User manual

LEADER Sentry

EN Read this manual carefully, before the first use

Product reference :

D11.06.010	LEADER Sentry 1 laser
D11.06.011	LEADER Sentry 2 lasers + 20m extension cable

The Leader Sentry complies with all European CE recommendations CE: CEM, RoHS, WEEE.

Contents

1 INTRODUCTION

This **LEADER Sentry** Building Stabilisation monitor is designed to be immediately operational and very simple to use. Supplied as a self-contained system with its own power supply, the unit can be used almost anywhere.
The **LEADER Sentry** alerts Search & Rescue teams of imminent danger from structural collapse or the movement of any mass which may harm or impede rescuers.
A harmless laser is sited on the potentially dangerous site or structure and the **LEADER Sentry** continually monitors for any slight movement. In addition, it can be used to monitor any movement of mass or material which might slide and endanger life during rescues involving mud slides, avalanches, unsafe vehicles or similar hazards.

Either mounted on a telescopic tripod or by using a high performing sucker pad for vehicular mounting, the **LEADER Sentry** can detect a pre-selected movement accurately up to a distance of 30m (98ft). A telescopic sight allows the user to precisely pinpoint the laser on the target area. The **LEADER Sentry** display will indicate the distance from the unit to the target area and display the variance of movement up to the pre-selected alarm threshold.

The **LEADER Sentry** will alarm at pre-determined thresholds. These thresholds can be selected in increments between 5mm and 100mm or 0.2 inches to 4.0 inches.

The **LEADER Sentry** detects movement in the direction of the laser beam. Rescuers can select a maximum movement tolerance in increments. This is useful when the operation is executed in adverse weather conditions or when there is an acceptable tolerance of movement naturally occurring in the structure. The fluctuation is displayed on the unit until it reaches the threshold. Should the structure move greater than the distance selected, it will immediately trigger a piercing 98dB audible alarm.

Two **LEADER Sentry** systems can be linked together via the same control system to allow two elevations to be monitored simultaneously or two axis of the same structure.

2 DESCRIPTION

2.1 CONTENTS

❖ **Version 1 laser**

- 1 Sentry **Class 2***Laser c/w 4m (14 feet) cable.
- 1 tripod base.
- 1 tripod neck.
- 1 tilt / twist connection for tripod - laser.
- 1 control panel.
- 1 power pack and international adaptors 110/220V 50/60 Hz.
- 1 mains / 12v power connecter.
- 1 red adaptor for 12v cigarette lighter.
- 8 AA batteries.
- 1 carrying case.

❖ **Version 2 lasers**

- 2 Sentry **Class 2***Laser c/w 4m (14 feet) cable.
- 2 tripod base.
- 2 tripod neck.
- 1 tilt / twist connection for tripod - laser.
- 1 control panel.
- 1 power pack and international adaptors 110/220V 50/60 Hz.
- 1 mains / 12v power connecter.
- 1 red adaptor for 12v cigarette lighter.
- 16 AA batteries.
- 20m extension cable.
- 1 carrying case.

***The power output is below 1mV. In case of exposure, the naturel reflex of blinking and turning the head away is sufficient to protect from any risk of lesion.**

LASER RADIATION / DO NOT STARE INTO BEAM / CLASS 2 LASER PRODUCT / EN60825-1:2007 / P≤1mW ; λ=650nm

➢ **Option:**

- 1 Laser and 20m extension cable **Réf: (D11.06.012).**
- Sucker attachment for Laser **Réf: (D11.06.014).**

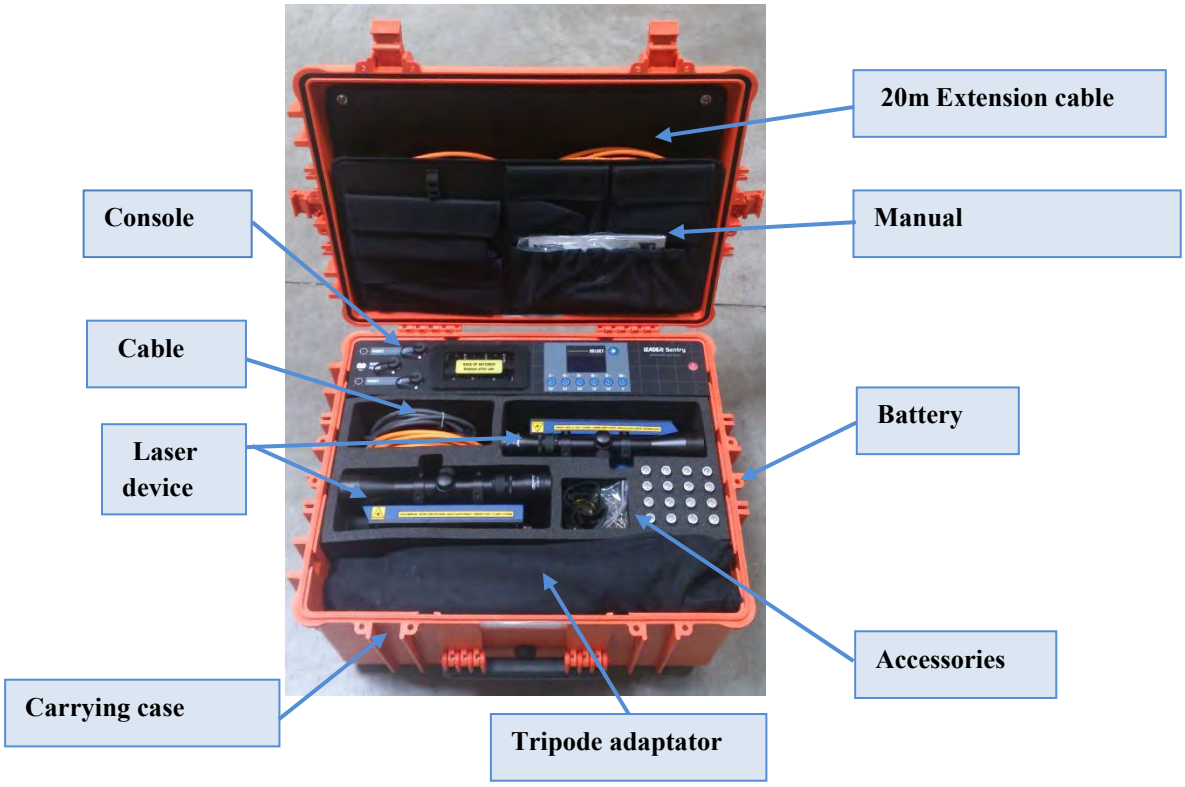
2.2 GENERAL FEATURES

	1 Laser	2 Lasers
Carrying case	Impact resistant IP67	
Storage T°	-40° à +70°C (-40° to +158°F)	
Operating T°	-25° à +50°C (-13° to +122°F)	
Working Range of the laser	Up to 30m (98ft) depending on climate conditions	
Dimensions	L650 x P510 x H242 mm +/-5 mm (25" x 20" x 9")	L640 x P510 x H372 +/-5 mm (26" x 20" x 14")
Poids	15.5 Kg +/-0.5 Kg (34lbs)	26.5 Kg +/-0.5 Kg (58lbs)
Extension	No	20m extension cable
Backup power run time	15.5 hrs with 8 x AA lithium battery (not supplied) * 7 hrs with 8 x AA alkaline supplied battery (supplied) *	**2 connected lasers:** 9 hrs with 8x AA lithium battery (not supplied) * 3 hrs with 8x AA alkaline battery (supplied) * **1 connected laser:** 15.5 hrs with 8x AA lithium battery (not supplied) * 7 hrs with 8x AA alkaline supplied batteries (supplied) * **Or** 6 hrs (2 lasers) and 14 hrs (1 laser) by using the 2nd set of battery (With 16 batteries supplied) *

