

CRAWLER-TYPE INSECT CONDITION MONITORING LAMP 7

Product Overview

Zhice Yunlian CRAWLER-TYPE INSECT CONDITION MONITORING LAMP 7 adopts optical, electrical and numerical control technologies to realize functions including pest trapping, pest killing and sample sorting.

Insect bodies fall evenly and spread flat on the conveyor belt, which accurately delivers all trapped insects to the shooting area of the high-definition camera device. The device also performs vibration dispersion and flattening treatment on the trapped insects to ensure that the morphological features of each insect are clearly captured.

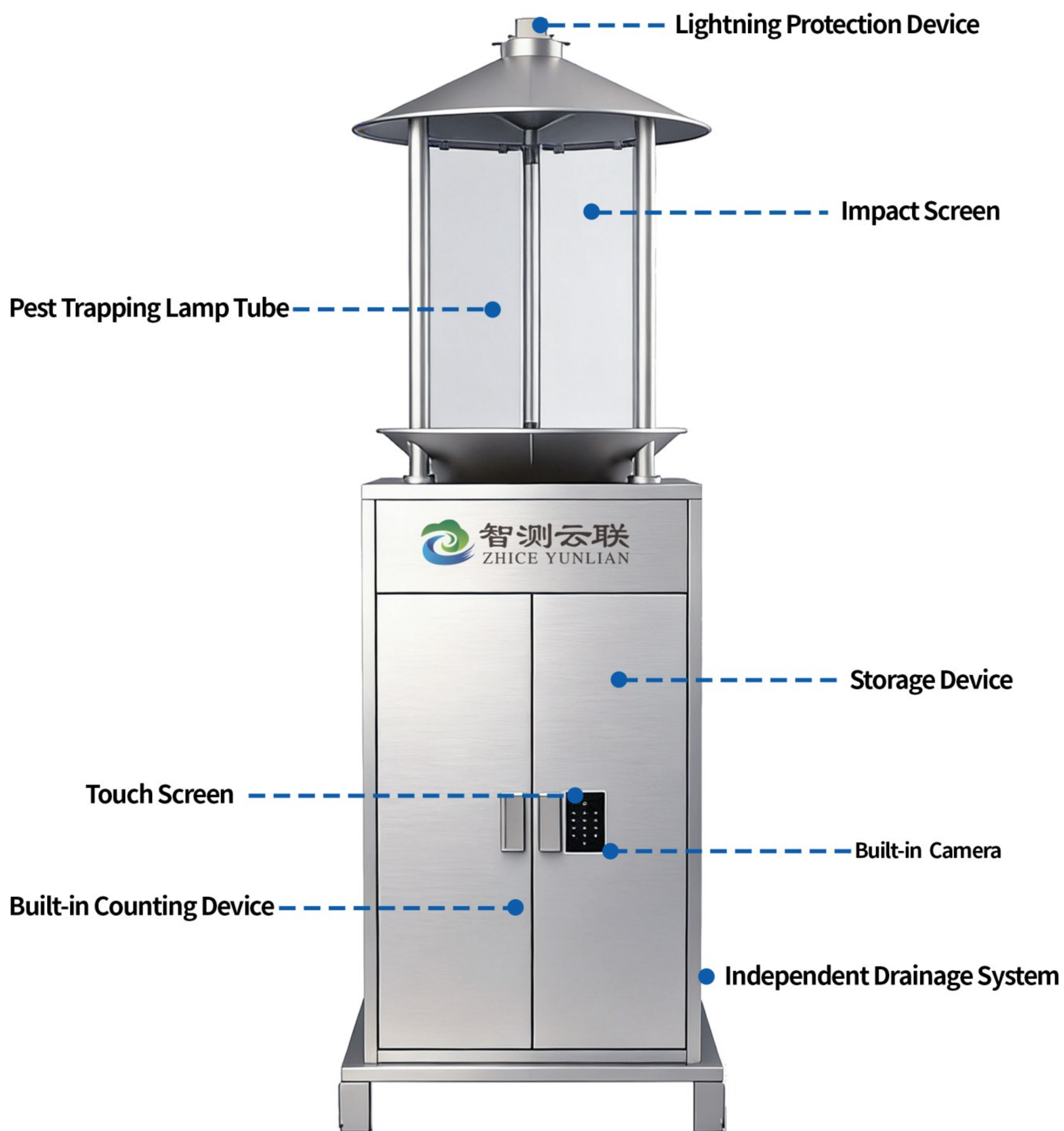
Under unattended operation, it can automatically complete the full workflow of pest trapping, pest killing, insect body dispersion, photographing, sample transportation, specimen collection and rainwater drainage. With wireless transmission and Internet of Things (IoT) technologies, it uploads real-time environmental meteorological data and pest infestation status to the designated agricultural cloud platform.



