

2 cc Click-on Coupler Type 4946

2 cc Click-on Coupler Type 4946 is intended for measurements on all types of hearing aids. The design is optimized for quick and easy use in the laboratory and on the production line. It fulfils the requirements of the ANSI S3.7 (2008) and IEC 60318-5 (2006) standards. A wide range of ear-mould simulators click into place on the coupler body, making changing to different hearing-aid designs easy. The calibration procedure is also simple. The microphone can be accessed without dismantling the coupler body and the protective grid stays on the microphone while swapping hearing aids, both features that reduce the risk of damaging the microphone.



020083/1

Uses and Features

- Uses**
- Frequency response, sensitivity and distortion measurements
 - On-line/off-line (QC/QA) production test and verification
 - Research and development of hearing aids
 - Hearing aid servicing
- Features and Benefits**
- Conforms to ANSI S3.7 (2008), IEC 60318-5 (2006)
 - Quick exchange of click-on adapters enables easy and precise alignment of (ITE) hearing aids
 - Rugged, ergonomic design for repetitive use in a production environment
 - Safe and fast calibration with a protective grid on the microphone and improved workflow
 - Many click-on adapters for BTE and ITE hearing aids
 - Supports Brüel & Kjær 1" and ½" microphones, both externally polarized and prepolarized, for easy conditioning
 - Designed to fit Anechoic Test Box Type 4232
 - Available in a packaged QC-friendly version with optional, selectable moulds and adapters
 - Self-centring microphone mounting ensures correct positioning
 - Hearing aids can be easily aligned in the mould without dismantling the coupler microphone
 - Detachable microphone preamplifier cables
 - Easy click-on adapter positioning saves time because the hearing aid is easily aligned
 - Easy calibration procedure encourages frequent system verification and leads to safer results
 - Extended (reinforced) protection of the microphone reduces damages and replacement of the valuable microphone
 - Production-line-friendly design means less time spent on cleaning and maintenance
 - Improved long-term quality of measurement data due to clean measurement volume
 - Integration with your existing or preferred Brüel & Kjær pressure-field microphones and preamplifiers saves on new equipment

Description

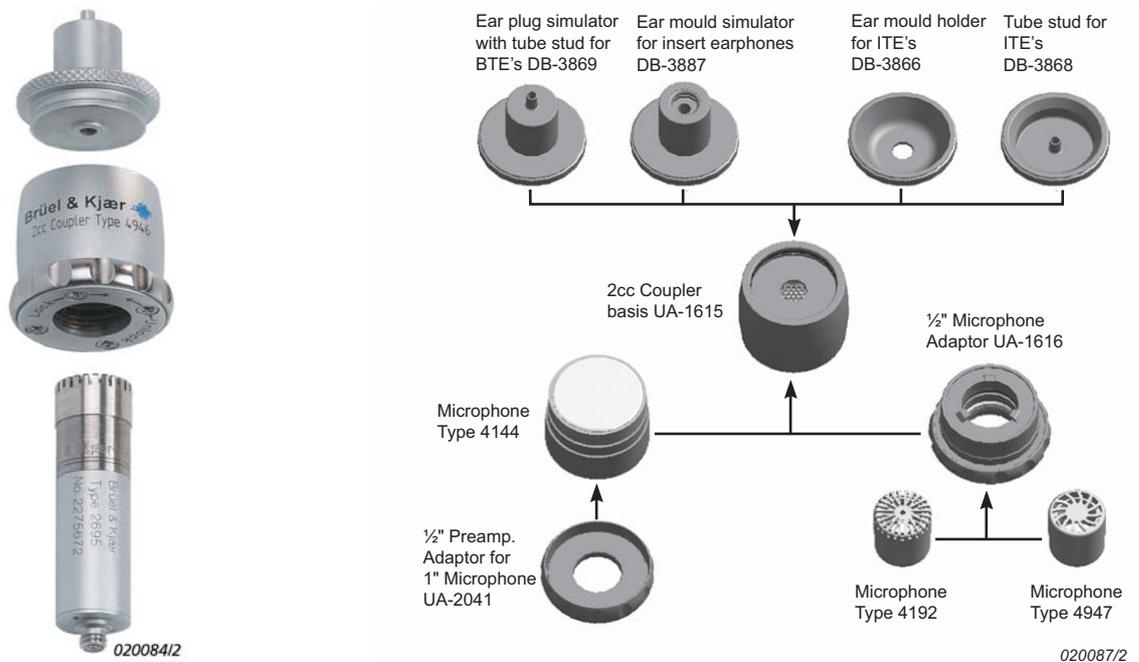
2 cc Click-on Coupler Type 4946 fulfils the IEC 60318-5 and ANSI S3.7 standards and is the successor to the well-known Brüel & Kjær 2 cc Coupler DB-0138. Type 4946 has been designed for ease of use, easing the workflow of production operators by adding click-on functionality to the adapters, and easy and safe handling of the microphone for regular calibration and verification.

For your convenience, the coupler has been designed to be used with a number of Brüel & Kjær microphones and preamplifiers.

