

# KLARITY

OWNER'S MANUAL 1.0



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# PK SOUND LOVES YOU

Thank you for choosing the Klarity series of professional powered loudspeakers built by PK Sound. Congratulations, you are now the owner of some of the finest professional powered loudspeakers on the planet. These cabinets are the culmination of significant research & development into loudspeaker design and we are confident that they will provide you many years of reliable use.

Please take the time to go over this owner's manual so you can understand all the features built into your Klarity loudspeaker and fully utilize their performance capabilities.

We stand behind our products so if you have any problems or questions, please get in touch with support at PK Sound ([support@pksound.ca](mailto:support@pksound.ca)) and we will take care of you, our valued customers.



KLARITY 8

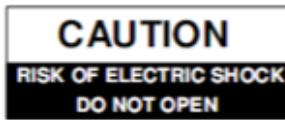
KLARITY 12

KLARITY 18

KLARITY 218

# SAFETY PRECAUTIONS

## IMPORTANT SAFETY INSTRUCTION



**Read these instructions • Keep these instructions  
Heed all warnings • Follow all instructions**

**CAUTION:** To reduce the risk of electric shock, do not remove the amplifier. No user-serviceable parts inside. Refer servicing to qualified service personnel.

**WARNING:** To prevent fire or electric shock, do not expose this equipment to rain or moisture. Do not use this apparatus near water.

**SAFEGUARDS:** Electrical energy can perform many useful functions. This loudspeaker has been engineered and manufactured to assure your personal safety. Improper use can result in potential electrical shock or fire hazards. In order to maintain the safeguards, observe the following instructions for its installation, use and servicing:

- This device must be powered exclusively by earth connected (ground) mains sockets in electrical distribution networks compliant to federal, and provincial/state standards.
- Before powering the loudspeaker, verify that the amplifier is supplied with the correct, rated Voltage.
- Verify that the AC power mains connection is capable of satisfying the power ratings of this device.
- Do not spill water or other liquids into, or on, the unit.
- Do not use this unit if the Electrical power cord is frayed or damaged. Contact PK Sound or your dealer for a replacement.
- Do not defeat the third grounding prong on the grounding type plug. It is provided for your safety. If the plug does not fit into your receptacle, consult an electrician.
- Protect the power cord from being walked on or pinched, particularly at the plug and where the cable exits the loudspeaker at the powerCON connector.
- Do not cover the amplifier heat sink. The performance may be affected.
- Do not install near any heat sources such as radiators, heat registers, stoves or other devices that produce heat.
- When flying or suspending the cabinet, use only the attachment points and accessories specified by PK Sound.
- Do not use in high moisture environments, humidity and moisture can damage the speaker cones and surrounds and over time, can cause corrosion on electrical contacts.
- All repairs & service must be performed by a certified PK Sound repair technician.

# DECLARATION OF CONFORMITY

The Klarity 8 and 12 have been tested and found to comply by notified body (DIRECTIVE 2004/108/EEC-EMC) pursuant to the product family standard for audio professional use:

EN 55103-1 and EN 55103-2 standard (with the limits for E1 and E2 electromagnetic environment); EN61000- 3 - 2, EN61000- 3 - 3

This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This equipment has been tested and found to comply by Notified Body (DIRECTIVE 2006/95/EEC L.V) pursuant to the audio apparatus safety requirements: Standard EN 60065.

The Klarity subwoofers (18, 218) have been tested and found to comply by Competent Body (Directive 89/336/EEC-EMC) pursuant to the product family standard for audio professional use:

EN 55103-1 and EN 55103-2 standard (with the limits for E1 and E2 electromagnetic environment); EN61000- 3 - 2, EN 61000 - 3 - 3

This is a Class B product. In a domestic environment this product may cause radio interferences in which case the user may be required to take adequate measures.

This equipment has been tested and found to comply by Notified Body 0715 (Directive 73/23/EEC L.V) pursuant to the audio apparatus safety requirements: Standard EN 60065.

