HK AUDIO

Selfpowered Cabinets

PR:O 8 A • PR:O 10 XA • PR:O 12 A • PR:O 12 MA
PR:O 15 A • PR:O 15 XA • PR:O 18 Sub A • PR:O 210 Sub A

Manual 1.6

- English
- Deutsch
- Français
- Italiano
- Español

PREMIUM PR:O

PREMIUM PR:O

Welcome to the HK Audio family!

Thank you for choosing (yet another) HK Audio product!

PREMIUM PR:O active enclosures are end-to-end sound reinforcement solutions comprising loud-speakers, power amps, and integrated circuitry precision-tuned to control these components. These satellites, bass bins, and monitors may be combined with one another. Deployed as standalone enclosures, they readily integrate into other sound reinforcement systems. Feel free to connect passive loudspeakers – ideally, a passive PREMIUM PR:O Series enclosure - to the parallel circuits of all active models except the PR:O 18 Sub A and the PR:O 210 Sub A to extend your system without having to add another power amp to your rig. What's more, our engineers developed new technologies specifically to maximize the performance of PREMIUM PR:O active cabinets.

Warranty

Register your PREMIUM PR:O using the enclosed warranty card to extend your warranty to five years free of charge!
Important note: Be sure to register each PREMIUM PR:O powered enclosure individually.
To this end, use the convenient online registration option at www.hkaudio.com.

If you are unable to register online, please complete the enclosed warranty card completely and mail or fax it to us. Registration is only valid if the warranty card is filled out and returned to HK AUDIO or the device is registered via Internet within the registration period. We are also interested in learning where and by whom our devices are used. This information will help us design future products. Your data are of course protected by privacy laws.

Thank you!

HK AUDIO
Technical Service
Postfach 1509
66959 St. Wendel, Germany

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Digital Amping – Enhanced efficiency and dynamics
With an efficiency rating topping the 90% mark, digital power amps are smaller, lighter, and more compact than conventional amps. The reduced thermal load on components clearly enhances reliability. The slew rate is far faster and the attenuation factor is higher, resulting in perceptibly more responsive and accurate performance.

RMS/Peak-Limiter
A smart combination RMS / Peak Limiter achieves balanced dynamic response at high loads while protecting components against overload. (The PR:O 18 Sub A and the PR:O 210 Sub A come without an RMS Limiter.)

Subsonic-Filter – Protection against low-frequency rumble
The integrated subsonic filter eliminates accidental and unintentional signals such footfalls, wind, or the sound of a hand inadvertently brushing a microphone. It cuts these frequencies drastically, freeing energy to better render bass impulses. The result: delightfully dynamic and natural-sounding low-end response.

DuoTilt 3/7™ – Making the most of sonic energy
The specially developed DuoTilt™ pole mount allows sound energy to be utilized far more efficiently. DuoTilt™ offers 3° and 7° angles of tilt, enabling perfect satellite-to-audience alignment. Troublesome ceiling reflections are minimized, yielding a clearer, punchier, and tighter sonic image. MonoTilt™ (PR:O 8 A) offers one angle of tilt.

1 PR:O 8 A, PR:O 10 XA, PR:O 12 A, PR:O 12 MA, PR:O 15 A, PR:O 15 XA

1.1 Control Features

1 Gain

This knob adjusts the input level.

2 Tone (not available on the PR:O 12 MA)

The Tone knob lets you optimize your active speaker cabinet for music or speech applications. It uses a special filtering setup that adapts frequency response to suit the given requirements. Room acoustics vary as does the cabinet's position, so we recommend you find the optimum position by piping in a full-fledged music signal, using a microphone, and twisting the knob. Turning it towards „Speech" boosts vocal signals, and turning it towards „Music" conjures a bigger, bolder sonic image with more low end and less midrange frequencies.

The Tone knob lets you tune the speaker cabinet to suit music or public address applications. Its special filtering circuit adapts its frequency response to the given requirements.

