

Mouth Simulator Type 44AA

Product Data and Specifications

Features/Uses

- Frequency response checks of:
 - telephone transmitters
 - communication microphones
- Sound source for acoustic measurements
- Maximum continuous SPL at MRP:
 - 110 dB re. 20 μ Pa, 200 Hz to 6 kHz
 - typically 100 dB, 100 Hz to 16 kHz
- Complies with Standards:
 - IEEE 269, 661
 - ITU T Rec. P51
- Built-in power amplifier or external power amplifier

The G.R.A.S. Mouth Simulator Type 44AA (Fig. 1) is a sound source which simulates the sound field around the human mouth at close quarters and complies with the Standards IEEE 269, 661, and ITU-T Rec. P51.

The Type 44AA is for testing telephone mouthpieces as well as other microphones similarly used in vocal-communication networks. At the mouth reference point (MRP), which is 25 mm from the detachable lip ring (35 mm from the 44AA's mouth), the maximum continuous equalised signal it can produce in $\frac{1}{3}$ -octave bands is 100 dB re. 20 μ Pa in the frequency range 100 Hz to 16 kHz. Its loudspeaker accepts an external signal either directly or via its own built-in power amplifier (when power is applied).

Calibration

Two jigs are included for calibrating the Type 44AA according to a) CCITT P.51 and b) IEEE 269.

a) CCITT P.51

The jig for this uses either a $\frac{1}{4}$ " or $\frac{1}{2}$ " pressure microphone (e.g. G.R.A.S. Type 40BP or 40AP)

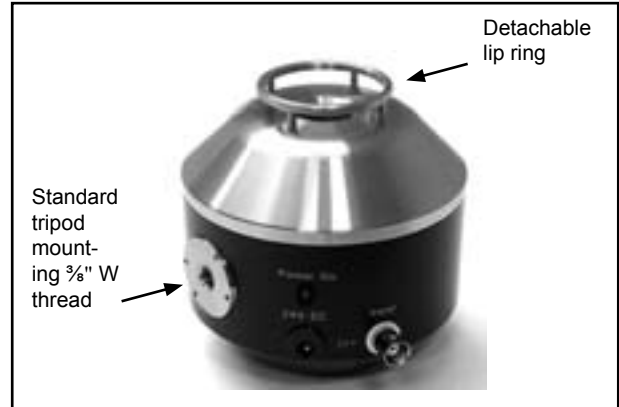


Fig. 1 The Mouth Simulator Type 44AA

which is held by its preamplifier at 90° incidence to the sound source, see Fig. 2.

b) IEEE 269

The jig for this uses a $\frac{1}{4}$ " free-field microphone (e.g. G.R.A.S. Type 40BF) which is held by its preamplifier at 0° incidence to the sound source, see Fig. 3.

In both cases, simple adjustment allows the microphone to be correctly positioned at the MRP.

The tripod-mounting arrangement, see Fig. 1, is fully compatible with current mounting platforms.

Fig. 4 shows typical frequency response curves for a swept sine signal using the setup shown in Fig. 3. The left curve shows the true response of the Type 44AA to the signal. The right curve shows the equalised response when the signal is compensated for the "ups-and-downs" of the left curve.

Earlier mouthpiece

An earlier conical mouth piece (RA0110) is available and can be delivered with the Type 44AA for users who require it, e.g. for historical reasons. It comes without the four holes for mounting the lip ring.

G.R.A.S.
Sound & Vibration

Skovlytoften 33
2840 Holte, Denmark
Tel +45 45 66 40 46 Fax +45 45 66 40 47
e-mail: gras@gras.dk www.gras.dk

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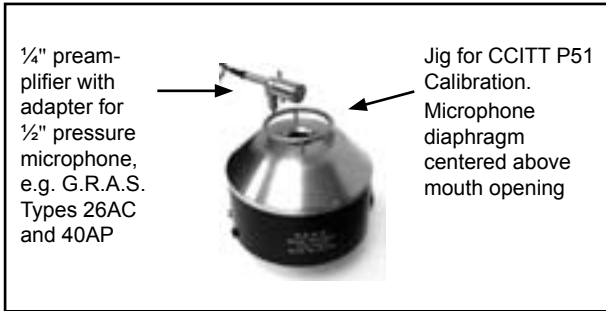


