












# UltraCam ILD 500/510 – Visualises the leaks directly in the image



-  Enormous time saving compared to classic leak detectors
-  30 MEMS microphones create the image of the leaks
-  Brightness sensor activates LEDs in dark surroundings
-  Available as an upgrade for ILD 500/510
-  **NEW:** Multi-user capable through cloud solution
-  **NEW:** Unique laser distance measurement for automatic cost determination
-  Find out your leakage rate (l/min or cfm) and potential savings (€ /year). Currency can be set as required
-  Photograph leaking parts
-  Paperless documentation. Enter everything into the device on site: Define the leakage location as well as the remedial measures and spare parts required
-  Create a report in accordance with ISO 50001
-  Fatigue-free work – ergonomic, one-hand operation – low weight

The iLD 500 meets the requirements of class 1 instruments for the "Standard Test Method for Leaks Using Ultrasonic" (ASTM Int. - E1002-05)

## Display and function in detail



The UltraCam ILD 500/510 uses 30 MEMS microphones to calculate and visualise the ultrasound image. In addition, the device makes inaudible ultrasound audible.

Advantage over the **classic leak detectors**:

Visual representation of the leakage in the live image, even in noisy environments during production

To **determine the leakage rate**, the user aims the laser directly at the leakage. Leakage, laser and red circle must be on top of each other in the image. Then, the **leakage rate in l/min or cfm** and the **costs in €/year** are determined exactly. The distance is measured automatically.



| DESCRIPTION                                                                                                                                           | ORDER NO. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Set UltraCam with leak detector ILD 500:</b>                                                                                                       | 0601 0205 |
| ILD 500 leak detector with UltraCam, integrated camera, 30 ultrasonic microphones for visualisation of the leakage on the screen, incl. 100 leak tags | 0560 0205 |
| Transport case                                                                                                                                        | 0554 0106 |
| Sound-proof headset                                                                                                                                   | 0554 0104 |
| Focus tube with focus tip                                                                                                                             | 0530 0104 |
| AC adapter plug                                                                                                                                       | 0554 0009 |
| Spiral cable for connecting the ultrasonic sensor, length 2m (extended)                                                                               | 020001402 |
| Holster with shoulder strap for ILD 500/510                                                                                                           | 020001795 |



| DESCRIPTION                                                                                                                                                                                  | ORDER NO. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Set UltraCam with leak detector ILD 510</b> leak detector with UltraCam, integrated camera, 30 ultrasonic microphones for visualisation of the leakage on the screen, incl. 100 leak tags | 0601 0206 |
| Transport case                                                                                                                                                                               | 0560 0206 |
| Sound-proof headset                                                                                                                                                                          | 0554 0106 |
| Focus tube with focus tip                                                                                                                                                                    | 0554 0104 |
| AC adapter plug                                                                                                                                                                              | 0530 0104 |
| Spiral cable for connecting the ultrasonic sensor, length 2m (extended)                                                                                                                      | 0554 0009 |
| Holster with shoulder strap for ILD 500/510                                                                                                                                                  | 020001402 |
|                                                                                                                                                                                              | 020001795 |

Reporting software see page 137  
For further accessories, refer to pages 138-139

## Easy documentation in the ILD 500 / UltraCam ILD 500 directly on site

\*\*\* Configuration \*\*\*

National Standard **ISO** US

Cost / 1000 m<sup>3</sup> 20.000 €

Operating hours/year 8760

Parameter Meas. Point

Home Default Value

### Entering the compressed air costs in the unit

Depending on the electricity costs, the costs per 1000 m<sup>3</sup> (or per 1000 cf) can be freely entered in any currency

Meas. Point

Company

Building South office

Place Compressor room

LeakTag 1

OK

### Define the location

The location of each leak can be stored:  
Company / building / location

Fault Description

Leak.Element Pressure regulator

Measures Change seal

Replacement Pressure Regulator

Repair under pressure possible?

Comment Empty the lines first

OK

### Remedy the leak

Efficiency and clarity also for elimination of leaks. Definition of the necessary spare parts and maintenance work already on site.

| Nr. | Replacement             |
|-----|-------------------------|
| 001 | 3/2 way pneumatic valve |
| 002 | mini regulator 1/4"     |
| 003 | quick coupling NW 7,2   |
| 004 | y plug connection 6mm   |

new delete Cancel OK

### Spare parts list in the device

The software can be used to transfer a custom spare parts list to the device. The device offers an intelligent search function with auto-complete feature. The list with the required spare parts can be exported from the CS Leak Reporter software.

