

PIONEER
The future of sound and vision.

LaserDisc™

**LD-W1
CLD-3030
CLD-1030**

SR

LD & CD/CDV/LD PLAYERS



**compact
disc**
DIGITAL AUDIO



LD-W1 LD PLAYER WITH DUAL-LD PLAY & DIGITAL SOUND



It's Show Time — Without Intermission

Lots of LaserVision programs these days take up as many as two, three or even four sides. The Pioneer LD-W1 is the world's first LD player to provide **continuous play of all four sides** of a pair of loaded videodiscs, thanks to an ingenious pickup/motor design and a built-in digital memory.

High-Quality Picture

- High horizontal resolution: 425 lines
- Low video noise: 46dB S/N
- Noiseless picture scan, even on CLV discs

High-Quality Digital Sound

- 2X oversampling digital filter
- Wide frequency & dynamic range: 4 — 20,000Hz, 95dB
- Very low noise & distortion: 98dB S/N, 0.005% THD
- L/R symmetrical audio circuitry

8-Bit Sampling RAM with One Megabit Memory

- Picture Memory eliminates gaps as sides/discs change
- "Trick play" with ongoing sound, clean picture on CAV and CLV discs
- Jog & Shuttle Play via Remote Control

More New Generation Advantages

- Compact OEIC laser pickup
- High-density video IC chip
- Improved front-panel operation/display with "Contents Calendar"
- New Linear Disc Clamper — more stable performance

TWO-DISC, FOUR-SIDE PLAY

Continuous Playback: The unique LD-W1 accepts two LD videodiscs at a time for automatic, continuous play of up to four sides — that's up to four hours of entertainment. **Choice of Sides & Sequence:** You may directly select any of the four sides for immediate playback, or access another side during playback, simply by pressing one of the A/B/C/D buttons provided on the front panel and duplicated on the remote controller, then pushing PLAY. **Chapter Program Play:** Program up to 20 chapters for playback in any order from any of the four sides of the two loaded discs. And that's just the beginning of the advantages of this multitasking player!

DIGITAL MEMORY FOR SPECIAL PICTURE EFFECTS

8-Bit Sampling RAM with One Megabit Memory: As one side of a videodisc ends, the built-in RAM (Random-Access Memory) digitally holds and displays the last frame until the next side begins. The chip uses 8-bit sampling (256-level) and provides a memory capacity of one megabit; its reference-shift TBC servo system enables various "trick plays" — all with a clear, stable picture from CAV and CLV discs. It also makes possible STILL & SOUND for a single, "frozen" frame with ongoing audio; your choice of normal or digitally processed display via DIGITAL MEMORY; exciting STROBE MOTION in seven steps (1/1, 1/2, 1/4, 1/8, 1/16, Step 1 and 3) with ongoing sound; ONE-SHOT MEMORY to display a single frame from one side of one disc for display while you listen to ongoing sound from that or any other disc; and DIGITAL EFFECTS, offering a screenful of divided mosaic patterns made up of after-images of the moving picture while the hi-fi sound plays on. **Jog & Shuttle for a Professional Touch:** The 8-bit chip backs up this useful feature. Use the ring portion of the dial to adjust VARI-SPEED SCAN in either direction. SHUTTLE operations are 2x, 5x, LOW SCAN (approx. 10x) and HIGH SCAN (approx. 30x ~ 40x). Then, the indentation in the JOG dial lets you easily change disc speed for STILL/STEP or VARI-SPEED display with a



It's All in Your Hands

The large JOG & SHUTTLE dial puts easy access to the LD program at your command from the Remote Control, which also has buttons to control DIGITAL EFFECTS, STROBE MOTION and most other functions of the LD-W1.



One-Time Loading for Two Discs!

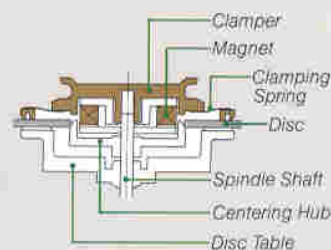
8 x 8



DIGITAL EFFECTS

It offers a screenful of divided mosaic patterns made up of after-images of the moving picture while the hi-fi sound plays on. Perfect for BGV!

