

***User Instructions  
for pin-less  
Ligno-Scanner S and Ligno-Scanner D***



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## ***Ligno-Scanner S and D - pinless***

The Scanners S and D are capacitance-type meters for wood, bamboo and building materials. The sensor plates on the back emit and pick-up very low-powered electromagnetic signals.

The readings generated by the Ligno-Scanners are average values of the entire measuring field between the surface and the maximum depth of penetration. Moisture closer to the surface has a greater effect on the average than the moisture closer to the maximum depth of penetration.

All Lignomat meters internally check and adjust the calibration. Therefore manual recalibration is neither needed nor possible.

Wood: Range: 5\*-60%. Readings above 25% fiber saturation point are less accurate.  
\*To check the lowest possible reading, hold the meter in the air and push the READ key. The range for hardwoods (softwoods) with high (low) specific gravity is lower (higher) than 5%.

### ***Settings: 30-100.***

Gravity Range 0.3 to 1.0. For unlisted species the specific gravity can be entered as species setting. For example, if the specific gravity is 0.42 the setting is #42. Values for the specific gravity can be found on the Internet by entering <specific gravity...> followed by the name of the wood. For calculations see page 9.

For unlisted species or new products Lignomat offers testing to determine the correct setting.

### ***Reference scale:***

Code# 0: Sensitivity level for laminates and products out of wood.

### ***Measuring Depth:***

Ligno -Scanner S 1/4" (7mm)

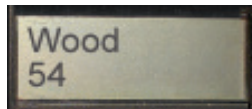
Ligno-Scanner D 3/4" (20mm)

### ***Battery:***

One 9V battery (included). A low battery symbol will appear on the display, when the battery has been drained to 25% of its capacity. To exchange the battery, slide battery cover off on back of instrument.

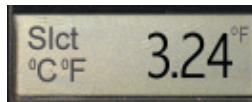
## ***Check and Change Settings***

Settings for wood species are listed on the laminated pocket guide included with each meter. To recall active settings push the SET/HOLD key repeatedly. As long as the screen shown below appears, you can use the ▲ or ▼ keys to change settings.



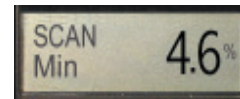
**Change mm to inches:** Disconnect battery and press SET key twice. Connect battery again. The display pictured below will appear, push ▼ key to change from inches to mm and push ▲ key to change from mm to inches.

3.24 is the software version.

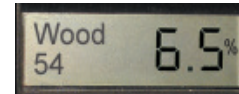


## **Take Measurements**

After settings have been checked / changed, push the READ key to obtain moisture readings. The active setting appears briefly, followed by the default (lowest) reading, if the sensor plates are not in contact with any material.



For actual measurements, place the meter on the test sample (for wood in the direction of the grain). Press down slightly, holding the outer sides of the meter without touching sample with your hand.



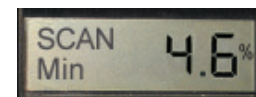
The HOLD key is used to freeze the indicated value for one minute. Helpful when taking notes or when measuring in places, where the display cannot be read while measuring. At any time you can switch back to measuring by pushing the READ key again.



When the moisture is too low to measure, the default reading appears with “Min” in the lower left side of the display. When the moisture is too high, the highest moisture value is displayed with “Max” on the lower left side of the display.

### ***For accurate readings:***

- Sample should be big enough to cover both sensor plates.
- Measuring depth has to be set according to sample thickness.
- Surface should be smooth and flat. For uneven surfaces take the highest value of several measurements.



To eliminate any possible influence from material underneath the sample board, it is recommended (if possible) to arrange the sample so that an open space is directly underneath the measuring area. If this is not possible, make sure the Ligno-Scanner SD is set for the correct measuring depth.

## ***Veneer***

We recommend placing a lightweight material such as Styrofoam under the veneer. It not only prevents inaccurate readings, but also helps to create a flat measuring platform for the veneer. To obtain accurate readings for very thin veneer it may be necessary to make a stack of several sheets.

### ***Find Settings for Composite and Engineered Boards***

If the sample to be measured is composed of different wood species or different materials (linoleum glued on to wood, plywood, bamboo flooring with a wood core, etc...) or if no wood species setting exists a setting can be found by using a dry sample board.

The dry sample could come from your office or from an area that has already dried out or from a place where excess moisture never reached. Estimate the moisture content. An acclimated sample from a home, office or show room should be at around 7.5%.

Start by selecting setting #50. Then take a measurement.

