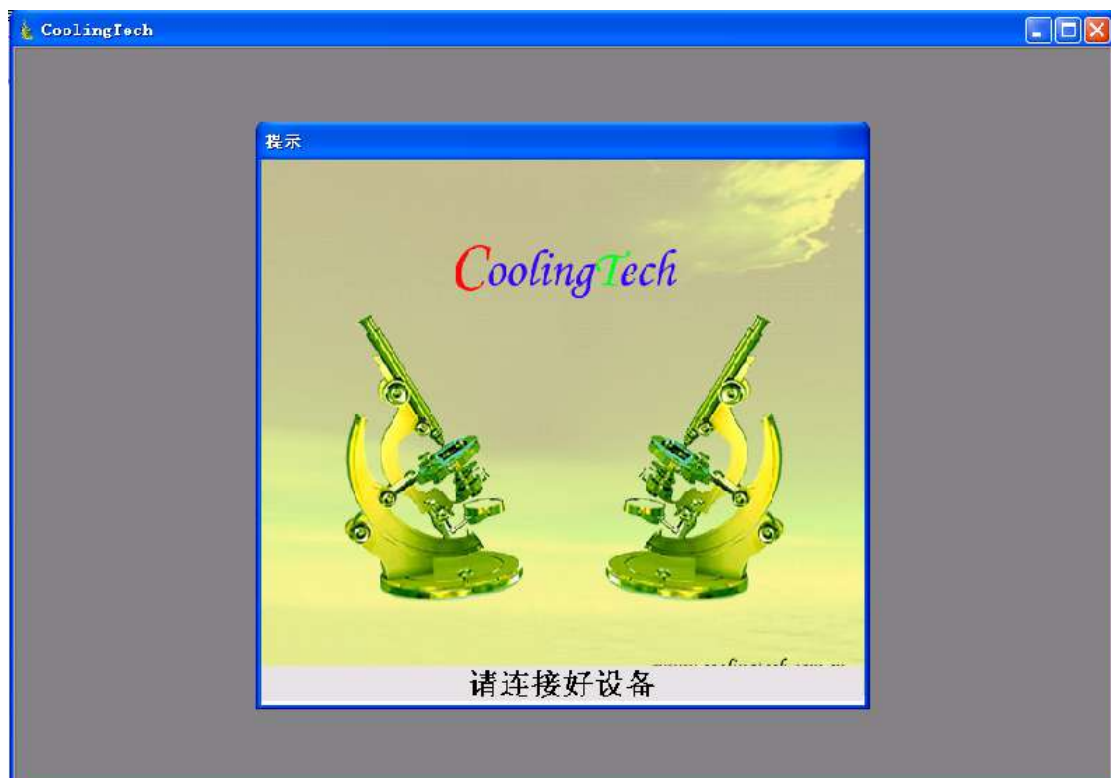


6 几秒钟后，程序安装过程结束

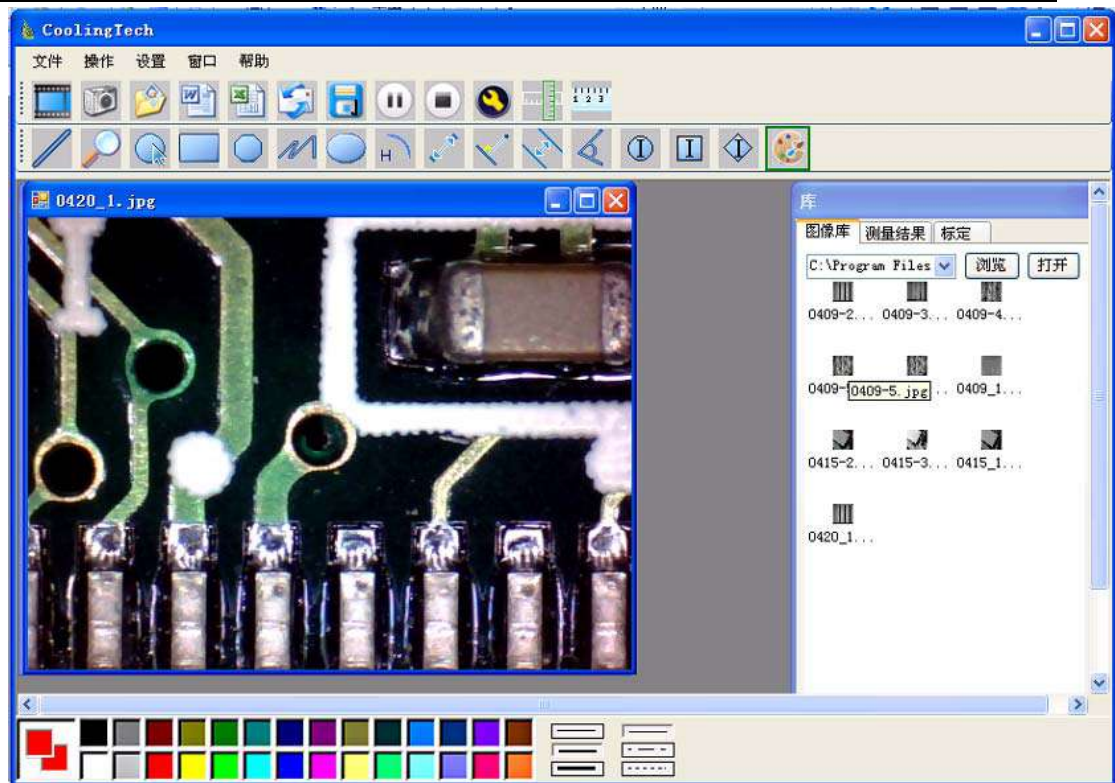


7 點擊完成，程序就可以使用了。

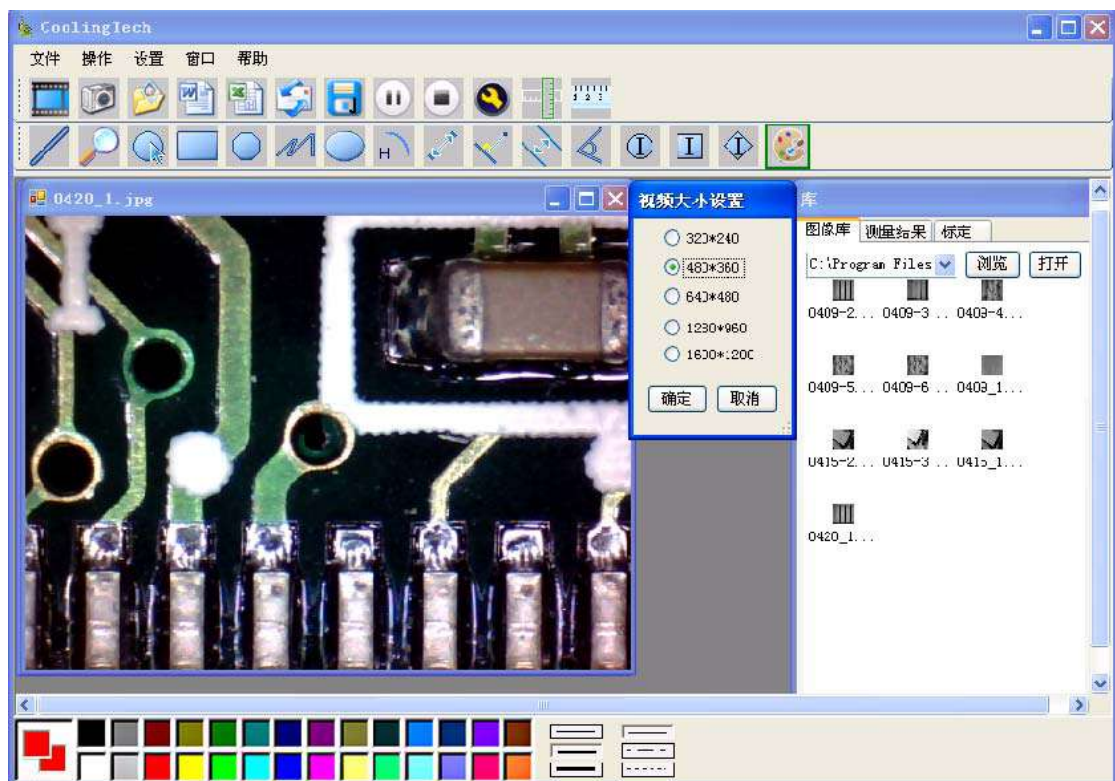
8 程序安裝成功后，點擊桌面圖標 ，進入如下界面




9 按照提示，連接好設備，程序自動運行到主界面。

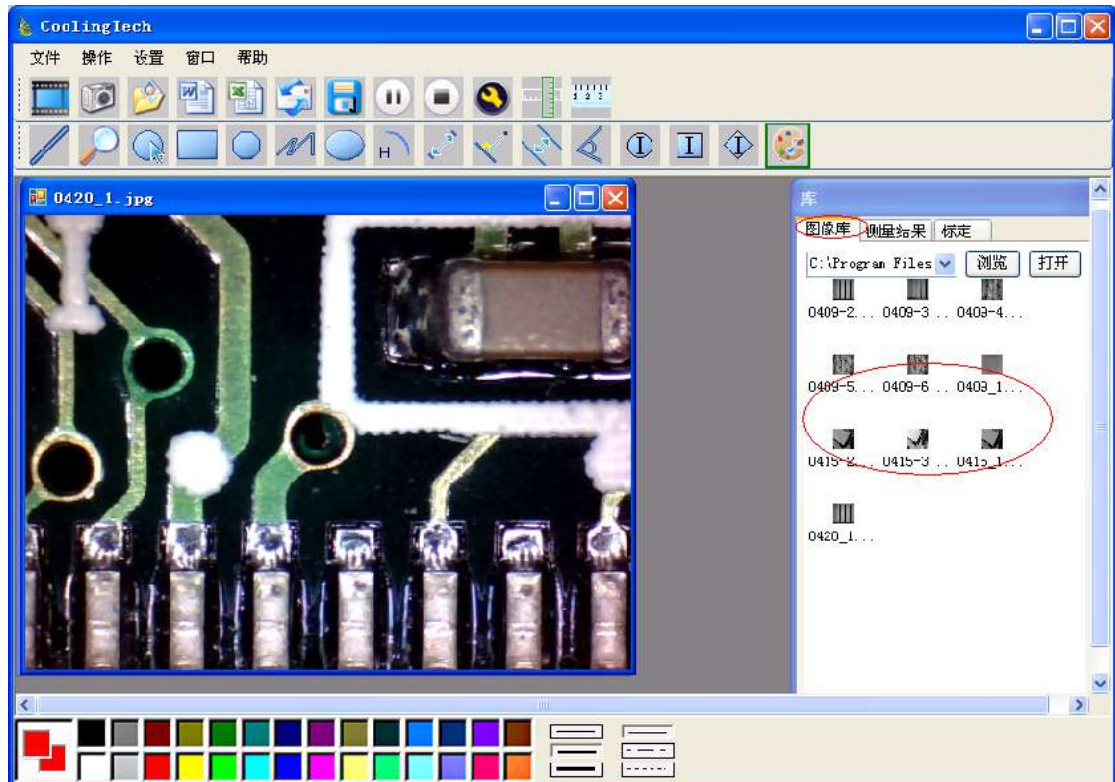




10 點擊 

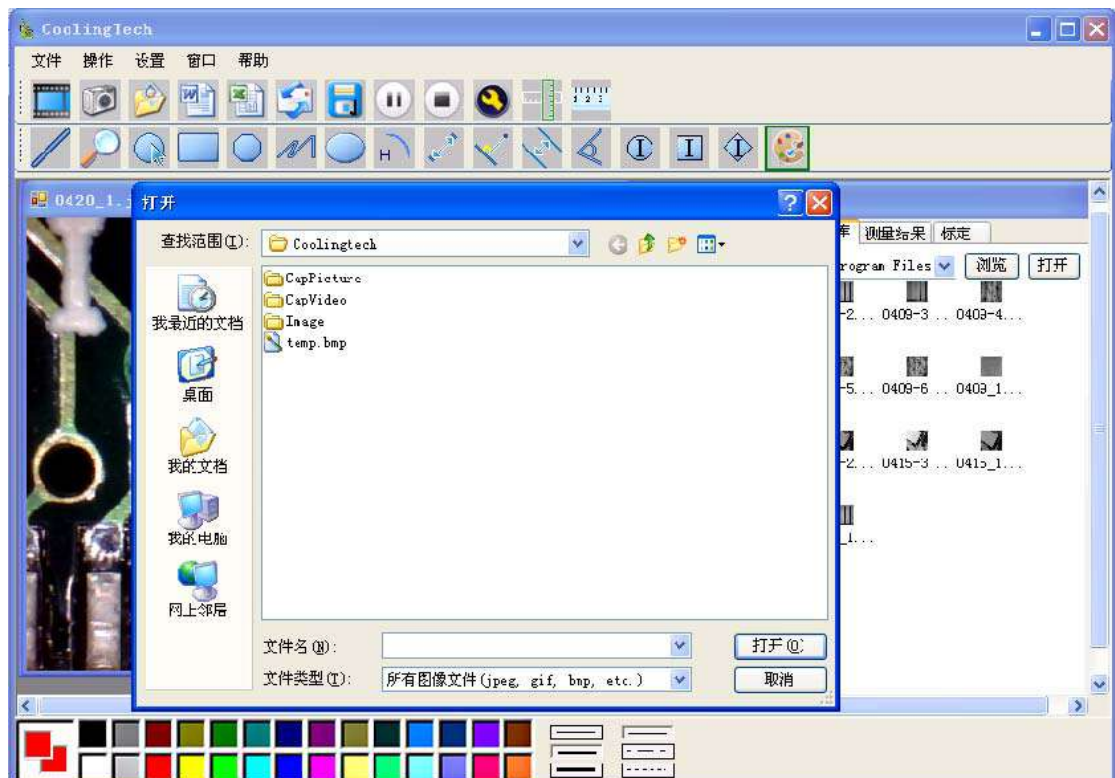


選擇視頻分辨率，視頻分辨率範圍320*240 ~1600*1200，分辨率默認值為640*480。

- 11 點擊 ，採集圖片，可執行數據量測功能。由於動態影像不是很穩定，本軟件將採用靜態模式下進行量測，測量精度會相應的提高