*** Unit ON - flash and alarm OFF.**

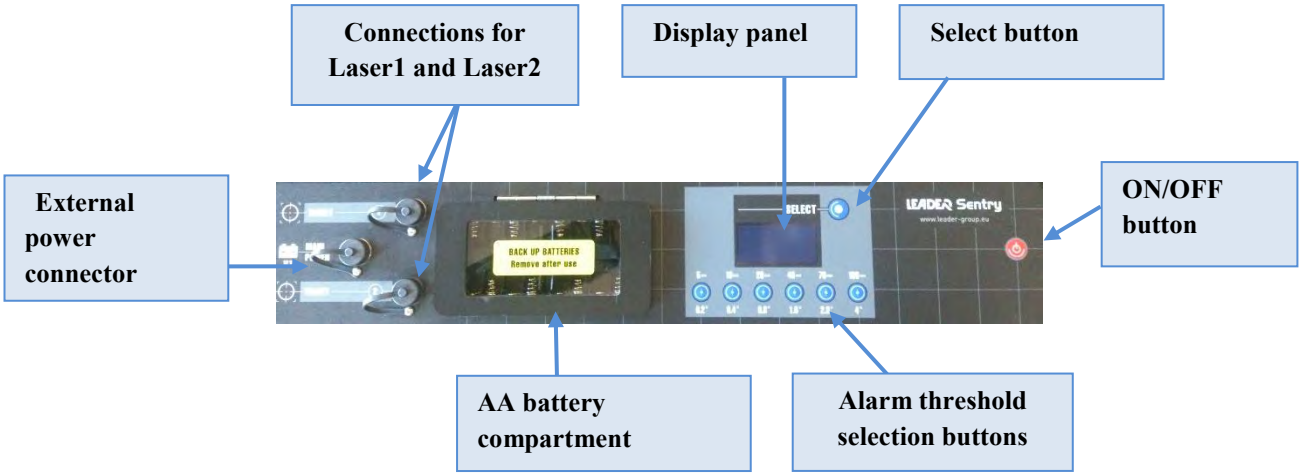
2.3 DESCRIPTION OF THE SYSTEM

- **The LEADER Sentry components:**



2.4 DESCRIPTION OF THE CONSOLE

➢ **The console features the following functions:**



ON/OFF button: To switch on, press once. To switch off, press and hold for **2 seconds**.

SELECT button: This button allows the navigation between the different menus.
By pressing this button once you can de-activate any alarm.

ALARM THRESHOLD Button: Press the required button to automatically select the maximum movement threshold. If the movement exceeds the selected threshold, the alarm is activated instantaneously. To de-activate a selected threshold, or to de-activate any alarm, press any button once.

To alter the display between inches or millimeters, at switch on press and hold the 5mm button and the On/Off button simultaneously for at least 5 seconds.

2.5 OVERVIEW OF THE LEADER SENTRY

The **LEADER Sentry** comprises of a harmless laser telemeter with a high level of accuracy, allowing the measurement of distances and movement. Both visual alarms and a powerful **98dB** audible alarm will alarm users of excess movement in the monitored area. A red flashing beacon provides a visual confirmation that the unit is activated and working.
The laser has a telescopic scope to enable accurate positioning of the laser beam.
(Magnification: 3x / 7x objective lens: 28mm).

2.6 DESCRIPTION DU TREPIED

The aluminum telescopic tripod: associated with a ball both axes will allow the user an establishment and an optimum adjustment of the laser. The maximum adjustment height of the tripod with the laser is about 2 meters. the tripod can be ballasted if used in strong winds.

2.7 DESCRIPTION OF THE ACCESSORIES

EXTERNAL POWER SUPPLY: 12V adaptor for **110/220V 50/60 Hz**. Supplied with international adaptors for the United Kingdom, Europe, the USA and Australia.

