

# vCam-6

## Technical Specifications V1.1



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## A. Typical Applications

Component	Specification
<b>Purpose</b>	To inspect and provide a digital recording and images of the interior of pipes, conduits or ducts. The most typical application is the inspection of sewer laterals, sewer mainlines and plumbing applications. Digital video and jpeg picture images are viewed on the control module LCD and recorded onto the internal hard drive, USB thumb drives or SD card.
<b>System Components</b>	<ul style="list-style-type: none"> <li>• <b>Viewing &amp; Recording Device:</b> vCam-6 Control Module supplied with accessory kit, quick guide and manual.</li>   <li>• <b>Reel Options:</b>  <b>Standard size Type-CP Reel</b> available in lengths of:               <ul style="list-style-type: none"> <li>- 200ft. / 60m</li> <li>- 300ft. / 90m</li> <li>- 400ft. / 120m</li> </ul>   <b>Mini size MX Reel</b> available in lengths of:               <ul style="list-style-type: none"> <li>- 100ft. / 30m</li> <li>- 150ft. / 45m</li> </ul> </li>   <li>• <b>Camera Head Options:</b>  <b>For Type-CP Standard Reel:</b> <ul style="list-style-type: none"> <li>- D34-HD 1.3"/34mm Self-leveling color camera</li> <li>- D46-HD 1.8"/46mm Self-leveling color camera</li> </ul> <b>For Type-MX Mini Reel:</b> <ul style="list-style-type: none"> <li>- D18-MX 0.70"/18mm Fixed position color camera</li> <li>- D26-MX 1"/26mm Self-leveling color camera</li> </ul> </li> </ul> <p><i>The vCam-6 control module is backward compatible with previous camera heads supplied with legacy Type-C, Type-P, Type-M and Type-M2 reels and camera heads.</i></p>

### vCam-6 Control Module

<b>Control Module</b>			
	<b>Type-CP Reel</b>	<b>D34-HD Camera Head</b>	<b>D46-HD Camera Head</b>
<b>Standard size systems</b>			
	<b>Type-MX Reel</b>	<b>D18-MX Camera Head</b>	<b>D26-MX Camera Head</b>
<b>Mini size systems</b>			

## B. vCam-6 Control Module

Component	Specification
<b>Dimensions</b>	14.2" (L) x 5.91" (W) x 12.6" (H) (360mm(L) x 150mm(W) x 320mm(H)).
<b>Weight</b>	12.1lbs. (5.49kg)
<b>Power Supply</b>	<ul style="list-style-type: none"> <li>AC Power: 100V / 240V, AC power powers unit and charges internal batteries.</li> <li>DC Power: 12V DC external power supply powers unit and charges internal batteries.</li> </ul>
<b>Fuse</b>	10 Amp – 250 Volt, glass, quick blow.
<b>Internal Storage</b>	1 TB / 5400 RPM Hard Drive
<b>External Storage</b>	<ul style="list-style-type: none"> <li>USB Port – Supports up to 128GB Removable USB 2.0 Drives.</li> <li>SD Card Slot – Supports up to 32GB Removable Class 10 SD Cards.</li> </ul>
<b>File Format</b>	<ul style="list-style-type: none"> <li>AVI Video (1920 x 1080) (PAL or NTSC)</li> <li>JPEG Still Image Capture (1920 x 1080, 96 dpi).</li> </ul>
<b>Display</b>	9.7" (24cm) Daylight viewable HD (1024x 768) (diagonal measurement).
<b>Environmental</b>	<ul style="list-style-type: none"> <li>Water resistant to IP54 (IEC 60529-Light shower) (lid closed).</li> <li>Shock resistant (IEC 60068-2-31) (lid closed).</li> </ul>
<b>Temperature Range</b>	<ul style="list-style-type: none"> <li>Storage: -4°F to 158°F (-20°C to +70°C).</li> <li>Operating: 14°F to 122°F (-10°C to +50°C).</li> </ul>
<b>Internal Batteries</b>	<ul style="list-style-type: none"> <li>Internal Lithium-ion rechargeable batteries and 12V charger provides 4-hour runtime with Sonde on, 6 hours with Sonde off.</li> </ul>
<b>Mounting</b>	Mounts directly atop standard size Type-CP reel.
<b>Operating System</b>	Firmware is updateable via USB port with files available from the local dealer, factory, and website.
<b>Options and Accessories</b>	Smartphone/Tablet App – App for video streaming, image capturing and texting or emailing still images.