16 x 16



Linear Clamping System

Contents Calendar: Shows which chapter is being played or how many chapters are included in the discs and which one is being played (discs with "table-of-contents" codes); it also shows all the chapters you have programmed in the Program Play mode.

fingertip. Operation in STILL/STEP and 1/2x, 1x and 2x speeds are not accompanied by sound.

HIGH-QUALITY PICTURE

Precision Laser Pickup: This is one of the secrets of the high 425-line horizontal resolution and 46dB video signal-to-noise ratio achieved in the LD-W1. Using high-tech miniaturization techniques, the entire unit has been reduced to half the size of conventional pickups. **Optoelectronic IC:** This OEIC chip incorporates both a pin-photodiode to convert optical signals to radio frequencies and the wide-band RF amplifier to which they are routed. Because the signal paths are as short and well shielded as possible, no outside interference can spoil picture quality. **One-Chip Video IC:** Again, Pioneer ultra-miniaturization techniques have packed several complicated circuits into one tiny IC; fewer parts, smaller size, less power consumption and higher reliability are the benefits. **Constant-Distance Tilt Servo:** A standard feature on Pioneer LD players, it automatically compensates for any excessive warps in any disc to assure accurate tracking — adding up to impressive improvements in both sight and sound.

HIGH-QUALITY SOUND

Anti-Vibration Measures: Pioneer's long experience in high fidelity (we've been in the business half a century) has taught us how to preserve

the best quality of the original sound by removing unwanted resonance both inside and outside a sound-reproducing component. Because we view the LD-W1 as a top-quality *high-fidelity* component, we've adopted a number of special techniques in this area, such as **Linear Magnet Clamping** (see illustration), a **Honeycomb Structure** in the chassis to increase rigidity, **Diecast Aluminum Base** for the pickup and spindle-motor, and large **Insulator "Feet"** to absorb external shocks and remove any threat to clean and rich sound reproduction. Other important measures to preserve audio fidelity: **2X Oversampling Digital Filter**, to assure accurate phase in the high frequencies; **L/R Symmetrical Circuitry** to minimize crosstalk and tone/level differences, and **Separate Transformer Windings** for audio, video and servo sections.

CONTENTS CALENDAR & OTHER FEATURES

- Special "Contents Calendar" in the large, concentrated fluorescent display shows the chapter in play and (on LDs with appropriate codes) the total number of chapters (up to 19) on the side, and all programmed chapters in the Program Play mode.
- Last-Address Memory lets you access and begin play from the exact frame last displayed.
- 6-Mode Repeat: 2-point, chapter, one-side, memory, all sides, program.
- Large Remote Control: Jog & Shuttle, 10 keys, disc side selector, etc.
- Gold-plated headphone terminal with volume control.
- Two video outputs and an I/O port for SR remote control.

CLD-3030 CD/CDV/LD PLAYER WITH DIGITAL MEMORY



Triple Play — The Pioneer Way

Who invented the "triple play" idea? Pioneer, of course. Giving you the convenience of a three-in-one unit for Compact Disc, CD with Video and LaserVision playback. And giving you **superior audio and video quality** at the same time. It's an idea whose time has come — for you!

