New! MSI-360 Digital Camera

mountsopris.com/new-msi-360-digital-camera

February 13, 2020

Description

The MSI-360 Digital Camera is the first of its kind in our industry! This is the first fully digital camera that works on up to 2000 meters (6562 ft) of **standard single, coaxial, or 4-conductor wireline** and **displays high resolution downhole and side-view video in real time** at the surface. Both the onsite logger and the customer can see the real time video displayed on their personal phones, tablets, or laptop using the control unit's built-in WiFi.

The process of collecting video with this digital downhole camera is so easy and seamless, any customer onsite will be immediately impressed. And better yet, the cost of this camera system is less than similar cameras from most leading camera vendors. This is the first time that a camera can now be used on standard geophysical wireline along with other groundwater tools such as resistivity, caliper, fluid conductivity/temperature, and natural gamma.

The well inspector can take pictures while recording video. As displayed in the video above, the downhole view is displayed next to two side-view videos that each cover 180 degrees of the borehole wall. Once the video is complete, a USB is retrieved from the camera body and a high resolution HDMI quality MP4 video is downloaded. If you are interested in testing before buying, this camera is available today in our Rental Equipment!

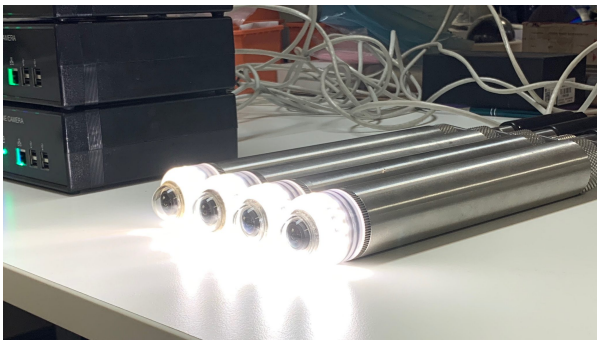
Don’t hesitate to Contact Us to let us know about your logging needs.

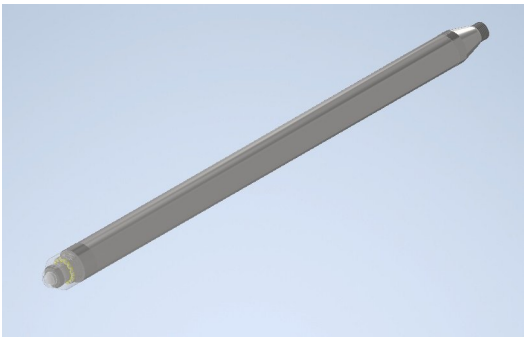
Watch Video At: https://youtu.be/wpakLHk0-j8

Note: The video above shows this camera being used for the inspection of a water well down to 400 meters (1312 ft) depth. The borehole is lined with 6 inch diameter steel casing and rock fragments are clearly visible.

Applications

- Water Well Inspection
- Pump Inspection
- Casing Revision
- Pylon and Caisson Inspection
- Equipment Recovery and Fishing
- Shaft Inspection
- Strata Identification
- 4G Remote Monitoring