These limits are designed to provide reasonable protection against harmful interference in a residential situation. This equipment generates, uses and can radiate electromagnetic energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this loudspeaker does cause harmful interference to radio or television signals, which can be determined by turning the loudspeaker off and on, the user is encouraged to try to correct the interference by increasing the separation between the loudspeaker and the equipment. See Installation section for more information.

## CSA COMPLIANCE NOTICE



### CSA CERTIFICATION OF COMPLIANCE NUMBER 2361014

CSA certification applies to amplifier module only  
CSA certified to operate only at 120 Vac in Canada  
Certified to CAN/CSA-C22.2 No 60065-03  
ANSI/UL 60065-2007

The products listed below are eligible to bear the  
CSA Mark shown with adjacent indicator 'C', 'US'

MODEL	RATED
Klarity 8	115V, 50-60 Hz, 2.6 A
Klarity 12	115V, 50-60 Hz, 2.6 A



### CSA CERTIFICATION OF COMPLIANCE NUMBER 1807695

CSA certification applies to amplifier module only  
CSA certified to operate only at 120 Vac in Canada  
Certified to CAN/CSA-C22.2 No 60065-03  
ANSI/UL 60065-2007

The products listed below are eligible to bear the  
CSA Mark shown with adjacent indicator 'C', 'US'

MODEL	RATED
Klarity 18	115V, 50-60Hz, 2.6A
Klarity 218	115V, 50-60 Hz, 5.5A

# INSTALLATION

Each Klarity mid/high frequency cabinet is designed to sit on the ground, stage, top of a subwoofer enclosure, be suspended or pole mounted on a 35 mm diameter loudspeaker support pole or tripod speaker stand.

The subwoofer cabinets are designed to sit on a floor, stage, or stacked upon one another. When stacking, lock them together by mating the small slots on the top of the bottom cabinet with the rubber feet of the cabinet above it. There is an option available when ordering the Klarity 18 sub to have dedicated rigging points installed so that it may be suspended.

## PRECAUTIONS REGARDING INSTALLATION LOCATION

The Klarity series of loudspeakers are not intended for use in high moisture environments. Install the loudspeaker in a ventilated area where it will not be directly exposed to high temperature or humidity. Moisture can damage the speaker cones and surround and over time, can cause corrosion of electrical contacts and metal parts.

Do not install the amplifier in a location that is exposed to direct rays of the sun, or near to hot appliances or radiators. Placing and using the loudspeaker for long periods on heat-generating sources will affect performance and can adversely affect the operation and internal components. Keep loudspeakers out of extended or intense direct sunlight. The speaker driver suspension can permanently dry out and finished surfaces may be degraded by long term exposure to ultra-violet (UV) light. Installation of the loudspeaker in a damp or dusty environment may result in malfunction or accident.

The Klarity family of speakers can generate significant kinetic energy due to its acoustical output. When placed on a slippery surface, the speaker may move. Precautions should be taken so that the speaker does not fall.

Install this loudspeaker as far as possible from radio tuners and TV sets. A loudspeaker installed in close proximity to such equipment may cause noise or degradation of the picture. If this equipment does cause harmful interference to radio signal or television picture, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the loudspeaker and the receiver or television.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

