GRAS 50VI-1

Vector intensity probe

Freq range: IEC 61043 Class 1
Dyn range: 25 dB(A) to 152 dB
Sensitivity: 25 mV/Pa

The GRAS 50VI-1 Vector Intensity Probe is a flexible and adjustable, two or three-dimensional sound-intensity probe. The probe handle has marked inputs for 3 pairs of preamplifiers (a pair for each of the mutually-perpendicular directions) and a 24-pin LEMO output socket at its base for connecting it to a suitable Power Module (e.g. Type 12AC) or Power Modules (via cable adapter).

GRAS Sound & Vibration
Skovlytoften 33, 2840 Holte, Denmark
www.grasacoustics.com

Typical applications and use

- Vector-intensity measurements
- Soundfield mapping
- Sound-source location
- Near-field investigations

Design

The 50VI-1 full 3-dimensional vector intensity probe complies fully with the requirements in IEC 61043, Electroacoustics - Instruments for the Measurement of Sound Intensity - Measurements with Pairs of Pressure Sensing Microphones, 1993 for Class 1 Sound-intensityprobes, and ISO/DIS 11205.2, Acoustics - Noise emitted by machinery and equipment - Engineering method for the determination of emission sound pressure levels in situ at the work station and at other specified positions using sound intensity.

The first generation of sound intensity probes was designed and developed using available standard microphones and preamplfiers, resulting in a number of compromises regarding size, acoustical performance and durability. In the new generation of sound-intensity probes, all components have been made specifically for sound intensity applications. Each small 1/4-inch diameter and 40mm long microphone preamplfier is housed in a robust, stainless steel casing which enables novel probe designs. These novel probe designs reduce the disturbances to the sound field otherwise brought about by the effects of shadows and diffraction, and its symmetry enables reliable calibrations as described in the standard (ISO/DIS 9614-2) for sound power measurements using sound-intensity measurements.

The Vector Intensity Probe Type 50VI includes three pairs of GRAS 40AI Sound-intensity microphones, three pairs of GRAS 26AA 1/4-inch Preamplifiers, 25 mm and 50 mm spacers covering the frequency range from 80 Hz to 6.3 kHz. The probe handle has an input for 6 preamplifiers and LEDs for indicating two states as well as a push button for remote control. The remote-controlled output can, for example, be connected to the RS232 port of a computer for controlling the process of data acquisition.

The output of the probe handle is a 24-pin LEMO connector and the 50VI includes a 5 m cable terminating in another 24-pin LEMO connector. This can be connected to a break-out adapter with six standard 7-pin LEMO microphone connectors for connection to the GRAS 12AC 6-Channel Power Module for GRAS Vector-intensity Probe.

Specifications

Polarization/Connection		0 V / CCP
Frequency range (±2 dB)	Hz	IEC 61043
Dynamic range lower limit (microphone thermal noise)	dB(A)	25
Dynamic range upper limit	dB	152
Set sensitivity @ 250 Hz (±2 dB)	mV/Pa	25
Polarization voltage	V	200
Microphone venting		Rear
IEC 61094-4 Compliance		WS3P
Temperature range, operation	°C / °F	5 to 40 / 41 to 104
Temperature coefficient @250 Hz	dB/°C / dB/°F	-0.01
Humidity range non condensing	% RH	0 - 100
Humidity coefficient @250 Hz	dB/% RH	-0.001
Influence of axial vibration @1 m/s²	dB re 20 µPa	66
Connector type		24-pin LEMO
CE/RoHS compliant/WEEE registered		Yes/Yes/Yes
Weight	g / oz	450 / 15.873

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

Ordering info

Included items

GRAS AL0004	Small light weight microphone tripod
GRAS AA0030	10 m cable
GRAS AC0017	Y-cable adapter

Optional accessories

GRAS 12AC	6-Channel Power Module for GRAS Vector-intensity Probe
GRAS AM0365	Windscreen for GRAS Vector-Intensity Probe

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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 502, Building T1,
No.1398 Ali Center
Shenchang Road,
Minhang District,
Shanghai, China, 201107
Tel: +86 21 400-888-9826
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 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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