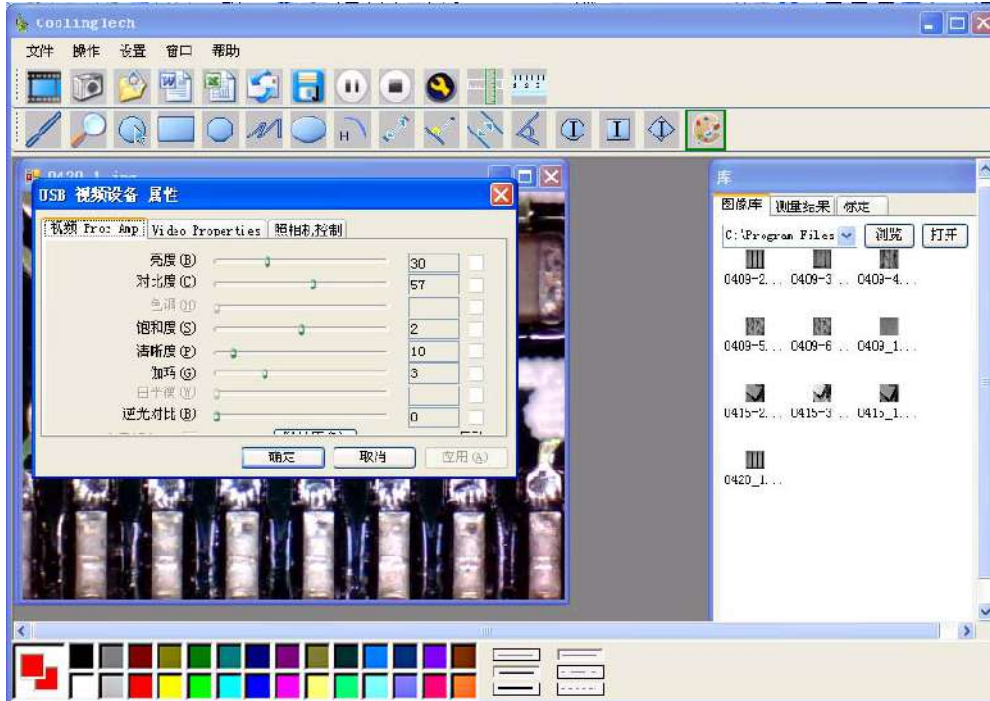


- 12 點擊  可以打開之前存儲的圖片；點擊  可以保存圖片到電腦指定文檔




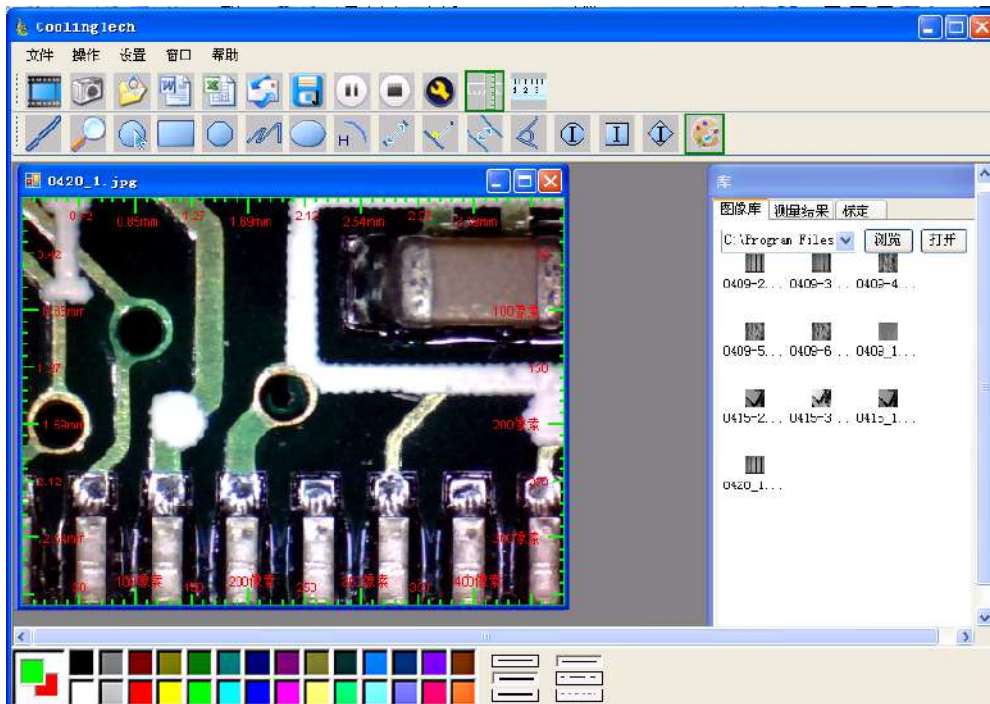
13  視頻暫停和終止

14 點擊 



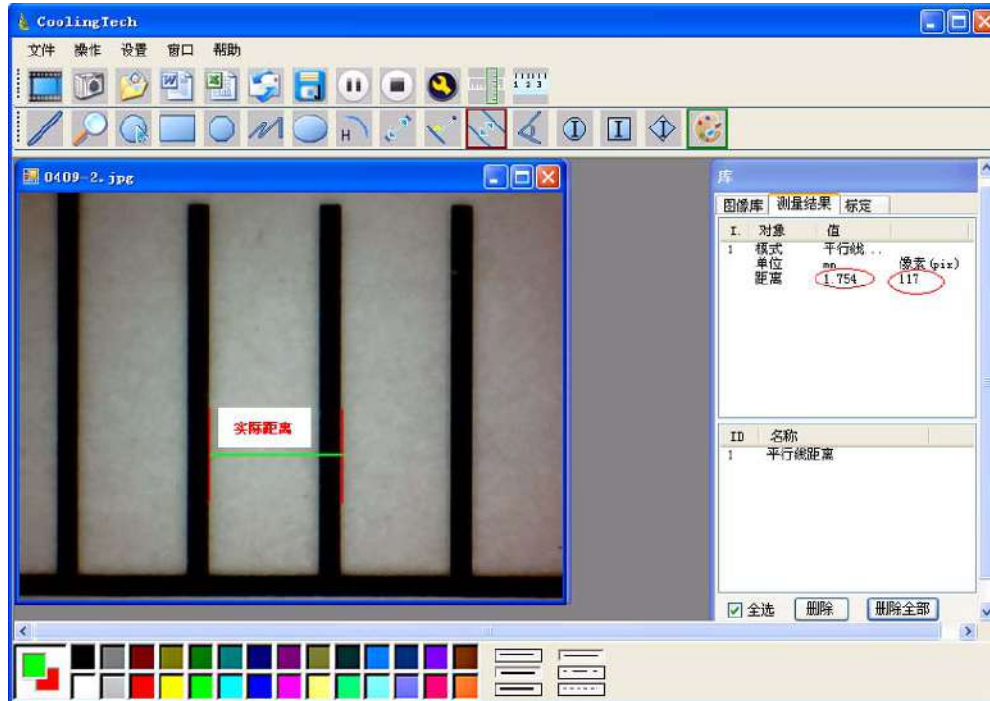
15  圖像放大

16 點擊圖標 ，顯示如下帶標尺線界面

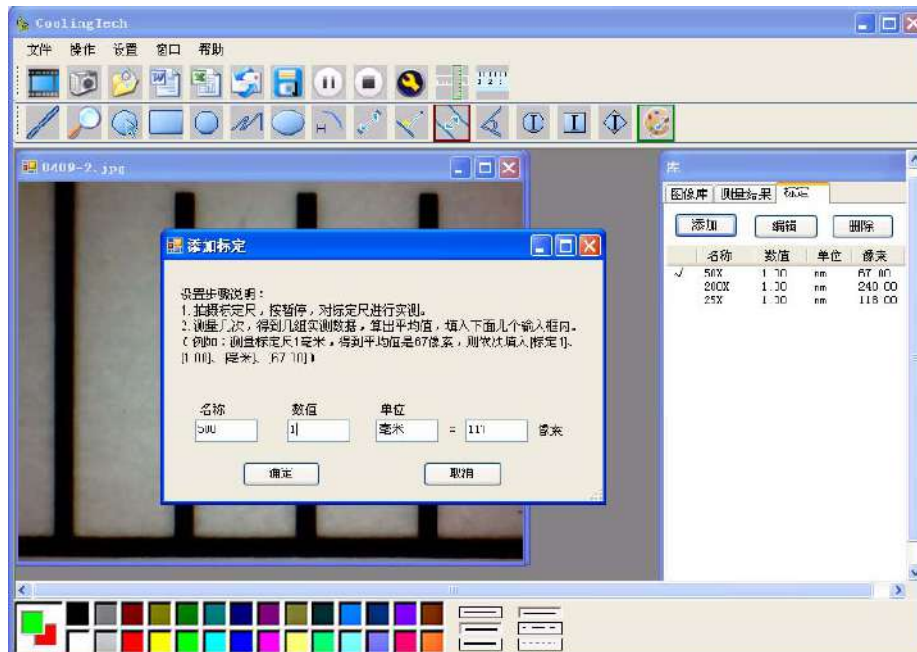


17 點擊圖標 ，進入測量精度校正功能

爲了提高測量精度，每次使用顯微鏡測量軟件前，倍率改變，校正也要改變，測量精度就可以達到99%。當然校正后的校正值可以保存，下次如有同樣倍率也可以使用，測量誤差相對較高。精度校正時，建議對同一個實際值進行多次測量取平均值的方式進行。另外本產品還配備專用校正尺，請不要使用其他標尺校正，以免影像測量精度。



