



PROMETHION

# Standard Data Review Guide

2021

3840 N. Commerce Street  
North Las Vegas, NV 89032 USA  
Toll-Free: 800-330-0465  
Phone: 702-269-4445  
www.sablesys.com  
[support@sablesys.com](mailto:support@sablesys.com)

## IMPORTANT NOTICE

**Sable Systems products are intended for research applications or other processes but strictly exclude mission critical applications of any kind, life support systems for humans, and clinical or diagnostic applications for human subjects. Use of these products for any of the excluded uses is at the user's sole risk and discretion and will void the product warranty.**

IN NO EVENT SHALL SABLE SYSTEMS BE LIABLE FOR ANY DAMAGES OF ANY KIND, INCIDENTAL OR CONSEQUENTIAL, REGARDLESS OF THE LEGAL THEORY APPLIED, CAUSED DIRECTLY OR INDIRECTLY BY THE UNIT OR ITS INSTRUCTIONS OR ASSOCIATED COMPONENTS AND MATERIALS.

---

The unit described in this manual is warranted by Sable Systems to be free of defects in material or workmanship for a period of three (3) years from date of purchase. If a problem develops during that period, contact Sable Systems with a description of the problem. Most problems are caused by inappropriate connections and can be diagnosed at a distance. If the problem is clearly caused by a defect in the unit, Sable Systems will issue you with a Return Material Authorization (RMA). Ship the unit, freight prepaid, to Sable Systems, enclosing the RMA and any further information that may be helpful in diagnosing the problem. **Sable Systems cannot accept responsibility for goods returned without an RMA.** Sable Systems will at its discretion repair or replace the affected unit. After the warranty period has expired, Sable Systems offers a repair service at a reasonable price. **The above warranty specifically excludes damages caused by misuse, abuse or unauthorized modifications or repairs.**

## Table of Contents

Standard Calibration Coefficients .....	4
Standard Data Values.....	5
Technical support contact information: .....	7

## Standard Calibration Coefficients

Table 1: Standard Calibration Coefficients

Component	Standard Values
<b>O<sub>2</sub></b>	<ul style="list-style-type: none"> <li>e.g. [0.0001296], [1605.9080811]</li> <li>The first value, the O<sub>2</sub> zero, should be &lt;0.001.</li> <li>The second value, the O<sub>2</sub> span, should be between 1400-1950.</li> </ul>
<b>CO<sub>2</sub></b>	<ul style="list-style-type: none"> <li>e.g. [0.9938183, 1.0077196], [0.9669094], [149, 143]</li> <li>The first value, RZCOEFF, should be between 0.95-1.1 for a CGF system and between 1.20-1.40 for a GA3 system.</li> <li>The second value, GZCOEFF, should be between 0.95-1.1 for a CGF system and between 1.20-1.40 for a GA3 system.</li> <li>The third value, the CO<sub>2</sub> span, should be ~1 (0.92-1). This value is set during the gas calibration. If the value is not correct, perform a gas calibration and verify that the CO<sub>2</sub> span is in the expected range.</li> <li>The fourth and fifth values are GasPot and RefPot, which should not change. These values should not reach the maximum gain parameter of 255 for a CGF system. GA3 systems do not have GasPot and RefPot coefficients.</li> </ul>
<b>WVP</b>	<ul style="list-style-type: none"> <li>e.g. [0.3557117], [1.0430171]</li> <li>The first value, the WVP zero, should have an absolute value between 0-0.5 (can be either a positive or negative value).</li> <li>The second value, the WVP span, should be ~1 (0.95-1.07).</li> </ul>
<b>Mass Monitor</b>	<ul style="list-style-type: none"> <li>e.g. MM-X_1_1 [0.1703321], [202.5388641]</li> <li>The first number, the mass monitor zero, should have an absolute value between 0-3 (can be either a positive or negative value).</li> <li>The second number, the mass monitor span, should have an absolute value between 180-270 (can be either a positive or negative value).</li> </ul>
<b>FR8 Flow Blade</b>	<ul style="list-style-type: none"> <li>e.g. FR8_A_mfm_3 [1.006421]</li> <li>The slope should be ~1 (.95-1.05).</li> </ul>
<b>CGF Flow Blade</b>	<ul style="list-style-type: none"> <li>e.g. FLOW_1: [0.0], [1.0001364]</li> <li>The first value, the offset, should be 0.</li> <li>The second value (slope) should be ~1 (.95-1.05).</li> </ul>

\* A sensor that did not respond will have [NR], NO RESPONSE, for its calibration coefficients.

