USA BORESCOPES

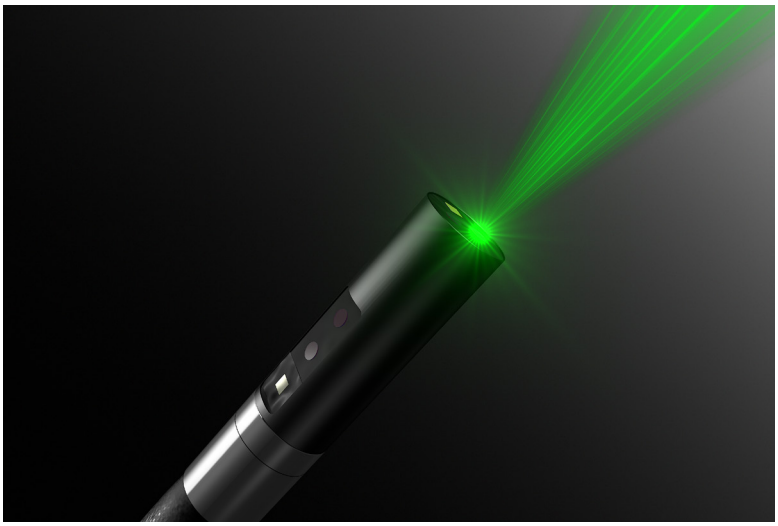
USA3000J 3D Measurement Industrial Videoscope

The world's first dual view 3D measurement videoscope

FASTER. EASIER. SMARTER.

Application Fields

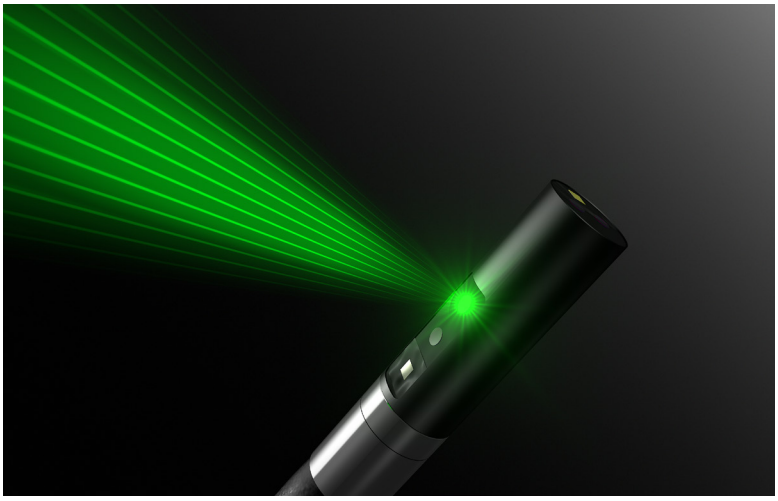
USA3000J system is designed for inspecting remote reach areas across various industries, including aerospace, automotive, power generation, oil and gas, and machinery equipment. It enables visual inspection of critical components such as turbine blades, pipes, welds, and engine parts, allowing users to detect defects, measure wear, and assess structural integrity with high accuracy.



Mitcorp's Patent 3D Technology

Active Stereo Technology

Active stereo technology offers an innovative alternative to the traditional dual-camera approach. In an active stereo vision system, one of the cameras is replaced with a projector unit that sequentially projects structured light onto the object of interest. Mitcorp's patented technology integrates two sets of cameras and a projector at the probe tip, enabling both front and side-view imaging. The advanced 3D geometry algorithm has been finely developed to generate reconstructed images for various inspection applications.



