Ultrasonic Pulse Velocity Tester

LT-C0185 / LT-C0186 | Pundit Lab Plus and Pundit Lab

Transit time • Waveform review • Pundit Link data management



54 kHz

STANDARD TRANSDUCER FREQUENCY

2 models

PUNDIT LAB PLUS / PUNDIT LAB

EN 12504-4 • ASTM C597 • Ultrasonic pulse velocity (UPV)

Photographs and Components

Display unit, transducers, connections and carrying set

The Pundit Lab range measures ultrasonic pulse transit time through concrete. Pulse velocity is calculated using the known path length. Measurements support comparison of homogeneity and relative quality between test locations.

DISPLAY UNIT

Transit time and measurement information are viewed on the unit. Assess the signal with the selected test arrangement.

TRANSDUCER CONTACT

Couple the transmitting and receiving faces to concrete using a suitable agent. Maintain contact during measurement.



CONNECTION CABLES

Connect the transducers to the appropriate terminals. Check cables and connectors before use.

CARRYING CASE

The case supports transport and organised storage of the instrument and measuring accessories.



Display unit and transducer connections

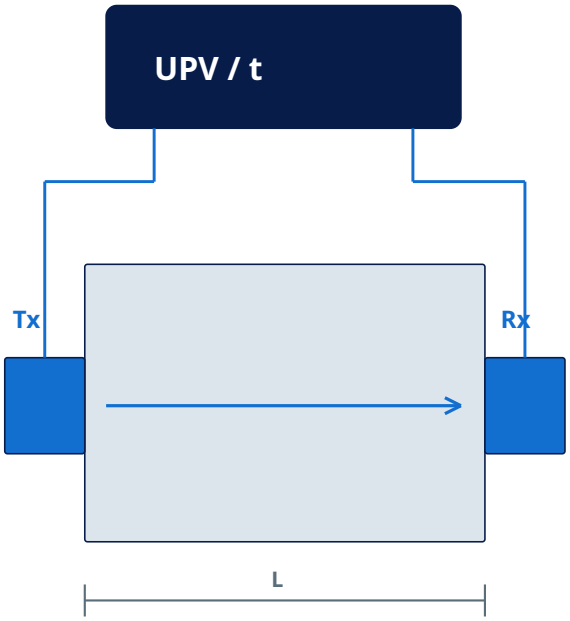


Pundit Lab instrument and measuring set

Ultrasonic Pulse Velocity Principle

Prepare contact • Determine path length • Measure transit time • Assess velocity

DIRECT TRANSMISSION • SCHEMATIC SETUP



V = L / t

L: PATH LENGTH • t: TRANSIT TIME

SCHEMATIC VIEW • NOT TO SCALE

Contact and Path Length

Prepare the surfaces and apply coupling agent. Determine the measurement path between transducers.

Measure Transit Time

The transmitter sends a pulse and the receiver collects it. Review the waveform and pulse arrival point.

Record Velocity

Calculate velocity using path length and time. Record it with point identification, setup and conditions.

In direct transmission, transducers are positioned on opposite concrete faces. Pulse velocity is calculated from transit time and path length. UPV alone is not a compressive strength result; strength estimation requires a correlation suitable for the concrete being assessed.

Pundit Lab Plus Evaluation

LT-C0185 Pundit Lab Plus provides an additional gain stage and advanced evaluation functions. Velocity-strength relationships can be developed using suitable reference data.

SONREB evaluation combines ultrasonic velocity with rebound hammer data. Establish the correlation for the concrete and project conditions; assess results with the available test evidence.

Set Contents and Data Records

The standard set includes the display unit, two 54 kHz transducers, BNC cables, coupling agent, calibration bar, USB cable, batteries, software and carrying case.

Complete the reference check before measurement. Use Pundit Link to record and export data. Store path length, point identification and surface conditions with the results.

Models and Technical Specifications

LT-C0185 / LT-C0186 • Models, measurement and set features

Product Code	Model	Dimensions (cm)	Weight (kg)
LT-C0185	Pundit Lab Plus	17.5 × 5.5 × 22	1.5
LT-C0186	Pundit Lab	17.5 × 5.5 × 22	1.5

Measurement / System Feature	Value / Description
Test Method	Ultrasonic pulse velocity (UPV)
Measured Parameter	Ultrasonic pulse transit time
Calculated Parameter	Pulse velocity: V = L / t
Standard Transducers	2 × 54 kHz
Signal Evaluation	Waveform review / manual triggering
Computer Connection	USB / Pundit Link software
Concrete Test References	EN 12504-4; ASTM C597; ISO 1920-7
Additional Method Reference	BS 1881 Part 203

Contact, Path Length and Interpretation

Check coupling quality and path length. Compare locations under similar conditions; assess velocity changes together with surface condition, moisture and concrete structure.

Ultrasonic Measurement Workflow

01
Check
Complete reference and connection checks.

02
Prepare Contact
Prepare surfaces and determine the path.

03
Measure and Review
Assess transit time and the received signal.

04
Record
Store pulse velocity with location and conditions.

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