

# M-series

## Mechanical 360° Industrial Endoscope



Visit [www.yateks.com](http://www.yateks.com) for more info.

## Introduction:

Yateks Mechanical 360° Industrial endoscope is a newly released product in combination with mechanical 360° articulation function & interchangeable tubes function.

M-series apply mechanical joystick control structure. M-series is portable with the whole weight of only 0.6KG. With the interchangeable tubes function, one host can match different diameters & lengths & lens of the insertion tube to meet customers' various needs and greatly save costs.

## Features:

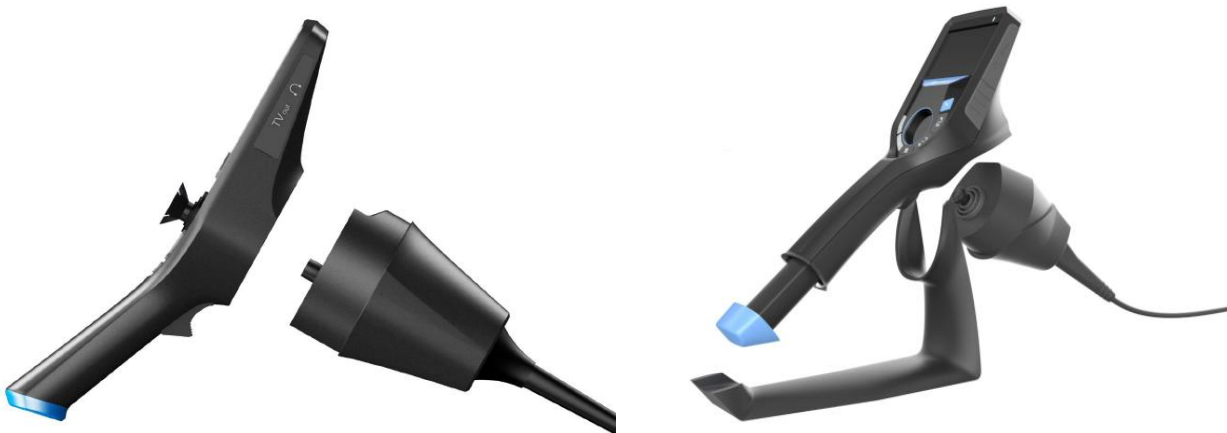
- ◆ Hand-held ergonomics design, portable with the whole weight of 0.6KG



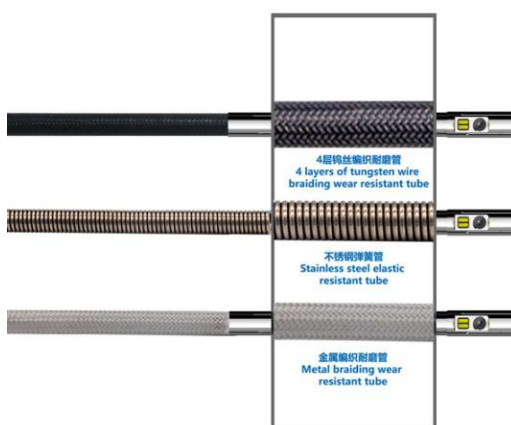
- ◆ Mechanical rotation for 360° and bend for 160°---convenient, accurate and automatic reset.



- ◆ Interchangeable tubes, one host can match different diameters & lengths & lens of the insertion tube to meet customers' various needs and greatly save costs.



- ◆ Anti-friction and anti-erosion, the insertion tube is woven with 4-layer of tungsten alloy



- ◆ IP67 standard of the probe—corrosion proof, waterproof and dust-proof. Reliable examination can be carried out even under all kinds of bad conditions.
- ◆ Apply LED packing technology. Probe illuminance can reach 20,000 lux, 200 times than indoor fluorescent. The dynamic optimized amount of light can be applied to different working conditions.
- ◆ 6-level high and low brightness adjustment, can detect different materials under different environments.
- ◆ 5-times digital zoom in/out, ensure the clear image.
- ◆ Easy to operate, core functions including taking photos, storage and recording video images.
- ◆ USB, big capacity SD card and TV out interface, data can be shared and analyzed.
- ◆ Large capacity charging battery can ensure continuous work for over 3 hours,

**Application field:****1. Aviation & Space Industry**

It can be used to inspect regularly turbine, blades, engine, surface of welding and conductor pipes, combustion chamber in plane, and in development and manufacture of rocket.

**2. Electrical Production and Construction Unit**

It can be used to detect and monitor defects of important apparatus such as turbine, pipes.

**3. Petro - Chemical and Pressure Container Industries**

It can be used to inspect reserve tanks, heat exchangers and tank trucks in oil refinery, pipes in chemical plant and containers, steel cylinders and pipes in special inspection unit and pressure container plant.

**4. Railway, Ship, Construction Engineering and Research Unit**

Railway/Ship: It can be used to inspect electrical locomotive, air - conditioner, turbine, heater, gas - engine and flames of boiler.

