



GREAT PLAINS AUDIO

# MODEL 515-8/16G

## BASS HORN DRIVER LOUDSPEAKER

*"The Legacy Lives On"*™



Great Plains Audio is pleased to offer one of the most efficient low frequency loudspeakers that has ever been made available by any manufacturer, the **GPA Model 515-G Series Bass Horn Driver Loudspeaker**. Designed to provide unsurpassed performance in low frequency horn and vented horn enclosures, the *Great Plains Audio's Model 515-G Series Bass Horn Driver Loudspeaker* is the loudspeaker of choice where superb clarity, natural sound quality, high efficiency, and excellent frequency response are a necessity.

### ❑ **A TRUE LOW-FREQUENCY BASS HORN DRIVER LOUDSPEAKER**

It has long been known that a horn provides the most efficient transfer of acoustic energy to the air. It is also known that a properly designed horn-type loudspeaker exhibits lower distortion, greater linearity, and more natural sounding reproduction than do other types of loudspeaker systems.

The advantages of using high and low frequency horns in sound reproduction are both well recognized and desired by discerning listeners everywhere. Low frequency (bass) horns are especially effective in situations where the acoustic energy must be directed away from hard reflective surfaces, such as walls and ceilings. They are also able to reproduce the dynamics of any given program material with stunning realism and minimum effort.

System designers that do not incorporate bass horns in their designs face a real problem when attempting to reach the farthest seats in a large facility with sufficient low frequency energy. Therefore, they have to increase the acoustic output of these non-bass horn systems in order to compensate. The result of this approach is that, while they may sound fine in the *back rows*, such a compromise nearly deafens those who are unfortunate enough to have to sit nearer to them.

**Not so with a properly designed and installed system that uses bass horns!** Bass horns reproduce the program material so accurately and

effortlessly that every person in the seating areas is able to hear even the most minute nuances of the audio signal, but without the long term listening fatigue often associated with systems that do not use them. In fact, the frequency response and dynamic levels that are achievable with a correctly designed and installed bass horn system are so uniform that they literally *draw the listeners into the program material*, instead of bombarding them with it. When directivity, accuracy, clarity, and naturalness of reproduction are required, bass horns are the low frequency systems of choice for discriminating listeners, performers, designers, and installers.

The design and resultant performance of the **Great Plains Audio Model 515-G Series** came out of many years of intense research into the behavioral characteristics of bass horns by a group of the finest loudspeaker engineers in the industry. One of the most startling things they discovered early in their research was that, although many types of loudspeakers had been used in bass horns since their invention over seventy years ago, there was not a single loudspeaker available at the time that had been *specifically designed* for the bass horn. Instead, system designers and end users had to make do with low frequency loudspeakers that were more of the "general purpose" type, instead of having one that was optimized for use in a low frequency horn.

The **Model 515-8G, Model 515-16G, and Model 515-8GHP Bass Horn Drivers** changed all that. Building upon proven manufacturing techniques and materials, the design team created an essentially all-new low frequency loudspeaker that was *optimized specifically for the bass horn*.

### ❑ **Digital Ready? OF COURSE!**

The amount of low frequency program material found in today's digital recordings is much greater than in other recorded media. When a loudspeaker system accurately reproduces such sounds, the result is impressive. When it does not, the results can often be unbearable to listen to. Most manufacturers, attempting to make their speakers "digital ready", realize that substantial changes must be made in their speaker designs if they are going to be able to keep up with the audio found in the digital world of today. Large, heavy voice coils, inarticulate suspension systems, cones that weigh far too much to be able to reproduce the middle of the audio spectrum accurately - these are but a few of the compromises that must be made if ordinary speakers are going to be able to function in the digital world. In addition, speakers of this type require massive amounts of amplifier power to operate. Not only that, but most of these types of designs incorporate voice coils that "overhang" outside of the magnetic field, a method of construction that results in a significant loss of control of cone movement, greatly reducing the ability of the loudspeaker to articulate sounds with the precision demanded by today's listeners and performers.

**Great Plains Audio's 515-G Bass Horn Drivers** don't rely on such tactics in order to be able to respond to the demands of digital music and sound effects. Instead, they use a lightweight cone, high-compliance suspension, and the low-frequency voice coil remains in the magnetic gap at all times. When used in a properly designed bass horn, they exhibit tighter bass, cleaner sound, and more accurate low-frequency sound reproduction than virtually any other system on the market today.