Operating Conditions

Borehole Fluid

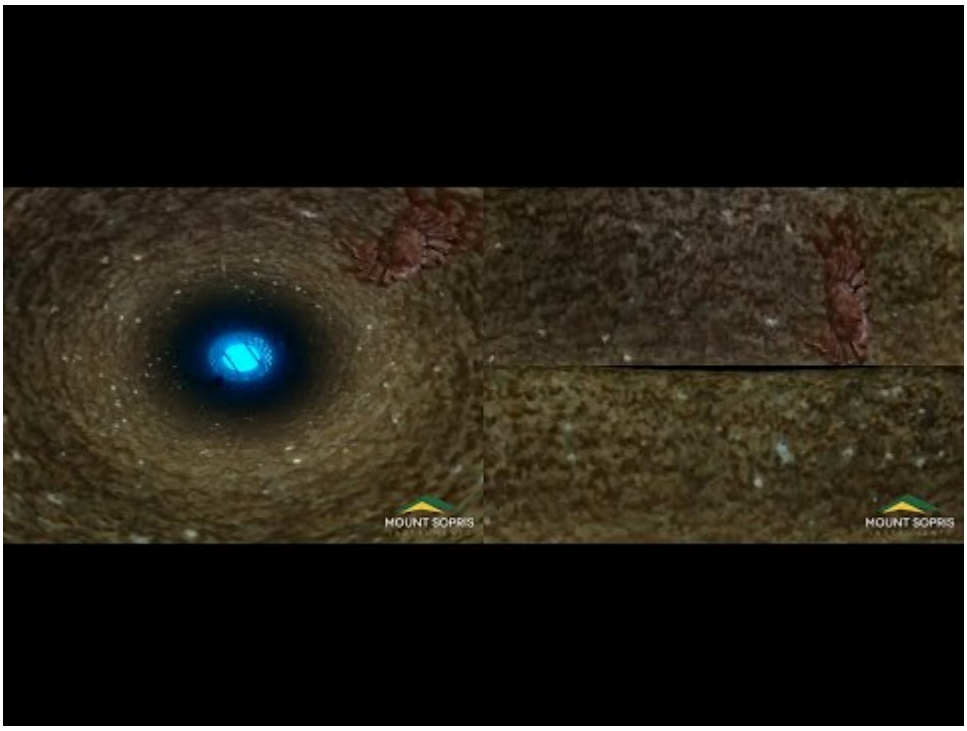
[X] Water
[_] Mud
[X] Dry

Casing

[X] Uncased
[X] PVC Borehole
[X] Steel

Centralization

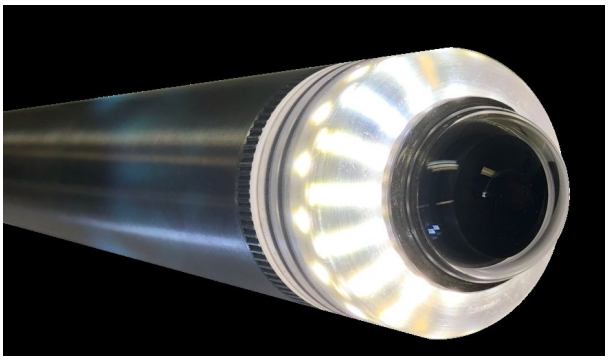
[X] Required
[_] Not Necessary



Watch Video At: https://youtu.be/2nlbPQmz58Y

Features & Benefits

- Digital video and pictures on standard wireline
- Works on up to 2000 meters (6562 feet) of single, coaxial, or 4-conductor wireline
- Downhole sidewall and down-view video recorded at the same time
- Review video in real time on multiple phones, tablets, or laptops via Bluetooth
- Improved digital, high resolution image
- Optional depth and speed overlaid onto video as subtitles
- Narrow 43 mm (1.7 inch) diameter
- Easy to operate, no training required



Specifications – Metric/English

Specification	Metric	Imperial
Diameter	43 mm	1.7 in.
Length	70.8 cm	27.9 in.
Weight	3.5 kg	7.72 lbs.
Max. Temp.	70 ºC	158 ºF
Max. Pressure	200 bar	2900 psi

Additional Example Videos on YouTube

Watch Video At: https://www.youtube.com/playlist?list=PLIlC_lq-wZ0_b9ewZzQ8hTTSMysnuqcZw

