

## LD 500/510 - Leak detector with camera – shows leakage rate in l/min and costs in €

The LD 500 meets the requirements of class I instruments for the norm "Standard Test Method for Leaks with Ultrasound" (ASTM Int. - E1002-05)



Find out your leak rate (l/min) and potential saving (€/year)



Find the smallest leaks at large distances



Auto level: Adapts the sensitivity automatically to the environment and eliminates the ambient noise reliably



Photograph leaking parts



Describe the leak and necessary actions



Transmit the leak details via USB to your desktop software



Create a report in accordance with ISO 50001



9 hours continuous operation possible

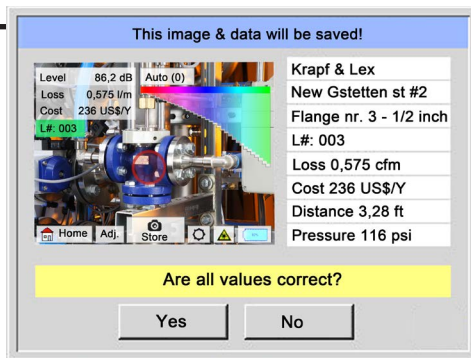
Costs per year						
Pressure	Size of leakage - diameter (mm)					
	0.5 mm	1.0 mm	1.5 mm	2.0 mm	2.5 mm	3.0 mm
3 bar	€90	€361	€812	€1,444	€2,256	€3,248
4 bar	€113	€451	€1,015	€1,805	€2,820	€4,061
5 bar	€135	€541	€1,218	€2,166	€3,384	€4,873
6 bar	€158	€632	€1,421	€2,527	€3,948	€5,685
7 bar	€180	€722	€1,624	€2,888	€4,512	€6,497
8 bar	€203	€812	€1,827	€3,248	€5,076	€7,309

Table: Leakage costs within one year in case of operation 24 h/365 days, calculated with compressed air costs of 1.9 ct/Nm<sup>3</sup>.

## The LD 500/510 in detail

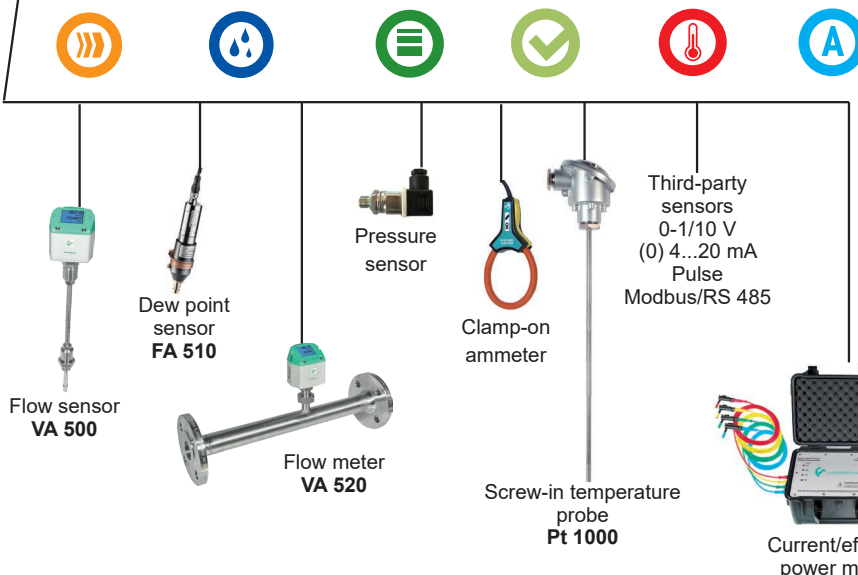
The new leak meters LD 500/LD 510 with integrated camera and leakage calculation are ideal measuring devices which help to find and document even the smallest leakages (0.1 l/min corresponds to approx. €1 per year) easily even at great distances.

