

GAZELLE®



±2500 Pa
STATIC PRESSURE
RANGE

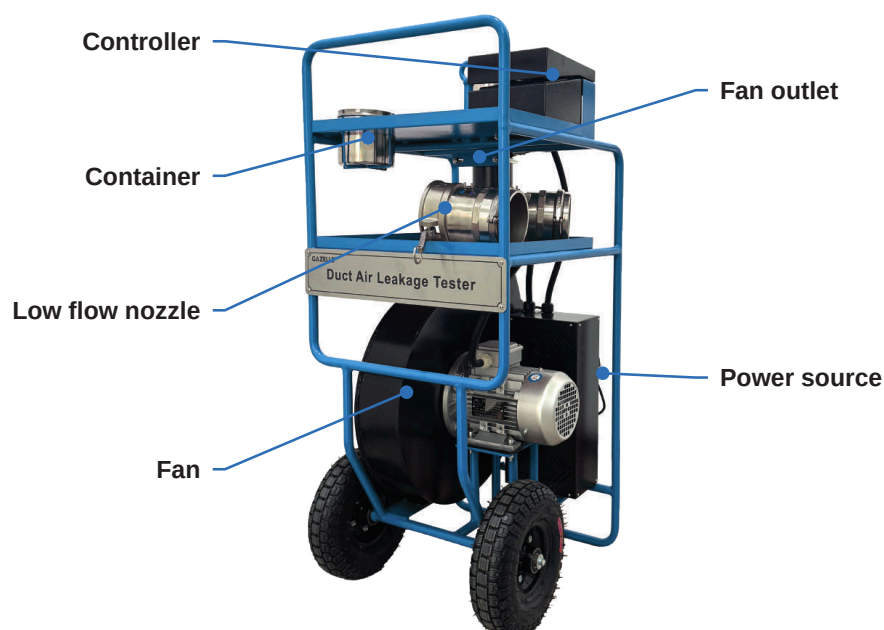
G9802

DUCT AIR LEAKAGE TESTER

G9800 SERIES · TOUCHSCREEN CONTROL

G9802 DUCT AIR LEAKAGE TESTER

The Gazelle G9802 Duct Air Leakage Tester is used for testing the sealing performance of air conditioning ducts. It can test segmented ducts and the main duct after the entire system is installed, ensuring the working efficiency of the air conditioning system and avoiding energy waste. The instrument performs tests according to relevant certification standards and can directly determine whether the duct's sealing performance is up to standard. It uses a touchscreen operation and an LCD colour screen display, providing a user-friendly interface for convenient operation.



Machine structure. The fan inlet is on the opposite side of the fan housing. Source: G9802 user manual, section 2.1.

640 m³/h

MAX AIR FLOW
(MATRIX)

±2500 Pa

STATIC PRESSURE
RANGE

±2.5%

AIR FLOW
ACCURACY

1000

STORED TEST
RECORDS

KEY FEATURES

- Test duct sealing under positive and negative pressure
- Duct sealing assessed to EN1507:2006, EN12237:2003, Eurovent 2/2, DW/143, SMACNA, AABC and GB50243-2003/2016
- Wide airflow measurement range; two measuring tools ensure measurement accuracy
- Assessment results directly determine whether the duct sealing is qualified
- Real-time display of leakage, test pressure, temperature and atmospheric pressure
- 1000 sets of data storage, browsing and deletion
- 5-inch LCD touchscreen for easy operation
- Tests segmented ducts and the main duct after the entire system is installed

