

PD18E-I INFRASUB™

SELF-POWERED

APPLICATIONS

Laboratory Reference System	House of Worship
Recording Studio and Mastering	Theatrical Sound Reinforcement
Post Production and Screening Room	Nightclub Installation
Cinema Subwoofer	Surround Sound Low Frequency Effects

DESCRIPTION

The PD18E-I is a self-powered double 18" bass system designed for permanent installation. The PD18E-I provides perfectly flat response down to 8 hertz when used in conjunction with the 8 hertz Integrator. Our external rack mount Infra-MXB Integrator is recommended to drive a line level Infra™ processed signal to one or more PD18E-I systems. The PD18E-I offers a black textured finish and a black coated steel grille.

The audio input incorporates an InGenius® balanced line receiver, providing very high common mode rejection, to eliminate noise often present in systems with less optimized grounding and wiring schemes. The internal Minima One™ amplifier incorporates a high efficiency low power consumption green design with advanced digital switching to automatically accept any line voltage from 88 to 270 volts. Low voltage contacts are provided to remotely turn the amplifier on and off.

SPECIFICATIONS

System Type:

2 - Infrasub™ sealed chambers 3 ft³ each

Enclosure:

18 mm 13-ply birch plywood

Finish:

Black Ro Tex™ True water born environmental finish

Grille:

16 Gauge black power coated perforated steel

Low Frequency Components:

2 - EL-18A 18" Extended Transducers, Infra™ cone, 3" Voice coil, 120 oz. Magnet

Input Connector:

XLR 1/4" combo with XLR loop through

Internal Amplification:

Minima One™

Input Impedance:

48K Ohms

Input CAL Sensitivity:

+4 dBu

Maximum Continuous Amplifier Power:

1000 W into 4 Ohms

High Pass Filter:

Switchable: -6 dB @ 8 Hz; @ 50 Hz; @ 95 Hz

Overload Protection:

Internal Dynamic Filter™ protection

LED Indicators:

Green - On
Yellow - Dynamic filter threshold
Red - System fault or sleep mode

Mains Voltage Requirements:

Auto sensing
Universal voltage range
88 Volts minimum to 270 Volts maximum

Mains Current Requirements:

4.6 Amps @ 120 Volts
2.3 Amps @ 240 Volts

Hardware:

8 - Machined aluminum speaker mounting clamps
Optional F6 Fly points available

Fly Points Safe Working Load:

200 lbs.

Crossover Type:

Requires external Infra™ Integrator

Frequency Response:

60 Hz to 250 Hz ±3 dB
8 Hz to 95 Hz ±3 dB with external Infra™ Integrator

Low Frequency Limit:

8 Hz

Maximum Calculated Continuous Acoustic Output:

Half Space @ 1 Meter
10 Hz - 96 dB SPL
20 Hz - 108 dB SPL
40 Hz - 124 dB SPL
80 Hz - 130 dB SPL

Polarity:

A positive asymmetrical signal applied to pin 2 will result in a positive asymmetrical acoustical pressure

Dimensions:

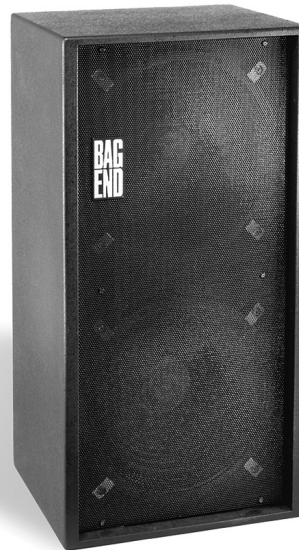
43.5" h x 22" w x 18" d
111 cm x 56 cm x 46 cm

Weight:

132 lbs
60 kg

Custom Finishes:

Optional custom finishes include white or unfinished ready to paint.



