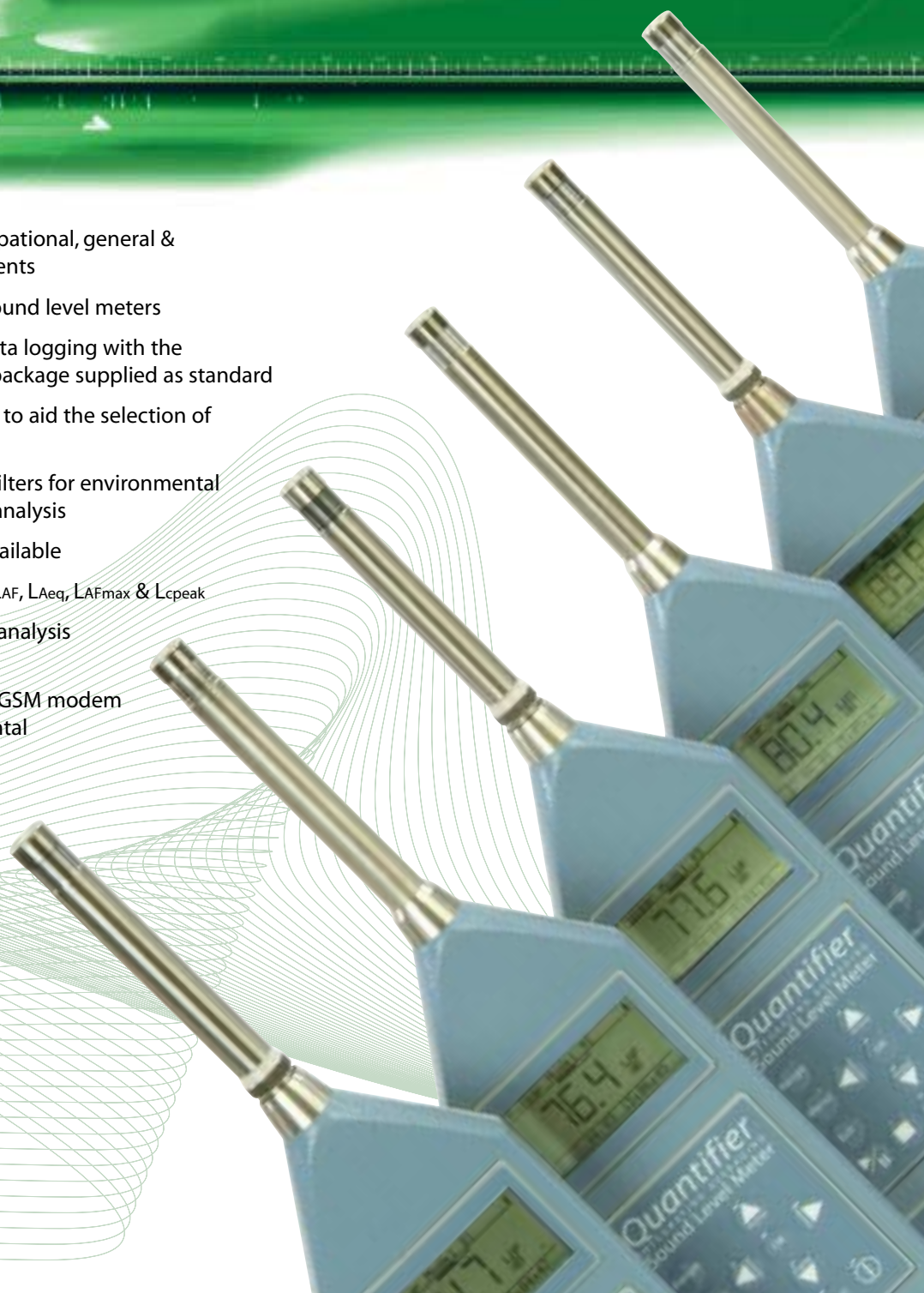


# The Quantifier Range

The Practical & Easy To Use Solution for Industrial & Environmental Noise Measurements.

- Simple to use solutions for occupational, general & environmental noise measurements
- Meets the latest standards for sound level meters
- The entire Quantifier range is data logging with the outstanding Analyser software package supplied as standard
- 1:1 Octave Band Filters available to aid the selection of hearing protection
- The option of 1:3 Octave Band Filters for environmental noise measurements and tonal analysis
- Class 1 or Class 2 instruments available
- Simultaneous measurement of LAF, LAeq, LAFmax & Lcpeak
- AC output for use with external analysis and recording equipment
- Outdoor measurement kits and GSM modem available for remote environmental noise measurements
- Automatic Backlight function





## Overview

The Quantifier range of integrating averaging sound level meters is the practical option for a user requiring a no nonsense, simple to use solution for their noise measurements.