### Operator Controls

Controls	Functions
<b>Camera LED Dimmer</b>	Variable control on front panel to adjust brightness of camera LED.
<b>Distance Counter</b>	Push button control on front panel to zero out distance out*.
<b>Sonde Operation</b>	Push button control on front panel activates the sonde and changes frequencies.
<b>Microphone Operation</b>	<ul style="list-style-type: none"> <li>Push button control on front panel turns both internal and external microphone on and off.</li> <li>Push button glows red and microphone icon appears on LCD when active.</li> </ul>
<b>Power On/Off</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Recording Control</b>	<ul style="list-style-type: none"> <li>Push button control on top panel, 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.</li> </ul>
<b>Image Capture</b>	<ul style="list-style-type: none"> <li>One-touch JPEG capture to the default storage device selected during setup.</li> <li>JPEG icon flashes on LCD status bar confirming capture.</li> </ul>
<b>Video Playback control</b>	Push button control strip on top panel for video pause, step reverse, play, step forward and stop. Icons appear on status bar to advise which function is being used.
<b>Digital Zoom</b>	Push button on top panel, pressing repeatedly toggles through 4 x zoom then off. When button is pressed a movable window appears on the LCD, use the left/right/up/down keys to move window and zoom in on a desired area.
<b>On Screen Display (OSD)</b>	Pressing keyboard F2 brings up OSD showing time, date and distance counter on bottom of screen, press to move to top of screen, pressing again turns off the OSD.
<b>Keyboard</b>	Custom QWERTY splash proof keyboard specifically labeled function keys F1 through F12.

Sockets and Jacks	Functions
<b>Audio and Video</b>	RCA Sockets: female sockets on left panel for video in, video and audio out VGA Port: 15-pin DE-15 connector to connect to external monitors HDMI Port: to connect to HD monitors, LCD's and TV's
<b>Microphone</b>	3.5mm female industry standard socket on front panel.
<b>Media Sockets</b>	USB 2.0 and SD (secure digital) sockets on left side panel. Supports up to 128GB USB 2.0 USB Drives and 32 GB Class 10 SD Cards.
<b>Ethernet</b>	Industry standard RJ45 Ethernet socket on left panel for direct PC interface.
<b>AC Power</b>	100V-240V Grounded power socket on left panel.
<b>Data Port</b>	USB Mini data port for use with third party LACP software.
<b>Camera Test Port</b>	4 Pin female keyed socket on right panel to test camera head picture and LED's.
<b>DC Power</b>	12V 1 Pin male circular sock for DC power cable assembly.

Reel Interconnect	9 Pin female keyed locking socket for reel interconnect cable assembly.
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**C. Type-CP Standard Reels**

Component	Specification
Pushrod	Fiberglass rod surrounded by multi conductors and coax wrapped in a Kevlar braid with a high-density Polyethylene jacket
Pushrod length Options	200ft (60m), 300ft (90m), or 400ft (120m)
Pushrod Diameter	0.47" (12mm)
Minimum Break Strength	4000lbs (1800kg)
Bend Radius	Approximately 40 x the rods OD
Sonde Frequencies	512Hz, 640Hz, or 33kHz selectable and set as default in the control module setup menu
Sonde Output/Range	5-Watt output power provided by the control module. Average maximum locatable depth approximately 12ft (4m) in cast iron pipes. Possibly more in non-metallic pipes.
Pushrod Tracing	Post for connecting an external utility locating transmitter. When connected and energized the entire length of pushrod can be traced with a buried utility locator
Termination Springs	Field serviceable coiled cable, lanyards, and spring
Distance Counter	Encoder driver accurate to 0.33ft (0.1m) resolution*.
Reel Dimensions	28"(L) x 19.7"(W) x 35.8"(H) (710(L) x 500(W) x 910(H) mm).
Weight	200 ft (60m): 57 lbs. (26kg) 300 ft (90m): 68 lbs. (31kg) 400 ft (120m) 79 lbs. (36kg)
Environmental	Water resistant to IP54.
Construction	All stainless-steel tubular frame with stainless hardware.
Braking/Locking	Hand tightening friction brake to slow pushrod cage, push/pull brake lever to lock cage in place.
Options and Accessories	<ul style="list-style-type: none"> <li>Interconnect Cable – Extended length 25ft (8m) cable to provide greater distance from the control module. (Standard version is 12ft (4m) long)</li> <li>Drip Bag - Attaches around the reel cage to catch debris from pushrod.</li> <li>Rotate and Tilt Table (RATT Table) – Mounts between the control module and Type-CP reel allowing to be able to tilt and rotate the control module to a comfortable viewing position.</li> <li>Short Spring Kit – Consist of shorter length (7inch/18cm) and stiffer spring, coiled cable and lanyards. Good for use in larger diameter lines with few bends</li> </ul>

