

## Operating Instructions



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## 1.1 For your safety

### Documentation



Please familiarise yourself with these operating instructions and the safety information provided before you start to work with the **X-Liner 4**.

The safety information is based on the current standards EN 60825-1:2007 and IEC/TR 60825-14:2004. Observing these instructions and information ensures safe working.

### Laser radiation

The **X-Liner 4** conforms to EN 60825-1:2007 (VDE 087 Part 1).



2M



**LASER RADIATION**  
NEVER LOOK INTO THE BEAM  
OR VIEW IT DIRECTLY WITH  
OPTICAL EQUIPMENT  
**LASER CLASS 2M**

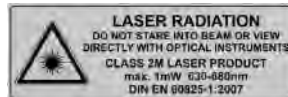
**EN 60825-1:2007**  
**P ≤ 1mW**  
**λ: 630-680 nm**

### Warning signs



Never remove the warning signs on the unit.

### Laser exit openings



## 1.2 Proper use

### Use

The **X-Liner 4** is suitable for marking heights, for aligning, plumbing, levelling and for carrying out similar work. The unit is designed for indoor use.

### Repair

Repairs may only be carried out by NEDO or an authorised customer service agent. Never open the unit, doing so cancels the warranty.

### Careful handling

The **X-Liner 4** is a sensitive, high-precision instrument and should therefore be handled with appropriate care.

## 1.3 Environment

### Disposal



Dispose of the unit in accordance with the applicable materials recycling regulations.

### Batteries/rechargeable batteries

Batteries/rechargeable batteries are hazardous waste and may not be put into domestic waste. They must be properly disposed of according to the respective national guidelines.



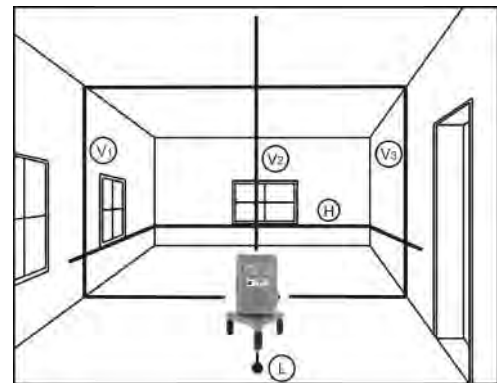
1. Transport bag
2. X-Liner 4
3. Batteries
4. Laser target board
5. Operating Instructions

## 3 Technical features

### 3.1 How it works

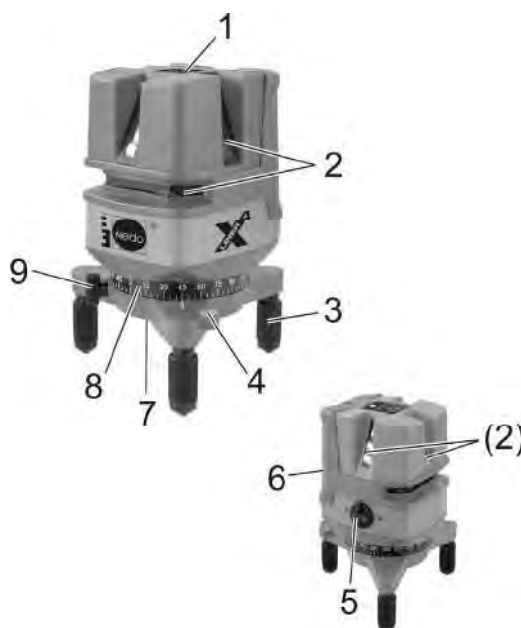
The **X-Liner 4** projects a horizontal (H) and three vertical (V1 + V2 + V3) laser lines that cross in front of the unit, above the unit and at the side. A plumb point (L) is projected onto the floor, vertically below the point at which the lines intersect.

The **X-Liner 4** is equipped with a pendulum for self-levelling and levels out tilted positioning of the unit by up to 3° in each direction.








## 4 Structure of the Instrument

### 4.1 Overview




1. Control panel
2. Laser exit window - horizontal and vertical beam
3. Adjustable baselegs
4. Circular level
5. Pendulum/transport locking device
6. Battery compartment
7. BSW 5/8" threaded connection and plumb beam exit window on the underside
8. 360° setting ring
9. Knurled thumb screw for fine adjustment (Adjustment range approx.  $\pm 4.5^\circ$ )

Unit ON/OFF switch and pendulum locking device	
1	 <p><b>Position 1</b></p> <p>The pendulum locking device is locked. The self-levelling function is disabled.</p> 
1	 <p><b>Position 2</b></p> <p>The pendulum locking device is unlocked. The self-levelling function is active.</p> 



