PRODUCT DATA

Hand-held Analyzer Type 2250-L (2250 Light)

Hand-held Analyzer Type 2250-L (2250 Light) has been developed specifically for measuring occupational, environmental and product noise, while complying fully with all the relevant national and international standards.

Extensive user studies have been paired with state-of-the-art technology to make this analyzer a robust, effective and practical tool for those applications.

Using the large, high-contrast, touch screen interface, the analyzer can easily be set up to display and measure just what is needed from the extensive list of parameters provided by the analyzer.

Together with Measurement Partner Field App, MP Cloud and Measurement Partner Suite for post-processing, 2250 Light is a complete solution for your measurement needs.

Uses and Features

Uses

- Environmental noise assessment
- Occupational noise evaluation
- Hearing protection selection
- Noise reduction
- Product quality control
- General purpose Class 1 sound measurements
- Real-time analysis of sound in 1/1- and 1/3-octave bands
- Tone assessment using 1/3-octave methods
- Loudness and noise rating measurements
- Time history analysis for broadband parameters and spectra (Logging)
- Audiometer calibration

Features

- Hardware
  - Large, high-resolution, touch-sensitive colour screen
  - 'Traffic light' status indicator
  - Plug-in rechargeable Li-ion battery (>8 h operation)
  - Robust and environmentally protected (IP 44)
  - Data storage on high-capacity plug-in memory cards or USB flash drive
  - USB 2.0 host for connection to printer, GPS, weather station, modem
  - Upgrade to Type 2250 or 2270 with the trade-in program
- Software
  - Multilingual user interface: 23 languages
  - 120 dB dynamic range – up to 140 dB
  - 24- or 16-bit recording of all or parts of a measurement
  - Broadband and spectrum logging (optional BZ-7133)
  - Logging profile display with markers (optional BZ-7133)
  - Back-erase for manual delete of unwanted noise events
  - Full Measurement Partner Suite support software for archiving, exporting and post-processing
  - Simultaneous measurement of noise and weather parameters with weather station
  - Measurement Partner Cloud
  - Measurement Partner Field App (iOS, Android)

Brüel & Kjær

Introduction

Type 2250-L is built on the core platform of the award winning design of Type 2250 and maintains the renowned Brüel & Kjær measurement excellence and the Type 2250 platform's ease of use in an efficient and versatile sound measurement instrument. Whether addressing workplace noise compliance, environmental noise assessment, or product noise certification, Type 2250-L offers the functionality needed to meet your requirements. Type 2250-L is fully compliant with IEC 61672–1 (see the specifications section for compliance information) and is delivered with a number of predefined measurement templates tailored to suit specific requirements.

The comfortable and secure design feels safe in your hand, and the buttons fall precisely where they need to be for a one-thumb operated start, stop and save. The 'traffic light' indicator surrounding the Start/Pause pushbutton gives you an immediate visual indication of measurement status, even in the brightest sunshine. The large, high contrast, touchscreen/display, lets you select parameters on the display and easily store those setups in your Type 2250-L for future measurements.

When on site, the weather station kit measures weather parameters that are stored on Type 2250-L together with the noise data. Measurement Partner Field App provides measurement annotation and control, keeping you out of the sound field and improving the quality of your measurement. After completion, upload your measurement data to MP Cloud and it is ready for you or a colleague to post-process using Measurement Partner Suite, which has tools to help you extract exactly what you need from your data.

This data sheet describes the suite of software applications available for Type 2250-L. All analyzers come with the Sound Level Meter Software for 2250 Light (BZ-7130) included.

Upgrade to Full Type 2250 or 2270

Type 2250-L can be upgraded to a Hand-held Analyzer Type 2250 or 2270, which has more features and supports a wider range of applications, such as enhanced logging, triggered signal recording and reverberation time software (see product data BP 2025 for more information). The upgrade is on an exchange basis, contact your local Brüel & Kjær representative for details.

Workplace and Industrial Hygiene Noise Measurement Applications

Type 2250-L is an easy-to-use, powerful tool to make you more productive, and more confident measuring noise at work. Type 2250-L was developed with workplace noise as a special concern.

Type 2250-L has all the necessary occupational health noise parameters. It can measure Fast and Slow, and A- and C-weighted sound pressure levels simultaneously (along with a separately weighted peak detector) so that the values you need to specify hearing protection are immediately on the display. Parallel analysis allows you to compare a 3 dB exchange rate average measurement with a selectable alternate 4, 5 or 6 dB exchange rate, including separate dose, expected dose and exposure values.

Type 2250-L offers three independent threshold peak event counters, along with simultaneous Fast, Slow and Impulse RMS detectors, to assess impulsive noise.

With the optional 1/1- and 1/3-octave frequency analysis software options, instantly assess noise control and detailed hearing-protection requirements for a surveyed location. All the octaves are measured at the same instant, along with broadband A- and C-weighted values, so there is no filter switching or range changing.

Sometimes noise levels in the workplace vary dramatically, and perhaps irregularly. To assess this kind of noise it is helpful to measure and analyse a noise profile – a measurement that shows how the sound varies with time. The logging option for Type 2250-L provides this capability in a natural, intuitive way. If you have installed the 1/1- or 1/3-octave real-time frequency analysis option, Type 2250-L seamlessly integrates the spectrum information into the noise profile.

Signal Recording Option BZ-7226 lets you record the measurement signal in order to identify and document sound sources.

Easily export, archive and report your measurements using Measurement Partner Suite BZ-5503, or export the results to Brüel & Kjær's Protector™ Type 7825, where you can organize and document a company's noise and hearing conservation program. Type 7825 calculates noise exposure according to ISO 9612–2.

Environmental Noise Assessment Applications

The tasks for environmental noise measurements are varied, so the instrument you pick for your measurements needs to be flexible, easy to configure, powerful and accurate. Type 2250-L is all that and more, ideal for a simple noise enforcement measurement one moment and for a complex environmental impact survey the next.

Type 2250-L with included Sound Level Meter Software BZ-7130 is ideal for spot noise enforcement checks. Press the Start pushbutton and, when ready, press the same button to stop the measurement. Press the Save pushbutton and you will not only be saving the results, but also the time and duration of the measurement and the date and time of the last calibration.

Type 2250-L can measure all the parameters needed for environmental noise, including dual-frequency weightings, fast, slow, and impulse time averaging, L_{eq}s and a full range of statistical distributions. Just as important, you can set Type 2250-L to display only the parameters you need and save that display so Type 2250-L starts, tailor-made for your use, every time.

For more involved environmental applications, you will need to add the Logging option. Now you can set the analyzer to record all, or up to ten selected measurement results at intervals from one second to one day, for a duration up to 1 month. The display offers two simultaneous views, one of the complete profile and a 'zoomed-in' 100-sample 'window', that are intuitively linked by the cursor.

For the precise timing of noise events, an alternative Fast Log view gives you the L_{AF}, L_{AS} and L_{Aeq} results for 100 ms intervals. In either the fast log, or profile view, you can define up to five different markers anywhere in the profile, to identify noise sources or events. When you use the real-time frequency analysis options, 1/1-octave or 1/3-octave, the frequency spectrum average, maximum and minimum values can be logged along with the overall values. With the Tone Assessment Option, annoying tones in the spectrum can be assessed according to the ISO 1996 standard. Save and view the noise profiles on your Microsoft® Windows® PC using Measurement Partner Suite and use its optional modules for noise assessment based on logging and frequency analysis.

Make these measurements with the incredible 120 dB dynamic range of Type 2250-L, allowing measurements from the low noise floor of the analyzer to over 140 dB. Without a range switch to consider, you can now make measurements without fear of overload, and still capture the nuances of a silent night. Type 2250-L is an ideal entry point to safe, easy and precise environmental noise measurements.

Product Noise Measurement

Brüel & Kjær long ago set the standard for product noise measurements. Now, whether you have a simple A-weighted sound limit requirement, or need to evaluate a 1/3-octave reverberation chamber sound power test, Type 2250-L is scalable to your requirements.

