VIVAX METROTECH

vCam-6

Technical Specifications V2.0

VIVAX METROTECH

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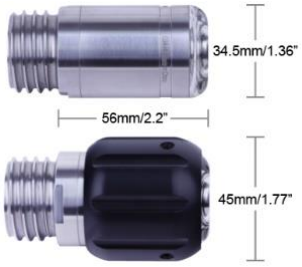
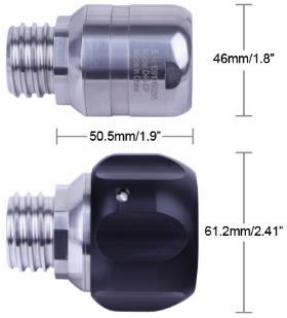
A. Typical Applications

Component	Specification
Purpose	This tool inspects and produces digital video recordings 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's LCD and recorded onto the internal hard drive, USB thumb drive, or SD card.
System Components	• **Viewing & Recording Device:** vCam-6 Control Module (supplied with AC charger, DC power cable, accessory kit, and manual) • **Reel Options:** **Standard size Type-CP Reel** available in lengths of: - 200 ft. / 60m - 300 ft. / 90m - 400 ft. / 120m **Mini size Type-MX Reel** available in lengths of: - 100 ft. / 30m - 150 ft. / 45m • **Camera Head Options:** **For Type-CP Standard Reel:** - D34-HD 1.3" / 34mm Self-leveling color camera - D46-HD 1.8" / 46mm Self-leveling color camera **For Type-MX Mini Reel:** - D18-HD 0.70” / 18mm Fixed position color camera - D26-HD 1” / 26mm Self-leveling color camera *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.*

	vCam-6 Control Module
Control Module	

	Type-CP Reel	D34-HD Camera Head	D46-HD Camera Head
Standard size systems			

	Type-MX Reel	D18-HD Camera Head	D26-HD Camera Head
Mini size systems			

B. vCam-6 Control Module

Component	Specification
Model Name	vCam-6
Model Number	VX111-01
Dimensions	14.2" (L) x 5.91" (W) x 12.6" (H) *(360mm(L) x 150mm(W) x 320mm(H)).*
Weight	12.1 lbs. (*5.49kg*)
Power Supply	• AC Power: 100V / 240V, AC power powers the unit and charges internal batteries • DC Power: 12V DC external power supply powers the unit and charges internal batteries
Fuse	10 Amp – 250 Volt, glass, quick blow

Internal Storage	1 TB / 5400 RPM Hard Drive
External Storage	• USB Port – Supports up to 128GB Removable USB 2.0 Drives. • SD Card Slot – Supports up to 32GB Removable Class 10 SD Cards
File Format	• MP4 Video (1920 x 1080) • JPEG Still Image Capture (1920 x 1080, 96 dpi)
Display	• 9.7" *(24cm)* Daylight viewable HD (1024x 768) (diagonal measurement) • Touch screen option
Environmental	• Water-resistant to IP54 (IEC 60529-Light shower) (lid closed) • Shock resistant (IEC 60068-2-31) (lid closed)
Temperature Range	Storage: -4ºF to 158ºF *(-20ºC to +70ºC)*, Operating: 14ºF to 122ºF *(-10ºC to +50ºC)*
Manufacturing	Designed and manufactured per ISO 9001:2015
Battery	An Internal Lithium-ion rechargeable battery (supplied with a 12V charger)
Battery Life	• Internal Lithium-ion rechargeable batteries • Time to a full charge = Six hours • Runtime is typically four hours with the sonde on and six hours with the sonde off (at 70ºF (21ºC) (with the backlight turned on). • Re-charging cycles are approximately 500 times the life cycle. Battery life varies with temperature.
Battery Indicators	• The power button acts as a charging indicator. The button glows red while charging and glows green when fully charged • A battery icon on the LCD status bar shows the battery level and running power source
Mounting	Mounts directly atop the standard-size Type-CP reel
Operating System	The firmware can be updated via the vCam Mobile Controller app or USB thumb drive with files from the Vivax-Metrotech website, local distributor, or factory.
Options and Accessories	Smartphone/tablet app for video streaming, image capturing and file sharing.
What's in the Box	• vCam-6 Control Module • Accessory bag which includes: - Flat Screwdriver - Camera Removal Tool - USB Thumb drive - 10 Amp Fuse (2) - 12V DC Power Lead - AC Charger - Quick Guide - Manual

C. Operator Controls

Controls	Functions
Camera LED Dimmer	Variable control on the front panel to adjust the brightness of the camera LEDs
Distance Counter	Push-button control on the front panel to zero distance count*

