

# Castle 'SONUS' GA116L and GA216L Pocket Sound Meters and Combined Personal Noise Exposure Meters (dosemeter)



The Castle SONUS range of pocket sized sound level meters bring simplicity and power to the worlds of Noise at Work and Environmental sound monitoring. From a basic sound pressure meter to full data-logging, combined sound and dose-meter, the range of systems covers a wide diversity of applications.

Top of the Castle Pocket Range of Sound Level Meters is the SONUS L (GA116L & GA216L), a Noise at Work and Environmental Sound Meter boasting a combined integrating sound level meter and dosimeter with full data-logging capability. Simply un-plug the sound meter microphone and plug-in the dose-meter cable to convert to a full-function dosimeter. The dual-measurement feature of the SONUS means two versions of most parameters can be measured simultaneously. This feature means you only ever need to measure once to capture all the data you need!

Mobility of instrumentation is essential for effective noise measurement. As the name indicates, the Castle SONUS 'Pocket Meters' pack all the necessary features into pocket sized proportions

The data-logging instruments have a USB connection and are compatible with the Castle dBdataPro software, where data can be presented in the desired format and copied and pasted into other applications, so you don't have to change the way you have always completed your reports.

There are a number of system packages available to suit many applications from simple tasks such as alarm monitoring, to a fully weatherproof system for long-term environmental monitoring, there are also dedicated packages for Noise at Work requirements.

## POCKET POWER

All measured values can be saved to the internal flash memory of the GA116L or GA216L for subsequent output. The results can be viewed on the instruments own display or downloaded to the included dBdataPro noise analysis PC software via a high speed USB connection.

Using the instruments could not be simpler. The simple user interface can easily be scrolled and selected to immediately display the information you need. The keypad also has a dedicated dB Range key, simply press and then select your required range.

The instruments also have 3 operating modes, select one and the instrument sets itself to the required settings. Its never been easier !!

The measured noise is computed and stored as a series of pre-chosen time intervals. The GA116L and GA216L instruments will store up to approximately 2100 intervals in either one or multiple recordings.

Each instrument is supplied with a comprehensive printed user manual and a getting started sheet.

- Measures  $L_p$ ,  $L_{eq}$ ,  $L_{max}$ ,  $L_E$ ,  $Pa^2h$ ,  $L_{ep'd}$ , DOSE, Dose Per Hour,  $L_{10}$ ,  $L_{90}$ ,  $L_{(user)}$
- Overload latched indicator
- Measures simultaneously  $L_{Aeq}$  and either  $L_{Zeq}$  or  $L_{Ceq}$
- User selectable Exchange rate, Threshold and Criterion level.
- User Modes: N@W, Environmental or ALL
- C or Z weighted Peak
- Save results to internal flash memory
- Download data to a PC via a USB connection
- Noise Analysis Software included with the meter
- Small and light weight, fits into small shirt or jacket pocket and also supplied with a strong pocket clip.
- Lockable Key pad through options
- Constructed of tough crack resistance plastic.
- Single battery operation of approximately 12 hours



# SONUS L (GA116L & GA216L) SPECIFICATION

Range of Pocket sized Sound Level Meters and combined Personal Sound Exposure Meters

## Standards

IEC61672-1-2002 (Sound Level Meters)

IEC61252-1993 (Personal Sound Exposure Meters)

## Level ranges:

RANGE	DISPLAY RANGE	LINEAR RANGE	PEAK RANGE
30-100	29 – 101dB	30 – 100dB	40 – 103dB
50-120	59 – 121dB	50 – 120dB	60 – 123dB
70-140	69 – 141dB	70 – 140dB	80 – 143dB

## Linear Operating range:

70 dB

## Detector Characteristics:

RMS and Peak

## Frequency Weighting

'A', 'C' & 'Z' Weighted in Accordance with IEC 61672-1-2002

Combinations of 'A', 'A&C' simultaneous or 'A&Z' simultaneous available for Lp, Leq and Lmax

## Time Weighting

'Slow', 'Fast' and 'Impulse' in Accordance with IEC 61672-1-2002

## Exchange rate:

3dB, 4dB or 5dB

## Criterion Level:

75dB, 80dB, 85dB or 90dB

## Threshold Level:

-5dB, -10dB or OFF

## Peak:

3dB above top of selected range

## Display:

Custom alphanumeric LCD, digit size 7mm x 5mm

## Memory:

2100 Data Intervals Maximum

## Microphone/Preamp:

ACO 7146A pre-polarised 1/2" condenser microphone, 25mV / Pa

## Calibration:

91.0 to 120.0dB @ 1KHz

## Batteries:

1 x PP3 (9V)

