

DENON

DVD Audio/Video &amp; Super Audio CD Player

DVD-2900

## DVD Audio/Video & Super Audio CD Player with PureProgressive™ Circuit

The DVD-2900 is endowed with PureProgressive™ technology to unleash the full impact of DVD-Video picture quality. The DVD-2900 also uses a 12-bit, 108-MHz video D/A converter to faithfully preserve the delicate low-level signals often lost during D/A conversion. With these advanced video image technologies, the DVD-2900 will reproduce with the highest resolution, DVD images on Progressive-compliant monitors and projectors. For sound, it is high quality audio D/A conversion and Digital Bass Management that will bring out the best of not only Super Audio CD and DVD-Audio discs, but your entire CD collection as well.



### ■ Super Audio CD

DENON supports Super Audio CD, the new-generation media format, with the DVD-2900.

Super Audio CD is recorded using the DSD (Direct Stream Digital) method, based on a concept that differs from PCM. Since DSD records signal output from the Delta-Sigma modulator as is, it is recorded as the compressional wave of a 1-bit pulse signal at the sampling rate of 2.8224 MHz.

The DSD format has a dynamic range of 120 dB (the audible band) and covers a playback frequency that extends to as much as 100 kHz, enabling playback that is extremely close to the original waveform. DSD is capable of recording all sound that exists in the natural world. To bring out the maximum potential of this sonic experience, the DVD-2900 incorporates a dedicated DSD decoder for Super Audio CD playback. The DVD-2900 supports Super Audio CD multi-channel discs capable of recording up to 6 channels of data at full specifications. It also supports Single Layer, Dual Layer, and Hybrid Layer discs.

### ■ New PureProgressive™ Circuit

The DVD-2900's interlace to progressive converter is the new Sil504 Converter with PureProgressive™ circuitry from Silicon Image. The Sil504 features faster moving picture detection and improved film/video mode recognition capability.

High-speed processing: This Sil504 Progressive Converter is capable of processing 6 billion operations per second, providing the finest in motion-adaptive de-interlacing.

Moving picture detection: PureProgressive™ features 2:3 pulldown detection, which converts 24-fps Film based material to 60-fps TV/Video playback, while also detecting Video based material, animation and graphics.

PureProgressive™ is capable of reproducing DVD-Video discs containing both Film and Video material, as well as high picture quality progressive video sources, while avoiding the flickering caused by detection delays of these different formats. In processing moving video signals, a conventional progressive converter performs detection on a full frame-by-frame basis, while PureProgressive™ stores 4 fields of video signals in a 64-Mbit SDRAM buffer, enabling the detection and processing on a pixel-by-pixel basis to achieve greater precision in discriminating between moving and still pictures.

Improved 2:3 pulldown detection: There are cases in which 2:3 pulldown data signals on DVD-Video discs are not in sync.

The PureProgressive™ converter will quickly detect the non-sequential points and perform appropriate corrective measures at high speed to minimize picture flickering.

It is now also possible to select Level Detection or Flag Detection as the detection method used for Film and Video material. If an incorrect flag was recorded or the difference between the video level and noise level is very small and distinctions on the disc are difficult to detect, this selection ensures optimum detection capability and minimizes picture quality degradation.

### ■ 12-bit, 108-MHz Video D/A Converter

An extremely high-speed video D/A converter is a critical component in superior quality digital video playback. The DVD-2900 therefore uses a 12-bit, 108-MHz video D/A converter to ensure highly accurate playback of delicate, low-level video signals and give you a vivid picture that is faithful in every detail. Oversampling of 4x is used for both Progressive and Interlaced video signals, allowing more detailed D/A conversion. Higher quality picture reproduction is also possible thanks to a filter with flexible shutout characteristics that is used for the analog filter in the latter stage. Furthermore, the DVD-2900 uses two separate video D/A converters to process Progressive and Interlaced signals. This eliminates mutual interference between the Progressive and Interlaced signals.

### ■ Noise Shaped Video (NSV)

The NSV feature works in the digital domain to reduce 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-2900 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-2900, the Super Sub Alias Filter is applied to the chroma signal as well as the luminance signal, improving color reproduction.

