

B&H 2009 Digital Piano Buyer's Guide

By [Ken Hamberg](#)

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Piano lessons are still a sort of familial rite of passage in many households, and the image of the family grouped around the piano singing along or listening while Bud, Sis, or Dad performs, has become a resonant cultural icon.

In the digital age we're able to replace the acoustic Spinet or Baby Grand piano with a digital electronic version. It never needs tuning, it's impervious to humidity and extremes of climate, and it often produces the ultra-realistic sounds of a host of different instruments besides the familiar tinkle of the 88's.

Digital Home Console Piano



In this article we're going to take a look at the features and options available these days in the current crop of digital pianos, and determine which models are most suitable for anyone from the budding beginner practicing at home to the seasoned professional rocking out on stage.

B&H carries a full line of digital pianos for the home, the stage, and the studio, and we'll be reviewing a selection from the home and professional categories in a variety of price ranges. Let's get going.

What's under the lid

Digital pianos produce their often-amazing sonic reproductions of the real thing by utilizing one of two DSP (Digital Signal Processing) technologies: sampling or sound modeling. Sampling is a digitized recording of a specific instrument under controlled conditions in a variety of acoustically desirable environments such as a concert hall or a recording studio — using sensitive recording microphones.

A good acoustic piano sample is actually a series of recordings (sometimes of every key) of a particular piano that — when played on a keyboard — capture most of the dynamic and harmonic nuances of that piano.

Digital Stage Piano



The response to the touch of the hammers on the strings in legato or staccato playing, the resonance of the sound board lid when raised or lowered, the loudness, softness and sustain of the upper, middle, and lower registers can all be reproduced, along with the tuning character and temperament of the instrument. A good piano sample, expressively played and pedaled, can be mighty compelling and convincing.

Sound modeling is an entirely computer-generated simulation of an instrument (or amplifier, speaker cabinet, etc.) using several programming languages. Sound modeling is a series of algorithms describing the acoustic behavior, and physical components and characteristics of an instrument as it is played over time.

Modeled, or "virtual" instruments tend to offer an often-astonishing degree of both realistic sonic detail and extensive programmability, a sort of build-your-own instrument for the more adventurous. You can create your ideal piano, drum set, or guitar amplifier by programming the available parameters.

While the majority of digital pianos use sampling (often stereo sampling) as their DSP technology of choice, several companies have begun using sound modeling as either a complement or alternative to sampling for some of their digital pianos. B&H carries these instruments, and we'll be discussing them later on in the article.

Digital Home Portable Piano



In short, today's digital pianos are capable of producing super-realistic reproductions and emulations of some of the finest instruments on the planet, at a fraction of the cost and the space required to house them. And you never have to call a piano tuner.

Easy action, or hammers without strings

Acoustic piano keys are made of wood, and when depressed cause a felt hammer to strike against a thick metal string (or strings) thereby producing a note. Digital pianos use electronic contacts instead of strings, and the keys are either plastic or plastic-coated wood. Several manufacturers are now using actual small hammers to strike the contacts, which can impart a striking realism to the feel of the playing experience.

There are 3 types of keyboard action designs prevalent in the production of most digital pianos — Weighted, Graded-Hammer, and Progressive-Hammer action.

Weighted Action basically means that the keys are made of real wood, and real hammers are used, so the action and weight of the keys most closely resemble the feel of an acoustic piano keyboard. Wooden keyboards are comparatively heavy and more expensive to produce, ultimately adding several hundred dollars to the cost of the digital piano. If you're serious about achieving a more expressive and realistic playing experience, wooden keys are well worth the investment.

Graded or Graded-Hammer Action describes a keyboard made of weighted plastic

keys, equipped with either lead weights or heavy springs to create more resistance, and often use a synthetic moving hammer as well. This keyboard design attempts — and often succeeds — in mimicking the heavier action (more force required to play the key) of an acoustic piano in the lower registers, and the lighter action of the higher registers. This design is often found in wooden keyboards as well.

Progressive-Hammer Action is another term for an all-plastic, lead-weighted keyboard with graded action in the lower, middle, and upper registers, which attempts to simulate the feel and response of an acoustic piano. Some manufacturers call it progressive-hammer, some call it graded-hammer; either way, it's all just marketingspeak to describe the same design.

