

Product Data

Portable Noise Monitoring Option — Type 3571

USES:

- Noise Control
- Area Planning
- Complaint Investigations
- Research

FEATURES:

- All-weather measurements using Precision Integrating Sound Level Meter Type 2236

- Rainproof case and microphone system
- Long-term monitoring due to rechargeable battery
- Battery change without interruption of measurements
- Flexible mounting of system and microphone
- Low level capability — noise floor 20 dB(A)
- Easy to carry and set up — no special tools needed
- Tamper proof
- Analysis and documentation software available
- Sound Level Meter still available for normal use

Portable Noise Monitoring Option Type 3571 allows all-weather monitoring using a Type 2236 Precision Integrating Sound Level Meter. The system can operate unattended for more than three whole days. Batteries can be changed without interrupting measurements, thus allowing long-term monitoring.

The system fulfils Type 1 requirements when using the included Prepolarized Free-field $1/2''$ Microphone Type 4189 with rain cover and windscreen. The rainproof case can be used with an included stainless steel tube for microphone mounting, or the microphone can be mounted on a separate tripod using an extension cable.

The sound level meter and microphone conform with IEC 651 and IEC 804 Type 1 as well as with ANSIS1.4-1983 Type 1.

The kit is tamper proof.

Using a Type 2236 for Outdoor Monitoring

The Portable Noise Monitoring Option includes all accessories needed to allow use of a Precision Integrating Sound Level Meter Type 2236 for outdoor noise monitoring even in bad weather conditions.



950282e

The option as a whole is a robust kit that is easy to carry and set up. It extends the possible uses of Type 2236 and provides a flexible system for unattended outdoor noise monitoring in almost all weather conditions. The system is rainproof and can be used in a temperature range from -10°C to $+50^{\circ}\text{C}$.

The kit is easy to transport — it fits in any car's boot — and can be used for a number of applications, such as the investigation of complaints about nightly disturbances or long-term monitoring of noise in residential areas.

The option provides an attractive, cost-effective solution to requirements for outdoor monitoring:

- Use it with your Type 2236 and its preamplifier.
- The included rainproof microphone system fulfils Type 1 requirements.
- The sound level meter is detachable from the outdoor gear for any other use.

Microphone and Microphone Mounting

Falcon™ Range Microphone Type 4189

The outdoor monitoring option includes a Pre-polarized Free-field $1/2''$ Microphone Type 4189. This microphone is used instead of the Type 4188 microphone supplied with the 2236 sound level meter. Type 4189 fulfils the Type 1 requirements when the rain cover is used.

Type 4189 is a rugged microphone ensuring high stability under a variety of conditions. The stainless steel alloy diaphragm withstands even polluted industrial environments.

Tube or Tripod Mounting

The microphone can be mounted on the included stainless steel tube (see illustration on front page). This tube is easily fitted to the case and makes the kit as a whole into a compact and easily mounted system.

Furthermore, the microphone can be mounted in any way desired using, for example, the optional Tripod UA 0587 and Microphone Clip UA 1254 with the included 3 m extension cable or the optional 10 m extension cable. The case and the microphone system are rainproof also with this set-up. This setup allows,



for example, the microphone to be placed outdoors while the sound level meter is kept indoors.

Monitoring Capacity

Logging Capacity

The capacity for logging depends on the Type 2236 Precision Integrating Sound Level Meter used.

Types 2236 A and C with 128 kbyte memory have a capacity of 21 600 sets of logged results. This corresponds, for example, to 6 hours of 1 s logging or slightly more than 2 weeks of 1 minute logging.

Types 2236 B and D have a 512 kbyte memory allowing for 86 400 sets of logged results. This corresponds to 24 hours of 1 s logging or about 2 months of 1 minute logging.

Battery Lifetime

The supplied battery of NiCd cells has a lifetime of at least 72 hours at 20°C . The internal batteries of Type 2236 can be used as a backup power

supply with a typical lifetime of 12 hours at 20°C .

Batteries can be changed without interrupting ongoing measurements. By using two or more batteries monitoring can continue without interrupts for as long as the sound level meter can log results.

Charging a fully discharged battery with the supplied charger takes a maximum of 18 hours.

Tamper Protection

During measurements the sound level meter remains in the case. When padlocks are used the case can only be opened by using tools or exerting excessive force. The case itself can be secured by using the included eye-bolt.

