



NEOFOCUS MANUAL



Designed and Manufactured by
ITEC Tontechnik und
Industrieelektronik GesmbH
8200 Laßnitzthal 300
Austria / Europe

 **ITEC**
www.itec-audio.com



General Information:

ITEC NEOFOCUS systems are focused column speakers with an outstanding score on intelligibility and the even distribution of sound waves – both nearly intangible by the acoustic properties of the room they are placed in. Why? First of all, no acoustic energy is emitted outside of the configured focal zone. And second, because the theoretical and actual acoustic pressure declines by only 3 dB max. per double distance due to the addition of the acoustic pressure of all the units placed on one side of the room.

Caution: Even the smallest mistake in the speaker cabling can result in serious deficiency of the entire speaker array. Example include interruptions, connection mistakes (-/+ poles), wrong connection terminals, differences in the settings of the amplifiers and badly connected controllers. If the system is connected and configured correctly, you will most certainly be impressed – even with having calibrated the system. If you are not satisfied with the performance, please check the cabling and configuration (e.g. if the correct speaker system is picked on the controller) before trying to calibrate the system.

Differences between ITEC NeoFocus 4 / 6 / 8

The speaker systems are different in length and the number of channels. The length of the array influences the vertical focus in lower frequencies. If you want to project low frequency sound into the back of the room, you should go for the larger speaker. A decline of acoustic pressure of 3 dB is normal. For frequencies below the following, the pressure decline may increase to up to 6 dB:

NeoFocus 4: Low border frequency: 350 Hz

NeoFocus 6: Low border frequency: 200 Hz

NeoFocus 8: Low border frequency: 125 Hz

Number of Drivers, Load Rating:

NeoFocus 4: 4 drivers (channels), 50W/100V per channel

NeoFocus 6: 6 drivers (channels), 50W/100V per channel

NeoFocus 8: 8 drivers (channels), 50W/100V per channel

Serie LI: 8 Ohm/80W RMS/channel

For each channel of a ITEC MULTIPOWER power output stage 4x75 you can connect up to 2 ITEC NEOFOCUS speakers in parallel.



Recommended Application of the Systems:

NeoFocus 4:

Rooms with reverberation times of up to 2 seconds. Examples include conference rooms and multi-functional halls, small churches with up to 20 m of length.

NeoFocus 6:

Rooms with reverberation times of more than 2 seconds, like churches and halls with up to 50 m of length.

NeoFocus 8:

Rooms with reverberation times of more than 2 seconds, like churches and halls with up to 50 m of length, if the lower frequencies of masculine voices should be projected to the back of the room.



Remark:

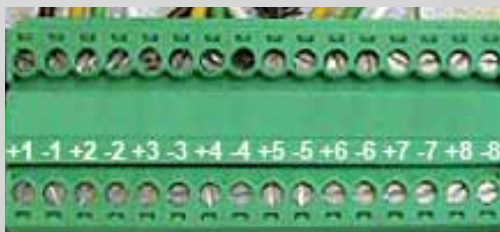
We recommend combining NEOFOCUS speaker systems with a woofer system like the ITEC POWERBASS 12 if you want to use them for music playback.

Speaker Connectors:

The connectors are numbered 1-4 (NEOFOCUS 4), 1-6 (NEOFOCUS 6) and 1-8 (NEOFOCUS 8). The Nr. 1 always refers to the top-most group. This numbering is the same as in the controller outputs. Out 1 on the controller is routed via the output stage channel to terminal 1 of the speaker.

Caution:

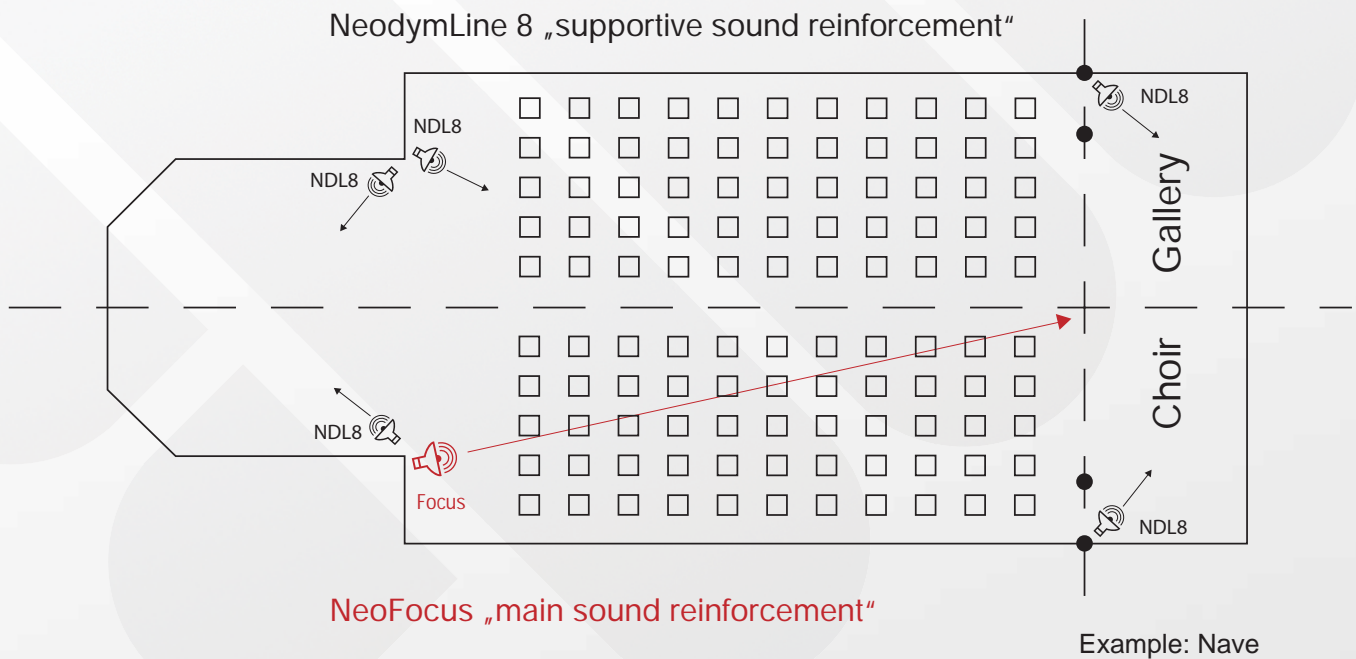
The bottom output of the NEOFOCUS 4 is “Out 4” of the controller. For NEOFOCUS 6 it is the “Out 6” and for NEOFOCUS 8 it is the “Out 8”!



