PIPE CAMERA

Pipe Camera / Cable Camera

The Pipe Camera / Cable Camera by NIRIKHON (Model BD-8050R) delivers precision inspection for confined, hazardous, and hard-to-reach areas. Its 360° electric rotating lens and ≤8mm slim probe navigate tight spaces with ease, guided through a 5-meter semi-rigid IP67 waterproof cable. Real-time HD video streams instantly to a 5-inch IPS display, while adjustable LED lighting ensures clarity in total darkness—engineered for reliable, mission-critical tactical inspection deployment.



Pipe Camera / Cable Camera | Official Brochure

SOLUTION SNAPSHOT

1080p Full HD 2MP Imaging with 360° Electric Rotation	Slim ≤8mm Camera Probe Diameter with 2–10cm Focal Range	5-Meter Semi-Rigid IP67 Waterproof Insertion Tube
High-Clarity 5-Inch IPS HD Real-Time Viewing Display	8 Front LEDs + 1 Side Light with Adjustable Dimming Control	3000mAh Lithium-Ion Battery with 3–5 Hours Field Endurance

OVERVIEW

Built for Real Operations 01

The Pipe Camera / Cable Camera by NIRIKHON (Model BD-8050R) delivers precision inspection for confined, hazardous, and hard-to-reach areas. Its 360° electric rotating lens and ≤8mm slim probe navigate tight spaces with ease, guided through a 5-meter semi-rigid IP67 waterproof cable. Real-time HD video streams instantly to a 5-inch IPS display, while adjustable LED lighting ensures clarity in total darkness—engineered for reliable, mission-critical tactical inspection deployment.

CAPABILITIES

Key Features & Product Modules 02

≤8mm Micro Camera Head with 360° Electric Rotation Motor

The camera head, at 8mm or smaller in diameter, fits through narrow pipes and tight cavities, while its electric 360° rotation motor sweeps the full interior view without needing to withdraw and reposition the probe.

1080p Full HD 2MP High-Resolution CMOS Sensor Module

A 2MP CMOS sensor captures 1920×1080 Full HD footage, giving inspectors sharp, forensic-level clarity when examining pipe interiors, cavities, or concealed structural spaces.

Dual-Zone Illumination Array (8 Front LEDs + 1 Auxiliary Side Light)

Eight front LEDs paired with an auxiliary side light, both brightness-adjustable, flood dark ducts and enclosed cavities with even illumination, eliminating shadowed blind spots during inspection.

5-Meter Semi-Rigid IP67 Waterproof & Anti-Corrosion Insertion Tube

The 5-meter semi-rigid cable bends through curves and junctions while its IP67 rating and anti-corrosion build withstand moisture, submersion, and abrasive contact—built for hazardous, wear-heavy environments.

5-Inch High-Definition IPS Real-Time Monitoring Display

A 5-inch IPS screen delivers live HD video with zero lag as the probe advances, letting inspectors read the interior environment and react to findings the instant they appear on screen.

MicroSD Recording System with 32GB Storage Support

Photos and video are captured directly to a 32GB MicroSD card in JPG, MP4, or AVI format, preserving a documented, retrievable record of every inspection pass for reporting and review.

3000mAh Rechargeable High-Endurance Lithium-Ion Battery Pack

The 3000mAh lithium-ion battery sustains 3 to 5 hours of continuous operation, keeping the unit field-ready through extended inspection sessions without mid-task downtime.

Ergonomic Handheld Control Housing with Intuitive Button Interface

A lightweight, ergonomic housing with a simple button-based interface puts rotation, lighting, zoom, and recording controls directly at the inspector's fingertips—enabling fast, one-handed operation in the field.

Software, Benefits & Outcomes

Real-Time 1080p Live Stream Viewing & Display Interface

Streams real-time 1080p Full HD footage to the onboard display as the probe advances through pipes and cavities, giving inspectors instant visual command of the inspection path.

- View live 1080p footage with no noticeable delay
- Track probe progress through pipes, ducts, or drainage lines in real time
- Identify blockages, damage, or concealed items as they appear on screen
- Maintain continuous visual coverage throughout the inspection pass

360° Motorized Camera Rotation & Directional Control

Drives the electric rotation motor to sweep the camera head through a full 360° field of view, allowing inspectors to examine every angle of a pipe or cavity interior without repositioning the probe.

- Rotate the camera head a full 360° from the control interface
- Inspect pipe walls, joints, and bends from multiple angles
- Redirect viewing angle instantly upon spotting an anomaly
- Maintain full directional control throughout confined-space navigation

Instant JPG Photo Snapshot & MP4/AVI Video Recording

Captures still images or continuous video the moment a finding requires documentation, preserving high-clarity evidence directly from the live inspection feed.

