Weatherford®

# Compact™ Microimager

Unprecedented logging detail and precision
with industry-leading versatility

Wireline or wireless logging

# Enhanced well characterization for informed reservoir decisions

The Weatherford Compact™ microimager (CMI) delivers an exceptional level of detail and precision in well logs, while its 10 deployment options provide unrivaled versatility. With launch capabilities including wireline, slickline, coiled tubing, and through-drillpipe, this unique microimager enables logging in otherwise impossible situations.

Featuring a distinctive profile and memory capacity, the CMI tool is not constrained by wireline transmission rates. Flash memory in the tool records high-definition imaging data for topside processing. This system not only improves logging speeds, but also enables an innovative method for speed-correcting imaging data.

**Increased production by**

**40% in 180 days.**

A global operator needed a fit-for-purpose logging solution in a horizontal well development. By adding the Compact microimager to the completion strategy, oil production rates increased nearly 40 percent in the first 180 days.

### The Compact Microimager Advantage

- Unequaled deployment versatility, including through-drillpipe capability
- High quality imaging with excellent borehole coverage, even in horizontal wells
- Excellent dynamic range and high formation, mud-resistivity contrast performance
- Six independent caliper measurements for complete borehole images
- High-resolution data recorded to flash memory
- Lightweight construction for easy centralization, better pad contact, less yo-yo effect, and reduced tool rotation
- Propriety speed correction that resolves data discrepancies caused by irregular tool motion in challenging wells
- Compatibility with other Compact™ measurement tools

### Unconventional Production Applications

- Fracture identification enables frac-treatment optimization, which reduces treatment cost and maximizes stage productivity.
- Used in conjunction with other Compact tools, including the cross-dipole (CXD) and spectral gamma ray (SGS) tools, the CMI provides brittleness and total organic carbon (TOC) data. This information supports treatment-pressure adjustments or the ability to eliminate unproductive zones.
- The eight-arm compact microimager provides six independent caliper measurements for precise completion design, ensuring proper packer placement.

## High-definition reservoir imagery, regardless of wellbore conditions

Whether visualizing complex structures, detecting dips and fractures, or evaluating thin beds, the Compact microimager delivers advanced image processing.

### Unique Deployment

The CMI tool is the only imaging system capable of through-the-drillpipe deployment. With 10 deployment options, the tool enables logging in previously unloggable wells. It reduces risk and increases efficiency without sacrificing data quality.

### Complete Perspectives

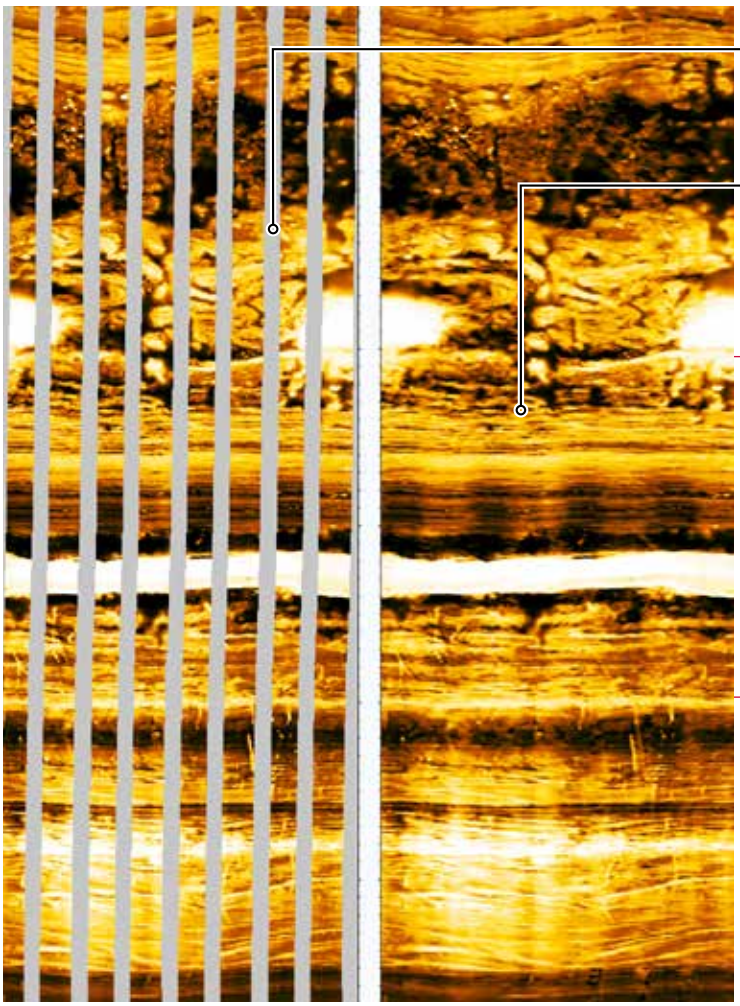
Using advanced digital-imaging technology, the CMI tool makes 360° reservoir data easier to interpret with enhanced image details.

