The SAVER™ 9X30 is a self-powered field data recorder with an internal tri-axial accelerometer, and six externally configurable channels. The 9X30 is provided with temperature, humidity and atmospheric pressure sensors and can be optionally configured with onboard GPS logging capability. Powered with 9V lithium batteries, the instrument and will operate continuously for up to 30 days.

Measure transport hazards in the field.
Use the results to construct laboratory testing.
Continue monitoring the field to see if anything changes.
**SAVER™ 9X30**

**FEATURES**

**Field-to-Lab®**

Use SaverXware™ software to analyze data captured with SAVER™ instruments, and seamlessly create random vibration test profiles that can be easily imported into Lansmont TouchTest Vibration Controllers for immediate use. Only Lansmont offers this cross-platform integration.

**30 Day Battery Life:**

SAVER 9X30 is powered by two 9V batteries located on the side of the unit. The unit will run for 30 days on lithium batteries (15 days on alkaline batteries). Step-by-step instructions are provided in SaverXware™ for replacing the batteries.

**Nine Dynamic Measurement Channels:**

The 9X30 incorporates a dedicated internal tri-axial with 6 external accelerometer inputs, along with temperature, humidity, atmospheric pressure sensors. Sampling rates up to 10KHz per channel provide unparalleled portable measurement capability. The 9X30 includes built-in signal conditioning for all of the dynamic channels along with selectable recording ranges and filters.

**OPTIONS**

**9X-GPS Configuration:**

Optionally configured as the SAVER™ 9X-GPS, the internal GPS hardware adds valuable location and speed detail to your measurement data. This detail is directly part of the SaverXware™ data stream, requiring an intermediate import and synchronization.

**External Battery Pack:**

Lansmont offers External Battery Pack options that can extend the continuous operation from one to multiple months of run time.

**Mounting Kits:**

Mounting kits can make it easier to fix SAVER™ 9X30’s to vehicles or structures. Kits include mounting plates and attachment hardware. If you are attaching to a ferrous surface, magnetic mounting kits are available.

**Data Analysis Center:**

Trust Lansmont data specialists to interpret your data and provide you with even greater confidence. Lansmont data specialists are experts at acquiring, analyzing and summarizing data; if you need help defining parameters or protocols, we can help.
SAVER™ 9X30

SaverXware™

Each SAVER™ purchase includes Lansmont’s SaverXware™, the easy-to-use software that communicates with the SAVER™ 9X30 for setup prior to recording — as well as data analysis once you’ve collected some data. Data analysis features include drop heights, impacts, vehicle motion, vibration, as well as temperature and humidity cycles.

**Measurement Setup**

Users are provided with simple, standard setup gateways for common measurement applications. Advanced setup options provide complete control over all setup parameters, providing unparalleled capability for instrument users.

**Data Analysis**

Powerful individual and multi-event summary analyses providing time-history, frequency domain, and vector visualizer playback and review.

**Event Table and History**

Multi-data files can be viewed in single, common project databases. The data file’s measured events are chronologically presented in event tables, which are positioned underneath measurement Quick Histories. The Quick Histories display the captured data from the project beginning to end in one view. Corresponding event thumbnails are updated as different events are highlighted in the table.

**Summary Event Selection**

Extremely useful event selection options based upon acceleration and Grms levels, time occurrence, type of event and even impact type and orientation. A quick history zoom-to-summary option with user-defined range cursors is provided as an alternative summary selector.

**Summary Reporting and Export**

Generate user-defined project summary reports and print to document measurement results. Additionally, export the project data itself to ASCII files for analysis and reporting using universally available software applications.

**GPS Integration**

Externally captured GPS data can be imported and automatically synchronized with 9X30 events. Optionally configured as a 9X-GPS, position and speed data will automatically be directly embedded into captured data files. This adds further value and definition to your measurement results.
Do you know what kinds of hazards your products must endure within their transport or in-use environments? The SAVER™ 9X30 Field Instrument is the right tool for thoroughly measuring dynamic and climatic conditions in manufacturing, transport, and in-use environments.

Effective integration of measurement and monitoring programs provide customers the ability to:

- Characterize the dynamic and climatic hazards within a given environment
- Establish product design criteria
- Develop laboratory testing and simulation criteria
- Audit distribution channels and carriers
- Establish liability in transport damage situations
- Determine normal vs. abnormal handling and transport of your goods
- Create climatic histograms of environmental conditions (Temp/RH)
## SPECIFICATIONS

### PHYSICAL
- **Size:** 5.0 x 4.9 x 1.7 in. (127 x 124 x 43 mm)
- **Volume:** 41.2 in.³ (675 cm³)
- **Chassis Material:** 6061-T6 anodized aluminum
- **Weight:** 35.0 oz. (1 kg)
- **Environmental:** Weather Resistant
- **Mounting:** 4 thru holes for #8 screws

