

PINLESS MOISTURE METER

Density Table MC-300XL

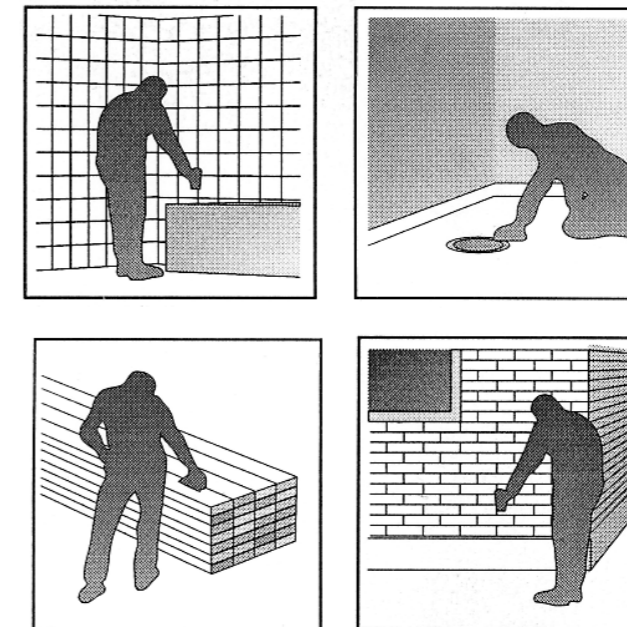
Name	Botanical name	to/ m ³	WG
Ru		0,64	H 6.0
Rubber tree		0,61	H 6.0
Safukala	Dacryodes heterotricha	0,61	H 6.0
Sal		0,83	H 8.0
Saligna Gum	Eucalyptus saligna	0,76	H 7.5
Sandlewood	Amyris balsamifera	0,82	H 8.0
Sapele		0,61	H 6.0
Sapelli		0,61	H 6.0
Sapo	Didelotia brevipaniculata	0,61	H 6.0
Satinwood, eastind.	Chloroxylon swientenia	0,87	H 8.5
Satinwood, westind.	Zanthoxylum flavum Vahl	0,83	H 8.0
Sen	Acanthopanax ricinifolius	0,50	H 4.5
Sengonlaut		0,31	H 3.0
Sepetir	Sindora coriacea	0,54	H 5.0
Sepetir	Sindora spp.	0,67	H 6.5
Sepetirpaya		0,64	H 6.0
Sequoia		0,42	H 4.0
Seraya Red	Shorea argentifolia sym.	0,57	H 5.5
Seraya White	Parashorea plicata	0,50	H 4.5
Seraya Yellow	Shorea acuminatissima sym.	0,49	H 4.5
Sikon	Tetraberlinia tubmaniana	0,64	H 6.0
Sipo		0,58	H 5.5
Siris, white		0,34	H 3.0
Snakewood	Piratinera guianensis	1,25	H 9.5
Sompong		0,30	H 2.5
Sonokeling		0,82	H 8.0
Spruce	Picea abies	0,43	H 4.0
Spruce western white	Picea glauca varalbertina	0,43	H 4.0
Spruce, Engelmann		0,37	H 3.5
Spruce, Sibirian		0,43	H 4.0
Spruce, Sitka-	Picea sitchensis	0,41	H 4.0
Sucupira	Bowdichia nitida	0,86	H 8.5
Sugi	Cryptomeria japonica	0,29	H 2.5
Sweetgum	Liquidambar styraciflua	0,51	H 5.0
Tabebuia		1,11	H 9.5
Tagayasan		0,78	H 7.5
Taihi		0,44	H 4.0
Tali	Erythrophleum guineense	0,87	H 8.5
Tangile	Shorea polisperma	0,50	H 4.5
Tarrieta		0,72	H 6.5
Taun		0,66	H 6.5
Tchitola	Oxystigma oxyphyllum	0,61	H 6.0
Teak	Tectona grandis	0,65	H 6.0
Terentang	Camptosperma spp.	0,39	H 3.5
Terminalia	Terminalia brassii	0,42	H 4.0
Terminalia	Terminalia complanata	0,44	H 4.0
Terminalia	Terminalia copelandii	0,49	H 4.5
Terminalia	Terminalia microcarpa	0,56	H 5.5
Tetrameles		0,30	H 2.5
Thuya-Maser	Tetraclinis articulata	0,50	H 4.5
Toosca	Atnus subcordata	0,49	H 4.5