2.8 DESCRIPTION OF THE OPTIONS

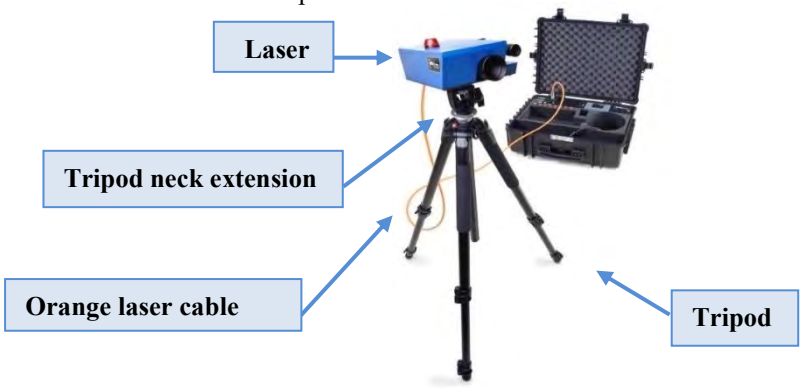
SUCTION CUP: The suction cup allows the laser to be attached to all smooth surfaces, such as metal or glass. **(Ref: D11.06.014)**

3 INSTRUCTIONS FOR ASSEMBLY AND USE

3.1 ASSEMBLY

- Insert the extension neck securely into the tripod base. Extend the legs to the required height.
- Attach the Laser / Tripod connector.
- Secure the Laser onto the tripod.
- Connect the Laser to the control panel using the orange cable. Attach one end of the orange cable to the rear of the Laser. Connect the other end to the control panel connection marked **"TARGET 1".**
- Connect the black power cable to the control panel where marked **"EXTERNAL POWER".**
- Plug the cable directly into a cigarette lighter or similar for 12V power*. If mains power is to be used, then plug the 12v connector into the mains power adaptor.
- Ensure the protective cap is removed from the laser and the rifle scope.

* **Note:** The unit can be powered by AA batteries and it is good practice to ensure that batteries are installed. However, it is recommended that battery power is used only if no other power source is available. The primary purpose of battery power is in the event of mains power failure.



3.2 INSTALLATION

- Identify the area of the structure or hazard which is likely to fall or move.
- Ensure the tripod is balanced and on secure ground. Ballast can be slung below the tripod by using the S hook provided.
- Using the telescopic sight, pin point the RED laser dot on the chosen area.

The beam will not work if focused on Glass. Light-colored flat surface is most suitable.

- Check the distance on the Laser display screen. For accurate monitoring, ensure the distance is <30m (98ft). Attempt to set the unit at right angles to the area to be monitored and focused on a flat surface.
- Choose the type of measurement: To switch between metric or imperial measuring modes, switch off the device.

  At switch on, press and hold the **"5mm"**  button and the **"ON/OFF"**  switch simultaneously.

  Hold for a minimum of **5 seconds** and then release.
- Select the alarm threshold by pressing the button adjacent to each measurement **5mm to 100 mm. (0.2in. to 4in.)** 
- The alarm is now activated. Ensure the red beacon on top of the laser is flashing. **(5 second intervals)** 
- It is good practice to test the unit prior to deployment by breaking the beam (place hand over lens) to activate the alarm. The alarm is de-activated by pressing any of the alarm threshold buttons.

Warning: If the test is done, the threshold will need to be re-selected.

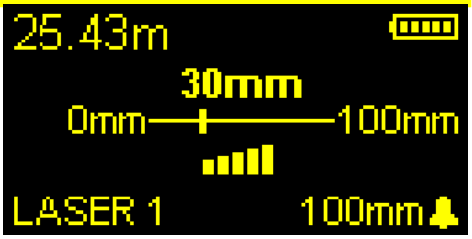
LEADER SENTRY has two alarms, one for identifying when a threshold is passed, and the other for identifying an "E- "error message.

3.3 DESCRIPTION OF THE MENUS

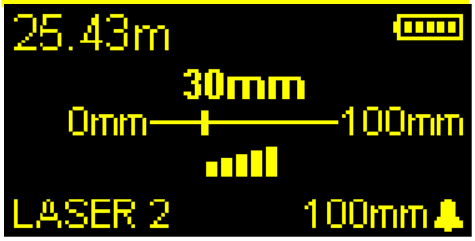
The operation of the **LEADER Sentry** is displayed via several different screens to highlight the mode of operation.

