



Inspection of Pipes or locations in Explosion Risk Environments

ATEX CRP140 ROBOTIC CRAWLER CAMERA PIPE INSPECTION SYSTEM

In association with
 **minicam**



Minicam, UK has been producing pipeline inspection systems for 30 years. Minicam is a part of Halma PLC group, a conglomerate with over £1.5B in revenues & one of Great Britains most admired companies.

asian contec limited, under an exclusive arrangement, provides supply, training & after sales of Minicam robotic tractor crawlers & push cameras including ATEX pipe inspection systems for the Indian market under its brand name STANONE. asian contec limited, is india's largest supplier of buried utility locating, marking and inspection systems.

The following pages feature the **ATEX CRP140 Proteus Robotic crawlers certified for use in Zone 1 and 2 hazardous areas , intrinsically safe & explosion protected**, for inspection of waste water, industrial & Oil/gas pipes(during shutdown), manhole inspection, inspection prior tank cleaning, for use in Steel plants, Paint / Emulsifier plants, Chemical plants, Oil/gas refineries and Reactors .

ATEX Crawler Camera System is available in 2 Configuration Options



Van Mounted ATEX Robotic Crawler System

Van mounted system are typically fitted with Heavy Duty Fully Automatic or Semi-Automatic cable reel systems & Van mounted control unit with large screen display.



Portable Robotic ATEX Crawler System

Trolley securely holds the control unit, manual cable reel & camera powered by a high performance battery system.

ATEX Systems

Uncompromising Performance and Safety

Proteus™ ATEX Tractors have been engineered, built and tested for safe use in some of the most dangerous situations, without compromising on any of the features and benefits of our other Proteus Tractors.

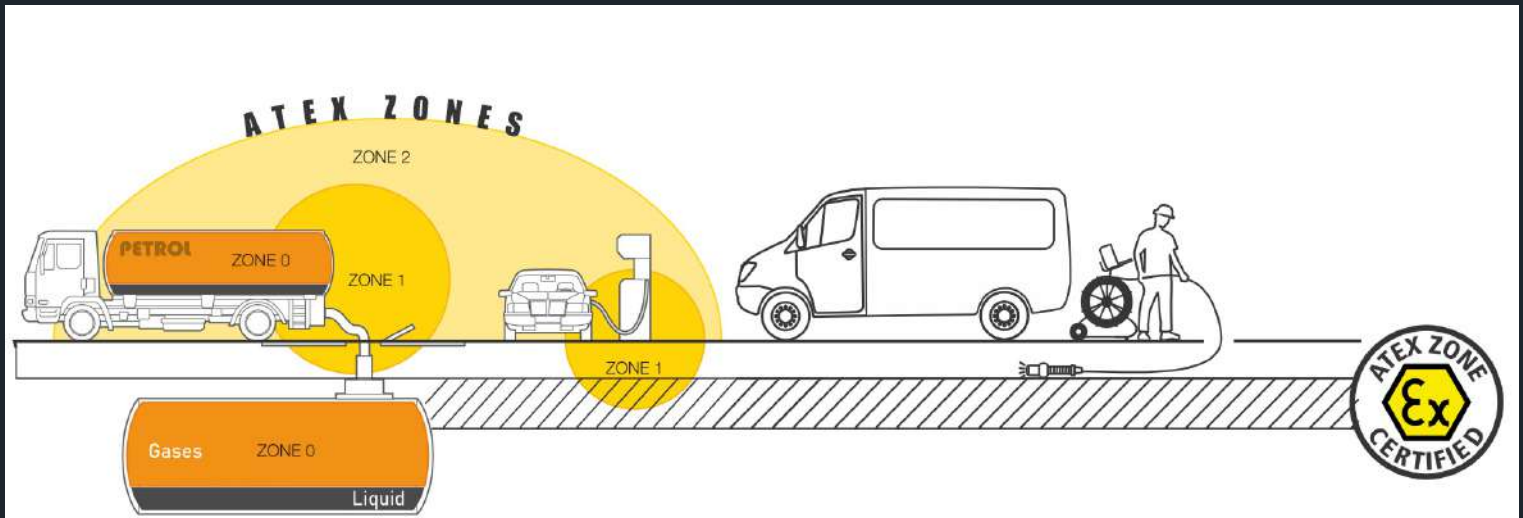
Our CRP140 Tractor is available in ATEX approved versions which make working in ZONE 1 and other explosion risk environments much easier and safer than alternative methods, giving you a clear, sharp eye into the unknown, without introducing risk through use of electronic devices.

