

Package V24-KM

Applications

Used by flooring inspectors, contractors and water restoration specialists, anyone who needs to test **moisture in concrete slabs** and measure wood floors, drywall, roofing materials and structural elements in the building envelope. With the two electrodes you can always choose the right tool for measuring hard-to-reach areas below the surface. With this package floor installers and inspectors use the Ligno-VersaTec with depth electrode to measure subfloors without removing floor planks. Slim Electrode is included for inspection, construction, restoration and building maintenance, as well as to reach problem areas inaccessible with depth electrode or meter pinless mode.

Advantages

The Ligno-VersaTec is Lignomat's most advanced with over 170 individualized wood species settings. The meter also has reference scales built-in for compare and search mode. It measures moisture in a wide range of materials and in relative humidity of air (with RH BluePeg probe). System also complies to ASTM F2170 for in-situ RH concrete testing. Adding the Electrode E12 allows accurate measurements up to 2" deep in wood with insulated pins. Adding the Electrode E14-V allows measurements in drywall, wall boards and otherwise unreachable problem areas.

Description

V4-KS package offers four measuring technologies to detect high moisture levels within the building envelope, including the concrete slab in preparation for installing resilient floors.

- **Pinless mode:** materials can be checked fast and easy, scanning along the surface.
- **Pin measurements:** The E12 electrode is used for in-depth measurements
- **In-situ probe testing:** Included are standard accessories for in-situ moisture testing of concrete slabs.
- **Thermo-hygrometer:** With RH BluePeg probe and RH adapter, the VersaTec can be used as a precision, fast-acting thermo-hygrometer....

The **pinless mode** in the Ligno-VersaTec is set to measure 1/4" and 3/4" deep, using separate sets of calibrations for each measuring depth. Pinless mode in the VersaTec allows fast and easy measurements of flat materials up to 3/4" deep. If the material is not flat, or measurements should reach deeper and differences between surface and core moisture have to be measured, the Electrode E12 should be used to accomplish those tasks.

In-situ probe testing of concrete

The V2-KM package contains accessories needed for RH testing:

- 1 RH Bluepeg probe (option 5 or 10 RH probes)
- 10 sleeves with caps
- 1 RH-CC cable and 1 brush (drill bit is not included)
- 1 RH Adapter connector VersaTec to RH BluePeg to use as thermo-hygrometer

Design of equipment and test procedure are governed by the ASTM standard F2170. Lignomat's RH BluePeg system complies with the latest F2170 standard.

After drilling, cleaning and setting the sleeve, the RH BluePeg probe easily drops into the sleeve. The cap fits perfectly and is as flat as can be. The cable connection is provided by a simple, fail-proof 3.5mm stereo plug. No pin alignment of the cable needs to be fitted and no set-up of the meter is necessary. The meter switches into RH mode as soon as an RH cable is connected. Plug in and read, that's what our customers like.

The display shows the measured value and the RH Probe number. The RH probe number is an individual number 1-999 to allow keeping track of probe location during testing, range.

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Multi-function meter with E12, E14-V

- **pinless and pin measurements**
- **in-situ concrete testing**
- **Thermo-Hygrometer**



Pinless mode: fast and easy moisture checking of floors, walls and ceilings 1/4" and 3/4" deep. Domestic and tropical woods, floors, bamboo, engineered products, drywall, even concrete.



Lignomat's RH BluePeg system for in-situ RH concrete moisture testing, conforms to ASTM F2170 with reusable probes.

Electrode E12: The E12 is designed to measure from the surface to 2" deep (with DB pins). All E12 pins are insulated and measure only at the tip. The slide hammer helps inserting and removing the pins. As pins are hammered into the material, consecutive readings show the moisture distribution within the material at every depth level the pins are driven to. The ability to measure a moisture gradient is one of the main reasons for our customers to use the electrode E12, even though the Ligno-VersaTec by itself can take moisture measurements at two depth levels 1/4" and 3/4" deep in pinless mode.

Wood: Taking numerous readings as pins are inserted, indicate if a moisture gradient exists or if the wood is dry throughout the core. Making sure wood is evenly dried is the best assurance for quality wood products. The thicker the wood, the more important core readings become. When inspecting wood floors, using the E12 gives you a tool to assess moisture distribution through floor planks into the sub floor without having to remove any floor planks. No other tool can achieve the same measuring accuracy at a defined depth.

