S04-600X Digital Microscope User Manual

Prepared by Coolingtech Engineering Dept.

2011.10.1

Thank you for Purchasing our S04-600X 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

Digital Microscope(S04-600X) must be connected to the computer ,User interface is very friendly and you can do the Measure work easily.

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

CONTENTS

Introduction2
Parts of Microscope3
Specification3
Notes before use4
Product Outlook & Standard parts3
Hardware and system requirements5
How to install the Driver software5
How to install the measurement software17
Function options21
How to do the calibration25

Parts of Microscope



LED Light (2) Lens (3) Magnification 25X~600X (4) Focus Roller
 SNAP & Zoom Switch (6) Body (7) USB Line

Specification

Image CMOS Sensor

Controller High Speed DSP (Driver Free available)

Focus Range 0mm ~ 40mm

Snap Shot Software and Hardware

Video Capture Resolution 1.3M.

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

Still Image Capture Resolution1280*960,1600*1200,800*600,640*480, 320*240

Frame Rate 30 f/s under 600 LUX Brightness

Digital Zoom 5X Sequence Mode

Brightness Control Manual adjustment

Magnification Range 25X ~ 600X (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: Iron gun colors.

Notes before use

- 1. Don't dissemble 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. If the product gets wet, leave PC connection immediately. And do not dissemble 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)
- 5. 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

S04-600X Digital Microscope is a free Driver Product, it can works immediately after being connected to the computer with operation system above win2000 version. Connect the Digital Microscope by USB2.0 cable to your computer, Double-click 'my computer' icon on your computer desktop, below interface will shown up.

💈 My Computer		
Eile Edit Vjew Favorites Iools	Help	
🕲 Back + 🕥 + 🏂 🔎 Se	arch 🎼 Folders 🛄 -	
Address 🔡 My Computer		💌 🋃 Go
System Tasks Image: Constraint of the system information Image: Change a setting Image: Change a setting	Local Disk (C:) DATA:	
Other Places Control Places Control Places Control Places Control Place	DVD/CD-RW Drive (H:)	deo Device
Details (*) Hy Computer System Folder		

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

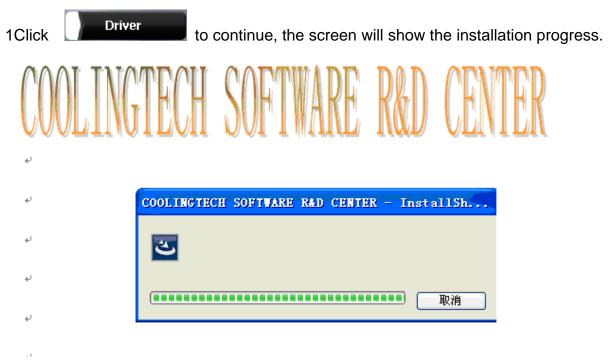
If you can't find the Video device, or if your computer can't recognize it, please follow below steps to install the driver.

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

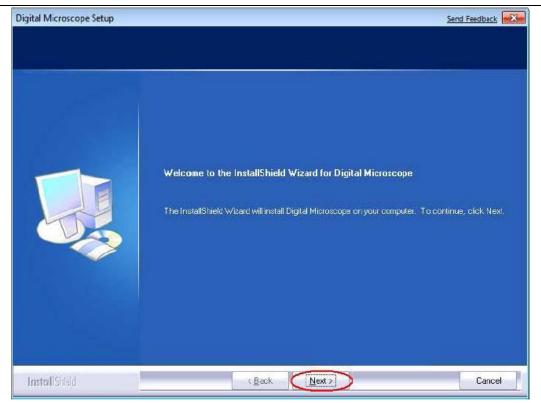
(NOTE: If the computer can't auto run the disc, you need to operate manually by click "My Computer" → "DVD/CD Driver" →run"AUTORUN.EXE")