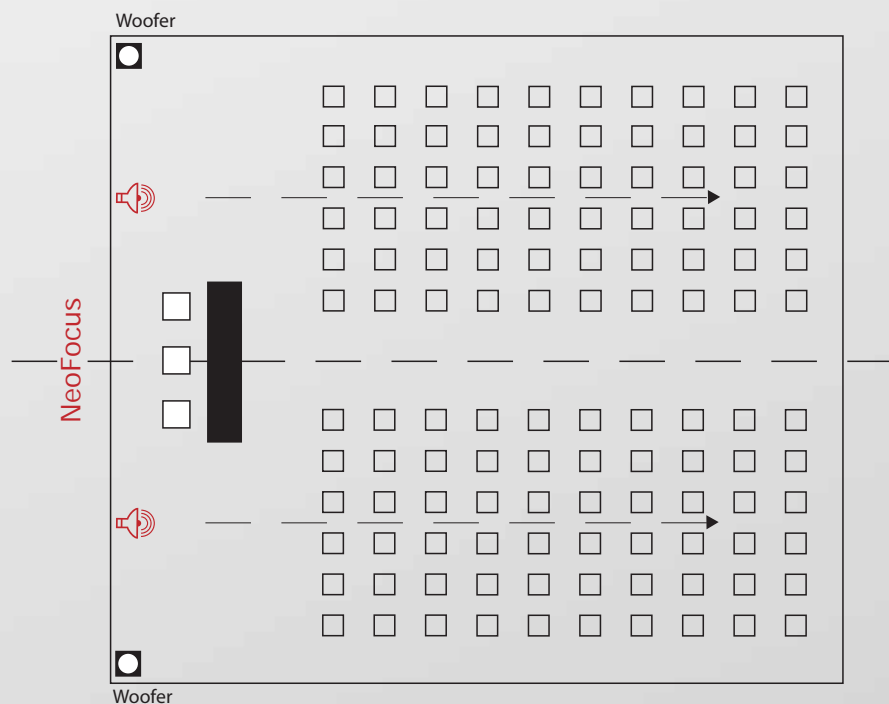
Mounting of ITEC NeoFocus Speakers

Position of Speakers: HORIZONTAL

In narrow, rectangular rooms, we recommend to use one single system at the front. Place it as near to the center of the front wall as possible. On the opposite wall, you can use a NEODYMLINE 8 for supporting sound reinforcement (for medium to high frequency range). The speakers should be mounted to an even and flat place on the wall if possible. Try to avoid corners, edges and the like to minimize early sound wave refractions. The speakers should not be tilted. Is it sufficient to turn the speaker towards the center of the room or the its diagonal a little bit in order to achieve optimum sound projection on the horizontal plane.

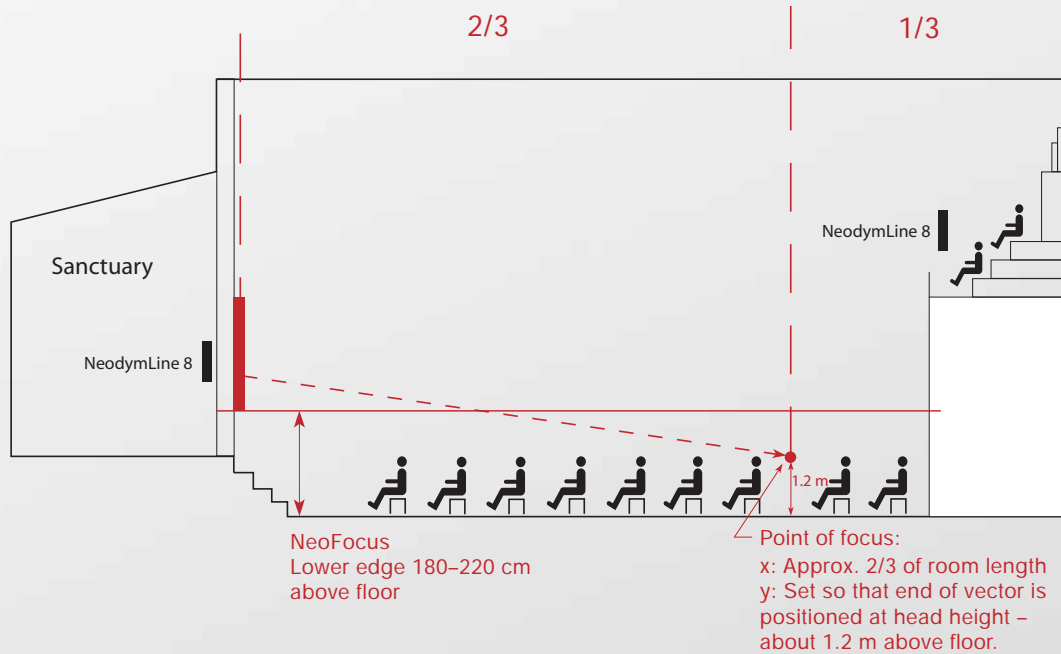


In wide, rectangular rooms we recommend to place 2 systems to the left and right respectively. Mount them approximately 1/4th of the room width away from the side walls. The speakers should be mounted flat to the wall so that they project the sound in an angle of 90° to the wall straight to the back of the room. Do not rotate them to the center or to the side walls!



