



# Noises sources

Technical datasheet

## NOISE SOURCES

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### GENERAL POINTS

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**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

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**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

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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

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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

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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

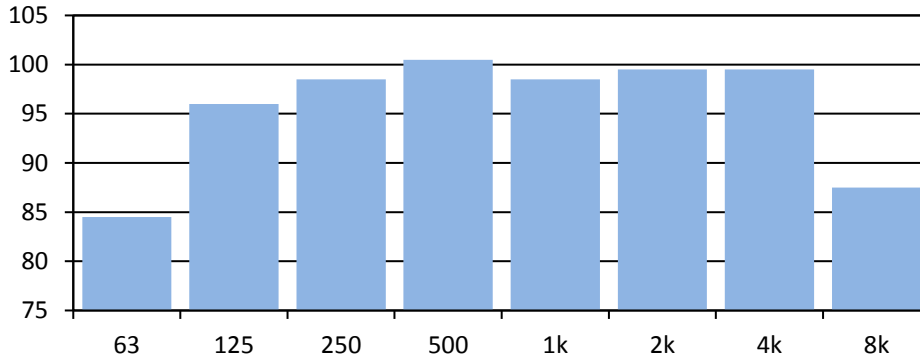
The **LS01** and **LS03** sources are delivered with a battery pack that provides an operating time of more than 1 hour for the **LS01** and more than 20 minutes for the **LS03**.



## 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:

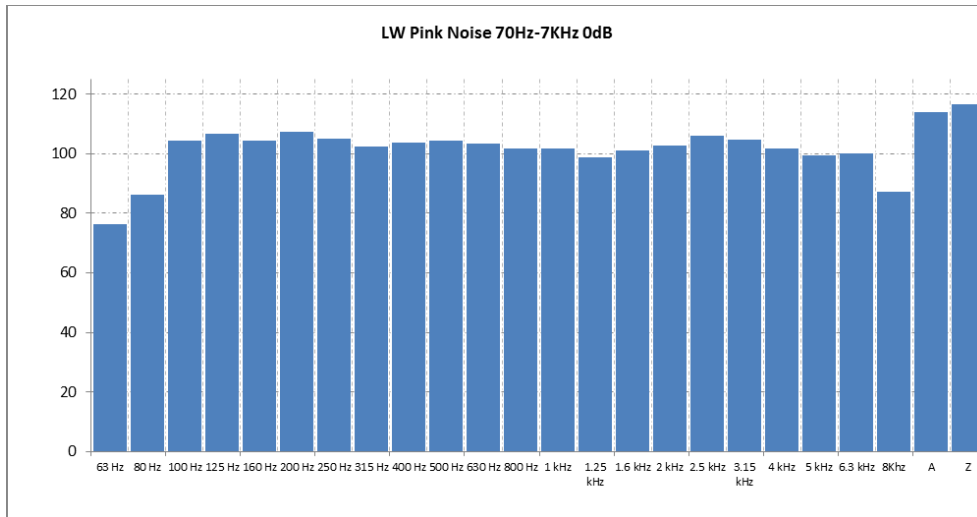


### Sources LS01/LS02

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

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### GDB-S

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#### Reference standards

ISO140 / ISO 717  
ISO 10052 / ISO3382  
DIN 52210

#### EC compliance

EN 60065 (06/2004) + A1 (01/2007)  
Immunity: EN 55024 (09-1998) + A1 (10-2001) + A2 (01-2003)+S1 (03-2008)  
Emission : EN 55022 (01-2009)

#### 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

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#### Reference standards

ISO 16283; ISO140 /3  
ISO 10140 / ISO 3382  
DIN 52210

#### EC compliance

EN 62368-1 (2014)  
Immunity: EN 55024 (09-1998) + A1 (10-2001) + A2 (01-2003)+S1 (03-2008)  
Emission : EN 55022 (01-2009)

#### Dimensions

Ø 35cm

#### 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 LxVxH: 150x90x20 mm  
Weight: 200 g

#### Battery pack (only for LS01)

4 x 12/7.2Ah elements  
Resettable internal fuse  
Battery life: 60 minutes  
Dimensions LxVxH: 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

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

#### Accessories provided

Carrying case: 425 x 425 x 490 mm  
Aluminium tripod Hmax: 2 m weight: 2.7 kg  
Remote control (batteries included)  
Battery pack 60 minutes (only for LS01)

## LS03/LS04

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### Reference standards

ISO 16283; ISO140 /3  
ISO 10140 / ISO 3382  
DIN 52210

### EC compliance

EN 62368-1 (2014)  
Immunity: EN 55024 (09-1998) + A1 (10-2001) + A2 (01-2003)+S1 (03-2008)  
Emission : EN 55022 (01-2009)

### Dimensions

Ø 26cm

### 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

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### 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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