Triple-Play Talents

- LD — Movies, Music, More!
- CDV — Compact Disc with video
- CD Play — Including NEW 3-inch size

High-Quality Picture

- High horizontal resolution: 425 lines
- Low video noise: 46dB S/N
- Noiseless picture scan, even on CLV discs

High-Quality Digital Sound

- 4X oversampling digital filter
- Wide frequency & dynamic range: 4 — 20,000Hz, 95dB
- Ultralow noise & distortion: 107dB S/N, 0.0035% THD

8-Bit Sampling RAM with One Megabit Memory

- "Trick play" with ongoing sound, clean picture
- Jog & Shuttle Play via remote control or front panel

More New Generation Advantages

- Compact OEIC laser pickup
- High-density video IC chip
- Improved front-panel operation/display with "Contents Calendar"

PLAY ANY LASER-READ PROGRAM

The Precision of Laser: You know the advantages of LaserVision and Compact Discs — they don't wear out, they contain nearly perfect pictures and digital sound, and they are very easy to play. The Pioneer CLD-3030 takes maximum advantage of all these benefits in audio-only CDs (including the new 3-inch single CDs), CDs with video content and, of course, medium and full-sized LD videodiscs. **Full Auto Disc Selection:** A single, high-performance brushless motor drives the disc you choose to play. When the tray opens fully, you load the disc, press PLAY on the front panel or the remote control and it's all automatic from then on. The tray closes, the disc size and type is detected and play begins. **Special Convenience:** Program Play for 20 Chapters or Tracks • Chapter/Track Skip • 10-Key Direct Chapter/Track Search and Play • Frame Number Search with CAV LDs • Track and Time Search for CD/CDVs • Remaining Time, Total Tracks, and Total Play Time Display for CDs — and more!

DIGITAL MEMORY FOR SPECIAL PICTURE EFFECTS

8-Bit Sampling RAM Chip with One Megabit Memory: This high-tech device, identical to that in the Pioneer LD-W1, makes possible various "trick plays" with clear, stable pictures from every video program, regardless of disc type. "Trick Plays" (described in this brochure in the section on the LD-W1) are STILL & SOUND, STROBE MOTION, ONE-SHOT MEMORY and DIGITAL EFFECTS. **Jog & Shuttle Conveniences:** As in the LD-W1, this provides a professional touch to your search operations. It is found both on the remote controller and on the front panel. For CD play, special LOW & HIGH SCAN modes are added. (Audio muting of -12dB is automatic during search.)



Fingertip Triple-Play Command

The remote control has Jog & Shuttle and other conveniences, including buttons for DIGITAL EFFECTS and STROBE MOTION. Also controls operations for CD and CDV.



