

TRADITION AND INNOVATION – 169 YEARS OF KERN

Independent and family-run, KERN is already in its 6th generation and is synonymous with quality and reliability in customer service.

FAST

- 24 hours delivery service – order today, on its way tomorrow
- Sales & service hotline from 8:00 am to 6:00 pm

COMPETENT

- DKD accreditation (DIN EN ISO/IEC 17025)
- QM system (DIN EN ISO 9001:200*)
- Initial verification by the manufacturer (2009/23/ECC)
- Medical (DIN EN ISO 13485 & 93/42/EWG)

RELIABLE

- 2+ years warranty
- Precision in weighing technology for the last 16+ years

DIVERSE

- One-stop shopping: from pocket balances through to floor scales – everything from one supplier
- 8 f V fZWTS'S UWkagi S' f [` a f_ Wwith the „Balance Quick-Finder“



KERN – Professional measuring.

MOISTURE ANALYZERS



GB

2013

4 Moisture analysers

KERN Model		Page
DBS	Modern moisture analyser with 10 memories and graphic display	48
DLB	Robust moisture analyser for samples up to 160 g	49
MLB-N	High standard in moisture analysis with graphic-assisted display	50
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Moisture analysing is an integral part of many raw and finished products and has a crucial influence on the quality of the product.

Moisture analysers are used particularly in the food industry, water resource management (sewage plants, etc.), plastics industry, agriculture and the energy industry (bio-energy plants, etc.).

Determining moisture requires a great deal of experience. Depending on the type of sample and the task involved, various drying processes are used.

KERN has concentrated on the most widely-used drying method: halogen drying, which brings many advantages:

- Even warming of the sample from above, without any risk of burning the surface of the sample
- Affordable purchase costs ensure rapid amortisation of the device
- Established temperature ranges from 35 - 200°C

- High measuring precision, up to 0.01 %
- Sufficient spare capacity, weighing range up to 160 g
- Various drying programs (gradual drying, standard drying, stage drying, preheating stage (Boost))

The numerous memories of the KERN moisture analyser are particularly useful, as they hold information on the complete drying processes with drying parameters such as, for example, drying period, drying temperature, display settings, switch off criteria, etc... This saves an enormous amount of time and helps to achieve repeatable results.

On the internet, you will find a practical application handbook containing many examples, field reports, adjustments and tips for each KERN moisture analyser.



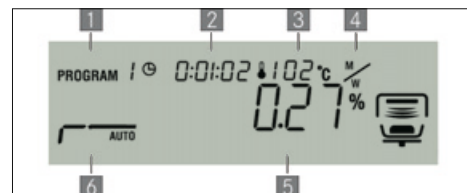
Your KERN product specialist will be happy to help:

Ulrich Ulmer
Product specialist Moisture analysers

Quick-Finder

■ = Standard □ = Option

Read-out	Weighing range	Model	Page	DAYS				
d	Max	KERN		ready for shipping	For an explanation of the symbols, see the flap of the envelope			
0,001 g	60 g	DBS 60-3	48	1		■	■	■
0,001 g	160 g	DLB 160-3A	49	1		■	■	■
0,001 g	50 g	MLB 50-3N	50	1		■	■	■
0,001 g	50 g	MLS 50-3HA160N	51	1		■	■	■
0,001 g	100 g	DLT 100-3	52	1		■	■	■



