Q Series Equalizers

OPERATING MANUAL AND USER GUIDE

Q Series Q130 / Q215 / Q230

www.wharfedalepro.com

IMPORTANT WARNINGS & SAFETY INSTRUCTIONS

1. **READ ALL INSTRUCTIONS carefully and become familiar with the features and functions of these products before operating them.**

2. **RETAIN THESE INSTRUCTIONS for future reference.**

3. **COMPLY WITH ALL WARNINGS – All warnings and instructions for this product should be adhered to.**

4. **USE WITH AMPLIFIERS – In order to avoid damage to drivers and other equipment, it is advisable to establish and follow a routine for powering up and powering down a sound system. With all system components connected, turn on source equipment (mixers, signal processors, record and playback units, etc.) BEFORE powering up amplifiers. Transient voltages from powering up source equipment can damage speakers if amplifiers are already turned on. Make sure that amplifier volumes are set to their minimum settings and power up any system amplifiers LAST. It is recommended that all system components be allowed to stabilize for several seconds before any source signals are introduced or level setting adjustments are made. Similarly, when shutting systems down, turn all amplifiers off first, before powering down any other system components.**

5. **CABLES – Do not use shielded or microphone cables for connection between amplifiers and speakers. Use only approved speaker cables with proper connectors.**

6. **MAINS SUPPLY AND SAFETY – The main operating voltage of Wharfedale electronics is shown on the rear panel of the device. If it does not match the voltage in your area, contact your dealer.**

7. **CAUTION – Professional sound reinforcement systems are capable of generating very high sound pressure levels and use high voltage. Use care with placement and operation to avoid exposure to excessive volume levels, water or moisture.**

8. **SERVICE – There are no user serviceable parts inside this product. Users should not attempt to service this product. Warranty nullification could result if this is attempted.**

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WHAT ABOUT THE Q Series Equalizers?

The Q Series consists of three models: Q130 is a high quality, constant Q, 1/3 octave, Graphic Equalizer; The Q215 is a high quality constant Q, 2/3 Octave Equalizer and the Q230, dual channel, constant Q, 1/3 Octave Equalizer. They are designed to provide transparent and accurate frequency shaping capability in an easy to use package.

The separate frequency bands, ranging from 25 Hz to 20kHz allow you to "tune" the sound system to the room to create the best sounding system. Using long throw faders makes fine adjustments of each band easy and accurate. Other features include a by-pass switch to allow you to compare the equalized sound from the unfiltered sound, thereby allowing you to fine tune the system.

The Q Series uses balanced and unbalanced Input/Output connectors to allow you to use it in a variety of applications. The rack-mountable chassis allows you to quickly install the units into an equipment rack or your audio cabinet.

INTRODUCTION

Wharfedale Q Series Equalizers are the result of many years of experience in the use, design and manufacturing of professional sound reinforcement products. We take great pride in engineering and building every Wharfedale Pro product and wish to thank you for entrusting us with your sound.

From the time Gilbert Briggs built his first loudspeaker in 1932, to the present, Wharfedale Professional products have maintained the same standard of quality in components, workmanship and performance.

Please take a few minutes to read this manual completely in order to ensure that you get the most out of your equalizers.

Q SERIES EQUALIZER OVERVIEW:

The Q Series Equalizers are accurate, high quality, Constant Q graphic equalizers. This allows you to tailor your sound to make it sound the best in a room or tailor the sound of your music. With low distortion and flexible features, these equalizers are the right tools to bring to the show.