Note: Twisting the Tone knob counterclockwise towards Music gradually attenuates a broad midrange frequency band with a center frequency of 1500 Hz (2500 Hz -PR:O 10 XA, 2600 Hz - PR:O 8 A). The maximum cut is 2 dB, achieved by setting the knob to the far left position. At the same time, this adjustment boosts bass frequencies in the range of 80 to 100 Hz in equal measure by up to 2 dB. Twisting the Tone knob counterclockwise towards Speech achieves the opposite effect, boosting the midrange frequency band and cutting bass frequencies accordingly by up to 2 dB.

A special corrective circuit compensates for this EQ effect so that the perceived volume level remains the same despite the change in tone. Setting the knob to the center position defeats the filter.

3 Mic/Line Switch (not on the PR:O 12 MA)

When patching in a microphone, adjust the input gain by setting the Line/Mic button to Mic. This provides a 30-dB gain boost, thereby optimizing the input for microphone signals.

4 Input

This electronically balanced XLR/ 1/4" combi input accepts mixer signals (pin 1= ground, 2= +, 3= -).

5 Through

This parallel output patches the incoming line signal through, for example, to other PREMIUM PR:O active speakers or monitors.

6 Limiter Status LED

This dichromic LED indicates the signal level and limiter status. Green means the signal level is okay; red means the limiter has engaged and is responding to high-volume signal peaks. **CAUTION! This is not a clip LED. It's okay if it lights up red briefly every now and then; this merely indicates the RMS Limiter is operating. If the signal LED remains constantly in the red at signal peaks, check the source signal's input level and back off the speaker's Gain knob. A status LED that lights up red continuously indicates there is a fault in the speaker system.**

7 Power Switch

This is the PREMIUM PR:O powered cabinet's on/off button. The signal LED lights up green to indicate the cab is powered up.
Note: The Power button is embedded to prevent unintentional actuation. When set to POWER ON, the button sits almost flush with the connector panel. This ensures it is not engaged accidentally, yet remains readily accessible.

8 Mains Input

Use the factory-included mains cord to connect this socket to a wall outlet.
Note: All PREMIUM PR:O active speakers are equipped with V-Lock mains sockets. If you use a VOLEX locking mains cord or another optionally available brand with the same design, you can fix the mains cord in place to prevent accidental disconnection.

9 Parallel Speaker Out

Use this Speakon NL4 output to connect another passive PREMIUM PR:O enclosure or another manufacturer's passive cabinet.
Be sure to watch the impedance rating, connecting no more than one enclosure with an impedance no lower than 8 ohms. The power amp delivers up to 300 watts to this output.

1.2 Setting Up and Connecting Cabinets

Connect cords routed from your mixer (monitor out, line out, or a similar output) to the balanced Input sockets using a cord equipped with standard XLR microphone connectors. Make sure the XLR connectors' terminals are configured as follows:
1= ground, 2= +, 3= -.
If you wish to connect a microphone directly to the PREMIUM PR:O active cabinet without going into a mixer first, plug it into the balanced Input socket and set its input sensitivity to Mic. Use a standard XLR microphone cord to do this. Make sure the XLR connectors' terminals are configured as follows:
1= ground, 2= +, 3= -.

1.3 Operating Speakers

• First make sure the powered cabinet is off.
CAUTION! Make sure the local mains voltage matches the PREMIUM PR:O active cabinet's specified voltage. If you connect the PREMIUM PR:O cab to the wrong mains voltage, you may destroy its electronic components.

• Back the Gain and Line/Mic knobs all the way off, turning them counterclockwise as far as they will go.
When connecting line signals, be sure to first switch on all other connected components first; that is, the connected mixer and signal sources patched into it, such as keyboards, instrument amps, effects and so forth.

Confirm that the PREMIUM PR:O powered enclosure's Mic/Line control is set to the correct mode, the standard mode being Line.