ATEX Tractors have all the features, functionality and agility of the standard versions, and offer the same professional-grade quality, reliability and accuracy our customers expect from the Proteus brand.

The Proteus ATEX Tractors feature as standard: built-in height adjustment, multi-frequency SONDE, lowering device, and variable wheel size options using our unique quick-release locking system.



ATEX ALB300 & ATEX APB300



ATEX Cameras

All major components such as controller, camera head, etc are ATEX certified

ATEX Features



ATEX Pan, Rotate, Zoom and Laser Camera



ATEX Pan, Rotate and Laser Camera



ATEX Auxiliary Light and Backeye



ATEX Connector



ATEX Tractor Cradle



ATEX Override Key Switch

Proteus Crawler CRP140 & Its Expandability



ATEX CRP140-EXZ1

Sophisticated ATEX Certified Mid-size Tractor Crawler, capable of going over obstacles & displaced pipe joints.

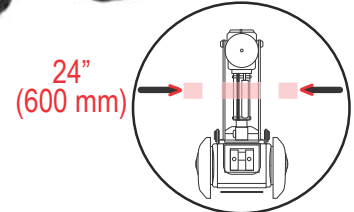
Standard :

- 6WD & Integrated Cruise control & Proportional control in slippery conditions.
- 6x QRWX90SR 90mm Rubber Wheels
- Motorised Elevator - Range 54-205mm
- Bigger wheel options available
- Multi-frequency SONDE

Optional :

- Additional Wheels
- Cradle

Intrinsically safe & approved for use in ATEX Zone 1

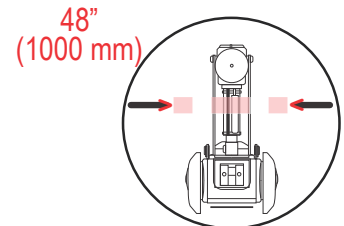


Technical Specifications

Dimension HxWxL	115 x 132 x 400mm
Weight (w/o cable)	9.5kgs
Weight with Cradle (w/o cable)	Approx 18kgs

Use in pipelines of 5.5" (140mm) to 24" (600mm).

Extendable to 48" (1000mm) pipes using PCC01 Crawler Cradle. *Refer page no.13



Control Unit CCU208-EXZ1



Feature Rich Control Unit

ATEX CCU208 EXZ1 Control unit is the brain of the Proteus system, providing functionality & control at your fingertips, Dual integral joysticks for camera & tractor control, user friendly multi-function hot keys control an intuitive on-screen display, to enable quick and accurate navigation of the numerous features. ATEX approved for use in Zone 1.

Setup, Configuration & Characteristics

Set language, date & time, customize PDF reports, client information oriented reports generated on site etc. Easily and quickly configure the Proteus CCU to your specific requirements using the various menu options ;

- Adjust the frequency of the SONDE transmitter to 33kHz, 512Hz or 640Hz.
- Meterage reset key.
- Control unit is powered by only batteries or power supplied via adapter. battery back up ~ 5hours (depending on weather).

Media Management

Record inspection MPEG video & JPEG images, Review footage with zoom up to 3x on video playback, organize videos & images into folders, then find them using thumbnail gallery.

Generating, Accessing & Sharing Data

Generate detailed inspection reports along with a pipe graph, defects, material, location, size of pipe.

Offload Data
Copy reports, videos & images to USB or SDHC directly from Control unit

Share Files
WIFI enabled to allow remote access to stored images and data. Users can instantly share PDF reports, images and footage via email or upload WinCan Reports via the Cloud to WinCan Web for secure, immediate team-wide access online.

Powerful measurement tools let you size up cracks, water level, pipe diameter, wall features, bend angles, inclination graph of pipeline.




