MEDICAL INTERNATIONAL RESEARCH

Innovation in Spirometry Oximetry Telemedicine

MIR Disposable Turbine

www.spirometry.com
www.facebook.com/MIRmedical

MIR
MEDICAL INTERNATIONAL RESEARCH

FlowMIR®
Disposable Turbine

Disposable Turbine

Technical Features

Comfortable Packaging

Singularly Packed

Really Disposable

No Sterilisation

No Calibration

No Cross Contamination

No Filter

ATS Certification

No Vapour Condensation

No Ambient Influence

The best Sensor

INTERNATIONAL PATENT

Disposable Turbine

Comfortable Packaging

Comfortable Packaging

Availability in a 60 or 10 pieces box:

- ✔ *Easy to store*
- ✔ *Easy to carry*

Disposable Turbine

Singularly Packed

Singularly Packed

Each turbine is individually wrapped in a plastic bag

Disposable Turbine

To be used Once

Really Disposable

The Cardboard Mouthpiece wears after each use and requires to be changed

Disposable Turbine

No Sterilisation

No Sterilisation

- ✔ *Hygienically packed*
- ✔ *No Downtime maintainance*
- ✔ *No Sterilization extra costs*

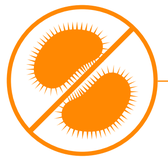
Disposable Turbine

No Calibration

No Calibration

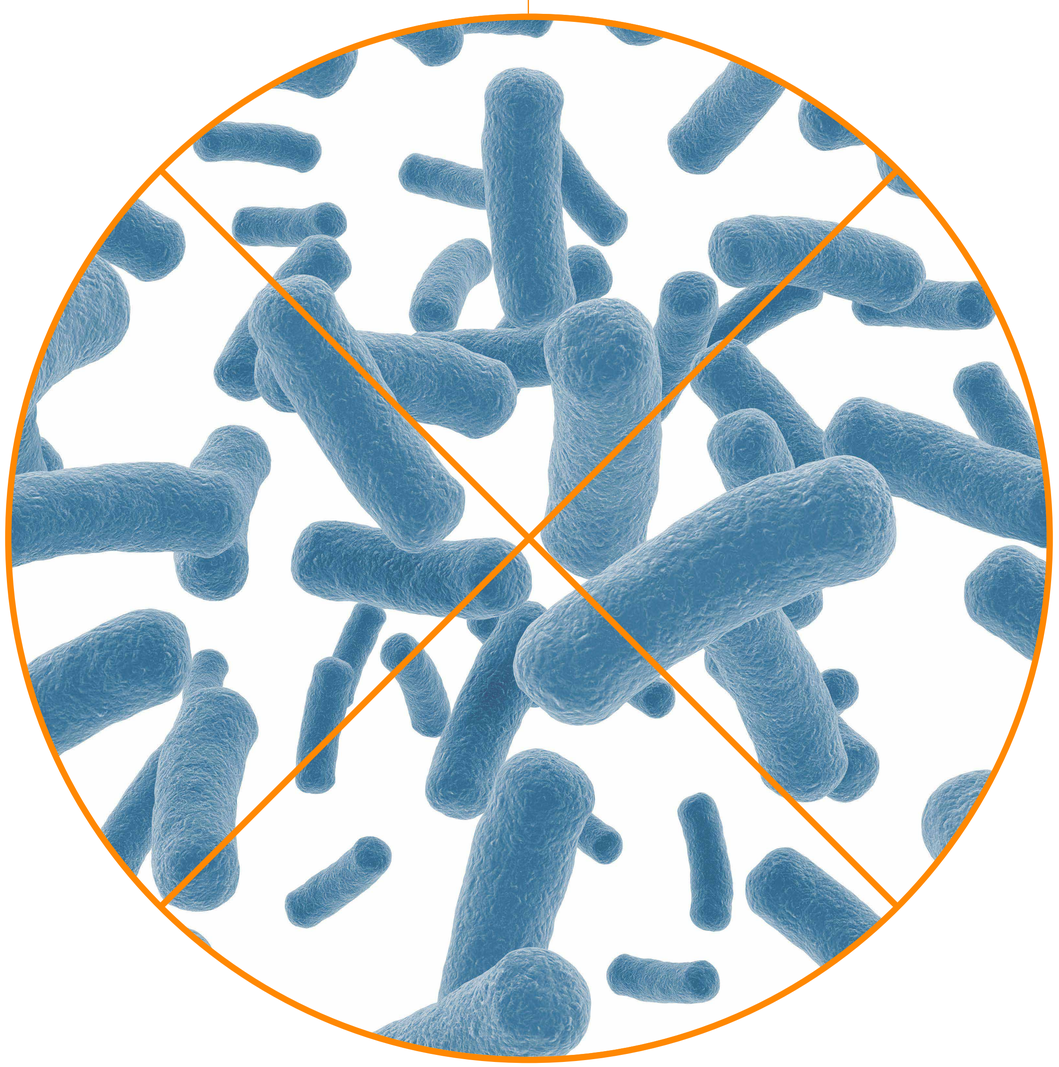
- ✔ *Factory calibrated, Always accurate*
- ✔ *No extra cost for calibration equipment*
- ✔ *No downtime for calibration procedures*
- ✔ *Real device portability without needing a bulky syringe*

