

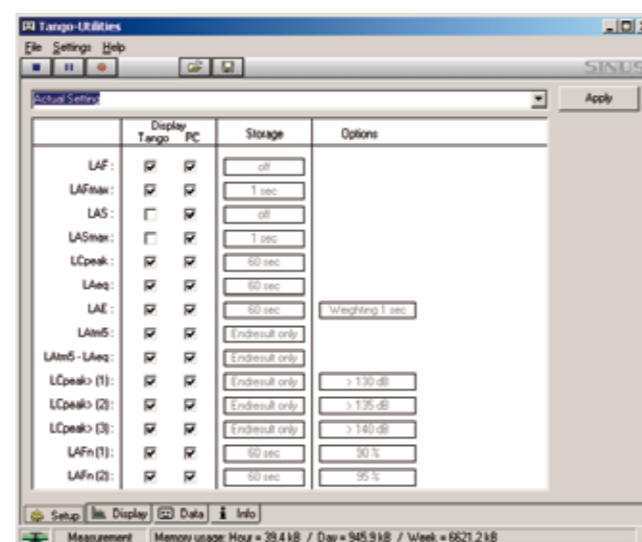


# TANGO™

Integrating Sound Level Meter  
type 1 according to IEC 61672

## Technical Data

Accuracy	Class 1 according to IEC 60651 / 60804 / 61672
Type approval	PTB approval 21.21 / 12.04
Meas. values	<ul style="list-style-type: none"> <li>- Sound pressure level LAF, LAS</li> <li>- Maximum sound level LAFmax, LASmax</li> <li>- Minimum sound level LAFmin, LASmin</li> <li>- Equivalent sound pressure level LAeq</li> <li>- Peak value LCpeak</li> <li>- Sound dose LAE</li> <li>- Taktmaximal level LATm5</li> <li>- 3x LCpeak_exceedance (freely selectable)</li> </ul>
Freq. weightings	A + C peak
Time weightings	Fast, Slow
Ranges	25 ... 140 dB (LAeq) 60 ... 143 dB (LCpeak)
Resolution	0.1 dB
Display	Illuminated LCD: <ul style="list-style-type: none"> <li>- Measured value with 3.5 digits</li> <li>- Bar graph in 5 dB steps</li> <li>&lt; under-range</li> <li>&gt; over range</li> <li>- Measurement time (hh:mm:ss)</li> <li>- Battery status</li> <li>- Memory status</li> </ul>
Microphone	1/2" microphone MK255, 50 mV/Pa
Connector	LEMO7 1B (for Micro Extension Cable) 3.5 mm jack (audio signal output)
Calibration	Automatic with external 94 dB calibrator
Storage cycles	Individually selectable for all values
Interface	USB 2.0
Batteries	2x AA (1.2 ... 1.5 V)
Operating time	> 120 h (per set of 2x batteries 2.7 Ah)
Storage time	10 years for lithium batteries
Dimensions	190mm x 70mm x 32mm
Weight	250 g (including batteries)
Scope of delivery	Sound level meter, windscreen, 1.5m USB interface cable, manual, mains power supply, carrying case, Tango-Utilities software
Option 1	Percentiles + 8 MB in base delivery
Option 2	1/2" calibrator (Cal200)
Option 3	Tripod with carrying case
Option 4	Tango Outdoor Kit
Option 5	AUDITOR_light software package



### Tango-Utilities Software

The Tango-Utilities software shows all settings at a glance and allows the user to change these on the PC screen. The measurement can be controlled from the PC with the START and STOP buttons.

Immediately after connecting to the PC via the USB cable, the internal clock of the Tango is automatically synchronized with that of the PC.

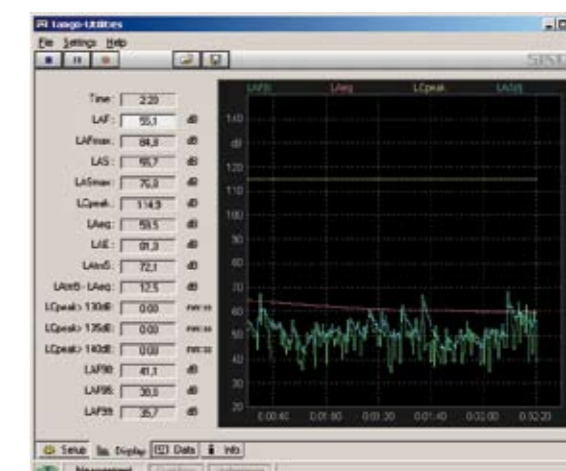
Tango-Utilities can be installed on all PCs with Windows 2000 or higher – the installation CD is included in the scope of delivery. A USB port is necessary for data exchange with Tango. After attachment to the USB interface the sound level meter is powered from the PC.

