humidi
metros.com

PFEUFFER

Línea de Productos

Tecnologías para el Control de Calidad Profesional



www.humidimetros.com



Each instrument is thoroughly checked in our testing area.

Pfeuffer – Technologies for Professional Quality Assessment

In over 70 years, our company has established itself as a global market leader in the business of measuring and sampling equipment for grains and seeds. Tradition and innovation, quality made in Germany, a passion for sustainability and flexible services with a dedicated customer focus are the main pillars supporting the dynamic growth of Pfeuffer GmbH – yesterday, today and tomorrow.

We are a medium-sized family business with highly qualified and committed employees. Short links, focused action and an inspiring working environment are driving the efficient collaboration with our customers and partners.

PFEUFFER

made in Germany

SYSTEM CERTIFICATION ISO 9001 SGS

Cornerstones of our company history:

- 1947, foundation by mill design engineer Franz Pfeuffer
- 1981, relocation to Kitzingen (near Würzburg, Bavaria)
- 2006, acquisition of Denmark's Rationel Kornservice A/S
- 2015, expansion of development, manufacturing, storage and administration facilities



Global Focus in the Heart of Europe

Since relocating the company to Kitzingen in 1981, we have built Pfeuffer GmbH into a globally focused development, manufacturing and sales organization. In 2014, the export share of the business rose to a record high of more than 60 percent.

In 2015, we embarked on an ambitious investment program to modernize and expand our engineering, manufacturing and logistics capacities, including two photovoltaic plants for sustainable self-sufficient power supply.



Pfeuffer GmbH
Flugplatzstraße 70
97318 Kitzingen/Main

Tel. +49 9321 9369-0
www.pfeuffer.com

Distribuidor en España
Humidimetros.com
Po. Ferrocarriles Catalanes
117 local 32
Tel. +34 936 654 966
www.humidimetros.com

Distributors of wide experience

Our global net has been stablished to permit you to have the best support in your market.



Precision is important to us down to the smallest detail.



Each sample cleaner is tested and must meet strict quality criteria before shipment.

Industry-leading Performance and Expertise

At Pfeuffer, maximum quality and reliability are the basis of our customers' confidence and guide our activities throughout product development, manufacturing and services.

- **Quality:** Our quality management has been certified to DIN EN ISO 9001 since 2001. In addition, since 2003, our sampling and measuring technology also meets the strict explosion protection requirements of the European ATEX standard (RL 2014/34/EU).
- **Environmental responsibility & sustainability:** We are committed to environmental protection, to the sustainable use of natural resources and to strict adherence to the highest environmental standards, including waste prevention and recycling. Contributing to the sustainable procurement of our resources, two photovoltaic plants at our Kitzingen site supply about 50 percent of our mean annual power needs.
- **Vertical manufacturing integration:** Based on state-of-the-art in-house facilities for product development, manufacturing and assembly, we offer a diversified portfolio of humidity and temperature measuring devices, laboratory equipment, and systems for sampling, sample division and sample preparation. A sophisticated ERP system ensures swift order processing and short delivery times.
- **Services:** The encompassing approach of our corporate philosophy also includes a complete set of customer-focused services for installation, maintenance and repair. This is backed by years of experience and solid, in-depth market knowledge. Today, Pfeuffer GmbH is a competent full-service provider with a reputation for shortest response times and on-time order processing.

Rakoraf CEE / CHE

Truck sampler



The quickest and most effective way of taking a representative sample from the vehicle

- For all agricultural grain crops
- Patented and tested sampling quality
- Leading in Europe
- Automatic transfer of sample to laboratory
- Operation of weighbridge and sampler

Usage area

The goal of goods inward testing in the acquisition and trading of grain crops is efficient sampling for quick and above all correct evaluation of the deliveries. Sensitivity to foreign substances and lack of quality mean that the representativeness of the delivery samples must be ensured. Correct delivery samples are essential for quality control, documentation and retraceability. Sampling can take place while the vehicle is on the weighbridge.

Function

The sample spear is pushed into the product using the remote control. When this takes place, a proper cross-sectional sample is pushed into the inner tube chamber of the sample spear. The Rekoraf operates using the patented Convac air circulation system. No suction effect is applied to the product. No lightweight fractions (e. g. broken grain, dust and dirt) are drawn in from the immediate vicinity. The air flow only takes the sample which is present in the sample spear and transports it to the weighing room or a laboratory through a PVC hose. There the sample is separated from the air in the reception box (collection container), emptied and is ready for quality control.

Positioning

The Rakoraf sampler is installed free-standing on a foundation. The positioning must be adapted to the local situation. The working and swiveling range can be preselected, and extends to rotation of approximately 350°, covering a diameter of 4.8 m to 8.8 m.

Variants

The CEE model is completely under electro-mechanical control. In the CHE model, the upwards and downwards movement of the telescopic arm is hydraulically controlled.

Technical data

Model	Voltage	Output	Weight	Item number
Rakoraf CEE	3x400 V, 50 Hz, 10 A	4000 VA	475 kg	1715 0000
Rakoraf CHE	3x400 V, 50 Hz, 10 A	4000 VA	475 kg	1715 0010

Accessories

Accessories	Item number
Sample spear 2.10 m (standard)	1715 0029
Sample spear 2.30 m	1715 0030
Sample spear 2.50 m	1715 0031
Sample spear 3.00 m	1715 0032
PVC transport hose, different lengths	By request
Foundation attachment frame	3321 0300
Foundation sheet metal box with fork lift pockets	1715 1031

Rakoraf 2 / Rakoraf 2 LINEAR

Truck sampler, stationary and with lateral movement



Complete and representative samples can be taken from both sides of articulated trains, semitrailers and railway wagons

- Maximum sampling area 8.8x18.8 m (linear)
- Column construction or alternatively wall-mounted
- Well-tried and patented sampling technology
- Clearly arranged remote control
- Quick installation

Usage area

The goal of goods inward testing in the acquisition and trading of grain crops is efficient sampling for correct evaluation of the deliveries. Sensitivity to foreign substances and lack of quality mean that the representativeness of the delivery samples must be ensured. Correct delivery samples are essential for quality control, documentation and retraceability. The Rakoraf 2 linear easily reaches any area of the vehicle to do this, e. g. while the vehicle is on the weighbridge.





Function

The sample spear is pushed into the product using the remote control. When this takes place, a proper cross-sectional sample is pushed into the inner tube chamber of the sample spear. The Rekoraf operates using the patented Convac air circulation system. No suction effect is applied to the product. No lightweight fractions (e. g. broken grain, dust and dirt) are drawn in from the immediate vicinity. The air flow only takes the sample which is present in the sample spear and transports it to the weighing room or a laboratory through a PVC hose. There the sample is separated from the air in the reception box (collection container), emptied and is ready for quality control.

Positioning

The Rakoraf 2 with a column or wall console is available with lateral movement (linear) with a maximum sampling area of 8.8x18.8 m or also fixed with a maximum radius of 4.4 m.

Technical data

Model	Voltage	Output	Item number
Rakoraf 2	3x400 V, 50 Hz	4000 VA	1715 0005
Rakoraf 2 linear	3x400 V, 50 Hz	4000 VA	1715 0006

Accessories

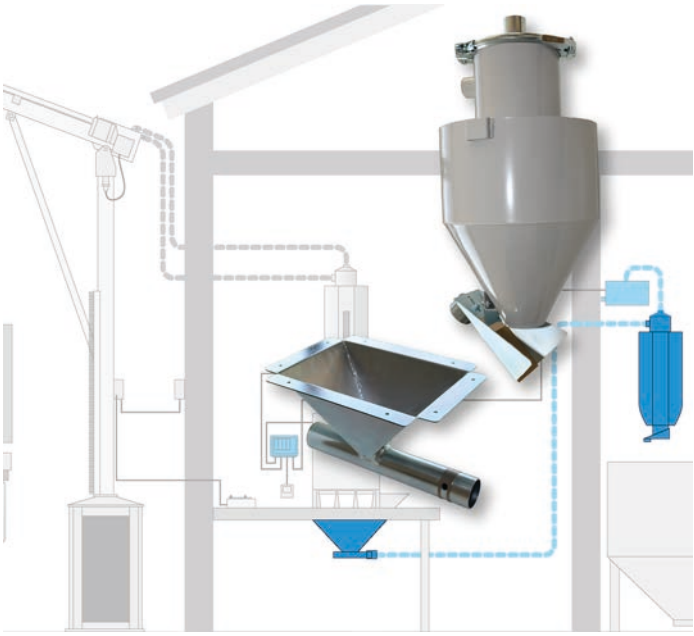
Accessories	Item number
Sample spear 2.50 m	1715 0031
Sample spear 3.00 m	1715 0032

Transport system

Extension to Rakoraf Truck sampler

Pneumatic transportation of samples, residual samples or surplus quantities

- Automatic transport
- Variable distances of up to 50 m
- Minimal effort required
- Extremely versatile



Function

Consisting of a feed funnel for installation, a blower unit, a reception box (collection container) and a switch box for automatic starting and stopping with a mains plug. A sheet metal housing is available as an accessory, into which the reception box, the switch box, the funnel and the agitator (optional) can be installed. It is used to provide protection against external influences (e. g. rain, snowfall and foodstuff pests).

