Noises sources
Technical datasheet
NOISE SOURCES

GENERAL POINTS

01dB offers a complete range of measuring instruments, software and accessories for building noise measurements. A complete range of noise sources is available to characterise the internal acoustics of a room and/or the airborne noise insulation:

- **Stand-alone unidirectional source GDB-S**
  - Compact and robust
  - 1m Pressure Level (107 dB(Z))
  - Pink noise generator
  - Operating life: 10 hours
  - Remote driving with remote control (provided)

- **Standard (LS01) and Compact (LS03) stand-alone omnidirectional source**
  - Light and robust
  - Powerful (LS01: Lw=115 dB(Z) / LS03: Lw=114 dB(Z))
  - Noise generator: pink, white, swept sine...
  - Operating life: 1 hour (LS01) / 20 minutes (LS03)
  - Remote driving with remote control (provided)

- **Standard (LS02) and Compact (LS04) omnidirectional source**
  - Light and robust
  - Powerful (LS02: Lw=115 dB(Z) / LS04: Lw=114 dB(Z))
  - Noise generator: pink, white, swept sine...
  - Remote driving with remote control (provided)

MAIN APPLICATIONS

01dB noise sources allow achieving acoustic insulation and reverberation time measurements according to the different current standards.

- Building acoustics
- On-site measurement of airborne noise insulation levels
- Laboratory measurement of airborne noise insulation levels
INTRODUCTION

According to the regulations, both a unidirectional noise source (sound is sent in one main direction) and an omnidirectional source (sound is propagated in all directions) can be used. 01dB then offers a comprehensive range consisting of 5 noise sources suitable for each requirement:

- Stand-alone unidirectional source GDB-S
- Stand-alone omnidirectional source LS01
- Omnidirectional source LS02
- Compact stand-alone omnidirectional source LS03
- Compact omnidirectional source LS04

UNIDIRECTIONAL NOISE SOURCE GDB-S

GDB-S is a compact unidirectional noise source including the following main elements:

- a power amplifier
- a pink noise generator
- a speaker

Hosted in a robust chassis, GDB-S is powered up by batteries that provide the user with 10 hours of continuous operating time.

The user can use the wireless remote control provided in order to start and stop the source.

The GDB-S source is fully integrated into the 01dB product range dedicated to building acoustics.

OMNIDIRECTIONAL SOURCES LS01/LS02

01dB offers a complete range of 4 omnidirectional sources, compliant with standards ISO 140 and ISO 3382.

The 4 sources have the same design. They consist of a sphere with 12-loudspeaker and contain each:

- a power amplifier
- a noise generator

Robust, compact and easy to implement, the sources can be driven using a remote control. In addition to starting and stopping the sources, the user can control:

- the volume level by +/-2 dB steps or with a known gain (0 dB, -8 dB, -30 dB…).
- the type of noise: pink, white, swept sine according to different frequency ranges

The sources are available in two sizes:

- The standard omnidirectional source LS01 and LS02 with a diameter of 35cm and a weight of 12kg and 9.5kg respectively
- The compact omnidirectional source LS03 and LS04 with a diameter of 26cm and a weight of 5kg

The LS01 and LS03 sources are delivered with a battery pack that provides an operating time of more than 1 hour for the LS01 and more than 20 minutes for the LS03.
ACOUSTIC CHARACTERISTICS

Source GDB-S

The pressure measurement at 1 meter is 105.5 dB(A) / 107 dB(Z). The pressure octave band spectrum at 1 meter is presented on the graph below:

Sources LS01/LS02

Maximum Sound power is

- 122 dB(Z) for LS01 source
- 121 dB(Z) for LS02 source
- 118 dB(Z) for LS03 and LS04 sources

The LS01 equalized sound power third-octave band spectrum is presented on the graph below:
# TECHNICAL SPECIFICATIONS

## GDB-S

<table>
<thead>
<tr>
<th>Reference standards</th>
<th>ISO140 / ISO 717</th>
<th>ISO 10052 / ISO3382</th>
<th>DIN 52210</th>
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**EC compliance**

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<td>Emission : EN 55022 (01-2009)</td>
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**Dimensions**

- L x H x P: 310 x 430 x 200 mm

**Weight**

- 15 kg (with batteries)

**Temperature**

- Operating: -10 à +40°C / 90% RH
- Storage: -20 à +60°C / 90% RH

**Remote control**

- Number of keys: 1
- Frequency: 433 MHz EMC compliant European standard
- Operating range: 100 m in free field

**Masse : 26 g**

**Power supply**

- Internal charger 220V/12V with charge limiter and colour LED for charge information.

**Batteries**

- 2 batteries 6V
- Type: lead acid gel with no maintenance
- Operating life: 10 continuous hours
- Charge duration: 12 hours

**Noise generator**

- Pink noise

**Sound pressure level at 1m**

- 105.5 dB(A) / 107 dB(Z)

**Warranty**

- 1 years for parts and labour

**Accessories provided**

- Power supply cable
- Remote control

## LS01/LS02

<table>
<thead>
<tr>
<th>Reference standards</th>
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<tr>
<td>ISO 16283; ISO140 /3</td>
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<td>ISO 10140 / ISO 3382</td>
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<td>DIN 52210</td>
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**EC compliance**

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<th>EN 62368-1 (2014)</th>
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<td>Emission : EN 55022 (01-2009)</td>
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**Dimensions**

- Ø 35 cm

**Weight**

- 12 kg for LS01
- 9.5 kg for LS02

**Temperature**

- Operating: from -10 to +40°C / 90% RH
- Storage: from -20 to +60°C / 90% RH

**Remote control**

- Number of keys: 16
- Frequency: 868 MHz, EMC compliant with European standards
- Operating range: 20 m in free field
- Dimensions LxWxH: 150x90x20 mm
- Weight: 200 g

**Battery pack (only for LS01)**

- 4 x 12/7.2Ah elements
- Resettable internal fuse
- Battery life: 60 minutes
- Dimensions LxWxH: 360x140x115 mm
- Weight: 10.8 kg

**Power supply**

- 230 VAC ±10% 50 / 60 Hz  300W

**Line input**

- 0.7 VRMS

**Input Impedance**

- 10KΩ

**Protection**

- Fuse: 2.5 A (5x20) -T- “delayed”

**Cooling**

- Internal fan (2 speeds)

**Noise generator**

- Pink noise, White noise, Swept sine
- Fast white, fast pink

**LS01 output level**

- Lw : 122dB, ref 1pW in (Max. output level) (switch position “I”)
- Lw : 115dB ref 1pW in (LINEAR) (switch position “II”)

**LS02 output level**

- Lw : 121dB, ref 1pW in (Max. output level) (switch position “I”)
- Lw : 115dB ref 1pW in (LINEAR) (switch position “II”)

**Frequency response**

- Pink noise: 50-20,000 Hz
- White noise: 40-20,000 Hz
- Swept sine: 100-8,000 Hz
- Fast white: 50-20,000 Hz
- Fast pink: 40-20,000 Hz

**Maintenance**

- Checking of conformity is advised every 2 years

**Warranty**

- 2 years for parts and labour

**Accessories provided**

- Power supply cable
- Remote control

## LS01/LS02

**Power supply**

- 230 VAC ±10% 50 / 60 Hz  300W

**Line input**

- 0.7 VRMS
**LS03/LS04**

**Reference standards**
- ISO 16283, ISO140 / 3
- ISO 10140 / ISO 3982
- DIN 52210

**EC compliance**
- EN 62368-1 (2014)
- Emission: EN 55022 (01-2009)

**Dimensions**
- Ø 26 cm

**Weight**
- 5 kg

**Temperature**
- Operating: from -10 to +40°C / 90% RH
- Storage: from -20 to +60°C / 90% RH

**Remote control**
- Number of keys: 16
- Frequency: 868 MHz, EMC compliant with European standards
- Operating range: 20 m in free field
- Dimensions: LxWxH: 150x90x20 mm
- Weight: 200 g

**Battery pack (only for LS01)**
- 4 x 12/2.2Ah elements
- Resettable internal fuse
- Battery life: 20/50 minutes
- Dimensions: LxWxH: 250x190x100 mm
- Weight: 3.8 kg

**Power supply**
- 230 VAC ±10% 50 / 60 Hz 160W
- Line input: 0.7 VRMS

**Input Impedance**
- 10KΩ

**Protection**
- Fuse: 2.5 A (5x20) - T- “delayed”

**Cooling**
- Internal fan (2 speeds)

**Noise generator**
- Pink noise, White noise, Swept sine
- Fast white, fast pink

**Output level**
- Lw : 118dB, ref 1pW in (Max. output level) (switch position “I”) Lw : 114dB ref 1pW in (LINEAR) (switch position “II”)

**Frequency response**
- 50-20,000 Hz ± 3 dB switch on “LINEAR” position
- Pink noise: 50-20,000 Hz
- White noise: 40-20,000 Hz
- Swept sine: 100-8,000 Hz
- Fast white: 50-20,000 Hz
- Fast pink: 40-20,000 Hz

**Maintenance**
- Checking of conformity is advised every 2 years

**Warranty**
- 2 years for parts and labour
- 1 year for batteries

**Accessories provided**
- Carrying case: 320x320x380mm
- Aluminium tripod Hmax: 2 m weight: 2.7 kg
- Remote control (batteries included)
- Battery pack 20/50 minutes (only for LS03)

**PRODUCT REFERENCES**

**Main references**
- SON1001000A Pink noise source GDB-S
- LS03001000B Omnidirectional source pack LS01
- LS03002000B Omnidirectional source pack LS02
- LS03004000 Omnidirectional source pack LS03
- LS03005000 Omnidirectional source pack LS04

**Spare parts**
- LSP1003000 Wireless remote control for LS0x
- LSP1004000A Carrying case for LS01/LS02
- LSP1013000 Carrying case for LS03/LS04
- LSP1005000 Battery pack for LS01
- LSP1014000 Battery pack for LS03
- LSP1009000 Tripod for LS0x

**Additional products**
- FSN3014000 FUSION – Building Wifi package
- FSN2009000 FUSION option - Building module
- SBU3001000 dBInside computer software
About ACOEM

ACOEM Group
Reduce your environmental impact

In today’s fast-moving world, the environment is increasingly impacted. The ACOEM Group is committed to sustainable development and help companies and public authorities limit their environmental impact by offering products and services that:

- Prevent and control air, noise and vibration pollution
- Increase the productivity and reliability of industrial machinery
- Contribute to the development of effective, robust & noiseless products
- Protect soldiers, sites and vehicles in military theaters of operation

Across the world, ACOEM’s 670 employees innovate in the measurement, analysis and control of all environmental parameters through the 01dB, ECOTECH, ONEPROD, FIXTURLASER, MEAX and METRAVIB brands.

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