When the tube mounting is used the cable is not accessible and the microphone cannot easily be removed.

Of course, the microphone system must be mounted outside the case

and the microphone is unprotected in so far as it can be accessed by unauthorised persons.

Applications

Portable Noise Monitoring Option Type 3571 extends the capabilities of Precision Integrating Sound Level Meter Type 2236 in three ways:

- Weather protection: the system is effectively rainproof and can be operated over a wide range of temperatures.
- The system allows unattended monitoring for short or long periods. The battery must typically be changed every three days, and that is all the attention that is needed.
- Tamper protection.

This points to a number of applications that either cannot be considered with a standard sound level meter or are inconvenient, time-consuming and expensive without using a special kit:

- Unattended night surveillance of traffic noise, railways, industrial areas, pubs, discoteques and so forth.
- Noise monitoring of small airports without permanent noise monitoring systems.
- Highly portable noise monitoring terminal for survey measurements and additional measurements for permanent noise monitoring systems.
- Monitoring of special events: open-air concerts, sports events and so forth.
- Monitoring of amusement parks, race tracks and the like.

Environmental Considerations

The kit can be used over a wide temperature range from -10 to $+50$ °C and the case and the microphone system are rainproof (IP 43).

The microphone system withstands even heavy industrial pollution.

Reporting Results

Results can be transferred to a computer or printed without removing the sound level meter from the case.

Reporter™ Software

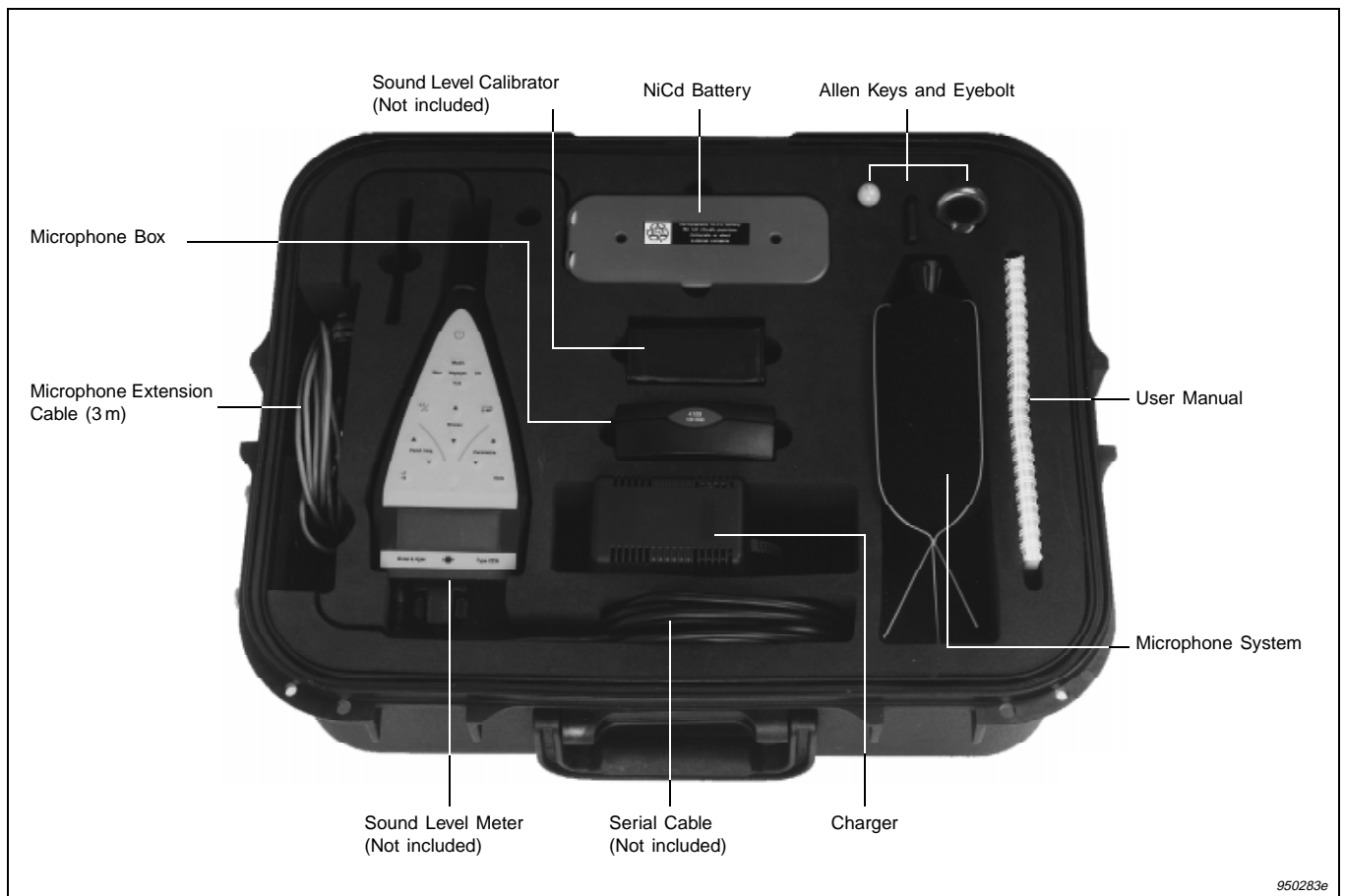
The comprehensive Reporter software package allows you to generate an extensive, customisable set of reports. These can be printed from the Reporter software or they can be imported into any standard Microsoft® Windows™ application using copy and paste.