輸入測量值，和相應的單位



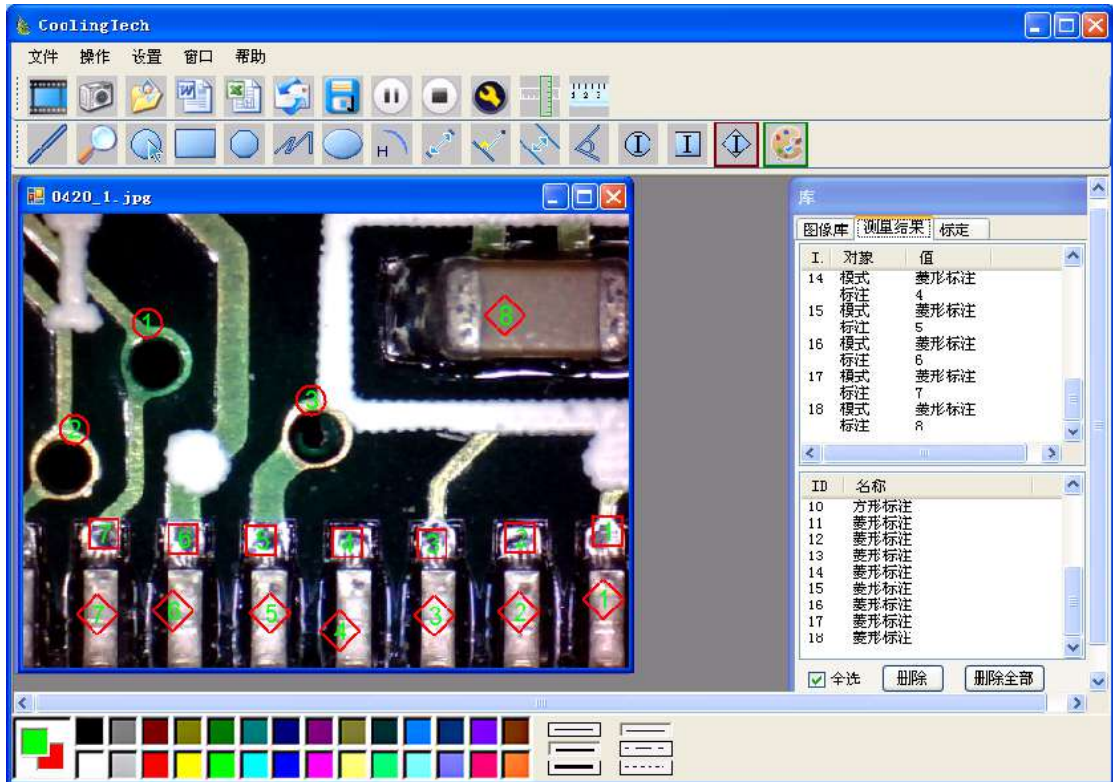
校正就完成了，在這個倍率下就可以做量測了。

注意：


放大倍率改變，必須重新校正。

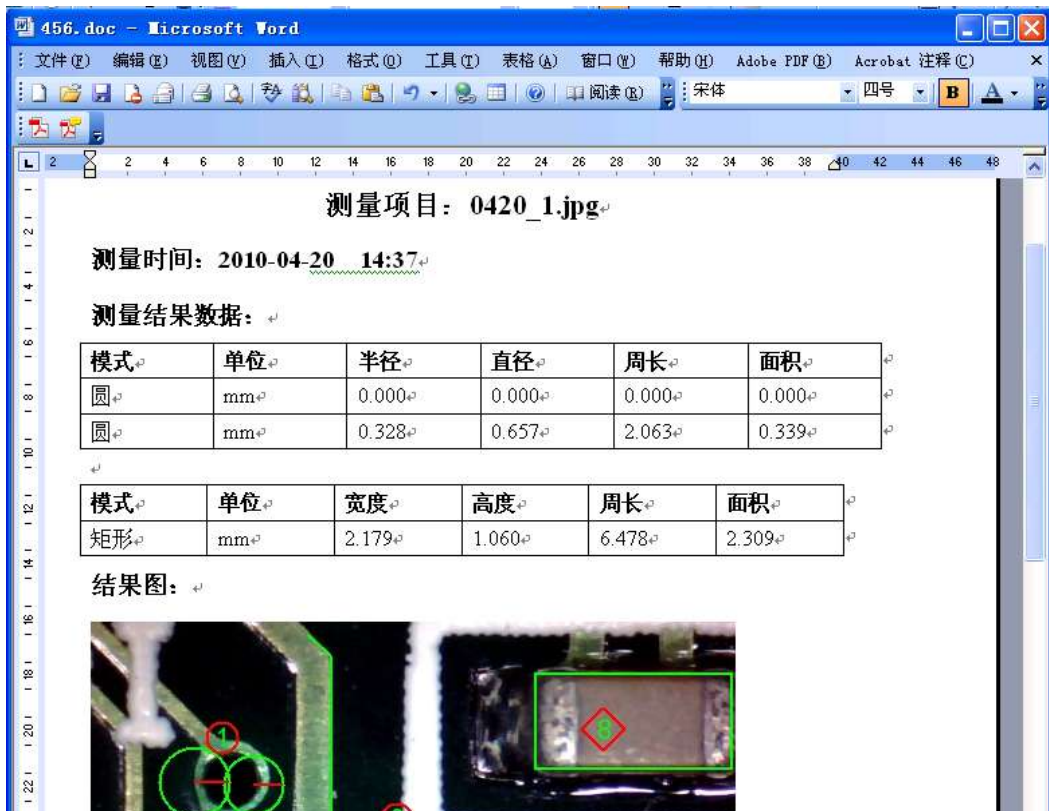
18

，标注方式和颜色选择



19

，测量的结果可以以Word，Excel，或邮件格式输出。
下麵是一个测量结果Word的输出范例



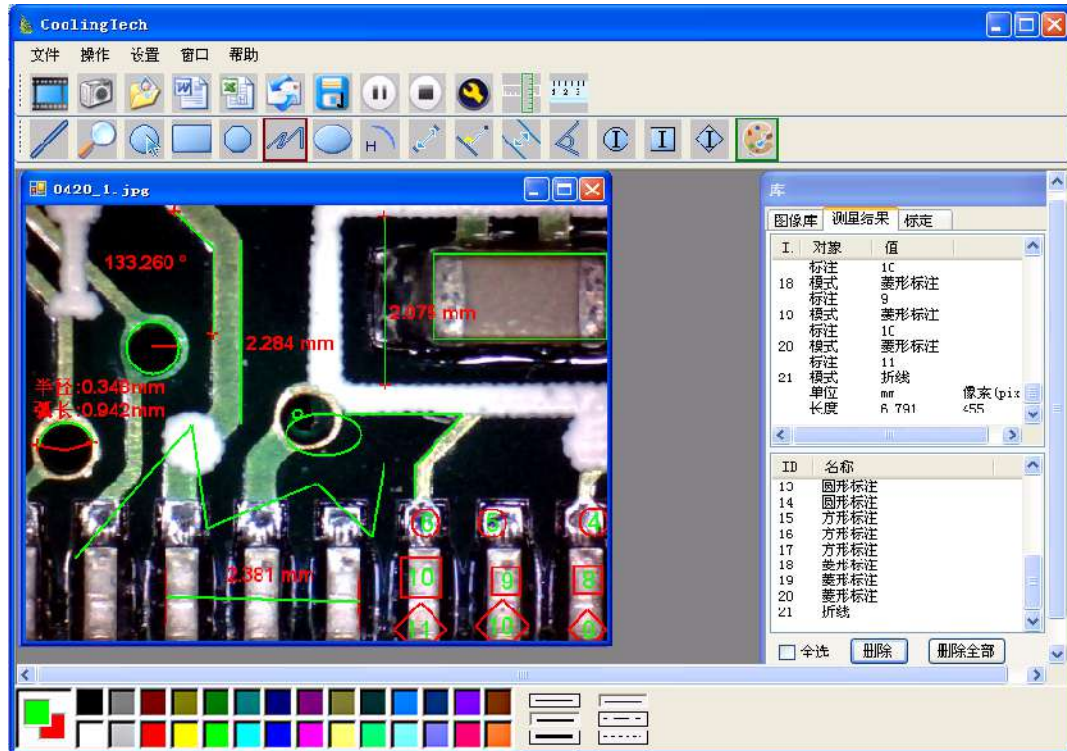
20



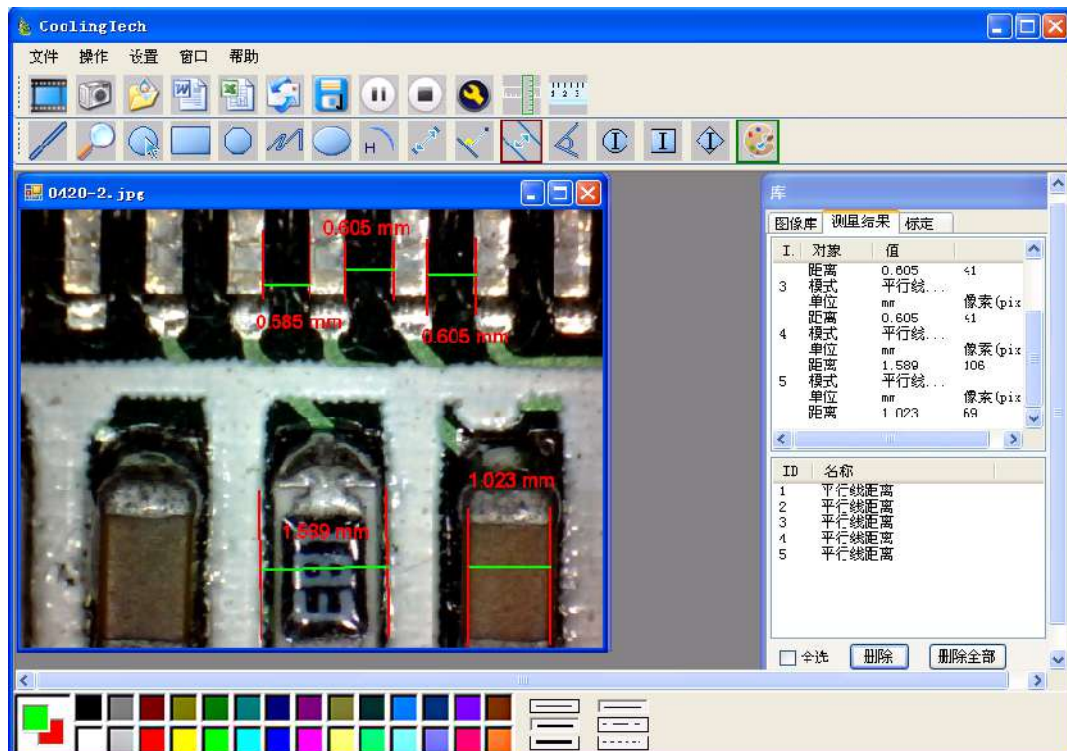
從左到右：

直線測量，圓測量，矩形測量，多邊形測量，折綫測量，橢圓測量，圓弧測量，點對點測量，點到綫測量，平行綫測量，角度測量。

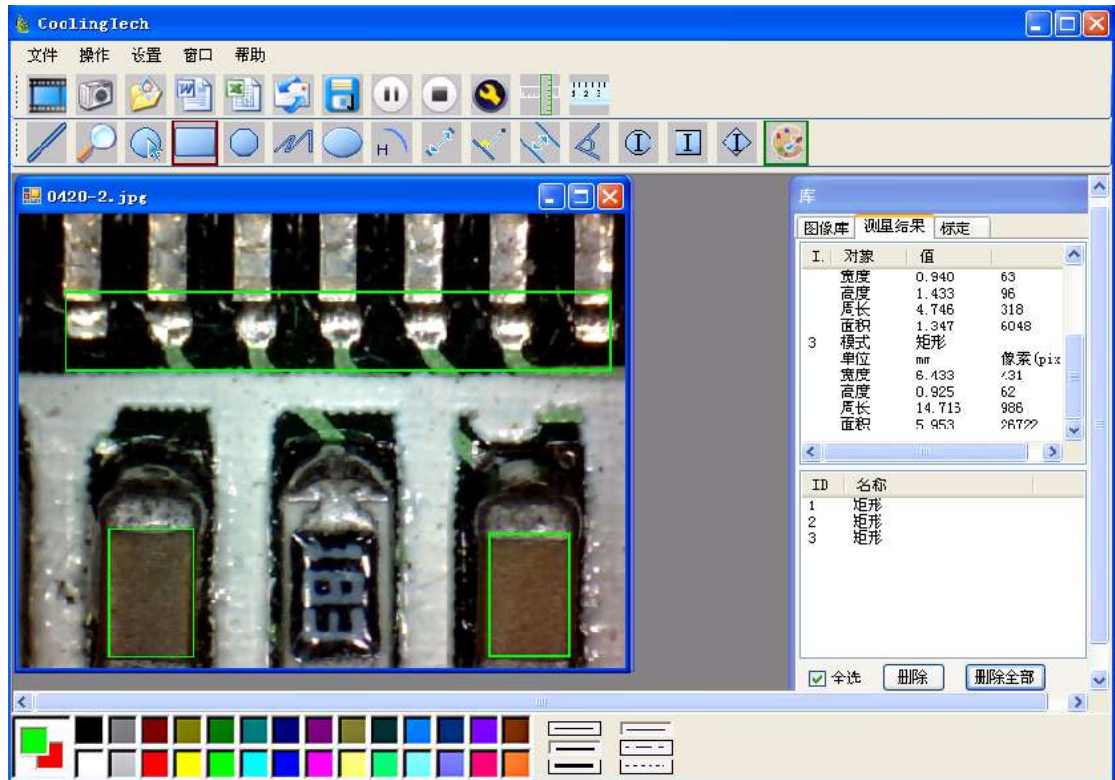
如下圖：



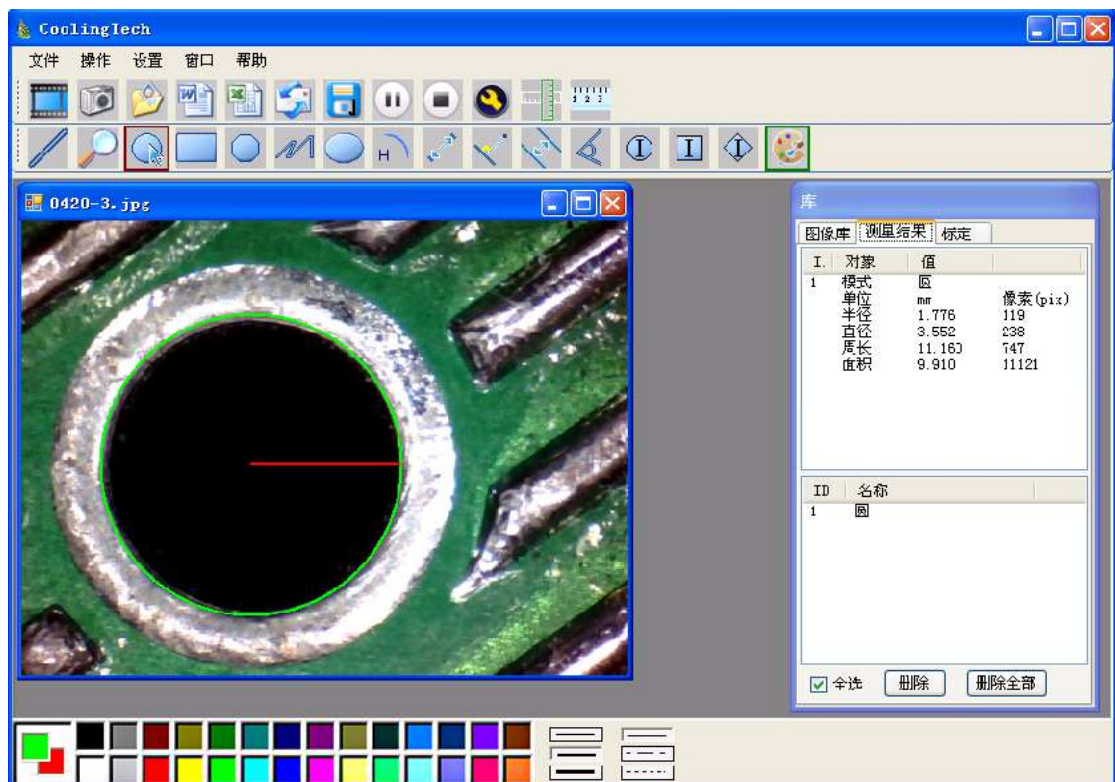
範例1：平行綫測量



範例2：矩形測量



範例3，圓測量



3在安裝驅動時如提示需要安裝**Net Framework 2.0**，請點

擊  按照提示，繼續下去就可以了

Thank you for Purchasing our CS02-500 Digital Microscope, it is a slim type tool and can be easily used in different fields including

1. Textile industrial for textile inspection
2. Printing inspection
3. Industrial inspection: PCB, Precision machinery...
4. Educational purpose
5. Hair examination
6. Skin examination
7. Microbiological observation
8. Jewelry & coin (Collections) inspection
9. Visual Assistance
10. Others

Currently we have two models of Digital Microscope: USB port and TV port formats.

The USB microscope must be connected to the computer and TV microscope be connected to visual device (N/P). User interface is very friendly and you can do the Measure work easily.

You can find more information of the product on this manual.

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Parts of Microscope



Specification

Image CMOS Sensor

Controller High Speed DSP (Driver Free available)

Focus Range 0mm ~ 40mm

Snap Shot Software and Hardware

Video Capture Resolution 0.3M.

Built-in 8 White-light LED and adjustable illumination ensure the magnified images are clear and bright

Still Image Capture Resolution 640*480

Frame Rate 30 f/s under 600 LUX Brightness

Digital Zoom 5X Sequence Mode

Brightness Control Manual adjustment

Magnification Range 50X ~ 500X (Manually)

Power Supply USB Port (5V DC)

USB 2.0 & USB 1.1 Compatible

Operation System Windows XP, Vista, Win 7 32 bit and 64 bit.

Language: English, Chinese and other language by selection

System Requirement: Pentium Computer with 700M Hz & above,
20M HD Space CD ROM Driver, 64MB RAM, Direct X VGA Card

CD disk Driver and Micro-Measurement Tool

Product dimension 112 mm (L) X 33 mm (R)

Product net weight: 380g

Available color: Matting black, UV black; and other colors.

Notes before use

1. Don't disassemble the digital Microscope or change the interior parts, it can cause damage.
2. Don't clean the Microscope with alcohol organic solvents
3. Don't touch the lens with your fingers.
4. Avoid outdoor use if possible.
5. Storage temperature , 0°C ~ 40°C, Humidity:45%RH ~ 85RH%.
6. In case the product gets wet, leave PC connection immediately. And do not disassemble or dry by hair dryer. Send to repair center if the digit microscope was effected by liquid or other elements.
7. Measurement Data only for reference.

