

BLX Series



AI-Powered Industrial Videoscope



Reinventing the horizons
Understanding the tiniest

PRODUCT INTRODUCTION

AI-Powered Industrial Videoscope

The BLX series AI-Powered Industrial Videoscope, developed by Coantec, is powered by a dedicated NPU neural network processor that delivers a 12-fold increase in computing power, enabling zero-delay AI image processing and precise voice interaction. Its 5.5-inch industrial touchscreen integrates with a modular insertion tube system for rapid adaptation to various inspection scenarios, while ensuring long battery life, low-temperature resistance, and superior protection.



Revolutionary
Imaging System



AI Intelligent
Interaction and Perception



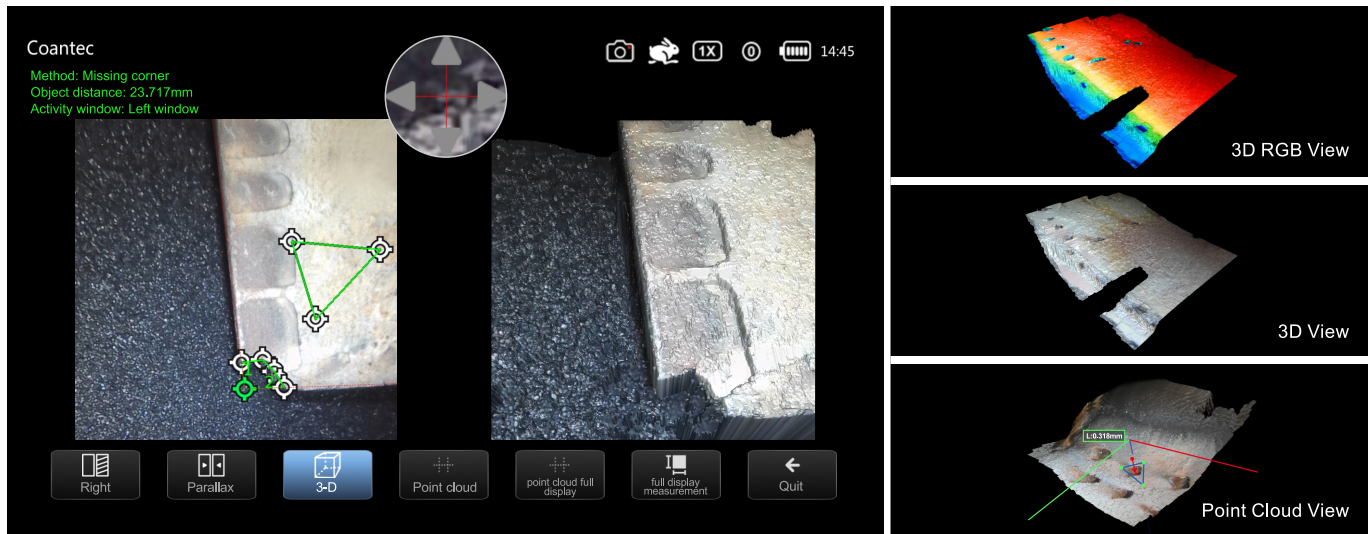
Modular Flexible
Configuration and
Ergonomic Design



Military-Grade
Protective Design

TECHNICAL FEATURE

AI-Powered Industrial Videoscope



Equipped with High-Precision 3D Measurement System /01

• Smart 3D Measurement

Real-time acquisition of high-density point cloud data generates clear 3D point cloud maps, supporting precise defect detection and analysis.

• Multi-Dimensional Accurate Calculation

Capable of measuring point-to-point, point-to-line, point-to-plane, multi-segment, area, profile, missing corner, circle, gap, etc. Data is stable and reliable, meeting the demands of complex scenarios.

• AI Algorithms

Integrates high-performance image processing and AI technology to adapt to complex environments, ensuring imaging quality and measurement accuracy.



