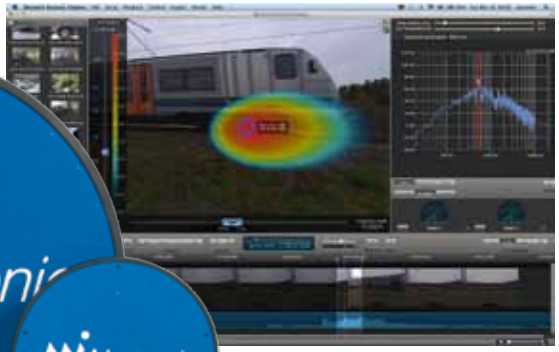
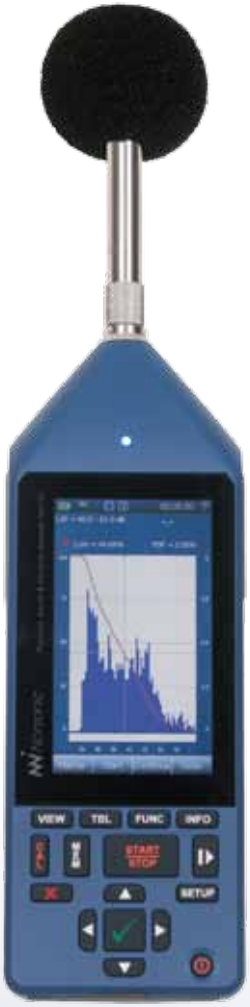
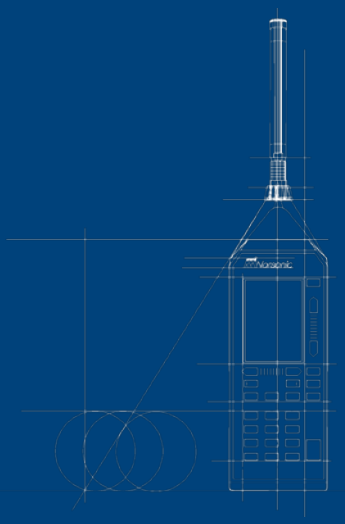
THE PRODUCT RANGE
CATALOGUE
2015





Norsonic



Norsonic is one of the world's leading manufacturers of precision measurement instruments for sound and vibration applications. Since 1967, the specifications for our successful instruments have been based on the requirements of regulations found in the EU, North American and other industrialised countries.

By careful attention to the user's requirements at the design stage, it has been possible to increase the complexity of the instrument yet preserve a user interface that is convenient and easy to understand. Our products have been developed in close consultation with our customers in more than 30 countries around the world.

It is by listening to our customers and implementing their needs that keep Norsonic at the forefront of the world market for sound and vibration instrumentation.

For more detailed information visit us at www.norsonic.com.

Norsonic – Innovative sound instrumentation

Norsonic is a leading manufacturer of measurement solutions for sound and vibration. Our vision is to supply our customers with the most innovative sound instrumentation of the highest quality.

During more than 45 years of operation, Norsonic has focused on delivering high quality instrumentation. It starts with the design of a new product, continues with the internal design tests, and ends with pattern evaluation for legal metrology by international laboratories such as the PTB in Germany. Our products have for decades been type approved in order to secure that the produced measurement results are accurate and within the given specifications.


ACCREDITATION DOCUMENT

CAL 022

Norsonic AS, Norsonic Kalibreringslaboratorium

Postboks 24

3421 LIERSKOGEN

NORWEGIAN ACCREDITATION

All our subcontractors are carefully selected and frequent quality audits assure that they keep a high quality standard.

Full test and calibration in accordance with relevant international standards, such as IEC61672, are carried out before the products leave the factory. Norsonic developed an automatic calibration system Nor1504A for this purpose. This product started as an internal calibration system for use at the factory and at our sales and calibration offices throughout the world. However, the product fills a general market need and is sold successfully to calibration laboratories and type approval organisations all over the world.

Norsonic Calibration Laboratory is an international accredited laboratory. This ensures that the quality of the measured values is at the highest possible level.

Norsonic is active in the standardisation work, both on international and national levels. We believe it is important, as a high quality manufacturer that our product design is made in accordance with the upcoming versions of relevant standards, combined with the latest available technology.

As a result of our quality philosophy we offer 3 year warranty on all our products.

Norsonic uses a minimum of 15% of its turnover in research and development. A great portion of this amount is used in designing new features in existing products. This ensures that you as a Norsonic customer may keep your products up to date for many years after your initial purchase.

Our R/D department has close cooperation with collaborating partners in order to take advantage of special technology not offered by internal resources. Our organisation enables us to react fast on changes in upcoming standards and new technology.

At Norsonic, we are proud to serve our customers and listen to their needs. All our products are developed in close cooperation with customers by listening to their needs and wishes.

Norsonic

NCL
NORSONIC CALIBRATION LABORATORY

Building Acoustics

- Nor140 Sound Analyser
- Nor265 Rotating Boom
- Nor275 Hemi-dodecahedron Loudspeaker
- Nor276 Dodecahedron Loudspeaker
- Nor277 Tapping Machine
- Nor280 Power Amplifier
- Nor1516B Wireless Building Acoustics System
- Nor1028 NorBuild Building Acoustics Software
- Nor850 Distributed Multichannel System

Environmental Monitoring

- Nor1520/Nor1530 Environmental Monitoring Terminal
- Nor1022 NorMonit Control and Data Management Software
- Nor1026 NorReview Environmental Noise Reporting Software
- Nor131 Sound Level Meter
- Nor139 Environmental Noise Meter
- Nor140 Sound Analyser
- Nor150 Precision Sound & Vibration Analyser
- Nor1210/Nor1216/Nor1217/Nor1218 Outdoor Microphones
- NorImage Noise and Video Monitoring System
- Noise Nuisance Recorder

Industrial Hygiene

- Nor131 and Nor132 Sound Level Meters
- Nor133 and Nor136 Vibration Meters
- Nor135 SoundBox
- Nor1025 NorProtector Hearing Protector Selection Software
- Nor1037 NorConcertControl Software
- Nor1038 NorVibraTest Software

Test Systems

- Nor848A Acoustic Camera
- Nor850 Distributed Multichannel System
- Nor1504A Calibration System
- Nor1516B Wireless Building Acoustics System
- Nor1517A Airflow Resistance Measurement System

Nor131/Nor132

The Nor130 Series of Sound Level Meters are designed and manufactured to the latest sound level meter standards and comprises two products. The Nor131 is a Class 1 (precision) instrument whilst the Nor132 is designed in accordance with the less accurate Class 2 requirements. Both meters offer the same features with exception of the detachable preamplifier which is only available on the Nor131 version.

NOW with Reverberation and STIPA

Nor131/132 Sound Level Meters

Applications

- Noise hazards in the workplace.
- Prescription of hearing protection.
- Environmental noise investigations.
- Product noise testing.
- General purpose sound level meter.
- Speech intelligibility testing - STIPA.
- Revereration time measurement.

Features

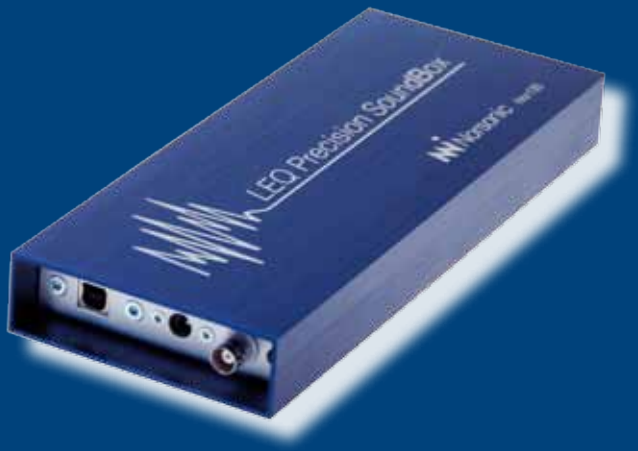
- Single measurement range.
- Extremely simple operation.
- Parallel L_{Aeq} and $L_{Cpeak.}$
- Large internal memory.
- Clock synchronised measurements.
- Real time 1/1 octave filter.
- Real time 1/3 octave filter.
- Level vs time with 1 sec. resolution.
- 8 statistical L_n calculations of which one is user selectable.
- Statistical L_n calculation even in the 1/1 and 1/3 octave bands.
- USB 2.0 interface.
- Allows use of microphone extension cable (Nor131).
- Large back lit display.
- Complies to IEC and ANSI standards.
- Type approved by PTB as well as other national laboratories.
- Supports frequency corrections for Nor1218 outdoor microphone (Nor131)

Nor135 SoundBox

The Nor135 SoundBox is a front end featuring the same hardware and analysing sofware as in the Nor131. It is mainly designed to be used as a frontend for NorConcertControl software.

