



Rear View License Plate Camera with Built-In Parking Sensors

User's Manual

Model:VTL401SR&VTL421SR

Thank you for choosing BOYO



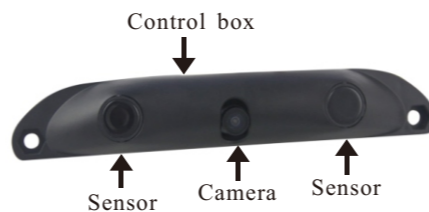
Take the time to read through this instruction manual. Familiarity with installation and operation procedures will help you obtain the best performance from your new Rear View License Plate Camera with Built-In Parking Sensors.

For your records:Record the serial number,found on the back of the unit,in the spaces designated on the warranty card.

Refer to the model and serial numbers whenever you call upon your BOYO dealer for information or service on the product.

Please note that all specifications and information contained herein are subject to change without prior notice.

Any changes will be integrated into the latest release. The manufacturer assumes no responsibility for any errors or omissions in this document.



Accessories

- 1.Rear View License Plate Camera with Built-In parking sensors
- 2.Power cord
- 3.Bracket
- 4.User's Manual
- 5.Registration Card,Warranty Card
- 6.License Plate bolts(Stainless) x2,Long screw x2
- 7.22ft Power wires x1
- 8.22ft length Sensor buzzer(Small speaker) x1
- 9.Short Screw x2
- 10.Plastic Cover(Screw cap) x2(Optional)

Specifications

1/3.7" Color Image Sensor
Sensors are built-in to the frame
Waterproof IP67
480TVL horizontal resolution
Adjustable camera angle up/down
0.1LUX
Step-up buzzer alarm for audible alert
The distance read out integrated into the camera video
640(H)x480(V) total pixels
Built-in parking gridlines(fixed)
No separate control box needed
The brain module is built-in to the camera
No need to drill holes for sensors
120 degree wide viewing angle

Technical Data

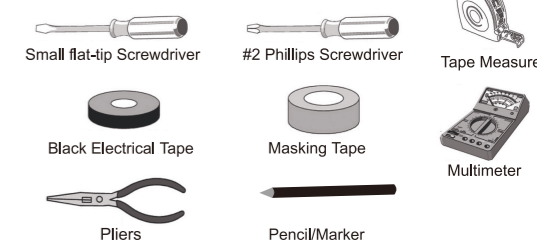
Rated Voltage	DC9~16V
Operating current	≅150mA
Ultrasonic frequency	40KHz
Detecting distance	1.0 4.9ft
Camera angle	120 degree
Working temperature	- 4℉ ~ 158℉
Store temperature	- 22℉ ~ 185℉
Sensor detection angle	Horizontal : 60°
	Vertical : 30°

Sensing Characteristics

Stage	Condition	Distance	Audible Alarm	Digital Display
1	Safe Mode	2.6ft-4.9ft	Bi..Bi..	2.6ft-4.9ft
2	Alarm Mode	2.0ft-2.59ft	Bi..Bi..	2.0ft-2.59ft
3	Alarm Mode	1.6ft-1.9ft	Bi..Bi..	1.6ft-1.9ft
4	Critical Mode	1.0ft-1.59ft	BiBi	1.0ft-1.59ft
5	Danger Mode	0.0ft-0.9ft	Continuous	0.0ft

Typical Installation

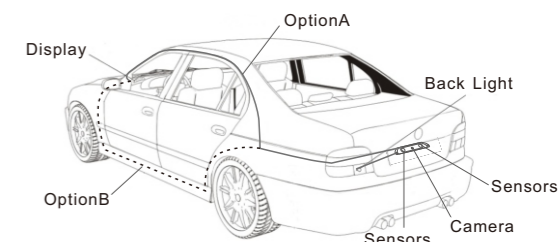
1.Tools



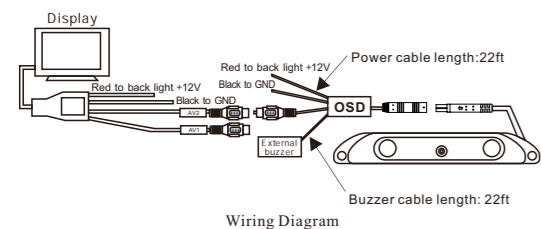
2.Recommended Installation Position

Installation and wiring of this product require specialist skill and experience.To assure your safety,please request a specialist technician to install the unit.

Example of correct camera installation.



3.Connections



4.Installing the License Plate Camera

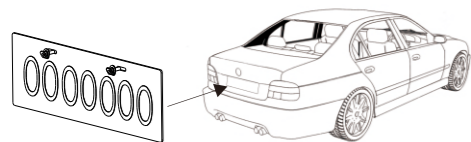
- A.Need a bracket install on the Trunk
- B.No need bracket install on the bumper

Accessory for installation

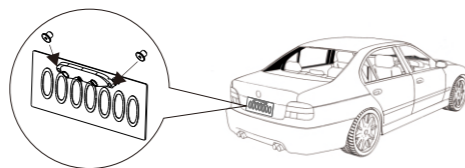


License plate installed on the trunk:

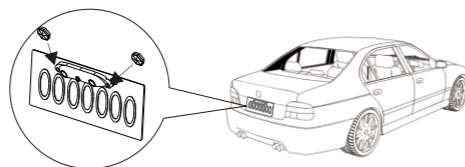
Step 1.Fix the camera firmly in position by using bracket and long screw.



Step 2.Use short screw to secure the position on the license plate.



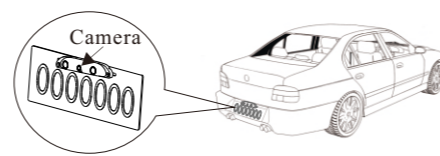
Step 3.Place plastic cover onto the license plate frame holes.



5.System Connection

Please refer to the diagram of "Connections" in the page 5 of the User's manual.

6.Adjust the camera angle



Adjust the camera angle so that the rear part of the vehicle or the rear bumper is visible at the bottom of the monitor screen.

7.Test after installation

Follow below steps to test and verify the operation of the backup system:

Warning:Do not stand behind a moving vehicle. death or injury may occur.Prior to testing,set the parking brake On,ignition key On(do not start),step foot on brake and shift the vehicle into reverse.Ensure that the engine is not running while proceeding with the following tests.

Test the system operation with a piece of wood (23.6*11.8*0.4inch) or other object (not too small) after the installation.Start with the wood more than 3.28ft away from the vehicle.Then move the wood closer the vehicle and ensure that the buzzer,LED,and distance indicators display correctly.

Caution:This system will not work if it's installed on the license plate area that is caved in.It will detect part of the bumper and may not work properly.

Limitations

The sensors may not work if an object does not reflect the ultrasonic waves or it has an unusual shape,pole cardboard carton,tire of bicycle, small or slender tree,rectangular lumber or curbs tone.The sensor may not detect another vehicle bumper if it is too high.

Also note:This system has different detection distance to the different object.To the wall,the max detection distance is 70.9inch;tho the human body,the max detection distance is 39.4inch;to the column is 40cm,the max detection distance is 47.2inch

In some special cases,the display may not be the same as the real condition due to the sensor position,obstacle shape,reflection condition and so on.Some examples are given below.