LD 510 is the worldwide first leak meter with an additional freely assignable sensor input for all CS sensors. In addition to the leakage measurement and detection, all necessary measurements with regards to dew point, flow, pressure, and temperature ... can also be carried out.



### Leak detection on:

- Compressed air, gas, vapour and vacuum systems
- Steam traps
- Seals



## Accessories



**Acoustic trumpet** bundles the acoustic waves of the smallest leakages, strengthening the audible noise.



**Straightening tube with straightening tip** for precise detection of the smallest leakages in confined spaces.



### Optional:

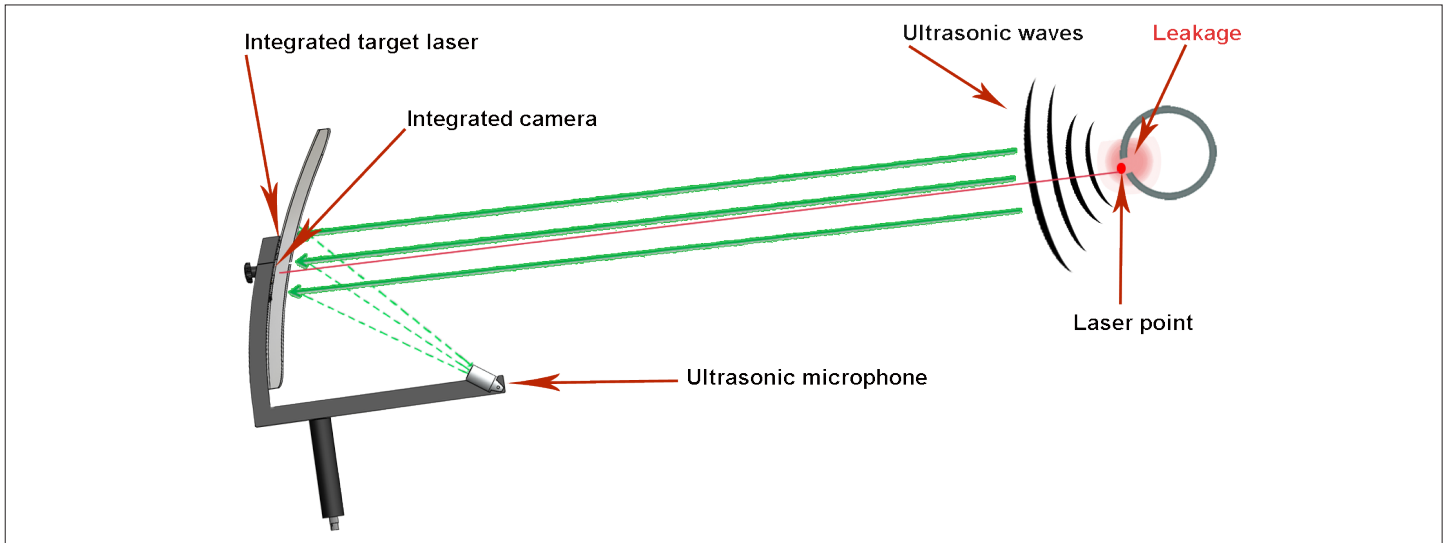
Gooseneck enables a precise detection of the leakage on in places that are difficult to access. Disturbing noise is cancelled out.



### Parabolic mirror:

For leak detection at great distances. Laser pointer and camera integrated.

## Professional accessory – parabolic mirror



By bundling the ultrasonic waves in the parabolic mirror, even the smallest leaks of 0.8 l/min (approx. €8 p.a.) at a distance of up to 10 ... 15 m can be located with pinpoint precision ( $\pm 15$  cm). The shape of the parabolic mirror ensures that only ultrasonic waves of the targeted leak are evaluated. Disturbing noise is reduced to a minimum.



