



CLEVER SCAN

info@acsbusinessgroup.co.uk



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portable, automated
manhole scanner

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Manhole inspection is all about productivity and detail.

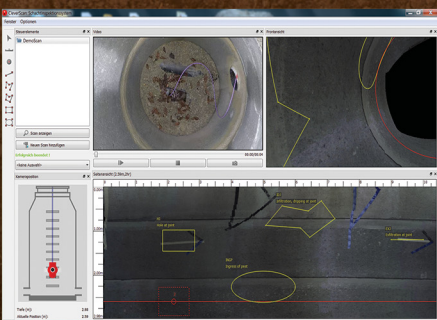
With the press of a button, CleverScan performs a rapid, high-res, fully automated manhole inspection. You get a detailed image that captures detail from every centimeter of the manhole wall, plus a dense point cloud that can be easily merged into any CAD or 3D application.

CleverScan's compact, lightweight design travels anywhere and deploys in minutes.



Capture Imagery

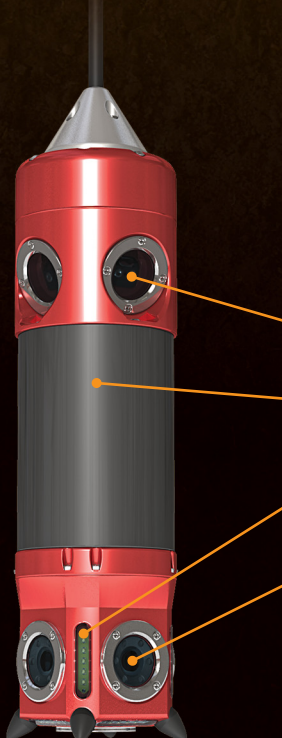
Using five HD cameras and powerful illumination, CleverScan builds a detailed image scan and captures video. The scan presents high-res detail from every centimeter of the manhole wall, and allows an analyst to quickly scan for structural defects, infiltration and other features. The scan data links seamlessly to WinCan VX allowing for detailed interrogation, measuring tools, annotation and report production.



Boost Productivity

A fully detailed manhole scan takes between 30 seconds and 3 minutes depending on depth, so production rates are limited only by time and site conditions. As an example, in trials WinCan Europe completed 43 scans during a four-hour lane closure on the M62 Motorway.

Once positioned over a manhole, a single button press initiates the scan. The system measures manhole depth, lowers the probe accordingly, and then assembles scan data for instant viewing in CleverScan software. From there, data can be transferred to WinCan's CleverScan module for reporting and advanced analysis, and shared via WinCan Web.



Four laser scanners generate a dense point cloud for 3D analysis.

Accelerometers allow software to compensate for torsional and pendular motion.

Strobing LEDs ensure bright, evenly lit image scans.

Five HD cameras capture high-res image data that's stitched together into a single scan.

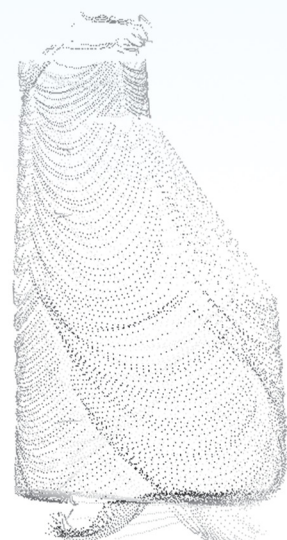


Fully automated system scans manholes with the press of a button.

Reel lowers camera as far as 9.5m (31 feet) into manholes.

Range-finder senses depth of manhole to control probe descent.

Adjustable tripod adapts to uneven ground.



Scan Geometry

CleverScan's four lasers capture manhole geometry to a high-resolution point cloud. This data is ideal for performing capacity studies, taking measurements for rehab projects and populating CAD models. Point cloud data is exportable in a variety of common formats and can be viewed directly in WinCan VX and WinCan Web.

Control Costs

CleverScan helps keep your per-manhole inspection costs at an industry low:

- Productivity.** When you inspect more manholes per day, your cost per manhole drops.
- Operating Costs.** CleverScan is the industry's most affordable automated manhole scanner.
- Portability.** CleverScan's compact, lightweight design means it can be deployed by a single operator from any small utility vehicle, keeping overhead costs low.

Specifications

weight	18kg (38lb)
height	1.1m (3'7")
camera protection	IP67
controls protection	IP54
computer req.	Intel i5 or i7 CPU minimum 8GB RAM Gbit Ethernet interface SSD (min. 256 Gb)
	HD monitor (min. 1024x768)
	Windows 7 or 10 Business