

# J-Lite

## WOOD MOISTURE METER

### OPERATION MANUAL



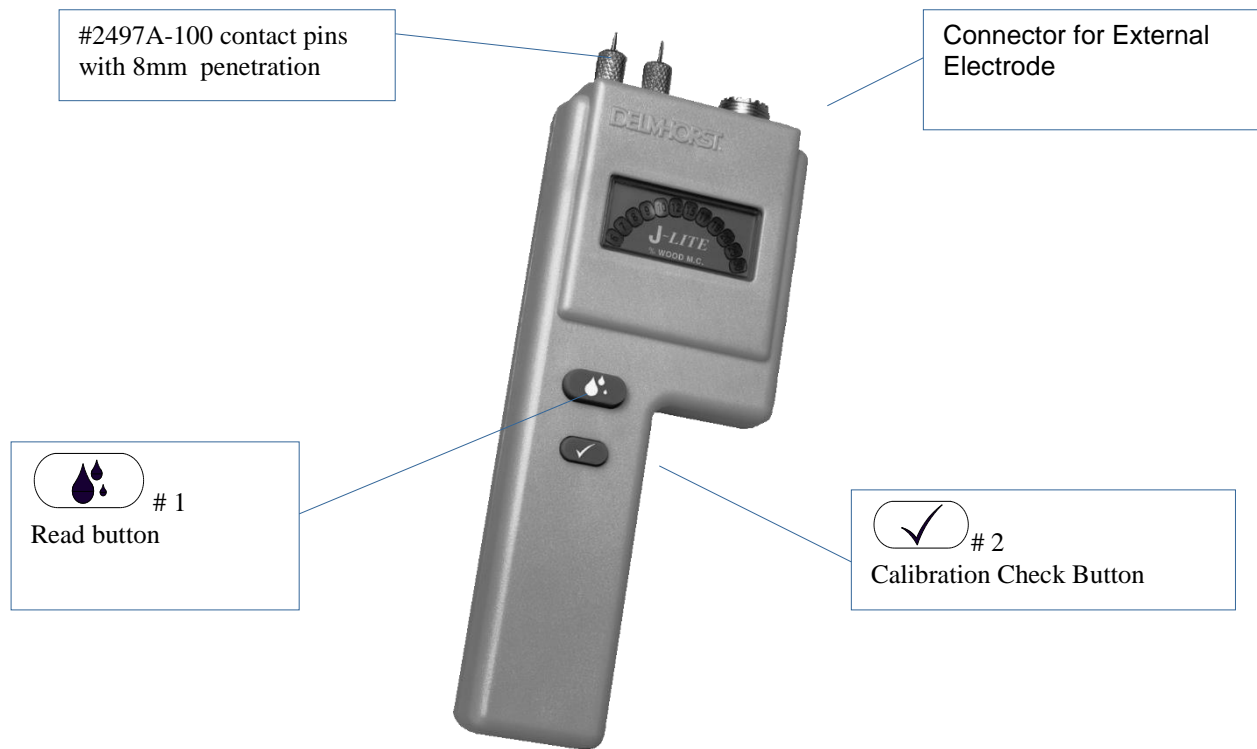
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## **J-Lite Features**

- Resistance technology recognized worldwide as the most accurate method for measuring moisture
- 6% to 30% MC range on wood (Douglas Fir)
- LED readout
- Proven microcontroller circuit
- Built-in calibration check
- Easy one-hand operation
- Includes (1) 9-Volt Battery
- Includes sturdy carrying case
- Three-year warranty
- 65 years of proven quality, accuracy and service

<b>TEMPERATURE CORRECTION TABLE</b>												
<b>METER READINGS</b>												
<b>°C</b>	<b>°F</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>60</b>
<b>-20</b>	<b>0</b>	<b>9</b>	<b>11</b>	<b>15</b>	<b>22</b>	<b>31</b>	38	45	53			
<b>-10</b>	<b>20</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>20</b>	<b>28</b>	34	40	47	55		
<b>5</b>	<b>40</b>	<b>7</b>	<b>8</b>	<b>12</b>	<b>18</b>	<b>24</b>	<b>30</b>	36	42	48		
<b>15</b>	<b>60</b>	<b>6</b>	<b>7</b>	<b>11</b>	<b>16</b>	<b>21</b>	<b>27</b>	32	38	43	54	
<b>30</b>	<b>80</b>	<b>6</b>	<b>7</b>	<b>9</b>	<b>14</b>	<b>19</b>	<b>23</b>	<b>28</b>	33	38	47	55
<b>40</b>	<b>100</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>12</b>	<b>17</b>	<b>21</b>	<b>25</b>	29	34	42	50
<b>50</b>	<b>120</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>11</b>	<b>15</b>	<b>19</b>	<b>22</b>	<b>26</b>	<b>30</b>	38	44
<b>60</b>	<b>140</b>	<b>4</b>	<b>5</b>	<b>7</b>	<b>10</b>	<b>14</b>	<b>17</b>	<b>20</b>	<b>23</b>	<b>27</b>	<b>34</b>	40
<b>70</b>	<b>160</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>18</b>	<b>21</b>	<b>24</b>	<b>30</b>	36
<b>80</b>	<b>180</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>8</b>	<b>11</b>	<b>13</b>	<b>16</b>	<b>19</b>	<b>22</b>	<b>27</b>	33
<b>95</b>	<b>200</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>7</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>17</b>	<b>19</b>	<b>24</b>	<b>28</b>
<b>105</b>	<b>220</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>15</b>	<b>17</b>	<b>21</b>	<b>26</b>

