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SOUNDCHECK  
magazin

# SOUNDCHECK

Das Bandmagazin

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## EINE FÜR ALLE

Electro-Voice ND-Serie: Mikrofone für die ganze Band



Paul Gilbert  
Hooklines statt  
Shred-Licks

Stimmveredelung

Gesangseffekte kreativ  
einsetzen

**SPECIAL**

Maximum Check

Optimal abhören: Boxen und  
Kopfhörer im Studiobetrieb

TEST STAGE

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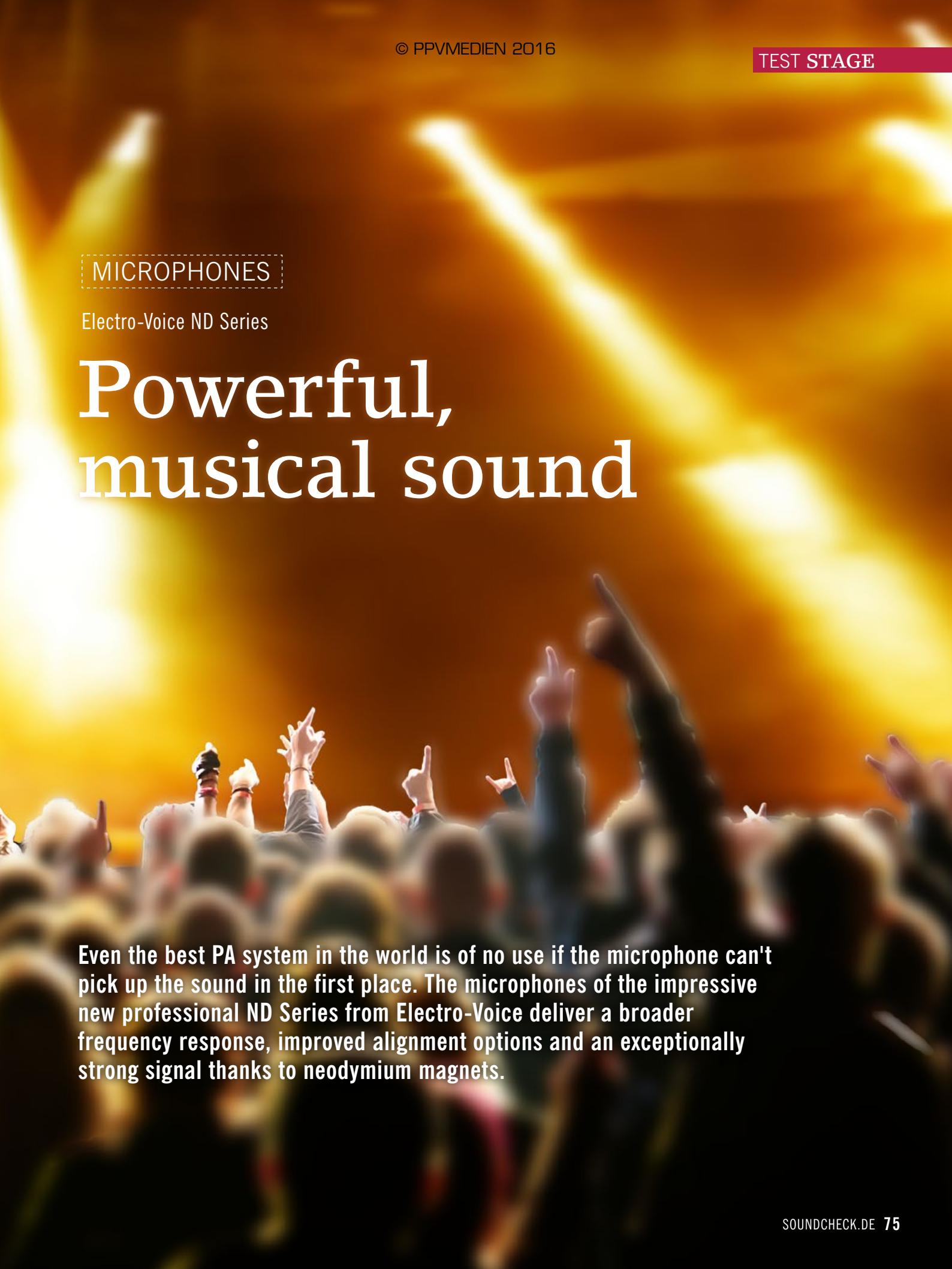