Transferring Results to Microsoft Excel™

The dB2XL software package allows results to be transferred directly from the sound level meter to a Microsoft Excel spreadsheet.

Printing and Transferring Results to a File

Logged results can be printed using the standard Type 2236 printing facilities. Or, the results can be transferred to a file on a computer via a serial link.



950283e

Specifications 3571

Sound Level Meter Specifications (Type 2236)*

STANDARDS:

Conforms with IEC 651 (1979) and 804 (1985) Type 1, and ANSI S1.4-1983 and Draft S1.43, 6th September, 1992 Type 1.

1/1-octave filter sets (Types 2236 C and D) conform with IEC 255-1966 and ANSI S1.11-86, order 3, Type 1-D.

NOISE FLOOR:

Typically 18 dB(A)
Maximum 20 dB(A)
 Includes preamplifier's electrical noise and microphone's thermal noise.

MEASURING RANGE:

20-140 dB in five overlapping steps (Types 2236 A and 2236 B)

10-140 dB in six 80 dB overlapping steps with filter selected (Types 2236 C and D)

DETECTORS:

Simultaneous RMS and Peak with independent frequency weightings.

Linearity Range 80 dB

Pulse Range 83 dB

Peak Detector Rise Time < 50 μs

Non-linear distortion is too small to affect accuracy.

* Precision Integrating Sound Level Meter Type 2236 is not included with Type 3571.
 See Type 2236 Product Data sheet or User Manual for complete specifications.

Microphone Specifications (Type 4189)†

OPEN CIRCUIT SENSITIVITY (250 Hz):

-26 dB ±1.5 dB re 1 V/Pa, 50 mV/Pa (Individually calibrated)

FREQUENCY RESPONSE:

0° incidence free-field response:

10 Hz to 8 kHz: ±1 dB

6.3 Hz to 20 kHz: ±2 dB

In accordance with IEC 651, Type 1

UPPER LIMIT OF DYNAMIC RANGE:

3% distortion: > 146 dB SPL

MAXIMUM SOUND PRESSURE LEVEL:

158 dB (peak)

OPERATING TEMPERATURE RANGE:

-30 to +150 °C (-22 to +302 °F)

TEMPERATURE COEFFICIENT (250 Hz):

-0.001 dB/°C, typical (for the range -10 to +50 °C)

INFLUENCE OF HUMIDITY:

< 0.1 dB at up to 95% RH (non-condensing) and 40 °C.

Power Supply

Battery Lifetime > 72 hours at 20 °C

Charging Time Max. 18 hours

† Prepolarized Free-field 1/2" Microphone Type 4189 is included with Type 3571.
 See separate Product Data sheet or Microphone Handbook for complete specifications.

Mechanical Specifications

CASE:

Dimensions 530 × 420 × 225 mm

Weight (including Type 2236 sound level meter, battery and microphone system) 9.1 kg

Case has provision for locking using a padlock. An eyebolt allows for securing the case.