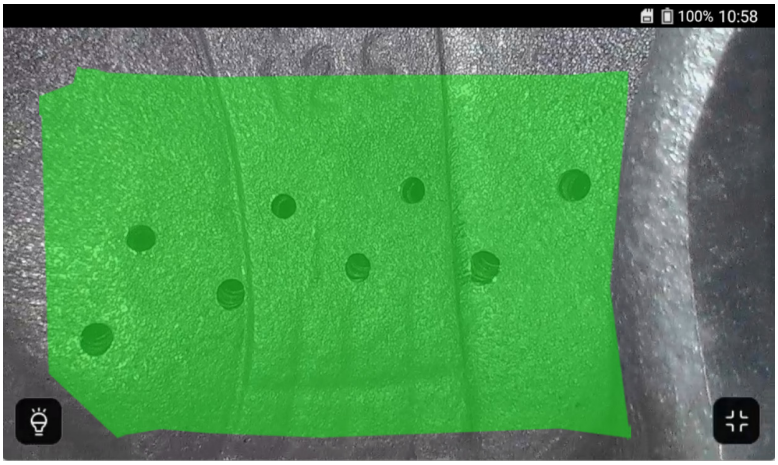
Patented Dual-View Cameras Measurement

The innovative dual-lens design allows you to capture multiple viewing angles without changing probes.

The front camera provides deep inspection, while the side camera offers lateral observation.

Fast & Easy Measurement Data Capture

In simple 3 steps, you can generate a detailed 3D reconstruction without any complex setup or tedious procedures. Simply capture and process in less than 10 seconds.

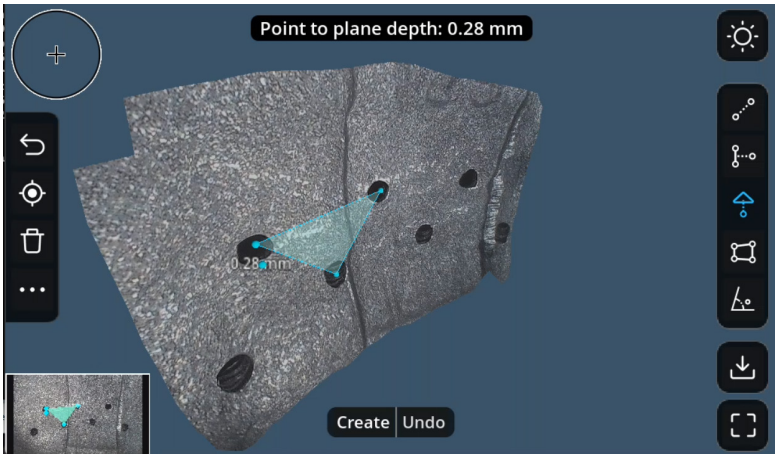


Exceptional Image Quality

Comprehensive image adjustments:
Brightness, Saturation, Contrast, White-balance, and Negative mode. 3D reconstruction quality comparable to 2D imaging, ensuring high-detail visualization.

Super Wide 3D Measurment Range

Mitcorp's Active Stereo technology is powerful to 3D reconstruct up to 80% of the snapshot image. Which accelerates the inspection overall time and shorten engine down-time.



High-Definition 3D Reconstruction

High-resolution 3D reconstruction technology, making it easier and more precise than ever to select measurement points.
You can inspect details from multiple angles, ensuring every measurement is accurate and reliable.

3D Measurement Functions & Annotation

Supports various measurement modes:

Stable, Fast & Easy

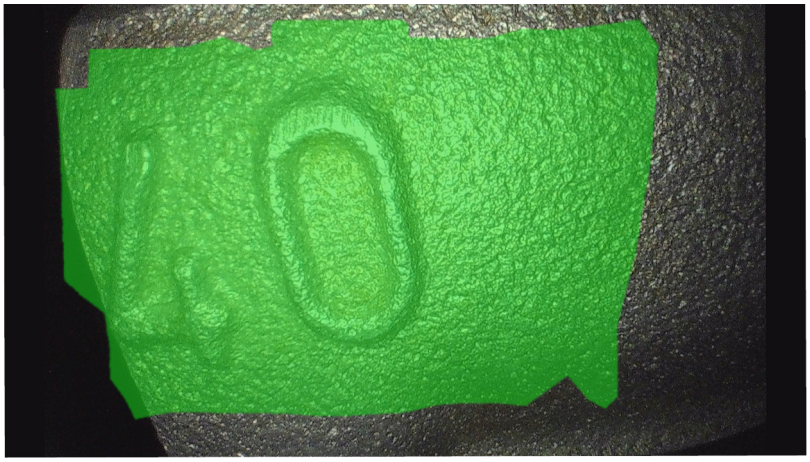
The USA3000J offers instant measurement data capture without the need for static waiting time, ensuring rapid and accurate analysis. It features superior image clarity, a rear-mounted fiber optic LED for stable, high-intensity illumination, and a rugged, all-weather chassis designed for demanding environments. With its world's first dual-camera, dual-measurement design, users gain instant access to multiple measurement modes for enhanced flexibility. A full-screen full-size 3D model display, coupled with intuitive 3D point selection, simplifies complex measurements. The system constructs a detailed 3D model in just 10 seconds, streamlining the analysis process,while its user-friendly interface ensures effortless operation.

