

Special Products Catalogue 2018



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ENTAM (European Network for Testing of Agricultural Machines) is the network constituted by the official testing stations in those European countries which have signed an agreement on shared activities. Their tests are based on national, European and international standards, or shared agreements (or methodologies). They provide manufacturers with useful information on how to improve their machinery.

The mission of **JKI** (Julius Kühn-Institute) is to ensure a decent and environmentally friendly pest management in practice. The technical assessments carried out in the institute on sprayers, its components and seeders are an important source of information for technical developments. This helps to quickly recognise problems in practice and to advise industry and agriculture about a better use and application of available tools and techniques.

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Air speed grid/profile measuring tool

The air speed grid measuring tool is developed to measure the air profile in front of a fan (typically air-blast sprayers for orchard and vineyards).

It allows to measure the air speed, the air direction at a high accuracy and at a high frequency (50 Hz).

The air speed sensor is of a 3D ultrasonic type and can be used with and without spraying. To avoid influence of droplets on the sensor heads, a heating is integrated.

The sensor has a special feature integrated to study the turbulence effect and factors. It allows a full analysis of the air profile (speed, direction, flow, etc..).

With the complimentary software, a 3D presentation can be created. Data can be exported for further elaboration or modelling.

Specifications

- Aluminium frame (water and weather resistant) with 4 robust wheels for internal transport.
- The full system is IP65 protected.
- Levelling system on the 4 wheels to position the system perfectly horizontal and vertical.
- 2 linear motion systems for the horizontal movement, in the example it can move 2m00.
- 1 linear motion system for the vertical movement (can be split in parts for simplifying transport in case of a mobile tool), in the example it can move 4m50.

• The drive engines for the movements are step per engines with a high accuracy and an absolute encoder.

• The software allows to create a measurement grid.

- All data are stored in a database.
- With the complimentary software, 2D and 3D visualisation of the data is possible.
- The vertical drive engine is equipped with an auto matic brake for safety reasons.
- The ultrasonic anemometer is fully 3D.
- The ultrasonic anemometer can measure up till 50 Hz.
- The ultrasonic anemometer has a maximal reach of 60 m/s.
- The ultrasonic anemometer has a precision of 1% (or down to 5cm/s in most precise setting).
- The ultrasonic anemometer can be ISO17025 certified in option.

Air Speed Measurement



Air flow rate measuring tool

The designed allows to measure the flow rate of the fan in an objective way.

The system corresponds and complies with ISO9898.

The system is built in a flexible way and has wheels for internal transport.

The height of the measuring tunnel can be changed with the help of electric powered actuators.

The connection to the fan can be changed for measuring different diameters, which allows being flexible to measure different sizes of fan.

- Stainless steel frame (water and weather resistant) with 4 The hot-wire anemometers can be ISO17025 robust wheels for internal transport.
- The full system is IP56 protected.
- The measuring tunnel height can be changed with electric actuators.
- The measuring tunnel and its results comply fully with ISO9898.
- In the measuring tunnel, 5 high precision hot-wire sensors The software gives also a visualisation of the are integrated with a measuring accuracy of 1% and a maximal air speed of 40 m/s.
- certified in option.
- With the complimentary software, the data can be saved and exported.
- Within the software, it is possible to do repetitions or measure for different settings as blade angle, rotating speed etc.
 - measured data.

Air Flow Rate Measurement





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Droplet Characterisation

Droplet Sizer

Oxford Lasers Ltd droplet size and velocity measurement instrument, the VisiSize P15 is ideal for agricultural spray nozzle assessment both in field and in the lab.

The VisiSize P15 is a simple fast way to check the diameter and velocity distribution of the spray and is an excellent tool for analysis, teaching or demonstrations.

Visual images of the spray droplets allow rapid clarification of the nature of the spray formation from sheet breakup to droplets.

The Visisize P15 instrument consists of a chemically resistant, water proof (IP67 rated) sealed enclosure containing the camera, lens arrangement and light source.

A laptop and a rugged water proof carry case are also included to provide a completely portable tool.

Statistical output from the system include: mean diameter (by number, area or volume), sauter mean diameter, 10%, 50% and 90% volume percentiles, standard deviation, relative span, and absolute concentration.

