# CX Series
# Motor-driven 3D Measurement Videoscope



## Convenient Practical Instrument for DNT in Aerospace



The super image processing system can restore the real image effect. The product is durable and suitable for a variety of application scenarios.

# Meet the Requirements of Various Detection Environments and has Wide Application Scenarios

## Intelligent touch screen to restore real image effect

- 7-inch intelligent touch screen, sensitive touch and accurate operation

- The screen brightness can be adjusted and the image can be clearly seen

- Ultra clear image quality and highly restore the real effect of the image

- Parametric adjustment of image effect to grasp the defect situation at any time

## Rugged and suitable for different scenes

- 4-layer wear-resistant tungsten wire tube, the wear resistance is 20 times than the ordinary tube

- The probe, objective lens and tube system shall be IP67 waterproof

- The shell is made of engineering alloy and aviation aluminum alloy, which is firm and durable

- The products have undergone strict high and low temperature, drop, vibration and other tests

# Intelligent File Management, Providing Professional Test Reports

MDI report generation and intelligent file management functions provide users with professional detection reports.

## MDI report function, generate test report

- Select the photo and give a text description of the defect below the picture

- Graffiti notes can directly circle defects and cracks on the drawing

- Watermark annotation, and you can customize "qualified, crack" and other marks

- Generate report, which can be saved in USB flash disk, internal storage or transfered to mobile device via Bluetooth

## Intelligent and convenient file management

- The file name can be preset or renamed

- New folders can be created to quickly find files

- Support picture/video preview and graffiti annotation pictures

- Pictures, videos and test reports can be deleted or exported with one click

# 3D Cloud Scanning Modeling and Rapid Measurement



## 3D measurement, measurement accuracy≥95%

- Point to point, point to line, polyline, area, depth and other measurement methods
- Measurement accuracy ≥ 95%
  Standard accuracy: 0.1mm
  Minimum accuracy: 0.01mm
- Fine tuning navigation keys and window assistance, fine tuning point selection, confidence assisted point selection and accurate measurement
- Shoot and measure immediately, and the measured image supports repeated measurement
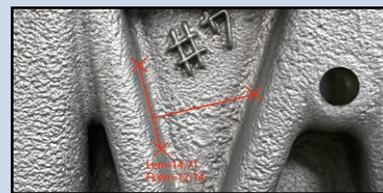

**Point to line distance**
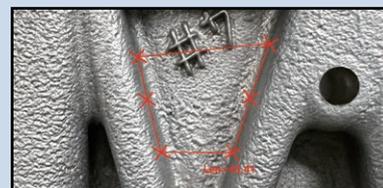

**Measuring perimeter**
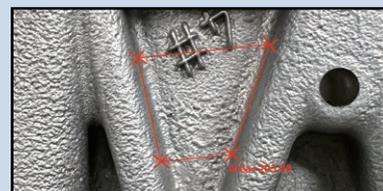

**Measurement area**
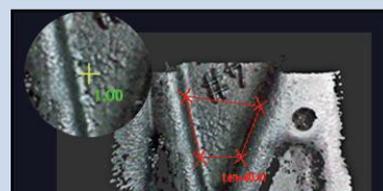

**Confidence assisted point**

# High precision and fast global scanning 3D cloud image

- Fast global scanning to view 3D physical cloud image

- Vertical depth cloud map, automatic measurement of maximum depth

- 3D cloud image XYZ coordinate display, arbitrary section view, easy to locate the depth and height difference of internal defects

- the datum plane shifts and the depth value changes in real time
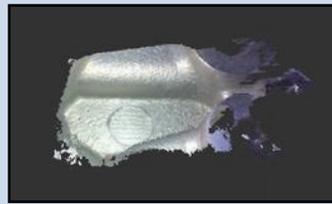
**3D physical cloud image**
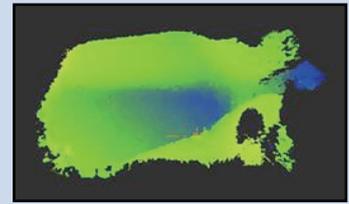
**Vertical depth nephogram**
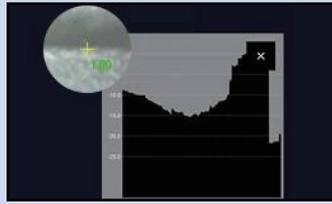
**Profile**
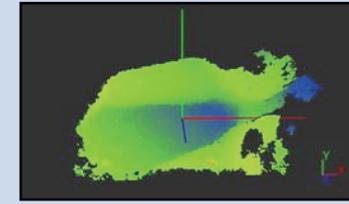
**Cloud 3D coordinates**

# Accurate Articulation with Joystick, Super Compatible Tube

180°

360°All-way accurate articulation
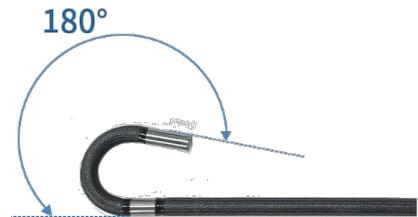
Maximum Bending Angle≥180°

**360°**All-way accurate articulation with joystick.
The maximum bending angle **≥180°**.
Damping type positioning design and precise probe locking technology makes the detection more accurate and efficient.

