

PRODUCT DATA

Sound Sources for Building Acoustics: OmniPower™ Sound Source — Type 4296, OmniSource™ Sound Source — Type 4295, Tapping Machine — Type 3207, Including Power Amplifier — Type 2716

For the proper measurement of building acoustics a range of sound sources is required, which should fulfil the relevant standards, e.g., ISO 140. Brüel & Kjær offers a complete range of sound sources for building acoustics measurements including Tapping Machine Type 3207, OmniSource™ Type 4295 single speaker omnidirectional sound source and OmniPower™ Type 4296 high power omnidirectional sound source. There is also a range of accessories available including Power Amplifier Type 2716 for driving both OmniPower and OmniSource, Flight Case KE 0358 for transporting the Type 2716, cables, Wireless Transmission Kit UA 1426 and the 2260 Investigator™ sound level analyzer.

FEATURES

- Architectural and building acoustics
- Measurement of:
 - Airborne sound insulation
 - Reverberation time
 - Impact sound level

BENEFITS

- Part of a complete building acoustics system featuring Brüel & Kjær's Investigator Type 2260D
- Two omnidirectional noise sources
- Tapping machine for impact sound level measurements
- Remote operation via cable or wireless remote control
- Satisfies national and international standards
- Robust
- Easily portable



INTRODUCTION

Architectural and building acoustic measurements require a range of noise sources for airborne noise and impact noise transmission measurements. For airborne noise transmission measurements, an omnidirectional sound source is needed. Brüel & Kjær offers two solutions: OmniPower Sound Source Type 4296 and OmniSource Sound Source Type 4295.

For impact sound measurements Brüel & Kjær offers Tapping Machine Type 3207. This is a robust and portable device that fulfils national and international standards.

The sound sources form part of a measurement system starting with the sound sources and where necessary the driving amplifier (e.g., Type 2716), followed by a sound level analyzer (e.g., 2260 Investigator), a PC and software, and the connecting cables or wireless transmission kits (UA 1426 or UA 1476 for the tapping machine).

Brüel & Kjær supplies all of these items except the PC, and a range of carrying cases for storage and transportation.

Summary:

- OmniPower Type 4296, 12-speaker high power omnidirectional sound source
- OmniSource Type 4295, lightweight single speaker omnidirectional sound source
- Tapping Machine Type 3207
- Power Amplifier Type 2716, portable amplifier for driving sound sources
- Flight Cases KE 0358 and KE 0365, and Carrying Cases KE 0364 and KE 0392, for packing and transporting equipment
- Cables and Wireless Remote Control Kits UA 1426 and UA 1476
- Battery Kit UA 1477 for Type 3207

Omnidirectional Sound Sources

For most building acoustics measurements, the sound source must radiate sound evenly in all directions to give reproducible and reliable results. Hence the relevant standards for the measurement of building acoustics (ISO 140 and ISO 3382) require that an omnidirectional sound source be used.

OmniPower Sound Source Type 4296

Fig. 1
OmniPower Sound Source Type 4296



OmniPower Sound Source Type 4296 (see Fig. 1) uses a cluster of 12 loudspeakers in a dodecahedral configuration that radiates sound evenly with a spherical distribution. All twelve speakers are connected in a series-parallel network to ensure both in-phase operation and an impedance that matches the power amplifier. The whole assembly weighs 14 kg and is fitted with a convenient lifting handle which does not measurably interfere with the sound field.

When connected via the Bridging Cable AQ 0621, OmniPower can utilise the combined output power of both channels of Power Amplifier Type 2716, and deliver a sound power of

122 dB re 1 pW (see Fig. 2 and Fig. 3). The high power output of OmniPower makes it ideal for sound insulation measurements.

OmniPower satisfies the requirements of DIN 52210, ISO 140 and ISO 3382 standards (see Fig. 2 and Fig. 3).

Fig. 2
Maximum $\frac{1}{3}$ -octave sound-power levels for OmniPower using 2260 Investigator pink noise generator and Power Amplifier Type 2716

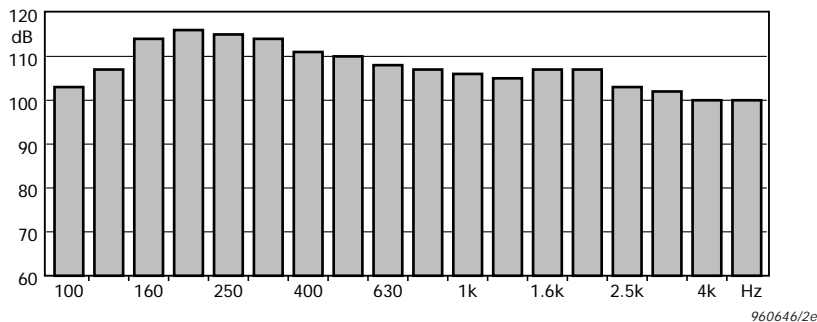


Fig. 3
Maximum $\frac{1}{1}$ -octave sound-power levels for OmniPower using 2260 Investigator pink noise generator and Power Amplifier Type 2716

