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THE JOURNAL FOR LIVE EVENT TECHNOLOGY PROFESSIONALS

# LIVE SOUND

MAY 2005 VOLUME 14 • NUMBER 5 \$10 INTERNATIONAL

*Genesee Theatre*  
*What's old is new again*

REPRINTED FOR  
**CREST  
AUDIO**  
BY LIVE SOUND MAGAZINE  
[www.livesoundint.com](http://www.livesoundint.com)

## Crest Pro 9200 Power Amplifier

Distinguished heritage goes modern

By Jeff Kuells

Say the name Crest Audio to a sound reinforcement veteran, and likely the first thing that comes to mind is the 8001 and 9001 power amplifiers. I've often heard colleagues say that the 8001 was the best touring amp of the late 1980s and 1990s. During that period, Crest had a huge share of the market.

I've always had great respect for Crest engineering. The amplifiers deliver great low-frequency punch and warm midrange. It's not surprising that even today, several sound companies still rely on the Crest legacy models to power their systems.

Things changed a few years ago, with the emergence of lighter weight switching amplifiers, as well as an influx of competitors from Europe. Crest also underwent a transition; in 1999 the company was acquired by Peavey.

Many of the same sound reinforcement veterans felt – unfairly I might add – that they wouldn't be able to depend on a product made by a “retail” manufacturer. But let's get real

– today is a new era. Just about every larger manufacturer has professional, contracting and retail divisions, and most do a good job with all of them, including Peavey.

When Crest decided it was time to create a new line of touring amplifiers, they relied upon award-winning amplifier designer J.D. Bennett, the protagonist of 8001 and 9001 (and 10001), as well as many others. The model Pro 9200, intended to supply the same sound characteristics and reliability of the 9001 but with modern twists, would headline this new line. And weight needed to be reduced by at least 80 pounds. No simple task.

But first, other models in what came to be called the Pro 200 Series were developed and released. This includes the 5200, 6200 and 7200, all incorporating modern touring features. The latest piece is the “King Kong” 9200, which began shipping mid last year.

The 9200 meets necessary criteria in terms of weight, size, affordability, and is covered by a five-year warran-

ty. Most importantly, to me at least – in my listening tests, I found it to offer sound characteristics very similar to those of the 9001.

The specified power output is impressive; Crest rates the 9200, both channels driven, as delivering 1300 watts at 8 ohms, 2200 watts at 4 ohms, and 3250 watts at 2 ohms in a 2U package (just 12.25 inches deep as well) weighing 24 pounds.

I like the blend of a proven Class-H Bipolar output design, combined with a switch mode power supply. This combination helps meet the criteria of traditional sound quality with reduced size/weight.

Modern technology and manufacturing techniques also helped in lessening size and weight. The 9200 is built at the same facility as the highly dependable Architectural Acoustics MediaMatrix series of digital processing, control and matrixing systems. The manufacturing plant is state of the art, period.

The look of the 9200 recalls it's classic heritage, but is also sleeker.



The 9200 bears a Crest family resemblance, but with modern touches and dual output connection on the rear panel.

# Amped Up

The front panel has recessed detented level controls, five LEDs per channel and a 30-amp circuit breaker power switch. The LEDs indicate output signal, DC protect, thermal protect, channel active and clip threshold.

The first thing I noticed when powering up the unit was the brightness of these LEDs. They can easily be seen outside or from a distance, very useful. By the way, the handles on the front panel are comfortable to use.

The rear panel layout is simple but effective. Input connectors are Neutrik Combo TRS/XLR. Note that there are no XLR loop-thru jacks, which might be problematic for some users. An input routing selector switch allows operation in stereo (two-channel) mode, or parallel connection of both channels together via one input, or mono bridging of the channels.

There's also a recessed input gain switch labeled "X20" and "X40." In X20 (26 dB) mode, the input sensitivity is 4.7 volts, and in X40 (32 dB) mode, it's 2.35 volts (at 4 ohms) to achieve rated output.

