

# IEPE Outdoor Microphone

## Nor1218 for semi-permanent installations



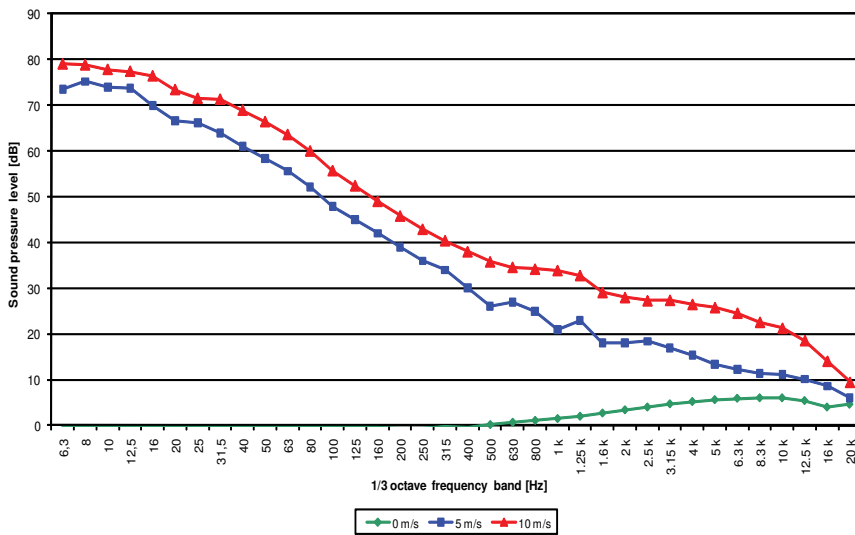
- Outdoor microphone for community and aircraft noise.
- Directly powered and supported by Nor131 or Nor139 (built in selectable frequency correction networks).
- Fulfils IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1.
- Protection class IP 55 (dust and water).
- Easy to calibrate with a normal ½" sound calibrator.
- Low self noise – typically below 18 dB, A-weighted.
- Low cost - uses microphone and preamplifier supplied with Nor131 or Nor139.



The Outdoor Microphone Nor1218 is a high quality measurement microphone for all-weather conditions, designed for semi-permanent application requiring low power. The Nor1218 uses the standard preamplifier and microphone from the Nor131/Nor139, making it a very cost effective solution.

The Nor1218 is designed for use with the Nor131 and Nor139 Sound Analyser. The instrument allows a direct connection via Nor4531 microphone cable supplied in various lengths. There is no need for extra adapter box or power supplies. The Nor131/Nor139 has selectable frequency correction for both community and airport applications.

The Nor1218 uses the microphone and preamplifier supplied with the sound level meter. Nor131 is supplied with the Nor1207 IEPE preamplifier and the pre-polarised microphone Nor1228, while the Nor139 is supplied with the same preamplifier, but normally with the pre-polarised microphone Nor1227.



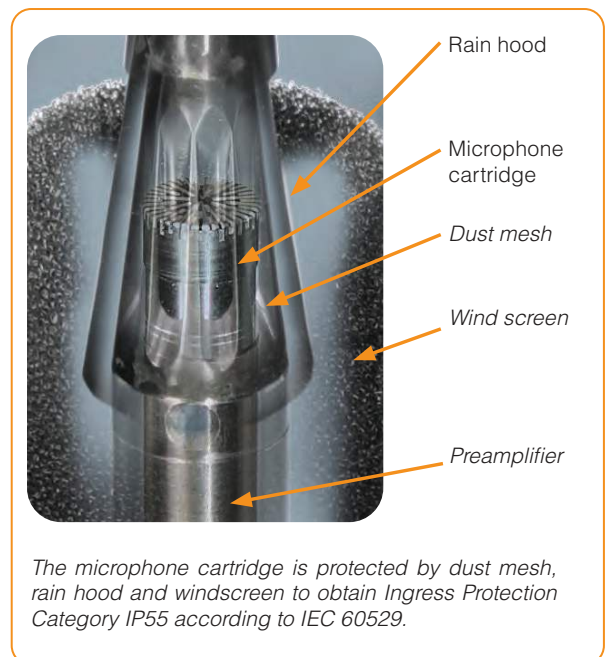
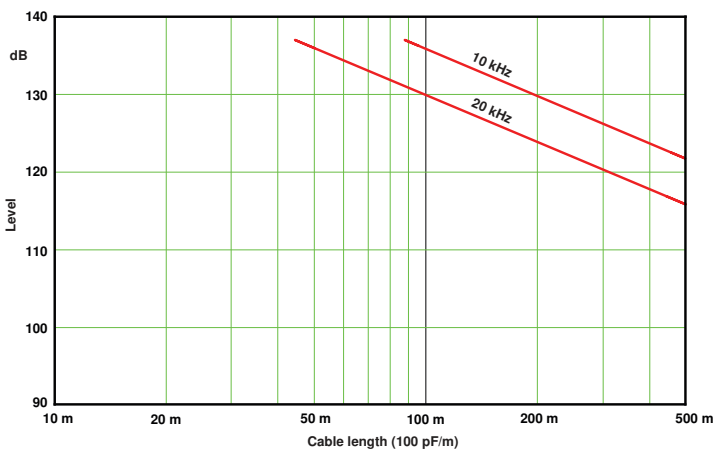
**Wind induced noise**