Technical data

Product	Voltage	Output	Item number
Transport system	230 V, 50 Hz	1200 W	1715 0050

Accessories

Accessories	Item number
Transport housing	1715 1025
Agitator	2320 0620
Blower unit (transport system from 35 m)	2320 0610
Switch cabinet (transport system from 35 m)	2320 1070

DVB 200 / 300

Process sampler for down pipes





Automatic removal of representative average samples

- Service-friendly design
- Robust, safe and reliable
- Compliant with the ISTA rules
- Extremely versatile
- ATEX version available

Usage area

The type DVB samplers are used for the product mixture made in the factory or for outgoing deliveries (loading of transport containers or vehicles), for example. The sampler is installed in a vertical down pipe (pipe incline = 25°). It can take samples in various locations in the process automatically and without a great deal of effort.





Function

Sampling takes place through a small cassette-like funnel, which has a removal gap at the top. This opening is automatically led through the flow of product over the entire width of the down pipe. A correct sample is taken across the entire cross-section when this occurs, not just at the sides or in the middle. The time between the individual samples is infinitely adjustable.

Variants

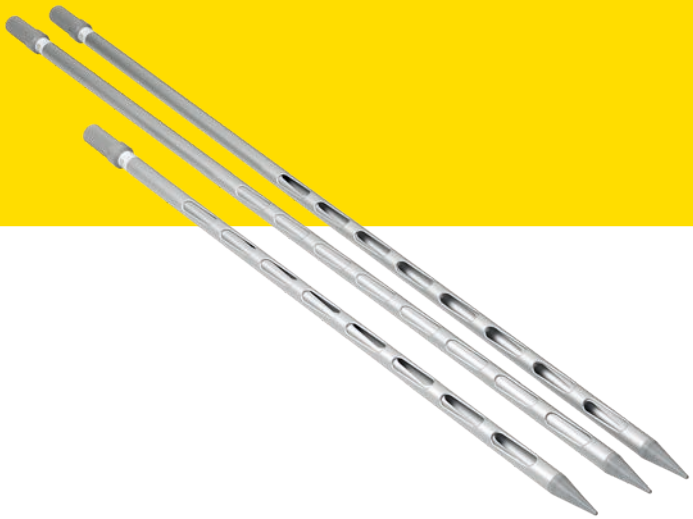
DVB 200, down pipe diameter 50 mm, inlet/outlet 200x200 mm with clamping rings DVB 300, down pipe diameter 76 mm, inlet/outlet 300x300 mm with counter flanges

Technical data

Model	Version	Voltage	Output	Weight	Item number
DVB 200	with control	3x400 V, 50 Hz	0.09 kW	36 kg	1710 0080
DVB 200	without control	3x400 V, 50 Hz	0.09 kW	36 kg	1710 0280
DVB 200	ATEX with control	3x400 V, 50 Hz	0.09 kW	36 kg	1710 4980
DVB 300	with control	3x400 V, 50 Hz	0.16 kW	85 kg	1710 0081
DVB 300	without control	3x400 V, 50 Hz	0.16 kW	85 kg	1710 0281
DVB 300	ATEX with control	3x400 V, 50 Hz	0.16 kW	85 kg	1710 4981

PNS sample spear

Alloy version of sample spear



For simple manual sampling of grain and seeds from the vehicle or stored in large storage facilities

- Spirally opening chambers
- Robust design
- Easy to dismantle
- Outlet opening in handle

Function

The spear is pushed into the product to be tested in the closed condition. When the handle is rotated, the removal slots open in an offset order from bottom to top. These spiral openings ensure that the sample material does not mainly fall into the spear through the upper openings. The spear is open towards the rear in the handle so that all of the removed sample (400-600 g) runs out. The spear can be easily pulled apart for cleaning using an internal notch in the screw cap.

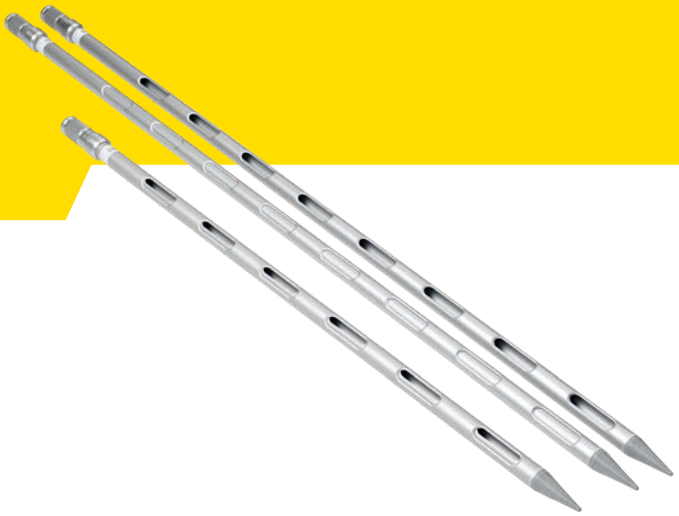


Technical data

Model	Length	External diam.	Weight	Item number
PNS84	1.45	38 mm	2.0 kg	1720 0300
PNS88	2.0 m	38 mm	2.5 kg	1720 0310
PNS88	2.5 m	38 mm	3.0 kg	1720 0315
PNS88	3.0 m	38 mm	3.5 kg	1720 0318
Pellet	1.3 m	50 mm	2.3 kg	1720 0320

Pfeuffer sample spear

Mechanical sample spear



Removal of average samples up to a depth of 2 m

- Evenly opening chambers
- Robust design
- Easy to dismantle
- Outlet opening in handle
- Light weight

Function

Insert the closed spear into the bulk material. Open the chambers by rotating the handle and then turn it back again. The specially shaped openings prevent grains from being cut up. The original broken grain part is not increased. The spear consists of two anodized aluminum tubes and can easily be pulled apart for cleaning.



Technical data

Product	Length	External diam. / openings	Weight	Sample quantity	Item number
Pfeuffer sample spear	1.5 m	40 mm / 6	1.8 kg	600 g	1720 0500
Pfeuffer sample spear	2.0 m	40 mm / 8	2.3 kg	800 g	1720 0510

Vario sample divider

Sample divider equipment range for quickly reduced laboratory samples



The standard machine for grain recording

- The quickest way of dividing samples in a representative way
- Large filling funnel
- Infinitely adjustable dividing ratio
- Models for 1 to 8 subsamples
- Extremely good static distribution of the different sample parts

Usage area

The sample divider is the most neglected device in the quality evaluation chain of agricultural grain when delivery takes place. Collection samples are produced in accordance with a fixed number of sampling points. The sample that is acquired in this way usually weighs 5–8 kg. Modern analysis devices required between 300–1000 g.

Function

Switch on sample divider and put the sample into the feed funnel. The surrounding distributor pipe passes the eight variably adjustable openings inside the device. The sub-samples are taken to the collection trays alternately via a tube system. The excess material flows through the middle and can be collected in a collection container or taken away via a pneumatic transportation system. The yellow scale on the front of the sample divider indicates the dividing ratio.

The Vario 1G sample divider is also available with a built-in electric actuator (actuation cylinder) and associated PC software. The device can be used in a single work operation to divide the initial sample, whereby either the size of the sub-sample or a fixed divided sample / subsample can be chosen.







Technical data

Model	Number of samples	Voltage / output	Dimensions	Weight	Item number
Vario 1G	1	230 V, 50 Hz / 60 W	492x465x800 mm	65 kg	1745 0057
Vario 2H	2	230 V, 50 Hz / 60 W	492x485x840 mm	60 kg	1745 0050
Vario 4/8	4 or 8	230 V, 50 Hz / 60 W	492x550x840 mm	72 kg	1745 0053

Accessories

Accessories	Item number
Standard funnel Ø 48 mm	3331 0500
Extension funnel for capacity of 8 kg	3331 0510
Funnel diam. 30 mm (9 kg/min)	3331 0520
Different funnel inserts	By request
Stainless steel hook-in plates for changing the dividing ratio	3331 0530
PVC collection tray, 2 liters	3110 0050

Accessories	Item number
Stainless steel collection pan, 2 liters	3351 0500
Stainless steel collection pan, 3.5 liters	3331 9015
Stainless steel continuous sample pan	1740 0081
Side funnel for Vario 2H model	3321 4020
Agitator for non-free-flowing products	1745 0065
For Vario 4/8 only: Stainless steel collection pan, 2 liters	3331 9010

Sample divider

Sample dividing into 8 or 32 subsamples in a single operation



Divider for round robin tests and test series

- 8 or 32 subsamples in a single work operation
- Fixed dividing ratio
- Suitable for large sample containers and quantities
- Three funnel sizes available

Usage area

The model 8 / model 32 sample divider is used to produce homogeneous round robin test samples. It is also used to prepare internal control samples, which are needed for regular comparative measurements.

Function

Switch on sample divider and put the sample into the feed funnel. The surrounding distributor pipe distributes the sample among the 8 or 32 sample outlets. The sample is fully distributed, which means that there is no surplus quantity. Because of the large number of openings that are coated when the sample is passing through, the sample divider achieves extremely good statistical distribution of the different sample parts.