Features

- Detachable preamplifier/microphone.
- Internal memory.
- USB 2.0 interface.



Nor139

Class 1 Sound Level meter mainly designed for advanced noise assessments and noise logging, featuring event triggered sound recording and markers. May optionally be fitted with 1/1- and 1/3-octave filters with multispectra down to 100ms time resolution.

The SD-card makes it easy to store and import measurement data to a PC.

Applications

- Environmental noise assessments with sound recording and markers.
- Noise logger.
- Noise hazards in the workplace.
- Noise labelling.
- Noise nuisance recorder.
- General purpose sound level meter.

Features

- Precision integrating sound level meter to IEC 61672 class 1.
- Handheld real-time 1/1- or 1/3-octave frequency analyser (6,3Hz-20kHz).
- Measurement of A-weighted levels simultaneously with either C- or Z-weighted levels.
- Parallel detection of SPL, L_{eq}, L_{min}, L_{max}, L_E and L_{peak}
- 120 dB dynamic range giving a “one-range” instrument.
- Measures L_{peak} levels up to 140 dB
- Parallel detection of F, S and I time constants.
- USB 2.0 and High-speed RS-232 serial interface.
- SD memory card and large high speed internal memory.
- Sound recording in 8, 16 or 24 bit format with 12 or 48 kHz sampling.
- Up to 90 sec. audio recording pretrigger.
- High-resolution graphical backlit display.
- Manual or automatic storage of results.
- Automatically repeated measurements with clock synchronization.
- Pause/Continue function with back erase feature.
- Results displayed as dB or linear values.
- Numerical printouts.
- AC output signal.
- Windscreen correction.
- Support for IEPE sensors.
- NC, NR and RC rating.
- Multiple language selection.
- Moving L_{eq} with threshold markers.
- Supports frequency corrections for Nor1218 outdoor microphone.

Nor140

A precision hand held sound analyser designed for the most demanding users. With this analyser Norsonic set a new standard for sound level meters, covering the widest range of applications. The Nor140 is packed into the smallest real time analyser unit featuring sound recording present on the market today.

Approved by:
- PTB Germany
- LNE France
- CEM Spain
- BEV Austria

.....and others

Applications

- Noise source identification with markers and sound recording.
- Environmental noise.
- Building acoustics.
- Industrial hygiene.
- Product development.
- Quality control.
- Noise mapping.
- Sound power.
- Speech intelligibility - STIPA.
- Vibration measurements.
- Noise nuisance recorder.

Features

- Sound recording onto exchangeable SD card.
- Level vs. Time with multispectrum function from 25ms resolution.
- Parallel detection of SPL, L_{eq}, L_{min}, L_{max}, L_E, L_{peak} and 8 statistical values.
- Measurement of A-weighted levels simultaneously with either C- or Z-weighted levels.
- Parallel F, S or I time constants.
- Frequency analysis with 1/1 - or 1/3-octave bands in the 0.4 Hz - 20 kHz range.
- FFT analysis.
- 120 dB dynamic range giving a "one-range" instrument covering all levels from microphone noise floor at 15 dBA to maximum SPL at 137 dBA (140dB peak).
- Pause/Continue function with variable 0 - 20 sec back erase function.
- Up to 90 sec audio recording pretrigger.
- Manual or automatic storage of results with automatic measurement repeat and clock synchronization.
- Building acoustics according to ISO 10052, ISO 140, ISO 717 & ISO 16283 with on-screen sound insulation indexes.
- Dual channel building acoustic analysis using two Nor140 controlled from CtrlBuild software hosted in the dual channel BA case Nor518.
- Noise generator.
- Reverberation time calculations.
- Support SweptSine measurement when used with CtrlBuild software.
- Advanced trigger functions.
- Complies to all relevant IEC and ANSI Class 1 specifications.
- USB 2.0 and RS-232 high speed digital interface.
- Wireless communication using Nor520 Bluetooth Transceiver.
- High resolution backlit display.
- IEPE power for direct connection of vibration sensors.
- RPM input.
- Built-in random incidence correction, wind screen correction and correction for outdoor microphones Nor1216 and Nor1217.
- NC, NR and RC rating.
- Multiple language selection.
- Moving L_{eq} calculations with threshold markers.

Nor150

The Nor150 Sound and Vibration analyser sets new standards in user-friendliness. Featuring the largest colour touchscreen in a handheld meter on the market today, the Nor150 provides the user friendliness of a smartphone. Further features include, built in web server, camera, GPS and advanced voice and text notes bringing the sophistications normally found in laboratory instrumentation out in the field. Connect your smartphone, pad or PC to the Nor150 or a Nor140. Photos and voice notes obtained on your smartphone or pad are seamless integrated with markers into your noise data with markers in the time profile. The photos taken on the external device may even be event triggered using the internal noise event trigger in the Nor150

The instrument is a dual channel analyser designed to cover a variety of applications such as environmental noise assessments, sound insulation and sound intensity measurements among many other measurement tasks.

Applications

- Environmental noise assessments.
- Noise monitoring.
- Noise at work.
- Product noise testing.
- Vibration measurements.

Features

- Large colour touch-screen (4.3”).
- Intuitive user interface with graphical icons for selection of mode and custom made user setups. Markers edited directly on the touch screen. Real keyboard for quick operation in challenging environments.
- Built in webserver makes your Nor150 available through the internet from anywhere in the world whether you configure it for LAN, USB, WLAN, GPRS, 3G or 4G communication.
- Audio recording on trigger or softkey. You can immediately listen to recordings using a standard headset.
- Voice and text notes, built in GPS and camera notes help you document your measurements with all.
- Wide frequency range for vibration and low frequency measurements (0,1 Hz – 20kHz in 1/3 octave band).
- 120dB measurement range broadband and filter.

Future Proof

Your Nor150 Analyser is designed to be expanded and upgradeable to give you a complete measurement tool for years to come. Norsonic’s retrofit policy ensures regular software updates with new features and new options followed by a 3 years warranty. As a general noise analyser, advanced environmental and occupational noise meter you can be sure your Nor150 will be up to date as requirements and standards change over the coming years.

Upcomming applications:

- Sound Intensity.
- Reverberation time.
- Single and dual channel sound insulation.
- Un-attended noise monitoring scheduler.

Nor850

The Nor850 is the latest state-of-the-art acoustical analyser from Norsonic. Using the experiences and accumulated knowhow from the previous generations of analysers such as Nor811, Nor823, Nor830 and Nor840, Norsonic is offering a unique multi-channel system.

The Nor850 Suite is connecting a variable number of individual measuring units to create the optimal system that suits any measurement task. Dedicated user-friendly application packages for various uses are available, and the overall system control and result presentations are done with a PC running the latest Windows8 platform.

Building Acoustics applications

Example of configuration

Features

- Individual units for each measuring channel offer a very high degree of operating flexibility. It allows the user to operate a multichannel system one day – or many individual measuring units another day!
- The multichannel system Nor850 may be expanded as the needs grow. Start with the new Nor150 SLM, or two units of the standardized Nor140 SLM's, and increase step-by-step by adding additional SLM units – or mix with Nor850 Racks containing 1-10 measuring channels.
- Norsonic supplies dedicated user friendly application packages for various use. In addition to the General Mode package, there is already a long list of users both for the Building Acoustics packages and for the Sound Power packages.
- The application packages are all written in the latest MS Windows Presentation Foundation software environment which opens up a new world of user friendly features.
- The General Mode allows the user to make mulit-specter measurements in all channels simultaneously with various settings for frequency range and level profiles. The profiles have user-defined period lengths from a few msec to several minutes. The results are presented in user-defined setups with both level vs. frequency and level vs. time views as well as tables.
- The Nor850 Suite offers an environmental software extension which enables the user to make audio recordings in selected channels and to insert event markers along the timeline during the measurement sequence.
- The basic Building Acoustics application package includes all required features for performing sound insulation tests in the field. Both the traditional ISO-140 Standards as well as the new ISO-16283 Standards are included, plus national varieties of these. The ASTM Standards E336, E90 as well as the E413 are also included.
- In the extended Building Acoustics package the more advanced laboratory test such as ISO-10140 as well as ASTM E1007, E492 and E989 are included together with absorption coefficient testing in accordance with ISO-354 and ASTM C423.
- The basic Sound Power application package includes all features required for making sound power test in accordance with the various Standards in the ISO-3740 series.
- The extended Sound Power application package contains required features for making more special tests such as dual-chamber testing of heat-pumps, dynamic testing of earth moving machinery, and similar.
- Further application packages are planned for sound intensity, environmental noise, vibration, etc.
- The Nor850 Suite additionally offer features for automatic control of Rotating Microphone Booms, Tapping Machines as well as control of moving loudspeaker systems. Logging of DC-voltage levels in parallel with the acoustic measurements is available, and the entire test procedure may be controlled by a user defined Scheduler for easy test repetitions.