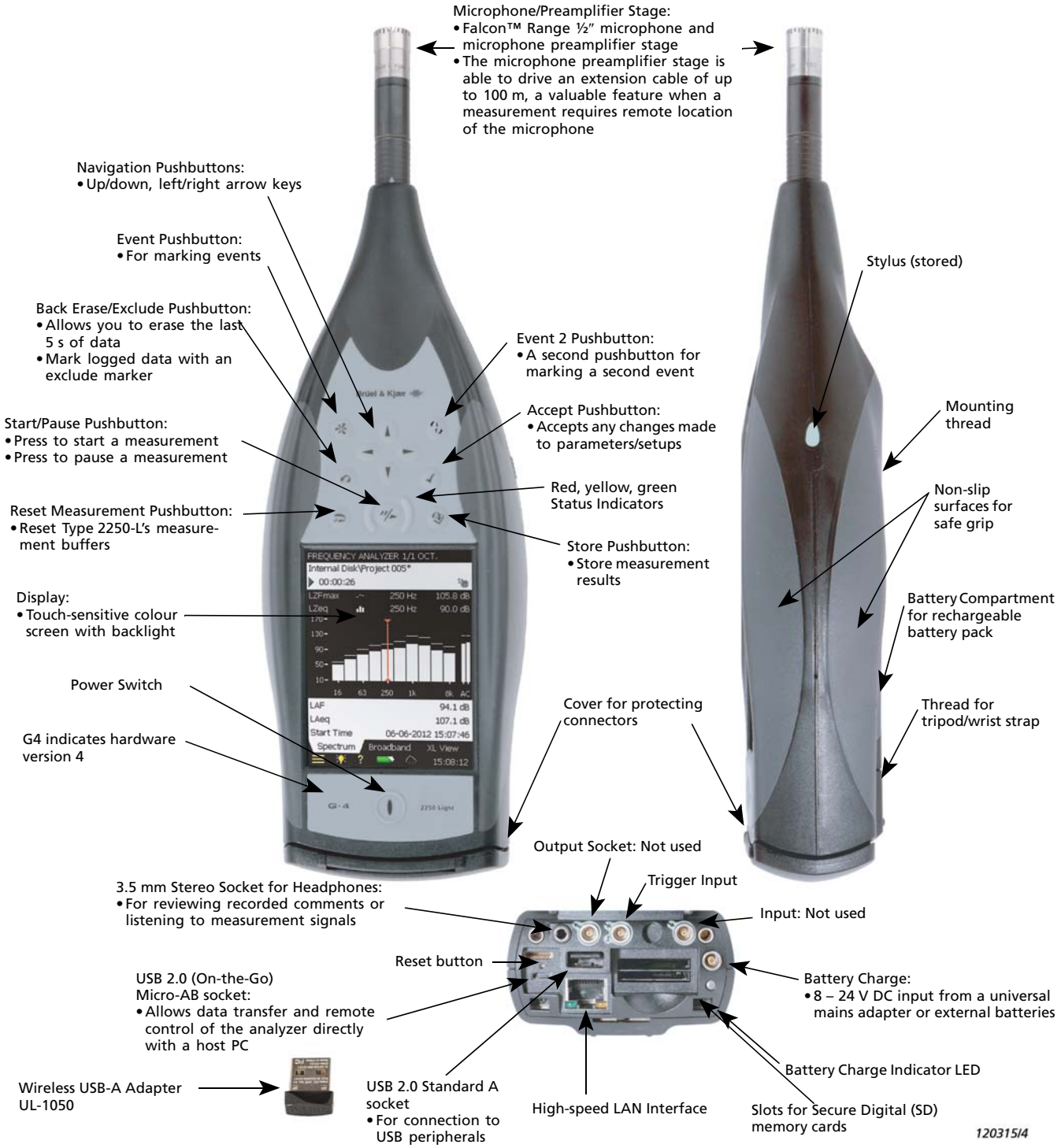
Type 2250-L can be used as a hand-held device for easy portability, or it can be operated using your Windows® PC as an online-, USB- or LAN-controlled device in your laboratory. The user-defined templates make switching between applications easy.

The wide 120 dB dynamic range of Type 2250-L eliminates concern for overloads, and you can set a preset measurement time to add consistency to your measurements. Use the built-in headphone style (3.5 mm) output jack to send the signal out to other measurement instrumentation. Measurement Partner Suite (included) makes it easy to keep track of results in an organized archive structure.

The Hand-held Analyzer Hardware

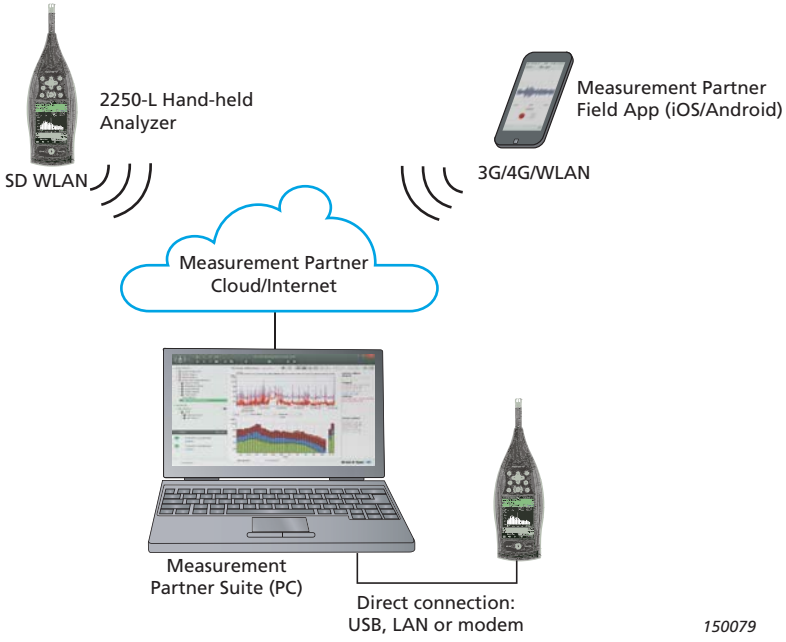
Great care has been taken to ensure that the hardware is ergonomically optimal in field use. The key features of Type 2250 Light are shown in Fig. 1.

Fig. 1 *Key features of Hand-held Analyzer Type 2250*



Connectivity

Fig. 2
Secure access to measurement data from anywhere



Remote Internet Communication

Access your data from anywhere by using various technologies. Type 2250-L allows direct operation through WiFi, modem connection (for example, 3G), or LAN (Ethernet).

Measurement Partner Cloud (MP Cloud)

Take advantage of modern cloud capability with 2250 Light. The analyzers can communicate with MP Cloud via WiFi, mobile connection or LAN (Ethernet). Upload your measurement data directly to MP Cloud for merging in Measurement Partner Suite with annotations collected with Measurement Partner Field App.

Store your data safely and securely in MP Cloud and share Cloud archives with anyone on the planet

Post-processing Software

Fig. 3
Measurement Partner Suite BZ-5503

Measurement Partner Suite BZ-5503, in its basic configuration, comes with your hand-held analyzer (see Product Data BP 2430). It is Brüel & Kjær's state-of-the-art data viewing and post-processing toolbox for environmental noise and vibration.

The free, basic configuration provides data archive, preview and export capabilities, software maintenance and online display. Archives can be stored locally, on network drives or, alternatively, in MP Cloud for easy sharing with anyone on the planet.

Measurement Partner Suite also merges field app annotations with the corresponding instrument project.

Additional valuable data analysis and post-processing tools are available on a time-limited subscription basis. You only pay for what you need, when you need it, with no penalty should your subscription lapse.

Annotating your Measurement Data

Measurement Partner Field App is the recommended solution for on-site annotation of your measurement data.

Measurement Partner Field App

Measurement Partner Field App transforms the way you work with your hand-held analyzer. It is an advanced companion app for the sound and vibration professional offering:

- Remote analyzer control
- Remote display
- Remote annotation of measurement data
- Cloud support

Whenever you stand next to your analyzer to operate it, you disturb the sound field. Therefore, we have released a field app that lets you stay away from your analyzer. Once your analyzer is powered on, you can wirelessly connect to it using Wireless USB-A Adapter UL-1050 for G4, Ethernet CF Card UL-1019 for G3.

Fig. 4
View and edit annotations collected with the field app

Once connection is made to the analyzer, you are ready to start, stop and pause your measurement from a safe distance. During noise measurements, the instantaneous LAF profile is displayed on the field app.

This allows you to keep an eye on the status of your measurement without being close to the analyzer. This is particularly important when low noise levels are being measured such as for indoor measurements.

MP Field App supports notes, voice commentary, image, video and GPS annotations. All annotations can be uploaded to MP Cloud for merging with the project in Measurement Partner Suite.