EN 1507:2006

EN 12237:2003

EUROVENT 2/2

DW/143

SMACNA

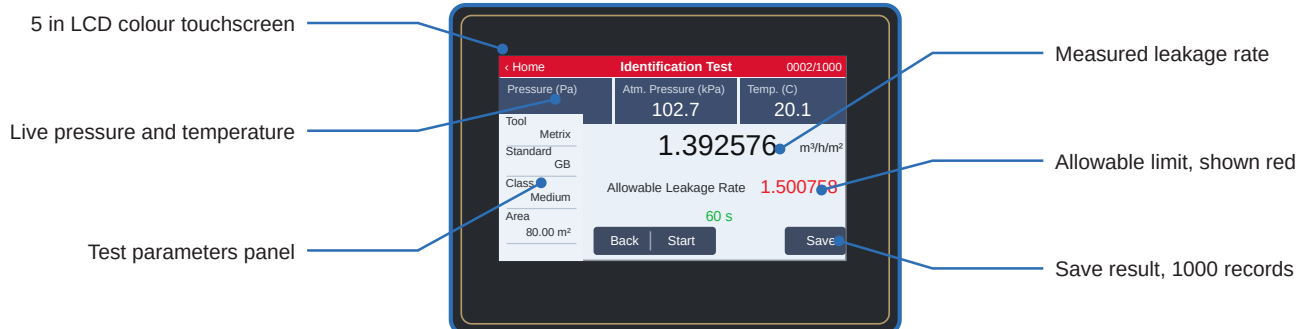
AABC

GB 50243

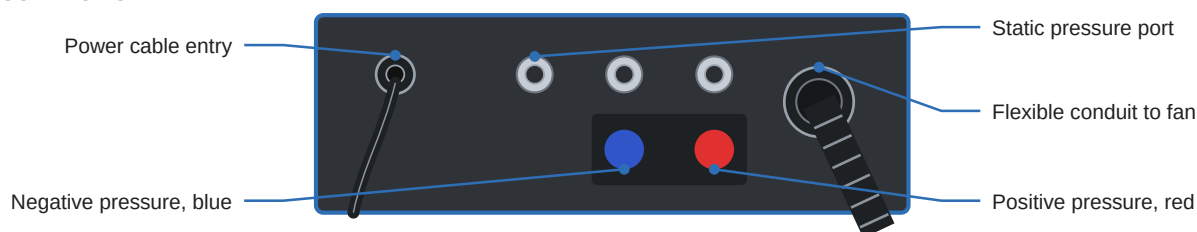
SPECIFICATIONS

CONTROL BOX

FRONT PANEL



REAR CONNECTION PANEL



Control box as supplied. Front panel and rear connection layout drawn from product photographs; port functions per G9802 user manual, section 2.2.

MEASUREMENT PERFORMANCE

Air Flow

Range (Matrix)	36 to 640 m³/h
Range (Nozzle)	4 to 36 m³/h
Accuracy	±2.5% of the reading ±0.1 m³/h
Resolution	0.01 m³/h

Static Pressure

Range	±2500 Pa
Accuracy	1% ±1 Pa of the reading
Resolution	0.1 Pa

Temperature

Range	0 to 60 °C
Accuracy	±0.5 °C
Resolution	0.1 °C

Atmospheric Pressure

Range	70 to 130 kPa
Accuracy	±2% of the reading
Resolution	0.1 kPa

MODEL VARIANTS

Model	Power supply
G9802-0E	100-120 V, 1 Phase, 50/60 Hz, 16 A
G9802-1E	200-240 V, 1 Phase, 50/60 Hz, 10 A

DISPLAY & DATA

Display	5 in LCD colour touchscreen
Data logging	Up to 1000 measurements

PHYSICAL

Net weight	73.5 kg
Dimensions (W × D × H)	54 × 50 × 120 cm
Lifting ring max. load	200 kg