Documentation

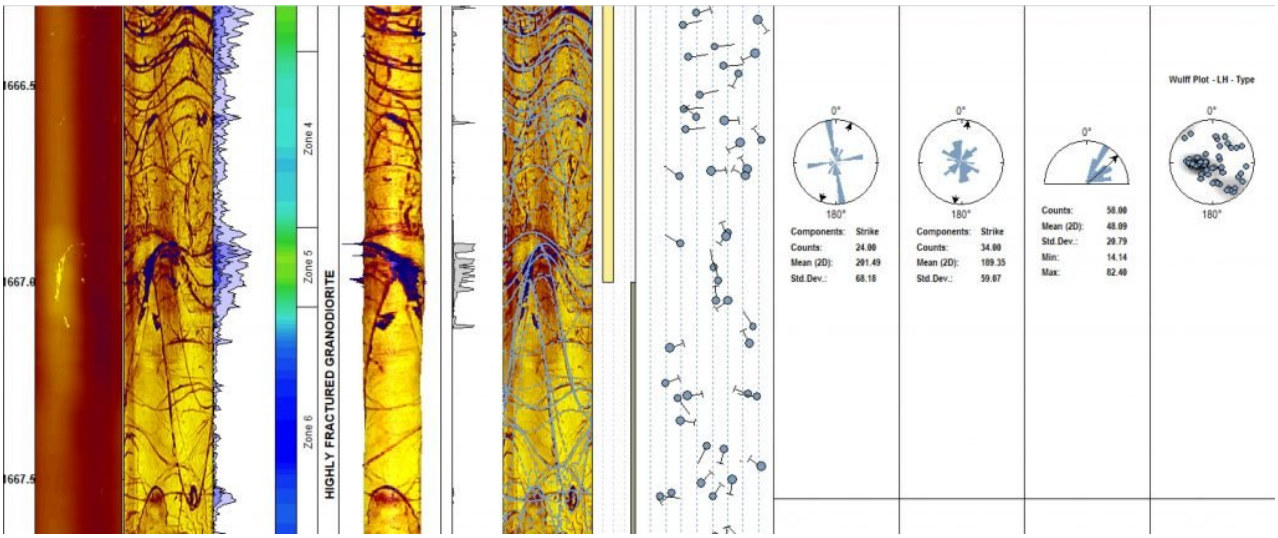
MSI-360 Digital Camera Brochure

Please Contact Us for more information

QL40-ABI-2G – Acoustic Televiewer

mountsopris.com/ql40-abi-2g-acoustic-televiewer

August 26, 2019




1617.10
1365.01
165
Deviation sensor reference
Acoustical sensor reference

QL40-ABI

Description

The QL40-ABI-2G is the latest generation of acoustic televiewers based on 20 years of experience and market leadership. The new system consists of a completely redesigned acoustic sensor and new electronics.

The acoustic borehole imager records a 360°unwrapped and 3D image of the borehole wall. The tool emits an ultrasonic beam towards the formation and records the amplitude and the travel time of the reflected signal. The amplitude record is representative of the impedance contrast between the rocks and fluid. The travel time is used to determine accurate borehole diameter data, which makes the tool ideal for borehole deformation description – stress field analysis and casing inspection.

A built in high precision orientation package incorporating a 3 axis fluxgate magnetometer and 3 accelerometers allows orientation of the images to a global reference and determination of the borehole's azimuth and inclination. Sophisticated algorithms and real time processes are also implemented to extend the tool applications for casing thickness measurement, corrosion evaluation and measurement behind a PVC casing.

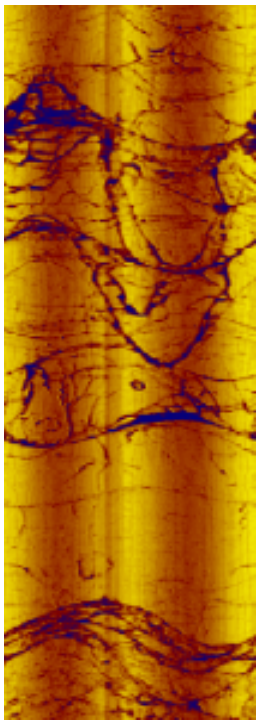
There are three acoustic televiewer options available:

- **QL40-ABI-2G**: Newest high resolution, slim acoustic televiewer. It is stackable within the Quick Link (QL) product line or it can be run as a standalone tool.
- **ABI40-GR**: Standalone tool integrating a built in natural gamma sensor.
- **QL40-ABI-VLB**: Very Large Borehole (VLB) acoustic televiewer specially designed to assess the integrity of large diameter wells. Implements the latest hardware/firmware to perform casing thickness measurement, corrosion evaluation and cement bond mapping in one run.

Read the Release Note for the latest QL40-ABI-2G!

