



W8-R500D40

**W8 Shock Sensor**

**\$5,000.00**

Aluminum 7075  
 Piezoresistive Accelerometer: ± 500g  
 Digital Capacitive Accelerometer: ± 40g  
 Battery: 4000 mAh  
 Storage: 16 GB

**W8-R500D40**

The W8-R500D40 is a shock recorder with a high-performance piezoresistive accelerometer, a secondary capacitive accelerometer and other environmental sensors. It uploads directly to the enDAQ cloud over WiFi after completing a recording yet this wireless connectivity can be configured to be off when desired. This model is most popular for shock testing. Its aluminum enclosure improves reliability in harsh environments and widens its frequency response. The W8 offers an impressive 4,000 mAh battery (our largest) to allow for the longest recording times of our sensors.

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**Coronavirus Update:** Please note that delivery times may be affected; for more information please [click here](#), or contact our [Customer Success Team](#)

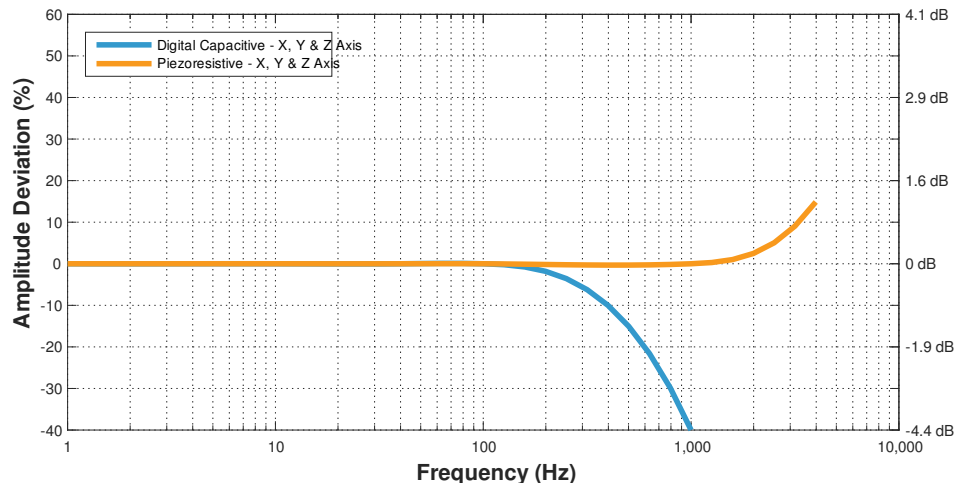
**Product Features**

- **Convenient, Adaptable, and Reliable** [Learn More](#)
- **Standalone Wireless Measurement System**  
 Embedded sensors, storage, WiFi connectivity, & power
- **Selectable High-Performance Accelerometers**  
 Variable capacitance, piezoelectric & piezoresistive  
 Selectable measurement range from 16g to 2,000g  
 Selectable sampling rate up to 20,000 samples per second
- **Up to 8 Billion Data Points of Memory**
- **Embedded Sensor Suite**  
 Gyroscope, magnetometer, pressure, temperature, humidity & light  
 Now includes GPS and Microphone
- **Triggering from Sensors and/or Time-Based**
- **Rechargeable Battery Life of Many Days**  
 Extend battery life with triggering and/or external power
- **Simple USB Interface for Download & Charging**
- **NIST Traceable Calibration**
- **Trusted by Over 2,000 Different Commercial Customers**

**Accelerometer Specifications**

Accelerometer Type	Range	Sampling Rate	Bandwidth	Noise	Resolution
Piezoresistive	± 500g	20,000 Hz	0 to 2,000 Hz	< 0.40 gRMS	0.015 g
Digital Capacitive	± 40g	4,000 Hz	0 to 300 Hz	< 0.01 gRMS	0.00008 g