Modern moisture analyser with 10 memories and graphic display

STANDARD

- CAL EXT
- MEMORY
- RS 232
- USB
- GLP PROTOCOL
- UNIT
- 230 V
- NITS
- FORCE
- 1 DAY
- 3 YEARS WARRANTY

OPTION

- DKD +3 DAYS

only with printer

KERN	DBS 60-3
Readout [d]	0,001 g / 0,01 %
Weighing range [Max]	60 g
Reproducibility, weight of sample 2 g	0,15 %
Reproducibility, weight of sample 10 g	0,02 %
Display after drying (Display can be switched over at any time)	
Moisture [%] = Weight loss (WL) from SW (startweight)	0 - 100 %
Dry mass [%] = Residual weight (RW) from SW	100 - 0 %
ATRO [%] [(SG-RG) : RG] · 100%	100 - 999 %
ATRO [%] (SG : RG) · 100%	0 - 999 %
Weight loss [g] (WL)	Absolute value in [g]
Temperature range	50 - 200 °C in steps up to 1 °C
Drying modes	<ul style="list-style-type: none"> • Standard drying • Drying in levels • Gentle drying • Pre-heat level, can be switched on
Switch off criteria	<ul style="list-style-type: none"> • When the set time has expired (1 min - 4 h) • When the weight loss per unit of time falls below the target value (30 sec)
Recall of measurement	Interval adjustable from 1 sec - 10 min (only in connection with KERN YKB-01N printer or PC)
Overall dimensions WxDxH	202x336x157 mm
Net weight	approx. 4,2 kg
Option DKD Calibr. Certificate	963-127

Features

- 1 Drying program
 - 2 Previous drying time
 - 3 Current temperature
 - 4 Unit for displaying the results
 - 5 Current moisture content in %
 - 6 Drying mode/Status display drying
- **Halogen quartz glass heater** 400 W
 - **Observation window over the sample**, useful during initial adjustment
 - **Internal memory** for automatic sequence of 10 drying programs and 100 drying processes carried out
 - The last value measured remains on the display until it is replaced by a new measurement
 - **Sample description** for up to 99 samples, 2 digits, freely programmable, and is printed in the measuring protocol
 - **Date and time display** as standard
 - **10 sample plates included**
 - **Application handbook:** On the internet, you will find a practical application handbook containing many examples, field reports, adjustments and tips for each KERN moisture analyser

Accessories

- **Sample plates aluminium**, Ø 92 mm. Unit of 80 pieces, KERN MLB-A01
- **Round fiberglass filter** e.g. for samples that splash or become encrusted. Unit of 80 pieces, KERN RH-A02
- **Temperature calibration set** consists of measuring sensor and display device, KERN DBS-A01
- **USB interface kit** for bi-directional data exchange between moisture analyser and computer. Scope of supply: USB cable, driver, Software Balance Connection, KERN DBS-A02
- **Suitable printers** see page 130

Moisture analyser KERN DLB



04

Robust moisture analyser for samples up to 160 g

STANDARD

CAL EXT MEMORY RS 232 GLP PROTOCOL UNIT 230 V DMS 1 DAY 3 YEARS WARRANTY DKD +3 DAYS

OPTION

only with printer

KERN	DLB 160-3A
Readout [d]	0,001 g / 0,01 %
Weighing range [Max]	160 g
Reproducibility, weight of sample 10 g	0,05 %
Display after drying (Display can be switched over at any time)	
Moisture [%] = Weight loss (WL) from SW (startweight)	0 - 100 %
Dry mass [%] = Residual weight (RW) from SW	100 - 0 %
ATRO [%] (SG : RG) · 100%	100 - 999 %
Weight loss [g] (WL)	Absolute value in [g]
Temperature range	35 °C - 160 °C in steps up to 1 °C
Drying modes	<ul style="list-style-type: none"> Standard drying Pre-heat level, can be switched on
Switch off criteria	<ul style="list-style-type: none"> When the set time has expired (1 - 99 min) When the weight loss per unit of time falls below the target value (60 sec)
Recall of measurement	<ul style="list-style-type: none"> Continuous output (residual weight) At the end of the drying process, manual or automatic (only in connection with KERN YKB-01N printer or PC)
Overall dimensions WxDxH	210x340x225 mm
Net weight	approx. 4,2 kg
Option DKD Calibr. Certificate	963-127

