BOYO®

Slim Rear-View Camera with Blind Spot Detection

INSTRUCTION MANUAL

* Model ☐ VTLBSD1

BOYO®
VISION

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Table of contents

1. Package

1-1. Camera part of VTLBSD1

Slim Rear View Camera
1EA

Adaptor cable
1EA

24ft Extension cable
1EA

M6 Hex bolt
4EA

Spring washer
4EA

Flat washer
4EA

M6 Hex nut
4EA

1.5Ø L-Wrench
1EA

Instruction manual
1EA

Registration card
1EA

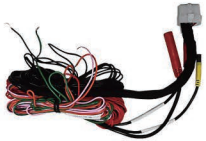
Warranty card
1EA

1. Package

1-2. Sensor part of VTLBSD1

Host computer
1EA

LED Flasher
2EA



Main harness
1EA

LED Extension
1EA

LED Extension
1EA

Blind Spot Sensor
Extension 1EA

Extension bracket
2EA

Snap plug
2EA

Double-sided stickers
1EA

2. Limited time warranty

Limited time warranty applies only if care instructons are followed regularly.
In the event of defective product or workmanship,please return the item to place of purchase.

3. Care instructions

Periodically the mounting frame's appearance may need maintenance.
Please take the following action to restore its original brilliant luster.
Use non abrasive mild soap detergent and water only to clean.

4. Key features

4.1 Key features of camera

- 1/3" CMOS Color Image sensor
- 976 x 592 Resolution
- 800TVL
- 175° (D) Wide View Angle
- LED Lights for Excellent Night Vision
- Reverse/Non-Reverse Selectable
- Trajectory Parking Lines On/Off
- Vertical Camera Angle Adjustable
- Anti-corrosive Zinc Metal
- IP68 Waterproof

*** Beautiful design & anti-scratch coating**

The camera design is very elegant. Its scratch free coating protects the finish with a very long lasting appearance.

4. Key features

4.2 Key features of microwave blind spot detection system

- Digital Microwave Radar
- Audible Alert : Lane change Assistance
- Two LED indicators for visual warning
- Speed range : 0.35 –175MPH
- Detection Range : 90 degree (Horizontal)
- Detection distance :1–60Ft (Vehicle), 1–33Ft (Motor cycle) and 1–23Ft (Pedestrian)
- Waterproof : Ip68
- Rear Cross Traffic Alert (RCTA)
- GPS speed detection : above 20MPH
- No signal Interference at any weather
- Easy Installation (No drilling/removal of bumper)

5. Installation Guide

Step 1.Install blind spot detector: Two ways to mount:

- a) Directly over the license plate mounting holes.

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5. Installation Guide

- b) Rotate the BSD and use an extension bracket to show state name or state moto.

Step 2. Connection to the left/right signal

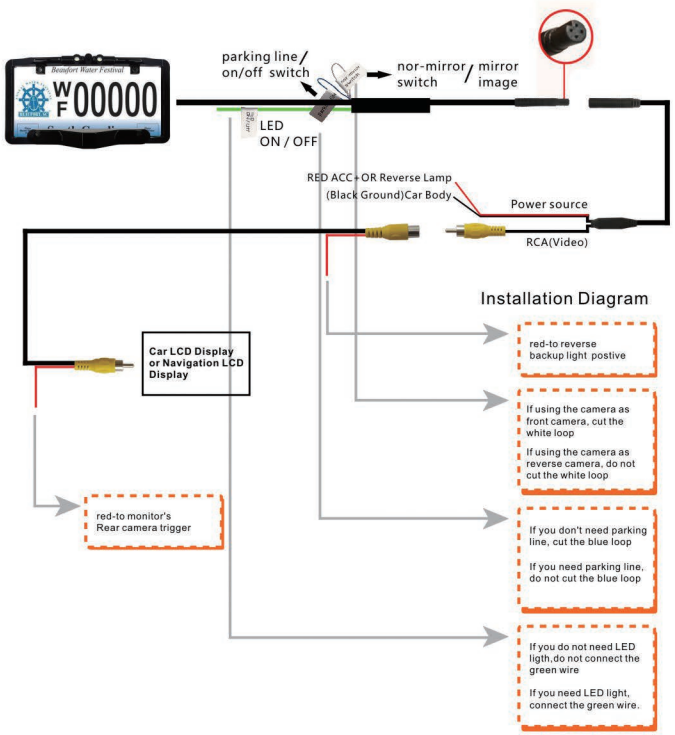
- Connect the left and right signal wires of the VTLBSD1 sensor wire harness to the correct signal wires of the car(see fig. below).

