

# Dosimeter Module

Fully integrated Dosimeter Module for easy and accurate bronchial provocation test protocols



- ▶ Controlled and more accurate management of bronchial challenge
- ▶ High quality Philips Respironics Nebulizer
- ▶ Easy to clean and disinfect
- ▶ Multi-step protocol with a single drug concentration
- ▶ Choice between standard (ATS and Lofarma) or custom protocols
- ▶ Full compliance with ATS/ERS Guidelines

Bronchial challenges can be used to confirm or rule out a diagnosis of hyperreactive airways.

A dosimeter is particularly useful as it allows to perform and control automatically the different steps of the bronchial challenge and the accurate delivery of incremental doses of bronchial stimulants.

The testing procedure involves executing repeated FVC manoeuvres following the inhalation of pharmacologic agents according to an established protocol.

The dosimeter consists of an ampulla (to fill up with drug before test starts) connected to a flowmeter monitoring the ventilation and the amount of drug inhaled, then a cylinder of medical air is used for the nebulization of the medicine.

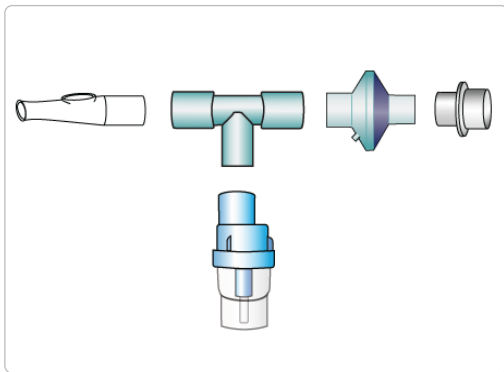
A pressure transducer is set to monitor the pressure at the ampulla level, during every single dose delivery, and guarantee that the correct amount of drug is delivered or stop the delivery.

The OMNIA software automatically controls the dosimeter according to a pre-defined Bronco challenge protocol.

An easy-to-use protocol editor in OMNIA software allows to select protocols among a predefined list or to create new ones.

**References:**

- Hallstrand TS et al. "ERS technical standard on bronchial challenge testing: general considerations and performance of methacholine challenge tests" *Eur Respir J* . 2018 Nov 15;52(5):1801033
- Crapo RO et al. "ATS 1999: Guidelines for Methacholine and Exercise Challenge Testing". *Am J Respir Crit Care Med* Vol 161, pp 309-329, 2000



Dosimeter Module setup.

Technical Specifications		
Product	Description	REF
Dosimeter Module	Fully integrated dosimeter	C03250-01-11
Standard packaging	Dosimeter Assembly, Dosimeter Tube, Dosimeter supports, Dosimeter Adapter.	
Nebulizer		
Type	Philips Respironics, SideStream	
Nebulizer @37 PSI	0.35 mL/min	
Ampolla volume	2-10 mL	
Safety tools	Yes (2 electro-valves connected in series)	
Power	100-240 Vac +/-10%, 50-60Hz	
Pressure transducer		
Type	Piezo-resistive compensated in temperature	
Range	3 – 58 PSI	
Accuracy	+/-1.5%Vfss	

BRONCHO CHALLENGE PROTOCOLS

Step #	Agent	Nebulizer Output (mL/min)	Concentration (mg/mL)	Breaths	Actuation (ms)	Flow (mL)	Cumulative Dose (mcg)
1	Diluent	0.35	0	1	1542	0	0
2	Broncho-constrictor	0.35	0.0625	5	1542	2.8125	2.8125
3	Broncho-constrictor	0.35	0.25	5	1542	11.25	14.0625
4	Broncho-constrictor	0.35	1	5	1542	45	59.0625
5	Broncho-constrictor	0.35	4	5	1542	180	239.0625
6	Broncho-constrictor	0.35	16	5	1542	720	959.0625
7	Broncho-dilator (mcg)	0.35	0	5	0	400	0

MODALITY: Provocation: Dosimeter

BRONCHO-CONSTRICTOR AGENT: Agent Name: metacholine, Unit of Measurement: mg/mL

BRONCHO-DILATOR AGENT: Agent Name: salbutamol, Unit of Measurement: mcg

Buttons: Save, Cancel

Broncho-challenge protocol editor.

ATS Step 2 of 7

Start [Dose] Extra Dose Stop Prev Next Last Abort

Concentration: 0.0625 mg/mL, Actuation: 1542 ms  
 Dose: 2.8125 mcg, Cumulative Dose: 2.8125 mcg

Agent: metacholine

1/5 Breaths, 0.56 mcg Breath Dose, 0.56 mcg Step Dose  
 1520 ms Inhale, 36 psi Nebulizer, 0.56 mcg Σ Dose

Cancel

Dosimeter dialog box in real time.



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