

introduction

Multipurpose Laser System

L-elite is a multipurpose laser system build to keep you and your vehicle safe. Designed to be mounted on your vehicle, this in many ways useful investment will enable effortless parking and greater confidence while driving.

L-elite is based on military technology, and comprises parts fabricated to military standards. As opposed to classic infra-red sensors that use light emitting diodes, L-elite uses a laser diode that is used in military range-finders and police speed detectors. The power of a laser diode is one hundred times greater than that of a LED diode. The reception of very faint signals is enabled due to the optical lenses in the receiver and high quality low-noise amplifiers.

The built-in USB socket will enable adding new features to your L-elite by connecting additional feature modules. The program code is also upgradeable in the event of improved software.

To cover both the front and back of a vehicle it is possible to order an additional outer sensor that can be connected to L-elite Control Box that already has two sockets for this purpose. In combination with other products of the L-elite brand, we can offer you even more features.

Contents

Inside this package you will find:

- Outer sensor
- Control box
- Control set (LOOM)
- Installation accessories
- This user's guide

basics & installation

Outer Sensor includes a laser beam emitter and a detector diode. As this unit is installed on the outside of the vehicle, it is specially protected from water and mechanical damage.

Control Box is the central part (brain unit) of the L-elite. It includes a processor, upgradeable flash memory, a complex power supply unit and the following sockets:

- H1 and H2 sockets for front/rear sensor connection
- L socket for control set connection (LOOM)
- USB socket for L-elite additional feature modules

Control Set includes an L connector which should be connected to the L socket of the Control Box. On the other side of the Control Set cable there are a speaker, a two-color light diode, an on&off switch, a programming key button and a car radio mute wire.

Installation

Outer Sensor can be mounted between the front grill partitions or above the rear bumper. It is important that you do not damage the cable or the factory installed connector on the cable during installation (cutting the cable or removing the factory installed connector voids warranty and may cause malfunction).

1. Check if the cable is long enough to reach the desired position.
2. Attach the unit using double-sided adhesive tape or a bracket to a position that offers a clear front (back) view.
3. Make sure the unit is horizontal (use a level to check).

Control Box is to be mounted in the interior of the vehicle at the place of your choice.

4. Locate access to the power supply of the vehicle (+12 V)
5. Connect the RED Control Box wire to the positive battery lead and BLACK Control Box wire to the ground lead or the car chassis. If using the supplied wire taps (to be used only on a wire of the appropriate size) insure that they are properly locked and preferably wrap them with insulation tape afterwards.
6. Connect the sensor into either one of the H sockets.

A A1 fuse is factory installed inside the Control Box so additional fuses are not needed.

Control Set

7. L connector must be connected to the L socket of the Control Box.
8. Connect the blue car radio mute wire to the corresponding audio mute input on the car radio, if it has one.
9. Speaker, a two-color light diode, an on&off switch and a programming key button can be mounted according to user's preference.

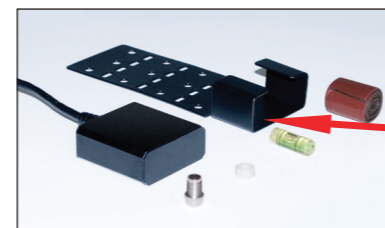
installation

SPECIAL INSTALLATION GUIDELINES

Outer Sensor Installation

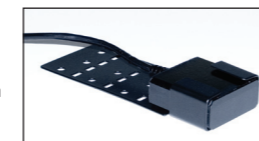
When mounting an outer sensor with a mounting bracket, make sure it is mounted very firm so the unit would not become loose under vibrations, especially when mounted on motorbikes.

We recommend using an adhesive tape in combination with a mounting bracket for maximum grip.



