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#### AXIOM: THE ESSENCE OF SOUND

AXIOM represents the culmination of an extensive development project that addresses the specific requirements of concert touring, fixed installation, and portable sound reinforcement professionals around the world.

Combining state-of-the-art proprietary Italian made transducers, advanced electronics and modern digital technologies in a range of high performance loudspeaker products designed and manufactured entirely in Italy, AXIOM utilises the most efficient production and test processes available to achieve incomparable quality and ultimate reliability.

The AXIOM product range provides a dedicated solution for every conceivable sound reinforcement application: as a main front of house PA system either indoor or outdoor; for stage monitoring and side fills; in fixed installations ranging from sports facilities to theatres, houses of worship, live music venues, nightclubs and bars; and for a myriad of corporate and portable applications.

AXIOM products are proudly supported by a specialised technical support network in more than 120 countries worldwide.



### THE JOURNEY STARTS HERE

PROEL is a leader in the design, manufacture and distribution of audio, video and lighting equipment for the world of entertainment and live music events, and for fixed installations.

Established in 1991 by Fabrizio Sorbi in Sant'Omero, Italy, over the years the company has witnessed steady development and robust growth. Today PROEL employs more than 120 people at its state-of-the-art modern factory, and distributes its products in over 120 countries worldwide.

A passion for quality and innovation proudly presented in its many products and services positioned PROEL at the forefront of professional audio solutions. The creation, in 1997, of the PROEL research and development team marked the beginning of a long and successful journey in the design and marketing of high quality sound reinforcement products. In 2002, after bringing on board technicians and professionals with years of experience in designing sound systems and their use in live applications, the R&D team embarked on the research of higher performance intelligent solutions for a global sound reinforcement market.





In a few short years PROEL had assembled a group of specialists with expertise not only in academic and laboratory disciplines, but also behind mixing desks and on concert stages – and had created a series of successful point source and line array loudspeaker systems rooted in technical innovation and originality, and backed up by all in-house Italian manufacturing with accurate process control.

In 2014 a specialist design team was assigned to the creation of a new AXIOM brand, with the specific aim of developing a comprehensive loudspeaker product range that fulfils the expectations of customers looking for top performance.

Today the AXIOM team – made up of loudspeaker system designers, analogue electronics specialists, digital systems practitioners, integration experts and live sound engineers – is creating the most advanced, state-of-the-art technologies: using powerful ultra-light transducers, efficient class-D amplifiers, integrated digital signal processors, high-end analogue electronics and convenient, efficient wiring and suspension systems.

All these features contribute to the achievement of intelligent sound reinforcement solutions that provide excellent sound quality, ease of use, versatility and reliability.

Manual Inter

#### DESIGNED AND **ENGINEERED** IN ITALY

It is the essential interrelation between design and technology that creates a truly great product. Both must work together in harmony in order for the most optimal form and function to be achieved. Only through the application of the dedicated AXIOM research and development team to a completely integrated system approach – from concept to completion – can these innovative designs and latest technologies combine to ensure that AXIOM sound reinforcement systems are equipped to offer exquisite sonic performance and ultimate reliability that you can depend on.

AXIOM loudspeaker systems are uniquely designed and engineered entirely in Italy by PROEL's R&D team, using the very latest reseearch and development techniques. Dedicated R&D facilities are located in Cattolica and also within PROEL's Sant'Omero headquarters and manufacturing base, staffed by highly qualified design engineers, digital electronics experts, and technicians. These two modern, fully equipped facilities are geared as much to 'blue sky' research activities as to structured development programs with clearly defined commercial goals. The role of R&D is to seek out new technological solutions through its strong links with local and national academic institutions, to constantly optimise products in the current portfolio, and to design and bring to market products tailored to the needs of professional users that make a lasting impression on the sound reinforcement market.

The AXIOM range was developed using the most advanced 2D and 3D modeling software, renowned for the ability to visualise and generate complex waveguides and for its accuracy in designing with many different materials. These processes have been combined with high end industrial design to create refined loudspeaker systems with real world applications.

We have developed sophisticated analytical and measurement routines that evaluate every minute aspect of the loudspeaker components' acoustical, mechanical and thermal behaviour to ensure that predictably repeatable performance and effective manufacturability can be maintained within tight tolerance limits.

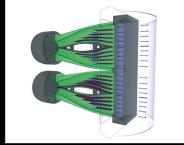
Development of the acoustic domain is of course only part of the story. Digital electronics has literally transformed the way that professional sound systems can perform in widely variable venue conditions, not to mention the convenience of packaging lightweight amplifier together with digital signal processing modules within the loudspeakers themselves. Add to that the ability to remote control many of the system parameters on the fly, and you can appreciate why the PROEL R&D team has attached great importance to the field of digital electronics and developed proprietary DSP platforms for speaker processing and audio signal distribution that are amongst the highest quality available.



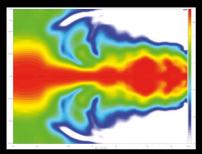
State-of-the-art analog and digital electronic design



Advanced 3D modeling and mechanical engineering



Design and development of innovative acoustic solutions



Sophisticated acoustic analysis and simulation



#### AX LINE ARRAY SYSTEMS

- High output compact Line Array elements
- Powered or passive formats
- Very good acoustic output to weight ratio
- High quality, low distortion HF drivers
- Stable horizontal coverage
- Transmission Line back loading for clean mid-bass reproduction
- Digitally controlled Class D amplifier modules with SMPS
- 96KHz / 40 bit floating point CORE processing
- PRONET remote control software

AX Vertical Line Array systems are designed for indoor and outdoor sound reinforcement applications where flexibility and ease of use are a primary consideration. They combine superior sound quality with leading-edge processing and digital amplification in practical road-ready packages. Made entirely in Italy using world-renowned Italian transducers and state-of-the-art manufacturing techniques, the AX series has been engineered for consistently reliable performance without compromise.



# The size, weight and make

#### AX LINE ARRAY SYSTEMS

AXIOM AX series line arrays provide high output from compact enclosures easily adaptable to a wide range of concert touring and fixed sound reinforcement applications.

High frequencies are reproduced by **low distortion compression drivers** (two are used in the AX2010, and a single unit in the AX2065), equipped with lightweight titanium diaphragms with a special suspension designed to deliver very natural sound quality. They are loaded by a transmission line wave-forming waveguide to achieve better high frequency projection over large distances.

The mechanical design of the AX line arrays places the high frequency waveguide in the centre of the cabinet between the two low frequency drivers, known as a **WTW driver configuration**. This symmetrical arrangement, together with a relatively low crossover frequency and the physical separation of the woofers, avoids the potential effects of beaming around the crossover frequency.