### Centralized Positioning

The specialized eight-arm caliper, with its four cross-linked arms and four independent arms, enables a total of six caliper measurements—vital for successful completions. The cross-linked arms centralize and align the microresistivity pads for optimum borehole contact and high-quality imaging.

### Smallest OD

The CMI is configurable for a maximum OD of only 2.4 in. (61 mm) for imaging in wells that exclude conventional tools.



**Standard**
The eight pads provide 176 measurements for high-resolution images of your wellbore.

**Reveal 360™**
Patent-pending, dynamic digital-imaging technology environmentally normalizes wellbore images and removes gaps between the pads for a complete 360° view.

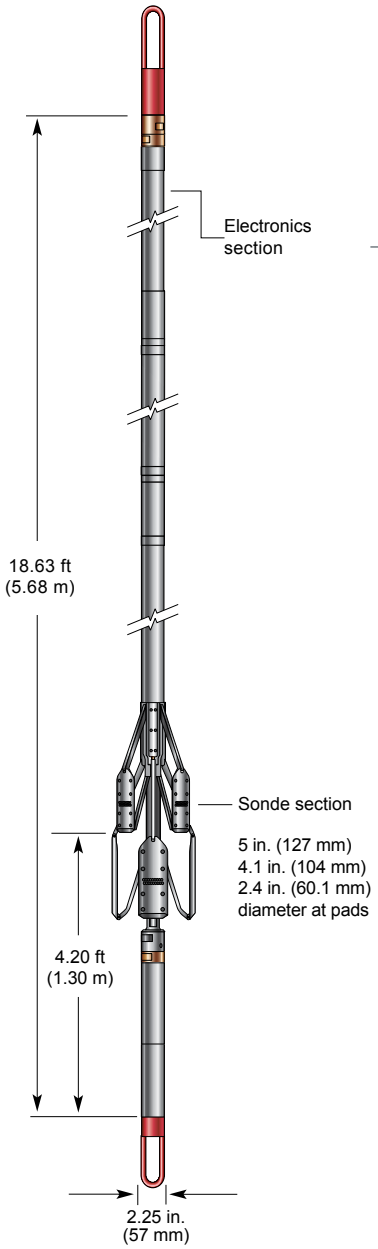
### Applications

- Visualizing complex structures
- Identifying faults, fractures, and their orientation
- Determining structural dip
- Defining crossbeds, thin beds, and net-to-gross ratio in sand-shale sequences
- Evaluating secondary porosity
- Depth matching, orientation, and substitution of cores
- Structural and breakout analysis

# CMI Technical Specifications

| MEASUREMENT SPECIFICATIONS | | | |
|---|---|---|---|
| Tool | CMI 5.0 | CMI 4.1 | CMI 2.4 |
| Data | Microresitivity imaging, borehole geometry, multi-arm caliper | | |
| Logging speed | 2,000 ft/hr (609.6 m/hr) | | |
| Measurement range | 0° to 180° tilt, 0 to 360° azimuth, microresistivity with no practical limit | | |
| Vertical resolution | 0.2 in. (5 mm) microresitivity | | |
| Accuracy | Caliper: ± 0.2 in. (5 mm)<br>Deviation: ± 0.1°<br>Azimuth: ± 5° | | |
| Depth of investigation | 0.90 in. (23 mm) nominal for microresitivity | | |
| Borehole fluids | Water-based mud (WBM), salt | | |

| MECHANICAL SPECIFICATIONS | | | |
|---|---|---|---|
| Maximum outer diameter | 5 in. (127 mm) | 4.1 in. (104 mm) | 2.4 in. (60.1 mm) |
| Length | 18.63 ft (5.68 m) | | |
| Weight (in air) | 126 lb (57.2 kg) | | |
| Maximum temperature | 302°F (150°C) | | |
| Maximum pressure | 15,000 psi (103 MPa) | | |
| Maximum borehole diameter | 17 in. (432 mm) | 12.25 in. (311 mm) | 11.6 in. (295 mm) |
| Minimum borehole diameter | 5.5 in. (140 mm) | 4.6 in. (117 mm) | 2.9 in. (74 mm) |




The Compact™ microimager is part of our comprehensive portfolio of openhole and cased-hole wireline services. To learn how our services and technologies can work for you, contact your authorized Weatherford representative, or visit us at **weatherford.com/contact-us**

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