

Minneapolis Micro Leakage Meter

An airtight building envelope is an important prerequisite for implementing up-to-date energy designs in new buildings as well as during building projects in existing buildings. In order to guarantee hygienic indoor air, fresh air supply through controlled room ventilation is the most sensible solution.



Airtightness testing of ventilation duct systems according to EN 12599

The Minneapolis Micro Leakage Meter (MLM) Measuring System has been developed by the manufacturer The Energy Conservatory in close cooperation with BlowerDoor GmbH in order to guarantee the functionality of ventilation systems by conducting airtightness tests of the duct system. With a measuring range of 0.17 to 78.5 m³/h, the MLM is also suitable for testing building components as well as small and highly airtight clean rooms.

The airtightness of the ventilation ducts installed is an important requirement for the functionality and efficiency of ventilation systems. Leakages in the ductwork impede the targeted distribution of air in the building. Consequently, the high level of air quality planned is not achieved. Leaky ventilation ducts impair the efficiency of ventilation systems, in particular of those with heat recovery.

The measuring principle

The ventilation systems are tested by ventilation strands. When testing the supply air ducts, the MLM is, for example, connected to the supply air valve. All other valves and the supply air duct at the central unit are closed with rubber bladders.

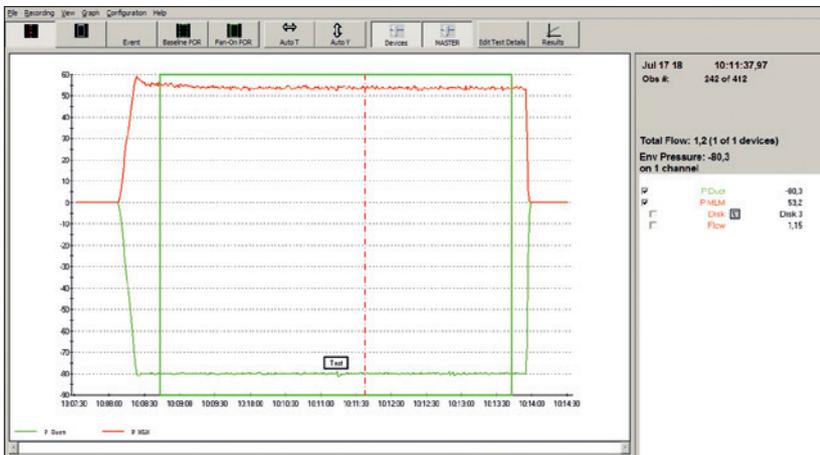
Using the Minneapolis DuctBlaster fan and the pressure gauge DG-1000 positive (testing supply air ducts) pressure or negative (testing exhaust air ducts) is created. The measurement can be performed via the TEC Gauge app or via a Windows computer using the TECLOG software. The data from the App TEC Gauge is displayed as follows and can be exported.



Air flow measurement of ventilation ducts at positive pressure

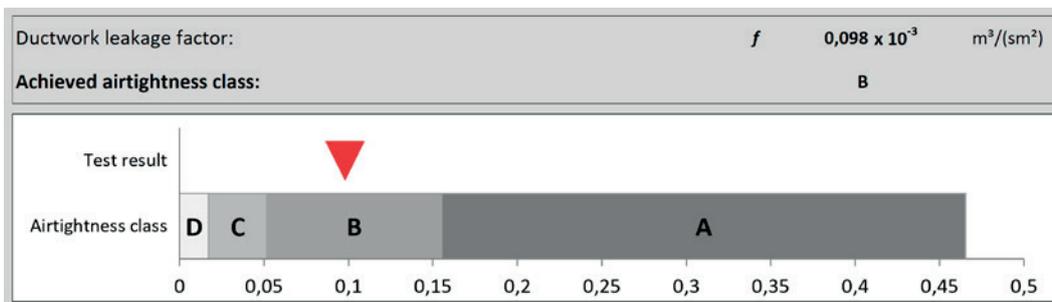


Air flow measurement of ventilation ducts at negative pressure



The measurement with the TECLOG software documents the entire measurement process. The data are read into the standard-compliant test report, which documents the results.

