

INTRODUCING PORTASCANNER® AIRTIGHT 520

Handheld Ultrasonic Non-Disruptive Room Integrity & Leak Detection Technology



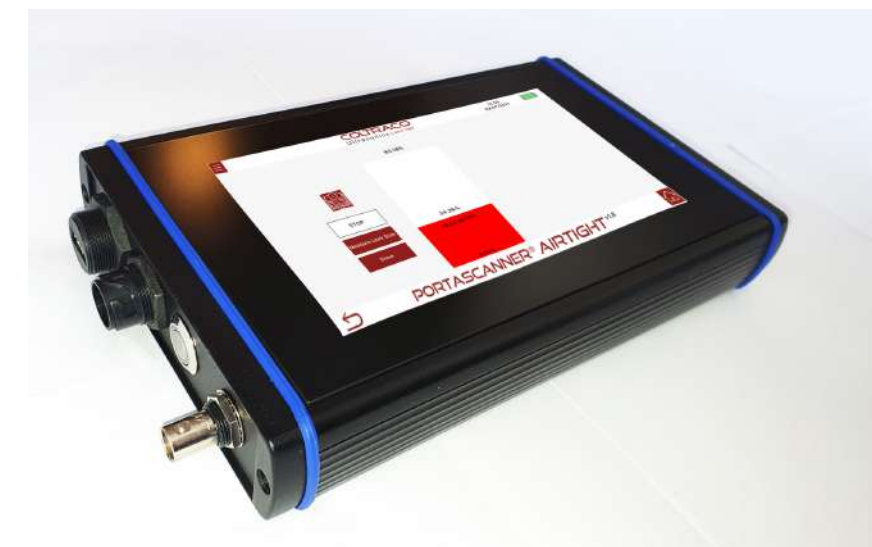
INTRODUCING THE PORTASCANNER® AIRTIGHT 520

What is it?: The **Portascanner® AIRTIGHT 520** has been developed to identify leak sites with a microscopic level of accuracy, to measure and quantify them using sophisticated algorithms, and to generate a value for the air flow rate through each leak as well as calculate the building's overall air permeability. It achieves this thanks to **innovations both in engineering and computer science**, meaning the **Portascanner® AIRTIGHT 520** possesses the hardware and software necessary to create the most stable, temporally and spatially consistent signal required to quantify leak extent ultrasonically.

What is it for?: For ensuring airtightness of room/spaces whilst locating and quantifying airleaks as small as 0.05mm.

Who needs it?: Anyone working in:

- Construction/built environment
- Laboratories
- HVAC areas
- Isolation areas
- Quarantine areas
- Cruise lines
- Corridors e.g. shipping, offshore
- Manufacturers



6 REASONS TO BUY PORTASCANNER® AIRTIGHT 520

1. Improve air quality
2. Compliance
3. Data-driven decisions
4. Non-disruptive
5. Record leaks
6. Reduce risk, increase safety

HOW PORTASCANNER AIRTIGHT 520 HELPS YOU

BEFORE Door Fan Test / Pressurisation Test:

- **Quantify leak sites** without the need to pressurise the environment
- Allows the identification and measurement of air leaks - for **precise, immediate** and often **low cost remedial action**
- **Complements the pressurisation test** and gives contractors the ability to **generate more competitive quotes** for pressurisation test related services as more information can be known about the enclosure before the test
- **Higher chance** of passing the Door Fan Test



DURING Door Fan Test / Pressurisation Test:

- If Door Fan Test / Pressurisation Test fails - the Portascanner Airtight 520 **assist in failure diagnosis** which includes locating and quantifying air leaks and subsequent precise remedial action



AFTER Door Fan Test / Pressurisation Test:

- Assist in **periodic maintenance** of the enclosure to ensure the room integrity remains unchanged

ADVANTAGES OF THE PORTASCANNER® AIRTIGHT 520



MEASUREABLE

Know where your leaks are and their significance – avoid having to seal every opening in the room which can be time-consuming, disruptive and cumbersome