Direct-view Measurement Lens

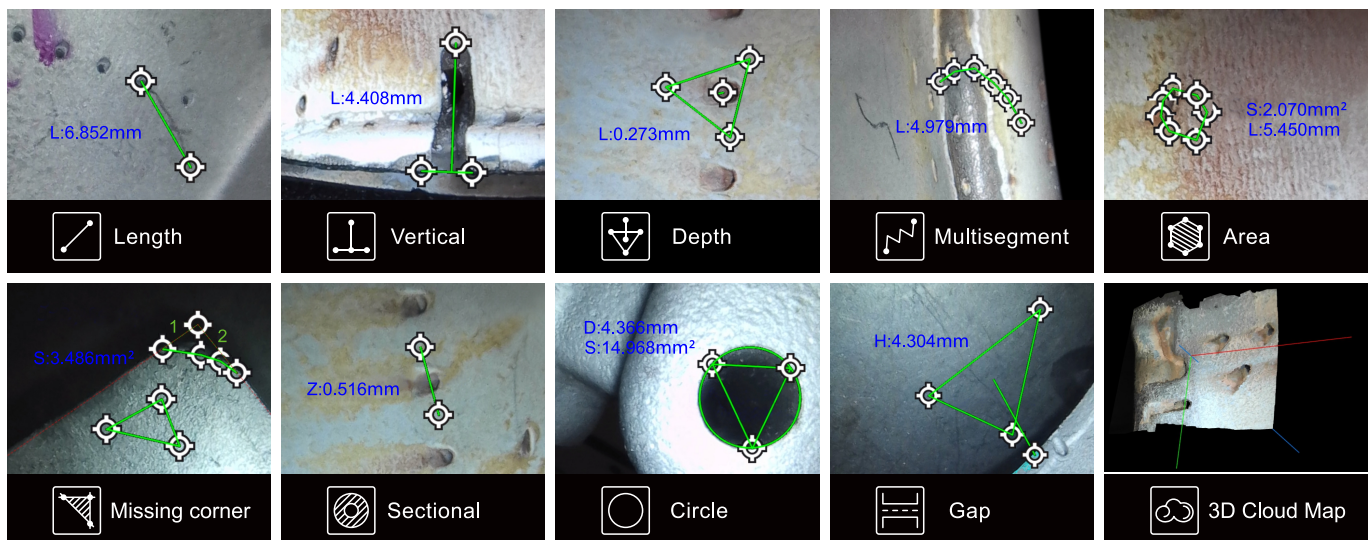


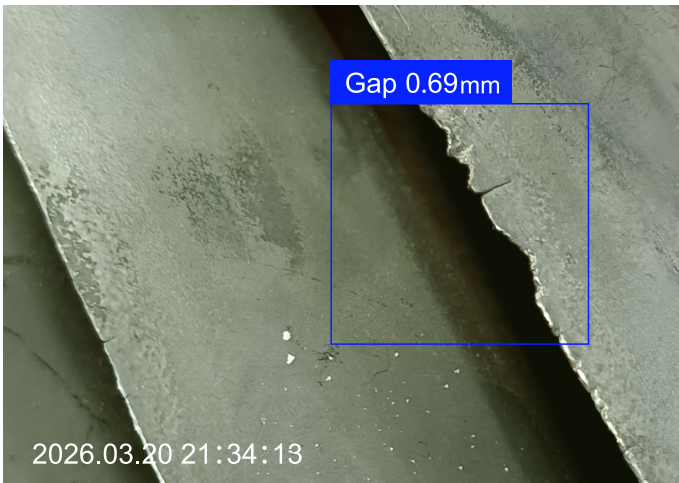
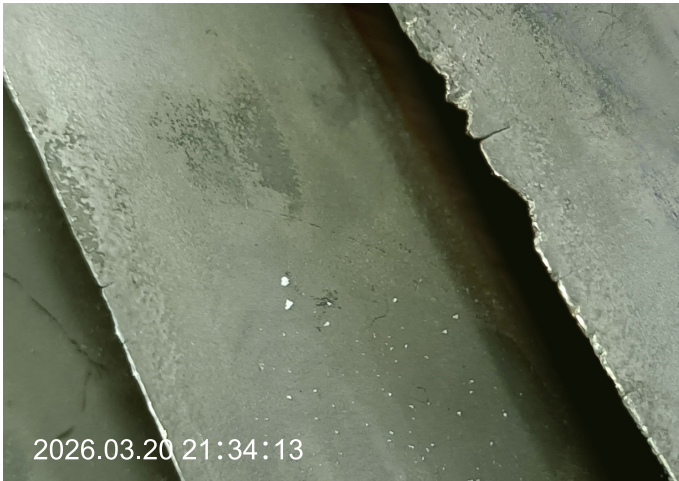
Side-view Measurement Lens