Uploading Measurement Data to Measurement Partner Cloud

Type 2250-L can send measurement data to Measurement Partner Cloud (MP Cloud) where projects are immediately available for post-processing, sharing or storage subject to account capacity. Only authorized users have access to the data when it is the MP Cloud.

You can create a Cloud account by visiting the MP Cloud web service at cloud.bksv.com. You open an account, register your analyzer serial numbers and perform a one-time pairing of analyzer and account, ensuring data security. You can also administer access to the account from the web service and order subscriptions to increase account capacity.

You can connect the hand-held analyzer to the Internet through modem, LAN or Wi-Fi connected to router. In the field, the analyzer can connect through Wi-Fi to hotspot on a smart device (Wi-Fi using CF-card UL-1019 for G1-G3 and Wireless USB-A Adapter UL-1050 for G4, respectively).

After measurement is completed and the project is saved, you log the analyzer into the cloud, and projects are uploaded to the cloud from the analyzer. To do this, you simply need to move your data to the Cloud folder, which is automatically created when you log on to your account. The data will now be ready for post-analysis in Measurement Partner Suite by anyone who has access to the relevant Cloud archive.

Sound Level Meter Software for 2250 Light – BZ-7130

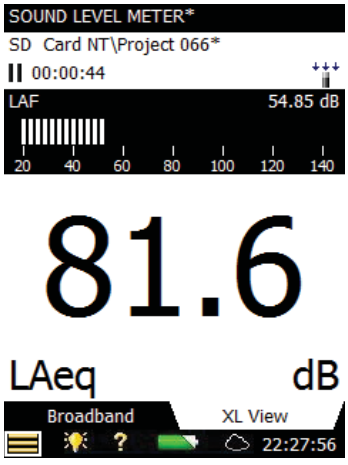


Fig. 5
The large numeric display – ideal for a spot noise enforcement check

Type 2250-L comes with Sound Level Meter Software for 2250 Light included. Type 2250-L is a versatile broadband sound level meter that complies with the latest international standard (IEC 61672–1) as well as previous international and national standards.

All quantities are measured simultaneously. For example, A and C frequency weighted levels are measured at the same time and F, S and I time weightings are applied in parallel, and Peak levels are also measured. Full statistics are also computed on-the-fly. Combine this with the dynamic range exceeding 120 dB and never miss a beat! You get all the parameters in one attempt, under- range is non-existent and you will have difficulties provoking an overload. A full complement of occupational health sound parameters are provided simultaneously, complying with national and international standards. The detailed list of available parameters can be found in the specifications section. You choose what you want on the display, but, at any time – during or after the measurement – all other parameters can be inspected and reported.

1/1- and 1/3-octave Frequency Analysis Software for 2250 Light – BZ-7131 and BZ-7132

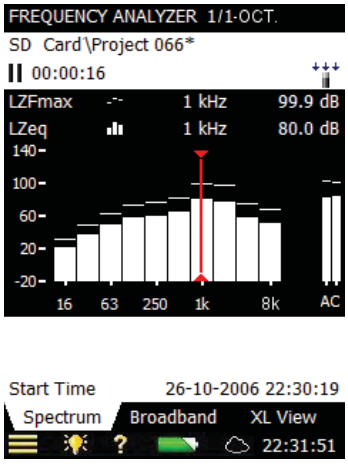


Fig. 6
Example of 1/1-octave frequency analysis. Note that two spectra are displayed simultaneously

1/1-octave Frequency Analysis Software for 2250 Light BZ-7131, and 1/3-octave Frequency Analysis Software for 2250 Light BZ-7132 are optional software modules that enable real-time measurements in 1/1- or 1/3-octave bands over a wide frequency range. This makes it a simple matter to obtain spectra in order to, for example, select hearing protection, qualify heat and ventilation systems, or assess tonality.

The following frequency ranges are available:

- 1/1-octave spectra (centre frequencies 16 Hz to 8 kHz)
- 1/3-octave spectra (centre frequencies 12.5 Hz to 16 kHz)

Each band provides unrivalled dynamic range from the noise floor in that particular band to 140 dB. That is, a dynamic range generally in excess of 135 dB. Spectra can be A-, B-, C- or Z-weighted. Five spectra are measured and stored and, in addition, two instantaneous spectra are available for display, for example, a minimum and maximum spectrum, that can be superimposed on the display. All the broadband quantities measured by Sound Level Meter Software BZ-7130 are computed in parallel with the frequency analysis.

Tone Assessment Option – BZ-7231

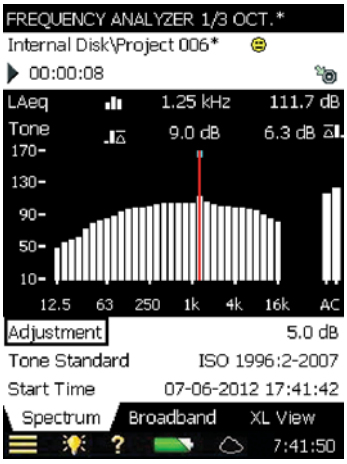


Fig. 7
Tone Assessment Option BZ-7231 showing 1/3-octave bands with audible tones over a set limit (identified by the blue dot)

Tone assessment identifies any 1/3-octave bands with audible tones above a set limit and is a standard application on all new analyzers. The assessment is based on the band's prominence versus adjacent bands. The adjustment is the penalty to add to L_{Aeq}.

Annoying tones in the spectrum can be assessed according to the ISO 1996 standard. The level of each 1/3-octave band is compared to the level of its neighbours, and all tones as well as the overall penalty (adjustment) are indicated. The search parameters are user adjustable to suit national requirements.

Logging Software for 2250 Light – BZ-7133

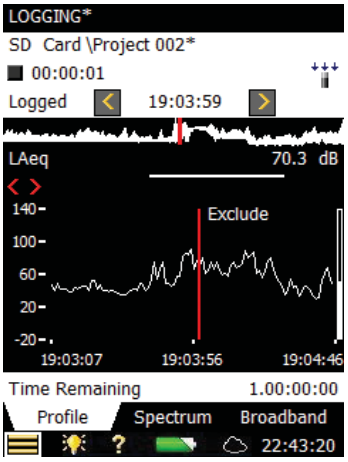


Fig. 8
Display showing part of a logging profile and an exclude marker

With optional Logging Software enabled, Type 2250-L becomes a versatile instrument for obtaining time histories. The Logging Software allows you to select freely among the broadband parameters and log them at intervals from 1 s to 24 h. At the same time L_{AF}, L_{AS} and L_{Aeq} can be logged at 100 ms intervals.

If Frequency Analysis Software BZ-7131 or BZ-7132 is enabled, the Logging Software additionally lets you log spectra at the same 1 s to 24 h intervals.

Logging Software BZ-7133 incorporates a number of features designed to make difficult field work as manageable as possible.

Some of these features are:

- Five user-definable markers can be set on-the-fly, making it easy to clearly indicate specific noise sources
- Markers can be set directly on the profile display using the stylus and the touch screen. Simply 'tap and drag' on the part of the profile you want to mark and select a marker from the drop-down list
- Markers can even be set after the fact. The display covers the latest 100 samples (100 s of profile when logging at 1 s intervals, otherwise more), so in most cases, you can wait for the event (or disturbance) to end before placing your marker. Alternatively, scroll back in the profile and set your marker
- Browse easily between markers (like signal recordings)
- The profile display can be 'frozen' at any time (automatic when you tap the screen)

All markers and annotations are saved with the measurement. No further bookkeeping is required. When importing data into Measurement Partner Suite BZ-5503 for further analysis, markers, as well as annotations, are directly accessible on the profile.

Charge Injection Calibration (CIC)

Measurement integrity is vital, particularly if the system is operating unattended. CIC provides a means of auto-checking the measurement system for 10 s to ensure its continued and accurate operation.

With the Logging Software, CIC can be set to run at the beginning and end of measurement.

Signal Recording Option – BZ-7226

Signal Recording Option BZ-7226 works with all other applications. In all cases it allows you to make recordings of the actual measured signal. Recordings are automatically attached to the measurement and kept with it, even after transfer of the data to a PC.