The left joystick controls crawler manoeuvrability. Movement of the camera module is smooth & effortless using the right hand joystick control.



For Vehicle Mounted System

Standard Tractor Crawler Features



Motorised Camera

Solely for adjusting the height of a camera (centralising) inside a pipeline to have a clearer view of top to bottom.

Locate Pipe Location



MULTI-FREQUENCY SONDE
33kHz / 512Hz / 640Hz

*When used with industry standard pipe cable locator.

CAM028L PAN, ROTATE, ZOOM & LASER CAMERA

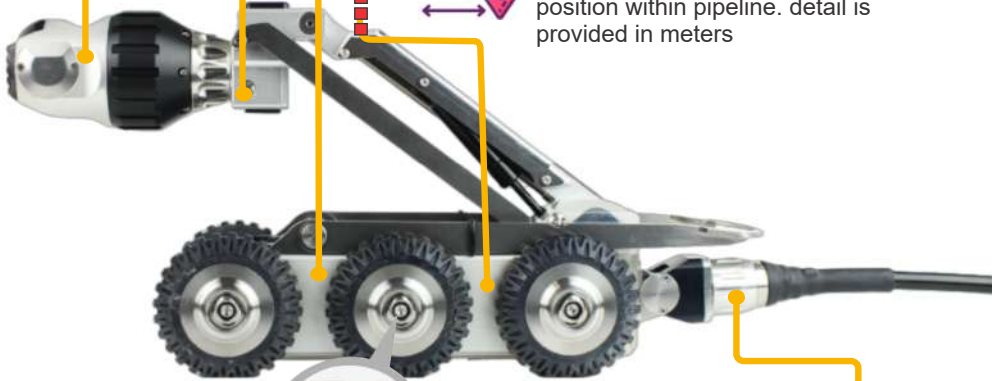


Horizontal & vertical movement is smooth and shutter-free, with the full 360° rotation & +/-135° pan. Two aligned lasers for defect & object measurement and a distance sensor for pipe diameter measurement. Twin clusters of three powerful, ultra-bright LEDs for optimum illumination.

Interchangeability Of Camera



Cameras are interchangeable in field without need of tools. Heavy duty connector prevents ingress to the connections.

In-Built Sensors

- Temperature sensor** measures the temperature of the pipeline, which can be helpful in identifying areas of potential damage or leaks.
- Inclination sensor** that detects changes in the pitch and roll of the crawler, a graph is generated with the information gathered.
- Meterage** feature shows the distance traveled by crawler on control unit that helps operator to keep track of its position within pipeline. detail is provided in meters



Quick Change Wheel Lock

Wheels of the Tractor Crawler System can be changed to larger or smaller wheels and wheels of different material types, to allow the robotic crawler operate in a variety of pipe diameters, conditions and pipe materials. Using the supplied, 4mm T-Bar the operation is quick and simple, with no other tools required. It is recommended to opt for various wheel sizes at the time of purchase to expand system capability.

Our Wheels offer significant performance & additional height benefits in various pipe diameters and for specific operating conditions.



Articulated 'knuckle' Connector

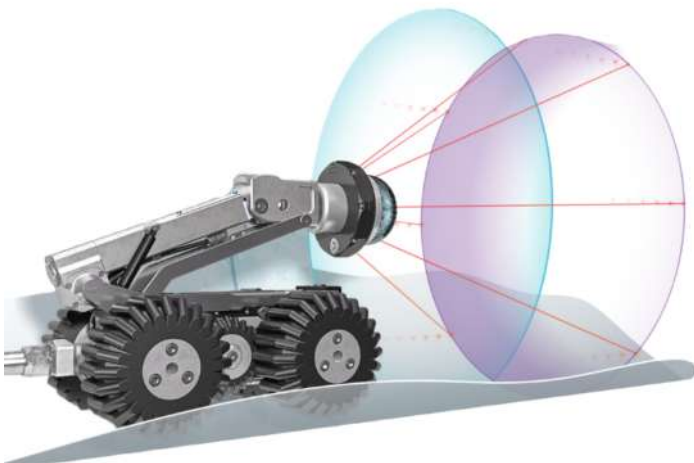
Enables easy deployment of the tractor and prevents water ingress to the connections.