ON/OFF or rather selection button and LED display	
1	<p><b>ON/OFF button</b></p> <p>Switches the laser beam on and on/off in the relevant order:</p> <p>Press 1x: Switch on the unit, Horizontal laser beam (H) and plumb beam (L)</p> <p>Press 2x: 1. vertical laser beam (V2)</p> <p>Press 3x: 2. vertical laser beam (V1)</p> <p>Press 4x: 3. vertical laser beam (V3)</p> <p>To switch the unit back off again, press the <b>ON/OFF</b> button for longer than 3 secs.</p>
2	<p><b>LED display above ON/OFF button</b></p> <p>Lights up green if a laser beam is switched on; flashes if the battery charge is weak.</p>
3	<p><b>PULS button</b></p> <p>Switches the laser to PULS mode for use of a laser receiver.</p>
4	<p><b>LED display above PULS button</b></p> <p>Lights up green if Pulse mode is activated.</p>

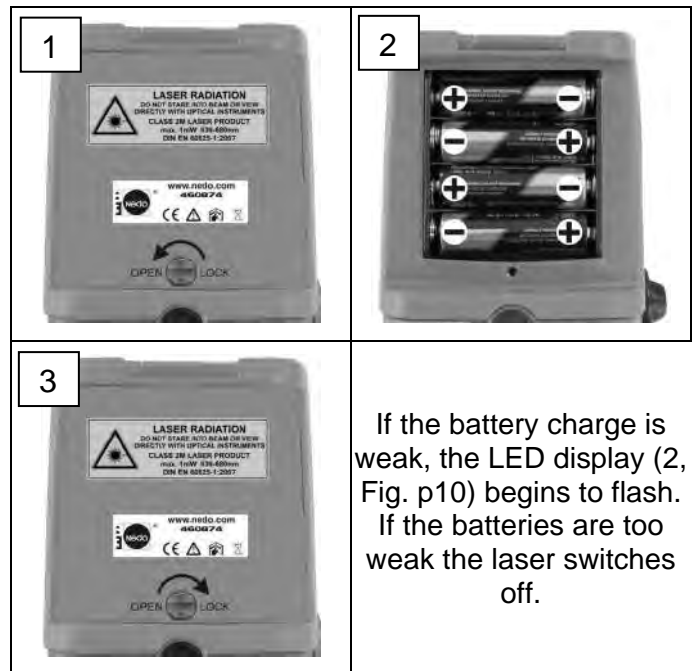


When starting up the *X-Liner 4* for the first time, install the batteries (4) supplied, as shown in the battery compartment.

## Insert /replace batteries



The *X-Liner 4* requires 4 batteries, 1.5 V (AA).

- Use a screwdriver to turn the locking screw of the battery compartment to the left until the battery compartment cover can be pulled out from underneath.
- Remove the battery compartment cover.
- Insert/replace batteries as specified. Ensure pole direction is correct!
- Re-insert the battery compartment cover and screw the locking screw back in by turning it to the right. Lightly tighten the screw.



# 6 Operation

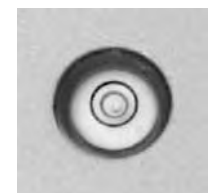
## 6.1 Starting up the unit

- Set up or fix the unit according to the intended use. Ensure the levelling range of  $\pm 3^\circ$  is not exceeded.
- Use the adjustable unit baselegs (3) to roughly level the unit. The setting can be checked using the circular bubble (4). The *X-Liner 4* is correctly levelled if the air bubble is located in the middle of the circle.
- Lock the pendulum locking device for use **without self-levelling**. To do this, push the **unit switch into position 1**  and use the **ON/OFF** button to switch on the unit. The laser lines flash slowly (every 4 seconds).
- Release the pendulum locking device for use **with self-levelling**. To do this, push the **unit switch into position 2**  and switch on the unit with the **ON/OFF** button. If the laser lines flash quickly the *X-Liner 4* is outside the self-levelling range. The laser must be positioned within its levelling range with the help of the adjustable baselegs.
- If you have finished working with the unit, lock the pendulum locking device and use the **ON/OFF** button (press for 3 secs.) to switch off the unit.

Alignment of the circular bubble



Wrong

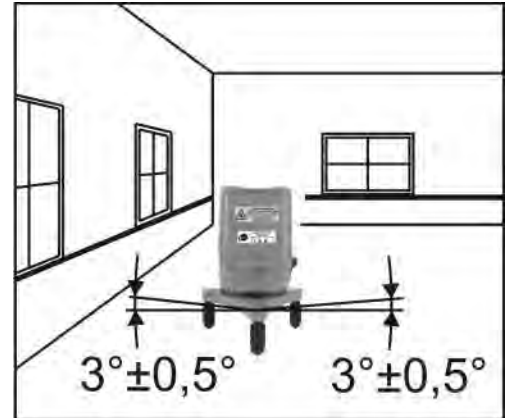


Correct

## 6.2 Self-levelling

The *X-Liner 4* has a self-levelling feature. If the unit is placed in a slanted position of up to 3° in any direction, the laser beams are plumb and horizontal.

