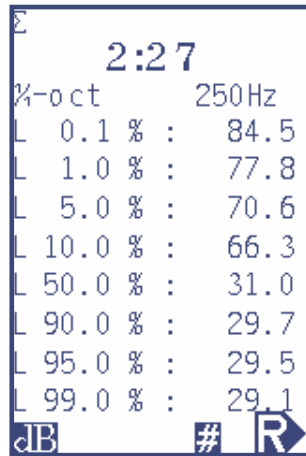


Statistical analysis (Option 2)



The LN percentage table contains 7 fixed and one user-defined percentile

For environmental noise evaluation, statistical analysis with the L_N-percentiles are often used. By installing the option 2, the Nor130 instruments offer these functions as well.

The statistical analysis are calculated based on 0.2 dB classwidths covering the entire 120 dB dynamic range. 7 fixed L_N-percentiles are calculated (L_{1%}, L_{5%}, L_{10%}, L_{50%}, L_{90%}, L_{95%}, and L_{99%}), plus 1 user-defined L_N-percentile which may be set to any N-value with 0.1% resolution.

If option 1 real-time filters is installed, the L_N-percentiles are available for each individual frequency band as well.

Specifications

(Common for both models unless noted.)
The Nor130 series of SLM fulfil the following standards: IEC60651, IEC60804, IEC61672, IEC61260, ANSI S1.4, ANSI S1.11, and ANSI S1.43. The Nor131 instrument meets the Class1 requirements while the Nor132 instrument is to the Class 2 requirements.

Measured Parameters:
Simultaneous measurement of SPL, Leq, LMax, LMin, LE and LPeak (plus the Tmax5 for Germany only)

Time weighting functions:
Fast, Slow, or Impulse

Spectral weighting functions:
Simultaneously measurement of A and C or Z-weighting. Additionally the 1/1 octave real time filters covering all bands from 8 Hz to 16K Hz (option 1)

Statistical calculations (option 2)
7 fixed percentiles L1%, L5%, L10%, L50%, L90%, L95%, and L99%, plus one user defined value (f.ex. L0.1%). The statistical calculation is in real time also within each frequency band if the filter option 1 is installed.

Measurement range:
One range covering 120dB without any range changing
Self noise measured with microphone: 17dBA (25dBA for Nor132)
Maximum RMS level 137dBA
Maximum Peak level 140dB PeakC

Battery / power consumption:
4 IEC LR6 (AA sized). Separate display showing battery voltage and time on battery since last battery change. Nominal operation time on one set of batteries is >8 hours. Nominal 11-15V external DC voltage. If supply drops below 9 volt it switches uninterrupted to internal batteries

Datastorage:
5MB internal memory equals to 2.5 million values which typically holds all measured functions from up to 10,000 individual measurements. If both the optional features, octave analysis (Option 1) and statistical indices (Option 2), are installed the memory will typically hold 2,500 sets of results.

Datatransfer:
Data transfer via USB 1.1 interface.

Microphone and preamplifier
Detachable ICP preamplifier on Nor131 which allows up to 10 meter of extension cable to be used. Nor132 has a fixed ICP preamplifier. The microphones are free field electret types. A built in random incidence correction network can be selected. A built in optional correction network for the windscreen can also be selected.

Analogue output
AC output, 100mV for full scale deflection.

