

Das Multimessgerät für die Arbeitsplatzanalyse

BAPPU-evo Overview

One manufacturer, one device, a wealth of advantages

Our successful BAPPU-evo multi-meter combines measurement versatility with intuitive operability. What kind of effect will this have on your daily work? Simple: your workplace analyses can be carried out quickly, easily and accurately.

Measurement Sizes

- Temperature/Dew point
- Globe temperature
- Relative humidity
- Air velocity
- Noise level (Class 2)
- Flicker frequency
- Illuminance (Class C)
- Luminance/-contrast
- TVOC indicator (Total volatile organic compounds)
- CO₂ (Carbon dioxide)
- CO (Carbon monoxide)
- Particulate Matter PM₁, PM_{2.5}, PM₁₀
- Climate indices (Calculation of medium PMV/PPD indices and thermal radiation)
- Now: Measuring range extension noise level, Cpeak up to 137dB

Features

- Easy operation with immediate evaluation
- Colour display with touch screen, USB interface
- Classification of noise and Illuminance measurement
- Software for preparation, evaluation and documentation
- Integrated data logger for long-term recording
- Sturdy case for all components and accessories

BAPPU-evo: the easy and reliable way to measure

L = 260 mm, W = 94 mm, D = 40 mm, W= 450 gr

PC software; power supply: (rechargeable) batteries or mains.

hand strap, long-life membrane keyboard,

Technical details:

Boasting a high degree of user-friendliness and a multitude of functions, BAPPU-evo is designed to make your work easier, a fact that is of great important to us. **Our goal:** to provide you with a measuring device that makes the orientation measurements of health-relevant environmental characteristics as simple and convenient as possible. Designed for workplace analyses in administration and industry, BAPPU-evo combines numerous measurement options – including the integrated, simultaneous long-term recording of all measured variables – all put together in a compact, ergonomic design. The measured values or measurement series can be individually stored in the device and transferred to your documentation for later evaluation by means of software. Moreover, the preparation of workplace analyses and long-term recordings also form part of the concept. **In a nutshell**: BAPPU-evo is the simple way to reliable measurements.



Anemometer-evo

The Anemometer-evo is a supplementary sensor for the measurement of air speed. The thermal measurement procedure also allows the accurate determination of small air movements.

Measurement Ranges

- Air velocity (0-5 m/sec) and temperature in the draught
- Intensity of turbulence

Features

- Accurate thermal measurement procedure
- High accuracy even with small air movements
- Possibility of long-term recording in connection with BAPPU-evo
- Tripod retainer and tripod

Technical details: L = 228 mm, W = 70 mm, D = 34 mm; 9 Volt battery or mains operation.



Brief Description of the Anemometer-evo

With the Anemometer-evo, air speeds from 0-5 m/sec can be recorded accurately. This allows the required check of the *"*comfort" within the framework of comfort measurements in workplaces.

Besides the present values, 3 mean value calculations can be performed over 3 minutes for measurements at various heights. In this way the draught-sensitive areas of the ankle, pelvis and neck can be recorded separately.

The temperature in the air flow is recorded with an additional sensor and shown and stored as evaluation parameters for the air speed values.

All recorded data is clearly shown in the display of the basic device and compared as part of the integrated conformity check with the required target values. For the practical performance of the measurements the anemometer has been provided with a tripod.



BAPPU-evo Globe

The globe thermometer BAPPU Globe enables the measurement and determination of "thermal comfort" in workplaces.

With the integration of the climatic variables that can be measured with BAPPU, the climate indices is calculated, as required in ASR A3.5 in the case of unfavourable conditions.

Measurement Ranges

Globe temperature and in conjunction with BAPPU: determination of the heat radiation and PMV/PPD indices.

Features

- Accurate temperature semiconductor sensor
- Calculation of the PMV/PPD indices according to DIN EN ISO 7730
- Long-term recording in conjunction with BAPPU-evo

Technical details: Globe thermometer: 160 mm diameter

Brief Description of the Globe

As a result of this extension, the comfort indices "PMV" and "PPD", which otherwise can only be determined with difficulty, can be simply recorded. The customary simple operation of the BAPPU devices is consistently continued.

In the PMV/PPD indices the "expected mean value" for the satisfaction or dissatisfaction level of the employees is expressed in comparison to the climatic conditions. On the basis of the climatic variables recorded with the multi-measuring device BAPPU, i.e. temperature, relative humidity, airspeed and globe temperature, the calculations on thermal comfort are quickly and efficiently performed.