0.01mm
Measurement Accuracy

≤5%
Measurement Error

3Dmold
Restore 3D Model



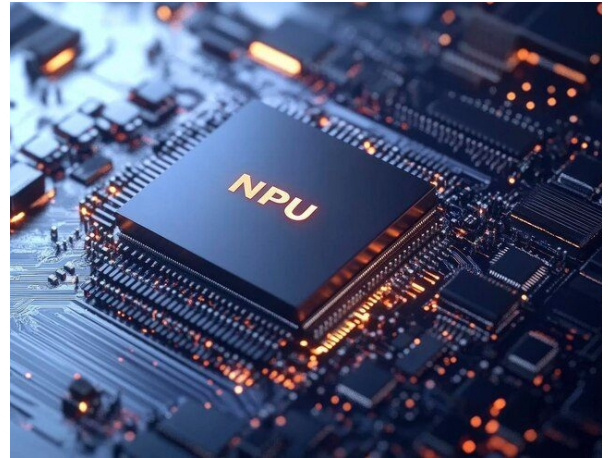


Automatically identify defect types

AI Intelligent Interaction and Perception /02

• AI Intelligent Defect Recognition

Equipped with NPU computing chip, achieving full digital intelligent detection. Not only has the ability to qualitatively judge defects, but also can perform rapid quantitative analysis and automatically identify defect types.



NPU Computing Power Chip

• A new voice interaction system, configured with Coantec's ecosystem AI intelligent voice intercom system, supports voice command control.

• Noise reduction recognition rate exceeds 95% in noisy environments, doubling inspection efficiency.

• Built-in temperature/ambient light sensors enable intelligent linkage, making the device more "context-aware":

Automatically initiates preheating in low-temperature environments, reducing startup time; luminescent buttons automatically turn off during the day and activate in low-light conditions, ensuring smoother and more effortless operation.

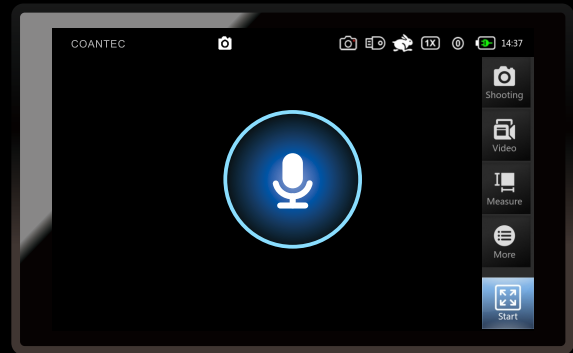
• All-in-One Power Solution:

Fast-charging technology (80% charge in just 50 minutes) + detachable battery design;

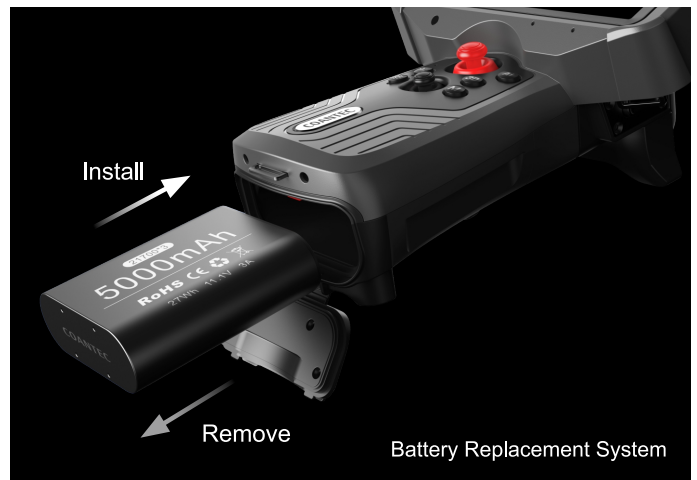
Supports continuous high-intensity operation for up to 4 hours (approximately 3 hours in low-temperature environments);