One purpose of the Signal Recording Option is to let you record the measurement signal in order to identify and document sound sources. Automatic gain control is available to allow for any signal level. For example:

- Did the measured L_{Aeq} at 57 dB actually stem from the rather distant compressor, or from other sources such as nearby birds or traffic? Not necessarily easy to evaluate on site, very difficult to document convincingly later. If the signal is recorded: No discussion
- Is it really true that this noise is impulsive and should be penalized accordingly? If the signal is recorded: There may still be a discussion, but it is then based on facts

Another important use of signal recording is to record the signal for later processing, such as analysing an engine run-up or a machinery process cycle.

With Sound Level Meter Software BZ-7130 and Frequency Analysis Software BZ-7131, Signal Recording Option BZ-7226 lets you:

- Record all or parts of the measured signal giving rise to specific results, levels and spectra
- Set up your analyzer so that recording can be set to start automatically when the measurement is started, or you can initiate recordings manually

With Logging Software BZ-7133, signal recording can be associated with the Event Marker using the Event key or an external signal (such as with Hand Switch ZH-0680). The sound during the event is recorded and attached to the appropriate part of the profile.

In all of the above cases, the maximum duration of recordings can be set (the analyzer is only limited by available storage on the memory card currently in use). Recording signals may require large amounts of storage; therefore, Signal Recording Option BZ-7226 allows you to decide on the trade-off between storage needed and recording quality (sampling rate).

The Signal Recording Option offers a choice of 24- or 16-bit recording. You can use 24-bit recording to capture the full 120 dB dynamic range of Type 2250-L, which is convenient for later signal analysis. You can use 16-bit recording to consume less memory; however, this requires selecting the level range for recording (or using the automatic gain control).

Adding Weather Parameters to Your Measurement Data

Fig. 9
Hand-held analyzer measuring outdoor noise using a weather station kit

Weather conditions affect the propagation of sound, so wind speed and direction must be taken into account when measuring noise outdoors. Consequently, most environmental noise measurement standards define limits for wind speed and direction. To identify the portions of your measurement that are within allowable limits for wind speed and direction, use Weather Station Kit MM-0316-A (two parameters) or MM-0256-A (six parameters).

Fig. 10
Weather Station Kit MM-0316-A

The weather stations are based on ultrasound technology and operate well above the upper frequency limit of the microphone. Connect your weather station to your analyzer, turn it on, and you are ready to start measuring with no software setup necessary. The weather station is powered by the analyzer's battery, so there is no need for extra batteries.

Post-processing of Weather Data

Noise and weather parameters are captured simultaneously on the analyzer and are available for display and post-processing in Measurement Partner Suite BZ-5503 along with your noise data when you are back in the office. To quickly identify the portions of your logging profile where wind speed and direction are within the allowed limits, use Measurement Partner's report and marker wizard (requires license BZ-5503-A).

Outdoor Protection

For outdoor environmental noise measurements, your analyzer may need extra weather protection, offered by All-weather Case Type 3535-A and Outdoor Microphone Type 4952. For details, please refer to product data BP 2251 and product data BP 2099 respectively.

Overview of Type 2250-L Software Features

The table that follows presents a summary of the features of each of the software modules available with Type 2250-L. See Specifications for details.

Feature	SLM Software	1/1-oct. Frequency Analysis Software	1/3-oct. Frequency Analysis Software	Logging Software
IEC/ANSI SLM standards Type/Class 1	●	●	●	●
120+ dB Dynamic Range – no need for range switching	●	●	●	●
Sound levels up to 140 dB with supplied Microphone Type 4950	●	●	●	●
Frequency weightings A, B, C, Z (linear) and time weightings F, S, I	●	●	●	●
Free-field/diffuse-field correction	●	●	●	●
Preset time start/stop	●	●	●	●
Multi-language user interface	●	●	●	●
Context-sensitive help	●	●	●	●
Broadband statistics based on L_{Aeq}, L_{AF} or L_{AS}	●	●	●	●
Broadband frequency range: 5 Hz – 20 kHz	●	●	●	●
Remote control using analog or GSM modem	●	●	●	●
Transfer of data files while measuring (USB, LAN or modem)	●	●	●	●
Recording of measured signal during measurement, 16- or 24-bit	●*	●*	●*	●*
Timers for automatic measurement start	●*	●*	●*	●*
Occupational health parameters	●	●	●	●
Weather data and GPS input	●	●	●	●
Back-erase – last 5 seconds of measurement data	●	●	●	●
Tone assessment		●	●	●
Loudness and Noise Rating results		●	●†	●†
1/1-octave spectra (centre frequencies 16 Hz – 8 kHz)		●		●†
1/3-octave spectra (centre frequencies 12.5 Hz – 16 kHz)			●	●†
Charge Injection Calibration (CIC)			●	●
Recording of signal during noise events (with Event key or external signal)			●*	●*
Logging of all or selected broadband parameters and spectra				●
Logging period 1 s – 24 h, Logging time up to 31 days				●
L_{Aeq}, L_{AS}, L_{AF} logged every 100 ms				●
Profile display				●
Profile overview of entire measurement				●
Markers on profile display				●

* If Signal Recording Option is enabled
† If 1/1- or 1/3-octave Frequency Analysis Software is enabled

Compliance with Environmental Standards

	The CE marking is the manufacturer's declaration that the product meets the requirements of the applicable EU directives RCM mark indicates compliance with applicable ACMA technical standards – that is, for telecommunications, radio communications, EMC and EME China RoHS mark indicates compliance with administrative measures on the control of pollution caused by electronic information products according to the Ministry of Information Industries of the People's Republic of China WEEE mark indicates compliance with the EU WEEE Directive
Safety	EN/IEC 61010−1, ANSI/UL 61010−1 and CSA C22.2 No.1010.1: Safety requirements for electrical equipment for measurement, control and laboratory use
EMC Emission	EN/IEC 61000−6−3: Generic emission standard for residential, commercial and light industrial environments EN/IEC 61326: Electrical equipment for measurement, control and laboratory use – EMC requirements CISPR 22: Radio disturbance characteristics of information technology equipment. Class B Limits IEC 61672−1, IEC 61260, IEC 60651 and IEC 60804: Instrumentation standards **Note:** The above is only guaranteed using accessories listed in this document
EMC Immunity	EN/IEC 61000−6−2: Generic standard – Immunity for industrial environments EN/IEC 61326: Electrical equipment for measurement, control and laboratory use – EMC requirements IEC 61672−1, IEC 61260, IEC 60651 and IEC 60804: Instrumentation standards **Note:** The above is only guaranteed using accessories listed in this document
Temperature	IEC 60068−2−1 & IEC 60068–2–2: Environmental Testing. Cold and Dry Heat Operating Temperature: −10 to +50 °C (14 to 122 °F) Storage Temperature: −25 to +70 °C (−13 to 158 °F)
Humidity	IEC 60068−2−78: Damp Heat: 93% RH (non-condensing at +40 °C (104 °F)). Recovery time 2 ~ 4 hours
Mechanical	Non-operating: IEC 60068−2−6: Vibration: 0.3 mm, 20 m/s^2, 10 – 500 Hz IEC 60068−2−27: Bump: 1000 bumps at 400 m/s^2 IEC 60068−2−27: Shock: 1000 m/s^2, 6 directions
Enclosure	IEC 60529 (1989): Protection provided by enclosures: IP 44*

* With preamplifier, extension cable or protection plug connected to the top socket and the hinged cover protecting the bottom connectors.

ADDITIONAL STANDARDS FOR MICRO USB WIRELESS ADAPTOR UL-1050*

Safety	EN 60950−1:2006+A11:2009+A1:2010 +A12:2011
EMC Emission	EN 301 489−1 V1.9.2 EN 301 489−17 V2.2.1 EN 55022: 2010+AC:2011
Spectrum & Health	EN 300 328 V1.7.1 EN 62311:2008
Restriction of Hazardous Substances	EN 50581:2012

FCC GRANT OF EQUIPMENT AUTHORIZATION FOR MICRO USB WIRELESS ADAPTOR UL-1050*

FCC Identifier	KA2WA121A1
FCC Rule Parts	15c
Frequency Range (MHz)	2412.0 – 2462.0
Output Watts	0.269
EC Declaration of Conformity	1Tx1R 802.11bgn USB adapter
C-Tick Authorization	AS/NZS 4268: 2008+A1:2010

* From the D-Link Corporation declaration of conformance for Wireless N 150 Micro USB Adaptor DWA-121.