Step 3.LED flasher installation

- Find a proper position to install the LED flashers in the right and left (normally on the A–PILLAR)(see fig. below).

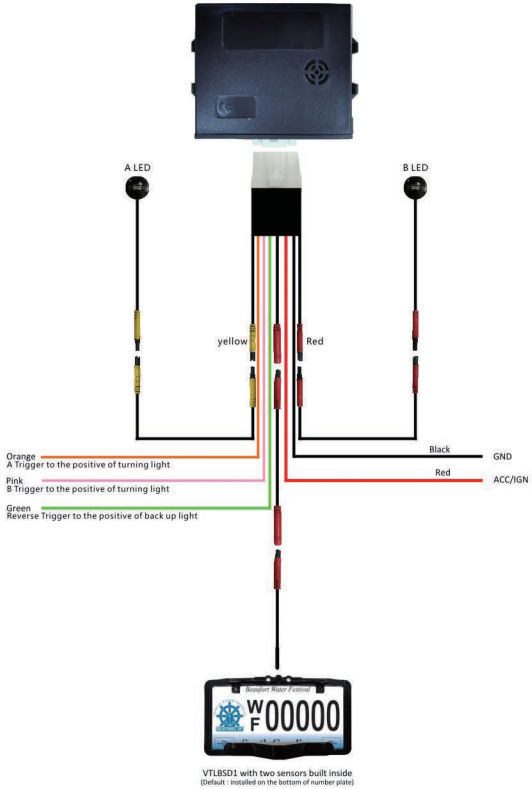
6. Connection instructions

6-1. Camera part of VTLBSD1



6. Connection instructions

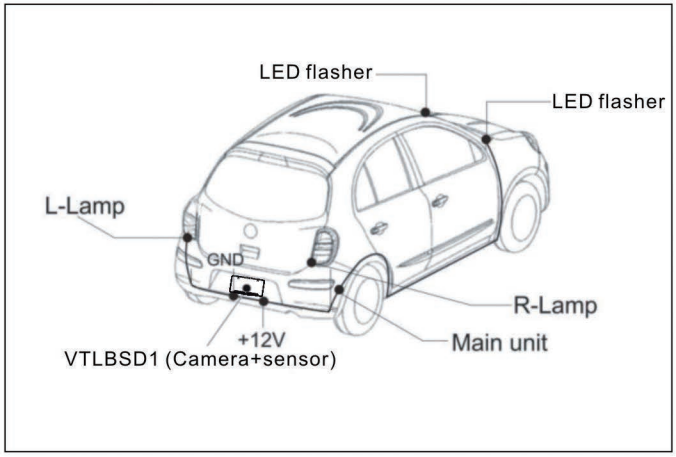
6-2. Sensor part of VTLBSD1



VTLBSD1 with two sensors built inside
(Default : installed on the bottom of number plate)

6. Connection instructions

6-3. Sensor part of VTLBSD1



Blind Spot Detection Volume Adjustment Settings:

1: Mute

2: Low

3: Middle

4: High

7. Troubleshooting

NO.	Issue	Reason	Solution
1	LED flasher does not work	Wrong connection or pins not making contact	Check the harness and make sure connection is correct
		LED flasher is broken	Replace LED flasher
2	Opposite LED indicator	Microwave sensor or LED flasher are plugged in to the opposite connector	Make sure RED is driver side and YELLOW is passenger side.
3	Buzzer does not work	Wrong connection or pins not making contact	Check the harness and make sure connection is correct

8. False Alarm

When engine is on, the system starts detecting the behind ojects in the lanes next to the driver. The detection range could be up to 80ft. Please note the system give warning signal only when the behind objects are approaching.

False Alarms

Due to detection distance range, a vehicle travelling faster than your vehicle in the blind spot detection area - two lanes away – may give false warnings as a vehicle approaching toward your vehicle. Blind Spot Detection Volume Adjustment Settings can be used to reduce beeper volume.

