NEW MODEL INFORMATION

DENON

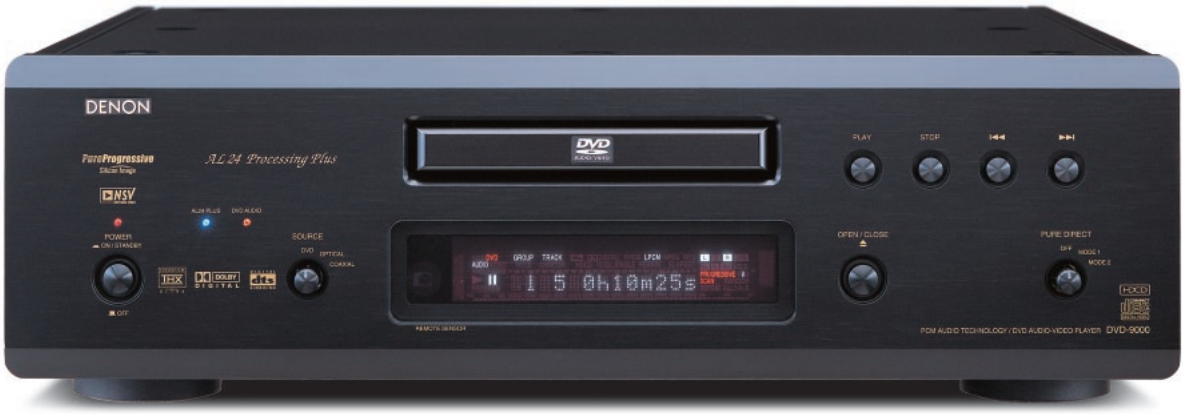
DVD Audio/Video Player

DVD-9000

TENTATIVE

High-end DVD A/V Player with 14-bit, 108 MHz Video D/A Converter and PureProgressive Circuit

Denon engineers have pulled out all the stops in its development of the DVD-9000 to ensure that this DVD player reproduces sound and pictures at the highest possible level of quality. The DVD-9000 is packed with PureProgressive circuitry for superior Interlaced-to-Progressive video conversion; two 14-bit, 108-MHz video D/A converters, Noise Shaving Video and a Super Sub Alias Filter. For high-quality audio output, the DVD-9000 sports AL24 Processing Plus supporting a sampling frequency of 192 kHz; a 24-bit, 192-kHz audio D/A converters and other state-of-the-art audio technologies to extract the maximum potential of DVD-Audio. Along with Denon's critically acclaimed circuit design and chassis construction, the DVD-9000 is a truly remarkable new flagship DVD player from Denon.



■ Thorough Vibration-resistant Designs

Since the high-density data recorded on DVD must be read with absolute accuracy, vibrations from outside or from internal sources such as the power unit will adversely affect sound and picture quality. A variety of designs have been incorporated in the DVD-9000 to suppress these unwanted vibrations. The bottom plate forming the foundation of the chassis is a 6-mm thick, 4-layer hybrid construction made up of a 1.2-mm thick copper-plated metal sheet and three layers of 1.6-mm metal sheets. Large insulators of sintered alloy (the same type used in Denon's high-end S1 series) have been used for the DVD-9000's feet to absorb external vibrations. Reinforcing plates for the base, front, and rear and four 1.2-mm thick copper-plated sheets have been used in a 3-box construction to strengthen the chassis. The chassis also uses copper plating to bring the ground electric potential of the overall chassis close to equipotential in order to suppress electrical noise. The top cover uses three types of 1.2-mm thick metal sheets in different shapes, while 2.5-mm thick aluminum panels have been used for the sides, giving rigidity to the entire chassis. The DVD mechanism is mounted on a cast-aluminum base between the mechanism and the chassis. Parts made of different materials effectively absorb vibrations caused by the unit itself as well as from outside to ensure stable operation.