VERTICAL

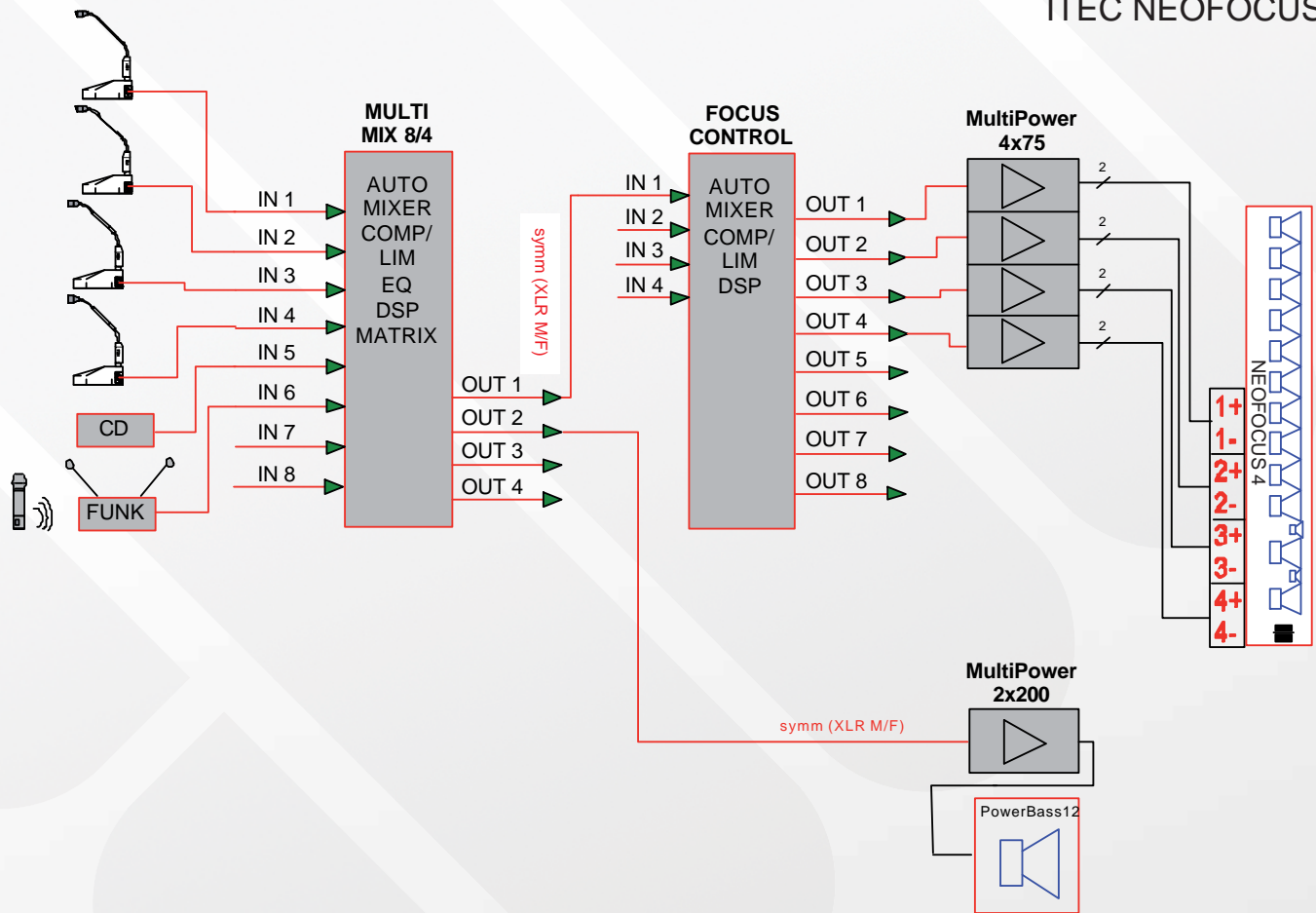
The bottom edge of the speaker should be mounted at least 20cm above the heads of the audience so that the higher frequencies are not blocked by the people standing in front. We suggest a mounting height of approx. 220-240cm (bottom edge of speaker above floor). Please consider that the seats of your audience may be elevated.



