# **GRAS 45BC-2**

KEMAR 2 CCP





CCP 2 ANSI: S3.36, S3.25 IEC: 60318-4 ITU-T Rec. P.57 Type 3.3 based on ITU-T Rec. P.58 45BC-2 TEDS 2-Ch CCP IEC 60318-4

KEMAR 45BC-2

LEMO GRAS 45BC-1 KEMAR 2

LEMO



#### GRAS 45BC-2 KEMAR 2 CCP

## Technology

□□ ""

KEMAR Knowles 1972

KEMAR.us ANSI S3.36/ASA58-2012 IEC 60318-7:2011 KEMAR

2.30/A3A30 2012 120 00310 7.2011

KEMAR KEMAR GRAS KEMAR 5 6

45BC KEMAR 45BC KEMAR

KEMAR 45BC KEMAR

KEMAR

TEDS □□□

CCP KEMAR IEEE 1451.4 TEDS v. 1.0

**TEDS** 

45BC-2 KEMAR

USB

45BC-2 GRAS 60318-4 RA0045-S1

KB0065/KB0066

GRAS ITU-T P51

1/3 100 dB 20 µPa 100 Hz 16

kHz

60318-4

RA0045-S1

IEC 60318-4 ITU-T P.57

RA0045-S1

KB0065/KB0066 Pinnae

KB0065 KB0066 55 Shore 00 IEC

ITU-T



#### GRAS 45BC-2 KEMAR 2 CCP

Connector type		3 m 7-pin LEMO
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	°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, S3.25
IEC standard		60318-7
ITU-T recommondations		P. 58
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
Input impedance	kΩ	20
Gain	dB	10
Input signal, max.	Vrms	2
Power supply, external	Vdc	24

**GRAS Sound & Vibration** 



## Ordering info

## 

GRAS 45BC	KEMAR Head & Torso with GRAS mouth simulator, non-configured
GRAS KB0065	KEMAR Large Right Ear 55 Shore 00
<u>GRAS KB0066</u>	KEMAR Large Left Ear 55 Shore 00
GRAS RA0237	Straight Ear Canal Extension Kit for KEMAR (2 pcs)
GRAS RA0045- S1	IEC 60318-4 Ear Simulator, (Prepol.version, 2 pcs)
GRAS 26CS	1/4" CCP Standard Preamplifier with Microdot Connector, Very Short (2 pcs)
<u>GRAS RA0001</u>	Adapter for 1/2" Microphone and 1/4" Preamplifier (2 pcs)
GRAS GR0408	External Ear Canal (2 pcs)
GRAS GR0409	Union Nut (2 pcs)
<u>GRAS AA0018-S</u>	Microdot-BNC Cable, 35 cm (2 pcs)
GRAS AA0035	3 m BNC - BNC Cable (2 pcs)
GRAS 46BD	1/4" CCP Pressure Standard Microphone Set
GRAS AA0070	Microdot-BNC Cable, 3 m



## **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**



## Ordering info

GRAS KB0060	KEMAR Small Right Ear 55 Shore 00
<u>GRAS KB0061</u>	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
<u>GRAS KB1060</u>	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
<u>GRAS KB0090</u>	KEMAR Large Right Ear (VA-Style/SQ) 55 Shore 00
<u>GRAS KB0091</u>	KEMAR Large Left Ear (VA-Style/SQ) 55 Shore 00
<u>GRAS KB1090</u>	KEMAR Large Right Ear (VA-Style) 35 Shore 00
<u>GRAS KB1091</u>	KEMAR Large Left Ear (VA-Style) 35 Shore 00

### **Ear Mould Simulators**

<u>GRAS KB0110</u>	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



## Ordering info

## **KEMAR Retrofit Kit for Binaural Hearing Aid Test**

<u>GRAS RA0251</u>	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, & 35 mm

### **Miscellaneous**

GRAS KB0000	KEMAR Handbook
GRAS KB0010	T-Shirt for KEMAR

#### **GRAS Sound & Vibration**



## **GRAS** Worldwide

Subsidiaries and distributors in more than 40 countries

#### **HEAD OFFICE, DENMARK**

#### **GRAS SOUND & VIBRATION**

Skovlytoften 33 2840 Holte Denmark Tel: +45 4566 4046 www.GRASacoustics.com gras@grasacoustics.com

#### USA

#### **GRAS SOUND & VIBRATION**

9290 SW Nimbus Avenue Beaverton, OR 97008 Tel: 503-627-0832 Toll Free: 800-231-7350 www.GRASacoustics.com sales-usa@grasacoustics.com

#### UK

#### **GRAS SOUND & VIBRATION**

Unit 115, Gibson House, Ermine Business Park, Huntingdon, Cambridgeshire, PE29 6XU Tel: +44 (0) 7762 584 202 www.GRASacoustics.com sales-uk@grasacoustics.com

#### **CHINA**

#### **GRAS SOUND & VIBRATION**

Room 315, RuiBo Center(T1) Lane683, Shenhong Rd, Minhang District, Shanghai, China, 201107 Tel: +86 21 64203370 www.GRASacoustics.cn cnsales@grasacoustics.com



#### **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

GRAS

An Axiometrix Solutions Brand

grasacoustics.com