Start-up screen

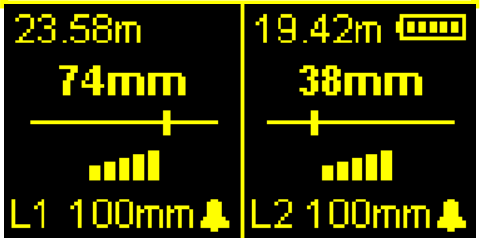
Laser1 screen



Laser2 screen



Two laser screen



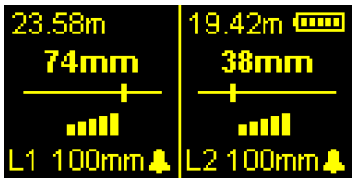
3.4 LASER 1 AND LASER 2 MENUS

The menus for Laser 1 and Laser 2 are only displayed if the respective laser is connected. The menus are identical and display the following:

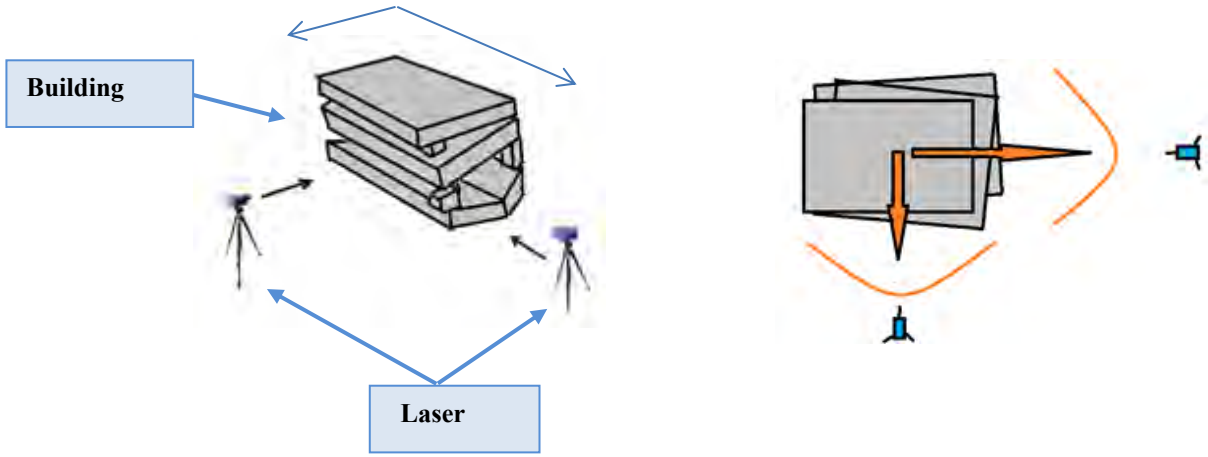
3.5 DUAL LASER MENU

If two Lasers are connected, the viewing screen will show both displays simultaneously. Each laser can be selected individually and set to individual settings.

Follow the ASSEMBLY and INSTALLATION instructions for each laser, attaching the second Laser to **TARGET 2** on the control panel. Set the monitoring threshold for Laser 1. Then select the threshold for Laser 2.



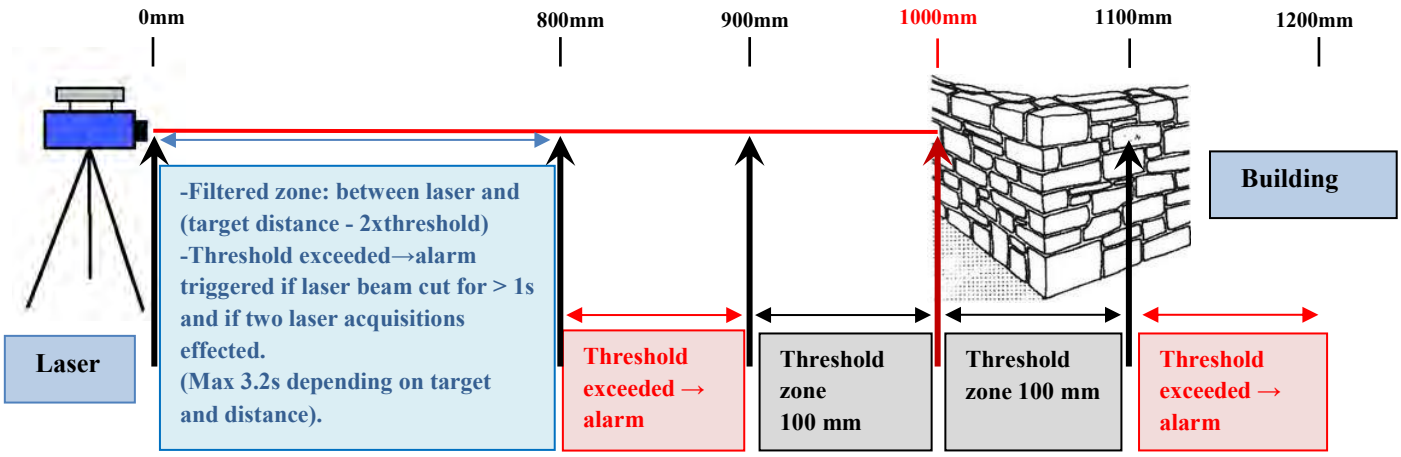
The **LEADER sentry** is designed to detect forward and backward movement in the direction it is pointing. To allow 2 dimensional monitoring, two **LEADER Sentry** detection systems can work in tandem from a single control box.