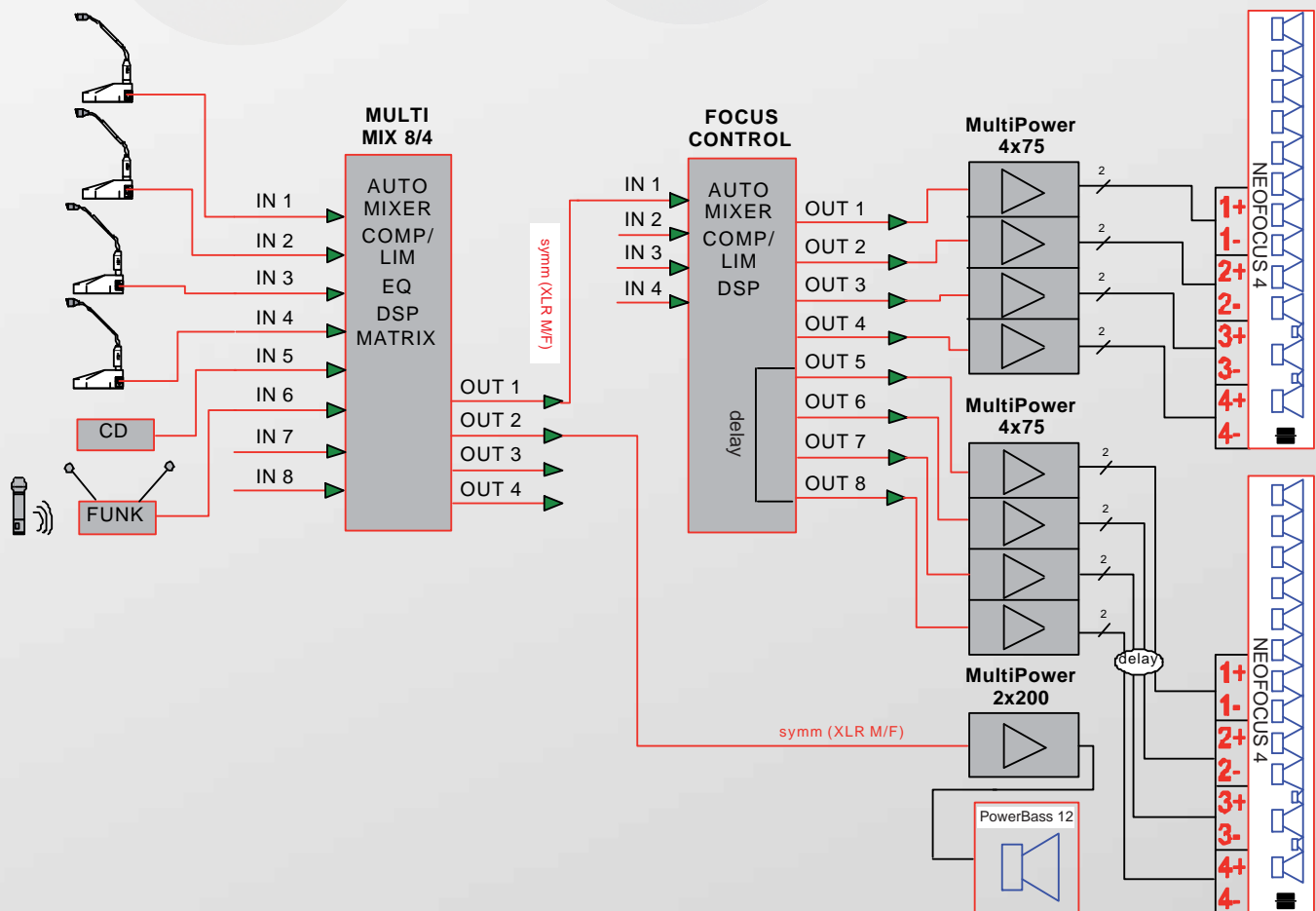
SUPPORTIVE SOUND REINFORCEMENT

Any additional speaker in the room can only worsen the overall performance in the scope of the NEOFOCUS System! Extra caution has to be taken when providing sound to “shaded” areas using supportive speakers.

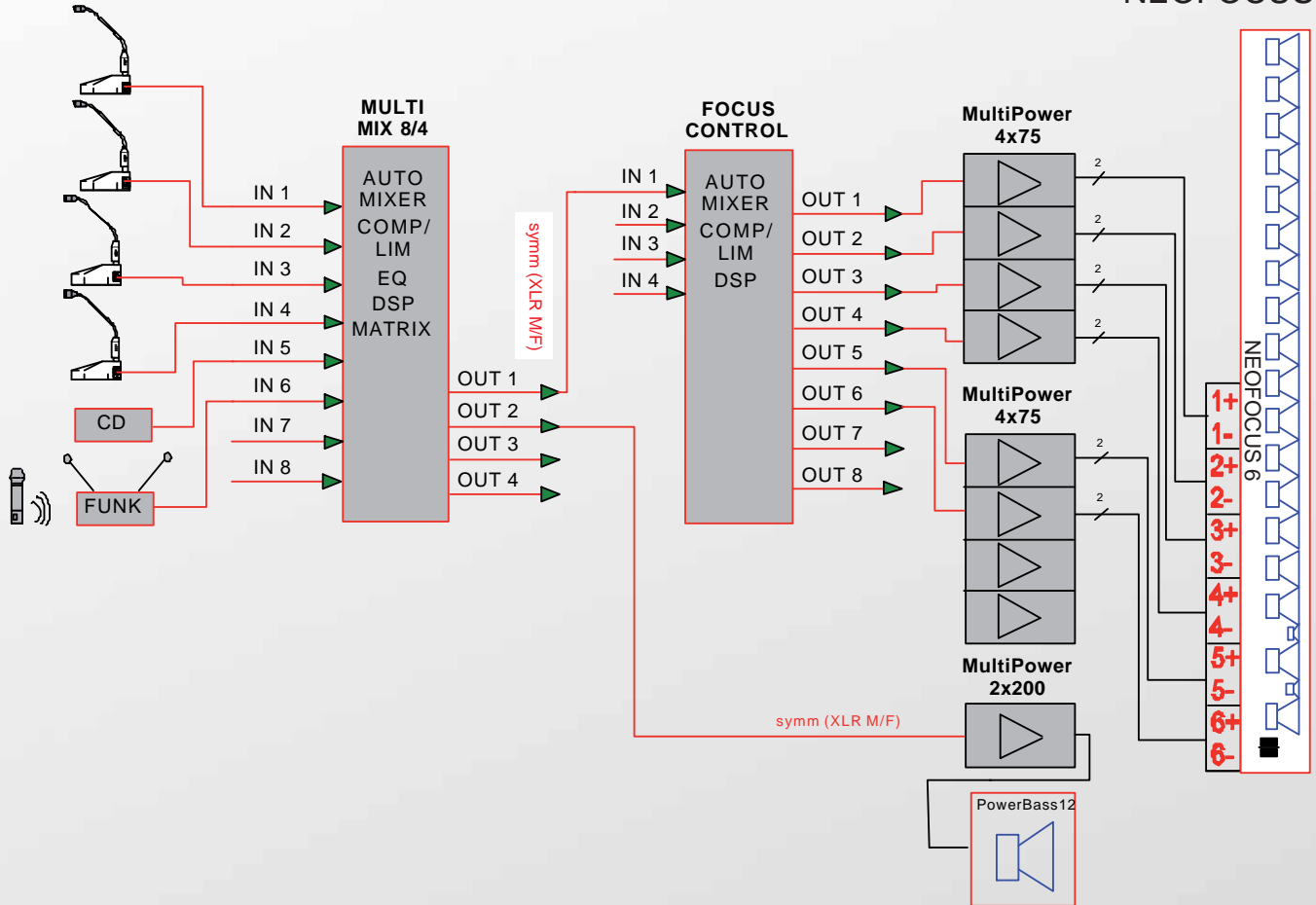
Example Nave: You might have to use supportive speakers for the sanctuary, the side naves and the choir gallery as a NEOFOCUS system is restricted to a horizontal plane as high as the speaker is. We recommend using the ITEC NEODYMLINE 8 as a supportive speaker because it is equipped with the same drivers as the NEOFOCUS, and thus produces a very similar acoustic pattern. When mounting and calibrating, you should concentrate exclusively on the NEOFOCUS system at first. The supportive speakers can wait. When calibrating the supportive speakers, limit the volume levels to the amount that is absolutely necessary. High volume levels on the supportive speakers drastically worsen the performance of the main NEOFOCUS system! If you support a NEOFOCUS system by additional speakers in the same horizontal plane, you have to configure the correct delays for these supportive speakers. The sanctuary will most often not require a delay, while the area below the choir gallery will very well require a delay. The choir gallery itself again should be configured without delay so that the choir singers can trust on being in time with the music.