Specifications – Hand-held Analyzer Type 2250-L (2250 Light) Platform

Specifications apply to 2250 Light fitted with Microphone Type 4950 and Microphone Preamplifier ZC-0032:

Transducer

SUPPLIED MICROPHONE
Type 4950: Prepolarized Free-field ½″ Microphone
Nominal Open-circuit Sensitivity: 50 mV/Pa (corresponding to −26 dB re 1 V/Pa) ±2 dB
Capacitance: 12.5 pF (at 250 Hz)

SUPPLIED MICROPHONE PREAMPLIFIER
Part No.: ZC-0032
Nominal Preamplifier Attenuation: 0.3 dB
Connector: 10-pin LEMO
Extension Cables: Up to 100 m in length between the microphone preamplifier and 2250 Light, without degradation of the specifications

MICROPHONE POLARIZATION VOLTAGE
Selectable between 0 V and 200 V

SELF-GENERATED NOISE LEVEL
Typical values at 23 °C for nominal microphone open-circuit sensitivity:

Weighting	Microphone	Electrical	Total
"A"	14.0 dB	12.7 dB	16.4 dB
"B"	12.9 dB	11.9 dB	15.4 dB
"C"	13.0 dB	13.6 dB	16.3 dB
"Z" 5 Hz – 20 kHz	14.4 dB	19.3 dB	20.5 dB

Hardware Interface

PUSHBUTTONS
11 keys with backlight optimized for measurement control and screen navigation

ON-OFF BUTTON
Function: Press 1 s to turn on; press 1 s to enter standby; press for more than 5 s to switch off

STATUS INDICATORS
LEDs: Red, yellow and green

DISPLAY
Type: Transflective back-lit touchscreen, 240 × 320 dot matrix
Colour Scheme: Black and white
Backlight: Adjustable level and time

USER INTERFACE
Measurement Control: Using pushbuttons
Setup and Display of Results: Using stylus on touchscreen or pushbuttons
Lock: Pushbuttons and touchscreen can be locked and unlocked

USB INTERFACE
USB 2.0 OTG Micro AB and USB 2.0 Standard A sockets for Wireless USB-A Adapter UL-1050, printer or weather station

MODEM INTERFACE
Connection to Internet through GPRS/EDGE/HSPA modem connected through the USB Standard A Socket.
Supports DynDNS for automatic update of IP address of host name

PRINTER INTERFACE
PCL printers, Mobile Pro Spectrum thermal printer or Seiko DPU S245/S445 thermal printers can be connected to USB socket

Inputs/Outputs

SECURE DIGITAL SOCKET
2 × SD sockets
Connect SD and SDHC memory cards

LAN INTERFACE SOCKET
- Connector: RJ 45 Auto-MDIX
- Speed: 100 Mbps
- Protocol: TCP/IP

TRIGGER SOCKET
Connector: Triaxial LEMO
Max. Input Voltage: ±20 Vpeak
Input Impedance: >47 kΩ
Precision: ±0.1 V

HEADPHONE SOCKET
Connector: 3.5 mm Minijack stereo socket
Max. Peak Output Level: ±1.4 V
Output Impedance: 32 Ω in each channel

Power

EXTERNAL DC POWER SUPPLY REQUIREMENTS
Used to charge the battery pack in the analyzer
Voltage: 8 – 24 V DC, ripple voltage <20 mV
Current Requirement: min. 1.5 A
Power Consumption: <2.5 W, without battery charging, <10 W when charging
Cable Connector: LEMO Type FFA.00, positive at centre pin

EXTERNAL AC MAIN SUPPLY ADAPTOR
Part No.: ZG-0426
Supply Voltage: 100 – 120/200 – 240 VAC; 47 – 63 Hz
Connector: 2-pin IEC 320

BATTERY PACK
Rechargeable Li-Ion battery
Part No.: QB-0061
Voltage: 3.7 V
Capacity: 5200 mAh nominal
Typical Operating Time: >11 h (screen backlight dimmed); >10 h (full screen backlight)
Use of external interfaces (LAN, USB, Wi-Fi) will decrease battery operating time. Connecting a weather station or a GPS receiver can decrease battery operating with up to 20%. Connecting Wireless Adaptor UL-1050 can decrease battery operating time up to 35%
Battery Cycle Life: >500 complete charge/discharge cycles
Battery Indicator: Remaining battery capacity and expected working time may be read out in % and time
Battery Fuel Gauge: The battery is equipped with a built-in fuel gauge, which continuously measures and stores the actual battery capacity in the battery unit
Charge Time: In analyzer, typically 10 hours from empty at ambient temperatures below 30 °C (86 °F). To protect the battery, charging will be terminated completely at ambient temperatures above 40 °C (104 °F). At 30 to 40 °C, charging time will be prolonged. With External Charger ZG-0444 (optional accessory), typically five hours
Note: It is not recommended to charge the battery at temperatures below 0 °C (32 °F) or over 50 °C (122 °F). Doing this will reduce battery lifetime

CLOCK
Back-up battery powered clock. Drift <0.45 s per 24-hour period

Storage

INTERNAL FLASH-RAM (NON-VOLATILE)
512 Mbyte for user set-ups and measurement data

EXTERNAL MEMORY CARD
Secure Digital (SD and SDHC) Card: For store/recall of measurement data

USB MEMORY STICK
For store/recall of measurement data

Environmental

WARM-UP TIME
From Power Off: <2 minutes
From Standby: <10 seconds

WEIGHT AND DIMENSIONS
650 g (23 oz) including rechargeable battery
300 × 93 × 50 mm (11.8 × 3.7 × 1.9") including preamplifier and microphone

Software Interface

PREFERENCES
Date, time and number formats can be specified

LANGUAGE
User interface in Catalan, Chinese (People's Republic of China), Chinese (Taiwan), Croatian, Czech, Danish, English, Flemish, French, German, Hungarian, Japanese, Italian, Korean, Polish, Portuguese, Romanian, Russian, Serbian, Slovenian, Spanish, Swedish, Turkish and Ukrainian

HELP
Concise context-sensitive help in Chinese (People's Republic of China), English, French, German, Italian, Japanese, Polish, Romanian, Serbian, Slovenian, Spanish and Ukrainian

UPDATE OF SOFTWARE
Update to any version using BZ-5503 through USB or update via Internet any version from 4.0 and up

REMOTE ACCESS
Connect to the analyzer using:
- Measurement Partner Suite BZ-5503
- Measurement Partner Field App (iOS or Android smartphone app)
- the 2250/2270 SDK (software development kit)
- a REST interface through HTTP
- an Internet browser supporting JavaScript

The connection is password protected with two levels of protection:
- Guest level: for viewing only
- Administrator level: for viewing and full control of the analyzer

CLOUD
Connect to Measurement Partner Cloud on cloud.bksv.com for transferring data to an archive in the cloud for storage or easy synchronization with Measurement Partner Suite BZ-5503

WIRELESS
Specifications apply to Wireless USB-A Adapter UL-1050
Operating Frequency: 2.4 GHz
Data Rate:
- IEEE 802.11n: up to 150 Mbps
- IEEE 802.11g: up to 54 Mbps
- IEEE 802.11b: up to 11 Mbps

Encryption/Authentication:
- 64/128-bit WEP
- WPA-PSK
- WPA2-PSK

Range: The range is similar to a standard WLAN unit, typically from 10 to 50 m (33 to 164'), depending on the environment and the number of other WLAN transmitters in the area (smartphones, Wi-Fi, etc.)
Power Requirements: Power Consumption: <1 W

Software Specifications – Sound Level Meter Software for 2250 Light BZ-7130

Conforms with the following national and international standards:
- IEC 61672–1 (2013) Class 1
- IEC 60651 (1979) plus Amendment 1 (1993–02) and Amendment 2 (2000–10), Type 1
- IEC 60804 (2000–10), Type 1
- DIN 45657 (1997–07)
- ANSI S1.4–1983 plus ANSI S1.4 A–1985 Amendment, Type 1
- ANSI/ASA S1.4–2014, Class 1
- ANSI S1.43–1997, Type 1

Note: The International IEC Standards are adopted as European standards by CENELEC. When this happens, the letters IEC are replaced with EN and the number is retained. Type 2250-L also conforms to these EN Standards

