MK30R - PORTABLE DEEP MOISTURE METER



Designed for thick materials, like pulp, paper and corrugated board plus all fibre materials. This is a unique instrument, a paper-maker's multimeter as one can work with sheets, reels and stacks. Visilab has developed a new proprietary dynamic analysis algorithm for fast operation and immediate response to fast changes in level. Now with a new outfit

Advantages

- Measures profiles of rotating and static reels, running webs, pulp bales and sample stacks. Static reels measured with an integral distance sensor
- Extremely wide moisture range
- Infrared thermometer signal too to get the thermal profile as well
- Excels with difficult materials like black papers and corrugated
- Suitable for static samples, stacks and running production lines
- Simple to use, accurate readings, excellent repeatability and stability
- Graphic display with trend curve / big numbers
- Wireless data transfer to laptop (Windows 64 bit 7 - 11+)
- A compact instrument, contains everything and is easy to travel with its protective case
- Has a bottom skid for all web and reel measurements plus soft materials for optimum results
- Good data logging and analysis features
- Recipes for regular measuring at same spots
- Other materials like wood, sawdust, minerals, soil, textiles

Benefits

- Quick measurements, readings and reports on site. Profiles are saved into the meter for later retrieval
- Immediate results and rapid reactions to profile issues. Verification of repair success follows
- Routine daily measurements are handy and reliable
- Measurements are saved when needed and documented when reporting
- Problems are solved fast and downtime is minimized in serious cases
- An economical price, pays for itself quickly

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VISILAB
SIGNAL TECHNOLOGIES

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Main Specifications

- applications in pulp, paper and board, textiles, felts, filters, recycled fiber, biofuels with fine particles, packaging papers, animal feed, peat, soil, minerals, wood, sawdust etc.
- suitable also for **corrugated** and **soft materials** and works for **reels** too. Tissue can be measured as well.
- unbeatable for most **black papers**
- moisture of thick and thin samples, moisture content in % (abt. **35 mm penetration in common materials**)
- wide moisture range starting from about 2 %, up to about 99 % depending on BW, **up to 8 000 g/m2 water**
- fully portable and stand-alone, an easy-to travel companion, no wires
- fast response, selectable digital filtering, 15 or 40 points/s sampling depending on speed selection
- superior stability, based on radio frequency technologies (UHF)
- the price is very competitive and the payback time is usually short
- a universal calibration is included for papers < 400 g/m2, giving g/m2 water content

Data logging features

- operating distance: **contact required**
- measuring area 40 mm in diameter, depth to 35
- nonvolatile memory for holding up to 810 profiles with time stamp and profile number
- each profile can contain up to 500 points
- profiles can be downloaded to a laptop with the original time stamp and a selectable text label, affecting directly the resulting filename
- the raw sampling speed is 15 .. 40 Hz
- profiles remain for years, unless erased
- **a web temperature sensor** data is interleaved with moisture data and both profiles are transferred
- graphic trend display for recent history
- the current trend display can be saved to a new profile with a button press
- autotimer sampling (adjustable sampling interval from 0.1 s and batch size 1 - 500), start with either the " + "-key or with a separate button in the handle
- statistics of collected values either from one series or of a preset number of series. This allows for averaging of sides of a large pulp bale
- low noise level even at high moistures
- a skid for measuring safely over moving webs and running rolls. It also ensures proper contact while measuring soft materials having a low-friction skid leaving no streaks, no ripping. Two variants are available
- water content in % total, can be calibrated as g/m2 in some materials
- calibration with multiple points for linearization (2 - 10 points)
- an integral distance meter is used when measuring accurate cross profiles of static reels synchronizing each point accurately
- **reel number** feature for assigning a reel number to profiles and carrying it further to the PC
- the distance meter increment is adjustable in the Menu in a wide range
- five quick switching recipes for starting new measurements at regular QC positions. Calibration table and a label can be edited for each recipe
- marker key for marking a part of data series acquired
- **-CARMK** a carrying case, water tight, shock-proof
- **-MKSTD** a polymer plate for verifying the calibration in long-term use (most stable polymers will do)

Interfaces and physical properties

- an integral display and a diaphragm keyboard
- large numeric display and a graphic display, trend curve and values
- LCD colour hue is associated with crossing preset moisture levels, high / low (alarm feature)
- battery charge indicator LEDs
- battery-backed clock for time stamping
- dimensions 283x141x141 mm, weight 2.0 kg
- IP65 enclosure for harsh environments with sturdy grips
- an operating period of at least 7 hours before recharging the Li ion battery of 10 Ah.
- battery charger for 110 - 240 VAC mains is included. Several common chargers will do
- wireless communication via Bluetooth eith the adapter for the laptop included
- the free **ATOM, AK30** and **AK30Mini** programs are data acquisition software for trend display, data archiving, manipulation etc. **Advanced** is an optional licensed program with plenty of features.
- meter configuration can be saved, meter starts the next session like that. Temporary changes are not saved.
- calibration tables can be saved after modification, user decides if necessary
- **Note:** Does not operate for materials containing significant amounts of **soothe**, **metal particles, metal films, glycerine** or **Titanium oxide** pigment