Approximately 12 hours continuous use

## Operating Temperature:

Operating Range: -10 to + 50°C

## Humidity:

Effect: < 0.5dB from 25% to 90% RH

## Vibration:

No effect on instrument

## EMC:

Emissions: EC 61000-6-3, EN61326-1:2006, CISPR 22:1997  
EN55022:1998, FCC Rules, Part 15 2003 Class B

Immunity: IEC 61000-6-2:2005, EN61326-1:2005  
Levels ±4kV (Contact), ±8kV (Air)

Amp Mod: IEC 61000-6-2:2005, Level 10V/m

## Construction:

ABS plastic

## Display parameters include :-

Lp (Sound Pressure Level)

Leq (Level equivalent) - dual measurement

Lep'd

LE

Lmax - dual measurement

'C' or 'Z' Weighted Peak

L<sub>10</sub>, L<sub>90</sub> and Ln (user selectable)

Pa2Hrs (Dose % x 0.032)

Dose per Hour

Dose count 1% to 9999% with Variable exchange rate of

3dB,4dB or 5dB exchange rates

75dB, 80dB, 85dB or 90dB criterion value.

'A', 'C' and 'Z' frequency weightings

'Slow', 'Fast' and 'Impulse' time weighting

Elapsed time (Running time hrs, mins, secs, 1%)

Period time (time left to end of current interval period)

Exposure Time (for Lep'd and dose calculations)

Overload indication (Flashing alternate display)

Battery condition indication

Low battery (Flashing alternate display)

## SONUS PRODUCT RANGE

Sound Meters	Class 1	Class 2
Basic— sound pressure level	GA116B	GA216B
Integrating—(Leq)	GA116I	GA216I
Data-logging	GA116L	GA216L
Dosemeters		
Basic Dedicated Dosemeter		GA257B
Data-logging Dosemeter		GA257L

## ORDERING INFORMATION

<b>GA116L</b>	-	Sonus Sound Level Meter Class 1
<b>GA216L</b>	-	Sonus Sound Level Meter Class 2
<b>GA607</b>	-	Dual Level Calibrator
<b>KA010</b>	-	Attaché Kit Case
<b>PC007</b>	-	dBdataPRO software
<b>MK579DP1B</b>	-	Dosemeter microphone
<b>KA020</b>	-	Weatherproof System Case
<b>ZL2094-03</b>	-	Weatherproof cable
<b>MW402</b>	-	Weatherproof microphone housing



System showing GA116/216 sound Meter and GA257 Dosemeter

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# To the Safety, Health and Environment Professional...

The issues faced every day by Health, Safety and Environmental professionals are vast and varied. At Castle, we have spent a lot of time developing products and services to make your life easier!

Castle Group Ltd are one of the leading international group specialists in technical safety, health and environment solutions. Whether you are in Industry, Construction, Local Authority or anywhere there are safety or environment issues, we are a resource you really could use. We can help with Noise, Vibration, Air sampling, Gas detection, Light and temperature and just about anything else that needs measuring. The following services show you how we can help

## FREE Health & Safety Training Seminars!

To get you off the ground, refresh your knowledge or just to get a taste, Castle is continually running FREE Safety, Health and Environmental seminars around the country. Covering subjects from Noise at Work, to COSHH and Audiology, the list is ever growing, as are the locations. Check out our web site for the next seminar near you.



[www.castlegroup.co.uk](http://www.castlegroup.co.uk)

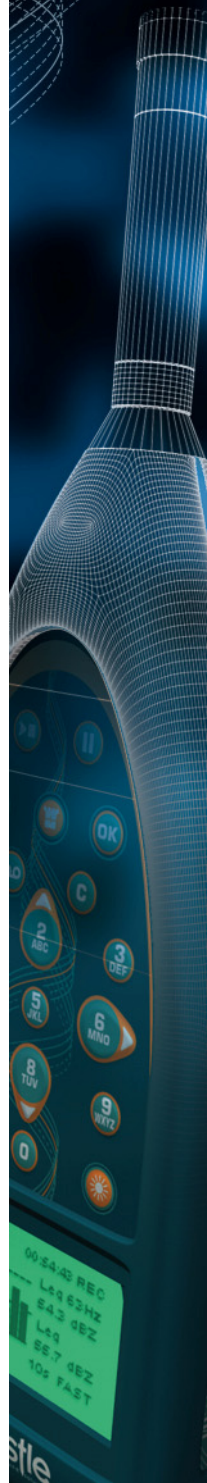
## Castle Instruments

Dealing with many Safety, Health and Environmental issues may well mean you need access to a plethora of **equipment** and **instrumentation** to carry out measurements and assessments necessary for the job.

At Castle we can provide you with just about any of the equipment you might need. All our equipment comes with the **guarantee** of back-up and support you only get from a company with 40 years under its belt! Here are a few of the core products we can offer, but we can also source anything you may need!