Name	Botanical name	to/ m ³	WG
Tupelo	Nyssa sylvatica	0,50	H 4.5
Ulin		0,93	H 9.0
Umbrella tree	Musanga cecropioides	0,20	H 1.5
Wacapou	Vouacapoua americana	0,90	H 8.5
Walnut tree	Juglans regia	0,61	H 6.0
Walnut, american, black	Juglans nigra	0,58	H 5.5
Walnut, New Guinea		0,52	H 5.0
Wattle, Black	Acacia mollissima	0,70	H 6.5
Wawa		0,36	H 3.5
Wengé	Millettia Laurentii	0,76	H 7.5
Whitewood	Liriodendron tulipiteria	0,44	H 4.0
Willow	Salix-alba-spp.	0,41	H 4.0
Yang	Dipterocarpus alatus	0,72	H 6.5
Yemane	Gmelina arborea	0,45	H 4.0
Yew	Taxus baccata	0,59	H 5.5
Zapatero	Gossypiospermum praecox	0,76	H 7.5
Zebra wood		0,82	H 8.0
Zingana	Microberlinia-bisulcata-brazzavillensis	0,72	H 6.5

MC-300XL

Electronic Moisture Meter for Wood

Wood Group Selection Table



ENG

USER'S MANUAL

PINLESS MOISTURE METER

User's Manual MC-300XL INTRODUCTION

With the moisture measuring instrument **MC-300XL**, Exotek AB has introduced an hand-held moisture measuring unit, incorporating electronic circuitry perfected over years of development and practical application.

The wood moisture measuring instrument MC-300XL works on high frequency according to the contact measurement process, thus a damage of the material to be measured is excluded.

Due to the approved contact measurement procedure, a quick determination of the moisture in timber is given.

Since it is used individually and is designed to fulfil requirements economically, this unit satisfies in every respect the demands made on a modern precision measuring apparatus.

Reliability, durability and a high standard of accuracy are assured by ultra-modern, completely dependable digital analogue components built to cope with the stress of uncompromising everyday use.

The setting of the wood-groups combined with the automatic 0-correction, allow exact measurements on **all** European and exotic timbers.

The MC-300XL moisture measuring device is equipped with an international standardized

9 Volt alkali block-battery, which can be obtained anywhere.

SWITCH-ON

By pressing the push-button, the unit is switched on.

SWITCH-OFF

By pressing **and** holding the push-button (after the unit is on and the values have been displayed), the unit is switched off after approx. 3 sec.

or: Remains the unit switched on after measurements have been taken, it's being switched off automatically after 2 minutes if it is not in use.

SELECTION OF WOOD GROUPS

After the unit has been switched on, the previous selected group for wood is indicated on the Display (H1.0 - H9.5). Each time the push-button is being pressed again (during the valid group is shown), the unit selects the next higher group in steps of 0.5.

The indicated wood group is equivalent to the density range of the timber. For selection of wood group see Wood Group Selection Table (page 5 – 18).

HOLD - FUNCTION

If the measured value is not readable directly while measuring, it is possible to choose the HOLD-function by pressing the right-hand button shortly. The unit will show this function by displaying a double point. Each time the measuring value is changing, the unit keep this value on the display for easy reading.

If the HOLD-function is active press the right hand button shortly to turn the HOLD-function off, the double point will go off.



BUZZER -FUNCTION

The MC-300XL is equipped with a buzzer. This function is always active when the unit is on. If the measured value goes higher than a specified limit, the buzzer will beep. This function is very helpful for fast timber selection.