Precision Cameras

For Optical Excellence



AXIAL	PAN & ROTATE	PAN, ROTATE & LASER	PAN, ROTATE, ZOOM & LASER
CAM027-EXZ1	CAM026-EXZ1	CAM026L-EXZ1 CAM050-EXZ1	CAM028L-EXZ1



Precision Cameras

Pan, Rotate, Zoom & Laser CAM028L-EXZ1

Continuous 360° rotation +/-135° pan, 12x digital zoom, 10x optical zoom.

Features an integral distance sensor & two aligned lasers to enable accurate pipe diameter, defect & object measurement.

6 High powered ultra-bright LEDs, heavy duty connector prevents ingress to the connections.

DSP (Digital Signal Processor) automatically adjust color correction, image sharpening & white balance in realtime.

Intrinsically safe & ATEX approved for use in Zone 1.



Technical specifications	
Pan & rotation	+/-135° / 360°
Zoom	12x / 10x
LEDs	6 LEDs
Pipe dia measurement range	90 - 600mm
Aligned laser spacing	30mm
Camera sensor	530 HTVL
Sensitivity	<1.0 Lux
Aperture/field of view	F1.8 - F2.9 / 46° - 4.6°
Maximum illumination intensity	12.5k Lux at 150mm
Pressure depth rating	1 bar (14.50psi)
Dimensions	155 x 84.5 x 84.5mm
Weight	1148g

Pan, Rotate & Laser CAM026L-EXZ1

Continuous 360° rotation +/-135° pan.

Features an integral distance sensor & two aligned lasers to enable accurate pipe diameter, defect & object measurement.

6 High powered ultra-bright LEDs, heavy duty connector prevents ingress to the connections.

DSP (Digital Signal Processor) automatically adjust color correction, image sharpening & white balance in realtime.

Intrinsically safe & ATEX approved for use in Zone 1.



Technical specifications	
Pan & rotation	+/-135° / 360°
Zoom	Yes
LEDs	6
Pipe dia measurement range	90 - 600mm
Aligned laser spacing	25mm
Camera sensor	470 HTVL
Sensitivity	<1.0 Lux
Aperture/field of view	F2.5 / 75°
Maximum illumination intensity	12.5k Lux at 150mm
Pressure depth rating	1 bar (14.50psi)
Dimensions	132 x 73 x 73mm
Weight	865g

Precision Cameras

Pan, Rotate & Laser CAM050-EXZ1

Continuous 360° rotation and +/-135° pan. Integral distance sensor & twin lasers to enable accurate pipe diameter, defect and object measurement. CAM050 is shipped with Minicam's SOLOPro+50 pipeline video inspection system.



Intrinsically safe & ATEX approved for use in Zone 1.

Technical specifications	
Pan & rotation	+/-135° / 360°
Zoom	Yes
Pipe dia measurement range	greater than 60mm
LEDs	4
Image orientation	Self-levelling
Camera sensor	740 HTVL
Sensitivity	<1.0 Lux
Aperture/field of view	F2.5 / 75°
Maximum illumination intensity	12.5k Lux at 150mm
Pressure depth rating	1 bar (14.50psi)
Dimensions	72 x 46 x 50mm
Weight	570g

Pan & Rotate CAM026-EXZ1

Continuous 360° rotation and +/-135° Pan, plus twin clusters of three high powered ultra-bright LED lights and a hard wearing, scratch resistant sapphire glass to protect the camera lens.



Intrinsically safe & ATEX approved for use in Zone 1.

Technical specifications	
Pan & rotation	+/-135° / 360°
Zoom	Yes
LEDs	6
Pipe dia measurement range	90 - 600mm
Camera sensor	470 HTVL
Sensitivity	<1.0 Lux
Aperture/field of view	F2.5 / 75°
Maximum illumination intensity	12.5k Lux at 150mm
Pressure depth rating	1 bar (14.50psi)
Dimensions	120 x 73 x 73mm
Weight	861g

Precision Cameras

Self-Levelling AXIAL CAM027-EXZ1

Robust camera head with triple clusters of three high powered ultra-bright LED lights for optimum illumination and a scratch resistant sapphire glass to protect the lens.

