Specifications

Sensor Type	electromagnetic
Sample Material Type	up to 100 different types
Measurement Range	4...22 % moisture content
Sample Temperature Range	-20…100 °C
Minimum Sample Area	2 x 7 cm
Minimum Sample Thickness	13 mm
Supply Voltage	9 V from 6F22 battery
Battery	☐ no battery, ☐ regular battery, ☐ long-life, ☐ rechargeable
Consumption	less than 3 mA
Measurement Error	± 1 %
Temperature Drift	0.05% from span for 1 °C
Supply-voltage Influence	0.05% from span for 1 V
Surface-moisture Interference	insignificant
Static-charge Interference	insignificant
Ambient Temperature / Humidity	-10…65 °C / 0…85% RH
Protection Class	IP44

Warranty and Support

……
serial number

……
manufacturing date

QC check mark ……(passed)
(stamp)

88 Slavyanska Str.
P.O.Box 378
Plovdiv 4000, BULGARIA
tel: +359 32 646523, 646524
fax: +359 32 634089, 646517
e-mail: support@comeco.org

QD-8.2.4-WC

Warranty

COMECO warrants this product to be free from defects in materials and workmanship for 2 years. If your unit is found to be defective within that time, we will promptly repair or replace it. This warranty does not cover accidental damage, wear or tear, or consequential or incidental loss. This warranty does not cover any defects caused by wrong transportation, storage, installation, or operating (see '**Specifications**').

Technical support

In the unlikely event that you encounter a problem with your COMECO device, please call your local dealer or contact directly our support team.

v3-11.12

COMECO
CONTROL & MEASUREMENT

COMECO Inc., P.O.Box 378, Plovdiv 4000, BULGARIA, tel: +359 32 646523, 646524, fax: 634089
e-mail: info@comeco.org, WWW.COMECOGROUP.COM

HANDHELD MOISTURE-CONTENT METER

H6300W

OPERATION MANUAL

Please read this Operation Manual before mounting and operating!
Save the Manual for future references!

Questions & Answers - I

Can I take accurate moisture readings with H6300W?	H6300W sends technologically advanced electro-magnetic radio waves deep into the wood without leaving destructive holes. The unit supplies instant readings, scanning large amounts of wood feet in seconds, and is virtually unaffected by temperature, humidity, and chemicals. ***Note:*** A correction is needed for measuring frozen wood with suspected moisture content over 15%, Contact COMECO for further assistance.
How accurate is H6300W in regard with gradients and wet pockets?	Although the various drying processes for green lumber can leave wet cores and pockets, moisture continues to pass from fiber to fiber within the wood until is has equalized through the whole board, and then to surrounding humidity levels. Determining if a board or load of lumber will equalize within tolerance levels can be difficult and tricky, but H6300 moisture meters provide this information automatically. Penetrating deep into the wood, H6300W mathematically determine equalized moisture content and is capable of checking truck loads of board feet for specified moisture content in minutes. For even greater convenience, use H6300W to read right through the plastic wrapping around the wood on new deliveries before unloading!
Where is the reading taken with H6300W?	H6300 generates a three-dimensional field that measures from the surface of the wood to a depth of 13mm under the entire sensor. The moisture meter can be held in one place or slid rapidly along the entire length of the wood product, on both finished and unfinished wood, for a stable, accurate reading.
Is H6300W accuracy affected by the surface moisture?	Most of the moisture meters can be affected by standing water or visible water on the board. You should always wipe off as much excess water as possible. Once the standing water is removed, H6300W will read slightly higher than normal, whereas other types of meters can show greatly exaggerated readings. ***Note:*** If water is allowed to soak into the wood, it will naturally show higher moisture. If a piece of wood is quite rough, it will soak up the water quite readily, affecting readings for all meters.
And what about the orientation of the meter on the wood?	For greatest accuracy, orientate the long dimension of the sensor parallel to the wood grain. The sensor must be completely covered by the wood.

Operation

Taking a moisture reading

- Grasp the meter from the side, with your thumb on the actuation key. Make sure your fingers are not near the black sensor plate. Point the sensor plate toward open air and press the actuation key. None of the indicator LEDs should light. While holding the key, check the BAT LED to make sure it is not illuminated.
- Set the sensor plate firmly on the surface of the wood, making sure the sensor is in full contact with the wood. For greatest accuracy, orientate the long dimension of the sensor parallel to the wood grain.
- Press and hold the actuation key. The number on the scale corresponding to the rightmost illuminated LED represents moisture content (MC) in %. If the wood is ***Douglas Fir***, the scale reading indicates the % MC in the wood
- If the wood is not ***Douglas Fir***, you must make a species correction. On Table 1, find the row for the specific gravity of the species you are testing. Across the top of the table, find the column for the meter reading you obtained. Where the row and the column intersect, you will find the reading for the species of wood you are testing.