Moisture content values shown in bold are only qualitative since they are above fiber saturation point (30%MC).

**Pin correction:**

METER READINGS WITH INSULATED PINS (26-ES ELECTRODE)

**7      8      10      12      14      16      18      20      22      24**

CORRECTED READINGS (TRUE INDICATED MOISTURE CONTENT)

**7.3      8.4      10.6      12.8      14.9      17.0      19.2      21.4      23.7      26.0**

## WOOD SPECIES CORRECTION TABLE

### METER READINGS WITH NON-INSULATED PINS


METER READING	7	8	9	10	12	14	16	18	20	22	24
ALDER	8	9	10	11	13	15	17.5	19.5	21.5	24	27
APITONG	8	9	10	11	13	15	17	20	22	24	27
ASPEN	7	8	9	10	11.5	13	15	16.5	18	20	21
ASH, WHITE	6.5	7.5	8	9	11	13	14.5	16	18	19.5	21
BASSWOOD	7	8	8	9	10.5	13	15	17	19	20.5	22
BIRCH	8	9	10	11	13	15	17	19	21.5	23.5	25.5
CEDAR, EAST. RED	8	9.5	10.5	12	14	17	19	21	23	25	26
CEDAR, INCENSE	7	8	9.5	10.5	12.5	15	17	19	21	23	25
CHERRY	8	9	10	11	13.5	15.5	18	20	22	24	26
COTTONWOOD	6	7.5	8.5	9.5	12	14	15	17	19.5	21	23
CYPRESS	7	8	9	10	12	14	16	18	19.5	21.5	23.5
ELM, AMERICAN	7	7.5	8	8.5	10	11.5	13	15	16	18	19
FIR, DOUGLAS	7	8	9	10	12	14	16	18	20	22	24
FIR, RED	7	8	9	10	12.5	15	17	19	21	23	25
FIR, WHITE	8	9	9.5	10.5	12.5	15	17	19	21	23	25
GUM, BLACK	7.5	9	10	11	13	15	16	18	19	20.5	22
GUM, RED	7	8	9	10	12.5	14.5	16.5	19	20.5	22.5	24
HEMLOCK, WESTERN	7	8	9	10.5	13	15	17	19	20.5	22	23.5
HACKBERRY	7	8.5	9	9.5	12	13	15	17	18.5	20	22
HICKORY	8	8.5	9	10	11	12.5	14	15.5	17	19	20.5
KERUING	8	9	10	11	13	15	17	20	22	24	27
LARCH	7.5	9	10	11	13	15	17	19	21	23	25.5
MAGNOLIA	7.5	9	10	11.5	14	16	17.5	19	21	22.5	24.5
MAHOAGANY, AFRICAN (ALSO KHAYA)	8	9.5	10.5	12	15	17	19.5	22	24	26	28
MAHOAGANY, HOND.	7	8	9	10.5	12.5	14.5	16	18	19.5	21.5	22.5
MAHOAGANY, PHIL.	6	7	7.5	8	9.5	11	13	14	15.5	17	18
MAPLE, HARD/SOFT	8	9	9.5	10	12	14	16	18	20	22.5	25
MERANTI, DARK RED	8.5	9.5	10.5	11.5	12.5	16	18	20.5	22.5	24.5	26.5
OAK, RED	7	8	9	10	12	14	16	18	20	22	24
OAK, WHITE	7	8	8.5	9.5	11.5	13.5	15	17	18.5	20	22
PECAN	6.5	8	9.5	11	12.5	14	16	17.5	19	22	24
PINE, LONGLEAF	8	8.5	10	11	13	15.5	17.5	19.5	21	23	25
PINE, PONDEROSA	7.5	8.5	10	11	13.5	15.5	17.5	19.5	21	23	25.5
PINE, SHORTLEAF	7.5	9	10	11	13	15.5	17.5	19.5	21.5	23.5	25
PINE, SO. YELLOW*	8	9.5	10.5	12	14.5	16.5	19	21	23	25	28
PINE, SUGAR	7	8	9	10	12	15	17	19	21	23	25
PINE, WHITE	7	8	9	10	13	15	17	19	21	23	25.5
POPLAR, YELLOW	8	8.5	10	11	13	15.5	17.5	19.5	22	24	26
RAMIN	7	8	9	10	11	13	15	16	18	20	21
RADIATA PINE	10	11	11	12	14	16	18	20	23	25	27
REDWOOD	7	8	9	10	12	13.5	15	17	19	22	24
SPRUCE, SITKA	7	8	9	10	12.5	14.5	17	19	21	23.5	26
SPF**	9	10	11.5	13	15.5	18	20.5	23	25	28	30
SPF/COFI	8	9	10	11	13	15	17	19	21	23	25
TEAK	7	8	8.5	9	11	12	14	15	17	18.5	20
VIROLA	6.5	7	8	9	11	12.5	14	16	18	18.5	20.5
WALNUT, BLACK	7.5	8.5	9.5	10.5	12.5	14.5	16	18	20	22	23.5