Ambient conditions

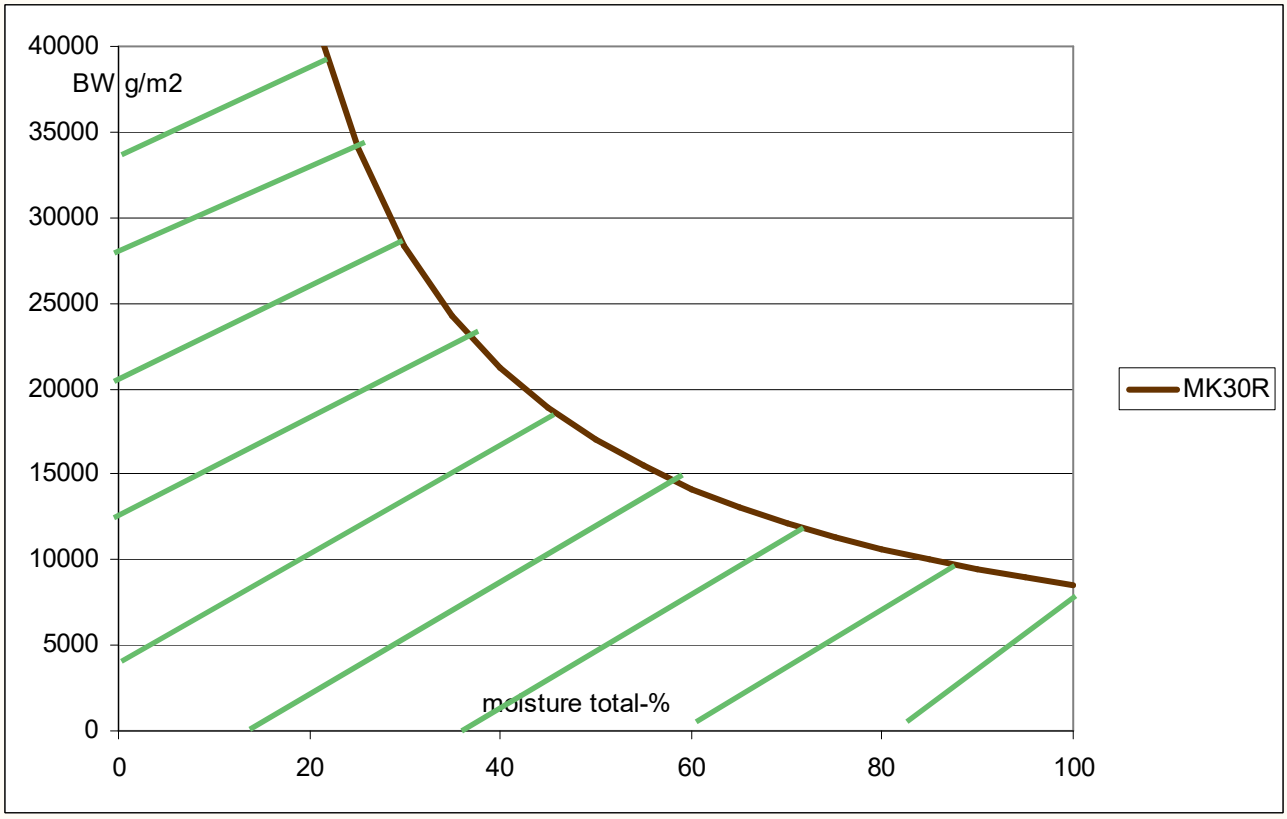
- operating +5 ... +45 C (+65 C shortly)
- fully temperature compensated
- IP65 case tolerating some water splashes but is not water-tight.
- sensing surface can be cleaned if dirt accumulated
- power and clock batteries are replaced every 7 years

Options

Your nearest contact:

Visilab Signal Technologies Oy
Sepäntie 4, FI-07230, Askola, Finland
Tel. +358-45-6354885
www.visilab.fi
e-mail: info@visilab.fi

Approximate safe operating region for MK30R



Moisture accuracy for MK30R - The moisture reading accuracy is dependent on the moisture level. The calibration performed will strongly affect and so do the measuring conditions.

In order to get the best results, measure with a thick layer of material **with air compressed out between the layers** . Strong layering of water is not supposed to exist. Moisture level 2 - 40 % accuracy is +/-0.3% or better. 40 - 70 accuracy is +/-0.4 % or better, above that +/-2% or better. Repeatability numbers are usually much better than these. **MK30R** will average out the moisture of the material which it is able to "see".