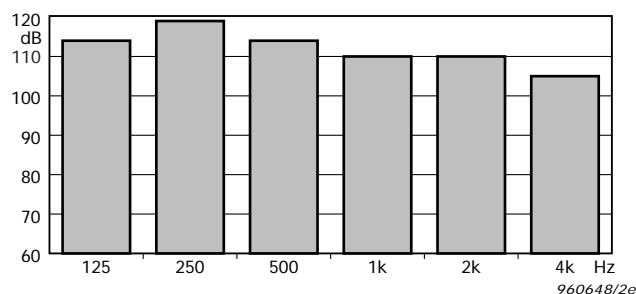


Fig. 4
Directivity for
OmniPower according
to ISO 140: maximum
deviation from mean for
'gliding' 30° arc. Upper
and lower curves are
the ISO 140 tolerances

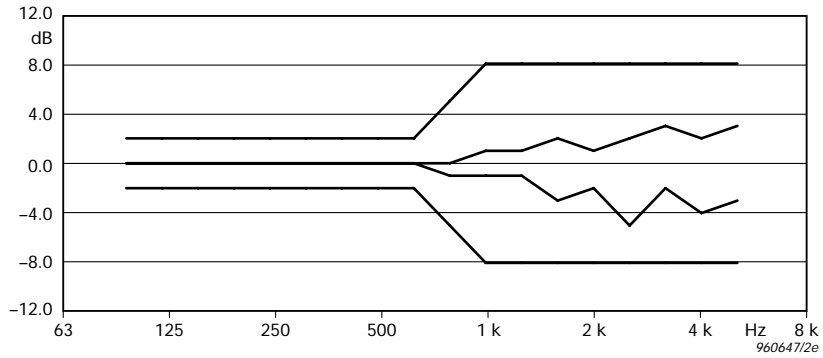
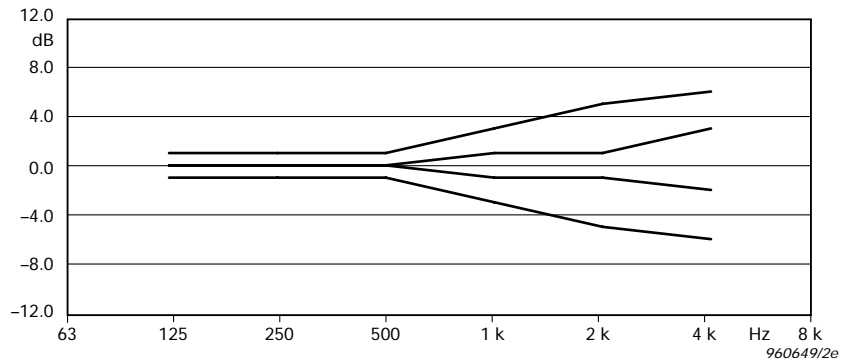


Fig. 5
Directivity for
OmniPower according
to ISO 3382: maximum
deviation from mean for
'gliding' 30° arc. Upper
and lower curves are
the ISO 3382 tolerances



OmniSource Sound Source Type 4295

Fig. 6
OmniSource Sound
Source
Type 4295



OmniSource Sound Source Type 4295 (see Fig. 6) presents a new solution to omnidirectional sound source design. OmniSource is optimised for the measurement of room acoustic quantities, such as reverberation time, sound distribution and spatial decay. The patented principle of the OmniSource uses a single high-power loudspeaker, radiating through a conical coupler to a circular orifice. The size of the orifice and the shape of the OmniSource have been carefully engineered to radiate sound evenly in all directions. Thus, the OmniSource fulfils the national and international standards for omnidirectional sound sources (see Fig. 9 and Fig. 10). Despite its compact dimensions and low weight, OmniSource is still capable of emitting a sound power of 105 dB re 1 pW (see Fig. 7 and Fig. 8).

Fig. 7
Maximum 1/3-octave
sound power levels for
OmniSource using 2260
Investigator pink noise
generator and Type
2716 Power Amplifier

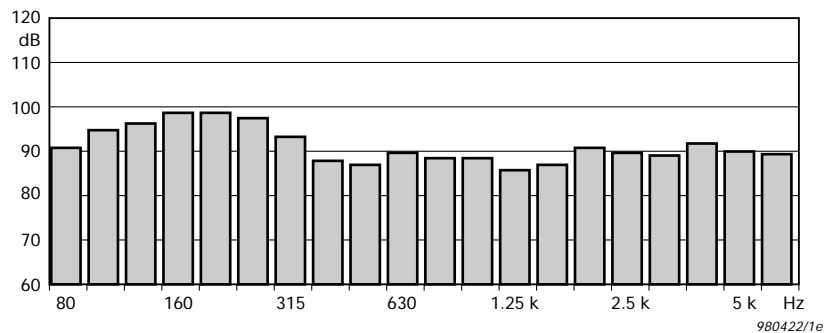


Fig. 8
 Maximum $1/1$ -octave
 sound power levels for
 OmniSource using 2260
 Investigator pink-noise
 generator and Type
 2716 Power Amplifier