The species correction values shown in this table have been rounded for easy reference.

\* Meter readings taken with 26-E 2-pin electrode with insulated pins.  
Do not apply 2-pin correction.

\*\* SPF correction is based on USDA/Forintek data and can be used for the following species: Lodgepole Pine, Alpine Fir, Eastern, White Spruce, Black Spruce, Jack Pine

## **CHECK CALIBRATION**

Press the calibration check key . Meter is in calibration when the "12" lights up.

If you check the calibration and an LED other than the "12" lights up, it is likely an indication of a low battery. If this occurs, change the battery immediately. Continued use with a low battery may cause the meter to go out of calibration. If you have a fresh battery and the instrument still does not indicate a proper calibration, return it to Delmhorst Europe for service. **See Service for Your Meter** section.


When the battery is removed and then reconnected, all the LEDs will flash for a few seconds, then the meter will turn itself off.

### **NOTE:**

A hard Reset is required if, after changing the battery, the display is frozen. This is sometimes caused by the interruption of contact between the battery and the battery lead wire. Resolve this as follows:

- Disconnect the battery.
- Press and hold the Read key for 15 seconds.
- Release the Read key.
- Press and hold the Check key for 15 seconds.
- Release the Check key.
- Connect a fresh battery to the lead wire in a single action, making sure to align the poles properly and without interrupting contact.
- If the display remains frozen, repeat this procedure.
- If this procedure does not solve the problem, refer to the **Service for Your Meter** section.

## **TAKING A READING IN WOOD**

- Remove the protective cover to expose the contact pins. Check that the contact pins' retainers # 4 are firmly hand tightened.
- Align the contact pins # 4 parallel to the grain, pushing them to full penetration into the wood, if possible
- Press the read key  and read the %M on the LED display.

### Note:

The integral contact pins (2497/A-100) are best for hardwoods up to 6/4 or softwoods up to 2". Push the non-insulated pins into the wood to their full penetration, if possible. The external electrode, 26-ES is fitted with insulated contact pins and a slide hammer. It is recommended for applications when a moisture gradient may be present, or on hardwoods of any thickness (up to 6 in). The insulated pins read only at the non-insulated tip and can be driven to the desired depth to obtain shell and core (gradient) information.

# **UNDERSTANDING YOUR READINGS**

Refer to the chart on page 5 for interpretation of meter readings. Since the J-LITE displays %MC in a range between two values, corrections for wood temperature, pin, and species have less impact on the accuracy of the meter readings, especially below 12%. Meter readings taken on construction-grade lumber material can be taken at face value, without making these corrections for many applications. If your application requires a higher level of accuracy (ex. finish flooring, furniture making) Delmhorst recommends applying the following corrections, even with the limitations of the meter display.

## **Temperature –**

As wood temperature increases, its electrical resistance decreases and indicated moisture content rises. Lower wood temperatures result in lower indicated moisture content. If the wood temperature, which is typically the ambient temperature, is between 50°F/10°C and 90°F/32°C, there is no need to apply a correction. Refer to the temperature correction table at the end of the manual.

## **Pin (insulated vs non-insulated) –**

The reference calibration of the meter was made with non-insulated pins that penetrate 5/16 inch. Insulated pins read slightly lower than non-insulated ones. When using an electrode with insulated pins, such as the 26-ES, refer to the pin corrections at the end of the manual.

## **Species –**

Delmhorst uses Douglas Fir, the USDA standard, as the basis for all wood calibrations. Because the electrical characteristics of different wood species vary, all species read differently at the same moisture content. For this reason, a species correction is required. Refer to the species correction table at the end of the manual.