Snap, Reconstruct & Measure in 10 Seconds.

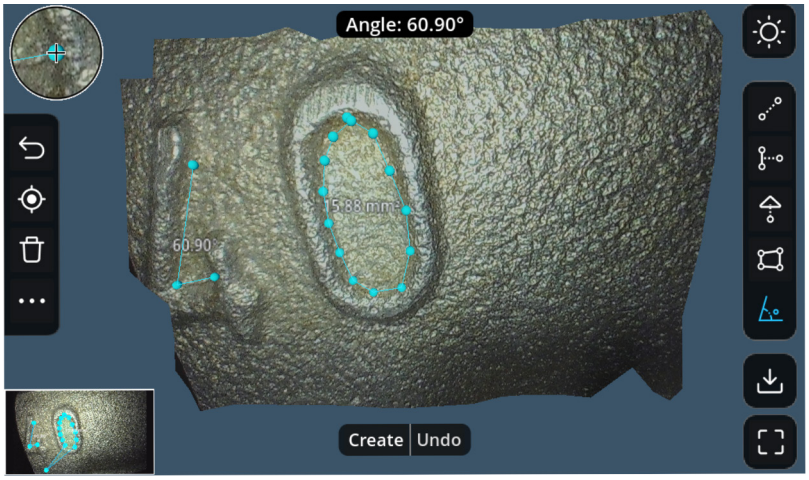
In simple 3 steps, you can generate a detailed 3D reconstruction without any complex setup or tedious procedures. Simply capture and process in less than 10 seconds.

1

2



3

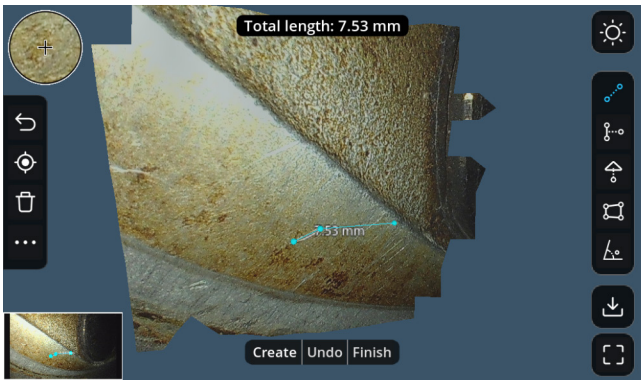


3D Measurement Functions

Multiple measurement on demand in one picture with initiative user interface

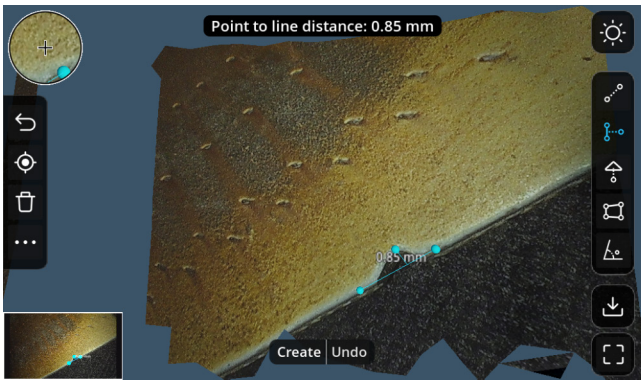
Length

Measures the distance between two selected points. It helps inspectors determine the length of defects such as cracks, scratches, or weld discontinuities.