To change the limit value press the right-hand button and keep it pressed for app. 2 sec. until a L and a value behind will appear on the display. This indicates the limit value for the buzzer. By repetitive pressing the right-hand button, the limit-value will increase in steps of one, until 36% is reached. After this it will automatically start with 6% again. So the buzzer limit value is selectable in a range of 6% to 36%. If the desired limit value is reached, press the left-hand button shortly to leave the limit entry menu. The unit will show the selected wood group and immediately after, it is possible to measure as described in the next section.

Caution! The HOLD-function is deactivated after buzzer limit value entry, and has to be selected again – if requested.

After turning off automatically or manually, the new buzzer limit value will be stored inside the unit and remains as the valid limit value, if the unit will be used next time.

MEASURING PROCEDURE

After selecting the appropriate wood-group, releasing the push-button, the unit must be hold up in the air. The unit is „ready for use“ after about 3 sec. On the display appear ” – 00.0 “ and now measurements can be taken by placing the springs onto the material.

The 3 measuring springs must have a good contact with the material to be measured. This guarantees exact measurements.

After 3 sec. a correct and constant measuring value is being achieved, indicated by a minus sign ”-“ in front of the value.

THIN MATERIALS

For single materials, thinner than 10 mm, the volume is too small for accurate measuring values, but it is possible to make comparing measurements for determination of too wet areas.

To obtain exact measuring results, we recommend measurements in a pile, but take care in getting a thickness of 10 mm minimum, as well as having no air-spaces between the single sheets.

BASE

With material thickness < 100 mm you absolutely have to take care of the right base. Generally avoid a metal base. The best results are taken, if the material to be measured is hold up in the air. You also can use polystyrene below the timber with at least a thickness of 100 mm.

VOLTAGE

The unit is equipped with an international standardized 9 Volt alkali block-battery. In case of low voltage, an arrow ”←“ appears at the left upper side of the display. In this case the battery has to be exchanged, to ensure further, correct measuring results.

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Name	Botanical name	to/ m³	WG
Nothofagus	Nothofagus fasca	0,68	H 6.5
Nyatoh	Palaquium spp.	0,63	H 6.0
Nyatoh batu		1,03	H 9.5
Oak, Japanese	Quercus crispula	0,63	H 6.0
Oak, red	Quercus rubra	0,65	H 6.0
Oak, stalk grape	Quercus-robur-petraea	0,63	H 6.0
Oak, stone	Quercus ilex	0,85	H 8.0
Oak, tasmanian		0,66	H 6.5
Oak, white	Quercus alba	0,64	H 6.0
Obeche	Triplochiton scleroxylon	0,35	H 3.0
Okan	Cylicodisus gabunensis	0,82	H 8.0
Okoume	Aucoumea klaineana	0,40	H 3.5
Olive	Olea-europaea-hochstetteri	0,85	H 8.0
Olivillo	Aextoxicon punctatum	0,58	H 5.5
Opepe	Nauclea diderichii	0,72	H 6.5
Ovengkol	Guibourtia ehie	0,69	H 6.5
Ozigo	Dacryodes buettneri	0,54	H 5.0
Ozouga	Saccoglottis gabonensis	0,84	H 8.0
Padauk, african	Pterocarpus dalbergiodes	0,68	H 6.5
Padauk, african	Pterocarpus soyauxii	0,73	H 6.5
Padauk, burma-	Pterocarpus macrocarpus	0,81	H 8.0
Padauk, manila	Pterocarpus indicus	0,48	H 4.5
Paldao	Dracontomelum mangiferum	0,52	H 5.0
Paldao-	Dracontomelum-dao.-spp.	0,62	H 6.0
Palisander, ostind.	Dalbergia latifolia	0,83	H 8.0
Palisander, rio	Dalbergia nigra	0,83	H 8.0
Palosapis		0,62	H 6.0
Panga Panga	Millettia stuhlmannii	0,76	H 7.5
Partridge	Caesalpina granadillo	0,98	H 9.5
Pau rosa	Swortzia filstuloides	1,00	H 9.5
Pear tree	Pirus communis	0,66	H 6.5
Pecan		0,71	H 6.5
Pencilwood, african afrepencilwdom, „od	Juniperus procera	0,51	H 5.0
Pencilwood, calif.	Libocedrus decurrens	0,36	H 3.5
Pencilwood, virg.	Juniperus virginiana	0,46	H 4.5
Pericopsis		0,75	H 6.5
Pernambuc	Caesalpina echinata	0,85	H 8.0
Peroba di campos	Paratecoma peroba	0,69	H 6.5
Peroba rosa	Aspidosperma peroba	0,71	H 6.5
Persimmon	Diospyros virginiana	0,78	H 7.5
Perupok	Lophoperalum spp.	0,49	H 4.5
Phdiek		0,63	H 6.0
Pillarwood	Cassipourea malonsana	1,00	H 9.5
Pine	Pinus sylvestris	0,48	H 4.5
Pine, Beach-	Pinus maritima	0,48	H 4.5
Pine, Benguet		0,57	H 5.5
Pine, black	Pinus nigra	0,56	H 5.5
Pine, Caribbean	Pinus caribea, polustris,tacda,ocarpa	0,63	H 6.0
Pine, Korean		0,46	H 4.5
Pine, eastern white	Pinus strobus	0,38	H 3.5