Fig. 2 Setup for calibrating Type 44AA according to CCITT P51

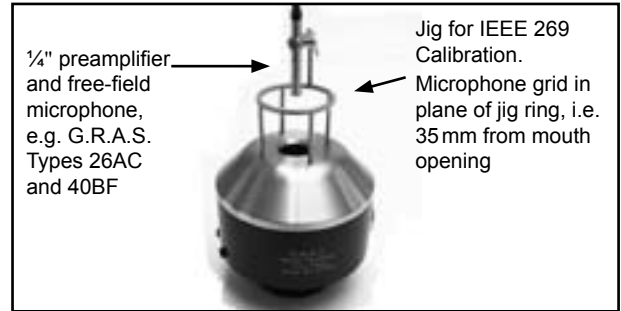


Fig. 3 Setup for calibrating Type 44AA according to IEEE 269

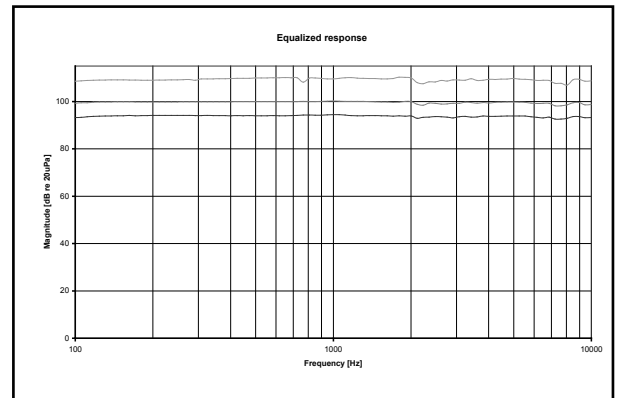
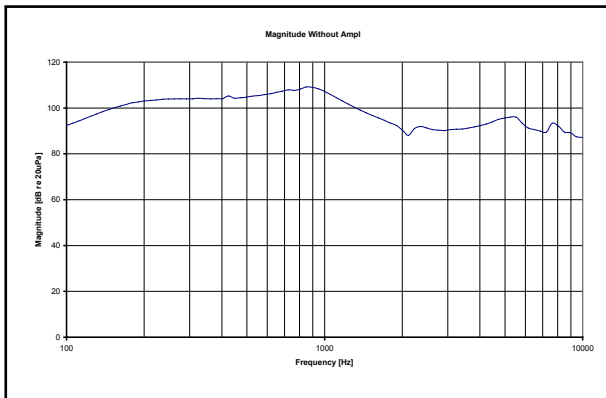


Fig. 4 Typical frequency-response measurements using the IEEE 269 setup shown in Fig. 3.
 Left: true response for an input signal of 1 V RMS to the built-in power amplifier.
 Right: equalised response at the Mouth Reference Point for 94 dB.

Specifications

Maximum continuous output level at MRP: 200 Hz - 6 kHz: 110 dB re. 20 µPa 100 Hz - 16 kHz: 100 dB re. 20 µPa Distortion (94 dB at MRP): 200 Hz - 5 kHz: typically 1 %, max. 1.5 % Loudspeaker: Impedance: 8 Ω Maximum power: continuous: 10 W pulsed: 50 W (for 2 sec.) Amplifier: Automatically enabled when external power is applied and is fully protected against overload. gain: 10 dB input impedance: 20 kΩ max. input voltage: 2 V RMS max. consumption: 24 V DC, 1000 mA	Mouth opening: Diameter: 20 mm Lip ring: External diameter: 48 mm Distance from mouth: 10 mm Dimensions: Diameter: 104 mm Height (with lip ring): 104 mm Weight: 1.05 kg Accessories: Included: Jig (CCITT P51): RA0104 Jig (IEEE 269): RA0105 Power supply: AB0012 Available: Conical mouthpiece: RA0110
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G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice

G.R.A.S.
Sound & Vibration

Skovlytoften 33
 2840 Holte, Denmark
 Tel +45 45 66 40 46 Fax +45 45 66 40 47
 e-mail: gras@gras.dk www.gras.dk