Multiple battery modules can be used to tackle all-weather inspection challenges;

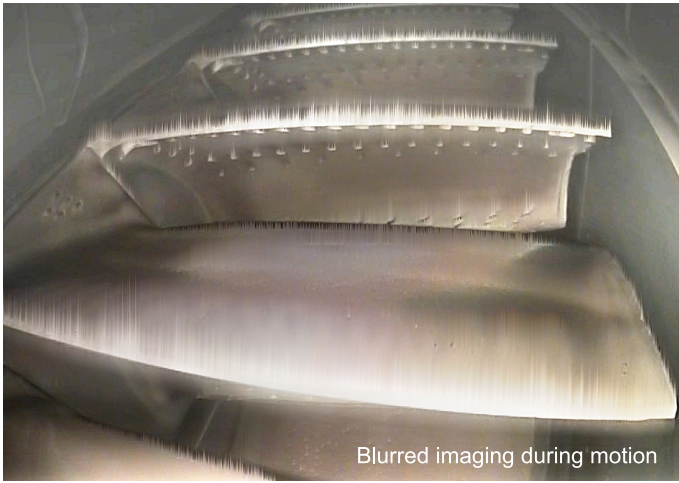
Battery status can be monitored at any time, even when powered off or operating with a single battery, making usage more convenient and efficient.



AI Intelligent Voice System



Battery Replacement System



Blurred imaging during motion



BLX No motion blur

Revolutionary Imaging System /03

•High-Resolution Ultra-Clear Imaging:

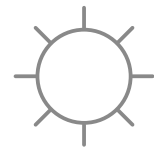
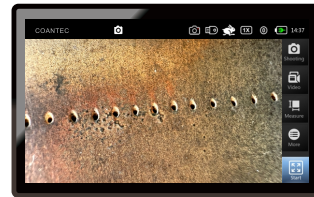
Equipped with 7 types of professional light sources (single white/single UV/single infrared/UV-white/UV-infrared/infrared-white/laser, etc. available), greatly improving color reproduction and detail rendition.

•Intelligent Noise Reduction Algorithm:

Supports 120Hz high frame rate full-pixel video recording, paired with an intelligent noise reduction algorithm, ensuring dynamic images are smooth without ghosting, making minor defects clearly distinguishable.

•High-Brightness Auxiliary Lighting System:

Employs independent dimming technology for each circuit, enabling synchronous fill light observation. Brightness is improved by 3 times compared to traditional lighting methods, allowing thorough inspections in corners and precise capture of hidden defects.

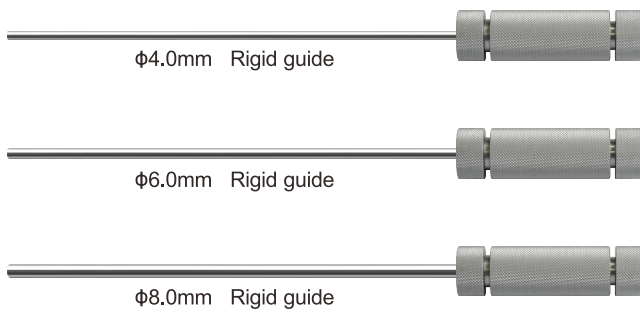


High-bright display

Modular Flexible Configuration and Ergonomic Design /04

•Modular Flexible Configuration

Supports interchangeable insertion tubes and lenses of different specifications, compatible with Coantec's 5th generation optoelectronic lenses and Xiangyun lens case (including direct view, side view, far focus, near focus, macro, and various other lenses), enabling free switching and covering all scenarios with one device.