Applications

- Detailed and oriented caliper and structural information
- Borehole deformation (stress field analysis)
- Fracture detection and evaluation
- Breakout analysis
- Detection of thin beds
- Determination of bedding dip
- Lithology characterizations
- Rock strength
- Casing inspection and corrosion evaluation
- Steel casing thickness



Operating Conditions

Borehole Fluid
[X] Water
[X] Mud
[_] Dry

Casing
[X] Uncased
[X] PVC Borehole
[X] Steel

Centralization
[X] Required
[_] Not Necessary

Features & Benefits

- Higher logging speed – speed of rotation of the mirror can reach up 35 rps
- Choice of azimuthal resolutions extended up to 360 acoustic traces per mirror revolution – higher image resolution obtained in bigger diameter boreholes
- Dynamic range of the measurement extended to 16 bits
- Improved signal/noise ratio – better results obtained in adverse borehole conditions
- Casing thickness algorithms and process refined
- Behind PVC operating mode available
- Acoustic head ruggedized to prevent coax failure
- Software interface reviewed for optimizing the tool settings

Specifications – Metric/English

Specification	Metric	Imperial
Diameter	40 mm	1.57 in.
Length	1.61 m	63 in.
Weight	6.7 kg	14.7 lbs.
Max. Temp.	70 ºC	158 ºF
Max. Pressure	200 bar	2900 psi

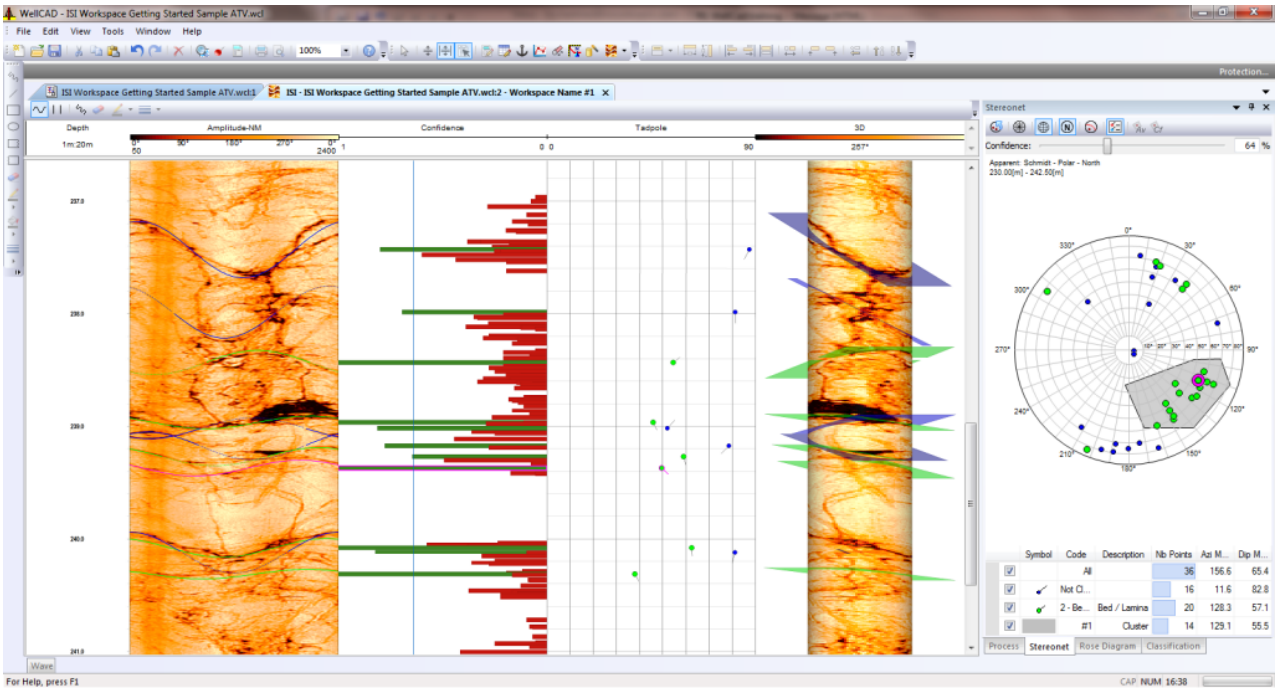
Acoustic Sensor: Fixed transducer, rotating focusing mirror
Focus Optimized For: 15.2 cm (6 in.) borehole
Frequency: 1.2 MHz
Acoustic Beam Width: 1.5 mm focal distance
Rotation Speed: Up to 35 revolutions/sec.
Samples per Rev.: 72, 144, 216, 288, and 360
Measurement Ranges:
Standard ABI-2G or ABI40-GR: 5 to 51 cm (2 to 20 inch) open or cased borehole
QL40-ABI-VLB : 25 to 76 cm (10 to 30 inch) in a cased borehole, minimum thickness 5 mm

