

USILAND[®]

SUZHOU USILAND
OPTRONICS CO., LTD.

SMART GRID CLEANING DEVICE
ANTI-BIRD LASER DEVICE



Power Industry Solutions

COMPANY PROFILE

SUZHOUSILAND OPTRONICS CO., LTD. is one of the few in China that started with laser cleaning technique and expanded to the fields of mold cleaning, nuclear power plant waste reduction, and transportation. Our company has expanded from current YAG lasers to fiber laser cleaning and obstacle clearing equipment with high beam quality, high efficiency, small and lightweight body, and online output.

Our company was founded in 2015, with a registered capital of 20 million yuan. After R&D and accumulation in 2015, a total of 9 products in Raptor series and Cyclone series were finalized in 2016. The Cyclone Smart Grid Cleaning Devices have received praise from many companies, including Jiangsu Electric Power, Shandong Electric Power, and Southern Power Grid. The newly developed laser bird repellents have been launched and applied due to its intelligent, safe, environmentally friendly, and long-distance characteristics.

At present, our products have expanded to fields, such as electricity, rail transit, aerospace, industrial-cleaning, cultural relic protection and restoration.

COMPANY ADVANTAGE

Our company uses cutting-edge and environmentally-friendly laser techniques to create first-class laser equipment for user experience and improve people's quality of life. Our team is particularly skilled in design and user experience, with complete equipment.

Our management team is composed of optical experts, laser experts, and a group of passionate young researchers. We jointly develop and share resources with top universities and research institutes at home and abroad, thus mastering the latest techniques and information.

USILAND has a sound organizational management system and has passed certifications such as ISO9001. Our company has unique advantages in the industrial field.



SMART GRID CLEANING DEVICE



Working Principle

High-energy laser is utilized to instantly dissolve foreign objects entangled in high-voltage lines without damaging transmission lines. When it is found that there is a foreign object hanging on the grounding wire that affects safe operation, the operator aims at the target through a sight on the ground, controls the laser device to emit laser. Through several seconds of burning and melting, the plastic-fiber foreign object is melted off, and the laser is turned off, thus completing the entire processes of handling foreign object with electricity.

Two Physical Functions

Foreign objects are vaporized (falling off due to sublimation)
Melted due to instantaneous high temperature

Application Scenarios





Cyclone 120
 Backpack, portable trolley case
 Weight < 20 kg



Cyclone 200
 Range Distance: 200m
 Hot-selling product in power grid and rail transit



Cyclone 500
 Range Distance: 300m
 Hot-selling product in power grid and rail transit.



Cyclone 1000
 Exclusive for clearing branches and obstacles
 Farthest working distance : 400m

Product Introduction

Product Model	Cyclone 120	Cyclone 200	Cyclone 500	Cyclone 1000
Size[mm3]	515*360*245	630*490*312	610*440*326	630*490*312
Weight[kg]	21.9	33	29.5	38
Cooling Mode	Air Cooling	Air Cooling	Air Cooling	Air Cooling
Power[W]	120	200+30	500+50	1000+50
Wavelength[nm]	1064	1064	1064	1064
Supply Voltage	24V DC	48V DC	48V DC	48V DC
Max Power Consumption [W]	450	800	1600	3300
Humidity [%]	10-90	10-90	10-90	10-90
Laser Class	IV	IV	IV	IV
Farthest Working Distance [m]	40	200	300	400
PTZ Accuracy ["]	0.6	0.6	0.6	0.6
Fiber Length	3	3	3	3
Continuous Full-load Working Time [H]	1	4	2	1
Min/Max Operating Temperature [°C]	-20-50°C	-20-50°C	-20-50°C	-20-50°C

Application Cases



Frequently Asked Questions(FAQ)

Q : What foreign objects can this device remove?

A: The target objects of the smart grid cleaning device mainly include balloons, kites, and plastic bags. Additionally, the 200W model can remove branches within a diameter of 4cm. The 600W model, with high power, is specifically designed for clearing tree branches (above 10cm).

Q : Can this device be used on rainy days?

A: The smart grid cleaning device is basically unaffected by the weather (except for heavy rain and thick fog), but rainproof measures should be taken as much as possible.

Q : Can lasers damage wires?

A: The melting point of the wire (bare stranded wire) is 670 ° C-720 ° C, and the melting point of foreign objects is around 300 °

C. Moreover, most of the thermal energy at this wavelength is scattered on the metal material, making it difficult for the bare stranded wire to absorb. The whole process lasts very short, 3 to 5 seconds.

Q : Is laser harmful to human health? How to avoid accidental injuries?

A: Laser is a type of energy-focused, directional, and non-dispersive light. In principle, laser is harmless to the human body, but in practical applications, laser protective glasses should be worn to avoid laser accidentally penetrating the eyes and causing damage.

Q : Is there any foreign object that cannot be removed?

A: The device can remove non-metallic substances without affecting metals.

ANTI-BIRD LASER DEVICE

For birds, vision is the most sensitive. The smart anti-bird laser device is inspired by bi-omics, so that birds regard the laser beam directed at them as a dangerous signal, producing threatening or maladaptive effects. Due to their survival instinct, birds will avoid the beam directed at them and fly away quickly, thus achieving bird repelling without harming them.



Items	Parameters
Laser Power[W]	1
Beam [mm]	40
Wavelength[nm]	520
Working Distance [m]	100-500m (day) 2000m + (night)
Power Supply Mode	220V Electricity
Operating Temperature	-25-50

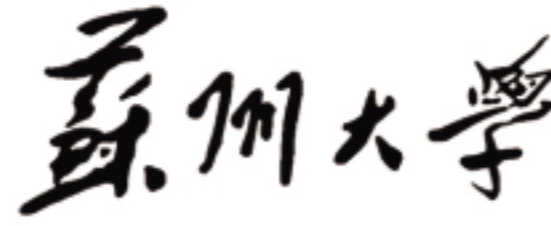
Application Scenarios



Application Cases



Partners



Certificates



USiLAND[®]

用心服务 客户第一

CUSTOMER FIRST, SERVICE FOREMOST



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