

A. Typical Applications

Component	Specification
Scope	A tool to inspect and provide a digital recording in and JPEG images of the interior of small diameter metallic and non-metallic, pipes, drains, conduits, and ducts. The most typical application is the inspection of sewer laterals and plumbing. Digital video and jpeg picture images are viewed on the control module LCD and recorded onto a USB thumb drive.
System Components	<p>Three major components make up the vCamMX System</p> <ul style="list-style-type: none"> • Viewing & Recording Device: vCamMX Control Module (comes with an accessory kit, quick guide, and setup guide). • Reels with Pushrod: (reels with pushrod come with an insertion sleeve). MX Reel pushrod options of: <ul style="list-style-type: none"> - 100ft/30m - 150ft/45m • Camera Heads: (MX reel cameras are interchangeable) <ul style="list-style-type: none"> - D18-MX 0.70"/18mm Fixed position color camera. - D26-MX 1"/26mm Self-leveling color camera.



B. vCamMX Control Module

Component	Specification
Dimensions	14.2" (L) x 5.91" (W) x 12.6" (H) (360mm (L) x 150mm (W) x 320mm (H)).
Weight	6.6lb (3kg).
Power Supply	• DC Power: 12V DC external power supply powers unit and charges internal batteries.
Fuse	• 10 Amp – 250 Volt, glass, quick blow.
Storage	• USB Port – Support up to 128 GB Removable USB 2.0 Drives. • SD Card Slot – Supports up to 128GB Removable SD Cards.
File Format	• AVI Video FRAME SIZE: NTSC 720 x 480, PAL 720 x 576. • JPEG Still Image Capture NTSC 720 x 480, PAL 720 x 576.
Video Format	Automatically senses PAL or NTSC and changes format.
Display	8" (20cm) Daylight Readable TFT LCD (800x600) (diagonal measurement).
Distance Counter	Approximate distance is shown (forward and backwards) in feet or meters on the LCD screen with the option to appear in still images or recorded video. *
Environmental	• Water resistant to IP65 (IEC 60529-Light shower) (lid closed). • Shock resistant (IEC 60068-2-31) (lid closed).
Temperature Range	• Storage: -4°F to 158°F (-20°C to +70°C). • Operating: 14°F to 122°F (-10°C to +50°C).
Internal Batteries	• Internal Lithium-ion rechargeable batteries. • Seven hours runtime when Sonde on, eight hours when Sonde off.
Mounting	Permanently mounted on the MX reel frame.

Operator Controls

Controls	Functions
Camera LED Dimmer	<ul style="list-style-type: none"> Variable control on front panel to adjust brightness of camera LED.
Distance Counter	<ul style="list-style-type: none"> Push button control on front panel to zero out distance out*.
Sonde Operation	<ul style="list-style-type: none"> Push button control on front panel turns Sonde on, cycles through available frequencies, then off. Push button glows green and Sonde icon appears on the status bar on LCD when active.
Microphone Operation	<ul style="list-style-type: none"> Push button control on front panel turns internal microphone on and off. Push button glows red and microphone icon appears on the status bar on LCD when active.
Unit On/Off	<ul style="list-style-type: none"> Push button control on front panel turns unit on and off. Push button glows green and battery icon appears on status bar on LCD showing battery status and if powered by AC/DC power or internal battery power.
Recording Control	<ul style="list-style-type: none"> Push button on control module, push to record, push second time to stop recording. Push button glows red when recording and flashing icon appears on status bar on LCD when recording.
Image Capture	<ul style="list-style-type: none"> Push button on control module, press once and image is captured to the USB drive. JPEG icon flashes on LCD with image file name.
Video Playback control	<ul style="list-style-type: none"> Push button on control module for video pause, rewind/fast forward, play and stop. Icons appear on status bar to advise which function is being used.
Digital Zoom	<ul style="list-style-type: none"> Push button panel, pressing repeatedly toggles through 2 X view zoom mode, then off.
On Screen Display (OSD)	<ul style="list-style-type: none"> OSD showing time, date, and distance counter on bottom of screen with option to display on top or turn off.
Text Overlay	<ul style="list-style-type: none"> On-screen keyboard allows for text commenting over recorded video and JPEG images.

Ports	Functions
Video Out	Color coded industry standard RCA female socket in media compartment for video out.
Microphone	Internal microphone located top center of LCD.
Media Sockets	USB 2.0 and SD (secure digital) sockets in media compartment. Supports up to 128GB USB 2.0 USB Drives and 128GB SD Cards.
DC Power	12V 1 Pin male circular sock for DC power cable assembly. Battery charger and DC vehicle cable are supplied with control module.
Battery Indicators	<ul style="list-style-type: none"> Charging indicator on left side panel glows red while charging and turns green when fully charged. Battery icon on status bar shows battery level and if running on AC/DC power or internal batteries.

Other Options	Description
Accessories	<ul style="list-style-type: none"> Range of camera skids. Smartphone/Tablet App for video streaming, image capturing, recording and texting or emailing still images.

Firmware	Functions
Operating System	The vCamMX Control Module firmware is updateable via update files available from our website, local dealer or factory.