### ■ Thorough Vibration-resistant Design

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 supply, will adversely affect sound and picture quality. A variety of designs have been incorporated in the DVD-2900 to suppress these unwanted vibrations:

- The DVD mechanism section in the main chassis has been divided in a two-box construction to further protect it from vibrations.

### ■ Burr-Brown 24-bit, 192-kHz Audio D/A Converter

The DVD-2900 uses a 24-bit, 192-kHz audio D/A converter that is well protected from noise caused by fluctuations in current from the power supply. Since the level of quantization noise within the frequency range is uniform for all frequencies, this D/A converter ensures that all the sound you hear is as clear and noise-free as possible.

### ■ Pure Direct Mode

The DVD-2900 includes two Pure Direct modes that further improves sound quality. For example, during analog audio output, Pure Direct can turn off digital signal outputs, video signal outputs, and the front panel display which can easily influence the sound quality of the analog audio signals. The user can define which operations are to be turned off and store those preferences in memory.

### ■ Digital Bass Management

When playing DVD-Video, DVD-Audio or Super Audio CD sources, it is possible to preset speaker configurations. The crossover point is fixed at 80 Hz with 12 dB high and 24 dB low pass filter slopes.

### ■ SRS True Surround

The DVD-2900 is equipped with SRS's True Surround circuit, a high-grade surround virtualizer that lets you enjoy the excitement of 5-channel audio with only using 2 speakers.

### ■ Newly-Developed Loading Mechanism for Suppression of Vibrations

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

### ■ Specially Selected Parts for High Sound and Picture Quality

### ■ DVD-R/RW (DVD-Video Recording Mode) Playback (\*1)

### ■ CD-R/RW (MP3 / JPEG) Playback (\*1)

The DVD-2900 supports the CD-R/RW format. It plays finalized CD-R/RW discs containing MP3 audio files. It also reads still photos in the JPEG format taken by a digital camera.

### ■ Brilliant Black

DVD-2900 can pass below black video (PLUGE) via the progressive or interlace video outputs for correct monitor setup and optimum picture quality.

### ■ A Wealth of Picture Quality Adjustment Functions

Contrast, Brightness, Hue, Sharpness, and Gamma can be adjusted as desired by the user.

### ■ Kodak Picture CD

The DVD-2900 also plays Picture CDs (Kodak format only).

### ■ On Screen Display

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

Includes a RS-232C port to support an AMX, Crestron integrated control system.

### ■ Remote IN/OUT Terminals

(\*1) Discs that have been poorly finalized following recording may be only partially playable or not playable at all.

### Specifications

#### ■ Video Section

Signal system .....	NTSC/PAL selectable
Disc played .....	DVD Audio, DVD Video, DVD-R/RW (DVD Video), Super Audio CD, Video CD, Music CD, CD-R/RW (AUDIO/MP3/JPEG), Picture CD
Video outputs.....	1 Set Composite video output: 1 Vp-p (with 75 ohms load) 1 Set S-Video output: Y; 1 Vp-p (with 75 ohms load), C; 0.286 Vp-p (NTSC) 1 Set Component Video Output: Y, Cb/Pb, Cr/Pr: Y; 1.0 Vp-p (with 75 ohms load), Cb/Pb; 0.648 Vp-p (with 75 ohms load), Cr/Pr; 0.648 Vp-p (with 75 ohms load)

#### ■ Audio Section

Audio outputs .....	1 Set Analog Front Channel (FL/FR) Output, 1 Set Analog Multi Channel (FL/FR/C/SU/SR/C/SW) Output, 1 Set Optical Digital Output, 1 Set Coaxial Digital Output,
Signal-to-noise ratio .....	118 dB
Dynamic range .....	110 dB
Total harmonic distortion .....	0.0009 %

■ General

Power supply .....	AC 120 V, 60 Hz
Power consumption .....	27 W
Dimensions .....	434 (W) x 137 (H) x 343 (D) mm, 17.1" (W) x 5.2" (H) x 13.5" (D)
Weight.....	8.0 kg, 17.6 lbs



\*Design and specifications are subject to change without notice.

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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.usa.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