Nor850

Sound Power applications

Nor265

Nor278

- In the heart of the Nor850 Suite there is a sensor database containing all possible information about each user complete list of measurement transducers (microphones, preamplifiers, accelerometers, etc.) including serial numbers, product name, producer, calibration history, verification laboratories, date of next verification, correction data, and more. The data base may also include similar data for calibrators and reference sound sources.
- By connecting a number of individual measuring units through various communication channels – including both LAN and USB – the user may create the optimal multichannel system for any task. Wireless communication through BlueTooth or WLAN is also available.
- All connected frontends and SLM's are communicating digitally with the controlling PC, hence any kind of errors introduced by long analogue cables are avoided. No need to worry any longer for the wear and tear of the long microphone extension cables!
- Each individual measuring unit may be homologated by an independent verification laboratory which means that even the entire multichannel system may be homologated!

Nor278

Reference sound source

The rugged and compact design makes it well suited for both laboratory and field use. The design ensures a stable and uniform sound power output with unique long-term stability.

Applications

- Substitution and juxtaposition methods for determination of sound power of noise sources according to ISO 3747.
- Comparison method for determination of sound power of noise sources according to ISO 3741, ISO 3743-1, ISO 3744 and 3747.

Features

- A-weighted Sound power output : 93dB re 1 pW (50Hz line frequency).
- Sound power 50 Hz – 20 kHz: 94dB re 1 pW (50Hz line frequency).
- Fulfils ISO 6926 for reference sound sources in the extended frequency range 50 Hz – 20 kHz.
- Individually calibrated (accredited calibration optional).
- Long-term stability.
- Weight 18,6 kg.
- Rugged.

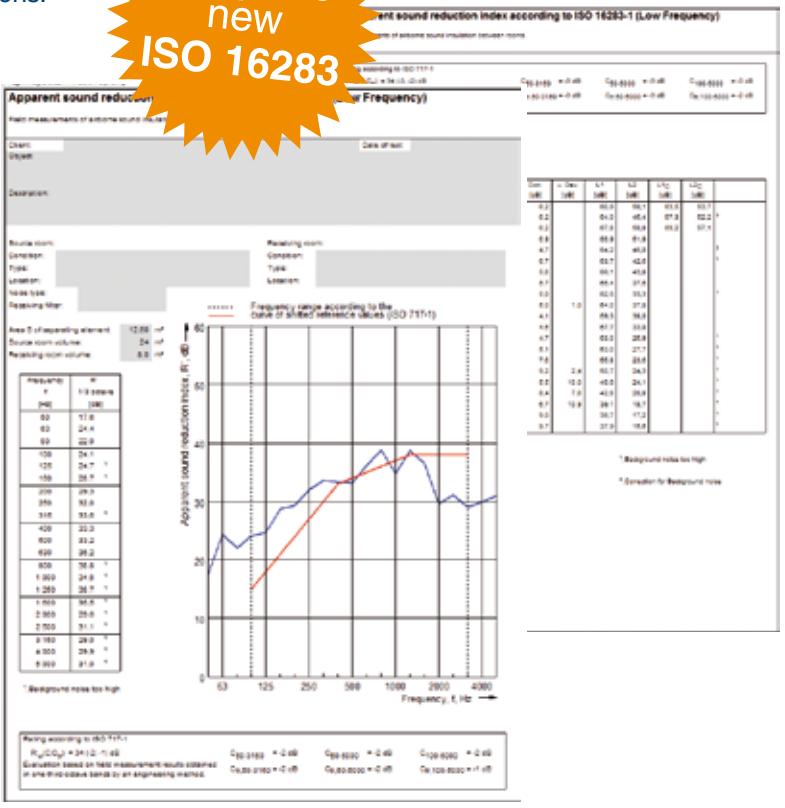
Nor265

- Oscillating microphone boom for spatial averaging in building acoustic or sound power measurements. Optionally it may be equipped with turntable.
See page 24 for further details.

NorBuild

Nor1028, software for Sound Insulation Calculations.
The universal package for building acoustics.

Supports new ISO 16283



Accepts files with measurement data from Nor110, Nor118, Nor140, Nor840, Nor843 or Nor121 and CtrlBuild plus files from NorSic projects.

Nor140

Nor265

CtrlBuild

Optional control module for use with NorBuild to automate building acoustics measurements. Controls the Nor118, Nor140, Nor121, Nor843 and up to two Nor265 Oscillating Microphone Booms.

NorBuild

- Allows the quantification of the acoustic performance of structures according to a wide range of international, European and national standards, i.e. ISO 717, EN 20717, BS 5821, ASTM, SIA 181 etc.
- Version 4 includes the test procedure and calculation for the new ISO 16283 standard that replace the ISO 140.
- Input data can be taken directly from the Nor110, Nor118, Nor140, Nor121, Nor840 or Nor843 analysers, from file or input by hand.
- Automatic calculation of the rating parameters (D_{nTw}, R_w, $L_{nT,w}$, etc.) as set out in the standards with the report generator producing the information in the required format.
- Freely selectable frequency range for the display and calculation of the rating parameters.
- Input of all the necessary project data is made via user friendly input screens.
- Graphic and numeric presentation of the results.
- To comply with their own company style, users may redefine the presentation of the reports.
- Energy and arithmetic averaging of the data is performed as required.
- Excel reporter for making customized reports in your local language.

CtrlBuild

- Interface with the Nor118, Nor140, and Nor843 analysers to fully control the procedure for normal level and reverberation time measurements as well as SweptSine technique.
- Support Nor520 Bluetooth Transceiver for wireless communication for Nor118 or Nor140 measuring instruments.
- Controls up to two Nor265 Oscillating Microphone Booms in a system.
- The user defines the measurement requirements and the associated instrument is then fully set up and the complete procedure controlled by simple mouse clicks.
- On-line display of the measured spectra and reverberation time data.
- Automatically transfers the measurement results to the NorBuild program to calculate the rating parameters, thus allowing the two modules to be fully integrated.
- The complete data set, measurement protocol and the calculated results are stored together in a project file.

Nor1516B

Wireless Building Acoustics System

The Nor1516B offers wireless communication between the PC in the hands of the operator and the measuring instruments in both the source and receiving room. The new Nor1516B system greatly simplifies the setup and communication protocols. By connecting the small external special developed Bluetooth Transceiver Nor520 directly to one or two of the Nor140 handheld sound analyser(s), a single or dual channel wireless building acoustic system may be setup with a minimum of time at almost any location. The nominal maximum distance from the analyser to the operating PC is 300 meters in free sight which for practical purposes is powerful enough to communicate through most building constructions.

Nor1516B

Normally, building acoustics testing in the field requires putting out a long noise generator cable between the test rooms. For dual channel measurements, long microphone extension cables must be laid out as well. This procedure is time consuming, particularly when the cables are to be laid out of windows in one room and into another window in the other room, Or, in cases where the cables have to go through corridors, down the staircase, and into a new corridor on another floor!

The Nor1516B is designed to avoid these cumbersome procedures. In addition, it limits the wear and tear problems often found on these cables when used over a period of time.

The Nor1516B System requires one measurement unit in each of the test rooms, plus a loudspeaker for noise excitation, and a control unit placed with operator in a third room. With these units, any airborne or impact sound insulation test may be performed including the measurements of reverberation times and the final calculation of the sound insulation indeeces (Rw, STC, Ln,w etc.).

Features

- No cables between source-, receiving- and control-rooms
- Elimination of long unwieldy microphone extension cables
- Elimination of cable wear due to transportation and through-door or -window
- Great time savings for sound insulation tests due to easy set-up and tear-down
- Single or dual channel measurements
- Any existing Nor118 or Nor140 can be upgraded to become the measuring unit in the 1516B system.

Nor520 Bluetooth Transceiver

The Nor520 Bluetooth Transceiver replaces the use of data interface cable between the measuring instrument and the PC. Hence, it is useable as a wireless alternative for many applications, and in combination with both the Nor118 and Nor140 Sound Analysers. Wireless download of measurement files may be performed using the NorXfer software. Wireless building acoustic systems may be achieved when used in combination with the CtrlBuild feature in the NorBuild software.

It is a compact unit plugged directly into the data communication part of the Nor118 or Nor140. The unit is supplied from the sound level meters internal batteries. The transmitting distance in free sight is 300 m.

Accessories

Nor275
Hemi-dodecahedron noise source for field applications. A portable noise source with omnidirectional characteristics. Improved loudspeakers elements have reduced both weight and dimensions compared to the previous Nor250 model.

Nor276
Dodecahedron loudspeaker. A high power loudspeaker with omnidirectional characteristics. Improved loudspeakers elements have reduced both weight and dimensions compared to the previous Nor270 model.