Caliper Resolution: 0.08 mm (.003 in.)
Orientation Sensor: APS 544, 3-Axis Magnetometer and Accelerometer
Inclination Accuracy: ± 0.5 º
Azimuth Accuracy: ± 1.2 º

QL Stack Possibilities

- **QL40ABI-2G** + QL40GR (Gamma): Water-well Monitoring, Contaminant Intrusion Studies
- **QL40ABI-2G** + QL40GR (Gamma) + QL40ELOG (Resistivity): Identification of Aquifers
- **QL40ABI-2G** + QL40GR (Gamma) + QL40ELOG (Resistivity)+ QL40CAL (Caliper): Hydrogeologist's Tool, Groundwater exploration, assessment, and well completion

WellCAD Image & Structure Interpretation (ISI) Workspace



WellCAD® Software is an advanced log processing and visualization software recommended for use with all Mount Sopris logging probes. The WellCAD Image & Structure Interpretation (ISI) Workspace, used in conjunction with the QL40-ABI-2G provides:

- Fully interactive structure interpretation: Acoustic caliper, Structure logs, Polar, and Rose diagrams
- Processing techniques: Trace interpolation, despiking filters, normalization, recentralize image, etc.
- 3D Log Visualization for virtual cores, breakouts, well deformation, and pipe corrosion

For more information, please refer to the WellCAD Image & Structure Interpretation Workspace news post.