All instruments are data logging with the outstanding Analyser software provided as standard, making the transformation of your measurements into informative reports a simple task.

The Quantifier range complies with virtually all worldwide noise measurement regulations making it the ideal instrument for industrial, general and environmental noise monitoring.

## Occupational / Industrial Noise Measurement

Current noise at work legislation requires the assessment of the risk of potential hearing damage or loss to employees. The Quantifier range provides all of the functions required to comply with these standards.

The Model 91 (Class 1) and Model 92 (Class 2) are ideal for the risk assessment of noise levels providing time history and the measurement of all required parameters needed to comply with the Noise at Work regulations and the EU Directive 2003/10/EC.

The Model 93 (Class 1) and Model 94 (Class 2) are perfectly suited for noise measurements requiring the use of 1:1 Octave Band Filters, assisting in the prescription of suitable hearing protection for employees working in noisy areas that exceed the recommended guidelines.

# The Quantifier Range

## Environmental, Vehicle and Outdoor Noise Measurement

The Quantifier range is also the ideal solution for environmental, vehicle and outdoor noise measurements. Although legislation differs from that of occupational noise, the range once again fully complies with most international standards, regulations and guidelines. These include the measurement of L<sub>max</sub>, L<sub>min</sub>, L<sub>eq</sub> and five L<sub>n</sub> values including L<sub>10</sub>, L<sub>90</sub> and L<sub>95</sub>.

The Model 95 (Class 1) and Model 96 (Class 2) provide 1:1 and 1:3 Octave Band Filters for the identification and subsequent analysis and control of noise sources that may require tonal analysis.

The Quantifier stores the Time History which is often crucial when assessing environmental noise. Data logging of the required measurement parameters is standard and up to 12 days of 1 second Time History data can be stored.

Pulsar Instruments provides two exceptional outdoor measurement kits to protect your instrument from adverse weather conditions.

The WK1 Lightweight Outdoor Kit uses the microphone and preamplifier from the sound level meter to make a simple, lightweight system suitable for overnight and occasional use.

For longer term measurements, the WK2 kit uses the microphone from the sound level meter to provide a complete integral outdoor microphone assembly, which has a superior degree of weather protection for the microphone capsule.

The GSM wireless modem option provides you with the opportunity to access the system remotely and to download stored measurements.

## Applications

The Quantifier range is suited to most applications where noise measurement is required.

These applications include:

- Noise measurements for Noise at Work and EU Directive 2003/10/EC
- Environmental noise measurement using frequency analysis
- Boundary noise measurements



- Machinery noise testing
- Vehicle noise measurement
- Entertainment noise
- Fire alarm testing
- Building acoustic measurement
- Engineering noise measurement



# Models 91 & 92

Simple to use meters for a wide range of applications

- Ideal for Industrial and Environmental Noise Measurements
- Simply switch the instrument on, calibrate and begin measurement
- Easy to navigate keypad
- Broadband measurements with Time History
- Data-logging with outstanding Analyser software package provided as standard
- Option to print data directly from the instrument
- Automatic Backlight
- Complies with IEC 61672, IEC 60651 & IEC 60804

The Model 91 (Class 1) and Model 92 (Class 2) are the ideal choice for noise measurements in accordance with the Noise at Work Regulations and EU directive 2003/10/EC.

The instruments have been designed to be easy to use whilst providing the user with the fundamental parameters required to comply with current legislation, such as  $L_{eq}$ ,  $L_{EPd}$  (LEX,8h) and  $L_{Cpeak}$ .

Both instruments are data logging with the outstanding Analyser software package provided as standard, making the transformation of measurements into informative reports a simple task.



Order Codes	Class 1	Class 2	Industrial	Environmental	General	Datalogging	1:1 Octaves	1:3 Octaves	Software
Model 91	✓		✓	✓	✓	✓			✓
Model 92		✓	✓	✓		✓			✓
Model 93	✓		✓	✓		✓	✓		✓
Model 94		✓	✓	✓		✓	✓		✓
Model 95	✓			✓		✓	✓	✓	✓
Model 96		✓		✓		✓	✓	✓	✓

# Models 93 & 94

## The complete solution for Noise at Work

- Suitable for both Industrial and Environmental noise applications
- Includes all the measurement functions of the Model 91 and Model 92 with the addition of 1:1 Octave Band Filters
- 1:1 Octave Band measurements from 31Hz to 16kHz
- Up to 12 days of 1 second Time History can be stored
- Analyser software includes a database of PPE for the selection of appropriate hearing protection
- Weatherproof kits available for outdoor long term monitoring
- GSM wireless modem provides the option of remote measurement download