**D. Camera Heads (For Type-CP Standard Reel)**

**D34-HD, Self-Leveling Color Camera, 1.3inch/34mm diameter**

Component	Specification
Application	Used with Type-CP Reel, in pipe diameters from three to six inches
Resolution	1080P
Active Pixels	<b>NTSC:</b> 1920 x 1080 (30 fps) <b>PAL:</b> 1920 x 1080 (25 fps)
Focus Point	12" (300mm)
Aperture / Field of View	F2.4/96°
Light Sensitivity	0.01 Lux
Lighting	12.87 Lumens
Auto Upright	Cantilever self-leveling design
Construction	Stainless steel housing with scratch resistant Sapphire lens
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	1.36" (Dia) x 2.2" (L) / 34.5mm (Dia) x 56mm (L) without skid
Total Dimensions	1.36" (Dia) x 2.9" (L) / 34.5mm (Dia) x 73mm (L) without skid
Weight	0.49lbs (0.22kg)
Shipping Weight	0.77lbs (0.35kg)
Warranty	1 Year
Options and Accessories	Camera Exchange Program Guide skid range: 2.25", 3", and 4" (57 mm, 75 mm, and 100 mm) Type-B Adjustable Skid

**D46-HD, Self-Leveling Color Camera, 1.8inch/46mm diameter**

Component	Specification
Application	Used on Type-CP Reel, in pipe diameters from four to eight inches
Resolution	1080P

<b>Active Pixels</b>	<b>NTSC:</b> 1920 x 1080 (30 fps) <b>PAL:</b> 1920 x 1080 (25 fps)
<b>Focus Point</b>	12" (300mm)
<b>Aperture / FOV</b>	F2.4/96°
<b>Light Sensitivity</b>	0.01 Lux
<b>Lighting</b>	44.02 Lumens
<b>Auto Upright</b>	Cantilever self-leveling design
<b>Construction</b>	Stainless steel housing with scratch resistant Sapphire lens
<b>Environmental</b>	Water resistance up to 11 BAR pressure
<b>Temperature Range</b>	Storage: -4°F to 158°F (-20°C to +70°C), Operating: 14°F to 122°F (-10°C to +50°C)
<b>Dimension Installed</b>	1.8" (Dia) x 1.9" (L) / 46mm (Dia) x 50.5mm (L) without skid
<b>Total Dimensions</b>	1.8" (Dia) x 2.6" (L) / 46mm (Dia) x 68.4mm (L) without skid
<b>Weight</b>	0.73lbs (0.33kg)
<b>Shipping Weight</b>	0.84lbs (0.38kg)
<b>Warranty</b>	1 Year
<b>Options</b>	Camera Exchange Program Guide skid range: 3", 4", and 5" (75 mm, 100 mm, and 127 mm) Type-B Skid

