



K.M.E.
ADVANCED LINE SOURCE
TECHNOLOGY

The PANO system concept

With PANO K.M.E. developed a compact line array which meets highest requirements of professional reinforcement for mobile use and in fixed installations. Hire companies and event service businesses are provided with a consistent and flexible product which can be customized to changing requirements. PANO enables an adequate use for bigger events like live concerts and open airs as well as for product- and show presentations in a difficult acoustic environment where precise sound alignment influences the quality significantly.



road suitable, moisture and UV resistant Polyurethane coating

patented AQF acoustic filters for an effective canceling of vertical and horizontal side lobars

K.M.E. Quick Release rigging system for flight and stacked use
highest safety, no loose parts



The 2-way line source units QL 906 and QL 1215 are equipped each with two 1" drivers coupled to a wave-former/ horn combination and each with two 8" neodymium speakers combined with outstanding AQF acoustic filters. This filters, compounds of reticulated aminoplastic foams, dampen standing waves inside the speaker system and cancel parasitical side-lobars within the working direction, creating a wide while smooth horizontal dispersion and a perfect vertical scalability.



QL 906

2-way line source unit with an excellent acoustic coupling wide while smooth horizontal dispersion and a perfect vertical scalability

QL 1215

2-way line source unit / fill-system with dispersion characteristic 120° x 15°

Transport case for three QL 906 or two QL 906 and one QL 1215 and a flying frame with load adapter are optionally available.



	QL 906	QL 1215
Design	2-way passively channelled	2-way passively channelled
Components	2 x 8" with acoustic filter in separated closed enclosures 2 x 1" with wave former	2 x 8" with acoustic filter in separated closed enclosures 2 x 1" with wave former
dispersion	90° horizontal / 6° vertical depends on array length and configuration	120° horizontal / vertical - max. 15° depends on array length and configuration
Nominal load AES / prog. (watts)	400 / 800	400 / 800
Impedance (Ohm)	8	8
SPL (nom.) dB*	98	98
SPL (max.) dB*	135 (3 units with an angle of 0°)	135 (3 units with an angle of 0°)
Frequency range (-6 dB)	80 Hz - 20 kHz	80 Hz - 20 kHz
Connectors	WA NL 4, 2 x Speakon NL 4	WA NL 4, 2 x Speakon NL 4
HF speaker protection	electronic	electronic
Frequency crossover	1.100 Hz	1.100 Hz
Finish	PU coating black	PU coating black
Special features	2 x side mounted steel handles	2 x side mounted steel handles
Hardware	K.M.E. Quick Release – fully integrated rigging- & stacking system	K.M.E. Quick Release – fully integrated rigging- & stacking system
Casing	3° trapezoid	6° trapezoid
Dimensions (mm) B x H x T	600 x 245 x 383	600 x 285 x 383
Weight (kg)	23	24
Recommende subwoofer	QLB 118, QCB 318, QLM 115	QLB 118, QCB 318, QLM 115
Optional accessories	transport cases for 3 units QL 906	transport cases for 3 units QL 1215

*SPL (Fullspace 1 W / 1 m), maximum SPL at nominal load (AES)

QLB 118

direct-radiating, flight- and stackable
1 x 18" subwoofer for a creation of
powerful bass-arrays (with special
preset also a cardioid dispersion
from 3 systems on is possible)

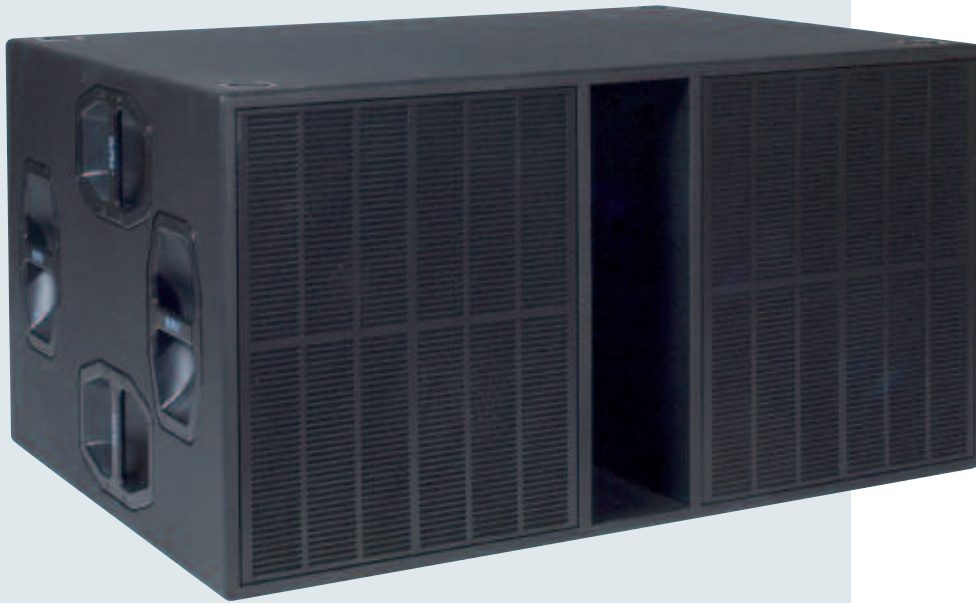
QLM 115

direct radiating 1 x 15" subwoofer / LoMid
extension for flight array and besides an
array of line source units. The QLM 1215
completes a compact array by an absolute
full-range suitability and extended LoMid
reproduction on long distances.