Core Functions & Advantages

- Pest Trapping
- Three-layer Filter Screen
- Fumigation-based Pest Killing
- Timing Control Module
- Accurate Monitoring
- All-in-one Integration
- Data Visualization Platform
- Reliable Data Transmission

Product Structure



Product Specifications

Item	Detailed Description
Implemented Standard	Meets the safety and technical requirements of GB/T 24689.1-2009 standard for insect pest forecasting lamps for plant protection machinery
Main Structure	Made of stainless steel as a whole
Core Technology	Integrates optical, electrical and numerical control technologies to realize automatic control
Control System	7-inch color Chinese LCD capacitive touch screen operation; supports time-phased setting and control, dual modes of automatic / manual photographing
Image Acquisition	Built-in 48-megapixel camera image acquisition equipment, collects insect conditions on the conveyor belt in real time; image clarity meets the requirements of artificial insect species identification
Insect Body Transmission & Treatment	Insect bodies are evenly spread on the conveyor belt, and sent to the shooting area after vibration dispersion and flattening; the conveyor belt accurately delivers all trapped insects to the shooting area of the high-definition camera device
Counting Function	Built-in counting device, records the number of insects in real time and uploads data to the platform
Remote Control	Supports remote wireless photographing, remote parameter setting of terminal equipment, and remote setting of working modes
Intelligent Photographing Mechanism	Automatically photographs and uploads when insects fall; stops photographing when no insects are present to save network traffic; supports scheduled automatic photographing and manual photographing
Cleaning & Storage	Equipped with automatic cleaning function, configured with daily separate storage device for insect bodies (insect collection bottle capacity 1.5L, supports 8 days of separate storage); removes insect bodies from the shooting area and collects them after photographing
Alarm & Management	Instrument and data alarm parameters can be remotely uploaded to the server via network for convenient maintenance and management
Positioning & Tracking	Built-in GPS positioning function, supports viewing equipment site data on the map, and enables anti-theft tracking of equipment
Manual Control Function	Manually control the warehouse rotation, trapping lamp switch, heating tube switch, insect killing / drying warehouse cleaning, vibration motor switch, conveyor belt switch and other functions
Insect Body Treatment	Upper and lower two-layer far-infrared treatment chambers, integrated killing + drying, with adjustable treatment time; pest mortality rate $\geq 98\%$, insect body integrity rate $\geq 95\%$
Light Source Features	20W trapping lamp tube (dominant wavelength 365nm), lamp start-up time less than 5 seconds
Light Control Function	Automatically turns on at night and switches to standby mode during the day; night operation is not affected by instantaneous strong light irradiation
Time Period Control	Working time periods can be set according to the living habits of target pests
Rain Control System	Independent drainage structure, automatically discharges rainwater to realize rain-insect separation, no water accumulation in the cabinet
Power Supply Protection	Voltage fluctuation range supports $220V \pm 60V$, equipped with leakage protection device
Safety Protection	Equipped with lightning protection device to effectively prevent lightning strikes
Function Expansion	Expandable interfaces for wind speed & direction, soil temperature & moisture, illumination, rainfall and other environmental parameters; optional filter screen (outside the trapping port) to prevent non-target large insects from entering and affecting small insect identification
Network Mode	Supports 4G, WIFI, wired and other networking modes, optional for anytime and anywhere network management