STANDARD ACCESSORIES

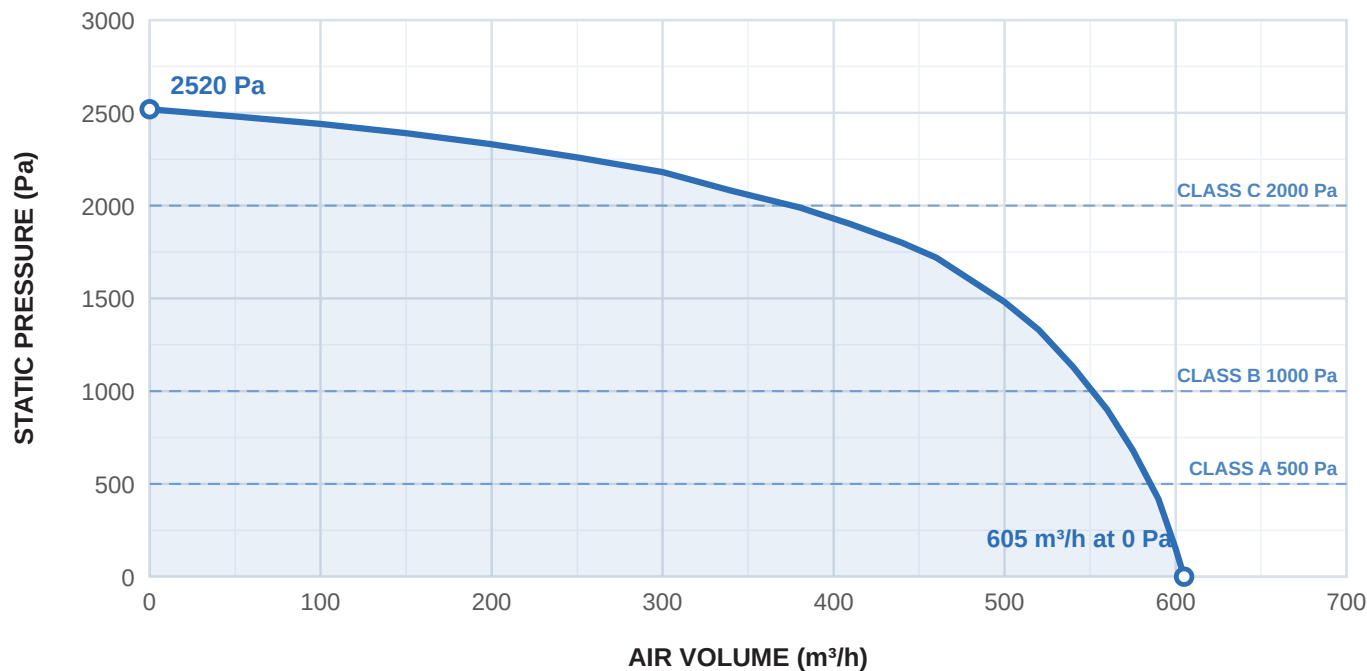
Duct Air Leakage Tester	Storage box
Low flow nozzle	Power cord
ø6 Silicone tube (Blue) 4 m	Calibration Certification
Duct connection hose	Operation manual

OPTIONAL ACCESSORIES

Dust-proof cover	Static probe
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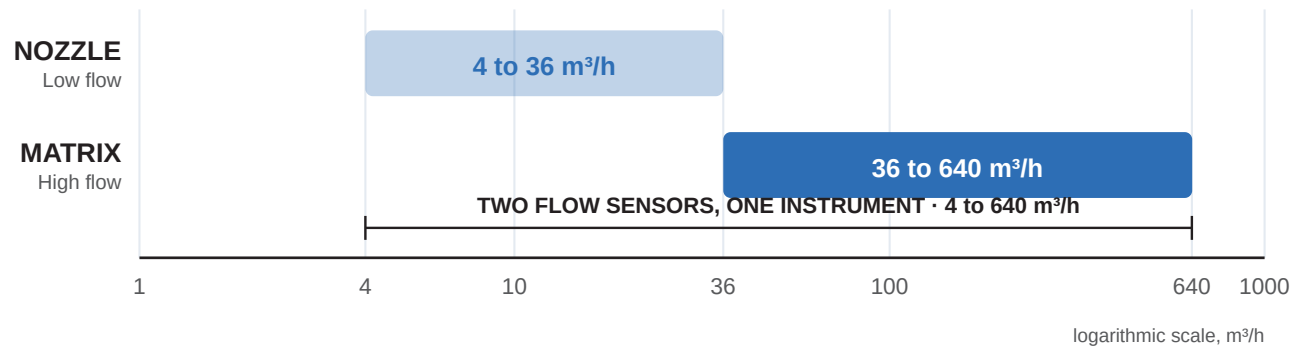
MEASUREMENT CAPABILITY

FAN PERFORMANCE CURVE



Static pressure against air volume at the fan outlet. Duct pressure class limits shown for reference. Source: G9802 user manual, Appendix 2; class limits from Appendix 1, DW/143.