Product Outlook & Standard parts

1. Digital Microscope (1pcs)

2. USB 2.0 cable
3. Metal fixed Stand (1pcs)
4. CD ROM (Driver, Measurement software, User Manual)

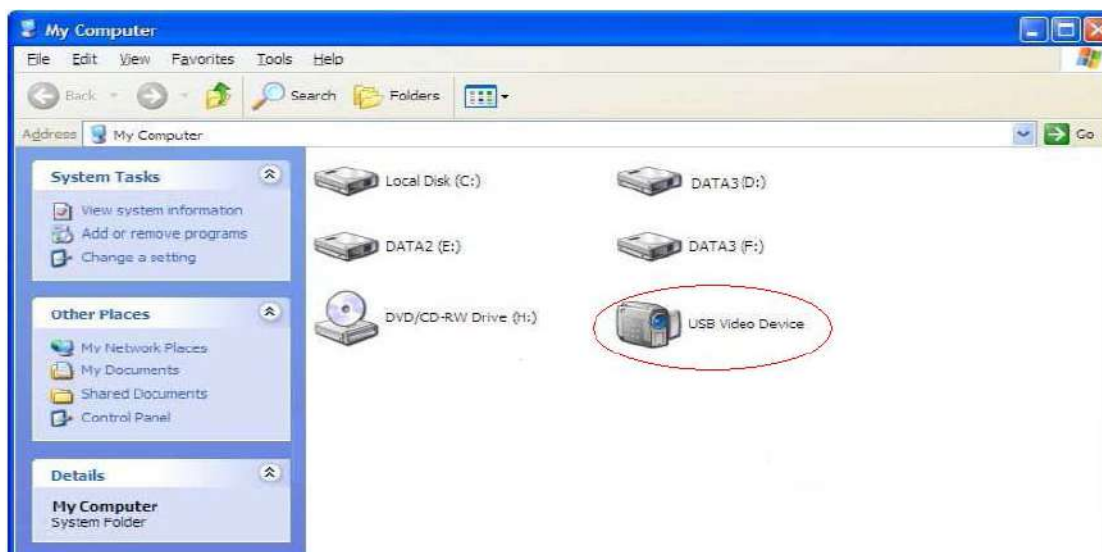
Hardware system requirements

Windows 2000、XP、VISTA、WIN7 Pentium 1G, Celeron, AMD 1G & above, 128MB Memory, 150MB Hard Disc memory space, 16-bit & above VGA ,CD-ROM, USB2.0 or USB1.1.

How to install the Driver

CS02-500 Digital Microscope is a free Driver Product, it can be worked immediately after connected to the computer with operation system above win2000 version.

1. Connect the Portable digital microscope by USB2.0 cable to your computer, double click 'my computer' icon on your computer desktop, below interface will be shown up.



2. Double click the **Video device icon** as above red marked in your computer. Now it is ready to use.

If you can't find the Video device, or if your computer can't recognize it, please follow below steps to install the driver.


Insert the attached CD, system will auto run to the interface as below and follow the steps to complete the installation:

(NOTE: If the computer can't auto run the disc, you need to operate manually by click "My Computer" → "DVD/CD Driver" →

run"AUTORUN.EXE")



1. Driver installation

1 Click  to continue, the screen will show the installation progress.

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↑

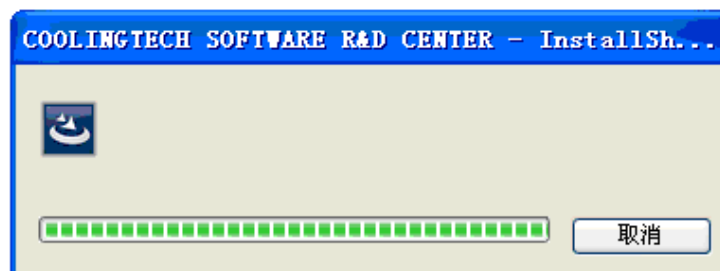
↑

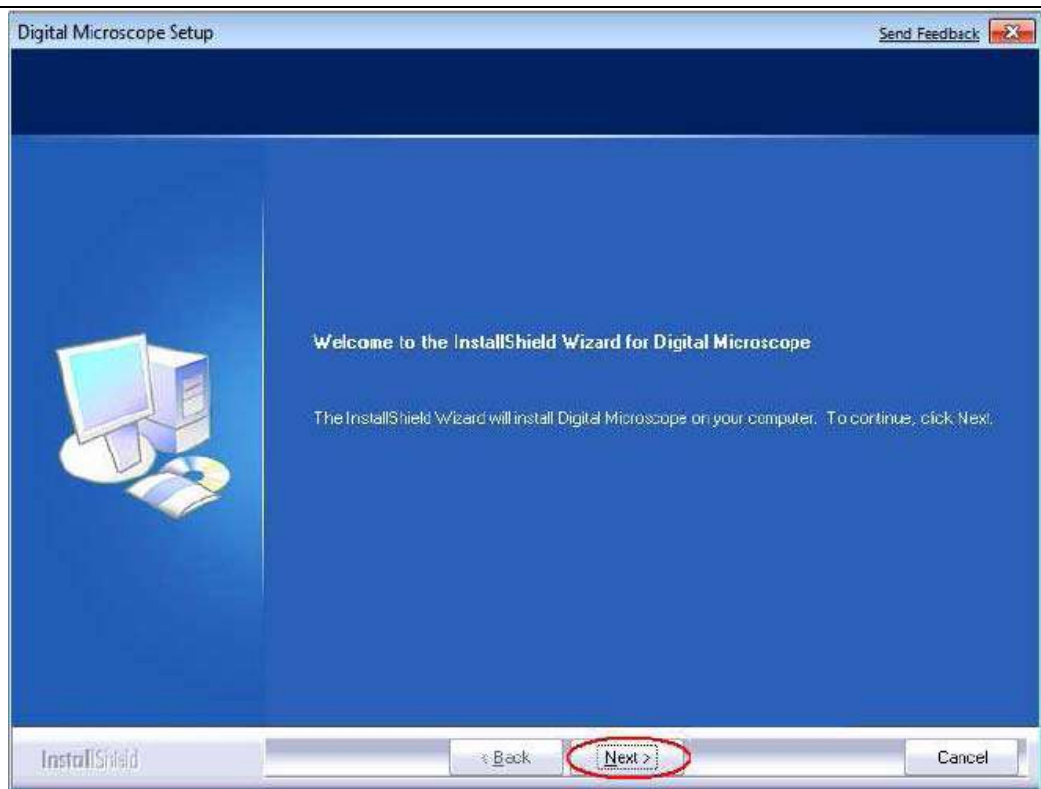
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↑

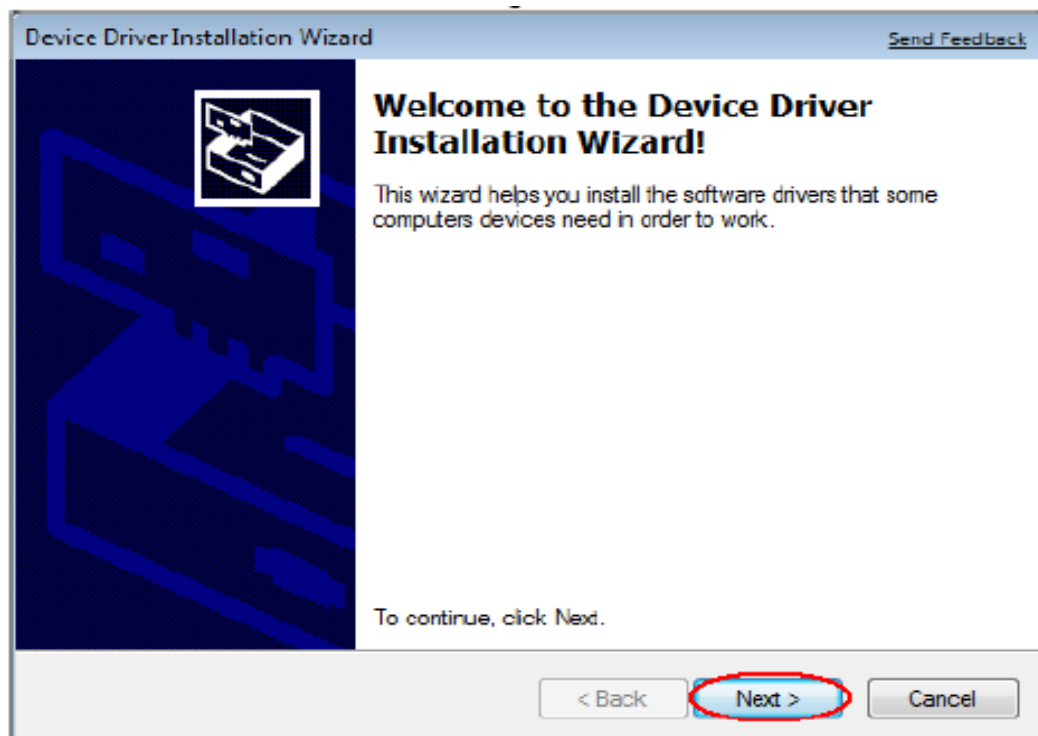
↑

↑





Click "next" to continue, as followings:



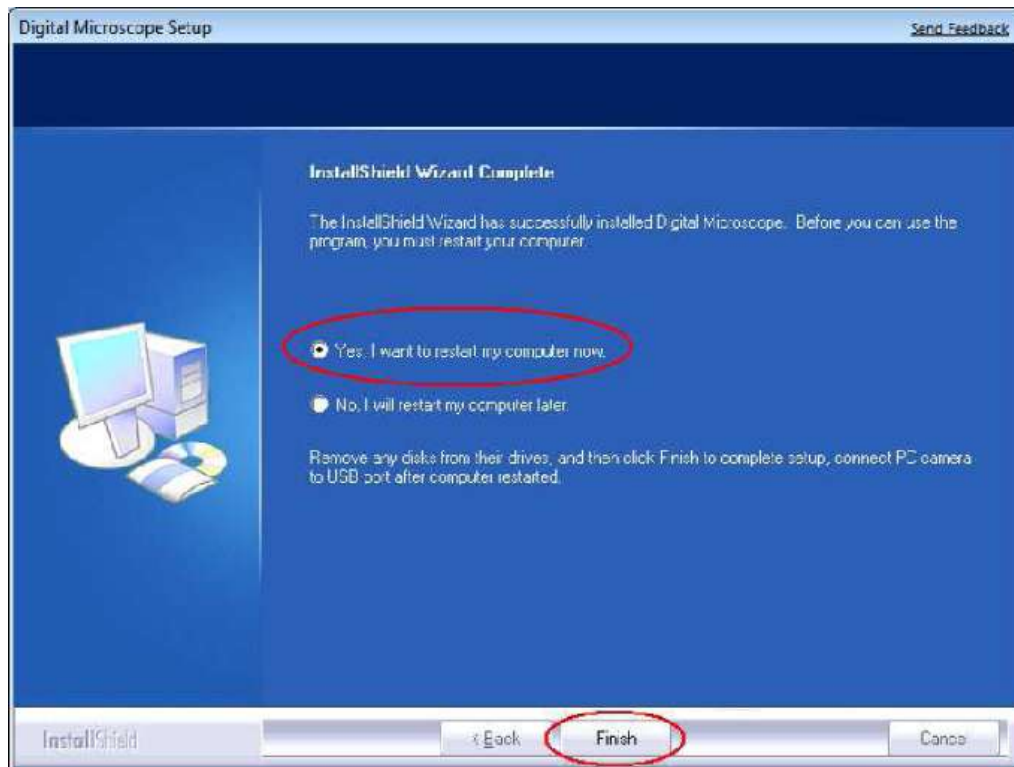
Click "next" to continue, as followings:



Click "continue Anyway", as followings:



Click "Finish" to continue, as followings




Select 'Yes, I want to restart my computer now', and click "finish".

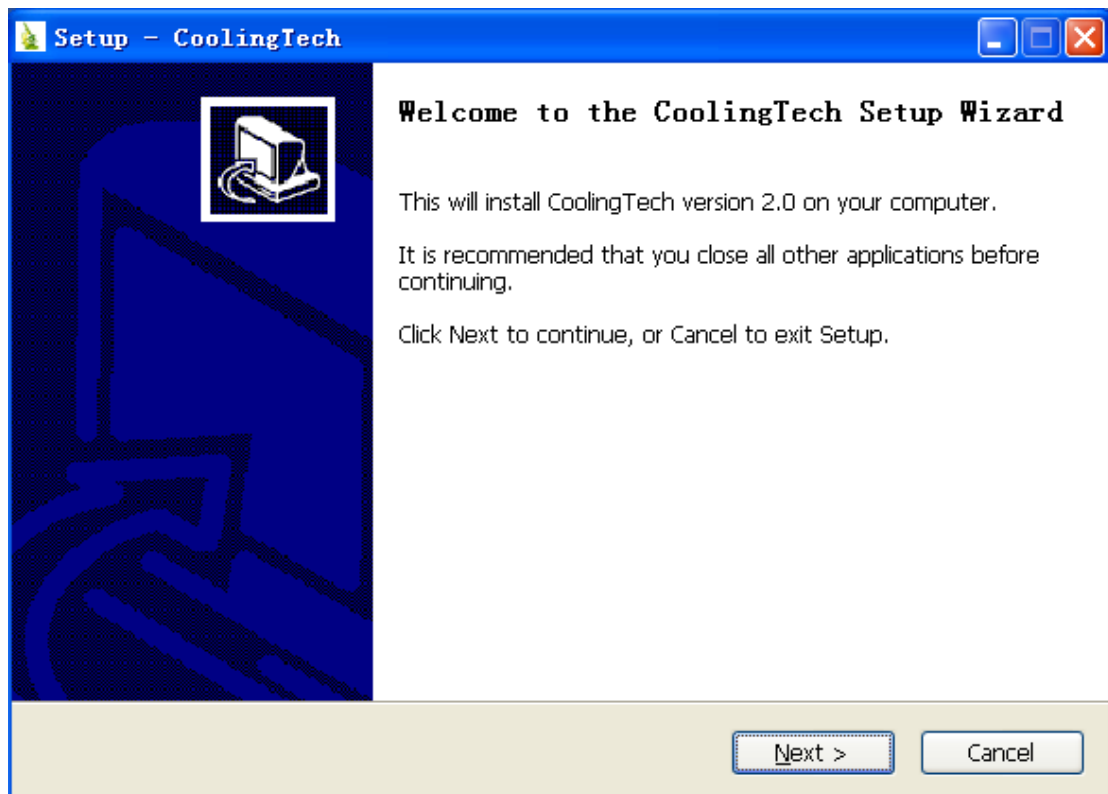
After restart your computer, Plug-in the USB port of Digital Microscope into Computer USB port. Following the user guide by steps and complete by click "Next" -> "Continue anyway" -> "Finish".