Name	Botanical name	to/ m³	WG
Pine, Hoop		0,47	H 4.5
Pine, Insignis	Pinus insignis-radiata	0,44	H 4.0
Pine, Klinki		0,41	H 4.0
Pine, Loblolly	Pinus-palustris-tacda-ocarpa- risida	0,52	H 5.0
Pine, Lodge pole		0,43	H 4.0
Pine, long-leaf		0,63	H 6.0
Pine, Merkus		0,65	H 6.0
Pine, Mindro		0,65	H 6.0
Pine, Parana	Araucaria angustifolia	0,50	H 4.5
Pine, Pitch, Honduras	Pinus-palustris-tacda-ocarpa- risida	0,63	H 6.0
Pine, red, Honduras,	Pinus palustris-tacda-ocarpa- risida	0,52	H 5.0
Pine, short-leaf		0,54	H 5.0
Pine, Siberian red		0,43	H 4.0
Pine, Slash		0,63	H 6.0
Pine, sugar		0,37	H 3.5
Pine, Swisse	Pinus cembra	0,45	H 4.0
Pine, western white		0,38	H 3.5
Pine, Weymouth	Pinus strobus	0,38	H 3.5
Planchonella		0,54	H 5.0
Plane	Platanus-acerifoglia-orientalis	0,57	H 5.5
Plum tree	Prunus dom.	0,69	H 6.5
Pocked wood	Guaiacum guatemalense	1,25	H 9.5
Podo	Podocarpus grcilior	0,46	H 4.5
Ponderosa Pine	Pinus ponderosa	0,55	H 5.0
Poplar	Populus-alba-nigra-hybrid	0,42	H 4.0
Port-Orfordcedar	Chamaecyparis lawsoniana	0,42	H 4.0
Primavera		0,44	H 4.0
Pulai	Alstonia spp.	0,40	H 3.5
Pyinkado	Xylia dolabriformis	0,84	H 8.0
Quaruba	Yochysia-guaianensis-spp.	0,46	H 4.5
Quebracho blanco	Aspidosperma quebrachoblanco	0,82	H 8.0
	Shinopsis balanesae	1,14	H 9.5
Ramin	Gonystylus bancanus	0,58	H 5.5
Rang		1,01	H 9.5
Rauli	Nothofagus procera	0,51	H 5.0
Redcedar, Western	Thuja plicata	0,34	H 3.0
Redwood, kaliforn.	Sequoia semper virens	0,37	H 3.5
Rengas	Gluta-rengas-spp.	0,59	H 5.5
Resak	Vatica stapfiana	0,76	H 7.5
Resak	Vatica cuspidata	0,92	H 9.0
Resak	Cotylelobium melanoxyton	0,94	H 9.0
Robinia	Robinia pseudoacacia	0,69	H 6.5
Roble	Tabebuia pentaphylla	0,52	H 5.0
Rosewood, Honduras		0,98	H 9.5
Rosewood, Indian	Dalbergia nigra	0,83	H 8.0
Rosewood, Thailand		1,08	H 9.5
Rosewood,Bahia, Brazilian	Dalbergia-frutenscens-variabilis	0,95	H 9.0

