He Check lite

PORTABLE HELIUM ANALYZER

User's Manual

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ENGLISH

He Check lite - User's Manual
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English Version

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Safety and General Informations

This manual has been developed for user's safety. Please read and understand it completely before using the analyzer.

You also should understand that this user manual is a remarkable component of **He Check lite**, so it should be always kept together with instrument itself.

User assumes all responsibility for use of **He Check lite** and by using it indicates that she/he has read and understands the owner's manual.

Please refer to the Warranty section in this manual and to the provided Product Warranty Registration Card for details about the Limited Two-Years Warranty.

WARNING

Using breathable gas mixture containing helium may be extremely dangerous, so you should be properly trained for such activities. Also you should adhere to well accepted standards and procedure for technical diving.
SCUBA diving, including the use of compressed air and any gas mixture underwater, is an activity that has inherent risks. An individual may experience injury that can result in disability or death.

Underwater Technology shall not be liable for incidental or consequential damages resulting from use, misuse, abuse, neglect, alteration, failure to perform maintenance as instructed, or unauthorized repair or service of the instrument.

The **He Check lite** is not meant to replace good gas management practices or handling techniques: it is an

additional tool to determine the content of helium in gas mixture. You should also use another similar instrumentation to verify results of your gas mixture analysis.

The information contained in this document and the technical specifications of instrument itself are provided “as is” and are subject to change without any notice.

Package Contents

The **He Check Lite** package includes the following items:

- **He Check Lite** portable helium Analyzer
- Measurement tubing equipped with flow regulator set to 0,5 liters per minute and inflator hose quick connector
- Carrying Case
- This User’s Manual
- Warranty Card

Product Overview

The **He Check Lite** helium analyzer is a hand-held device specifically designed to confirm the helium content in diving cylinders and is an invaluable tool for all technical divers. Fast and easy to use, it can be connected directly to the jacket low pressure inflation hose or directly to the cylinder valve using an optional DIN adapter.

The **He Check Lite** is the most innovative and easiest to use helium analyzer available on the market.

The **He Check Lite** adopts an impressive solid-state technology to detect gas thermal conductivity; it is designed to

achieve the best results on stability, precision and accuracy of measurement. Accuracy and resolution of measurement achieved by this new kind of sensor is simply not reachable using old and traditional portable instruments. The inside electronic is based on 'state of art' risc CPU and the control software is optimized for intuitive, easy and flawless operations. When powering up the instrument, calibration is performed by an unique helium sensor zero function, achieving the greatest accuracy ever seen in this grade of instrumentation.

Technical Specifications

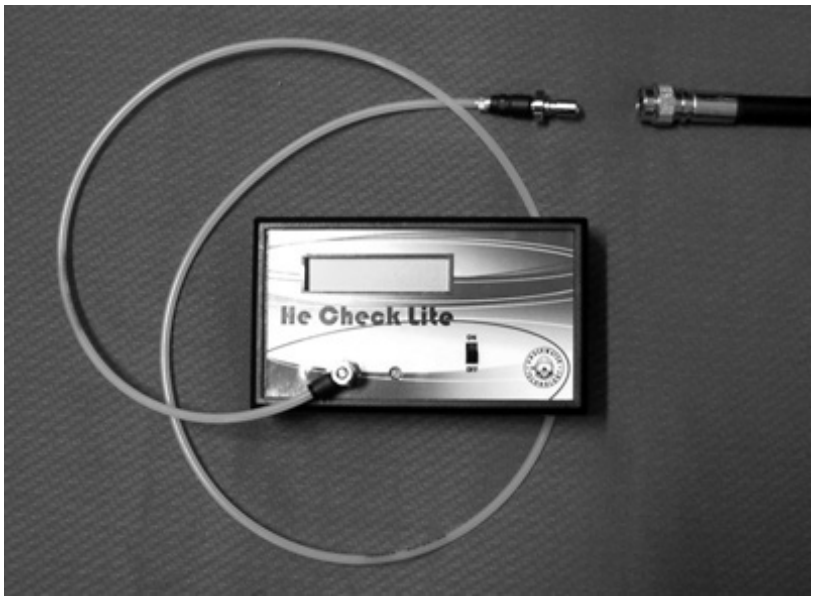
- **Helium measurement range from 0,1 to 99,9 %**
- **Easy readable Alphanumeric LCD Display**
- **Analysis max Error + / - 1%**
- **Auto calibration by air mix**
- **Powered by 9 Volts alkaline battery**
- **Battery power level showing on LCD display**
- **Empty battery power alarm showing on LCD display**
- **Self-contained helium sensor**
- **Expected sensor life over 10 years**
- **Operational self-diagnostic**
- **Measurement tube equipped with flow regulator set to 0.5 liters per minute and inflator hose quick connector**
- **Limited warranty from material defects in workmanship and materials of 24 months**