Technical Parameters

Parameter	Specification
Power Supply Mode	AC power or solar power supply; solar panel power: 600W, battery specification: 12V 200AH
Power Consumption	Standby power $\leq 5W$; total lamp power $\leq 450W$
Trapping Light Source	20W black light lamp tube (dominant wavelength: 365nm)
Impact Screen	Arranged at 120° to each other; single screen size: $595\pm 2mm$ (L) $\times$ $213\pm 2mm$ (W) $\times$ 5mm (T)
Lamp Start-up Time	Starts within 5s
Far-infrared Treatment Chamber Temperature	Reaches $85\pm 5^\circ C$ after 15 minutes of operation
Insulation Resistance	$\geq 2.5M\Omega$
Overall Dimension	650mm $\times$ 650mm $\times$ 2100mm
Design Service Life	≥ 10 years
Camera Pixel	48 megapixels
Insect Collection Bottle Capacity	1.5L
Daily Storage Capacity	Supports 8 days of separate storage by date
Power Supply Voltage Fluctuation Range	220V $\pm$ 60V

Installation Instructions

1. Select the installation site for the insect pest forecasting lamp (avoid obstacles and keep away from interference sources), and construct a concrete load-bearing platform with a thickness of no less than 10cm.
2. Place the equipment base smoothly at the center of the precast concrete platform. According to the reserved holes of the 4 fixed feet on the base, drill vertical holes with an impact drill. Drill 2 fixed holes symmetrically on each fixed foot with evenly distributed spacing.
3. Take 8 expansion screws from the accessory kit, insert them into the drilled holes one by one and fix them firmly. Align the fixing holes of the base with the expansion screw holes accurately, and tighten the nuts sequentially with a torque wrench according to the specified torque to ensure the base is firmly installed without looseness.
4. After installation, check the levelness of the base with a spirit level and test the stability by manual shaking. After confirmation, lift the device smoothly onto the base by hoisting or multi-person cooperation. Align the installation holes of the device and the base, and fasten them one by one with special fixing screws to complete the rigid connection between the device and the base.



Introduction to the upper computer software

Function Category	Specific Description
Core Functions	Realize integrated management of data reception, storage, viewing and analysis in the PC standalone environment
Data Reception and Processing	1. Support data reception via serial port, as well as data processing and visual display 2. Compatible with communication methods such as JSON string and MODBUS485
Parameter Configuration	1. Allow independent setting of data storage time 2. Support custom collection time in MODBUS485 collection mode
Monitoring Parameter Management	Support users to independently add, delete and modify monitoring parameters, including information such as parameter protocols, names and icons
Data Processing Expansion	1. Equipped with data post-processing function 2. Support external running of JAVASCRIPT scripts



Introduction to Cloud Platform

Function Category	Specific Description
Architecture & Access Method	Adopts a CS architecture software platform, supporting direct access and observation via mobile phones and PC browsers without additional software installation
Account & Device Management	Supports multi-account and multi-device login, meeting the collaborative management needs of multiple users and terminals
Data Display Function	1. Provides dashboards for real-time data display and historical data display 2. Supports data curve analysis 3. Supports map display and device information viewing
Data Storage & Stability	Implements cloud data storage based on cloud servers, featuring stability, reliability, easy scalability and load balancing
Alarm & Threshold Management	Supports SMS alarm function, allowing custom alarm threshold settings to respond to abnormal data in a timely manner
Data Processing & Output	1. Supports data export in table format 2. Has data post-processing function 3. Supports external running of JAVASCRIPT scripts to enhance customization capabilities
Data Forwarding Function	Supports data forwarding via multiple protocols, including HJ-212 protocol, TCP forwarding, HTTP protocol, etc.