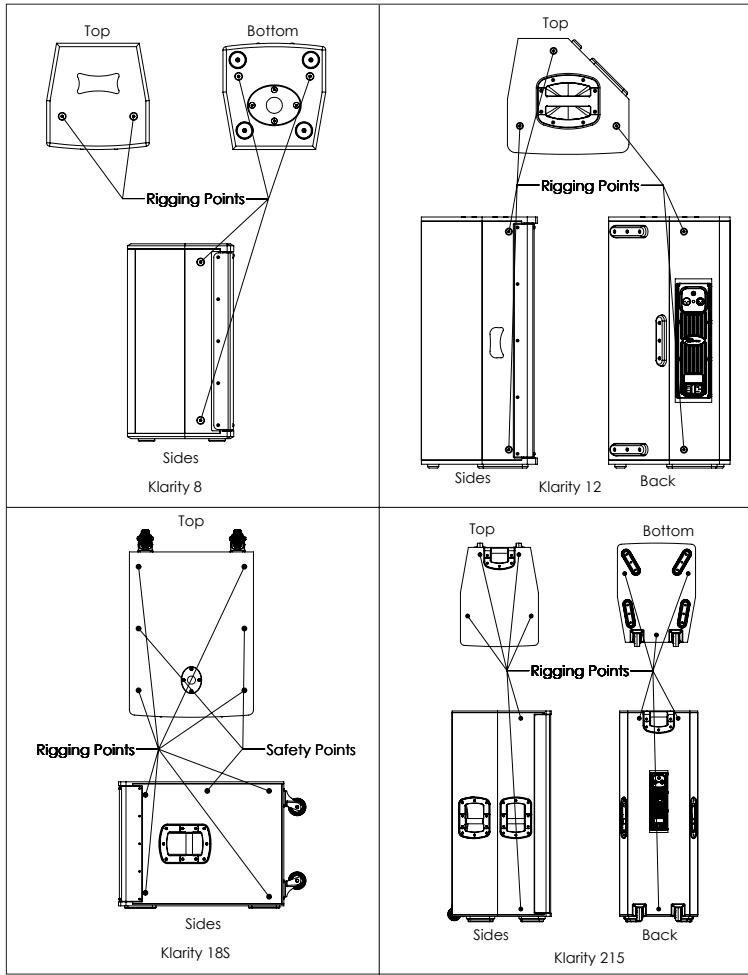


FIGURE 1: Rigging Points on Klarity Cabinets

## MOUNTING OR SUSPENDING LOUDSPEAKERS

**DANGER:** Mounting or overhead suspension of any heavy load can result in serious injury when not done correctly. This work should be done by qualified persons following safe rigging practices in accordance with, and in compliance with, all federal and local regulations governing such work.

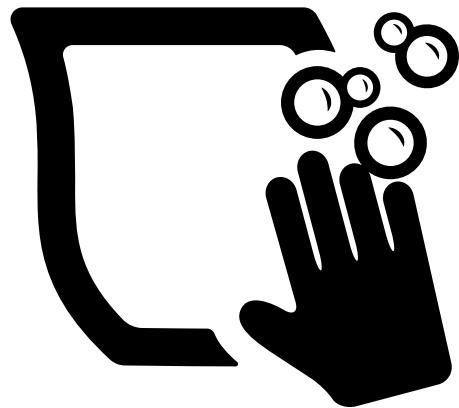
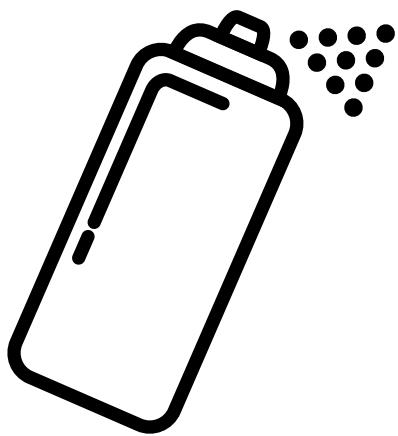
**WARNING:** Never attempt to suspend the cabinets by their handles, use the rigging points only. See the figures above for the proper rigging points in each cabinet. Contact PK Sound, or see your dealer for the appropriate rigging kit for your cabinet. Consult a professional rigger or structural engineer prior to suspending loudspeakers from a structure. You must know the working load limits and determine the mounting or suspension method that meets static, dynamic, and shock load requirements.

**CAUTION:** The user assumes all responsibility and liability for the proper design, installation and use of any rigging or mounting system for Klarity loudspeakers. Please note that only one cabinet can be suspended from the rigging points, no additional cabinets may be suspended beneath it.