Intrinsically safe & ATEX approved for use in Zone 1.



Technical specifications	
Pan & rotation	N/A
Laser	N/A
LEDs	9
Image orientation	Self-levelling
Camera sensor	470 HTVL
Sensitivity	<1.0 Lux
Aperture/field of view	F2.5 / 75°
Maximum illumination intensity	12.5k Lux at 150mm
Pressure depth rating	1 bar (14.50psi)
Dimensions	73 x 52 x 52mm
Weight	251g



Expandability Based On Wheels

Soft Black Rubber Wheels (EXZ1 Wheels)		
1.	QRW115S 6nosX90mm Electrically conductive carbon impregnated rubber wheels. For use in 150 to 200mm pipes.	Provided as default with CRP140-EXZ1 system
2.	QRW115SR-140 Z1 for use in pipe size 200 to 300mm Provided as a set of 4.	Optional
3.	QRW140SR-140 Z1 for use in pipe size 300 to 450mm provided as a set of 4.	Optional

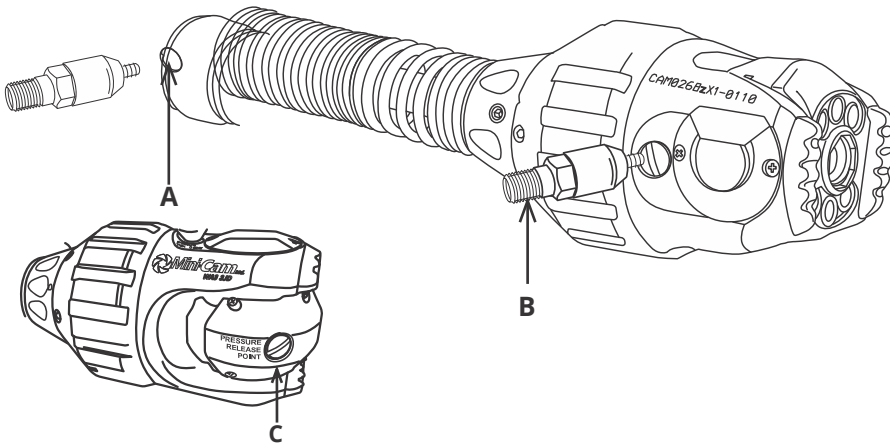


Accessories

ATEX Nitrogen Pressurization Kit

All you need to purge a Proteus Tractor and camera head

Prior to performing an inspection in any ATEX Zone 1 or 2, pressurization of the ATEX certified robotic crawler components is necessary.



Pressure Bar Meter shown on Control unit



- Pressure too low / uncompliant
- Pressure low caution
- Pressure low advisory
- Pressure OK
- Pressure too high, though still compliant.

All equipment should be pressurised into the green area.



A : Pressure Valve Protection CAP of CAMERA SPRING ASSEMBLY
 B : Camera Housing Pressure Valve (IN)
 C : Camera Housing Pressure Release Point



ATEX Nitrogen Pressure kit supply includes 2 canisters, valve & pressurisation gun, for use with Proteus System.

Technical specifications	
Product Code	Description
PKP01	Standard CO ₂ Pressure kit
PKP02EX	ATEX Nitrogen Pressure Kit

Accessories

Proteus Power Battery Pack

All you need to power portable crawler system

No need to rely on vehicle or mains power. Minicam's unique Proteus Power Battery Pack enables pipeline inspections in the most remote locations with in excess of 5 hours inspection time*. Short circuit protection and LED charge status indication.

*Battery life dependant on operation condition.



The battery is charged using the standard Proteus power supply unit.

Note: Charging unit shown above for illustration only, not included with Proteus Power Pack. Charging unit purchase separately.