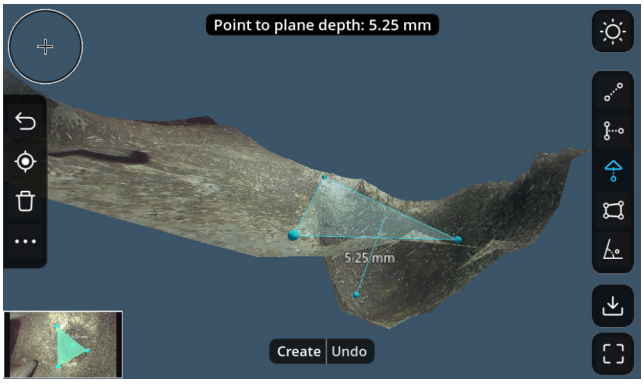
Point to Line

Measures the distance from a specific point to a reference line. This function is useful for evaluating the relative position of defects such as cracks or pits in relation to structural features.



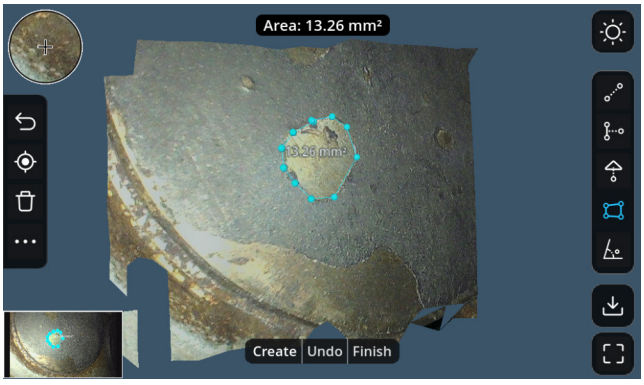
Depth

Measures the height difference between a selected point and a reference plane defined by three base points. This function is essential for assessing corrosion, pitting, and material wear in critical components.



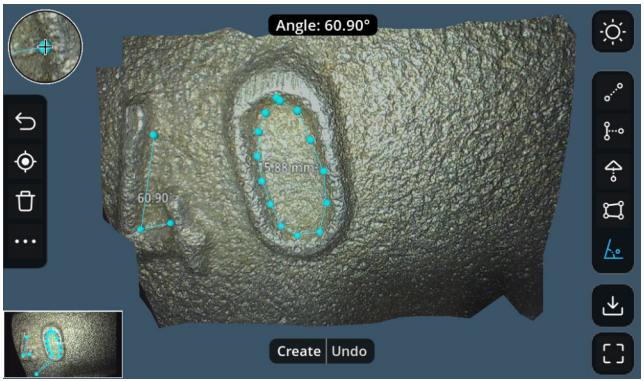
Area

Measures the surface area of a selected region. It helps inspectors evaluate the extent of defects like corrosion spots, delamination, or coating failures.



Protractor

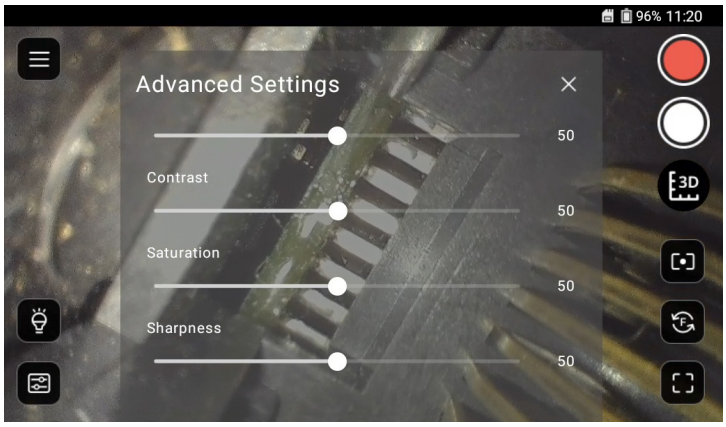
Measures the angle between two intersecting lines. This function assists in assessing misalignment, bending, or deformation of structural components.