■ THX Ultra Certified

The THX Ultra standards comprise three basic categories of tests; Audio Quality, Video Quality and User Interface. These tests ensure that the DVD Player is fully capable of bring out the best visual and sonic quality of your favorite DVD programs.
The DVD-9000 has passed those stringent standards.

■ Newly-Developed Loading Mechanism for Suppression of Vibrations

The newly-developed mechanism unit uses a guide and tray painted with protein material that is highly resistant to vibrations in order to prevent unwanted vibrations to the tray.

■ New PureProgressive Circuit

The DVD-9000's interlace/progressive converter is the new Progressive Converter with PureProgressive circuitry from Silicon Image. The Progressive Converter features faster moving picture detection and improved mode recognition capability.

High-speed processing: This Progressive Converter is capable of processing 6 billion operations per second, giving reality to the following high performance.

Moving picture detection: Since PureProgressive is also adept at 2:3 pulldown detection, which converts Film recording mode to TV/Video playback mode, and detecting Video mode signals of DVD-Video and other moving picture formats, PureProgressive is capable of reproducing DVD-Video discs containing both Film mode and Video mode signals, as well as high picture quality Progressive video sources, while avoiding the flickering caused by detection delays. In detecting moving video signals, the conventional Progressive method performs detection in single frame units, while PureProgressive stores 4 fields of video signals in a 64-Mbit SDRAM buffer, enabling the detection of single-pixel units to achieve greater precision in discriminating between moving and still pictures.

2:3 pulldown detection: In 2:3 pulldown processing which converts 24-fps Film mode into 60-fps TV/Video mode, there are cases in which 2:3 pulldown sync signals are not in sync. The PureProgressive converter thus quickly detects the non-sequential points and performs appropriate corrective measures at high speed to minimize picture flickering.

■ 14-bit, 108-MHz Video D/A Converter

The DVD-9000 uses a 14-bit, 108-MHz video D/A converter to tap the maximum potential of the new PureProgressive circuit's performance. The DVD-9000 also uses two independent D/A converters for Progressive and Interlaced picture reproduction.

These converters provide a very high sampling frequency of 108 MHz, with 4x oversampling used for Progressive and 8x oversampling for Interlaced operation, resulting in more detailed D/A conversion. Since a filter with ample cutoff characteristics can also be used for the analog low-pass filter, the DVD-9000 reproduces the delicate nuances of video signals, allowing viewers to enjoy the original picture at a high level of fidelity.

■ Noise Shaving Video (NSV)
The NSV feature reduces noise in the video signal frequency band in order to enhance video signal linearity.

■ Super Sub Alias Filter
The S/N ratio can be improved when unwanted signals of higher than 6.75 MHz following D/A conversion are cut. The DVD-9000 thus uses a Super Sub Alias Filter that produces flat characteristics, ensuring that adverse influences do not affect video signals inside the essential frequency band, and folding noise is eliminated. In the DVD-9000, the Super Sub Alias Filter is applied to the chroma signal as well as the luminance signal, improving color reproducibility.

■ A Wealth of Picture Quality Adjustment Functions
Contrast, Brightness, Hue, Sharpness, and Gamma can be adjusted as desired by the user.

■ AL24 Processing Plus
Denon has further developed its proprietary AL24 Processing analog waveform reproduction technology to support the 192-kHz sampling frequency. This new technology, AL24 Processing Plus, thoroughly suppresses quantization noise associated with D/A conversion of LPCM signals to reproduce the low-level signals with optimum clarity and bring out all the delicate nuances of a rich, musical sound.

■ 24-bit, 192-kHz Audio D/A Converters
The DVD-9000 uses a high-performance 24-bit, 192-kHz D/A converter to faithfully convert high-quality 24-bit data generated by AL24 Processing Plus.

■ Pure Direct Mode
The DVD-9000 includes a Pure Direct mode that further improves sound quality. During pure audio output, Pure Direct mode turns off digital signal output, video signal output, and displays that easily influence analog audio signals and allows only audio output. The user can define which operations are to be turned off and store those preferences in memory.