Nor265
Oscillating microphone boom for spatial averaging in building acoustics or sound power measurements. Optionally, it may be equipped with a turntable and RS-232 remote control.

Nor277
Tapping Machine for making footfall noise transmission measurements in buildings as set out in International and National Standards.

Nor280
A portable power amplifier with internal noise generator for use with the Nor275, the Nor276 or other suitable loudspeakers. Optionally, it may be equipped with a wireless on/off remote control.

Nor276

- Fulfils the directional characteristics required by the ISO 140-3 and -4 Standard.
- Fulfils ISO 3382-2.
- Delivers a continuous sound power level of 120 dB when driven with pink noise over the frequency range 50 to 5 000 Hz via the Nor280 Power Amplifier.
- Dimensions 332 mm (13”) diameter. Weight 9,3 kg (20,5 lb).

Nor275

- Fulfils the directional characteristics required by the ISO 140-4 Standard when mounted on a hard reflecting plane.
- Delivers 120dB sound power level in conjunction with the Nor280 Power Amplifier over the frequency range 50 to 5 000 Hz.
- Dimensions: 332 (d) × 195 (h) mm. (13 x 7,6”) Weight 5,7 kg (12,6 lb).

Nor280

- Specially designed for building acoustics measurements.
- Lightweight and rugged construction.
- Self contained noise generator.
- Emits 120 dB sound power level in the 50 - 5000 Hz frequency range when used with Norsonic dodecahedron loudspeakers Nor275 or Nor276.
- Wireless remote control of noise generator (optional).
- Equalization network to optimise acoustic output from speaker.
- Balanced signal input for low noise and limited cross talk problems.
- Dimensions 275 x 110 x 246 mm (10,8 x 4,3 x 9,7”). Weight 3,5 kg (7,9 lb).

Nor277

- Impact sound transmission testing according to ISO 140 part VI, VII and VIII, ASTM E-492 and ASTM E-1007.
- Determination of single number quantity index Ln,w, in accordance with ISO 717-2 and ASTM E-989.
- Remote operation from hand switch or PC.
- Mains or battery operation.
- Powered from 85-264 volt AC main supply. Built in Lithium Ion rechargeable batteries.
- Low weight 10 kg (22 lb) incl. battery and wireless remote option.
- Five hammers each having a mass of 500 g falling from a height of 40 mm (adjustable).
- Tapping sequence of 10 impacts per second, rpm controlled via servo feedback loop.
- Built in self check of hammer fall speed, and tapping sequence.
- Retractable feet.
- Dimensions: 265 x 230 x 495 mm (10,4 x 9,1 x 19,5”).

Nor265

Applications

- Building acoustics measurements in accordance with ISO 140.
- Reverberation time measurements in accordance with ISO 354.
- Sound Power measurements in accordance with ISO 3740 series.
- Directional response measurements of loudspeakers and microphones.

Features

- Accurate positioning.
- Sweep of ±90º and ±180º.
- Direct control or remote control from a PC.
- User defined sweeps.
- Selectable sweep times.
- Boom length adjustable from 0,8 - 2 metres.
- Rugged design.

NorImage

Integrated video for noise nuisance recording.
Compatible with existing noise nuisance systems.

Noise Nuisance Recorder

Measures the noise and record audio signals of disturbing events.

NorImage

Norsonic was the first manufacturer with integrated digital recording in a sound level meter - and now the latest generation Nor140 has an option for video recording. The complete NorImage system integrates a Nor140 Class 1 sound level meter full fidelity audio and video. A simple interface has been constructed to make these measurements possible which gives competing evidence when investigating noise nuisance.

- Simple touch-screen set up – just press 'Start'
- Dedicated NorImage software runs on Micro PC supplied with system.
- The NorImage system works exclusively with the Nor140 and has a simple connection between the two.
- Sturdy lockable tamper-proof case.
- Sound levels are logged once per second.
- 1 minute pre-trigger on video & audio recordings.
- Full fidelity audio recordings.
- Unlike CCTV, video recording is only collected/ stored when a hand switch is activated or set trigger levels are exceeded - which saves valuable officer time.
- For long-term noise monitoring the NorImage will run within the Nor1520 Permanent Monitoring Terminal. Simply connect the camera to log video permanently or when set levels are exceeded. Perfect for accurate noise source identification.
- All recordings date/time logged.
- Highlight recording and click 'Play' - integrated media player in NorReview software (supplied) plays recordings (video & audio) with moving cursor.

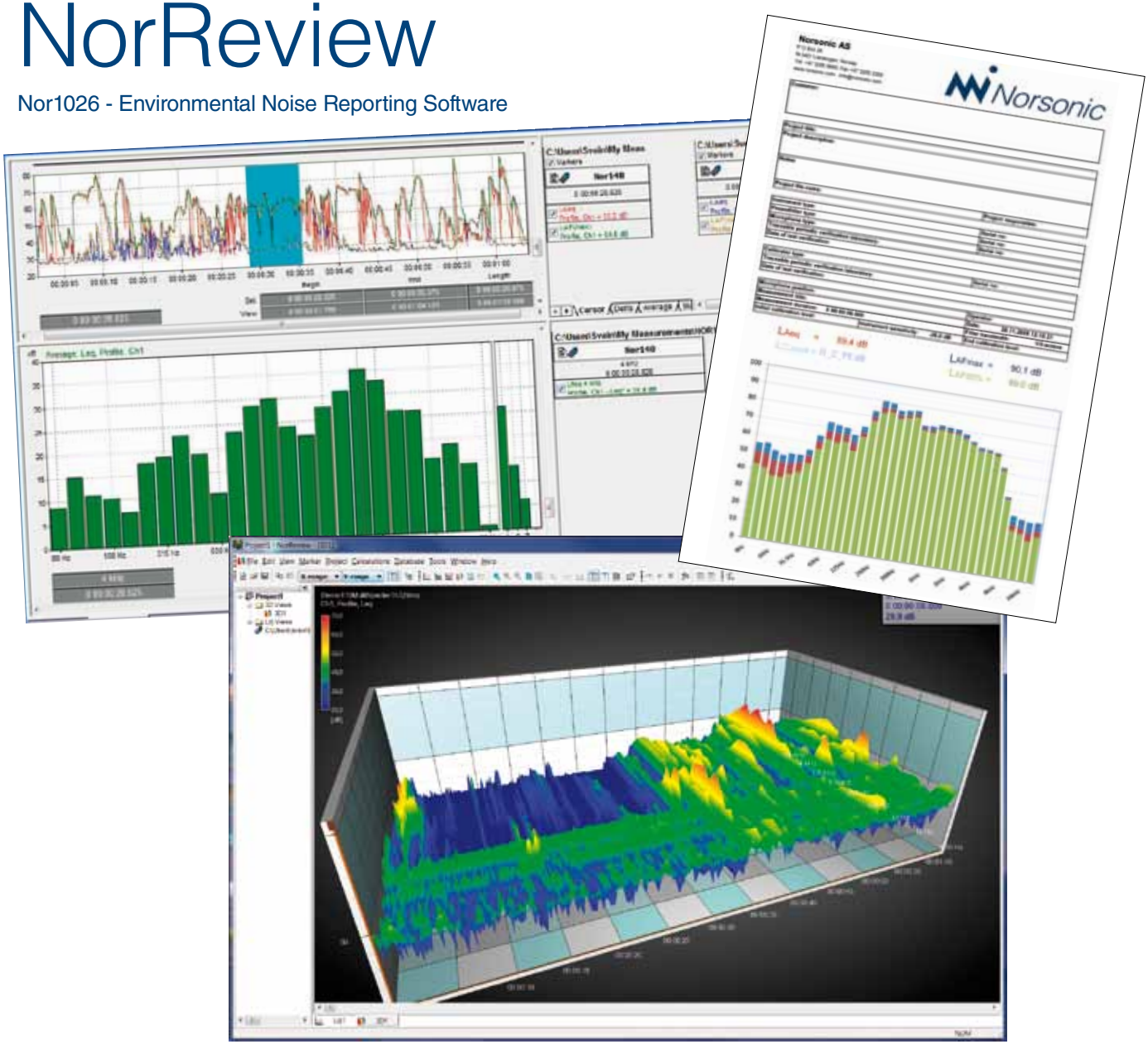
Noise Nuisance Recorder

- Compact
- Discreet
- Easy to set up
- Simple to use system and software
- Easy to analyse

- System contained in small, tough, lightweight case to prevent damage (accidental or deliberate!) and provided with padlocks to prevent interference.
- System supplied with rucksack for discreet deployment.
- Full fidelity audio recordings (NOT compressed audio) for reliable evidence gathering.
- Speedy download from Secure Digital memory card.
- The Norsonic Nor140 is a compact hand-held meter with audio recording for noise nuisance investigations and also environmental noise measurements.
- Up to 99 sec audio pretrigger.