Advanced Set-up Functions

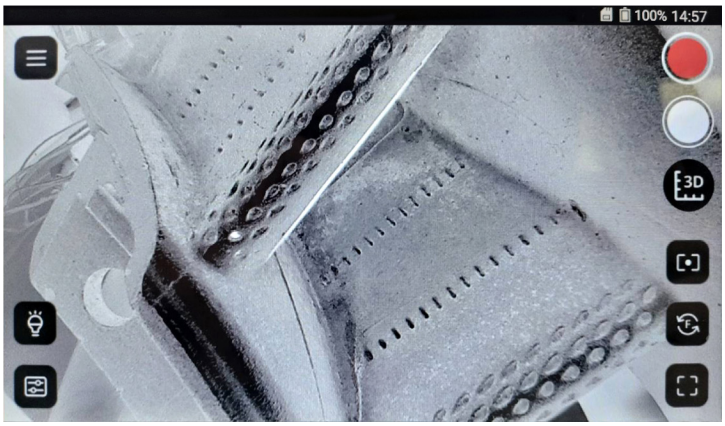
Wide Dynamic Range

WDR(Wide Dynamic Range) technology for better image quality in bright / dark complex environment.



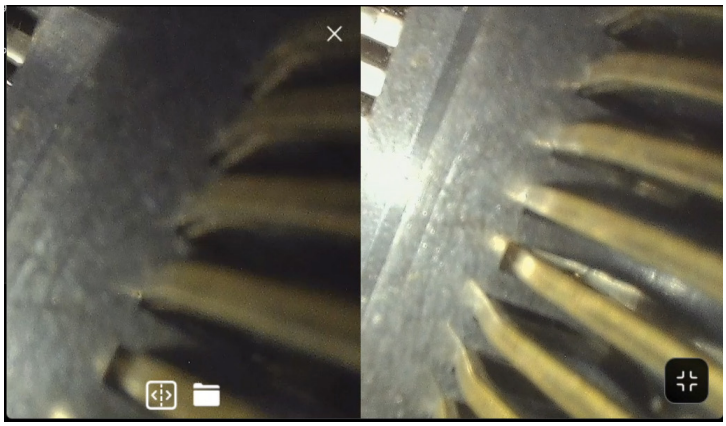
Manual Color Set-up

Sharpness / Saturation / White balance... various image fine tune parameters.



Negative Image

The negative image function is super useful of identifying tiny scratch,crack on reflective surface.

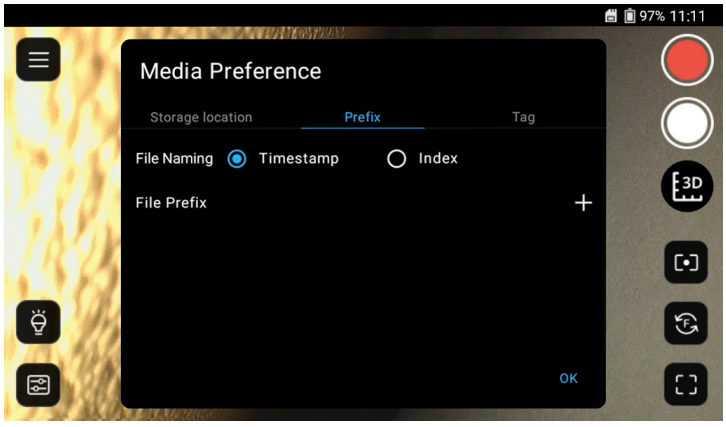


Compare Image

To compare the live view to a saved image by separated window for damage status reference.

Photo Annotation

Write / Draw / Erase on Images



Advanced File Management

Built image storage folder & user defined storage filename sequences to meet inspection project jobs.

Versatile Features

Versatile Features

New Hand-grip design
for a stay-still operation

Tripod application
for a hands-free operation

Accessories

2 Rigid Sleeve Set

450 mm in Length
the Rigid Sleeve available for
6 mm and 3.9 mm probes
The sleeve option comes
corresponding to the ordered probe

3 Swappable Battery

520g in weight
Charging from zero to full
in less than 5 hours
Typical 3 hours operation
LED light indicators

4 USB Type-C Power Adapter

Output 45W,3A

5 Calibration Block

For re-calibration of the
3D measurment probe

6 SD Card

64GB Micro SD Card
+ SD Card adapter

7 Neck Strap

8 HDMI cable

9 Type-C cable

10 Cleaning set

Optional

11 Centering Device

Three sizes of centering
device included.