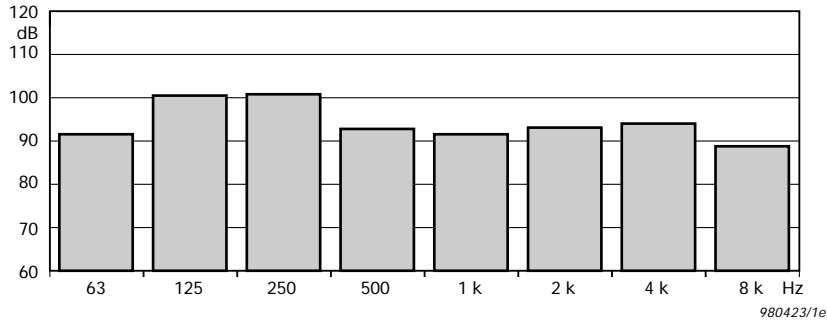


Fig. 9
 Directivity for
 OmniSource according
 to ISO 140 maximum
 deviation from mean for
 'gliding' 30° arc. Upper
 and lower curves are
 the ISO tolerances

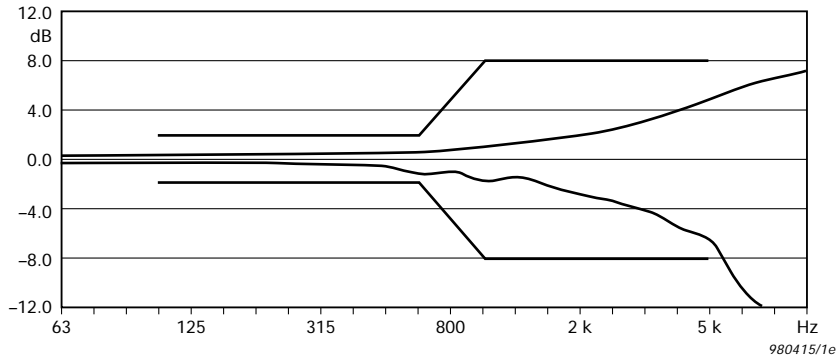
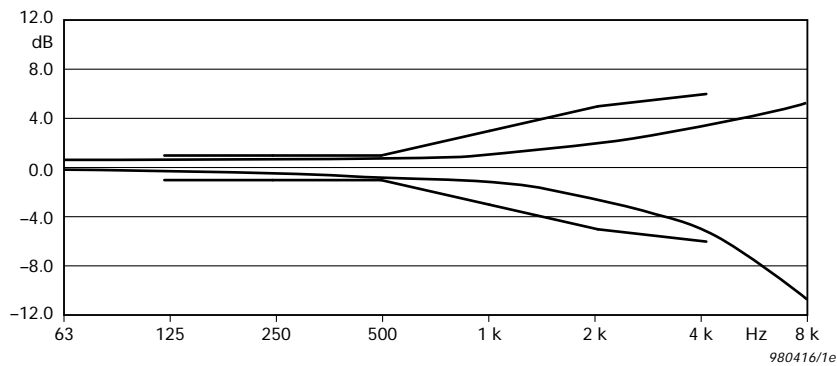


Fig. 10
 Directivity for
 OmniSource according
 to ISO 3382: maximum
 deviation from mean for
 'gliding' 30° arc. Upper
 and lower curves are
 the ISO tolerances



Impact Sound Source

Tapping Machine Type 3207

Tapping Machine Type 3207 is an impact sound generator (see Fig. 11). It can be used for impact sound measurements to national and international standards. The unit is available with an optional battery kit and a remote control.

Type 3207 uses five hammers each weighing 500 g and operating at 2 Hz dropping from a height of 40 mm, giving an operating frequency of 10 Hz. This fulfils national and international standards. The hammers are operated via tappets on a single shaft. The shaft is driven by a DC motor via a toothed belt and gearbox.

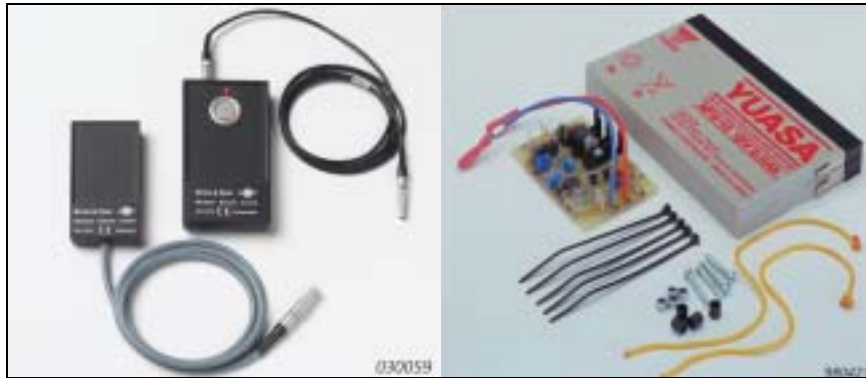
Fig. 11
Tapping Machine
Type 3207



The unit is based around a welded aluminium chassis. Both size and weight have been minimised for easy transportation. Three extendable legs with rubber feet support the unit during operation. The rubber feet are height adjustable with supplied gauges. This gives stable and level mounting during operation in accordance with the relevant standards.

The unit is powered via the supplied mains adaptor, or the optional battery kit (see Fig. 12). The unit can be remotely switched on and off with cable AQ 0633 or Wireless Remote Control Option UA 1476 (see Fig. 12).

Fig. 12
Accessories for Tapping
Machine. Wireless
Remote Control
UA 1476 (left) and
Battery Kit UA 1477
(right)



Accessories

Power Amplifier Type 2716

Fig. 13
Power Amplifier Type
2716 fitted in Flight
Case KA 0358 from
where it can be
operated



Power Amplifier Type 2716 is of compact size and low weight for its output power. It has the same features and protection circuits normally found only in higher powered amplifiers. This makes it one of the few really professional power amplifiers in its class.

