

# HSR-20

## 2-3/4" High Speed Radial Cement Bond Logging Tool

### Description

The High Speed Radial (HSR) tool evaluates the cement bond quality and integrity to both pipe and formation by providing the measurements of the cement bond amplitude (CBL) through near receiver (3-ft crystal), and variable density log (VDL) through far receiver (5-ft Crystal). HSR tool also provide a cement map through eight segmented receivers, each segment covers 45° section of the pipe. All sonic data is captured and stored digitally within 2ms after the transmitter fires allowing flexibility of the output telemetry. This tool is easily configured to customers requirements. The separate acquisition and output module allows changes to the output telemetry to be easily accomplished.

### Applications

- Evaluation of cement bond quality and integrity.
- Location of free-pipe and cement-top.
- 360° cement map.

### Features

- Rated for High-temperature and high-pressure environments.
- Gamma ray detector, CCL detector, and temperature sensor are built in.
- Compatible with most surface systems.
- Runs on all standard wirelines.
- Combines with two standard pulse tools on the bottom
- All receivers are built in a slotted housing to provide rigidity, strength, and noise isolation.
- Rigid design ideal for horizontal logging
- Electronic design verified for 1 hour operation at 415°F to ensure reliability.
- Easy to service and maintain.

### Specifications

<b>Tool Operating Voltage</b>	<b>100 to 150 VDC</b>	<b>Tool Length</b>	<b>Under 4.0 m (13 feet)</b>
<b>Tool Operating Current</b>	<b>80 to 90 mA</b>	<b>Tool Weight</b>	<b>68.0 Kg (150 Lb)</b>
<b>Tool Time Cycle</b>	<b>3 X 50ms = 150ms</b>	<b>Tool Positioning</b>	<b>Must be centralized</b>
<b>Max. Temperature</b>	<b>204°C (400°F)</b>	<b>Max Logging Speed</b>	<b>Up to 30m/min (100 ft/min)</b>
<b>Max. Pressure</b>	<b>172.4 Mpa (25,000 PSI)</b>	<b>Borehole Fluids</b>	<b>Oil - Fresh Water - Brine</b>
<b>Receivers</b>	<b>Near &amp; Far = 2" Omni Radial = 8 Segments</b>	<b>Measurements</b>	<b>Near @ 3 ft, Far @ 5 ft Radial @ 2 ft</b>
<b>Transmitter</b>	<b>2" Dia Omni</b>	<b>Recommended Max. Casing ID</b>	<b>264 mm (10.75 in)</b>
<b>Tool Diameter - OD</b>	<b>68.8 mm(2-3/4 in)</b>	<b>Recommended Min. Casing ID</b>	<b>89 mm(3.5 in)</b>



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