High-sensitive receiver
Allows the GPS/GLONASS antenna to be installed inside a vehicle for measurement*

Less than half the volume of previous models
Can be easily used in vehicles

Data logging without a PC
Convenient and easy to use

*Measurement may not be possible depending on the vehicle shape and environmental conditions.
The LC-8300 was developed for high sensitivity, small size, and data recording in the main unit.

The high sensitive receiver allows the GPS/GLONASS antenna to be installed inside a vehicle*, while the small size makes installation simple. Data is stored in the main unit, eliminating the need for a permanent connection to a PC.

### Main features of LC-8300

- **Small size means easy installation**
  The volume of the main unit is just 30% that of previous models. Since an inertial measurement unit (IMU) is integrated, the number of installed units is reduced. Even in vehicles with limited space, such as two-wheel vehicles and construction vehicles, the unit is easy to install for optimum operation.

- **High sensitivity enhances measurement**
  The highly sensitive GPS receiver and support for GLONASS satellites ensure stable measurement in adverse conditions that previous models cannot cope with. Measurement is possible even if the antenna is installed on the dashboard of a vehicle**, supporting a wide range of applications including coasting tests and data collection in poor conditions for capturing satellite signals.**

- **Speed interpolation is possible via vehicle speed pulses and CAN**
  If satellite signals cannot be captured, speed interpolation will be made by selecting from IMU, pulse and CAN.
  1. Speed interpolation by inertial navigation system using IMU.
  2. Speed interpolation based on the frequency of input pulses.
  3. Speed interpolation using signals from CAN.

### Small size

![Small size](image)

**Interpolation function**

- Previous models
- 70% reduction in volume

### High sensitivity

- **High functionality**
  Accuracy of ±0.2 km/h (speed) and ±0.2% (distance).
  Measurement of more than 80 channels*** with analog, pulse and CAN inputs are available as standard.

- **Various measurement items**
  - LC-0825 IMU data output function (option)
  - LC-0826 Vertical direction measurement function (option)

### Expandable measurement items optionally

- LC-8300 can measure vehicle speed, distance, latitude and longitude as standard measurement items. By adding optional IMU data output function and vertical direction measurement function, the tri-axial acceleration/angle/angular velocity, gradient and vertical direction speed can be measured and recorded.

### Useful software

- **Testing and logging functions**
  - Internal storage memory*3
  - USB flash memory (the above photo)
  - Data can be stored in: USB flash memory, downloading to a PC.
  - All data can be stored in USB flash memory.

### Easy to operate

- **Easy operation**
  The touch panel display improves visibility and ease of operation. Test results can be checked on a large screen.

### Measurement and logging can be performed on the main unit

- Data can be stored in:
  - USB flash memory (the above photo)
  - Internal storage memory*3
- Stand Alone Test mode includes:
  - Starting acceleration test**
  - Passing acceleration test**
  - Brake test (MFDD)**
  - Brake test (ABS)**
  - Fade recovery brake test**
  - Interval measurement test (horizontal/vertical)

### Information

- Types of satellites
  - GPS, short for Global Positioning System, is a positioning system using satellites launched by the U.S..
  - GLONASS is a positioning system using satellites launched by Russia.
  - GALILEO is being developed by the EU and Michibiki launched by Japan.

- Ono Sokki’s sites
  - Ono Sokki has three development and manufacturing sites, and 10 sales offices in Japan. We also have offices in the U.S., China, India and Thailand. Visit our website for details.

- *1: When data is stored in the internal storage memory, downloading to a PC may take time depending on the amount of data.
- *2: Including optional measurements
- *3: Requires optional hardware brake test function.
- *4: Requires optional hardware acceleration test function.
- *5: Requires optional hardware brake test function.
- *6: Requires optional hardware coasting test function.

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* Measurement may not be possible depending on the vehicle shape and environmental conditions.
Compact & High-Sensitive GPS Speedometer
LC-8300

**Configuration**
- LC-0088 GPS/GLONASS antenna
- LC-0853 USB flash memory
- LC-0089 Touch panel display unit

**Display example of touch panels**

**Display example of brake test result**

**Display example of fade recovery test result**

**Test screen**

**Traveled path screen**

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**Compact IMU (option)**
The external compact IMU is an accessory of the optional IMU output function, which measures speed, acceleration and angular velocity with the external compact IMU set as the measurement zero point. The IMU output function is not available on the internal IMU.

**CPU:** Intel® Core™ 2 Duo / 2 GHz or more, Memory: 1.0 GB or more

**USB:** USB2.0 (High Speed) 1 port or more

**Option IMU output function**
- Vertical velocity (km/h), Vertical distance (m), VDOP (Vertical dilution of precision)
- Drift amount (m), Y angular velocity (°/s), X angular velocity (°/s), Z angular velocity (°/s), Gradient (%)

**Remarks**
- When the optional IMU is connected, the IMU output function for port B side is not available.

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**Part number**
- LC-0088 GPS/GLONASS antenna
- LC-0853 USB flash memory
- LC-0089 Touch panel display unit

**Specifications**

### Measurement accuracy
- **Horizontal speed accuracy:** ±0.2 km/h or less
- **Horizontal distance accuracy:** ±0.1 % + 3 mm or less

### Standard measurement item
- **Horizontal speed (km/h), Horizontal distance (m), Time (s), UTC time, Number of satellites, HDOP (Horizontal dilution of precision), Heading (°), North velocity (km/h), East velocity (km/h), North distance (m), East distance (m), Traveling distance (m), Latitude (dms), Longitude (dms), Altitude (m), Latitude (dms), Longitude (dms), Altitude (m)**

