

LK-1250 Plant Rhizo-box Imaging System is designed for long-term continuous noninvasive measurement of plant roots under controlled conditions. Plants are planted in a rhizo-box with transparent bottom which is obliquely placed on a bracket with a fixed angle. The roots are mainly distributed on the box panel due to gravity. Combined with professional root box imaging



Fig.1 LK-1250 Plant Rhizo-box Imaging System

system, the changes of root throughout the growth cycle can be continuously tracked and measured. Image analysis software can measure root indexes such as root length, diameter, area, biomass, topological structure, etc. Simultaneously, the rhizosphere soil solution can be extracted from the back of rhizo-box by professional porous soil pore water microprobe to study the interaction between roots and soil.

The plant rhizo-box imaging system is photographic as shown in Figure 1. The resolution, area and distance of the camera equipment have been set before leaving the factory, so users can directly put the rhizo-box into the photo position to obtain a complete and clear root system picture. Then as shown in Figure 2, a variety of software can be selected for analysis .

Main Feature

- Matched with rhizo-box for long-term nondestructive measurement of root;
- 20.44 megapixel high-definition imaging module imported from Germany;
- Rolling guide design and identifying pictures by scanning code can save massive experimental time;
- The material and specification of the rhizo-box can be customized;
- Compatible with a variety of root image analysis software to measure more than 20 root parameters;

Technical Parameters

1. Frame: aluminum profile;
2. Light Source: LED with adjustable brightness;
3. System Control Software: Windows interface control software, Chinese and English bilingual; functions of adjustment of exposure time, contrast, gain control, image size cutting, etc;
4. Camera Parameters:
Interface: USB3.0; Interface speed: 5.0Gbps;
Sensor Type: CMOS; Sensor size: 13.286 x 8.861 mm; 1 inch;
Maximum Frame Rate: 19.5FPS; Resolution: 5536 × 3692 px;
Shutter Type: rolling shutter;
Pixel: 20.44 megapixels;



Pixel Size: 2.4um;
AD Conversion: 12 bits;
Color Depth: 12 bits;
Pixel Merge Function: increase frame rate;
Pixel Merge Coefficient: 2;
Power Consumption: 1.8W-3.5W;
Built-in Cache: 128M;
Waterproof Grade: IP30;
Operating Conditions: 0° C-55° C, 20%-80%RH;
Weight: 49g;
Lens Interface: C interface;
Other Features: Pre-calibrated, Plug and Play, CE certified, FCC certified, UL certified.



5. Rhizo-box

Material: acrylic opaque material and transparent material;
Specifications: Dimensions can be customized according to customer requirements;

6. Rhizo-box support: acrylic material, stainless steel screws fixed, each support can be placed 3-5 rhizo-boxes;

Root Picture Analysis Software



Fig.2 Software Analysis of Root Image

The following software can analyze the photos obtained from the rhizo-box:

DIRT; rhizo Trak; RootNav; SmartRoot; RhizoChamberMonitor; WinRhizo Tron

Origin and Manufacturer: China ECO-MIND

Web: www.eco-mind.cn