Restoration: The moisture in structural components even behind wall coverings can be checked with the electrode E12. When assessing water damage, the pins of the E12 can be driven to different depth levels and thus indicate how far water has been absorbed or if there is still residual moisture inside the structure after drying. Insulated pins can measure dry material behind wet surfaces.

With the E14-V and the E12 electrodes, you will always find the right tool for the job on hand. Pins are available for a measuring depth between 3/8" and 7".

Inspector Electrode E14-V with teflon-coated pins EG: The slim shape allows for checking around pipes, below window sills, in wall corners, places where round electrodes or built-in pins from moisture meters cannot reach. With the E14 you can truly track moisture where it hides. Adding the 7" long EL pins lets you reach through insulation or under baseboards into structural components. Great for EIFS inspections. For depth measurements in wood, wood floors or structural lumber up to 2" deep, we recommend adding the slide-hammer electrode E12 see also package V24-KM

The knob at the end of the handle can be removed and replaced by a paint brush handle or broom stick. You can stay a distance from mold infested areas and still be able to get reliable measurements. Extending the handle with a broom stick makes measuring carpets and carpet padding easy without crouching down. Ceilings can be checked for moisture leakage without a ladder.

Pins measure only at the tip. EG and EL pins are teflon coated up to the electrode handle. Moisture from a wet surface is never picked up, even if the pins are pushed all the way into the material.

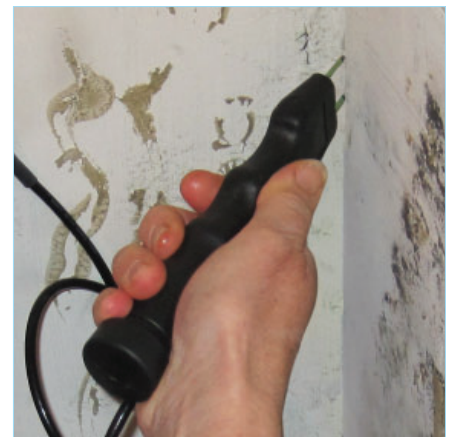
In addition, the electrode and pins are built tough, which allows the user to hammer pins into wood and other hard materials, without damage to the probe or the pins. (Strand bamboo, hard hardwood and even cementitious materials)
Pinless Search and Compare Mode can track moisture in walls, ceilings and floors. Lumber mills use the meter to make sure QC requirements are followed.

RH mode / Thermo-Hygrometer: To activate the RH thermo-hygrometer mode, plug the RH Adapter with the RH BluePeg probe into the stereo connector at the top of the meter. Instead of using the Adapter RH, the 6 ft RH-CC cable included in the package can be used for remote measurements (any stereo cable could be used).

As soon as the connection is established, the Ligno-VersaTec is in RH mode. When the READ button is depressed, the meter immediately indicates the RH value. The up or down keys allow recalling the values for ambient T, Dew Point T and Grains Per Pound.



Slide-hammer to pin-point moisture distribution from surface to core, from floor to sub floor. For quality control, for restoration jobs, when installing, inspecting floors.



Inspector electrode E14-V measures in places where other electrodes cannot reach, with EL pins up to 7" deep.



RH mode - Thermo-Hygrometer: RH Adapter is used to connect RH BluePeg probe to meter.

Meter Specifications

Size: 4.75"L X 2.5"W X 1"H

Measuring Range:

- Wood: 5-99% (pin)
- Gypsum, Sheetrock, Wall Boards: 0-7%
- Reference Scale: 0-99

Display: Resolution: 0.1% for all values

Species Corrections: Over 170 settings to correct for:

- domestic and tropical wood species
 - bamboos, vertical, horizontal and strand
 - OSB and wood-based panel products
 - gypsum, drywall, wall boards interior, exterior, and water resistant (%)
- 3 Reference scales for building materials including concrete

Operation: Working with the Ligno-VersaTec is simple with clearly marked push buttons.

Meter fits comfortable in your hand for pin and pinless readings.

Functions: Pin and Pinless:

Push SET repeatedly to dial settings for species, wood temperature and measuring depth.