The custom designed **Italian made low frequency transducers** are equipped with very lightweight cones and rubber suspensions to extend their low frequency response. Diaphragm weight is further reduced by the use of aluminium coils rather than copper, and this resultant reduction in mass is responsible for the fast reproduction of mid and mid-bass musical passages. Thermal capacity is also improved, and consequently the overall power compression as well.

The woofers are back-loaded by a **short transmission line** that minimises any box resonances and eliminates the 'boxy' mid-bass sound commonly found in traditional bass-reflex enclosures.

# t, clarity, dispersion themperfect...

**Rigging hardware** is fully integrated into the AX series line array cabinets, and the rigging pins are captive, requiring no external parts other than the custom designed flybars to quickly and easily fly a loudspeaker array.

Both the medium scale and compact powered AXIOM line arrays feature a 2000 watt **digitally controlled Class D amplifier module with SMPS** (switch mode power supply). The power supply employs a variable switching frequency that varies with input level to deliver audio performance comparable to audiophile Class AB designs, but with vastly improved efficiency (better than 90%) as well as much lower weight and reduced size.

System processing for active AXIOM line arrays is based on the **CORE DSP platform** developed by PROEL's R&D laboratories, using one of the most advanced SHARC DSP chips available for audio applications. 40-bit, 96kHz floating point resolution and top quality A-D converters ensure perfect signal integrity, dynamic range in excess of 110 dB, and superior sonic performance.

Powered AXIOM line arrays can be conveniently remote controlled by **PRONET control software** running on a Windows<sup>®</sup> PC. The free software, which works on the very stable and reliable CANBUS protocol, provides an intuitive user interface for remote control of the whole system, offering access to equalisation, multiple delays, driver protection, and overall amplifier status monitoring.



### AX2010P

Dual 10" Passive Vertical Array Element

#### AX2010A

Dual 10" Powered CORE Processed Vertical Array Element

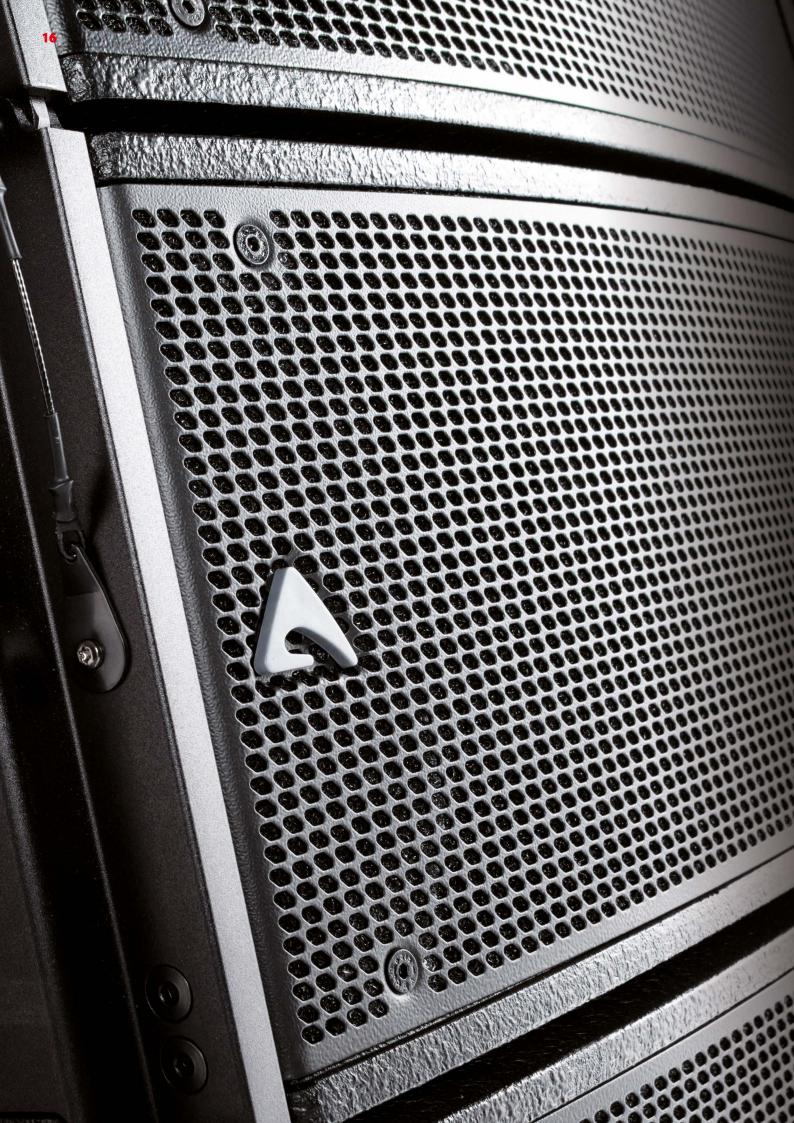
#### Medium Scale High Output Line Arrays in Passive or Powered formats

The AX2010P is a passive vertical line array element providing superior sound quality and effortless portability, designed for general purpose live sound reinforcement applications where a range of audience spaces can be addressed with only one type of enclosure. The loudspeaker is based around two high performance 10" woofers with lightweight cones and aluminium voice coils to ensure fast response in the bass and mid frequencies. These are loaded by a hybrid transmission line that eliminates the 'boxy' sounding mid-bass common with conventional bass-reflex designs. Two 1.4" high frequency compression drivers, loaded by transmission line wave-forming waveguides, deliver detailed and natural high frequencies with excellent projection capabilities. The birch plywood cabinet includes integrated rigging hardware designed for both portable rental applications and fixed installations.

The AX2010A powered vertical line array raises ease of operation to a new level. Dispensing with separate amplifier racks and associated bulky cabling, the AX2010A is a self-contained high quality audio source powered by a new generation 2000 watt DA series Class D digital amplifier with digitally-controlled SMPS, providing superior sound definition at all audio frequencies and exceptional dynamics. Optimised performance is ensured by the 40-bit, 96kHz CORE DSP that is implemented across all AXIOM range products, and controlled via a PC by the intuitive PRONET control and monitoring software developed by the PROEL R&D team. The integrated rigging hardware and transport accessories make the assembly of flown clusters an easy task.