If the above-mentioned coefficients are not within the stated ranges, then please perform an appropriate calibration. If the issue persists, then contact Sable Systems support.

## Standard Data Values

Table 2: Standard Data Values

Data Channel	Standard Range	Notes
<b>O<sub>2</sub></b>	19-21% STP	Reported values are not BP corrected and may read lower due to dependence on altitude.
<b>CO<sub>2</sub></b>	0.04-0.4% STP	Higher values are possible, but not recommended for animal welfare.
<b>WVP</b>	0.5-3 kPa	Water vapor pressure, the index of the amount of water in the air.
<b>BP</b>	94-104 kPa	Expected range at sea level and is dependent on altitude.
<b>Set_AnTemp</b>	37 °C	Gas analyzer temperature setpoint.
<b>An_Temp</b>	36-37 °C	Should be within 1°C of Set_AnTemp
<b>Set_SubFR</b>	250 ml/min	Default SubFR setpoint is 250 ml/min.
<b>SubFR</b>	250 +/- 25 ml/min	Should match Set_SubFR setpoint as closely as possible.
<b>SetFR</b>	2000 ml/min 3500 ml/min	Default FR setpoint is 2000 ml/min for mice. Default FR setpoint is 3500 ml/min for rats.
<b>FR</b>	2000 +/- 100 ml/min 3500 +/- 100 ml/min	Should match SetFR setpoint for mice as closely as possible. Flow rate can briefly have a fluctuation greater than +/- 100 ml/min when switching sampling from cage to cage. Should match SetFR setpoint for rats as closely as possible. Flow

		rate can briefly have a fluctuation greater than +/- 100 ml/min when switching sampling from cage to cage.
<b>XBreak</b> <b>YBreak</b> <b>ZBreak</b>	A few thousand per day	This data is model specific and may vary significantly between animals.
<b>FoodIn</b>	~3-5 g/day	These values are for mice and may depend on body size, strain, etc.
	~15-35 g/day	These values are for rats and may depend on body size, strain, etc.
<b>WaterIn</b>	~3-5 g/day	These values are for mice and may depend on body size, strain, etc.
	~20-40 g/day	These values are for rats and may depend on body size, strain, etc.
<b>BodyMass</b>	5-50 g	Typical mouse mass.
	150-600 g	Typical rat mass.
<b>WheelMeters</b>	Several km/day	Up to 7-8 km have been seen in a single night.
<b>PedMeters</b>	Few hundred m/day	At most a few hundred meters per night.
<b>VO<sub>2</sub></b>	1.0-3.0 ml/min	Value valid for a typical mouse, but also depends on size and strain.
<b>VCO<sub>2</sub></b>	0.8-2.5 ml/min	Usually a bit less than VO <sub>2</sub> .
<b>RER</b>	0.7-1.0	Can be as low as 0.5 during starvation or up to 1.2 during lipogenesis. Check body mass to see if mouse is losing mass or gaining mass, respectively.
<b>EE</b>	0.3-0.6 kcal/hr	Calculated using Weir equation <sup>1</sup> and VO <sub>2</sub> = 1 ml/min, RER = 0.85.

Physiological data for different mice strains can be found at <https://phenome.jax.org/>.

<sup>1</sup> Weir (1949): New methods for calculating metabolic rate with special reference to protein metabolism. J Physiol. 109:1-9.

Technical support contact information:

**For Sable Systems International:**

**Email: [support@sablesys.com](mailto:support@sablesys.com)**

**Telephone: 702-269-4445**

**Toll Free: 800-330-0465**



**3840 N. Commerce Street  
North Las Vegas, NV 89032 USA**

**For Sable Systems Europe:**

**Email: [support@sablesys.com](mailto:support@sablesys.com)**

**Telephone: +49 30 5304 1002**



**Sable Systems Europe GmbH  
Ostendstr. 25  
D-12459 Berlin, Germany**