	QLB 118	QLM 115
Design	direct radiating with bass reflex tuning	direct-radiating closed
Components	1 x 18" neodymium	1 x 15" neodymium
Dispersion	omnidirectional, cardioid as 3 cluster	frequency dependant
Nominal load AES / prog. (watts)	800 / 1600	400 / 800
Impedance (Ohm)	8	16
SPL (nom.) dB	96 (flight array) / 102 (ground stacking)	98 (flight array)
SPL (max.) dB	125 / 131	
Frequency range (-6 dB)	33 - fx	60 - 250 (fx)
Connectors	WA NL 4, 2 x Speakon NL 4 or WA NL 8 2 x Speakon NL 8	WA NL 4, 2 x Speakon NL 4 or WA NL 8 2 x Speakon NL 8
Finish	PU coating black	PU coating black
Special features	4 side mounted steal handles / 1 edge handle top side	2 side mounted steal handles
Hardware	K.M.E. Quick Release – fully integrated rigging- & stacking system	K.M.E. Quick Release – fully integrated rigging- & stacking system
Casing	rectangular	3° trapezoid
Dimensions (B x H x T) mm	600 x 600 x 720	600 x 495 x 383
Weight (kg)	45,5	32
Recommended top unit	QL 906, QL 1215, QLM 115	QL 906, QL 1215, QLB 118, QCB 318
Optional accessories	detachable and lockable transport cover on 4 x 100 mm blue wheels	

*SPL (Fullspace 1 W / 1 m), maximum SPL at nominal load (AES)



front

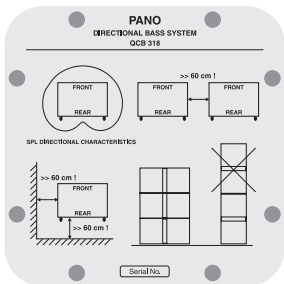
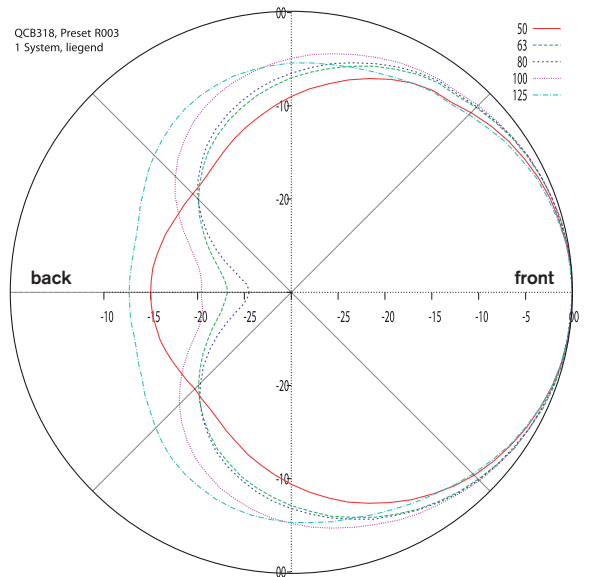


back

QCB 318

Directional radiating high-power bass speaker system

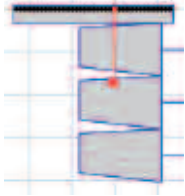
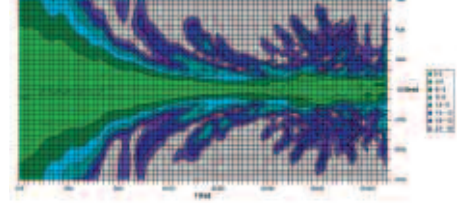
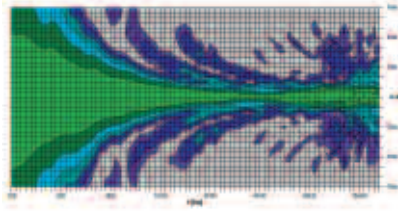
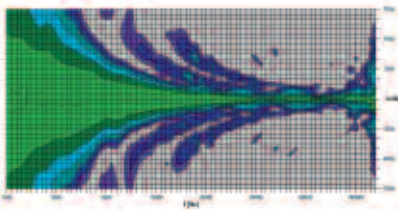
The QCB 318 is a directional radiating 3 x 18" bass speaker system. A digital controlling (preset in digital controller DAP 26) together with two suitable amplifier channels (for example SPA 3200 MP) enable a cardioid dispersion with a front-to-back damping of more than 20 dB in a wide frequency range. The subwoofer system can be used in bigger production surroundings (open airs, big indoor events and installations). The construction features of the PANO product family are also taken over to this system. The black polyurethane coated birch plywood casing is equipped with 8 ergonomical set handles and four 100 mm blue wheels. Stacking elements and multiply bolted foot elements made out of special plastics provide a safe grip when stacked.