φ4.0mm Rigid guide

φ6.0mm Rigid guide

φ8.0mm Rigid guide

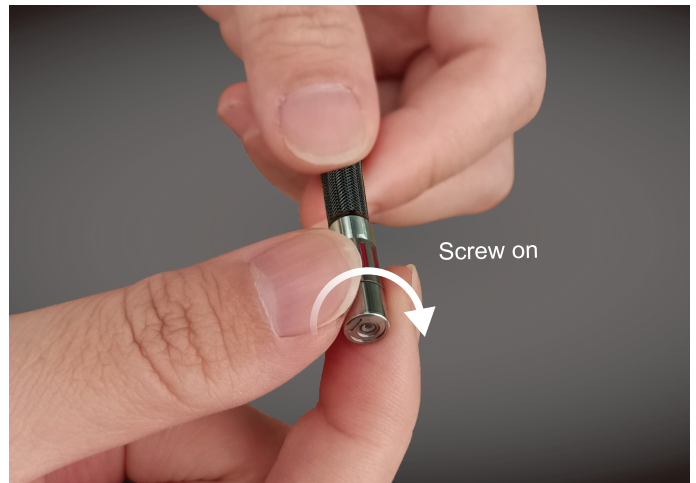
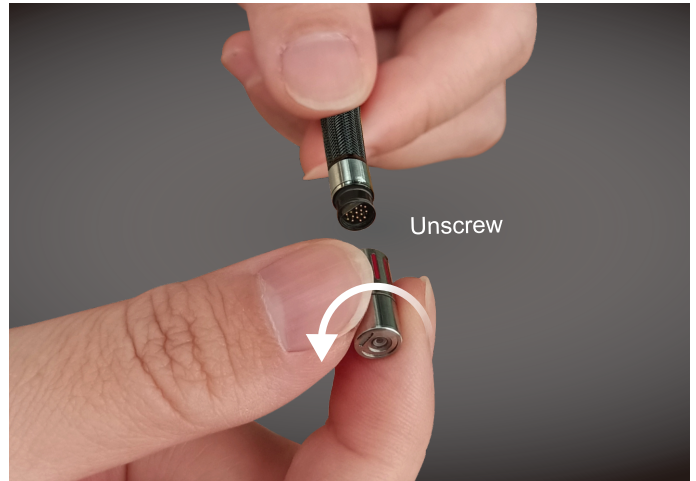
120DM Direct-view	120DN Direct-view	80DF Direct-view	3D Measurement Direct-view	100DMN Direct-view
120SM Side-view	120SN Side-view	80SF Side-view	3D Measurement Side-view	120SMN Side-view

The unit for the depth of field of all lenses is (mm)



$\phi 0.95\text{mm}$	L: 1-2m	DOF: 3-50mm	FOV: 120°
$\phi 1.2\text{mm}$	L: 1-2m	DOF: 5-50mm	FOV: 120°
$\phi 1.6\text{mm}$	L: 1-3m	DOF: 5-50mm	FOV: 120°
$\phi 1.8\text{mm}$	L: 1-3m	DOF: 5-50mm	FOV: 120°
$\phi 2.0\text{mm}$	L: 1-3m	DOF: 5-50mm	FOV: 120°
$\phi 2.8\text{mm}$	L: 1-3m	DOF: 5-50mm	FOV: 120°
$\phi 3.0\text{mm}$	L: 1-1.5m	DOF: 3-50mm	FOV: 130°
$\phi 3.9\text{mm}$	L: 1-3m	DOF: 3-100mm	FOV: 120°
$\phi 4.8\text{mm}$	L: 1-3m	DOF: 10-100mm	FOV: 100°
$\phi 6.0\text{mm}$	L: 1-10m	DOF: 8-80/10-100/15-130/15- ∞ (mm)	FOV: 100°/105°/120°
$\phi 8.0\text{mm}$	L: 1-10m	DOF: 8-80/10-100/15-130/15- ∞ (mm)	FOV: 100°/105°/120°

For detailed specifications and additional requirements, please consult our sales representatives.



