

HT155 - HT157

PROFESSIONAL INTEGRATION SOUND-LEVEL METERS TYPE 1

Models HT155 and HT157 are portable integration sound-level meters type (class) 1, which can be used for monitoring the noise equivalent level (Leq), for measuring peak values, for verifying soundproofing levels, sound pollution, etc. Therefore this instrument is suitable for certification in compliance with the Legislative Decrees currently in force as regards measurements of environmental noise and noise in workplaces. The instruments have a wide measuring range (from 25 to 140dB) and several internal functions (statistic analysis, 24H analysis, Leq integration over time) which are fundamental for measurements, Model HT157 also allows carrying out detailed analyses of spectrum components of the noise by using built-in octave band and 1/3 octave band filters. Both models have an internal memory for saving data and an USB interface for PC transfer by Windows dedicated software, with possibility of numerical, graphic and statistic display. Sound-level meters are supplied in a handy and solid suitcase, with a portable calibrator for preliminary checks before any measuring operation is carried out.

FUNCTIONS	HT155	HT157
Sound-level meter category	Type 1	Type 1
Noise measuring range	25÷140dB	25÷140dB
Noise measurement resolution	0.0÷10.1dB	0.0÷10.1dB
Dynamic range	> 90dB	> 90dB
Sound pressure level (SPL) measurement	•	•
Meas. of noise equivalent levels (Leq)	•	•
Frequency weighting	A / C / Z	A / C / Z
Integration over time	F/S/ Impulse	F/S/ Impulse
Peak measurements (Peak-, Peak+)	•	•
Statistic analysis of noise type "A"	•	•
24H analysis of noise	•	•
Spectrum analysis in octave band		•
Spectrum analysis in 1/3 octave band		•
1/2 condenser microphone	•	•
AC analogue output	•	•
Internal calibration in Class 1	•	•
Supplied portable calibrator	•	•
Internal memory for data saving	(128 groups)	(128 groups)
Interface with USB Pen Drive	•	•
USB interface for PC connection	•	•

GENERAL SPECIFICATIONS	
Display	LCD, matrix dots (240x160pxl) with backlight
Internal power supply	4x1.5V alkaline batteries type AA LR6
External power supply	Adapter 100-240VAC/5VDC
Reference standard	IEC 61672:2002 type1 IEC 61260:1995 type1 (HT157) IEC 60804:1985 type1 IEC 60651:1979 type1
Size (LxWxH) mm	285x90x39
Weight (with batteries)	500g

ACCESSORIES	
Standard	
Portable calibrator in Class 1	
Power supply 100-240VAC/5VDC with USB output	
Mini-USB/USB cable for PC connection	
USB Pen Drive (TRASCEND JF V30/2GB)	
USB cable for Pen Drive connection to the instrument	
Windproof protection 60mm	
Windows software for data transfer	
Transport suitcase	
4x1.5V alkaline batteries type AA LR06	
Calibration certificate of sound-level meter and calibrator	
User manual	

HT157
HN000157

HT155
HN000155





1. TECHNICAL SPECIFICATION

Accuracies are referred at the temperature of 23°C±5°C with <80%HR

MEASUREMENT RANGE

- Type A weighting: 25 ÷ 140dB
- Type C weighting: 30 ÷ 140dB
- Type Z (linear) weighting: 35 ÷ 140dB
- Peak C SLM: 50 ÷ 143dB

Range [dB]	0 ÷ 90	10 ÷ 100	20 ÷ 110	30 ÷ 120	40 ÷ 130	50 ÷ 140
A Weighting	25 ÷ 90	25 ÷ 100	25 ÷ 110	30 ÷ 120	40 ÷ 130	50 ÷ 140
C Weighting	30 ÷ 90	30 ÷ 100	30 ÷ 110	30 ÷ 120	40 ÷ 130	50 ÷ 140
Z Weighting	35 ÷ 90	35 ÷ 100	35 ÷ 110	35 ÷ 120	40 ÷ 130	50 ÷ 140
Peak C	50 ÷ 93	50 ÷ 103	50 ÷ 113	50 ÷ 123	60 ÷ 133	70 ÷ 143

FREQUENCY WEIGHTING (Type A / C / Z)

- It complies with IEC61672:2002Class 1,CNS 7129,IEC60651:1979Type 1,IEC60804:2000Type 1

MICROPHONE

- Pre-polarized condenser ½ " with pre-amplifier
- Nominal sensitivity (at reference conditions): 50mV/Pa
- Frequency range: 10Hz ÷ 20kHz
- Noise: < 16dB(A)

AC OUTPUT

- Output ratio: 1mV AC / 0.1dB
- Maximum output voltage: 3.2Vrms
- Output impedance: 1kΩ

PC CONNECTION

- mini-USB: compliance with 1.1 and 2.0 release
- Connection to USB pen drive: suggested TRASCEND JF V30 2GB