	AX2010P	AX2010A
Configuration	2 x 10" LF driver	2 x 10" LF driver
	2 x 1.4" HF compression driver	2 x 1.4" HF compression driver
Frequency Response	75 Hz - 18 kHz ±3 dB	75 Hz - 18 kHz ±3 dB
Max Peak SPL	138 dB	138 dB
Power Handling / Ouput	LF: 700 watts AES, 1400 watts program	2 x 1000 watt Class D amplifier with SMPS
	HF: 150 watts AES, 300 watts program	
Coverage Angle	110°H x 10°V @-6 dB points	110°H x 10°V @-6 dB points
Dimensions (wxhxd)	746mm x 341mm x 530mm (29.4" x 13.4" x 20.9")	746mm x 341mm x 530mm (29.4" x 13.4" x 20.9")
Net Weight	38.5 kg (42.3 lbs)	40.3 kg (88.7 lbs)







### AX2065P

Dual 6.5" Passive Vertical Array Element

#### AX2065A

Dual 6.5" Powered CORE Processed Vertical Array Element

#### **Compact Line Arrays in Passive or Powered Formats**

The AX2065P is a compact passive vertical line array element providing superior sound quality and effortless portability, designed for live sound reinforcement in small to medium audience spaces, for example for corporate events, broadcast studios, and fashion shows, where height limitations may be a constraining factor. It is also ideal for use as flown or ground stacked stage side fill applications as part of a larger system, and as a stage front fill loudspeaker. The two proprietary 6.5" woofers use hybrid transmission line loading to reduce box resonance and ensure clarity in the mid-bass frequencies, while the highs are handled by a 1.4" low-distortion compression driver loaded by transmission line wave-forming waveguide. The birch plywood cabinet includes integrated rigging hardware designed for both portable rental applications and fixed installations.

The identically-sized AX2065A powered line array element combines superior sound quality with a higher level of convenience, and is designed for live sound reinforcement of small to medium audience spaces. It is powered by a 2000 watt DA series digital amplifier, a new generation of Class D power amplifier with digitally-controlled SMPS, providing superior sound definition at all audio frequencies and exceptional dynamics. The power module is not only extremely compact and lightweight, it is also capable of powering an additional passive AX2065P loudspeaker, making very efficient use of mains power. Optimised performance is ensured by the 40-bit, 96kHz CORE DSP that is implemented across all AXIOM range products, and controlled via a PC by the intuitive PRONET control and monitoring software developed by the PROEL R&D team. Integrated rigging hardware is seamlessly compatible with the AX2065P.

	AX2065P	AX2065A
Configuration	2 x 6.5″ LF driver	2 x 6.5″ LF driver
1 Marsh	1 x 1.4" HF compression driver	1 x 1.4" HF compression driver
Frequency Response	80 Hz - 18 kHz ±3 dB	80 Hz - 18 kHz ±3 dB
Max Peak SPL	129 dB	129 dB
Power Handling / Output	LF: 400 watts AES, 800 watts program	2 x 1000 watt Class D amplifier with SMPS
6 . 3 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1	HF: 75 watts AES, 150 watts program	
Coverage Angle	110°H x 12°V @-6 dB points	110°H x 12°V @-6 dB points
Dimensions (wxhxd)	583mm x 244mm x 481mm (22.9" x 9.6" x 18.9")	583mm x 244mm x 481mm (22.9" x 9.6" x 18.9")
Net Weight	19.2 kg (42.3 lbs)	22.5 kg (49.6 lbs)

#### SW SUBWOOFER SYSTEMS

- Very high energy at sub-bass and bass frequencies
- Manifolded Transmission Line, Manifolded Bandpass and horn-loaded configurations
- Long-excursion split coil for extended linear response
- Tetracoil Dual Voice Coils
- Water repellent, reinforced speaker cones
- Digitally controlled Class D amplifier modules
- 96 kHz / 40 bit floating point CORE DSP processing
- PRONET remote control software

SW series subwoofers are designed to provide highly energetic sub-bass support for AX series line arrays and ED series point source loudspeakers. They are designed to be physically and acoustically compatible with all AXIOM systems in a wide variety of indoor and outdoor concert touring, festival, and fixed installation applications. The active versions offer unparalleled levels of performance and convenience of operation with minimal weight penalty.



#### 20

# Impressive low fre

#### SW SUBWOOFER SYSTEMS

AXIOM subwoofers are designed to deliver high output low frequency reproduction with well defined bass response and excellent transient response to partner AX series line array systems.

High power custom designed Italian made transducers are used in all AXIOM subwoofers.

Where extreme coil excursion is demanded of a sub-bass transducer, high stiffness **Double Silicon Spiders** and **Inner Flux Demodulating Rings** ensure that voice coils remain totally centred and under complete mechanical and thermal control in critical show conditions.

The 18" drivers of the SW218X and SW36XF use **Tetracoil Technology** to derive very long excursion (up to 30mm peak to peak) from insideoutside wound dual coils which are centred in two axially separated magnetic gaps. The resultant dual coil, although only 4" in diameter, provides equivalent performance to a single coil larger than 6", giving better heat dissipation and increased power handling.

Direct radiating AXIOM subwoofers use Interleaved Sandwich aluminium Voice Coils (ISV), which together with the die-cast basket increases efficiency, improves heat dissipation, and reduces power compression.

AXIOM subwoofers feature **water-repellent speaker cones**, making them very resilient in outdoor concert touring and festival situations where the drive units may be exposed to damp conditions. This treatment significantly prolongs the expected component life when on tour.

# equency extension on upper bass...

The **Manifolded Transmission Line** combines two acoustic principles: manifold loading the output of two cone drivers for beneficial mutual coupling and improved efficiency, while simultaneously transmission line loading the rear of the cones, thereby speeding up transient response and further increasing efficiency.

**Manifolded Bandpass** technology similarly brings together two concepts: loading the front of two driver cones into a manifold with the advantages of band pass design for higher efficiency in the upper bass region.

Powered AXIOM subwoofers feature digitally controlled **Class D amplifier modules with SMPS** (switch mode power supplies). These are among the most powerful in the industry, employing a variable switching frequency that varies with input level to deliver audio performance comparable to audiophile Class AB designs, but with vastly improved efficiency (better than 90%), as well as much lower weight and reduced size.

System processing for AXIOM active subwoofers is based on the **CORE DSP platform** developed by PROEL's R&D laboratories, using one of the most advanced SHARC DSP chips available for audio applications. 40-bit, 96 kHz floating point resolution and top quality A-D converters ensure perfect signal integrity, dynamic range in excess of 110 dB, and superior sonic performance.

Remote control of AXIOM subwoofers is conveniently implemented by **PRONET control software** running on a Windows<sup>®</sup> PC. The free software, which works on the very stable and reliable CANBUS protocol, provides an intuitive user interface for remote control of the whole system, offering access to equalisation, multiple delays, driver protection, and overall amplifier status monitoring.



### SW121HLP

High Output 21" Horn-loaded Subwoofer

### SW121HLA

High Output 21" Powered Horn-loaded Subwoofer

#### High Efficiency Subwoofers for Touring or Fixed Installations

The SW121HLP delivers high quality low frequency reproduction where very high output is a key requirement, together with well defined, extended bass response, and fast transient response. The enclosure's special horn-loaded configuration is based on a small rear cavity and a very compact folded horn. With this design and specific processing, the SW121HLP is ideal for use as a ground stacked 'infra-sub' as part of a four-way AX2010 or AX2065 line array system, providing impressive low frequency extension with usable response down to 32 Hz as well as 'punchy' upper bass reproduction. The proprietary Italian designed high power 21" driver and the compact size of the cabinet contribute to excellent output-to-weight ratio, producing maximum peak output of 145 dB.

