

GRAS 45CA

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ISO 4869-3
IEC 60318-1 60318-4

GRAS 45CA
60318-4
[45CB](#)

ISO 4869-3
ANSI/ASA S12.42

IEC60318-1
[GRAS](#)



GRAS 45CA

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- KEMAR

45CA

ISO 4869-3 IEC 60318-1 IEC 60318-4

45CA KEMAR 45CA
45CA

[GRAS 42AP](#) [GRAS 42AA](#)

TEDS

CCP -2 -4 -6 -8 -10 -12 IEEE 1451.4 TEDS
v. 1.0 (TEDS)



45CA / GRAS

45CA-1 / ISO 4869-3 1" .LEMO

45CA-1 45CA GRAS
40EN 1" **ISO 4869-3**

45CA-2 / ISO 4869-3 1/2" .CCP

45CA-2 45CA GRAS
40AD 1/2" **ISO 4869-3**

45CA-3 / IEC 60318-1 LEMO

45CA-3 40AG 1/2" RA0039
RA0039 **IEC 60318-1**

45CA-4 / IEC 60318-1 CCP

45CA-4 40AO 1/2" RA0039
RA0039 **IEC 60318-1**

45CA-5 / IEC 60318-4 LEMO

45CA-5 RA0045
IEC 60318-4 ISO 4869-3

45CA-6 / IEC 60318-4 CCP

45CA-6 RA0045-S1
IEC 60318-4 ISO 4869-3

45CA-7 / IEC 60318-4 LEMO

45CA-7 RA0045
IEC 60318-4 ISO 4869-3

45CA-8 / IEC 60318-4 CCP

45CA-8 RA0045-S1
IEC 60318-4 ISO 4869-3

45CA-9 / LEMO

45CA-9 RA0401 20 kHz
IEC 60318-4 ISO 4869-3

45CA-10 / CCP

45CA-10 RA0402 20 kHz
IEC 60318-4 ISO 4869-3

45CA-11 / LEMO

45CA-11 RA0403 50 kHz
IEC 60318-4 ISO 4869-3

45CA-12 / CCP

45CA-12 RA0404 50 kHz
IEC 60318-4 ISO 4869-3

45CA-13 /

45CA-13 43BB **IEC**

60318-4 ISO 4869-3

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[GRAS 42AG](#) [GRAS](#)
[42AP](#)

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GRAS 45CA
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IEC standard		Dep. on conf.
ITU-T recommendations		P.380
CE/RoHS compliant/WEEE registered		Yes/Yes/Yes
Weight	g / oz	11.6 k / 409.18

45CA-1 and 45CA-2

Self Insertion Loss, measured with closed ear simulators	> 50 dB	80 - 250 Hz
Self Insertion Loss, measured with closed ear simulators	> 65 dB	350 - 4000 Hz
Self Insertion Loss, measured with closed ear simulators	> 55 dB	5000 - 20000 Hz

Specs for the GRAS 40EN 1" Externally Polarized Pressure Microphone can be found [here](#).

Specs for the GRAS 40AD 1/2" Prepolarized Pressure Microphone can be found [here](#).

45CA-3 and 45CA-4

GRAS RA0039 Ear Simulator	Specs can be found here :	www.gras.dk/RA0039
GRAS 40AG 1/2" Externally Polarized Pressure Microphone	Specs can be found here :	www.gras.dk/40AG
GRAS 40AO 1/2" Prepolarized Pressure Microphone	Specs can be found here :	www.gras.dk/40AO

45CA-3 and 45CA-4

GRAS RA0039 Ear Simulator	Specs can be found here :	www.gras.dk/RA0039
GRAS 40AG 1/2" Externally Polarized Pressure Microphone	Specs can be found here :	www.gras.dk/40AG
GRAS 40AO 1/2" Prepolarized Pressure Microphone	Specs can be found here :	www.gras.dk/40AO