Large, Easy-to-Use Jog & Shuttle Dial

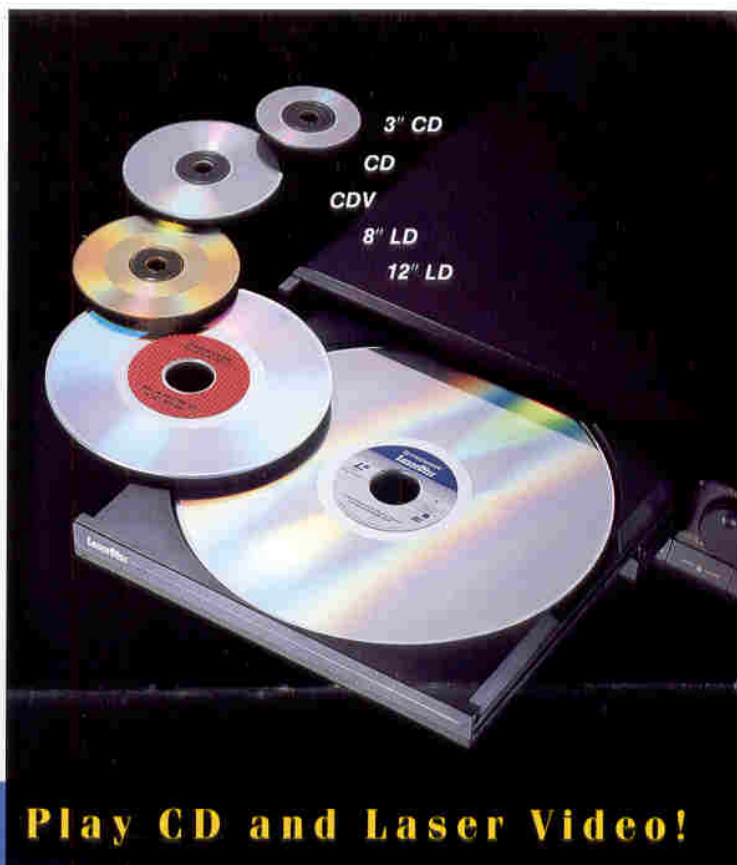


HIGH-QUALITY PICTURE

Compact & Precise Pickup: Again, the CLD-3030 has the same terrific technology as the all-new Pioneer LD-W1 to provide ultra-accurate read-out of all video and audio information encoded on the disc in play. This new laser pickup is only half the size of previous versions, and contains an OEIC chip that rides "piggyback" on the mechanism itself, thus reducing signal-path length and shutting out interference. **One-Chip Video IC & Constant-Distance Tilt Servo:** A single chip contains the video demodulator, video-dropout compensator, synch-signal detector, feed-forward color corrector and the high-precision noise reduction circuit — in other words, all the devices that assure a cleaner, more stable picture from every video-capable disc. And thanks to the Constant-Distance Tilt Servo, we do mean EVERY one, even those that are warped or bumpy.

HIGH-QUALITY SOUND

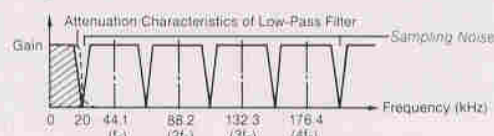
4X Oversampling Digital Filter: Passing on the incredible fidelity of audio content of digitized LDs and CDs to your ears without compromise was the goal of the design of the audio section of the Pioneer CLD-3030. One of major contributions is the use of state-of-the-art "4X oversampling" to extend the usual 44.1kHz digital sampling frequency to 176.4kHz. This makes it unnecessary to use a multistage, analog low-pass filter to remove sampling noise in the harmonics of the sampling frequency, and



Play CD and Laser Video!

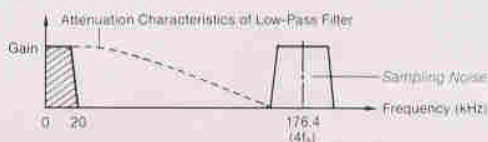
4X Oversampling Digital Filter: How It Works

• Without Digital Filter



Sampling: 44.1kHz — A high-order low-pass filter with sharp attenuation characteristics is required, compromising sound quality.

• 4X Oversampling Digital Filter



4X oversampling — Attenuation characteristics roll off gently to avoid phase changes in frequencies of 10kHz and higher.

avoids the high-frequency phase changes and distortion such filters can cause. **Twin Digital-to-Analog Converters:** Two separate D/A converters, one in each channel, reduce phase differences and crosstalk between channels virtually to zero. Also, as a "deglitcher" switch is unnecessary, no switching noise can compromise the high S/N ratio and superb linearity. The result is a deep, bright sound with sharp image localization. **Optical Digital Output:** A terminal is provided for use with an optional optical-fiber lead to transfer data to a digital amp or outboard D/A converter. Also, as in the LD-W1, a number of **Anti-Vibration Measures** have been taken in the CLD-3030 to preserve audio purity.

SPECIAL FEATURES

CD Auto Program Edit: When dubbing a CD to tape, input the length (time) of the side of the tape you are using, then start CD play. A micro-calculator in the CLD-3030 will let you know how many tracks on that CD can be recorded on that side of the tape. **Other Conveniences:** CD Track/Time Search • CD Random Play (of all or programmed tracks) • "Contents Calendar" for LD, CD and CDV • 5-Mode Repeat: 2-point, chapter, one-side, memory, program • Large Remote Control with Jog & Shuttle, 10 keys, etc. • I/O port for SR remote control, and more.

CLD-1030

CD/CDV/LD PLAYER WITH COLOR-LOCK SCAN



One, Two, Three — Entertainment!

Triple-play versatility is not the only advantage of the CLD-1030. This attractively priced player for Compact Discs, CD with Video and LaserVision programs also gives you high-quality performance and top conveniences in the bargain. It's entertainment at your fingertips — one, two, three.