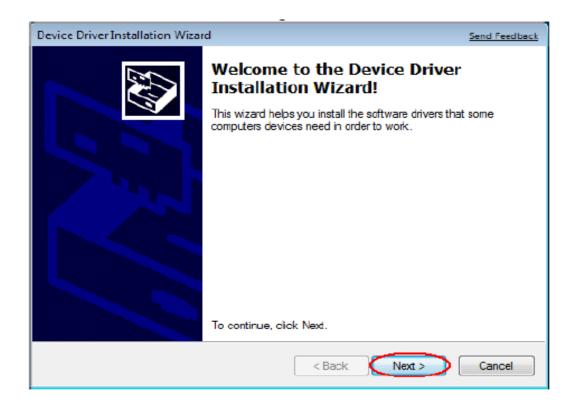
1. Driver installation







Click "next" to continue, as followings:



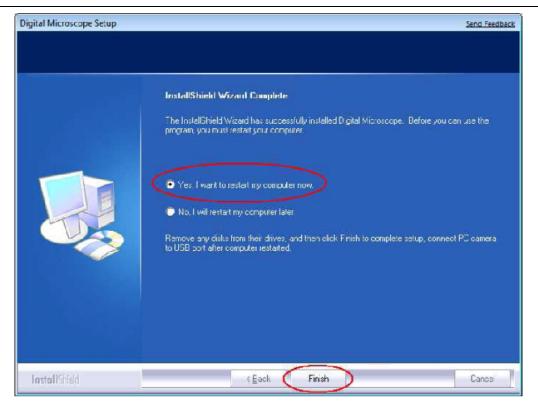
Click "next" to continue, as followings:



Click "continue Anyway", as followings:



Click "Finish" to continue, as followings



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

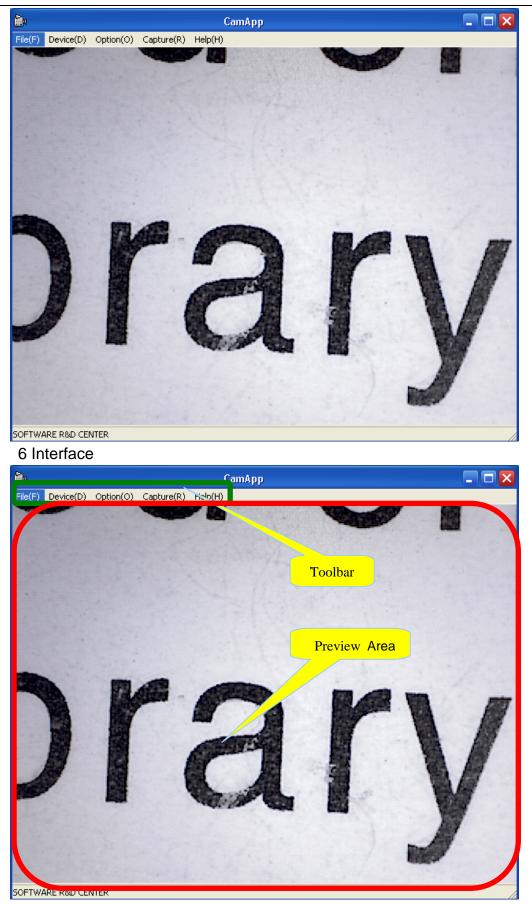
After restart your computer, Plug-in the USB port of Digital Microscope into Computer USB port. Following the user guide by steps and complete by click "Next" -> "Continue anyway" -> "Finish".



Hardware Installation		
<u>.</u>	The software you are installing for this hardware: Digital Microscope has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tail are why the testing is important.)	
with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system / either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.		
	Continue Anyway STOP Installation	
Found Nev	w Hardware Wizard	
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Digital Microscope	
	Click Finish to close the wizard.	

5, When Drive are installed, camper icon will appear on the desktop. Double-click it





7 Tool bar instroduction				
File(F)	Device(D)	Option(O)	Capture(R)	Help(H)
1 Click File(F)				
Set snap	ure file Folder(S) oshot file Folder(N) × reset(R)			
Exit(X)				

This equipment has video and photo function. Before video and photo Please click "Set capture file folder path" or "Set snapshot file path" to set the file storage area .