45CA-5 to 45CA-8

GRAS RA0045 Ear Simulator	Specs can be found here :	www.gras.dk/RA0045
GRAS RA0045-S1 Ear Simulator	Specs can be found here :	www.gras.dk/RA0045-s1

45CA-9 to 45CA-10

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GRAS RA0401 High-Frequency Ear Simulator Externally Polarized	Specs can be found here:	www.gras.dk/RA0401
GRAS RA0402 High-Frequency Ear Simulator Prepolarized	Specs can be found here:	www.gras.dk/RA0402
45CA-11 to 45CA-12		
GRAS RA0403 Hi-Res Ear Simulator Externally Polarized	Specs can be found here:	www.grasacoustics.com/ra0403
GRAS RA0404 Hi-Res Ear Simulator Prepolarized	Specs can be found here:	www.grasacoustics.com/ra0404
45CA-13		
GRAS 43BB Ear Simulator	Specs can be found here:	www.grasacoustics.com/43bb

GRAS Sound & Vibration

GRAS 45CA

GRAS GR1085	Cover Plate, 2 pcs
GRAS GR0970	Insert
GRAS GR0974	Acoustic Cup (for acoustic isolation testing)
GRAS RA0178	1" Acoustic Plug
GRAS GR1281	Foam plug for leakage sealing (2 pcs)
GRAS MI0016	7 ml Silicon grease for leakage sealing
GRAS YY0019	Allen Key, 6 mm
GRAS YY0016	Allen Key, 2.5 mm
GRAS YY0018	Allen Key, 2 mm
GRAS YY0012	Allen Key, 1.5

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45CA-1 1 / ISO 4869-3 1 .LEMO—

GRAS 40EN	1" Ext. Polarized Pressure Microphone (2 pcs)
GRAS RA0017	Adapter for 1" microphone and 1/2" preamplifier (2 pcs)
GRAS RA0003	Adapter for 1/2" microphone and 1/4" preamplifier (2 pcs)
GRAS 26AS	1/4" Standard Preamplifier with 3 m integrated cable, very short (2 pcs)

45CA-2 1/2" / ISO 4869-3 1/2" .CCP—

GRAS 40AD	1/2" Prepolarized Pressure Microphone, High Sensitivity (2 pcs)
GRAS RA0177	1" Microphone protection grid (2 pcs)
GRAS RA0058	1/2" to 1" Microphone Adapter (2 pcs)
GRAS GR0010	1/2" to 1/4" Adapter (2 pcs)

[GRAS 26CB](#) 1/4" CCP Preamplifier with Microdot connector, very short (2 pcs)

[GRAS AA0070](#) 3 m Microdot - BNC Cable, High Temp

45CA-3 IEC 60318-1 LEMO —

[GRAS RA0039](#) Ear Simulator according to IEC 60318-1 (2 pcs)

[GRAS 40AG](#) 1/2" Ext. Polarized Pressure Microphone (2 pcs)

[GRAS RA0176](#) 1/2" to 1" Adapter for RA0039 (2 pcs)

[GRAS GR0010](#) 1/2" to 1/4" Adapter (2 pcs)

[GRAS 26AS](#) 1/4" Standard Preamplifier with 3 m integrated cable, very short (2 pcs)

45CA-4 IEC 60318-1 CCP —

[GRAS RA0039](#) Ear Simulator according to IEC 60318-1 (2 pcs)

[GRAS 40AO](#) 1/2" Prepolarized Pressure Microphone (2 pcs)

[GRAS RA0176](#) 1/2"-1" Adapter for RA0039 (2 pcs)

[GRAS GR0010](#) 1/2" to 1/4" Adapter (2 pcs)

[GRAS 26CB](#) 1/4" CCP Preamplifier with Microdot connector, very short (2 pcs)

