

User Instructions for all mini-Lignos

Before taking measurements with a mini-Ligno, the protective cap over the pins has to be removed and can be placed on the other end of the meter for easy pin insertion. As soon as the pins are pushed into the wood, 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). For higher or lower wood temperatures see correction table on page 6

All Lignomat meters internally check and adjust the calibration. Therefore manual checks and recalibration is not necessary and not possible.

Wood Group Corrections: All mini-Lignos are equipped with built-in wood group corrections. 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 wood group. For unlisted wood species Lignomat offers free of charge testing to determine the wood group.

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 over 5/4" (30mm) lumber, make a fresh cut. Measure the end grain close to the surface and at the core. If it is not feasible to cut the board, the core of the wood can only be reached with the external Electrode E12 and any mini-Ligno C-model.

Battery: One 9-Volt Battery. If the LED lights get

dim or step 1 and 2 described under "Performance Test" fail, remove screw on back cover, open-up into 2 halves and replace battery.

Pins: All mini-Lignos come with 2 sets of pins #MA for a measuring depth of 3/16" (5mm) and #MB for 7/16" (10mm). To exchange pins, remove screw on back cover, open-up into 2 halves. The longer pins are stored inside the back cover on either side of the indentations for the pins. Remove and replace pins.

Electro-Magnetic Interference and Static Electricity: If you measure close to computers, power tools or electrical wires, several LED lights may be on or the moisture readings jump. To avoid the interference, take readings in a different location.

The wood, the meter and the person holding the meter should not move while taking readings.

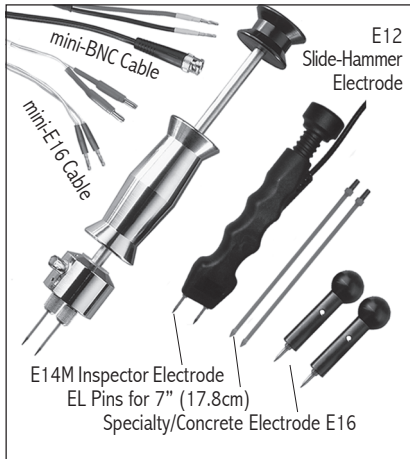
Performance Tests:

Step 1: When the on-off switch is pressed by hand without touching the pins, the lowest moisture value is indicated: for mini-Ligno DX or DX/C: 5%
for mini-Ligno, mini-Ligno C, E/D, S/D or S/DC: 6%.

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: Lignomat offers an external testblock to check calibration and operation of any Lignomat pin meter, including cable and electrode. If steps 1, 2 or 3 fail either the battery needs to be replaced or the meter is defective.

1.6 Electrodes for mini C-Models



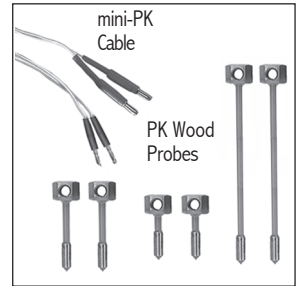
E12 Electrode and mini-BNC Cable is for measurements up to 2" (50mm) deep in wood and soft building materials (drywall, gypsum, plaster, etc.) Allows comparing surface and core moisture.

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".

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

1.7 In-kiln - remote

In-Kiln PK Probes and mini-PK Cables are used for measurements of stacked lumber in kilns, air-drying yards or warehouses. PK Probes are available to measure up to 2.75" deep. Cables can be upon request up to 50ft (15m) long.



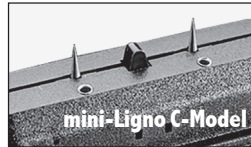
Non-Kiln Applications

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 are available.

mini-Ligno C-Model

Mini-Lignos MD/C, S/DC, DX/C have two integral pins and a cable connection built-in. To measure connect cable ends into the inserts besides the pins. Depress on-off switch between the pins by hand to activate meter.

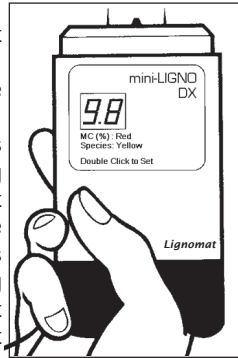


All mini-Lignos come with a two-year warranty, accessories have a one-year warranty, pins and batteries are excluded.

1.4 mini-Ligno DX and DX/C

Measuring Range:

4.8-65% dependent on wood group. Red numbers indicate wood moisture in %. For moisture values above the measuring range, the highest moisture value for the chosen wood group is flashing. A blinking decimal point indicates the lowest readings for the chosen wood group.



Wood Group Settings: The blue laminated card lists domestic and tropical species and corresponding wood group settings. Click on-off switch twice to check/change settings. Yellow LEDs indicate settings: 1-40 for wood (0 and 41 is for building materials). Click on-off switch again to change setting. Check/Change Mode is only accessible when meter is off. If a wood species is not listed on the laminated blue card, contact customer service at 800-227-2105.

Non-Wood Building Materials

Setting 41 is for drywall and gypsum (range 0.1 to 7.5%). For moisture ranges see graph at the bottom of the previous page 1.3.

For example at 65% relative humidity and 70°F (20°C) drywall measures 0.7%, the corresponding WME on wood group 2 is 11%.

Setting 0 is a Reference Scale (0-99) for comparative readings in building materials. For ranges see graph on page 1.3. We recommend measuring a dry sample to establish a base value for dry. Compare readings in test material to the base value. For hard building materials such as concrete, brick or stone, we recommend DX/C plus Electrode E14C or Electrode E16 with EC pins.

To investigate hard to reach problem areas we recommend the DX/C with the Electrode E14C. To take core measurements in wood we recommend the DX/C with the Electrode E12.

Measuring Concrete and other Non-Wood Building Materials with Electrode E14C and EC or EL pins

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. 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 evaluation of concrete moisture use Lignomat's in-situ RH BluePeg system.

Sheetrock DX-C	Settings (41)	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

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	28	29	30	31	32	
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	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						
15	59	4.5	5.5	7	8	9	10	11.5	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	10.5	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	24	25	26					
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	3.5	4.5	5.5	6.5	7	8.5	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	10.9	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 moisture meters with built-in wood temperature corrections. The following meters indicate moisture values internally corrected for chosen wood group and chosen wood temperature: mini-Master HT or HTC, Lignometer KF or KC, 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.