Sonde Operation	Push-button control on the front panel activates the sonde and changes frequencies.
Microphone Operation	• Push-button control on the front panel turns the internal and external microphones on and off • Push-button glows red, and the microphone icon appears on the status bar on the LCD when active
Power On/Off	• Push-button control on the front panel turns the internal microphone on and off • Push-button glows red, and the microphone icon appears on the status bar on the LCD when active
Recording Control	• Pushbutton on the front panel, push to record, push a second time to stop recording • Push-button glows red when recording, and a flashing icon appears on the status bar on the LCD when recording
Image Capture	• Press the pushbutton on the top panel, and the image is captured to the default drive • A JPEG icon flashes on the status bar, confirming the image capture
Video Playback control	• Pushbuttons on the top panel to pause the video, rewind/fast forward, play and stop • Icons appear on the status bar to advise which function is active
Digital Zoom	Push the button on the top panel. Pressing the button repeatedly toggles through 4 x zoom, then off. When the button is pressed, a movable window appears on the LCD. Use the left/right/up/down keys to move the window and zoom in on the desired area.
On-Screen Display (OSD)	Pressing the F2 keyboard brings up OSD, which shows the time, date, and distance counter at the bottom of the screen; pressing to move to the top and pressing again turns off the OSD.
Wi-Fi	150' / 45m Wi-Fi range for use with streaming and recording app
Keyboard	Custom QWERTY splash-proof keyboard with specifically labeled function keys F1 through F12

Sockets and Jacks	**Functions**
Audio and Video	RCA Sockets: Color-coded industry-standard female socket for video out, video in, 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
Microphone	3.5mm female industry-standard socket
Media Sockets	USB 2.0 and SD (secure digital) sockets Supports up to 128GB USB 2.0 USB Drives and 32 GB Class 10 SD Cards
AC Power	12V 1 Pin male circular socket for AC charger
DC Power	12V 1 Pin male circular socket for DC power cable assembly
Data Port	USB Mini data port for use with third-party LACP software
Camera Test Port	4 Pin female keyed socket to test camera head picture and LEDs
Reel Interconnect	9 Pin female keyed locking socket for reel interconnect cable

D. **Type-CP Standard Reels**

Component	Specification	
Model Name	Type-CP Reel	
Model Number	VX111-02	
Pushrod	Fiberglass rod, conductors, and coax 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 times the rods' OD Minimum bend radius approximately 5.5"/139mm	
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. Locatable depth up to 12ft *(4m*)	
Pushrod Tracing	The reel has a post for connecting an external utility locating transmitter. When connected and energized, a buried utility locator can trace the entire length of the pushrod.	
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 fame with stainless hardware	
Manufacturing	Designed and manufactured per ISO 9001:2015	
Braking/Locking	Hand-tightening friction brake to slow the pushrod cage and push/pull brake lever to lock the cage.	
Options and Accessories	• Interconnect Cable – Extended length 25ft (8m) cable to provide greater distance from the control module. (Standard version is 12ft (4m) long) • Drip Bag - Attaches around the reel cage to catch debris from the pushrod. • Rotate and Tilt Table (RAT Table)—Mounts between the control module and Type-CP reel allow the control module to be tilted and rotated to a comfortable viewing position. • Short Spring Kit – Consists of shorter length (7inch/18cm), stiffer spring, coiled cable, and lanyards. Suitable for use in larger diameter lines with few bends	

What's in the Box	• Type-CP Reel with Pushrod and Spring Assembly • Reel Interconnect Cable • Plastic Cable Insertion Sleeve

E. Camera Heads (For Type-CP Standard Reel)

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

Component	Specification
Model Name	D34-HD
Model Number	VX111-05
Application	Used with Type-CP Reel, in pipe diameters from 3 to 6 inches /76 to 152mm
Resolution	1080P
Active Pixels	NTSC: 1920 x 1080 (30 fps) PAL: 1920 x 1080 (25 fps)
Focus Point	7.8"/*20cm*
Aperture / Field of View	F2.4/96º
Light Sensitivity	0.01 Lux
Lighting	12.87 Lumen
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: -4ºF to 158ºF *(-20ºC to +70ºC)*, Operating: 14ºF to 122ºF *(-10ºC to +50ºC)*
Manufacturing	Designed and manufactured per ISO 9001:2015
Dimension Installed	1.36" (Dia.) x 2.2" (L) / *34.5mm (Dia.)* x *56mm (L)* without standard skid 1.77" / 45mm Diameter with standard skid installed
Total Dimensions	1.36" (Dia.) x 2.9" (L) / *34.5mm (Dia.)* x *73mm (L)* without standard skid 1.77" / 45mm Diameter with standard skid installed
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

