

SOUND & VISION®

from test report on the Denon DVD-2900 DVD/SACD player in the October 2003 S&V. Copyright © 2003 by Hachette Filipacchi Media U.S., Inc.; all rights reserved.

in the lab

DVD-VIDEO PERFORMANCE

Measurements were made from a variety of DVD test discs. Unless otherwise stated, data are for the composite-video output.

Maximum-white level error0 IRE

Setup level+7.5/0 IRE (adjustable)

Horizontal luminance response

(re level at 1 MHz)

4 MHz-0.17 dB

5 MHz-0.26 dB

6 MHz-0.35 dB

6.75 MHz-0.92 dB

Onscreen horizontal resolution540 lines

In-player letterboxinggood

Component-output level error (interlaced)

(Y/P_r/P_b)+2.2/-8.0/-7.9%

Component-output timing error (interlaced)

(P_r/P_b)+7/+7 nanoseconds

DVD-AUDIO PLAYBACK

All tests were done using a custom-made test DVD-R consisting of computer-generated test signals containing dither, which sets limits on measured distortion and noise performance. All speakers were set to "large," subwoofer on. All data are for the left front channel but are typical of all channels.

Maximum output2.1 volts

Noise level (re -20-dBFS, A-wtd, 24-bit signals) 96-kHz sampling rate-96.4 dB

Frequency response

(96-kHz)20 Hz to 42 kHz +0.09, -0.36 dB

Excess noise (re perfect 24-bit performance)

96-kHz+27.4 dB

Noise modulation

all sampling rates<0.5 dB

SACD PLAYBACK

All tests were made with the Philips DAC-test multichannel SACD under the same test conditions as for DVD-Audio.

Maximum output2.03 volts

Frequency response

20 Hz to 60.1 kHz +0, -3 dB

Noise level (re -20 dBFS)-92.6 dB

DOLBY DIGITAL PERFORMANCE

All data were obtained from the Dolby Labs test DVD and other test discs using signals containing dither, which sets limits on measured distortion and noise performance. Reference level is -20 dBFS. All level trims at 0; all speakers were set to "large," subwoofer on. All are worst-case figures where applicable.

In addition to having superb sound and picture quality, the Denon proved an excellent performer in lab tests. Video measurements showed no anomalies. In particular, the player lacked such common progressive-scan problems as the "chroma-upsampling bug," or breakup of diagonal edges of moving objects. In-player letterboxing was well above average (though this is irrelevant if you have a widescreen TV).

The audio behavior was, if possible, on an even higher plane, with Dolby Digital and CD noise measurements at or close to theoretical limits — the CD quasi-20-bit excess noise of only +2 dB was among the lowest we've seen

Output level219 mV

Distortion at reference level0.04%

Noise level (A-wtd)-75.6 dB

Excess noise (with sine tone)

16-bit (EN16)+0 dB

Frequency response

20 Hz to 20 kHz +0, -0.1 dB

CD AUDIO PLAYBACK

All tests except defect tracking were made with *Sound & Vision's* test CD-RW. All test signals contain dither.

Maximum output2.1 volts

Frequency response

20 Hz to 20 kHz +0.01, -0.139 dB

Noise level (re -20 dBFS, A-wtd)-75.9 dB

Excess noise (without/with sine tone)

16-bit (EN16)0/0 dB

quasi-20-bit (EN20)+2/+2 dB

Linearity error (at -90 dBFS)±0 dB

Noise modulation<0.5 dB

Defect tracking

(Pierre Verany test disc)1,000 µm

BASS MANAGEMENT

Subwoofer-overload tests were performed using worst-case Dolby Digital signals on a custom DVD-RW. Center and surround outputs were set to "small," subwoofer on, and all channel-balance controls were set to 0.

Subwoofer low-pass frequency response

DVD, CD: -12 dB/octave rolloff above -3-dB

point of 80 Hz

SACD: -6 dB/octave rolloff above -3-dB point

of 80 Hz

Main-channel high-pass frequency response

DVD, CD: -18 dB/octave rolloff below -6-dB

point of 80 Hz

SACD: -12 dB/octave rolloff below -3-dB point

of 80 Hz

Maximum subwoofer output

2.98 volts with 0.02% THD+N

Response consistency: crossover slopes change with SACD operation

Media consistency: bass management applied to all media

Speaker-size selection: all main speakers can be either "large" or "small"

Speaker-distance compensation: not available for SACD

— as well as excellent noise performance with DVD-Audio and SACD. The only audio anomalies were the usual lack of speaker-distance compensation for SACD playback and the shift of crossover slopes when changing from a CD or DVD (audio or video) to an SACD. The latter is not nearly as serious as the shift of crossover frequency seen in other players under the same conditions (some even shift both slopes and frequency). With most setups the resulting slight change in bass balance will not be very noticeable. Recordable DVD-R/RWs in both the video and VR modes were playable.

— David Ranada