Input

CORRECTION FILTERS
For Microphone Types 4950, 4952, 4952+EH-2152 and 4184-A: Correct the frequency response to compensate for sound field and accessories
Accessories (Type 4950 only): None or Windscreen UA-0237
Sound Field: Free-field or Diffuse-field (for Types 4952 and 4184-A only: 0° (Top) reference direction and 90° (Side) reference direction)

Analysis

DETECTORS
Parallel Detectors: On every measurement:
A- or B-weighted: (switchable) broadband detector channel with three exponential time weightings (Fast, Slow, Impulse), one linearly averaging detector and one peak detector
C- or Z-weighted: (switchable) as for A- or B-weighted
Overload Detector: Monitors the overload outputs of all the frequency weighted channels

MEASUREMENTS
X = frequency weightings A or B
Y = frequency weightings C or Z
V = frequency weightings A, B, C or Z
U = time weightings F or S
Q = exchange rate 4, 5 or 6 dB
N = number between 0.1 and 99.9

For Storage: Full statistics

For Display and Storage:

Start Time	Stop Time	Overload %
Elapsed Time	L_{Xeq}	L_{Yeq}
L_{XE}	L_{YE}	$L_{Ceq} - L_{Aeq}$
L_{XSmax}	L_{XFmax}	L_{XImax}
L_{YSmax}	L_{YFmax}	L_{YImax}
L_{XSmin}	L_{XFmin}	L_{XImin}
L_{YSmin}	L_{YFmin}	L_{YImin}
L_{XIeq}	L_{YIeq}	$L_{AIeq} - L_{Aeq}$
L_{AFTeq}	$L_{AFTeq} - L_{Aeq}$	Time Remaining
$L_{ep,d}$	$L_{ep,d,v}$	E
Dose	Proj. Dose	#VPeaks (>NNNdB)
#VPeaks (>137dB)	#VPeaks (>135dB)	L_{Vpeak}
T_{Vpeak}	L_{avUQ}	TWA
TWA_v	DoseUQ	Proj. DoseUQ
$L_{Aeq,T1,mov,max}$	$L_{Aeq,T2,mov,max}$	$L_{Ceq,T1,mov,max}$
$L_{Ceq,T2,mov,max}$	$\Delta L_{eq,T1,mov,max}$	$\Delta L_{eq,T2,mov,max}$

Weather Data (requires connection to a weather station)**:**
Wind Dir. avg.
Wind Dir. min.
Wind Dir. max.
Wind Speed avg.
Wind Speed min.
Wind Speed max.
Amb. Temperature
Amb. Humidity
Amb. Pressure
Rainfall

Only for Display as Numbers or Quasi-analog Bars:

L_{XS}	L_{XF}	L_{XI}
L_{YS}	L_{YF}	L_{YI}
$L_{XS(SPL)}$	$L_{XF(SPL)}$	$L_{XI(SPL)}$
$L_{YS(SPL)}$	$L_{YF(SPL)}$	$L_{YI(SPL)}$
$L_{Vpeak,1s}$	L_{AN1} or L_{AUN1}	L_{AN2} or L_{AUN2}
L_{AN3} or L_{AUN3}	L_{AN4} or L_{AUN4}	L_{AN5} or L_{AUN5}

L_{AN6} or L_{AUN6}	L_{AN7} or L_{AUN7}	Std.Dev.
$L_{Aeq,T,mov}$	$L_{Aeq,T2,mov}$	$L_{Ceq,T1,mov}$
$L_{Ceq,T2,mov}$	$\Delta L_{eq,T1,mov}$	$\Delta L_{eq,T2,mov}$

Trig. Input Voltage

Instantaneous Weather Data:
Wind Dir.
Wind Speed
Instantaneous GPS Data:
Latitude
Longitude

MEASURING RANGES
When using Microphone Type 4950
Dynamic Range: From typical noise floor to max. level for a 1 kHz pure tone signal, A-weighted: 16.4 dB to 140 dB
Primary Indicator Range: In accordance with IEC 60651, A-weighted: 23.6 dB to 122.3 dB
Linearity Range: In accordance with IEC 60804, A-weighted: 21.5 dB to 140.8 dB
Linear Operating Range: In accordance with IEC 61672:
A-weighted 1 kHz: 24.9 dB to 139.8 dB
C-weighted: 26.2 dB to 139.8 dB
Z-weighted: 31.6 dB to 139.8 dB
Peak C Range: In accordance with IEC 61672: 1 kHz, 43.0 dB to 142.8 dB

SAMPLING FOR BROADBAND STATISTICS
Statistics can be based on either L_{AF}, L_{AS} or L_{Aeq}:
- Statistics L_{AFN1-7} or L_{ASN1-7} are based on sampling L_{AF} or L_{AS}, resp., every 10 ms into 0.2 dB wide classes over 130 dB
- Statistics L_{AN1-7} are based on sampling L_{Aeq} every second into 0.2 dB wide classes over 130 dB

Full distribution saved with measurement
The Std.Dev. (Standard Deviation) parameter is calculated from the Statistics

Measurement Display and Control

MEASUREMENT DISPLAYS
Measurement data displayed as numbers of various sizes and one quasi-analog bar.
Measured data are displayed as dB values, housekeeping data as numbers in relevant format.
Instantaneous measurement L_{XF} is displayed as a quasi-analog bar

MEASUREMENT CONTROL
Manual: Manually controlled single measurement
Automatic: Preset measurement time from 1 s to 24 h in 1 s steps
Manual Controls: Reset, Start, Pause, Back-erase, Continue and Store the measurement manually
Auto-start: A total of 10 timers allow set up of measurement start times up to a month in advance. Each timer can be repeated. Measurements are automatically stored when completed

BACK-ERASE
The last 5 s of data can be erased without resetting the measurement

Measurement Status

ON SCREEN
Information such as overload and running/paused are displayed on screen as icons

TRAFFIC LIGHTS
Red, yellow and green LEDs show measurement status and instantaneous overload as follows:
- Yellow LED flash every 5 s = stopped, ready to measure
- Green LED flashing slowly = awaiting calibration signal
- Green LED on constantly = measuring
- Yellow LED flashing slowly = paused, measurement not stored
- Red LED flashing quickly = intermittent overload, calibration failed

NOTIFICATIONS
Sends an SMS or email daily at a specified time or if an alarm condition is fulfilled.
Alarm Conditions:
- Disk space below set value
- Internal battery enters set state
- Change in measurement state
- Reboot of analyzer

Calibration

Initial calibration is stored for comparison with later calibrations

ACOUSTIC
Using Sound Calibrator Type 4231 or custom calibrator. The calibration process automatically detects the calibration level when Sound Calibrator Type 4231 is used

ELECTRICAL
Uses internally generated electrical signal combined with a typed-in value of microphone sensitivity

CALIBRATION HISTORY
Up to 20 of the last calibrations made are listed and can be viewed on the analyzer

Signal Monitoring

The input signal can be monitored using an earphone/headphones connected to the headphone socket

HEADPHONE SIGNAL
Input signal can be monitored using this socket with headphones/earphones
Gain Adjustment: –60 dB to 60 dB

GPS Annotations

A text annotation with GPS information can be attached (Latitude, Longitude, Altitude and position error). Requires connection to a GPS receiver

Data Management

PROJECT TEMPLATE
Defines the display and measurement settings. Setups can be locked and password protected

PROJECT
Measurement data stored with the project template

JOB
Projects are organized in jobs
Explorer facilities for easy management of data (copy, cut, paste, delete, rename, view data, open project, create job, set default project name)

Software Specifications – 1/1-octave Frequency Analysis Software for 2250 Light BZ-7131 and 1/3-octave Frequency Analysis Software for 2250 Light BZ-7132

The specifications for BZ-7131 and BZ-7132 include the specifications for Sound Level Meter Software for 2250 Light BZ-7130. **BZ-7131 and BZ-7132 add:**

Standards

Conforms with the following National and International Standards:
- IEC 61260–1 (2014), 1/1-octave Bands and 1/3-octave Bands, Class 1
- IEC 61260 (1995–07) plus Amendment 1 (2001–09), 1/1-octave Bands and 1/3-octave Bands, Class 0
- ANSI S1.11–1986, 1/1-octave Bands and 1/3-octave Bands, Order 3, Type 0–C
- ANSI S1.11–2004, 1/1-octave Bands and 1/3-octave Bands, Class 0
- ANSI/ASA S1.11–2014 Part 1, 1/1-octave Bands and 1/3-octave Bands, Class 1