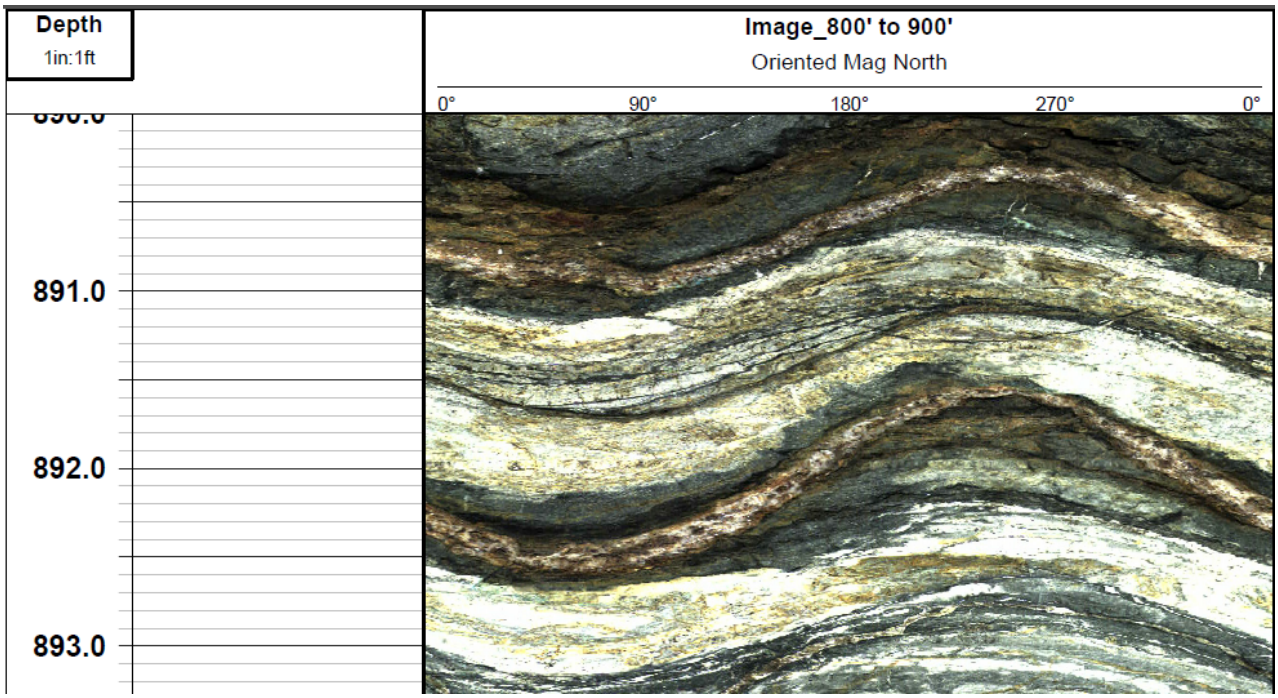
Documentation

- Release Note for the Second Generation ABI
- QL40-ABI-2G Brochure
- QL40-ABI-VLB Brochure
- QL40-ABI-VLB Example Data Set
- Image & Structure Interpretation (ISI) Workspace
  Please Contact Us for the User Guides

QL40-OBI-2G – Optical Televiewer

mountsopris.com/ql40-obi-2g-optical-televiewer

August 25, 2014



The New 2nd Generation Optical Televiewer is Here!

Description

The QL40-OBI-2G and OBI40GR-2G are the new generation of Optical Borehole Imagers. The new televiewer comprises a completely redesigned optical assembly with new electronics. It implements a high resolution CMOS digital image sensor combined with a fisheye lens. The tool produces an extraordinarily clear, sharp, 360° continuous-upwrapped digital picture of the borehole wall, either in air or clear water. Resolutions up to 1800 pixels over the borehole circumference can be achieved, which makes this televiewer ideal for lithological, mineralogical, and structural analyses.

A built in high precision orientation package incorporating a 3-axis magnetometer and 3-axis accelerometer allows orientation of the images to a global reference and determination of the borehole's azimuth and inclination. Optical televiewer images can complement and even replace a coring survey and its associated problems of core recovery and orientation.

The new QL40-OBI-2G televiewer is fully digital and can operate on standard wirelines. It can be either combined with other logging tools of the QL (QuickLink) product line to build tool strings or operated as a standalone tool.

The OBI40GR-2G is a standalone tool version integrating a natural gamma sensor thereby enabling the measurement of gamma radiation emitted naturally from within the formations crossed by a borehole.

For more detailed information on the differences between the 1st and 2nd generation optical televiewers, please see the Release Note.

Applications

- Detailed and oriented structural information
- Reference for core orientation
- Fracture detection and evaluation
- Breakout analysis
- Detection of thin beds
- Determination of bedding dip
- Lithology and mineralogical characterization
- Casing inspection

New Optical Televiewer Head

Operating Conditions

Borehole Fluid
[X] Water (Clear)
[_] Mud
[X] Dry

Casing
[X] Open Hole
[X] PVC Borehole
[X] Steel

Centralization
[X] Required
[_] Not Necessary

Features & Benefits

- Unlike standard video systems, televiewers operate on any standard wireline
- Higher telviewer image resolution- up to 1800 pixels over the borehole circumference

- 40 mm OD for logging small diameter boreholes
- Can replace or support a coring survey and the associated problems of core recovery and orientation
- Digital data transmission up to 500 kbits per second
- Real time automatic telemetry tuning according to the cable length/ type
- Lifetime factory color calibration

Specifications – Metric/English

Specification	Metric	Imperial
Diameter	40 mm	1.57″
Length	1.47 m	57.9″
Weight	5.3 Kg	11.7 lbs.
Max. Temp.	70ºC	158ºF
Max. Pressure	200 bar	2900 psi

Optical Sensor: 1/3″ high sensitivity CMOS digital image sensor
Azimuthal Resolution: 120, 180, 360, 600, 900, 1800 pixels
Vertical Resolution: User definable minimum 1 mm. Function of depth encoder resolution.
Color Resolution: 24 bits RGB true colors
Responsivity: 5.48 V/lux-sec