Features

- Backlit LCDdisplay, digit height 17 mm
 - Current moisture content in %
 - Unit for displaying the results, e.g. % moisture
 - Drying process active
- Halogen quartz glass heater** 400 W
- Internal memory** for automatic sequence of 5 complete drying processes
- The last value measured remains on the display until it is replaced by a new measurement
- 10 sample plates included**
- Application handbook:** On the internet, you will find a practical application handbook containing many examples, field reports, adjustments and tips for each KERN moisture analyser

Accessories

- Sample plates aluminium**, Ø 92 mm. Unit of 80 pieces, KERN MLB-A01
- Round fiberglass filter** e.g. for samples that splash or become encrusted. Unit of 80 pieces, KERN RH-A02
- Temperature calibration set** consists of measuring sensor and display device, KERN DLB-A01
- Protective working cover** standard, can be reordered, KERN PLJ-A01
- Suitable printers** see page 130



04

High standard in moisture analysis with graphics display

STANDARD OPTION

CAL EXT
 MEMORY
 RS 232
 230 V
 FORCE
 1 DAY
 3 YEARS WARRANTY
 DKD +3 DAYS

KERN	MLB 50-3N
Readout [d]	0,001 g / 0,01 %
Weighing range [Max]	50 g
Reproducibility, weight of sample 2 g	0,5 %
Reproducibility, weight of sample 10 g	0,02 %
Display after drying (Display can be switched over at any time)	
Moisture [%] = Weight loss (WL) from SW (startweight)	0 - 100 %
Dry mass [%] = Residual weight (RW) from SW	100 - 0 %
ATRO [%] $[(SG-RG) : RG] \cdot 100\%$	0 - 999 %
Temperature range	50° - 160°C in steps up to 1°C
Drying modes	<ul style="list-style-type: none"> Standard drying Gentle drying Pre-heat level, can be switched on
Switch off criteria	<ul style="list-style-type: none"> When the set time has expired (1 - 9 h 59 min) When a constant weight per adjustable time unit has been reached (1 - 59 sec)
Recall of measurement	Interval adjustable from 1 - 180 sec (only in connection with KERN YKB-01N printer or PC)
Overall dimensions WxDxH	210x335x156 mm
Net weight	approx. 6 kg
Option DKD Calibr. Certificate	963-127

Features

- Backlit LCD display, digit height 14 mm
 - 1 Moisture display in %
 - 2 Current moisture content in %
 - 3 Printout in moisture %
 - 4 Type of drying *Standard*
 - 5 Switch off mode
 - 6 Previous drying time
 - 7 Current temperature
 - 8 Drying process active
- **Halogen quartz glass heater** 400 W
- The last value measured remains on the display until it is replaced by a new measurement
- **10 sample plates included**
- **Application handbook:** On the internet, you will find a practical application handbook containing many examples, field reports, adjustments and tips for each KERN moisture analyser

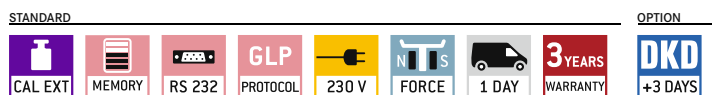
Accessories

- **Sample plates aluminium**, Ø 92 mm. Unit of 80 pieces, KERN MLB-A01
- **Round fiberglass filter** e.g. for samples that splash or become encrusted. Unit of 80 pieces, KERN RH-A02
- **Temperature calibration set** consists of measuring sensor and display device, KERN MLB-A11
- **Protective working cover** standard, can be reordered, KERN ALS-A02
- **Suitable printers** see page 130