Example

Your meter reading is 13%, and your species specific gravity is 0.42 (Lime).
Find the specific gravity in the appropriate row and the meter reading in the appropriate column. Where row and column intersect is the actual reading for your species - 15%.

Determination of moisture for unknown species

Moisture values in Table 1 are based on wood specific gravity. If you do not know the wood specie or its specific gravity (SG) differs from the value stated in the table (due to the geographical origin), follow the procedure below:

- Select a sample of wood with all edges being true. Carefully measure the dimensions of the sample using a caliper. You will need the length, width, and thickness, measured in centimeters.
- Calculate the volume of the sample in [cm^3]
- Carefully measure the weight of the sample in [g]
- Calculate specific gravity using the formula **SG = (Weight / Volume)/ SG of water**
- For better accuracy, a number of pieces must be measured and the average determined. Use this value of SG with Table 2 to find the actual adjustment factor for your species of wood.

Example

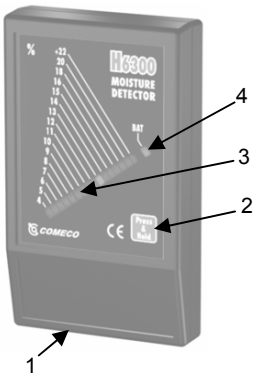
Length = 5 cm
Width = 3 cm
Thickness = 2 cm
Weight = 12 g
Water SG = 1 g/cm^3

SG = 12 / (5*3*2) = 0,40
Meter reading: 13%
Moisture-content: 16%

Overview

H6300W is designed to measure moisture content of wood or samples, employing an electromagnetic measurement principle. With the help of a sensor detecting variations of electromagnetic field within sample, the device measures moisture content even without an electrical contact with the sample.
To measure, simply place the moisture detector on even sample surface. H6300W may be used for other similar materials if their specific weight when completely dry is known.
The moisture detector is equipped with a 16-dot LED display for exact reading of moisture in 1% steps.
H6300W is offered with a general-purpose, long-life, or rechargeable 9 V batteries. Battery charger is available as accessory.
An exceptionally lightweight and compact device, H6300W is especially suited for measurement of thin samples as well as for fast and frequent measurements.

Indication and Controls



1 - Sensor Plate (sensing surface)
Must be held in a full contact with the material surface when taking a reading!

2 - Actuation Key
To take a reading just press and hold for some seconds.

3 - LED indicator
H6300W electronically measures the moisture-content of the material sample and lights a LED indicator. Read the moisture in % marked by the illuminated LED lamp.

2 - BAT LED lamp
LED lamp lights when the actuation key is pressed and the battery is weak.
Replace the battery when BAT illuminates!

Table 1

DETERMING MOISTURE-CONTENT OF KNOWN SPECIES

SG*	Read Value ⇒	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22
0,66	Acacia	2	3	3	4	5	6	7	8	8	9	10	11	12	14	15	17
0,43	Alder	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24
0,57	Ash	3	4	5	6	7	8	9	10	11	11	12	13	14	16	18	20
0,56	Beech	4	5	5	6	7	8	9	10	11	12	13	14	14	16	18	20
0,53	Birch	4	5	6	7	8	9	10	11	12	12	13	14	15	17	19	21
0,53	Chestnut	4	5	6	7	8	9	10	11	12	12	13	14	15	17	19	21
0,45	Chestnut, horse	6	7	8	9	9	10	11	12	13	14	15	16	17	19	21	23
0,56	Elm	4	5	5	6	7	8	9	10	11	12	13	14	14	16	18	20
0,36	Fir	7	8	9	10	11	12	13	14	15	17	18	19	20	22	24	26
0,58	Hornbeam	3	4	5	6	7	8	9	9	10	11	12	13	14	16	17	19
0,42	Lime	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24
0,67	Oak	2	2	3	4	5	6	7	7	8	9	10	11	12	13	15	17
0,61	Pear	3	4	4	5	6	7	8	9	10	11	11	12	13	15	17	18
0,43	Pine (Scotch)	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24
0,34	Pine (East. White)	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26
0,50	Plane	5	6	7	8	8	9	10	11	12	13	14	15	16	18	20	22
0,36	Poplar	7	8	9	10	11	12	13	14	15	17	18	19	20	22	24	26
0,38	Spruce	7	8	9	10	11	12	13	14	15	16	17	18	19	21	23	25
0,52	Sycamore	4	5	6	7	8	9	10	11	12	13	14	15	15	17	19	21
0,56	Walnut	4	5	5	6	7	8	9	10	11	12	13	14	14	16	18	20
0,46	Willow	5	6	7	8	9	10	11	12	13	14	15	16	17	19	21	23

* SG – specific gravity [g/cm^3]

Questions & Answers - II

What is the narrowest piece of lumber I can measure accurately with H6300W?