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Name	Botanical name	to/ m³	WG
Kotibe	Nesogordonia papaverifaera	0,70	H 6.5
Koto	Pterygota macrocarpa	0,47	H 4.5
Krabak	Anisoptera marginata	0,60	H 5.5
Kuku		0,75	H 6.5
Kwila	Intsia-bijuga	0,80	H 7.5
Labula		0,42	H 4.0
Lagerstroemia		0,64	H 6.0
Landa	Erythroxylum manni	0,58	H 5.5
Lapacho	Tabebuia-guayacan-ipe-serratif	1,11	H 9.5
Larch, european	Larix decidua	0,55	H 5.0
Larch, japanese	Larix leptolepsis	0,49	H 4.5
Larch, sibirian	Larix sibirica	0,55	H 5.0
Lauan, red		0,49	H 4.5
Lauan, white		0,49	H 4.5
Lauan, yellow		0,46	H 4.5
Laurel, chile	Laurelia aromatica	0,44	H 4.0
Laurel, indian-	Terminalia alata	0,83	H 8.0
Lavoa	Lavoa brownii, Lavoa trichilodes	0,49	H 4.5
Lenggadai		0,89	H 8.5
Lignum vitae		1,25	H 9.5
Limba	Terminalia suberba	0,51	H 5.0
Limballi	Gilbertiodendron dewevrei	0,76	H 7.5
Linde	Tilia-cordata-platyphyllos	0,49	H 4.5
Litsea		0,46	H 4.5
Longui		0,53	H 5.0
Louro, -Vermecho	Ocotea rubra	0,57	H 5.5
Madrono, Pacific	Arbutus menziesii	0,68	H 6.5
Magnolie	Magnolia acuminata	0,52	H 5.0
Mahogany	Swietenia mahagoni	0,58	H 5.5
Mahogany ,Tiama	Entandrophragma angolense	0,52	H 5.0
Mahogany, Honduras		0,49	H 4.5
Mahogany, Khaya, African	Khaya-ivorensis-grandifoliola-spp	0,49	H 4.5
Mahogany, Kosipo	Entandrophragma candollei	0,65	H 6.0
Mahogany, Sapelli	Entandrophragma cylindricum	0,61	H 6.0
Mahogany, Sipo	Entandrophragma utile	0,58	H 5.5
Makore	Tieghemella heckelii	0,62	H 6.0
Malas		0,89	H 8.5
Malugai		0,66	H 6.5
Manbarklak	Eschweilera longipes	0,92	H 9.0
Manggachapui		0,70	H 6.5
Manggasinoro		0,46	H 4.5
Mango		0,71	H 6.5
Mangrove		0,92	H 9.0
Manio	Podocarpus nubigenus	0,45	H 4.0
Mansonia	Mansonia-altissima-ssp.	0,60	H 5.5
Maple (mountain)	Acer pseudoplatanus	0,57	H 5.5
Maple (silver), soft	Acer saccharinum	0,51	H 5.0
Maple (sugar)	Acer saccharum	0,68	H 6.5
Maple, black		0,57	H 5.5
Maple, hard		0,64	H 6.0