Again, always switch on the PREMIUM PR:O active cabinet last, that is, after you switch on all connected devices. After you power the system up by engaging the Power switch, a system check prompts the fan to briefly kick on and back off again in about five seconds. The fan is temperature-controlled, actuating only at very high volumes and temperatures requiring cooling.

After you power up the cab by engaging the Power switch, the Power LED lights up green when the cabinet receives mains power. Set the Gain Line In knob to the center or 12 o'clock position (= 0 dBV). This is the preferred level if you have connected a mixer to the PREMIUM PR:O active cabinet. If you are patching a CD player or keyboard straight into the cab, turn the Gain Line In knob clockwise all the way to the far right to achieve maximum volume. If the input signal is still too weak, boost the level at the signal source, for instance, by adjusting an MP3 player's volume knob.

If necessary, you can turn the PREMIUM PR:O powered enclosure's Gain knob counterclockwise to the far left position and then press the Mic/Line button. This boosts the input signal by 30 dB. Then adjust the input gain by slowly turning the Gain knob to the right until you attain the desired volume. For the best audio results, ensure the Limiter LED (red) does not light up continuously.

1.4 Settings

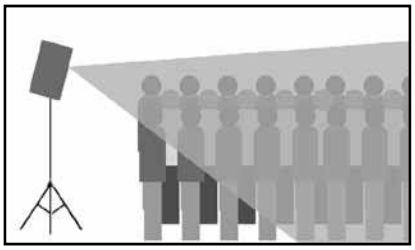
Adjusting volume with the Gain knob
Twist this knob and engage the Mic/Line switch line to adjust microphone and line signal levels.

If you hear distortion or saturated signals, first check the signal sources and, if possible, reduce the output signal level there. If you cannot adjust the level of the signal routed to the PREMIUM PR:O active cabinet at the source, match it to the power amps by backing off the Gain Line In knob.
CAUTION: Never tape over the plug's ground terminal - this endangers lives!

Tone (not available on the PR:O 12 MA)
Starting at the center or 12 o'clock position, you can EQ the sonic image by turning the knob to the right or left. Set it to „Music" to attenuate midrange frequencies somewhat and boost the low range frequencies for live or CD signals.
Setting the knob to „Speech" enhances intelligibility for public address purposes.
A corrective circuit automatically compensates for EQ, balancing out the overall volume for each setting.

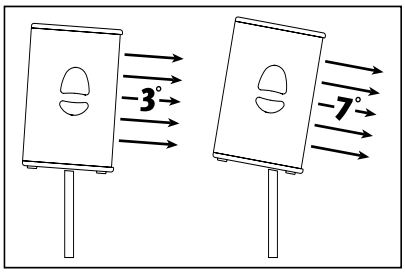
1.5 Alignment

HK Audio DuoTilt™
(apart from the PR:O 12 MA, HK Audio Mono Tilt™ with a 3° angle tilt for the PR:O 8 A)



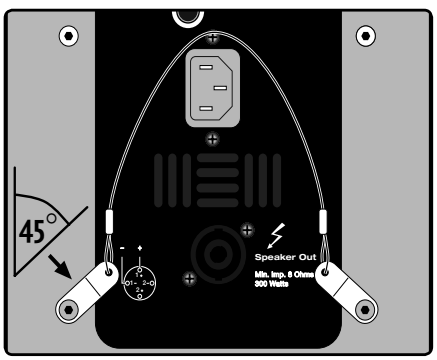
The HK AUDIO DuoTilt™ pole mount lets you align PREMIUM PR:O active cabinets along the horizontal plane to prevent or reduce troublesome ceiling reflections. The front aperture of the HK AUDIO DuoTilt™ provides a 3° angle, the rear aperture a 7° angle of tilt.