You can select the different equipment according to your request if your computer has two video equipment or more

3 Click Option(O)

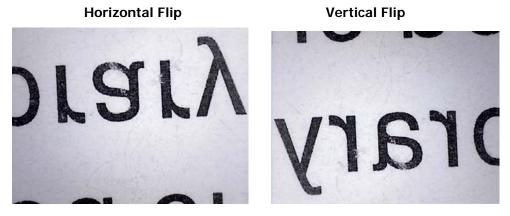
Option(O)
✓ Preview(P)
Video Capture Filter(C)
Video Capture Pin(I)
Audio Capture Filter(V)

1 Click "Video capture filter"

Properties		
Video Proc Amp Camera Co	ontrol General Setting	
Brightness Contrast Hue Saturation Sharpness Gamma White Balance Backlight Comp ColorEnable	Introl General Setting	30
l	OK Cancel	Apply

Video parameters setting, you can change some values according to your request, Do not recommend to make some changes because the parameters has been adjusted to best form before leaving factory If the values are changed negligently, and click "default" to recover the factory shipped state. Click "General Setting" and entering Special effective function

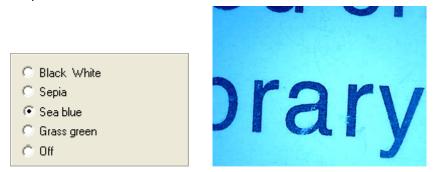
"Horizontal Flip" and " Vertical Flip" in the red form.



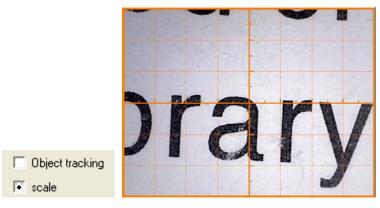
"frequency" in the green form

Special background in the blue form, the back ground will be changed by your different selection

For example:



"Object tracking" and "Scale" in the yellow form



2 Click "video capture pin.."

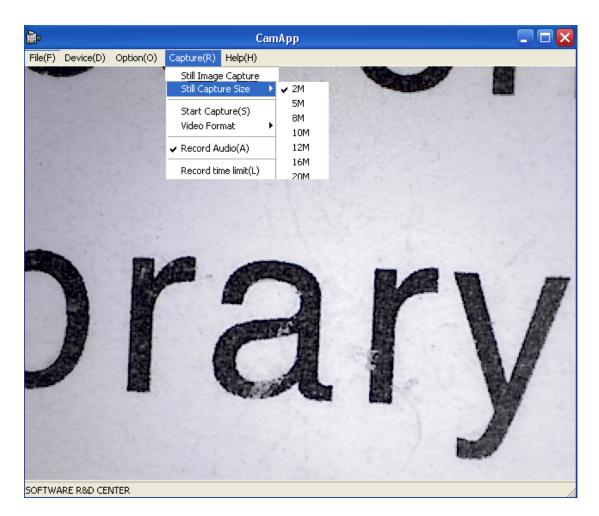
Properties	X
Stream Format	
Video Format	Compression
Video Standard: None	
Frame Rate: 30.000	I Frame Interval:
Flip Horizontal:	P Frame Interval:
Color Space / Compression:	
YUY2 💌	
Output Size:	Quality:
640 x 480 💌	
1600 x 1200 (defau	
320 x 240 640 x 480	Cancel Apply
800 x 600 1280 x 960	Cancer Apply

You can set the different output size according to your request

4 Click Capture(R) Photo and Video setting

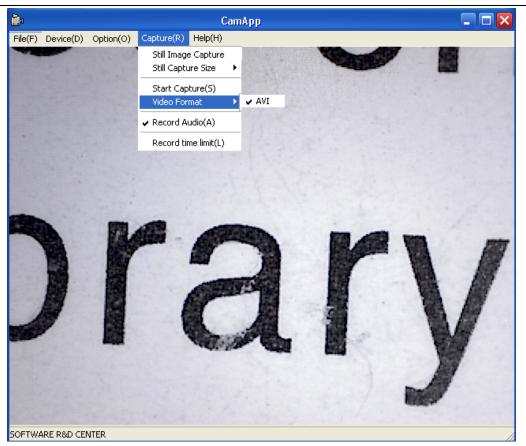
Capture(R)	
Still Image Capture Still Capture Size	•
Start Capture(S) Video Format	•
✓ Record Audio(A)	
Record time limit(L)	

Select "Still Image capture" and "still capture Size"



Video Format AVI.