The powered version of this efficient subwoofer takes convenience and repeatable performance to a new level. Featuring a fully integrated lightweight Class D amplifier module with switch mode power supply, a system of AX2010A or AX2065 line array modules and SW121HLA subwoofers can be set up in minutes with minimal cabling and a high degree of system control. As such the SW121HLA is a compelling proposition as part of a high power sound reinforcement system for rental companies as well as being well suited for fixed installations in theatre or live music venue applications. The CORE DSP processing platform ensures perfect signal integrity, dynamic range in excess of 110 dB, and superior sonic performance. PRONET control software provides intuitive remote control, with full user access to system EQ, delay, protection settings, and amplifier status monitoring.

Both subwoofer models are equipped with heavy duty wheels to aid in handling and transportation.

	SW121HLP	SW121HLA
Configuration	1 x 21"LF driver	1 x 21″ LF driver
Frequency Response	32 Hz - 85 Hz ±3 dB	32 Hz - 85 Hz ±3 dB
Max Peak SPL	145 dB	145 dB
Power Handling / Ouput	1800 watts AES, 3600 watts program	4000 watt Class D amplifier with SMPS with PFC
Dimensions (wxhxd)	589mm x 801mm x 1022mm (23.2" x 31.6" x 40.2")	589mm x 801mm x 1022mm (23.2" x 31.6" x 40.2")
Net Weight	72 kg (158.7 lbs) without heavy duty wheels	78.2 kg (172.4 lbs) without heavy duty wheels



### SW36XFP

#### SW36XFA

High Output 2 x 18" Manifolded Bandpass Subwoofer

High Output 2 x 18" Powered Manifolded Bandpass Subwoofer

#### High Efficiency Flyable Subwoofers in Passive or Powered Format

Designed to be flown with AX2010P line array modules, the SW36XFP provides an elegant solution to delivering 'bass in the sky' from a flown cluster, with usable response down to 36 Hz. When positioned at the top of the array its integrated rigging hardware mates with the AX2010P and the curved grille profile also matches the AX2010, forming a neat and unobtrusive cluster. Offering impressive efficiency from a compact cabinet, the SW36XFP uses a combination of manifold and bandpass loading techniques to achieve an impressive 143 dB peak output. Its dual 18" low frequency drivers feature 4"Tetracoil dual voice coils, which have the equivalent performance to a single 6" voice coil.

The powered SW36XFA features an integrated 4000 watt class D amplifier module that provides convenience and simplicity of connection for concert touring applications, or will benefit larger fixed installations such as dance clubs, sports halls, stadia, and large conference rooms. It will deliver high sound presure level at bass frequencies, with abundant headroom to deliver the fast transient response that brings live performances and electronic music to life. Its two custom 18" drivers feature 4"Tetracoil dual voice coils, which are capable of very high excursion and hence have the ability to move significant amounts of air. PROEL's CORE DSP processing ensures that the SW36XFA is capable of perfect signal integrity, dynamic range in excess of 110 dB, and superior sonic performance.

	SW36XFP	SW36XFA
Configuration	2 x 18" LF drivers	2 x 18″ LF drivers
Frequency Response	36 Hz - 100 Hz ±3 dB (processed)	36 Hz - 100 Hz ±3 dB (processed)
Max Peak SPL	143 dB	143 dB
Power Handling / Ouput	1800 + 1800 watts AES, 3600 + 3600 watts program	4000 watt Class D amplifier with SMPS
Dimensions (wxhxd)	746mm x 795mm x 710mm (29.4" x 31.3" x 27.9")	746mm x 795mm x 710mm (29.4" x 31.3" x 27.9")
Net Weight	87.4 kg (192.7 lbs) without heavy duty wheels	91.2 kg (201.1 lbs) without heavy duty wheels



### SW218P

High Output 2 x 18" Manifolded Subwoofer

#### SW218A

High Output 2 x 18" Powered Manifolded Subwoofer

#### High Efficiency Subwoofers for Touring and Fixed Installations

The SW218P is a dual 18" manifolded transmission line subwoofer designed for ground stacked sub-bass support of AX2010 line arrays in demanding concert touring applications where high output and good bass definition is required from an easily transportable and road-ready cabinet. It uses two proprietary 18" woofers with high excursion 4" voice coils to generate significant low frequency energy to provide real impact to live music. The birch plywood cabinet includes multiple recessed handles and heavy duty wheels for easy loading in and out of venues, and is also equipped with stacking feet and matching recesses to enable the building of stable ground stacks.

The powered SW218A features an integrated 4000 watt class D amplifier module that provides convenience and simplicity of connection for concert touring applications, and also for fixed installations in discotheques and live music clubs. It will deliver high sound presure level at bass frequencies, with abundant headroom to deliver the fast transient response that brings live performances and electronic music to life. Its two custom 18" drivers feature inside-outside wound voice coils, which are capable of very high excursion and hence have the ability to move significant amounts of air. PROEL's CORE DSP processing ensures that the SW218XA is capable of perfect signal integrity, dynamic range in excess of 110 dB, and superior sonic performance.

	SW218P	SW218A
Configuration	2 x 18" LF drivers	2 x 18″LF drivers
Frequency Response	36 Hz - 100 Hz $\pm$ 3 dB (processed)	36 Hz - 100 Hz $\pm$ 3 dB (processed)
Max Peak SPL	141 dB	141 dB
Power Handling / Ouput	800 + 800 watts AES, 1600 + 1600 watts program	2000 + 2000 watt Class D amplifier with SMPS
Dimensions (wxhxd)	1215mm x 590mm x 950mm (47.9" x 23.2" x 37.4")	1215mm x 590mm x 950mm (47.9" x 23.2" x 37.4")
Net Weight	98 kg (216 lbs)	101.7 kg (223.7 lbs)



### SW218XP

Very High Output 2 x 18" Manifolded Subwoofer

Very High Output 2 x 18" Powered Manifolded Subwoofer

**SW218XA** 

#### Very High Efficiency Subwoofers for Touring and Fixed Installations

The SW218XP generates an additional 3 dB of peak output, making it ideal for top level concert touring and festival applications requiring higher levels of low frequency response such as hard rock and electronic music. It does this by utilising the unique 4" Tetracoil, two separate voice coils wound on both side of the same former and suspended in two axially separated magnetic gaps, enabling extreme excursion of the cone and suspension system. The SW218XP offers twice the output of the SW218P in the same size enclosure, so making it ideal for rental companies looking to increase total system SPL capability for the same amount of inventory

The powered SW218XA is recommended for high level dance music clubs and touring systems requiring very strong sub-bass energy with its 4000 watt class D amplifier module generating peak output of up to 143 dB, and extended low frequency response. The CORE DSP processing allows for remote control of critical operating parameters, as well as comprehensive system monitoring.