Threads for mounting M8 × 1.25

Screws for mounting M8 × 12 mm CH

Grub Screw

for securing microphone M3 × 5 mm

TUBE:

Dimensions Ø 25 mm, length 1.06 m

Weight 1.3 kg

Microphone height above ground 1.2 m

CHARGER:

Dimensions 96 × 63 × 48 mm

INCLINE:

Does not overturn on a 45% incline with microphone mounted on tube.

Environmental Specifications

TEMPERATURE:

Operating -10 to +50 °C

Storage -20 to +70 °C

(Battery service lifetime decreases above +50 °C)

HUMIDITY:

Operating 0 to 90% RH (no condensation)

RAIN:

Case Rainproof to IP 43

Microphone system Rainproof to IP 43

DURABILITY:

Measurement in large-city environment before cleaning and drying > 4 weeks

Measurement in large-city environment before microphone system overhaul > 4 months

Ordering Information

Type 3571 Portable Noise Monitoring Option

Includes the following accessories:

Type 4189 Prepolarized Free-field 1/2" Microphone
 UA 0393 Rain Cover
 YM 0420 Screw Cap (for Rain Cover)
 UA 0308 Dehumidifier
 UA 0570 Windscreen
 AO 0408 Microphone Extension Cable (3 m)
 KE 0349 Case
 DS 0906 Inlay
 DS 0907 Lid Cushion
 QB 0047 Battery with cable
 ZG 0357 Charger (220-230 V), or
 ZG 0389 Charger (100-120 V), or
 ZG 0390 Charger (240 V)
 UA 1321 Tube Assembly
 YQ 4003 Grub Screw (for microphone system) (5 pieces)

DD 0532 Cover
 YJ 0640 O-ring (for microphone sealing) (12 pieces)
 YJ 0902 Packing (for tube and cover) (3 pieces)
 YS 0827 Eyebolt
 QA 0089 6 mm Allen key
 QX 0126 1.5 mm Allen key

Optional Accessories

For Measuring:

Type 2236 Precision Integrating Sound Level Meter
Type 4231 Sound Level Calibrator
Type 4226 Multifunction Acoustic Calibrator
UA 0587 Tripod
UA 1254 Microphone Clip

AO 0409 Microphone Extension Cable (10 m)

For Transferring Results to a Computer and Reporting:

Type 7692 dB2XL software
Type 7694 Reporter™ software
AO 1386 9-pole Cable with 25-pole Adaptor

For Printing:

Type 2318 Graphics Printer
WQ 1138 Serial Printer (European version)
EQ 4001 Serial Printer (US version)
EQ 4002 Serial Printer (UK version)
AO 0404 9-pole to LEMO Cable (for 2318)
AO 1386 9-pole Cable with 25-pole Adaptor (for serial printer)

Services available with delivery of Type 2236:

EK 0102 Accredited Calibration re IEC 651 and IEC 804

Brüel & Kjær reserves the right to change specifications and accessories without notice

Brüel & Kjær

WORLD HEADQUARTERS:

DK-2850 Naerum · Denmark · Telephone: +45 45 80 05 00 · Fax: +45 45 80 14 05 · Internet: <http://www.bk.dk> · e-mail: info@bk.dk

Australia (02) 9450-2066 · Austria 00 43-1-865 74 00 · Belgium 016/44 92 25 · Brazil (011) 246-8166 · Canada: (514) 695-8225 · China 10 6841 9625 / 10 6843 7426

Czech Republic 02-67 021100 · Finland 90-229 3021 · France (01) 69 90 69 00 · Germany 0610 3/908-5 · Holland (0)30 6039994 · Hong Kong 254 8 7486

Hungary (1) 215 83 05 · Italy (02) 57 60 4141 · Japan 03-3779-8671 · Republic of Korea (02) 3473-0605 · Norway 66 90 4410 · Poland (0-22) 40 93 92 · Portugal (1) 47114 53

Singapore (65) 275-8816 · Slovak Republic 07-37 6181 · Spain (91) 36810 00 · Sweden (08) 71127 30 · Switzerland 01/94 0 09 09 · Taiwan (02) 713 9303

United Kingdom and Ireland (0181) 954-236 6 · USA 1 - 800 - 332 - 2040

Local representatives and service organisations worldwide

BP 1572-11