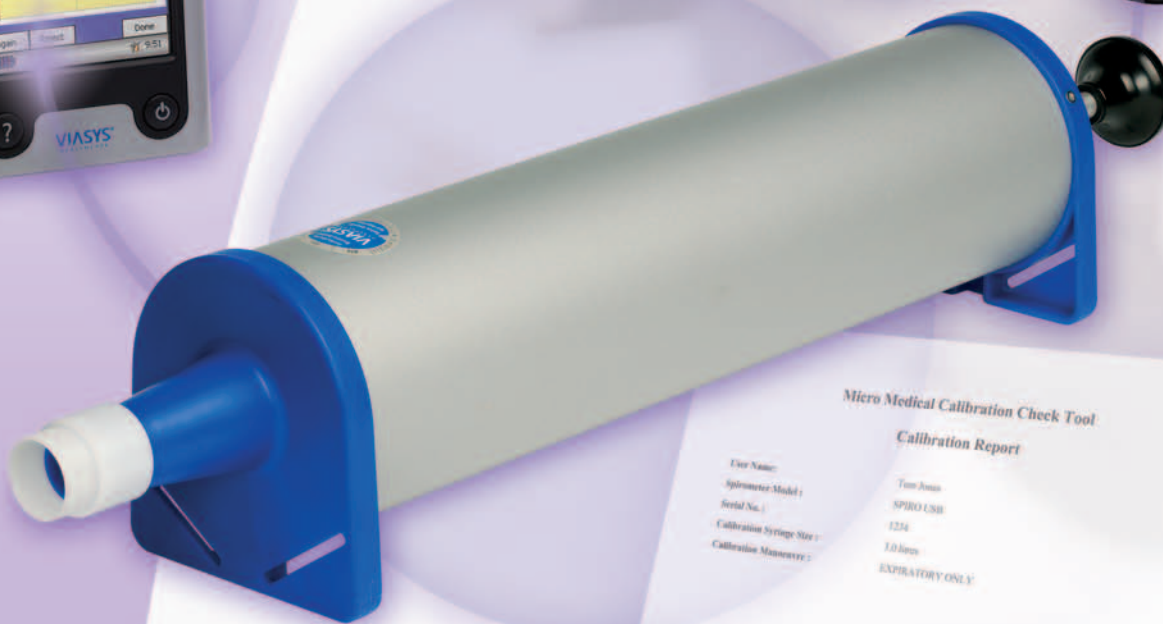
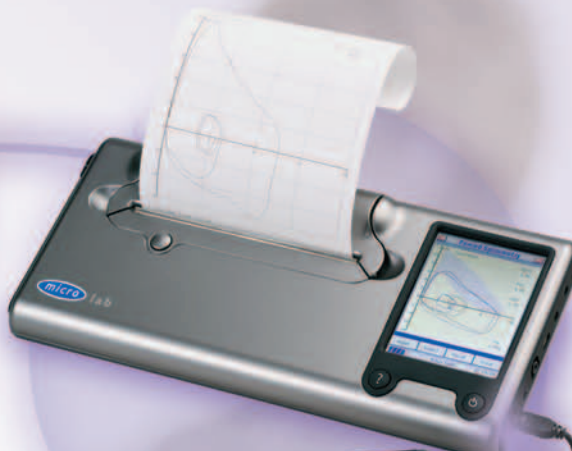
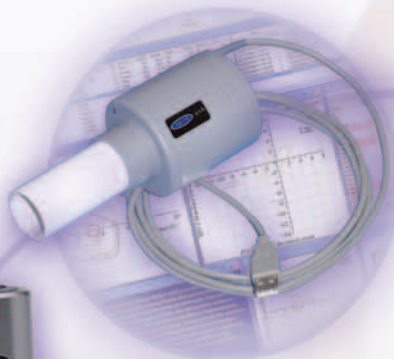


Micro

# 3 Litre Calibration Syringe

## Medical

a subsidiary of  
VIASYS Healthcare



Micro Medical Calibration Check Tool  
Calibration Report

User Name: Tom Jones  
Spirometer Model: SPIRO USB  
Serial No.: 1234  
Calibration Syringe Size: 3.0 litres  
Calibration Manoeuvre: EXPIRATORY ONLY

	Ideal Volume (litres)	Measured Volume (litres)	Error
Head (low 0 - 4.5 l/s)			
Test 1 Expiratory Calibration	3.000	3.018	0.6%
Test 2 Skipped			
Head (mid 4.5 - 8.5 l/s)			
Test 1 Expiratory Calibration	3.000	3.082	-2.2%
Test 2 Skipped			
Head (high 8.5 - 12 l/s)			
Test 1 Expiratory Calibration	3.000	3.067	-2.2%
Test 2 Skipped			
UNIT CALIBRATION:			
		PASSED	

Signature:   
Date/Time: 22/07/2007 11:23

Focus on the Future



## Medical

### Volume Accuracy Check

The measurement accuracy of Turbine Flow Heads manufactured by Micro Medical remains unaffected by changes in environmental conditions. In consequence their factory-set calibration remains extremely stable(2) and they do not require routine calibration adjustment. However, in accordance with international guidelines (1) their accuracy can be quickly verified by using a 3 litre calibration syringe.

Below is a summary of the key ATS/ERS 2005(1) recommendations when performing a volume verification for flow measuring devices (such as Micro Medical Spirometers)

- A volume accuracy check should be performed daily(1)
- A 3-L calibration syringe should be used(4)
- This calibration syringe should have an accuracy of +/- 0.5% (15 mL for a 3-L syringe) (1)
- The syringe should be discharged through the device at least three times to give a range of flows varying between 0.5 and 12 L.s<sup>-1</sup> (with 3-L injection times of approximately 6s for the lower flow limit and less than 0.5s for the upper flow limit) (1)
- The volume at each flow should meet the accuracy requirement of +/-3.5%(1)



Each syringe is supplied with a unique certificate confirming ATS/ERS 2005 performance compliance

### Bibliography

- (1) Standardisation of Spirometry M.R Miller et al. ATS/ERS Task Force: Standardisation of Lung Function; Testing Eur Respir J 2005; 26: 319-338.
- (2) Dirksen A, Madsen F, Pedersen OF, Vedel, Jensen AK. Long term performance of a hand held Spirometer. Thorax 1996; 52:973-976.
- (3) Technical and Functional assessment of 10 Office Spirometers. A Multicenter Comparative Study Giuseppe Liistro, Carl Vanwelde et al CHEST/30/3/ September 2006.
- (4) A 3 litre calibration syringe (catalogue number SM2125) can be obtained from Micro Medical Ltd in the UK or from one of their approved distributors internationally.

### 3 litre Calibration Syringe Cat. No. SM2125



**Micro Medical Limited**  
 Quayside, Chatham Maritime,  
 Chatham, Kent, ME4 4QY, UK  
**Telephone 01634 893500**  
**Fax 01634 893600**  
**International +44 1634 893500**  
**Email micromedical@viasyshc.com**  
**www.micromedical.co.uk**