FOTO: SHUTTERSTOCK/BOSCH/EVI AUDIO

## MICROPHONES

Electro-Voice ND Series

# Powerful, musical sound



Even the best PA system in the world is of no use if the microphone can't pick up the sound in the first place. The microphones of the impressive new professional ND Series from Electro-Voice deliver a broader frequency response, improved alignment options and an exceptionally strong signal thanks to neodymium magnets.

**E**lectro-Voice was founded in 1927, and the company's first product was a microphone. Since then, Electro-Voice has become a trusted provider of microphone solutions that deliver superior sound for both live performance and studio applications. Electro-Voice was the first company to use neodymium magnets in its microphones, and the N/DYM Series microphones introduced in 1984 had a stronger-than-average output. Having spent 32 years applying its proven neodymium technology, Electro-Voice is launching the new ND Series as the successor to its N/DYM Series microphones in 2016. We've taken a detailed look at the new developments and features of the ND Series microphones to see exactly what benefits they have to offer for practical use.

### The new ND Series – four vocal and four instrument microphones

All microphones in the new ND Series are supplied in cardboard packaging, which contains tissue paper padding as well as a microphone clip for stand mounting. The microphone itself is also protected by a robust padded bag, which has a long zipper that makes it easy to open. Equally striking are the elegant matt black/silver design of the ND Series and the superb quality finish that you expect from Electro-Voice. The microphone body is made from robust die-cast zinc and has a matt black polyurethane paint finish. At the heart of the ND Series dynamic microphones is a new neodymium large-diaphragm capsule design, which takes the technology of the original N/DYM Series capsule to new levels of acoustic performance. The capsule is protected by a durable, tight-mesh Memraflex grille, which ensures that the microphone can withstand rough treatment on stage without any visible damage. We have compiled a detailed analysis of the microphones and their individual features below.

**Hitting the right note:** The ND microphones deliver accurate voice reproduction.

### TECHNICAL SPECIFICATIONS

#### › Vocal microphones

##### ND76 – THE HIGH-END VOCAL MICROPHONE

› <b>Form factor</b>	Dynamic microphone
› <b>Design</b>	Cardioid
› <b>Frequency response</b>	70 – 17,000 Hz (30 – 17,000 Hz for close miking)
› <b>Impedance</b>	350 Ω
› <b>Connection</b>	XLR male connector
› <b>Weight</b>	11.4 oz (323 g)

##### ND76S – THE VOCAL MICROPHONE FOR SWITCH FANS

› <b>Switch</b>	On/off
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##### ND86 – FOR LARGE VENUES AND STAGES

› <b>Design</b>	Supercardioid
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##### ND96 – THE REALLY LOUD VOCAL MICROPHONE

› <b>Switch</b>	Presence (reduction of low midrange)
› <b>Frequency response</b>	140 – 15,000 Hz (30 – 15,000 Hz for close miking)
› <b>Special feature</b>	Squared-off grille for better proximity effect



All four vocal microphones are dynamic and do not require an additional power supply. The vocal microphones of the new Electro-Voice ND Series can also be identified by their model number. If the number is greater than 70, this means that it is a vocal microphone. Instrument microphones have lower model numbers. The first vocal microphone of the new ND Series is the ND76 – an excellent, professional all-around vocal microphone with a clear and balanced sound, recommended for both male and female singing voices. For close miking, the frequency response extends downward to an audible 30 Hz, whereby voice intelligibility remains good thanks to the slightly accentuated high-frequency range. The midrange, to which the human ear is more sensitive, is slightly attenuated, thereby ensuring that the microphone delivers a superb overall sound.