Triple-Play Talents

- LD — Movies, Music, More!
- CDV — Compact Disc with video
- CD Play — Including NEW 3-inch size

High-Quality Picture

- High horizontal resolution: 425 lines
- Low video noise: 46dB S/N
- Color-Lock Scan: clean, bright scan on CAV/CLV discs

High-Quality Digital Sound

- 2X oversampling digital filter
- Wide frequency & dynamic range: 4 — 20,000Hz, 95dB
- Very low noise & distortion: 98dB S/N, 0.005% THD

More New Generation Advantages

- Compact OEIC laser pickup
- High-density video IC chip
- Improved front-panel operation/display
- Multifunction "SR" Remote Control

VERY EASY OPERATION

Full Auto Disc Selection: As in the Pioneer CLD-3030, the CLD-1030 uses a single, high-performance brushless motor that drives any CD, CDV or LD you play. When the tray opens fully, you load the disc, press PLAY on the front panel or the remote control and it's all automatic from then on. The tray closes, the disc size and type is detected and play begins. **Color-Lock Scan:** Use this to scan the visual content of any disc at high speed without picture "flipping" and loss of color. **LD Multiple Functions:** Program Play for up to 20 chapters • Chapter Skip • 10-Key

Direct Chapter Search and Play • Frame Number Search with CAV LDs
CD Multiple Functions: Auto Program Edit for CD-to-Tape (see CLD-3030) • Program Play for up to 20 tracks • Track/Time Search • Random Play • 5-Mode Repeat: 2-point, chapter, one-side, memory, program — and still more.

HIGH-QUALITY PICTURE & SOUND

Video Resolution & Clarity: The very low noise content (video S/N: 46dB) and superior resolution for a more detailed picture (horizontal lines: 425), the CLD-1030 displays every bit as much class as more expensive models. The advantages of a smaller and more precise laser pickup, OEIC, One-Chip Video IC, Constant-Distance Tilt Servo and other new, high-tech developments found in the CLD-3030 are also here. **True High-Fidelity Audio:** With its Anti-Vibration Design, 2X Oversampling Digital Filter, L/R Symmetrical Circuitry and many other sound-saving features, the CLD-1030 reproduces both digital and analog audio content with impressive depth and clarity.



The Triple-Player Buy of the Year!

