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QL40-DEN Data Sheet



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The **QL40-DEN** Dynamic Probe is an advanced tool for acquiring high-resolution compensated density measurements across a variety of borehole environments.

Key Features and Functionality:

- Dual Density Data Collection: Captures raw long/short counts per second (cps) and g/cc density data, alongside caliper measurements, for precise compensated dual-density readings.
- High-Precision Detection: Utilizes a Cs137 source, which emits 662 keV gamma particles. Two shielded CsI (Th) scintillator crystals, each coupled to a photomultiplier tube, detect backscattered gamma radiation, sensitive to energy levels >200 keV.
- Electron Density Measurement: The system measures backscattered energy through Compton scattering, enabling accurate determination of electron density rather than bulk density, which is ideal for lithological studies.

Compatibility and Usage:

- Quick Link (QL) Integration: As part of the Quick Link system, the probe can be seamlessly combined with other QL inline subs or used as a standalone tool. It is optimized for 2 to 12-inch boreholes, providing flexibility for diverse applications.
- Stackable Design: Can be deployed as a bottom sub-tool, enabling streamlined operations when paired with other geophysical tools.

Applications:

- Geological and Lithological Analysis: Ideal for assessing subsurface electron densities and identifying variations in rock composition.
- Environmental Studies: Useful for mapping contaminant plumes or soil characterization.
- Mining and Exploration: Provides critical data for evaluating ore densities and deposit quality.

The **QL40-DEN** probe's precise measurement capabilities, combined with its robust integration and adaptability, make it an indispensable tool for modern geophysical investigations.

Operating Conditions

W - Water ?
M - Mud ?
D- Dry ?

S - Steel
P - PVC Borehole
UC- Uncased ?

*Tool is de-centralized

Product Dimensions

Physical	Dimensions (L x W x H)	Weight
(instrument only)	185 cm x 5.08 cm x	19.2 kg

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Technical Specifications

Maximum Temperature (°C):	85 °C
Maximum Pressure:	206 bar (3000 PSI)
Source Detectors:	20 cm (Short Spaced Source) 35 cm (Long Spaced Source)
Cable Type:	Mono, coaxial, 4 or 7 conductor
Digital Data Transmission:	500 Kbits/sec (depends on the wireline)
Caliper:	30 cm (Size), 2.54 mm (Accuracy), 0.64 mm (Resolution)
Density Range:	1 - 4 g/cc (depending on the source)
Density Source:	100-250 mCurie (Cs-137 or Co-60)
Density Accuracy and Resolution:	0.1 g/cc (100 mC Cs-137) ; 0.05 g/cc (100 mC Cs- 137)
Power:	80 VDC (Min), 160VDC (Max) 120VDC (nominal) 25mA (nominal current)

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