Disposable Turbine
No Cross Contamination



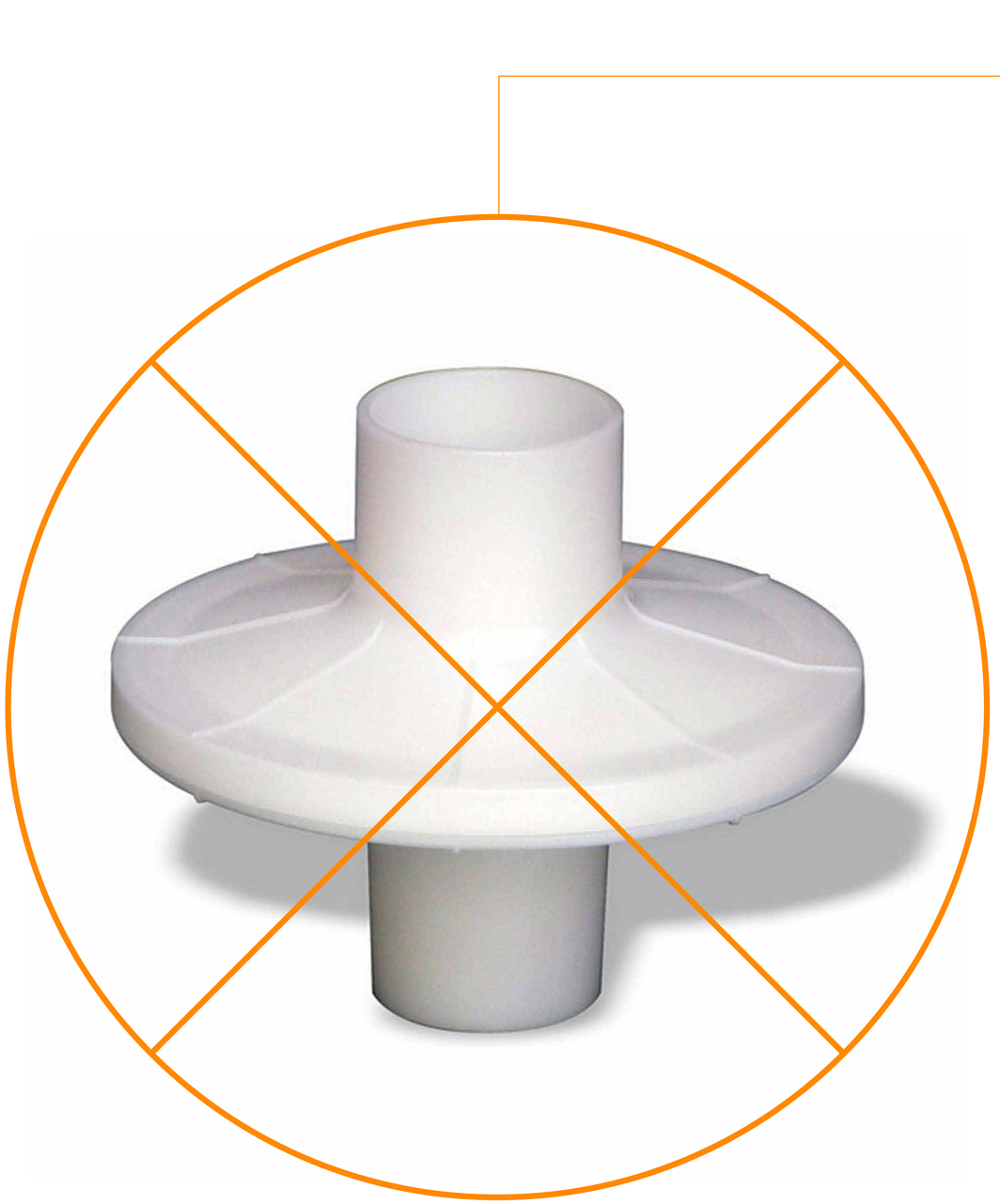
No Cross Contamination

The device is completely isolated (no contact of device sensor with contaminants)



Disposable Turbine