3.6 FILTERING OUT OF BRIEF INTERRUPTIONS

The apparatus is designed to filter out short-duration interruptions of the beam, e.g. people, birds etc. passing through it. Longer interruptions will trigger the alarm. This function is operational only if a threshold is selected. The filter zone is between the laser and the target – 2 x the selected threshold.

Example with a threshold of 100 mm:



4 CONSIDERATIONS FOR USE

TREAT ALL ALARMS SERIOUSLY. NEVER ASSUME THEM TO BE ACCIDENTALLY ACTIVATED UNTIL THE CAUSE IS ASCERTAINED

- Ensure the area in the focal direction of the laser is cordoned off from all but essential personnel, to avoid false alarms being activated.
- If the **LEADER Sentry** is in monitoring mode (a threshold is selected) and the distance measurement is no longer possible (Due to fog for example), the alarm will go off to warn the user.
- The unit is designed to filter out minimal breaks of the beam by unavoidable actions. (Birds, People crossing). Longer breaks caused by vehicles etc… will activate the alarm.
- Airborne particles mist or high ambient light may affect the measurement range. The user should pay attention to the weather and adapt the distance accordingly to get accurate measurements.
- When the temperature is very low (0°C or below), batteries may not be usable. It is highly recommended to use an external power supply when the weather is cold.
- Always use good quality lithium, alkaline or NiMH batteries. 

Never use zinc-carbon or zinc-chloride batteries. Always ensure battery polarity is correct.

- Always use same battery type.
- Always apply care if using the mains adapter outdoors. Protect it from rain.
- Always ensure a pre check of functionality is done before deploying the system. Ensure the alarm is working and the red beacon is flashing.
- The sight scope is adjusted so that the laser dot is aligned with the crosshair at 65ft. Be aware fluctuation will occur slightly outside this distance.
- To avoid errors of measurement, do not aim laser at dust-free glass, expanded ploystyrene surfaces of a similar level of transparency.
- In the event of aiming the laser at trongly reflective surfaces, the laser beam can be deviated and errors of measurement can occur.
- The amount of time required to take a measurement can increase when surfaces are dark and non-reflective.