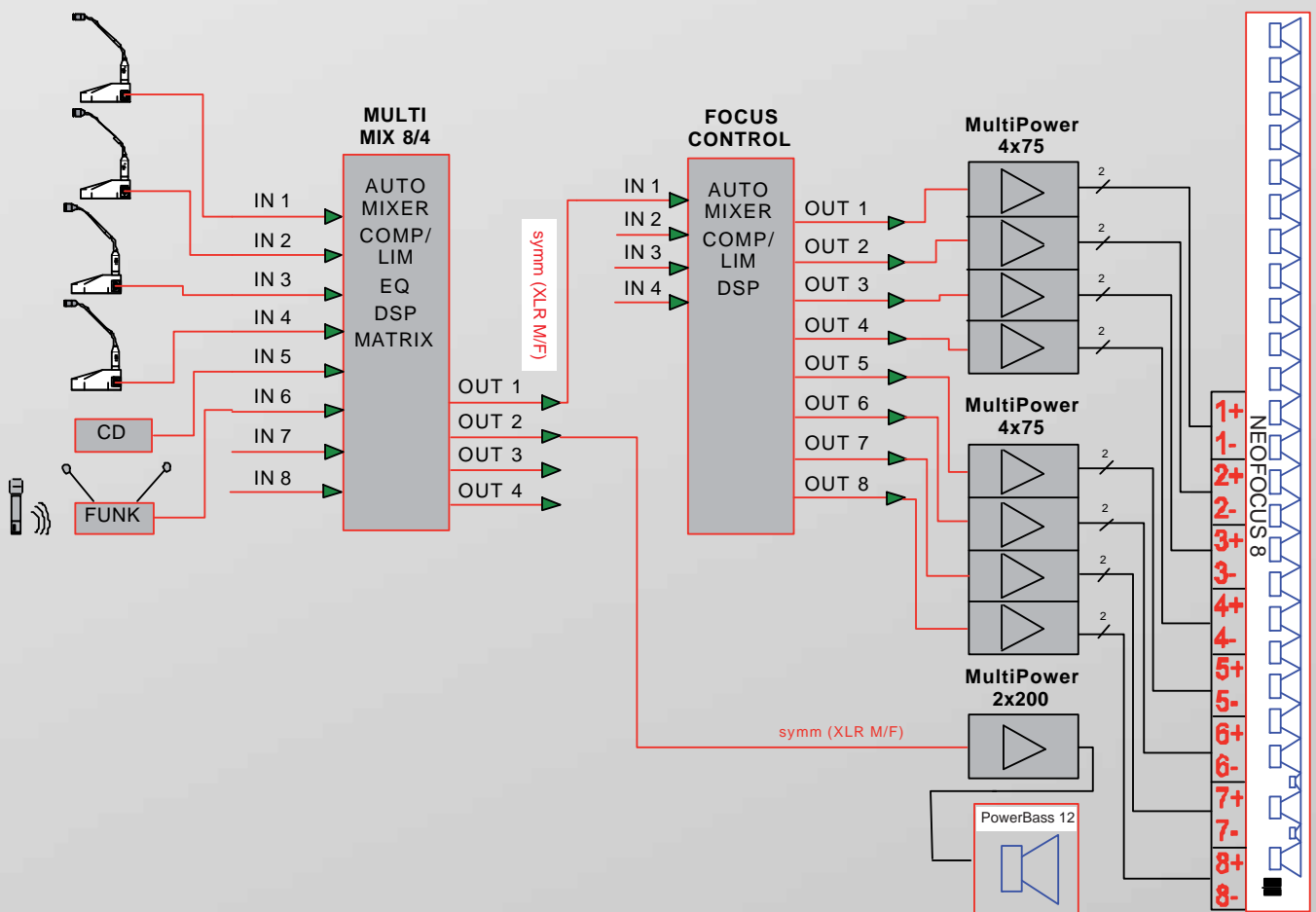
ITEC NEOFOCUS 4 AND DELAYLINE NEOFOCUS 4