If you set the full-range cabinets on a fully extended cabinet tripod or mounting pole, opt for the 7° angle. This setting works especially well when addressing fewer listeners standing close to the speakers. If you wish to address more listeners further from the speakers, opt for the 3° angle on the HK AUDIO DuoTilt™.



Curving cable (for the PR:O 8 A only)

Included you'll find a curving cable. It aligns the PR:O 8 A vertically, for instance, if you wish to install the enclosure or mount it to a from a truss. Simply attach it using the bolts at the bottom of the cabinet's housing.



Attaching the curving cable:
The curving cable lets you precisely aim the flown PR:O 8 A cab.
It attaches to the back of the PR:O 8 A.
- Remove the bottom two bolts from the connector panel.
- Place the washers over the two holes.
- Insert the bolts to fasten the two plates attached to the curving cable to the cabinet at a 45° angle (refer to the diagram).

Note: The plates must be aligned to a 45° angle to ensure safe operation!

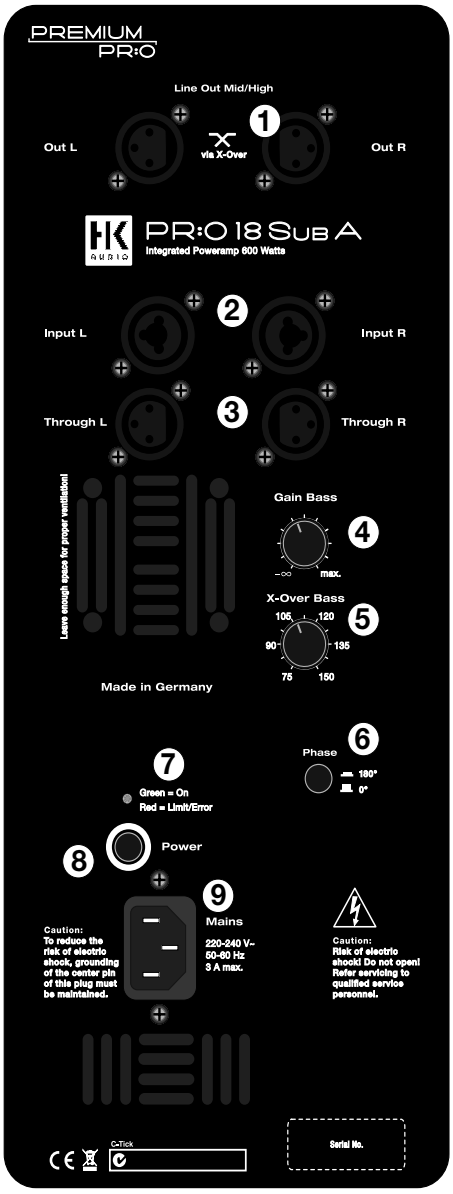
- Tighten the bolts.

The cable kit includes:
- two washers
- two 5x25 mm recessed hex-head bolts
- one cable with mounting plates

Caution: The curving cable serves solely to tilt the cabinet; it is not a rigging point!

2 PR:O 18 Sub A, PR:O 210 Sub A

2.1 Control Features



1 Out L / Out R (Line Out Mid / High)

These two electronically balanced XLR inputs serve to connect PREMIUM PR:O satellites (pin 1= ground, 2= +, 3= -).

2 Input L / Input R

These two electronically balanced XLR / 1/4" combi inputs accept signals from mixing consoles (pin 1= ground, 2= +, 3= -).

3 Through L / Through R

These two parallel outputs patch incoming line signals through, for example, to other PREMIUM PR:O active speakers or monitors (pin 1= ground, 2= +, 3= -).

4 Gain Bass

This knob adjusts the input level (center position = 0 dBV).
The 12 o'clock position is the ideal starting point when operating the subwoofer in combination with a PREMIUM PR:O active cabinet. Then you can simply twist the knob to the left or right to cut and boost bass frequencies. If you connect a PREMIUM PR:O satellite, first set the Gain knob to the center detent and then adjust the level to suit the given sound reinforcement situation.

