

AIR PERMEABILITY TESTER

AIR TRONIC PLUS



Mesdan developed a “Medical mask testing kit” according to EN 14683:2019 (Annex C) and ASTM F2100:2019 (point 9.2), for what refers to the differential pressure only, measuring the pressure difference above and below the specimen, used mainly for surgical masks.

AIR TRONIC PLUS is a fast and silent electronic instrument to determine the air permeability (meant as speed of the air flow vertically passing through the sample under preset and known testing conditions) of woven, knitted and non-woven fabrics, industrial fabrics for technical use, artificial leather, felt, velvet and paper. It can calculate also the average pore size of woven fabrics, a unique feature important for the filtration industry, their evaluation and classification.

AIR TRONIC PLUS is equipped with wheels, as well as a user-friendly touch screen display, a built-in suction unit with cooling system (granting a noise level reduction of about 20-30 dB, in comparison with the “standard models”), and a digital Flux Meter (to perform fast tests).

The air permeability value is expressed in mm/sec. and, thanks to the different testing template areas supplied with the instrument, the air permeability range is extremely wide and goes from a minimum of 1.4 mm/sec up to a maximum of 8056 mm/sec**.

The air permeability value can be also expressed in m/sec. and l/minutes.

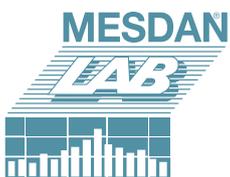
Code	Depressure [10 Pa = 1 mm H ₂ O]		Air flow l/h (min-max)	Flux meter cm ²	Standard Test Area cm ²	Optional Test Area cm ²
	Pa	mm H ₂ O				
3240E	0-2500	0-250	50-5800	Digital (1 unit)	2-5-10-20-50-100	38
3240F*	0-2500	0-250	50-5800	Digital (2 units)	2-5-10-20-50-100	38 / 25 ☑
3240G***	0-2500	0-250	50-360.000	Digital (2 units)	2-5-10-20-50-100	38 / 25 ☑

* Special model, which conforms to ASTM D3574 as well (in addition to all other Standards of models 3240E and 3240C).

** The air permeability range of model 3240C (special high capacity model available on demand), goes from a minimum of 180 mm/sec up to a maximum of 55555 mm/sec.

*** For highly impermeable fabrics (like parachutes).

Remarks: bench model also available on demand (Code 3240B).



COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =
= ISO 14001 =

AIR TRONIC PLUS

CODE 3240C, 3240E, 3240F, 3240G

Description / Testing procedure

The instrument is operated through a user-friendly touch screen display, that allows the operator to set and enter the following test parameters:

- Testing area (expressed in cm²).
- Pressure drop, expressed in Pascal, continuously adjustable (from 0 Pa to the max. value).
- Air permeability measuring unit (expressed in mm/sec., m/sec., l/min.).
- Measuring volume (either 10 litres or 100 litres must be selected).

At the end of the testing procedure, a test report can be printed by means of the built-in Micro printer (Code 3240.2), available as optional.



Testing guidelines

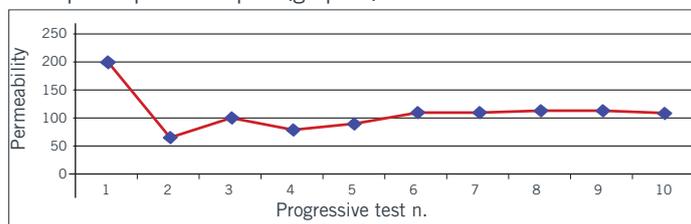
Instrument	Test area	Measuring range	Suggestions
3240E - 3240F	2 cm ²	from 69.4 to 8056 mm/s	very low density knitted fabrics
	5 cm ²	from 27.8 to 3222 mm/s	low density knitted fabrics
	10 cm ²	from 13.9 to 1611 mm/s	high density knitted fabrics
	20 cm ²	from 6.9 to 806 mm/s	woven fabrics
	38 cm ²	from 3.7 to 424 mm/s	woven and knitted fabrics
	50 cm ²	from 2.8 to 322 mm/s	industrial fabrics and heavy velvets
3240C - 3240G	100 cm ²	from 1.4 to 161 mm/s	very low air permeability value
	5 cm ²	from 3611 to 55555 mm/s	low density knitted fabrics
	20 cm ²	from 903 to 13889 mm/s	woven fabrics
	25 cm ²	from 722 to 11111 mm/s	very high density knitted fabrics
	38 cm ²	from 475 to 7310 mm/s	industrial fabrics and heavy velvets
	50 cm ²	from 361 to 5555 mm/s	industrial fabrics and heavy velvets
	100 cm ²	from 180 to 2778 mm/s	very low air permeability value