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PD18E-1 INFRASUB™

ABOUT INFRASUB™ TECHNOLOGY

Almost all designs and specifications for subwoofer systems are fixated on the frequency response domain. However, the impression of power and quality of a loudspeaker is equally related to the time domain. The long wavelengths associated with low frequencies make this particularly true with subwoofers. Likewise, the maximum SPL is not a very reliable way to judge the impact of a subwoofer. A poor time domain performer will not have the same impact or natural musically connected sound as a Time-Aligned™ Infra™ system. The reason that an Infra™ subwoofer sounds dramatically better is because of their superior time domain performance, as well as their extended low frequency response. The Infra™ subwoofer maintains the bass energy in a tight packet, aligned with the upper range signal, providing a greater body impact and a seamless musical connection with the main loudspeakers. Conventional subwoofer designs perform so poorly in the time domain because designers have used methods that sacrifice the phase response for more control over the frequency response (e.g.: steep low pass filter slopes, vented speaker enclosures, and narrow bandwidth systems). With the Infra™ technique, we do not degrade the phase response while extending the frequency response.

While the Infra™ dual Integrator does function as the system crossover, it does so without using a conventional low pass filter. The Infra™ integrator applies an inverse electrical response to the acoustical response of the Infra™ loudspeaker in its sealed

enclosure. This provides the extended frequency response while maintaining the hi sound quality often associated with a sealed box design. This design approach requires the most amplifier power to be used at the lowest frequency, thus we implement the Dynamic Filter™ technology to protect the system from the bottom up, affecting the lowest frequency first and leaving the middle and upper bass unaffected. The Dynamic Filter™ is a complimentary technology to the Infra™ system taking unique advantage of the Infra™ design approach, to implement a reliable protection scheme that is transparent and inaudible to the listener. When comparing a genuine Bag End® Infra™ loudspeaker system to any other, our technology and design is easy to hear and appreciate. The dramatic clarity, realism, and overall pleasant sound of an Infra™ system is well noted throughout the world.

ABOUT MINIMA ONE™

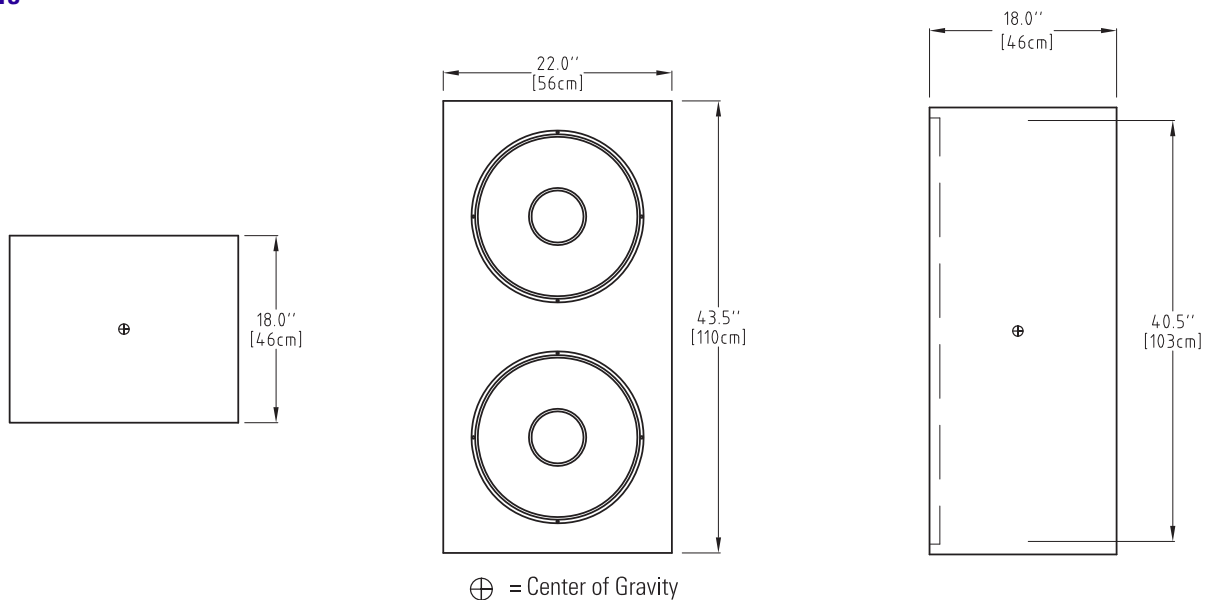
The Minima One™ is both a high fidelity and a high efficiency amplifier. With efficiency well over 80%, the Minima One™ provides more power to the loudspeakers and creates less heat in the amplifier. In real world applications there is practically no heat emitted from the amplifier and thus it requires no cooling fan. Incorporating patented technology the comparison circuit of the Minima One™ corrects every single cycle to drive error to zero at the end of each cycle. On average, every 4 microseconds, the one cycle modulator transforms and amplifies the input signal into the ideal natural pulse width modulation. Switching at 250 kHz with the single

cycle error correction insures extremely low distortion and high reliability. The power factor corrected AC power input, automatically and continuously adapts to any voltage between 88 and 270 volts. The Minima One™ is convenient and stable to operate on any power grid in the world.

