



Noise Sources

# Reference sound source Nor278

Noise Sources

# Reference Sound Source Nor278

**Comparison method for determination of sound power of noise sources according to ISO 3741, ISO 3743-1, ISO 3747 and other methods requiring ISO 6926 compliant reference sound sources.**

The reference sound source Nor278 is designed to produce a stable and uniform sound power output with unique long-term stability. The high sound power output makes it ideal for sound power measurements in a noisy environment. The rugged, but yet portable and light weight construction is perfect for field use as well as laboratory use.

Every effort is made in the design to ensure a uniform frequency response and optimum directional characteristic well inside the requirements in ISO 6926:2016.

## Accredited Calibration

Each unit is carefully assembled and individual tested. To enhance the level of quality and traceability of your measurements, every unit is accredited calibrated by the Norsonic Calibration Laboratory (NCL) in accordance to ISO 6929:2016. This service is also offered for periodic re-calibration.

NCL is a calibration laboratory accredited according to ISO/IEC 17025, carrying out calibration of acoustical equipment for measuring noise (sound level meters, microphones, dosimeters and acoustical calibrators), accelerometers, tapping machines and reference sound sources. The accreditation is recognized internationally through European and global multilateral agreements in more than 40 countries around the world made through the international Laboratory Accreditation Cooperation – ILAC. Thus the Norwegian Accrediting body has established that Norsonic calibrations are internationally accepted as being carried out in an accredited laboratory.



## Key Features

**A weighted Sound power output: 94 dB re 1 pW (50 Hz line frequency)**

**Sound power 50 Hz – 20 kHz: 94 dB re 1 pW (50 Hz line frequency)**

**Fulfills ISO 6926:2016 (ANSI/ASA S12.5-2016) for reference sound sources in the extended frequency range 50 Hz – 20 kHz**

**Long-term stability**

**Delivered with accredited calibration certificate**

**Weight: 18 kg (50 Hz) / 24.5 kg (60 Hz)**

## 50 Hz Extended frequency range (EFR)

Freq. [Hz]	Third Octave bands	Octave bands	Dir. [dB]
50	72 dB	78 dB	2.3 dB
63	72 dB		2.1 dB
80	74 dB		2.1 dB
100	76 dB	81 dB	2,2 dB
125	77 dB		2.5 dB
160	76 dB		2.4 dB
200	75 dB	81 dB	2.5 dB
250	76 dB		2.3 dB
315	77 dB		2.5 dB
400	78 dB	83 dB	2.4 dB
500	78 dB		2.6 dB
630	78 dB		3.2 dB
800	79 dB	84 dB	3.5 dB
1 k	79 dB		2.9 dB
1.25 k	80 dB		2.9 dB
1.6 k	81 dB	88 dB	3.1 dB
2 k	83 dB		2.2 dB
2.5 k	85 dB		2.3 dB
3.15 k	85 dB	89 dB	2.9 dB
4 k	84 dB		3.1 dB
5 k	83 dB		1.4 dB
6.3 k	82 dB	85 dB	2.6 dB
8 k	80 dB		1.5 dB
10 k	78 dB		1.3 dB
12.5 k	76 dB	79 dB	1.3 dB
16 k	74 dB		2.0 dB
20 k	70 dB		1.0 dB
A-weighted	94 dB		–
Lin	94 dB		–

Dir. = Directivity index, i.e. the difference between the maximum SPL in one particular direction and the SPL averaged in all direction of a hemisphere.

## 60 Hz Standard frequency range (SFR)

Freq. [Hz]	Average Lw 1/3	Average Lw 1/1	STD 1/3	STD 1/1
20	67.2		2.4 dB	
25	67.4		1,0	
31.5	70.3		1.1	
40	71.4		0,9	
50	73.2		0.7	
63	77.0	81,1	1.4	1.0
80	77.6		1.0	
100	78.9		0.8	
125	79.9	84.8	0.8	0.6
160	80.9		0.5	
200	81.0		0.5	
250	81.0	86.0	0.8	0.6
315	81.8		0.6	
400	82.1		0.7	
500	81.8	86.8	0.5	0.5
630	82.3		0.5	
800	83.3		0.5	
1000	83.4	88.3	0.4	0.4
1250	83.8		0.4	
1600	84.2		0.4	
2000	85.4	90.5	0.4	0.5
2500	87.2		0.8	
3150	87.8		0.9	
4000	87.2	92.0	0.8	0.9
5000	86.6		1.1	
6300	86.0		0.9	
8000	84.0	89.0	0.8	0.8
10000	81.8		0.7	
12500	79.6		0.6	
16000	78.0	82.9	0.7	0.7
20000	76.1		0.7	
Lin	97.3		0,6	
A-weighted	97.1		0.6	

Note: Single number quantities (linear and A-weighted) are calculated from values in the range 100 Hz to 10 kHz.

## Technical Specifications

<b>Device type</b>	Nor278: Reference sound source according to ISO 6926:2016 for extended frequency range 50 Hz- 20 kHz  Nor278/US: Reference sound source according to ISO 6926:2016 for standard frequency range 100 Hz- 10 kHz
<b>Power supply</b>	220-240 Volt/50 Hz / 110-120 Volt/60 Hz
<b>Power consumption</b>	<750 W (typical 650 watt) (50 Hz) / <900 W (typical 800 watt) (60 Hz)
<b>Fuses</b>	10A – slow blow (220 V) / 20A - slow blow (110 V)
<b>Sound power output each 1/3-octave frequency band:</b>	>75 dB re 1 pW (50 Hz) / >77 dB re 1 pW (60 Hz) in each 1/3-octave bands in the range 100 Hz to 10 kHz.
<b>A-weighted sound power output</b>	94 dB (typically) (50 Hz) / 97 dB (60 Hz)
<b>Supplied power</b>	5 volt on pin 9 for supply of external modules, max 50 mA.
<b>Temperature</b>	-25° to 50°C. Above 35°C intermittent use only.
<b>Humidity</b>	Up to 90 %, non-condensing
<b>Dimensions</b>	WxHxD feet retracted: 165x230x495 mm (6,5x9,1x19,5") WxHxD feet extended: 265x230x495 mm (10,4x9,1x19,5") +50 mm (H) including handle (2")
<b>Weight / Dimensions</b>	18 kg (50 Hz) / 24,5 kg (60 Hz) Height exclusive handle: 396 mm Height inclusive handle: 464 mm Diameter: 283 mm
<b>Compliance</b>	ISO 6926:2016, ANSI/ASA S12.5-2016 CE-mark indicates compliance with: Machinery Directive, EMC Directive and Low Voltage Directive.