The SW218XP and SW218XA both feature reinforced birch plywood cabinets with stacking feet and heavy duty wheels.

	SW218XP	SW218XA
Configuration	2 x 18" LF drivers	2 x 18″LF drivers
Frequency Response	36 Hz - 100 Hz ±3 dB (processed)	36 Hz - 100 Hz ±3 dB (processed)
Max Peak SPL	143 dB	143 dB
Power Handling / Ouput	800 + 800 watts AES, 1200 + 1200 watts program	4000 watt Class D amplifier with SMPS with PFC
Dimensions (wxhxd)	1215mm x 590mm x 950mm (47.9" x 23.2" x 27.4")	1215mm x 590mm x 950mm (47.9" x 23.2" x 27.4")
Net Weight	114 Kg (251.3 lbs)	121.2 Kg (267.2 lbs)



### SW215P/SW215FP SW215A/SW215FA

High Output 2 x 15" Manifolded Bandpass Subwoofer

High Output 2 x 15" Powered Manifolded Bandpass Subwoofer

#### High Efficiency Subwoofers for Touring and Fixed Installations, Optional Flying Hardware

The SW215P is a compact double 15" subwoofer designed for high quality sound reinforcement in touring applications such as musicals, fashion shows, and coporate events, and also for fixed installations such as live music venues, theatres, and concert halls. It is especially effective in side fills or drum fills to provide solid and cohesive bass response. The SW215P features a unique, innovative Manifolded Bandpass cabinet configuration to deliver articulate and punchy upper bass frequencies with an emphasis on the 60 Hz to 90 Hz region where much of the impact of today's music is felt, and is physically and sonically compatible with the AX2065 compact line arrays. The combination of two loading techniques - manifolding the front sides of the speaker cones to maximise mutual coupling between drivers, and at the same time employing bandpass loading to increase efficiency - gives excellent definition of bass frequencies and 139 dB peak output from a cabinet of modest dimensions.

Both the ground-stackable and flown double 15" subwoofer models are available in powered versions, for use in applications where simplicity of setup and highly repeatable performance are key requirements. The SW215A includes a 2000 watt Class D amplifier module with advanced CORE DSP processing for optimised sound reproduction in fixed installations, avoiding the need for long speaker cable runs. Systems of SW215 subs and AX2065 series line array modules can be very easily controlled and monitored with PROEL's intuitive PRONET software running on a Windows PC, providing a high degree of driver protection and security. Integrated rigging hardware on the SW215FP and SW215FA makes them ideal for mobile rental applications, and heavy duty wheels are also included.



	SW215P/SW215FP	SW215A/SW215FA
Configuration	2 x 15"LF drivers	2 x 15″ LF drivers
Frequency Response	39 Hz - 120 Hz $\pm$ 3 dB (processed)	39 Hz - 120 Hz $\pm$ 3 dB (processed)
Max Peak SPL	139 dB	139 dB
Power Handling / Ouput	700 + 700 watts AES, 900 + 900 watts program	2000 watt Class D amplifier with SMPS
Dimensions (wxhxd)	571mm x 800mm x 582mm (22.5" x 31.5" x 22.9")	571mm x 800mm x 582mm (22.5″ x 31.5″ x 22.9″)
Net Weight	61 kg (134.2 lbs)	64.5 kg (141.9 lbs)





### **SW112P**

Compact 12" Reflex-loaded Subwoofer

#### High Efficiency Subwoofer for Installed and Portable Applications

The SW112P is a front-loaded subwoofer designed for good near-field coverage of medium sized venues such as high profile bars and clubs that feature recorded music, DJs, and live bands, and is specifically recommended for use with ED23P, ED25P, and ED65P point source loudspeakers. Its interleaved sandwich voice coil provides high efficiency (125 dB peak SPL), and the double silicon spider maintains good linearity. Due to its compact size and minimal front area it is small enough to be unobtrusively built into a stage or under seating, while the integrated pole mount socket allows it to provide sub-bass support for ED series satellite speakers, and also to be effective in portable audio-visual applications.

	SW112P
Configuration	1 x 12" LF driver
Frequency Response	39 Hz - 125 Hz $\pm$ 3 dB (processed)
Max Peak SPL	125 dB
Power Handling	600 watts AES, 1200 watts program
Dimensions (wxhxd)	370mm x 470mm x 460mm (14.6" x 18.5" x 18.1")
Net Weight	24.5 kg (53.9 lbs)

### ED POINT SOURCE SYSTEMS

- Arrayable Point Source loudspeakers
- Wide range of models for a variety of applications
- Constant coverage and excellent directivity control
- Near-field and mid-field sound reinforcement applications
- Passive and bi-amped format
- High quality, low distortion drivers
- Medium and wide dispersion patterns
- Audiophile-grade passive crossover networks
- Multiple integral rigging points

ED point source systems are designed for indoor and outdoor sound reinforcement applications ranging from clubs, bars and restaurants to theatres, live music venues, houses of worship and themed environments. Passive ED series loudspeaker systems are easy to set up and simple to operate, while the bi-amped models offer a higher level of performance and system control.



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### ED POINT SOURCE SYSTEMS

AXIOM ED series point source loudspeakers provide systems with a choice of 80° x 65°, 70° x 50°, 90° x 60°, and 60° x 40° high frequency waveguides, adaptable to a range of portable or fixed system applications that require precisely tailored coverage in both horizontal and vertical planes. In the larger cabinets the waveguides are rotatable within the enclosure, so allowing them to be mounted horizontally for example where ceiling height is limited while maintaining wide horizontal coverage.

Additionally this feature enables the assembly of **modular**, **multiple-speaker arrays**, supported by the integral M10 and M5 rigging points, with coverage that accurately matches the audience space. The compact and ultra-compact ED series cabinets are trapezoidally shaped so that they can be arrayed in neat and unobtrusive speaker clusters.

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Custom designed Italian-made transducers used in the ED series feature **edgewound aluminium voice coils** for high efficiency, special high strength woodpulp cones with **water-repellent treatment** for longevity in humid environments, and progressive rubber suspensions for good low frequency control.

The ED12P and ED15P use **Interleaved Sandwich aluminium Voice Coils (ISV)**, which increases efficiency. Neodymium magnet assemblies are also used extensively throughout the ED series to keep system weight low.