# Use the reporting software to quickly and efficiently produce an ISO 50001 report





## Leak Reporter – cloud solution



Ideal for leak detection service providers and for companies/major corporations with multiple locations.

- Each “user” in the leakage search team can be assigned a role (e.g. leakage search, leakage repair, monitoring, checking for success)
- Access rights to individual or all projects can be assigned individually to each user
- The browser-based software ensures a common database in real time and paperless documentation

## Leak Reporter – PC solution

Creates detailed ISO 50001 reports. Provides an illustrated overview of the leaks found and their savings potential. Measures for elimination, including status display, can be defined for every leak – license for two computers

| Leakage Report                  | Start: 15/04/2019                                                                   | End: 25/04/2019                 | Duration: 10 day(s)                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|
| <b>Contact details:</b>         |                                                                                     |                                 |                                                                                     |
| Company:                        | Acme                                                                                | Auditor:                        | John Sample                                                                         |
| Address:                        | ...                                                                                 |                                 | 1 Sample St., 12345 Sampletown                                                      |
| E-mail:                         | johnacme@sample.com                                                                 |                                 | j.sample@acme.com                                                                   |
| Phone:                          | ...                                                                                 |                                 | +49 1234 567890                                                                     |
| Logo:                           |  |                                 |  |
| <b>Project master data:</b>     |                                                                                     |                                 |                                                                                     |
| Import date:                    |                                                                                     | CO <sub>2</sub> emissions:      | 0.527 kg/kWh                                                                        |
| Cost calculation basis:         | Energy costs (70%)                                                                  | Specific output:                | 0.12 kWh/m <sup>3</sup>                                                             |
| Compressed air costs:           | 21.6 €/1000 m <sup>3</sup>                                                          | Electricity price:              | 0.18 €/kWh                                                                          |
| Operating hours per year:       | 4350 h                                                                              |                                 |                                                                                     |
| <b>Results:</b>                 |                                                                                     |                                 |                                                                                     |
| Number of leaks:                | 141                                                                                 | Number remedied:                | 1                                                                                   |
| Total leakage amount:           | 718.126 ltr/min                                                                     | Leakage amount saved:           | 3.468 ltr/min                                                                       |
| Total costs per year:           | 4,048.49 €                                                                          | Costs saved per year:           | 19.55 €                                                                             |
| Total CO <sub>2</sub> per year: | 11.91 tonnes                                                                        | CO <sub>2</sub> saved per year: | 0.06 tonnes                                                                         |

|                                                                                    |                                       |                         |                                             |
|------------------------------------------------------------------------------------|---------------------------------------|-------------------------|---------------------------------------------|
|  | <b>Leak tag:</b>                      | <b>1</b>                |                                             |
|                                                                                    | <b>Building – location</b>            | COMPRESSOR ROOM 1       | <b>Repair under pressure possible?</b> - No |
|                                                                                    | <b>Date and time:</b>                 | 15/04/2019 12:06:03     | <b>Error:</b> Ball valve defective          |
|                                                                                    | <b>Leakage rate:</b>                  | < 1.395 ltr/min         | <b>Spare part:</b> 1/2" ball valve          |
|                                                                                    | <b>Costs per year:</b>                | < 7.86 €                | <b>Action:</b> Replace                      |
|                                                                                    | <b>Total CO<sub>2</sub> per year:</b> | 0.02 tonnes             | <b>Note:</b> -                              |
|                                                                                    | <b>Priority:</b>                      | Low                     | <b>Status:</b> Open                         |
|                                                                                    | <b>Comment:</b>                       | Replace ball valve      | <b>Remedied on:</b> -                       |
|                                                                                    | <b>Remedied by:</b>                   | -                       | <b>Remedied by:</b> -                       |
|  | <b>Leak tag:</b>                      | <b>2</b>                |                                             |
|                                                                                    | <b>Building – location</b>            |                         | <b>Repair under pressure possible?</b> - No |
|                                                                                    | <b>Date and time:</b>                 | 15/04/2019 12:08:19     | <b>Error:</b> Flange leaking                |
|                                                                                    | <b>Leakage rate:</b>                  | 2.519 ltr/min           | <b>Spare part:</b> DN 100 flange seal       |
|                                                                                    | <b>Costs per year:</b>                | 14.2 €                  | <b>Action:</b> Reestablish seal             |
|                                                                                    | <b>Total CO<sub>2</sub> per year:</b> | 0.04 tonnes             | <b>Note:</b> -                              |
|                                                                                    | <b>Priority:</b>                      | High                    | <b>Status:</b> Done                         |
|                                                                                    | <b>Comment:</b>                       | Reestablish flange seal | <b>Remedied on:</b> 16/04/2019              |
|                                                                                    | <b>Remedied by:</b>                   | -                       | <b>Remedied by:</b> AM                      |

