

CTE MODEL 2000 UCA ULTRASONIC CEMENT ANALYZER



M2000 UCA

The M2000 UCA (Ultrasonic Cement Analyzer) is used to provide an indication of the relative strength development of a slurry sample while it being cured under downhole temperature and pressure conditions. The instrument is designed to perform testing in accordance with API Recommended Practice 10B-2/ISO 10426-2. The M2000 UCA is able to test cement slurries at temperatures up to 500°F/260°C and pressures as high as 20,000 psig/138 MPa.

STANDARD EQUIPMENT

- State-of-the-Art, user friendly Cementlab® software package with Windows® XP operating system and 180gb SSD.
- Digital, graphical on-screen pressure indication.
- Automatic set-point pressure control regulator up to 10,000 psig (69 MPa). Manual control thereafter.
- Fully programmable temperature control and digital, graphical on-screen temperature indication.
- 5 micron water inlet and high pressure filters protect critical components and prevent premature failures.
- Spares and accessories include tools, fuses, slurry cup parts, utility connection hardware, main power cord and printer.
- Customizable graphs and multi-variation data export.
- Programmable and audible alarms for compressive strength and time.
- Text test files can be transferred to any existing user data base or spread sheet.
- Permanent on-board record of test files.
- Manual high pressure release and regulator by-pass valves.

OPERATION

Relative strength is determined by measuring the change in velocity of an ultrasonic signal transmitted through the cement slurry specimen as it cures. As the strength of the cement specimen increases, the transit time of the ultrasonic signal through the specimen decreases, allowing the relative strength to be calculated. The slurry sample to be tested is prepared in accordance with API recommended practices and placed in the pressure cell. Pumped water pressure is applied with an air regulator and set point pressure control is achieved automatically with a high pressure regulator. Step by step programming instructions are displayed on the 12" touch screen. Temperature control is fully automatic and multi-ramp programmable.

Safety features include:

- Rupture disc protects system over-pressure.
- Fused circuitry.
- Automated error reporting.
- Thermocouple detection protects against heater run-away.
- Over-current sensing relay monitors and protects against short circuits..

OPTIONAL EQUIPMENT AND SERVICES

- Automatic, programmable pressure control.
- 1 year spares kit for normal operation.
- Instrument training and commissioning.
- Scheduled calibrations.
- Re-circulating chiller for improved post-test cooling times.)



CEMENT TEST EQUIPMENT, INC.

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WARRANTY

All CTE products are covered by a full one-year warranty against defect in materials and workmanship. A sales terms, conditions, and warranty statement is located on our website www.ctetulsa.com/support.



BENEFITS

- Non-destructive method determining relative compressive strength and WOC time.
- Step by step instructions for programming options displayed on touch screen minimizing or eliminating need for time consuming training and increases operator confidence.
- High speed processor performs timely calculations and increases display resolution for better functionality.
- Bench-top cabinet designed with easy access side panels to electronics and plumbing for easy maintenance and servicing.
- Rugged and compact electronics withstands lab environment and improves space saving.
- Industry proven, proprietary algorithms.
- No other PC is required to operate the instrument.

FEATURES

- Digital, real-time display of current strength, transit time, pressure and temperature measurements.
- USB flash drive for data export.
- High quality pressure relief valve and high pressure pump.
- Automatic shutdown based on compressive strength or time.
- Integral cooling jacket permits the circulation of a cooling fluid to cool the pressure vessel quickly..
- Adjustable automatic cooling upon test finish.
- Instrument can be joined into local networks for remote test viewing.
- Externally mounted computer control box allows simple access to ports, repair, or future upgrades.
- Simple calibration routines enable users to quickly calibrate the instrument.
- Graphical customization allows the user to change labels, colors, visibility, and scaling.
- Further customization of the testing units and sampling rate..

ENVIRONMENTAL & UTILITY CONNECTIONS

ELECTRICAL	ENVIRONMENTAL	SERVICE CONNECTIONS
Input Voltage 230 VAC (±10%)	Operating Temperature 32 - 105 °F (0 - 40 °C)	Compressed Air 50-100psi (Intermittent flow) (700kPa)
Input Power 2500W	Operating Humidity 0 - 95% non-condensing	Cooling Fluid 5-80psi (600kPa) Nominal flow 2L/min
Current 11 A		
Input Frequency 50 -60 Hz		
MECHANICAL	HEATER	
Height 15 in. (38 cm)	Heater Power 2000 W	
Width 26 in. (67 cm)	Input Power Cast Heater w/ Cooling Coils	
Depth 15 in. (38 cm)		
Weight 150 lbs. (68 kg)		