

PILOT Automatic compression-flexural cement testers

The new automatic testers which combine high productivity with Energy Saving

ASTM C109 | ASTM C349 | ASTM C348 | EN 196-1

MAIN FEATURES

- **Automatic test cycle.** Correct test execution according to selected Standards, is continuously and automatically controlled. See additional information.
- **Dual user interface display and PC**
- **Accuracy Class 1 (EN) and Class A (ASTM) starting from 10% of full scale.** Special calibration starting from 3kN for 300kN chamber and from 0.5kN for 15kN available on request. See upgrading options.
- **Compatible with the new, intuitive and smart DATA MANAGER Software.** Very easy to use, complete with many functions, totally flexible, open to network communications
- **Adopt the latest ES Energy Saving technologies.** For reduction of power consumption and silent operation
- **Double stage hydraulic pump with rapid approach and precise oil flow control.** Allowing high throughput of accurate tests (up to 40 per hour)
- **Soft platen-to-specimen contact and smooth load rate control from the very beginning of the ramp**
- **Optional control of a second frame** for 65-L18xxx series single chambers testers. Active frame selection via manual lever
- **Optional internal graphic printer including Load-Time plot**
- **Connect to laboratory network via LAN port/software**
- **Allow remote verification of settings and performances.** For easy debugging of unexpected malfunctions
- **Universal compression testers**, in practice, suitable to house various accessories for testing cement, mortar, resins and other materials for load values from 0.75 to 300 kN.
- **Recording facility of up to 10 test profiles for each channel allowing quick and easy test start**

GENERAL DESCRIPTION

Frames

These machines, featuring a very rigid four columns frame, have been designed for the testing of the cement prism either in compression or in flexure.

Three versions are available:

65-L27C0x, L27C1x

models, double testing chamber, 15/300 kN cap., inbuilt flexural jig for 40x40x160 cement prisms and compression apparatus for portions of 40x40x160 mm prisms broken in flexure.

Conforming to EN 196-1, 1015-11.

65-L28C0x, L28C1x

models, double testing chamber, 15/300 kN cap., fitted with round platens for testing in compression and flexion cement, mortar, resins and other materials.

Conforming to EN 196-1, 1015-11, ASTM C109, C348, C349 using the suitable accessories.

65-L18C0x, L18C1x

models, 300 kN cap., fitted with round platens for testing cement, mortar, resins and other materials and other materials. Conforming to EN 196-1, 1015-11, ASTM C109, C349 using the suitable accessories.

All models can be fitted with pressure transducer/s for load measurement (65-L27C0x, 65-L28C0x, 65-L18C0x) or with high accuracy load cell/s (65-L27C1x, 65-L28C1x, 65-L18C1x).

Models fitted with compression platens 165 mm dia. (L28Cxx,L18Cxx) have a vertical span of 200 mm hence can house all standard accessories for cement and mortar testing (see accessories) and furthermore can be used to test other specimens directly on the standard compression platens adjusting, if necessary, the vertical daylight, with the suitable distance pieces (see accessories). Compression platens can be supplied complete with Platen surface hardness certificate. See upgrading options.

Pilot, Automatic power and control system

Dual stage pump, centrifugal for fast approach and multi-piston for loading, DC motor, ES Energy Saving technology to reduce the power consumption and ensure silent operation. For detailed information see Additional information.

Hardware

132,000 points effective resolution, three channels, touch screen graphic display 240x128 pixel, sampling rate 50/sec, large storing capacity on USB pen drive, test data downloadable to PC, Ethernet port, real time management software (optional, see accessories 82-SW/DM DATAMANAGER)

Firmware

Simultaneous display of load-specific load, actual load rate and load/time graph; LAN connection to PC; advanced memory management; multi coefficient calibration.

Recording facility of up to 10 test profiles for each channel including type of test (e.g. compression, flexural, indirect tensile), specimen size and shape, load rate, standard in use and other general information. Each one of the recorded test profile can be recalled automatically to save time

Safety features

Includes: Max. pressure valve to avoid machine overloading; piston travel limit switch; emergency stop button; front door and rear transparent fragment guard on request, see Upgrading Options.

TECHNICAL SPECIFICATIONS

Models 65-	L18C02 L18C04	L18C12 L18C14	L27C02 L27C04	L27C12 L27C14	L28C02 L28C04	L28C12 L28C14
Max. Load kN	300	300	15/300	15/300	15/300	15/300
Load measurement by	Press. Transd.	Load cell	Press. transd.	Load cells	Press. transd.	Load cells
Ram travel mm	50	50	30/50	30/50	30/50	30/50
Vert. span mm	200	200	50/50	50/50	200/200	200/200
Horiz. span mm	220	220	220	220	220	220
Platen dim. mm	Dia. 165	Dia. 165	40x40	40x40	Dia. 165	Dia. 165
Flexural jig 40x40x160 mm	-	-	included	included	-	-
Overall dim. mm l x g x h	801x823 900	801x323 x964	875x333 x867	875x333 x964	844x323 x867	844x323x964
Weight approx kg						
Class 1 measuring Range from kN:	30 to 300	30 to 300	1.5 to 15 30 to 300	1.15 to 15 30 to 300	30 to 300 1.5 to 15	1.5 to 15 30 to 300
Class 1 measuring range from kN:*		3 to 300		0.75 to 15 3 to 300	30 to 300	0.75 to 15 3 to 300

*With the special calibration procedure, code 50-C0050/CAL for the 300 kN load scale and with the special procedure 50-C0050/CAL5 for the 15 kN load scale. To be specified at time of order. Suitable only for models fitted with load cells.

