

# Pulse-40v2 Performance specifications

## Accelerometers specifications

 Preliminary

These performance specifications are preliminary and will be confirmed after complete qualification.

	Typical	Units	Notes
Measurement range	±40	g	
Scale Factor error	500	ppm	Over ±1g, one year accelerated aging
Non-linearity (ppm of FS)	25	ppm	Over ±1g, one year accelerated aging
Long-term bias repeatability	1250	μg	One year accelerated aging
In-run bias instability	6	μg	Allan Variance method, constant temperature
Velocity Random Walk	0.02	m/s/h	Allan Variance method, constant temperature
Noise spectral density	40	μg/Hz	Wide-band noise [0 to 100] Hz
Misalignment	1	mrad	Over temperature range
Orthogonality	0.07	mrad	Over temperature range
Vibration Rectification Coefficient (VRC)	0.03	mg/g <sup>2</sup>	10g RMS - random vibrations 20Hz to 2kHz
Bandwidth	250	Hz	-3dB point
Sampling rate	4.0	kHz	


## Gyroscopes specifications

 Preliminary

These performance specifications are preliminary and will be confirmed after complete qualification.


	Typical	Units	Notes
Measurement range	±499 ±4000*	°/s	490 °/s is the default range.
Scale Factor error	500	ppm	One year accelerated aging
Non-linearity (ppm of FS)	25	ppm	One year accelerated aging
Long-term bias bias repeatability	150	°/h	One year accelerated aging
In-run bias instability	0.6	°/h	Allan Variance method, constant temperature
Angular Random Walk	0.08	°/h	Allan Variance method, constant temperature
Noise spectral density	5.0	°/h/Hz	Wide-band noise [0 to 100] Hz
Misalignment	1	mrad	Over temperature range
Orthogonality	0.07	mrad	Over temperature range
Vibration Rectification Coefficient (VRC)	0.02	°/h/g <sup>2</sup>	10g RMS - random vibrations 20Hz to 2kHz
Acceleration sensitivity	10	°/h/g	Tested over ±1g

<b>Bandwidth</b>	250	Hz	-3dB point
<b>Sampling rate</b>	6.6	kHz	

 4000°/s version is export controlled.

## Magnetometers specifications

A set of three Anisotropic Magneto-resistive magnetometers is embedded within the all the Pulse-40. This technology provides a very high sensitivity compared to coil based technologies.

 Magnetometer sampling design makes it impossible to reject signal frequencies above 75Hz. User should ensure that high frequency noise is not disturbing magnetometers at the sensor's location.

	<b>Specifications</b>	<b>Remarks</b>
<b>Full scale (Gauss)</b>	50	
<b>Scale factor stability (%)</b>	0.5	
<b>Noise (mGauss)</b>	3	Over 1 to 25 Hz band
<b>Bias stability (mGauss)</b>	1	
<b>Bandwidth (Hz)</b>	22	-3dB attenuation
<b>Resolution (mGauss)</b>	1.5	
<b>Sampling rate (Hz)</b>	100	
<b>Orthogonality (°)</b>	0.1	Achievable after magnetic calibration