## Illuminance

With super bright LED ceramic light source or optical fiber lighting,the illuminance can reach to 1,000,000 Lx.

## Photo / video

Gun type one click to take photos and video,make the operation convenient and fast

## Rotation speed

One click control, fast/slow electric rotation, automatic reset

## Probe positioning

One click lock probe, fine adjustment, precise positioning

- Modular design, and the host system, tube system and power supply system can be disassembled and separated.
- Independently replace the 1.0mm~8.0mm tube system to meet the needs of different working conditions.

Visual direction:
front view、side view、
dual lens（front view&side view）

1.0mm/1.8mm (one/two way, front view)

2.2mm (two/all way, front/side view)

2.8mm (360°all-way, front/side view)

3.8mm (360°all-way, front/side view/dual lens)

6.0mm
(360°all-way, front/side view/dual lens)

8.0mm
(360°all-way, front/side view/dual lens)

Snap on disassembly tube system

Replaceable tube system
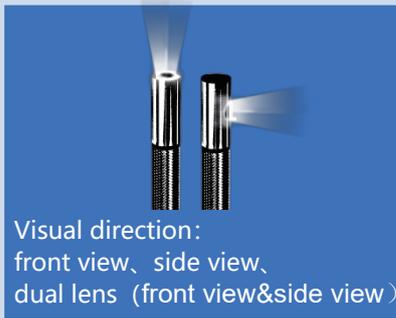
# Craftsmanship, Military Quality

We have obtained more than 10 invention patents and software copyrights, passed ISO9001/14001 system certification. Us product got CE, RoHS certificates, certificate from the Ministry of Public Security Testing Center and QC inspection report from Ceprei，Credit Rating Certification、GJB9001 National Military Standard System Certification，Explosion Proof Certification, etc.

## Battery Module

Working Time≥4h,support charging while use.
Replaceable monitor makes the operation simple and convenient.

## Ergonomic Design

The anti falling and anti-skid design of the whole machine makes the operation more comfortable.

## Easy and portable

Equipped with shoulder straps and reserved universal support interface, it is convenient to operate in complex environment.

## Interface

- HDMI interface can output the detection situation in real time
- USB interface supports USB flash disk to store and transfer files
- SD card slot, with a maximum capacity of 128G

## WiFi wireless image transmission

- WiFi wireless connection, and the mobile device synchronously displays the detection image
- Take photos / videos remotely through app and save test pictures
- Error reporting notes

## Probe temperature measurement

- Real time display of detected ambient temperature
- High temperature alarm function, power off when overheating

# Parameter

| Monitor System | | | |
|---|---|---|---|
| **Structure** | Hand-held integrated design | **Standard Accuracy** | 0.1mm |
| **Display** | 7 inch touch screen, humanized Interface keys | **Minimum Accuracy** | 0.01mm |
| **Outer Case Material** | Engineering alloy material and aviation aluminum alloy | **Measurement Accuracy** | ≥95% |
| **Tube Material** | tungsten-braided | **Rotation Mode** | 360°All-way accurate articulation with joystick |
| **Display Resolution** | 1920*1200 | **Probe Positioning** | Fine adjustment, precise positioning |
| **Light Source** | Optical fiber/LED | **Tube Length** | 1.5m/2m/3m (other lengths can be customized) |
| **Bending Angle** | 180° | **Working Time** | 4h, support charging while use |
| **FOV** | 90°/120° | **Battery Capacity** | 7.4V/6400mAH |
| **Video Output** | HDMI same screen output | **Storage Medium** | Memory storage, SD card, USB flash disk (optional) |
| **Waterproof and Dustproof Grade** | The probe, objective lens and tube can withstand IP67 waterproof | **Weight** | ≈ 2.3 kg (battery included) |
| **Monitor System** | Real time intelligent multitasking operation | **Compatibility** | Compatible with different tube systems |
| **Data Port** | HDMI port、USB port、type-c port、SD card port、3.0earphone port | | |
| **Standard Configuration** | Special instrument box、videoscope、battery module, charger、card reader、memory card、data cable、operation manual、certificate etc. | | |