NorReview

Nor1026 - Environmental Noise Reporting Software



NorReview

The NorReview is a flexible project oriented PC software package for presenting and post processing environmental noise data from Norsonic instruments. Each project may contain all kind of raw and post processed noise and weather data, audio recordings, voice notes, Microsoft® Word or Excel reports and other files such as digital photos and pdf-text files. It can quickly generate a single report or make advanced evaluations and complex project reports.

Features

- Flexible and versatile user-interface.
- Evaluation of industrial noise.
- Evaluation of rail and road traffic noise.
- Evaluation of residential noise.
- Evaluation of multiple measurement files simultaneously.
- Direct import or file read-in from Norsonic instruments.
- Displays frequency, time-profile, FFT and AC views of the measurement data.
- Insert and edit markers to recognize noise sources.
- Replay of audio recordings with dynamic cursor and marker insert features.
- Post processed event analysis with marker insert feature.
- Post processed calculations on selected pre-marked sections.
- Rating calculations according to national standards.
- Pre-defined project reports.
- L(t) view of calculated functions.
- L(f) view difference calculations.
- User-defined project reports.
- Supports weather data
- Online view of measured values from several instruments in conjunction with Nor1022 NorMonit.
- New MS' Excel template based NorReport measurement report feature.

NEW features in version 6!

- Sophisticated 3D and Spectrogram views.
- Automated multi-views of long-term measurements in pre-selected detailed sub-periods (24 x 1 hour views of a 24h measurement).
- Other improvements:
  - Overlay marker
  - Redesigned high/low
  - Simultaneously transfer of all views to Word
  - Connected cursors Lt/Lf views
  - Calculation of difference between selectable functions.

Noise Monitoring

Norsonic has delivered solutions for permanent noise monitoring for decades. The first customers were typically airports that could afford to invest in sophisticated, custom made solutions. Today we have affordable, standardized solutions with modular hardware and flexible software alternatives.

Nor1530

Our customers use our equipment to monitor:

- Traffic and infrastructure such as highways, sea ports, airports, railways.
- Construction works such as raising of new buildings, road and tunnel construction.
- Industrial noise from factories, chimneys, power stations, mining and wind power turbines.
- Recreational activity including race tracks, concerts and festivals, bars and pubs.

Nor1506B

Nor140 / Nor139

Nor1520

Nor1520

The Nor1520 is a complete Environmental Monitoring Terminal (EMT) for the most advanced users and it is especially suited for harsh environments. An integrated industrial PC makes your system flexible and gives a virtually unlimited storage capacity.

- Equipped with the type approved class 1 (IEC 61672) Nor140 sound level analyser.
- Continuous or triggered audio and video recording, see the noise source and listen to the noise! (option).
- Integrated GPS available (option).
- Supports various communication channels like RS232, USB, LAN, WLAN and cellular connections like 3G, 4G and GPRS.
- Logs weather data (option).
- Operates as a self contained unit collecting data off line or as a part of a multi channel noise monitoring system.
- All functionality can be remotely controlled.
- Fault tolerant. Stores data locally if connection with host computer is down/faulty. The system will automatically transfer all data when connection is re-established.
- Automatic electrostatic actuator- or CIC check of the measurement chain. (Nor1210, Nor1214 or Nor1216 outdoor microphones).
- Double skin aluminium cabinet for optimal working condition for the measuring instruments in hot and cold environments.
- Thermostatically controlled fan.
- Mains powered, runs 12h on internal batteries in case of power outage.

Nor1530

The Nor1530 noise monitoring terminal is a robust, cost efficient solution for semi permanent or permanent outdoor noise monitoring. Equipped with a selectable communication module (GPRS, LAN or Wifi), noise data can be reliably and securely transferred to your office. Even files containing the recorded sound of an event can be transferred and evaluated for source identification. The system can be self contained, or remotely controlled by the powerful noise monitoring software NorMonit. Equipped with the type approved class 1 (IEC 61672) Nor140 sound level analyser, detachable for handheld operation.

- Triggered audio: Listen to recorded events! (WAV files).
- Up to 32 GB SD card for storage of uncompressed audio clips and safe backup of data.
- Automatic electrostatic actuator- or CIC check of the measurement chain. (Nor1210 or Nor1216 outdoor microphones).
- Polycarbonate, IP 65 graded enclosure. Sustains harsh environments and have a high impact resistance.
- Mains/12V powered. Charger and 10Ah battery built in for up to 100 h autonomous operations.
- Logs weather data (option, requires network configuration).

Nor1506B

The portable, weatherproof case Nor1506B has been designed to protect the sound measuring instruments from heavy weather conditions, such as rain and snow. Mains, internal batteries and or external batteries can power the system. It can be delivered with the same options as the Nor1530 noise monitoring terminal.

Accessories

Nor1210, Nor1216, Nor1217 and Nor1218 Outdoor Microphones
Nor1329 Tiltable Mast

Nor1210

Nor1216/Nor1217/Nor1218

Nor1329

Nor1210

Outdoor microphone for permanent installations

- Permanent outdoor microphone for community (Model C) and aircraft noise (Model A).
- Built-in electrostatic actuator calibration.
- Fulfils IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1.
- Type approved by PTB, Germany.
- Low self noise – typically below 20 dB, A-weighted.

Nor1216

Outdoor microphone for permanent installations

- Outdoor microphone for community and aircraft noise.
- Fulfils IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1 (frequency correction applied).
- Protection class IP 55 (dust and water).
- Easy to calibrate with a normal ½" sound calibrator.
- Microphone verification by SysCheck facility.
- Low self noise – typically below 17 dB, A-weighted.
- Delivered with individually calibration certification.
- Built-in heating for enhanced weather protection.
- Directly powered and supported by Nor140 (built-in selectable frequency correction networks, heater supply and SysCheck signal generator).
- Type approved by PTB, Germany.

Nor1217

Outdoor microphone for temporary installations

- Outdoor microphone for community and aircraft noise.
- Directly powered and supported by Nor140 (built-in selectable frequency correction networks, SysCheck signal generator).
- Fulfils IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1 (frequency correction applied).
- Protection class IP 55 (dust and water).
- Easy to calibrate with a normal ½" sound calibrator.
- Microphone verification by SysCheck facility.
- Low self noise – typically below 17 dB, A-weighted.
- Low cost - uses microphone and preamplifier supplied with Nor140.
- Type approved by PTB, Germany.

Nor1218

Outdoor microphone for temporary installations

- Outdoor microphone for community and aircraft noise.
- Directly powered and supported by Nor131/Nor139 (built-in selectable frequency correction networks.
- Fulfils IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1 (frequency correction applied).
- Protection class IP 55 (dust and water).
- Easy to calibrate with a normal ½" sound calibrator.
- Low self noise – typically below 17 dB, A-weighted.
- Low cost - uses microphone and preamplifier supplied with Nor131/Nor139.

Other accessories

Nor1329 Tiltable Mast (5.5 m – other lengths on request) for permanent installation of our noise monitoring terminals Nor1520 or Nor1530, weather station and outdoor microphone. Our noise monitoring stations can also be delivered with weather stations logging everything from only wind speed and direction to complete weather data including rainfall, humidity, atmospheric pressure etc.

NorMonit & NorWeb

Nor1022 - Noise Monitoring Software
NorWeb

NorMonit

A sophisticated control and data management program for noise monitoring applications. It is scalable and can control a monitoring system, from simple to advanced with a large number of stations. The software configures each Noise Monitoring Terminal individually and automatically collects data from all stations defined. With database option, you can present data real-time in a web browser with NorWeb or with the quick view option of NorReview.

- Automatic measurement and storage of noise data, sound recording, video recording, weather data and GPS.
- Controls remote-monitoring stations based on either Nor139, Nor140, Nor1520 or Nor1530.
- Supports various communication channels like RS232, USB, LAN, WLAN and cellular connections like 3G, 4G and GPRS.
- Flexibility in the selection of measurement parameters. Provides all relevant noise parameters.
- Data may be stored as files or into an SQL database.
- Measured data may be automatically converted to Microsoft® Excel format or into ASCII text format.
- Easy integration to WEB pages retrieving data from the SQL database.
- Seamless integration to NorReview software which is used for realtime presentation, post processing and reporting.
- Automatic calibration of outdoor microphone with data presented in a separate calibration log file.
- Automatic clock synchronisation.
- Automatic SMS/E-mail message at pre-selected threshold levels.
- Data management control with user-defined backup storage of measured data.
- Up to 5 different set-up schedules per noise monitor per day.
- Each day may be treated individually.
- Continuous or triggered video for noise source identification.
- Advanced trigger functionality. Trigger levels can change throughout day and can be absolute or relative.
- Automatic reporting to PDF or other file formats.

