

## User Instructions for mini-Lignos DX and DX/C



The mini-Lignos DX and DX/C come with 2 pairs of pins for a measuring depth of 3/16" and 7/16" (5, 10mm), green cap, wrist strap and pouch, one 9V battery, user instructions and laminated wood species card.

The mini-Ligno DX/C has a connection built-in for an external handprobe (electrodes E12, E14, E16) for depth measurements and remote cables for monitoring moisture in hard to reach places.

## User Instructions for mini-Lignos DX and DX/C

Before taking measurements remove the green cap and place it on the other end of the meter. The cap serves as handle for easy pin insertion. To obtain measurements, push the pins into the wood. As soon as the on/off switch between the pins is depressed, red LEDs 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. 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. If the LED lights get dim or step 1 and 2 described in the next column fail, remove screw on back cover, open-up into 2 halves and replace battery.

**Pins:** Longer pins are stored inside the mini-Lignos. Remove screw on back cover, open-up into 2 halves. Pins are stored in back cover on either side of the indentations for the pins. Remove and replace pins using pliers.

**Electro-Magnetic Interference:** If you measure close to computers, power tools or electrical wires, indicate the moisture jump. 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 into a board. 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 can only be reached with the mini-Ligno C-Models and the external Electrodes E12, E14, E16.

We also offer extension cables for building surveillance and in-kiln monitors (MD/C). See page 3.

### Performance Tests:

**Step 1:** When the on/off switch is depressed by hand without touching the pins, the lowest moisture value is indicated:

4.8% for mini-Ligno DX, DX/C on species setting #3.  
6% for mini-Ligno SD, SD/C E/D, MD, MD/C setting #2 and #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 cable and electrode. All Lignomat meters internally, automatically check and adjust the calibration. Therefore manual recalibration is not necessary.

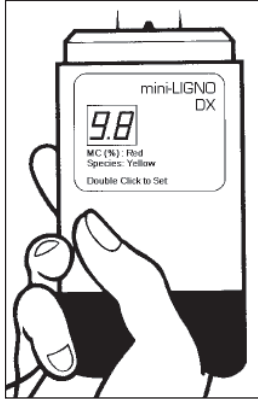
If steps 1, 2 or 3 fail either the battery needs to be replaced or the mini-Ligno is defective.

Call customer service at 800-227-2105.

## mini-Lignos DX and DX/C

### Measuring Range:

4.8% to 65% dependent on wood group. Red LEDs indicate wood moisture in percent. For moisture values above the measuring range, the highest moisture value for the chosen wood group flashes. For moisture values below the measuring range, the lowest moisture value for the chosen wood group appears with a flashing decimal point.



Red digital LED display:

Resolution: 0.1% below 10%, 1% steps above 10%

**Wood Group Settings:** The blue laminated card lists domestic and tropical species and corresponding wood group settings. Yellow numbers indicate: Settings 1-40 for different wood species. Settings 0, 41, 44 and 45 for building materials.

Click on-off switch twice to check/change settings.

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 blue card, contact customer service at 800-227-2105.

mini-Lignos DX, DX/C	Drywall Setting 41	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

**Setting 41:** For standard drywall and gypsum range is 0.1-7.5%. For acceptable moisture ranges see the table in the first column. For example, standard drywall has a moisture content of 0.7% at 65% RH and 70°F (20°C). 0.7% is a moisture value based on oven dry calculations. The corresponding WME is 12%. Add Electrode E14-m to mini DX/C to check hard to reach problem areas. Page 3.

**Setting 44:** Waterproof Backer Board

**Setting 45:** Glass Matt Interior Panel

Glass Matt Exterior Sheathing

**Setting 0:** Reference scale (0-99) for comparative readings in building materials. Take measurements in a dry sample to establish a base value. Compare measurements to base value.

Add Electrode E14-m to check hard to reach problem areas in water damage repair applications. For hard materials (concrete, brick, stone) add Electrode E16 and E/C or EL pins. For in-kiln and remote measurements add cables, probes or pins. See page 3.

### Measuring Concrete and other Non-Wood Building Materials with Electrode E14-m or E16

Distance between pins is 1 1/4" (3cm) for settings 41, 44 and 45. Distance between pins is 4.5" (10cm) for setting 0 when measuring concrete, other hard building materials.

For surface readings insert pins 1/8" (3mm). For depth readings drill 2 holes with diameter 3/16" (5mm). Depth is approximately as deep as you want to measure (up to 7" with EL pins). Insert pins an additional 1/8" (3mm). For deeper readings you can use regular nails. To obtain measurements touch nail heads with mini pins. Be sure the contact area between concrete and the blank metal of the pins or nails does not change from test to test.

When concrete moisture testing is performed to determine if resilient floor coverings can be installed, use Lignomat's in-situ RH BluePeg system. ASTM standard F2170.

## Electrodes for mini C-Models



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

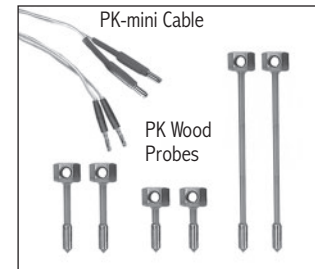
**E14M Inspector Electrode** in-Hand probe includes cable, EG Pins, teflon-coated. Measures hard to reach places easily, because of its slim shape. Extendable handle. Optional EL Pins 7" (17.5cm).

**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 PK-mini Cables

are used to measure stacked lumber in kilns, air-drying, lumber yards or storage areas. PK Probes are available to measure up to 2.75" deep. Cables can be made up to 50ft (15m) 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 for a measuring depth of 3/4" and 7" are also available. For those applications cables with loops allow for an easy connection. S-10 package with LP-mini cables.

### 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, press the on/off switch between the pins by hand to activate the meter.



**Warranty:** All moisture meters including mini-Lignos have a 2 year warranty. The LED displays for the mini-Lignos have a life-time warranty, they virtually never brake. Accessories have a one-year warranty, pins and battery are excluded.

## Wood Temperature Correction Chart

WOOD TEMP.		INDICATED MOISTURE CONTENT IN PERCENT																									
°C	°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		
0	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		
5	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		
10	50	5	4	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		
15	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		
20	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		
25	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		
30	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		
35	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		
40	104	2	3	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		
45	113	1.5	2.5	4	5	6	6.5	8	8.5	9	10	11	12	13	14	15	15.5	16.5	17	17.5	18	19	20	20.5	21		
50	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		
55	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		
60	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 the Lignometer K and Ligno-VersaTec with built-in wood temperature corrections.

For info call 1-800-227-2105

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