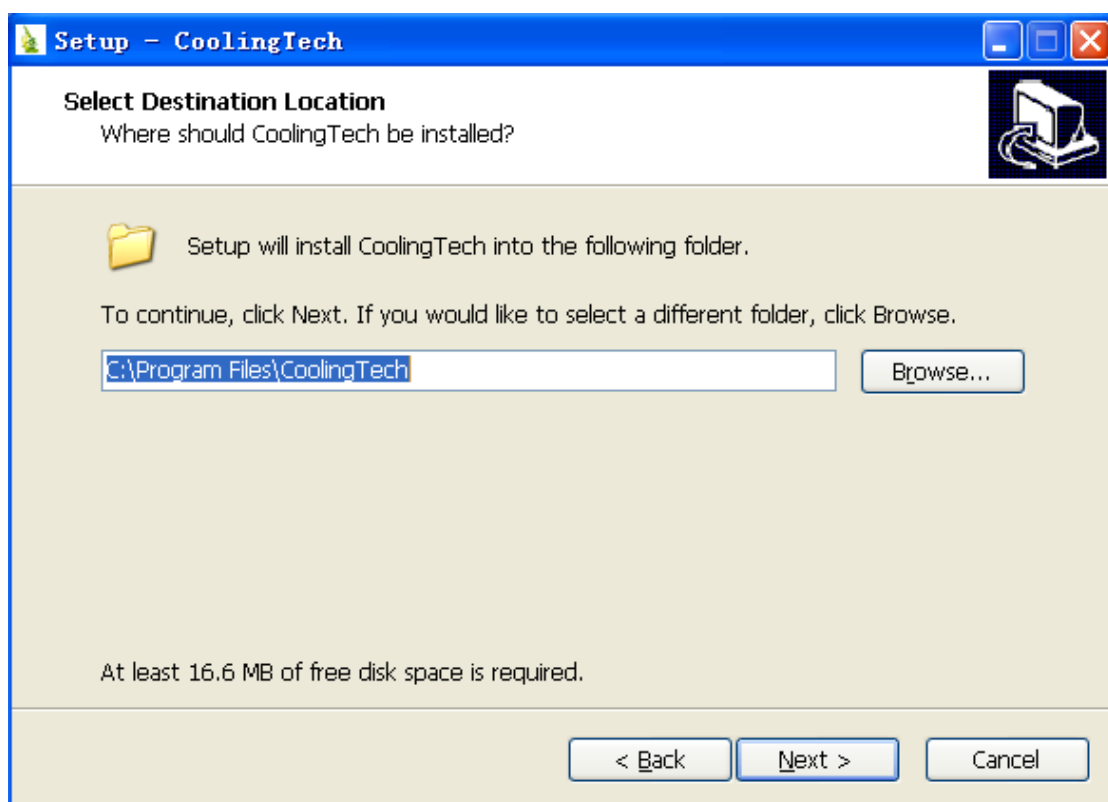


2 Measurement installations:

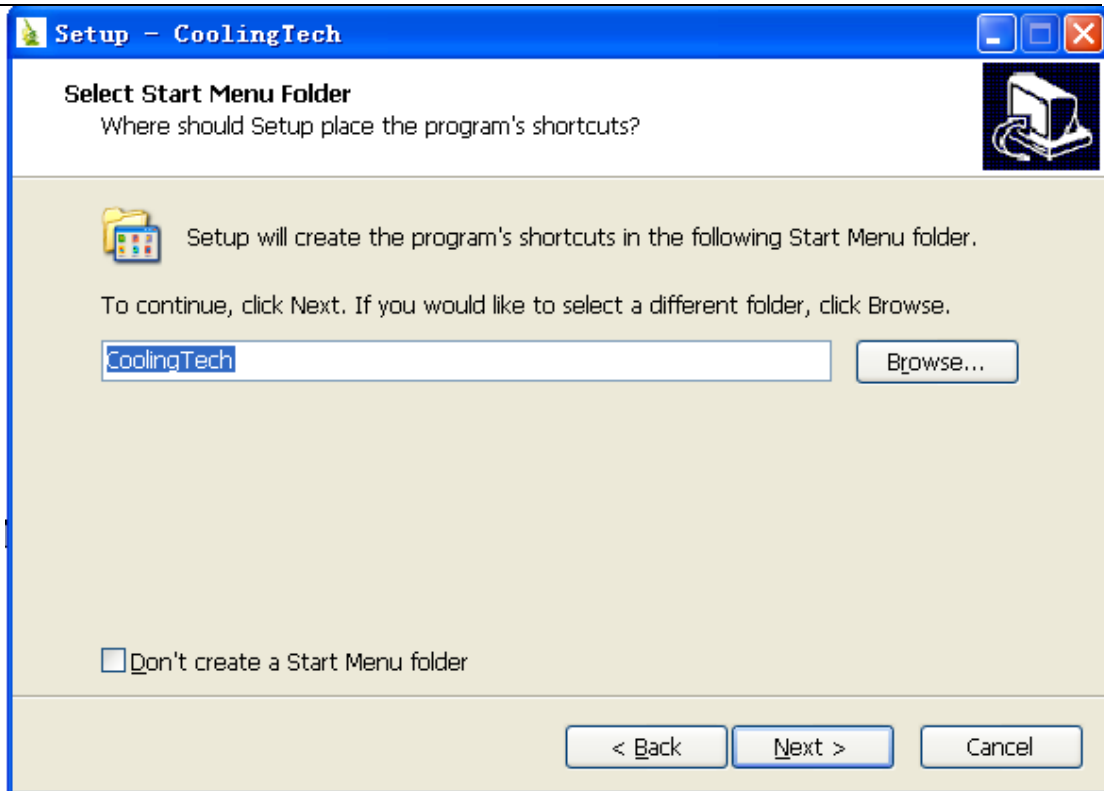
- 1 Click  to continue, as followings



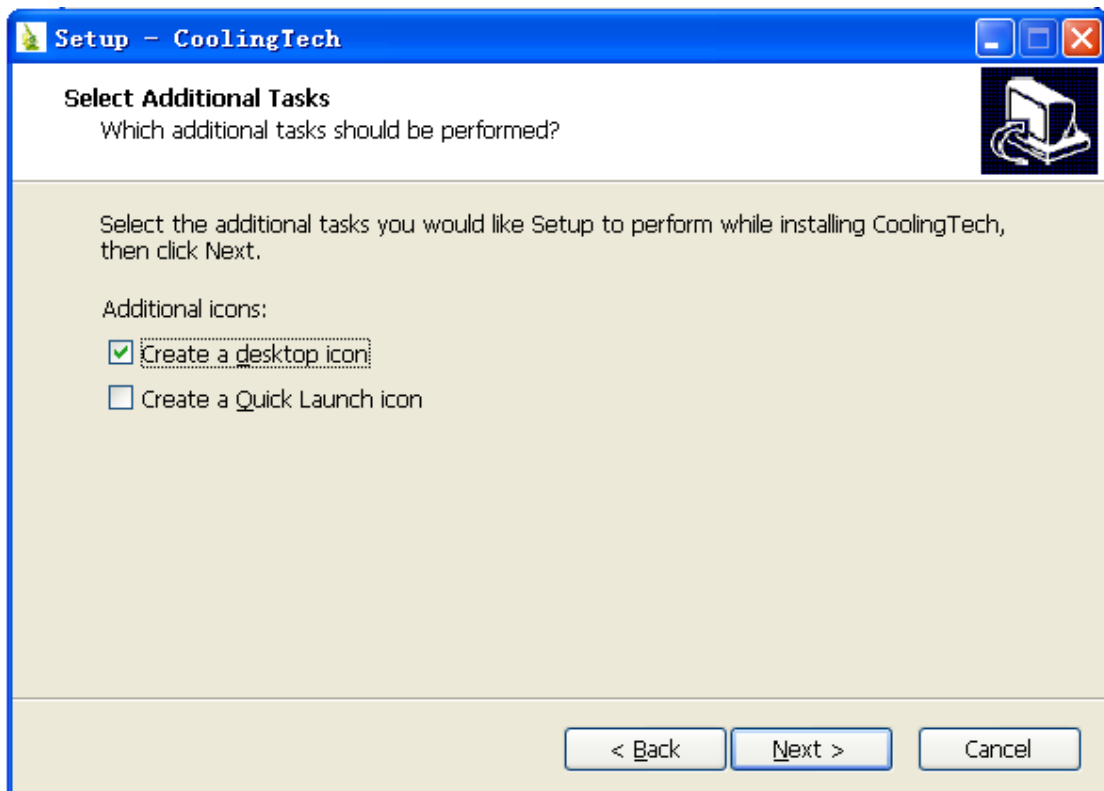
2 Click "next" to continue, as followings



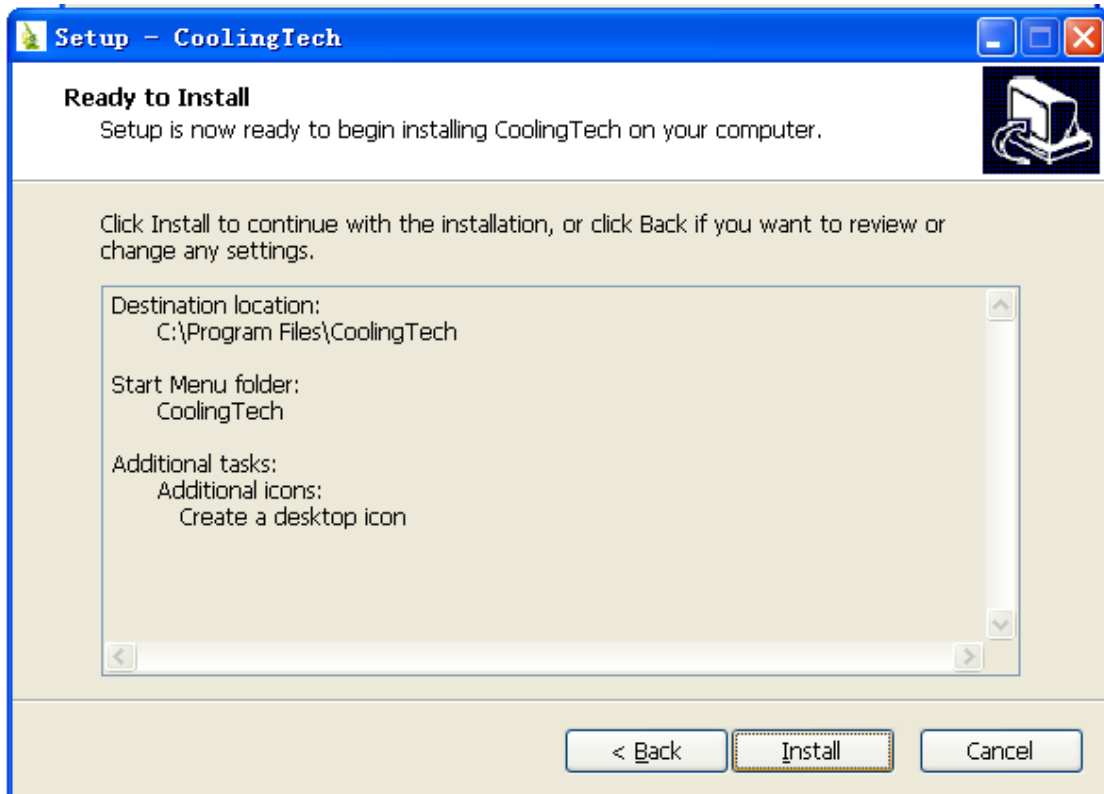
3. Click "next" to continue, as followings



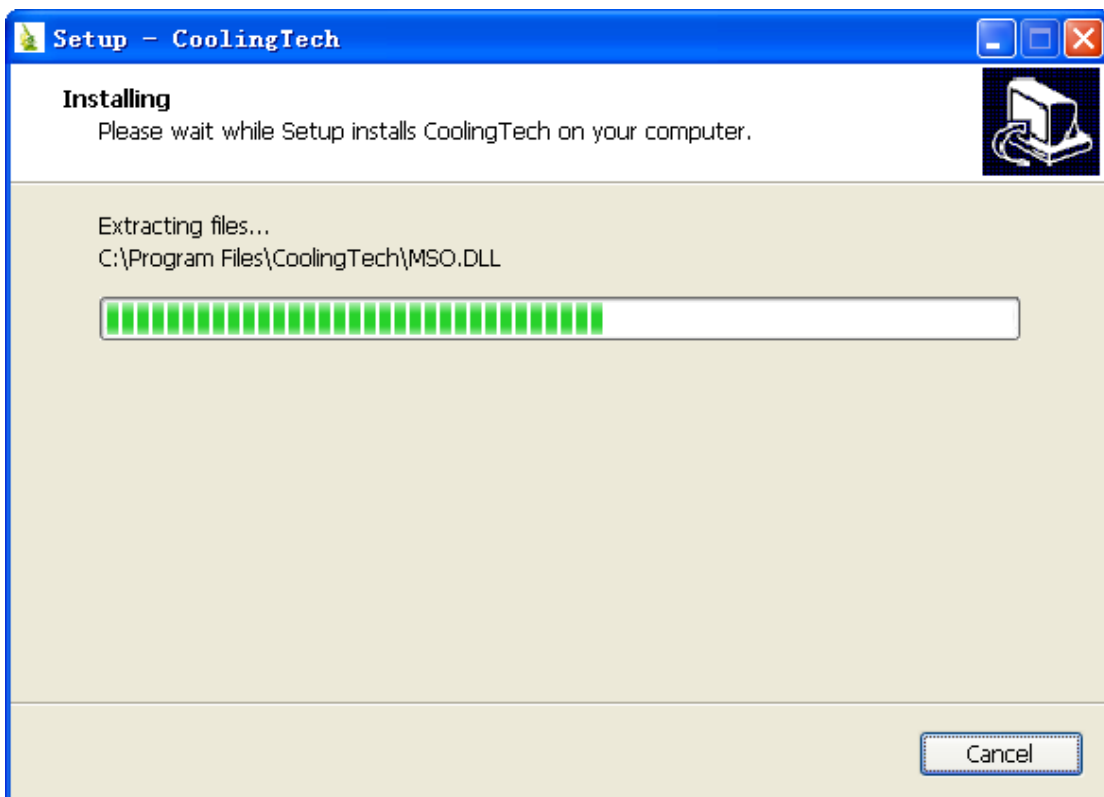
4. Click "next" to continue, as followings