NorWeb

Our noise monitoring system can be set up to present a web page with noise data. The NorWeb presents real time data and by using a calendar function, historical data can be viewed. Noise data from a number of stations can be accessible through a pull down menu. Detailed noise data can be directly downloaded as a Microsoft Excel® file. The web solution is suitable when noise data needs to be shared with a group of people.

Hosting

Norsonic offers you to remotely operate your noise monitoring system and store your data security on a dedicated server. With this service we will take care of the collection of data and you will have secure access to the noise data through a web interface.

- Cheaper: No need to invest in additional computer hardware.
- Safer: Norsonic takes care of trouble shooting and secure backup procedures.
- Simpler: Direct access to noise data through your web browser.

NorRemote

– a new generation of remote control and data acquisition from a sound level meter.

The Nor150's built in web server opens up a new world of remote communication and acquisition of data from a Sound level meter. Simply connect to your instrument via LAN, GPRS or WiFi using a web browser to control, download or view the measurement in real time. The program covers all applications from downloading files to full control of your analyser, to add markers, start a recording or just check the battery status.

Connect your smartphone, pad or PC to the Nor150 or a Nor140. Photos and voice notes obtained on your smartphone or pad are seamless integrated with markers into your noise data with markers in the time profile. The Nor140 needs an external tiny PC with web server while the Nor150 uses its internal web server.

NorConnect

- NorConnect is the tool for download of measurements from Nor150
- Included with Nor150 deliveries
- Manages measurement files and makes reports
- Seamless integration with NorReview and NorReport for easy and powerful report making
- NorConnect installs and is run from the laptop

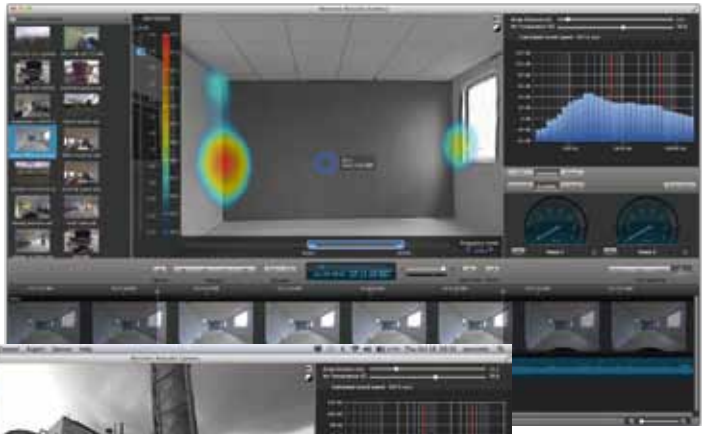
NorRemote

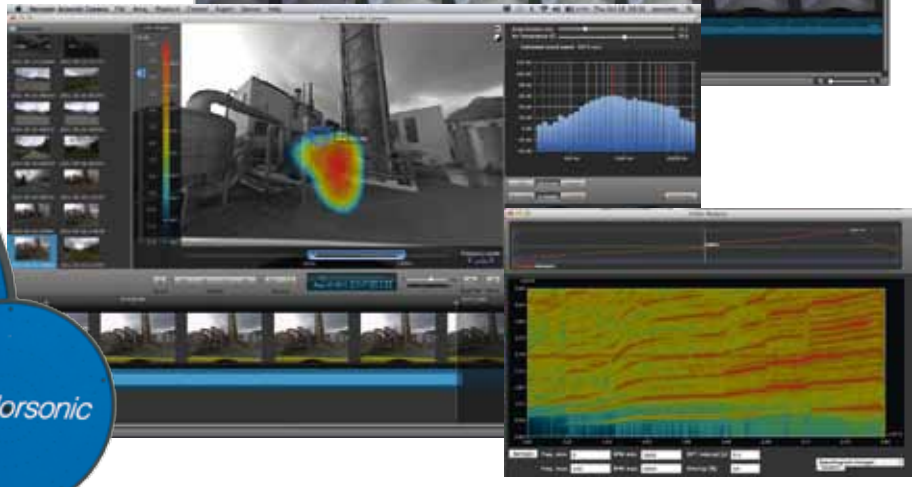
- Enables remote control of Nor150 or Nor140 from your PC, smartphone or Pad using a web browser.
- A perfect measurements tool for noise assessment applications featuring on-line view, marker and trigger management and measurement configuration.
- Remote configuration and data download via a web browser.
- On-line view of measurement data.
- Communicate with Nor150 via 3G/4G, Wlan, LAN or USB.
- Seamless integration to camera.

Nor848A

Norsonic is proud to present the acoustic camera Nor848A with outstanding performance.

The camera consist of 128, 256 or 384 microphones - more than any competitor - and enable the user to perform noise analysis with a clear view of the spatial distribution of the sound.





Nor848A

The Nor848A system is easy to set up in the field. Just power the self-contained unit from mains or battery and connect the LAN-cable to the computer. A typical set-up time is less than ten minutes.

The sound signal from every microphone as well as the video from the integrated optical camera are recorded and stored in the computer. Both live intensity plots as well as post-processed analysis are available with the user friendly software package that runs on the state-of-the-art MacBook Pro computer.

- Robust camera front-end based on a circular carbon fibre disc, three sizes available:
  - 128 microphones 0.4 meter array, only 2.5 kg weight.
  - 256 microphones 1 meter array, only 11 kg.
  - 384 microphones 1.6 meter array for lower frequency analysis.
- The high number and the optimal distribution of the microphones suppress ghost-spots and ensure that the spatial mapping range is up to more than 25 dB.
- No need for a separate signal processing interface box as all interfaces to the digital microphones enclosed in the microphone housing. Simple connection to the laptop computer through a simple LAN-cable.
- Operated on mains or 12Vdc input.
- User friendly software with all required functions for overall and detailed analysis of complex noise situations based on optimized beamforming algorithms.
- Overall, 1/1-octave, 1/3-octave, FFT and spectrogram analysis available.
- Colour intensity plots based on level and frequency.
- Selectable upper and lower frequency limits.
- Live analysis.
- Zoom feature defines the area for analysis.
- Select the focus point by the cursor and listen and analyse the sound from a virtual microphone position – even in real time.
- Suppress interfering sources by using the acoustic eraser function.
- Direct output of analysing views to PDF report.
- RPM and order analysis option.
- Select single episodes from recording with easy to use video editing features.
- Post processing for higher precision calculations.
- Competitive price!

Applications

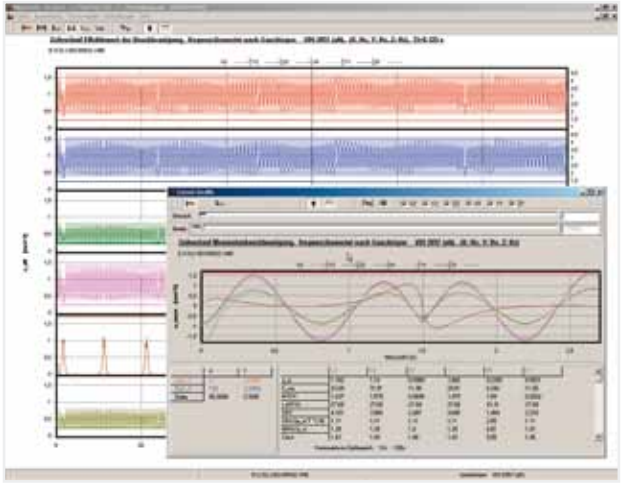
- Sound source identifications.
- Sound leakage.
- Automotive.
- Industry.
- Environmental noise.
- Building acoustics.

Nor133 & Nor136

The Precision Vibration Meters Nor133 and Nor136 are designed in accordance with ISO 8041. In their basic versions, both meters are well suited for measurement of whole body and hand arm vibration measurements. Optional upgrades allow for the measurement and analysis as vibration in buildings, ships, vehicles and public transport systems in accordance to international and national standards.

NorVibraTest

Nor1038 - A powerful tool for post processing and creation of measurement reports based on captured raw data. The program handles up to 6 measured vibration channels and one noise channel. The program requires that the Nor133 or Nor136 is equipped with option 1, raw data recording.



Nor133 and Nor136

Features and applications

- Whole body vibration to ISO 2631.
- Hand Arm vibration to ISO 5349.
- Building Vibration measurement.
- Ship cabin vibration measurements.
- Graphical and numerical display of all channels simultaneously.
- Huge memory capacity with SD memory card.
- Records the raw data signal for analysis in NorVibraTest.
- Powerful post processing software.
- Complete range of accelerometers for HA and WB measurements.
- Multi language selection.

NorVibraTest

Features

- Project oriented system.
- Calculation of all weighted features for multi-file measurements.
- Displays e.g. weighted and un-weighted time signal, frequency spectrum, power density.
- Additional weighting functions available.
- Export of the vibration signals to .WAV or ASCII.
- Calculated values between cursors and zoom.
- Correlation verification between channels.
- Calculation of A(8) for multi-step cycles.
- Report generator based on Microsoft® Word for generating user defined reports.
- Multi language selection.