DUAL-TOOL FLOW COVERAGE



A nozzle tool is used for low-flow testing and a matrix tool for high-flow testing. Source: G9802 user manual, section 3.

MEASURED PARAMETERS AND ACCURACY

Parameter	Range	Accuracy	Resolution
Air flow (Matrix)	36 to 640 m³/h	±2.5% of the reading ±0.1 m³/h	0.01 m³/h
Air flow (Nozzle)	4 to 36 m³/h	±2.5% of the reading ±0.1 m³/h	0.01 m³/h
Static pressure	±2500 Pa	1% ±1 Pa of the reading	0.1 Pa
Temperature	0 to 60 °C	±0.5 °C	0.1 °C
Atmospheric pressure	70 to 130 kPa	±2% of the reading	0.1 kPa

HOW IT TESTS

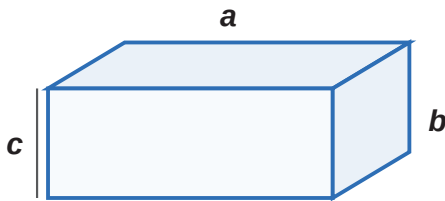
TEST SET-UP SEQUENCE

1 Flow Tool Matrix or Nozzle	2 Test Standard EN, DW/143, SMACNA, AABC, GB	3 Sealing Class Select or enter class	4 Duct Surface Area Enter area in m²	5 Test Duration Enter time in seconds
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After the parameters are set, start the fan, adjust the duct static pressure using Pressurize or Depressurize, enter the test, then save the result. Source: G9802 user manual, section 4.2.

FLOW TOOL SELECTION		
	Nozzle	Matrix
Flow range	4 to 36 m³/h	36 to 640 m³/h
Application	Low-flow testing	High-flow testing
Fitted at	Fan outlet, cam-lock	Fan outlet, cam-lock
Pressure tap	To airflow differential pressure interface	To airflow differential pressure interface

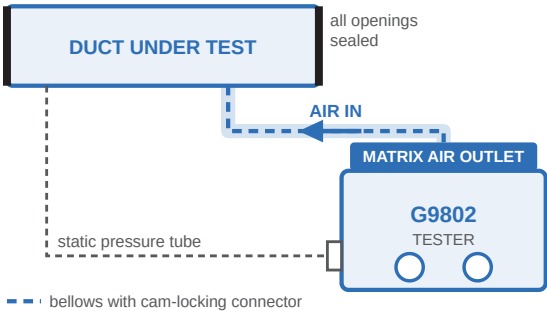
DUCT SURFACE AREA



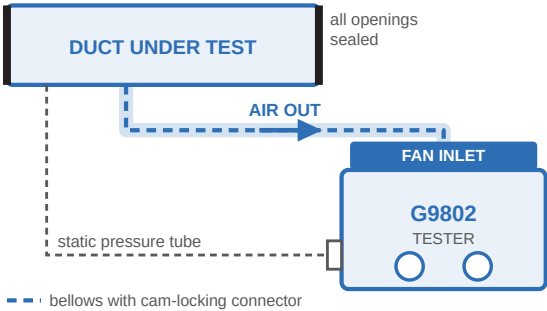
$$S = (ab + bc + ca) \times 2$$

Seal all joints of the duct under test, leaving only one joint connected to the testing machine, and calculate the surface area within the input range of the machine.

PRESSURE CONFIGURATIONS



POSITIVE PRESSURE TEST



NEGATIVE PRESSURE TEST

Positive pressure: connect the cam-locking connector of the bellows to the matrix air outlet. Negative pressure: connect it to the fan inlet.