H6300W measures boards as narrow as 25mm, as thin as 1 mm, and up to 51mm thick or more.
Note: Generally, moisture-content in the center of thicker beams and posts is not of a great matter. Usually, 25mm deep scanning is considered more than adequate. When testing boards thinner than 13mm, make sure there is no other object behind the measured board. Otherwise, the meter will read the moisture of the material behind. Never take measurements of wood sample placed on metal table!

What is the proper moisture-content in wood?

There is no right answer for this question. As a rule, different woods and their uses determine the moisture-content. For instance, if the wood is to be used in construction as a stud for building, the moisture-content requirement could be under 15% or 19%. If the wood is to be glued and it is too dry, it will not bond; If it is too wet, it will not hold. Ideally, the moisture-content of wood to be used for indoor furniture is between 6% and 8%.

Declaration of Conformity

The undersigned hereby declares, on behalf of COMECO Inc., that this device has been manufactured in compliance with standards EN 61010 and EN 61326 and meets the requirements of Directives 89/336/EEC, 2004/108/EC and 2011/65/EU (batteries not included).

Vladimir Sakaliyski
CEO,

COMECO Inc.

Waste Disposal

Do not dispose of electronic devices together with household waste material!

If disposed of within European Union, this product should be treated and recycled in accordance with the laws of your jurisdiction implementing the WEEE Directive 2002/96/EC on the Waste Electrical and Electronic Equipment.

Table 2

DETERMING MOISTURE-CONTENT OF UNKNOWN SPECIES

SG/%	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22
0,30	8	9	10	12	13	14	15	16	17	18	19	20	21	23	25	28
0,31	8	9	10	11	12	13	15	16	17	18	19	20	21	23	25	27
0,32	8	9	10	11	12	13	14	15	16	17	19	20	21	23	25	27
0,33	8	9	10	11	12	13	14	15	16	17	18	19	20	22	25	27
0,34	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26
0,35	7	8	10	11	12	13	14	15	16	17	18	19	20	22	24	26
0,36	7	8	9	10	11	12	13	14	15	17	18	19	20	22	24	26
0,37	7	8	9	10	11	12	13	14	15	16	17	18	19	21	23	25
0,38	7	8	9	10	11	12	13	14	15	16	17	18	19	21	23	25
0,39	7	8	9	10	11	12	13	14	15	16	17	18	19	21	23	25
0,40	7	8	9	10	11	12	13	14	15	16	17	18	19	21	23	25
0,41	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24
0,42	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24
0,43	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24
0,44	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	23
0,45	6	7	8	9	9	10	11	12	13	14	15	16	17	19	21	23
0,46	5	6	7	8	9	10	11	12	13	14	15	16	17	19	21	23
0,47	5	6	7	8	9	10	11	12	13	14	15	16	17	19	21	22
0,48	5	6	7	8	9	10	11	12	13	14	15	16	16	18	20	22
0,49	5	6	7	8	9	10	11	12	12	13	14	15	16	18	20	22
0,50	5	6	7	8	8	9	10	11	12	13	14	15	16	18	20	22
0,51	5	5	6	7	8	9	10	11	12	13	14	15	16	18	19	21
0,52	4	5	6	7	8	9	10	11	12	13	14	15	15	17	19	21
0,53	4	5	6	7	8	9	10	11	12	12	13	14	15	17	19	21
0,54	4	5	6	7	8	9	9	10	11	12	13	14	15	17	19	20
0,55	4	5	6	7	7	8	9	10	11	12	13	14	15	16	18	20
0,56	4	5	5	6	7	8	9	10	11	12	13	14	14	16	18	20
0,57	3	4	5	6	7	8	9	10	11	11	12	13	14	16	18	20
0,58	3	4	5	6	7	8	9	9	10	11	12	13	14	16	17	19
0,59	3	4	5	6	7	7	8	9	10	11	12	13	14	15	17	19
0,60	3	4	5	5	6	7	8	9	10	11	12	13	13	15	17	19
0,61	3	4	4	5	6	7	8	9	10	11	11	12	13	15	17	18
0,62	2	3	4	5	6	7	8	9	9	10	11	12	13	15	16	18
0,63	2	3	4	5	6	7	7	8	9	10	11	12	13	14	16	18
0,64	2	3	4	5	6	6	7	8	9	10	11	12	12	14	16	17
0,65	2	3	4	4	5	6	7	8	9	10	10	11	12	14	15	17
0,66	2	3	3	4	5	6	7	8	8	9	10	11	12	14	15	17
0,67	2	2	3	4	5	6	7	7	8	9	10	11	12	13	15	17
0,68	1	2	3	4	5	6	6	7	8	9	10	10	11	13	15	16
0,69	1	2	3	4	4	5	6	7	8	9	9	10	11	13	14	16
0,70	1	2	3	3	4	5	6	7	8	8	9	10	11	12	14	16

* SG - specific gravity [g/cm^3]