

GRAS 45BC-4

KEMAR 头和躯干模拟器（含人工嘴），电话测试，1 通道 CCP



连接：恒流电源 (0 V/CCP)

通道数：1

ANSI 标准 S3.36, S3.25

IEC 标准 60318-4 (formerly 60711), 60318-7 (formerly 60959)

特殊功能：电话测试

用于电话测试的 45BC-4 KEMAR 头和躯干模拟器（含人工嘴和 TEDS 1-Ch CCP 配置有耳廓和 IEC 60318-4 仿真耳，右耳有耳道扩展。由于 KEMAR 的设计，可以在使用助听器的人所经历的声音环境中进行真实测量。此外 45BC-4 还配有一个人工嘴，用于测试电话中的传声器。还包括 45EA 听筒定位系统。其 LEMO 对应版本为 [GRAS 45BC-3 KEMAR](#) 电话测试用的头和躯干模拟器（含人工嘴），1 通道 LEMO

简介

KEMAR 头和躯干模拟器由 Knowles 于 1972 年推出, 并迅速成为助听器制造商和研究听力学家的行业标准 (访问 KEMAR.us 阅读完整故事)。它基于全球人类男性和女性的平均头部和躯干尺寸。该模拟器符合 ANSI S3.36/ASA58-2012 和 IEC 60318-7:2011 标准要求。

当前的 KEMAR 头和躯干模型与原版 KEMAR 具有相同的尺寸和声学特性, 但 GRAS 对其进行了进一步开发, 以满足行业对助听器、耳机和耳麦进行真实测量需求。该模型在近场和远场环境下均能提供与人类头部和躯干周围声学衍射相似的特性。

所有预配置的 45BC KEMAR 均由相同的 45BC KEMAR 未配置版本组成, 再加上一套应用程序特定的配件。因此, 要获取特定 KEMAR 配置的完整信息, 需将 45BC KEMAR 未配置版本的信息与本文中所述的特定配置版本信息相结合。 [点击此处](#) 了解未配置版本 KEMAR 的详细信息。

TEDS 兼容性

所有基于 CCP 的 KEMAR 配置均符合 IEEE 1451.4 TEDS v. 1.0 标准。如果您的测量平台支持传感器电子数据表 TEDS 您将能够读取和写入属性数据和校准数据等信息。

设计

45BC-4 是一款用于电话测试的 KEMAR 头与躯干模拟器, 配备人工嘴, 带有预极化仿真耳和大型直立耳廓。该配置的特殊功能是含 45EA 手柄定位系统。

45BC-4 设备已完成全部配置, 经过单独校准, 可直接投入使用。除系统校准证书外, 还附带包含模拟数据的 USB 闪存盘。

45BC-4 的主要配置专用组件包括 GRAS 仿真耳 RA0045-S1 仿真耳 (符合 60318-4 标准 KB1065/KB1066 大型直耳廓以及 45EA 听筒定位系统。

GRAS 人工嘴, 符合 ITU-T 建议书 P51 标准, 内置功率放大器。

该人工嘴在 1/3 倍频程带宽内能持续输出的最大连续信号为 100 dB 相当于 20 μ Pa 频率范围为 100 Hz 至 16 kHz 其扬声器可直接接收外部信号, 或通过内置功率放大器 (需供电) 进行接收。

60318-4 仿真耳

RA0045-S1 仿真耳的声学输入阻抗与人耳的声学输入阻抗非常相似, 因此对声源的负载方式也与人耳非常相似。

该产品符合 IEC 60318-4 标准, 并按照 ITU-T P.57 标准进行测量和校准。其内部结构由多个精密设计的腔体构成, 这些腔体通过严格标定的阻抗槽相互连接。在等效电气电路中, 腔体可等效为电容元件, 而电感和电阻则分别代表电阻性槽道内的空气质量和空气流量。