## METER READINGS

If the LED displays:	The %MC is:
Blinking 6%	Below 5.5%
6%	Between 5.5 and 6.0
7%	Between 6.1 and 7.0
8%	Between 7.1 and 8.0
9%	Between 8.1 and 9.0
10%	Between 9.1 and 10.0
Blinking 10% and 12%	Between 10.1 and 11.0
12%	Between 11.1 and 12.0
Blinking 12% and 15%	Between 12.1 and 13.5
15%	Between 13.6 and 15.0
Blinking 15% and 17%	Between 15.1 and 16.0
17%	Between 16.1 and 17.0
Blinking 17% and 19%	Between 17.1 and 18.0
19%	Between 18.1 and 19.0
20%	Between 19.1 and 20.0
Blinking 20% and 25%	Between 20.1 and 22.5
25%	Between 22.6 and 25.0
Blinking 25% and 30%	Between 25.1 and 27.5
30%	Between 27.6 and 30.0
Blinking 30%	Above 30%

The J-Lite can be used to test many other building materials such as drywall, plywood, OSB, MDF.

Call Delmhorst Europe or e-mail [info@delmhorst.eu](mailto:info@delmhorst.eu) for more information on using the meter on other materials.



## **CARE OF YOUR METER**

To keep your meter in good working order:

- ✓ Store your meter in a clean, dry place. The protective carrying case provided is an ideal storage place when the meter is not in use.
- ✓ Change the 9-Volt battery as needed. Continued use with a low battery may cause the meter to go out of calibration.
- ✓ Change contact pins as needed. Keep pin retainers hand tightened.
- ✓ Clean the meter, contact pins, and probes with any biodegradable cleaner.
- ✓ Use the cleaner sparingly and on external parts only. Keep the cleaner out of the external connector.
- ✓ DO NOT IMMERSE THE METER OR ANY ELECTRODE IN WATER.
- ✓ Remove the battery if the meter will not be used for one month or longer.

## **SERVICE FOR YOUR METER**

- ✓ Pack your meter securely. Enclose a purchase order or letter with a brief description of the problem.
- ✓ There is no need to call us for a return authorization number if you are within the EU. Customers outside the EU must contact us for more specific instructions prior to returning a meter.
- ✓ Include your name, address, daytime phone and fax numbers or e-mail address. If you believe the meter is under warranty, please provide the original sales slip or invoice.
- ✓ Ship via UPS, Express Mail, Priority Mail or any overnight courier who provides prompt service. Do not use standard parcel post.
- ✓ Insure your instrument for its full value and ship prepaid. We are not responsible for damage in transit.
- ✓ We do not accept COD shipments or cover any incoming freight or duty charges on returned merchandise
- ✓ Turnaround time on repairs is approximately two weeks.
- ✓ We will call you with an estimate if you specifically request one, or if we determine that the meter may be too costly to repair.
- ✓ Non-warranty repairs will be returned via UPS/COD unless you have already established other payment terms. There is no COD service outside the EU.
- ✓ Payments have to be made by Bank transfer prior to the return shipment. A Proforma invoice will be raised in advance.
- ✓ Warranty repairs will be returned at no charge if shipped within the EU via UPS Ground Service. Freight charges for expedited services (i.e., Federal Express, UPS/2 Day, UPS/1 Day, etc.) are the customer's responsibility and will be charged as per the above terms.

## **WARRANTY**

Delmhorst Europe, referred to hereafter as Delmhorst, guarantees your moisture meter for one year from date of purchase and any optional electrodes against defects in material or workmanship for 90 days. If, within the warranty period of the meter, you find any defect in material or workmanship return the meter following the instructions in the "**Service for Your Meter**" section. This limited warranty does not cover abuse, alteration, misuse, damage during shipment, improper service, unauthorized or unreasonable use of the meter or electrodes. This warranty does not cover batteries, pin assemblies, or pins. If the meter or any optional electrodes have been tampered with, the warranty shall be void. At our option we may replace or repair the meter. Delmhorst shall not be liable for incidental or consequential damages for the breach of any express or implied warranty with respect to this product or its calibration. With proper care and maintenance the meter should stay in calibration; follow the instructions in the "**Care of Your Meter**" section.

Under no circumstances shall Delmhorst be liable for any incidental, indirect, special, or consequential damages of any type whatsoever, including, but not limited to, lost profits or downtime arising out of or related in any respect to the meters or electrodes and no other warranty, written, oral or implied applies. Delmhorst shall in no event be liable for any breach of warranty or defect in this product that exceeds the amount of purchase of this product. The express warranty set forth above constitutes the entire warranty with respect to Delmhorst meters and electrodes and no other warranty, written, oral, or implied applies. This warranty is personal to the customer purchasing the product and is not transferable.

### **ARTTEST B.V.**

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For over 65 years, Delmhorst is a leading brand for high-quality resistance moisture meters. Today the Delmhorst range consists of a complete line of portable moisture meters for a variety of different applications including woodworking / lumber, agriculture, construction and paper.