Electrically controlled joystick

●Ergonomic and Portable Design

Features an integrated handheld body structure, lightweight and easier to grip than comparable products. It can be comfortably operated with one hand, allowing flexible maneuvering in tight spaces, truly enabling inspections on the go.

●Precise and Effortless Control

Electric joystick + 5-way navigation button enables 360° all-way directional control with a 50% improvement in response speed. The anti-slip base supports both flat placement and upright positioning, ensuring stable multi-mode operation for precise and effortless control.



IP68



-40°C Low-Temperature

Military-Grade Protective Design /05

- System boasts IP65 protection, while the insertion tubes feature IP68 rating, making it dustproof, waterproof, and drop-resistant.
- Optional -40°C cold-resistant mode, ready to withstand extreme challenges.
- Constructed with an aerospace aluminum alloy skeleton and equipped with three cooling systems, increasing structural strength by 400% and achieving 97% cooling efficiency. This balance of lightweight construction and exceptional durability enables continuous operation without the need for downtime.



Auxiliary Lighting System



Modular Structural Design



Integrated Metal Stud Design

OPERATIONAL SCENARIOS

AI-Powered Industrial Videoscope

Widely Applied :

Aerospace:

Internal defect detection for engine blades, combustion chambers, turbine structures, fuel nozzles, etc.

Automotive Manufacturing:

Inspection of engine block, valves, and internal cleanliness and assembly status of transmission.

Nergy and Power:

Internal inspection of boiler pipelines, heat exchangers, transformer oil tanks, and wind turbine gearboxes.

Etrochemical:

Pipeline and tank inspection at refineries, reactor and heat exchanger inspection at chemical plants, maintenance of oil and gas transmission pipelines.

Rail Transit:

Evaluation of internal conditions of bogie hollow shafts, brake system piping, and air conditioning ducts.

Construction Engineering:

Detection of internal cavities, clogged drainage pipes, and dust accumulation in ventilation systems for concrete structures.

Special Equipment:

Regular inspection and safety assessment of pressure vessels, boilers, and pressure pipelines.

Military Industry and Research:

Internal inspection of weapon components, material structure observation, and teaching experimental demonstrations.

SPECIFICATION PARAMETERS

AI-Powered Industrial Videoscope

● Standard ○ Optional

Host System(Basic)	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
CPU Processor	8-core, 2.4GHz Main Frequency	
NPU Processor	Dedicated neural network processor, 6-54Tops	
GPU Processor	Dedicated image acceleration processor	
Audio	Stereo speakers, microphone array	
Image Enhancement	Triple image enhancement technology	
Display specifications	Full-view industrial HD touchscreen	
Display size	5.5-inch	
Display resolution	1920 * 1080	
Host material	Aerospace aluminum alloy	
Host storage capacity	Default 64GB, expandable up to 1TB	
Host operating memory	Standard 8GB, expandable up to 32GB	
Image storage format	JPG/BMP	
Video storage format	MP4	
AI image intelligent recognition	Supports automatic defect recognition	
AI voice interaction	Supports intelligent voice input and output, features an intelligent voice chip, allows menu control via voice commands, and includes noise reduction functionality	
Real-time image magnification	5 times (supports multi-touch pinch-to-zoom gestures)	
LED brightness Adjustable	0-9 level	
Image color adjustment	Adjust image brightness, contrast, hue, saturation, sharpness, gamma, and restore to default	
Image modes	Optional modes include color, monochrome, negative	
Screen Backlight Brightness	1000nit high-brightness sunlight screen	
Ruler	Optional modes include "No ruler, circular ruler, cross ruler, or reference line"	
Battery level monitoring	With button, displays power level even in shutdown state	
File operations	Full-screen viewing of images/image zoom/delete/rename/rotate/doodle, etc.	
Image zoom	5 times zoom (supports multi-touch pinch-to-zoom gestures)	
File editing	Text annotation, doodling feature (supports handwritten lines, arrows, boxes, circular markings, text annotations, brush color and thickness settings)	
Menu/input language	More than ten languages including Simplified Chinese, English, Japanese, Korean, French, German, Portuguese, Spanish, Russian, Italian, and Dutch	
User permission management	Administrator, guest, standard user (created by the administrator)	
3D measurement system	/	9 measurement methods: point-to-point, point-to-line, point-to-plane, multi-segment, area, missing corner, profile, circle, and gap; measurement accuracy: 0.01mm, measurement error: ≤5%
Host dustproof and waterproof rating	IP65	