Vibration transducers & accessories

Norsonic has a carefully selected range of single and triaxial accelerometers. All accelerometers are piezoelectric share type with integrated preamplifier, so called IEPE accelerometers.

We have also developed a tri-axial velocity sensor (Geophone) for ground- or building vibration applications.

Nor1286

Nor1288

Nor1270

Nor1271

Nor1287

Nor1292

Vibration transducers

- Nor1270 - General purpose single axis accelerometer, 100 m V/g (*)IEPE type).
- Nor1271 - Miniature single axis accelerometer, 10 mV/g (IEPE* type).
- Nor1286 - Triaxial seat pad accelerometer, 100 mV/g (*)IEPE type).
- Nor1287 - Triaxial miniature accelerometer, 10 mV/g (*)IEPE type).
- Nor1288 - Triaxial accelerometer, 100 mV/g (IEPE* type).
- Nor1292 - Triaxial Velocity Sensor (Geophone), 26 mV/mms^{-1} * (1 Hz / 500 Hz when frequency compensated). 3-axial passive velocity transducer has screw-adjustable feet and spirit level for horizontal alignment. With 3 m cable and 7 pin LEMO connector.

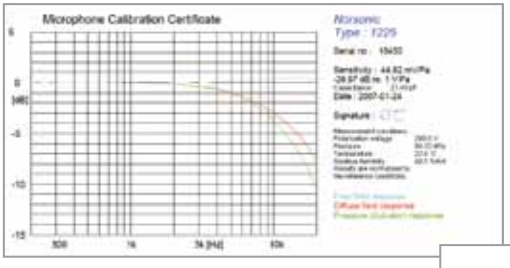
Accessories

- Microdot cable Nor1480 (1,5m) and Nor1481 (5m) Microdot-microdot cable suitable for use on accelerometer Nor1270 and Nor1271.
- Triaxial cable Nor4551
  1,5m cable for connecting a Norsonic triaxial accelerometer to Nor133 / Nor136 vibration meters, fitted with 4 pin MicroCom connectors.
- Triaxial cable Nor4555
  1,5m cable for connecting a Norsonic triaxial accelerometer to Nor133 / Nor136 vibration meters, fitted with 4 pin Lemo connectors.
- Triaxial cable Nor4556
  5m cable for connecting a ZEB/GS3T Geophone to Nor136 vibration meters.
- TNC to microdot adapter, Nor1456.
- BNC to microdot adapter, Nor1466.

*)IEPE: Integral Electronics Piezoelectric Accelerometer

Nor1504A

Complete system for the periodic verification of sound level meters, acoustic calibrators and measurement microphone.



Sound Calibrator Certificate

Calibrator : Norsonic Type 1253

Serial no : 27766

Level : 124,00 dB
Frequency : 251,19 Hz

Reference conditions:
Pressure : 101,325 kPa
Temperature : 23,0 °C
Relative humidity : 50 %RH

Measurement conditions :
Pressure : 98,13 kPa
Temperature : 21,6 °C
Relative humidity : 49 % RH

Date : 2007-03-15
Signature :

Norsonic AS

Nor1504A

- Allows for the acoustic, electrostatic and electrical verification of acoustic instrumentation as set out in the Standards covering Legal Metrology requirements.
- Calibration of sound level meters performed in accordance with IEC 61672, part 3, IEC 60651, IEC 60804, BS7580, DIN45657, ANSI SI.4, ANSI SI.43.
- Calibration of dose-meters in accordance with IEC 61252.
- Quick and accurate calibration of sound level meters using fully automatic, semiautomatic or manual test modes, to give the best compromise between functionality, set up time and throughput.
- Frequency response calibration of measurement microphones using either electrostatic or acoustic methods.
- Sensitivity calibration of measurement microphones using insert voltage methods.
- Quick and accurate calibration of acoustic calibrators to the requirements of IEC 60942.
- Verification of fractional octave filters as per IEC 61260 and IEC 225.
- Produces complete test report and traceable calibration certificates.
- Module for logging of pressure, temperature and humidity values every 30 minutes.
- Self-test application controlling the excitation signal hardware, amplifiers, filters etc.
- Supports a multitude of microphones, calibrators and sound level meters of virtually all brands. New devices to test may be added by the user through modifications of the existing library or by writing new library files.

Nor1517A

Airflow Resistance Measurement System.

The Nor1517A system measures the airflow resistance in porous materials according to ISO 9053/DIN EN 29053 (DIN52213).

Nor1517A

Applications

- Quality control in production process.
- Testing in research and development.

Features

- Fast and accurate measurement and readout of measurement results.
- Accepts test material of various form and size.
- Easy setup and use.
- Large dynamic range of measurement.
- Measures at 2 Hz.
- Standards: ISO 9053/DIN EN 29053 (replaces DIN 52213).
- Measurement range: 10 Pa s/m to 30 000 Pa s/m, up to 200 000 Pa s/m when correcting for non-linearities.
- The piston can be set for 2 different stroke lengths: 28 mm and 2,8 mm giving airflow speed 0,5 mm/s or 5 mm/s (rms).
- Effective diameter for test: 100 mm.

Accessories included:

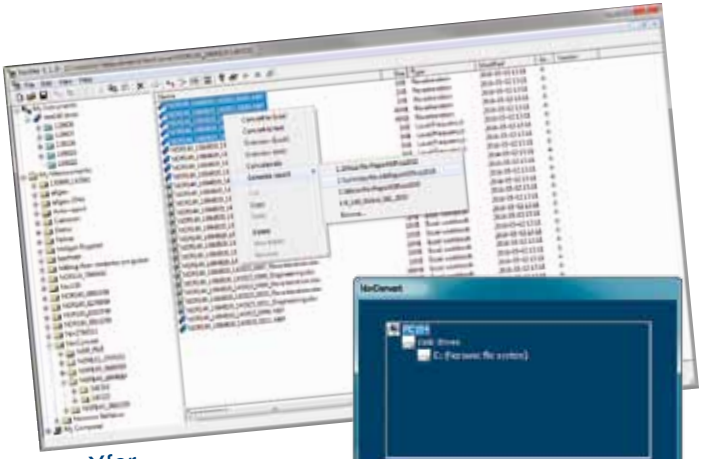
- Calibration disc.
- Sample holders 1517A/01 and 03.
- Sound level meter Nor140 with microphone, sealing device and 1/3 octave filters.

Accessories included:

- Norsonic may deliver mounting devices for test materials. Ask the factory/dealer for special needs.

NorXfer

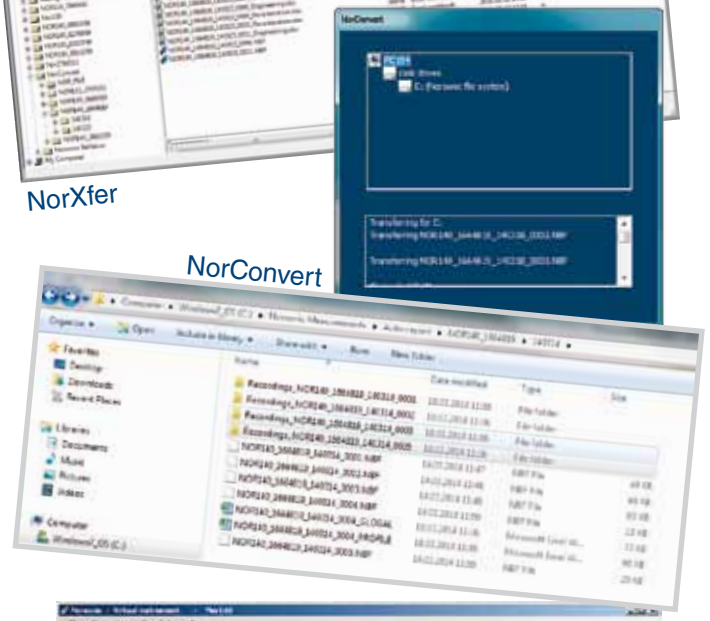
Nor1020 - Software for transfer of measured data from Norsonic instruments to a PC. Freeware included with the sound level meter.



NorXfer

NorConvert

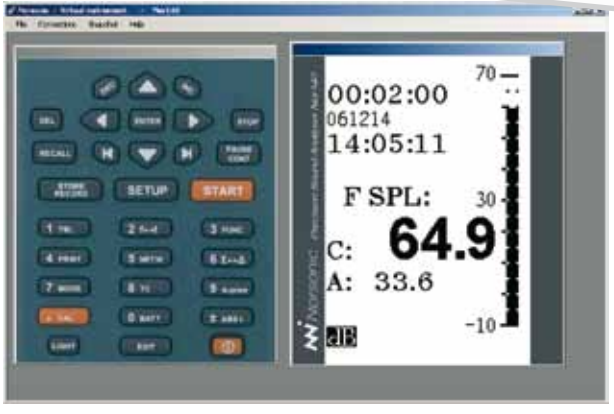
A program for automatic downloading and convert to Excel of Norsonic measurements from Nor13x-series and Nor140 instruments. The program transfers all files on the sound level meter not yet transferred before. Freeware included with the sound level meter.