**E. MX Mini Reel**

<b>Component</b>	<b>Specification</b>
<b>Pushrod</b>	Fiberglass rod surrounded by multi conductors and coax wrapped in a Kevlar braid with a high density Polyethylene jacket
<b>Pushrod length Options</b>	100ft (60m) or 150ft (90m)
<b>Pushrod Diameter</b>	0.39" (10mm)
<b>Minimum Break Strength</b>	4000lbs (1800kg)
<b>Bend Radius</b>	Approximately 40 x the rods OD
<b>Sonde Frequencies</b>	33kHz, 512Hz, or 640Hz selectable and set as default in the control module setup menu
<b>Sonde Output/Range</b>	5-Watt output power provided by the control module. Average maximum locatable depth approximately 12ft (4m) in cast iron pipes. Possibly more in non-metallic pipes.
<b>Pushrod Tracing</b>	Post for connecting an external utility locating transmitter. When connected and energized the entire length of pushrod can be traced with a buried utility locator.
<b>Termination Spring</b>	Removable spring assembly consist of spring, coiled cable and lanyard
<b>Distance Counter</b>	Encoder driver accurate to 0.33ft (0.1m) resolution*
<b>Reel Dimensions</b>	28" (L) x19.7" (W) x35.8" (H) (710(L) x 500(W) x 910(H) mm)
<b>Weight</b>	100 ft (30m): 22.7lbs (10.3kg) 150 ft (45m): 27.3lbs (12.4kg)
<b>Environmental</b>	Water resistant to IP54
<b>Construction</b>	Stainless-steel tubular fame with lightweight carbon fiber drum
<b>Braking/Locking</b>	All-in-one locking and friction lever slow pushrod drum or lock in place
<b>Options and Accessories</b>	Drip Bag - Attaches around the reel cage to catch debris from pushrod

**F. Camera Heads (For MX Mini Reel)**

**D18-MX, Fixed Position Color Camera, 0.70 inch / 18mm diameter**

<b>Component</b>	<b>Specification</b>
<b>Application</b>	Used on MX Reel, in pipe diameters from 1.5" to 4" / 40 to 100mm
<b>Resolution</b>	520 TVL
<b>Active Pixels</b>	<b>NTSC:</b> 704 x 480 <b>PAL:</b> 704 x 576
<b>Focus Point</b>	4.7" (120mm)
<b>Aperture / FOV</b>	F2.0/55o
<b>Light Sensitivity</b>	0.008 Lux
<b>Lighting</b>	17.53 Lumens
<b>Auto Upright</b>	None, fixed position non-leveling camera
<b>Construction</b>	Stainless steel housing with scratch resistant Sapphire lens
<b>Environmental</b>	Water resistance up to 11 BAR pressure
<b>Temperature Range</b>	Storage: -4°F to 158°F (-20°C to +70°C), Operating: 14°F to 122°F (-10°C to +50°C)
<b>Dimension Installed</b>	0.70" (Dia) x 1.2" (L) / 18.6mm (Dia) x 29.5mm (L) without skid.
<b>Weight</b>	0.039lbs (0.018kg).
<b>Shipping Weight</b>	0.22lbs (0.1kg).
<b>Warranty</b>	1 Year



<b>Options and Accessories</b>	Optional 2.5 / 57 mm Guide skid Camera exchange program
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**D26-MX, Self-Leveling Color Camera, 1 inch / 26mm diameter**

Component	Specification
<b>Range</b>	Used on MX reel, in pipe diameters from 2 to 4" / 50 to 100mm.
<b>Resolution</b>	700 TVL
<b>Active Pixels</b>	<b>NTSC:</b> 704 x 480 <b>PAL:</b> 704 x 576
<b>Focus Point</b>	12" (300mm).
<b>Aperture / FOV</b>	F2.0/88.4°
<b>Light Sensitivity</b>	0.01 Lux.
<b>Lighting</b>	20.39 Lumens
<b>Auto Upright</b>	Cantilever self-leveling design.
<b>Construction</b>	Stainless steel housing with scratch resistant Sapphire lens.
<b>Environmental</b>	Water resistance up to 10 BAR pressure
<b>Temperature Range</b>	Storage: -4°F to 158°F (-20°C to +70°C), Operating: 14°F to 122°F (-10°C to +50°C).
<b>Dimensions</b>	1.02" (Dia) x 2" (L) / 26mm(Dia) x 55mm(L) without skid.
<b>Weight</b>	0.205lbs (0.093kg).
<b>Shipping Weight</b>	0.4lbs (0.18kg).
<b>Warranty</b>	1 Year.
<b>Options and Accessories</b>	Optional 2.5 and 3" guide skids (57 and 75mm). Camera exchange program