NEOFOCUS 6



NEOFOCUS 8



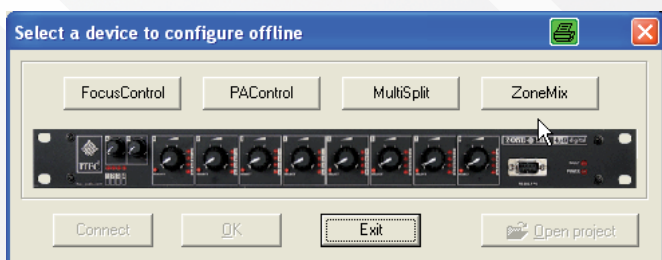
Software SplitDesign

<http://www.itec-audio.com/download/splitter/splittersetup.exe>

The configuration software SPLITDESIGN runs on Windows and can be used to configure the following 4 different controllers:

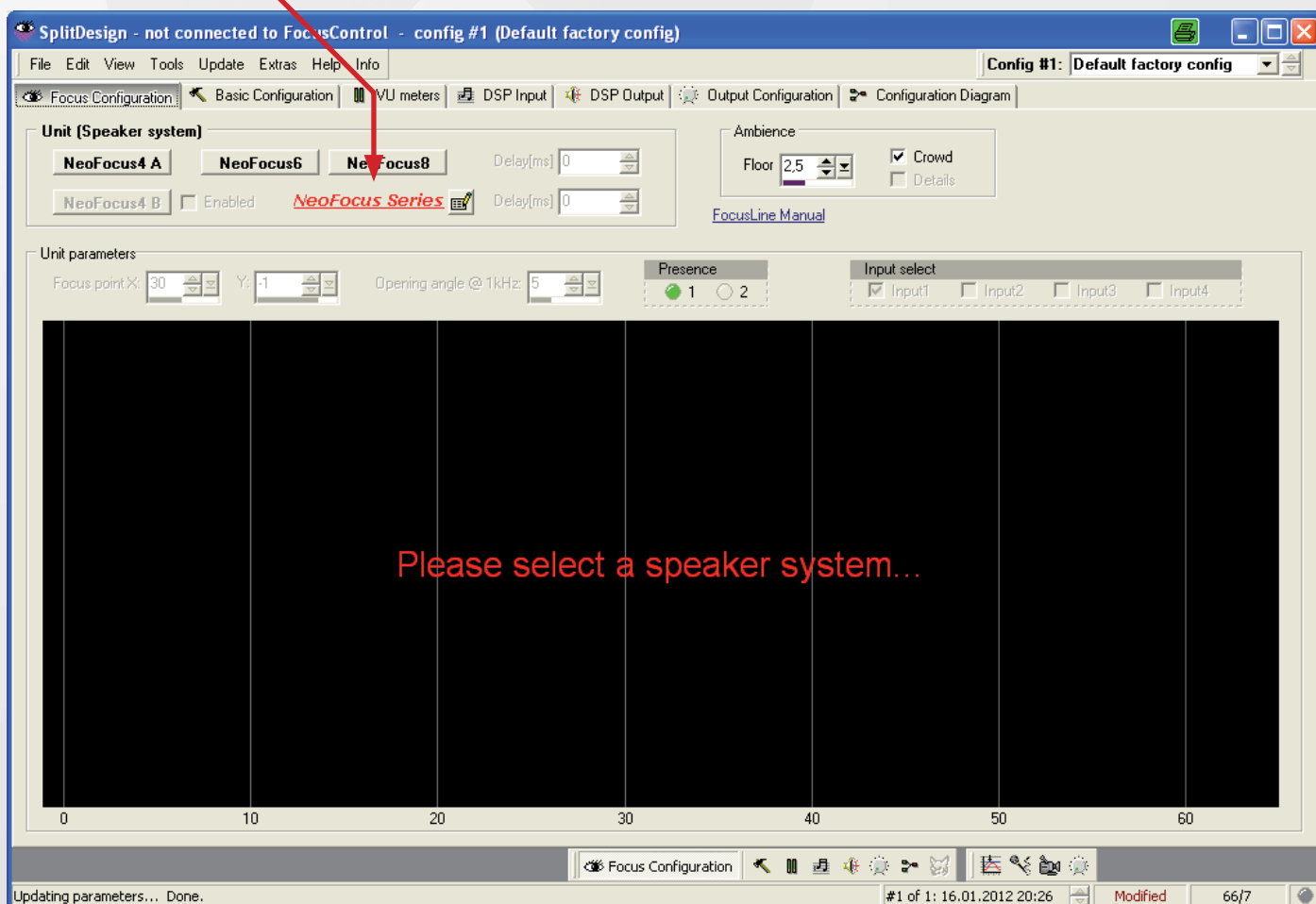
- 1) Focus-Control
- 2) PA-Control
- 3) MultiSplit
- 4) Zone-Mix

If you have not connected your PC with one of the 4 controllers (offline mode), you will have to choose a device prior to creating a configuration project.



If the PC is connected to a controller, the software will automatically detect the device and display the corresponding configuration screens.