了解更多关于 [RA0045-S1 仿真耳](#)。

KB0065/KB0066 人体测量学耳廓

KB0065 和 KB0066 是用于直耳道延长件的大型直耳廓。其硬度为 35 Shore 00 它们符合 IEC 和 ITU-T 的推荐标准。

45EA 手持定位系统

45EA 手持定位系统专为头和躯干模拟器搭配人工嘴设计。通过这一组合, 您可以对移动电话以及传统手机进行非常逼真的现场测量。

您可以无需额外工具即可将系统安装在 KEMAR 上。该系统可安装在 KEMAR 的任一侧, 且可轻松在两侧之间切换。

了解更多关于 [45EA Handset Positioning System](#)。

该配置的其他配件列表请参见“订购信息”。

性能与保修

KEMAR 由我们标准产品系列中的组件构成, 所有部件均采用精选的优质材料和品牌零件, 并经过特殊工艺处

理, 从而确保其具备终身稳定的卓越性能。基于这种严格的质量标准, 我们为该产品提供为期 2 年的材料和工艺质保。

例外情况 KEMAR 中包含的传声器适用我们常规的 5 年保修政策。线材的保修期为 6 个月

Connector type		BNC
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	151
Theoretical dynamic range upper limit with GRAS CCP preamplifier	dB	146
Resonance frequency	kHz	13.5
Temperature range, operation	$^{\circ}\text{C}$ / $^{\circ}\text{F}$	-30 to 60 / -22 to 140
Temperature range, storage	$^{\circ}\text{C}$ / $^{\circ}\text{F}$	-40 to 65 / -40 to 149
Humidity range non condensing	% RH	0 to 95
ANSI standard		S3.36, S3.25
IEC standard		60318-4 (former 60711), 60318-7 (former 60959)
ITU-T recommendations		P.380
Weight	g / oz	11.45 k / 404
MOUTH SIMULATOR		.
Output impedance	Ω	8
Maximum power, continuous	W	10
Maximum power, pulsed 2 sec.	W	50

GRAS Sound & Vibration 保留更改规格和配件的权利, 恕不另行通知。

标配

GRAS 45BC	KEMAR Head & Torso with GRAS mouth simulator, non-configured
GRAS KB1065	KEMAR Large Right Ear 35 Shore 00
GRAS KB1066	KEMAR Large Left Ear 35 Shore 00
GRAS RA0237	Straight Ear Canal Extension Kit for KEMAR (2 pcs)
GRAS RA0045-S1	IEC 60318-4 Ear Simulator, Prepol. version
GRAS 26CS	1/4" CCP Standard Preamplifier with 0.4 m cable, Short
GRAS RA0001	Adapter for 1/2" Microphone and 1/4" Preamplifier
GRAS GR0408	Exterior Ear Canal
GRAS GR0409	Union Nut
GRAS AA0018-S	Microdot-BNC Cable, 35 cm
GRAS AA0035	BNC-BNC Cable, 3 m
GRAS 46BD	1/4" CCP Pressure Standard Microphone Set
GRAS AA0070	Microdot-BNC Cable, 3 m
GRAS 45EA	Handset Positioning System

选配

Power Modules for Pre-polarized Ear Simulators and Microphones

GRAS 12AL	1-Channel CCP Power Module with A-weighting filter
GRAS 12AQ	2-Channel Universal Power Module with signal conditioning and PC interface

For Ear Simulator Calibration

GRAS 42AP	Intelligent Pistonphone (250 Hz or 251.2 Hz, 114 dB +/- 0.05 dB)
GRAS 42AA	Pistonphone (250 Hz, 114 dB +/- 0.08 dB)
GRAS RA0157	1/2" Calibration Adapter for KEMAR Pinna

Pinna Simulators

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

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 Binaural Hearing Aid Test

[GRAS RA0251](#)

KEMAR Retrofit Kit for Binaural Hearing Aid Test:
The Kit includes Ear Holder Plates, mounting bolts and the RA0249 and RA0250 Ear Canal Extension Kits. Included items are made of POM, Nylon and Teflon.

Extension Cables

GRAS AA0034

BNC-BNC Cable, 2 m

[GRAS AA0035](#)

BNC-BNC Cable, 3 m

GRAS AA0036

BNC-BNC Cable, 5 m

[GRAS AA0037](#)

BNC-BNC Cable, 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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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 to industries where acoustic measuring accuracy and repeatability is of utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.

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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