No Filter



No Filter

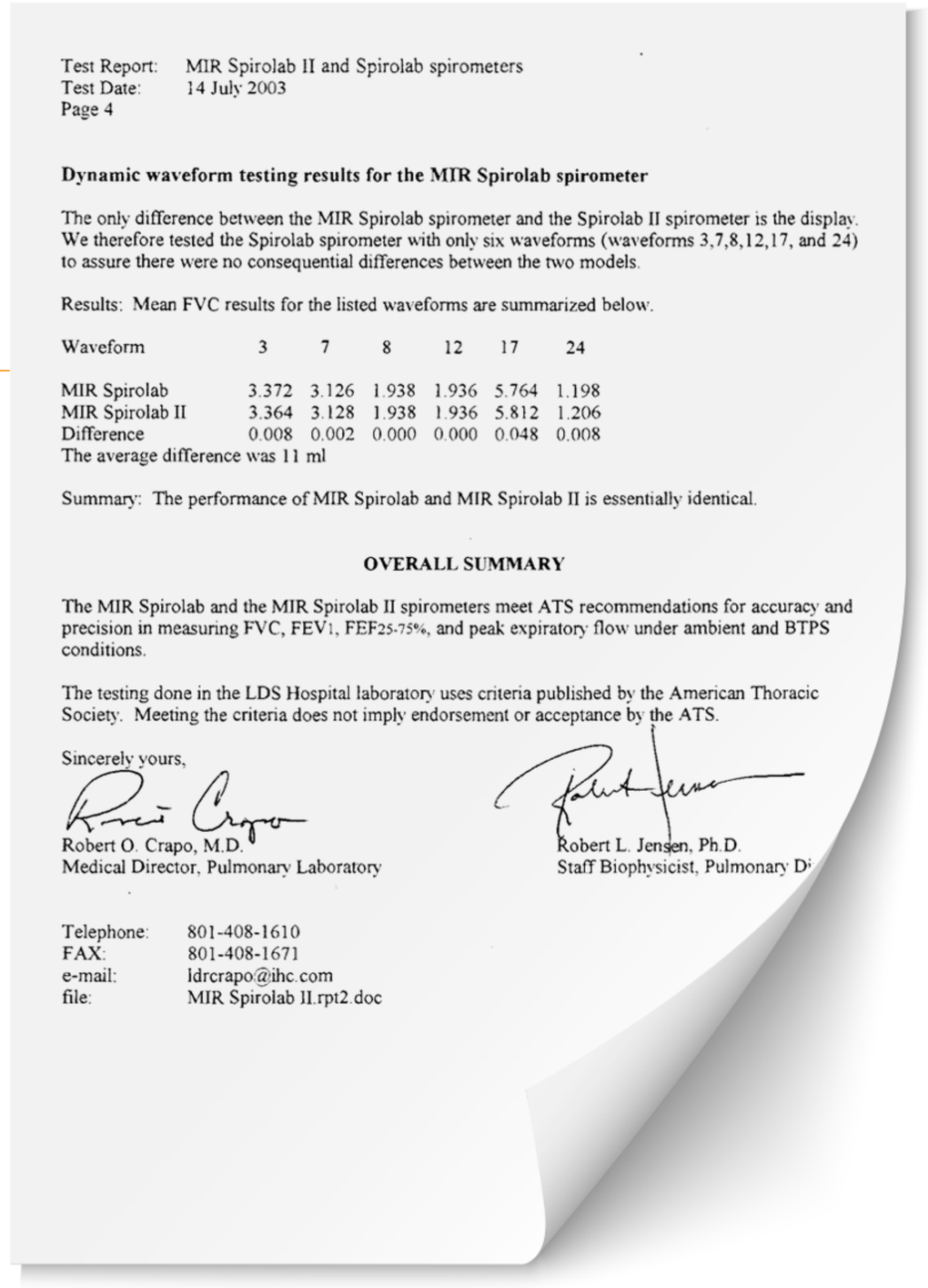
- ✔ *Less expensive than a filter*
- ✔ *Less cumbersome than a filter*
- ✔ *Filters only protect max up to 99%*
- ✔ *No resistance during test maneuvers*