Technical specifications	
Product code	BPP24
Dimensions	280 x 101 x 120mm
Weight	4kg
Optional	Carry case



Optional Easy Access Carry Case

Expandability Based On Wheels

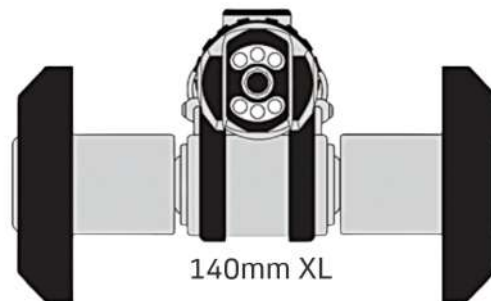
As example, standard setup on CRP140 crawler is based on x6 **90mm wheel** (6WheelDrive) .



Optionally, adapt the **CRP140** to be based on 140mm wheels for increased floor height to cover larger dia pipes OR use 140XL wheels with extended axle to cover greater width in large dia pipes.

Accessory

ATEX Zone 1 PCC01 EXZ1 Crawler Cradle adapts **CRP140** Crawlers for use in large diameter pipes. Versatile, quick and easy to attach, the cradle provides extra ground clearance enabling improved inspection capabilities in pipes and culverts up to **1000mm** in diameter.



Technical specifications	
Product code	PCC01-EXZ1
Dimension	406 x 254 x 218mm
Weight	7.65Kgs

Wheel options offered are EXZ1 for use in ATEX Zone 1 or 2 (Refer page no. 10).



Fully Automatic, Semi-Automatic & Manual Cable Reel Options



RMPL250

The RMPL250 Reel is a LITE Manual Cable Reel that is operated manually with a turning handle. Smooth pay-out and re-winding performance enhanced by the cable layering mechanism. Available in 250meters.

Technical specifications

Product code	RMPL250
Cable length	250m
Dimensions	550 x 385 x 700mm
Weight	27kg



RAP200/RAP300

The RAP200/RAP300 are Semi-Automatic Motorised cable reels designed for easy one person operation. Providing 250/350 meters of inspection capability. Developed for the **Van-fit system**, three phase motor and cable layering mechanism, specially designed for uninterrupted, tangle free pay-out and re-winding.

Note : Choose CAP250SC-EXZ1 (250Meters inspection cable) or CAP350SC-EXZ1 (350 meters inspection cable) at the time of ordering along with cable reel.

Technical specifications

Product code	RAP200	RAP300
Operation	3 phase motor	3 phase motor
Cable length	250m	350m
Dimension (in mm)	533 x 317 x 508	304 x 431 x 508
Weight	30.5kg	40.5kg
Power supply	24V	24V
Ingress protection	IP45	IP45
operational remote controller	RJP/RCP4	RJP/RCP4



ACR350/ACR500

The ACR350/500 are Fully Automatic Cable Reels providing 350-500 meters of inspection capability (with CAP350SC-EXZ1 or CAP500SC-EXZ1 inspection cable), developed for the **Van-fit system**, equipped with 3 phase motor & cable layering mechanism, specially designed for uninterrupted, tangle free pay-out and re-winding of cable.

Roll out, roll in & stop of cable can be controlled using the (included) hand-held Bluetooth® joystick remote controller, which is also capable of controlling crawler functions.

Technical specifications

Product code	ACR350	ACR500
Operation	3 Phase motor	3 Phase motor
Cable length	350m	500m
Dimension (in mm)	660 x 300 x 650	660 x 550 x 650
Weight	42kgs	55kgs
Power supply	90 – 264 VAC	90 – 264 VAC
Power consumption	600w	600w
Ingress protection	IP45	IP45
Remote controller (included)	RPJ joystick	RPJ joystick
Van guide pulley	VGP350 (optional)	VGP350 (Included)

All of the Reels are offered with CAP ATEX Zone 1 inspection cable (length weight 7.5 kg per 100 meter) Kevlar reinforced (500 kg breaking strength).

Fully Automatic, Semi-Automatic & Manual Cable Reel Options



ACR350/ACR500-EXZ1

The ACR350/500 are Fully Automatic Cable Reels providing **350-500 meters** of inspection capability, developed for the **Van-fit system**, equipped with three phase motor & cable layering mechanism, specially designed for uninterrupted, tangle free pay-out and re-winding of cable.