5 TROUBLE SHOOTING

Problem	What to do
The unit does not power up.	-Check that the batteries are new and fully charged. -Check battery polarity is correct. -Check that the batteries are of the right type. -Check the battery type are all the same. -Check that the power cable is not damaged. -Check that the power connector is tightly screwed on. -Check that the power source is switched on and securely connected. -Check that the power source has the right voltage. (12V*) *Direct or via mains adaptor 110-220V
The display is frozen on the Leader logo screen.	-Ensure a laser is connected correctly and securely. -Check that the laser cable (orange) is not damaged. -Check that the laser connectors are tightly secured.
No distance is displayed.	-Ensure the cap on the laser has been removed. -Reduce the distance between the sensor and the target.
The red beacon is not flashing.	-Ensure a detection threshold has been selected. -Check that the laser connectors are tightly secured. -Check that the laser cable is not damaged.
The laser dot is not visible.	-Ensure the cap on the laser has been removed. -The laser dot is not always visible when ambient light is high. -Hold palm of hand directly in front of laser lens, dot should be seen. -Just ensure that the crosshair is aligned with the target and that the distance is displayed correctly.
The following error code is displayed: **E15, E16, E17, E23, E24, E31, E51, E52, E53, E54, E55, E61, E62, E63, E64, E65.**	**-E15:** Reflexes are too weak, or distance from LDM (front edge) to target is less than 0.1 m. Use white target board or increase distance to target. **-E16:** Reflexes are too strong, use white target board or Filter. **-E17*:** Too much steady light (e.g. sun) or reflexes are too strong. Use aperture or filter or white target board. **-E23:** Inner temperature below – 10°C Heading necessary. **-E24:** Inner temperature above + 60°C Cooling necessary. **-E31, E51, E52, E53, E54, E55, E61, E62, E63, E64:** Ensure a laser is connected correctly and securely. Check that the laser cable (orange) is not damaged. Check that the laser connectors are tightly secured. **-E65:** Target is too far away, move laser towards target.

6 GUARANTEE

LEADER SAS guarantees the original purchaser of the **LEADER Sentry** that the equipment is free of equipment and labour defects for two (2) years from. This limited warranty is only applicable to the original buyer and not for third parties to whom the equipment may have been resold.

LEADER SAS's duties under this warranty are specifically limited to the replacement or repair of the equipment (or its parts) after it has been inspected by **LEADER** and considered by **LEADER** to be defective. To be able to benefit from this limited warranty, the claimant must send the equipment to **LEADER SAS** within a reasonable time of having discovered the said defect. **LEADER** will inspect the equipment. If **LEADER** determines that it is liable for the defect, the company will resolve the problem in a reasonable time. If the equipment is covered by this limited warranty, **LEADER** will pay the costs of the repairs.

In the situation where any defect for which **LEADER** is liable under this limited warranty could not be reasonably resolved by a repair or a replacement**, LEADER** may then choose to refund the purchase price of the equipment, from which a reasonable depreciation value will be deducted, in order to fulfil its duties under this limited warranty. If **LEADER** decides to do this, the claimant must send **LEADER** the equipment free of charge and free of any liabilities or constraints.

This warranty is limited. The original purchaser, any person to whom it may be transferred, and any person who is the intended beneficiary of the equipment or not, cannot claim the payment of any damages from **LEADER** in the event of injuries and/or material damage due to any defective equipment manufactured or assembled by **LEADER**. Some countries do not allow the exclusion or limitation of damages : the above section may or may not be applicable depending on the country.

LEADER cannot be held liable under this limited warranty if the equipment has been used inappropriately or negligently (including the absence of reasonable maintenance), or if it has suffered accidents or been repaired or modified by a third party.

THIS WARRANTLY IS ONLY AN EXPLICIT LIMITED WARRANTY. LEADER DOES NOT ACCEPT ANY IMPLICIT WARRANTY FOR COMMERCIAL QUALITY AND SUITABILITY FOR ANY OTHER SPECIFIC USE. NO OTHER WARRANTY (OF ANY TYPE WHATSOEVER) THAN THE WARRANTY GIVEN BY LEADER IN THIS DOCUMENT WILL BE ACCEPTED.

7 DISCLAIMER

LEADER and its subsidiaries assume no liability for any direct, incidental or consequential damages resulting from supply, performance or use of **Leader Sentry** Monitor.

MANUFACTURER

LEADER S.A.S.
Z.I. des Hautes-Vallées
Chemin n° 34
CS20014
76930 Octeville sur Mer
France

CERTIFIED
ISO 9001
AB CERTIFICATION

www.leader-group.eu

www.LeaderNorthAmerica.com

Our policy is to constantly seek to improve our products. We therefore reserve the right to change their technical specifications at any time and without prior notice. - Non contractual images

PLEASE RECYCLE

Code Notice:
LEADER Sentry.00.ZN8.16.EN.3