GENERAL CHARACTERISTICS

- Level linear range: >90dB
- Resolution: 0.1dB (Statistic), 0.01dB (1/1 e 1/3 OCT)
- Frequency range: 10Hz ÷ 20kHz (±0.2dB) ; 1Hz ÷ 23kHz (±1.0dB)
- Range gain: -10dB, 0dB, 10dB, 20dB, 30dB, 40dB
- Range control error: ≤ 0.1dB
- Self-generated noise voltage: <4μV (1Hz ÷ 23kHz linear)
- Background noise: <13dB(A), 15dB(C), 25dB(Z)
- Total noise: <18dB(A), 23dB(C), 28dB(Z)
- Measuring voltage range: 15μV ÷ 10V (TRMS)
- Frequency weighting: A / C / Z
- Time weighting: Fast, Slow, Impulse, Peak C+, Peak C-
- A/D internal converter: 24 bit
- Anti-aliasing filter: cut-off frequency 23.5kHz, attenuation 100dB
- Sampling rate: 20.8μs (48kHz)
- Intergration time: 1s ÷ 24h pre-defined or customized
- Internal memory: 64kBytes flash memory
- Data storage: max 128 groups / max 256 calibrations





CHARACTERISTICS OF STATISTICAL ANALYSIS

- Features: SLM statistical analysis with A frequency weighting
Frequency integration with customized interval
SLM statistical analysis during 24 hours (24H)

Type of analysis	Measured parameters (*)
Statistical	L_{AFp} , L_{AFmax} , L_{AF5} , L_{AF10} , L_{AF50} , L_{AF90} , L_{AF95} , L_{AFmin} , SD , L_{Aeq1s} , $L_{Aeq,T}$, L_{AE} , L_{AfeqT} .
24H	L_d , L_n , L_{dn} more than the parameters of statistical analysis
Integration	L_{xyp} , L_{xyi} , $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE} , E , C_{peak+} , C_{peak-} , L_{AFmax} , L_{AFmin} , L_{AfeqT} , L_{ASeqT} , L_{AlegT}

(*) X = A/C/Z frequency weighting ; Y = F/S/I time weighting constants

CHARACTERISTICS OF 1/1 OCT AND 1/3 OCT

- Features: Noise's real-time OCT and 1/3 OCT spectral analysis with integral measuring
 - Frequency weighting: A/C/Z
 - Spectral analysis interface: all spectrum frequencies
 - Total analysis interface: performed with digital filter
 - Z weighting added with one digital high-pass filter (cut-off frequency: 4Hz)
 - Filter type: digital, G=2 for 1/1 and 1/3 octave analysis
 - Central frequency of 1/1 analysis:
 - > 16Hz, 31.5Hz, 63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz
 - Central frequency of 1/3 analysis:
 - > 12.5Hz, 16Hz, 20Hz, 25Hz, 31.5Hz, 490Hz, 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
 - Measured parameters (*): $L_{fmeq,1s}$, $L_{fmeq,T}$, L_{xyp} , L_{xyi} , $L_{xeq,1s}$, $L_{xeq,T}$, L_{AE} , E , C_{peak} , T_m
- (*) f_m = central frequency ; X = A/C/Z frequency weighting ; Y = F/S/I time weighting constants
- Noise exposure (E)'s range: $0 \div 65.535Pa^2h$

CHARACTERISTICS OF HT151 PORTABLE CALIBRATOR

- Selectable SLM levels: 94dB and 114dB (reference to $2 \times 10^{-5}Pa$)
- Accuracy: $\pm 0.3dB$ (94dB) ; $\pm 0.5dB$ (114dB)
- Reference frequency: 1kHz $\pm 1\%$
- Distortion: $\leq 1\%$
- Reference standard: IEC 60942:2003 Class 1 and ANSI S1.40:1984
- Stability time: 3s
- Working temperature: $-10^\circ C \div 50^\circ C$ ($-14^\circ F \div 122^\circ F$)
- Storage temperature: $-25^\circ C \div 0^\circ C$ ($-13^\circ F \div 158^\circ F$)
- Humidity : $< 90\%HR$
- Atmospheric pressure: 65kPa \div 100kPa
- Power supply: 1x9V battery type IEC 6F22 or NEDA 1604
- Dimensions: 117(L) x 53(\varnothing) mm
- Weight (with battery and 1/2 " adapter): 250g



2. GENERAL SPECIFICATIONS

Display:

- Type of display: LCD, (240x160pxl), with backlight
- Sampling update : 1Hz (numerical), 10Hz (graphics)

Power supply:

- Internal supply: 4x1.5V alkaline batteries type IEC LR6, AA
- Battery life: about 8 hours
- External supply: adapter AC100-240V, 50/60Hz / 5VDC 2A

Mechanical specifications:

- Dimensions: 285 (L) x 90 (W) x 39 (H)mm
- Weight (with batteries): 500g

Environmental conditions:

- Max height: 2000m
- Reference temperature: 23°C ± 5°C
- Working temperature: 5 ÷ 40 °C
- Working humidity: <80%RH (up to 31°C) and <50%RH (at 40°C)
- Storage temperature: -10 ÷ 60 °C
- Storage humidity: <70%RH

Standard reference:

- Statistical and integration analysis: IEC 61672:2002 Class 1, CNS 7129
IEC 60651:1979 Type 1, IEC60804:2000 Type 1
- 1/1 and 1/3 octave analysis: IEC 61260:1995 Class 1

This meter is compliance to the requirements of 2004/108/EEC EMC Directive