### DATA ACQUISITION
- **Sampling Rates:** 50, 100, 200, 250, 500, 1000, 2500, 5000 and 10,000 samples per second
- **A/D Conversion:** 16-bit

### INTERNAL CHANNELS
- **Accelerometer Type:** Tri-axial piezoelectric
- **Acceleration Ranges:** 5, 10, 20, 50, 100 and 200 g (full-scale)
- **Anti-Alias Filter:** 4-pole, low-pass Butterworth filter 10, 20, 25, 50, 100, 200, 250 and 500 Hz (cut-off frequency)
- **Software Filters:** 1 or 2-pole, low-pass RC post-process filters 0 to 10 kHz (cut-off frequency)
- **3-dB Frequency Response:** 0.4 Hz to filter setting
- **Instrument Noise Floor:** 0.02 Grms typical at 500 Hz bandwidth
- **Dynamic Range:** 80 dB typical
- **Measurement Accuracy:** ±5% with nominal variations in temperature and frequency

### DATA RECORDING
- **Signal Trigger:** User programmable acceleration (g) threshold
- **Timer Trigger:** User programmable "wake-up" interval
- **Pre-Trigger:** User-programmable signal event pre-trigger
- **Data Retention Modes:** Max. Override, Fill / Stop, Wrap / Overwrite
- **Temperature / Humidity / Atmospheric Pressure:** Temperature, RH and Atmospheric Pressure readings recorded for each event

### MEMORY
- **Memory Size:** 128 MB
- **Memory Type:** Non-volatile FLASH
- **Memory Retention:** Retains data even when batteries are exhausted or removed

### SOFTWARE / COMMUNICATIONS
- **User Interface:** SaverXware™ software
- **Compatibility:** Microsoft Windows® XP (SP3), Vista, 7
- **COM Interface:** USB 1.1 or 2.0 compatible
- **Data Rate:** 400 kB/s (typical)

### CONTROLS AND INDICATORS
- **Controls:** Run / Stop button
- **LED Indicators:**
  - Green: Run
  - Red: Alarm
  - Yellow: Stop
  - Green: USB cable connected

### Optional Embedded GPS (9X-GPS):
- **Antenna:** External with SMA connector and magnetic mount
- **Data Acquisition:** GPS position recorded with every event
- **Run Time:** 100 hours of vehicle movement on lithium batteries
  50 hours of vehicle movement on alkaline batteries
  GPS turns off when instrument is not moving

### EXTERNAL CHANNELS
- **Number of Channels:** 6
- **Input Modes:** Charge and Voltage
- **Anti-Alias Filter:** 4-pole, low-pass Butterworth filter 10, 20, 25, 50, 100, 200, 250, 500, 1,000, 2,000, and 2,500 Hz (cut-off frequency)

#### Charge Mode:
- **Accelerometer Type:** Piezoelectric
- **Input Sensitivity:** 0.3 to 30.0 pC/g
- **Acceleration Ranges:** 5, 10, 20, 50, 100, and 200 g (full scale)
- **3-dB Frequency Response:** 0.4 Hz to filter setting
- **Measurement Accuracy:** ±5% with nominal variations in temperature and frequency

#### Voltage Mode:
- **Input Range:** ±5 volts AC or DC
- **Input Sensitivity:** 0.3 to 5000mV/g
- **AC Response:** 0.4 Hz to filter setting
- **3-dB Frequency DC Response:** DC to filter setting
- **Measurement Accuracy:** ±5% with nominal variations in temperature and frequency

### ENVIRONMENTAL
- **Operating Temperature:** -40° to +60°C (-40° to +140°F) using lithium batteries
  -20° to +54°C (-4° to +130°F) using alkaline batteries
- **Temperature Measurement / Accuracy:** -40° to +60°C (-40° to +140°F)
  ±1.0°C from +5° to +40°C; ±1.5°C from -40° to +60°C
- **Humidity Measurement / Accuracy:** 5% to 95% RH, non-condensing
  ± 4% from 5% to 95% RH at 25°C
- **Atmospheric Pressure Measurement Range:** 10 to 1100 mbar.
- **Measurement Accuracy:** ±4 mbar from 750 to 1100 mbar at 25°C

### POWER
- **Internal:** 2 lithium or alkaline 9V batteries
- **External:** Extended run-time options available
- **Continuous Run Times:**
  - 30 days using lithium batteries
  - 15 days using alkaline batteries
  - Extended run-time options available
SAVER™ 9X30

SYSTEM DRAWINGS – MOUNTING DIMENSIONS

ISOMETRIC VIEW

Note: Dimensions in inches [ millimeters ]

MOUNTING OPTIONS

MAGNET MOUNT

STANDARD MOUNT

Note: Dimensions in inches [ millimeters ]