Change settings with up and down keys.

Push READ to obtain moisture measurements.

Instrument stays on for 3 minutes, then turns itself off.

At any time you can change from pin mode to scan mode by depressing up or down button

When the RH BluePeg is connected, the meter automatically switches to RH mode. No further set-up is necessary.

HOLD function is available for measuring in places, where the display cannot be seen or when taking photos of the display.

Display shows moisture percentage, wood species, wood temperature (only pin) and depth settings (only pinless)

RH Mode: As soon as the RH BluePeg probe is connected to the Ligno-VersaTec with RH cables or RH adapter, the meter is in RH mode and indicates relative humidity, temperature, DPT, GPP.



Ligno-VersaTec comes with a BNC connector for pin electrodes, a 35mm Stereo plug for RH measurements and 2 measuring plates on the back for pinless scan mode.



The electrode E12 has a slide hammer to insert and extract pins easily.
For measurements up to 2" deep.

Electrode E12 Specifications

Weight 3.5 lbs. Length without pins 12".

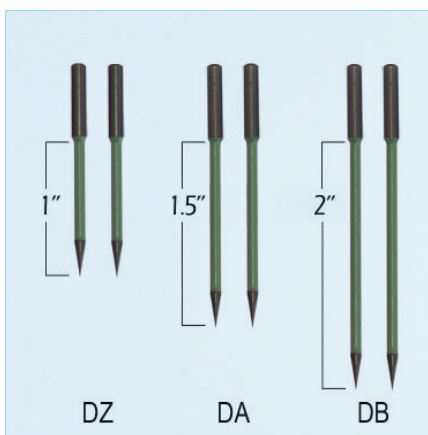
A cable connector (BNC) is mounted at the head of the electrode.

A BNC cable (3ft) to connect electrode E12 to Ligno-VersaTec is included in the V2-11M

E12 pins are teflon coated to only measure at the tip and come in three options:

- DZ Pins insulated, measuring depth 1"
- DA Pins insulated, measuring depth 1.5"
- DB Pins insulated, measuring depth 2"

1 pair DZ pins and 1 pair DA pins are included in the package
DB Pins not included.



Pins for E12: DZ, DA, pins can only be used with the Electrode E12.
Insulated pins measure only at the tip.



Teflon coated pins measure only at the tip.
The E12 electrode is one tool to measure moisture at a defined depth.

Electrode E14-V Specifications

Weight 5 oz. Length without pins 7".
Electrode E14-V comes with a 3 ft BNC cable
to connect the Ligno-VersaTec moisture meter.

Electrode E14-V can be connected to
- **Ligno-VersaTec** and Lignometer K

E14-V pins come teflon coated or uncoated
depending on the measuring depth. Teflon
coated pins only measure at the tip.

- EG Pins insulated, measuring depth 3/4"
- EL Pins insulated, measuring depth 7" not
included in package V4-KM included.



Adding EL Pins allows reaching 7" deep.



Inspector Electrode E14-V is designed to reach
where moisture hides.
E14-V is tough enough to hammer pins into hard
materials.

The **RH BluePeg probe** uses a single micro-chip humidity and temperature sensor, factory calibrated to NIST standards. A NIST certificate can be found on this web page in the Document tab. During the first year we offer to check the accuracy of the probe calibration three times at no extra cost. This is helpful for our customers, who use the RH probes for in-situ concrete testing, because ASTM regulations require a calibration check when the probes are being **re-used**.

Specifications:

Relative Humidity	0% to 99%: Resolution for entire range is 0.1% $\pm 2\%$ for 10 to 90%, $\pm 3\%$ for 0 to 10% $\pm 3\%$ for 90 to 99.9%
Ambient Temperature	5°F to 160°F: Resolution for entire range is 0.1°F (0.1°C) 32°F to 120°F, $\pm 0.5^\circ\text{F}$ (0°C to 50°C, $\pm 0.3^\circ\text{C}$) 5°F to 32°F, $\pm 1^\circ\text{F}$ (-15°C to 0°C, $\pm 0.5^\circ\text{C}$) 120°F to 160°F, $\pm 1^\circ\text{F}$ (50°C to 70°C, $\pm 0.5^\circ\text{C}$)
DPT	- 17.8°F to 160°F (Dew Point Temperature)
GPP	0-99.9 (Grains per Pound)

Size \varnothing 0.5 inches (1.27cm), length 1.35 inches (3.8cm)
Multiple slots for air circulation around RH sensing element
Connection Easy-to-connect 3.5 mm stereo connectors.