Construction Engineering: It can be used to inspect erosion and fouling of pipes, rust of concrete iron, break of support shaft and bridge connection part; to observe caves inside tunnel and construction model; to diagnose erosion and blockage of running water pipe.

Research Unit: It can be used in observation, research, trial, archaeological work and etc.



## Specifications

|                           | Category                        | Description   |
|---------------------------|---------------------------------|---|
| System                    | Dimension/Weight                | 315*111*173mm/0.75KG  |
|                           | Display screen                  | 3.5" TFT LCD (320*240 )   |
|                           | Articulation                    | Mechanical rocker with lens able to rotate in 360-degree,automatic lock                   |
|                           | Functions                       | Photography, video, brightness control, menu, image zoom in/out, screen frame, image flip |
|                           | Storage                         | 16G (UP TO 32G)   |
|                           | I/O port                        | SD card, headset, TV-OUT, charge and Micro USB  |
|                           | Battery/Standby time            | Li on Battery 18650 x1 / 4 hours  |
|                           | Brightness control              | 6 degrees for brightness adjustment   |
|                           | Software                        | Operation system  |
| User interface            |                                 | Drop-down operation menu  |
| File management           |                                 | File & Folder creation, naming, deleting Storing to SD card or USB ThumbDrive             |
| Image control             |                                 | Flip, zoom in/out, screen frame   |
| Image format/Video format |                                 | JPEG,JPG/AVI(record date and time)  |
| Language                  |                                 | English/Deutsch/Chinese/Japanese/Korean/Russian   |
| Operating environment     | Monitor working temperature     | -10~50°   |
|                           | video probe working temperature | -20~70°   |
|                           | Relative humidity               | Highest 90%,no condensation   |
|                           | Waterproof                      | Monitor IP54/video probe IP67   |

## Models for M series

| Model No | Part No  | Diameter [mm] | Insertion Tube Length [m] | Camera   |           |             |            | Optic          |               | Light    |        | Probe Bending |
|----------|----------|---------------|---------------------------|----------|-----------|-------------|------------|----------------|---------------|----------|--------|---------------|
|          |          |               |                           | Location | Head Type | CMOS Sensor | Resolution | Depth of Field | Angle of View | Type     | [Lux]  |               |
| M310FN   | 11130010 | 2.8           | 1                         | Front    | YA        | D           | 640*480    | 3-25mm         | 80°           | LED      | 4,000  | 130±10°       |
| M315FN   | 11130015 |               | 1.5                       |          |           |             |            |                |               |          |        | 120±10°       |
| M320FN   | 11130020 |               | 2                         |          |           |             |            |                |               |          |        | 110±10°       |
| M410FM   | 11141010 | 3.9           | 1                         | Front    | PG        | A           | 720*576    | 7 - 80mm       | 110°          | LED      | 6,000  | 170±10°       |
| M415FM   | 11141015 |               | 1.5                       |          |           |             |            |                |               |          |        | 170±10°       |
| M420FM   | 11141020 |               | 2                         |          |           |             |            |                |               |          |        | 150±10°       |
| M430FM   | 11141030 |               | 3                         |          |           |             |            |                |               |          |        | 130±10°       |
| Model No | Part No  | Diameter [mm] | Insertion Tube Length [m] | Camera   |           |             |            | Optic          |               | Light    |        | Probe Bending |
|          |          |               |                           | Location | Head Type | CMOS Sensor | Resolution | Depth of Field | Angle of View | Type     | [Lux]  |               |
| M610FM   | 11161010 | 6             | 1                         | Front    | QB        | A           | 720*576    | 7-80mm         | 80°           | LED      | 20,000 | 170±10°       |
| M615FM   | 11161015 |               | 1.5                       |          |           |             |            |                |               |          |        | 150±10°       |
| M620FM   | 11161020 |               | 2                         |          |           |             |            |                |               |          |        | 120±10°       |
| M630FM   | 11161030 |               | 3                         |          |           |             |            |                |               |          |        | 120±10°       |
| M650FM   | 11161050 |               | 5                         |          |           |             |            |                |               |          |        | 100±10°       |
| M680FM   | 11161080 |               | 8                         |          |           |             |            |                |               |          |        | 100±10°       |
| Model No | Part No  | Diameter [mm] | Insertion Tube Length [m] | Camera   |           |             |            | Optic          |               | Light    |        | Probe Bending |
|          |          |               |                           | Location | Head Type | CMOS Sensor | Resolution | Depth of Field | Angle of View | Type     | [mW]   |               |
| M610RF   | 11165010 | 6             | 1                         | Front    | PR        | B           | 720*576    | 50mm-∞         | 80°           | Infrared | 100    | 150±10°       |
| M615RF   | 11165015 |               | 1.5                       |          |           |             |            |                |               |          |        | 150±10°       |
| M620RF   | 11165020 |               | 2                         |          |           |             |            |                |               |          |        | 130±10°       |
| M630RF   | 11165030 |               | 3                         |          |           |             |            |                |               |          |        | 110±10°       |