What's in the Box	D34-HD Camera	Standard Skid

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

Component	Specification
Model Name	D46-HD
Model Number	VX111-03
Application	Used on Type-CP Reel, in pipe diameters from 4 to 8 inches / 101 to 203mm
Resolution	1080P
Active Pixels	NTSC: 1920 x 1080 (30 fps) PAL: 1920 x 1080 (25 fps)
Focus Point	7.8"/*20cm*
Aperture / FOV	F2.4/96º
Light Sensitivity	0.01 Lux
Lighting	44.02 Lumen
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: -4ºF to 158ºF *(-20ºC to +70ºC)*, Operating: 14ºF to 122ºF *(-10ºC to +50ºC)*
Manufacturing	Designed and manufactured per ISO 9001:2015
Dimension Installed	1.8" (Dia.) x 1.9" (L) / 46mm (Dia.) x 50.5mm (L) without standard skid 2.41" / 61.2mm Diameter with standard skid installed
Total Dimensions	1.8" (Dia.) x 2.6" (L) / *46mm (Dia.) x 68.4mm (L)* without standard skid 2.41" / 61.2mm Diameter with standard skid installed
Weight	0.73lbs *(0.33kg)*
Shipping Weight	0.84lbs *(0.38kg)*
Warranty	1 Year
Options	• Camera Exchange Program • Guide skid range: 3", 4", and 5" (75 mm, 100 mm, and 127 mm) • Type-B Skid
What's in the Box	D46-HD Camera / Standard Skid

F. Type-MX Mini Reel

Component	Specification	
Model Name	Type-MX Reel	
Model Number	VX112-02	
Pushrod	Fiberglass rod, conductors, and coax with a high-density Polyethylene jacket	
Pushrod length Options	100 ft. (60m) or 150 ft. (90m)	
Pushrod Diameter	*0.39" (10mm)*	
Minimum Break Strength	4000lbs *(1800kg)*	
Bend Radius	Approximately 40 times the pushrod diameter Minimum bend radius approximately 3" (75mm)	
Sonde Frequencies	33kHz, 512Hz, or 640Hz selectable and set as default in the control module setup menu	
Sonde Output/Range	• 1-Watt output • Locatable depth up to 9 ft *(3m*)	
Pushrod Tracing	The reel has a post for connecting an external utility locating transmitter. When connected and energized, a buried utility locator can trace the entire length of the pushrod.	
Termination Spring	The removable spring assembly consists of a spring, coiled cable, and lanyard.	
Distance Counter	Encoder driver accurate to 0.33ft *(0.1m)* resolution*	
Reel Dimensions	20.9" (L) x 12.7" (W) x 22.4" (H) (531mm (L) x 322mm (W) x 570mm (H)).	
Weight	100 ft (30m): 22 lbs. (*10kg*)	150 ft (45m): 27 lbs. (12kg)
Environmental	Water-resistant to IP54	
Construction	Stainless-steel tubular fame with lightweight carbon fiber drum	
Manufacturing	Designed and manufactured per ISO 9001:2015	
Braking/Locking	All-in-one locking and friction lever slow pushrod drum or lock in place	
Options and Accessories	Drip Bag - Attaches around the reel cage to catch debris from the pushrod	
What's in the Box	• Type-MX Reel with Pushrod and Spring Assembly • Reel Interconnect Cable • Plastic Cable Insertion Sleeve	

G. Camera Heads (For the Type-MX Mini Reel)
D18-HD, Fixed Position Color Camera, 0.70 inch / 18mm diameter

Component	Specification	
Model Name	D18-HD	
Model Number	VX113-2	
Application	Used with the Type-MX reel in pipe diameters from 1-1/2 to 3 inches / 38 to 75mm	
Resolution	1080p	
Active Pixels	1920 x 1080	
Focus Point	4" *(10cm)*	
Aperture / FOV	90º	
Lighting	69 Lumens Measure at 1 meter in 4-inch cast iron pipe	
Auto Upright	None, fixed position non-leveling camera	
Construction	Stainless steel housing with scratch-resistant Sapphire lens	
Environmental	Water resistance up to 11 BAR pressure	
Temperature Range	Storage: -4ºF to 158ºF *(-20ºC to +70ºC)*, Operating: 14ºF to 122ºF *(-10ºC to +50ºC)*	
Manufacturing	Designed and manufactured per ISO 9001:2015	
Dimensions Installed	0.73” (Dia.) x 0.71” (L) / *18.6mm (Dia.) x 18.1mm (L)* without standard skid 1.0” (Dia.) x 0.73” (L) / *25.6mm (Dia.) x 18.6mm (L)* Diameter with standard skid installed	
Weight	0.029lbs *(0.013kg) without standard skid*	0.035lbs *(0.016kg) with standard skid*
Options	Optional 2.5 / 57mm Guide skid	Camera exchange program
What’s in the Box	D18-HD Camera	Standard Skid