#### ED12P

12" Passive Two-way Full Range Loudspeaker

15" Passive Two-way Full Range Loudspeaker

ED15P

#### Passive Point Source Loudspeakers with Rotatable HF Horn

The ED12P offers great performance and full range response from an arrayable cabinet with a choice of dispersion patterns to suit a range of portable and fixed installations applications. It is supplied with a user-rotatable 90° x 60° high frequency waveguide, providing the optimum coverage for the chosen application – typically useful for wider rooms as a stand-alone solution, or when arrayed in pairs with the high frequency horns rotated as a powerful medium dispersion cluster. The bi-amped configuration allows for optimisation of each drive unit with PROEL's DSP controlled amplifiers such as the AXIOM QC2.4. M10 flying points are integrated into the birch plywood cabinet for easy loudspeaker cluster assembly, and a pole mount is also included for mobile applications.

The ED15P's larger cabinet enables greater bass extension down to 50Hz in stand-alone applications, and as with the ED12P the rotatable 90° x 60° waveguide gives wide horizontal coverage in stand-alone applications or allows flexible high density loudspeaker clusters to be assembled with coverage to suit specific venues or audience spaces. The birch plywood cabinet is equipped with M10 flying points. AXIOM DSP controlled amplifiers provide an ideal power source to derive consistently high quality audio from the ED15P.

Both ED series models feature proprietary Italian-made neodymium drive units, engineered to provide the best possible point source performance while keeping the net weight low – critically important for mobile rental and fixed installation applications.

	ED12P	ED15P
Configuration	1 x 12" LF driver	1 x 15″ LF driver
	1 x 1.4" HF compression driver	1 x 1.4" HF compression driver
Frequency Response	60 Hz - 18 kHz (-3 dB, +6 dB)	50 Hz - 18 kHz (-3 dB, +6 dB)
Max Peak SPL	128 dB	130 dB
Power Handling	70 + 600 watts AES (600 watts passive)	70 + 600 watts AES (600 watts passive)
	140 + 1200 watts program (1200 watts passive)	140 + 1200 watts program (1200 watts passive)
Coverage Angle	90° H x 60 °V @-6 dB points	60°H x 40°V @-6 dB points
Dimensions (wxhxd)	410mm x 630mm x 370mm (16.1" x 24.8" x 14.6")	470mm x 730mm x 460mm (18.5″ x 28.7″ x 18.1″)
Net Weight	27 kg (59.5 lbs)	36 kg (79.4 lbs)





### ED210P

#### Compact 2 x 10" Passive Two-way Full Range Loudspeaker

Compact 6.5" Passive Two-way Full Range Loudspeaker

#### **Passive Point Source Loudspeakers**

The ED210P offers great performance from an arrayable vertically-orientated trapezoidal cabinet with a choice of dispersion patterns to suit a range of portable and fixed installations applications. Its 90° horizontal by 60° vertical coverage pattern can be rotated through 90°, providing the optimum coverage for the chosen application and allowing it to mounted horizontally while maintaining the wide coverage. The bi-amped configuration allows for optimisation of each drive unit with PROEL's DSP controlled amplifiers such as the AXIOM QC2.4. Flying track is integrated into the birch plywood cabinet for easy loudspeaker cluster assembly, and a pole mount is also included for mobile applications.

ED65P

The ultra-compact ED65P leads the field in terms of output-to-size ratio, developing up to 120 dB peak output and usable bass response down to 85 Hz from a very small cabinet. This high level of performance is largely made possible by the bi-amped configuration, and when used with AXIOM QC series amplifiers the ED65P is capable of hi-fi quality sound for demanding theatre and audio-visual applications.

	ED210P	ED65P
Configuration	2 x 10" LF drivers	1 x 6.5″ LF driver
	1 x 1.4" HF compression driver	1 x 1" HF compression driver
Frequency Response	65 Hz - 18 kHz (-3 dB, +6 dB)	85 Hz - 20 kHz (-3 dB, +6 dB)
Max Peak SPL	130 dB	120 dB
Power Handling	70 + 600 watts AES (600 watts passive)	60 + 250 watts AES (250 watts passive)
	140 + 1200 watts program (1200 watts passive)	120 + 500 watts program (500 watts passive)
Coverage Angle	90° H x 60° V @-6 dB points	70° H x 50° V @-6 dB points
Dimensions (wxhxd)	360mm x 860mm x 320mm (14.2" x 33.9" x 12.6")	260mm x 420mm x 200mm (10.2" x 16.5" x 7.9")
Net Weight	32 kg (70.5 lbs)	9.5 kg (20.9 lbs)





#### ED25P

2 x 5.25" Passive Two-way Full Range Loudspeaker

2 x 3.5" Passive Two-way Full Range Loudspeaker

ED23P

#### **Compact Passive Point Source Loudspeakers**

Designed for near-field sound reinforcement applications such as television, stage front, conferencing, theatres, and audio-visual, the ED25P is an ultra-compact passive two-way loudspeaker that can be used either on its own or in small loudspeaker arrays creating even and seamless coverage. Its two 5.25" woofers and high frequency dome tweeter with Spherical Wave Guide Horn are arranged in a WTW linear enclosure configuration to give a wide dispersion pattern that works well in fixed installations using a minimal number of units. The cabinet is trapezoidally shaped, and also asymmetrical, and this profile not only allows the assembly of small clusters using the integral flypoints, but also enables it to be suspended horizontally very close to a ceiling or placed on a stage front as a low profile monitor.

The ED23P passive full range loudspeaker fulfils all of the applications for which the larger ED25P is suited, but does so from an even more compact cabinet housing two 3.5" woofers and a high frequency dome tweeter mounted on a Spherical Wave Guide Horn. The WTW driver arrangement provides a wide dispersion pattern that allows widely spaced units to cover large spaces with high quality background sound. Due to its very low profile, the ED23P is an ideal stage lip monitor, and especially useful for fashion show catwalks where it can be unobtrusively provide alternate inwards / outwards coverage for both audience and presenters.

The ED23P and ED25P both feature high quality passive crossovers for efficient use of available amplifier power and simplicity of operation.

	ED25P	ED23P
Configuration	2 x 5.25" LF drivers	2 x 3.5″LF drivers
	1 x HF dome tweeter with spherical waveguide	1 x HF dome tweeter with spherical waveguide
Frequency Response	125 Hz - 20 kHz ±6 dB	200 Hz - 20 kHz ±6 dB
Max Peak SPL	116 dB	112 dB
Power Handling	100 watts AES, 200 watts program	70 watts AES, 140 watts program
Coverage Angle	80° H x 65° V @-6 dB points	80° H x 65° V @-6 dB points
Dimensions (wxhxd)	176mm x 460mm x 190mm (6.9" x 18.1" x 7.5")	138mm x 320mm x 198mm (5.4" x 12.6" x 7.8")
Net Weight	7 kg (15.4 lbs)	6.4 kg (14.1 lbs)





### **CX15A**

Coaxial, High Output, Powered Stage Monitor

#### **Powered Monitoring Solution with Minimal Footprint**

The CX15A is a co-axial powered stage monitor designed to provide exceptional intelligibility and high gain before feedback on concert stages where minimal physical impact is desirable. It is ideally suited to live sound stage monitoring, as well as to theatre and television applications. The co-axial driver configuration eliminates the time and phase problems that can occur with discrete non-coincident sources, and provides a very small footprint on stage while giving the output of a much larger unit. The dispersion pattern is optimised for general purpose monitoring applications at 80° conical, so allowing performers freedom to move around on stage but still stay within the coverage pattern.