If the 3° range is exceeded or the pendulum locking device is locked, the projected laser line flashes.



## 7 Technical Specifications

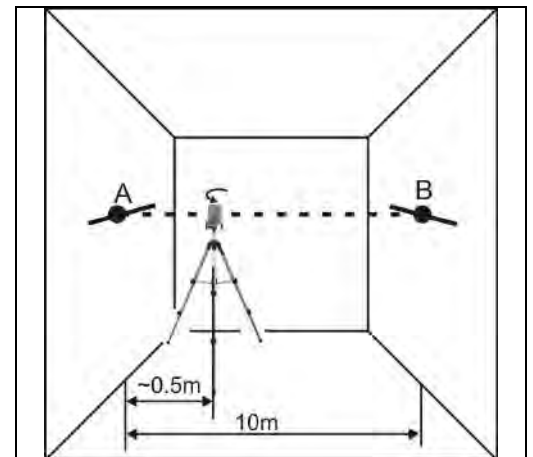
Type	<i>X-Liner 4</i>
Ref.-No.	460 874
Laser configuration	4 lines: 1 horizontal, 3 vertical 90° offset - cross on the ceiling, front, right and left; plumb point downwards
Accuracy	Levelling accuracy: ±0.3 mm/m
	Laser lines: ±0.3 mm/m
	90° angle: *0.1 mm / 0.5 m
	Plumb beam: *0.1mm / 0.2 m
Working range	Ø 50m
Damping	Magnetic
Thread	BSW 5/8" on the underside
Wavelength	630 - 680 nm
Laser class	2M
Output	< 1 mW
Self-levelling range	±3°
IP protection class	IP54
Power supply	Batteries: 4 x 1.5 V (AA)
Battery life	approx 15 h
Operating temperature	-10 °C bis +50 °C
Storage temperature	-20 °C to +70 °C
Dimensions	L 130 mm / W 145 mm / H 196 mm
Weight	1.05kg

We reserve the right to make technical changes.

The accuracy of the laser beam should be checked regularly. This requires a free measuring length of 10 m. The check is carried out in two steps.

## Step 1

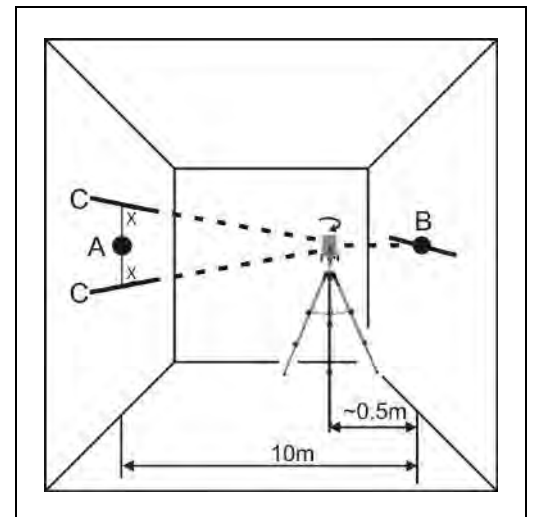
- Position the **X-Liner 4** as shown in the figure to the right.
- Switch on the horizontal beam at the **X-Liner 4**.
- Mark point **A** on the laser line.
- Rotate the **X-Liner 4** through 180° and mark point **B** on the laser line.



## Step 2

- Position the **X-Liner 4** opposite as shown in the figure to the right.
- Align the **X-Liner 4** with marking **B**.
- Rotate the **X-Liner 4** through 180°.
- Measure the plumb distance **H** between marking **A** and laser line **C\***.
- If the measured distance **H** between marking **A** and laser line **C\*** < 6 mm, the **X-Liner 4** is within the tolerance range.

\* The laser line **C** can be both above or under marking **A**.



**Note:** If the plumb distance **H** measured between marking **A** and laser line **C** is outside the tolerance range, the **X-Liner 4** must be checked by an authorised customer service or by NEDO.

# 9 Troubleshooting

**Note:**

If the errors cannot be rectified using one of the listed remedies, the **X-Liner 4** must be examined by an authorised customer service agent or by NEDO.

Error	Cause	Remedy
No horizontal laser line is projected after pressing the <b>ON/OFF</b> button.	No power supply	Insert batteries
	Inadequate power supply	Replace batteries
The laser line flashes after activating the pendulum locking device in position 2.	Unit outside the self-levelling range.	Realign the <b>X-Liner 4</b> within the self-levelling range of $\pm 3^\circ$ .