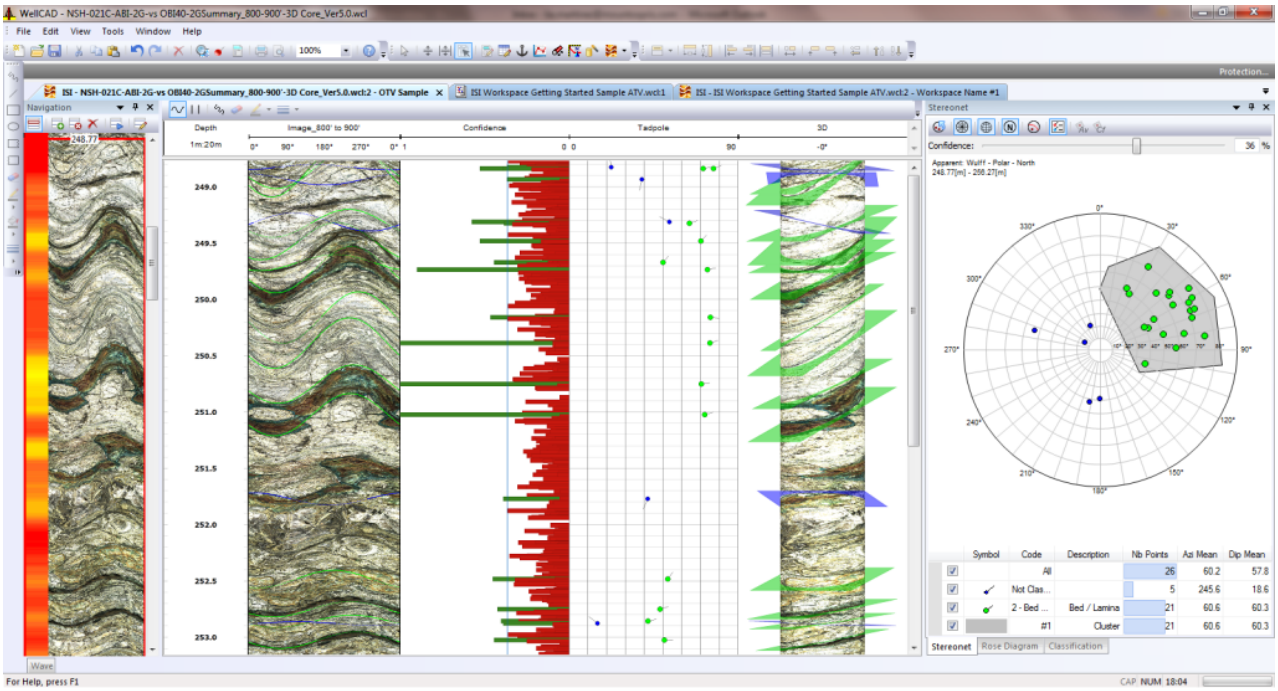
Light Source: High efficiency LEDs
Color Temperature: 5600 K
Light Intensity: 750 lm
Color Rendering Index: 80%
Power Max.: 5.60 W

Orientation Sensor: APS 544 – 3-Axis Magnetometer and Accelerometer
Inclination Accuracy: ± 0.5 º
Azimuth Accuracy: ± 1.2 º

QL Televiewer Stack Possibilities

- **QL40OBI-2G** + QL40GR (Gamma): Bed boundary identification
- **QL40OBI-2G** + QL40SGR (Spectral Gamma): Complex lithological analysis and Clay typing

WellCAD Image & Structure Interpretation (ISI) Workspace



WellCAD® Software is an advanced log processing and visualization software recommended for use with all Mount Sopris and ALT logging probes. The WellCAD Image & Structure Interpretation (ISI) Workspace, used in conjunction with the QL40-OBI-2G optical televiewer provides:

- Fully interactive structure interpretation using automatic picking algorithms: Structure logs, Polar, and Rose diagrams, Structure interval statistics
- Processing techniques: Trace interpolation, adjust brightness and contrast, extract RGB values, etc.
- 3D Log Visualization for virtual cores and breakout analysis

For more information, please refer to the WellCAD ISI Workspace news post.

Documentation

Data Sheet

Release Note for the Second Generation OBI

WellCAD Image & Structure Interpretation Workspace
Please Contact Us for the User Guide