## Frequency Response Plot



## Additional Sensor Specifications

Sensor	Measurement Range	Resolution	Sampling Rate
Microphone	105 dB		0 (off) to 20,000 Hz
GPS Location		2.5 m	0 (off) to 1 Hz
GPS Time		60 ns	0 (off) to 1 Hz
Gyroscope	2000°/s	0.06 °/s	0 (off) to 3,200 Hz
Magnetometer	± 1300 μT	0.3 μT	0 (off) to 10 Hz
Temperature	-40 to 85 °C	0.01 °C	0 (off) to 10 Hz
Pressure	1 to 200 kPa	1.6 Pa	0 (off) to 10 Hz
Humidity	0 to 100 %RH	0.04% RH	0 (off) to 10 Hz
Light	0 to > 20 uV	<100 mlx	0 (off) to 4 Hz

## Environmental Specifications

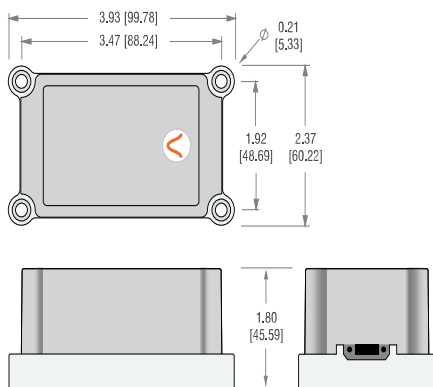
Parameter	Range	Notes
Operating Temperature	-40°C to 80°C (-40°F to 176°F)	
Recommended Storage Temperature	15°C to 30°C (59°F to 86°F)	Recharging Temperature 0°C to 45°C (32°F to 113°F)
Humidity	0 to 95 %RH	Non-Condensing
Pressure	20 kPa to 110 kPa (2.9 psi to 16.0 psi)	Absolute Pressure
Shock Limit	>3,000 g	<a href="#">Refer to Shock Report (PDF)</a>
No Electric Field Susceptibility	2 MHz to 18 GHz @ 200 V/m	<a href="#">Refer to EMI Test Report (PDF)</a>
No Magnetic Field Susceptibility	30 Hz to 100 kHz	<a href="#">Refer to EMI Test Report (PDF)</a>

## Battery & Storage Performance

Battery performance is heavily dependent upon the device configuration (sensor sample rates and triggers), battery age (including charging cycles), temperature, and WiFi interference/strength. The following table provides the battery life and storage capacity of this device assuming it has a relatively new battery and it is at room temperature. When showing performance it assumes all sensors are on at the default sample rate with the main accelerometer sample rate driving performance. **It also assumes wireless upload is turned OFF. If the device is uploading to the cloud after every recording, assume a battery life of 50% that listed below.** With triggers, it assumes the device is in trigger mode 99% of the time. Here are some additional resources: [Measurement Settings](#), [Battery Specifications](#), [Battery Life Estimator Tool](#).

Sample Rate	Storage Capacity	Continuous Recording	Main Accel. Trigger	2nd Accel. Trigger	Periodic/Time Trigger
100 Hz	44 days	7 days	8 days	33 days	2.0 years
1,000 Hz	18 days	7 days	8 days	33 days	1.9 years
5,000 Hz	6 days	6 days	8 days	33 days	1.7 years
20,000 Hz	34 hours	3 days	8 days	33 days	320 days

## Dimensions



## Mechanical Specifications

Mass	250 grams
Case Material	Aluminum Base, Polycarbonate Top
Mounting - Screw	10-32 Bolts (23 ft-lb)
Mounting - Tape (Double Sided)	3M 950 Tape
Length	99.8 mm (3.93")
Width	58.6 mm (2.31")
Thickness	45.6 mm (1.80")
Ingress Protection	IP 50 (Dust Protected)

## Free Software Features

- **enDAQ Cloud** Access Data Remotely within Seconds of a Recording Receive Email Alerts Share Recording Files with URL Free for 1 Sensor and 100 GB of Storage \$100/Month for 5 Sensors and 500 GB of Storage
- **Free Standalone Software Packages** [Lab](#) - Configuration, Quick Snapshot, Batch File Conversion [Analyzer](#) - Analysis of enDAQ Sensor Data in MATLAB
- **Configure Sensors for Measurement**
- **Export/Convert Data to CSV or MATLAB**
- **Analysis** FFT PSD Spectrogram Digital Filtering