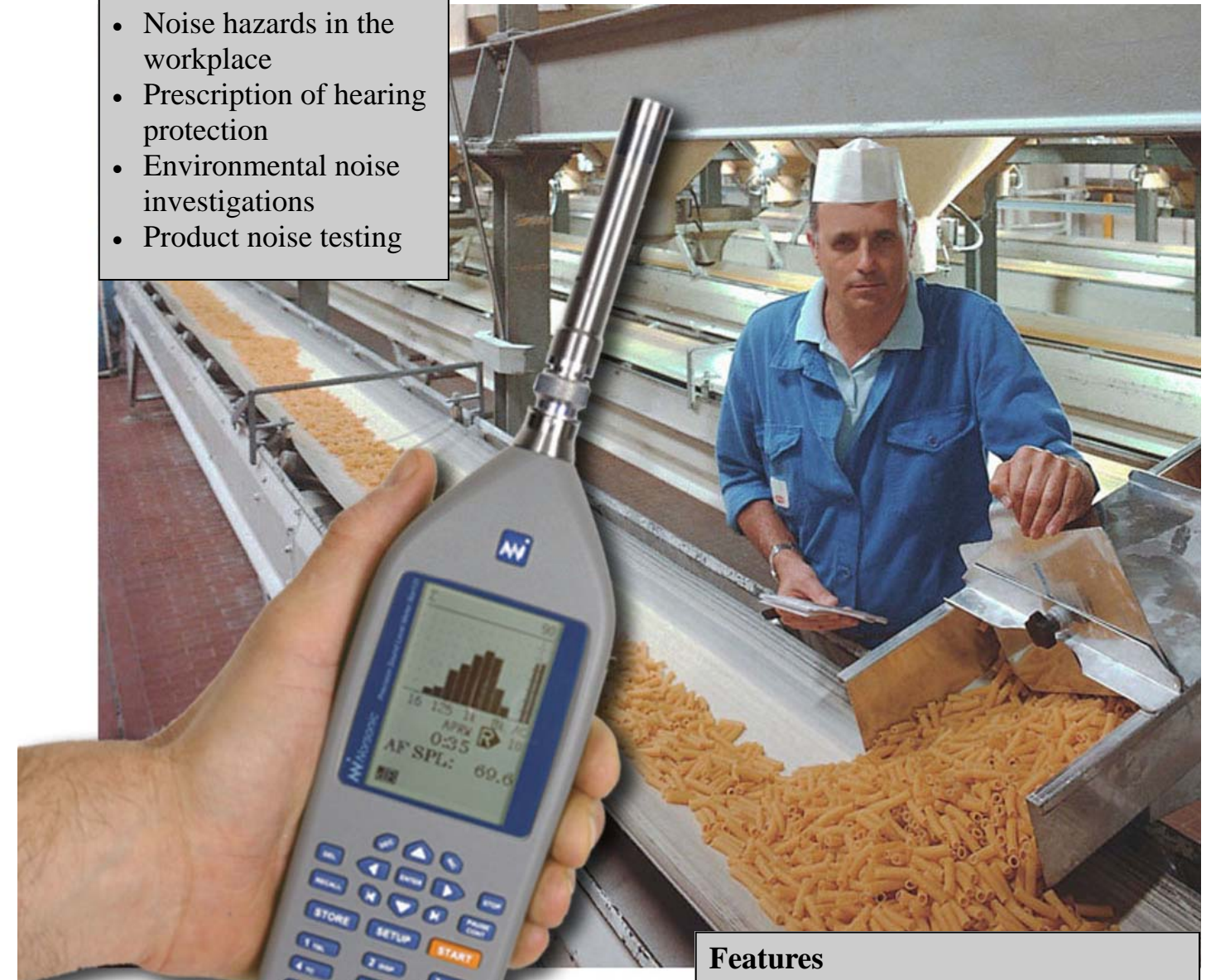
Specifications subject to changes without notice



**Sound Level Meters
Nor131 & Nor132**

Applications

- Noise hazards in the workplace
- Prescription of hearing protection
- Environmental noise investigations
- Product noise testing



Features

- Single measurement range
- Parallel L_{Aeq} and L_{Cpeak}
- Real-time octaves
- Large internal memory
- Clock synchronized measurements

Developed and manufactured by Norsonic AS Norway

Distributor:

Norsonic AS, known as a high quality manufacturer of advanced sound analysers for nearly 40 years, are proud to present a new range of sound level meters. We have taken the unique technology from our more advanced analysers into a new simple sound level meter—to give the users a reliable low cost SLM with the well-known Norsonic quality. Thereby, our complete range of sound level meters is expanded to cover any need from simple dB(A) measurement to advanced analysis of environmental noise and building acoustics.

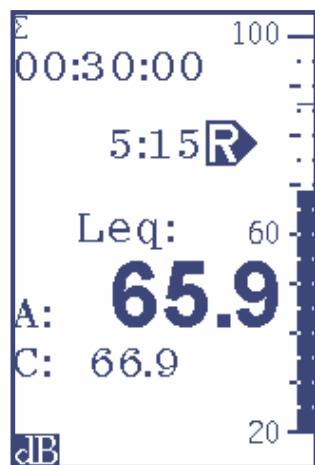
Nor130 Series of SLM's

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.

Easy to use

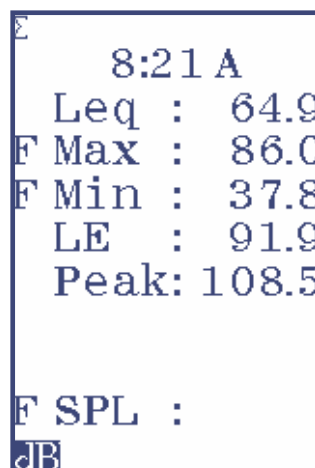
Just push the START key and measure! No need to worry about gain setting as the instrument covers the entire range from 20-140 dB in one single span. When the measurement stops, the auto-store feature writes your measurement in the non-volatile memory.

The Nor130 Series of SLM's uses the latest available



The main screen shows both A- and C-weighted levels simultaneously

digital technology to give the operator a clear view of the noise climate. The main operations are performed through dedicated front panel keys in order to give instant access to all required functions during the measurement. No need to pre-select required measurement function before starting the investigation. Simply press the NETW-key to swap between the A- and C-weighting networks, and press the FUNC-key to scroll through all the measured functions.