- If the reading is below 7.5%, choose a setting lower than #50.
- If the reading is above 7.5%, choose a setting higher than #50.

Then take another measurement. Change settings until you find a setting, which gives a value of 7.5%. This setting can be used in the future for the same product.

## ***Calculating Specific Gravity***

The specific gravity can be calculated, if the Weight in Ounces and the Length, Width and Heights in inches is available:

$$\frac{(\text{Weight} \times 1.73)}{\text{-----}} \\ (\text{W} \times \text{L} \times \text{H})$$

Once the specific gravity has been found (value between 0.3 and 1.00) the corresponding setting is between 30 and 100. See Page 2.

### ***For the Floor Installer***

Moisture meters should be used throughout the installation process:

When the floor is delivered the first step is to take a moisture reading to make sure the floor is dry. Then take moisture readings before, during and after acclimation. A good way to do this is to mark selected sample boards and take readings repeatedly.

The moisture condition of a floor should be documented at the time the customer signs off on the installation. Select several moisture sensitive areas. Take readings on both depth levels and document the readings with species setting, measuring depth and location. Maybe even taking a photo to pinpoint the location. If you ever have to go back to check out a complaint, you can measure the same areas again and compare with the original readings. Keeping track of moisture conditions may in the end protect you from unwarranted claims.



Comparing readings taken at 1/4" and 3/4" can also help to diagnose problems and indicate if moisture was absorbed from the down-side or the up-side of the floor.



### ***Specifications and Warranty***

#### ***Ligno-Scanner S and D:***

For Measuring Range and Settings see page 2.

**Size:** 2"x 5.5" x 1" (12 x 6 X 2.5cm)

#### ***Sensor Plates:***

2 1/2"L x 1 1/2"W (65 x 40mm)

#### ***Warranty:***

All Lignomat meters have a two year warranty. Battery excluded.

## ***Moisture Problems***

Nobody would worry about moisture if it would not create shrinking, warping, mold or dry rot.

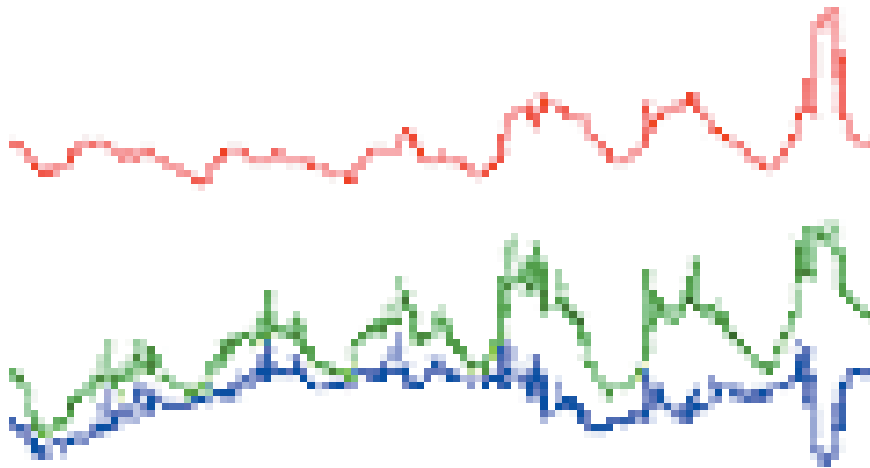
Assuming the wood was dry initially, no problems will occur

-If the ambient conditions are kept between 35-50% relative humidity at a temperature of 60-80°F.

-If the building is healthy and moisture cannot migrate through walls, floors and the roof.

[www.moistureproblems.info](http://www.moistureproblems.info)

To help investigate moisture problems, Lignomat developed the new BL2 moisture tracker. With the BL2 you can simultaneously record moisture in wood, drywall and concrete and RH / temperature.



## ***Other Lignomat Products***

### **Pin meters:**

The pocket-size mini-Ligno Series has been popular since its introduction more than 30 years ago. Several updates over the years have kept the technology up to date for these accurate and reliable meters.

### **Pinless meters:**

One step up from the Ligno-Scanners D or S would be the Ligno-Scanner SD which offers selectable measuring depth of 1/4" and 3/4" deep.

The Ligno-DuoTec BW is a scanning meter which can also be used as a Thermo-Hygrometer. You can measure relative humidity in air or use the meter to measure the moisture in concrete before laying a floor. Complies to ASTM F2170-09 to obtain in-depth Rh measurements.

### **Pin and Pinless meter:**

The Ligno-VersaTec combines all of Lignomats technologies: Pin - Pinless - RH