Power Amplifier Type 2716 (see Fig. 13) fits in a 19" rack or in Flight Case KE 0358. It has two channels which may be used independently or jointly (using the **Link A+B** and **Phase**

Reverse B switches, and Bridging Cable AQ 0621). Signals enter electronically balanced inputs via XLR and jack connectors. Input level requirements are matched by the signals generated by the 2260 Investigator. Total output power is around 300 W and is relatively independent of load. This matches the requirements for driving the OmniPower with a wide margin of safety against damaging the speaker units. A single channel can be used to drive the OmniSource. The Type 2716 will deliver full output power for a duty cycle of $\frac{1}{3}$, matching typical operating modes in building acoustic measurements.

Quiet Operation

Type 2716 uses passive cooling during operation which removes the need for a cooling fan. The lack of cooling fan in turn makes the Type 2716 very quiet during operation, an essential feature for building acoustics measurements.

Extensive Protection

Power Amplifier Type 2716 has circuits that protect it against short-circuits, DC, overheating, VHF and clipping (clip limiter may be switched off).

Wireless Transmission Kit UA 1426

When performing measurements with a sound source, the bandwidth, spectrum, and timing of the driving signal need to be controlled. If the operator is mobile, moving between many measuring positions, a wireless link offers the best method of controlling the driver signal. Using Wireless Transmission Kit UA 1426 a system can be assembled from readily available components.

Flight Case KE 0358

Fig. 14
Flight Case KE 0358 (left), 2260 Investigator housed in bottom of Flight Case KE 0358 (right)



You can safely and conveniently pack and transport several of the items of the measurement chain in Flight Case KE 0358 (see Fig. 14, left-hand picture). These include:

- 2260 Investigator with accessories
- Power Amplifier Type 2716
- Wireless Transmission Kits UA 1426 and UA 1476
- Assorted cables

The base of the flight case can carry the 2260 Investigator and its accessories (see Fig. 14 right). The main body of the flight case contains the cables and houses the power amplifier.

Carrying Case KE 0392

Fig. 15
Carrying Case KE 0392



The OmniSource has an optional, custom designed, carrying case, KE 0392, with shoulder strap (see Fig. 15), for easy storage and transportation. The case is foam lined and provides impact protection for the OmniSource inside.

Flight Case KE 0365

An optional transportation and storage case, KE 0365, is available for the OmniPower (see Fig. 16, left-hand side). It is custom designed and features a foam lining to protect the OmniPower, and two handles for carriage.

Carrying Case KE 0364

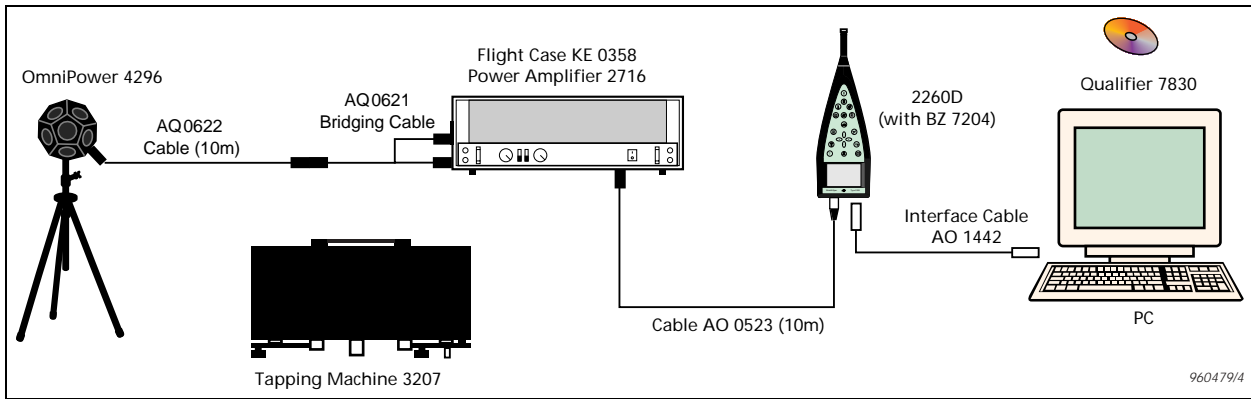
To carry the OmniPower tripod, Carrying Case KE 0364 (see Fig. 16, right-hand side) is equipped both with handles and a shoulder strap.

Fig. 16
 Flight Case KE 0365
 (left) and Carrying Case
 KE 0364 (right)



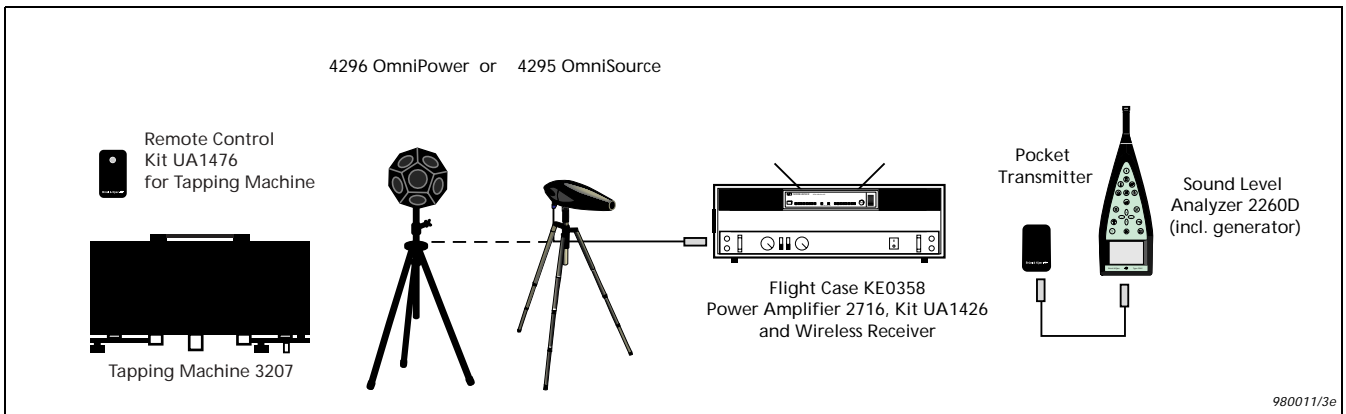
Complete Systems

Fig. 17 Complete system



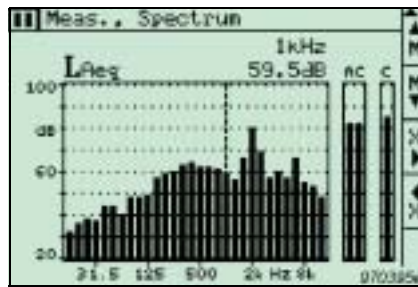
The sound sources mentioned above belong to a range of complete measurement systems from Brüel & Kjær, including power amplifiers, sound level analyzers, and PC-software for documenting results.

Fig. 18 Sound sources with wireless remote control kits



2260 Investigator

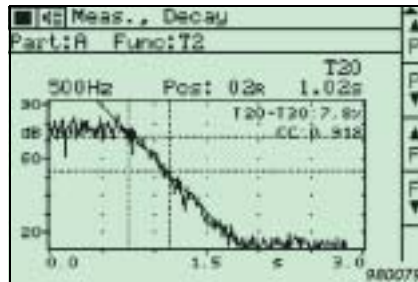
Fig. 19
Investigator display screen showing a 1/3-octave level spectrum



2260 Investigator is a versatile, hand-held, battery-operated, two-channel sound analyzer. Like a personal computer, it is driven by application software for various tasks. Basic Sound Analysis Software BZ 7210, shipped with 2260 Investigator, converts the instrument into a precision sound level analyzer conforming with IEC and ANSI Type 1 standards. It simultaneously measures a vast array of parameters including 1/3- and 1/1-octave levels and statistics. The measured data can be output to an IBM® Proprinter compatible printer or downloaded to a PC using optional Microsoft® Windows® compatible software such as Noise Explorer Type 7815.

Building Acoustics Software BZ 7204 and BZ 7207

Fig. 20
2260 Investigator display screen showing a reverberation decay curve



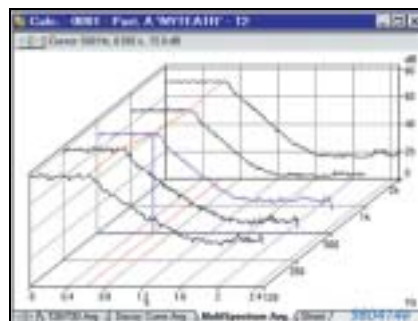
Building Acoustics Software BZ 7204 converts 2260 Investigator into a building acoustics analyzer. It can measure the parameters needed and calculate the weighted sound reduction index according to national and international standards. The frequency range is 50 Hz – 10 kHz in 1/3- or 1/1-octaves. For room acoustics, it measures reverberation time (T20 and T30) for up to 25 positions and displays the decay graphically. Up to 99 decays may be averaged at each position. The average decay time is calculated for all decays. Levels can also be measured, averaged and corrected for background noise. With the BZ 7204, the 2260 also has a built-in noise

generator for measurement of sound level and reverberation time. Both pink and white noise can be generated with selectable bandwidth and level.

Room Acoustics Software BZ 7207 is like BZ 7204, but for reverberation time only.

Qualifier™ Types 7830 and 7831

Fig. 21
3D-multispectra, showing reverberation decay curves displayed with Type 7830 Qualifier software



Qualifier Type 7830 is a Windows®-compatible PC program that takes data from BZ 7204 and lets you store, view, modify, export and report your measurements. When inspecting the reverberation decay curves, you can graphically adjust the slope line or key in data manually. Reverberation decays can be displayed as 3D-multispectra, providing a complete overview of the frequency dependent reverberation curves. Reverberation time measurements can be averaged in two ways by:

- averaging of reverberation times (T20 and T30)
- averaging of decay curves (ensemble averaging)

Qualifier Light Type 7831 is like Type 7830, but for reverberation time only (matches BZ 7207)

Sound Intensity Software BZ 7205

Fig. 22
Mapping the sound reduction to find leakages between studio and control room



Building acoustic applications such as reduction indices and leakage detection benefit enormously from the sound intensity measurement technique, using 2260 Investigator with sound intensity kit and Intensity Software BZ 7205, as an alternative to a sound pressure based measurement of the apparent sound insulation index R' for a given partition. This measurement method allows the corrected intensity sound reduction index, $R_{I,c}$ to be measured. This gives extra information regarding the contribution of various flanking and leakage transmissions. In a traditional sound pressure based measurement you get an apparent sound insulation index R' which takes every type of transmission into account. However, traditional measurements cannot identify individual transmission paths. But with this application, you can choose specific details of any particular segment of any given partition or surface. If a compound partition is to be studied, e.g., a wall containing a window, the respective corrected intensity sound reduction index, $R_{I,c}$ for both the wall material and the window can be found.