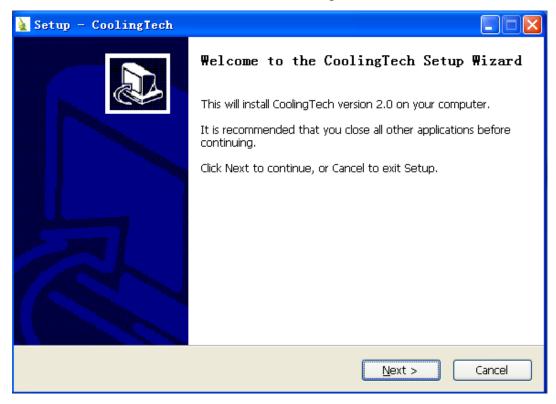




2 Measurement installations:

1 Click Measurement

to continue, as followings



2 Click "next" to continue, as followings

🛓 Setup - CoolingTech
Select Destination Location Where should CoolingTech be installed?
Setup will install CoolingTech into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\CoolingTech Browse
At least 16.6 MB of free disk space is required.
< Back Next > Cancel

3. Click "next" to continue, as followings

🛓 Setup - CoolingTech
Select Start Menu Folder Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
CoolingTech Browse
Don't create a Start Menu folder
< <u>B</u> ack <u>N</u> ext > Cancel

4. Click "next" to continue, as followings

🛓 Setup - CoolingTech	
Select Additional Tasks Which additional tasks should be performed?	
Select the additional tasks you would like Setup to perform while installing CoolingTe then click Next. Additional icons: ☑ Create a desktop icon ☑ Create a Quick Launch icon	ech,
< <u>B</u> ack <u>N</u> ext >	Cancel

5. Click "next" to continue, as followings

🛓 Setup - CoolingTech	
Ready to Install Setup is now ready to begin installing CoolingTech on your computer.	
Click Install to continue with the installation, or click Back if you want to review or change any settings.	
Destination location: C:\Program Files\CoolingTech Start Menu folder:	
CoolingTech Additional tasks: Additional icons:	
Create a desktop icon	
< <u>B</u> ack Install	Cancel

6 Click "Install" to continue, as followings

🛓 Setup - CoolingTech		
Installing Please wait while Setup installs CoolingTech on your computer.		
Extracting files C:\Program Files\CoolingTech\MSO.DLL 		
	Cancel	Wait a few

seconds while the installation taking place.

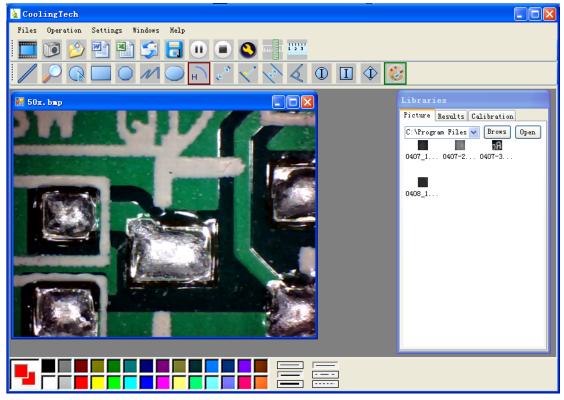
🛓 Setup - CoolingTech	
	Completing the CoolingTech Setup Wizard Setup has finished installing CoolingTech on your computer. The application may be launched by selecting the installed icons. Click Finish to exit Setup.
	Einish

