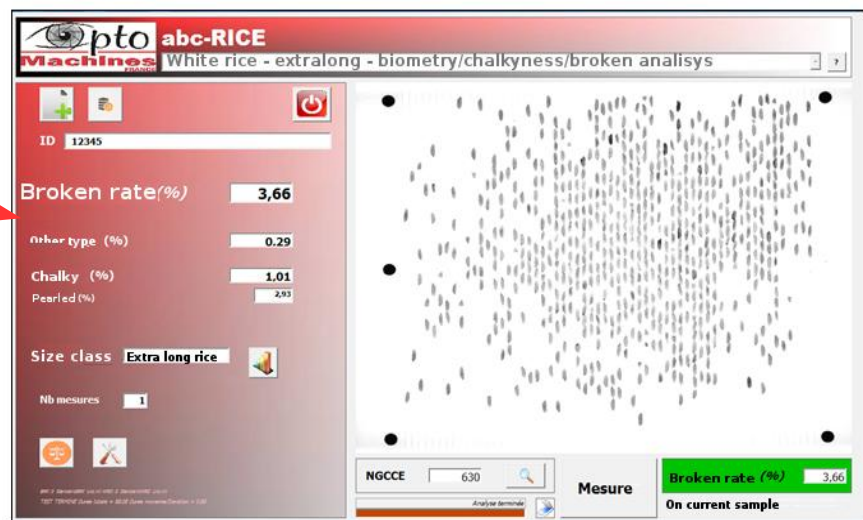




Rice Analysis, grading and quality control Station by image processing (Analysis - Biometry - Broken - Classification)



Ultra fast measurements for Rice phenotyping or quality control applications

Main applications

5 measurements in approx. 1 minute

1. Broken rate: standard settings based on ISO and local norms (Whole Kernels, head rice, big broken, small broken, ...)
2. Chalky & Pearled estimation: estimation compared to the total weight of analyzed white rice
3. Automatic biometry: length, width & ratio length/width
4. Whole grain size distribution: in classes (Short, medium, Long, Extra long...)
5. Automatic grading: based on the biometry of the whole grains based on ISO norm and Local Standards.
6. Grain shape analysis: High quality images for visual inspection are saved together with biometric datas

Key benefits

- ➔ **Improves your phenotyping capabilities** : Abc Rice allows researchers and industrials to quantitative analyses on grain structure and improve accuracy of their measurements. It opens new capabilities towards modern phenotyping methods (mass data statistics and cross compilation, year-to-year comparisons, environmental effects scenarios studies, growing areas productivity comparison, species performance qualification, etc...) to understand how can plants better adapt to low-input agriculture and resource-limited environments
- ➔ **Powerful** : Collect mass data on your rice and get automatic grading, classification and accordance to rice standards. Impressive tool for quality controllers (rice millers, exporters, ...) in their assessment of rice production.
- ➔ **Improves profitability** : By analyzing the broken rate in 1 minute, ABC-Rice allows the millers to better adjust their machines or detect defaults in production line
- ➔ **Easy to use** : Very Intuitive and fast lecture of results

Optomachines ASIA ABC-Rice details and options:

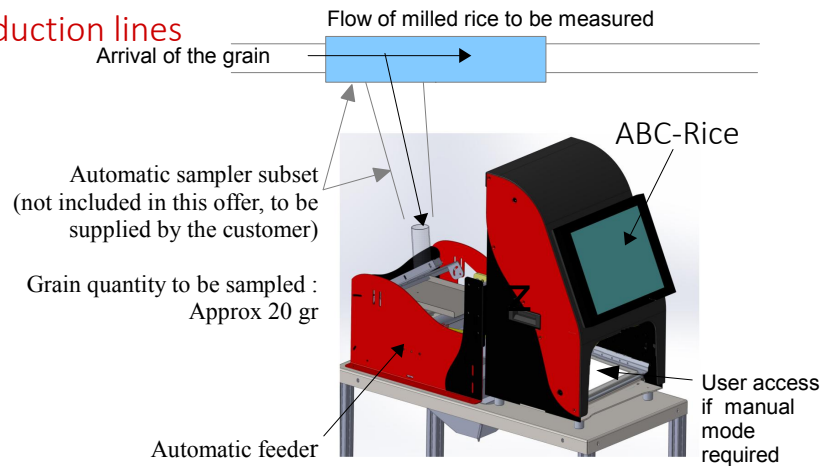
1 Optional Automated feeder for production lines