Caution: SWITCHING FocusLine (old) und NeoLine (new)



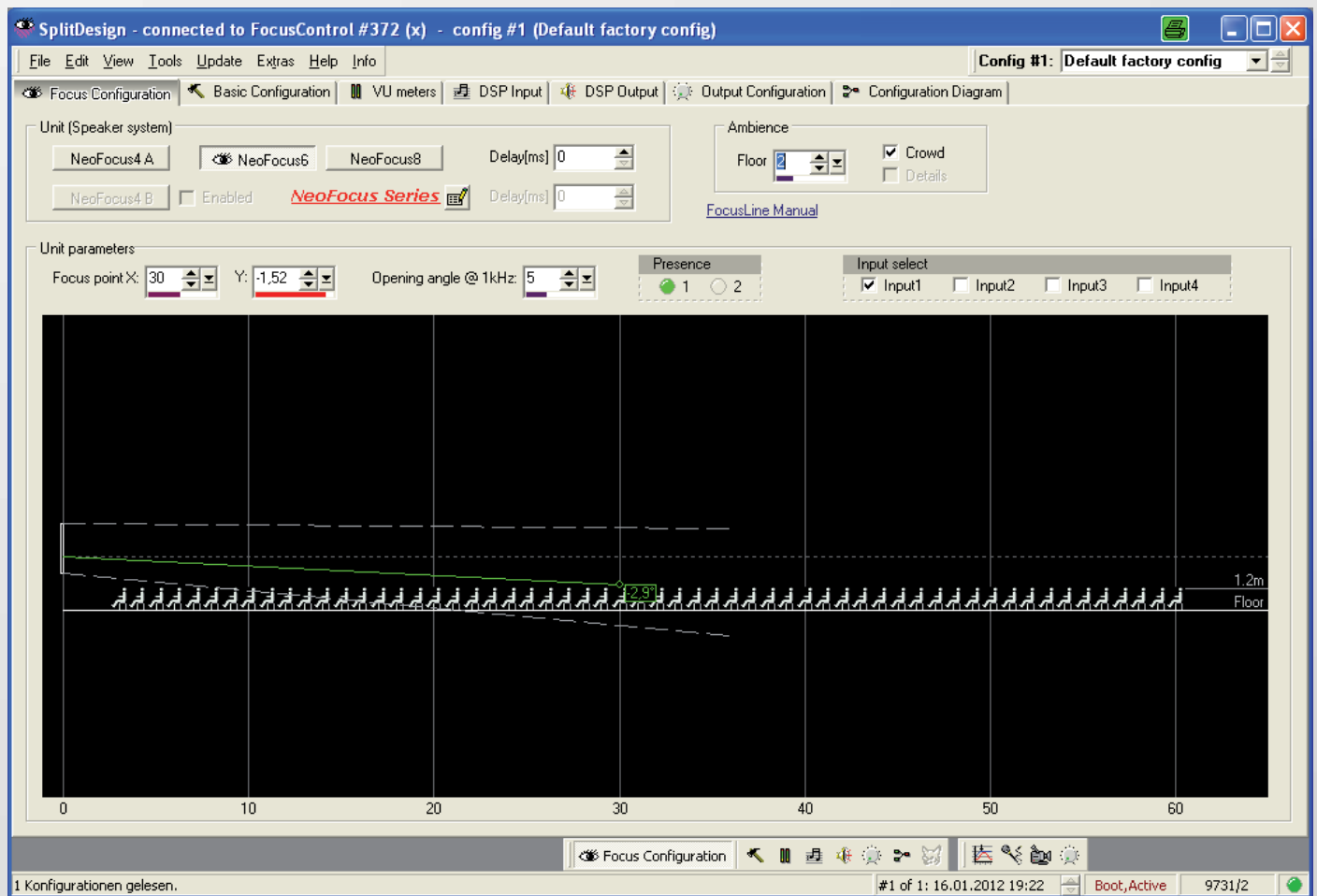
Focus-Control: First, choose the correct speaker system. Then, configure the focal point (x/y in meters), the projection angle and the presence.

Recommendations:

Focal point: x-axis: 2/3rd of the length of the room. Y-axis: 1,2m above floor level at 2/3rd of the length of the room. SPLITDESIGN will automatically calculate the projection angle and display the focal point. If the angle is larger than -3.6° , the sound beam will turn red.

Projection Angle: 2° - 8°

Presence: Presence 1 for reverberant rooms, presence 2 for non-reverberant rooms



For all other configuration settings like input-configuration, comp/lim, EQs, etc, please refer to the FOCUS-CONTROL manual.

We wish you great success with your ITEC NEOFOCUS System!

Your ITEC Acoustic Team

www.itec-audio.com

Signal Processing Devices and Power Output Stages

Digitally-controlled rack-mounted mixer ITEC MULTIMIX 8/4 digital
Auto-Mixing, Voice Over Music, Priority, Compressor-Limiter, DSP module, EQ module



In contrast to other products, the ITEC MULTIMIX is an analogue mixer on the signal processing part. However, it managed entirely using digital technology. Two processing units manage the Voltage Controlled Amplifiers (VCAs). They also measure levels and transducers and switch the signal paths. The analogue basis is responsible for the devices' extraordinary quality with respect to signal to noise ration (SNR), sound dynamics and harmonic distortion at low amplitude. Each one of the eight input channels may be mixed to one or more of the four internal bus channels. For devices without DSP module, the bus is identical with the corresponding output. The DSP module enables signal processing for each separate bus signal prior to mixing the signals to the output channels.

The ITEC MULTIMIX can store up to 15 full-featured configuration sets in its flash memory. These can be activated by the user at any time to fit various requirements.

ITEC Focus-Control 4/8 digital



The heart piece of the FOCUS line is the ITEC FOCUS-CONTROL. It provides for signal processing for all NEOFOCUS speakers and can be configured very easily using the provided configuration software SPLITDESIGN. When going live, you have to configure only 4 parameters:

- Speaker type
- Focal point (distance and sound projection angle)
- Angle of beam (a measure to the vertical height of projection)
- Presence (2 settings from high authenticity of sound to optimal intelligibility)

One ITEC FOCUS-CONTROL supports up to 2 ITEC NEOFOCUS 4 speakers or 1 ITEC NEOFOCUS 6 or 8 respectively. A 5-band parametric equalizer and a digital delay module allow for optimal adjustment to the acoustic parameters of a room and the distance to other systems. You can program up to 10 full configuration sets that are accessible by the push of a button.