Place red adhesive tape inside bracket

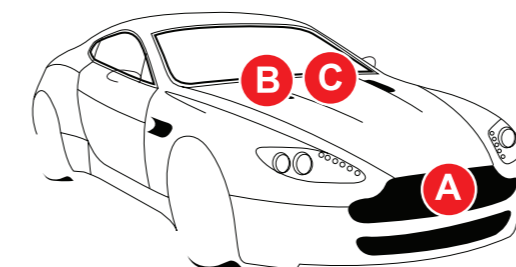
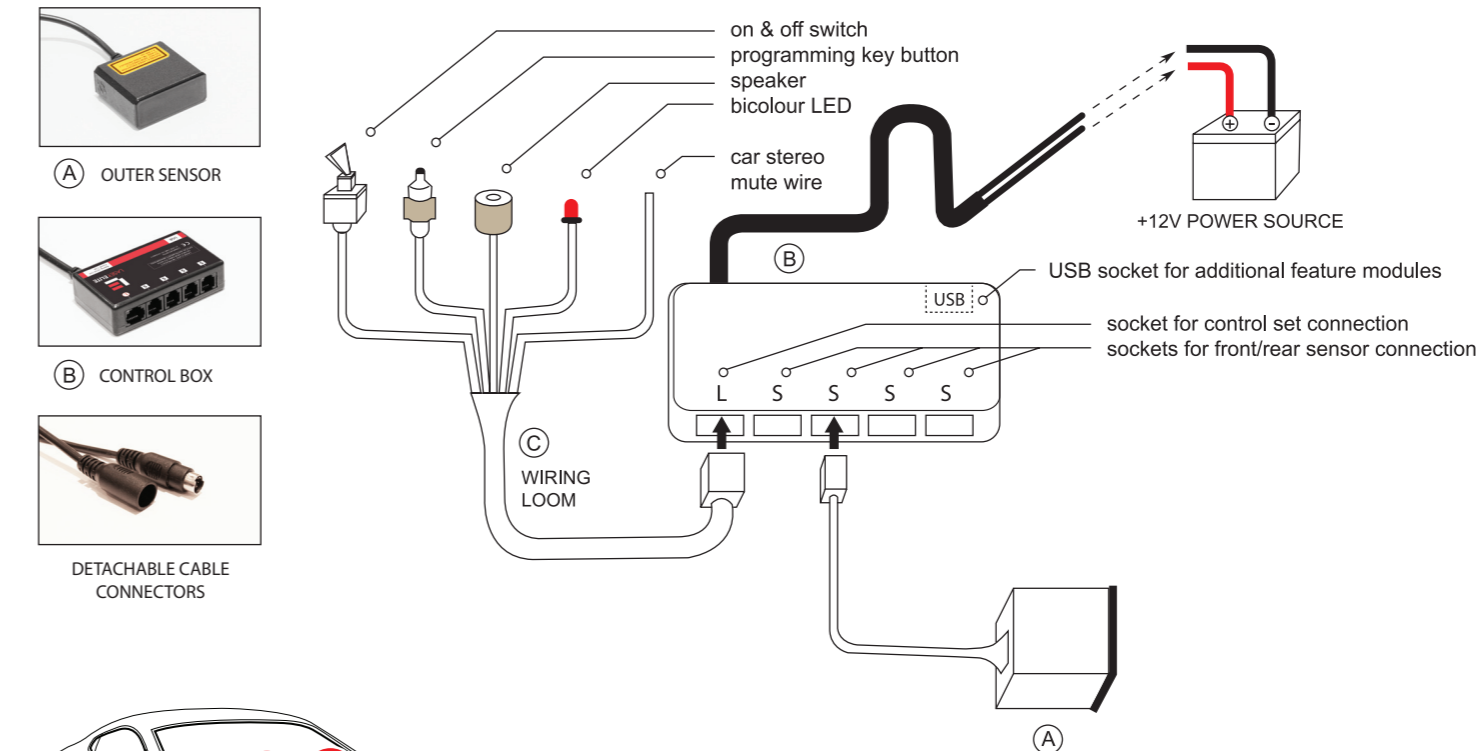
Sensor slid into bracket after adhesive is stuck in



CAUTION ! when connecting the Control Box power leads

To avoid the possibility of draining your car battery by accidentally leaving your L-elite system on for prolonged time, use the following connection method:

Connect the BLACK Control Box wire to the vehicle chassis or to negative ground power supply wire of your vehicle's system and connect the RED Control Box wire to the SWITCHED positive power supply wire usually found in the car radio power supply.



L-elite is to be used under the following conditions:

Ambient temperature: -20°C to +60°C
Operational power supply: 10,5 V to 15 V
Car radio mute: connects to ground

usage

Turn on your L-Elite set. The activation is followed by an intermittent sound coming from the speaker and alternating red and green flashing diode lights. While active the green light will flash once every second. With every activation the set runs a self-test; if the set has not been connected properly or has a malfunction, the red diode will light up accompanied by a warning tone. When an obstacle is detected your L-Elite will warn you with red diode flashes and audible signals that will become faster as the obstacle gets closer to the outer sensor. You will also be warned with fast red flashes and speaker tones in case of laser interference detection.

L-Elite has 6 user selectable operating modes which are set to optimal default values but can be modified using the programming key button at any time during the operation of L-Elite. After the settings have been modified the selected operating mode will remain permanently written in the memory of the processor. Besides operating modes there are also additional features that will be introduced later on.