Host System(Optional)	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Photography function	●	●
Video recording function	●	●
Manual adjustment of display brightness	●	●

Host System(Optional)	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Image rotation	●	●
Image freeze	●	●
Mirroring	●	●
Real-time image comparison	●	●
Time watermark	●	●
Location watermark	●	●
Virtual joystick	●	●
Generate report	●	●
Secondary measurement	/	●
Online upgrade	●	●

Output Port	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
HDMI video output port		1
3.5mm audio output		1
USB 3.0 port		1
TF card with card reader		1
Type C port		1

Size specifications	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Host size	152mm*215mm*101mm	
Packaging size	551mm*351mm*240mm	
Host weight (including battery)	1.35KG	

Tube System(Basic)	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
* Tip diameter (±0.1mm)	0.95 / 1.2 / 1.6 / 1.8 / 2.0 / 2.8 / 3.0 / 3.9 / 4.8 / 6.0 / 8.0	
* Insertion tube length	1m ~ 10m optional (measurement function only supports tubes ≥2mm)	
* Depth of field(mm)	3-50 / 3-100 / 5-50 / 5-100 / 7-150 / 8-80 / 10-100 / 15-100 / 15-∞ / 50-∞	
* Field of view	80° / 100° / 120° / 140°	
* Camera pixels	160K / 500K / 1M / 2M	
View direction	Direct view, Side view, Dual view	
Lighting source	Front LED / Backend LED with optical fiber / Laser	
Light source type	White light, UV light, Infrared light, Laser	
*Tube unidirectional bending angle	≥ 160°	
Probe movement speed	Fast/slow speed adjustable	
Tip material	High-wear-resistant titanium alloy protective shell	
Insertion tube material	Tungsten Alloy Wire Braided Tube	
Dustproof and waterproof rating of insertion tube	IP68	
Temperature sensor	Built-in over-temperature alarm system	

Tube System(Optional)	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Replaceable insertion tube	●	●
Replaceable lens	○	○
360° all-way articulation	●	●

Tube System(Optional)	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Electric probe guidance control	●	●
Tip lock/release function	●	●
Probe lock step adjustment	●	●

Power Parameters	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Power input	INPUT: 220±10%V 50Hz mains electricity	
Output	OUTPUT: DC12V 3A 40W	
Fast charging	80% charge in 50 minutes	
Battery capacity (removable)	Voltage: 11.1V, 5000mAh at normal temperature, 4200mAh at low temperature (-40°C)	
Continuous working time of host	≥4h at normal temperature; ≥3h at low temperature (-40°C)	

Operating Environment	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
System working temperature	-40°C-80°C	
Tip working temperature	-40°C-95°C	
Storage temperature	-40°C-60°C	
Relative humidity	Not greater than 95%, non-condensing	

Configurations	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Standard configurations	Dedicated instrument case, TF card with card reader, Power adapter, Wrist strap, Cleaning set	
Optional configurations	USB flash drive, Centering device, Battery pack, Seat charger, HDMI cable, Battery module	

Personalized Customization	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
Insertion tube lengths, diameters, and lighting methods can be customized as required	○	○
Insertion tubes can be added with scale markings	○	○
Software customizable	○	○
Lens customizable	○	○

Notes	BLX (Standard Inspection Version)	BLX (Flagship Measurement Version)
* For specific parameters (such as illuminance, depth of field, resolution, field of view, working length, bending angle, etc.) and other requirements, contact relevant personnel for confirmation.		

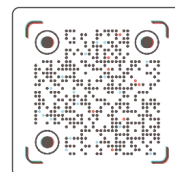
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TikTok