5 X-Over-Bass

The active crossover can serve to vary the top cutoff frequency of the subwoofer with a range of 75 to 150 Hz. The best cutoff frequency for the given application depends on the surroundings and satellite, so you will have to experiment.
Note: If you set the cutoff to a frequency higher than 110 Hz, the subwoofer will render mostly the lower frequencies of signals generated by bass guitars, kick drums, and low-end keyboard sounds. If you set the cutoff to a frequency higher than 110 Hz, the subwoofer will also render the lower frequencies of voices and other sound sources.

6 Phase

The Phase switch changes the subwoofer's phase position to match it to the connected satellite's phase position (0° – 180°). Set the switch to 0° when operating the PR:O 18 Sub A in combination with a PREMIUM PR:O active cabinet. The PR:O 210 Sub A's phase has to be reversed 180° to ensure it is in phase with PREMIUM PR:O mid-/high-range units. You may have to invert the phase for combinations with other enclosures. If you are unsure, simply try the 180° setting. If the bass response changes and the signal sounds weak and washed out, the phase setting is incorrect.

7 Limiter Status LED

This dichromic LED indicates the signal level and limiter status. Green means the signal level is okay; red means the limiter has engaged and is responding to high-volume signal peaks.
CAUTION! This is not a clip LED. It's okay if it lights up red briefly every now and then; this merely indicates the RMS Limiter is operating. If the signal LED remains constantly in the red at signal peaks, check the source signal's input level and back off the speaker's Gain knob. A status LED that lights up red continuously indicates there is a fault in the speaker system.

8 Power Switch

This is the PREMIUM PR:O powered cabinet's on/off button. The signal LED lights up green to indicate the cab is powered up.
Note: The Power button is embedded to prevent unintentional actuation. Set to Power On, the button sits almost flush with the connector panel. This ensures it is not engaged accidentally, yet remains readily accessible.

9 Mains Input

Use the factory-included mains cord to connect this socket to a wall outlet.
Note: All PREMIUM PR:O active speakers are equipped with V-Lock mains sockets. If you use a VOLEX locking mains cord or another optionally available brand with the same design, you can fix the mains cord in place to prevent accidental disconnection.

2.2 Setting Up and Connecting the Cabinet

Connect cords routed from your mixer (monitor out, line out, or a similar output) to the balanced Input sockets using a cord equipped with standard XLR microphone connectors. Then connect the active satellites to the XLR outputs labeled X-Over Out. Use the two Through ports to feed the fullrange signal to other enclosures. Make sure the XLR connectors' terminals are configured as follows: 1= ground, 2= +, 3= -. If only one Input signal is available, select "Input L". To get full power out of the system, connect "Through L" with "Input R" via XLR cords.

2.3 Operating Speakers

• First make sure the powered cabinet is off.

CAUTION! Connect the cabinet to the mains supply only after you are certain the local mains voltage matches the voltage specified on the rear panel. If you connect the system to the wrong mains voltage, you may destroy the electronic components of the PREMIUM PR:O active cabinet.

• Back the Gain knobs all the way off, turning them counterclockwise as far as they will go. Ensure you first switch on all other connected components, for example, a connected mixing console as well as all signal sources patched into it, such as keyboards, instrument amps, effects and so forth. Always connect PREMIUM PR:O active cabinets to Line Out Mid/High, and always switch them on last; that is, after you switch on all other connected components. When you powering down, first turn the Gain knobs to the far left and switch active cabinets off first, before switching off any connected devices.

After you power the system up by engaging the Power switch, a system check prompts the fan to briefly kick on and back off again in about five seconds. The fan is temperature-controlled, actuating only at very high volumes and temperatures requiring cooling.

- The Power LED lights up green when the cabinet receives mains power.