Compared to a standard measurement microphone, the Outdoor Microphone Nor1218 improves the measurement accuracy by reducing the wind noise and by improving the directional response for sound from different directions. The diagram shows the typical noise floor for different wind speeds. The noise is typically more than 20 dB less than an unprotected microphone.

A 200mm wind shield Nor4576 may be added to further reduce the wind induced noise, as required by some applications and standards. Frequency correction for the combination of the original wind-shield with the 200mm added is supported by the Nor131/139

The correction for this combination of windshields is supported for horizontal direction only.

The figure below shows the maximum level as function of cable length and frequency. 20 kHz corresponds to the bandwidth of the microphone system with the microphones Nor1227 and Nor1228.

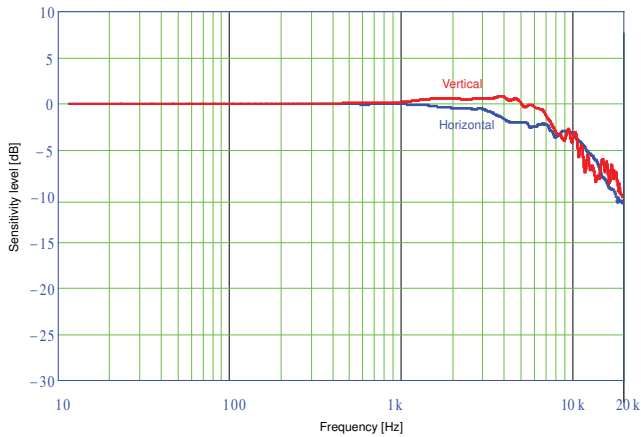


The microphone cartridge is protected by dust mesh, rain hood and windscreen to obtain Ingress Protection Category IP55 according to IEC 60529.



### Frequency response

The Nor1218 satisfies IEC 61672 Class 1 requirements and related national standards when used with Nor131 or Nor139. These instruments applies a frequency correction to the measured noise signal when the Nor1218 and the vertical or horizontal noise incidence criteria is selected in the instruments transducer selection menu.



### Calibration

The Outdoor Microphone may be calibrated with a normal sound calibrator suitable for 1/2" working standard microphones (WS2) without the need for extra accessories. Access to the microphone cartridge is easily gained by dismounting the upper part of the microphone.

The base is made of an electrical insulating material. The microphone body will be fully insulated from the mounting mast thereby reducing pick-up of electrical hum and noise.

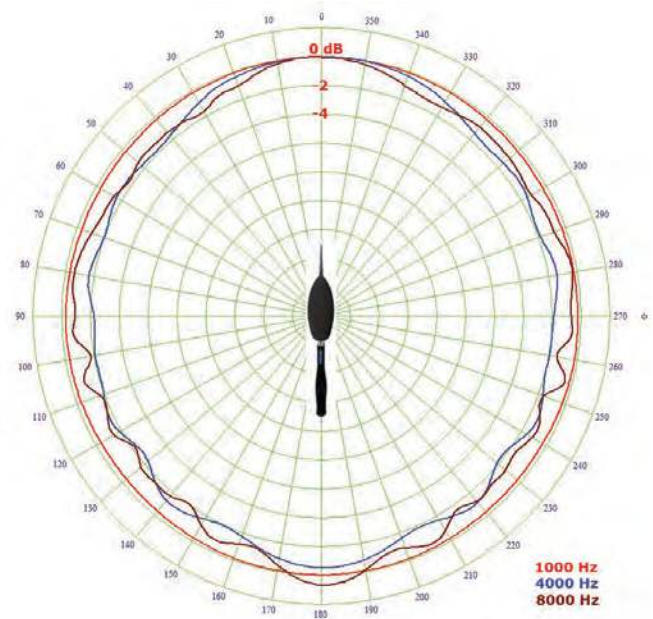
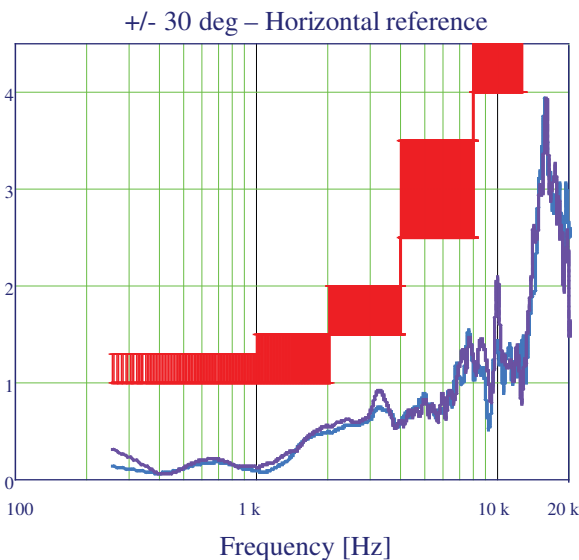
*By removing the upper part, the outdoor microphone may be calibrated as an ordinary 1/2" microphone.*