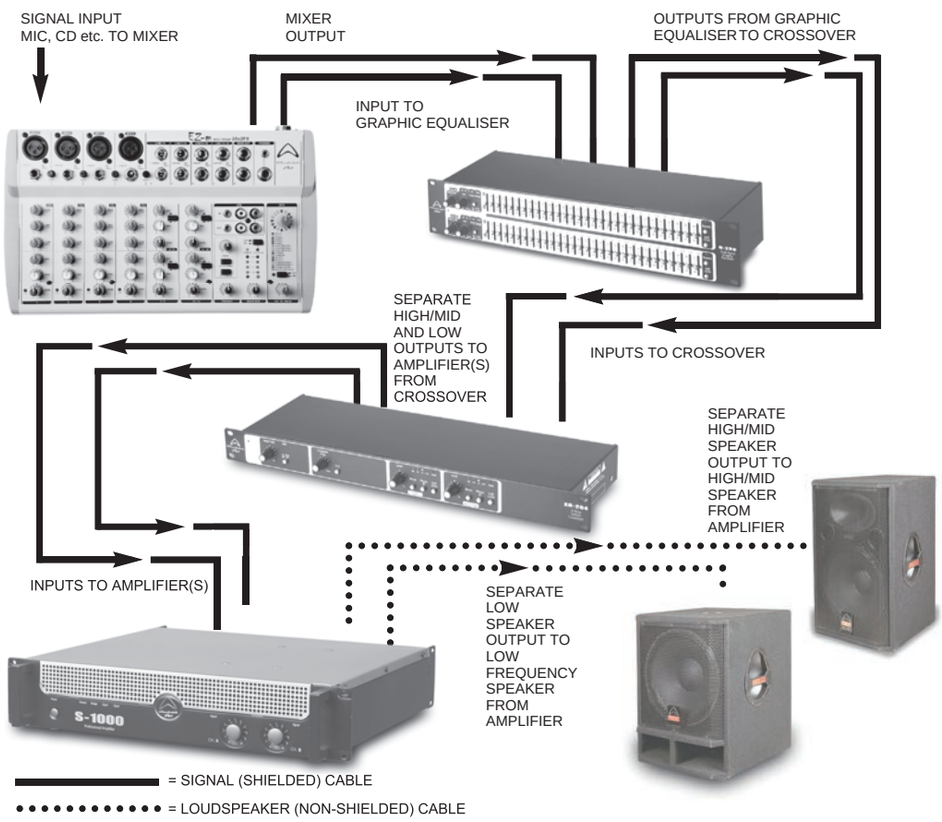
The Q Series has many user-friendly features. These easy to adjust and use features include, long travel slide faders (Q-130), by-pass switch, soft limit switch, variable high pass filter control and easy to read LED meters.

FEATURES

- **Three models**
  - Q-230: Two Channel 30 band, 1/3 Octave Equalizer
  - Q-130: Single Channel 30 band, 1/3 Octave Equalizer
  - Q-215: Two Channel 15 band, 2/3 Octave Equalizer
- **Constant Q**
- **By-pass switch**
- **Soft Limit Switch**
- **Variable High pass filter 10Hz – 200Hz (Q-130)**
- **Variable High pass filter 10Hz – 100Hz (Q-230)**
- **Easy to read LED meters**
- **Professional long throw slide faders (Q-130)**
- **XLR/ 1/4” TRS balanced/unbalanced inputs/outputs**
- **Output Ground lift switch**

BLOCK DIAGRAM

TYPICAL WIRING DIAGRAM FOR THE Q130 CROSSOVER IN SYSTEM SETUP



SETTING UP

The Q Series Equalizers are easy to install and operate.

Before plugging in the Q Series Equalizers, or any electrical audio device, be sure that the power switch is in the off position, the volume control is all the way down (at 0 level) and all audio connections are made.

After power-up, speak into your mic start the CD or MP3 player or other line level device and slowly increase the volume to the desired level. Avoid distortion (or overdriving the input) as it can damage your system in the long term. If you cannot achieve the desired sound level in your system, you must add more speakers or a subwoofer to the system.

CONNECTIONS / WIRING

Connecting Q Series Equalizers to your system is straightforward. You simply plug in your cables (microphone or line level) from the output of the mixer to the input of the EQ; then from the EQ output to an amplifier. Always use good quality microphone (2 conductor + shield) cable. After you plug in the components, you must adjust the sound level to produce the best sound. A good place to start is the mixer then EQ then amplifier.

Gain Stage Adjustments:

- Plug the mic in and position the volume control at ´0´ (zero) dB. Keep the main output volume down as well as the other components volume controls.