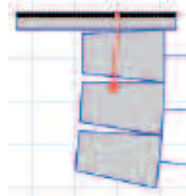
info display

QCB 318		
speaker components	neodymium	3x 18" direct loaded
design	birch plywood	two chamber bass reflex system
frequency range	-6 dB	35 Hz - 110 Hz
impedance	front / back	4 Ohm / 8 Ohm
nominal load	front / back	1600 W / 800 W
SPL peak (music)	@ cert. amp lvl.	138 dB
SPL peak (music)	using 4 systems	144 dB
recommended amplification	per system	2 equal channels of approx. 1.6 kW into 4 Ohm
obligate controller setup	system / preset	K.M.E. DAP 26 using QCB 318 preset
front to back damping	free field	above 17dB within transmission range, max. 24 dB @ 70Hz
connectors	Neutrik	2x Speakon NL4 (1+/1- Front, 2+/2- Rear)
dimensions	w x h x d, mm	1175 x 600 x 795
accessories	standard	4 bluwheels 100mm
weight	kg	107

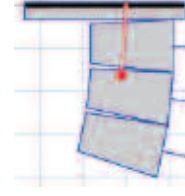
*SPL (Fullspace 1 W / 1 m), maximum SPL at nominal load (AES)



vertical isobars of 3 x QL 906 with an angle of 0° between the systems



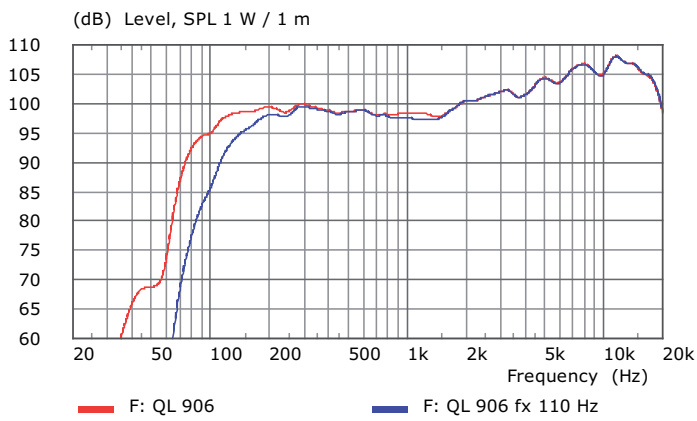
vertical isobars of 3 x QL 906 with an angle of 3° between the systems



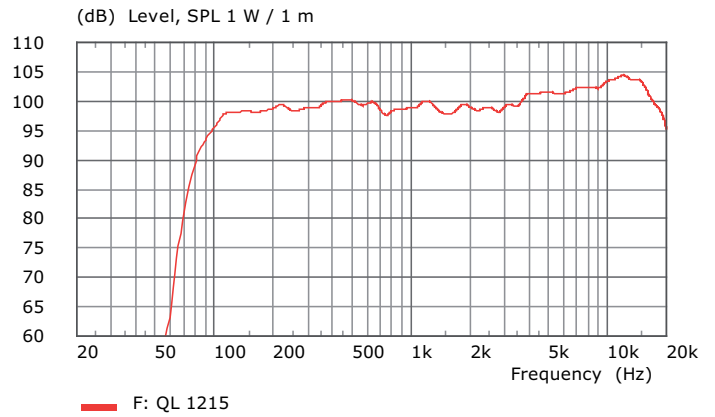
vertical isobars of 3 x QL 906 with an angle of 6° between the systems