Here's a further list of terms you'll encounter as you shop for your digital piano:

- **Touch Response or Velocity Sensitivity** — The loudness and softness (dynamics) of the notes the keys produce in response to the touch of the player's fingers.
- **Aftertouch** — A selectable expressive performance feature that defines a keyboard's capacity to transmit vibrato and other modulation elements to its own internal sounds, or over MIDI, to control other keyboards and modules that are able to receive monophonic or polyphonic Aftertouch. Aftertouch (also called Channel Pressure) is most useful for performing string, brass, and woodwind sounds — individual or ensemble. For example, a string quartet performed with polyphonic aftertouch will sound much more realistic and nuanced, as each instrument responds differently to the varying pressure from each finger.
- **Polyphony** — The total number of notes a keyboard is capable of playing back simultaneously.
- **Multi-timbral** — The number of separate parts (or sounds) a keyboard is capable of playing back simultaneously, whether through its own internal sequencer, or over MIDI via an external one. Not to be confused with polyphony.
- **MIDI** — An acronym for Musical Instrument Digital Interface, MIDI is a serial protocol devised by several music keyboard manufacturers in the early 1980's that enables multiple electronic keyboards and synthesizers to be played simultaneously by a single keyboard or an internal/external sequencer. USB/MIDI ports are increasingly common on digital pianos, and handy for both computer and data-storage device connectivity.
- **Splits and Layers** — Splitting a keyboard into dual or multiple, user-defined or preset zones allows for assigning separate sounds to different areas of the keyboard (a bass sound for the left hand and a piano sound for the right hand, for example.) Layering allows for simultaneous real-time or sequenced performance and playback of different sounds (piano and strings, trumpet and saxophone, etc.)
- **Controllers** — Pedals, pitch bend and modulation wheels (for increased vibrato), joysticks, and ribbons (for smooth glides and leaps across a wide range of notes) are all examples of performance controllers used for enhanced expressiveness of playing. Many digital pianos come with the same three soft, sostenuto, and sustain pedals that acoustic pianos have. For enhanced realism of performance that's a great feature to look for.

So what are my choices?

Below you'll find a list of the digital pianos we sell at B&H. For your shopping convenience, we've divided them into 3 separate categories: Digital Home Portables, Digital Home Consoles, and Digital Stage Pianos.

Digital Home Portables are comparatively light, and generally do not come with a stand or pedals. They'll usually include built-in amplification and speakers, and offer built-in accompaniment and sequencing features.

Digital Home Consoles do come with a stand, usually with a wood-grain finish, and can

function quite nicely as a home furnishing complement. They offer many of the same features as their portable brethren, but look more like an acoustic spinet piano, and tend to reside in one place.

Digital Stage Pianos are designed for professional use on stage or in the studio, often as a master controller instrument for a large keyboard rig. The features, flexibility, and level of programmability of the digital stage pianos are usually quite advanced, thus more appropriate for professional applications. They generally do not come with built-in speakers and amplification.

Digital Home Portables



The [Casio Privia CPX-130](#) offers a sleek, high-tech appearance, built-in speakers and amplification, 128-voice polyphony, and 88 Scaled (progressive) hammer-action keys with 3 levels of touch response. There's also an internal 2-track recorder and some cool effects processing — like acoustic resonance and brilliance — for added sonic realism. The piano sample is one of the best we've heard in its price range, which is around \$500.



The [Yamaha P85](#) has a simple, yet elegant design. The unit sports 88 graded hammer-action keys, built-in stereo speakers and amplification, and a pretty good damper pedal. The stereo-sampled piano sounds warm and natural, and plays very nicely. While there isn't a huge selection of sounds in this instrument's library, they're all quite classy. Around \$600.



The [Korg SP250](#) is a handsome keyboard, with a shiny and attractive wood-grain finish. It comes with a stand, music rest and damper pedal, along with built-in speakers and amplification. The unit is equipped with weighted hammer-action keys, and offers 3 levels of touch response. The 30 sampled sounds are quite good, and overall this is a great value for around \$700.



The [Casio Privia PX-330](#) is a beefed-up version of the PX-130 mentioned above. It offers the same sound architecture and scaled hammer-action keyboard design, but includes split and layering modes, a pitch wheel, a robust 16W internal amplification, a 16-track internal sequencer, USB and MIDI ports, and an SD card slot for data storage. Another great value in the \$700 ballpark.



The [Yamaha P-155](#) is a handsome and robust affair, sporting a black and mahogany wood-grain finish. The keyboard offers 128-voice polyphony, and uses a graded hammer-action design with real hammers under the hood. This instrument is all about the sound: 17 clean, ultra-realistic samples featuring a 4-layer sampled grand, and adjustable damper resonance. Throw a 24W amp and speaker system into the mix and you're getting major league value in the \$1200 ballpark.



The [Roland FP7](#) is a slick-looking unit with 88 progressive hammer-action keys and an astounding 100 levels of touch sensitivity. This keyboard offers 128-voice polyphony and an oversized sound library featuring 9 drum sets, sparkling pianos, and a generally ambitious collection of western and world instruments. The FP7 comes with stereo speakers and 26W of amplification, along with a 3-track sequencer with a 30,000-note capacity. The keyboard itself is fun to play, and there are enough controls, audio and MIDI inputs and outputs, and USB connectors for data storage and computer integration to make the FP7 a viable alternative for professional use. Around \$2000.

Digital Home Consoles



The [Casio Privia PX-800](#) comes with a beautiful light cherry wood-grained stand, and a full complement of 3 expression pedals. The 88 keys are equipped with a hammer-action design and respectable touch-sensitivity. The unit offers 150 realistic stereo-sampled

sounds and 128-voice polyphony. The bass-reflex speakers produce a clean, punchy sound with a tight bottom end, and they're supported by a serious 40-watt amplifier. Sounds good, looks good, feels good, and it's around \$900.



