

## User Instructions for all mini-Ligno SD and SD/C

Before taking measurements remove the green cap and place it on the other end of the meter. The cap serves as a handle for easy pin insertion. To obtain measurements, push the pins into the material. As soon as the on-off switch between the pins is depressed, red LED lights indicate wood moisture in percent for a wood temperature of 70°F (20°C). A correction table is included on page 4 for higher or lower wood temperatures.

**Wood Group Corrections:** All mini-Lignos are equipped with built-in wood group corrections. The indicated moisture values are corrected for the chosen setting. A chart for wood species and corresponding wood group settings is included with each mini-Ligno. The indicated moisture values are corrected for the chosen settings. Wood species with similar electrical properties are in the same group. Lignomat offers oven-dry testing to determine the wood group for unlisted wood species.

**Battery:** One 9-Volt Battery included. If the LED lights get dim or step 1 and 2 described in the next column fail, remove screw on the back cover, open-up into 2 halves and replace battery.

**Pins:** Each mini-Ligno comes with two sets of pins for 3/16" and 7/16" measuring depth. The longer pins are stored in the back cover. Remove screw on the back cover, open-up into 2 halves. Remove and replace pins using pliers.

**Electro-Magnetic Interference:** If you measure close to computers, power tools or electrical wires, readings may not be stable. To avoid the interference, take measurements in a

different location. The wood, the meter and the person holding the meter should not move while taking measurements.

**Core Measurements:** For core measurements at least one third of the wood needs to be penetrated. The longer mini-Ligno pins reach 7/16"(10mm) deep, which is sufficient for 5/4" lumber. For core measurements in lumber over 5/4" (30mm) thick, make a fresh cut. Measure the end grain close to the surface and at the core with the integral mini-Ligno pins. Compare readings to detect uneven drying. If it is not feasible to cut the wood, the core of the wood over 5/4" can only be reached with the mini-Ligno C-Models and the external Electrode E12. Page 3 shows cable connection of mini-Ligno C models, and shows external electrodes.

### Performance Tests:

**Step 1:** When the on-off switch is depressed by hand without touching the pins, the lowest moisture value for the chosen wood group is displayed: 6% for mini-Ligno SD and SD/C on species setting #3.

**Step 2:** When the on-off switch is depressed by hand and both pins are touched with two fingers at the same time at least 12% should be indicated.

**Step 3 optional:** The external test block TP checks calibration and operation of all Lignomat pin meters, including external cables and electrodes. All Lignomat meters internally and automatically check and adjust the calibration. Therefore manual recalibration is not necessary.

If steps 1, 2 or 3 fail either the battery needs to be replaced or the mini-Ligno is defective.

All mini-Lignos come with a two-year warranty, accessories have a one-year warranty, pins and batteries are excluded.

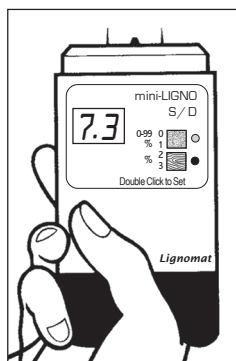
## mini-Ligno S/D and S/DC

### **Red LED for Wood**

#### **Measuring Range:**

6-45% for wood and wood products. For moisture values above 45%, number 45 flashes. For moisture values below 6%, meter reads 6.0 with a blinking decimal point.

- 0.1% below 10%
- 1% steps above 10%



**Wood Group Settings:** The gray laminated card lists the most common wood species and corresponding wood group settings. Click on-off switch twice to check/change settings. Numbers (0.) through (3.) indicate wood group settings: Number 2. and 3. are for different wood species. Number 0. and 1. are for building materials. Click on-off switch again to change setting. Check/Change Mode is only accessible when the meter is off. If a wood species is not listed on the laminated gray card, contact customer service at 800-227-2105.

mini-Ligno S/D, S/DC	Drywall Setting 1	Ref. Scale Setting 0
dry	0-0.5%	0-15
questionable	0.6-0.9%	16-23
moist	1-1.5%	24-35
wet	>1.5%	over 36

### **Yellow LED for Building Materials**

**Setting 1:** For drywall and gypsum (range 0.1-7.5%). For acceptable moisture ranges see the table in the first column. For example, drywall has an equilibrium moisture content of 0.7% at 65% RH and 70° F (20°C). The corresponding WME is 12%. Add Electrode E14M to mini S/DC to check hard to reach problem areas. See page 3.

**Setting 0:** Reference scale (0-99) for comparative readings in building materials. Take measurements in a dry sample to establish a base value. Compare readings in test samples to base value. For hard materials (concrete, brick, stone, etc.) we recommend using the mini-Ligno S/DC with Electrode E16 and E/C pins. Page 3.

#### **Measuring Concrete and other Non-Wood Building Materials with Electrode E14M or E16**

For surface readings insert the pins 1/8" (3mm). For depth readings drill 2 holes about 3/16" (5mm) wide and approximately as deep as you want to measure (up to 7" with EL pins). Insert pins an additional 1/8" (3mm) so that the shanks of the pins are not touching the concrete. Space pins 1 1/4" apart, be sure the contact area does not change from test to test. For deeper readings you can use regular nails and touch nail head with mini-Ligno pins.

For more accurate concrete moisture measurements and to determine if resilient floor coverings can be installed, use Lignomat's in-situ RH BluePeg system.

## Electrodes for mini C-Models



**E12 Electrode** and mini-BNC Cable are for measurements up to 2" (50mm) deep in wood and soft building materials (drywall, gypsum, plaster, etc.) Allows comparing surface and core moisture.