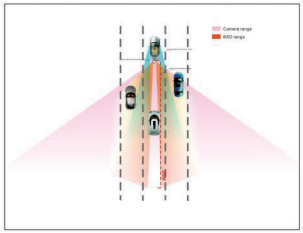
9. How does it alert?

A. Detection and warning on right side:

1. Right LED flasher will light up when there is an object approaching from the right side blind area of your vehicle at speed over 20 mph (see Fig. below).
2. If the right turnning signal is triggered when some ojects detect by the system, Right LED flasher will blink and the buzzer will beep at the same time.

B. Detection and warning on left side:

1. Left LED flasher will light up when there is an object approaching from the left side blind area of your vehicle at speed over 25 mph (see Fig. below).
2. If the left turnning signal is triggered when some ojects detect by the system, left LED flasher will blink and the buzzer will beep at the same time. When in reverse gera, the buzzer will beep to give cross traffic notification and the LED will indicate the direction of incoming vehicles (or objects) approaching. Notifications will not alert, for standing objects under 5mph reverse speed.



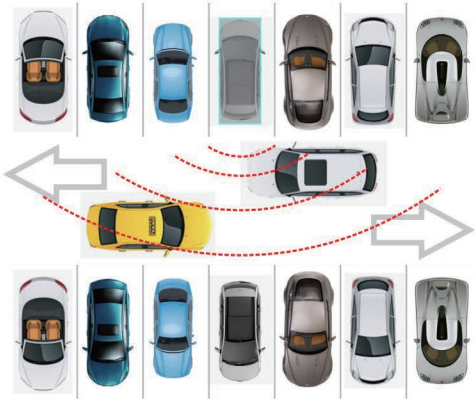
9. How does it alert?

C. Cross traffice non–detect warning:

1. When car is backing out of the parking stall, the driver will be alerted with warning lights, when cross traffic approaching at a very slow speed or pedestrian approaching(see Fig. below).

Warning Notice:

The BSD detects objects which travels above certain speed. When an object, a person or vehicle moving across at below the threshold may not trigger alarm in reverse mode. An object MUST approach the vehicle at 0.35 mph or above to be detected.



10.Specification

10-1. Camera part of VTLBSD1

Effective Pixels	NTSC : 976(H)X592(V)
Horizontal resolution	800 TV Lines
Total number of pixels	NTSC : 460K
Min.Illumination	0 Lus at F2.0
Light	Dual 3W LED lights
Synchronizing system	Internal
Scanning system	Interlaced
Video outp	1Vp-p 75 ohm composite
S/N Ratio	More than 48dB
Electronic iris	1/50,1/60-1/100,000sec
Smear effect	0.005%
Gamma correction	r =0.45
White balance	Auto.2100K-9100° K
Gain control	Auto.4dB-30dB
Lens mount	1.56mm Board lens (175° D)
MTBF	80,800 hours
Power source	Car Electric Source DC12V(Tolerance:9VDC~16VDC) Built-in transient impulse protection circuit
Operating current LED OFF	70mA w/regulated power in
Operating Temp.	-4° F～ 122° F (-20℃ ～ +50℃)
Storage Temp.	-40° F～ 176° F (-40℃ ～ +80℃)
Humidity	Up to 90% RH (non-condensing)
Measurement	Camera Size : 3.70(L)X063(D) (Camera)

10.Specification

10-2. Sensor part of VTLBSD1

Operating frequency	24.0 ----24.25GHZ
Transmit power	15dbm
Detection Angle	90 degrees
Detection range	Truck : 1ft-60ft Car : 1ft-50ft Motorcycle:1ft-33ft Pedestrian:1ft-23ft
Detection ability	5 objects can be detected at the same time
Speed range	0.35mph---137mph
Speed accuracy	< 0.5mph
Speed Restriction	1. Without GPS signal: no speed restriction (system always on). 2. With GPS signal: system would be triggered on in case of speed higher than 25mph.
Direction of movement	approached or overtaken by vehicles
Operating voltage	9---35V
Waterproof	Ip68
Working current	< 200mA
Working temperature	-40℃ ~ + 85℃