The [Yamaha YDP-S31](#) comes with a handsome console stand in a dark alder finish that contrasts strikingly with the keyboard's brushed chrome finish. The unit comes with 3 expression pedals, and the graded hammer-action keyboard plays beautifully. The stereo sampled pianos sound amazing, and they're nicely enhanced by some cushy, studio-quality reverbs. This unit is all about the piano sound, and it succeeds admirably. There are few competitors with this instrument in the \$900 price range.



The [Yamaha Arius YDP-140](#) is a classy-looking piece of furniture with a rich walnut wood-grain finish. It also happens to be one of the best-playing, best-sounding pianos we've heard so far. The keyboard is endowed with a precise graded-hammer action, and the stunning 3-level layered, stereo-sampled piano presets make you want to play forever. The unit comes with 3 expression pedals, and the overall playing experience is incredibly realistic and compelling. Super sound and feel for around \$1050, and it looks great, too.



The [Roland RP-101 PAK](#) is a handsome console keyboard emulating the design of the classic upright acoustic piano. The 88-key progressive-hammer action keyboard offer 3 levels of touch sensitivity, and the rich, dark wood-grained console is equipped with the requisite 3-pedal complement. The sparkling stereo-sampled pianos, backed by 50 watts of stereo amplification, are highly detailed and nuanced, as are the strings, organs and others of the 17 choice sounds in the collection. The unit comes with a bench and headphones, for around \$1495.



The [Yamaha Nocturne N100MR](#) is a very attractive digital piano housed in a striking console with an ebony finish, and sleek, shiny pedals that impart the elegance of a Baby Grand. It sounds and plays like one too, featuring a graded-hammer action keyboard, 40 watts of stereo amplification, and 4 built-in speakers. The stunning stereo-sampled grand just shines, and Yamaha has thrown in the half-pedal feature for greater realism of expression. A beautiful addition to your living room or den, for around \$2300.

Digital Stage Pianos



The [M-Audio ProKeys Sono 88](#) is a lightweight USB bus-powered digital-stage or studio piano with 88 semi-weighted piano-style keys. The unit features 128 on-board sounds with 40-voice polyphony, and both pitch bend and modulation controller wheels. The standout feature of the unit is a dual in/out audio interface and a microphone input, allowing for immediate co-integration with a computer for recording and sequencing. This keyboard represents a great value for songwriters and musicians, coming in for around \$450.



The [Roland RD-300GX](#) is a professional digital stage piano with 88 weighted wooden

keys that feel like the real thing. The impressive collection of stereo-sampled acoustic and electric pianos is augmented by a large and varied sound library, 128-voice polyphony, and 16-part multi-timbral capability for computer sequencing. The unit offers multi-zone split and layering, assignable controls, and a pitch bend and modulation lever. An impressive value for the professional, in the \$1600 ballpark.



The [Roland RD-700GX](#) is a deluxe version of the R-300GX described above. The unit features weighted wooden keys with a progressive hammer-action design, and sparkling stereo piano samples. The oversized sound library is ambitious and top-notch, as this unit features Roland's proprietary SuperNATURAL electric piano sound bank and ultra-realistic modeling parameter control such as hammer noise and damper resonance. Around \$2600.



The [Nord Stage EX-88](#) is an elite professional stage keyboard with 88 weighted wooden hammer-action keys and polyphonic aftertouch. Like the RD-700GX, this keyboard design follows the trend of integrating stereo sampling and sound modeling technologies to great effect. The stereo-sampled pianos and the tone wheel organ models are among the most realistic and responsive sounds out there. The unit also features 4 types of sound synthesis for the internal synth collection, and a host of assignable controls including 9 drawbars for the organs. A great performer on the stage or in the studio. Around \$3500.



The [Roland V-Piano](#) takes sound modeling and the idea of the virtual instrument to an unprecedented place. The keyboard's 88 weighted, hammer-action wooden keys invoke the feel and touch of well ...ivory. The unit delivers sound models that are breathtakingly realistic, yet you can also program custom pianos that sound unlike anything that exists. The unit's look is classic and imposing, featuring a large, attractive LCD display and elegant, ergonomic performance and programming controls. There's also an internal 30,000-note MIDI sequencer, professional audio outputs, and a 3-pedal performance complement. The proprietary high-tech stand is included. For around \$6000 you can enter the next millennium way early.

Conclusion

Don't forget the accessories you should consider in order to enhance and protect your investment. These include a decent set of [headphones](#), a [keyboard pedal](#) (or several, if the keyboard offers additional pedal inputs) a [case](#) or [carrying bag](#), an adjustable [keyboard stand](#), an adjustable [stool](#) or [bench](#), and a [keyboard dust cover](#).

We hope that the information contained in this article will help you find the digital piano of your dreams. Happy Holidays!

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