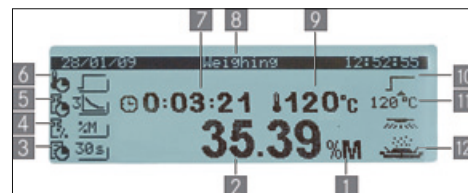
Moisture analyser KERN MLS-N



Moisture analyser with 10 memory possibilities and graphic display



KERN	MLS 50-3HA160N
Readout [d]	0,001 g / 0,01 %
Weighing range [Max]	50 g
Reproducibility, weight of sample 2 g	0,5 %
Reproducibility, weight of sample 10 g	0,02 %
Display after drying (Display can be switched over at any time)	
Moisture [%] = Weight loss (WL) from SW (startweight)	0 - 100 %
Dry mass [%] = Residual weight (RW) from SW	100 - 0 %
ATRO [%] [(SG-RG) : RG] · 100%	0 - 999 %
Restgewicht [g]	Absolute value in [g]
Temperature range	50° - 160°C in steps up to 1°C
Drying modes	<ul style="list-style-type: none"> Standard drying Drying in levels Gentle drying Pre-heat level, can be switched on
Switch off criteria	<ul style="list-style-type: none"> When the set time has expired (1 - 9 h 59 min) When the weight loss per unit of time falls below the target value (both values freely adjustable mg/sec)
Recall of measurement	Interval adjustable from 1 sec - 5 min (only in connection with KERN YKB-01N printer or PC)
Overall dimensions WxDxH	210x335x156 mm
Net weight	approx. 6,3 kg
Option DKD Calibr. Certificate	963-127



Features

- Backlit Grafik display, digit height 14 mm
 - 1 Moisture display in %
 - 2 Current moisture content in %
 - 3 Printer interval 30 sec
 - 4 Printout in moisture %
 - 5 Switch off mode
 - 6 Type of drying *Standard*
 - 7 Previous drying time
 - 8 Status bar
 - 9 Current temperature
 - 10 Type of drying *Standard*
 - 11 Target temperature
 - 12 Drying process active
- 13 Halogen quartz glass heater 400 W
- Internal memory for automatic sequence of 10 drying programs (12 free digits for each memory) and 100 drying processes carried out, which can be recalled individually
- Practical net weighing assistance to a defined target value [g] with adjustable tolerance range 1 - 25 % of the target value
- The last value measured remains on the display until it is replaced by a new measurement
- Simple „step-by-step“ user guidance in the display in the following languages D, GB, F, I, E, PL
- 14 10 sample plates included
- Can be connected to PC keyboard
- Application handbook: On the internet, you will find a practical application handbook containing many examples, field reports, adjustments and tips for each KERN moisture analyser

Accessories

- 14 Sample plates aluminium, Ø 92 mm. Unit of 80 pieces, KERN MLB-A01
- Round fiberglass filter e.g. for samples that splash or become encrusted. Unit of 80 pieces, KERN RH-A02
- Temperature calibration set consists of measuring sensor and display device, KERN MLB-A11
- Protective working cover standard, can be reordered, KERN ALS-A02
- Suitable printers see page 130



High-end moisture analyser with innovative Windows CE touch® operating system



Particularly in the pharmaceutical, food, chemical and construction industries, being able to analyse the moisture content of materials at Goods Inwards and production is an important tool to ensure product quality and robust production processes.



In biogas plants, sewage treatment plants or landfill sites, the drying of biomass has always been extremely important. Controlling the moisture content precisely helps, for example, to reduce transport weights or increase heating values



In the timber industry, statements which can be validated relating to the moisture content and the resulting mechanical and technological characteristics of the wood or the fuel and heating values of wood chips, pellets, etc. are of economic importance

Moisture analyser KERN DLT

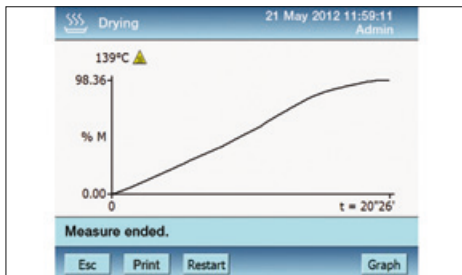


Innovative touchscreen: Large touch-sensitive, backlit screen with very good contrast for easy operation and convenient reading

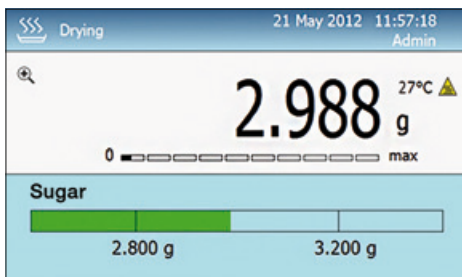
Clear menu structure with plain text labels on the display. The menu and processes are self-explanatory. This reduces the training times, avoids operating errors and in this way, ensures more efficient, rapid operation.