ITEC MultiPower 2x200 and 4x75



The power output stages of the product line ITEC MULTIPOWER are well-known for their robustness and reliability. They are designed for continuous operation as part of professional installations. Dynamic limiters ensure an effective overload protection, preventing distortion and damage to the speaker systems. A temperature-controlled fan guarantees optimal operating temperature in the case at any time while keeping noise levels low. A series of protective features provides operation at highest-possible security levels.

Supportive Speaker ITEC NeodymLine serie

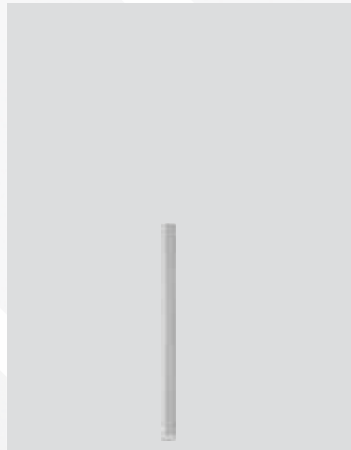
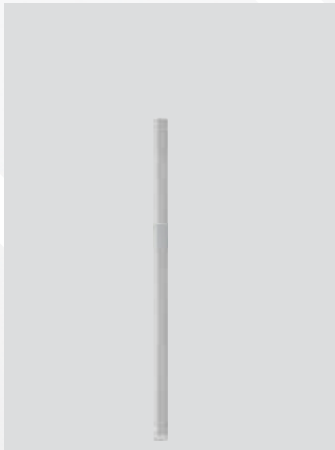
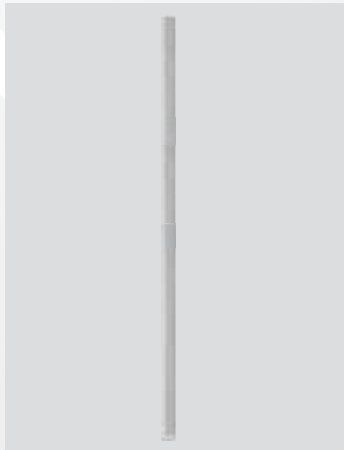


- Perfect sound in acoustically challenging areas
- High power 2 or 3-way systems with passive crossover network unit
- Highest sound pressures even at very small dimensions
- 3 different sizes and performance models
- Integrated power switch (100V-Versions)
- Optional: Ceramic connection terminal with thermal fuse
- Mounting accessories

ITEC NEODYMLINE 8

High-performance sound line, 2-way speaker system with passive crossover network unit;
Rated load 160W or 100V/50W,
Integrated power switch (50/25/12, 5 / 6, 25W)
8 Low-range driver 3"
Dimensions: 102.5 x 10 x 10 cm, weight: 5.2 kg
incl. 2 mounting bracket (short)

NEOFOCUS - SPECIFICATIONS

			
MODELS	NEOFOCUS 4 / LI (LOW IMPEDANCE)	NEOFOCUS 6 / LI (LOW IMPEDANCE)	NEOFOCUS 8 / LI (LOW IMPEDANCE)
Load Rating	320 W / RMS	480 W / RMS	640 W / RMS
Frequency Range	100 Hz - 12 kHz (-6 dB)		
Max. Sound Pressure Level	97 dB at 25 m distance	96 dB at 40 m distance	95 dB at 50 m distance
Radiation Angle	Horizontal: 180° - 500 Hz, 90° at 5 kHz		
	Vertical: Angels of bundling, tilting and radiation adjustable with ITEC FOCUS-CONTROL 4/8 digital		
Dimensions (W x H x D)	100 x 2025 x 100 mm	100 x 3025 x 100 mm	100 x 4025 x 100 mm
Weight	10,5 kg	15,7 kg	20,9 kg
Standard colour	white, RAL 9010		
Provided Accessories	Mounting brackets, multi-pin connectors		
MODELS	NEOFOCUS 4 / 100 V	NEOFOCUS 6 / 100 V	NEOFOCUS 8 / 100 V
Load Rating	200 W / RMS	300 W / RMS	400 W / RMS
Frequency Range	100 Hz - 12 kHz (-6 dB)		
Max. Sound Pressure Level	97 dB at 25 m distance	96 dB at 40 m distance	95 dB at 50 m distance
Radiation Angle	Horizontal: 180° - 500 Hz, 90° at 5 kHz		
	Vertical: Angels of bundling, tilting and radiation adjustable with ITEC FOCUS-CONTROL 4/8 digital		
Dimensions (W x H x D)	100 x 2025 x 100 mm	100 x 3025 x 100 mm	100 x 4025 x 100 mm
Weight	11,9 kg	17,8 kg	23,7 kg
Standard colour	white, RAL 9010		
Provided Accessories	Mounting brackets, multi-pin connectors		
MODELS	NEOFOCUS 4 / WP/ 54-24 (100 V)	NEOFOCUS 6 / WP/ 54-24 (100 V)	NEOFOCUS 8 / WP/ 54-24 (100 V)
Load Rating	200 W / RMS	300 W / RMS	400 W / RMS
Frequency Range	100 Hz - 12 kHz (-6 dB)		
Max. Sound Pressure Level	97 dB at 25 m distance	96 dB at 40 m distance	95 dB at 50 m distance
Radiation Angle	Horizontal: 180° - 500 Hz, 90° at 5 kHz		
	Vertical: Angels of bundling, tilting and radiation adjustable with ITEC FOCUS-CONTROL 4/8 digital		
Dimensions (W x H x D)	100 x 1916 x 100 mm	100 x 2866 x 100 mm	100 x 3816 x 100 mm
Weight	10,8 kg	16,2 kg	21,6 kg
Standard colour	white, RAL 9010		
Provided Accessories	Mounting brackets, multi-pin connectors		

All information without guarantee. Subject to technical changes.