Name	Botanical name	to/ m³	WG
Maple, red		0,57	H 5.5
Massaranduba	Minusops balata,Manikara-bidentata-huberi	0,96	H 9.5
Matoa		0,66	H 6.5
Mayapis		0,47	H 4.5
Mecrusse	Androstachys johnsonii	0,86	H 8.5
Medang	Cinnamomum camphora	0,56	H 5.5
Melapi	Shorea-assamica-bracteolata-spp.	0,61	H 6.0
Mempening	Lithocarpus spp. Quercus spp.	0,83	H 8.0
Menggeris		0,79	H 7.5
Menkulang	Tarrietia spp.	0,66	H 6.5
Meranti, dark red	Shorea-pauciflora-spp.	0,64	H 6.0
Meranti, light red	Shorea-negrosensis-spp.	0,48	H 4.5
Meranti, red	Shorea parvifolia	0,46	H 4.5
Meranti, red	Shorea leprosula	0,49	H 4.5
Meranti, red	Shorea spp. (Rubroshorea)	0,54	H 5.0
Meranti, red	Shorea teysmannina	0,56	H 5.5
Meranti, red	Shorea curtisii	0,58	H 5.5
Meranti, white	Shorea spp. (Authoshorea)	0,52	H 5.0
Meranti, white	Shorea-assamica-bracteolata-spp.	0,61	H 6.0
Meranti, white	Shorea hypochra	0,63	H 6.0
Meranti, yellow	Shorea-faguetiana-multiflora-spp.	0,53	H 5.0
Merawan	Hopea-mangarawan-odorata	0,71	H 6.5
Merbau	Intsia bijuga	0,80	H 7.5
Mersawa	Anisoptera marginata	0,65	H 6.0
Messmate stringy bark		0,66	H 6.5
Mindro		0,65	H 6.0
Moabi	Baillonella toxisperma	0,81	H 8.0
Molave		0,69	H 6.5
Molucansaw		0,31	H 3.0
Mora	Mora excelsa	0,90	H 8.5
Movingui	Distemonanthus benthamianus	0,70	H 6.5
Mucarati	Burkea afrikana	0,97	H 9.5
Muhimbi	Cynometra alexandri	0,87	H 8.5
Muhuhu	Brachylaena hutchinsii	0,85	H 8.0
Mukulungu	Austranella congolensis	0,91	H 9.0
Mukusi	Balkaea plurijuga	0,87	H 8.5
Mulberry tree	Morus alta	0,60	H 5.5
Muninga	Pterocarpus angolensis	0,55	H 5.0
Musizi	Maesopsis-eminii-berchemioides	0,45	H 4.0
Mutenye	Guibourtia arnoldiana	0,73	H 6.5
Myristica		0,42	H 4.0
Myrtle	Nothofagus cunninghamii	0,50	H 4.5
Naga	Brachystegia cynometroides	0,60	H 5.5
Narig		0,87	H 8.5
Narra	Pterocarpus indicus	0,48	H 4.5
Nato		0,60	H 5.5
Neconauclea		0,79	H 7.5
Niangon	Tarretia-utilis-densiflora	0,65	H 6.0
Niove	Staudtia-stipitata-camerunensis	0,87	H 8.5
Nothofagus	Nothofagus menziesii	0,57	H 5.5
Nothofagus	Nothofagus spp.	0,62	H 6.0

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User's Manual MC-300XL

TECHNICAL SPECIFICATIONS

Measuring method:	High frequency dielectric constant measurement
Measuring range - Wood:	0 - 99 % moisture content (H2O)
Scanning depth:	10 - 100 mm
Density Range:	100 – 1000 kg/m3
Hold function:	Yes
Alarm function:	Yes/selectable
Automatic switch off:	Yes
Automatic 0-correction:	Yes
Low battery warning:	Yes
Working conditions, temp / RH:	-10 to +60° C / 0 – 90 %
Display:	LCD digital
Resolution:	0,1%
Housing material:	ABS
Sensor material:	Chrome plated steel
Power supply:	9 V alkaline battery
Power consumption:	Approx. 5mA
Carrying case:	Artificial leather
Dimensions (h x w x d):	130 x 60 x 27 mm
Weight (incl. battery):	150 g
Warranty:	1 year

The Technical Specification and be changed without further notice.