## CARE AND CLEANING

The Klarity family of loudspeakers is coated with a tour-proven, thick Poly-Eura coating. It may be cleaned with a mild soapy damp microfiber cloth and wiped down finally with a dry cloth.

To reduce the risk of electrical shock, ensure the system in unplugged from AC power before cleaning. To clean, dust off the speaker cone, you can use a can of compressed air such as commercial air dusters. Do not blow dust into the horn flare, it may damage the high frequency compression driver.



# OPERATION

## AC POWER

The Klarity family of loudspeakers use Neutrik's PowerCON connectors for AC power connection. The powerCON is a locking AC equipment connector with contacts for line, neutral, and a pre-mating ground contact. It replaces the standard IEC AC power connector with a very rugged solution in combination with a locking device to guarantee a safe and reliable power connection. The locking tab prevents the AC power from accidentally becoming disconnected. The grey colored receptacle can be used as a power out connection to daisy chain to another Klarity series cabinet. To connect, match the keyways with the receptacle, push it all the way in and twist until you hear the locking "click," letting you know that the connector is mated to the receptacle. Similarly, to disconnect, pull the locking tab towards you, twist and pull until the connector is out of its receptacle.

Before plugging in the Klarity speaker systems into an outlet, verify that it is able to provide the appropriate voltage and current as required by the speaker. A robust AC supply is necessary for maximum performance; if it is too weak, the bass performance may be affected and if it sags too much (brown-out), the system may self-mute to protect itself. As soon as the appropriate AC supply is restored, it will continue to operate. Plugging multiple systems into the same outlet and using long extension cable runs can affect the AC supply to the system.

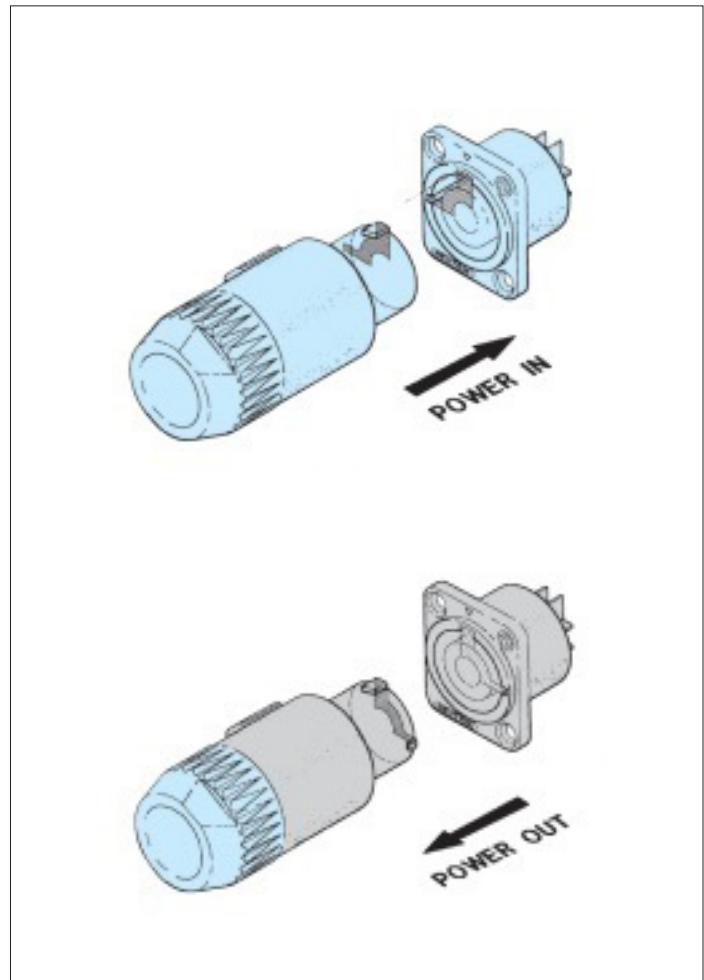


FIGURE 2: PowerCON connectors

## SYSTEM POWER SEQUENCING

To prevent unwanted sounds from being produced by the system, always observe the correct power on/off sequence. Always follow the rule of thumb... **"Amplifiers are the last on and the first off"**