[GRAS AA0070](#) 3 m Microdot - BNC Cable, High Temp

45CA-5 IEC 60318-4 LEMO —

[GRAS KB0070](#) Large Right KEMAR Pinna, 55 Shore 00

[GRAS KB0071](#) Large Left KEMAR Pinna, 55 Shore 00

GRAS GR1075 Pinna Holder Plate

GRAS GR1069 Ear Canal Extension

[GRAS RA0045](#) Externally Polarized Ear Simulator according to IEC 60318-4 (60711) (2 pcs)

[GRAS GR0010](#) 1/2" to 1/4" Adapter (2 pcs)

[GRAS 26AS](#) 1/4" Standard Preamplifier with 3 m integrated cable, very short (2 pcs)

45CA-6 IEC 60318-4 CCP

GRAS KB0070	Large Right KEMAR Pinna, 55 Shore 00
GRAS KB0071	Large Left KEMAR Pinna, 55 Shore 00
GRAS GR1075	Pinna Holder Plate
GRAS GR1069	Ear Canal Extension
GRAS RA0045-S1	Prepolarized Ear Simulator according to IEC 60318-4 (60711) (2 pcs)
GRAS GR0010	1/2" to 1/4" Adapter (2 pcs)
GRAS 26CB	1/4" CCP Preamplifier with Microdot connector, very short (2 pcs)
GRAS AA0070	3 m Microdot - BNC Cable, High Temp (2 pcs)

45CA-7 IEC 60318-4 LEMO

GRAS KB5010	Large Right Anthropometric KEMAR Pinna 35 Shore 00
GRAS KB5011	Large Left Anthropometric KEMAR Pinna 35 Shore 00
GRAS GR1075	Pinna Holder Plate
GRAS RA0045	Externally Polarized Ear Simulator according to IEC 60318-4 (60711) (2 pcs)
GRAS GR0010	1/2" to 1/4" Adapter
GRAS 26AS	1/4" Standard Preamplifier with 3 m integrated cable, very short (2 pcs)
GRAS GR0408	Exterior Ear Canal (for calibration)
GRAS GR0409	Union Nut (for calibration)

45CA-8 IEC 60318-4 CCP

GRAS KB5010	Large Right Anthropometric KEMAR Pinna 35 Shore 00
GRAS KB5011	Large Left Anthropometric KEMAR Pinna 35 Shore 00
GRAS GR1075	Pinna Holder Plate
GRAS RA0045-S1	Prepolarized Ear Simulator according to IEC 60318-4 (60711) (2 pcs)
GRAS GR0010	1/2" to 1/4" Adapter
GRAS 26CB	1/4" CCP Preamplifier with Microdot connector, very short (2 pcs)

GRAS AA0070	3 m Microdot - BNC Cable, High Temp (2 pcs)
GRAS GR0408	Exterior Ear Canal (for calibration)
GRAS GR0409	Union Nut (for calibration)

45CA-9 / LEMO— 20 kHz

GRAS KB5010	Large Right Anthropometric KEMAR Pinna 35 Shore 00
GRAS KB5011	Large Left Anthropometric KEMAR Pinna 35 Shore 00
GRAS GR1075	Pinna Holder Plate
GRAS RA0401	Externally Polarized High-Frequency Ear Simulator (2 pcs)
GRAS GR0010	1/2" to 1/4" Adapter
GRAS 26AS	1/4" Standard Preamplifier with 3 m integrated cable, very short (2 pcs)
GRAS GR0408	Exterior Ear Canal (for calibration)
GRAS GR0409	Union Nut (for calibration)

45CA-10 / CCP— 20 kHz

GRAS KB5010	Large Right Anthropometric KEMAR Pinna 35 Shore 00
GRAS KB5011	Large Left Anthropometric KEMAR Pinna 35 Shore 00
GRAS GR1075	Pinna Holder Plate
GRAS RA0402	Prepolarized High-Frequency Ear Simulator (2 pcs)
GRAS RA0412	Kit of 8 degr. angular adapters 1/2" to 1/4"
GRAS 26CB	1/4" CCP Preamplifier with Microdot connector, very short (2 pcs)
GRAS AA0070	3 m Microdot - BNC Cable, High Temp (2 pcs)
GRAS GR0408	Exterior Ear Canal (for calibration)
GRAS GR0409	Union Nut (for calibration)