- Whilst watching the meters, speak or sing (it's always good to warm up your voice) into the mic in the same way as your performance and adjust the GAIN control, usually at the top of the mixer channel near the mic input jack, to the point where the meters spend a lot of time at or near the ´0dB´ (zero). An occasional red peak light is OK, just make sure the meters are not in the red area very long.

- Next adjust the main output so that the meters are at the ´0´ (zero) position most of the time, or at the loudest part of your performance. This takes time and practice to get the best sound.

- The next stop is the EQ. The idea of all these adjustments is be sure you get the best and cleanest signal going down the line. Start with the gain or volume control in the 0 position.

- The next step: Tuning the room (a/k/a ringing out the system). See page 9,10.

- In a simple system, the next component is the amplifier. Because your previous adjustments have resulted in the cleanest, loudest sound coming from the mixer to the EQ, it is not uncommon for the volume controls on the amplifier to be less than maximum (a/k/a "11"). Don ' t worry, this means you have plenty of room to get louder. If your amplifier volume control is "max ' d out" when you are at this point in the setup, you have no place to go. You must add to your system; either more amps or more speakers.

- The bottom line is to keep watch over your meters, they will tell you if the sound levels throughout the system are in keeping with good practices.

Tuning the Room:

A graphic equalizer is a very valuable tool for the traveling musician. It allows you to get the best sound in a variety of venues. As we know, all rooms are not created equal. They have their own personality. That is to say, your sound system will not sound the same from room to room. Using the EQ correctly will help you maintain "your sound".

- **The controls on the Equalizer provide level adjustment to frequencies in the audio spectrum. You adjust them either louder (up) or quieter (down) to make the overall sound in the room better.**

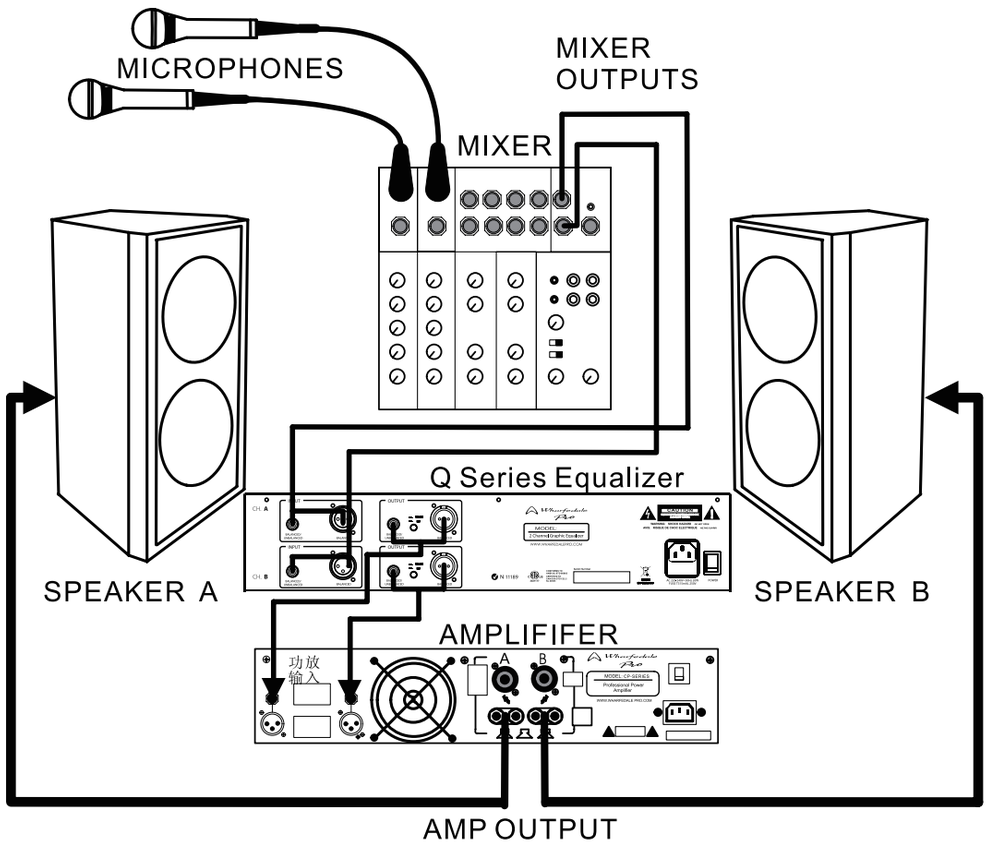
- **To tune the system to the room, it takes some practice and patience. You play PINK NOISE through the system and adjust each frequency so that the response is the same for every frequency. You can download pink noise and save it to CD or MP3/4 player.**

