



# DataRX-C™

a sensor reader and analyzer that plugs into our custom-designed software

## Benefit

DataRX-C™ can record, analyze, and plot real-time data from a variety of sensor units. This makes DataRX-C™ a powerful, multipurpose tool. DataRX-C™ provides crucial data and analysis for applications such as robotics, navigation, control, augmented reality, virtual reality, gaming, and more.

## Hardware Feature

- convenient, comfortable and reliable
- standalone measurement system
- embedded sensor suite
- simple USB interface for transferring the data measured
- automated calibration.

## Measurement

DataRX-C™ provides orientation data and dynamic information in 3D:

- roll, pitch, and yaw (Euler) angles
- linear accelerations (3 DOFs)
- angular accelerations (3 DOFs)
- angular velocity (3 DOFs)
- magnetic field (3 DOFs)
- jerk components (3 DOFs)
- several key performance indicators (KPIs).

## Description

DataRX-C™ is a state-of-the-art sensor reader and analyzer that plugs into our custom RX-UI™ software to read and analyze sensor data. RX-UI™ restores/plots sensor data, interprets data in real-time, and provides advanced statistical data analysis. DataRX-C™ can mount to any surface with the provided straps. The sensor data transfers to any computer by using a USB or mini-USB cable.

## Software Feature

- free standalone software development kit (SDK)
- configure multiple sensors at the same time
- export signals to CSV or Excel format
- advanced statistical analysis toolbox.

## Mechanical Specification

<b>Mass (g)</b>	<100
<b>Enclosure Material</b>	APL
<b>Mounting</b>	Strap-Glue
<b>Length (mm, in)</b>	<(50,5)
<b>Width (mm, in)</b>	<(30,1)
<b>Thickness (mm, in)</b>	<(30,1)
<b>Ingress Protection</b>	IP54
<b>Color</b>	Vary

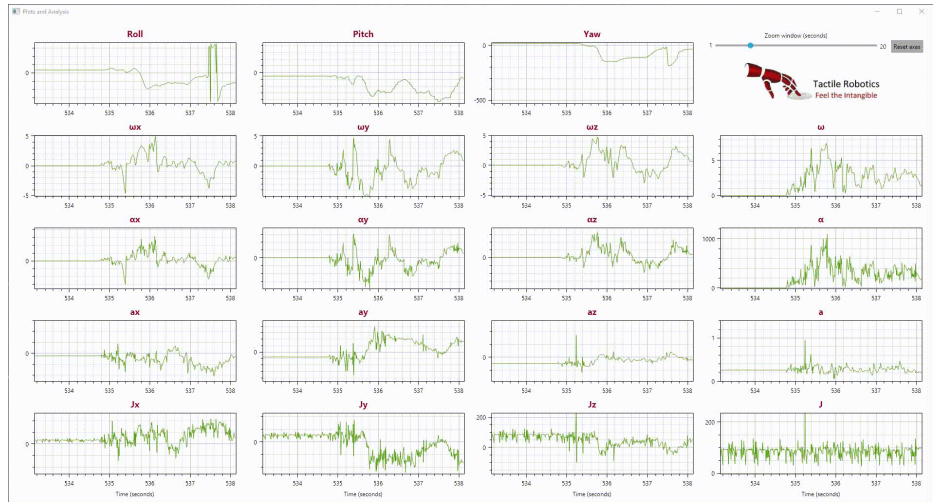


# Platform Integration

DataRX-C™ includes our custom RX-UI™ software, which is compatible with Windows, macOS, and Linux. RXUI™ allows you to perform the following actions:

- record and store sensor data from the connected DataRX-C™ sensor reader for future use.
- view the performance report for each sensor recording at any time.
- calibrate sensors to provide the most accurate results for your environmental setup.

For your convenience, we provide DataRX-C™ with its SDK, developed in .NET Standard, which is available for all supported OS platforms. The SDK easily connects DataRX-C™ to your desired development environment, such as the Unity™ game development engine.



For more information please visit: <https://tactilerobotics.ca/datarx-c/>



# Specification

Parameter	Test conditions
Linear acceleration sensitivity	0.061 (FS = ±2)
	0.122 (FS = ±4)
	0.244 (FS = ±8)
	0.488 (FS = ±16)
Angular rate sensitivity	8.75 (FS = ±245)
	17.50 (FS = ±500)
	35 (FS = ±1000)
	70 (FS = ±2000)
Linear acceleration sensitivity change vs. temperature	±1 (from -40° to +85° delta from T=25°)
Angular rate sensitivity change vs. temperature	±1.5 (from -40° to +85° delta from T=25°)
Linear acceleration typical zero-g level offset accuracy	±40
Angular rate typical zero-rate level	±10
Linear acceleration zero-g level change vs. temperature	±0.5
Angular rate typical zero-rate level change vs. temperature	±0.05
Rate noise density	7
Acceleration noise density	90 (FS=±2 g, ODR=104 Hz)

Parameter	Test conditions
Sensitivity	6842 (FS = ±4 gauss)
	3421 (FS = ±8 gauss)
	2281 (FS = ±12 gauss)
	1711 (FS = ±16 gauss)
Zero-gauss level	±1 (FS = ±4 gauss)
Magnetic disturbance field	Zero-gauss offset starts to degrade
Operating temperature range	-40



# Application

DataRX-C™ includes our custom RX-UI™ software, which is compatible with Windows, macOS, and Linux. RX-UI™ allows you to perform the following actions:

- vibration and handling shock (drop height) measuring of distribution/ packaging environment
- tank level monitoring
- sport medicine
- environmental monitoring
- vehicle Testing
- science education applications including enabling measurement, scientific investigation and an appreciation of change
- veterinary vital signs monitoring including recording trend data at regular intervals
- study kinematics of the human body
- measure motion characteristics of conventional tools such as a bipolar forceps in surgery and handpiece.



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