## Live strengths

The new neodymium large Mylar diaphragm has outstanding acoustic properties. The large diaphragm surface delivers good sound across the entire frequency range, while the lightweight Mylar material ensures a rapid diaphragm response and therefore an excellent transient response. Use of a secondary voice coil ensures a humbucking effect, which means that the microphone is not affected by electromagnetic interference when used near AC lines or speakers. The proven neodymium magnet technology also delivers an exception-

*The ND44 performs extremely well with drums and other percussion instruments.*



nally strong, high-quality output signal, which reaches the mixing desk without any noticeable loss of sound, even with long cables. The powerful signal means that the preamplifier doesn't have to be turned up so high, which in turn leads to reduced ambient noise, lower feedback sensitivity and cleaner mixes.

**» The large diaphragm surface delivers good sound across the entire frequency range.«**

The capsule in the ND76 is located in the microphone housing in a new four-point suspension with a pneumatic pump at the capsule base, which is extremely effective at suppressing ambient noise caused by mechanical vibration or handling noise at the microphone shaft. The capsule is protected by an extremely durable, tight-mesh Memraflex grille, which protects the capsule against debris and moisture on the inside thanks to an additional foam layer. An additional hydrophobic cloth membrane over the capsule provides added protection against moisture, thus ensuring a long capsule life without any loss of sound. The cardioid design isolates the sound of other voices or instruments coming from the side or rear. In short, the ND76 is ideal for use on stage thanks to its robust design and delivers a clean, powerful signal for a sound that is lively, crisp and balanced.

## Switch philosophy

Whether or not a vocal microphone should have an on/off switch is a philosophical question to which there will never be a conclusive answer. Many reject the idea of a switch on the basis that it is another potential source of problems and a potential

## TECHNICAL SPECIFICATIONS

### › Instrument microphones

#### ND44 – THE DRUM MICROPHONE

› <b>Form factor</b>	Dynamic microphone
› <b>Design</b>	Tight cardioid
› <b>Frequency response</b>	80–16.500 Hz
› <b>Max. sound pressure</b>	140 db SPL
› <b>Impedance</b>	350 Ω
› <b>Connection</b>	XLR male connector
› <b>Weight</b>	6.85 oz (194 g)
› <b>Special feature</b>	90° rotating microphone head, supplied with drum rim clamp

cause of unwanted signal interruptions, while others rely on a switch in order to be able to mute the microphone in certain situations. For the latter, Electro-Voice has developed the ND76S, which has the same basic design as the ND76, but features a sliding switch on the microphone shaft under the EV logo for switching the microphone signal on and off. The switching action is very discreet, with no audible noise.

### ND86 – effective even in large venues

The ND86 high-performance microphone is designed to perform exceptionally well anywhere, while strategic characteristics overcome the sonic challenges encountered in large concert venues. The supercardioid design focuses the voice coming from the front even better than the ND76 and delivers optimum isolation from other audio signals on the stage. In other respects the ND86 has the same innovative features as the ND76. The ND86 also has an extended frequency range down to 30 Hz in the low frequency range for close miking and thanks to an increased high frequency range also delivers very good voice intelligibility and a superb overall sound. This high-end microphone also uses the new neodymium magnet capsule, which you notice in the



Presentation of the ND Series at this year's NAMM.

### TECHNICAL SPECIFICATIONS

#### › Instrument microphones

##### ND46 – THE INSTRUMENT MICROPHONE

› Form factor	Dynamic microphone
› Design	Supercardioid
› Frequency response	70–18.000 Hz
› Max. sound pressure	140 db SPL
› Impedance	350 Ω
› Connection	XLR male connector
› Weight	10.9 oz (309 g)
› Special feature	180° rotating, lockable microphone head

**Flexibility included:** The ND46 is suitable for use with a range of instruments.



extremely powerful and clear signal at the mixing desk. Also noteworthy is the high gain-before-feedback of the ND86, which is a side effect of the supercardioid design. Overall, the microphone delivers an impressively full sound with crisp, comfortable high frequencies and is effective in any mix thanks to its outstanding acoustic properties.