- Trigger instant JPG snapshot capture during live viewing
- Record continuous MP4 or AVI video footage on demand
- Capture multiple images per inspection pass as needed
- Preserve high-resolution evidence for reporting and review

On-Screen Live Frame Freeze & Pause Analysis

Freezes the live video frame at any moment, allowing inspectors to pause on a critical finding and examine it closely without losing the probe's position in the pipe or cavity.

- Freeze the live frame instantly upon identifying a point of interest
- Examine paused footage in detail before resuming inspection
- Avoid missing critical findings during fast-moving inspection passes
- Resume live streaming immediately after analysis

Multi-Angle Image Rotation & Orientation Calibration

Rotates the captured image on-screen to correct orientation, ensuring inspectors always view the pipe or cavity interior in a consistent, readable perspective.

- Rotate the displayed image to match physical orientation
- Correct viewing angle after probe repositioning
- Maintain consistent visual reference throughout inspection
- Improve readability of recorded footage during later review

Smooth Digital Zoom & Detail Magnification

Applies digital zoom to magnify areas of interest during live viewing, allowing closer examination of fine details without physically advancing the probe further.

- Zoom in on suspected damage, blockages, or foreign objects
- Magnify fine detail without repositioning the camera head
- Zoom out to regain full-frame situational context
- Support closer analysis during evidence capture

Multi-Level LED Brightness & Illumination Adjustment

Controls the 8 front LEDs and auxiliary side light independently, allowing inspectors to fine-tune illumination for varying darkness levels inside pipes and enclosed spaces.

- Adjust front LED brightness across multiple levels
- Activate the auxiliary side light for angled illumination
- Optimize lighting for reflective or highly enclosed surfaces
- Maintain consistent visibility throughout dark, confined environments

32GB MicroSD Media Gallery & Playback Management

Organizes and manages recorded photos and videos stored on the onboard 32GB MicroSD card, enabling direct review without requiring external software.

- Browse recorded JPG, MP4, and AVI files on-device
- Play back recorded video footage for immediate review
- Manage and retain files based on inspection findings
- Monitor available storage across the 32GB capacity

SPECIFICATION

Technical Details 05

1080P FULL HD 2MP IMAGING WITH 360° ELECTRIC ROTATION
✓ Included

SLIM ≤8MM CAMERA PROBE DIAMETER WITH 2–10CM FOCAL RANGE
✓ Included

5-METER SEMI-RIGID IP67 WATERPROOF INSERTION TUBE
✓ Included

HIGH-CLARITY 5-INCH IPS HD REAL-TIME VIEWING DISPLAY
✓ Included

8 FRONT LEDS + 1 SIDE LIGHT WITH ADJUSTABLE DIMMING CONTROL
✓ Included

3000MAH LITHIUM-ION BATTERY WITH 3–5 HOURS FIELD ENDURANCE
✓ Included

IMAGE ROTATION & FRAME FREEZE FUNCTIONALITY
✓ Included

32GB MICROSD RECORDING IN JPG, MP4 & AVI FORMATS
✓ Included

ANTI-CORROSION, WEAR-RESISTANT CABLE CONSTRUCTION
✓ Included

DIGITAL ZOOM SUPPORT
✓ Included

USER-FRIENDLY, INTUITIVE BUTTON INTERFACE
✓ Included

LOW-LIGHT OPERATIONAL CAPABILITY
✓ Included

FLEXIBLE CABLE BENDING FOR CONFINED & IRREGULAR ACCESS POINTS
✓ Included

QUESTIONS

Frequently Asked Questions 07

Q. How durable is the 360° electric rotation mechanism under repeated use in tight, obstructed pipe environments?

A. The camera head's electric rotation motor is engineered for repeated 360° directional movement within confined pipe and cavity spaces, allowing inspectors to examine full interior surfaces without mechanical strain from repositioning. This rotation capability is built into the probe as a core operational feature suited to sustained field use.

Q. Can the insertion cable and camera head reliably operate when submerged in dark, moisture-heavy drainage or conduit environments?

A. Yes. The 5-meter semi-rigid cable and camera assembly carry an IP67 waterproof rating, with anti-corrosion, wear-resistant construction designed to withstand submersion and repeated exposure to moisture-heavy or abrasive environments without performance degradation.

Q. What is the expected battery runtime during continuous field inspection, and how is power managed across extended sessions?

A. The system is powered by a rechargeable 3000mAh lithium-ion battery rated for 3 to 5 hours of continuous operation, supporting extended inspection sessions across multiple sites without requiring an immediate recharge between tasks.

Ready to deploy Pipe Camera / Cable Camera?

Talk to Nirikhon for product consultation, installation planning, integration support, and enterprise deployment.

Hotline: 09647 120 120 | Website: www.nirikhon.com