- **To effectively measure and adjust the system response, you will need a Real Time Analyzer (RTA). This device displays the system frequency response. They are available in rack mounted, hand held and software formats.**

- **When your ear gets calibrated, you can tune the system by ear.**

- **Using pink noise through the system and an RTA, adjust the frequency response of the system to look flat. Minor adjustments by ear can be made later, but only minor adjustments.**
- **Leave the EQ alone until the next gig or the room changes significantly. However, if it changes too much, it is too late to run the above procedure and you must "do it by ear"**
- **Use the individual channel EQ on the mixer to get the music and vocals to mix properly.**

Q Series with connections shown

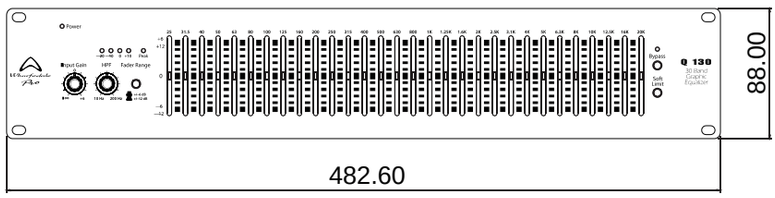


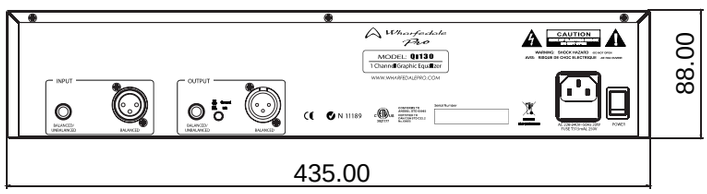
SPECIFICATIONS

	Q-130	Q-215	Q-230
INPUT/ OUTPUT			
Connectors:	1/4" TRS, female XLR (pin 2 hot)	1/4" TRS, female XLR (pin 2 hot)	1/4" TRS, female XLR (pin 2 hot)
Type:	Electronically balanced/ unbalanced, RF filtered	Electronically balanced/ unbalanced, RF filtered	Electronically balanced/ unbalanced, RF filtered
Input Impedance:	Balanced 20k ohm, unbalanced 10k ohm	Balanced 20k ohm, unbalanced 10k ohm	Balanced 20k ohm, unbalanced 10k ohm
Max Input Level:	>+21dBu balanced or unbalanced	>+21dBu balanced or unbalanced	>+21dBu balanced or unbalanced
CMRR:	>40dB, typically >55dB at 1kHz	>40dB, typically >55dB at 1kHz	>40dB, typically >55dB at 1kHz
Type:	Impedance-balanced/ unbalanced, RF filtered	Impedance-balanced/ unbalanced, RF filtered	Impedance-balanced/ unbalanced, RF filtered
Output Impedance:	Balanced 100 ohm, unbalanced 50 ohm	Balanced 100 ohm, unbalanced 50 ohm	Balanced 100 ohm, unbalanced 50 ohm
Max Output Level:	>+21dBu balanced/ unbalanced into 2k ohm or greater	>+21dBu balanced/ unbalanced into 2k ohm or greater	>+21dBu balanced/ unbalanced into 2k ohm or greater
SYSTEM PERFORMANCE			