Set the Gain Line In knob to the center or 12 o'clock position (= 0 dBV). This is the preferred level if you have connected a mixer to the PREMIUM PR:O active cabinet. You can boost the input level 6 dB by turning up the Gain knob.
For the best audio results, ensure the Limiter LED (red) does not light up continuously.

2.4 Settings

Adjusting volume with the Gain knob

Twist this knob to adjust microphone and line signal levels.

CAUTION: Never tape over the plug's ground terminal – this endangers lives!

If you hear distortion or saturated signals, first check the signal sources and, if possible, reduce the output signal level there. If you cannot adjust the level of the signal routed to the PREMIUM PR:O active cabinet at the source, match it to the power amps by backing off the Gain knob to lower the input level.

3 Tips and Tricks

1 Do not expose electronic circuitry to moisture! Protect cabinets against rain when you set them up outdoors. Keep soft drinks, beer, and any other liquids away from the electronic components to prevent short circuits.

2 PREMIUM PR:O active enclosures provide optimum sound to you, so be sure to provide optimum input signals to them! Noise such as humming is generally caused by defective cables, the wrong type of cords, or unbalanced signals routed into the mixing console. Check all signal and mains cables.

3 Prevent distortion! Not only is it unpleasant to your audience's ears, it also endangers your equipment. Make sure all components that are connected directly and indirectly to PREMIUM PR:O active cabinets have sufficient power ratings, and that they don't distort because they're running at their respective limits. Ensure all sources deliver clean audio signals.

4 Avoid ground loops! Annoying humming can arise even within audio systems with balanced circuits, for example, when the mixing console's mains cord isn't connected and grounded to the same mains circuit as PREMIUM PR:O active enclosures. Using two different ground circuits can create a ground loop. To prevent this problem, always connect PREMIUM PR:O active enclosures and the mixing console to the same electrical circuit; that is, the same phase!
CAUTION: Never tape over the plug's ground terminal - this endangers lives!

4 Troubleshooting

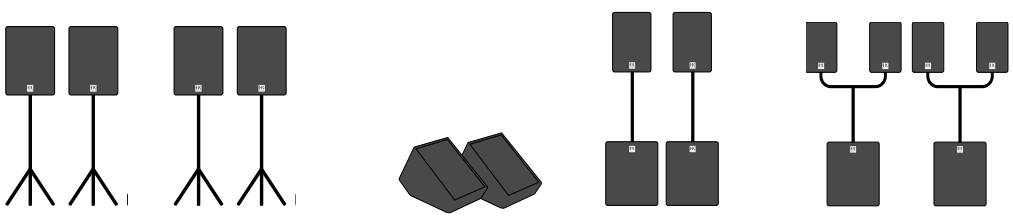
The POWER LED does not light up when switched on.
- Check if the mains cord is plugged into the Mains Input.
- Check if the mains power supply is providing current.

The Power LED lights up red, flashing intermittently.
- The Limiter has actuated; lower the input level if necessary.

The Power LED lights up red continuously, but no sound is issuing from the cabinet.
- The enclosure's protective circuit has tripped. Please contact your authorized dealer.

The rendered music sounds distorted.
- Check your mixing console's LED meters. They should not be constantly in the red. If necessary, back off the volume at the mixer.
- If the LED displays on your mixer are in the green, back off the PREMIUM PR:O active cabinet's Gain knob.
- Observe the Limiter LEDs on the PREMIUM PR:O active enclosure's control panel. These may light up red, but only intermittently. The red light may not illuminate continuously. If it does, turn down the Gain knob