Always ensure that the powered speaker system is the last thing you power up, and the first thing you turn off when operating a complete PA. Bring the output level of the mixer to zero while you turn on any sources such as CD players, turntables, mixers, instruments and any outboard processing. Then turn on subwoofers, then the top boxes. You are now ready to bring up the level control on the mixer. If speakers are daisy chained together, turn off the last speaker in the chain first.

## OPERATING TEMPERATURE

The design of the amplifier is such that it is very efficient and as a result, shouldn't get too hot. In the rare event that it does get too hot, it will shut down to protect itself. The temp led will light to let you know. A condition where this might occur is when it is operated in very high ambient temperature or when the heat sink on the back of the cabinet is in direct sunlight. Always ensure adequate cooling and appropriate shade. When its temperature has returned to within its operating temperature range, it will turn back on.

## INPUT CONNECTION PLATE



FIGURE 3: Input plate

- ① BALANCED INPUT/OUTPUT:** The input has a female XLR 3 pin connector that accepts a balanced or unbalanced mic or line-level signal. When connecting a balanced signal, make sure you follow the AES (Audio Engineering Society) standards:

	XLR CONNECTOR
Shield (ground)	pin 1
Hot (+)	pin 2
Cold (-)	pin 3

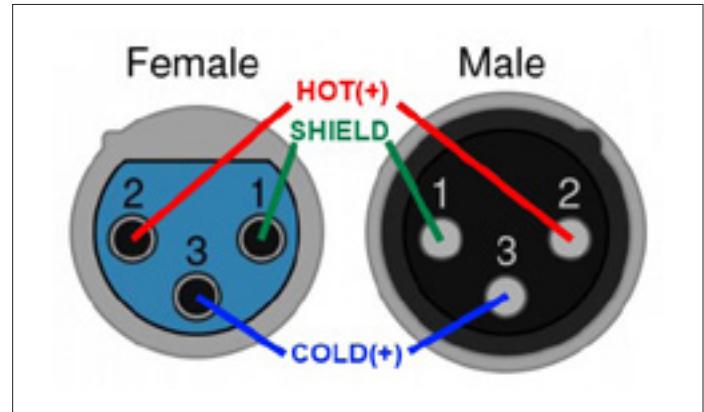


FIGURE 4: XLR pin-out

There is also a male XLR through connector, in parallel with the female connector, which you can use to connect more than one Klarity cabinet to the same audio source. Simply plug the source XLR cable to the female input connector on the first cabinet, then patch the male output to the next cabinet's female connector, and so on. This makes it possible to daisy chain multiple cabinets to the same audio source. Since microphones have a higher output impedance, you should limit daisy chaining to two cabinets.

## ② STATUS LEDS:

**LIMIT:** Should the limiting system be engaged due to overdriving the cabinet, this led will be lit indicating that a limiter is on for the loudspeaker's protection. The audible effect of the limiting system is a lowering of overall output level. To preserve the excellent sound quality that this cabinet is capable of, reduce the input signal or the volume gain knob slightly until this led is no longer lit.

**TEMP:**

- When the amplifier temperature is < 80°C, the led is not active

- When the temperature is > 80°C, the led will blink slowly.

- When the temperature is > 85°C, the led will blink fast.

- When the temperature is > 90 °C, the led will be on steady and the output of amplifier will shut down to preserve the loudspeaker.

**SIGNAL:** Indicates if the loudspeaker is seeing an audio signal.

**READY:** Indicates that the loudspeaker is powered and will reproduce an audio signal input.

**③ GAIN ADJUSTMENT:** use this rotary knob to set the output volume of the loudspeaker. Note that if the limit status led is lit, reduce the volume using this knob or reduce the signal level from the audio source.