RH probe comes with 3.5mm stereo jack.
RH adapter and RH cables come with 3.5 mm stereo plugs
on both ends to connect RH BluePeg probe to meters or data loggers.

Calibration Calibration Salts for 33 and 75% RH available. During the first year Lignomat checks the calibration three times at no charge.

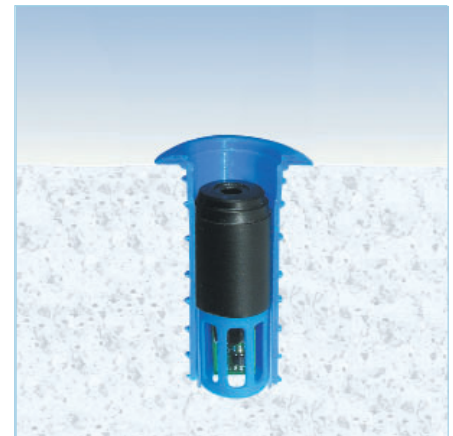
All Lignomat meters come with a 2 year warranty. Accessories have one year warranty.
Battery and pins are excluded.

Package Includes

1 Ligno-VersaTec meter with 9V battery, laminated wood group card, instruction manual,
built in connector for assortment of external electrodes and in-kiln probes (Adapter H)
1 Slide-hammer electrode E12, 1 pair pins DZ 1" and 1 pair pins DA 1.5", teflon-coated
1 BNC cable for E12
1 E14-V electrode with EG pins and 3 ft BNC cable
1 Case M

- RH Accessories

1 or 5 or 10 RH BluePeg probes (Choose an option)
10 Sleeves with caps standard 1.8"
1 RH adapter, direct plug-in for Ligno-VersaTec and RH probe
1 RH concrete cable with seal plug to measure RH, while the RH probe is in the sleeve
1 Brush to clean the hole after drilling



After drilling, cleaning and setting the sleeve,
the RH BluePeg probe easily drops into the
sleeve. The cap fits perfectly and is as flat as
can be. The cable connection is provided by
a simple,



RH accessories include:
- BluePeg Probe
- RH Cable, Adapter
- RH Sleeves fail-proof 3.5mm stereo plug.

Accessories Concrete Moisture Testing **with in-situ probes** compliant with ASTM F2170F



1. RH BluePeg probes



2. RH Sleeves 1.8" and 3"



3. Depth Adapter over 2.4"



4. Top Extender for short sleeves



5. RH-CC cable for in-situ test

1. RH BluePeg Probe (#RH-B):

The RH BluePeg probe measures relative humidity and ambient temperature. Readings are obtained at the Ligno-VersaTec, Ligno-DuoTec BW, LignoTec RH or Data logger BL2:

- for measuring ambient conditions
- for obtaining measurements from in-situ probes for concrete moisture testing.

Packaged as single, 3, 5, 10, 20 units.

Red caps are supplied with the multiple packs to mark sleeves, which contain an RH Probe,

When using the RH probes for in-situ testing, the ASTM standard requires testing the accuracy of the probes before reusing them. For on-site and in-office checking we offer salt solutions. We also offer to test the probes free of charge during the first year.

2. RH Sleeves with Caps (#RH-S):

Sleeves are the liners for the test holes, drilled with a 5/8" drill bit. The cap seals the opening. Sleeves can be cut to the required depth. See ASTM F2170 standard for depth requirements.

Sleeves 1.8" available in packs of 20, 50, 100.

Sleeves 3" available in packs of 10, 50, 100.

Use Depth Adapter (3) for long sleeves and Top Extender (\$) for shortened sleeves.

3. RH Depth-Adapter (#RH-DA):

For sleeves over 2.4" deep we recommend to use Depth-Adapter to make it easier to connect the cable when the probe is inside the sleeve. Available as 1 unit and pack 5 units.