NorConvert

NorVirtual

Nor1036 - A program for emulating the sound level meter on a PC. Whatever view the sound level meter has (graphs, menus, tables etc.), the same view is visible on the PC screen. The mouse can be used to operate the virtual keyboard. Freeware included with the sound level meter.



NorVirtual

NorXfer

- Transfer software for reading-in and converting measured data from Norsonic Sound level meters and analysers to a PC.
- Basic version supports transfer via USB, RS232 or parallel interfaces as well as PC-cards and SD cards.
- Results may be shown numerically on screen. It is also possible to generate an overview - a selected number of results from different measurement files into one MS Excel® file.
- Seamless integration to all Norsonic post processing and control programs.
- Conversion of the transferred data to text format or Microsoft® Excel format.
- Supports optionally also PSTN modem and GSM modem (option 1).
- Optionally instrument control for manual setup and download of data via modem or cable (option 2).

NorConvert

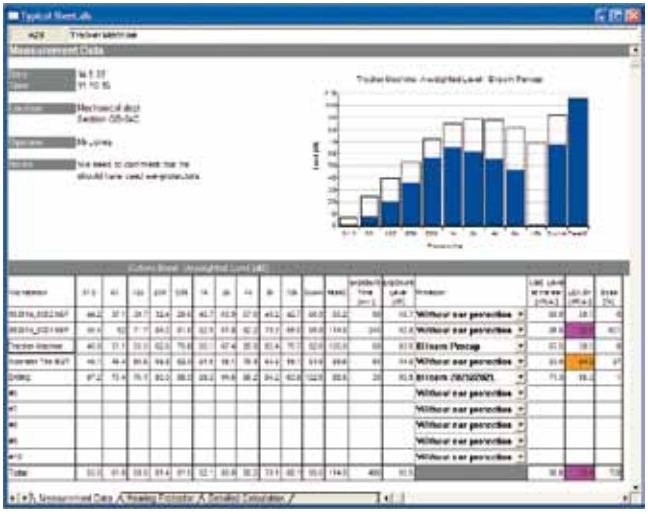
- Transfer software for reading-in and converting measured data from Norsonic Sound level meters and analysers to a PC.
- Basic version supports transfer via USB, RS232 or parallel interfaces as well as PC-cards and SD cards.
- Results may be shown numerically on screen. It is also possible to generate an overview - a selected number of results from different measurement files into one MS Excel® file.

NorVirtual

- NorVirtual type Nor1036 is a simple PC viewer of the screen from the various Norsonic instruments.
- Whatever view the instrument screen displays (graphs, tables, menus, etc), the same view is visible on the PC screen.
- Press a key on the instrument keyboard that change the instrument view – and the PC screen change simultaneously.
- Use the PC cursor to click on any instrument key shown on the PC screen – and the instrument will operate as if it was the instrument key that was pressed directly.
- NorVirtual communicates with the instrument on the RS-232 or USB interfaces.
- The NorVirtual software is distributed free of charge together with any Norsonic instrument type Nor131, Nor132, Nor139 and Nor140.

NorProtector

Nor1025 – Hearing Protector Software for calculating the effects of using different hearing protectors based on frequency spectra from Nor131, Nor132, Nor139 and Nor140.



NorConcertControl

Nor1037 - A complete system for monitoring and reporting the sound level in discotheques, concerts and at outdoor events.

NorProtector

- Software for calculating the effects of using different hearing protectors based on frequency spectra from Nor131, Nor132, Nor39 and Nor140.
- A large database containing data for the most popular used hearing protectors are included. Hearing protectors not listed in the database can easily be added by the user. The measurements are transferred from the sound level meter to the program using NorXfer software.
- The Nor1025 NorProtector software calculates all the required results for the noise deafness risk assessments. With a quick drag and drop operation all measurements from most Norsonic sound level meters are imported. The user only needs to specify the duration of work at each position, and the values exceeding the action level turns out in coloured cell boxes. Individual data for each person may be entered.

NorConcertControl

- Provides real-time monitoring of the actual sound level.
- Works with the Norsonic Nor131, Nor139 and Nor140 sound level meters.
- The sound level meters is completely controlled by the PC.
- All relevant results are continuously updated on the PC-display: Running 1 hour L_{Aeq}, 1-5 min L_{Aeq}, L_{AF}, L_{AmaxF}.
- Optional SMS at pre-selected threshold level.
- Internal distance-correction allows free choice of microphone position.
- All measured results are available in Microsoft® Excel data format.
- All results are available as graphical displays and as numerical tables.

Microphones & preamplifiers

A broad range of industry standard measurement microphones in ½” configurations with fully traceable calibration.

A full range of low noise ½” measurement microphone preamplifiers.

Microphone preamplifiers

Norsonic has a broad range of microphone preamplifiers. All designed in accordance with international standards and are therefore suitable for use with both Norsonic and other leading makes of measurement microphones. As a result of close cooperation with our customers we developed the, now well accepted, 7 pin Lemo connector standard for microphone preamplifiers.

- ICP and traditional 7 pin Lemo.
- Internal microphone heating.
- High input impedance.
- Low output impedance.
- Wide frequency range.
- ½" and ¼" versions for insert voltage testing.
- Drives up to 100 m of extension cable without loss in specification.

For details about microphones, preamplifiers, extension cables and adaptors, see: www.norsonic.com.

Measurement microphones

Norsonic's wide range of microphones covers almost any application and can be used as direct replacement with other brands.

Full use has been made of modern materials which when coupled with traditional engineering skills produces microphones that meet all the requirements of the precision measurement standards, yet are robust and resistant to corrosion. These microphones are used in conjunction with the Norsonic range of preamplifiers that closely couple to them and ensure perfect matching to the associated instrument with minimum disturbance to the acoustic field. The preamplifiers have the necessary signal handling capability and low self-noise to allow full use to be made of the wide dynamic range of the microphones.

Calibration

Calibration of all Norsonic microphones is directly traceable to national and international standards with particular attention being paid to the design to ensuring long term stability. Each microphone is delivered with an individual certificate of calibration giving all the key information relating to its performance. This includes the nominal sensitivity and frequency response along with the environmental data that relates to the calibration.

Calibrators

Self compensating precision class 1 acoustic calibrator!
Fully certified and individual accreditated calibrated to international standards.

Approved by:
- PTB Germany
- LNE France
- CEM Spain
- BEV Austria
.....and others

Nor1251

Precision sound calibrator

- Automatically adjusts for changes in the load volume applied to the calibration cavity thereby removing the need for the manual correction of the level for the effective volume of different types of microphone.
- Compensates for changes in temperature, humidity and barometric pressure to remove the need for manual corrections for these parameters.
- Output level 114.0 ± 0.2 dB @ 1kHz.
- Meets the requirements of IEC 60942 class 1.
- Automatically switches off when the microphone is removed from the calibration cavity.
- Accepts 1", ½" and ¼" cartridges by means of adaptors.
- Powered by a standard 9 volt battery.
- Dimensions 40 × 109.5 mm. Weight 185 g including battery.
- Accreditated calibrated.

Nor1253

"Class 0" sound calibrator
– the electronic pistonphone

Nor1253 was designed to comply with the class 0 requirement in the international standard for sound calibrators IEC 60942 (1997). The standard is now been replaced by a new version (2003) without this class of performance.

The calibrator is widely used as a replacement for a pistonphone - without the need for correction for the barometric pressure.

- Automatically adjusts for changes in the load volume applied to the calibration cavity thereby removing the need for the manual correction of the level for the effective volume of different types of microphone.
- Compensates for changes in temperature, humidity and barometric pressure to remove the need for manual corrections for these parameters.
- Output level 124 ± 0.15 dB @ 250 Hz ± 0.2 %.
- Other frequency and other output level can be supplied as factory preset settings.
- Meets the requirements of IEC 60942 class 1.
- Automatically switches off when the microphone is removed from the calibration cavity.
- Accepts 1", ½" and ¼" cartridges by means of adaptors.
- Powered by a standard 9 volt battery.
- Dimensions 40 × 109.5 mm.
  Weight 185 g including battery.
- Accreditated calibrated.

Norsonic

Some of the features listed in this brochure may be optional in certain markets. Contact your local representative or the factory for details. Norsonic AS reserves the right to amend any of the information given in this brochure in order to take account of new developments.

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