- Noise and Vibration Measurement Equipment
- Audiometers, Otophoses and Booths
- Air-Sampling Pumps, Calibrators and Consumables
- Gas-Detection and Personal Monitors
- Emissions and Air Quality
- Light, Temperature, Humidity and Airflow

[www.castlegroup.co.uk](http://www.castlegroup.co.uk)



## Castle Training Academy

Training is becoming an ever more important area of consideration to industry **professionals** and the Castle Training Academy is fulfilling the need for more and more companies every year. The Academy now offers **competence** training along with IOSH and CIEH **qualifications**. What is more, look out for our NEW City & Guilds provision. All courses come with professional **CPD** points and many are eligible for CITB and Train to Gain **grant funding**.

You can see a full list of courses and book-online on our website.

[www.castletrainingacademy.com](http://www.castletrainingacademy.com).



## CastleRent

There are a number of **reasons** why rental may be the solution for you. You may only have a one-off use, a special contract, a limited budget or a need for supplementary products. In any case, our **flexible booking** system, next day a.m. delivery and open-pricing mean that you can address any of these issues without delay. For long-term contracts, such as construction projects, Castle Rent is also a **tax efficient** way to 'own' equipment. Finally, for peace of mind, what better way is there to try a product before deciding to buy it? We even give you money back if you do purchase!

### The Advantages of Castle Rent;

- Easier on cash-flow
- Rent for long- or short-term as you need it
- Let the Tax Man pay for you!
- Try before you buy
- Four weeks for the price of three
- No on-going maintenance costs
- Sourcing service for any other equipment you need

[www.castle-rent.com](http://www.castle-rent.com)

## Castle Care

Measurement instrumentation must be **regularly** calibrated to a traceable standard and this is certainly true for most health, Safety and Environmental monitoring equipment. At Castle, our team of **highly trained and experienced** technical staff can service and calibrate almost any type of monitoring equipment from Noise and Vibration meters to Thermometers to Scales. The Castle '**Premier Service**' includes menu pricing and a normal turnaround time within 5 days. What is more, we will evaluate any instrument and return it for **FREE** if you do not want to proceed.



### Castle premier service and calibration offers...

- Free Evaluation Service
- Clear and Simple Pricing
- UKAS Accreditation Available
- Large range of equipment calibrated
- 4 Levels of calibration available for most equipment
- Annual contract calibrations with up to 20% off

[www.castle-care.com](http://www.castle-care.com)

## Castle Contracts

For companies with **multiple** pieces of **equipment**, there is also Castle's 'Contract Calibrations'; an annual scheme to take the hassle out of maintaining equipment certification. Castle will issue calibration **reminders**, collect your equipment if required and return it calibrated as soon as possible. This scheme also affords a **saving** of up to 20% on annual calibration charges.

[www.castle-care.com](http://www.castle-care.com)

## Castle Consultancy

Castle **experts** are waiting to help you. Because we have a **network** of consultants across the country, we are poised to **react** to your requirement. Not only can we normally provide a local service, but we can usually help right away if you need us to!

Whether you are limited for time, in need of further **expertise** or just want some **advice**, we can assist. We have provided a wide range of services to many top companies for projects large and small.

**Here are some of the services we can provide, but if it's not here, just ask!**

- Noise or Vibration risk assessments
- Building Acoustics
- COSHH compliance
- Environmental Impact Assessments
- Air Quality Monitoring
- Occupational Health Screening programmes

[www.castle-consultancy.com](http://www.castle-consultancy.com)

## Castle Online

You can access all our products and services online whenever you want, just go to [www.castlegroup.co.uk](http://www.castlegroup.co.uk) and you will find a **knowledgebase** packed full of useful facts and information. You will also find details of all our upcoming **FREE seminars** and training courses as well as product information on literally hundreds of health, safety and environmental items, which are available to purchase directly through a secure server. Among other things you will find:

- HS&E Measurement Products
- Books, Standards and Publications
- HS&E CD's DVD's
- Stopwatches and Timers
- Scales and Distance Measurement
- Water Testers

You will also find our shop on ebay of all places - <http://stores.ebay.co.uk/Castle-Group-Safety> or just go onto ebay and type Castle Group Safety in the shops section.

## Who are Castle

For 40 years, Castle has been driving forward with product and service innovation. For a number of the early years, the company focussed on the development of sound and vibration measuring equipment. This was then progressed by adding training courses, rental and consultancy eventually leading to the Castle of today, which is helping many customers deal with a vast range of health, safety and environmental issues in a variety of ways. The future is a very exciting place at Castle and we are working on many new initiatives with our customers firmly in mind!