Frequency Analysis

CENTRE FREQUENCIES
1/1-octave Band Centre Frequencies (BZ-7131 only): 16 Hz to 8 kHz
1/3-octave Band Centre Frequencies (BZ-7132 only): 12.5 Hz to 16 kHz

MEASUREMENTS
X = frequency weightings A, B, C or Z

Spectra for Display and Storage:

L_{Xeq} L_{XSmax} L_{XFmax}
L_{XSmin} L_{XFmin}

Spectra for Display Only:

L_{XS} L_{XF}

Single Values:

SIL PSIL SIL3
$L_{Xeq}(f1 – f2)^*$

NR	NR Decisive Band
RC	RC Classification
NCB	NCB Classification
NC	NC Decisive Band
Loudness	Loudness Level (BZ-7132 only)

* where f1 and f2 are frequency bands in the spectrum

MEASURING RANGES
When using Microphone Type 4950:
- **BZ-7131, 1/1-octave:**
  - Dynamic Range: From typical noise floor to max. level for a pure tone signal at 1 kHz: 5.9 to 140 dB
  - Linear Operating Range: In accordance with IEC 61260: ≤22.9 dB to 140 dB
- **BZ-7132, 1/3-octave:**
  - Dynamic Range: From typical noise floor to max. level for a pure tone signal at 1 kHz: 1.0 to 140 dB
  - Linear Operating Range: In accordance with IEC 61260: ≤20.1 dB to 140 dB

MEASUREMENT DISPLAYS
Spectrum: One or two spectra superimposed + A/B and C/Z broadband bars
Table: One or two spectra in tabular form
Y-axis: Range: 5, 10, 20, 40, 60, 80, 100, 120, 140, 160 or 200 dB. Auto zoom or auto scale available
Cursor: Readout of selected band

Software Specifications – Logging Software for 2250 Light BZ-7133

The specifications for BZ-7133 include the specifications for Sound Level Meter Software for 2250 Light BZ-7130. **BZ-7133 adds:**

Logging

MEASUREMENTS
Measurement data logged at preset periods into files on:
- SD Card
- USB Memory Stick

Logging Period: From 1 s to 24 h with 1 s resolution
Fast Logging: L_{AF}, L_{AS} and L_{Aeq} can be logged every 100 ms, irrespective of logging period. L_{AF} can be logged every 10 ms.
One spectrum (L_{eq}, L_F or L_S) can be logged every 100 ms. The 10 ms L_{AF} and the 100 ms spectrum can only be stored and not displayed, but can be displayed using BZ-5503 MPS
Broadband Data Stored at each Logging Interval: All, or up to 10 selectable broadband data including weather data and $L_{Aeq,T,mov}$
Broadband Statistics Stored at each Logging Interval: Full distribution, or none
Spectrum Data Stored at each Logging Interval: All, or up to three selectable spectra (license for BZ-7131 or BZ-7132 required)
Logging Time: From 1 s to 31 days with 1 s resolution
Measurement Total: For the logging time, in parallel with logging: All broadband data, statistics and spectra (license for BZ-7131 or BZ-7132 required).
Automatic reboot and resume of operation in case of power failure

MEASUREMENT DISPLAYS
Profile: Graphical display of selectable measurement data versus time. Fast display of next or previous marker; Profile overview of entire measurement
Y-axis: Range: 5, 10, 20, 40, 60, 80, 100, 120, 140, 160 or 200 dB. Auto zoom or auto scale available
X-axis: Scroll facilities
Cursor: Readout of measurement data at selected time

MARKERS
Five user-definable markers for online marking of noise sources or events anywhere in the profile.
Markers are set using the stylus on the touch screen, or the three marker pushbuttons

Calibration

CHARGE INJECTION CALIBRATION (CIC)
Injects an internally generated electrical signal in parallel with the microphone diaphragm. Manual CIC can be performed whenever no measurement is in progress. Automatic CIC can be performed at the start and end of a logging measurement

Notifications

ALARM CONDITIONS
CIC failed (in addition to those specified for BZ-7130)

Weather Data

MM-0256-A WEATHER STATION KIT
Six parameters: Wind Speed, Wind Direction, Ambient Temperature, Ambient Humidity, Ambient Pressure, Rain Gauge

MM-0256-A WEATHER STATION KIT
Two parameters: Wind Speed, Wind Direction

Software Specifications – Signal Recording Option BZ-7226

Signal Recording Option BZ-7226 is enabled with a separate license. It works with all analyzer software: Sound Level Meter, Frequency and Logging Software.
For data storage, signal recording requires:
- SD Card
- USB Memory Stick

RECORDED SIGNAL
A-, B-, C- or Z-weighted signal from the measurement transducer

AUTOMATIC GAIN CONTROL
The average level of the signal is kept within a 40 dB range, or the gain can be fixed

SAMPLING RATE AND PRE-RECORDING
The signal is buffered for the pre-recording of the signal. This allows the beginning of events to be recorded even if they are only detected later.

Sampling Rate (kHz)	8	16	24	48
Maximum Pre-recording (s) 16-bit	470	230	150	70
Maximum Pre-recording (s) 24-bit	310	150	96	43
Memory (KB/s) 16-bit	16	32	48	96
Memory (KB/s) 24-bit	24	48	72	144

PLAYBACK
Playback of signal recordings can be listened to using the earphone/headphones connected to the headphone socket

RECORDING FORMAT
The recording format is either 24- or 16-bit wave files (extension .wav) attached to the data in the project, easily played back afterwards on a PC using BZ-5503, Type 7820 or 7825. Calibration information is stored in the .wav file allowing BZ-5503 and PULSE to analyse the recordings

Functions with BZ-7130 and BZ-7131

Manual Control of Recording: Recording can be manually started and stopped during a measurement using a pushbutton or an external signal
Automatic Control of Recording: Start of recording when measurement is started. Minimum and Maximum recording time can be preset

Functions with BZ-7133

Manual Control of Recording (using Manual Event or Back-erase pushbutton, or an external signal): Recording during all of the event, or for preset minimum and maximum duration. A Sound marker is set while recording. Selectable pre- and post-recording time
Manual Control of Recording (using touch screen): Recording for the selected time period (subject to the limitations of the pre-recording buffer). A Sound marker is set for the selected time period
Automatic Control of Recording: Recording during all of the event or for preset minimum and maximum duration. Selectable pre- and post-recording time
Playback: Playback of signal recordings can be listened to using earphone/headphones connected to the headphone socket
Gain Adjustment: –60 to 60 dB

Functions with BZ-7222 and BZ-7223

Manual Control of Recording: Recording can be manually started and stopped during a measurement using a pushbutton or an external signal
Automatic Control of Recording: Start of recording when measurement is started. Minimum and Maximum recording time can be preset

Functions with BZ-7224 and BZ-7225

Manual Control of Recording (using Manual Event or Back-erase pushbutton, or an external signal): Recording during all of the event, or for preset minimum and maximum duration. A Sound marker is set while recording. Selectable pre- and post-recording time
Manual Control of Recording (using touch screen): Recording for the selected time period (subject to the limitations of the pre-recording buffer). A Sound marker is set for the selected time period
Automatic Control of Recording: An event can be triggered when a broadband level is above or below a specified level. Recording during all of the event or for preset minimum and maximum duration. Selectable pre- and post-recording time

Functions with BZ-7227

Automatic Control of Recording: Start of recording when measurement is started. 16-bit recording format only

Software Specifications – Tone Assessment Option BZ-7231

LICENSE
Tone Assessment Option BZ-7231 is a standard application included with all new Type 2250/2270 analyzers. The option can be used with the 1/3-octave and logging template (BZ-7132 and BZ-7133)

Tone Assessment

STANDARD
Tone assessment is based on the measured in accordance with ISO 1996:2007 Acoustics – Description, assessment and measurement of environmental noise – part 2: Determination of environmental noise levels. Annex D (informative) Objective method for assessing the audibility of tones in noise – Simplified method

SPECTRA ASSESSED
Any displayed 1/3-octave spectrum (L_{eq}) may be assessed
Assessment is made as post-processing, that is, when measurement is paused or stopped

SETUP ACCORDING TO STANDARD
Setups in violation of the standard are indicated as such on the display, you may then accept to apply the default setup
Tone assessment will be made if possible, in spite of standard violations. For tone assessment according to ISO 1996–2, Annex D, you can set the division between the low and middle frequency range, the division between the middle and high frequency range, and the limits for the level differences between adjacent bands