Frequency ranges

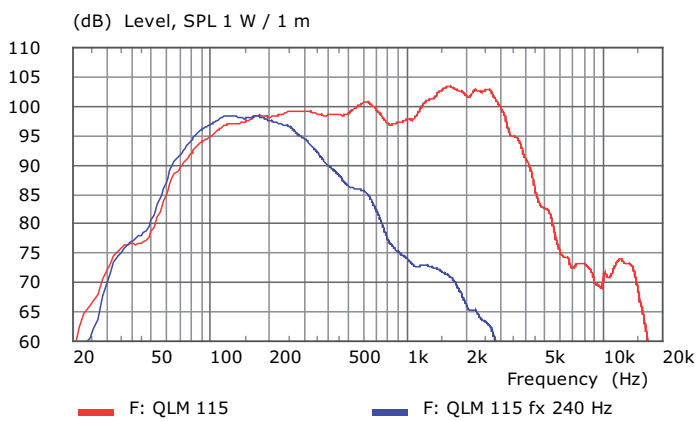
Frequency range QL 906



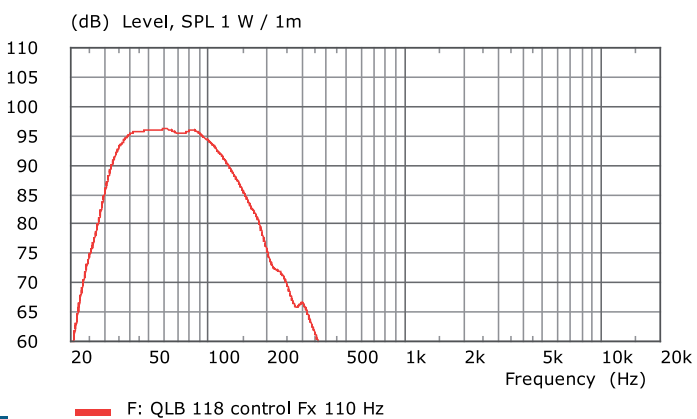
Frequency range QL 1215



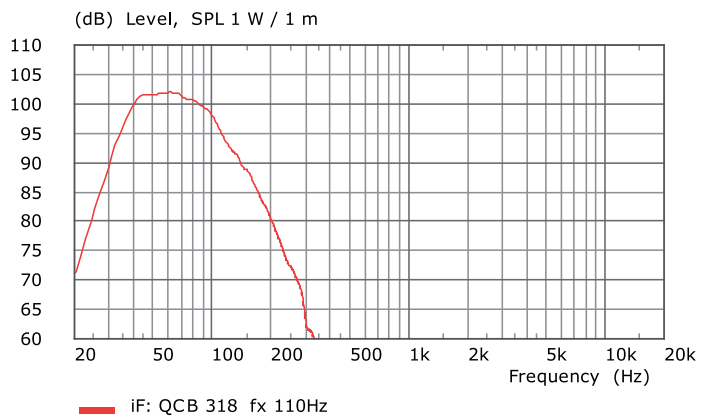
Frequency range QLM 115



Frequency range QLB 118



Frequency range QCB 318



The PANO Quick Release Hardware meets the safety-related guidelines of professional event technology. With a pin point the elements were mounted and fixed on the grid and among each other. The vertical angeling calculated by the simulation can be adjusted over pin configurations in 1° steps.



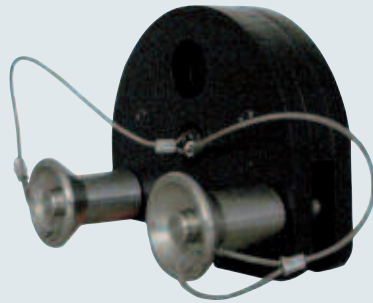
TB 500 flying frame

With 4 x self-locking pins the line array unit QL 906 is mounted on the bottom side of the top bar. QL 906 and QLB 118 can be used for flight or stacked configurations with integrated Quick Release Hardware. Vertical angeling of the first unit from -3° to 0°. The top side of the top bar is equipped with 37 Pin Points for mounting on chain hoist.

	TB 500
Load (SWL)	500 kg
Maximum load	20 x QL 906 / QL 1215
Pin Points	37
Assembly to carrying structure (PinPoint)	on 1 to 4 mounting points
Finish	black powder coating
Dimensions (B x H x T) mm	600 x 750 x 80
Weight (kg)	19,5

PANO load adapter

The load adapter enables a secure mounting of the flying frame TB 500 on truss constructions and chain hosts. Therefore 3,5 t load shackles can be used. The usage spectrum reaches from one-point mounting in consideration of simulation results from PANO Focus Software until four-point mounting (e.g. for installation).



The info display on the back side gives clear information about the display angle pre-calculated with the simulation program PANO-Focus.

PANO
LINE ARRAY SYSTEM
MOUNTING SCHEMES

QL 906 / QLM 115	+9°	+6°	+4°	+3°	+2°	+1°	0°	-1°	-2°	-3°	-4°	-5°	-6°	-7°	-8°	-9°
TB 500 / QLB 118							C	B	A	B						
QL 906 / QLM 115							4	3	2	4						
QL 906 / QLM 115	C		B		C	A	C	B	C	B	A	B				
QL 906 / QLM 115	1		1		2	1	3	2	4	3	2	4				
QL 1215				C		B		C	A	C	B	C	B	A	B	B
QL 906 / QLM 115				1		1		2	1	3	2	4	3	2	4	4
Stacking QL 906 / QLM 115	C	B	C	A	C	B	C	B	A	B						
QLB 118	1	1	2	1	3	2	4	3	2	4						