Provide evidence of your maintenance programme – **locate, quantify and record leaks** as well as photograph and export a test report all in one hand-held instrument

EVIDENCE BASED

SAVES TIME

Improve efficiency and quality of airtight room maintenance – locate leaks, accurately predict the leak site size and its significance, seal the leaks that matter

- **ACCURATE:** Determine air leakage rates through walls, doors, seals.
- **RESULTS-BASED:** Calculate number of leaks, leak area, total air flow rate and air permeability rate.
- **PRECISE:** Accurately identify leaks, so remedial measures can be taken. Without knowledge of leak location and size, the best that can be done is to “patch and hope”, which cannot guarantee air tightness.
- **FAST & EASY:** Quicker, cheaper & easier than the alternative.

CASE STUDY - PORTASCANNER® AIRTIGHT 520



Air Tightness Testing & Measurement Association (ATTMA)

In January 2022, Coltraco Ultrasonics' Daniel Dobrowolski (Senior Physicist) and Bernard Hornung (Head of Built Environment) joined Paul Jennings (Airtightness Specialist) and Dr Bill Bordass OBE (Building Scientist) to test the Portascanner® AIRTIGHT 520 in a full-sized house. Testing followed a Pulse Test and a Door Fan Blower Test, both of which the Portascanner® AIRTIGHT 520 is designed to complement.

The Portascanner® AIRTIGHT 520 performed outstandingly, being able to identify and quantify leaks that had been found with traditional basic methods of leak detection such as thermal cameras, smoke pencils and anemometers, but most importantly finding leaks that could not be found with any alternative method. A significant number of leaks were identified in window and door seals.

Passivhaus Build

At the Passivhaus Build, the Door Fan Test identified that the building just passed the required threshold meaning that there were some leaks that were unaccounted for. After a scan of a wall within the building, the Portascanner® AIRTIGHT 520 was able to identify a small leak, that a smoke pencil was unable to find.

Being able to detect, rapidly locate, and to quantify air leaks in buildings as small as those with a diameter of 0.5mm, regularly, frequently, and periodically is a transformational step-change in the construction, management and maintenance of the entire global built environment.

A LITTLE BIT OF BACKGROUND

Our History: During Coltraco Ultrasonics' long history in watertight integrity monitoring for the Royal Navy we learned it was one thing to identify large and microscopic leak sites, quite another to quantify the leak site to determine the water flow rate through it. These were the crucial pieces of information required to assess the ship's vulnerability at sea.

We have used our experience to create **Portascanner® AIRTIGHT 520**, which:

Evolving

- Takes Coltraco Ultrasonics' understanding of fluid dynamics at sea,
- And applies it to air flow dynamics on land
- Taking the best ultrasonic technology in Coltraco's hardware to identify leak sites with a microscopic level of accuracy. We can now generate a value for air flow rate through the leak and the building's overall air permeability

The Future Now - Portascanner® AIRTIGHT 520 is a unique technology globally.

- The first of its kind – a 100% British hand-held, portable analytical instrument
- We invented it to complement existing airtightness testing, typically achieved using a Door Fan Test or a Pulse Test, that are essential for measuring the integrity of the Built Environment



STAY COMPLIANT WITH REGULATIONS



IMPROVE YOUR SAFETY TODAY.



ISO 14520-1:2015 (Gaseous fire-extinguishing systems – Physical properties and system design – Part 1: General requirements)

Chapter 9.2.4 Enclosures

9.2.4.1 At least **every 12 months** it shall be determined whether boundary penetration or other changes to the protected enclosure have occurred that could affect leakage and extinguishant performance

NFPA 2001:2018 (Standard on Clean Agent Fire Extinguishing Systems)

Chapter 11 Inspection, Servicing, Testing, Maintenance, and Training

Clause 11.4.5 Enclosure Inspection

Clause 11.4.5.1 The protected enclosure shall be inspected annually or monitored by a documented administrative program for changes in barrier integrity or enclosure dimensions

(continued overleaf)

STAY COMPLIANT WITH REGULATIONS



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Building Regulation Requirements in the UK

Air permeability regulations are prevalent within the construction and building services industry, where the air tightness of rooms and buildings must be regulated to ensure sufficient standards of ventilation, energy performance, and protection against fire.