ORDERING INFO

300kN compression testers

65-L18C02

300 kN cap., automatic compression tester for cement, mortar, resins and other materials using the suitable accessory. Load

measurement by pressure transducer. PILOT control system. Round compression platens 165 mm dia. 230 V, 50-60 Hz. 1 ph.

65-L18C04

Same as above but 110 V, 60 Hz, 1 ph

65-L18C12

300 kN cap., automatic compression tester for cement, mortar, resins and other materials using the suitable accessory. Load measurement by precision load cell. PILOT control system. Round compression platens 165 mm dia. 230 V, 50-60 Hz. 1 ph.

65-L18C14

Same as above but 110 V, 60 Hz, 1 ph

300kN/15kN compression testers

65-L27C02

Double chamber automatic flexural-compression tester, 15/300 kN cap., inbuilt flexural jig for 40x40x160 mm prisms and compression apparatus for portions of 40x40x160 mm prisms broken in flexure to EN 196-1. Load measurement by pressure transducers. PILOT control system. 230 V, 50-60 Hz, 1 ph.

65-L27C04

Same as above but 110 V, 60 Hz, 1 ph

65-L27C12

Double chamber automatic flexural-compression tester, 15/300 kN cap., inbuilt flexural jig for 40x40x160 mm prisms and compression apparatus for portions of 40x40x160 mm prisms broken in flexure to EN 196-1. Load measurement by precision load cells. PILOT control system. 230 V, 50-60 Hz, 1 ph.

65-L27C14

Same as above but 110 V, 60 Hz, 1 ph

65-L28C02

Double chamber automatic compression tester, 15/300 kN cap., for cement, mortar, resins and other materials using the suitable accessory. Load measurement by pressure transducers. PILOT control system. Round compression platens 165 mm dia. 230 V, 50-60 Hz, 1 ph.

65-L28C04

Same as above but 110 V, 60 Hz, 1 ph

65-L28C12

Double chamber automatic compression tester, 15/300 kN cap., for cement, mortar, resins and other materials using the suitable accessory. Load measurement by precision load cells. PILOT control system. Round compression platens 165 mm dia. 230 V, 50-60 Hz, 1 ph.

65-L28C14

Same as above but 110 V, 60 Hz, 1 ph

ACCESSORIES

Compression devices for cement and mortars

Flexural test devices for mortar beams

Distance pieces to adjust the vertical daylight

Data manager PC software

ADDITIONAL INFORMATION

The PILOT compression testers represent the more sophisticated and advanced evolution of the usual compression testers.

This new and advanced system satisfies, first of all, the requirements for the automatic accurate and constant load rate application conforming to standards. The test cycle with closed loop digital feedback is automatically performed by simply pressing the start button. The other important innovation concerns the "ES technology" which features the accurate oil flow control with no oil dispersion, silent operation, cold oil temperature and, finally, **low energy consumption** saving over the 30% energy compared to traditional systems.

The automatic test procedure, once the specimen has been positioned and centered and the machine switched on is:

- o Set test parameters, including load rate, on the touch screen (can be avoided by default for repetitive tests)
- o Press the start button on the touch screen
- o Move the oil delivery valve upwards
- o The machine automatically starts the rapid platen approach, switches to the test speed once the specimen comes into contact with the upper platen and, finally, releases the pressure upon specimen failure

- o Save the test including data results and load/time graph. The test execution conforming to standards can be easily proved.
- o Move the oil delivery valve downwards.

UPGRADING

Second frame facility

50-C10C/2F

Upgrading the Pilot System for a second frame connection and control (except 4000kN and 5000kN models). Frame selection via manual lever (only for single chamber compression testers model 65-L18xxx)

Graphic printer (To be factory installed)

50-C10B/PR

Upgrading the DIGIMAX, PILOT and AUTOMAX to incorporate a serial graphic printer in the front panel allowing also load/time plot at the end of test.

Specifications:

- Very silent printing
- High speed: 50 mm/sec
- High resolution: 203 dpi=8 dots/mm
- Support test and graphic printing
- Easier maintenance with self-diagnostic
- Paper width: 57.5 mm

Safety fragment guard

65-L2700/P

Transparent rigid fragment guard for 65-L27xxx compression testers and frames fitted with pressure transducers

65-L2701/P

Transparent rigid fragment guard for 65-L27xxx compression testers and frames fitted with load cells

65-L1800/P

Transparent rigid fragment guard for 65-L18xxx compression testers and frames

65-L2800/P

Transparent rigid fragment guard for 65-L28xxx compression testers and frames

Fragment guard locking switch.

50-L0050/P To prevent the test execution with the safety guard open. It has to be factory installed directly on the transparent fragment guard.

Platens surface hardness certificate

50-L0050/HRD

Traceable hardness certificate for platens 165 mm dia. Min. hardness 55,5 HRC.
Available only for ordering with the machine

50-C0050/HRD5

Traceable hardness certificate for platens 40x40 mm. Min. hardness 60 HRC.
Available only for ordering with the machine

Special calibration procedures

50-C0050/CAL

Special calibration procedure to obtain class 1 from 1% of the 300kN scale

50-C0050/CAL5

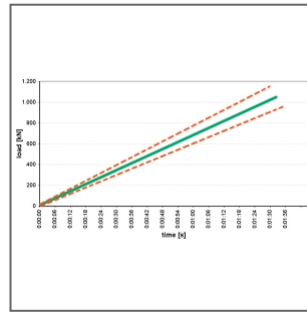
Special calibration procedure to obtain class 1 from 5% of the 15kN scale



Double chamber 300/15 kN Pilot compression machine 65-L27C12 with incorporated compression and flexural jigs



Double chamber 300/15 kN Pilot compression machine 65-L28C12 complete with flexural device model 65-L0019/B



Load rate between the limits (dash lines) specified by Standards



Array