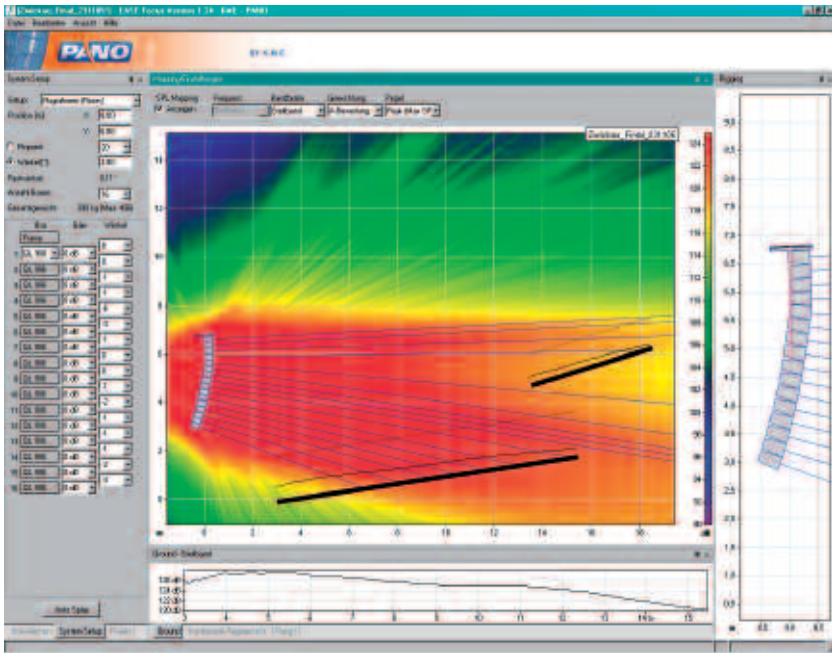
Side View

Rear View

Rigging

Stacking

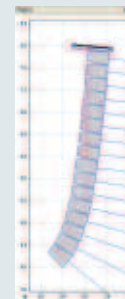
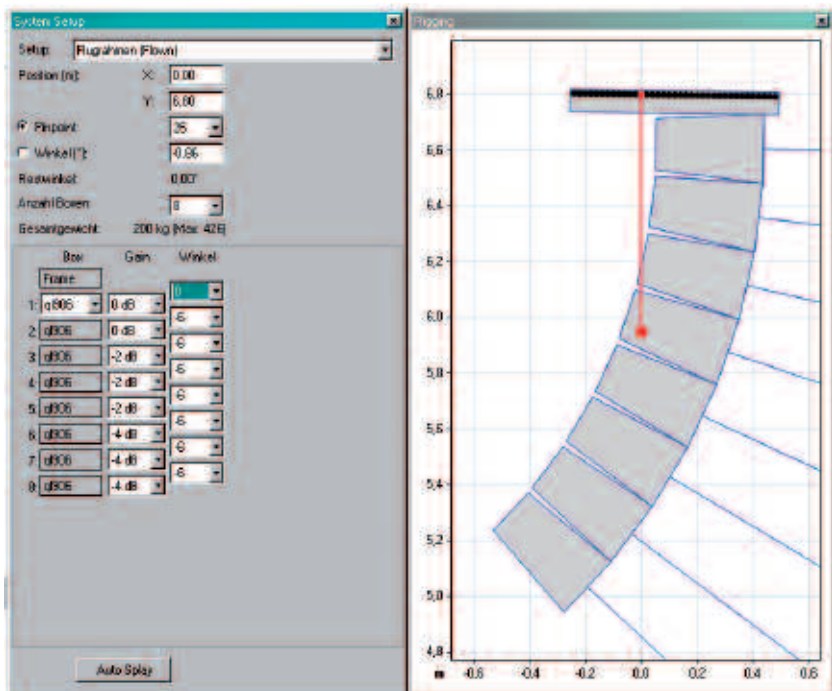
Serial No. _____



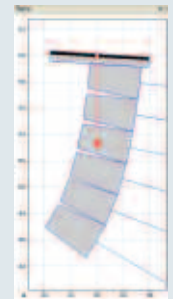
The PANO – Focus software allows a two-dimensional simulation of the acoustic sources of the line array. Herewith developers and end users use a quick simulation software, which calculates the splay angles and the expected array performance and displays it as a printable version with rigging details.

Download at www.kme-sound.com

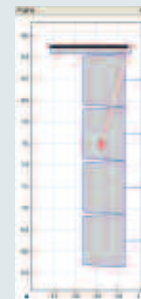
In the window »system setup« the user can designate the two-dimensional position of the array to the audience. Using speaker definitions and the number of speakers used the software calculates a setup suggestion including rigging details (splay angles, mass of system, pinpoint to use) and dispersion details.



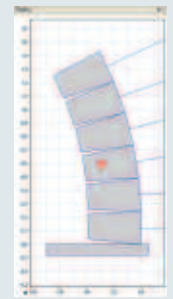
Flying configuration
J-Array: combination of flat- & curved array up to max. 20 x QL 906 / QL 1215



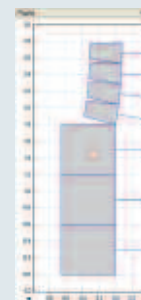
Flying configuration
Curved-Array:
6 x QL 906 / QL 1215



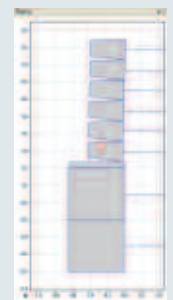
Flying configuration
LoMid-extension
min. 4 x QLM 115



Frame-stacking
configuration max.
6 x QL 906 / QL 1215



Sub-stacking
configuration max.
3 x QLB 118 +
4 x QL 906 / QL 1215



Sub-stacking
configuration max.
2 x QCB 318 + TB 500 +
8 x QL 906 / QL 1215

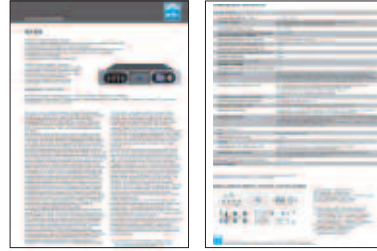
DA428

fully digital 4-channel DSP-amplifier
4 x 700 W @ 4 ohms, free routable/adjustable