## Accessories included in the set:



### Headset

The noise-proof headset enables leak detection even in an extremely loud environment. The ambient noise is faded out, and the leakage (inaudible ultrasonic sound) is transformed into an audible signal



### Holster with shoulder strap

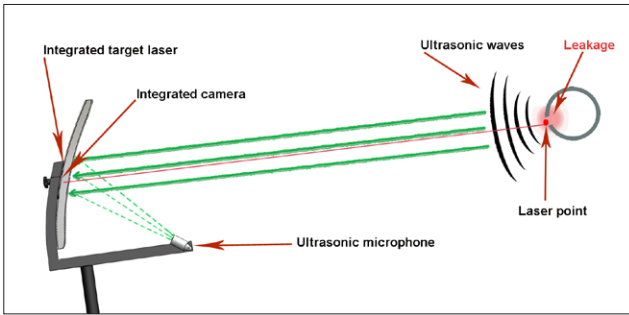
For the ILD 500/510, enables ergonomic and safe work



### Focus tube with focus tip

For pinpoint detection of the smallest leaks in confined spaces

## Professional accessory – parabolic mirror



By focusing the ultrasonic waves in the parabolic mirror, even the smallest leaks of 0.8 l/min (approx. € 8 p.a.) can be located with pinpoint precision ( $\pm 15$  cm) at a distance of up to 10 to 15 m.

The shape of the parabolic mirror ensures that only ultrasonic waves of the targeted leak are evaluated. Background noise is reduced to a minimum.

## Accessories



### DESCRIPTION

Gooseneck for leak detection at sites which are difficult to access (length 600 mm)

### ORDER NO.

0530 0105

Gooseneck for leak detection at sites which are difficult to access (length 1500 mm)

0530 0108

Gooseneck High Sensitivity for leak detection on vacuum systems and for leak testing (length: 600 mm)

0530 0110



### DESCRIPTION

Parabolic mirror with laser distance measurement for leak detection in long distances, incl. transport case

### ORDER NO.

0530 0206

Parabolic mirror for leak detection at long distances, incl. transport case

0530 0106

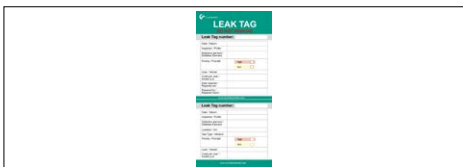


### DESCRIPTION

Ultrasonic tone generator for leak testing. A handy ultrasonic tone generator is available for detecting leaks in systems that are not under pressure. The transmitter is positioned so that the sound can enter the pipe system. The ultrasonic signal penetrates the smallest openings, which can then be detected with the ILD 500

### ORDER NO.

0554 0103



### DESCRIPTION

500 leak tags for marking the leaks on site

### ORDER NO.

0530 0107



### DESCRIPTION

UltraCam – funnel with integrated camera, 30 ultrasonic microphones for visualisation of leakages – for retrofitting to existing ILD 500 / ILD 510

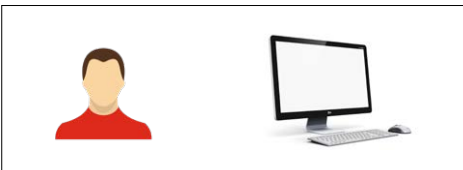
### ORDER NO.