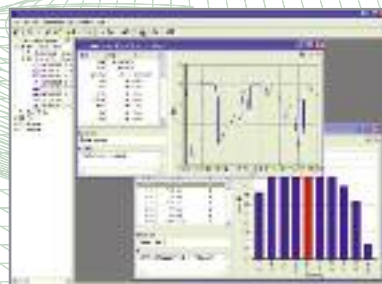
The Model 93 (Class 1) and 94 (Class 2) offer all the measurement functions of the Model 91 and Model 92 with the addition of 1:1 Octave Band Filters.

For Industrial Noise measurements these models offer 1:1 Octave Band Filters for the selection of accurate hearing protection. You can then choose your preferred PPE from a database of hearing defender products included in the Analyser software package.

NR and NC values and curves can also be calculated using the Analyser software.

For Environmental noise monitoring the Model 93 and Model 94 provide either an automatic or manual sweep through the filter bands in a measurement duration of as little as 1 minute for the 1:1 Octave Band Filters.

The frequency measurements are automatically time and date stamped with the 1:1 Octave Band Filters displayed as a bar graph. Comments can be added to the reports and individual frequency bands can be highlighted using the cursor.



# Models 95 & 96

## For comprehensive Industrial & Environmental noise measurements

- The simple to use solution for Environmental, Industrial and General noise measurements
- Includes all the measurement functions of the Model 91 and Model 92 with the addition of 1:1 & 1:3 Octave Band Filters
- 1:3 Octave Band measurements from 25Hz to 16kHz with the option of adding 20Hz to 20kHz filter bands
- Ideal for applications requiring tonal analysis using 1:3 Octave Band Filters
- All measurement functions provided to comply with most world wide standards, regulations and guidelines
- Outdoor weatherproof kits and GSM modem for remote download available

The Model 95 (Class 1) and Model 96 (Class 2) have 1:1 & 1:3 Octave Band Filters making them a cost effective, yet fully compliant instrument for environmental noise measurements where distinct tones need to be identified and subsequently controlled.

The Analyser software enables the user to show over 12 days of Time History data. This can then be used to analyse and discover specific noise sources and take the necessary action.

The option of 2 weatherproof kits are available for semi permanent outdoor monitoring and measurements can be downloaded remotely using a GSM modem.



## Accuracy

Class 1	Model 91, Model 93 & Model 95
Class 2	Model 92, Model 94 & Model 96

## Applicable Standards

IEC61672-1:2002 Class 1 or 2 Group X  
IEC 60651:2001 Type 1 or Type 2  
IEC 60804:2000 Type 1 or Type 2  
ANSI S1.4 with NK70 Random Incidence Adaptor  
1:1 & 1:3 Octave Filters to IEC 61260 Class 1 (where fitted)

## Microphone (Typically)

Class 1	MK224 pre-polarised Free-field ½" Condenser
Class 2	MK216 pre-polarised Free-field ½" Condenser

## Microphone Preamplifier

Class 1	MV:200D Removable Preamplifier
Class 2	MV:200D Integral Preamplifier

## Measurement Range

Broadband	21dB(A) to 140dB(A) Class 1 25dB(A) to 140dB(A) Class 2 143dB(C) Peak (70dB to 140dB Range)
1:1 Octaves	19dB(Z) to 140dB(Z)
1:3 Octaves	14dB(Z) to 140dB(Z)

## Noise Floor (Typical)

Broadband	18dB(A) Class 1, 20dB(A) Class 2
1:1 Octaves	12dB(Z) @ 1kHz 1:1 Octave Band
1:3 Octaves	7dB(Z) @ 1kHz 1:3 Octave Band

## Frequency Weightings

Channel 1 'A', 'C' or 'Z'  
Channel 2 'C' for Peak  
Z weighting is a flat frequency response. When either 1:1 or 1:3 Octave Band Filters are selected the 'Z' weighting is used.