Technical data

Product	Number of samples	Voltage / output	Dimensions	Weight	Item number
Model 8	8	230 V, 50 Hz / 60 VA	540x540x695 mm	38.5 kg	1745 0055
Model 32	32	230 V, 50 Hz / 60 VA	530x480x575 mm	51 kg	1745 0056

Accessories

Accessories	Item number
Extension pipe (for model 32 only)	2330 0390
Extension funnel for capacity of 8 kg	3331 0510
Funnel diam. 30 mm (9 kg/min)	3331 0520
Different funnel inserts	By request

Riffle sample divider

Mechanical sample divider product range



Made from stainless steel

- Available in four sizes: 3, 5, 10 and 18 liters
- Three different numbers of slots: 10, 18 and 34
- Different slot widths: from 9.8 to 29.0 mm
- Also suitable for granulates, flour and powder

Function

The initial sample is put into the attached container and closed by tilting it (dividing ratio 50:50). If the sample is to be divided again, depending on the model a drawer can be relocated or the contents of a drawer put into the attached container and the procedure repeated.







Deliverable containers

Container type 1 is supplied with 2 collecting containers, has a closed attached container and is optimum for halving the initial sample quantity. Container type 2 is supplied with 3 identical collecting containers. It has an attached container with an opening for sliding in and for quick relocating of the collecting container. It also has a flap that opens just before the highest point and minimizes the amount of dust. The closed structure is therefore particularly suitable for multi-stage dividing of dusty samples, flour, granulates and powder. Container type 3 has an additional flap for alternative use with or without a collecting container.

Technical data

Maximum sample quantity	Container type	Number of slots	Slot width	Weight	Item number
3 liters	1	10	19.2 mm	8.0 kg	1745 0020
3 liters	1	18	10.3 mm	8.5 kg	1745 0021
5 liters	1	18	19.1 mm	13.0 kg	1745 0022
5 liters	2	18	19.1 mm	13.0 kg	1745 0023
3 liters	1	10	19.2 mm	8.0 kg	1745 0020
3 liters	1	18	10.3 mm	8.5 kg	1745 0021
5 liters	1	18	19.1 mm	13.0 kg	1745 0022
5 liters	2	18	19.1 mm	13.0 kg	1745 0023

Maximum sample quantity	Container type	Number of slots	Slot width	Weight	Item number
5 liters	1	34	9.8 mm	13.5 kg	1745 0019
5 liters	2	34	9.8 mm	13.5 kg	1745 0024
10 liters	1	10	29.0 mm	15.0 kg	1745 0025
10 liters	3	10	29.0 mm	15.0 kg	1745 0018
10 liters	1	18	15.2 mm	15.5 kg	1745 0026
10 liters	3	18	15.2 mm	15.5 kg	1745 0027
18 liters	3	18	28.2 mm	23.6 kg	1745 0028
18 liters	3	34	14.5 mm	24.0 kg	1745 0029


PFEIFFER

MLN sample cleaner

Sieve machine with aspiration and deawner



The cleaning procedure essentially corresponds to that of a normal process cleaning machine

- Fully automatic cleaning
- With deawner and aspiration
- Quick sieve change
- Maintenance-free

Usage area

The proportion of impurities (coarse particles, fine particles, aspiration discharge) and the proportion of quality grain can be determined directly upon receipt using a sample. This makes it possible to accept quality grain and reject batches that do not fulfill the contractual conditions in a targeted way.

Function

Put in sample and start the cleaning process. If necessary, the sample is first deawned for a preselectable time. Then the deawner opens automatically and the sample falls through the aspiration chamber. The lightweight dirt such as dust is extracted by the aspiration and deposited in the dust bag by the cyclone. The sample runs over the straw sieve, which removes bigger impurities, and then runs over the sand sieve. Sand and small impurities such as weed seeds fall through the sand sieve. The impurities, sand and weed seeds run into the left-hand collection pan, and the quality grain runs into the right-hand collection pan. A feed funnel is available as an accessory. This means that the sample cleaner can be used for large sample quantities such as for seed cleaning for trial plots.







Technical data

Model	Number of sieves	Voltage	Output	Weight	Item number
MLN	2	230 V, 50 Hz	0.37 kW	55 kg	1740 0020

Accessories

Accessories	Item number
Feed funnel (5 kg capacity)	1740 0080
Stainless steel collection pan for flow	1740 0081
Bag holder, 1-way	1740 0082
Bag holder, 2-way	1740 0083
Stainless steel collection pan	3351 0500
PVC collection pan	3110 0050
Dust bag holder and dust bag	1740 0100
Different sieves with round and elongated holes	By request

Standard sieves for brewing barley

Sieve	Dimensions	Item number
Straw sieve	4.5x20 mm / 300x350 mm	3115 6088
Sand sieve	1.5x3.5 mm + Ø 2.0 mm / 300x350 mm	3115 6999

SLN sample cleaner

Sieve machine with sorting sieve



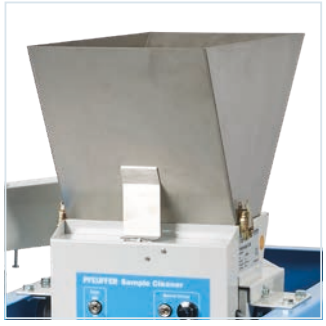
The cleaning procedure essentially corresponds to that of a normal process cleaning machine

- Fully automatic cleaning
- With deawner and aspiration
- Quick sieve change
- Additional sorting sieves for sorting out shriveled and small grain
- Sorting sieve system with cleaning balls

Usage area

The proportion of impurities (coarse particles, fine particles, aspiration discharge) and the proportion of quality grain can be determined directly upon receipt using a sample. This makes it possible to accept quality grain and reject batches that do not fulfill the contractual conditions in a targeted way.







Function

Put in sample and start the cleaning process. If necessary, the sample is first deawned for a preselectable time. Then the deawner opens automatically and the sample falls through the aspiration chamber. The lightweight dirt is extracted by the aspiration and deposited in the dust bag by the cyclone. The sample runs over the straw sieve, which removes bigger impurities and then runs over the sand sieve. Sand and small impurities fall through the sand sieve. The sample is finally led through the sorting sieve (model SLN4 = 2 sorting sieves). Rubber balls prevent the sorting sieve from clogging. The impurities run into the side collection pan. The shriveled and small grain is collected in the left-hand tray and the quality grain in the right-hand tray. For accessories see the MLN sample cleaner.

Technical data

Model	Number of sieves	Voltage	Output	Weight	Item number
SLN3	3	230 V, 50 Hz	0.37 kW	85 kg	1740 0040
SLN4	4	230 V, 50 Hz	0.37 kW	85 kg	1740 0050

Standard sieves for brewing barley SLN3

Sieve	Dimensions	Item number
Top sieve (straw sieve)	4.5x20 mm / 300x350 mm	3115 6088
Sand sieve	1.5x3.5 mm + Ø 2.0 mm/ 300x350 mm	3115 6999
Sorting / grading sieve	2.2x20 mm / 300x470 mm	3115 8057

Standard sieves for brewing barley SLN4

Sieve	Dimensions	Item number
Top sieve (straw sieve)	4.5x20 mm / 300x350 mm	3115 6088
Sand sieve	1.5x3.5 mm + Ø 2.0 mm/ 300x350 mm	3115 6999
1st Sorting / grading sieve	2.2x20 mm / 300x470 mm	3115 8046
2nd Sorting / grading sieve	2.2x20 mm / 300x470 mm	3115 8057

Housing for SLN 3

Dust and noise prevention housing



The housing reduces the amount of working noise and the dust emissions of the sample cleaner

- Ergonomic working height
- Feed funnel and openings for collecting containers
- External mains switch
- Reduction of noise and dust in the working room
- Can be pulled out for easy cleaning

Function

The housing is a cabinet with surrounding foam rubber insulation, acrylic glass doors with drawer openings, a feed funnel and an external operating switch. The SLN3 sample cleaner is placed on the pull-out heavy-duty extension and can be quickly pulled out for regular cleaning. The housing is screwed to the floor or the wall to prevent it from tipping over.





Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
SLN3 housing	230 V, 50 Hz	0.37 kW	800x805x1650 mm	95 kg	1740 0075

Automatic sample cleaner

Total dockage determination, sorting and weighing



For a wide range of agricultural grain crops and seeds

- Fully automatic cleaning and weighing
- Run-through time approx. 1.5 minutes for 1 kg of grain
- Barcode scanner
- Touchscreen display
- Data memory

Function

The automatic sample cleaner is available as an open version or with a closed housing. Pour the sample into the feed funnel and start the process. The automatic cleaner weighs the initial sample and starts the cleaning procedure fully automatically. The cleaned and sorted sample parts fall into balance containers in the two drawer positions, where they are weighed. The software shows the fraction weights and the percentage proportions on the large color display. The result consists of the cleaning loss (aspiration discharge, straw and sand sieve) and the quality grain and small grain proportions. The weighed samples then fall into a large collection container, which has a volume of approx. 180 liters, and can therefore hold more than 100 samples. A pneumatic transport system for automatic sample disposal can also be optionally used. The automatic sample cleaner is also available as an addition to an existing SLN sample cleaner.







Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Automatic sample cleaner	230 V, 50 Hz	0.40 kW	800x800x1800 mm	145 kg, with SLN	1740 0070
Automatic sample cleaner as addition	230 V, 50 Hz	0.40 kW	800x800x1800 mm	60 kg, without SLN	1740 0071

Accessories

Accessories	Item number
Collection pan for flow	1740 0081
Mounting frame for sample splitter	2350 0775
Barcode scanner	1920 0900

Milomat

Laboratory mill



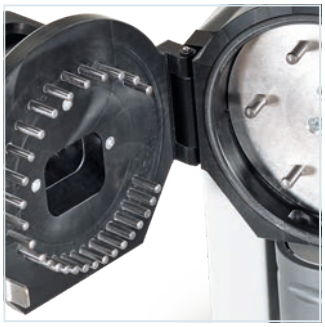
Ideal for sample grinding for moisture determination with the HE 60 / HE 90 moisture meters

- High sample throughput – fast grinding
- Less force required than grinding with a hand mill
- Easy to clean
- Compact design

Function

The Milomat impact mill effortlessly grinds almost any agricultural grain crop. Add the sample (20 ml). When the metering handle is turned, the product runs into the grinding chamber. The product is ground between a stationary and a rotary metal pin ring (impact effect). The ground material falls via the outlet connection directly into the bottom of the measuring cell of the HE 60 / HE 90 moisture meter. Powerful airflows and heating are avoided during the grinding work so that the actual moisture content is not affected.







Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Milomat	230 V, 50 Hz	70 VA	280x160x300 mm	10 kg	1520 0700

Pellet mill

Laboratory mill



Crushing of feedstuffs in the form of pellets, bruised grain, cake and granulate

- Low noise
- High grinding capacity 100-200 kg/h
- 3 kg grinding capacity in a single pass
- Collection tray with a capacity of 5 liters
- Also suitable for pellets rich in fat

Function

The sample material to be crushed is put into the funnel and falls through the filling facility into the grinder. The sample material is ground between the grinding pins or the rotating pin roller and the stationary grinding comb in the grinder. The coarsely ground mill material falls through a safety grating into the drawer. The mill material is intended for further quality control by a suitable analyzer. The pellet mill can also be used for the representative determination of continuously acquired process samples in combination with a Vario sample divider and a DVB sampler.

Insect sieve

Sieve box with drawer



Determination of insect attack during acceptance and storage

Function

Add a representative sample of approx. 100 g and sieve by hand for one minute making movements to and fro. Then check the removable white drawer for the presence of beetles or insects. The effect can be increased by heating the sample.

Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Pellet mill	400 V, 50 Hz	0.55 kW	360x440x560 mm	25 kg	1520 0300

Technical data

Product	Sample quantity	Dimensions	Weight	Item number
Insect sieve	approx. 200 g	250x250x80 mm	1 kg	1290 0010

Handheld test sieves

Standard-compliant analysis sieves for grain crops



Classic method for manual total dockage determination

- Compliant with DIN EN ISO 5223
- Stainless steel
- Sample quantity approx. 100 g

Function

The well-tried handheld test sieves consist of a robust stainless steel sieve frame with a high degree of form stability and glued-in perforated plates. No openings are cut into the edge area of the sieves. Sieve diameter Ø 200 mm, effective height 25 mm. A lid and a base are available as accessories. DIN EN ISO 5223 determines the features for analysis sieves which are used to determine dockage in grain samples in accordance with DIN EN 15587.







Technical data

Sieve	Elongated hole	Round hole	Item number
Fine sieve	1.00x20 mm	-	1290 5040
Rye	1.80x20 mm	-	1290 5060
Durum wheat	1.90x20 mm	-	1290 5062
Wheat	2.00x20 mm	-	1290 5065
Barley	2.20x20 mm	-	1290 5070
Brewing barley	2.50x20 mm	-	1290 5075
Brewing barley	2.80x20 mm	-	1290 5067

Sieve	Elongated hole	Round hole	Item number
Chaff	3.55x20 mm	-	1290 5090
Rapeseed	-	ø 0.50 mm	1290 5208
Rapeseed	-	ø 1.80 mm	1290 5260
Rapeseed	-	ø 3.00 mm	1290 5280
Maize	-	ø 4.50 mm	1290 5295
Cover			1290 5005
Base			1290 5010

Filling funnel

Sample bag tripod



The filling funnel makes the filling of retained samples in bags quick and easy

Function

The height of the bag tripod is variable, and can be adapted to the size of the bag. The aluminum funnel is easy to clean and can also be sterilized if necessary.

Balance

Compact, robust and practical

Used in agriculture



- Easy to operate
- High precision
- Value for money

Usage area

Balances must be compact, robust and practical for use in agriculture, without having to tax the budget or make concessions with regard to accuracy. These balances with their striking design are versatile, easy to operate and portable. Automatic shut-off after 5 minutes (mains adapter optional). Three models with different load capacities and accuracies are available.

Technical data

Product	Funnel diam.	Bag length	Dimensions	Weight	Item number
Filling funnel	310 mm	up to 310 mm	200x275x500 mm	3.4 kg	1745 0080

Technical data

Product	Version	Power supply	Dimensions	Weight	Item number
Balance	5000 g / 2 g	3x1.5 V batteries (AA Mignon)	193x135x39 mm	470 g	1610 0052
Balance	2000 g / 1 g	3x1.5 V batteries (AA Mignon)	193x135x39 mm	470 g	1610 0053
Balance	200 g / 0.1 g	3x1.5 V batteries (AA Mignon)	193x135x39 mm	470 g	1610 0054

Granolyser

NIR analyzer for grain, oil seeds and legumes



Determines all of the parameters for your sample quickly and accurately

- Large sample volume of 600 ml
- NIR (near infrared) diode array technology
- 1500 individual scans per sample
- Corresponds to the current Standard Weights and Measures Law in Germany and Austria.
- Touch screen display and built-in printer

Function

Pour the sample (600 ml) into the Granolyser. The start and settings for the measurement are carried out on the touch screen. The transport wheel ensures that the density is consistent during the measurement. The sample is continuously moved past the detector, and the reflection of the sample in the NIR range is measured. The built-in spectrometer scans within the range of 950 to 1540 nm (NIR). The spectrums recorded by the detector are processed by the evaluation electronics. The analysis parameters are optically determined in less than one minute. Different parameters are determined depending on the selected product: Moisture, protein, sedi, gluten, oil content and starch. The measurement result is displayed and can be printed out.







Connectivity

The Granolyser has a network connection and a USB interface for a barcode scanner, keyboard or USB data memory. It can store measuring data in the LAN of an MS Access® database using the Granolyser Data Server application. A database connection can be established quickly using an interface. For simple processing using the PC (e. g. with MS Excel®), all measurement data can also be exported onto a USB data memory.

Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Granolyser	100–240 V, 50/60 Hz	70 VA	370x450x380 mm	23 kg	1180 0000

Accessories

Accessories	Item number
Beaker 0.5 liters	3112 8605
Rolls of thermal paper (5 pieces)	3262 8601
Barcode scanner	1920 0900
»Granolyser Data Server« database application for MS Access®	By request

Granolyser HL

NIR analyzer with bulk density module



Increase the efficiency of your grain analysis

- All NIR parameters and bulk density
- Corresponds to the current Standard Weights and Measures Law in Germany and Austria.
- Results in less than 60 seconds
- User-friendly software, available in 18 languages
- Touch screen display and built-in printer

Function

The Granolyser HL supplements the well-tried NIR analysis device with a module for bulk density. A large sample (600 ml) is poured in. The touch screen is used to start the measurement and make the required settings. A long-life halogen lamp with controlled light intensity illuminates the sample. The sample material is continuously transported, the reflection of the sample is scanned in the NIR range and the material is then poured into the bulk container. The weight of a 500 ml sample is determined using an integrated weighing system. As well as different grain types (wheat, rye, barley and maize) oil seeds (rapeseed and sunflower seeds) can also be measured. Cereal legumes such as peas and broad beans can also be measured. The important parameters of moisture, protein, sedi, gluten, oil content and starch are supplemented by the hectoliter weight (bulk density) in the Granolyser HL. The measurement result is shown on the display and printed out. The Granolyser HL with LAN and USB interfaces also has the same connectivity as the Granolyser.







Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Granolyser HL	100–240 V, 50/60 Hz	70 VA	500x349x507 mm	31 kg	1180 0005

Accessories

Accessories	Item number
Beaker	3112 8605
Rolls of thermal paper (5 pieces)	3262 8601
Barcode scanner	1920 0900
»Granolyser Data Server« database application for MS Access®	By request

Granomat

Whole grain moisture meter



Quickly and accurately determines moisture and bulk density

- Large sample volume of 600 ml
- Sample does not require crushing
- Integrated printer
- Fully automatic
- Corresponds to the current Standard Weights and Measures Law in Germany, Austria and other European countries

Usage area

All types of grain, legumes, oil seeds, maize and malt can be examined with the Granomat. Up to 200 different calibrations can be stored in the internal memory. Ask for an overview of the available measuring curves!







Function

The Granomat measures the capacity (dielectric constant), weight and temperature of the sample over the entire grain. It determines both the product moisture and the bulk density (kg/hl). The sample does not have to be crushed. Pour in the sample, select the sample type and press the measuring key. The Granomat fills the measurement cell fully automatically. This guarantees that there is a consistent bulk density. A scraper removes the grains that are not needed for the measurement and ensures that there is a constant volume. The sample is measured within a very short time. The measurement cell is then emptied and the sample falls into the drawer. The measurement result is displayed and can be printed out.

Connectivity

The Granomat has two serial interfaces and one parallel interface for connecting an external printer and for transferring data to IT systems.

Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Granomat	230 V, 50/60 Hz	50 VA	420x360x390 mm	18 kg	1195 0011

Accessories

Accessories	Item number
Beaker 0.5 liters	3112 8605
Rolls of thermal paper (5 pieces)	3262 8601
»Granocom« PC software	1195 0500
»Granocom« serial cable	2295 1200
USB-to-serial adapter	2820 1522

HE 60 / HE 90

Moisture meter with grinding in the storehouse



A measuring method that has been tried and tested thousands of times – reliable and accurate for harvesting, drying and storage

- Easy to operate
- Exact measuring results
- Automatic temperature correction
- Corresponds to the current Standard Weights and Measures Law for moisture in Germany
- Also suitable for flour and bruised grain

Usage area

The moisture meters are used to measure the majority of grain crops. A total of 200 different calibrations are available. Crush the sample (20 ml) with the hand mill or optionally with the Milomat lab mill. Then screw in the top of the measuring cell as far as it will go. The homogeneous press cake is the guarantee of consistently high measuring accuracy. Select product, and after 30 seconds the exact measurement result appears in the display. The sample temperature is measured and taken into consideration automatically.





HE 60 for mobile use

The HE 60 moisture meter is suitable for use in the field or in field offices, and is the guarantee of high precision on site. The built-in battery makes a measuring time of up to 10 hours possible, independently of the power supply. The HE 60 can be programmed with up to 39 calibrations.



HE 90 with document printer

The HE 90 moisture meter is accommodated in a hard wood carry case, and is extremely robust. It contains an integrated document printer. The HE 90 can be programmed with up to 28 calibrations. A PC interface (RS232C) is optionally available via which the measurement results can be transmitted to a PC or a billing system.

Technical data

Model	Voltage	Dimensions	Weight	Configuration	Item number
HE 60	230 V, 50 Hz	470x250x120 mm	6 kg	Battery	1160 0019
HE 90	230 V, 50 Hz	540x270x130 mm	9 kg	Printer	1190 0019

HE 50

Grain moisture meter for agriculture



Precision for the most important reference variable in combine harvesting – reliability during threshing, drying and storage

- Easy to operate
- Fast measurement
- Automatic temperature correction
- Wide measuring range of more than 30 % moisture content
- 14 products can be read off directly

Function

Pour the sample (11 ml) into the bottom part of the measuring cell and screw the measurement cell together using the ratchet. Fit the measurement cell to the measuring device, turn the switch to the relevant product and press the measuring key. The HE 50 carries out the measurement in seconds, automatically corrects the temperature and displays the measurement result. The measurement cell, which has been specially developed for agriculture, allows a wide range of products to be measured. The homogenization of the sample in the measurement cell provides the optimum prerequisites for accurate moisture measurement. The HE 50 is therefore extremely reliable with freshly harvested grain up to the high measuring range. The HE 50 can be calibrated for more than 200 different products, and is therefore the most versatile moisture meter on the market. Calibrations for peanuts and false oat-grass, grasses and other grain crops are also available.







Temperature measurement

Control of the temperature in the grain store is crucial for quality and storage capability. The HE 50 is also equipped for a temperature measurement.

Technical data

Product	Power supply	Dimensions	Weight	Item number
HE 50	9 V monobloc battery	220x120x65 mm	1.7 kg	1150 0010

Accessories

Accessories	Item number
Measurement cell for floury products and hops	2150 0020
Temperature measuring probe, 1 m	2150 0110
Temperature measuring probe, 1.5 m	2150 0120
Temperature measuring probe, 2 m	2150 0130
Measuring cable for temperature measuring probe, 3 m	2250 0055
Measuring cable for temperature measuring probe, 5 m	2250 0056

HE lite

Portable and robust moisture meter



The moisture content is crucial for determination of the correct harvesting time

- High measuring range
- Simple menu navigation
- Well-tried measuring principle
- Average calculation
- Adjusting facility

Function

The HE lite measures the conductivity and temperature of a crushed grain sample. State-of-the-art measurement technology calculates the exact moisture value from this. The integrated measurement cell of the HE lite is based on the Pfeuffer principle which has been well-tried for more than 45 years: The sample is crushed and homogenized at the same time by special grinding discs. The HE lite is therefore extremely reliable with freshly harvested grain. Pour the sample into the beaker built into the top of the measuring cell (11 ml) and put it into the grinding chamber. Fit top part and screw together as far as possible. Then switch on device, select type of grain and trigger a measurement. The measurement result appears on the display after a few seconds.

Average calculation

The HE lite automatically calculates the average of several measurements. Simply select the number of measurements and the displayed measured values under »Average« in the settings menu. The display of the HE lite then shows the average and the individual values after every measurement.

Adjusting facility





If necessary, the HE lite can be individually calibrated by the user. The measurements can be modified around a constant value and a multiplicative value can be modified for each product. The HE lite can therefore be optimally adjusted to individual requirements.

Technical data

Product	Power supply	Dimensions	Weight	Item number
HE lite	3x1.5 V batteries (AA Mignon)	200x82x85 mm	0.9 kg	1170 0000

Accessories

Accessories	Item number
Carrying strap	3190 7005
Case	3111 0270

Pfeuffer HFM

Measuring lance for hay and straw moisture



Quick determination of moisture and temperature of pressed hay and straw

- Robust stainless steel lance, length 50 cm
- Moisture from 9 % to 50 %
- Temperature from -10 °C to +100 °C
- Quick display
- Holding, counting and average function

Usage area

The Pfeuffer HFM can be used in the hay and straw trade. You safeguard the quality of your feedstuffs with this device. The correct storage moisture and temperature gives you reliability during storage and protects from destruction by fungal attack and rotting. The Pfeuffer HFM has a continuous stainless steel probe for measuring, which is held by an ergonomically shaped wooden handle.





Function

The display shows the current moisture value during the measuring procedure. The measurement can be reliably taken within a few seconds on different locations in bales or a large number of bales – without pressing a button. The resolution of the device is around 0.1 %, and the accuracy in practical use is around +/-0.8 % points. Temperature measurement – switch the device to temperature mode and insert the measuring probe into the bale in the required location. Wait until the displayed value is stable before reading off the temperature. The Pfeuffer HFM has a highly sensitive temperature sensor which quickly adapts itself to the product.



Technical data

Product	Power supply	Dimensions	Weight	Item number
Pfeuffer HFM	9 V monobloc battery	772x70x48 mm	0.65 kg	1315 0015


PFEUFFER

Contador

Seed counter



Counting and filling of all seeds from 0.3 mm to 15 mm

- Fast counting speed
- Exact counting results
- Flexible due to easily changeable feed container
- All functions can be controlled via PC software
- Little inherent noise

Function

The Contador is an optical counter with integrated vibration channel. The counting speed is automatically controlled depending on the size of the material to be counted, so that the counting time is minimized and a high degree of counting accuracy is achieved. The feed container is held by a magnet and is easy to change. Both a sample change and a crop type change can therefore be carried out very quickly. The Contador can be controlled using the keyboard on the device or using the serial interface, e. g. with the »SeedCount« PC software which is available as an accessory.







Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Contador	230 V, 50/60 Hz	50 VA	430x235x380 mm	16 kg	1410 0009

Accessories

Accessories	Item number
Feed container no. 1 for rapeseed, seeds, fine seeds	2410 0101
Feed container no. 2 for grain and sunflower seeds	2410 0102
Feed container no. 3 for maize, broad beans and peas	2410 0103
»SeedCount« PC software for automatic processing of counting lists and printing labels	1410 0320

Contafill

Filling station for Contador seed counter



Effortless filling of small seed batches

- For all of the most popular paper and plastic bags
- Carousel for plastic and glass bottles
- Number of seeds and bags can be preselected
- Detection of missing bags or bottles
- Continuous operation or stop after one cycle

Function

Put the seeds into the feed hopper and fit bags to the carousel. Preselect the number of grains per bag on the Contador or using the PC software and start. The Contador starts and counts the required number of grains into the first bag. The bags can be circulated continuously or individually. In this way, the bags can be replaced at regular intervals, or the entire carousel can be reloaded at the end of counting. This procedure is made easier by the base for the carousel. This reduces the stop times during the filling procedure to a minimum. The Contador automatically detects the bags using a sensor so that no valuable seeds are wasted.





Technical data

Product	Voltage	Dimensions	Weight	Item number
Contafill	24 V (via Contador)	480x440x340 mm	16 kg	1410 0050

Accessories

Accessories	Item number
Base for supporting a carousel	2410 0650
Carousel for bottles with adjustable platform up to a height of 110 mm; bottle diameter: 60 mm	2410 0600

Contador 2

5-Channel seed counter



Increase the efficiency of your counting processes

- Count and fill at high speed
- Counting rates of up to 5000 grains/min
- Compact design, light weight
- Flexible due to easily changeable feed container
- All functions can be controlled via PC software

Function

The Contador 2 is a lightweight and compact seed counter with an extremely fast counting speed, short transport section and high counting speed. The attached feed container makes quick and flexible use for different types of seed possible. This makes quick sample changing possible without having to run the transport section empty. The new type of feed container and a counting algorithm that is coordinated with it are the guarantee of fast counting speed and accuracy. The Contador 2 can be controlled using either the function keys on the device or via the interface, e. g. with the »SeedCount« PC software that is available as an accessory.







Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Contador 2	230 V, 50 Hz	24 VA	375x168x185 mm	4.5 kg	1410 0019

Accessories

Accessories	Item number
Feed container no. 1 for rapeseed and small seeds	2410 0301
Feed container no. 2 for grain	2410 0302
Feed container no. 3 for maize and legumes	2410 0303
Feed container no. 4 for fine seeds	2410 0304
»SeedCount« PC software for automatic processing of counting lists and printing labels	1410 0320

Contafill 2

Filling station for Contador 2 seed counter



Effortless filling of small seed batches

- For all of the most popular bags and bottles
- Slimline design for free access
- Number of bags can be preselected
- Detection of missing bags or bottles
- Continuous operation or filling stop after one circulation of the carousel

Function

Put seed, e. g. rapeseed into the feed container of the Contador 2. Equip the carousel with bags, hang up and secure. Preselect number of grains per bag and start the counting process. Filled bags can be removed and empty bags fitted continuously in operating mode B. In operating mode P the Contafill 2 fills the first ten bags. If a second carousel is equipped with bags, the two carousels are swapped at the end of the filling procedure. Because of the electronic sensor in the Contafill 2, the Contador 2 automatically detects whether all bags are actually present and skips empty positions without a bag.







Technical data

Product	Voltage	Dimensions	Weight	Item number
Contafill 2	24 V (via Contador)	520x420x345 mm	11.5 kg	1410 0060

Accessories

Accessories	Item number
Base for supporting a carousel	2410 0650
Carousel for bottles with adjustable platform up to a height of 110 mm; bottle diameter: 60 mm	2410 0600

Sortimat

Laboratory sorting machine



Sorting and appraisal of grain

- Determination of the full barley proportion
- Tiltable sieve stack and sieve cleaning
- Available with 3, 4 or 5 sieves
- Robust and solid construction
- Official method in accordance with MEBAK, EBC and ICC

Usage area

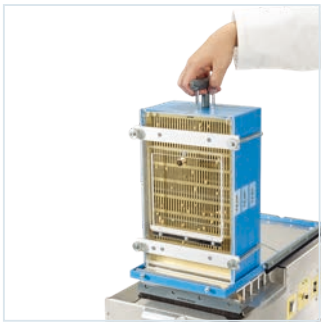
The Sortimat is designed for sorting and classifying agricultural grain crops and products derived from them. The main focus of use is in the boldness determination of brewing barley. The Sortimat can be used to appraise the productive capacity of grain, legumes, oil seeds and pellets.





Function

The Sortimat is designed for a sample quantity of 100 g. The tiltable stack of sieves and the integrated sieve cleaning make it possible to carry out several samples within a minimal amount of time. Complicated dismantling and cleaning after every sorting. The laboratory sorting machine is available in three variants with three, four or five sieves. The Sortimat consists of a mechanical vibrating device with an electric motor and an electronic timer for controlling the sieving time.



Accessories

Separating device for wheat or for barley and rye: These plastic channels with milled recesses sort broken and round grain from the sample. They are inserted into the filling opening and held in place with a mounting bracket. A double tray is available for sorting malt. The sieves are exchangeable.

Technical data

Model	Number of sieves	Voltage / output	Dimensions	Weight	Item number
K3	3	230 V, 50 Hz / 40 VA	550x270x350 mm	28 kg	1240 0100
K4	4	230 V, 50 Hz / 40 VA	550x270x380 mm	29 kg	1240 0110
K5	5	230 V, 50 Hz / 40 VA	550x270x410 mm	30 kg	1240 0120

Accessories

Accessories	Item number
Broken and round grain separating device for barley and rye	2440 0020
Broken and round grain separating device for wheat	2440 0021
Collection tray for malt	2440 0022
Clamp for separating device	2440 0023
Various sieves made from brass or stainless steel (round or elongated hole)	By request

Friabilimeter

Measuring device for malt friability



Quick and easy evaluation of the brewing value of malt for breweries and malthouses

- Uncomplicated mechanical analysis
- Practical brewing value statement
- Simplification of the malt analysis
- Robust and solid construction
- Internationally recognized method (IM)

Usage area

Brewers need high-quality malt for producing beer. The brewing value of the malt can be determined quickly and easily in practice using the Friabilimeter. In the malthouse, the Friabilimeter makes it possible to monitor the quality of the malt immediately after drying. Irregularities during the malting procedure are detected and corrected. The brewery can determine the quality of the malt upon delivery and then adjust the malt mixtures so that they are consistent.





Function

A malt sample (50 g) is mechanically separated into its hard and crumbly constituents. The grains are pressed against a rotating sieve drum for 8 minutes by a roller with constant spring pressure. The crumbly parts fall through the wire braiding. Glassy grains and hard broken parts remain in the sieve drum. As far as the hard malt components are concerned, a distinction is made between partial hyaline and whole hyaline. The individual fractions are weighed and converted to a percentage. The percentage values are a constituent of the malt specification between breweries and malthouses. Excessive glassiness has a detrimental effect during the mashing and lautering process. Deficiencies occur in the brewing process in wort clarification, fermentation, maturing and filtration, whereby climate and variety-related influences can occur.

Technical data

Product	Voltage	Output	Dimensions	Weight	Item number
Friabilimeter	230 V, 50 Hz	50 W	400x265x270 mm	12 kg	1810 0000

Accessories

Accessories	Item number
Pressure roll	2810 0080
Drive roll	2810 0030
Sieve drum	2810 0100
Can of test malt, 400 g	4898 0120
Can containing official EBC test malt	By request

Hecto grain tester

Handy volume measuring device



Up to five times faster than conventional mechanical determinations

- Bulk density for barley, oats, rye and wheat.
- Robust design (stainless steel), 0.5 liters
- Simple and easy operation
- Mobile and power supply-independent
- Exact measurements

Function

Insert the skimming knife into the Chondrometer. Insert forerunner into the cylinder and pour in the grain sample. Pull out the skimming knife quickly. The forward member and the grain fall into the bottom part of the Chondrometer. Cut the volume exactly using the skimming knife. Pour out excess grain and weigh the contents on the compact digital balance. The bulk density (kg/hl) of the different grain types is then determined on the basis of the provided correction table. Particularly suitable for farmers, universities and field testing. The Hecto grain tester is not compliant with the current Standard Weights and Measures Law in Germany!







Technical data

Product	Version	Case dimensions	Weight with case	Item number
Hecto grain tester	with balance	425x340x115 mm	4.5 kg	1745 1000
Hecto grain tester	without balance	425x340x115 mm	4.0 kg	1745 1001

Grain tester model 1938

Volume measuring device



Determination of the bulk of a liter of grain and conversion to EU bulk density for trade

- Bulk density for barley, oats, rye and wheat.
- Robust design (brass), 0.25 liters or 1.0 liters
- Simple and easy operation
- Exact measurements
- Good reproduction

Usage area

The high-precision grain testers are used to measure the EU bulk density (bulk per hectoliter, hectoliter weight) of barley, oats, rye and wheat. The bulk is determined with the aid of a balance. The ratio of bulk to volume results in the bulk density, which is corrected with the factors from the »official tables« for liter and quarter liter samples. A calibrated balance is required for determination in the trade, and is available as an accessory.





Function

Insert the skimming knife, insert the forerunner into the measuring cylinder, fit the forward cylinder (1.25 liters) and pour in the grain sample. Pull out the skimming knife quickly. The forerunner and the grain fall into the measuring cylinder (1.0 liter). Cut the volume exactly using the skimming knife. Pour out excess grain, remove the forward cylinder and weigh the contents on a calibrated precision balance. The bulk density (kg/hl) of the different grain types is then determined on the basis of the provided correction table.



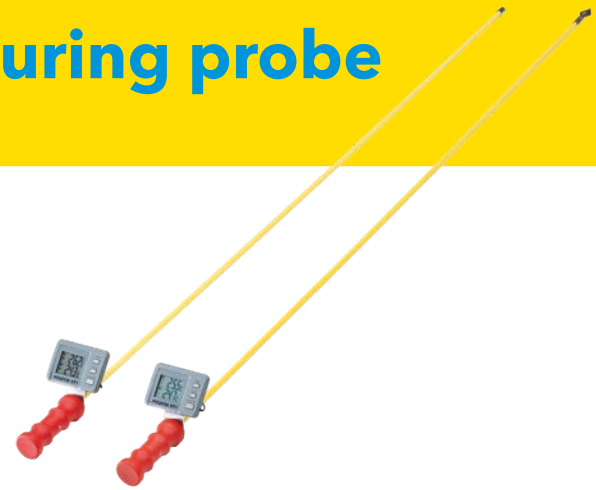
Technical data

Product	Version	Weight	Item number
Grain tester 1938	0.25 liters	3.2 kg	1745 5010
Grain tester 1938	1 liters	6 kg	1745 5015

GT1 temperature measuring probe

Monitoring the temperature in bulk material

Versatile assistant in agriculture and in small grain stores



- Large LCD display
- Temperature sensor in measuring tip and housing
- Robust probe made from GRP, 0.5 m to 2.8 m
- Conical or knife tip
- Simple and easy operation

Usage area

The GT1 temperature measuring probe is suitable for measuring in batches at different depths and on the surface. It has two temperature sensors, one in the measuring tip and one in the display housing. The temperature measurement is within the range of -10 °C to +70 °C in loose agricultural bulk materials such as grain, silage, compost, hay and straw.