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- General sound level measurements
- Noise measurements at the workplace
- Environmental noise measurements
- Monitoring of traffic noise



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## TANGO™ - entry-level sound level meter for all measurements necessary in workplace and environmental protection

The Tango™ sound level meter is a compact Class 1 basic sound level meter according to IEC 61672 for workplace and environmental protection applications. Due to its intelligent software concept and its measuring range of 110 dB without switching to another range, Tango is still very easy to operate despite its high functionality. Using Tango, even inexperienced users are immediately able to correctly measure and interpret the current sound level.

It is possible to use the detachable microphone & preamplifier via extension cable. An outdoor protection kit is available on request. The measured value is shown on a back-lighted high-contrast display and is readable even over larger distances in sunlight or in darkness. The clearly arranged keyboard has a perceptible keystroke. Being based on state-of-the-art circuit technology, Tango has an extremely low power consumption. Two batteries (1.2 ... 1.5 V, size AA) guarantee an operation time of 120 h and a storage time of 10 years (for lithium batteries). Therefore Tango is practically always ready for use.

The Tango sound level meter allows for simultaneous A- and C-frequency weightings as well as Fast (125 ms) and Slow (1 s) time weightings. In addition to the momentary sound level values (LAF and LAS) and the maximum sound level values over a given period (LAFmax, LASmax and LCpeak), Tango can also measure the LAeq, LA5 and LA5-LAeq values integrated over a given period.

All measurement values chosen in the Setup are computed simultaneously and one of these values is selected for display. After starting the integrating measurement all values are saved automatically. With the help of the USB interface and the Tango-Utilities software, the measured values can be read from the memory, saved and converted to a standard office format. Additionally, the software allows a user-defined setup to be defined and transferred to the device (measured values, storage cycles, percentiles).

Tango satisfies all requirements for a Class 1 sound level meter to be used for the following measurement tasks:

- Traffic and industrial noise measurements
- Neighborhood and recreation noise monitoring
- Workplace noise measurements
- Monitoring / logging of traffic noise.

## Modern technology combines utmost accuracy with simplest operation

The accuracy of the measurement may be considerably improved by calibrating the sound level meter before each measurement. This calibration also remains intact after switching off the device. Because of its reasonable price, easy operation and small dimensions, Tango is the ideal instrument for all users whose measurement tasks require a Class 1 measuring device according to the IEC 61672 standard but without frequency analysis or audio recording. A comprehensive memory management scheme allows different storage cycles to be selected for the various measurement values. In order to prevent incorrect settings from being selected by inexperienced users, the Setup function can be disabled via the interface (Easy Operator Mode).

**Type approval by the PTB (legal calibratability in Germany) 21.21 / 12.04 .**

### Workplace protection applications

For labor protection applications, in addition to the C-weighted peak value, the exceedance times for three freely-selectable LCpeak thresholds can be measured. This non-standard measurement allows the degree of noise exposure at a workplace to be captured much better than a measurement of the peak value alone.

### Environmental protection applications

Option 1 allows three freely-selectable statistical values to be measured and saved. These LAFN% percentiles express what A-weighted level was exceeded in N% of the measurement time. The internal memory is expanded to 8 MB with this option.

Option	Beschreibung
907000.1	TANGO sound level meter (basic version)
907010.6	Option 1: Percentiles & 8 MB in base delivery
800630.0	Option 2: Tripod with case
800934.4	Option 3: Cal 200 Calibrator
907300.4	Option 4: Tango Outdoor Kit (see frontpage)
801282.1	Option 5: Software AUDITOR_light

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## Highest ease of use via integrated software package: TANGO-Utilities for Windows

