

Q-Box

Body Plethysmography



“Respiratory care,
when breath does
matter”

- All-in-one solution for Lung Volumes, Airways Resistance, Spirometry and Respiratory Mechanics (MIP/MEP, PO.1)
- Optional DLCO module for single-breath, intra-breath and membrane lung diffusion capacity
- Large cabin (873 liters) provides comfort while maintaining high sensitivity to volume changes
- Possibility to perform spirometry and DLCO either inside or outside cabin
- Perform all tests with a single manoeuvre (TGV, sRAW, SVC, IC)
- Featuring OMNIA, the new software from COSMED, powerful, easy-to-use with touch screen user interface

Accuracy and simplicity for the new benchmark in body plethysmography

The Q-Box is the new generation standalone body-box from COSMED for Gold Standard measurement of Static Lung Volumes (TLC, RV, ITGV) and Airways Resistance and Conductance (RAW, GAW) through the body plethysmography technique.

Spirometry is standard in the Q-Box, together with the Respiratory Mechanics module, and both can be performed either inside or outside the cabin. The optional DLCO module allows also to perform lung diffusing capacity tests by using fast-response CO-CH₄ gas sensors.

Q-Box unique high quality components, highly accurate pneumotach and super-fast analyzers guarantee accurate results and make the Q-Box stand out from the competition.

The large cabin volume (873 liters) provides comfort and ease-to-access both for adult and special population. Maintenance and parts replacement allow easy service on-the-field without the need of specialized technician.

Q-Box is powered by OMNIA, the new software generation from COSMED. OMNIA is a powerful software, easy and intuitive thanks to its innovative user interface which has a native touch-screen design. OMNIA features enhanced networking capabilities as well as full integration with any additional COSMED products (spirometers, cardiopulmonary exercise testing etc.).

Body plethysmography tests can be quickly and easily performed in a single manoeuvre and the test sequence (TGV, sRAW, SVC, IC) can be defined according to user preferences. Possibility to capture multiple RAWs with one single click (up to 7).

Calibration procedures (leakage check and polytropic factor calibration) are easy and intuitive to perform. A 30 mL syringe is integrated in the cabin to perform this operation completely automatic.

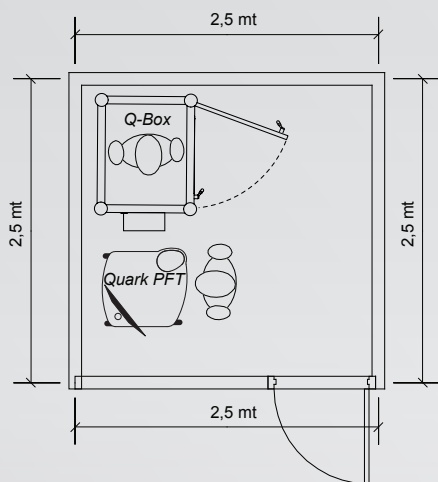
OMNIA encompasses all the latest industry standards for body plethysmography tests, including the 2005 ATS/ERS Consensus Statement on the “Standardization of the measurement of lung volumes”.



COSMED
The Metabolic Company

Validation articles

- Hans Rudolph Inc. 2012 "Third Party Validation: Quark PFT with X9 PNT for Spirometry and DLCO Measurements"
- More scientific studies on www.cosmed.com/bibliography



Technical Specifications

Product	Description	REF		
Q-Box	Standalone Body Plethysmography Laboratory	C09068-01-99		
Standard packaging	Q-box (Cabin+Quark PFT body), Multi-use PNT X9 (2 pieces), Smart Valve, Calibration syringe 3L, Compensation Chamber, PC Software (CD-Rom), User Manual.			
Standard Tests				
Spirometry	Forced Vital Capacity (FVC) Pre/Post, Slow Vital Capacity (SVC) Pre/Post, Maximum Voluntary Ventilation (MVV), Bronchochallenge - Bronchial Dilator/Constrictor test			
Body Plethysmography	Lung Volumes (TGV, TLC, FRC), Airway Resistance (RAW, sRAW), Conductance of Airways (GAW/sGAW), Pre/Post BD for TGV and RAW tests			
Respiratory Mechanics	Maximum Inspiratory/Expiratory Pressure (MIP/MEP), Respiratory Drive (PO.1)			
Flowmeter	X9 PNT	Turbine Ø-28mm (optional)		
Type	Lilly multiuse pneumotach	Bidirectional Digital Turbine		
Flow Range	0-14 l/s	0-16 l/s		
Accuracy	±2% or 20 ml/s (flow)	± 2% or 20 ml/s (flow) ± 2% or 200 ml/min (ventil.)		
Resistance	<1cmH ₂ O/l/s @ 14 l/s	<0.6 cmH ₂ O /l/s @ 14l/s		
Ventilation range	NA	0-300 l/min		
Pressure Sensors	Cabin Pressure	Mouth pressure	MIP/MEP	Pneumotach
Type	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive
Range	±1 cm H ₂ O	±70 cm H ₂ O	±250 cm H ₂ O	±1.25 cm H ₂ O
Resolution	0.00015 cm H ₂ O	0.01 cm H ₂ O	0.034 cm H ₂ O	0.0002 cm H ₂ O
Calibration	Integrated 30 mL pump	Automatic Zero	Automatic Zero	Automatic with 3L syringe
Hardware				
Dimensions & Weight	93x79x172 cm / 130 Kg			
Internal Volume	873 litres			
Interface ports	USB A-B, RS-232, HR-TTL, SpO ₂			
Electrical requirements	100-240V ± 10% 50/60 Hz			
Environmental conditions	Temperature 0-50 °C (32 - 122 °F); Barometer 400-800 mmHg; Humidity 0-100%			
Software				
Available languages	Italian, English, Spanish, French, German, Portuguese, Greek, Dutch, Turkish, Russian, Chinese, Korean, Romanian, Czech			
PC Configuration	1.4 GHz or faster processor speed. Compatible with Vista (32/64), Windows 7 (32/64), Windows 8 (32/64). RAM 4GB (8GB recommended). 500 MB of free disk space			
Optional Modules				
	Description	REF		
DLCO	Lung diffusing capacity measurements with different test options: single-breath, intrabreath and membrane diffusion	C03240-01-11		
Rocc	Enables the measurement of respiratory resistance with interrupter technique (Rocc, RoccEX, RoccIN, Gav, etc.)	C02700-01-11		
Integrated Dosimeter	Bronchochallenge with integrated DeVilbiss 646 Nebulizer	C03250-01-11		
Accessories				
	Description	REF		
Oesophageal catheter	for compliance	A-661-922-010		
Gas Calibration Cylinder	(for DLCO module) composition: CO 0.3%, CH ₄ 0.3%, O ₂ 21%, N ₂	A-860-000-005		
Large Medical Cart (230 Vac)	3 cylinder holder	C02900-01-04		
Large Medical Cart (120 Vac)	3 cylinder holder	C02900-02-04		
Table arm support	flexible arm for holding Smart Valve	C02870-01-05		
Safety & Quality Standards				
MDD (93/42 EEC); FDA 510(k); EN 60601-1 (safety) / EN 60601-1-2 (EMC) Complies with ATS/ERS 2005 guidelines				



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To know more:

