Type 4192 is designed for high-precision coupler measurements or ANSI noise measurements. Being externally polarized, Type 4192 must be used with a classical preamplifier.

USES
• Precision coupler measurement
• Premium class ANSI sound level meters
• General random incidence measurements

FEATURES
• Sensitivity: 12.5 mV/Pa
• Frequency: 3.15 Hz – 20 kHz
• Dynamic Range: 19 – 162 dB
• Temperature: –30 to +300°C (–22 to +572°F)
• Polarization: 200 V

Use of Pressure-field Microphones
Pressure-field microphones are optimised to have a flat frequency response in a pressure field. The microphones should be used for making measurements in small, closed couplers or close to hard, reflective surfaces.

Type 4192 is suited for situations where a robust and stable pressure-field microphone is required.

Manufacturing and Stability
A press-fitted, stainless-steel diaphragm ensures superior long-term stability and mechanical robustness – Type 4192 will withstand the 1 m drop test of IEC 60068–2–32.

All Brüel & Kjær Measuring Microphones are assembled in a clean room. This ensures that the microphones maintain their inherent low noise floor and high stability, even when used in environments with a combination of high humidity and high temperature.

Polarization Voltage
Type 4192 requires an external polarization voltage and must therefore must be used with a classical preamplifier. Externally polarized microphones may be used at higher temperatures without severe changes in sensitivity.

TEDS Microphones
Type 4192 is available in TEDS combinations with the classical Microphone Preamplifier Type 2669. The TEDS microphone is considered one unit and has been sealed in a clean environment. The TEDS is programmed with the loaded sensitivity of the actual cartridge and the data is therefore readily available. The default TEDS template is to IEEE P 1451.4 but TEDS to IEEE 1451.4 is available on request.

Individual Calibration Data
Each Type 4192 comes with an individual calibration chart with information about the open-circuit sensitivity and frequency response in a pressure field as well as the electrostatic actuator response.

An enclosed mini-CD contains the individual calibration data at 1/12-octave frequencies plus a wealth of technical information, such as the influence of different accessories, response in different sound fields and much more. Using the CD data and the REq-X feature of PULSE™, a real-time correction for different measurement situations, can increase measurement accuracy.
Specifications – ½” Pressure-field Microphone Type 4192 (valid from serial number 2496392)

IEC 61094-4 Type Designation: WS2P
Polarization Voltage: 200 V (external)
Open-circuit Sensitivity (250 Hz): 12.5 mV/Pa, –38 dB ±1.5 dB re 1 V/Pa
Pressure-field Response: 5 Hz to 7 kHz ±2 dB
Lower Limiting Frequency (–3 dB): 1 to 2 Hz
Pressure Equalization Vent: Side vented
Diaphragm Resonance Frequency: 23 kHz (90° phase shift)
Cartridge Capacitance (Polarized): 18 pF at 250 Hz
Equivalent Air Volume: 8.8 mm³ (250 Hz)
Pistonphone Correction (Type 4228 with DP-0776): 0.02 dB
Cartridge Thermal Noise: 19 dB(A), 21.3 dB(Lin)
Upper Limit of Dynamic Range (3% Distortion): >162 dB SPL

Max. Sound Pressure Level: 171 dB (peak)

ENVIRONMENTAL
Operating Temperature Range: –30 to +150°C (–22 to +302°F)
Useable up to 300°C with a permanent sensitivity change of approx. 0.4 dB, which stabilizes after one hour.
Storage Temperature: In Microphone Box: –30 to +70°C (–22 to +158°F)
With Mini-CD: 5 to 50°C (41 to 122°F)
Temperature Coefficient (250 Hz): –0.0045 dB/K (–10 to +50°C, 14 to 122°F)
Pressure Coefficient: –0.005 dB/kPa, typical
Operating Humidity Range: 0 to 100% RH (without condensation)
Influence of Humidity: <0.1 dB in the absence of condensation

Vibration Sensitivity (<1000 Hz): 65.5 dB equivalent SPL for 1 m/s² axial vibration
Magnetic Field Sensitivity: 16 dB SPL for 80 A/m, 50 Hz field
Estimated Long-term Stability: >1000 years/dB in dry air at 20°C (68°F)
>100 hours/dB in dry air at 150°C (302°F)

DIMENSIONS
Diameter with Grid: 13.2 mm (0.52”)
Diameter without Grid: 12.7 mm (0.50”)
Height with Grid: 13.5 mm (0.53”)
Height without Grid: 12.6 mm (0.50”)

Thread for Preamplifier Mounting: 11.7 mm–60 UNS

Note: All values are typical at 23°C (73.4°F), 101.3 kPa and 50% RH unless otherwise specified

Compliance with EMC Directive

Ordering Information

Type 4192 ½” Pressure-field Microphone
Includes the following accessories:
• BC-0227: Calibration Chart
• BC-5002: Microphone Data CD

TEDS COMBINATIONS
4192-B-001 ½” Pressure-field Microphone with Preamplifier Type 2669-B
4192-C-001 ½” Pressure-field Microphone with Preamplifier Type 2669-C
4192-L-001 ½” Pressure-field Microphone with Preamplifier Type 2669-L

OPTIONAL ACCESSORIES
Type 2669 ½” Microphone Preamplifier
Type 4231 Sound Calibrator
Type 4228 Pistonphone
Type 4226 Multifunction Acoustic Calibrator
DP-0776 Calibration Adaptor for ½” Microphones

Calibration Services
4192-CFI Accredited Calibration
4192-CFF Factory Standard Calibration

Brüel & Kjaer reserves the right to change specifications and accessories without notice

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