Z554 5500

## Software



| DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ORDER NO. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <p><b>Leak Reporter V2</b><br/>Creates detailed ISO 50001 reports. Provides an illustrated overview of the leaks found and their savings potential. Measures for elimination, including status display, can be defined for every leak – license for two computers</p> <p>New functions:</p> <ul style="list-style-type: none"> <li>- Simple spare parts management</li> <li>- Histogram functions for documenting continuous improvement in accordance with ISO 50001 on the company or building level</li> </ul> | 0554 0205 |



| DESCRIPTION                                            | ORDER NO.   |
|--------------------------------------------------------|-------------|
| Leak Reporter V2 – additional licence for one computer | Z554 0205CS |



| DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ORDER NO. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <p><b>Leak Reporter – cloud solution Basic</b><br/>package:<br/>Browser-based access to the Cloud.<br/>Advantages:</p> <ul style="list-style-type: none"> <li>- Common database of all users in real time.</li> <li>- Cross-location work in a team</li> <li>- Paperless documentation.</li> <li>- Unlimited number of guest logins (read-only rights) can be set up.</li> </ul> <p>Only available in combination with at least one CS Cloud (0554 0306) user licence.</p> | 0554 0305 |



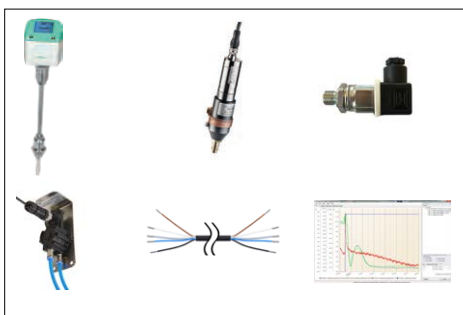
| DESCRIPTION                                                                                     | ORDER NO. |
|-------------------------------------------------------------------------------------------------|-----------|
| <p><b>User licence – Cloud</b><br/>1 user / 12 months for Leak Reporter Cloud solution use.</p> | 0554 0306 |

## ILD 500/510 calibration



| DESCRIPTION                                           | ORDER NO. |
|-------------------------------------------------------|-----------|
| ILD 500/ILD 510 re-calibration / UltraCam ILD 500/510 | 0560 3333 |

## Additional sensors / accessories for connection to ILD 510



| DESCRIPTION                                                                                                                                    | ORDER NO. |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| IFA 510 dew point sensor for mobile devices, -80...+20 °Ctd incl. mobile measuring chamber, 5 m connection cable and perforated protection cap | 0699 1510 |
| IVA 500 flow probe, max. version (185 m/s), probe length 220 mm, incl. 5 m connection cable                                                    | 0695 1124 |
| Standard pressure probe 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, 5 m                                                      | 0553 0501 |
| Basic – data evaluation in graphic and table form – readout of the measured data via USB or Ethernet. License for two workstations             | 0554 8040 |

## Calculation

| Costs per year |                              |        |         |         |         |         |
|----------------|------------------------------|--------|---------|---------|---------|---------|
| Pressure       | Size of leak – 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 in one year with 24-hour operation 365 days per year calculated with compressed air costs of 1.9 ct/Nm<sup>3</sup>.

### TECHNICAL DATA OF THE ILD 500 / ILD 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: 630...660 nm<br>Output power: < 1 mW (laser class 2)                              |
| <b>Display:</b>                | 3.5" touch screen                                                                             |
| <b>Interface:</b>              | USB interface                                                                                 |
| <b>Data logger:</b>            | 16 GB SD memory card<br>(100 million values)                                                  |
| <b>Power supply:</b>           | Internal rechargeable Li-Ion batteries, approx. 9 h continuous operation, 4 h charging time   |
| <b>Operating temperature:</b>  | -5...+50 °C                                                                                   |
| <b>EMC:</b>                    | DIN EN 61326                                                                                  |
| <b>Auto level:</b>             | Automatically adapts the sensitivity to the environment and reliably eliminates ambient noise |
| <b>Sensitivity:</b>            | min: 0.1 l/min at 6 bar, 5 m distance, approx. € 1/year of compressed air costs               |
| <b>Weight without headset:</b> | 540 grams                                                                                     |

### TECHNICAL DATA OF EXTERNAL SENSOR INPUT (ILD 510 ONLY)

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