BAPPU-Vocoo-sx

BAPPU-Vocoo-sx is a supplementary IAQ sensor (Indoor Air Quality) for assessment of indoor air. Vocco-sx measures the fine dust concentrations of different particle fractions (PM) and carbon dioxide (CO_2) in room air and by means of TVOC measurement – provides an additional indicator for assessing indoor air. Optionally, the additional carbon monoxide (CO) measurement is available and complements the IAQ sensor.

Measurement Ranges

- Particulate Matter PM₁, PM_{2.5}, PM₁₀
- TVOC indicator (Total volatile organic compounds)
- CO₂ (carbon dioxide)
- Optional measurement of CO (carbon monoxide)

Features

- Comprehensive assessment of "indoor air quality"
- Quantity distribution of the particles in six fractions
- Continuous recording in conjunction with BAPPU-evo

Technical details: Vocoo-sx Sensor: L = 120 mm, W = 76 mm, D = 27.5 mm

Brief Description of BAPPU-Vocoo

CO₂ is regarded as a key indicator for the current ventilation of indoor spaces. According to the German Technical Rules for Workplaces 3.6 (ASR 3.6), increased values can affect concentration. However, in order to obtain a more comprehensive result, also with regard to the non-anthropogenic influences on indoor air, TVOC measurement can be used as an additional indicator. TVOC can also contribute to an uncomfortable room climate and are also to be avoided as substance loads according to the German Technical Rules for Workplaces 3.6 (ASR 3.6).

The measurement of carbon monoxide can help to assess problems caused, for example, by outside air on busy roads. A small amount of CO in the room, even one that is well below a hazardous concentration, will be sufficient to disturb the wellbeing and reduce efficiency.

Long-term Recording

All measurement ranges can be recorded simultaneously, either directly in the BAPPU-evo or with the PC (BAPPU-time). With the BAPPU-time software an efficient program for evaluating long-term recordings is provided. The recorded data can be read out and presented as graphs or tables.

The simultaneous recording enables the analysis of correlations (e.g. temperature/humidity). Further features allow, for example, the calculation of mean values and the parallel representation of several measurement curves. Further details can be found on the separate information sheet for BAPPU-time.



Technical Details BAPPU-evo

	Mearsurement Range	Tolerance	Sensor	Resolution
Air temperature	-2050 °C	+/- 0.5 °C	PT 1000 Sensor	0.1°C
Globe temperature*	070 °C -2070 °C	+/- 0.7°C +/- 2 °C	Integrated temperature semiconductor sensor	0.1 °C
Rel. humidity	1090 %	+/- 4 % r.H.	Capacitive humidity sensor	0.1 %
Air velocity*	0,05 m/s	+/- 10% f.m.v.** +/- 3 Digit	Thermomanometer	0.01 m/s
Noise level (Class 2) in accordance with DIN EN 61672-1	30135 dB(A) A-evaluation slow/fast Cpeak= 137 dB	+/- 1.0 dB(A) (at 1 kHz) inherent noise < 25 dB(A)	Precision electret condenser-microphone	0.1 dB(A)
Illuminance (Class C) in accordance with DIN 5032-7	5030,000 Lux	V-Lambda adjustment 7.5 % Cos-accurate evaluation 4 % Linearity 3%	Silicon photoelement with adapted spectral sensitivity	1 Lux
	150 Lux	plus +/- 1 Lux		
Flicker frequency	01000 Hz	+/- 0.2 Hz	Silicon photodiode	0.1 Hz
Luminance	102000 cd/m ²	+/- 10% f.m.v.** +/- 10% cd/m ²	Silicon photoelement with adapted spectral sensitivity	0.1 cd/m ²
CO ₂ * (carbon dioxide)	010,000 ppm	+/- 75 ppm +/- 5% f.m.v.** (at 02000 ppm)	Non-dispersive infrared	1 ppm
TVOC* (total volatile organic compounds)	1002000 ppb (Isobutylenequivalent)	+/- 100 ppb +/- 15% f.m.v.**	metaloxide	1 ppb
CO* (carbon monoxide)	0500 ppm	+/- 5 ppm +/- 10% f.m.v.**	electrochemical	1 ppm
Particulate Matter*/ PM	PM ₁ 01000 μg/m ³ PM _{2.5} 01000 μg/m ³ PM ₁₀ 01000 μg/m ³	$\begin{array}{llllllllllllllllllllllllllllllllllll$	optical	0.1 µg/m³
		at 040°C; 1070% r.F.		

Subject to technical changes

*optional sensor/**from measured value

BAPPU... its as simple as that.

BAPPU – The Systematic Multi-Measuring Device

All components are supplied in the sturdy case with cables and accessories. Create your very own individual offer with our BAPPU-configurator at www.bappu.de.



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