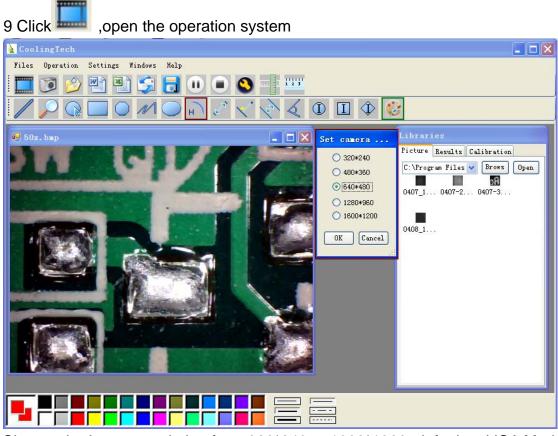
7.Click "Finish" and the installation completes.

8.After the installation completes, double click software.



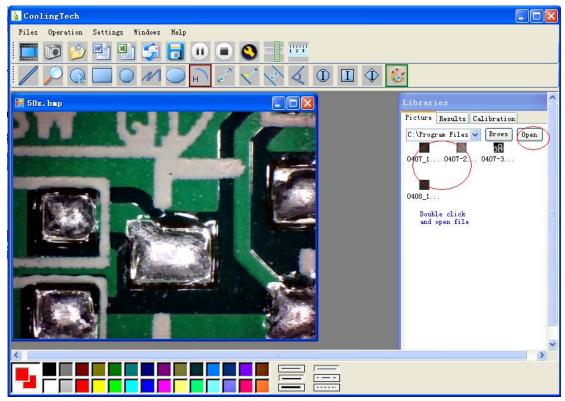
Plug-in the devices, Display in operation window





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

10 Click to use measurement function.



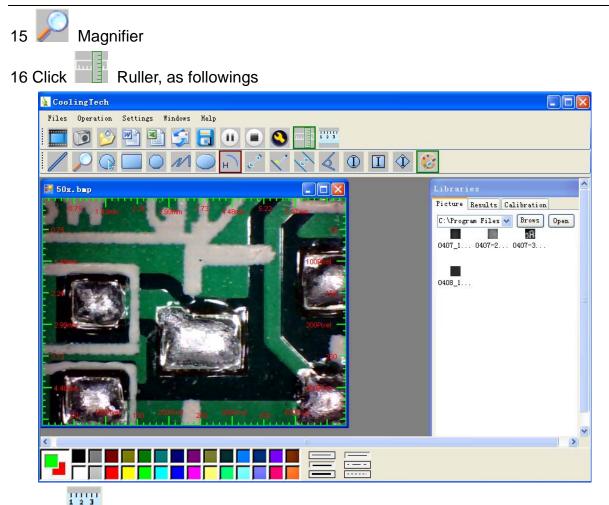


11 Click 🖄	to open	pictures	, and click	to save	e picture:	5	
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Video PLAY(Pause) ,STOP

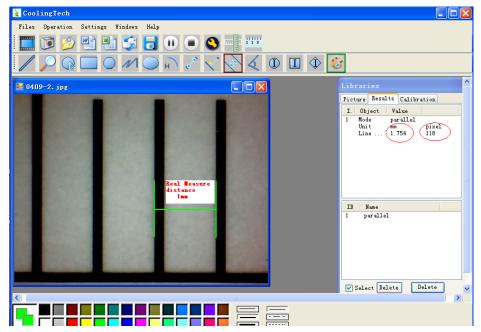
13 Image Parameter including Image setting and special effects

Brightness		- 17 -
Contrast		- 100
Hue		
	1	
Saturation		
Sharpness	1	- 0 -
Gamma		- 22 [
White Balance	1	
Backlight Comp		- 1
ColorEnable 🥅	Default	Auto

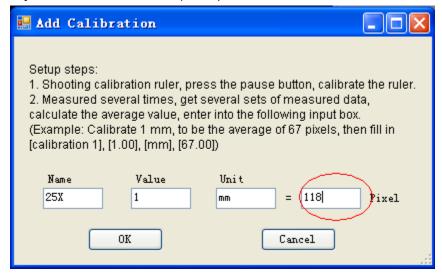


17 Click, start calibration make sure certain accuracy.

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'