TOUCHSCREEN INTERFACE

Pipeline Air Leakage Testing System 2025/03/06 18:37:45

Certification Test

General Test

Result

Settings

1. Flow Tool
Matrix

2. Test Standard
GB

3. Sealing Class
LOW PRESSURE

4. Duct Surface Area
100 m²

5. Test Duration
60 s

Back

Next Step

100%

Duct Static Pressure (Pa)

0.0

Back

Depressurize

Start

Pressurize

Enter Test

Identification Test 080201000

Pressure (Pa)	102.7	Temp. (°C)	20.1
Test	1.392576 m³/h/m²		
Standard	GB		
Class	Medium		
Area	1.500758 m²		

Allowable Leakage Rate 0.0 s

Back

Start

Save

MAIN MENU

TEST PARAMETERS

PRESSURE SET-UP

LIVE TEST RESULT

AIR TIGHTNESS CLASS REFERENCE

EN 12237			
Air Tightness Class	Air Leakage Limit $f_{\max}$ m³/s/m²	Neg. Pa	Pos. Pa
A	$0.027 \times p_t^{0.65} / 1000$	500	500
B	$0.009 \times p_t^{0.65} / 1000$	750	1000
C	$0.003 \times p_t^{0.65} / 1000$	750	2000
D	$0.001 \times p_t^{0.65} / 1000$	750	2000

EN 1507					
Class	Air Leakage Limit $f_{\max}$	Neg.	Pos. 1	2	3
A	$0.027 \times p_t^{0.65} / 1000$	200	400	–	–
B	$0.009 \times p_t^{0.65} / 1000$	500	400	1000	2000
C	$0.003 \times p_t^{0.65} / 1000$	750	400	1000	2000
D*	$0.001 \times p_t^{0.65} / 1000$	750	400	1000	2000

* Class D ductwork is only for special apparatus. Static pressure limits in Pa.

EUROVENT 2/2	
Air Tightness Class	Air Leakage Limit $f_{\max}$ m³/s/m²
A	$0.027 \times p_t^{0.65} / 1000$
B	$0.009 \times p_t^{0.65} / 1000$
C	$0.003 \times p_t^{0.65} / 1000$

GB 50243	
Rectangular Duct Pressure Class	Maximum Leakage Rate m³/h/m²
Low voltage system	$0.1056 \times p^{0.65}$
Medium voltage system	$0.0352 \times p^{0.65}$
High voltage system	$0.0117 \times p^{0.65}$

p refers to the working pressure (Pa) of the duct system.

LOCATING A LEAK	
Visually inspect the seals of all vents and duct joints	
Listen for drafts during pressurization; larger leaks produce a distinct hissing sound	
Place a hand near the duct surface to feel airflow at the leak	
Apply soapy water to the duct joints and observe for bubbles	
Light a smoke pen inside the duct; smoke will appear at the leak	

All class tables reproduced from the G9802 user manual, Appendix 1. Refer to the current issue of each standard for the governing requirements.

DW/143				
Duct Pressure Class	Pos. Pa	Neg. Pa	Max. Air Velocity m/s	Air Leakage Limit l/s/m²
Low Pressure – Class A	500	500	10	$0.027 \times p_t^{0.65}$
Medium Pressure – Class B	1000	750	20	$0.009 \times p_t^{0.65}$
High Pressure – Class C	2000	750	40	$0.003 \times p_t^{0.65}$

SMACNA			
Duct Class	1/2-, 1-, 2-inwg	3-inwg	4-, 6-, 10-inwg
Seal Class	C	B	A
Sealing Applicable	Transverse Joints Only	Transverse Joints and Seams	Joints, Seams and All Wall Penetrations
Leakage Class – Rectangular Metal	16	8	4
Leakage Class – Round Metal	8	4	2

Maximum air leakage $F = CLP^{0.65}$, where F = maximum air leakage (cfm/100 ft²), CL = leakage class and P = pressure (inwg).

AABC		
Type of system (examples)	Minimum Test Pressure	Max. Allowable Leakage
Fractional horsepower fan systems, fan coils, small exhaust/supply fans, residential	0.50"WC (125 Pa)	2%
VAV and CAV terminal boxes and associated downstream ductwork	1.00"WC (250 Pa)	2%
Single zone, multi-zone, return ducts and exhaust duct systems	2.00"WC (500 Pa)	2%
Chilled-beam primary supply	2.00"WC (500 Pa)	1%
Supply ducts for VAV and CAV systems	4.00"WC (995 Pa)	1%
High pressure induction systems; exhaust systems for labs with air valves	6.00"WC (1495 Pa)	0.5%
Grease duct systems	4.00"WC (995 Pa)	0.0%

Extract of the AABC schedule. The full 13-system table is given in the G9802 user manual, Appendix 1.