**④ PROGRAM SELECT BUTTON:** The Klarity series of loudspeakers have an advanced Digital Signal Processor (DSP) with four individual presets that can be used to tailor the sound for particular applications.

MID/HIGH CABINETS (KLARITY 8, KLARITY 12)	
DSP PRESET	RESULTS
FULL RANGE	Reproduces the full audio input signal, use this preset when no additional low frequency bass reinforcement is present (i.e. a subwoofer).
90 HZ /-	The DSP has a 90 Hz high pass filter so that frequencies above 90 Hz are reproduced by the loudspeaker. Use this setting when low frequency bass reinforcement is present (i.e. a subwoofer).
VOCAL	The DSP has a slight boost in the human vocal frequency range, use this DSP preset when you are using the cabinet for Public Address applications.
MIC. LEVEL (*NOTE 1)	The input sensitivity (gain) of the amplifier has been boosted in the DSP for use with microphone level signals, use this preset when connecting a microphone directly to the loudspeaker.

SUBWOOFER CABINETS (KLARITY 18, KLARITY 218)	
DSP PRESET	RESULTS
90 HZ -	Has a low pass filter at 90 Hz with a roll-off of 24 dB/octave.
130 HZ	Has a low pass filter set to 130 Hz with a roll-off 24 dB/octave.
CARDIOID	Is an advanced feature for using groups of three, or multiples of three, subwoofers in a cardioid arrangement with other Klarity subs.
POL. REV.	Reverses the polarity of the sub. Since room acoustics play a crucial role in the overall performance of low frequency bass reinforcement, use this feature in addition with experimenting with room placement to achieve the best sound possible; when the subwoofer cabinet isn't placed properly, the bass can sound muddy and indistinct. Make sure all subwoofers are set to the same polarity.

NOTE: \*(1) Mic. level program only to be used with microphone input.

## SOME NOTES REGARDING CARDIOID SUB ARRANGEMENTS

The cardioid DSP preset enables the combination of three, or multiples of three, Klarity subwoofers to provide exceptional directivity at low frequencies. When setting up an audio system, there will be situations where a cardioid subwoofer arrangement can be useful. Since subwoofers radiate sound in all directions, there can be situations where there is too much bass on stage. A cardioid subwoofer arrangement can be used to radiate as little energy as possible toward the rear of the subwoofers. Below is an idealized example of the energy distribution using a cardioid subwoofer arrangement:

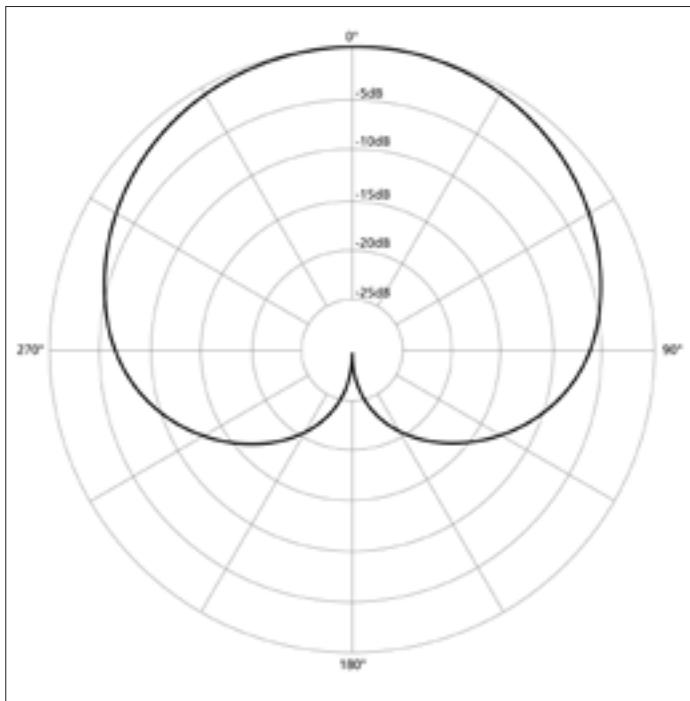


FIGURE 5: Idealized polar plot of cardioid output from subwoofers



FIGURE 6: Possible subwoofer configurations for cardioid DSP preset

Situations where one would want to consider using a cardioid subwoofer arrangement include:

- When there is a wall behind the subs, the reflected wave from the back wall will arrive at a different time than the front wave resulting in a phase difference between them, which can cause destructive low frequency interference.
- When there is a band playing that doesn't want too much bass on stage. Also, using a cardioid output can often help increase the maximum microphone gain before feedback occurs.
- When there is a monitor sound person, one can make their job easier by removing subwoofer frequencies which can mask instruments on stage.

To optimally arrange the Klarity subwoofers in a cardioid arrangement, you will need three cabinets, or multiples of three, they should be placed in the following orientations (fig.6). If you want to place them in a different arrangement, do not use this DSP setting and use an external processor to achieve the desired results.

When setup in a cardioid arrangement, the forward facing two subwoofers should be in standard 90 hz high pass mode (Program 1) and the rear facing subwoofer should be set to "Cardioid" mode (Program 3).

# WARRANTY

## PK SOUND 2-YEAR TRANSFERABLE LIMITED WARRANTY

Dear Customer,

Thank you for choosing PK Sound. This is an important document. Attach your bill of sale to this warranty document, and keep it in a safe place. Your bill of sale is your warranty.

The PK Sound warranty remains in effect for two years from the date of the first consumer purchase.

### WHO IS PROTECTED BY THIS WARRANTY

The PK Sound warranty protects the original owner and all subsequent owners, provided the PK Sound product was purchased from an authorized dealer in Canada or the United States. A copy of the original dated bill of sale must be presented whenever warranty service is required.

### WHAT IS COVERED BY THIS WARRANTY

Except as specified below, the PK Sound warranty covers all defects in material and workmanship.

The following are not covered: damage caused by accident, misuse, abuse, product modification or neglect, inclement weather including water and excessive exposure to the elements; damage occurring during shipment; damage resulting from the performance of repairs by someone not authorized by PK Sound; damage caused by the installation of parts that do not conform to PK Sound specifications; any claims based on misrepresentations by the seller; products sold on an "as-is" or final sale basis; the cost of installing, removing, or reinstalling the unit.

PK Sound's liability is limited to the repair or replacement, at our option, of any defective product and shall not include incidental or consequential damages. PK Sound reserves the right to replace a discontinued model with a comparable model. Any replacement units or parts may be new or rebuilt.

NOTE: Repair of our product must be done by an authorized dealer or service center. Unauthorized repair will void the warranty and is done at the risk of the consumer.

### TO OBTAIN WARRANTY SERVICE

If you require warranty service, please contact your dealer for assistance with repair or replacement.

**DO NOT RETURN PRODUCTS TO THE PK SOUND FACTORY WITHOUT AUTHORIZATION; THEY WILL BE RETURNED UNOPENED.** You are responsible for transporting your product for repair or replacement. PK Sound will pay reasonable return charges for delivery to any location in Canada, the continental United States, Alaska, or Hawaii, if the repair or replacement is covered under the warranty.

This warranty provides the purchaser with specific legal rights. You may also have other rights, which vary from country to country and from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above may not apply to you.