Fig. 23
2260 Investigator display screen showing the $R_{I,cw}$ in surface display

Meas., Results					M C E D S T
RI,cw		RI,c			
WALL/EAST:		37.0dB			
R1,C1:		43.0dB			
4	
3	
2	48	48	58	52	
1	43	43	43	53	
	1	2	3	4	

The single-number weighted and corrected intensity sound reduction index, $R_{I,cw}$, is automatically calculated for each segment and for the surface as a whole.

To create a sound field on one side of the wall (in the source room) you can use the internal white noise generator in 2260 together with Power Amplifier Type 2716 and OmniPower Sound Source Type 4296.

Specifications 4296

STANDARDS

Conforms to the following:
ISO 140-3
ISO 3382
DIN 52210

NOMINAL IMPEDANCE
6 W

POWER HANDLING
300 W continuous
1000 W short duration (duty cycle 1/10)

OPERATING FREQUENCY RANGE
100–5000 Hz (1/3-octave band centre frequencies)

SOUND POWER LEVEL
(with Power Amplifier Type 2716, bridge configuration, duty cycle 1/3, 100–3150 Hz pin- noise signal)

Broadband: 122 dB re 1 pW
Spectral: Min. 100 dB/1 pW in each 1/3-octave band

CONNECTION
Four-pin Neutrik Speakon socket, pins 1+ and 1-

TRIPOD
Adjustable to give a speaker height of between 130 and 200 cm

FLOOR MOUNTING
Four rubber feet provided for floor mounting

DIAMETER
Speaker enclosure: 35 cm (13.8")

WEIGHT
Speaker enclosure: 14 kg (30.8 lb.)
Tripod: 2.4 kg (5.3 lb.)

Specifications 4295

STANDARDS

Conforms to the following:
ISO 140-3
ISO 3382
DIN 52210
ISO 14257 (Draft)

OPERATING FREQUENCY RANGE
80–6300 Hz

NOMINAL IMPEDANCE
6 Ω

POWER HANDLING
50 W continuous
Accepts full power from Power Amplifier Type 2716, one channel, 80–6300 Hz pink noise

SOUND POWER LEVEL
(with Power Amplifier Type 2716, one channel, 80–6300 Hz pink noise signal)
Broadband: 105 dB re 1 pW
Spectral: Min. 85 dB in each 1/3-octave band

CONNECTION
Four-pin Neutrik® Speakon® socket, pins 1+ and 1–

TRIPOD THREADS (LARGE TYPE)
One at rear end, one below centre of gravity

CARRYING CASE
Nylon with padded inlay, adjustable carrying strap

MECHANICAL SPECIFICATIONS
Material: Dense polyurethane plastic, painted black
Dimensions: Ø145 × 560 mm (Ø5.7 × 22")
Weight: 3.5 kg (7.7 lb.)

Compliance with Environmental Standards for Types 4295 and 4296

Temperature	IEC 60068-2-1 & IEC 60068-2-2: Environmental Testing. Cold and Dry Heat. Operating Temperature: +5 to +40°C (41 to 104°F) Storage Temperature: -25 to +70°C (-13 to 158°F) IEC 60068-2-14: Change of Temperature: -10 to +40°C (2 cycles, 1°C/min.)
Humidity	IEC 60068-2-3: Damp Heat: 93% RH (non-condensing at 40°C (104°F))
Mechanical	Non-operating: IEC 60068-2-6: Vibration: 0.3 mm, 20 m/s ² , 10–500 Hz IEC 60068-2-27: Shock: 1000 m/s ² IEC 60068-2-29: Bump: 1000 bumps at 250 m/s ²

Specifications 3207

STANDARDS

ISO 140, ISO 717, DIN 52210, BS 5821, ASTM E 492

HAMMERS

Five in line, 100 mm between each hammer, single hammer weight 500±12 g

IMPACT FREQUENCY
Each hammer operates at 2 Hz, tapping frequency for unit is 10±0.5 Hz

IMPACT DYNAMICS
Equivalent free-fall height of hammers 40 mm, extra drop below impact plane at least 4 mm

REMOTE OPERATION

Socket: LEMO 4-pole
Pin 1: 0 V
Pin 2: Power supply for wireless receiver unit
Pin 3: TTL-level, +5 V for "Operate", 0 V for "Stop"
Pin 4: For "Operation" connect to Pin 1
Housing: Shield

REMOTE OPERATION WIRELESS CONTROL KIT UA 1476 (OPTIONAL)

Operating frequency: 433.92 MHz
Transmitter Unit
– Connector: LEMO-coaxial socket
– Middle pin: +5 V for "on"; Outer ring 0 V
– Batteries: 2 × AAA/LR03 1.5 V
– Dimensions: 105 × 58 × 18.5 mm (4.13 × 2.28 × 0.73")
– Weight: 90 g