PREMIUM PR:O active System Configurations



5 Technical Specifications

	PR:O 8 A	PR:O 10 XA	PR:O 12 A	PR:O 12 MA	PR:O 15 A	PR:O 15 XA	PR:O 18 Sub A	PR:O 210 Sub A
Frequency response +/- 3 dB:	89 Hz - 19 kHz	89 Hz - 19 kHz	85 Hz - 19 kHz	85 Hz - 19 kHz	55 Hz - 19 kHz	55 Hz - 19 kHz	48 Hz – fx	60 Hz – fx
Frequency response -10 dB:	63 Hz - 19 kHz	67 Hz - 19 kHz	78 Hz - 19 kHz	78 Hz - 19 kHz	48 Hz - 19 kHz	48 Hz - 19 kHz	38 Hz – fx	40 Hz – fx
Max SPL (Half Space):	118 dB	121 dB	123 dB	123 dB	123 dB	123 dB	125 dB	123 dB
Loudspeakers:								
Bass / midrange woofer	8"	10"	12"	12"	15"	15"	18"	2x 10"
High-frequency driver	1"	1"	1"	1"	1"	1"	-	-
HF protection (passive):	Dyn. protective circuit	Dyn. protective circuit	Dyn. protective circuit	Dyn. protective circuit	Dyn. protective circuit	Dyn. protective circuit	Dyn. protective circuit	Dyn. prot. circuit
Horn directivity:	80° x 80 CD horn	90° x 60 CD horn	60° x 40 CD horn	60° x 40° CD horn	60° x 40° CD horn	60° x 40° CD horn	-	-
Power amps:	1x 600 W	1x 600 W	1x 600 W	1x 600 W	1x 600 W	1x 600 W	1x 600 Watt	1x 600 Watt
	Class D - 4 ohms	Class D - 4 ohms	Class D - 4 ohms	Class D - 4 ohms	Class D - 4 ohms	Class D - 4 ohms	Class D - 4 ohms	Class D - 4 ohms
Limiters:								
RMS Limiter	yes	yes	yes	yes	yes	yes	no	no
Peak Limiter	yes	yes	yes	yes	yes	yes	no	no
Subsonic Filter:	35 Hz	35 Hz	35 Hz	68 Hz	35 Hz	35 Hz	35 Hz	35 Hz
Cutoff frequency of the active crossover	-	-	-	-	-	-	75 - 150 Hz variable	75 - 150 Hz variable
(12 dB/ octave)								
EQ:	Tone knob	Tone knob	Tone knob	-	Tone knob	Tone knob	-	-
Connectors:								
Line/Mic combi jack balanced:	1x combi XLR/1/4"	1x combi XLR/1/4"	1x combi XLR/1/4"	1x combi XLR/1/4"	1x combi XLR/1/4"	1x combi XLR/1/4"	2x combi XLR/1/4"	2x combi XLR/1/4"
Through, balanced:	1x XLR Through	1x XLR Through	1x XLR Through	1x XLR Through	1x XLR Through	1x XLR Through	2x XLR Through	2x XLR Through
Out, balanced:	-	-	-	-	-	-	2x XLR L/R Out Mid/High	2x XLR L/R Out Mid/High
Parallel Speaker Out*	1x Speakon	1x Speakon	1x Speakon	1x Speakon	1x Speakon	1x Speakon	-	-
Pole mount:	MonoTilt™	DuoTilt 3/7	DuoTilt 3/7	-	DuoTilt 3/7	DuoTilt 3/7	M20 threaded base plate	2x M20 thread. base plate
Rigging points:	2x M8	3x M8	3x M8	3x M8	3x M8	3x M8	-	-
Weight:	11 kg / 24.3 lbs.	13,9 kg / 30.6 lbs.	19,5 kg / 43 lbs.	17,1 kg / 37,7 lbs.	23,5 kg / 51,8 lbs.	22,4 kg / 49,4 lbs.	39,8 kg / 87,8 lbs.	27,2 kg / 55 lbs.
Dimensions (WxHxD)	27 x 42 x 27 cm	32 x 48 x 29 cm	39 x 57 x 36 cm	39 x 55,5 x 38 cm	47 x 61,5 x 41,5 cm	47 x 61,5 x 44,5 cm	53 x 61 x 64 cm	36 x 61 x 53 cm

*) Min impedance 8 ohm/300 W