The **GPA 515-G series** uses a massive 132-ounce FerriteV magnet, which provides 15,500 gauss of flux density, an edgewound aluminum flatwire voice coil, a very light cone assembly, and a low distortion cloth suspension, which enables them to exhibit extended bass response, extremely high linearity, and amazing efficiency. ■

# 515-8/16G BASS HORN LOW-FREQUENCY LOUDSPEAKERS

## PERFORMANCE SPECIFICATIONS -

Frequency Response*:	515-8G	515-16G	515-8GHP
Enclosure: 816A	60-4kHz	65-4kHz	70-4kHz
817A	55-4kHz	60-4kHz	65-4kHz
828A	50-4kHz	55-4kHz	60-4kHz
210A	40-4kHz	50-4kHz	50-4kHz

Power Handling\*\*:

75 watts	75 watts	200 watts
----------	----------	-----------

Pressure Sensitivity***:	515-8G	515-16G	515-8GHP
Enclosure: 816A	102 dB	103 dB	103.5 dB
817A	104.5 dB	105.5 dB	106 dB
828A	103 dB	104 dB	104.5 dB
210A	107 dB	108 dB	108.5 dB

Minimum Impedance: 8 ohms 16 ohms 8 ohms

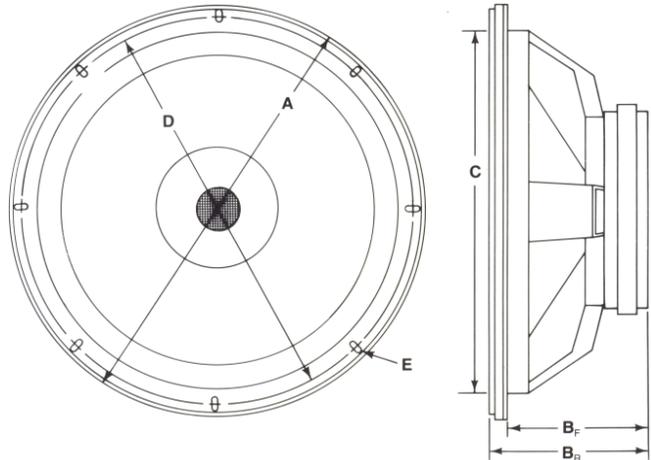
Input Connections: .25-inch spade type terminals.

Thiele-Small Parameters: 515-8G 515-16G 515-8GHP

<i>X<sub>max</sub></i> (inch)	0.17	0.15	0.12
<i>R<sub>e</sub></i> (ohms)	6.20	11.30	5.60
<i>V<sub>d</sub></i> (cu. in.)	22.40	19.70	15.80
<i>F<sub>s</sub></i> (Hz)	37.00	37.00	37.00
<i>V<sub>as</sub></i> (cu. ft.)	12.40	12.20	12.10
Ref. Eff (%)	6.00	7.50	8.60
<i>Q<sub>ts</sub></i>	0.269	0.215	0.187
<i>Q<sub>ms</sub></i>	5.00	5.00	4.50
<i>Q<sub>es</sub></i>	0.284	0.225	0.195

Magnet Type:	Ferrite V
Magnet Weight:	132 ounces
Flux Density:	15,500 Gauss
Net Weight:	30 pounds.
Finish:	Gray powder coat paint.

### Loudspeaker Mounting Dimensions:



- A = Loudspeaker Diameter: 16"
- B<sub>F</sub> = Depth When Front Mounted: 5 7/8"
- B<sub>R</sub> = Depth When Rear Mounted: 6 11/16"
- C = Baffle Opening Diameter: 14 1/8"
- D = Bolt Circle Diameter: 15"
- E = Bolt Hole Slots: 1/4" x 3/4" (8 slots spaced 45° apart)

### NOTES:

- \* Low frequency limit is the 3 dB down point using the particular enclosure and the Thiele/Small parameters of the loudspeaker.
- \*\* AES power rating (measured Power = E<sup>2</sup>/R, using Pink Noise with a crest factor of 6 dB and a band limit of 60-600 Hz).
- \*\*\* Measured in the free-field at 4' on-axis with one watt (Power = E<sup>2</sup>/R), of band-limited pink noise from 100 to 1000 Hz.



GREAT PLAINS AUDIO  
 7127 N. W. Third Street  
 Oklahoma City, Oklahoma 73127  
 (405) 789-0221  
 www.greatplainsaudio.com

"The Legacy Lives On"™