Connection Setup

Insert the free side of the measurement tube into the flow regulator input orifice mounted on the front panel of **He Check Lite**.

Push lightly until end-run is reached. Connect the other side of the measurement tube (the one with quick connector) to the cylinder using the inflator low pressure hose of your first stage.

To disconnect the measurement tube, apply a light pressure with your fingers on the input orifice ferrule and at the same time pull out the tube.



Gas Mixture Analysis Recommendations

Before starting the gas mixture analysis, you should be sure that there is no water or moisture at any connection point, in any connection tube or in the tank. Be advised that helium sensor may be damaged by the water contact.

The gas flow entering in measurement chamber must be regulated at about 0.5 liter per minute; such flow is provided by using an embedded precision flow regulator.

Make sure that during calibration/measuring operation the inflator hose quick connector is properly locked and that the other end of measurement tube is firmly inserted into the flow regulator input orifice.

The calibration (aka *automatic zero function*) is automatically performed at every power up, using air as reference gas mixture.

You should connect **He Check Lite** to the jacket inflator hose only after you have opened cylinder valve.

You must use only the measurement tubing supplied in the **He Check Lite** package. Do not attempt to use unauthorized hardware or to modify the gas flow tuning.

Do not leave **He Check Lite** powered up for long time period if you are not performing any measurement.

An appreciable change in environmental pressure, temperature or moisture may lead to a lowering of the measurement accuracy.

Always check for absence of moisture inside measurement tube.

WARNING

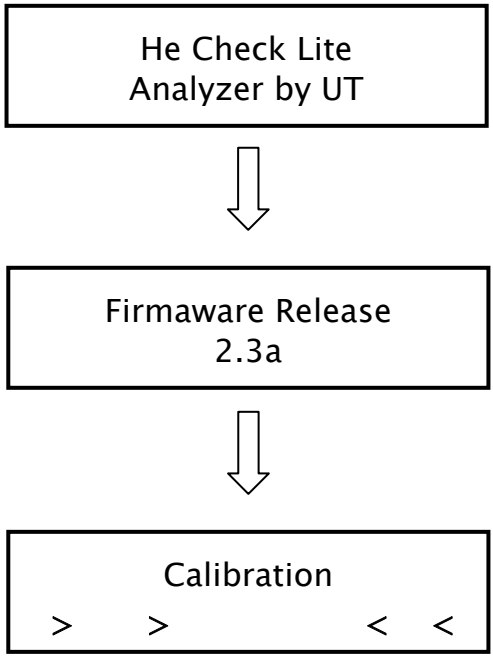
Accurate reading of the helium content is dependent on a flow rate of 0.5 liters per minute. Flows other than this one will result in an error in the calculated amount of helium. The input pressure of the gas source should be 9 bars +/- 20%.
You should always check for presence of moisture or oil vapor in the tank since presence of these contaminants in the sensor's enclosure are able to badly damage the helium sensor itself.

Analysis Operations

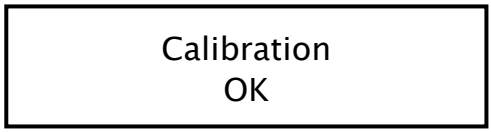
Before powering on **He Check lite** you should make sure that power battery (not supplied) is in place and correctly connected.

Make sure that in sensor's chamber there is just air. If you are unsure, an air mix flush of the measurement chamber must be performed. See chapter *'Measurement Chamber Air Flush'* for details about.