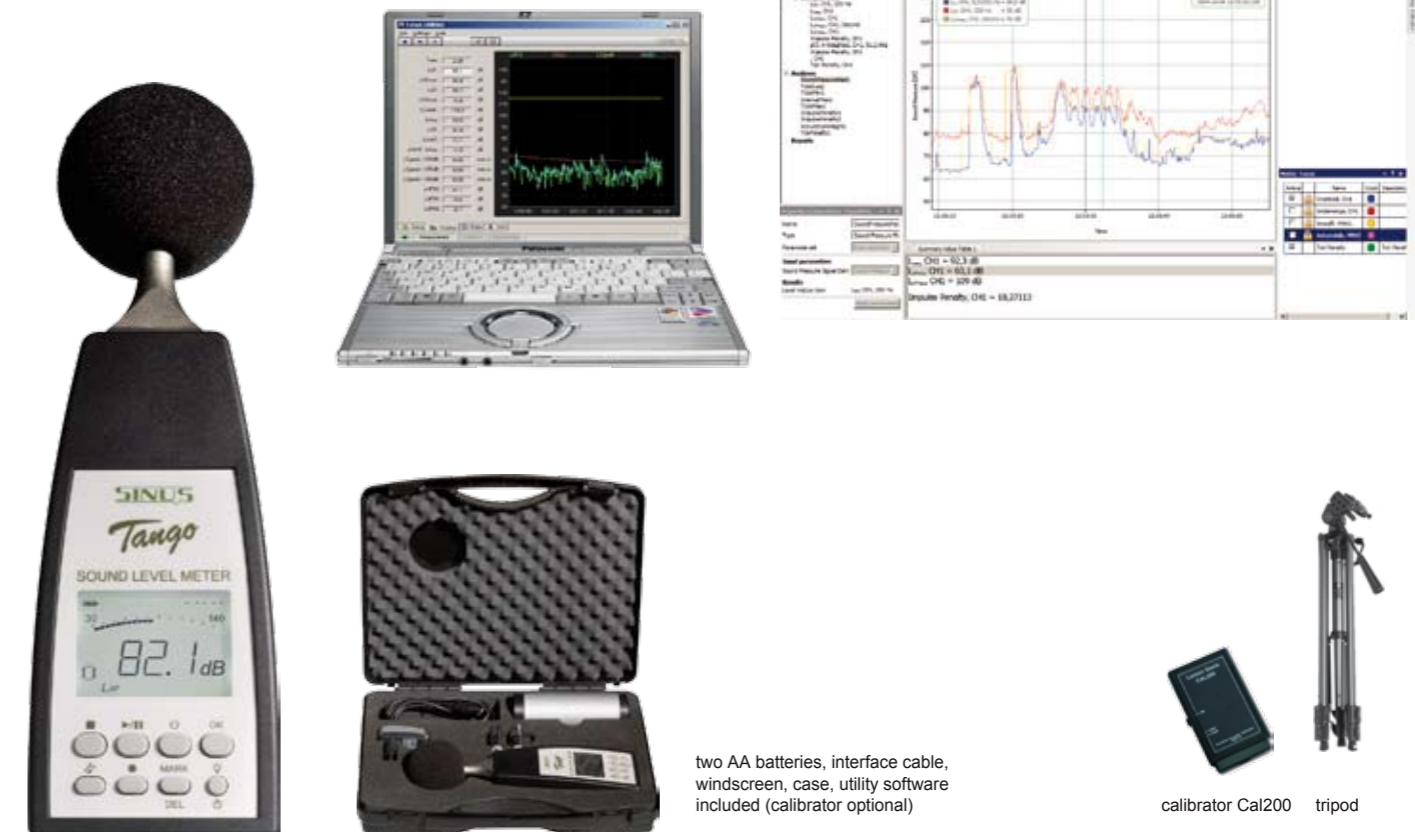
The Tango sound level meter may also be operated via USB interface. In this case the PC powers the device through the interface. The scope of delivery also includes a USB adapter for mains power supply. The Tango-Utilities software included in the scope of delivery allows the operation and configuration of Tango via PC as well as the data transfer between the two devices. A separate window is displayed on the PC which allows easy setting of the parameters and rapid transfer of the stored measurement values. A unique feature of Tango is that several measurement values can be stored with individual sample times. The file names and sizes of the saved measurement values are displayed for transfer or deletion. The USB interface also enables the user to integrate Tango easily into a PC-based measuring system.

## TANGO system integration with AUDITOR™ post-processing software

With the combination of the Tango sound level meter and the AUDITOR\_light post-processing software we offer a powerful solution for measurement, evaluation and report generation of environmental noise. The post processing allows an effective calculation of Rating Noise Levels according to the German TA-Lärm as well as international standards and laws. The main features of AUDITOR\_light are:

- Import of Tango measurement values and markers
- graphical display of long-term measurements
- extracting, marking and masking of data
- calculation of Rating Noise Levels
- report generation

Our full version of the AUDITOR™ software allows the post-processing of all sound level meters & analyzers from SINUS Messtechnik, including Tango.



Standard scope of delivery

Optional