ABOUT DYNAMIC FILTER™

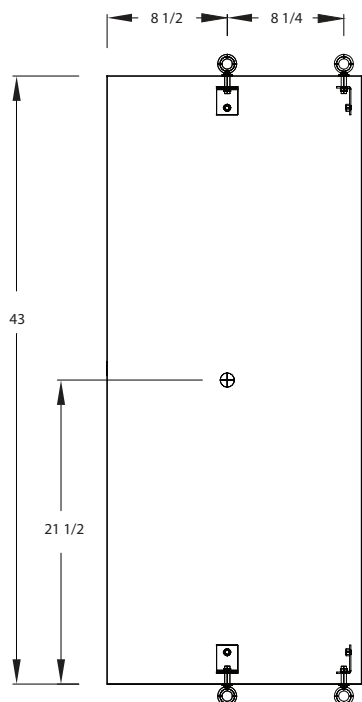
The Dynamic Filter™ is a complimentary technology to the Infra™ system taking unique advantage of the Infra™ design approach, to implement a reliable protection scheme that is transparent and inaudible to the listener. Systems using the external rack mount Infra-MXB processor require an appropriate threshold adjustment that sets the amplifiers power and sensitivity to the Infra™ loudspeakers in use. When a system is asked to do more than it is capable of, or if an accidentally large signal is presented the threshold of the Dynamic Filter™ is crossed and the system protects itself from the bottom up by reducing the lowest frequencies first. Since the most power and excursion is always required at the lowest frequency, reducing the level of the lowest frequencies first avoids an overload, while at the same time the system is able to reproduce the middle and upper bass and leave the upper crossover region unaffected. This is a very natural and inaudible method to protect the system and unique to the Infra™ technology.

DIMENSIONS

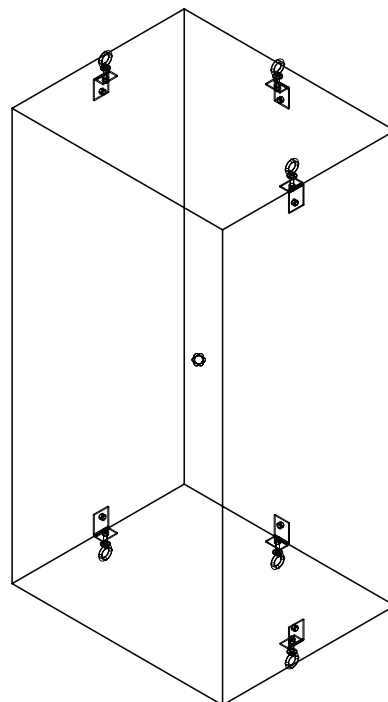


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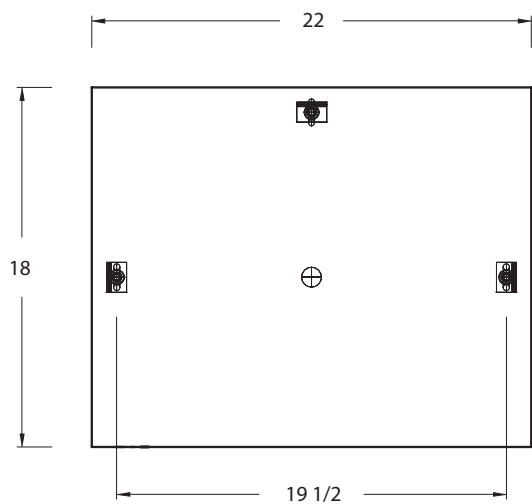
SIDE VIEW



ISOMETRIC VIEW



TOP VIEW



KEY

Center of Gravity: +

WARNINGS

Mounting and rigging loudspeakers requires experienced professionals. Improperly installed loudspeakers can result in property damage, personal injury, death and/or liability to the installing contractor.

FLYPOINTS

This optional hardware packet includes flypoints as shown plus 3 x 5/16" - 18 forged shoulder eyebolts