The tabular display shows all functions both during and after the measurement

Legible display with backlight

The high resolution backlit graphical display presents all results clearly. The graphical screen contains a bargraph with the instantaneous SPL level plus the numerical value of the selected functions for both weighting networks. Date, time and the instrument status are displayed as well.

A push on the TBL-key presents all results in a tabular view.

Quatro detector

The *Quatro detector* in the instrument is capable of detecting both the RMS- and the Peak-levels from two weighting networks simultaneously! Hence, the Nor130 Series offer industrial hygiene specialists the L_{Aeq} , L_{Ceq} , L_{Apeak} , and L_{Cpeak} from one single measurement.

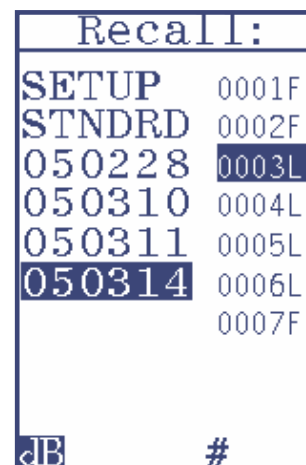
Large memory

Measurement results may be stored in the 5 MByte internal memory. This memory is of the "flash" type that will retain the information without a power supply.

The memory typically holds all measured functions from up to 10,000 individual measurements. If both the optional features, octave analysis (Option 1) and statistical indices (Option 2), are installed the memory will hold 2,500 sets of results

USB interface

Remote control of the instrument is possible via the state-of-the-art USB interface. All features may be controlled, and



All measurement are stored using the actual date as current directory name

all measured results may be read-out.

By use of the Norsonic NorXfer software (ordered separately), data downloading is completed in a few keystrokes in a *Windows Explorer* environment.

Occupational hygiene

The Nor130 Series is ideal for noise deafness risk assessments under the EU Physical Agents (Noise) Directive. It measures all required functions, and presents the results both during and after the measurement period. The $L_{Aeq,t}$ and L_{Cpeak} values are provided to allow the $L_{EP,d}$ and peak action levels to be determined from quick and simple measurements at each workstation. Where exceedences are detected the $L_{Ceq}-L_{Aeq}$ value is available to allow the HML method of hearing protector to be specified.

For a more detailed analysis, the instruments may be upgraded with 1/1-octave real-time frequency analysis (Option 1). The resulting frequency spectrum is available at the same time as the initial

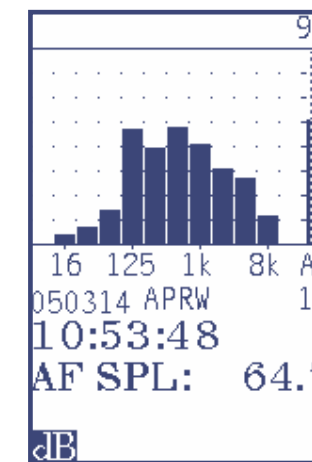
measurement and gives the information necessary to both specify noise control measures and for the correct prescription of personal hearing protection.

Environmental noise assessments

By adding the statistical L_N function (option 2) the instrument will also provide the dB values in terms of the L_5 , L_{10} , L_{50} , L_{90} etc that are required to determine the impact of noise in the community.

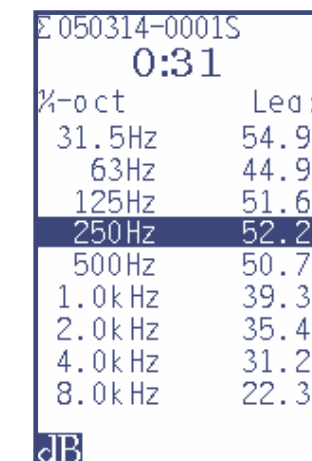
These measurements often require long term noise monitoring. With the clock synchronized automatic storage facility in the Nor130 series, repeated measurements may be performed with the results automatically stored to allow these long term measurements to be made, yet preserving the temporal data on the dispersion of the levels. By taking, for example, 5 minutes measurements on repeat store, the Nor130 instruments will produce 288 measurement per 24 hour period. These measurement files are easily downloaded to a PC using the NorXfer software which will additionally convert all these files into one single Excel-file containing an overview of all the measured data for the entire 24 hour period.

Frequency analysis (Option1)



The 1/1-octave spectrum may be viewed with a A-preweighting feature

The Nor130 series of SLM's may be extended with digital real-time 1/1-octave filters. This feature is available through the installation of option 1, and covers 12 frequency bands in the range from 8Hz to 16kHz.



The 1/1-octave table is scrolled up and down for all measured functions

Within each band, the instrument will measure the SPL, Leq, LMax, LMin and LE functions. Additionally, if the Option 2 Statistical analysis is installed, 8 different LN-percentiles are calculated within each 1/1-octave band.