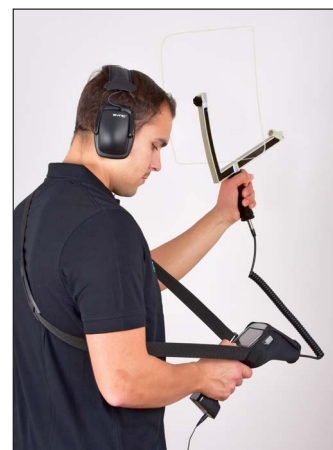
Accurate leak detection during operation with laser pointer and integrated camera



Checking high-voltage overhead lines for corona discharge



The noise-proof headset enables the leak detection in an extremely loud environment as well. The ambient noise will be faded out, the leakage (inaudible ultrasonic sound) will be transformed to an audible signal. The laser grants an exact detection.



Holster with shoulder strap for LD 500/510



Leakage data stored in the LD 500/510 is exported to a USB stick for reporting via software.

If the leakage is detected and stored, the following data are also stored in the LD 500/510 and will be available after the export to the CS Leak Reporter software to issue a report:

**LEAK TAG**  
DO NOT REMOVE!

**Leak Tag number:**

Date / Datum:	
Inspector / Prüfer:	
Defective element / Defektes Element:	
Priority / Priorität:	high <input type="checkbox"/>
	low <input type="checkbox"/>
Loss / Verlust:	
Costs per year / Kosten p.a.:	
Date repaired / Repariert am:	
Repaired by / Repariert durch:	

[www.cs-instruments.com](http://www.cs-instruments.com)

---

**Leak Tag number:**

Date / Datum:	
Inspector / Prüfer:	
Defective element / Defektes Element:	
Location / Ort:	
Gas Type / Medium:	
Priority / Priorität:	high <input type="checkbox"/>
	low <input type="checkbox"/>
Loss / Verlust:	
Costs per year / Kosten p.a.:	

[www.cs-instruments.com](http://www.cs-instruments.com)

Leak Tags as hardcopies for documentation on-site.


- Picture of the leakage point
- Date / time
- Company name / department / machine
- Size of the leakage in litres/min (unit adjustable)
- Costs of the leakage per year in € (currency selectable)

Detailed reports can be issued via PC software CS Leak Reporter, which can be made available to the operators of compressed air systems or the head of the respective department.

The report can be issued for the whole company or for each department and it documents the detected leakages simply and clearly.

The totals at the end of the report provide a simple overview of the total leakage management in litres/min and the total leakage costs per year.

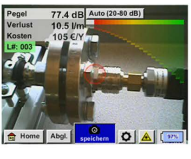

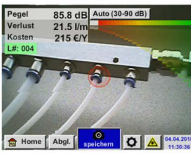



## Leakage report for ISO 50001 Audits

Int. Compressor Service 

Company: Krapf + Lex Report created at: 04.04.2018 11:52  
 Project: Datenimport 2018-04-04T09:34:51.861Z from: Matthew Smith

### Leakages

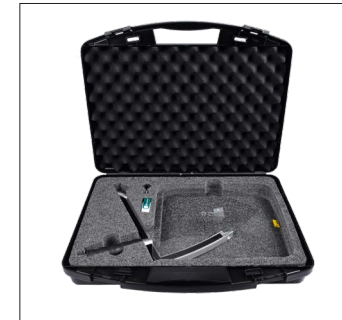
Project master data:  
 costBase: 19.00 €  
 costTime: 8760

Image	Building Place LeakTag	Date Time	Volume loss	Costs / Year	CO2 Tons / Year	Comment action measures Responsible	Status	Priority
	Neuer Gasettenweg 2 Flansch Nr. 3 - DN 15 003	04.04.2018 11:29:42	10.549 ltr/min	105.35 €	0.58	SEALING		
	Neuer Gasettenweg 2 Maschine 23 004	04.04.2018 11:31:19	21.528 ltr/min	214.99 €	1.19	Coupling		
	Neuer Gasettenweg 2 Maschine 23 005	04.04.2018 11:32:51	2.987 ltr/min	29.83 €	0.17	Piping		
			<b>Σ 36.06 ltr/min</b>	<b>Σ 390.17 €</b>	<b>Σ 1.94</b>			