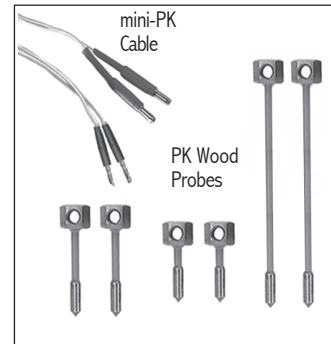
**E14M Inspector Electrode** comes with the cable and teflon-coated EG Pins. E14 Measures hard to reach places easily, because of its slim shape. The handle of the E14 can be extended. Optional EL Pins 7" (17.5 cm) can be added for depth measurements.

**E16 Specialty/Concrete Electrode** and mini-E16 Cable for moisture measurements of concrete and other hard building materials. Standard pins 5/8" (15mm). Optional add EL Pins 7" (17.5cm)

## In-kiln - remote

### In-Kiln PK Probes with mini-PK Cables

are used to monitor places, which are hard to reach with handheld meters: Stacked lumber in kilns, air-drying yards or warehouses. PK Probes are available to measure up to 2.75" deep. Cables can be made upon request up to 65ft (20m) long.



### Non-Kiln Applications

Lignomat's cable system works well for monitoring inaccessible areas (underside of floor planks, structural components, behind drywall, roof trusses, etc.) Teflon coated pins EG and EL are available to measure 3/4" and 7" deep. Remote cables can be up to 65 ft (20m) long.

### mini-Ligno C-Model

mini-Lignos MD/C, S/DC, DX/C have two integral pins and a cable connection built-in. When an external electrode is connected,



depress the on-off switch between the pins by hand to activate the meter.

## Wood Temperature Correction Chart

WOOD TEMP.	INDICATED MOISTURE CONTENT IN PERCENT																										
°F	4	5	6	7	8	9	10	(11)	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27			
32	6	7	8.5	9.5	11	12	13	14.5	15.5	16.5	17.5	18.5	20	21	22	23	24	25	26	27	28	29.5	31	32			
(41)	5.5	6.5	7	9	10.5	11.5	12.5	(14)	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29.5	30.5			
50	5	6	7.5	8.5	10	11	12	13.5	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29			
59	4.5	5.5	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
68	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27			
77	3.5	4.5	6	7	8	9	10	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21	22	23	24	25	26			
86	3	4	5.5	6.5	7.5	8.5	9.5	10	11	12	13	14	15	16	17	18	19	19.5	20	21	22	23	23.5	24.5			
95	2.5	3.5	5	6	7	8	9	9.5	10	11.5	12.5	13.5	14.5	15.5	16.5	17	18	18.5	19	20	21	21.5	22.5	23.5			
104	2	3.5	4.5	5.5	6.5	7	8	9	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16	17	17.5	18	19	20	20.5	21	22			
113	1.5	2.5	4	5	6	6.5	7.5	8.5	9	10	11	12	13	14	15	15.5	16.5	17	17.5	18	19	20	20.5	21			
122	1	2	3.5	4.5	5.5	6.5	7.5	8	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15	16	16	16.5	17.5	18.5	18.5	19	20			
131	0.5	1.5	3	4	5	6	7	7.5	8	9	10	11	12	12.5	13.5	14.5	15	15.5	16	17	17.5	18	18.5	19.5			
140		1.5	2.5	3.5	4.5	5.5	6.5	7	8	8.5	9.5	10.5	11	11.5	12.5	13.5	14	14.5	15	16	16.5	17.5	18	18.5			

WOOD TEMP.	INDICATED MOISTURE CONTENT IN PERCENT																
°C	°F	28	29	30	31	32	33	34	35	36	37	38	39	40			
0	32	33	34.5	36	37	38.5	40	41.5	42.5	43.5	44.5	46	47	47			
5	41	31.5	33	34	35	37	38.5	39.5	41	41.5	42.5	44	45	45			
10	50	30	31	32.5	33.5	35	36.5	37.5	39	40	41	42	43	43			
15	59	29	30.5	31	32	34.5	35	36	37	38	39	40	41	41			
20	68	28	29	30	31	32	33	34	35	37	37	38	39	39			
25	77	27	28	29	30	31.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	37.5			
30	86	25.5	26.5	27.5	28.5	29	30	31	32	33	34	35	36	36			
35	95	24.5	25.5	26	26.5	28	29.5	29.5	30.5	31.5	32.5	33.5	34.5	34.5			
40	104	23	24	24.5	25	26	27	28	29	30	31	32	33	33			
45	113	22	23	23.5	24	25.5	26	27	28	29	30	31	32	32			
50	122	21	22	22.5	23	24.5	25.5	26	27.5	28	29	30	31	31			
55	131	20	21	21.5	22.5	23.5	24.5	25.5	26.5	27.5	28	29	30	30			
60	140	19.5	20.5	21	22	22.5	23.5	24.5	25.5	26.5	27	28	29	29			

Example:

For an indicated moisture reading of (11)% taken with a mini-ligno at a wood temperature of (41)°F, the actual moisture value is (14)%.

If using the correction chart is too time consuming, Lignomat offers moisture meters with built-in wood temperature corrections and 150 different wood species settings:

-Lignometer K

-Ligno-VersaTec

For info call **1-800-227-2105**

The mini-Lignos are calibrated for a wood temperature of 70°F (20°C). For wood temperature over 80°F and under 60°F we recommend using this chart.