

## A. Typical Applications

Item	Parameter
<b>Application</b>	The vCamLS & vCamLSR systems can be used to inspect the insides of small diameter pipes, ducts and drains.
<b>System</b>	<p>The system comprises of two main components that can be used separately, together with other Vivax-Metrotech inspection products.</p> <p>The system major components are:</p> <p><b>vCamLS Viewer:</b></p> <ul style="list-style-type: none"> <li>- 1 x hand-held viewer with 3.5in LCD display</li> <li>- Choice of D9 or D17 flexible rod camera</li> </ul> <p><b>Type-S Reel:</b></p> <ul style="list-style-type: none"> <li>- 1 x Type-S reel with 60ft (20m) of push rod</li> <li>- Choice of D17/STD, D25/STD or B33/STD pushrod cameras for Type-S Reel</li> </ul> <p><small>(When combined together the vCamLS Viewer and Type-S Reel are known as the vCamLSR System)</small></p>

## B. System Assembly

Item	Parameter
<b>Hand-held Viewer Dimensions</b>	3.91in(L) x 3.84in(W) x 8.65in(H) (99.28mm x 97.34mm x 219.63mm)
<b>Hand-held Viewer Weight</b>	1.54lbs (0.7kg)
<b>System Options</b>	<p><b>vCamLS Viewer:</b></p> <ul style="list-style-type: none"> <li>- D9 flexible rod camera <ul style="list-style-type: none"> <li>• 9mm diameter camera with 6ft (2m) flexible rod</li> <li>• Optional 6ft (2m) flexible extension rod</li> </ul> </li> <li>- D17 flexible rod camera <ul style="list-style-type: none"> <li>• 17mm diameter camera with 5ft (1.5m) flexible rod</li> <li>• Optional 6ft (2m) flexible extension rod</li> </ul> </li> </ul> <p><b>Type-S Reel</b></p> <ul style="list-style-type: none"> <li>- Type-S reel with 60ft (20m) pushrod</li> </ul>
<b>Camera Options</b>	<p><b>Flexible Rod Cameras for vCamLS Viewer:</b></p> <ul style="list-style-type: none"> <li>- 9mm flexible rod camera (Available in NTSC only)</li> <li>- 17mm flexible rod camera</li> </ul> <p><b>Push Rod Cameras for Type-S Reel:</b></p> <ul style="list-style-type: none"> <li>- D17/STD, D25/STD, B33/STD</li> </ul> <p>*Cameras are available in NTSC or PAL. (Specify when ordering)</p>
<b>Standard Accessories</b>	<p><b>vCamLS Viewer:</b></p> <ul style="list-style-type: none"> <li>- Carry bag</li> <li>- Quick Guide</li> <li>- Video out cable</li> </ul> <p><b>Type-S Reel:</b></p> <ul style="list-style-type: none"> <li>- Carry bag</li> </ul>

	<ul style="list-style-type: none"> <li>- Quick Guide</li> <li>- DC power cord</li> <li>- AC power cord</li> <li>- Internal rechargeable batteries and charger</li> <li>- Switchable integrated Sonde (512Hz or 640Hz)</li> </ul>
<b>Optional Accessories</b>	<b>vCamLS Viewer System:</b> <ul style="list-style-type: none"> <li>- Optional 6ft (2m) extension rod for either D9 or the D17 flexible rod camera</li> </ul>