# SPECIFICATIONS

	KLARITY 8	KLARITY 12	KLARITY 18	KLARITY 218
PURPOSE	8" 2-way Trapezoidal	2" 2-way Multipurpose	18" Subwoofer	Dual 18" Subwoofer
LOW FREQUENCY	8" Cone Transducer	12" Cone Transducer	18" Cone Transducer	2 x 18" Cone Transducer
HIGH FREQUENCY	1.75" Titanium Compression Driver	1.75" Titanium Compression Driver	n/a	n/a
AMPLIFIER	700 watt Class D	700 watt Class D	1000 watt Class D	1800 watt Class D
OPERATING FREQUENCY + -10DB	50hz - 20khz	45hz - 20khz	30hz - 150hz	30hz - 150hz
FREE FIELD RESPONSE + -3DB	65hz - 18khz	55hz - 18khz	36hz - 130hz	36hz - 130hz
MAXIMUM SPL (*NOTE 2)	129db	132db	132db	135.5db
HF COVERAGE PATTERN (HXV)	90°x60° Rotatable	90°x60° Rotatable		
AUDIO INPUT	Balanced XLR	Balanced XLR	Balanced XLR	Balanced XLR
AUDIO THROUGH	Balanced XLR	Balanced XLR	Balanced XLR	Balanced XLR
TRANSDUCER PROTECTION	Thermal & Excursion Limiting	Thermal & Excursion Limiting	Thermal & Excursion Limiting	Thermal & Excursion Limiting
AMPLIFIER COOLING				Temperature controlled fan
DSP PRESETS	1. Full Range 2. 90hz High Pass 3. Vocal 4. Mic Level Input	1. Full Range 2. 90hz High Pass 3. Vocal 4. Mic Level Input	1. 90hz LP 2. 130hz LP 3. Cardioid 4. Reverse Polarity	1. 90hz LP 2. 130hz LP 3. Cardioid 4. Polarity Reverse
AC POWER INPUT	Powercon	Powercon	Powercon	Powercon
INPUT VOLTAGE	100-250 Auto	100-250 Auto	100-250 Auto	100-250 Auto
AC POWER CONSUMPTION 1/8 POWER (110/220) AMPS	1.2/0.6	1.2/0.6	3.2/1.6	5.5/2.9
MATERIAL	Void Free Baltic Birch	Void Free Baltic Birch	Void Free Baltic Birch	Void Free Baltic Birch
FINISH	High Impact EXL Polyurea	High Impact EXL Polyurea	High Impact EXL Polyurea	High Impact EXL Polyurea
GRILL	12 gauge powder coated steel	12 gauge powder coated steel	12 gauge powder coated steel	12 gauge powder coated steel
RIGGING	M8 Rigging Points	M8 Rigging Points	Optional	n/a
DIMENSIONS DXWXH (MM)	250 x 240 x 460	340 x 355 x 725	765 x 575 x 585	765 x 990 x 585
DIMENSIONS DXWXH (INCH)	9.8 x 9.5 x 18.1	13.4 x 13.9 x 28.5	30.1 x 22.6 x 23.1	30.1 x 38.9 x 23.1
WEIGHT (LB)	28.2	55.3	120.3	205.1
WEIGHT (KG)	12.8	25.1	54.7	93.2

TABLE 2: Klarity family Specifications

NOTES: \*(2) Max SPL 1w/1m with 4db crest factor pink noise

# ACCESSORIES

Contact PK sound or see your PK dealer for the following accessories:

ACCESSORY	PART NUMBER
Padded fabric cover for Klarity 8	KLARITY8CVR
Padded fabric cover for Klarity 12	KLARITY12CVR
Padded fabric cover for Klarity 18	KLARITY18CVR
Padded fabric cover for Klarity 218	KLARITY218CVR
Castor kit for Klarity Subwoofers	K-Wheels
K&M Heavy duty telescopic speaker pole	21366-BLACK
K&M 2 x tripod stand with carry bag	21451-BLACK
Rigging kit	M8RIGGINGBOLTS
Klarity 12 K&M wall mount	24110-BLACK
Klarity 8 K&M wall mount	24481-BLACK

## IN CANADA AND USA:

- For sales and accessories, please contact the sales department at:  
**[sales@pksound.ca](mailto:sales@pksound.ca)**
- For warranty repair, service information or technical assistance, contact technical support at:  
**[support@pksound.ca](mailto:support@pksound.ca)**