

CALSIS



LASER CAMERA SYSTEM

- Three deployment modes including ILUC attachment
- Can be used in both onshore and offshore environments
- Provides clear and detailed images of the weld
- Can be used to identify defects in the weld
- Generates reports that can be used to assess the quality of the weld
- Can be customised to meet the specific needs of the client

Assuring pipeline integrity with laser technology.

The CALSIS Laser Camera system is a remote inspection system for circumferential girth welds in welded pipelines. It is available in two sizes, covering pipe internal diameters of 125-260mm and 180-1500mm, respectively. Each system is supplied in a portable transit flight case.

The CALSIS system is a rugged and robust unit designed for use on both onshore and offshore pipeline spreads. It consists of a rugged control unit/PC, two 24-inch HD monitors, and a shelf for the PC keyboard and mouse. The laser scanning information is displayed on the first monitor, while the full HD video is displayed on the second monitor. This allows the operator and welding inspector to have a clear view of both the laser profile scan information and the remote visual inspection of the weld.

Each system also includes a calibration kit that contains certified calibration equipment for the laser dimensional measurements, monitor colour, camera focus, and onscreen video measurements.

- Remote inspection of circumferential girth welds in welded pipelines
- Two sizes available, covering pipe internal diameters of 125-260mm and 180-1500mm
- Rugged and robust design for use on pipeline spreads both onshore and offshore
- Includes two 24-inch HD monitors, a rugged control unit/PC, and a calibration kit
- Can be deployed in three ways: attached to the rear of an ILUC, using a remote crawler vehicle, or manually using a push rod
- Both wireless and hard-wired connectivity options
- Can be powered by a battery pack when used wirelessly
- Drive output for controlling an external crawler/drive module via the system software
- Linear head with a movement range of up to 90mm for accurate alignment of the laser with the weld
- Auto tracking of the laser-to-weld distance for optimum laser trace when scanning.



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The CALSIS system can be deployed in three ways: attached to the rear of an ILUC, using a remote crawler vehicle, or manually using a push rod. Each system has both wireless and hard-wired connectivity options. When used wirelessly, a battery pack can also be supplied, which can power the CALSIS system and a remote crawler.

- Attached to the rear of an ILUC (Internal Line Up Clamp) for deployment in pipelines
- Deployed via a crawler vehicle and controlled remotely using the CALSIS system software
- Manually deployed using a push rod

The CALSIS system is also supplied with a drive output for controlling an external crawler/drive module via the system software. A linear head with a movement range of up to 90mm is fitted to the CALSIS system, so that the operator can accurately align the laser with the weld using the onscreen video. The laser head has auto-tracking of the laser-to-weld distance and will automatically control the distance to obtain the optimum laser trace when scanning.

Data analysis

The CALSIS system can be used to analyse a variety of data, including:

- Weld length
- Excess penetration
- Lack of penetration
- Lack of Sidewall Fusion / Undercut
- Manual height measurement
- Toe angle measurement

The data can be used to assess the quality of the weld and to identify any defects. The reports can be tailored to client requirements.

After each scan, the CALSIS system will record and save three files: a laser scan data profile file, an HD video file, and an Excel report. The Excel report provides a summary of the recorded laser scanned parameters, including the minimum, maximum, and average values over 2 degrees for the full circumference of the pipe ID.

The reports can be tailored to client requirements. For example, the client may want to include additional parameters in the report, or they may want to change the way that the data is presented.



CALIS 160 LASER & CAMERA SPECIFICATIONS

Imaging Camera

Image Sensor	1/3-type CMOS 3.0 Megapixel
Signal System	Full HD 2304 x 1296P
Lens	M12, focal length 3.6mm, F1.8 IR
Angle of View	85°
Min. Working distance	10mm
Focus	Remote Manual Adjustment
Video output	HD Full Digital
Voltage	6Vdc to 12Vdc

Camera Adjustment

Manual Adjustment	74mm
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Measurement Laser

Mounting	Diffuse Reflective
Reference Distance (Rd)	20mm
Measuring Range	Height: Rd±10mm/Width: 20mm to 30mm
Light Source	Red Semiconductor Laser/655nm Class 2/0.95mW
Spot size	40µm x 13mm (approx.)

Measurement Laser Adjustment

Motorised Adjustment	50mm
Manual Adjustment	71mm

Laser/Camera Scanning Head

Motorised Adjustment	100mm
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Display Monitor

Screen Size	60cm/24"
Aspect Ratio	16:9
Resolution	1920 x 1080
Input	HDMI
Voltage	100Vac to 240V

Full calibration certification provided, traceable to The National Physical Laboratory (NPL), UK.

The Validation Centre (TVC) Limited reserves the right to alter or change product specifications without prior notice. Images are representative of full optional additions installed; delivered equipment and software may vary depending on options purchased.



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