| Tube System | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Probe Diameter (mm)** | **Camera Pixels** | **Tube Length** | **View** | **DOF** | **FOV** | **Light Source** | **Articulation** |
| **8.0mm/ 6.0mm** | 1mega pixels | 1m~10m | front | 10-100mm | 120° | LED/optic fiber | 360°all-way |
| | | | side | 3-25mm/10-110mm | 90°/120° | LED | 360°all-way |
| | 1mega pixels | ≤ 3m | 3D measurement | 10-100mm | 120° | optic fiber | 360°all-way 360°all-way |
| **3.8mm** | 1mega pixels | 1m~10m | front | 10-100mm | 120° | LED/fiber | 360°all-way |
| | | | side | 3-25mm/10-110mm | 90° | LED | 360°all-way |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 300,000pixels | ≤ 3m | 3D measurement | 5-50mm | 120° | optic fiber | 360°all-way / 360°all-way |
| **2.8mm** | 300,000pixel | 1m~3m | front | 5-50mm | 120° | LED/optic fiber | 360°all-way |
| | | | side | 5-50mm | 120° | LED | 360°all-way |
| **2.2mm** | 300,000pixel | 1m~3m | front | 5-50mm | 120° | LED/optic fiber | 360°,two-way |
| **1.8mm** | 300,000pixel | 1m | front | 5-50mm | 120° | LED/optic fiber | two-way |
| **1.0mm** | 40000pixel | 1m | front | 5-50mm | 120° | LED/optic fiber | no direction |

## Product Function Selection

| Function | CX7 | CX7M | Function | CX7 | CX7M |
|---|---|---|---|---|---|
| Image format：jpg | √ | √ | Wireless image transmission: wirelessly transmit images to mobile phones, computers and other terminals | √ | √ |
| Video format：MP4 | √ | √ | Probe temperature display: probe temperature display and high temperature alarm (optional) | √ | √ |
| Rotation：fast/slow electric rotation, automatic reset | √ | √ | Delayed exposure function | √ | √ |
| Probe Lock：step fine adjustment, precise positioning | √ | √ | Vector diagram coordinates: the vector indication diagram of guiding orientation and curvature is displayed on the screen | √ | √ |
| Lighting: light continuous automatic adjustment and 5-gear manual adjustment | √ | √ | Intelligent file management: support copying, renaming, deleting and generating reports of files in internal storage, SD card and USB storage media | √ | √ |
| Zoom in/out: 8X | √ | √ | | | |
| Image display scale: image 1:1 / full screen | √ | √ | | | |
| Image resolution: 1920 x1080/1280 x 720/640 x 480 | √ | √ | Language：English / French / German / Japanese / Traditional Chinese /Simplified Chinese / Korean / Italian | √ | √ |
| Image adjustment: brightness, contrast, gamma, chroma, saturation, sharpness | √ | √ | | | |
| Image Effects：negative、black-and-white film | √ | √ | MDI report generation software: select the picture, graffiti it, edit the text description under the picture, create the test report and Bluetooth transmission test report | √ | √ |
| White balance：automatic white balance | √ | √ | | | |
| Image freeze：Freeze the view and call the brush to save the graffiti in real time | √ | √ | 3D measurement: point to point, point to line, point to surface measurement of depth, area, perimeter, etc. fine tune the navigation key and window assistance, confidence assistance to select points, and the measured image can be measured repeatedly | × | √ |
| Image mirroring and rotation：0°、90°、180°、270° | √ | √ | | | |
| Graffiti notes: text notes, graffiti, watermark | √ | √ | | | |
| Dual camera preview: dual camera dynamic display on the same screen | √ | √ | Cloud image: vertical depth cloud image, 3D physical cloud image, local section, arbitrary section, XYZ coordinate display of cloud image, automatic measurement of maximum depth, view of section view, datum translation and real-time display of depth dimension | × | √ |
| Picture in picture: the main screen image and small window photo can be switched arbitrarily | √ | √ | | | |
| Front/side on the same screen: front-view /side-view are displayed on the same screen | √ | × | | | |

# CX7M 3D Measurement Series

| Model | Display | Tip Dia. | Length | Articulation | Camera Pixels | Bend Angle | Side View for Option |
|---|---|---|---|---|---|---|---|
| CX7M-38014 | 7" | Ø3.8mm | 1M | 360° | 1mega | 180° | |
| CX7M-38024 | 7" | Ø3.8mm | 2M | 360° | 1mega | 170° | |
| CX7M-38034 | 7" | Ø3.8mm | 3M | 360° | 1mega | 160° | |
| CX7M-60014 | 7" | Ø6.0mm | 1M | 360° | 1mega | 180° | |
| CX7M-60024 | 7" | Ø6.0mm | 2M | 360° | 1mega | 170° | Yes |
| CX7M-60034 | 7" | Ø6.0mm | 3M | 360° | 1mega | 160° | |
| CX7M-80014 | 7" | Ø8.0mm | 1M | 360° | 1mega | 180° | |
| CX7M-80024 | 7" | Ø8.0mm | 2M | 360° | 1mega | 170° | |
| CX7M-80034 | 7" | Ø8.0mm | 3M | 360° | 1mega | 160° | |