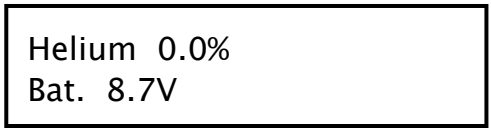
Power on the instrument and wait for the end of automatic zero function.



At the end of calibration procedure, will be displayed the message:



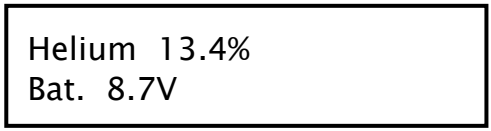
and **He Check lite** will be ready to the measurement operation, as displayed in the following picture.



Connect the quick connector at the measurement tube end to the low pressure jacket inflator hose.

Wait for filling up of measurement chamber by the gas mixture to be analyzed. The time required to fill both tubing and chamber is about 10 seconds.

On the **He Check Lite** display, read the helium percentage contained in gas mixture (from 0.1 to 99.9 %).



Detach the measurement tube quick connector from inflator hose. You will see decreasing values displayed, denoting emptying of measurement chamber.

You can proceed to next measurement even though display shows a value not equal to zero: it just means that some traces of the previous mixture are still into measurement chamber.

The injection of a new gas mixture will eject the old one, allowing a new measurement with no need for any further calibration or zeroing.

Measurement Chamber Air Flush

At power up, **He Check Lite** perform an automatic zero function, assuming that into measurement chamber there is

just air: it is therefore necessary to be sure that at this time, is indeed present a pure air mixture inside the chamber.
If you are unsure about the content of measurement chamber, before powering up the instrument, you must execute the *washing* of tubing and sensor compartment, namely *measurement chamber air flush*.

Just in case you do not have a readily available source of compressed air, you should wait at least 10 minutes from the last analysis before again turning on **He Check Lite** (This is the necessary time to allow a complete emptying of any traces of helium from measurement chamber).

To perform the measurement chamber air mix flushing, proceed as stated in the following:

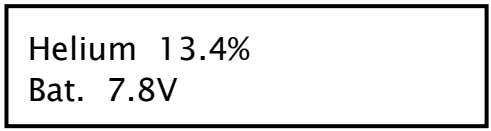
1. Connect **He Check Lite** to a cylinder containing pure air mix as explained in 'Connections Setup' chapter of this manual.
2. Wait about 60 seconds, during this time the injected flow of air mix will eject out of measurement chamber any unknown residual gas mixture.
3. Detach **He Check Lite** from air cylinder.
4. Power up **He Check Lite** and wait until the end of automatic zero function (calibration).

Battery Power Indicators

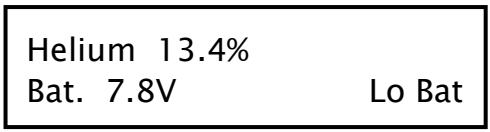
For proper operation **He Check Lite** requires a 9 Volts alkaline battery, not supplied in the package.

On the display lower row is permanently reported voltage of the running battery; when battery voltage goes below a value

of 7.9 volts, the **He Check lite** residual autonomy is short and consequently is advisable to schedule battery swapping out.



The alkaline battery must be definitely swapped out when display report the "**Lo Bat"** message (empty power battery alarm).



To change power battery:

- Power off **He Check lite** operating the **ON/OFF** switch;
- open the battery compartment placed on the rear of device;
- remove the empty battery and change it with a new one;
- put in place again the battery compartment closure;
- power on **He Check lite** and make sure that the power level is over 7.9 volts by looking at displayed voltage.

WARNING

There are no user serviceable parts inside the instrument. Removing the four locking screws will void all warranties. Do not leave batteries inside the instrument if you are planning to not use it for a long time period.

Warranty

The **He Check lite** is covered by a limited warranty from material defects in workmanship and materials of 24 months.

To make a claim under this warranty, the owner must have both completed and returned (by mail or fax) at the time of purchase the warranty registration card. The owner must then return the damaged items to Underwater Technology, along with a copy of the original purchase invoice or receipt. *No warranty service will be performed for other than registered owners.*

For any question or problem write to:

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or send a fax to: **+39-06-45445708**

NOTES

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