4. RH Top-Extender (#RH-EX):

The RH BluePeg probe sticks out over the surface of the concrete, when the sleeve is less than 1.6" long. The top-extendors cover the probe during the test and allow using the CC cable the same way as in the sleeve.

5. RH Cable for in-situ Concrete Test (#RH-CC):

The RH-CC cable is a standard 3.5mm stereo cable 6ft long. One end is equipped with a sleeve-seat-plug. The plug is used to keep the probe in place while taking measurements and to un-plug the cable without having to take the probe out of the sleeve, which would disturb the acclimation.

6. RH Salt-solution for 75% Accuracy Check: (#RH-T75)

The salt bottle (75%) is used to check the accuracy of RH probes before reusing, see ASTM standard F2170. Bottle has fittings for RH BluePeg probes and includes RH-CB cable.

7. Brush (#RH-BR): Cleaning brush with round tip to brush off loose particles after drilling.

8. Vacuum Attachment (#RH-V): Removes dust and loose particles after drilling.

9: RH Adapter (#RH-A): Short connection between probe and meter. The RH adapter is mainly used instead of the cable, when measuring relative humidity and ambient temperature.



6. Salt Solution 75% Test



7. Brush



8. Vacuum Attachment



9. RH Adapter thermo-hygrometer

Advantages of Lignomat's in-situ RH Probe, RH BluePeg System Accomplies with ASTM F2170F



We have designed a user-friendly, reliable system which complies with the ASTM standard F2170. The RH BluePeg probes use a single microchip, factory calibrated to NIST standards. The RH BluePeg Probes comply with the latest ASTM standard for F2170.

The RH BluePeg probes are retrievable and reusable.

For checking calibration accuracy, the ASTM standard has to be followed. For on-site and in-your office testing we offer a salt-solution bottle to check for 75%, a test allowed by the ASTM standard to check in-situ RH probe accuracy before re-using the probes. During the first year, Lignomat offers to check the probe calibration three times at no charge.

Note: The Lignomats system allows easy tracking of RH probes. Each probe shows its own 3-digit number every time the display is activated for readings.



Better sealing, easier-to-place sleeves, adaptable to any length up to 3":

Lignomat's sleeves have feathered fins along the entire length, which provide an excellent seal. The lip of the sleeve covers the area around the concrete hole and provides an effective barrier for any air escaping, because the lip is part of the sleeve. At the bottom of the sleeve is a movable cylinder, which places the RH Probe every time as required by ASTM F 2170, even if the hole is slightly too deep. Standard sleeves require no cutting.

Longer sleeves are available 3". The sleeves can be cut to any depth required.

- If the sleeves are over 2.4" long, we recommend the RH depth-adapter for easier cable connections. (#RH-DA)
- Shorter sleeves may need the top-extender. The top-extender covers the rh probe and plugs into the sleeve to seal during the 24-hour waiting period. (#RH-EX)



Better sealing, flatter caps:

Lignomat's caps come with an O-ring to absolutely seal the sleeves. The caps are flat and do not interfere with any traffic around the test area.



Fast connection:

A fail-proof, easy-connect 3.5mm stereo plug is used to connect RH probes with the RH meters. No twisting, turning or setting-up an instrument for readings. No pin arrangements need to be fitted. We use a standard 3.5mm stereo cable. The cable comes with a seal-plug, which is pressed into the top of the sleeve and keeps the cable in place during the time moisture readings are obtained. After the readings the cable is un-plugged and removed. Cable can be unplugged without taking the BluePeg probe out of the sleeve for further testing. Cable is also used to remove the RH BluePeg plug from the sleeve after the test is completed. RH plug can be used for further testing, check calibration rule ASTM F2170 for multiple use probes.

Most accurate testing: Our Meter instantly shows the RH and temperature values. The resolution on Lignomat's RH meters is 0.1, 0.1%, 0.1°. No guessing or rounding up. The large numbers on the display are easy to read from with the meter, which you are holding in your hand.



Thermo-Hygrometer: The Ligno-VersaTec meter can also be used as a thermo-hygrometer. For that application, the short RH adapter comes in handy. The RH adapter is included with every package. All RH meters from Lignomat (Ligno-VersaTec, Ligno-DuoTec BW, Ligno-Tec RH) show

- relative humidity
- temperature
- dew point temperature
- grains per pound.