The reflex ports, instead of being located on the baffle where they can cause destructive inteference, are on the front of the cabinet and aimed towards the floor where some beneficial mutual coupling occurs in the 80 Hz region, tightening up the bass response and increasing definition. The ports also provide an efficient cooling method for the amplifier.

An advanced level of operating convenience and consistent performance is made possible by the integrated Class D amplifier with CORE DSP processing, with all the controls and connectors conveniently placed on a recessed side panel. The innovative technology developed by PROEL's R&D team and used in the CX15A, including the lightweight and efficient switch mode power supply (SMPS), offers top of the range performance while being very quick to set up even with multiple monitor mixes, without the complexity of speaker cables. The CX15A is very flexible in its positioning, made possible by the provided DSP presets that cater for use either as single units, in separated left / right pairs, or side by side.

The CX15A delivers an exceptional combination of high power, on-board amplification, and remote control in a compact, lightweight package. It is equipped with a dual angle pole mount socket on one side of the cabinet, so allowing it to be additionally used as a high quality front of house loudspeaker.

	CX15A		
Configuration	1 x 15" LF driver		
	1 x 1.4" coaxially mounted HF compression driver		
Frequency Response	60 Hz - 18 kHz $\pm$ 3 dB (processed)		
Max Peak SPL	131 dB		
Power Output	2000 watts		
Coverage Angle	80° H x 80° V conical @-6 dB points		
Dimensions (wxhxd)	520mm x 336mm x 415mm (20.5" x 13.2" x 16.3")		
Net Weight	18.5 kg (40.8 lbs)		

### **CX STAGE MONITOR**

- High-Output Coaxial Stage Monitor
- Very compact size and low-profile design
- Single magnet neodymium motor
- 80° constant coverage
- Front tuning ports
- 96KHz / 40bit floating point CORE processing with PRONET remote control
- Digitally controlled Class D amplifier module with SMPS

## OCAMPLIFIERS AXIOM QC series amplifiers are high performance 211 rack ment

AXIOM QC series amplifiers are high performance 2U rack mount models with built-in DSP, designed for powering large touring PA systems or loudspeaker systems in high-profile fixed installations. They are available in standard two channel configurations for powering typically a pair of full range loudspeakers or frequency band of a stereo multi-way speaker system; or in a four channel format for use with large multi-cabinet PA systems or for multiple monitor mixes. QC series amplifiers are **fully networkable** using the highly stable CANBUS protocol, so making it possible to set up and control a large network of devices – including amplifiers, powered speakers, and PROEL PC260 speaker processors – in a complex fixed install.

This new generation of **digitally controlled Class D power modules with switch mode power supplies** (SMPS) feature innovative and very efficient power supply technology with significant benefits over currently available designs. Rather than relying on a commonly used fixed switching frequency, the QC series amplifier design uses a **variable switching frequency** which varies according to the input signal level, giving high-fidelity sound quality that can be compared with pure audiophile, top-of-the-range, Class AB designs, but with the added advantages of lower weight, better than 90% efficiency, and negligible heat dissipation. The improvement in operating efficiency is a big contributing factor to an overall reduction in wasted energy that is often associated with large and complex sound system installations.

Signal processing is based on the **CORE DSP platform** developed by PROEL's R&D laboratories, using one of the most advanced SHARC DSP chips available today for high quality audio applications. Thanks to its substantial processing power, the CORE DSP platform can provide the most sophisticated algorithms for enhanced speaker processing, together with comprehensive remote control and system monitoring capabilities.

QC series amplifiers can be remotely controlled with **PROEL's proprietary PRONET software**, which provides an intuitive user interface for control of the DSP features in the amplifier, and for monitoring of the amplifier's overall status. This allows the user access to many of the loudspeaker system's operating parameters such as equalisation, multiple delays, and individual driver protection.

Based around a lightweight 2U chassis with an aluminium front panel, QC series amplifiers are equally at home on tour or in fixed installs. Airflow is from front to rear, aided by whisper-quiet variable speed fans, and the removable dust filters are accessible from the front for easy maintenance when racked.



QC4.2

Four Channel DSP Amplifier



Four Channel DSP Amplifier



Two Channel DSP Amplifier with PFC

#### **Digitally Controlled Class D Power Amplifiers with SMPS**

The four channel QC4.2 delivers 500 watts per channel at 4 ohms, and is recommended for powering a fixed installation system consisting of either multiple ED23P or ED25P point source speakers with full range response, or a combination of ED23P or ED25P satellites in combination with ED112P subwoofers using the onboard DSP to split the frequency bands. Any pair of channels can be bridged to drive more power into a subwoofer load.

The QC4.4 provides four channels of 1000 watts at 4 ohms, and is the preferred option to power multiples of the bi-amped AX2010P or AX2065P line arrays.

The most powerful in the series, the QC2.4 is a two channel unit delivering 2000 watts per channel at 4 ohms and featuring PFC (Power Factor Correction), a technology able to guarntee always the highest level of power regardless of any eventual fluctuations of the power supply. QC2.4 is ideal for use with subwoofers from the Axiom SW series, either bridged with a single driver model like the SW121HLP, or in two channel mode with dual driver subwoofers such as the SW36XFP, SW218P or SW218XP.