**G. Shipping Weights**

Model	Dimensions and Weights
<b>vCam-6 Control Module</b> (with tool kit)	Dimension: 15.8" (L) x 8.7" (W) x 17.3" (H) (400(L) x 220(W) x 440(H) mm). Weight: 14.3 lbs. (6.5 kg).
<b>Type-CP Reel with Pushrod</b> (Reels with pushrod, camera head, insert sleeve and interconnect cable)	<ul style="list-style-type: none"> <li>• 200ft/60m                             <ul style="list-style-type: none"> <li>○ Dimension: 31.1" (L) x 21.3" (W) x 38.6" (H) (790(L) x 540(W) x 980(H) mm)</li> <li>○ Weight: 74 lbs (34kg)</li> </ul> </li> <li>• 300ft/90m                             <ul style="list-style-type: none"> <li>○ Dimension: 31.1" (L) x 21.3" (W) x 38.6" (H) (790(L) x 540(W) x 980(H) mm)</li> <li>○ Weight: 83 lbs (38kg)</li> </ul> </li> <li>• 400ft/120m                             <ul style="list-style-type: none"> <li>○ Dimension: 31.1" (L) x 21.3" (W) x 38.6" (H) (790(L) x 540(W) x 980(H) mm)</li> <li>○ Weight: 95 lbs (43kg)</li> </ul> </li> </ul>
<b>D34-HD Camera Head</b>	* Dimensions: 9" (L) x 5" (W) x 5" (H) (228(L) x 127(W) x 127(H) mm) * Weight: 2 lbs. (0.90kg)
<b>D46-HD Camera Head</b>	* Dimensions: 9" (L) x 5" (W) x 5" (H) (228(L) x 127(W) x 127(H) mm) * Weight: 2 lbs. (0.90kg)
<b>MX Reel with Pushrod</b> (Reels with pushrod, camera head, insert sleeve and interconnect cable)	<ul style="list-style-type: none"> <li>• 100 ft / 30 m                             <ul style="list-style-type: none"> <li>○ Dimension: 22.6" (L) x 13.5" (W) x 24.2" (H) (574 (L) x 343 (W) x 615 (H) mm)</li> <li>○ Weight: 31 lbs. (14 kg)</li> </ul> </li> <li>• 150 ft / 45 m                             <ul style="list-style-type: none"> <li>○ Dimension: 22.6" (L) x 13.5" (W) x 24.2" (H) (574 (L) x 343 (W) x 615 (H) mm)</li> <li>○ Weight: 34 lbs. (16 kg)</li> </ul> </li> </ul>
<b>D18-MX Camera Head</b>	* Dimensions: 9" (L) x 5" (W) x 5" (H) (228(L) x 127(W) x 127(H) mm) * Weight: 2 lbs. (0.90kg)
<b>D26-MX Camera Head</b>	* Dimensions: 9" (L) x 5" (W) x 5" (H) (228(L) x 127(W) x 127(H) mm) * Weight: 2 lbs. (0.90kg)

\*Shipping dimensions and weight are approximate.

**H. Warranty**

Item	Parameter
<b>Warranty</b>	Control Module: 1 year Reels & Pushrod: 1 year Camera Heads: 1 year Accessories: 1 year

## I. Warnings



Dimensions and weight conversions are approximate (metric data is the most accurate). Shipping dimensions and weight are approximate.

The internal hard drive and 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 hard drive and LCD, some additional features may change from model to model.

Vivax-Metrotech Corporation continues to update and improved its products. The information in these specifications are subject to change, obsolescence, or superseding. Check with your local sales representative or Vivax-Metrotech Corporation for updates.

\* Contact your local distributor or service center for more detail and ordering information on aftermarket skids.

\* Distance counter show on LCD should be used for an estimate. Care should always be used by actual locating the camera head with a sonde locator or pipe and cable locator.

All products are designed and manufactured in accordance with ISO 9001:2008.

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

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