Function

Insert the GT1 temperature measuring probe into the bulk material. Wait until the temperatures of the bulk material batch and the sensor in the measuring tip have equalized. The exact temperature value can be conveniently read off on the digital display.The GT1, GT1-2 and GT1-3 are supplied with a robust conical tip made from stainless steel. The GT1S, GT1H and GT1-3H contain a screw-on two-piece knife tip with a knife holder and a durable quality knife made from hardened and sharpened stainless steel. The knife is supplied in a separate case and can be unscrewed for transportation purposes. Weight: 350 g to 530 g depending on model; power supply: 1x1.5 V battery (AAA Micro)

Technical data

Model	Products	Length	Item number
GT1	Grain, oil seeds, grains	1.5 m	1332 1102
GT1-2	Grain, oil seeds, grains	2.0 m	1332 1108
GT1-3	Grain, oil seeds, grains	2.8 m	1332 1103
GT1S	Silage	0.5 m	1332 1105
GT1H	Hay, straw, compost	1.5 m	1332 1106
GT1-3H	Hay, straw, compost	2.8 m	1332 1107

GTM 800

Temperature logger for grain stores

The standard for documentation in small grain stores



- Storage for up to 800 measurements
- Infrared interface (serial, RS232)
- Measurement time memory
- Adjustable limit temperature
- For up to 200 temperature measuring probes (cable-bound)

Function

Connect the GTM800 to the respective temperature measuring probe via a cable. Select position and press measure. If the limit is exceeded or undershot, an acoustic signal provides an immediate warning. The affected temperature values are marked. Call-up of temperatures in the display. Print and save the measuring data on the PC together with the date and time. Up to 200 temperature measuring probes can be measured and saved using the GTM 800.





Measuring feeders

Temperature measuring probes (wired)



Detailed quotation on request.

Item

Model	Item number
GTM 800	1336 0800

Accessories

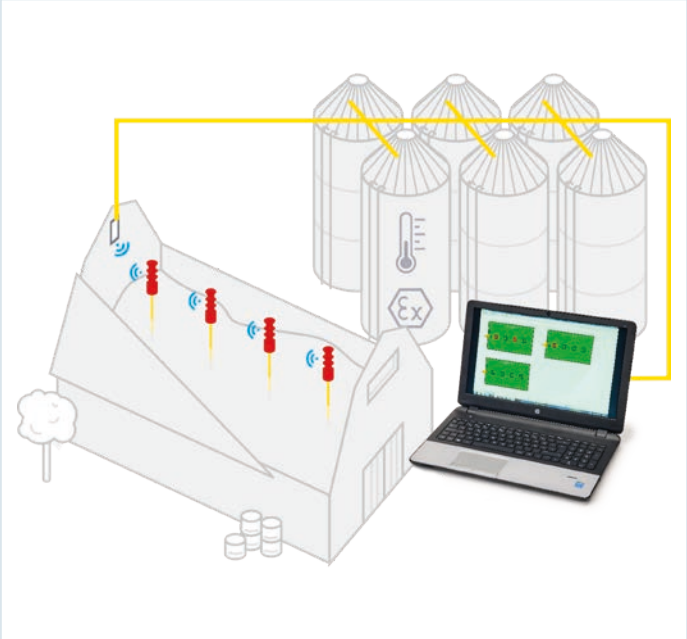
Accessories	Item number
Carrying case	1336 0100
Serial infrared adapter for data transmission	1336 0050
InLine serial AT adapter (25-pin to 9-pin)	3230 5098

DuoLine STAR

Temperature measuring system

Quick and efficient management of the temperatures in the silo and the grain store

- Minimal installation work
- Fail-safe and reliable data communication
- High cable and wireless ranges
- Wireless bus communication
- Flexible, compatible and expandable



Usage area

The temperature in the grain store is the most important indicator for changes to the stored quality. Increasing temperatures are an indication of infestation by storage pests or moisture problems. The DuoLine STAR (DLS) temperature measuring system is used for fully automatic temperature control of grain stores, and helps to detect problems at an early stage and make decisions about measures that can be taken to preserve the health of the stored grain. The control of cooling or ventilation measures is directly related to the resulting temperatures.

Easy installation

In order to record the temperatures, measuring transducers are attached in several locations in the silo or grain store. The measuring transducers are digitally connected to an evaluation unit via a four-wire bus cable (portable, stationary, PC software) so that temperature problems can be quickly localized. An external sensor for temperature, humidity and dew point can also be optionally connected. The DLS Bus makes quick and cost-effective installation possible. The cost of installation is reduced to a minimum, since only four wires are needed for the entire remote cabling. DLS can be installed serially or radially, or in combinations of both variants.

The DLS temperature measuring system is individually adapted to your requirements. Do you have any questions or would like to receive further information? Just call us or send us an email, we would be pleased to help!

DuoLine STAR mobile

Portable temperature measuring system



Handy measuring device for temperature control in grain silos and grain stores

- Combination of silos and grain stores
- Intuitive operation
- Easy installation
- Infrared interface
- Suitable for use in ATEX Zone 20/21

Usage area

Professional support for documentation in the grain store. Quick and reliable delegation of the necessary measuring data. With DLS mobile the temperatures of up to 2x10 silo cells with sensor cables and up to 200 temperature measuring probes (wired) can be measured and stored.





Function

Connect DLS mobile to the GT-DLS connection box using the connecting cables and start the temperature measurement of the of the silo system. If a set limit is exceeded, an acoustic signal provides an immediate warning. The affected temperature values are marked. Call up the temperatures in the display, and print or save the measuring data on the PC.



Measuring feeders

Temperature measuring probes (wired), sensor cables with suspension brackets or sensor cables with a floor socket and a control module

Detailed quotation on request.

Item

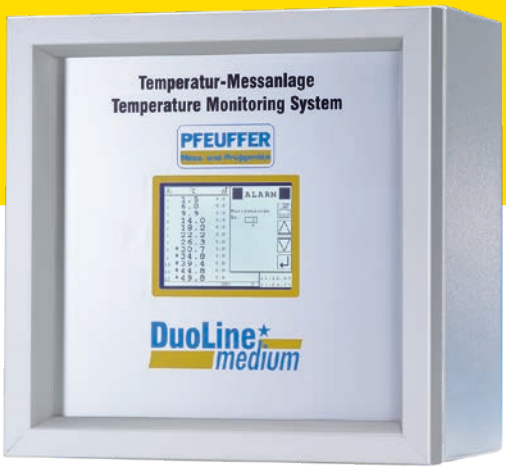
Model	Item number
DuoLine STAR mobile	1336 0000

Accessories

Accessories	Item number
Carrying case	1336 0100
Serial infrared adapter for data transmission	1336 0050
InLine serial AT adapter (25-pin to 9-pin)	3230 5098
GT-DLS1 connection box	2236 0001
GT-DLS2 connection box	2236 0002

DuoLine STAR medium

Temperature measuring system with stationary evaluation center



The reliable, efficient and safe temperature control system for all types of grain store

- Large touch screen display
- Fully automatic control
- Easy installation
- PC interface
- Suitable for use in ATEX Zone 20/21

Usage area

DLS medium is the stationary solution in the control center. Automated measuring cycles or times, combined with alarm relays and automatic printing relieve the strain on the silo personnel. DLS medium is suitable for measuring the temperature of up to 64 (optional:128) silo cells with sensor cables.





Function

The built-in microprocessor in the evaluation center monitors the measuring procedure, checks the individual values of the temperature sensors for limit exceeding, issues an alarm if necessary and stores all of the results. An illuminated LCD module displays the individual temperatures of the sensors. An optional printer provides a clearly organized log of the individual temperature values. The different setting types make it possible to output a tendency measurement. The data can be passed on to a PC via a serial interface (RS232).



Measuring feeders

Temperature measuring probes (wired), sensor cables with suspension brackets or floor sockets and a control moduleDetailed quotation on request.

Item

Model	Item number
DuoLine STAR medium up to 64 control modules	1336 0500
DuoLine STAR medium extended up to 128 control modules	1336 0510

Accessories

Accessories	Item number
External temperature and humidity sensor	2236 0700
Log printer LX 350 with connecting cable	1330 0105

DuoLine STAR soft

Temperature measuring system with PC software

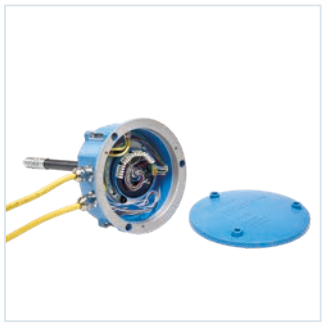
Quick and efficient management of the temperatures in the silo and the grain store

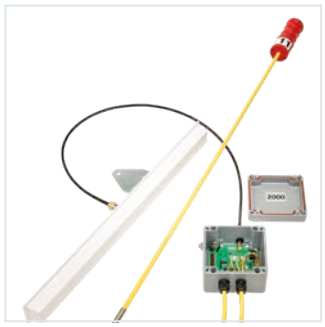
- Simple and intuitive operation
- Graphical display of temperature curves
- Easy installation using bus system
- Integrated database
- Suitable for use in ATEX Zone 20/21



Function

Sensor cables and/or wireless measuring probes with receivers are connected to the DLS soft Gateway via the DuoLine STAR four-wire bus cable. Up to 255 wireless measuring probes can be used per system. The receiver of the grain store reports the detected wireless measuring probes, and the operator moves these to the usage location in the installation plan in the DLS soft PC software using drag & drop. In this way, not only silos but also grain stores with wireless measuring probes can be managed in the new PC software. This includes planning of the fully automatic measuring intervals, convenient evaluation and a graphical display of the installation plan with silos, sensor cables, grain stores and wireless measuring probes. The DLS soft PC software provides you with a complete overview quickly, clearly and efficiently. As well as automatically planned measurements, the current temperature can also be measured with just a click. DLS soft stores all measurements in a database. For documentation purposes, temperature logs can be printed out locally and automatically transmitted by e-mail in PDF format. The PC software is approved for the Windows® 7, 8 and 10 operating systems.