Test areas listed above - except for the 38 cm² area - are included

Included accessories

- **Calibration template**, to check calibration.
- **Reduction area templates**, to carry out tests on samples of different permeability.
- **Digital flux meter**, for fast testing (only for 3240E, 3240F and 3240G).

Example of printed report (graphic)



Example of test report

MESDAN SPA		
Raffa di Puegnago (BS) ITALY		
TEST REPORT		
Date:	08/06/2017	
Operator:	Lab	
Material:	Poly	
Supplier:	Example 1	
Code No.:	12345	
Sample No.:	5	
Notes:	Example 2	
T.1	12,7	Lt/min
T.2	12,8	Lt/min
T.3	13	Lt/min
T.4	12,7	Lt/min
T.5	12,9	Lt/min
T.6	12,7	Lt/min
T.7	12,9	Lt/min
T.8	12,8	Lt/min
T.9	12,9	Lt/min
T.10	12,7	Lt/min
Signature:	

OPTIONAL ACCESSORIES

Calibration report of control template	code	3240.CC2
Template Area adapter for 38 cm ² ASTM Standard	code	3240.8
Square template area adapter for 25 cm ² ASTM D3574 standard	code	3240F.32
Seal Fixing Ring 50 cm ² area, for sample thickness up to 10 mm, recommended to avoid air leaks when carrying out tests on industrial fabrics and heavy velvets	code	3240.6
Seal Fixing Ring 100 cm ² area, for sample thickness up to 10 mm, recommended to avoid air leaks when carrying out tests on synthetic leather and microfibrils fabric	code	3240.10
Seal Fixing Ring 100 cm ² area, for sample thickness over 10 mm and up to 20 mm, recommended to avoid air leaks while testing high thickness samples	code	3240.26
Seal Fixing Ring 50 cm ² area, for sample thickness over 10 mm and up to 20 mm, recommended to avoid air leaks while testing high thickness samples	code	3240.28
Built-in Micro printer (to print test results)	code	3240.2
Data management Software	code	3240A.12
PLC Software Option for average pore size calculation	code	3240.30
Automatic pressure drop regulation (for self-regulation at set point - except for 3240C)	code	3240.22
Medical Mask Testing Kit (only for models 3240B & 3240E)	code	3240B.37
	code	3240E.36

CONTROL LAB: Laptop (Code 2532.150), or - as alternative - Personal Computer (Code 237.92); Monitor (Code 250.300); Ink Jet Printer (Code 250.4); UPS - Uninterruptible Power Source (Code 2341.900)

GENERAL CHARACTERISTICS

- Measure units: mm/s, l/min, l/h, m/s, l/m²/s, dm³/s, cm³/s, ft³/min, ft³/min/ft², cm³/s/cm², m³/m²/min
- Pressure drop: continuous set
- Standard cup configuration: test area 100 cm²
- Standard test area for Code 3240C: 5 - 20 - 25 - 50 - 100 cm²
- Standard test area for Code 3240E and Code 3240F: 2 - 5 - 10 - 20 - 50 - 100 cm²
- Measuring accuracy < ± 3%

REFERENCE STANDARDS

UNI EN ISO 9237, UNI EN ISO 9073-15, UNI EN ISO 7231, ASTM D737, ASTM D3574 (only model 3240F), JIS L 1096 meth A, NWSP 070.1 RO (15)
 For Mask Testing Kit (only for models 3240B & 3240E):
 EN 14683:2019 (Annex C) and ASTM F2100:2019 (point 9.2).

DIMENSIONS / POWER SUPPLY

Weight: 76 kg (model 3240E) - 100 kg (model 3240F)
 Dimensions: (L) 620 x (W) 620 x (H) 1170 mm
 Power supply: 230 Vac, 50/60Hz single-phase

Photographs and descriptions of the present leaflet have to be considered as purely indicative and not binding



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