■ Layout for High Sound Quality
The DVD-9000's audio, video, digital, and power supply circuit boards have been isolated into independent blocks to prevent mutual interference.

■ Independent Power Supplies
Independent power supplies have been provided for the audio signal processing block, the video signal block and other areas to eliminate mutual distortion with other blocks. Clean supplies of power to the various circuits contribute to high picture and sound quality.

■ Parts for High Sound Quality

■ Bass Management
When playing multi-channel Dolby Digital, LPCM or MLP sources, it is possible to preset speaker configurations and delay times.

■ DENON Link
When the DVD-9000 is connected via a shielded twisted pair (STP) cable to a DENON Link compliant A/V receiver, the DENON Link interface enables high-grade LPCM 24-bit / 96-kHz / 6-channel or 24-bit / 192-kHz / 2-channel (*1) digital output. Since DENON Link uses low-voltage differential signaling (LVDS), transfer capabilities of greater than 1.2 Gbps at a differential voltage of approximately 0.3 Vpp are possible. And since signal transfer is balanced and voltage is lower than coaxial or unbalanced transfers, LVDS is less susceptible to noise such as radiation, ensuring high-grade signal transfer.

■ HDCD Decoder

■ MP3 / JPEG Playback (*2)
Since the DVD-9000 supports the CD-R/RW format, it plays finalized CD-R/RW discs containing MP3 audio files.

■ RS-232C Port (Third-party system controls only)

■ Brilliant Black
DVD-9000 can pass below black video via the video outputs for correct monitor setup and optimum picture quality.

■ Self-illuminated GLO-KEY Remote Controller with Easy Recognition Layout
The DVD-9000 comes equipped with a self-illuminating remote controller for easy operation in a dark room.

Specifications

■ Video Section

Disc played	DVD Audio, DVD Video, Video CD, Music CD, CD-R/RW (audio/MP3/JPEG)
Video outputs	2 Sets Composite Video Output, 2 Sets S-Video Output, 1 Set Component Video Output

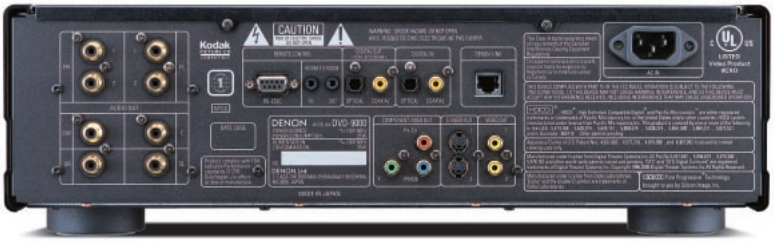
■ Audio Section

Audio outputs	2 Sets Analog Front Channel (L/R) Ouput, 1 Set Analog Surround Channel Output, 1 Set Optical Digital Output, 1 Set Coaxial Digital Output, 1 Set DENON Link
Audio inputs	1 Set Optical Digital Input, 1 Set Coaxial Digital Input

■ General

Power supply	AC 120 V, 60 Hz
Dimensions	434 (W) x 136 (H) x 395 (D) mm, 18.5 kg 17.1" (W) x 5.4" (H) x 15.6" (D), 40.8 lbs

(*1). If a 24-bit, 192-kHz sound source is copyright protected, the DVD player may convert the digital output to a 24-bit, 48-kHz signal.
(*2) Discs that have been poorly finalized following recording may be only partially playable or not playable at all.



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DENON ELECTRONICS (USA), INC.
19 CHAPIN ROAD, P.O. BOX 867, PINE BROOK, NJ 07058-9777 USA
TEL: 973-396-0810 www.del.denon.com

DENON CANADA INC.
505 APPLE CREEK BLVD. UNIT 5 MARKHAM, ONTARIO L3R 5B1 CANADA
TEL: 905-475-4085 www.denon.ca

DENON, LTD.
3-16-11 YUSHIMA, BUNKYO-KU, TOKYO 113-0034 JAPAN
www.denon.co.jp

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