Receiver Unit
Connector: LEMO 4-pole plug with cable
For details of pin connections see "Remote Operation"
– Power supply: From the Remote control socket
– Dimensions: 85 × 46 × 16 mm (3.35 × 1.81 × 0.63")
– Weight: 80 g

BATTERY KIT UA 1477 (OPTIONAL)

Mounting Position: Internally in unit housing
Battery Life: 1.5 hours
Battery Type: Maintenance free 2 Ah Lead Acid battery
Charger Type: Same as mains adaptor (see below)
Charging Time: 24 hours for a completely discharged battery

ON/OFF SWITCH

3 Positions: Remote, Off, On

MAINS ADAPTOR

10.5–35V DC, max. 10W

Socket: LEMO coaxial (can also be used as charging socket)

Middle pin: +, Outer ring: 0V

Mains Adaptor: Mains adaptor ZG 0400

100–240V AC input, 24V DC output, max. 45W

Operating temperature max. +40°C

Can also be used to charge optional battery pack

SUPPORTS

3 extendable and height adjustable feet

DIMENSIONS

W × H × D: 471 × 227 × 141 mm (18.5 × 8.9 × 5.6")

(feet retracted)

W × H × D: 580 × 227 × 270 mm (22.8 × 8.9 × 10.6")


(feet extended)

Weight: 10 kg (22 lb.) with Mains adaptor

MAINTENANCE REQUIREMENTS

After 24 hrs. operation or once a year (which ever comes first), lubricate with the supplied sewing machine oil according to instructions

Compliance with Regulations and Environmental Standards for Type 3207

	CE-mark indicates compliance with: EMC Directive, Low Voltage Directive and Machinery Directive. Remote Control UA 1476: CE-mark means compliance with R & TTE Directive.
Safety	EN 61010–1 and IEC 61010–1: Safety requirements for electrical equipment for measurement, control and laboratory use.
EMC Emission	EN 50081–1: Generic emission standard, Part 1: Residential, commercial and light industry. CISPR 22: Radio disturbance characteristics of information technology equipment. Class B limits. FCC Rules, Part 15: Complies with the limits for a Class B digital device
EMC Immunity	EN 50082–2: Generic immunity standard, Part 2: Industrial environment. Note: only guaranteed using accessories listed in this Product Data Sheet.
Temperature	IEC 60068–2–1 & IEC 60068–2–2: Environmental testing. Cold and dry heat. Operating Temperature: 0 to +40°C (32 to 104°F) Storage Temperature: –25 to +70°C (–13 to 158°F)
Humidity	IEC 60068–2–3: Damp heat: 90% RH (non-condensing at 40°C (104°F))
Mechanical	Non-operating: IEC 60068–2–6: Vibration: 0.3 mm, 20 m/s ² , 10–500 Hz IEC 60068–2–29: Bump: 1000 bumps at 250 m/s ² IEC 60068–2–27: Shock: 500 m/s ² , 6 directions
Enclosure	IEC 60529: Protection provided by enclosures: IP 20

Specifications 2716**MAXIMUM OUTPUT POWER:¹**

Load	EIA 1 kHz at clip level ^a
8 Ω stereo	100 W
4 Ω stereo	150 W
2 Ω stereo	160 W
8 Ω bridged	300 W
4 Ω bridged	320 W

a. Continuous power (1 hour) is 1/3 of this

SPEAKER PROTECTION

Each channel is separately protected by a fuse on the positive and negative power supply branch. Electronic short circuit protection with a progressive characteristic is provided. Output power will be progressively reduced below 3Ω. The power amplifier can be run short-circuited for a long time without damage and is open circuit and mismatch proof.

POWER BANDWIDTH

12 Hz–50 kHz

SLEW RATE

25 V/μs

OUTPUT IMPEDANCE

0.03 Ω at 1 kHz

HUM AND NOISE

More than 105 dBA below max power

Channel Separation:

90 dB at 1 kHz

80 dB at 10 kHz

PHASE AND DELAY

± 2° deviation from perfect delay 150 Hz–20 kHz

3.8 μs total delay from input to output at 4 Ω

INPUTS**Sensitivity:** switchable for full output into 4 Ω, 0.775 or 1.73 Vrms**Gain:** switchable, 30 dB or 23 dB**Impedance:** 20 kΩ balanced**Common Mode Rejection at 1 kHz:** 70 dB**FRONT PANEL****Gain Controls:** 2 – channels, A and B**Clip Indicator:** 2 red LEDs, fast peak and slow release**Protection indicator:** 2 yellow LEDs, 90°C at heat sink or below 180V AC or >20 kHz at full power**Present Indicator:** 2 green LEDs, –25 dB at input**On indicator:** 2 green LEDs, DC rail voltage for channel A/B respectively**REAR PANEL****Input connectors:** Two XLR type 3-pin female (pin 2+), and two 1/4" jack**Output Connectors:** Two Neutrik 4-pin Speakon sockets**Switches:**

– Gain: 30 dB or 23 dB

– Link: tandem mono, channel A + B

– Rev B: phase reversal of channel B

– Clip limiter: On – Off

POWER REQUIREMENTS**Voltage:** 180 – 240 V AC (90 – 120 V AC possible)**AC-mains Fuse:** 4 A slow**DIMENSIONS**


W × H × D: 48.3 × 4.4 × 25.5 cm (19.0 × 1.7 × 10.0")

WEIGHT

7.5 kg (16.5 lb.)