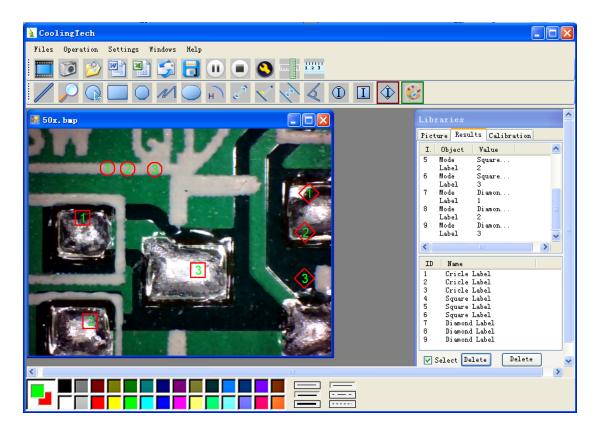


Warning:

Please do calibration again once Magnification Ratio changed.



Color setting of display character





20 Click 20 Click 20 Click

Example: Measure data under word file

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From Left to right:

- Line Square Polygon Set-line Length ring
- Oval Point to Point distance Point to Line distance Arc
- Parallel line Angle

(as below show)



CoolingTech	
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3.821 mm	2 Cyclometry 3 Rectangle 4 Polyline 5 Arc 6 parallel 7 Cricle Label 9 Diamond Label 10 Ellipse

For example 1

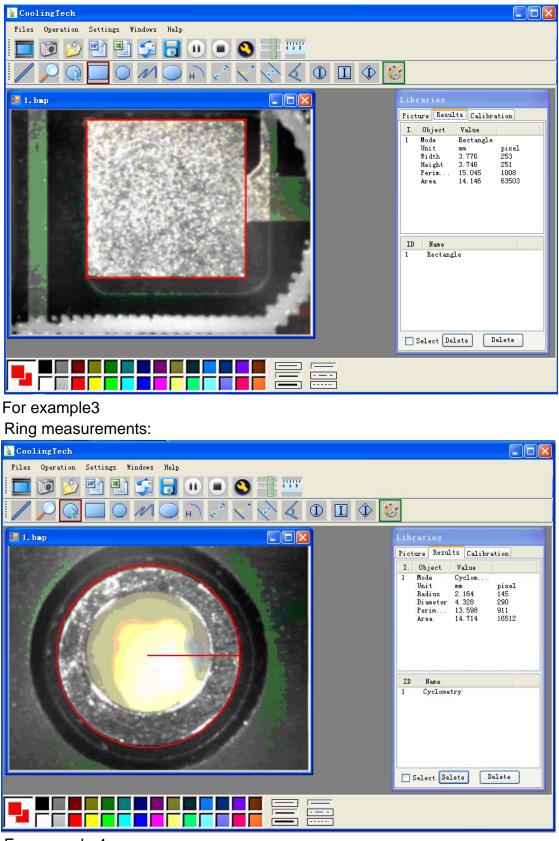
Line measurement:

CoolingTech	
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🖶 1. bap 🗕 🗖 🗙	Libraries
0.751 mm 1.936 mm 1.936 mm	Picture Results Calibration I. Object Value 1 Mode Straig Unit mm pixel Length 0.761 51 2 Mode Straig Unit mm pixel Length 0.836 56 3 Mode Straig Unit mm pixel Length 0.806 54 ID Name 1 Straight Line 2 Straight Line 3 Straight Line

For example 2



Rectangular measurements:



For example 4 Arc measurements:



CoolingTech	
Files Operation Settings Windows Help	
	3
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	Picture Results Calibration
	I. Object Value 1 Mode Arc
Radius:0.978mm Radian:3.043mm	l Mode Arc Unit Degree Arcuate 178.281 Unit mm pixel Radian 3.043 204 Radius 0.978 66
	ID Name
	I ALC
	Select Delete Delete

3Please click Dotnetfx to Continue when the NET Framework 2.0 is necessary, and you must install the application "Instmsia.exe" of disk if your computer operation system is MAC OS.