USING MIR DISPOSABLE TURBINE IS LIKE HAVING A BRAND NEW SPIROMETER FOR EVERY PATIENT

Disposable Turbine
ATS Certification

ATS Certification

MIR's Turbine System is ATS (American Thoracic Society) Certified



Test Report: MIR Spirolab II and Spirolab spirometers
Test Date: 14 July 2003
Page 4

Dynamic waveform testing results for the MIR Spirolab spirometer

The only difference between the MIR Spirolab spirometer and the Spirolab II spirometer is the display. We therefore tested the Spirolab spirometer with only six waveforms (waveforms 3,7,8,12,17, and 24) to assure there were no consequential differences between the two models.

Results: Mean FVC results for the listed waveforms are summarized below.

Waveform	3	7	8	12	17	24
MIR Spirolab	3.372	3.126	1.938	1.936	5.764	1.198
MIR Spirolab II	3.364	3.128	1.938	1.936	5.812	1.206
Difference	0.008	0.002	0.000	0.000	0.048	0.008

The average difference was 11 ml

Summary: The performance of MIR Spirolab and MIR Spirolab II is essentially identical.

OVERALL SUMMARY

The MIR Spirolab and the MIR Spirolab II spirometers meet ATS recommendations for accuracy and precision in measuring FVC, FEV_1, $FEF_{25-75\%}$, and peak expiratory flow under ambient and BTPS conditions.

The testing done in the LDS Hospital laboratory uses criteria published by the American Thoracic Society. Meeting the criteria does not imply endorsement or acceptance by the ATS.