General building regulations in the United Kingdom, deal with air permeability (volume of air flow per hour per square meter of room envelope area, at **50 Pascals** reference pressure), whereas others reference air changes per hour (also at a 50 Pascals reference pressure), or how often the air in a room will be completely replaced.

Approved Document L2A (England and Wales) and Technical Booklet F2 (Northern Ireland)

- In England, Northern Ireland and Wales, the maximum air permeability for buildings of **<10m³/(h·m²)** at a reference pressure of **50 Pascals** is required
- In Scotland the air permeability of any building must be **<7m³/(h·m²)**
- The AECB Silver and Gold standards for energy performance require **<3.0m³/(h·m²)** and **<0.75m³/(h·m²)** respectively

ABOUT COLTRACO ULTRASONICS

"To see the sounds that others cannot hear"

"To measure the hitherto unmeasurable"



Headquartered in **London**

Operating across a diverse array of **25 Market Sectors**

- Shipping
- Safety Engineering
- Process Control
- Mining
- Offshore Energy
- Renewables
- Healthcare
- Built Environment
- Naval
- Space



Engaged in Research, Design, Development, Manufacture, Integration & Sustainment of high-exporting advanced technology systems, products and services.

We monitor and measure an array of specialised environments to deliver the Safesite™ on land and the Safeship™ at sea.

BY BEING SCIENCE-LED:



We identify and nurture brilliant minds, creating a unique research environment at Durham University, which is a globally outstanding centre of teaching and research excellence.



In our research at DIRDI, we undertake fundamental research into the physical laws of the universe, alongside applied research in Physics, Mathematics, Engineering and Computer Science in acoustics, electromagnetism and information engineering.



It is this research and manufacturing excellence, and our enduring commitment to the sustainment of our technologies in the field, that makes Coltraco Ultrasonics the partner of choice for customers and distributors in 120 countries.



We deliver genuine value for our customers through our scientific and institutional values, and the global quality of our commercial and technical services.



Our organisation comprises:

- Our **Company**
- Our **Laboratory**, co-located with the Centre for Advanced Instrumentation at Durham University
- Our **Research Organisations**, the Durham Institute of Research, Development & Invention (DIRDI)
- Our **Centre for Underwater Acoustic Analysis** (CUAA)

OUR CUSTOMER CARE COMMITMENT

Global Support

You can receive worldwide support through our network of Global Partners, Distributors, and Service Centres (ODA's).

More than 150 Exclusive local distributors, in over 80 countries.

10 ODAs:

- Europe - UK, Turkey
- Middle East - UAE
- Asia - India, Singapore
- Australia
- USA - Florida
- Central America - Trinidad
- South America - Brazil



*Accurate as of February 2022

Coltraco®, Coltraco North America®, Portamarine®, Portalevel®, Permalevel®, Portagauge®, Portasonic®, Portamonitor®, Portasteele®, Portascanner®, Permascanner®, Safesite®, Safeship® are trademarks or registered trademarks of Coltraco Limited, UK. DuPont™, FM-200®, FE-25™, FE-13™, and FE-241™ are trademarks or registered trademarks of E.I. du Pont de Nemours and Company and its affiliates. Novec™ 1230 is a trademark owned by 3M.

When purchasing a Coltraco product you receive FREE Lifetime Technical Support in addition to a 3 year warranty on the main unit and 1 year on the sensor.

Coltraco Ultrasonics

★REVIEWS.io

"The instruments acquired by Benguella Enterises (Pty) Ltd has enabled our technicians to work faster delivering accurate undisputed test results. The staff at Coltraco has been truly most supportive and professional during the years of dealing with them. We can vouch for a..."

★★★★★ Verified Reviewer