DA230

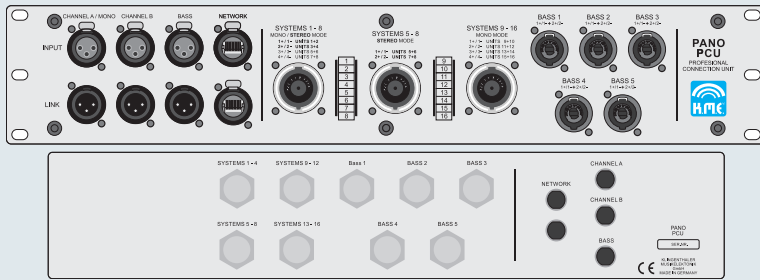
fully digital 2-channel DSP-amplifier
2 x 1500 W @ 4 ohms, free routable/adjustable



Please read out the technical datas of DA 428 and DA 230 from the attached data sheets.

PANO PCU

rack-mount connection unit PANO PCU
professional connection unit, 19" version, 2 RU



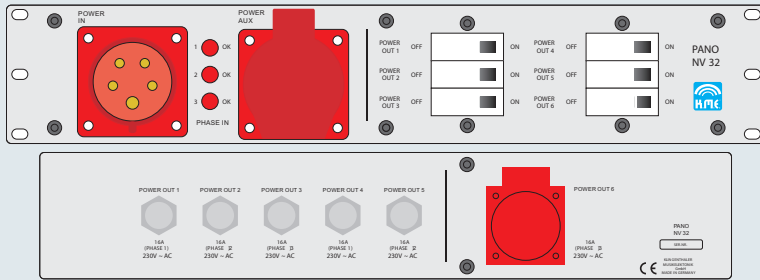
The rack-mount connection unit PANO PCU enables the user to route the audio signal to the amplifiers DA 428 resp. DA 230 and the speaker signals to the array elements using Neutrik NL 8 and NL 4 connectors.

On the front side there are three XLR-inputs and link-sockets as well as a network connection available. Further there are three Neutrik NL 8 and five Neutrik NL 4 connectors available for connecting the amplifier signals. These connectors can be driven as subwoofer or top unit channel.

On the rear side all connectors are realized by 4-wired Speakon connectors.

PANO NV 32

mains supply unit
32 A to 6 x 16 A, 19" version, 2 RU

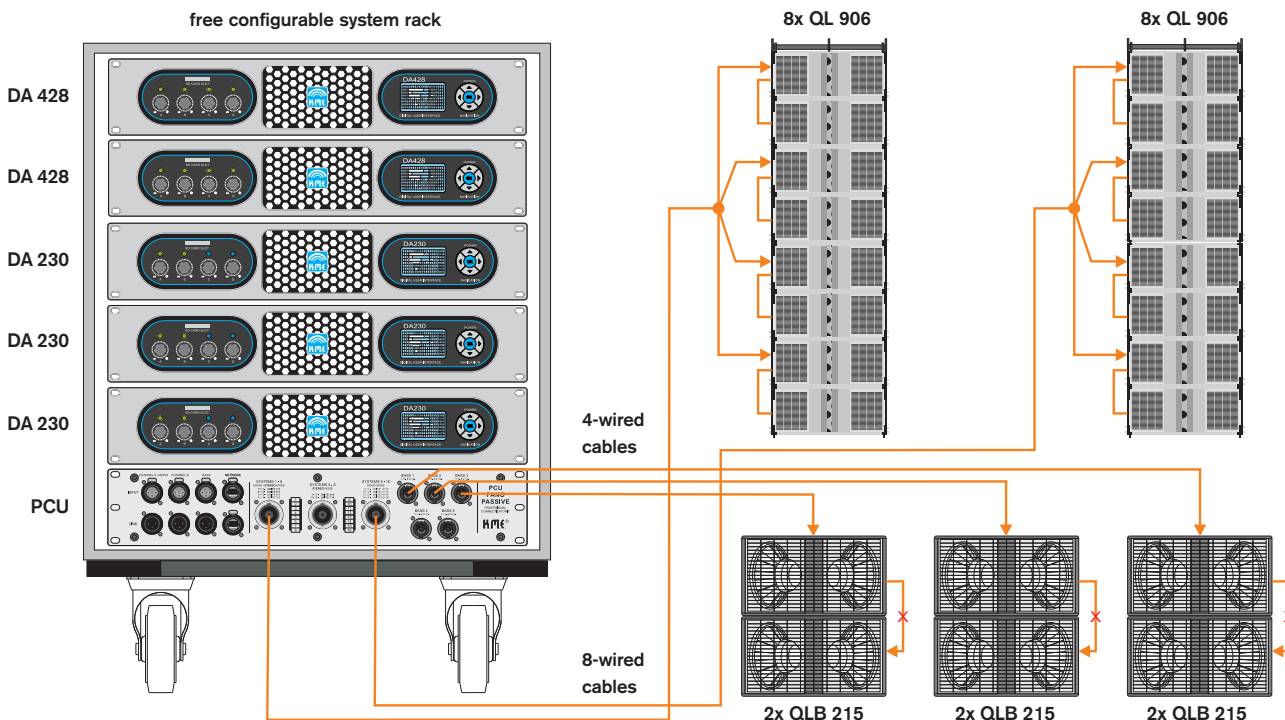


Mains supply unit, 19" version, 2 RU with six circuit breakers, each C 16 A / 230 VAC.