D26-HD, Self-Leveling Color Camera, 1 inch / 26mm diameter

Component	Specification
Model Name	D26-HD
Model Number	VX112-3
Application	Used with the Type-MX reel in pipe diameters from 2 to 4 inches / 50 to 101mm
Resolution	1080p
Active Pixels	1920 x 1080

Focus Point	6" *(15cm)*	
Aperture / FOV	114º	
Auto Upright	Cantilever self-leveling design	
Construction	Stainless steel housing with scratch-resistant Sapphire lens	
Environmental	Water resistance up to 10 BAR pressure	
Temperature Range	Storage: -4ºF to 158ºF *(-20ºC to +70ºC),* Operating: 14ºF to 122ºF *(-10ºC to +50ºC).*	
Manufacturing	Designed and manufactured per ISO 9001:2015	
Dimensions Installed	1.02” (Dia.) x 1.41” (L) / *26mm (Dia.) x 35.9mm(L)* without standard skid 1.33” (Dia.) x 1.41” (L) / *33.7mm (Dia.) x 35.9mm(L)* with standard skid	
Weight	0.14lbs *(0.065kg) without standard skid*	0.16lbs *(0.073kg) with standard skid*
Options	Optional 2.5 and 3" guide skids (57 and 75mm)	Camera exchange program
What’s in the Box	D26-HD Camera	Standard Skid

H. Shipping Weights

Model	Dimensions and Weights
vCam-6 Control Module (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)*

Type-CP Reel with Pushrod
(Reels with pushrod, camera head, insert sleeve and interconnect cable)
	• 200ft/60m
	  o Dimension: 31.1" (L) x 21.3" (W) x 38.6" (H) *(790(L) x 540(W) x 980(H) mm)*
	  o Weight: 74 lbs. (34kg)
	• 300ft/90m
	  o Dimension: 31.1" (L) x 21.3" (W) x 38.6" (H) *(790(L) x 540(W) x 980(H) mm)*
	  o Weight: 83 lbs. *(38kg)*
	• 400ft/120m
	  o Dimension: 31.1" (L) x 21.3" (W) x 38.6" (H) *(790(L) x 540(W) x 980(H) mm)*
	  o Weight: 95 lbs. *(43kg)*

D34-HD Camera Head	* Dimensions: 9" (L) x 5" (W) x 5" (H) *(228(L) x 127(W) x 127(H) mm)* * Weight: 2 lbs. (0.90kg)
D46-HD Camera Head	* Dimensions: 9" (L) x 5" (W) x 5" (H) *(228(L) x 127(W) x 127(H) mm)* * Weight: 2 lbs. (0.90kg)

Type-MX Reel with Pushrod (Reels with pushrod, camera head, insert sleeve and interconnect cable)	• 100 ft / 30m
	  o Dimension: 22.6" (L) x 13.5" (W) x 24.2" (H) *(574 (L) x 343 (W) x 615 (H) mm)*
	  o Weight: 31 lbs. *(14 kg)*
	• 150 ft / 45m
	  o Dimension: 22.6" (L) x 13.5" (W) x 24.2" (H) *(574 (L) x 343 (W) x 615 (H) mm)*
	  o Weight: 34 lbs. *(16 kg)*

D18-HD Camera Head	* Dimensions: 9" (L) x 5" (W) x 5" (H) *(228(L) x 127(W) x 127(H) mm)* * Weight: 2 lbs. (0.90kg)
D26-HD Camera Head	* 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	

I. Warranty

Item	Parameter			
Warranty	Control Module:	1 year	Camera Heads:	1 year
	Reels & Pushrod:	1 year	Accessories:	1 year

Note

*****The distance count shown on the LCD is designed to provide an estimate. The camera should always be located with care using a Sonde or Pipe and Cable Locator.

Shipping dimensions and weights are approximate.

This product's LCD and Hard Drive are consumer products, and models may change. Vivax-Metrotech Corporation attempts to ensure that the minimum features listed here are present in every LCD and hard drive. Some additional features may vary from model to model.

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

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