# CX7 Non 3D Measurement Series

| Model | Display | Tip Dia. | Length | Articulation | Camera Pixels | Bend Angle | Side View for Option |
|---|---|---|---|---|---|---|---|
| CX7-1001 | 7" | Ø1.0mm | 1M | - | 40,000 | - | |
| CX7-18012 | 7" | Ø2.8mm | 1M | 2-way | 300,000 | 180˚ | Non |
| CX7-22012 | 7" | Ø2.2mm | 1M | 2-way | 300,000 | 180˚ | |
| CX7-22022 | 7" | Ø2.2mm | 2M | 2-way | 300,000 | 170˚ | |
| CX7-22032 | 7" | Ø2.2mm | 3M | 2-way | 300,000 | 160˚ | |
| CX7-22014 | 7" | Ø2.2mm | 1M | 360˚ | 300,000 | 180˚ | |
| CX7-22024 | 7" | Ø2.2mm | 2M | 360˚ | 300,000 | 170˚ | |
| CX7-22034 | 7" | Ø2.2mm | 3M | 360˚ | 300,000 | 160˚ | |
| CX7-28014 | 7" | Ø2.8mm | 1M | 360˚ | 300,000 | 180˚ | Yes |
| CX7-28024 | 7" | Ø2.8mm | 2M | 360˚ | 300,000 | 170˚ | Yes |
| CX7-28034 | 7" | Ø2.8mm | 3M | 360˚ | 300,000 | 160˚ | Yes |
| CX7-38014 | 7" | Ø3.8mm | 1M | 360˚ | 1mega | 180˚ | Yes |
| CX7-38024 | 7" | Ø3.8mm | 2M | 360˚ | 1mega | 170˚ | Yes |
| CX7-38034 | 7" | Ø3.8mm | 3M | 360˚ | 1mega | 160˚ | Yes |
| CX7-38044 | 7" | Ø3.8mm | 4M | 360˚ | 1mega | 160˚ | Yes |
| CX7-38054 | 7" | Ø3.8mm | 5M | 360˚ | 1mega | 160˚ | Yes |
| CX7-38064 | 7" | Ø3.8mm | 6M | 360˚ | 1mega | 160˚ | Yes |
| CX7-60014 | 7" | Ø6.0mm | 1M | 360˚ | 1mega | 160˚ | Yes |
| CX7-60024 | 7" | Ø6.0mm | 2M | 360˚ | 1mega | 160˚ | Yes |
| CX7-60034 | 7" | Ø6.0mm | 3M | 360˚ | 1mega | 150˚ | Yes |
| CX7-60044 | 7" | Ø6.0mm | 4M | 360˚ | 1mega | 140˚ | Yes |
| CX7-60054 | 7" | Ø6.0mm | 5M | 360˚ | 1mega | 130˚ | Yes |
| CX7-60064 | 7" | Ø6.0mm | 6M | 360˚ | 1mega | 120˚ | Yes |
| CX7-60074 | 7" | Ø6.0mm | 7M | 360˚ | 1mega | 110˚ | Yes |
| CX7-60084 | 7" | Ø6.0mm | 8M | 360˚ | 1mega | 100˚ | Yes |
| CX7-60094 | 7" | Ø6.0mm | 9M | 360˚ | 1mega | 90˚ | Yes |
| CX7-60104 | 7" | Ø6.0mm | 10M | 360˚ | 1mega | 80˚ | Yes |
| CX7-80014 | 7" | Ø8.0mm | 1M | 360˚ | 1mega | 160˚ | Yes |
| CX7-80024 | 7" | Ø8.0mm | 2M | 360˚ | 1mega | 160˚ | Yes |
| CX7-80034 | 7" | Ø8.0mm | 3M | 360˚ | 1mega | 150˚ | Yes |
| CX7-80044 | 7" | Ø8.0mm | 4M | 360˚ | 1mega | 140˚ | Yes |
| CX7-80054 | 7" | Ø8.0mm | 5M | 360˚ | 1mega | 130˚ | Yes |
| CX7-80064 | 7" | Ø8.0mm | 6M | 360˚ | 1mega | 120˚ | Yes |
| CX7-80074 | 7" | Ø8.0mm | 7M | 360˚ | 1mega | 110˚ | Yes |
| CX7-80084 | 7" | Ø8.0mm | 8M | 360˚ | 1mega | 100˚ | Yes |
| CX7-80094 | 7" | Ø8.0mm | 9M | 360˚ | 1mega | 90˚ | Yes |
| CX7-80104 | 7" | Ø8.0mm | 10M | 360˚ | 1mega | 80˚ | Yes |