(Optional)

TPKZ-3

INTELLIGENT CROPS STUDY ANALYSIS SYSTEM

Introduction

The Intelligent Crops Study Analysis System is suitable for seed testing and analysis of corn, rice, wheat, soybeans, vegetables, and other seeds. The system uses high-precision weighing sensors and high-resolution cameras to capture the tested seeds. While obtaining the weight of the seeds, it calculates the number of seeds planted and quickly obtains data on the thousand/hundred seed weight and seed size.

Features

• High definition imaging, precise analysis

A3 format, 22 million pixels, maximum resolution 4896 * 3672 high-definition camera. Ultra thin backlight source board, natural light and built-in new ultra-high LED fill light, ultra-thin transparent seed tray with automatic calibration function, no shadows after laying seeds, making grain size calculation accurate.

• Integrated design of weighing backlight

The testing backlight panel and weighing module are integrated, allowing for direct weighing of grains and ears during testing. The weight data is transmitted through an interface and automatically converted into thousands/hundreds of grain weights upon input.

• Visual weighing platform

The 1-inch OLED weighing platform display screen can support intuitive perception of the weight of the seeds weighed during the seed testing process, making it convenient to choose the number of seeds to be weighed.

• Multi purpose display desk

The display desk can be connected to a computer to directly read the weight of seeds, or it can be used separately as a balance (weighing range: 0-5kg).

• Image retrieval

With the ability to zoom in, out, and observe specific areas, it can accurately display the bounding rectangle of seed grains, making it easy to view the results.

• Intelligent comparison

capable of comparing the length and width of seeds of different varieties, and outputting arrangement and comparison charts.

• Deep learning

self-learning and relearning seeds based on their color or shape, and achieving automatic classification and recognition.

• Auxiliary correction

Use the mouse to select segmentation/merging to correct incorrectly identified seeds to ensure 100% accuracy.

• Personalized counting of target area

Box counting of seeds within an optional range or rectangular range in the workspace field of view.

• Data saving

Image results can be saved, automatically generate a total report, export Excel tables, have the function of additional saving, and support printing analysis data through a thermal printer.

• Support uploading data to cloud platforms

Allowing for saving, viewing, and down loading of data.

• Software encryption

The software uses dynamic QR code encryption and software lock encryption to prevent loss.

• Optional barcode scanning gun

Using a barcode scanner can quickly add variety names and improve user experiment efficiency.

Technical Parameter

Counting speed	Corn kernels have a density of 1500-3000 kernels per minute, while other kernels have a density of 1200-20000 kernels per minute
Numerical error	≤ ± 0.5%, monitoring correction reaches 100% accuracy
Thousand particle weight error	≤ ±0.5%
Weighing range	0 ～ 5kg

Model Comparison

TPKZ-3	The grain size parameters of a single seed (length, width, aspect ratio, area, circumference, etc.) The total number of seeds, thousand seed weight, hundred seed weight, seed color, average value (length, width, aspect ratio, area, circumference), standard deviation of all seeds, semi-automatic detection of bulk density, moisture content, and seed type
TPKZ-3-L	The total number of seeds, thousand seed weight, hundred seed weight, seed color, average value (length, width, aspect ratio, area, circumference), standard deviation of all seeds, semi-automatic detection of bulk density, moisture content, and seed type