## C. Camera Assembly

Item	Parameter
<b>Weight and Dimension</b>	<b>vCamLS Flexible Rod Cameras:</b> <ul style="list-style-type: none"> <li>- 9mm camera:               <ul style="list-style-type: none"> <li>• 1.98lbs (0.9kg)</li> <li>• 0.35in(D) x 1.18in(L) (9mm x 30mm)</li> </ul> </li> <li>- 17mm camera:               <ul style="list-style-type: none"> <li>• 2.11lbs (0.96kg)</li> <li>• 0.67in(D) x 1.65in(L) (17mm x 42mm)</li> </ul> </li> </ul> <b>Type-S Pushrod Cameras:</b> <ul style="list-style-type: none"> <li>- D17/STD:               <ul style="list-style-type: none"> <li>• 0.04lbs (18.2g)</li> <li>• 0.67in(D) x 1.18in (L) (17mm x 30mm)</li> </ul> </li> <li>- D25/STD:               <ul style="list-style-type: none"> <li>• 0.12lbs (56.4g)</li> <li>• 0.98in(D) x 1.6in(L) (25mm x 41mm)</li> </ul> </li> <li>- B33/STD:               <ul style="list-style-type: none"> <li>• 0.19lbs (85.4g)</li> <li>• 1.3in(D) x 1.6in(L) (33mm x 41mm)</li> </ul> </li> </ul>
<b>Camera Type</b>	<b>vCamLS Viewer:</b> <ul style="list-style-type: none"> <li>- CMOS camera</li> <li>- 9mm camera – NTSC only</li> </ul> <b>Type-S Reel:</b> <ul style="list-style-type: none"> <li>- D17/STD – CMOS cameras</li> <li>- D25/STD and B33/STD – CCD camera</li> </ul> *Specify NTSC or PAL at time of ordering
<b>Camera Housing</b>	<b>vCamLS Flexible Rod Cameras:</b> <ul style="list-style-type: none"> <li>- Aluminum housing</li> </ul> <b>Type-S Reel Push Rod Cameras:</b> <ul style="list-style-type: none"> <li>- Stainless steel housing</li> </ul>
<b>Push Rod Camera Lens</b>	Scratch resistant Sapphire
<b>Resolution</b>	<b>vCamLS Flexible Rod Cameras:</b> <ul style="list-style-type: none"> <li>- 9mm camera:               <ul style="list-style-type: none"> <li>• Resolution pixel – 320 x240</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>- 17mm camera: <ul style="list-style-type: none"> <li>• Resolution pixel - 640 x 480</li> </ul> </li> </ul> <p><b>Type-S Reel Push Rod Cameras:</b></p> <ul style="list-style-type: none"> <li>- D17/STD, D25/STD, B33/STD camera <ul style="list-style-type: none"> <li>• Horizontal resolution - 420TVL</li> </ul> </li> </ul>
<b>Focus Point</b>	12in (300mm)
<b>Light Sensitivity</b>	0.5 LUX
<b>Lighting</b>	<p><b>vCamLS Flexible Rod Cameras:</b></p> <ul style="list-style-type: none"> <li>- D9/ROD: 6000 MCD illumination LED x 1 pc</li> <li>- D17/ROD: 6000 MCD illumination LED x 3 pcs</li> </ul> <p><b>Type-S Reel Push Rod Cameras:</b></p> <ul style="list-style-type: none"> <li>- D17/STD: 8000 MCD illumination LED x 4 pcs</li> <li>- D25/STD: 2500 MCD illumination LED x 9 pcs</li> <li>- B33/STD: 2500 MCD illumination LED x 9 pcs</li> </ul> <p>*Luminous intensity</p>

## D. Controls and Display

Item	Parameter
<b>Power Supply and Battery Life</b>	<p><b>vCamLS Viewer:</b></p> <ul style="list-style-type: none"> <li>- 4 x AA alkaline batteries provides 2 hours continuous use</li> <li>- When attached to the Type-S reel power is drawn from the internal reel battery</li> </ul> <p><b>Type-S Reel:</b></p> <ul style="list-style-type: none"> <li>- Build in rechargeable battery provides 2 hours of continuous use</li> <li>- AC power by mains plug</li> <li>- DC power by vehicle charging lead</li> </ul>
<b>Interface (for Type-S Reel)</b>	Interface socket to connect to optional vCamModular-R or vCamModular-V control modules
<b>Display</b>	3.5in (85mm) (diagonal measurement)
<b>Counter Incremental</b>	<ul style="list-style-type: none"> <li>- Electric encoder 0.33ft (0.1m) resolution</li> <li>- Provides approx measurement of cable deployed – output written to counter display and video display</li> </ul>
<b>Video Out</b>	<p><b>vCamLS Viewer:</b> 3.5mm jack</p> <p><b>Type-S Reel:</b> Industry standard RCA (Video) socket</p>
<b>Light control</b>	<p><b>vCamLS Viewer with Flexible Rod Cameras:</b> LED brightness is controlled push buttons on vCamLS Viewer</p> <p><b>vCamLS Viewer when used with Type-S Reel:</b> Push rod camera brightness is controlled by controls on Type-S reel</p> <p><b>Type-S reel used with modular control module:</b> Push rod camera LED brightness is controlled by control modules.</p>
<b>Keypad</b>	Waterproof pushbutton keypad

## E. Cable Reel Assembly: Type-S Reel

Item	Parameter
Pushrod Cable	- 0.19"(Dia) x 60ft(L) (5mm(Dia) x 20m(L)) - Polyester resin impregnated glass fibre
Pushrod Cable Diameter	0.19" (5mm)
Bend Radius	6" (150mm)
Reel Assembly Dimensions	9.5"(L) x 10.4"(W) x 10.8"(H) (240(L) x 265(W) x 275(H) mm)
Weight	14.54lbs (6.6kg)
Sonde Frequency	- 512Hz, 640Hz - Frequency selectable on front panel of reel
Sonde Output	Continuous sine wave approx 0.7w
Sonde Range	- 5ft (1.5m) - In cast iron pipe – more in non metallic pipes
Interconnect Cable	8.5ft (2.5m) long
Camera Options	- D17/STD, D25/STD, B33/STD color

## F. Environmental

Item	Parameter
Camera	Water resistance up to 0.6 bar (6m water pressure)
Control and Display	Water resistance to IP54
Temperature Range	Storage: -4°F to 158°F (-20°C to 70°C) Operating: 14°F to 122°F (-10°C to 50°C)
Weather Proof	IP54
Shipping Weight and Dimension	<b>vCamLS Viewer:</b> - 7lbs (3kg) - 11in(L) x 9.7in(W) x 6.6in(H) (280mm x 245mm x 168mm)  <b>Type-S Reel:</b> - 32lbs (14.12kg) - 22in(L) x 17.7in(W) x 12.6in(H) (560mm x 450mm x 320mm)

## G. Warranty

Item	Parameter
Warranty	1 Year

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

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