Online Broken rate alert: Obtain the broken rate every minute

- 1- Sampling of the grain from the production line
- 2- Automatic loading of the grains into the analysis station
- 3- Automatic measurement
- 4- Results are saved and sent to a supervisor

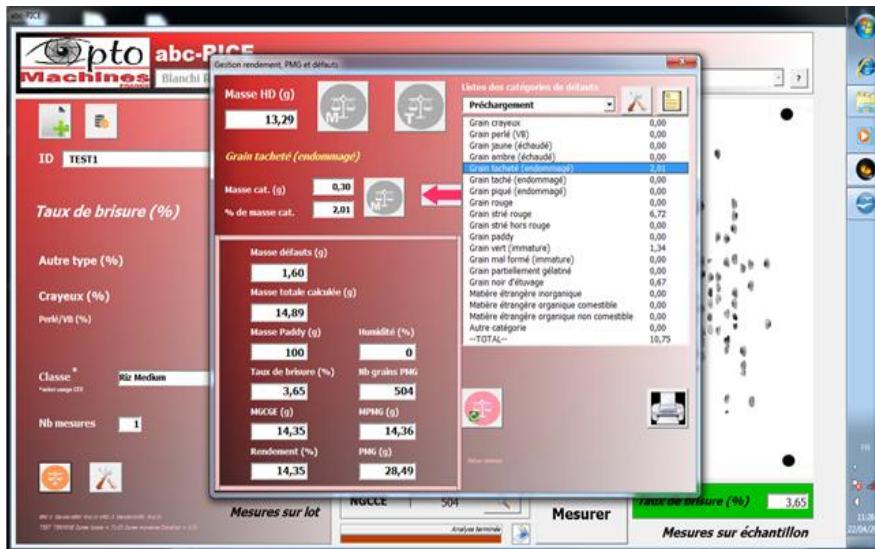
KEY BENEFITS : Improve profitability !

Detect defects, broken and foreign bodies at the exit of milling machines .



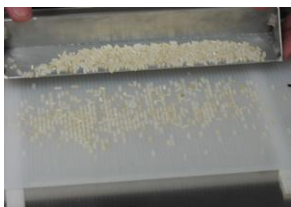
2 Compact & robust:

- H 91cm x w 44 cm x d 42 cm
- Integrated panel PC



3 Defects management in a sub-window to enhance the sample information database:

abc-RICE allows to save the defects rates which have been visually quantified by the user by entering in a sub-window his own figures in the fields (rate or weight of yellow grains, red or green grains, red streaked grains, damaged grains...). The whole information related to the sample are so concatenated and saved in the same file. This function can be totally set and modified by the user.



4 Ergonomic accessories

Specific accessories are delivered to spread grains harmoniously and quick. Grains are easily aligned for a better analysis.

5 Optional balance

This option includes a Mettler Toledo balance (0,01g) which allows to transfer directly the weight and the TSW (thousand seeds weight) on whole grains to the PC. The balance is placed next to the machine.



6 Protective cover

Cover made of waterproof fabric protects the machine during an inactive period. The cover is reinforced at the front for protecting the tactile PC.

7 Data security guaranteed

Important : At Optomachines, we consider your data regarding the quality/specifications of your rice production or research samples are crucial and belong ONLY to you!

All the analyses algorithms are executed and automatically saved on the embedded PC, meaning that **no critical data are sent to any cloud or externally.**

Problems of data security and privacy, operational security, disaster recovery or availability of data and business continuity are in the hands of the users, and not of a third party.

The user can export the ABC-Rice database contents through text file (grain biometry, broken rates etc...) or image file (photos of the samples) using his proper secured network.

Our station is ready to use and will offer different types of "standards" calibrations :

- 1- ISO 7301 standard (ready to use)
- 2- Advanced ISO standard for ASEAN countries (ready to use)
- 3- Commercial LOCAL standard (to be developed upon customer's specifications)