Roll out, roll in & stop of cable can be controlled using the (included) hand-held Bluetooth® joystick remote controller, which is also capable of controlling camera and crawler functions.

Technical specifications		
Product code	ACR350	ACR500
Operation	3 Phase motor	3 Phase motor
Cable length	350m	500m
Dimension (in mm)	660 x 300 x 650	660 x 550 x 650
Weight	42kgs	55kgs
Power supply	90 – 264 VAC	90 – 264 VAC
Power consumption	600w	600w
Ingress protection	IP45	IP45
Remote controller (included)	RPJ joystick	RPJ joystick
Van guide pulley	VGP350 (optional)	VGP350 (Included)

LCR350-EXZ1

The LCR350 is a Lateral Cable Reel providing **350 meter** of inspection capability, flexible 11 mm diameter push rod. Pays out matching the speed of the Proteus Lateral Crawler. Equipped with 3 phase motor.

The extendable arm of the guide roller has a 4-position locking system for the ease of deployment.

Fit for crawler Lateral150, installed in a Van-fit System.



Product code	LCR350
Operation	3 Phase motor
Payout / rewind	Cable layering
Emergency stop	mechanism
Stop button	In-built
Push rod length	45m
Cable length	300m
Cable type	Kevlar reinforced
Power supply	100-240VAC
Power consumption	600W
Dimension (in mm)	889 x 482 x 711
Weight	120kg
Van guide pulley	Integral

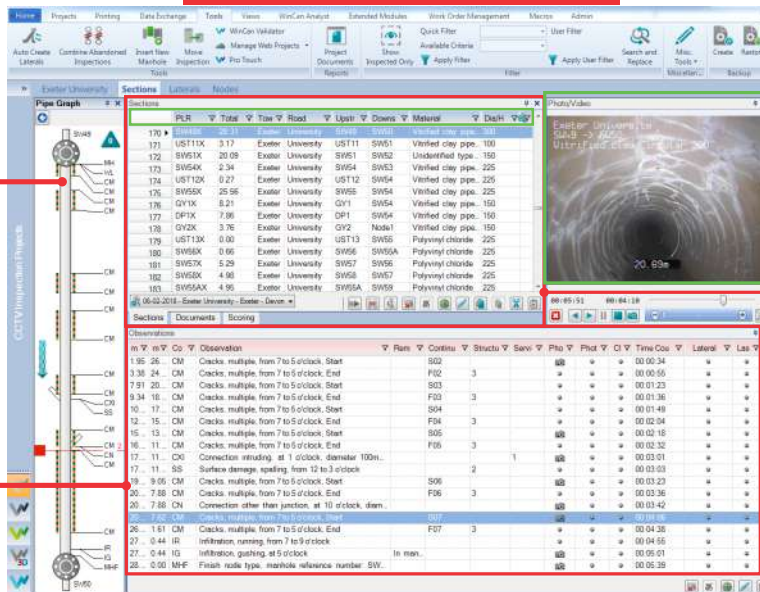


WinCan VX is a **Pipe Inspection & Asset Management** software which is core of the entire WinCan product family.

Offers pipe inspection data, organise it into a database & generate inspection reports that **(3D pipeline graph)** graphically display the pipe and its defects etc.

Provides Comprehensive inspection

Software Interface



3D graph of pipeline along with pinpointed

Observations Detailed defects report with Images & Video.

Video playback & still photos.

(GIS)Geographic Information System can be used to display the location, condition, and other important information about pipes and other underground infrastructure.



Generate PDF Reports

Share Files



WIFI + 3G/4G enabled to allow remote access to stored images and data. Users can instantly share PDF reports, images and footage via email or upload WinCan Reports via the Cloud to WinCan Web for secure, immediate

ATEX CRP 140 Robotic Crawler System:



CRP140-EXZ1 Robotic Tractor Crawler,
PTP04 Portable Storage trolley,
RMPL250 Proteus Lite cable Reel,
CAP250SC-EXZ1 Inspection Cable,
CCU208-EXZ1 Control Unit,
BPP24 Proteus Power Battery Pack.

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**Quality
Management
System**

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