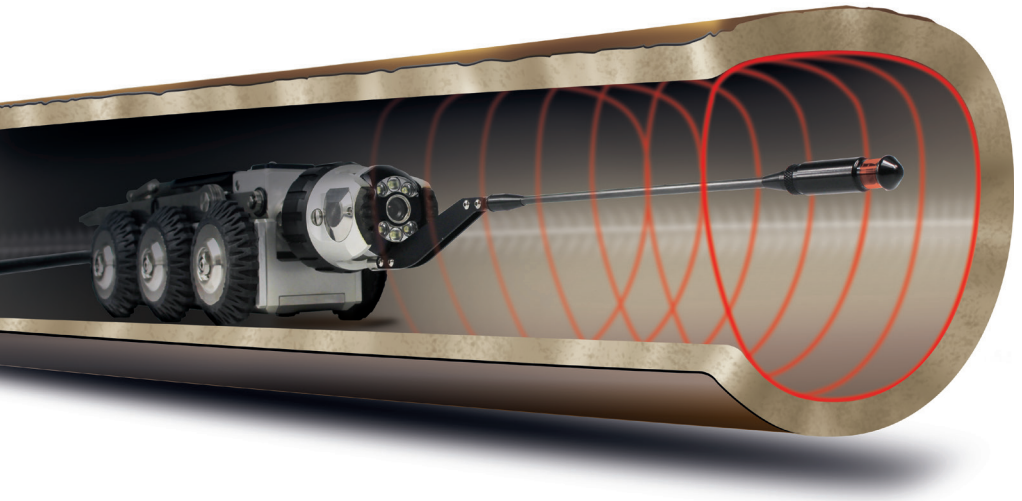


PRO LASER



USER GUIDE

Version B





Minicam Laser Profiler

Key Features

For use in pipe sizes 100mm to 500mm

- Fully integrates to *WinCan V8 LaserScan* module.
- Verification of structural integrity of network, ovality and deep corrosion.
- Fast cross-sectional area calculations for determining flow reduction.
- Deformation measured as an out-of-circle percentage.
- Erosion loss of pipe wall can easily be ascertained.
- Quantifies defects, holes, or other abnormalities.

Why do you need a pipe profiler?

If you are a municipality, consulting engineer or contractor the Profiler is a necessary tool for the analysis of the true pipe condition prior to and after rehabilitation. When used as a video survey tool it can provide accuracy up to 1mm when measuring pipe size, deformation, erosion, encrustation, debris, grease, flows, lateral protrusion, surface damage, holes.

The Minicam Laser Profiler has been developed to provide pipeline engineers and contractors with very accurate empirical data on the ovality, capacity, and other conditions in new and existing pipelines. The Profiler simply attaches to your existing camera system and the resulting CCTV images are analysed using the innovative *WinCan V8 LaserScan* software module.

Laser profiling immediately highlights deviations to a pipe's circular cross section. The laser produces a ring which is cast onto the inner surface wall of the pipe which is then recorded in high resolution. *WinCan V8* software can then be used to analyse and create reports.

The Minicam Laser Profiler is ideal for:

- Ovality reporting, especially for plastic pipes
- Measuring the thickness of relining
- Measuring the thickness spray lining
- Deformation reporting
- Cross section loss reporting

Warnings, Safety Measures and Care

Please read the safety measures closely and observe them. They preserve your own safety, the safety of co-workers as well as the prevention of damage to the ProLaser device and its components.

Notes on Using the Manual



CAUTION!

Safety instruction: failure to observe this instruction can cause personal injury or damage the device.



CAUTION!

Safety instruction relating to danger emanating from electrical currents or voltage: failure to observe this instruction can cause injury or damage the device and impair its function.



CAUTION!

Safety instruction relating to danger emanating from laser light.

Safety Instructions



CAUTION!

Minicam will not be held liable for claims for damage resulting from the following:

- Damage to the device resulting from mechanical influences and overvoltage.
- Alterations to the device made without the explicit permission of Minicam.
- Use for purposes.



WARNING!

The following fundamental safety measures must be observed when using electrical devices to protect against:

- Electric shock
- Fire hazards
- Injury

General Safety



- Check the battery is correct and in the right position.
- Laser radiation - avoid direct eye exposure.
- Check all the seals are ok.
- The device may not be used if the laser module itself or the bracket are visibly damaged.
- This device may only be repaired by qualified personnel. Inadequate repairs can lead to considerable hazards. Should your device need to be repaired, please contact your local Minicam Dealer or Minicam customer services.

Operating the Device Safely



CAUTION! – Danger of Laser Radiation!

- Do not look into the laser light or blind other people.
- The bracket must be mounted correctly.

Contents of Kit

- Laser Module
- Bracket (varies depending on camera manufacturer)
- 225mm Pin
- 400mm Extension Pin
- Storage Case

Proper User

The Laser Module and the Bracket are for use in a pipe to measure the deformations of the pipe with a camera system.

Technical Description

The Laser Module is powered by a Lithium 3V (CR1/3N battery).
The Bracket is designed for one specific camera.

Using the Laser Module

Assembling



360° Laser Ring Pipe Measurement RC90 / RCX90

To switch on the laser module screw the rear part clockwise into the laser module until the laser lights. To switch off the laser module screw the rear part anti-clockwise until the laser goes out. To replace the battery, fully unscrew the rear part (anti-clockwise), replace with a new cell, lightly grease the sealing O ring seal and then screw back on (clockwise).



Technical Details - ProLaser

Wavelength:	650nm
Maximum Opt Output Power:	1mW
Laser Class:	2
Power Supply:	1 x Battery CR1/3N Lithium 3V - 170mAh
Operation Time:	4h - 6h
Range of Application: (dependant on the pin)	DN100 - DN450

Pipe Diameter	Pin Length
DIN100 - DN225	225mm
DIN200 - DN450	625mm (by using the 400mm extension)



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