## Time Weightings

'F' (Fast), 'S' (Slow) & 'I' (Impulse) to IEC 61672-1:2002 Class 1 or 2

## Measurements

### Broadband Mode

$L_{Aeq}$ ,  $L_{Ceq}$  or  $L_{Zeq}$   
 $L_{Cpeak}$   
 $L_{AF}$ ,  $L_{AS}$ ,  $L_{AI}$ ,  $L_{CF}$ ,  $L_{CS}$ ,  $L_{CI}$ ,  $L_{ZF}$ ,  $L_{ZS}$  or  $L_{ZI}$  (not stored)  
 $L_{AFmax}$ ,  $L_{ASmax}$ ,  $L_{AImax}$ ,  $L_{CFmax}$ ,  $L_{CSmax}$ ,  $L_{CImax}$ ,  $L_{ZFmax}$ ,  $L_{ZSmax}$  or  $L_{ZImax}$   
 $L_{AFmin}$ ,  $L_{ASmin}$ ,  $L_{AImin}$ ,  $L_{CFmin}$ ,  $L_{CSmin}$ ,  $L_{CImin}$ ,  $L_{ZFmin}$ ,  $L_{ZSmin}$ ,  $L_{ZImin}$   
 $L_{AE}$ ,  $L_{CE}$  or  $L_{ZE}$ ,  $L_{Aeq}$ ,  $L_{Ceq}$  or  $L_{Zeq}$ ,  $L_{AFeq}$   
 $L_{0.1}$  to  $L_{99.9}$  (five simultaneous user-selected values available)  
Date and time, 1 second Short Leq Noise Profile ( $L_{Aeq}$ ,  $L_{Ceq}$  or  $L_{Zeq}$ )

## Filter Mode

1:1 or 1:3 filter selected  
Filtered LZS, LZF or LZI (not stored)  
Filtered LZeq (stored), LAeq, LCeq or LZeq (stored)  
Date and time

## Frequency Bands (Nominal Frequencies)

1:1 Octave Band 31Hz to 16kHz  
1:3 Octave Band 25Hz to 16KHz  
20Hz & 20kHz 1:3 Octave band with MO:800/6 Factory Option

## Memory

16Mbit memory allowing up to:  
1300 broadband measurements  
770 1:1 octave measurements  
330 1:3 octave measurements

For example, broadband mode allows 12 days of 15 minute measurements to be stored.  
Calibration records are automatically stored in the instrument memory.

## Noise Profile ( $L_{Aeq}$ , $L_{Ceq}$ or $L_{Zeq}$ ).

Short Leq ( $L_{Aeq}$ ,  $L_{Ceq}$  or  $L_{Zeq}$ )  
Up to 12 days at 1 second acquisition with 2 second factory set option

## Automatic Measurements

The unit can be set to record and store data over fixed times of:

1 minute	5 minutes
10 minutes	15 minutes
30 minutes	1 hour
8 hours	12 hours

## Display

Graphical LCD with Quasi-Analogue Display  
Selected measurement parameter with level  
Warnings for Overload, Under Range  
Battery Level & External Power Indicators  
Time & Frequency Weighting  
Elapsed measurement time  
Real time short Leq (broadband mode)  
Graphical 1:1 and 1:3 Octave Band (recall mode only)  
Recalled stored measurements  
Measurement Range & Instrument settings

## Dimensions

340mm x 75mm x 25mm

## Weight

450 gms

## Batteries

2 x AA (LR6)

## Battery Life

Broadband Mode typically >24 hours

## Environmental

Temperature	Operating -10°C to +50°C Storage -20°C to + 60°C
Humidity	Up to 95% RH Non Condensing

## External Connections

USB Type B Data Out  
Multipin I/O for optional connections

## Outputs

Unweighted AC Output via Multipin I/O Connector  
PU:90C recommended (Specify UK, EU or US plug type)

## Electromagnetic Performance

IEC 61672-1:2002  
IEC 61672-2:2003  
Except where modified by EN 61000-6-1:2007

## Output Cables

Standard:	ZL:100 USB to USB
Optional:	ZL812 AC Output Cable to Phono Cable ZL:813 RS232 Output Cable

## Software

Pulsar Analyser download, analysis & reporting software  
Compatible with Windows 9x / Me / 2000 / NT / XP and Vista

## Ordering Codes

Sound Level Meter	Measurement Kit
Model 91	Model 91K
Model 92	Model 92K
Model 93	Model 93K
Model 94	Model 94K
Model 95	Model 95K
Model 96	Model 96K

## Measurement Kits

Instruments can be supplied as a complete measurement kit to ensure you have all of the accessories necessary to perform your noise survey. The Quantifier noise measurement kit contains: Sound Level Meter, Acoustic Calibrator, Windshield, Hard Attache Case, Wrist Strap, Analyser Software, Download Cable, Batteries, Operating Manuals, Calibration Certificates & Extended Warranty Record



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



**UK Office**

**Keison Products,**

**P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.**

**Tel: +44 (0)330 088 0560**

**Fax: +44 (0)1245 808399**

**Email: [sales@keison.co.uk](mailto:sales@keison.co.uk)**

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.