### At close range

The ND96 has a distinctive squared-off Memraflex grille, which allows the singer to get even closer to the diaphragm. As the design suggests, this microphone is ideal for singers who often perform on very loud stages and therefore deliberately and frequently use the proximity effect to give their voice greater impact and volume in the low frequency range. The overall design of the ND96 is aimed at exceptionally high gain-before-feedback at extreme volumes. In the rock and metal genres, for example, guitars tend to dominate the low midrange. Only the ND96 has an extra switchable frequency filter, which lowers this range slightly for the voice so that the vocals also sound more present in the upper midrange. This switch can also be used to



*Mounting option for stands  
are included.*



select linear frequency adjustment when this feature is no longer required or wanted. The switch is recessed in the microphone to ensure that the frequency is not switched accidentally. The features referred to above, together with the outstanding acoustic properties of the new neodymium magnet capsule and the other developments of the new ND Series already described for the ND76, make the ND86 a microphone that allows the singer to be heard, even when there are really loud guitars playing.

**» The ND86 also has an extended frequency range up to 30 Hz.«**

### **Every wish fulfilled**

Electro-Voice also uses its optimized neodymium magnet capsule in the three dynamic instrument microphones, each of which has been designed for a specific application. The first of these we looked at was the ND44.

The ND44 is a robust, dynamic high-performance instrument microphone, which is ideal for picking up sound from drums. The ND44 is supplied with the new DRC-2 microphone clamp, which is suitable for most standard tom and snare metal rims. The clamp provides a secure grip for instrument microphones ND44, ND46 and ND66, eliminating the need for a bulky stand



The ND Series offers microphones for every live scenario.

for picking up the sound from the drum shell. The good news is that the new DRC-2 clamp also works with the N/D468, N/D308 and N/D408 microphones from the predecessor series as well as all other microphones with a shaft diameter of 0.8 inches. The design of the DRC-2 plastic clamps allows it to be handled using just one finger and the connection is strong enough to suspend the entire tom from the clamp. Although the ND44 itself already has a pivoting microphone head, another joint has been integrated into the clamp for pivoting the entire microphone. This makes it possible to achieve optimum placement of the microphone with the signal source and therefore the desired drum sound.

The ND44 instrument microphone is a dynamic microphone with a microphone head rotated by 90°, which houses the new neodymium magnet capsule from Electro-Voice. The small head dimensions, with a diameter of less than 49 mm, make it very difficult to hit the microphone with the drum stick. Although the microphone is supplied with a DRC-2 clamp for drums, the wide frequency response of 80 – 16,500 Hz, the high sound pressure level of 140 dB SPL and the outstanding acoustic properties of the neodymium capsule make it suitable for picking up sound from other dynamic instruments, such as guitar amplifiers. The tight cardioid design of the ND44 ensures excellent channel separation and insensitivity to ambient sound, which makes the job at the mixing desk much easier. Despite the fact that the ND44 is not typically used for singing, it offers the same design benefits as the other dynamic microphones in the ND Series, such as the extremely lightweight Mylar diaphragm, the humbucking effect and the resulting insensitivity to electromagnetic interference, the extremely durable Memraflex grille and protection of the capsule with an extra hydrophobic cloth layer.

While the ND44 was developed primarily for use with drum kits, the ND46 was designed as an instrument microphone for universal use. As our tests show, however, it also makes a very good snare drum microphone. The slightly larger dimensions of the ND46 mean that it has an extended frequency range of 70 – 18,000 Hz. With this microphone, the head rotates a full 180° and clicks into the desired position to prevent it from being knocked out of place accidentally. The balanced acoustic properties, the supercardioid design and all of the other benefits of the dynamic microphones of the new ND Series already mentioned make the ND46 the ideal solution for a wide variety of instruments.