Detection range adjustment (DEFAULT LEVEL 2)

Before using the parking sensor in driving conditions it should be tested with a piece of paper or other object. A warning tone will be heard, accompanied by the red flashing light as you bring a paper or an object closer to the sensor. If needed, the detection range (which can vary from 0 to 3 meters) can be adjusted to four different levels by using the programming key button. Use the following sequence for reprogramming:

Press and hold the key button while counting the flashing green light. Release the key button after the third (3) flash.

L-Elite will reprogram accompanied by red and green flashing lights and speaker tones. Long tones coming from the speaker during reprogramming symbolize four different detection levels:

- 1 tone for LEVEL 1 (short mode):
- 2 tones for LEVEL 2 (medium mode):
- 3 tones for LEVEL 3 (long mode):
- 4 tones for LEVEL 4 (extra long mode).

The detection range levels can vary and you will need to reprogram the set several times before reaching the desired setting.

Silent power-up (DEFAULT : OFF)

During activation, only the red and green indicator lights will flash with no sounds.



usage

Use the following sequence to active/deactivate this feature:

Press and hold the key button while counting the flashing green light.
Release the key button after the fifth (5) flash.

L-Elite will reprogram and this will be signalled by red and green flashing lights and speaker tones.

Laser interference defense (LID) adjustment (DEFAULT : 4SEC)*

L-Elite possesses an advanced program code for detecting and deflecting possible interference signals from other sources of laser emissions on 904 nm frequency. When an external source of interference is detected and recognized via the parking sensor operation, L-Elite will try to keep maintaining its normal performance. During this time the user will be warned by a four second tone from the speaker and a flashing red light that the parking sensor operation has become unreliable. If the parking sensor operation is not recovered within 4 seconds and the interference continues the unit will automatically reset.

You can set the interference detection and deflection duration between 4 seconds and 8 seconds. This mode can be programmed with the following sequence on the key button:

Press and hold the key button while counting the flashing green light.
Release the key button after the eighth (8) flash.

L-Elite will reprogram accompanied by red and green flashing lights and speaker tones. A short tone coming from the speaker during reprogramming indicates the 4 sec mode being selected while the long tone indicates the 8 sec mode. The limit duration settings alternate so please repeat the sequence to return to the previous state.

LED Dark mode (DEFAULT : OFF)

To prevent the green light from flashing every second during normal operation, you can activate the LED Dark mode. The green light will stop flashing after the warm-up period (60 seconds after the power-up) if this mode is activated.

* in some regions LID default is 8 SEC. check with your local agent.

Use the following sequence to activate/deactivate the LED Dark Mode:

Press and hold the key button while counting the flashing green light.
Release the key button after the tenth (10) flash.

L-Elite will reprogram and this will be signalled by red and green flashing lights and speaker tones.

Laser Power Output (DEFAULT : OPTIMAL)

Choose between the optimal and maximum laser power output modes. Using optimal setting (recommended) will reduce the possibility of error detection while maximum power insures maximum range and energy. To change the setting use the following sequence:

Press and hold the key button while counting the flashing green light.
Release the key button after the thirteenth (13) flash.

Tone with LED flashing red indicates MAXIMUM setting selected while tone with LED flashing green indicates OPTIMAL setting being selected.

Parking sensor mute (DEFAULT : OFF)

With this mode activated the parking sensor will warn you of the detected obstacle only with red flashing lights, while in default setting the light would be accompanied by warning tones from the speaker. To activate/deactivate this mode use the following sequence:

Press and hold the key button while counting the flashing green light.
Release the key button after the eighteenth (18) flash.

L-Elite will reprogram accompanied by three short red flashes.

Additional features

Speaker mute

The key button is useful in city driving as a single 1 second press will switch the speaker off and further parking sensor warnings will be given just by the red flashing light.

This setting lasts until the set is turned off.

Restore factory default settings

Did you forget the features or settings you have programmed in your system? Use this simple programming sequence to restore the factory default settings:

Press and hold the key button while counting the flashing green light.
Release the key button after the fifteenth (15) flash.

L-Elite will reprogram accompanied by constant green light and longer speaker tone.

Automatic sensors check

While restoring factory default settings the unit will count and memorize the number of sensors connected to the system. On each subsequent power-up during the self-test process the unit will check if all memorized sensors are present and operational. If one or more of them is disconnected or not operational you will be warned by five 2 seconds long tones and red flashes during the first 15 second of operation.

NOTE: initiate this setting after installation and each time you make a change to number of sensors connected to the system so the new setup could get memorized.