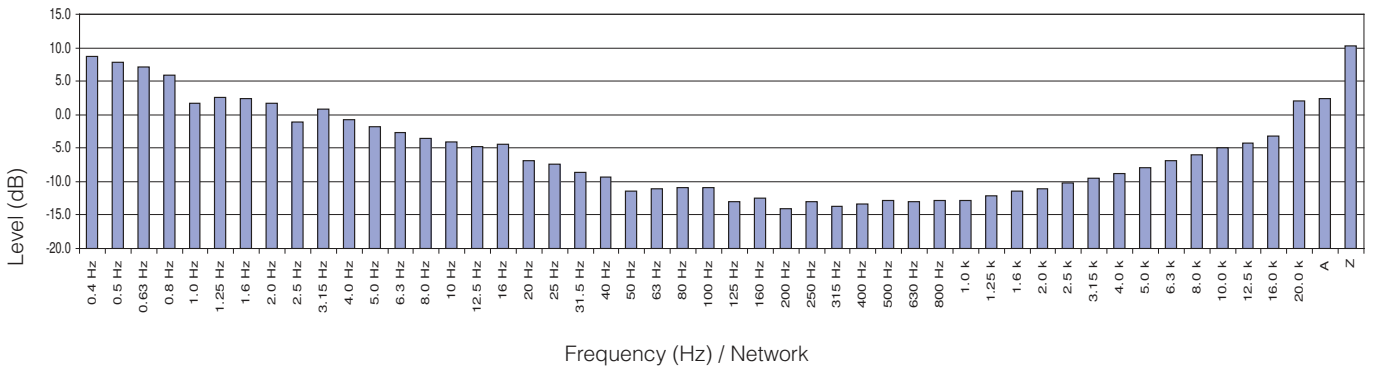
### Directional response

The figure below to the right shows the directional response for three frequencies in a vertical plane. A similar diagram in the horizontal plane is very close to circular.

The figure below to the left shows the maximum deviations from an ideal circular response within ±30 degree from a horizontal reference axis as a function of frequency (blue curves) and the tolerance limits as specified in IEC 61672, class 1 (red).



## SysCheck verification



Typical self-noise of the microphone system when the microphone is substituted by a capacitor with similar capacitance as the microphone. Note that the acoustical self-noise for a real microphone will be higher due to thermal noise in the microphone cartridge.

### Specifications

**Acoustic performance:** IEC 60651, IEC 61672 class 1 and ANSI S1.4 type 1 (frequency correction applied) with a suitable instrument (Nor131/Nor139).

**Max sound pressure level:** >140 dB peak dependent on supply voltage.

**Microphone cartridge:** Nor1227 or Nor1228 (1/2" 50 mV/Pa)

**Polarization voltage:** 0 volt

**Inherent noise:** < 18 dB A-weighted

**Reference direction:** Vertical or horizontal dependent on the applied frequency correction

**Ingress Protection Category:** IP55 according to IEC 60529.

**Supply voltage:** IEPE

**Power consumption:** 30 mW (dependent on supplied current)

**Connector:** TNC

**Temperature range:** -40°C to +85°C

**Height:** 375 mm / 14.8" (1" pipe mounting)  
450 mm / 17.7" with tripod adaptor

**Diameter:** Approx 80 mm / 3.1" (with windshield)

**Weight:** Approx 300 g (with preamp microphone)

**Mounting thread:** Standard 1" pipe threads according to ISO 228. When using the tripod adaptor: 3/8" UNC.

### Accessories and spare parts

**Windshield upper part:** Nor4529

**Assembled upper part with windscreen:** Nor4560

**Microphone:** Nor1227 or Nor1228

**Microphone preamplifier:** Nor1207

**Sound calibrator:** Nor1251, Nor1253, Nor1255 or Nor1256.

**Microphone cable:** Nor4531 Standard lengths 5, 10, 15, 30 and 50 meters – other lengths on request.

**Extra wind protection:** 200 mm windshield Nor4576.

### Ordering information

**Nor1218** – Outdoor microphone excluding preamplifier and microphone.