Connections: 1 x 400 V AC 32 A Power IN, 1 x 400 V AC 32 A Power AUX, 5 x PowerCon connectors, à 230 V AC 16 A and one Schuko-socket 230 V AC 16 A (on request available with various european sockets).

Dimensions (W x H x D) mm: 483 x 88 x 125, Weight: 6 kg

SYSTEM EXAMPLE for an individual system setup:



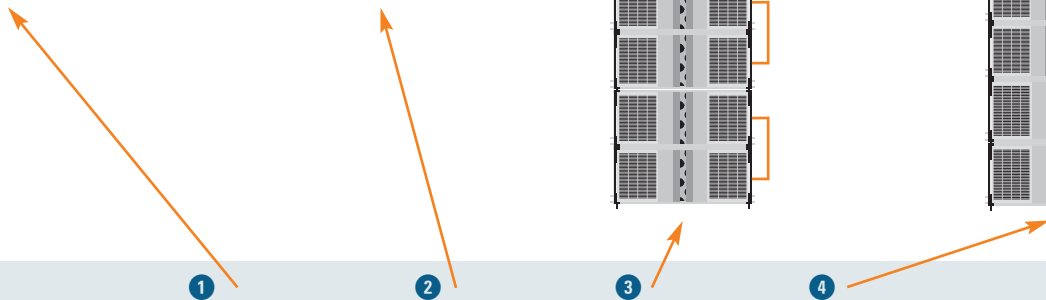
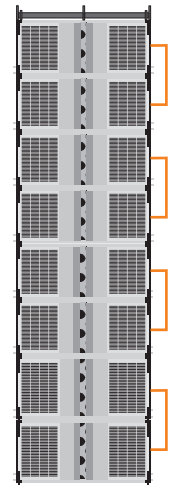
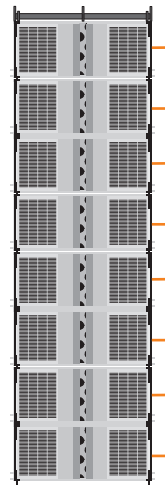
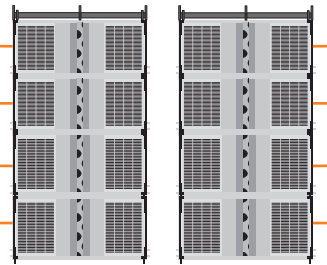
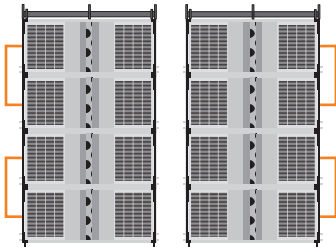
Here you can see application examples for the max. system configuration of one DA 428 and one DA 230:

system-preset: PANO Top 1
4 x QL 906 per side,
2 elements per channel,
stereo-setup

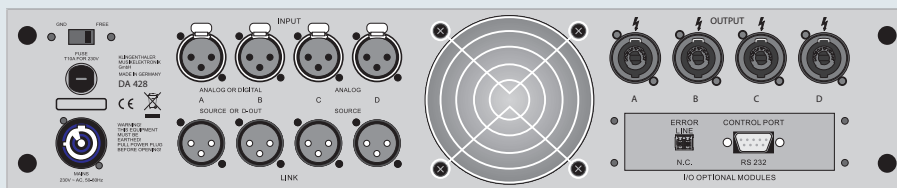
system-preset: PANO Top 2
2 x QL 906 + 2 x QL 1215 per side,
2 elements per channel,
stereo-setup

system-preset: PANO Top 3
8 x QL 906 per side,
2 elements per channel,
mono-setup

system-preset: PANO Top 4
6 x QL 906 + 2 x QL 1215 per side,
2 elements per channel,
mono-Setup