1. Measured specifications for a 220V regulated AC power supply and at 20°C ambient temperature

Compliance with Regulations and Environmental Standards for Type 2716

	CE-mark indicates compliance with: EMC Directive and Low Voltage Directive.
Safety	IEC 60065:1985 and Amendment 1:1987: Safety requirements for mains operated electronic and related apparatus for household and similar general use.
EMC emission	EN 55013 and CISPR 13: Radio disturbance of broadcast receivers and associated equipment.
EMC immunity	EN 50082-1: Generic immunity standard, Part 1: Residential, commercial and light industry.
Temperature	IEC 60068-2-1 & IEC 60068-2-2: Environmental testing. Cold and dry heat. Operating temperature: 5°C to 40°C (41 to 104°F) Storage temperature: -25°C to +70°C (-13 to +158°F)
Humidity	IEC 60068-2-3: Damp heat: 90% RH (non-condensing at 40°C (104°F))
Mechanical	Non-operating: IEC 60068-2-6: Vibration: 0.3 mm, 20 m/s ² , 10-500 Hz IEC 60068-2-29: Bump: 1000 bumps at 250 m/s ² IEC 60068-2-27: Shock: 500 m/s ² , 6 directions
Enclosure	IEC 60529: Protection provided by enclosures: IP20

Specifications KE 0358

Standard 19" rack-mount with a height of 3U (units) = 13.2 cm
Type 2716 must be mounted at bottom of Flight Case
Space for transporting cables and accessories 2U (units) = 8.8 cm
Base contains an inlay for storing and transporting the Investigator Type 2260D and its accessories which comprise:

- Sound Level Calibrator Type 4231
- Six QB 0009 alkaline cells
- Two PC-cards

The lid is fitted with a lifting handle

DIMENSIONS

W × H × D: 53.5 × 17 × 46 cm (21.1 × 6.7 × 18.1")

WEIGHT

7.5 kg (16.5 lb.) empty

Ordering Information

Type 4296 OmniPower Sound Source with tripod

Type 4295 OmniSource Sound Source

OPTIONAL ACCESSORIES

Type 2716 Power Amplifier

KE 0358 Flight Case

KE 0392 Carrying Case for 4295

KE 0365 Carrying Case for 4296

KE 0364 Carrying Case for tripod of 4296

UA 1426 Wireless Transmission Kit

UA 0801 Tripod

AO 0523 10 m cable from 2260 to 2716

AO 0524 10 m cable 2260 to BNC

AQ 0622 10 m cable from 2716 to 4295, 4296 or equiv.

AQ 0621 Bridging Cable for 2716 output (not for Type 4295)

Type 2260 Sound Level Analyzer including BZ 7210

Type 2260D Sound Level Analyzer including BZ 7210, with Building

Acoustics Software BZ 7204

Type 2260G Sound Level Analyzer including BZ 7210, with Room Acoustics

Software BZ 7207

BZ 7204 Building Acoustics Software for Type 2260

BZ 7207 Room Acoustics Software for Type 2260

Type 7830 Qualifier PC Software for 2260D

Type 7831 Qualifier Light PC Software for Type 2260G

Type 7815 Noise Explorer – data viewing software

For further information, see separate Product Data for the Types mentioned above, and Technical Documentation for UA 1426

Type 3207 Tapping Machine

ACCESSORIES INCLUDED WITH TYPE 3207

ZG 0400: Mains adaptor (mains cable country dependent)

2 Gauges for drop height adjustment

Oil canister for maintenance

OPTIONAL ACCESSORIES FOR TYPE 3207

AQ 0633 10 m Remote Cable for 2260 to 3207

UA 1476 Wireless Remote Control for 3207 (includes AO 1439 Cable for 2260)

UA 1477 Battery Kit for 3207

QB 0055 Replacement battery for 3207

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HEADQUARTERS: DK-2850 Nærum · Denmark · Telephone: +45 4580 0500
Fax: +45 4580 1405 · bksv.com · e-mail: info@bksv.com

Australia (+61) 2 9889-8888 · Austria (+43) 1 865 74 00 · Brazil (+55) 11 5188-8166
Canada (+1) 514 695-8225 · China (+86) 10 680 29906 · Czech Republic (+420) 2 6702 1100
Finland (+358) 9-755 950 · France (+33) 1 69 90 71 00 · Germany (+49) 421 17 87 0
Hong Kong (+852) 2548 7486 · Hungary (+36) 1 215 83 05 · Ireland (+353) 1 803 7600
Italy (+39) 0257 68061 · Japan (+81) 3 3779 8671 · Republic of Korea (+82) 2 3473 0605
Netherlands (+31) 318 55 9290 · Norway (+47) 66 77 11 55 · Poland (+48) 22 816 75 56
Portugal (+351) 21 47 11 453 · Singapore (+65) 377 4512 · Slovak Republic (+421) 25 443 0701
Spain (+34) 91 659 0820 · Sweden (+46) 8 449 8600 · Switzerland (+41) 1 880 70 35
Taiwan (+886) 22 713 9303 · United Kingdom (+44) 14 38 739 000 · USA (+1) 800 332 2040

Local representatives and service organisations worldwide

Brüel & Kjær 