

# μZ-20 datasheet

Team ASCEE<sup>1</sup>

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<sup>1</sup>ASCEE, Nikola Teslastraat 1-11 7442 PC Nijverdal, [info@ascee.nl](mailto:info@ascee.nl)

## Disclaimer

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## 1 Overview

The ASCEE  $\mu$ Z-20 is a 20 mm diameter impedance tube, designed for small samples. It accurately measures impedance, reflection and absorption. A special calibration method allows for quick calibration, without having to switch the microphone positions.

Due to the calibration method, we claim to achieve a **higher accuracy** than the one obtained upon using EN-ISO 10534-2. The result is also that we do not claim to be conforming this standard. Although:

- The microphone hole sizes are conforming EN-ISO 10534-2.
- The mechanical design is conforming EN-ISO 10534-2.

Each tube section is has a quick-release clamp connection with other sections. O-rings make sure the system is free of any leakage. A small vent ensures no static pressure build-up occurs when parts are connected.

## 2 Technical data

### 2.1 Acoustic measurement outputs

The specified technical data below are possible measurement outputs. These quantities are related via known acoustic relations.

- Acoustic input impedance (rayls / acoustic Ohms)
- Acoustic series impedance (rayls / acoustic Ohms)
- Complex reflection coefficient (-)
- Normal incidence sound absorption coefficient (-)

## 2.2 Acoustic measurement range

Parameter	Min.	Max.	Unit
Frequency range	20	8,000	Hz
Acoustic input impedance range relative to air, $z/z_0$	0	20	-
Acoustic series impedance range	0	> 8	GPa·s / m <sup>3</sup>
Acoustic series impedance range (ø2 mm sample)	0	> 25·10 <sup>3</sup>	MKS rayl
Sound pressure level (closed off tube)		130	dB SPL

## 2.3 Mechanical

Tube inner diameter	20	mm
Material	Aluminum	
Finish	Anodized, blue and black	
Weight	19	kg
Dimensions, base system (L x W x H)	82 × 15 × 27	cm
Dimensions, case	118 × 44 × 16	cm

## 2.4 Electrical

### 2.4.1 Microphone and preamplifier

Output connector	XLR, requires 48 V phantom power	
Noise floor	21	dB(A)
Microphone sensitivity	-40	dBV @ 94 dB SPL, 1 kHz
Max. sound pressure level (10% THD)	135	dB SPL
Max. output voltage	1	V rms

### 2.4.2 Speaker amplifier

Input connector	1/4" TRS jack, balanced
Input sensitivity	+4 dBu / 1.228 V rms

## 2.5 Interface

Computer interface	USB A connector, USB 2.0 / USB Audio Class 2.0
Software	ACME with $\mu$ Z module
Operating system	Windows 10 or later / Linux
Driver Windows	Requires an ASIO driver for high channel synchronous audio I/O
Driver Linux	Not required