FUNCTIONS ON THE REMOTE CONTROL UNIT

	LD-W1		CLD-3030				CLD-1030			
	LD		LD		Compact Disc		LD		Compact Disc	
	Standard-Play (CAV)	Extended-Play (CLV)	Standard-Play (CAV)	Extended-Play (CLV)	CD	CDV	Standard-Play (CAV)	Extended-Play (CLV)	CD	CDV
General functions										
TV/LDP selector	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Play	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Eject	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pause	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Disc-side selector	yes	yes								
Audio functions										
Audio monitor (Stereo, 1/L, 2/R)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Auto digital/analog	yes ¹	yes ¹	yes ¹	yes ¹			yes ¹	yes ¹		
CX system on/off	yes ²	yes ²	yes ²	yes ²			yes ²	yes ²		
Scan/search functions										
Jog & shuttle	yes	yes	yes	yes	yes	yes				
Scan (forward/reverse)	yes	yes	yes	yes	yes	yes	yes ³	yes ³	yes	yes
Chapter-number search	yes ³	yes ³	yes ³	yes ³			yes ³	yes ³		
Track-number search					yes	yes			yes	yes
Chapter skip search (forward/reverse)	yes ³	yes ³	yes ³	yes ³		yes ⁴	yes ³	yes ³		
Track search					yes	yes			yes	yes
Frame-number search	yes		yes				yes			
Time-number search		yes		yes	yes	yes		yes	yes	yes
Repeat play functions										
2-point repeat	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Memory repeat	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Chapter repeat	yes ³	yes ³	yes ³	yes ³			yes ³	yes ³		
Track repeat					yes	yes			yes	yes
Programmed-chapter repeat	yes ³	yes ³	yes ³	yes ³			yes ³	yes ³		
Programmed-track repeat					yes	yes			yes	yes
One-side repeat	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
All repeat	yes	yes								
Special play functions										
Multispeed play (forward/reverse, 9 steps)	yes	yes	yes	yes		yes ⁴	yes	yes ³		
Chapter program play (up to 20 chapters)	yes ³	yes ³	yes ³	yes ³			yes ³	yes ³		
Track program play (up to 20 tracks)					yes	yes			yes	yes
Program correction	yes ³	yes ³	yes ³	yes ³	yes	yes	yes ³	yes ³	yes	yes
Still/step play (forward/reverse)	yes	yes	yes	yes		yes ⁴	yes			
Still with sound	yes	yes	yes	yes		yes ⁴				
Digital effects	yes	yes	yes	yes		yes ⁴				
Stroboscopic motion	yes	yes	yes	yes		yes ⁴				
One-shot memory	yes	yes	yes	yes		yes ⁴				
Random play					yes	yes ⁵			yes	yes ⁵
Auto program edit					yes	yes ⁵			yes	yes ⁵
On-screen displays										
Disc-side selection	yes	yes					yes			
Multispeed play (forward/reverse, 9 steps)	yes	yes	yes	yes		yes ⁴	yes ³	yes ³		
Chapter number	yes ³	yes ³	yes ³	yes ³						
Track number					yes	yes			yes	yes
Frame number	yes		yes				yes			
Time number		yes		yes	yes	yes		yes	yes	yes
Total tracks/play time	yes ⁶	yes ⁶	yes ⁶	yes ⁶	yes	yes	yes ⁶	yes ⁶	yes	yes
Remaining time					yes	yes ⁵			yes	yes ⁵
Repeat	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Program play	yes ³	yes ³	yes ³	yes ³	yes	yes	yes ³	yes ³	yes	yes
Stroboscopic motion	yes	yes	yes	yes		yes ⁴				
Digital/analog sound	yes	yes	yes	yes			yes	yes		

Notes: 1) Applicable only with discs having digital sound.

2) Applicable only with discs having CX noise reduction codes.

3) Applicable only with discs having chapter number codes.

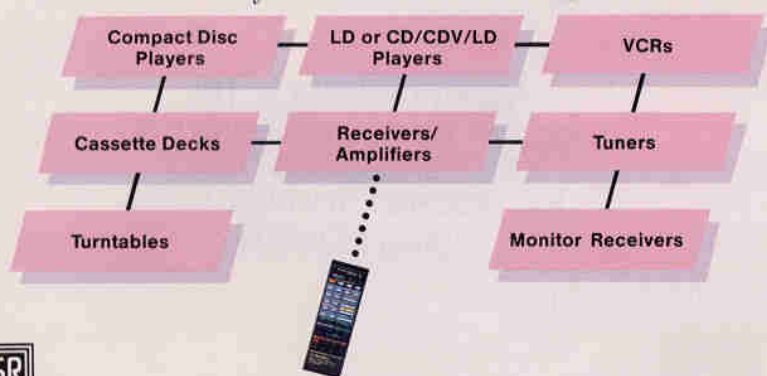
4) Applicable only with video-part tracks on CDVs.

5) Applicable only with audio-part tracks on CDVs.

6) Applicable only with discs having TOC (table of contents) codes.

□ CX is a trademark of CBS Inc.

Pioneer SR System



The major functions of our LD and CD/CDV/LD players and other Pioneer audio-video source components bearing the "SR" (System Remote) mark can be controlled from the "SR" unified A/V commander of any Pioneer "SR" A/V amplifier or A/V receiver.

LaserDisc™

LaserDisc is a trademark of Pioneer Electronic Corporation.



The LaserVision mark certifies compatibility with other laser optical video products bearing the mark.



This mark indicates the compatibility for the Pioneer system remote control.