QUALITY INDICATORS
On the display, a quality indicator (smiley) will indicate that a hint is available for tone assessment quality. Click on the indicator to see the hint

RESULTS
Tones are indicated above the spectrum when *Tone* is selected as spectrum parameter. The resulting adjustment can be viewed on the Value panel. It is not saved with the measurement

Specifications – Measurement Partner Suite BZ-5503

BZ-5503 is included with Type 2250-L for easy synchronization of setups and data between the PC and hand-held analyzer. BZ-5503 is supplied on ENV DVD BZ-5298

PC REQUIREMENTS
Operating System: Windows® 7, 8.1 or 10 (all in 32-bit or 64-bit versions)
Recommended PC:
- Intel® Core™ i3
- Microsoft®.NET 4.5
- 2 GB of memory
- Sound card
- DVD drive
- At least one available USB port
- Solid State Drive

ONLINE DISPLAY OF TYPE 2250-L DATA
Measurements on the analyzer can be controlled from the PC and displayed online with the PC, using the same user interface on the PC as on the analyzer
Display: 1024 × 768 (1280 × 800 recommended)

DATA MANAGEMENT
Explorer: Facilities for easy management of analyzers, users, jobs, projects and project templates (copy, cut, paste, delete, rename, create)
Data Viewer: View measurement data (content of projects)
Synchronization: Project templates and projects for a specific user can be synchronized between PC and analyzer and between local and cloud archives. Measurement Partner Suite BZ-5503 merges Measurement Partner Field App annotations with the corresponding analyzer project

EXPORT FACILITIES
Excel®: Projects (or user-specified parts) can be exported to Microsoft® Excel® (Excel 2003 – 2016 supported)

Brüel & Kjær Software: Projects can be exported* to Predictor-LimA Type 7810, Acoustic Determinator Type 7816, Protector Type 7825, Qualifier (Light) Type 7830 (7831), PULSE Mapping for Hand-held Sound Intensity Type 7962/7752/7761 or PULSE Reflex

POST-PROCESSING
Measurement Partner Suite is a suite of modules, including post-processing tools for data acquired with Type 2250-L. The following post-processing modules are available:
- Logging Module BZ-5503-A
- Spectrum Module BZ-5503-B
- WAV File Analysis Module BZ-5503-C

These modules help to assess logging data and measured spectra, such as calculating contribution from markers on a logging profile or correcting spectra for background noise

HAND-HELD ANALYZER SOFTWARE UPGRADES AND LICENSES
The software controls analyzer software upgrades and licensing of the analyzer applications

INTERFACE TO HAND-HELD ANALYZER
USB, LAN or Internet connection

LICENSE MOVER
To move a license from one analyzer to another use BZ-5503 together with License Mover VP-0647

LANGUAGE
User Interface in Chinese (People's Republic of China), Chinese (Taiwan), Croatian, Czech, Danish, English, Flemish, French, German, Hungarian, Japanese, Italian, Korean, Polish, Portuguese, Romanian, Russian, Serbian, Slovenian, Spanish, Swedish, Turkish and Ukrainian

HELP
Concise context-sensitive help in English

* Not all data are available in all exports. The data exported are dependent on the type and target of the export.

Ordering Information

Type 2250-L-S **Hand-held Analyzer Light**
Type 2250-L-SC **Hand-held Analyzer Light with Sound Calibrator Type 4231**
which include the following as standard:

INCLUDED SOFTWARE
- BZ-7130: Sound Level Meter Software
- BZ-7231: Tone assessment option
- BZ-7232: Noise Monitoring Software
- BZ-5503-001: Measurement Partner Suite, one month demo license for any instrument

INCLUDED MICROPHONE AND PREAMPLIFIER
- Type 4950: ½" Prepolarized Free-field Microphone
- ZC-0032: Microphone Preamplifier

INCLUDED ACCESSORIES
- FB-0679: Hinged Cover
- QB-0061: Battery Pack
- ZG-0426: Mains Power Supply
- UA-0237: 90 mm dia. Windscreen
- Compulsory Accessory Kit UA-1710-D01 including:
  - KE-0441: Protective Cover, for hand-held analyzer
  - UL-1050: Wireless USB-A (M) Adapter
  - UA-1651: Tripod Extension, for hand-held analyzer
  - UA-1654: 5 Extra Styli
  - UA-1673: Adapter for Standard Tripod Mount
  - DH-0696: Wrist Strap
  - DD-0594: Protection Plug, for hand-held analyzer without preamplifier
  - AO-1494: Cable, USB 2.0, USB-A (M) to USB-micro-B (M) black, 1.8 m (5.9′), max. +70 °C (158 °F)
  - BZ-5298: Environmental Software DVD

Note: These accessories are also available separately

Software and Accessories Available Separately

SOFTWARE MODULES

BZ-7131	1/1-octave Frequency Analysis
BZ-7132	1/3-octave Frequency Analysis
BZ-7133	Logging Software for 2250 Light
BZ-7226	Signal Recording Option

PC SOFTWARE

BZ-5503-A	Logging Module (see product data BP 2430)
BZ-5503-B	Spectrum Module (see product data BP 2430)
BZ-5503-C	WAV File Analysis Module (see product data BP 2430)
BZ-5503-D	Measurement Partner Field App for iOS and Android (free download at App Store® and Google Play™)
BZ-5503-E	Measurement Partner Cloud Entry Level, free cloud storage
BZ-5503-F-012	Measurement Partner Cloud Basic, basic cloud storage subscription for one year

BZ-5503-G-012	Measurement Partner Cloud Professional, enterprise cloud storage subscription for one year
Type 7825	Protector™ – calculation software of personal noise exposure

INTERFACING

UL-1016	10/100 Ethernet CF Card (for hardware versions 1 – 3)
UL-1019	CF WLAN Card for Hand-held Analyzers (for hardware versions 1 – 3)
UL-0250	USB to RS – 232 Converter, for hardware version 4

MEASURING

Type 3535-A	All-weather Case (see Product Data BP 2251)
AO-0697-D-030	Microphone Extension Cable, 10-pin LEMO, 3 m (10′)
AO-0697-D-100	Microphone Extension Cable, 10-pin LEMO, 10 m (33′)
KE-0440	Travel Bag
HT-0015	Earphones
UA-0254	90 mm dia. Windscreens (6-pack of UA-0237)
UA-0587	Tripod
UA-0801	Small Tripod
UA-0588	Tripod Adaptor for ½″ microphone/preamplifier assemblies
UA-1317	Microphone Holder
UL-1009	SD Memory Card for hand-held analyzers
UL-1017	SDHC Memory Card for hand-held analyzers
UA-1251	Lightweight Tripod
MM-0256-A	Weather Station Kit
MM-0316-A	Weather Station Kit

Included with MM-0256-A or MM-0316-A:

- MM-0256-002: Six-parameter Weather Station (and mounting kit)
- MM-0316-002: Two-parameter Weather Station (and mounting kit)
- AO-0657: USB Cable
- AO-0659: Cable M12 8-pin (F) to LEMO 1-B 8-pin (M), 10 m (33.3′)
- BR 1779: Weather Station Field Guide
- DB-4364: Weather Station Pole Adapter
- KE-4334: Weather Station Carrying Case
- QX-0016: Screwdriver
- QX-1171: 2.5 mm Hex Wrench
- UA-1707-A: Weather Station Tripod Adapter
- ZH-0689: Weather Station USB Adaptor

ANALYZER COMPONENTS

ZG-0444	Charger for QB-0061 Battery Pack
ZH-0680	Hand Switch for remote control

CALIBRATION

Type 4231	Sound Calibrator

Service Products

MAINTENANCE

2250-L-EW 1	Extended Warranty, one year extension

ACCREDITED CALIBRATION

2250-CAI	Accredited Initial Calibration of Type 2250
2250-CAF	Accredited Calibration of Type 2250
2250-CTF	Traceable Calibration of Type 2250
2250-TCF	Conformance Test of Type 2250, with certificate

BP 2151 – 24 2016-11

Brüel & Kjær Sound & Vibration Measurement A/S
DK-2850 Nærum · Denmark · Telephone: +45 77 41 20 00 · Fax: +45 45 80 14 05
www.bksv.com · info@bksv.com
Local representatives and service organizations worldwide

Brüel & Kjær