- Application: Analysis of droplets and particles size
- Measure Drop Size: Yes
- Measure Drop shape: Yes
- Measure Velocity: P15 upgrade option
- Measure Direction: P15 upgrade option
- Size Range: >15µm
- Dynamic Range: 175
- Working distance: Fixed position within instrument.
- Maximum particle velocity: 10m/s (50µm diameter particle)

- Image source: Online, High resolution camera
- Up to 15,000 particles/second in
- Real-time mode.
- Spray protection: Splash-proof enclosure suitable for use within sprays, rated IP67.
- System dimensions: 915mm x 219mm x 170mm (fully extended)

Droplet Characterisation



Drive engine with torque/power consumption measurement

The AAMS-Salvarani Drive engine is built on a stainless steel frame with 4 transport wheels, so the device can be easily moved.

The drift shaft can be changed in height from 25 to 90 cm.

With the frequency convertor for the rotation speed, the RPM can be changed between 200 and 1200 RPM.

Moreover a torque/power consumption meter with a precision of 0.1 Kw is integrated in the drive engine.

- Electric dynamometer with a power of 42.5 Kw
- RPM meter, 200-1100 RPM
- The power consumption with an accuracy of 0.1 Kw
- Cable of 1 meter + European connector
- USB 3.0 cable



Drive Engines



Patternators for precise nozzle characterisation

Horizontal patternators, to measure the liquid distribution under a spray boom (ISO5682).

Allow a precise definition of a single nozzle pattern.

Allow to define the pattern of overlapping nozzles for different conditions of height and pressure.

- On demand (based on working width, working depth, gutter width and options)
- Precision patternators built with aluminium gutters according to ISO5682.
- Available with gutters of 25, 50 and 100 mm.
- Available with working widths of 2, 3, 4, 5 and 10 meter.
- Available working depths of 1.5, 2, 2.5 and 3 meter.
- Available with visual or automatic reading of the collected liquid in the measuring glasses.
- Automatic reading in a static way (rotating measuring glasses) or in a dynamic procedure with flash measurements of increasing height of the water level in the measuring glasses.
- Automatic spray boom height and depth setting available.

- Automated protocols, repetitions and others possible.
- Automatic nozzle activation and de-activation available.
- In option: possibility to integrate a precise pressure controller in back-loop.
- In option: continuous flow rate measurement, measurement of temperature of sprayed liquid and ambient air, and relative humidity near the patternator.
- In option: blue led lights for indicating spray patterns, spray angles and droplet sizes.

Horizontal Spray Patternators



Horizontal Spray Patternators









Horizontal Spray Patternators



Weighing platform for sprayers (ISO16119, ISO13340)

The electronic balance is developed to measure the weight of a sprayer under different conditions.

The platform above the balance can be tilted to check the weight under hilly working conditions,

The platform can be tilted in 4 directions till 15° and continuous monitoring the weight.

The platform is equipped with a 12kW engine, that can run between 200 and 600 RPM.

- Welded frame, epoxy painted.
- Two electrically driven cylinders and 4 blocking systems allow to tilt the platform in 4 directions up till 15°.
- With the stepper engines on the cylinders, the position can be precisely adjusted.
- The inclinometer (ISO17025 approved) indicates per 0.1° The drive engine (max 12 kW) can be set between
- Under the platform, 4 weighing cells (ISO17025 ap proved) are assembled for weighing the whole construction continuously with a precision of 0.1kg.
- The total load on the present platform is max. 8.000 kg.
- The present platform has a useful load/mounting surface of 2 by 4 meter.

- With the lift arms and connections integrated on the platform, sprayers can be mounted in a wor king position on the platform.
- With the drive engine, the sprayer can be activated to simulate action on flat or hilly conditions.
- The drive engine (max 12 kW) can be set between 200 and 600 RPM
- The full system is IP65 protected.
- Balance for measuring total residual volume of sprayers, checking sprayer tank level indicator, total tank volume and overfilling capacity (ISO16119, ISO13340)

Electronic Balance



Our Mission

What we do best

AAMS-Salvarani is specialized in developing test equipment for agricultural machinery and components, mainly for sprayers.

We offer a very wide range of standard test equipment but sometimes this standard equipment is just not suitable for the job you have to get done.

For those special requirements, AAMS-Salvarani can offer you the service to develop customized test equipment adapted to your specific application, requirements and/or wishes.

Because of our years of experience and many finished projects over the years, we are your partner for the development and realization of test equipment to your requirements.

We involve the customer in the project, as much as possible, from the first drawings till the installation, in order to get the best result.

Check our website www.aams-salvarani.com Contact us on info@aams-salvarani.com or by phone on +32 (0)50 70 00 40

We are looking forward to a new cooperation!





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