### Option measurement item
- **GPS/GLONASS antenna**
- **LC-0861:** Cable for CAN (2.0 m)
- **LC-0863:** CAN-OBD2 cable for North America
- **LC-0862:** CAN-0802 cable for Europe
- **LC-0864:** Tape switch
- **PS-P20018A:** AC adapter unit for the main unit
- **VM0721-VM0749:** for China
- **VM0600-VM0299A:** for North America

### Main screen

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**Input waveform**
- Pulse waveform: Pulse count/ Frequency/ Duty

### Accessory
- **Remote box (with 2.0 m cable)** ×1
- **GPS/GLONASS antenna** ×1
- **GPS/GLONASS antenna** ×1
- **Pin jack - BNC cable (2.0 m)** ×1
- **USB cable for PC connection (1.5 m, L) ×1
- **USB cable for PC connection (0.5 m, L) ×1**

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**Display example of PC screen**

**Display example of touch panels**

**Display example of brake test result**

**Display example of fade recovery test result**

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**Configuration**

### Measurement accuracy
- **Horizontal speed:** 31 to 500.0 km/h, ±0.2 km/h or less
- **Horizontal distance:** 31 to 500.0 km/h, ±0.2 km/h or less

### Standard measurement item
- **Horizontal speed (km/h), Horizontal distance (m), Time (s), UTC time, Number of satellites, HDOP (Horizontal dilution of precision), Heading (°), North velocity (km/h), East velocity (km/h), North distance (m), East distance (m), Traveling distance (m), Latitude (dms), Longitude (dms), Altitude (m), Latitude (dms), Longitude (dms), Altitude (m)**

### Option measurement item
- **GPS/GLONASS antenna**
- **Compact IMU (option)**
- **LC-0087:** Compact IMU (option)

### Remarks
- **Update (output)**
- **measurement**
- **Standard**
- **frequency**

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**Input**

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>100 Hz</td>
</tr>
<tr>
<td>Load resistance</td>
<td>10 kΩ</td>
</tr>
<tr>
<td>Resolution</td>
<td>30 km/h or more</td>
</tr>
</tbody>
</table>

**Output**

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>4 A to 6 A (of necessity), 4 A to 6 A (output from the main unit)</td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V (DC)</td>
</tr>
<tr>
<td>Resolution</td>
<td>10 mm or more</td>
</tr>
<tr>
<td>Duty</td>
<td>90 % or more</td>
</tr>
<tr>
<td>Load resistance</td>
<td>10 kΩ</td>
</tr>
<tr>
<td>Distance pulse output</td>
<td>30 km/h or more</td>
</tr>
<tr>
<td>Output signal</td>
<td>Square wave pulse output Ht: 5 V ±0.5 V, Lo: 0.5 V or less</td>
</tr>
<tr>
<td>Output delay</td>
<td>10 ms or less</td>
</tr>
</tbody>
</table>

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**Other function**
- **Buzzer, External trigger input, DC current output, 12 V output for general sensor, Condition memory, Printing by connecting the optional printer, Storage function**

### Test function

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard test function</td>
<td>Normal measurement, Internal measurement test</td>
</tr>
<tr>
<td>Optional test function</td>
<td>Starting acceleration test, Planning acceleration test, Brake test (MFDD), Brake test (ABS), Fade recovery test, Coasting test</td>
</tr>
<tr>
<td>Standard function for PC application</td>
<td>Standard function (Setting for the main unit, Measurement value display on PC, Transfer to OS-2000 function, etc.)</td>
</tr>
<tr>
<td>Optional function for PC application</td>
<td>Acceleration/deceleration test, Fuel consumption test, Orbit display</td>
</tr>
</tbody>
</table>

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**Accessory**
- **Remote box (with 2.0 m cable)** ×1
- **GPS/GLONASS antenna** ×1
- **Power cable for cigarette lighter socket (3.0 m)** ×1
- **USB cable** for PC connection (1.5 m, L) ×1
- **USB cable** (3.0 m, L) ×1

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**Part number**
- LC-0882: Power supply cable (for battery)
- LC-0824: km/h to mile conversion switch
- LC-0855: IMU date output function (with small IMU LC-0097)
- LC-0826: Vertical direction measurement function
- LC-0827: Hardware acceleration test function
- LC-0829: Hardware braking test function
- LC-0839: CAN output function
- LC-0831: Terminal resistor adapter
- LC-0834-0802 cable
- LC-0835-0802 cable

### PC side
- **LC-0831:** Acceleration/deceleration test software
- **LC-0832:** Fuel consumption test software
- **LC-0833:** Orbit display software
**Example 1** Useful for logging data in poor conditions for capturing satellite signals

Measurement data from the LC series can be loaded in the CSV file format to the OS-2000 series time-series data analysis tool to display and analyze the data. Video files*9 and wave form can be reproduced at the same time.

*9: The LC-8300 cannot record videos.

**Example 2** Useful for testing and inspection of vehicles

- Easy-to-view single-line display.
- 2 or 4 data items can be displayed.
- Maximum and minimum speeds, etc. are listed in interval measurement.
- Real-time speed and last test result are displayed in the fade recovery test (part of optional hardware brake test function).
- Test results can be output to the optional printer. Automatic printing after testing is also possible.

**Outer dimensions**

<table>
<thead>
<tr>
<th>Unit: mm</th>
<th>LC-8300 Compact &amp; High-Sensitive GPS Speedometer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>49.4</td>
</tr>
<tr>
<td>Height</td>
<td>132</td>
</tr>
<tr>
<td>Depth</td>
<td>35</td>
</tr>
<tr>
<td>Weight</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**LC-0089 Touch panel display unit**

- Mount adapter (standard accessory)

**LC-0087 Compact IMU**

- Mount adapter

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