Manual sensor check

To manually check the number of sensors connected and operating in the system use the following programming sequence:

Press and hold the key button while counting the flashing green light.
Release the key button after the twentieth (20) flash.

The number of long tones coming from the speaker shows how many sensors are found connected.

specifications

Specifications Table

Dimensions:

Outer Sensor (LxHxW)
42x20x50 mm (1.7x0.8x2.0 in)
Cable length: 5 m (16.4 ft)

Control Box (LxHxW)
85x22x40 mm (3.3x0.8x1.6 in)
Power supply cable: 1 m (3.3 ft)

Control Set (L)
1.5 m (4.9 ft)

Weight:
Outer Sensor
120 g (0.3 lb)

Control Box
85 g (0.2 lb)

Working temperature:
-20°C to +60°C (-4°F to 140°F)

Power:
Operational Power supply:
10.5 V to 15V

Current consumption:
400 mA max.

Speaker loudness:
90 dB

Laser class:
1M

Laser wavelength:
904 nm

Specifications are subject to change without notice.

operation description

Operation:

Activation mode
1 second following power-up: self-test

Warm-up mode
60 seconds following the Activation mode: during warm-up mode L-Elite functions are limited. The end of a warm-up mode is signaled with a green LED flash and a tone from the speaker.

Search mode
Searching for obstacles: Other functions

LED & sound signals:

LED flashing green
Normal operation, LED flashes green every second

LED flashing red + tone
Obstacle found

LED constant red + tone
Interference detected: LID activated

LED constant red + 1 beep
Faulty operation; low voltage, check vehicle power supply

LED constant red + 2 beeps
Faulty operation, cables unplugged or defective unit, check cables

LED constant red + 3 beeps
Warning sensor unplugged, not properly mounted or a defective sensor. Check sensor.

LED flashing red + beeps during first 15 seconds of operation
Automatic sensor check failed. Check sensor connections. If adding or removing sensors perform code 15 (restore factory defaults)

notes and warnings

• Take special care while installing sensor head. Damaging the cable or the factory installed connector on the cable when installing may cause malfunction and doing so voids warranty.

• Do not plug more than two outer sensors into the control box. Do not plug any third party equipment into any of the sockets in the control box. Do not plug any part of the L-elite into the third party equipment. Doing so may cause fire or damage to the unit and voids warranty.

• It will take time to get acquainted with the parking sensor range, which can vary from 0 to 5 meters between the car and an obstruction, therefore rely on personal judgment.

• L-elite CANNOT detect glass or other transparent objects.

• While driving, especially in winter months, dirt and filth can accumulate on the protective glass cover of the outer sensor, which can affect the sensor's performance. Wipe the protective glass periodically with a dry or moist cloth.

• Use of laser products may be regulated by your local laws. Check your State laws before using this product.

SPECIAL CAUTION:

Laser sensor emits an invisible laser beam that can be harmful to sight. Never, under any circumstances, look at the sensor while it is connected to a power supply.

**INVISIBLE LASER RADIATION : DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS (MAGNIFIERS)
CLASS 1M LASER PRODUCT IEC 60825—1-2001**

warranty & service

Register your L-elite

To become a registered owner or the L-elite please send a registration inquiry not later than 30 days from the date of the purchase to your place of purchase or local reseller.

If you have purchased directly from L-elite you do not need to register since we already registered your data in our customer database at the time of the purchase.

Program Code Upgrading

Program code upgrading is available free of charge for registered users only (shipping not included). To find if there is a program code upgrade available for your unit and to arrange upgrade of your control box contact your local sales agent.

For more information contact your local sales agent.

Warranty Conditions

L-elite guarantees that the product is fully functional. During production and before delivery it undergoes several quality checks. Nevertheless, L-elite offers a limited one year warranty, valid from the date of the first purchase. If you have not registered your product in case of warranty claim you are required to show an original receipt with a visible date of purchase and a warranty card authorised by a dealer. In case of malfunction or defect caused in manufacture, the product will be repaired or replaced. In case of replacement, original warranty period is applied to replaced parts.

The warranty does not cover installation and dismantling fee, shipping costs, damage caused by incorrect installation, damage caused by attempted repair, mechanical damage of any kind; or any direct or indirect damage caused in use, misuse, or mounting of the L-elite

The warranty is not valid if the serial number on the unit has been removed or if there is some physical damage visible on the unit.

Servicing and Support

If uncertain whether your L-elite is working correctly, please check Operation description in Specifications table of this manual. If it does not give you a solution to your problem, contact your local distributor or local sales agent.