GRAS 45BB-3

KEMAR Head & Torso for Sound Quality Recording, 2-Ch LEMO



Connection: Traditional Power Supply (200 V/LEMO)
Channel(s): 2
ANSI: S3.36
ITU-T Rec. P.57 Type 3.3
based on ITU-T Rec. P.58

The 45BB-3 KEMAR Head and Torso for Sound Quality Recording is an acoustic research tool with built-in 1/2" microphones for realistic sound quality testing and recordings. It is easy ro replace the 1/2" microphones with 1/4" microphones if preferred. Its CCP equivalent is GRAS 45BB-4 KEMAR Head & Torso for Sound Quality Recording, 2-Ch CCP.

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Introduction

The KEMAR head and torso simulator was introduced by Knowles in 1972 and quickly became the industry standard for hearing-aid manufacturers and research audiologists (visit KEMAR.us to read the full story). It is based on worldwide average human male and female head and torso dimensions. It meets the requirements of ANSI S3.36/ASA58-2012 and IEC 60318-7:2011.

The GRAS 45BB KEMAR Head and Torso has the same dimensions and acoustical properties as the original KEMAR, but has been developed further by GRAS to meet the industry's demand for realistic measurements of hearing aids, headphones and headsets. It provides acoustic diffraction similar to that encountered around the median human head and torso, both in the proximity and in the far-field.

As all the preconfigured 45BB KEMARs consist of the same basic 45BB KEMAR Non-configured, plus a set of application-specific accessories, the full information about a given KEMAR configuration is obtained by combining the information about the 45BB KEMAR Non-configured and the information for a given configured version as found in the present text. Read about the non-configured KEMAR here.

Design

The 45BB-3 is a KEMAR head and torso for 2-channel sound quality recording, with externally polarized ½" pressure microphones.

It is delivered fully configured, individually calibrated and ready for use. In addition to a system calibration certificate, a USB flash memory with simulation data is included.

The main configuration specific components of the 45BB-3 are the GRAS 40AG ½" pressure microphones and the KB0090/KB0091 large tapered (VA-style) pinnae.

The 40AG 1/2" Ext. Polarized Pressure Microphones

The 40AG is an IEC 61094 WS2P ½" externally polarized pressure microphone with rear-venting. It is a high-precision condenser microphone made according to IEC 61094-4. It is extremely robust and reliable and can measure sound pressure levels up to 160 dB within 3.15 Hz to 20 kHz.

Read more about 40AG here.

The KB0090/KB0091 Pinna

The KB0090 and KB0091 are large VA-style pinnae. The hardness is 55 Shore 00 and they comply with IEC 60318-7.

Other accessories for this configuration are listed in the Ordering Info tab.

Performance and warranty

KEMAR is made of components from our standard portfolio, all manufactured of high-quality material and branded parts that were chosen and processed to ensure life-long stability and robustness. This enables us to offer 2 years warranty against defective materials and workmanship.
Exceptions: Microphones included in KEMAR as for these our normal 5-year warranty apply. The warranty period for cables is 6 months.

Connector type		7-pin LEMO (FGG.1B.307)
Set sensitivity @ 250 Hz (±2 dB)	mV/Pa	12.5
Set sensitivity @ 250 Hz (±2 dB)	dB re 1V/Pa	-38.5
Theoretical dynamic range lower limit with GRAS preamplifier	dB(A)	25
Theoretical dynamic range upper limit with GRAS preamplifier @ +28 V / ±14 V power supply	dB	153
Theoretical dynamic range upper limit with GRAS preamplifier @ +120 V / ±60 V power supply	dB	160
Temperature range, operation	°C / °F	-30 to 60 / -22 to 140
Temperature range, storage	°C / °F	-40 to 65 / -40 to 149
Humidity range non condensing	% RH	0 to 95%
ANSI standard		S3.36
Weight	g / oz	11.45 k / 404

GRAS Sound & Vibration reserves the right to change specifications and accessories without notice.

Included items

GRAS 45BB	KEMAR Head & Torso, non-configured
GRAS KB0090	KEMAR Large Right Ear 55 Shore 00 (VA/SQ)
GRAS KB0091	KEMAR Large Left Ear 55 Shore 00 (VA/SQ)
GRAS RA0241	Holder for short 1/2" Microphone Kit for KEMAR (2 pcs)
GRAS 40AG	1/2" Ext. Polarized Pressure Microphone, High Frequency (2 pcs)
GRAS 26AS	1/4" Preamplifier, Short version with 0.4 m cable (2 pcs)
GRAS RA0003	Adapter for 1/4" Preamplifier and 1/2" Microphone (2 pcs)
GRAS AA0008	LEMO 7-pin - LEMO 7-pin Cable, 3 m (2 pcs)