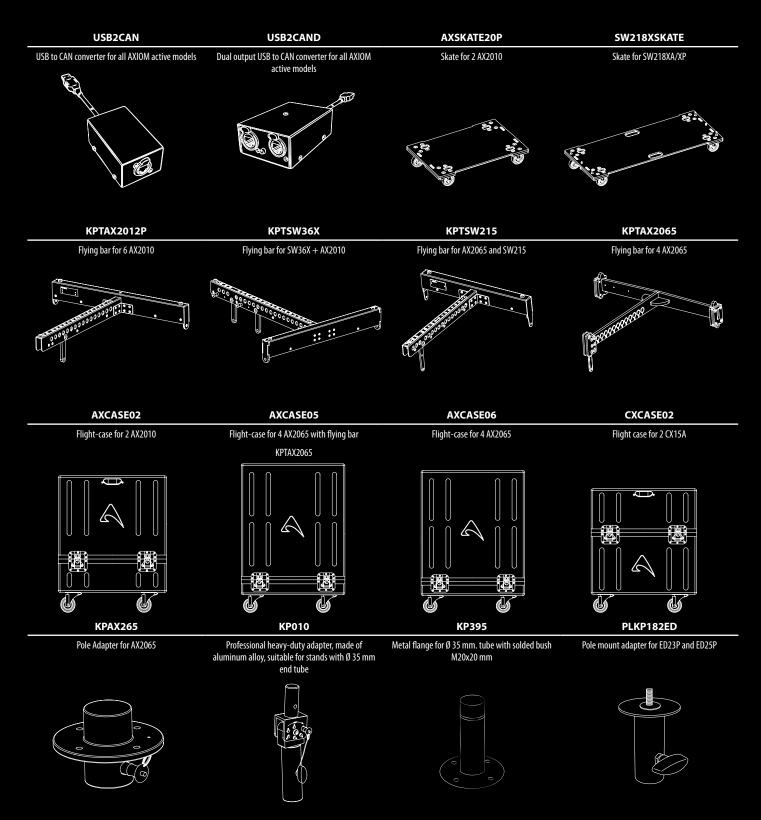
	QC4.2	QC4.4	QC2.4
Number of Channels	Four (single) or Two (bridged)	Four (single) or Two (bridged)	Two (single) or One (bridged)
Frequency Response	20 Hz - 20 kHz	20 Hz - 20 kHz	20 Hz - 20 kHz
Power Output @ 8 Ohms	250 watts	500 watts	1000 watts
Power Output @ 4 Ohms	500 watts	1000 watts	2000 watts
Power Output @ 8 Ohms Bridged	1000 watts	2000 watts	4000 watts
Input Sensitivity	+3 dBu	+6 dBu	+3 dBu
Dimensions (wxhxd)	483mm x 89mm x 383mm (19" x 3.5" x 16.2")	483mm x 89mm x 383mm (19″ x 3.5″ x 16.2″)	483mm x 89mm x 463mm (19″ x 3.5″ x 18.2″)
Net Weight	11 kg (24.3 lbs)	11 kg (24.3 lbs)	11 kg (24.3 lbs)

### ACCESSORIES

Any loudspeaker system designed for professional use on the road or as part of a prestigious fixed installation would not be complete without a full range of intelligently engineered packaging solutions designed to enable rapid and intuitive deployment.

Rugged, weather-resistant road cases with truck pack friendly dimensions are available for efficient transportation of the AX series line arrays, constructed from 10mm multi-laminate plywood and equipped with heavy duty 100mm wheels. Cabinets can be pre-configured, with flybars attached, in the road cases to save time on set up.

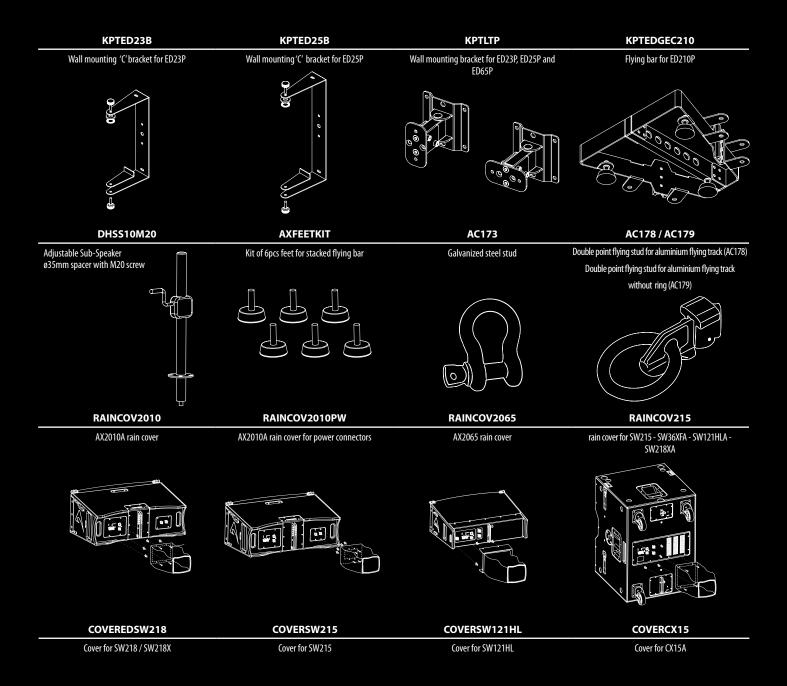
AX line arrays are flown using the elegant, lightweight, T-shaped flybars designed with multiple pickup and suspension points for flexibility of angling. The flybars include M10 threaded rigging points to enable ground stacking of AX line arrays when inverted. Subwoofers such as the SW215 can be integrated into a speaker cluster of AX2065 elements.



When used outdoors for concert touring or at festivals, flown loudspeaker systems must necessarily be protected from the effects of the weather. For these applications Rain Covers are optionally available to make the loudspeakers essentially shower-proof.

Adjustable straight speaker poles and angle adapters increase the flexibility of a subwoofer-mounted speaker system by allowing the satellite cabinets to be raised and angled incrementally downwards over a range of 0° to 10° for better audience coverage.

Professionally pre-cabled amplifier racks are available in various dedicated configurations to suit commonly implemented line array and point source systems. Constructed and fully tested by the world leader in cabling and accessories, the amplifier racks include mains distribution and signal connection panels. Inter-rack cabling is also available for connecting racks together with a single multi-way cable.



### THE **FINEST** ITALIAN CRAFTMANSHIP

AXIOM products are manufactured entirely in-house at PROEL's ultra-modern factory in Sant'Omero, Italy. This means that every aspect of the process from the cabinet construction to the immaculately finished product is managed and controlled under the most careful supervision – and while an artisanal philosphy is embraced with an emphasis on a highly skilled workforce, modern quality control standards to ISO9000/2008 are adopted.

Baltic birch plywood, manufactured using phenolic water-resistant adhesives, is used on all AXIOM speakers. Cutting and routing is handled by state-of-the-art CNC machines on a flexible macro scale which allows for rapid response to changing product demands, maintains highly efficient computer-generated material yield, and can even be used for prototyping purposes. Enclosures are finished either in low allergen content water-based paints or polyurethane paint under temperature and pressure controlled conditions, and custom colours are offered for easy product customisation.

All the compression drivers and cone transducers used in AXIOM are manufactured in Italy by well-known and respected driver makers, considered to be the undisputed leaders in their field. A fully automated CLIO measurement system ensures that every AXIOM product that leaves the factory meets precise technical specifications within tight tolerance limits, and most importantly has passed several critical listening tests.



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#### **AXIOM** is a brand of

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