Trolly Case 1

Hand carry and lightweight carry case
Rigid & Drop-proof, fully protecting
the videoscope system with smart
probe cable managment

USA3000 videoscope dimensions

USA3000J Base Unit / Monitor	
Dimension	L:355 W:216 H:214 (mm)
Weight	2200 g
water proof	IP 54
Display	above 7" LCD monitor with full touch panel
I / O Port	Power button
	Micro SD memory card slot
	USB Type-C (data transmission)
	Mini-HDMI (AV Output)
	Reset button (pin push)
Display Extension	HDMI / USB-C to +7" monitor
Tip Temperature warning	Low / Middle / High warning on screen display
Power indicator	0 ~ 100% indicator on screen display
Microphone	Built-in (on / off switch by setting menu)
Memory media	External Micro-SD card. Up to 128 GB
System languages	30 languages with user interface context
Battery	
Dimension	L:125 W:114 H:58 (mm)
Weight	520 g
Charging time	4.7-4.33hrs (2.5A-3A) *Power adaptor: output 45W, 3A
Discharging time	Typical 3 hours operation
LED Indicators	Red:charging / Green:full charged / Flashing:Abnormal
Operating Environment	
System Operating Temperature	0°C~40°C with AC adapter
Tip Operating Temperature	-10°C~100°C in air 10-30°C in water
Storage Temperature	0°C~60°C
Battery Charging Temperature	0°C~45°C
Image functions	
WDR (Wide Dynamic Range)	Software merge 3 pictures in 1
Negative	High contrast film effect
Rotation	90-180-270 degree rotation of the image
Compare	Select any saved image to compare with live view image
Annotation	Text and hand draw remarks on saved image (English letters and symbols)
Watermark	Fixed Mitcorp watermark on image
Tag	Editable preset tag text on still images (English letters and symbols)
Image Adjustment	Sharpness / Contrast / Saturation / White Balance
File Management Functions	
Gallery playback	Android based APP. Grid view / List view / File filter.
Create / edit folder	Editable preset for saving images
Create / edit filename	Editable prefix text for saving images
Package / Accessories	
HDMI cable (AV-out)	1.5m, HDMI 1.4a,TYPE A to TYPE D (Micro HDMI)
USB cable (data transfer)	1m, type C to type A
Carry case	Airtight trolley case
Micro SD card	Maximum 128G
Battery	DC output 7.8V, 9800mAh*1 sets
DC power adapter	USB PD 45W with Cable
Rigid sleeve	Detachable hand grip (*1 pcs); 45 cm stainless steel extension poles (*2 pcs)
Centering Devices (Optional)	O.D.: 18 mm*1, 38 mm*1 65 mm*1

Regulatory	
Basic safety	CE / FCC
EMC	EN55032 / 24 , part 15B(ITE)
Environmental	WEEE / RoHS/REACH / CA65 / Conflict Minerals
Battery	UN38.3 (1.2 m drop / 3 m stacking / test summary)PSEIEC62133BSMICCC

Insertion Probe	USA3000J-6-3000
	
Still Image resolution	Front & Side: 2560*1440
Video record resolution	Front & Side: 1920*1080
View angle	Front (0°) + Side (90°)
Tip length	25 mm
Tip Construction	Stainless steel housing. Front + Side 2 pairs: camera / light source / micro projector integrated packing
Outside Diameter (OD)	6.0 mm
Probe Length	3 m
Probe Construction	Tungsten steel out-braid
Field of View (FOV)	95° ±5%
Depth of Field (DOF)	10 mm~∞
Illumination light source	Front: Fiber + backend LED. Side: LED on tip
Temperature resistant	Up to 100 degree C
3D Measurement	See below
Articulation	Full way mechanic joystick with lock button
Neck bending angle	≤ 135°
Console Function Buttons	Trigger: snapshot / freeze / record; Round button: bright+ / bright- / custom hotkey
Water proof	Camera tip: IP67; Scope console: IP54

3D Measurement	
Functions	Point to Point (Distance)
	Point to Line (Distance)
	Point to Plane (Depth)
	Multi-point to Line (Length)
	Multi-point-Area (Area)
	Two-lines-angle (Protractor)
Accuracy	1 mm +/- 0.05 mm (95%)
Object distance	10~25 mm
Measurable area	130~830 mm^2