

## ACOUSTIC CALIBRATOR



### HIGHLIGHTS:

- The 1,000 Hz frequency enables sound level meters to be calibrated with any weighting
- Independent of the atmospheric pressure
- The 114 dB sound level allows calibrations to be carried out even in environments with loud background noise
- User friendly

HD-2020

### HD 2020

Item No. 700062

Class 1 sound calibrator, according to IEC 60942: 2003

#### GENERAL:

The sound level calibrator HD-2020 is a portable, battery-operated sound source for the calibration of sound level meters (portable as well as laboratory devices) acoustic stations. It enables the calibration of 1/2" microphones with mechanical dimensions according to IEC 61094-1. The calibration pressure levels of 94 dB and 114 dB can be selected using the keypad. If the microphone is not or not correctly inserted into the calibrator, the indicator on the display flashes. With the calendar / time function, the expiry date of the calibration can be stored as a reminder. When the validity expires, a corresponding symbol flashes on the display.

#### TECHNICAL SPECIFICATIONS:

Coupling cavity:	For 1/2" standard microphones (12.7 ± 0.03 mm) according to IEC 61094-1 and IEC 61094-4
Frequency:	1.000 Hz
Frequency tolerance:	1 % in the range -10 .. + 50 °C and 10..90 % RH
Sound pressure level:	94.0 dB and 114.0 dB ± 0.2 dB at 1 kHz (based on 101.3 kPa, 23 °C ± 3 °C and 65 % RH)
Reference conditions:	+20 °C, 50 % RH, 101.3 kPa, 10 mm <sup>3</sup> capsule volume
Response speed:	10 s
Distortion factor:	<1 %
<b>Influence of the environmental conditions</b>	
Influence of temperature and humidity:	<0.3 dB in the range -10 .. + 50 °C and 10..90 % RH
Influence of static pressure:	<0.1 dB in the range -65 .. + 108 kPa
<b>Operating conditions</b>	
Working temperature:	-10 .. + 50 °C
Relative humidity:	≤90 % RH
Storage temperature:	-25 .. + 70 °C
Microphone equivalent volume:	5..250 mm
Power supply:	9 V alkaline battery IEC type 6LR61. 9 V rechargeable batteries are also allowed.
Battery operation with 9 V battery:	48 h permanent function with good quality alkaline batteries
Display:	3 1/2 LCD display, battery symbol
Clock / date display:	internal with 3 V lithium buffer battery
Housing material:	ABS
Dimensions:	83 x 43 x 53 mm (H x W x D)
Protection class:	IP64
Influences from electromagnetic fields:	<0.3 dB
Scope of delivery:	Calibrator HD-2020, 1x 9 V alkaline battery, instruction manual. Including individual ACCREDIA calibration certificate.

#### IMPORTANT INFORMATION:

THE DEVICE IS SHIPPED WITH A CALIBRATION CERTIFICATE. ORDER MUST BE ACCOMPANIED BY THE CUSTOMER'S NAME.

## PHOTO AND RADIOMETER



### HIGHLIGHTS:

- Measurement of many different light values, illuminance, luminance, irradiance
- Wide range of sensors, interchangeable sensors

ILLUMINATION LEVEL, LUMINANCE, PHOTON FLOW, UVA, UVB, UVC  
IRRADIANCE STRENGTH, RADIATION LEVEL IN THE SPECTRAL BAND OF  
BLUE LIGHT, GLOBAL SOLAR IRRADIANCE

### HD 2302.0

Item No. 700063

Photo and radiometer

#### GENERAL:

Depending on the sensor used, the device measures illuminance, luminance, PAR, and irradiance (via the spectral ranges VIS-NIR, UVA, UVB, and UVC or measurement of the effective irradiance in accordance with the UV effect curve). The probes have the SICRAM automatic detection module: in addition to detection, the measuring unit is also selected automatically. The factory calibration data are already saved in the device.

#### APPLICATION:

Measurement of illuminance and irradiance at workplaces with increased exposure or at adjacent traffic routes and workplaces. Further applications in museums, for non-destructive testing, on photovoltaic systems or in tanning salons.

#### TECHNICAL SPECIFICATIONS:

<b>Device</b>	
Dimensions:	140 x 88 x 38 mm (H x W x D)
Material:	ABS
Display:	2 x 4 1/2 characters and symbols, 52 x 42 mm (display area)
<b>Operating conditions</b>	
Working temperature:	-5 .. + 50 °C
Storage temperature:	-25 .. + 65 °C
Relative working humidity:	0.90 % RH, No condensate
Protection class:	IP67
<b>Feed</b>	
Batteries:	3 batteries 1.5 V type AA
Battery operation:	200 hours with 1,800 mAh alkaline batteries
Power consumption when the device is switched off:	20 µA
Measurement Unit:	lux - fcd - µmol / m <sup>2</sup> s - cd / m <sup>2</sup> - W / m <sup>2</sup> - µW / cm <sup>2</sup> - µW / lumen
Connections:	Input module for the probes: 8-pole connector DIN45326
Scope of delivery:	Device HD-2302-0, 3 x 1.5 V alkaline batteries, operating instructions, transport bag / case. <i>The probes have to be ordered separately.</i>
<b>EQUIPMENT:</b>	
LP 471-PHOT	
LP 471-LUM2	
LP 471-PAR	
LP 471-UVA	
LP 471-UVB	
LP 471-UVC	
LP 471-PA	
LP 471-BLUE	
LP 471-SILI-PYRA	

For technical data, see the following pages