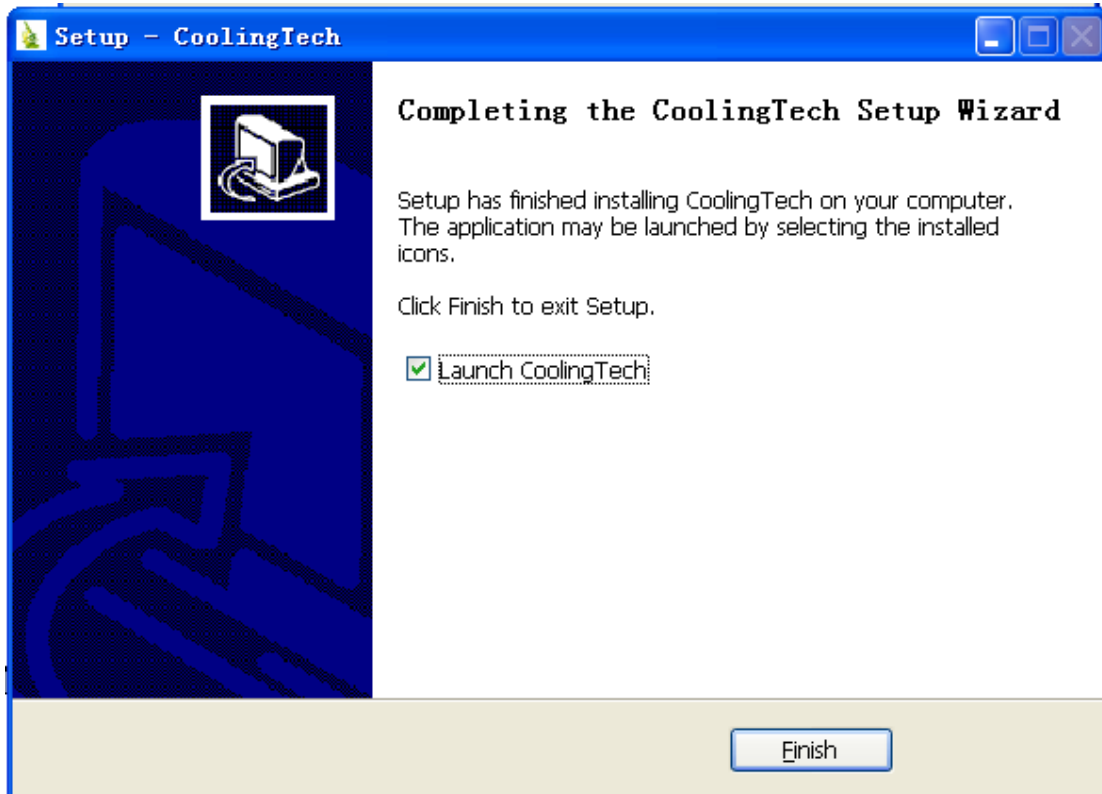
5. Click "next" to continue, as followings




6 Click "Install" to continue, as followings



Wait a few seconds while the installation taking place.

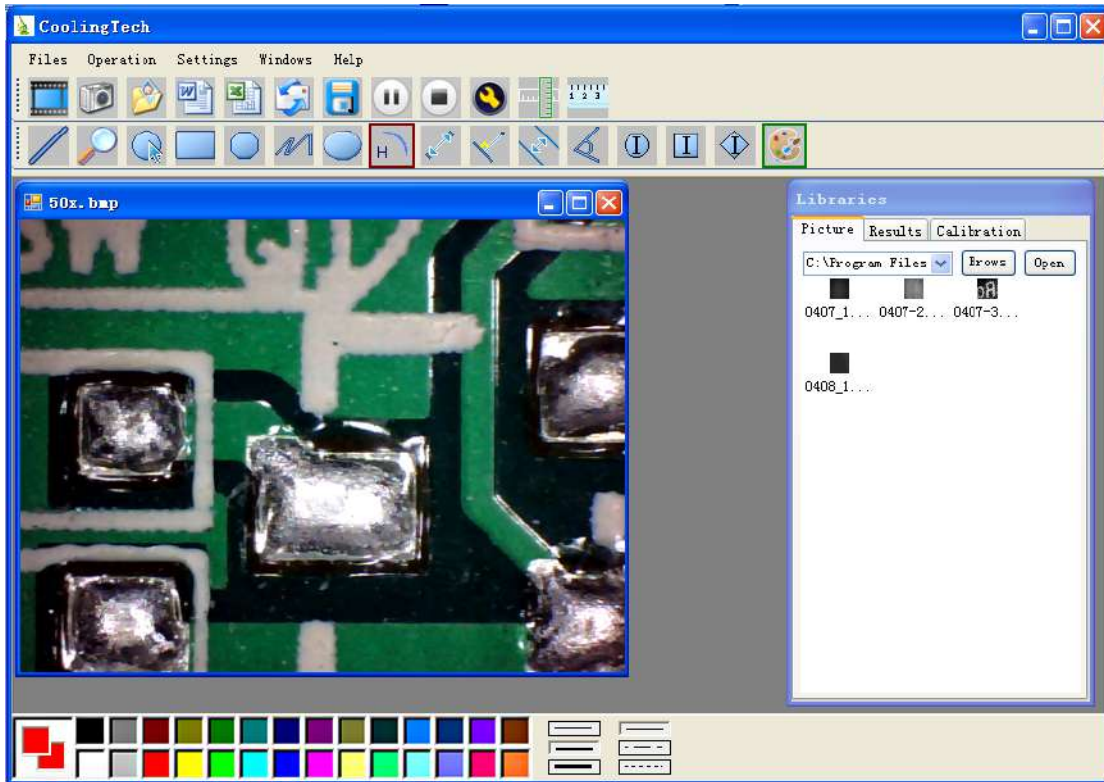



7. Click "Finish" and the installation completes.

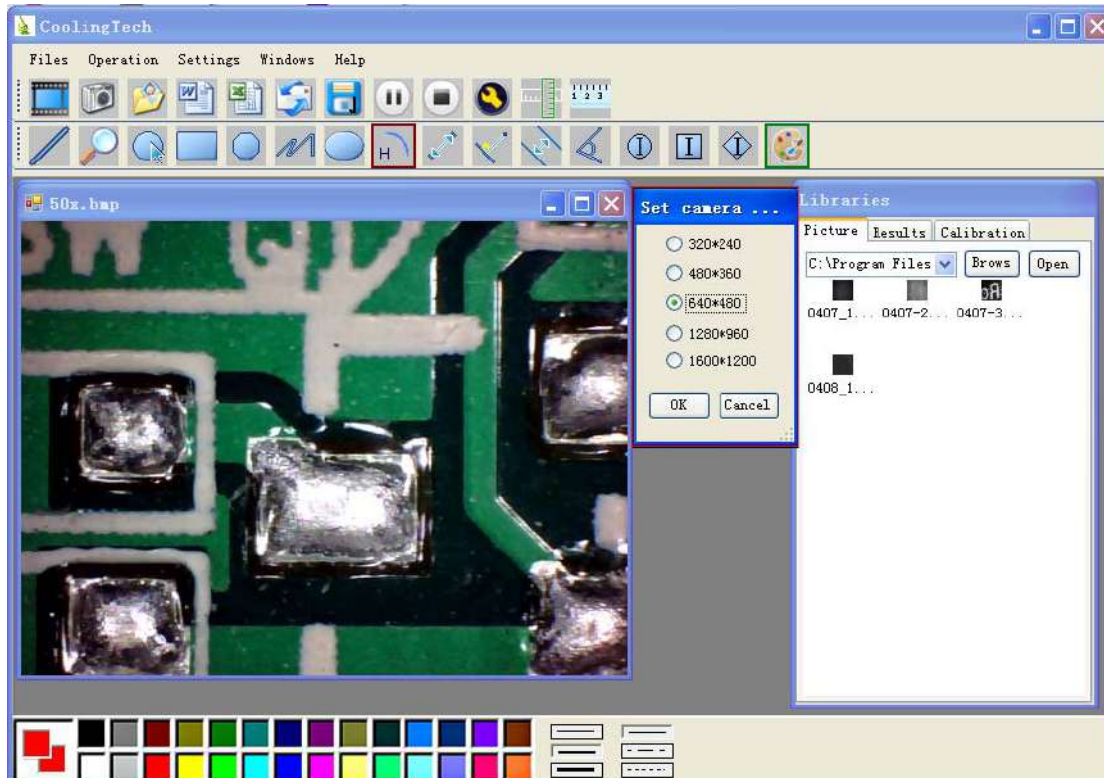
8. After the installation completes, double click  at computer desktop to start using the software.




Plug-in the devices, Display in operation window

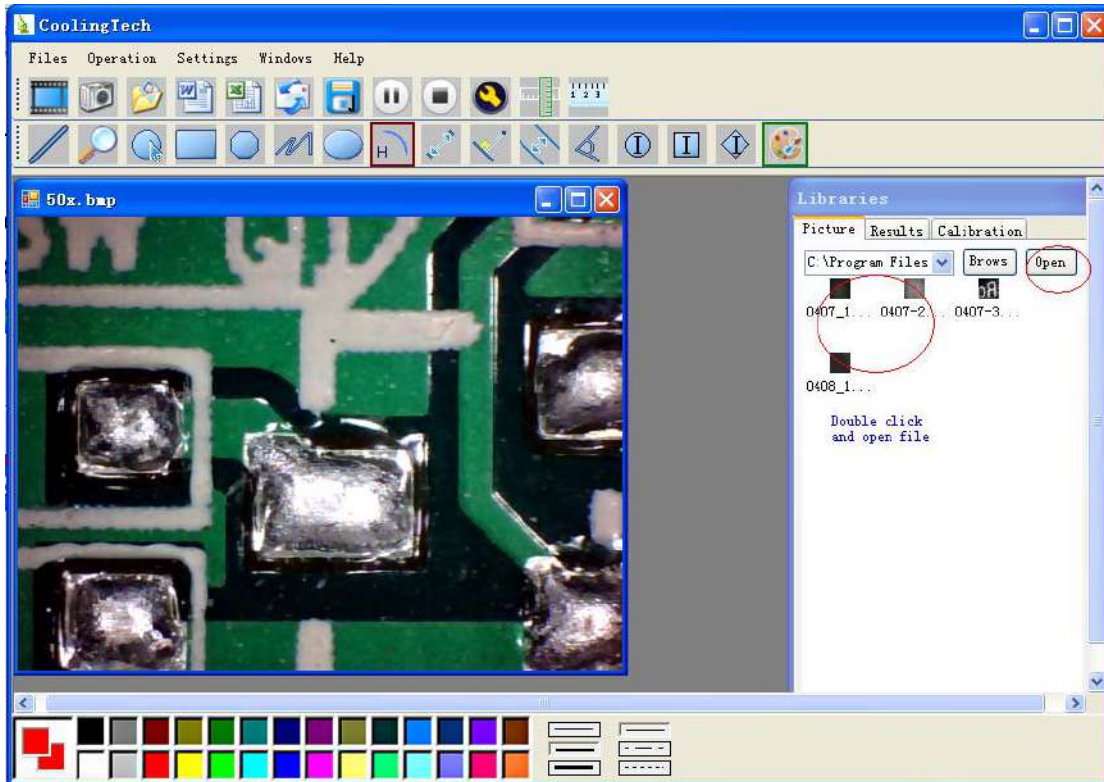




9 Click  ,open the operation system

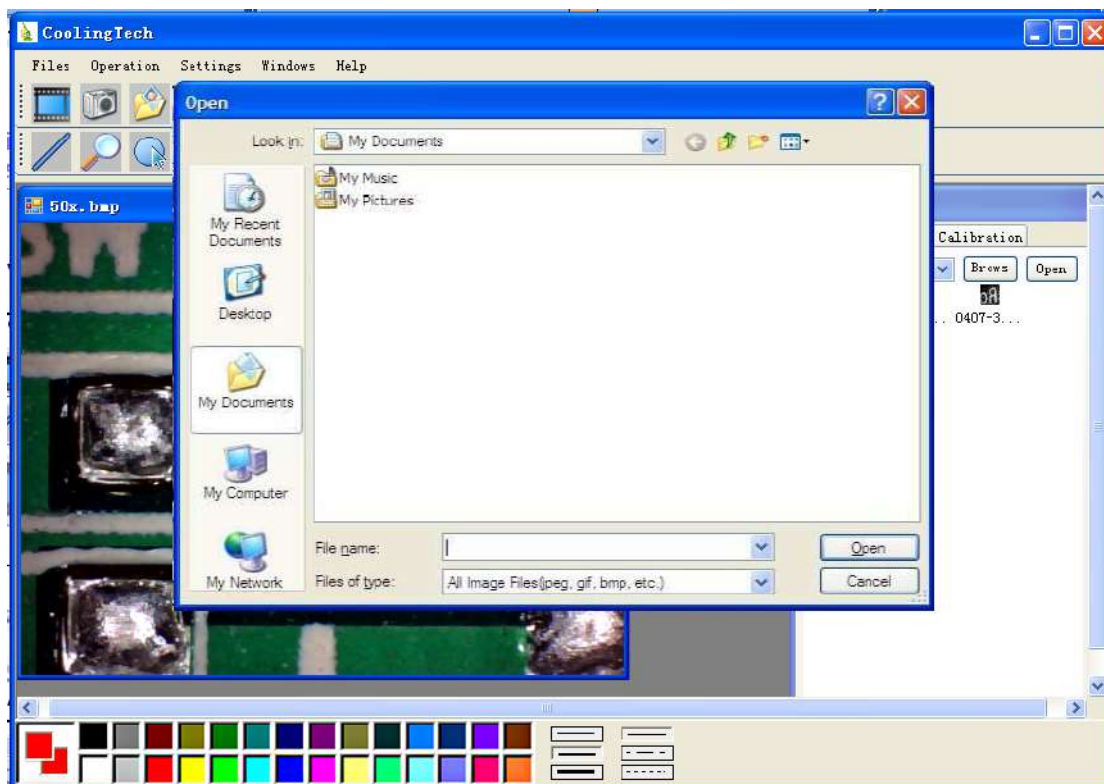


Choose the Image resolution from 320*240 to 1600*1200, default at VGA Mode640*480