C. vCamMX Reel Features

Component	Specification
Dimensions	20.9" (L) x 12.7" (W) x 22.4" (H) (531mm (L) x 322mm (W) x 570mm (H)).
Weight	22.7lb (10.3kg)
Distance Counter	The encoder driver is accurate to 0.33ft (0.1m) resolution*.
Environmental	Water resistant to IP65.
Construction	Stainless-steel tubular frame with carbon fiber pushrod drum.
Braking/Locking	Hand tightening friction brake to slow pushrod cage, move brake lever left/right to lock/unlock pushrod drum.
Sonde Frequencies	33kHz, 512Hz and 640Hz. Selectable at time of control module feature setup.
Sonde Output/Range	1 Watt output provided by the control module. Average maximum locatable depth approximately 9 feet (3m) in cast iron pipes. Possibly more in non-metallic pipes.
Pushrod	Fiberglass rod surrounded by multi-conductors and coax wrapped in a Kevlar braid with a high-density Polyethylene jacket.

Pushrod length Options	100ft (30m), 150ft (45m).
Pushrod Diameter	0.39" (10mm).
Pushrod Minimum Break Strength	4000lbs (1800kg).
Pushrod Bend Radius	Approximately 40 x the pushrods diameter.
Pushrod Termination	<ul style="list-style-type: none"> Termination Base - Custom stainless steel hardware with black POM (a plastic) housing a Sonde coil. Filled with two-part epoxy securing Kevlar braids and waterproofing. Termination Spring Assembly - Tempered steel spring.

D. D18-MX 0.70" (18mm) fixed position camera head

Component	Specification
Application	Pipe diameters from 1-1/2 to 4 inches / 40 to 100mm.
Horizontal Resolution	520 TVL.
Active Pixels	NTSC 720 x 480, PAL 720 x 576.
Focus Point	4.7" (120mm).
Aperture / FOV	F2.0/55°.
Light Sensitivity	0.008Lux.
Lighting	10,000 mcd illumination LED x 6 pcs (Millicandela or thousandths of a candela).
Auto Upright	None, fixed position non-leveling camera.
CCD Type	Color CCD camera assembly available in NTSC or PAL format.
Camera Housing	Stainless steel.
Camera Lens	Scratch resistant Sapphire.
Environmental	Water resistance up to 11 BAR pressure.
Temperature Range	Storage: -4°F to 158°F (-20°C to +70°C), Operating: 14°F to 122°F (-10°C to +50°C).
Dimension Installed	0.70" (Dia) x 1.2" (L) / 18.6mm (Dia) x 29.5mm (L) without skid.
Weight	0.039lbs (0.018kg).
Shipping Weight	0.22lbs (0.1kg).
Warranty	One Year.
Options	Optional 2.5 and 3" skids.

D26-MX, 1 inch (26mm) self-leveling color camera

Component	Specification
Application	In pipe diameters from 2 to 4" / 50 to 100mm.
Horizontal Resolution	700 TVL.
Active Pixels	NTSC 720 x 480, PAL 720 x 576.
Focus Point	12" (300mm).
Aperture / FOV	F2.0/88.4°.
Light Sensitivity	0.01 Lux.
Lighting	10,000mcd illumination LED x 9 pcs (Millicandela or thousandths of a candela).
Auto Upright	Cantilever self-leveling design.
CCD Type	Color CCD camera assembly available in NTSC or PAL format.
Camera Housing	Stainless steel.
Camera Lens	Scratch resistant Sapphire.
Environmental	Water resistance up to 10 BAR pressure.
Temperature Range	Storage: -4°F to 158°F (-20°C to +70°C), Operating: 14°F to 122°F (-10°C to +50°C).
Dimensions	1.02" (Dia) x 2" (L) / 26mm(Dia) x 55mm(L) without skid.
Weight	0.205lbs (0.093kg).
Shipping Weight	0.4lbs (0.18kg).
Warranty	One Year.
Options	Optional 2.5 and 3" skids.

E. vCamMX System Shipping Weights

Model	Dimensions and Weights
100ft/30m System	<ul style="list-style-type: none"> Dimension: 22.8" (L) x 15" (W) x 28" (H) (580(L) x 380(W) x 700(H) mm). Weight: 41.4lbs (18.8kg).
150ft/45m System	<ul style="list-style-type: none"> Dimension: 22.8" (L) x 15" (W) x 28" (H) (580(L) x 380(W) x 700(H) mm). Weight: 44.3lbs (20.1kg).


F. Miscellaneous

Item	Details
Camera Exchange Program	A camera exchange program for the replacement of out of warranty cameras at a discounted price.

G. System Warranty

Item	Parameter
Standard Limited Warranty	Camera Heads: One year.
	Reels & Pushrod: One year.
	Control Module: One year.
	Plastic Guide Skids: Six months.

H. Warnings

	<p>Dimensions and weight conversions are approximate.</p> <p>LCD display used in this product are consumer products and models may change – Vivax-Metrotech Corporation attempts to ensure that the minimum features listed here are present in every reorder – some additional features may change from model to model.</p> <p>Vivax-Metrotech Corporation continues to update and improve its products – information on this data sheet may have changed or been superseded – check with your local sales representative or Vivax-Metrotech Corporation for updates.</p>
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*Contact your local distributor or service center for more detail and ordering information.

* Distance counter show on LCD should be used as an estimate. Care should always be used by actual locating the camera head with a sonde or utility locator.

*This information is applicable to units manufactured after 1 January 2016 with a serial number greater than 11001120001 and 11002120001.

Disclaimer: Product and accessory specification and availability information is subject to change without prior notice.

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