Supported Microphones

- Externally polarized: ½" Pressure-field Microphone Type 4192, 1" Pressure-field Microphone Type 4144
- Prepolarized: ½" Microphone Type 4947

Fig. 1
Left: 2 cc Click-on Coupler Type 4946;
Right: Overview of components and options for assembly



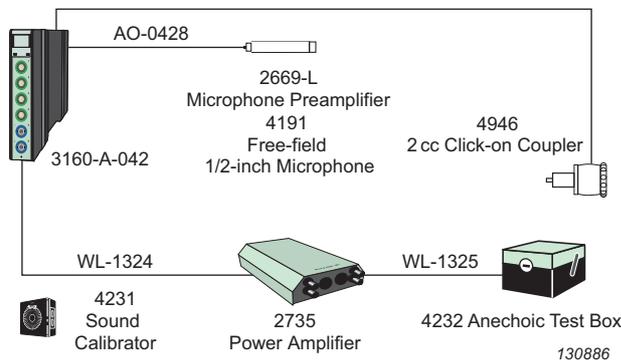
Supported Preamplifiers

- Conventional: ½" Microphone Preamplifier Type 2669 with exchangeable cable; older Preamplifier Type 2639
- CCLD: ½" CCLD Microphone Preamplifier Type 2695 (short, with microdot connector); CCLD Microphone Preamplifier Type 2671 (long, with BNC connector)

A large selection of adapters for BTE and ITE hearing aids is available, either in the standard version of Type 4946 or individually, for production line use.

The coupler has been designed for use with Anechoic Test Box Type 4232 and different measurement systems are available for R&D and production-line purposes. Fig. 2 shows a typical R&D measurement system setup using the PULSE analyzer platform for R&D purposes.

Fig. 2
 Typical measurement setup using a LAN-XI Module Type 3160-A-042 for hearing aid testing using ear simulator and anechoic test box



Sensitivity Calibration

The unique ½" microphone adapter design enables very easy and safe calibration of the coupler. Simply unlock the adapter, pull out the ½" microphone, with grid and preamplifier, and mount it in Sound Calibrator Type 4231 or any other Brüel & Kjær acoustic calibrator.

When using a 1" microphone, the microphone protection grid must be mounted before calibration.

Accredited calibration of microphones is available (see Ordering Information).

Specifications – 2 cc Click-on Coupler Type 4946

COMPLIANCE WITH STANDARDS

Complies with IEC 60318-5 (2006) and ANSI S3.7 (2008)*

EFFECTIVE COUPLER VOLUME†

1" Microphones: 2000 mm³ ± 1% (Type 4144)

½" Microphones: 2000 mm³ ± 2% (Types 4192, 4947)

NOISE

The equivalent noise in the coupler is dependent on the different microphone/preamplifier combinations used:

- Type 4144 with Type 2639/69: 10.6 dB(A)
- Type 4192 with Type 2639/69: 20.7 dB(A)
- Type 4947 with Type 2671/95: 24.0 dB(A)

SYSTEM COMPATIBILITY

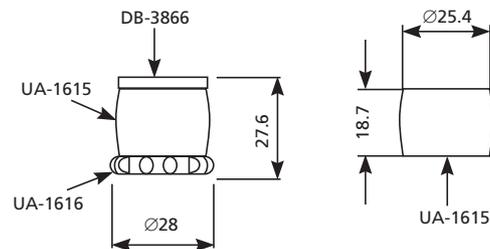
Type 3160-A-042: Generator, Input/Output Module LAN-XI 51.2 kHz

Type 3560-C: PULSE Multi-analyzer System

Type 2012: Audio Analyzer

DIMENSIONS

(all dimensions in mm)



020095/1

* Using 1" Pressure-field Microphone Type 4144

† Including equivalent volume of microphone and influence of protection grid

Ordering Information

Available Configurations

Name	Type/Part No.	4946	4946-Q-001 QC version with Mic. and Preamp.	4946-Q-002 QC version without Mic. and Preamp.
2 cc Coupler Basis	UA-1615	●	●	●
½" Microphone Adapter	UA-1616	●	●	●
½" Preamp. Adapter for 1" Microphone	UA-2041	●		
Ear Plug Simulator with Tube Stud for BTEs	DB-3869	●		
Ear Mould Simulator for Insert Earphones	DB-3887	●		
Ear Mould Simulator for ITEs	DB-3866	●		
Tube Stud for ITEs	DB-3868	●		
Dust Protectors (×10)	DS-0535	●	●	●
½" Prepolarized Pressure-field Microphone	4947		●	
½" CCLD Microphone Preamplifier	2695		●	

Accessories Available

DB-3869	Ear Plug Simulator with Tube Stud for BTEs
DB-3887	Ear Mould Simulator for Insert Earphones
DB-3866	Ear Mould Simulator for ITEs
DB-3868	Tube Stud for ITEs
DS-0535	Dust Protectors (×10)

Additional Instrumentation

MICROPHONES

Type 4144	1" Pressure-field Microphone
Type 4192	½" Pressure-field Microphone
Type 4947	½" Prepolarized Pressure-field Microphone

PREAMPLIFIERS

Type 2669-L	½" Microphone Preamplifier
Type 2671	CCLD Microphone Preamplifier
Type 2695	½" CCLD Microphone Preamplifier

CONDITIONING

Type 2690-A-OS2/OS4	2/4-channel Microphone Conditioning Amplifier (NEXUS™)
Type 2829	4-channel Microphone Power Supply

OTHER

Type 4231	Sound Calibrator
Type 4232	Anechoic Test Box

CABLES

AO-0087	3 m BNC-to-BNC Cable for CCLD Microphone Preamplifier Type 2671
AO-0419	3 m Cable with LEMO connector for ½" Microphone Preamplifier Type 2669-L (included with Type 2669)
AO-0531	5 m Microdot Cable for ½" CCLD Microphone Preamplifier Type 2695 (included with Type 2695)

Service Products

Ref. Numbers	CAF	CFF
Type 4144	●	●
Type 4192	●	●
Type 4947	●	●

CAF:	Accredited Calibration
CFF:	Factory Standard Calibration including new Calibration Chart for Microphone (included with delivery)

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