Measuring feeders

Wireless measuring probes with receivers, sensor cables with suspension brackets or floor sockets and a control module

Detailed quotation on request.

Item

Model	Item number
DuoLine STAR soft Gateway	1336 1000
DuoLine STAR soft Gateway (for 256 control modules)	1336 1010

Accessories

Accessories	Item number
External temperature and humidity sensor	2236 0700
USB relay output	2236 0750

DuoLine STAR link

Bus interface for interrogating data for process controllers

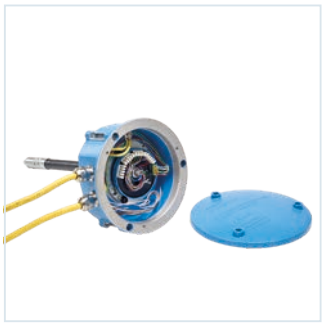


Design your own application and get the temperature directly from the DuoLine STAR Bus

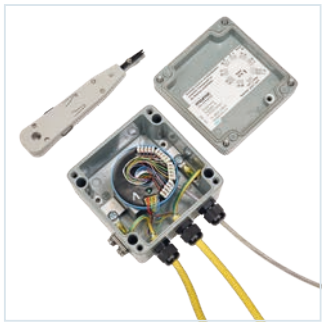
- Designed for interrogating data for visualization and control (PLC)
- Direct access to the DuoLine STAR Bus
- Serial RS232 interface
- Easy to integrate
- Including evaluation software

Function

DuoLine STAR link is the minimalized solution for PLC-controlled grain stores with visualization. DLS link has a serial interface which makes it possible for the automation engineer to retrieve the temperatures for process control from the DLS Bus in a direct and targeted way. Up to 256 control modules, 255 wireless measuring probes and a sensor for the external temperature and humidity can be read out using DLS link. The command set includes checking for the presence of the individual control modules on the bus, measurement of the temperature (with up to 16 sensors) and the measurement of the external temperature and humidity sensor. The temperatures that are determined can be processed directly for the control center instrumentation diagram.Detailed quotation on request.







Item

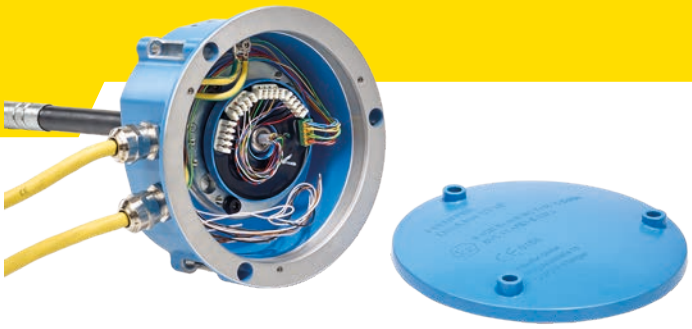
Model	Item number
DuoLine STAR link Gateway	1336 1015
DuoLine STAR link Gateway (for 256 control modules)	1336 1016

Accessories

Accessories	Item number
External temperature and humidity sensor	2236 0700

Sensor cables

Measuring feeders for concrete and steel silos



Temperature sensors for the DuoLine STAR measuring systems

- Suitable for use in ATEX Zone 20/21
- Suspension bracket or floor socket
- Up to 15 temperature sensors on one measuring line
- Maximum measuring line length: 60 m

System

A sensor cable is attached in the silo in one or more locations for recording temperatures at different heights in a conventional grain silo. A sensor cable consists of a sensor cable head, a control module, a hollow cable with a measuring line and a conical tip. The control module is pre-wired in the factory. Up to 128 sensor cables (optionally 256 or 512 sensor cables) can be connected to the DLS temperature measuring system.





Variants

High-performance sensor cable with suspension bracket for fitting to supports, gangways and roof struts. High-performance sensor cable with floor socket for fitting to the silo roof or for casting in the concrete ceiling. The floor socket is a dust-tight housing which accommodates the sensor cable head with round control module. Instead of a floor socket, a distribution box can be used to accommodate a round or rectangular control module. Several control modules can be accommodated in a large distribution box. Distribution boxes for bus cables are also available.



Item

Model	Item number
Sensor cable suspension bracket, 10 m, 6 measuring points	1357 0310
Sensor cable suspension bracket, 20 m, 6 measuring points	1357 0620

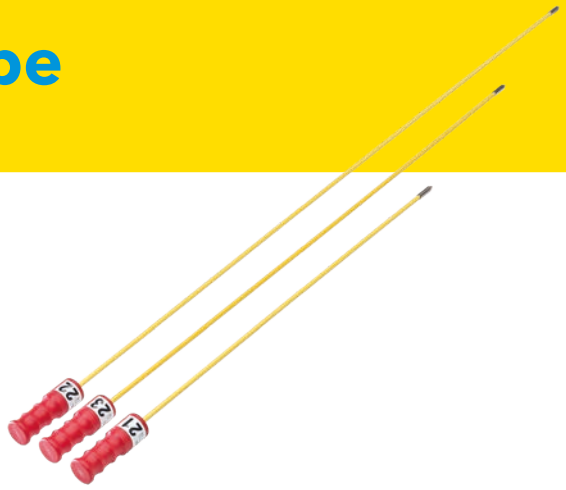
Accessories

Accessories	Item number
Distribution box	2236 0003
Sensor cable floor socket, 10 m, 3 measuring points	1359 0310
Sensor cable floor socket, 20 m, 6 measuring points	1359 0620
Floor socket, concrete silo	2136 8203
Floor socket, steel silo	2136 8204
Control cable (bus cable)	3234 3151

Wireless measuring probe

Data transmission via radio to a receiver

For the DuoLine STAR soft and link measuring systems



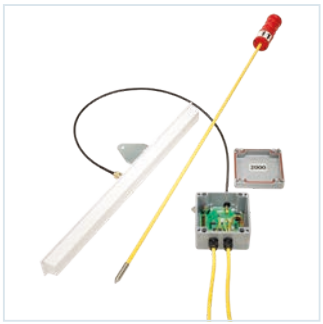
- Long range
- 4 measurements per hour
- Battery service life: >5 years (easy to change)
- Fully compatible with existing systems
- Up to 255 wireless measuring probes per system

System

Temperature measuring probes can be equipped with up to four temperature sensors. The flexible GRP material and the ergonomically shaped handle of the measuring probe make insertion into the bulk material easier. An LED which flashes during measurement is integrated in the handle for function checking purposes. There are no interfering cables which have to be unrolled and cleared away again. The measuring probes do not need to be assigned to receivers. The grain store receiver reports the detected wireless measuring probes, and the operator moves these to the usage location in the installation plan in the DLS soft PC software using drag & drop. The distance between the measuring probes can be varied. The wireless measuring probes transmit the measuring data (temperatures, ID number and battery status) to a receiver every 15 minutes. The receiver recognizes the assigned ID number and is connected to the DLS soft Gateway via the DLS bus cable. The current measuring data is transmitted whenever it is requested by the DLS soft PC software. A receiver covers a range of approx. 40x100 m with the supplied antenna.







Item

Model	Item number
Wireless measuring probe, 2 m, 2 sensors	1337 0202
Wireless measuring probe, 10 m, 4 sensors	1337 0410

Accessories

Accessories	Item number
Receiver	1337 0000
Control cable (bus cable)	3234 3151

Temperature measuring probe

Measuring feeder for flat stores, grain stores and boxes



DuoLine STAR mobile, medium and GTM 800 measuring systems

- Robust design
- High flexibility
- Up to 4 temperature sensors
- Fill height max. 12 m
- Available up to 10 m in length

System

Temperature measuring probes can be equipped with up to four temperature sensors. The flexible GRP material and the ergonomically shaped handle of the measuring probe make insertion into the bulk material easier. The measuring probes are set step by step when the grain store is being filled and brought in after filling. The distance between the measuring probes can be varied. There is a 5-pin DIN socket on the handle for connecting the measuring cable for transferring the measurements.



Item

Model	Item number
Temperature measuring probe, 2 m, 2 sensors	1332 0202
Temperature measuring probe, 10 m, 4 sensors	1332 0410

Accessories

Accessories	Item number
Measuring cable, length: 5.0 m	2233 0105
Measuring cable, length: 25.0 m	2233 0125

YOUR CONTACT

SALES GERMANY



Günter Droll
g.droll@pfeuffer.com
Tel. +49 9321 9369-16



Marion Will
m.will@pfeuffer.com
Tel. +49 9321 9369-11



Oliver Krist
o.krist@pfeuffer.com
Tel. +49 9321 9369-13

SALES SPAIN



Zaida Alanís
zaida.alanis@concereal.com
Tel. +34 936 654 966



Nati Lobato
nati.lobato@concereal.com
Tel. +34 936 654 966

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Humidimetros.com
Distribuidor en España

Ferrocarriles Catalanes, 17
Barcelona, España

comercial @humidimetros .com
www.humidimetros.com

Tel. +34 936 654 966
Telegram @Concereal

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