10 Click  to use measurement function.

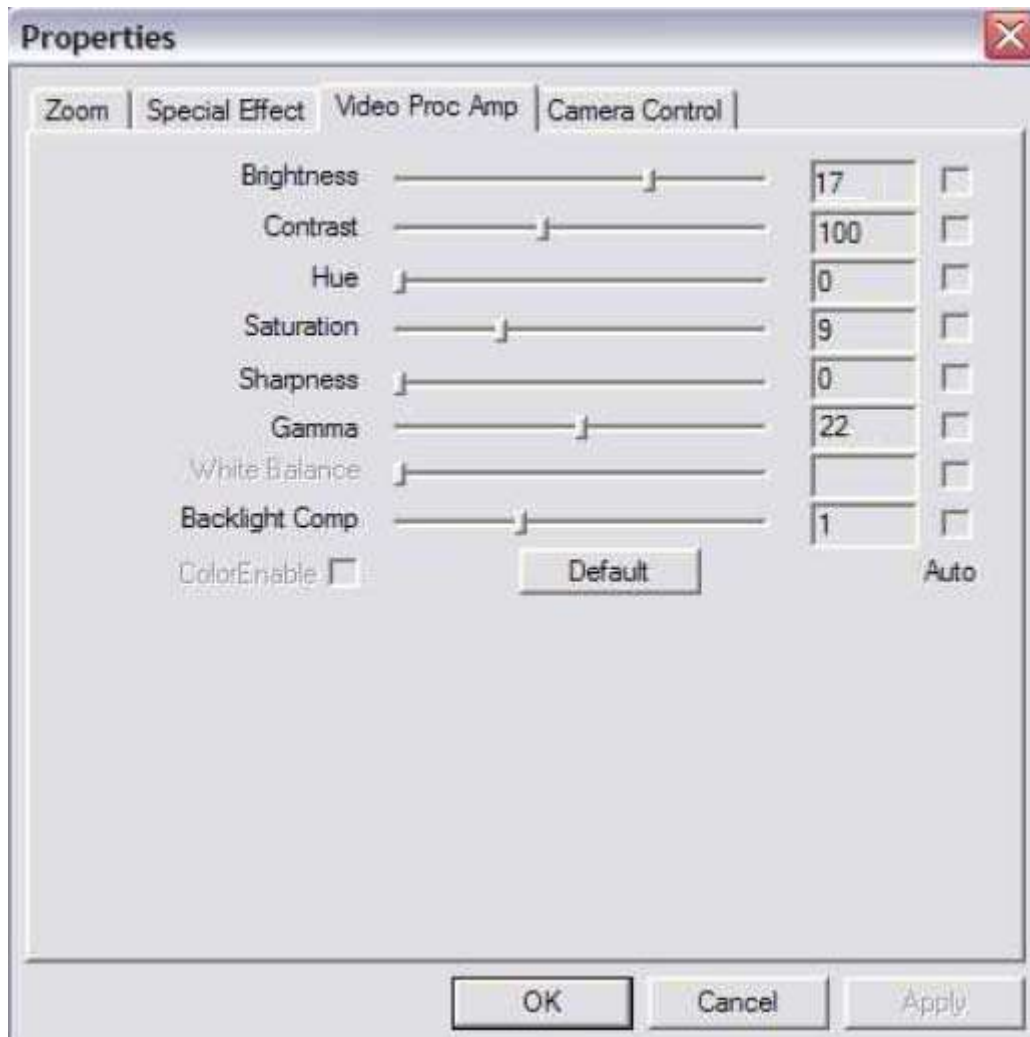


11 Click  to open pictures, and click  to save pictures



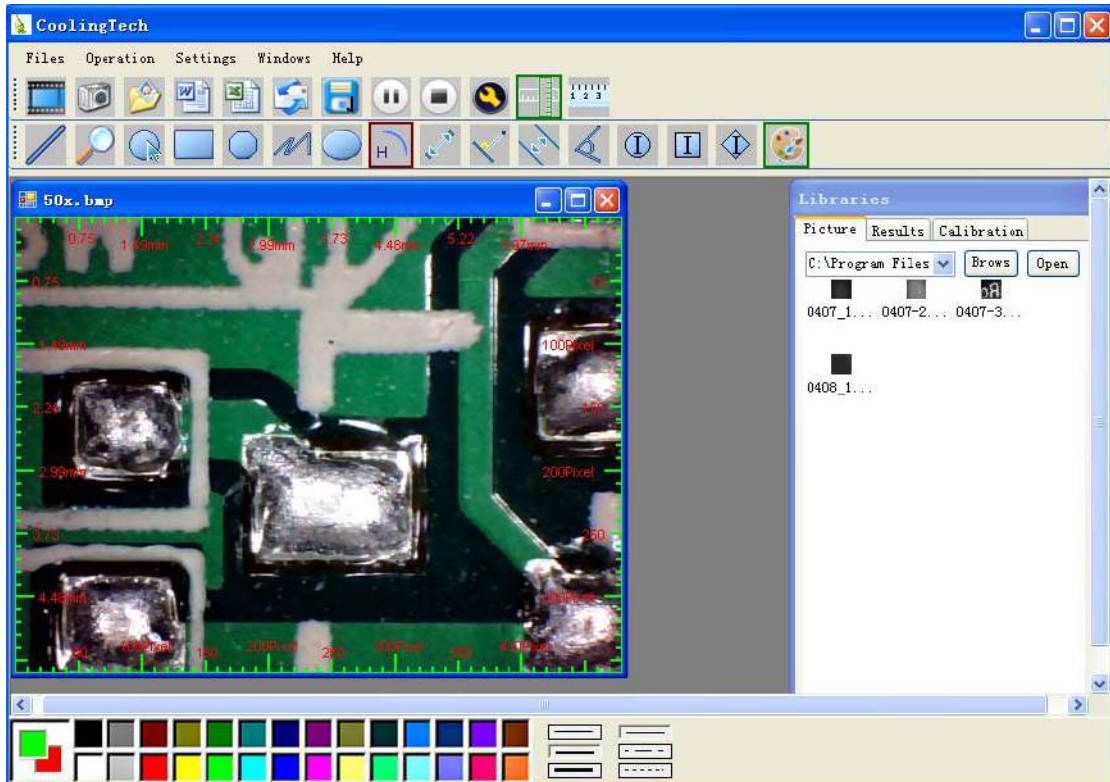
12  
Video PLAY(Pause) ,STOP


- 13  Image Parameter including Image setting and special effects



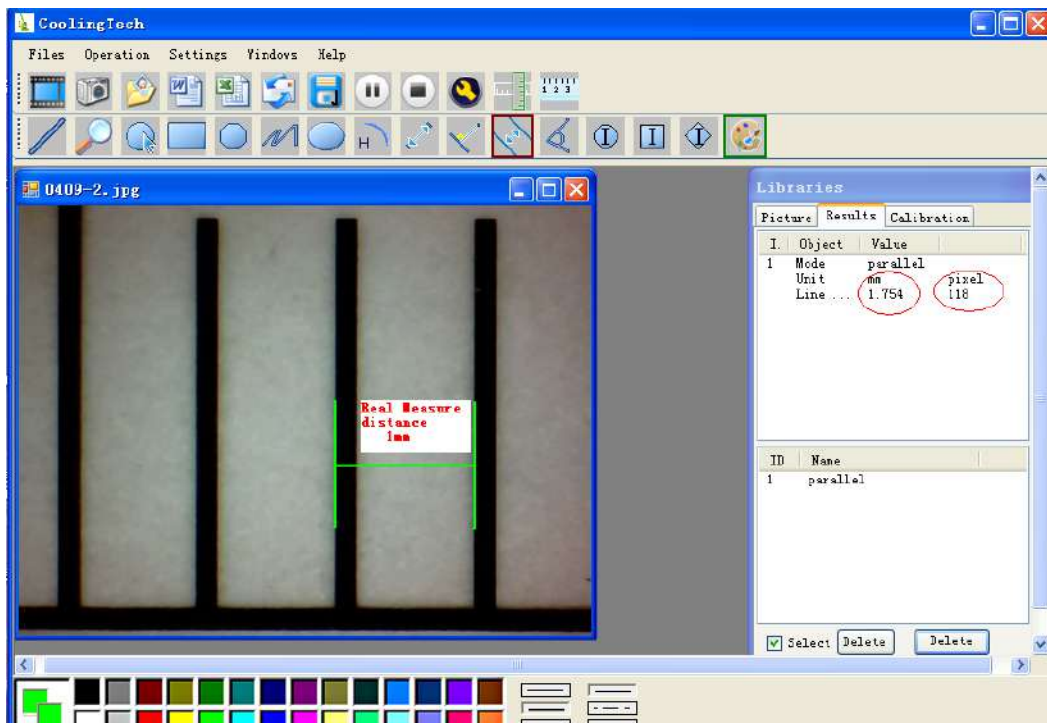
- 15  Magnifier

- 16 Click  Ruller, as followings

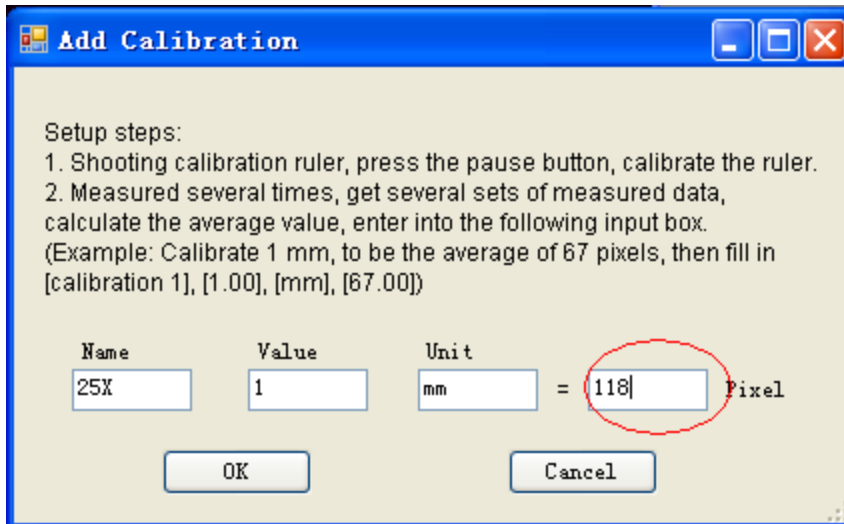


17 Click  , start calibration make sure certain accuracy.

Our experience told us that measurement could be controlled at 99% high precision. Measure tolerance could be caused from human eye distortion and defocus. More practice is helpful to measurements.

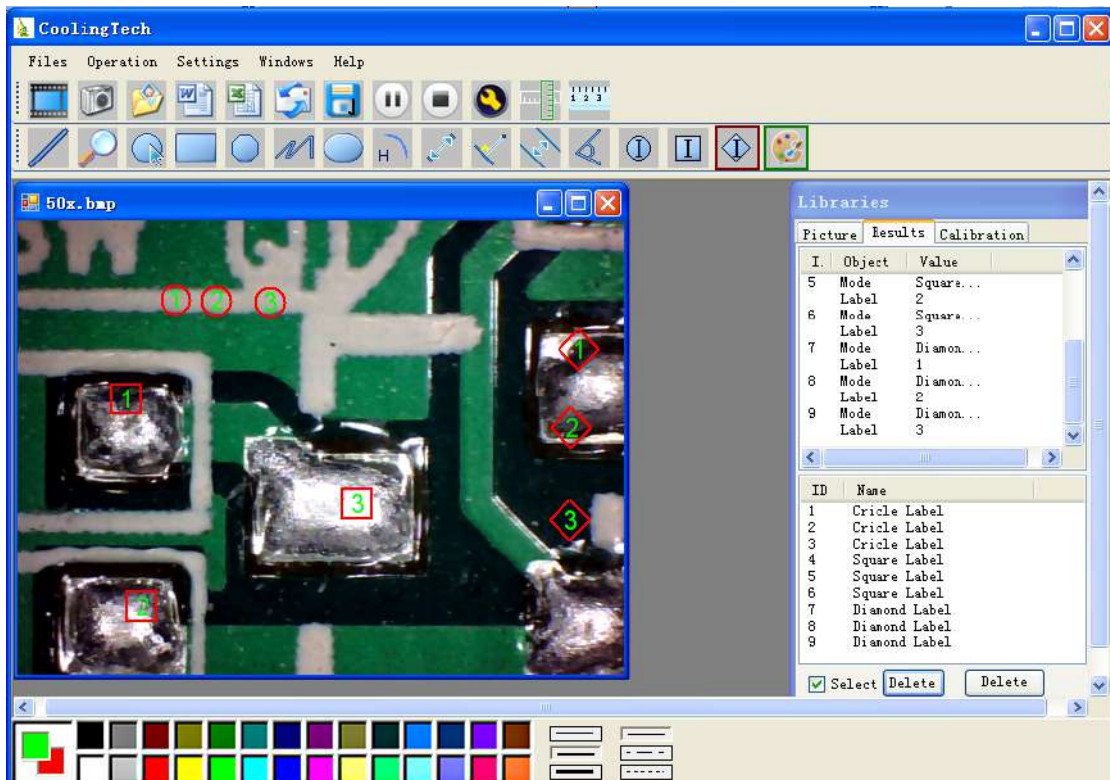


18 Key in the Measure data(Pixel),Unit, and Click' OK'



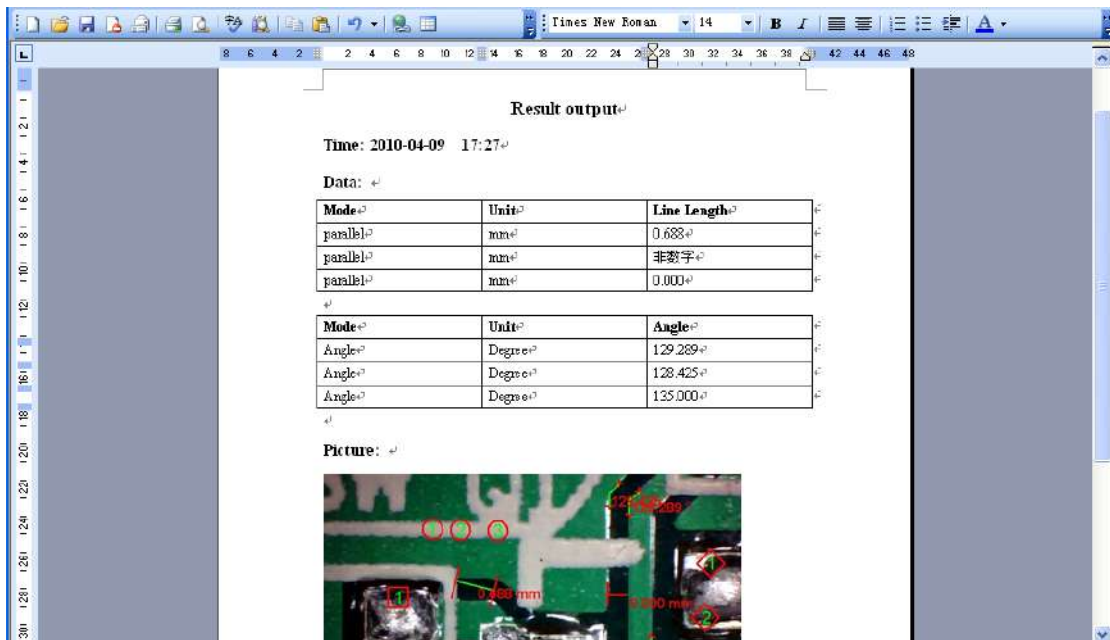
Warning:
 Please do calibration again once Magnification Ratio changed.