Each channel offers two sets of output connectors – five-way binding posts and Neutrik NL4 connectors. Two sets of output connectors is rather unique for amplifiers of this size and power. Because the 9200 has an output voltage swing of 113 volts, I do recommend use of the NL4s because there are no exposed contacts. (Don't want to get shocked!)

Cooling is forced air, and there are two variable speed fans to ensure this vital job gets done. Airflow is from the rear to the front. If using the amp for light duty, it's tough to tell the fans are even on. Under heavy loads, they can get a bit loud.

The 10-gauge AC line cord is definitely heavy duty, and it's captive, which most users prefer. A Hubble L5-30A 120-volt twist-lock connector is also supplied. An IEC receptacle is provided for 240-volt models.

The 9200 has several well-thought-out protection circuits. The designers elected to use relays in the series with the outputs. In my opinion, using output relays is the best and simplest solution for DC protect, thermal protect and delayed turn on.

Any time you can disconnect the load from the output stage, it's a good idea. In the past, relays were a source for problems, but today most are made with a far longer life cycle.

Another protection scheme is the Automatic Clip Limiting (ACL) circuit. Any time a channel is driven into a hard continuous clip state, the clip limiter circuit will automatically reduce the channel gain to a level just slightly below a hard clip.

This protects loudspeakers against damage from continuous square wave conditions. Crest claims normal program transients won't trigger the clip limiter; only steady, excessive clipping will. And the ACL LED will glow brightly and continuously when limiting occurs.

When the amplifier sees a load that overstresses the output stage, the Instantaneous Gain Modulation (IGM) circuit adjusts the channel gain to a safe level. The IGM circuit is sonically transparent in normal use and unobtrusive when activated.

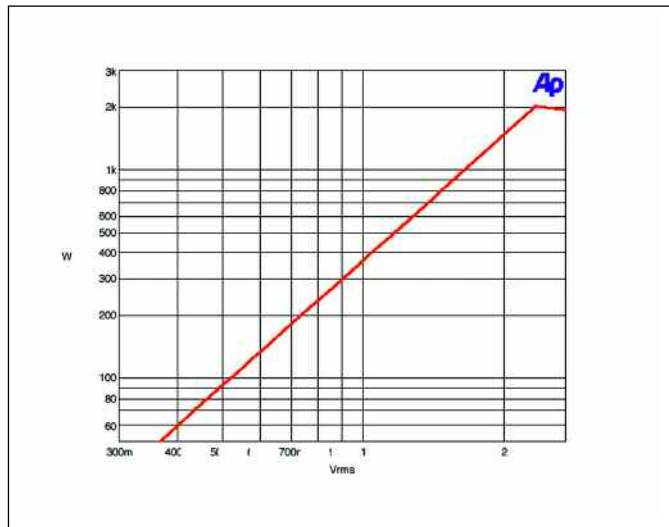


Figure 1: Power sweep at 4 ohms, 240-volt mode.

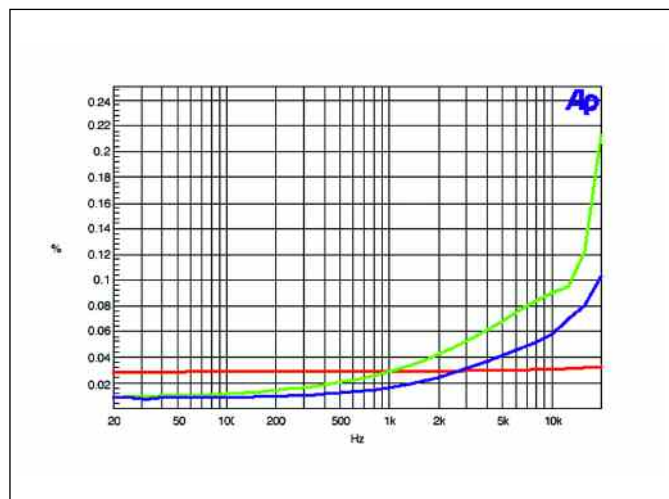


Figure 2: THD versus frequency at 8 ohms. (Red = 25 watts; Green = 200 watts; Blue = 800 watts)

