

**Customer: ABC Corp**

Attn: SRO or CO #

GENERAL INFO			
<b>Manufacturer:</b>	IngMar Medical, Ltd.	<b>Calibration Date:</b>	2019/01/08
<b>Model:</b>	ASL 5000	<b>Calibration Due Date:</b>	2020/01/08
<b>Description:</b>	Breathing Simulator	<b>Procedure used:</b>	201034
<b>Serial Number:</b>	9999	<b>Laboratory Environment:</b>	
<b>Options:</b>	n/a	Temperature:	21.0 °C
		Humidity:	50.0 %

IngMar Medical, Ltd. certifies that the above instrument has been calibrated using standards traceable to the SI through National Institute of Standards and Technology (NIST) or other national metrology institutes, or to accepted values of natural physical constants, or derived by the ratio type of self-calibration techniques.

The reported uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. The reported uncertainty is valid only at the time of calibration and does not take into account any effects such as long-term drift, transportation or other factors that may affect the stability of this device. The results shown relate only to the item calibrated.

This certificate and any included reports shall not be reproduced, except in full, without written permission from IngMar Medical, Ltd. This calibration was performed in accordance with the requirements of ISO/IEC 17025.

STANDARDS USED		
ID	Description	Due Date
5007	Hans Rudolph 1L Syringe	2019/10/16
5012	Ebro Temp Sensor	2019/10/18
5011	Mensor Baro Pressure Meter (CPG)	2019/11/07
5010	Mensor Vacuum Pressure Meter (CPG)	2019/11/07
5013	Extech Temp & Humidity Data Logger	2019/06/11
5014	Fluke 287 Multimeter	2019/08/17

**Notes:**

Approved by: \_\_\_\_\_



**Anthony Rakow**

Calibration Manager

**MEASUREMENT RESULTS**
**AS FOUND**

Test Description	Reference Value	Lower Limit	Test Result	Upper Limit	Uncertainty
Cylinder Leak	< 40.0 mL/min	-	.0 mL/min	40.0 mL/min	n/a
Volumetric	1000.0 mL	980.0 mL	* .00 mL	1020.0 mL	8.3 mL
Barometric	.00 kPa	-.50 kPa	.0 kPa	.50 kPa	0.14 kPa
Pressure	.00 cmH <sub>2</sub> O	-.50 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.50 cmH <sub>2</sub> O	0.28 cmH <sub>2</sub> O
	.00 cmH <sub>2</sub> O	-.30 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.30 cmH <sub>2</sub> O	0.16 cmH <sub>2</sub> O
	.00 cmH <sub>2</sub> O	-.20 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.20 cmH <sub>2</sub> O	0.13 cmH <sub>2</sub> O
	.00 cmH <sub>2</sub> O	-.20 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.20 cmH <sub>2</sub> O	0.09 cmH <sub>2</sub> O
Temperature	.0 °C	-.5 °C	.0 °C	.5 °C	0.18 °C

\* Test result does not meet the specified tolerance.

**Options**

Test Description	Reference Value	Lower Limit	Test Result	Upper Limit	Uncertainty
Preemie Cylinder Leak	< 10.0 mL/min	n/a	n/a	n/a	n/a
O <sub>2</sub> at 20.9%	20.9 %	n/a	n/a	n/a	n/a
O <sub>2</sub> at 100%	99.7 %	n/a	n/a	n/a	n/a

**AS LEFT**

Test Description	Reference Value	Lower Limit	Test Result	Upper Limit	Uncertainty
Cylinder Leak	< 40.0 mL/min	-	.0 mL/min	40.0 mL	n/a
Volumetric	1000.0 mL	980.0 mL	* .00 mL	1020.0 mL	8.3 mL
Barometric	.00 kPa	-.50 kPa	.0 kPa	.50 kPa	0.14 kPa
Pressure	.00 cmH <sub>2</sub> O	-.50 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.50 cmH <sub>2</sub> O	0.28 cmH <sub>2</sub> O
	.00 cmH <sub>2</sub> O	-.30 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.30 cmH <sub>2</sub> O	0.16 cmH <sub>2</sub> O
	.00 cmH <sub>2</sub> O	-.20 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.20 cmH <sub>2</sub> O	0.13 cmH <sub>2</sub> O
	.00 cmH <sub>2</sub> O	-.20 cmH <sub>2</sub> O	.0 cmH <sub>2</sub> O	.20 cmH <sub>2</sub> O	0.09 cmH <sub>2</sub> O
Temperature	.0 °C	-.5 °C	.0 °C	.5 °C	0.18 °C

\* Test result does not meet the specified tolerance

**Options**

Test Description	Reference Value	Lower Limit	Test Result	Upper Limit	Uncertainty
Preemie Cylinder Leak	< 10.0 mL/min	n/a	n/a	n/a	n/a
O <sub>2</sub> at 20.9%	20.9 %	n/a	n/a	n/a	n/a
O <sub>2</sub> at 100%	99.7 %	n/a	n/a	n/a	n/a

**END OF MEASUREMENT RESULTS**
**Notes:**

\*Uncertainties marked "n/a" are not covered by IngMar Medical's Scope of Accreditation