45CA-11 / LEMO— 50 kHz

GRAS KB5010	Large Right Anthropometric KEMAR Pinna 35 Shore 00
GRAS KB5011	Large Left Anthropometric KEMAR Pinna 35 Shore 00
GRAS GR1075	Pinna Holder Plate
GRAS RA0403	Externally Polarized Hi-Res Ear Simulator (2 pcs)
GRAS 26AS	1/4" Standard Preamplifier with 3 m integrated cable, very short (2 pcs)
GRAS GR0408	Exterior Ear Canal (for calibration)
GRAS GR0409	Union Nut (for calibration)

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GRAS KB5010	Large Right Anthropometric KEMAR Pinna 35 Shore 00
GRAS KB5011	Large Left Anthropometric KEMAR Pinna 35 Shore 00
GRAS GR1075	Pinna Holder Plate
GRAS RA0404	Prepolarized Hi-Res Ear Simulator (2 pcs)
GRAS 26CS	1/4" CCP Preamplifier with Microdot connector, very short (2 pcs)
GRAS AA0070	3 m Microdot - BNC Cable, High Temp (2 pcs)
GRAS GR0408	Exterior Ear Canal (for calibration)
GRAS GR0409	Union Nut (for calibration)

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IEC 60318-4 KEMAR

GRAS RA0172	Pinna & Ear Simulator Mounting Kit (required to hold a pinna) Included with 45CA-5 and -6. Note: Contains a cover plate, ear canal extension, screws and Allen key
GRAS KB0070	KEMAR Large Right Pinna Shore 55 Hearing Protector. Included with 45CA-5 and 6.
GRAS KB0071	KEMAR Large Left Pinna Shore 55 Hearing Protector. Included with 45CA-5 and 6.
GRAS KB1070	KEMAR Large Right Pinna Shore 35 Hearing Protector
GRAS KB1071	KEMAR Large Left Pinna Shore 35 Hearing Protector
GRAS KB0072	KEMAR Small Right Pinna Shore 55 Hearing Protector

GRAS KB0073	KEMAR Small Left Pinna Shore 55 Hearing Protector
GRAS KB5010	KEMAR Large Right Anthropometric Pinna for 45CA, Shore 35. Included with 45CA-7 and 8
GRAS KB5011	KEMAR Large Left Anthropometric Pinna for 45CA, Shore 35. Included with 45CA-7 and 8

LEMOS

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

CCPs

GRAS AA0035	3 m BNC - BNC Cable
GRAS AA0037	10 m BNC - BNC Cable
GRAS AE0074	BNC - BNC adapter

12AQ/12AA

GRAS 12AQ	For all configurations (dual channel LEMO/CCP)
GRAS 12AA	For externally polarized configurations only (dual channel)

+15 VDC

GRAS AB0002	Mains/line power supply, 230 VAC (EU mains connector)
GRAS AB0006	Mains/line power supply, 230 VAC (UK mains connector)
GRAS AB0003	Mains/line power supply, 120 VAC (US mains connector)

42AP/42AA

GRAS 42AP	Intelligent Pistonphone, Class 0
GRAS 42AA	Pistonphone, Class 1

GRAS RA0023	Coupler for 1" microphones (Note: RA0023 is included with 42AP but optional for 42AA)
GRAS RA0287	Calibration Adapter (for in-situ verification of RA0039)
GRAS RA0157	1/2" Calibration Adapter for KEMAR Pinna (For the IEC60318-4 configuration only)
GRAS 42AG	Multifunction Sound Calibrator, Class 1

GRAS Sound & Vibration

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than 40 countries

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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

grasacoustics.com

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