19  Color setting of display character



20 Click  to export word or excel format.

Example: Measure data under word file



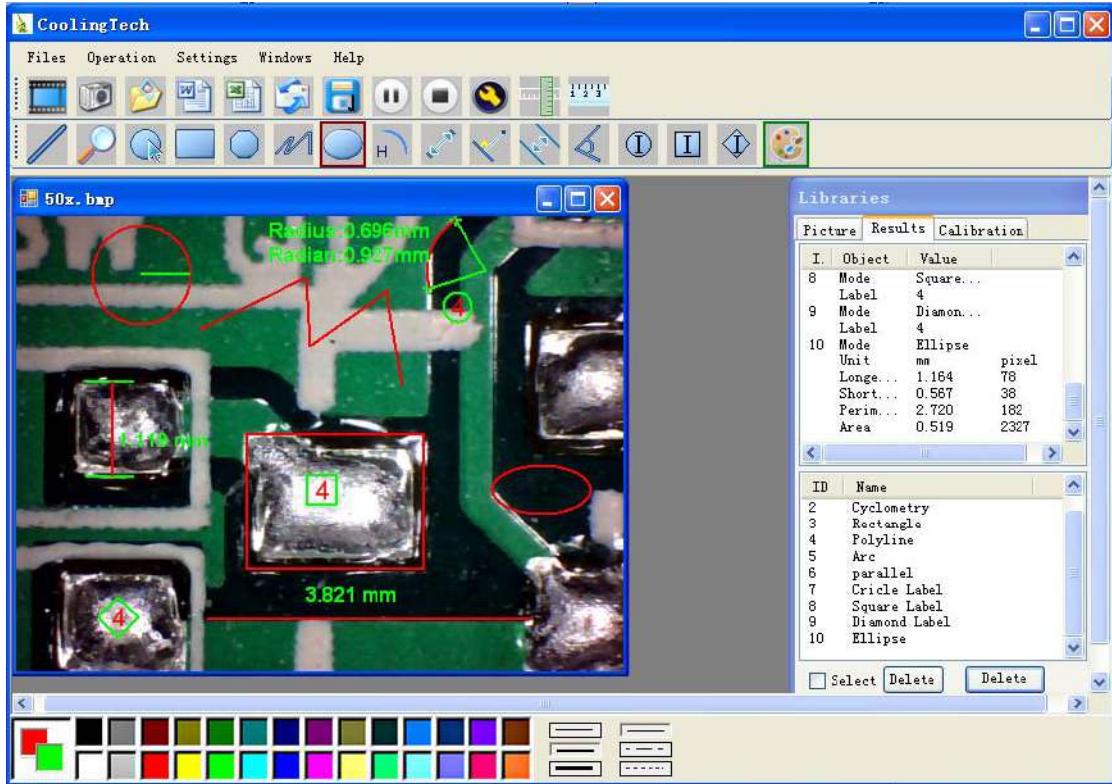
From Left to right:

Line ring Square Polygon Set-line Length

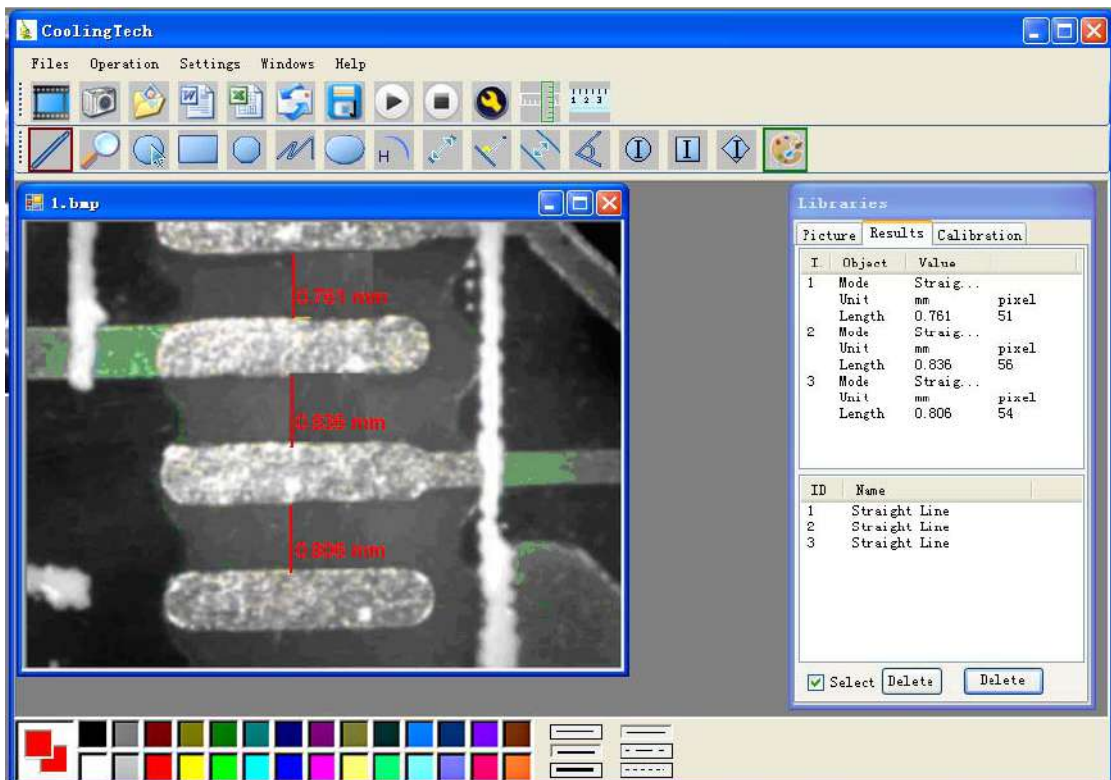
Oval Arc Point to Point distance Point to Line distance

Parallel line Angle

(as below show)

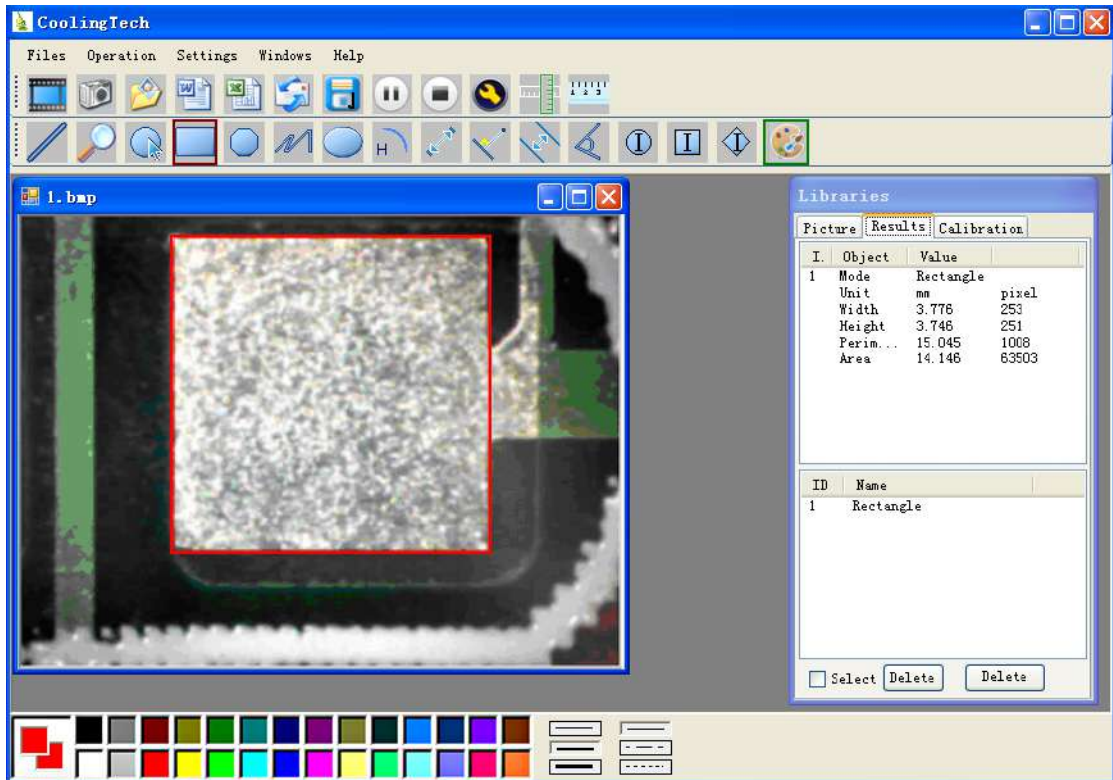


For example 1
Line measurement:



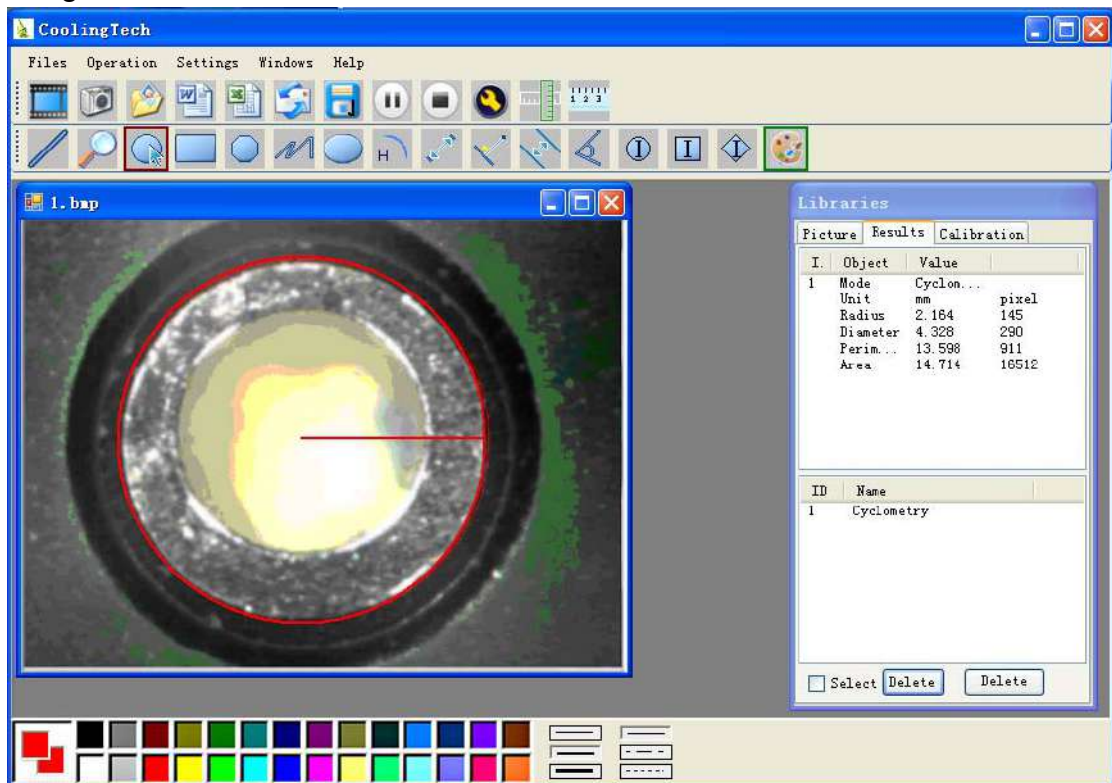
For example 2

Rectangular measurements:



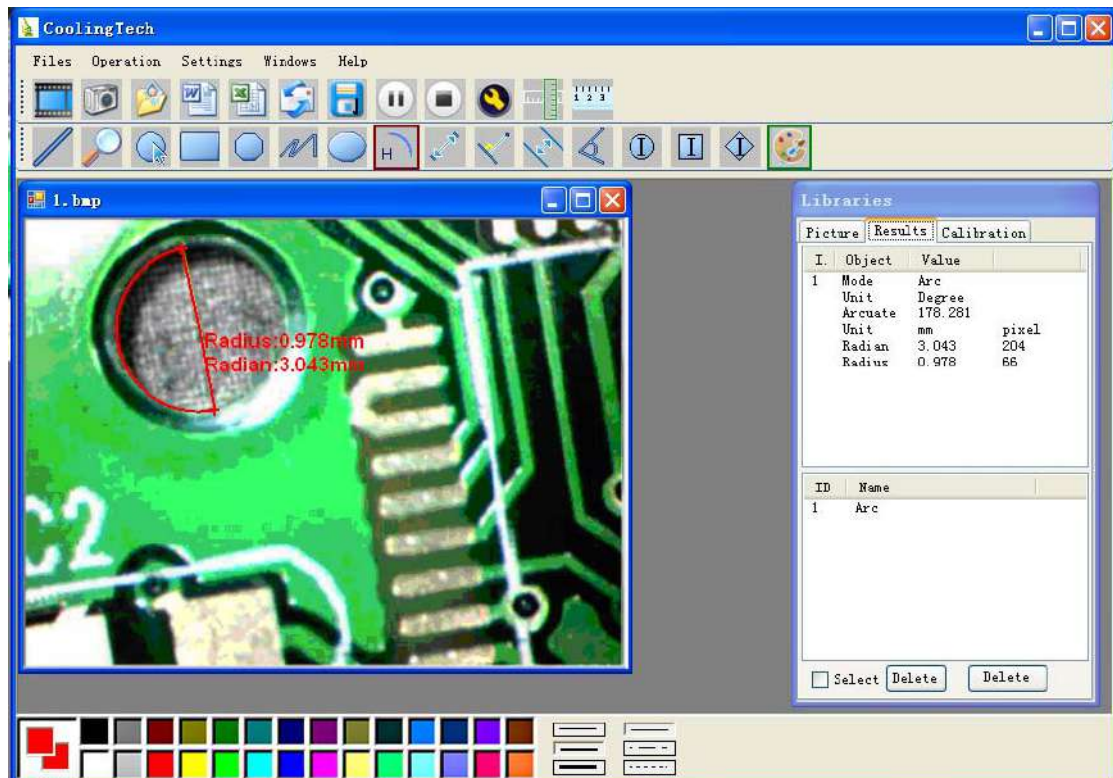
For example3


Ring measurements:



For example 4

Arc measurements:



3Please click  to Continue when the NET Framework2.0 is necessary