Bandwidth:	20Hz to 20kHz, +0.5/-1dB	20Hz to 20kHz, +0.5/-1dB	20Hz to 20kHz, +0.5/-1dB
Frequency Response:	<10Hz to >50kHz, +0.5/-3dB	<10Hz to >50kHz, +0.5/-3dB	<10Hz to >50kHz, +0.5/-3dB
Dynamic Range:	108 dB	108 dB	108 dB
Signal-to-Noise:	90 dB	90 dB	90 dB
THD + Noise:	<0.004%	<0.004%	<0.004%
Interchannel Crosstalk:	<-80dB, 20Hz to 20kHz	<-80dB, 20Hz to 20kHz	<-80dB, 20Hz to 20kHz
FUNCTION SWITCHES			
EQ Bypass:	Bypasses the graphic equalizer section in the signal path	Bypasses the graphic equalizer section in the signal path	Bypasses the graphic equalizer section in the signal path
Low Cut:	Activates the 50Hz 12dB/ octave high-pass filter	Activates the 50Hz 12dB/ octave high-pass filter	Activates the 50Hz 12dB/ octave high-pass filter
Range:	Selects either +/- 6dB or +/-12dB slider boost/cut range	Selects either +/- 6dB or +/-12dB slider boost/cut range	Selects either +/- 6dB or +/-12dB slider boost/cut range
POWER SUPPLY			
Operating Voltage:	100VAC 50/60Hz, 120VAC 60Hz, 230VAC 50/60Hz	100VAC 50/60Hz, 120VAC 60Hz, 230VAC 50/60Hz	100VAC 50/60Hz, 120VAC 60Hz, 230VAC 50/60Hz
Power consumption:	12W	12W	12W
Mains Connection:	IEC receptacle	IEC receptacle	IEC receptacle
DIMENSIONS/WEIGHT			
Dimension:	482.6 x 170 x 88 mm	482.6 x 168 x 44mm	482.6 x 168 x 88 mm
Weight	4.0 kg	2.96 kg	3.93 kg

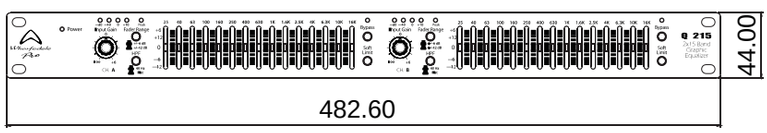
Dimensional

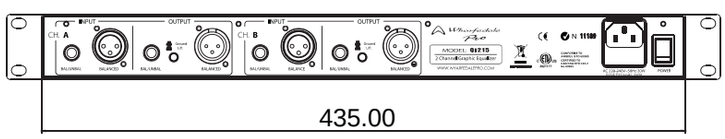
Q130



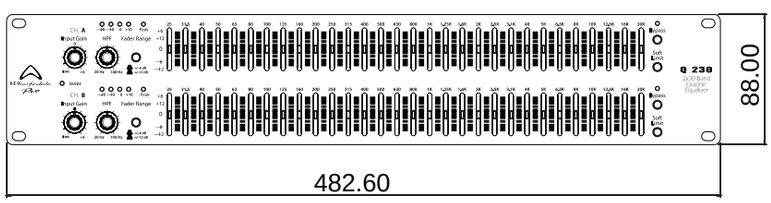


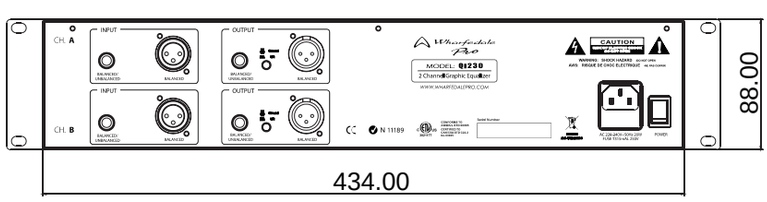
Q215





Q230





WHARFEDALE PRO LIMITED WARRANTY

Wharfedale Pro products are warranted of manufacturing or material defects for a period of one year from the original date of purchase. In the event of malfunction, contact your authorized Wharfedale Pro dealer or distributor for information.

***Be aware that warranty details may differ from country to country. Contact your dealers or distributor for information. These terms do not infringe your statutory rights.**

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