DESCRIPTION	ORDER NO.
<b>Set LD 500 consisting of:</b>	0601 0105
LD 500 leak detector with acoustic trumpet and integrated camera, 100 leak tags for marking the leakages on site	0560 0105
Transport case	0554 0106
Sound-proof headset	0554 0104
Focus tube with focus tip	0530 0104
AC adapter plug	0554 0009
Helix cable for connecting the ultrasonic sound sensor, length 2 m, (extended)	020001402
Holster with shoulder strap for LD 500/510	020001795
<b>Set LD 510 consisting of:</b>	0601 0106
LD 510 leak detector incl. acoustic trumpet, with integrated camera and additional input for external sensors, 100 leak tags for marking the leakages on site	0560 0106
Transport case	0554 0106
Sound-proof headset	0554 0104
Focus tube with focus tip	0530 0104
AC adapter plug	0554 0009
Helix cable for connecting the ultrasonic sound sensor, length 2 m, (extended)	020001402
Holster with shoulder strap for LD 500/510	020001795
<b>Accessories:</b>	
CS Leak Reporter – Creation of detailed ISO 50001 reports. Provides an illustrated overview of the leakages found and their savings potential. Measures for elimination including status display can be defined for every leakage - license for 2 computers	0554 0105
CS Leak Reporter – Additional licence for 1 computer	Z554 0105CS
Gooseneck for leak detection at sites which are difficult to access (length 600 mm)	0530 0105
Gooseneck for leak detection at sites which are difficult to access (length 1500 mm)	0530 0108
Parabolic mirror for leak detection at long distances, incl. transportation case	0530 0106
Ultrasonic tone generator for leak testing	0554 0103
500 leak tags for marking the leakages on site	0530 0107
<b>Calibration:</b>	
Re-calibration LD 500/LD 510	0560 3333
<b>Additional sensors / accessories for connection to the LD 510:</b>	
FA 510 dew point sensor for mobile devices, -80...+20 °Ctd incl. mobile measuring chamber, 5 m connection cable and perforated protection cap	0699 1510
VA 500 flow probe, max. version (185 m/s), probe length 220 mm, incl. 5 m connection cable	0695 1124
Standard pressure probe CS 16, 0...16 bar, ± 1% accuracy of f.s.	0694 1886
Differential pressure probe 1.6 bar diff.	0694 3561
Connection cable for pressure, temperature or external sensors on mobile instruments, ODU / open ends, 5 m	0553 0501
CS Basic - data evaluation in graphic and table form - readout of the measured data via USB or Ethernet. License for 2 working places	0554 8040



Transportation case – LD 500/510



Transportation case – Parabolic mirrors

#### TECHNICAL DATA LD 500 / LD 510

<b>Operating frequency:</b>	40 kHz ± 2 kHz
<b>Connections:</b>	3.5 mm stereo jack for headset, power supply socket for connecting an external charger
<b>Laser:</b>	Wavelength: 645...660 nm Output power: < 1 mW (laser class 2)
<b>Display:</b>	3.5" touch screen
<b>Interface:</b>	USB interface
<b>Data logger:</b>	8 GB SD memory card (100 million values)
<b>Power supply:</b>	Internal rechargeable Li-Ion batteries, approx. 9 h continuous operation, 4 h charging time
<b>Ambient temperature:</b>	0...+50 °C
<b>EMC:</b>	DIN EN 61326
<b>Auto level:</b>	Adapts the sensitivity automatically to the environment and eliminates the ambient noise reliably
<b>Sensitivity:</b>	min: 0.1 l/min at 6 bar, 5 m distance, approx. €1/year compressed air costs

#### TECHNICAL DATA EXTERNAL SENSOR INPUT (ONLY LD 510)

<b>Measuring range:</b>	see external CS sensors
<b>Accuracy:</b>	see external CS sensors
<b>Power supply:</b>	Output voltage: 24 VDC ± 10% Output current: 120 mA in continuous operation