## The universal solution

The ND68 is a condenser microphone with a cardioid polar pattern and a frequency response of 50 – 20,000 Hz. It has a rotating, lockable microphone head and a squared-off grille for better proximity effect. The ND96 is a dynamic microphone with a cardioid polar pattern and a frequency response of 80 – 16,500 Hz. It has a rotating, lockable microphone head and a squared-off grille for better proximity effect. Both microphones are supplied with a DRC-2 clamp for drums, a shock mount, a windscreen, and a carrying case.

## TECHNICAL SPECIFICATIONS

› Overhead-Mikrofone	
<b>ND66 – THE OVERHEAD MICROPHONE</b>	
› Form factor	Condenser microphone
› Power	48 V phantom supply
› Design	Cardioid
› Frequency response	50–20.000 Hz
› Max. sound pressure	146 db SPL
› Impedance	200 Ω
› Connection	XLR male connector
› Weight	6.3 oz (179 g)
› Special feature	90° rotating, lockable microphone head, squared-off grille for better proximity effect



## TECHNICAL SPECIFICATIONS

### › Bass Drum Microphones

#### ND68 – THE BASS DRUM MICROPHONE

› <b>Form factor</b>	Dynamic microphone
› <b>Design</b>	Supercardioid
› <b>Frequency response</b>	20–11.000 Hz
› <b>Max. sound pressure</b>	140 db SPL
› <b>Impedance</b>	150 Ω
› <b>Connection</b>	XLR male connector
› <b>Weight</b>	13.2 oz (374 g)

*The ND68 has an extended frequency range of 20–11.000 Hz.*

### Bass drum mic



The ND68 is specially designed for picking up sound from bass drums and delivers a deep low end. Because the microphone is placed close to the batter head for picking up the bass drum sound, Electro-Voice has not given the ND68 a pivoting head. The frequency range of this dynamic microphone has been extended downward to a range of 20 – 11,000 Hz and in our test it delivered a powerful bass drum signal with deep lows and lively, detailed top-end punctuation.

The supercardioid design gives the microphone high gain-before-feedback and the high sound pressure level of 144 dB SPL won't push drummers to their limits. In short, when combined with the other benefits of the new ND Series from Electro-Voice, the ND68 offers the ideal solution for picking up the bass drum sound in any genre, whether it's metal or jazz.

### The ND66 – the exception

On account of its design, the ND66 is the only microphone in the ND Series not to benefit from the new neodymium magnet capsule. With its sound, look, and 90° rotating head, however, it fits in well with the other microphones in the new Electro-

Voice series. Instead of the dynamic capsule, the head contains a premium small-diaphragm condenser element, which gives the ND66 an excellent frequency range of 50 – 20,000 Hz. Like all condenser microphones, the ND66 also requires a 48 V phantom power supply. The cardioid design and the ability to

» *The ND68 bass drum mic delivers a deep low end.«*

withstand sound pressure of 146 dB SPL without incurring overload make it suitable for virtually unlimited use as an instrument microphone. The ability to reduce gain by -10 dB and -20 dB using a switch and the selectable 75 Hz and 150 Hz high-pass filters, which eliminate lower frequencies, make this the ideal overhead microphone for picking up sound from drum kits or other very loud, high-frequency signal sources.

### A worthy successor

The microphones of the predecessor N/DYM Series earned their place on the stages of the world thanks to their outstanding acoustic properties. With the new ND Series, Electro-Voice has managed to make the microphones even better. The excellent value for money offered by the new ND Series will no doubt attract a large fan base and make it part of the standard kit offered by most professional rental companies.

Michael Hennig

## TECHNICAL SPECIFICATIONS

### › ELECTRO-VOICE ND SERIES

› <b>Sales</b>	Bosch EVI Audio, <a href="http://www.electrovoice.com">www.electrovoice.com</a>			
› <b>Price (RRP)</b>	ND44	154 EUR	ND46	189 EUR
	ND66	237 EUR	ND68	237 EUR
	ND76	154 EUR	ND76S	165 EUR
	ND86	189 EUR	ND96	237 EUR

### › Evaluation

- Natural, round tones
- High signal strength
- Low sensitivity
- Elegant design
- High-quality finish
- Excellent alignment options
- Good channel separation