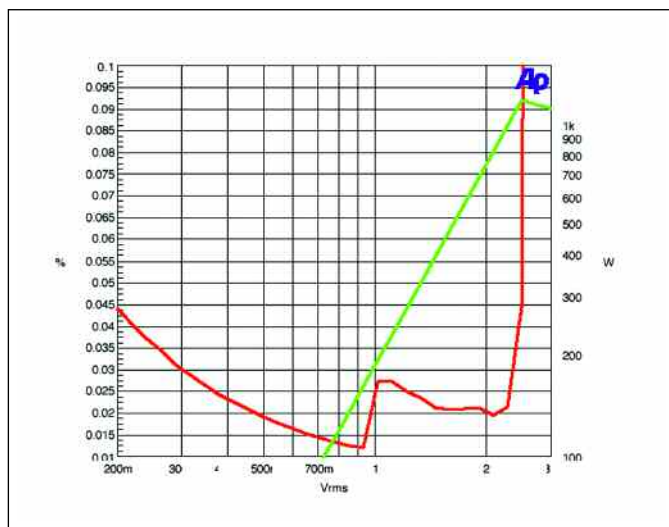


Figure 3: THD versus power, revealing low distortion at all levels

# Amped Up

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It's difficult to test 1 kHz power levels with an amplifier of this magnitude – just a 1-volt drop in the AC line can drastically change things. To be perfectly accurate, the AC line voltage must be maintained.

Even at a constant 120 volts, evaluation can still be tough because the output voltage swing, at the previously noted 113 volts, presents close to a 1:1 ratio. It's a situation calling for very stable (100-amp) AC service and a costly Variac (variable output transformer).

Prior to power testing the 9200, I bypassed the 30-amp circuit breaker on the power switch. This breaker works on magnetic current sensing and heat. At the power levels I would be working with, the breaker could trip during sinusoidal testing. Under normal audio operation, the breaker is rated properly, and would not open prematurely.

I was able to do an 8-ohm, two-channel power sweep using the 120-volt configuration, but for both 4-ohm and 2-ohm power sweeps, I first had

to convert to 240-volt operation. By going to 240 volts, the current draw is reduced by half. The conversion process is very easy – simply remove one jumper internally. At 4 ohms (**Figure 1**), I measured 2,232 watts with a 28-amp draw, and at 2 ohms, I measured 3,329 watts with a current draw of over 38 amps. That's a lot of juice!

**Figure 2** shows THD (total harmonic distortion) versus frequency at 8 ohms. Three sweeps were run at various power levels, and all levels looked good. I also measured bandwidth at 20 Hz to 20 kHz, which remained very consistent throughout.

Next, check out **Figure 3**, which shows results of THD versus power. This graph indicates that the amplifier has low distortion, even at lower levels, throughout the power band. Noise levels were also low.

But the real test for noise is listening, and I found it hard to tell if the amplifier was even turned on. Very unusual for a unit of this size.

When reviewing published specs,

the only number that jumped out at me was slew rate, which is listed as 10 microvolts per second. This is a bit slow for high-frequency applications, and indicates that the 9200 is best suited for mid-, low- and sub-low frequencies. Which is what it's primarily intended for anyway.

I can recommend the Crest 9200 for three reasons: it's small yet powerful, offers Crest's traditional sound characteristics, and is a value at \$3,445 (U.S. list price). I do advise running it at 240 volts due to the amount of current it consumes.

One other note: apparently during the initial manufacturing run, the 9200 had a few "issues" – completely common for first runs of any new product. It appears these issues have been resolved, with the 9200 used in applications such as the Summer Olympic Games last year in Athens. ■

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