The measuring data recorded for the entire measuring period is included in the test protocol

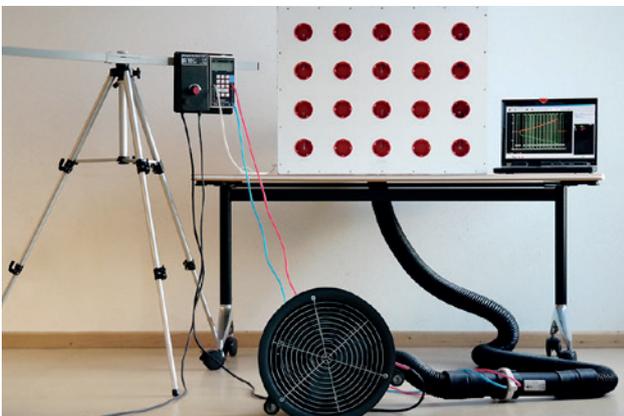


Extract from the test report: The airtightness class is calculated from the air flow measured with the MicroLeakageMeter and the duct enveloping surface and is displayed graphically

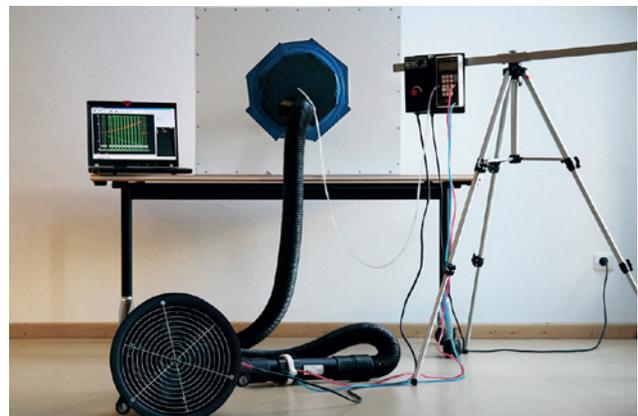
Further application possibilities with the MLM

You can also conduct other airtightness measurements with very low air flows:

- Airtightness measurements of highly airtight rooms (e.g. clean rooms)
- Measurements of joint permeability of windows and building components



Test setup for component testing (sockets) / front side



Test setup for component testing (sockets) / back side



Technical Data

Minneapolis Micro Leakage Meter

Measuring range:	Pressure differential:	Measuring accuracy:
2.15 – 57.4 m ³ /h	250 Pa	With disc 1 or 2: ±5 % or ± 0.37 m ³ /h of the measured value (the higher value is valid)
2.15 – 69.7 m ³ /h	160 Pa	With disc 1 or 2: ±5 % or ± 0.37 m ³ /h of the measured value (the higher value is valid)
0.17 – 78.5 m ³ /h	80 Pa	With disc 1 or 2 (measuring range of 2.15–78.5 m ³ /h): ±5 % or ± 0.37 m ³ /h of the measured value (the higher value is valid)
		With disc 3 (measuring range of 0.65–3.23 m ³ /h): ±5 % or ± 0.09 m ³ /h of the measured value (the higher value is valid)
		With disc 4 (measuring range of ≤ 0.83 m ³ /h): ± 0.04 m ³ /h

Dimensions: L 300 mm, Ø 140 mm

Weight: approx. 800 g

Software TECLOG MLM

Version TECLOG 4 per download link in English, reference guide available in EN/DE/FR

System requirements: WIN 7 or up, Excel 2007 or up

Shipment includes

Transport bag with MLM flow meter including 4 discs in a padded bag, calibration certificate (4 discs of 5 measuring points each), measuring software TECLOG MLM including test report, 2 hoses connecting plates for DuctBlaster fan, connecting hoses of 1 m and 3 m, 4 hose clamps, 5 connecting pieces for ventilation systems, sample roll of Duct Mask, set of rubber bladders, 1 capillary tube, tube set (red and blue of 3 m each, transparent of 10 m), reference guide

Guarantee period: 4 years from date of purchase

Package variations

A1 – Airtightness testing of ventilation systems

No BlowerDoor Measuring System available

Package contents:
MLM including accessories (see above), DuctBlaster including rings 1–4 and calibration certificate, speed controller, DG-1000 with calibration certificate, reference guide, transport bag

A2 – Airtightness testing of ventilation systems

BlowerDoor Measuring System MiniFan available

Package contents:
MLM including accessories (see above)

B1 – Airtightness testing of ventilation systems, airtightness testing of small buildings

No BlowerDoor Measuring System available

Package contents:
MLM including accessories (see above), Measuring System BlowerDoor Mini-Fan (see data sheet for BlowerDoor MiniFan)

B2 – Airtightness testing of ventilation systems, airtightness testing of buildings

BlowerDoor Measuring System Standard available

Package contents:
MLM including accessories (see above), DuctBlaster including rings 1–4 and calibration certificate, fan cap, speed controller, BlowerDoor panel (standard size), reference guide, transport bag