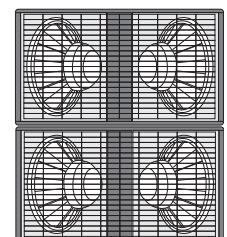
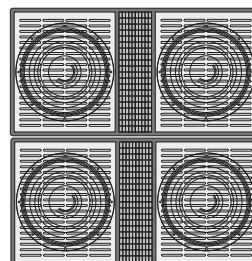
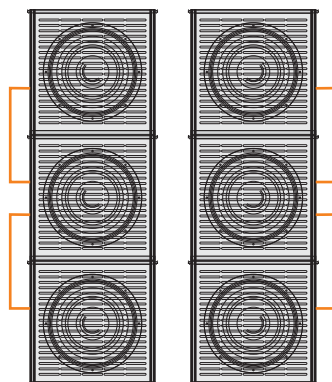
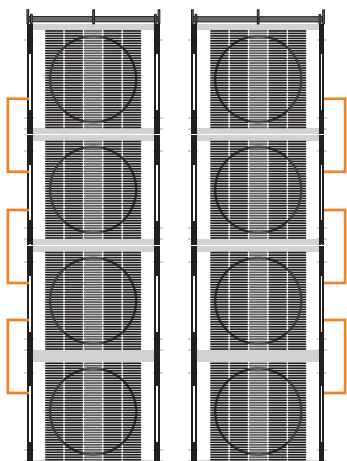
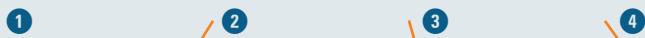


DA428



For each system-setup you have to choose the appropriated preset on DA 428 / DA 230.

DA230



system-preset: PANO Sub 1
8 x QLM 115,
4 elements per channel,
stereo or mono setup

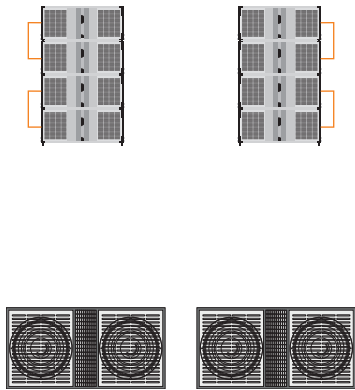
system-preset: PANO Sub 2
6 x QLB 118,
3 elements per channel,
stereo or mono setup

**system-preset: PANO Sub 3 (omni)
or PANO Sub 4 (cardioid)**
2 x QCB 318, 1 element per channel,
stereo or mono setup

system-preset: PANO Sub 5
2 x QLB 215,
1 element per channel,
stereo or mono setup

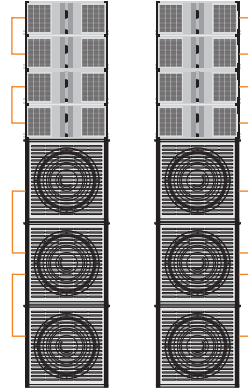
On this page you see special system-configuration examples of passive PANO Line Array elements. This examples are variable and extendable. By means of the PANO-Focus simulation software, all listed system configurations are available on the internet at www.kme-sound.com as a two-dimensional simulation.

example 1



recommended amplifiers: 1 x DA 230 + 1 x DA 428
 system components: max. 2 x QCB 318 and 8 x QL 906 / QL 1215

example 2



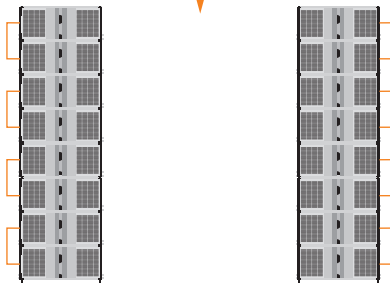
recommended amplifiers: 1 x DA 230 + 1 x DA 428
 system components: max. 6 x QLB 118 and 8 x QL 906 / QL 1215

System Setup

flown and stacked use
 (recommended minimum configuration)

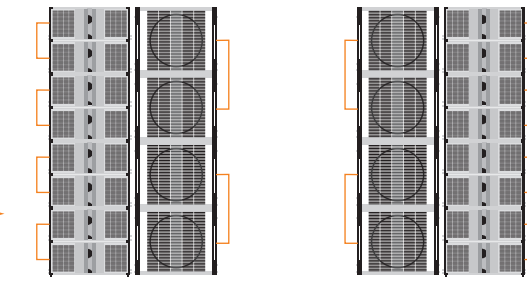
extendable to

example 3



recommended amplifiers: 4 x DA 230 + 2 x DA 428
 system components: max. 4 x QCB 318 and 16 x QL 906 / QL 1215

example 4



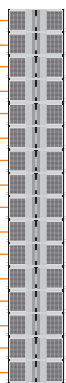
recommended amplifiers: 7 x DA 230 + 2 x DA 428
 system components: max. 6 x QCB 318 and 16 x QL 906 / QL 1215 and 8 x QLM 115

System Setup

flown and stacked use
 (max. 8 x top's per side)

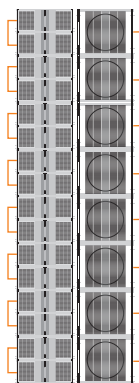
extendable to

example 5



recommended amplifiers:
 8 x DA 230 + 4 x DA 428
 system components:
 max. 8 x QCB 318 and
 32 x QL 906 / QL 1215

example 6



recommended amplifiers:
 12 x DA 230 + 4 x DA 428
 system components:
 max. 10 x QCB 318 and
 32 x QL 906 / QL 1215
 and 16 x QLM 115

System Setup

flown use

extendable to

extendable to

extendable to



Der Inhalt entspricht dem Stand bei Drucklegung.
Technische Änderungen, Druckfehler und Änderungen vorbehalten.
K.M.E. adopts the right of continuous improvement and reserves
the right to change specifications without notice.

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