Colour LCD Display with digit height 18 mm, screen diagonal 5.8" (approx. 147 mm), WxH 11,8x8.8 mm

- 1 Drying process active
- 2 Status bar
- 3 Current temperature
- 4 Current moisture content in % / Display and print-out of moisture-%
- 5 Residual weight in % (progress bar)
- 6 Switch off mode
- 7 Target temperature
- 8 Type of drying Standard
- 9 Drying rate
- 10 Drying process active

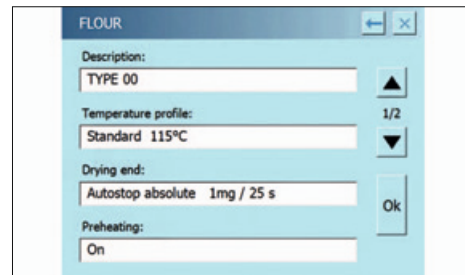


Graphic display of the drying curve shows the progress of the drying process in real time and can be used by the operator to check and evaluate the result



Net weighing assistance to a defined target value [g] with adjustable tolerance range 1% - 25% of the target value

- Halogen quartz glass heater 400 W
- Simple „step-by-step“ user guidance in the display in the following languages D, GB, F, I, E, PT



Balance contains memories for automatic sequence of 300 drying programs (12 free characters for each memory) as well as a further 100 memories for drying processes which have been carried out, which can be recalled individually



Touchless tare function: just give it a wave. 2 freely-assignable movement sensors for TARE/Print/OFF

- The last value measured remains on the display until it is replaced by a new measurement
- 10 sample plates included
- Application manual: On the website there is a practical application handbook for each KERN moisture analyser, which contains many examples, field reports, settings and tips

STANDARD



OPTION



KERN	DLT 100-3
Readout [d]	0,001 g 0,01 %
Weighing range [Max]	160 g
Reproducibility, weight of sample 10 g	0,001 g
Display after drying (Display can be switched over at any time)	
Moisture [%] = Weight loss (WL) from SW (startweight)	0 - 100 %
Dry mass [%] = Residual weight (RW) from SW	100 - 0 %
ATRO [%] (SG : RG) · 100%	100 - 999 %
Weight loss [g] (WL)	Absolute value in [g]
Temperature range	35 °C - 160 °C in steps up to 1 °C
Drying modes	<ul style="list-style-type: none"> • Standard drying • Drying in levels • Gentle drying • Pre-heat level, can be switched on
Switch off criteria	<ul style="list-style-type: none"> • When the set time has expired (1 - 99 min) • When the weight loss per unit of time falls below the target value (60 sec)
Recall of measurement	<ul style="list-style-type: none"> • Continuous output (residual weight) • At the end of the drying process, manual or automatic (only in connection with KERN YKB-01N printer or PC)
Overall dimensions WxDxH	210x340x225 mm
Dimensions of display device WxDxH	200x150x63 mm
Net weight	5,5 kg
Option DKD Calibr. Certificate	963-127

Accessories

- **Sample plates aluminium**, Ø 92 mm. Unit of 80 pieces, KERN MLB-A01
- **Temperature calibration set** consists of measuring sensor and display device, KERN MLB-A11, KERN RH-A02
- **Round fibre glass filter** e. g. for samples that splash or become encrusted. Unit of 80 pieces, KERN RH-A02
- **Protective working cover** standard, can be reordered, KERN PLJ-A01
- **Suitable printers** see page 130