Sincerely yours,

Robert O. Crapo, M.D.
Medical Director, Pulmonary Laboratory

Robert L. Jensen, Ph.D.
Staff Biophysicist, Pulmonary Di

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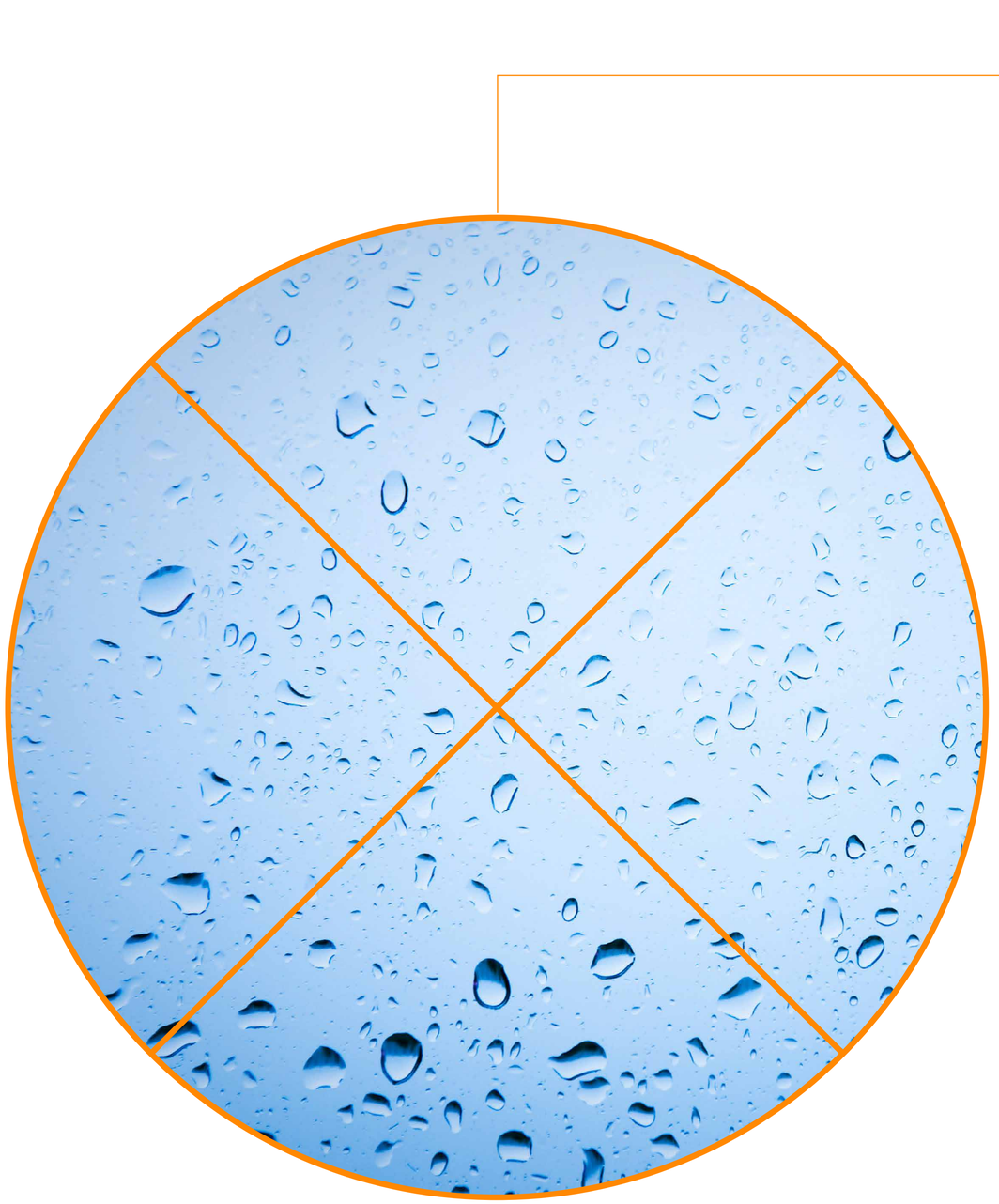
file: MIR Spirolab II.rpt2.doc

Disposable Turbine

No Vapour Condensation



No Vapour Condensation

Many other sensor are affected by Vapour Condensation causing a resistance that affects the measurements.
(Vapour Condensation is determined by the expiration gasses against a cold fixed surface)

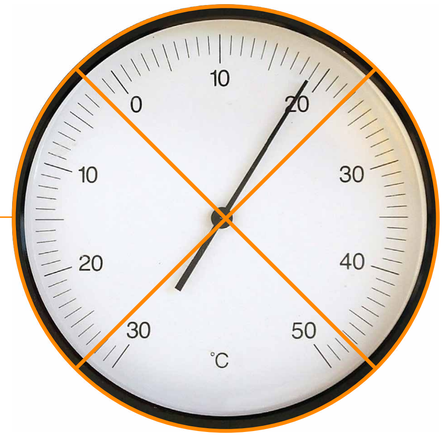
Disposable Turbine

No Ambient Influence

No Ambient Influence

Many other sensor types are dependent by ambient conditions and therefore are required the insertion of:

- ✔ *Temperature*
- ✔ *Pressure*
- ✔ *Humidity*
- ✔ *Viscosity*



THERMOMETER

HYGROMETER

BAROMETER

Disposable Turbine

The best Sensor

The best Sensor

	PNEUMOTACH	ULTRASONIC	TURBINE
Measurement changes with air: ✔ *Pressure* ✔ *Humidity* ✔ *Temperature* ✔ *Viscosity*	*YES*	*YES*	*NO*
Measurement changes due to condensation of water vapour in expiration	*YES*	*NO*	*NO*
Requires calibration	*YES*	*YES*	*NO*
Hygiene	✔ *Sensors not completely isolated from the device*	✔ *Sensors not completely isolated from the device*	✔ *Sensors completely isolated from the device*

MIR

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www.spirometry.com

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