Optional items

Power Modules for Externally Polarized Ear Simulators and Microphones

GRAS 12AK	1-Channel Power Module with gain, filters and SysCheck generator
GRAS 12AD	1-Channel Power Module
GRAS 12AA	2-Channel Power Module with gain, filters and SysCheck generator
GRAS 12AR	2-Channel Power Module
GRAS 12AQ	2-Channel Universal Power Module with signal conditioning and PC interface

Pinna Simulators

GRAS KB0060-S1	KEMAR Small Right Pinna for SQ, 55 Shore 00
GRAS KB0061-S1	KEMAR Small Left Pinna for SQ, 55 Shore 00
GRAS KB1060-S1	KEMAR Small Right Pinna for SQ, 35 Shore 00
GRAS KB1061-S1	KEMAR Small Left Pinna for SQ, 35 Shore 00
GRAS KB0060	KEMAR Small Right Ear 55 Shore 00
GRAS KB0061	KEMAR Small Left Ear 55 Shore 00

GRAS KB0065	KEMAR Large Right Ear 55 Shore 00
GRAS KB0066	KEMAR Large Left Ear 55 Shore 00
GRAS KB1060	KEMAR Small Right Ear, 35 Shore 00
GRAS KB1061	KEMAR Small Left Ear 35 Shore 00
GRAS KB1065	KEMAR Large Right Ear 35 Shore 00
GRAS KB1066	KEMAR Large Left Ear 35 Shore 00
GRAS KB0090	KEMAR Large Right Ear (VA-Style/SQ) 55 Shore 00
GRAS KB0091	KEMAR Large Left Ear (VA-Style/SQ) 55 Shore 00
GRAS KB1090	KEMAR Large Right Ear (VA-Style) 35 Shore 00
GRAS KB1091	KEMAR Large Left Ear (VA-Style) 35 Shore 00
GRAS KB5000	KEMAR Large Right Anthropometric Pinna 35 Shore 00
GRAS KB5001	KEMAR Large Left Anthropometric Pinna 35 Shore 00

Ear Mould Simulators

GRAS KB0110	Ear Mould Simulator for 2 mm Inner diameter tubing
GRAS KB0111	Ear Mould Simulator for 3 mm Inner diameter tubing

Ear Canal Extension and Microphone Holder Kits (kits with 2 pcs and O-rings)

GRAS RA0237	Straight Ear Canal Extension Kit for KEMAR
GRAS RA0238	VA-tapered Ear Canal Extension Kit for KEMAR
GRAS RA0239	Ear canal Extension Kit w. silicone lining for KEMAR
GRAS RA0240	Holder for long 1/2" microphone Kit for KEMAR
GRAS RA0241	Holder for short 1/2" microphone Kit for KEMAR
GRAS RA0243	Holder for 1/2" microphone Kit for KEMAR
GRAS RA0244	O-ring kit for KEMAR, 2 pcs.
GRAS RA0249	Straight Ear Canal Extension Kit for KEMAR, made of POM, for binaural hearing aid test
GRAS RA0250	Tapered Ear Canal Extension Kit for KEMAR, made of POM, for binaural hearing aid test

KEMAR Retrofit Kit for Anthropometric Concha and Canal Pinna

GRAS RA0311	KEMAR Retrofit Kit for Anthropometric Concha and Canal Pinna. The Kit includes Ear Simulator Holder, 2 finger screws and a 3 mm Allen Key.

Extension Cables

GRAS AA0008	LEMO 7-pin - LEMO 7-pin Cable, 3 m
GRAS AA0009	LEMO 7-pin - LEMO 7-pin Cablee, 10 m

Flight Case

GRAS KM0094	PELI Case for KEMAR

Simulation Model of KEMAR

GRAS KB3000	Simulation Model of KEMAR with large pinnae
GRAS KB3001	Simulation Model of KEMAR with small pinnae

Stand for KEMAR

GRAS AL0026	Loudspeaker stand for KEMAR, Ø 35 mm

Miscellaneous

GRAS KB0000	KEMAR Handbook
GRAS KB0010	T-Shirt for KEMAR

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GRAS Worldwide

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About GRAS Sound & Vibration

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones and related equipment for industries where acoustic measuring accuracy and repeatability are of the utmost importance. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, consumer electronics and other highly demanding industries. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect, trust and require.
GRAS Sound & Vibration is represented through subsidiaries and distributors in more than 40 countries and is part of Axiometrix Solutions, a leading test solutions provider comprised of globally recognized measurement brands. Read more at www.grasacoustics.com

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