ELITE Blu-ray Disc™ Players

Images for illustrative purposes only

Construction

- Three-Chamber Structure
- Double-Layered Chassis
- Highly Rigid Center Frames
- Steel Plate Top Panel and Aluminum Side Panels
- Steel Plate Bonnet
- Rigid & Quiet BD Drive
  - Steel Shield Drive Case with Black Paint
  - Steel Drive Base
  - Tray Shaft
  - Tray with Anti-Vibration Paint
  - Acoustic Damper Tray

Video Features

- Precise Pixel Driver
- 4K Reference Converter
- Stream Smoother
- 36-bit Deep Color
- "x.v.Color"
- HDMI 1080p/24 Hz & 2160p/24 Hz Output
- Video Adjust

Audio Features

- ESS SABRE^{32} Reference DAC (ES9018)
- ESS SABRE^{32} Ultra DAC (ES9011)
- Large-Capacity Power Supply Transformer
- Acoustic Custom Capacitors and Other High-Grade Parts
- Zero Signal Terminal
- Precision Audio
- PQLS Bit-stream
- Dual HDMI Output
- Audio Scaler
  - Hi-bit32
  - Up Sampling
  - Digital Filter
- Balanced Analog Audio Output
- Direct Function
- SACD Compatible
- Sound Retriever Link

Network Features

- DLNA Certified™ (1.5)
- iControlAV5 Remote App Ready
- YouTube/Picasa Viewing
- Various Playable Formats

Convenience

- Continue Mode
- 30 sec Skip Forward/10 sec Skip Back
- Quick View (x1.5) with Audio
- Auto Power Off
- Firmware Update (USB/Network)
- User-Friendly Remote Control

Applicable models displayed in icons:

88FD BDP-88FD

85FD BDP-85FD

* New features in blue

For North America

Three-Chamber Structure

88FD

The power supply, digital processing, and audio circuit blocks are separated by the three-chamber structure to eliminate electrical and signal interference between the blocks, with the power supply block and digital processing block enclosed in separate shield cases. Each circuit is isolated to cut out unwanted electrical signal to provide clear audio and video reproduction.

Double-Layered Chassis

88FD 85FD

The 1.6 mm-thick chassis base is reinforced with a 3 mm-thick plate. This Double-Layered Chassis structure provides a low center-of-gravity and overall rigidity that prevents the transfer of external vibration to the inner chassis, and offers a superior reading of the disc.

Highly Rigid Center Frames

88FD

Inside the chassis, two steel center frames provide additional rigidity, while an optimal layout is adopted to minimize vibration and signal loss.

Steel Plate Top Panel and Aluminum Side Panels

88FD

To ensure rigidity, the 1 mm-thick steel plate top panel is fixed at multiple points. Designed to eliminate the most minute vibration inside the chassis, aluminum which has high damping effect, is used for the side panels.

Steel Plate Bonnet

85FD

The 1 mm-thick steel plate bonnet provides extra rigidity to the chassis.

Rigid & Quiet BD Drive

88FD 85FD

The high performance Rigid & Quiet BD Drive provides strong resistance against vibration with its rigid structure.

Steel Shield Drive Case with Anti-Vibration Paint, Steel Drive Base, Tray Shaft, Tray with Anti-Vibration Paint

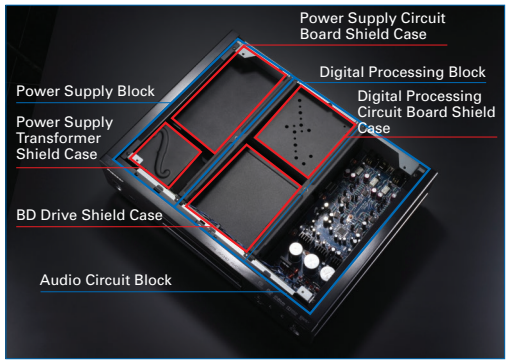
The BD drive is housed in a shield case with anti-vibration paint* and fixed to the steel plate drive base for reduced vibration. The drive base and the chassis are fixed via the damper, so vibration from the drive will not be transferred to the chassis. The tray shafts on both sides provide a steady loading of the tray. A special paint is applied to the disc tray for enhanced anti-vibration and damping effect.

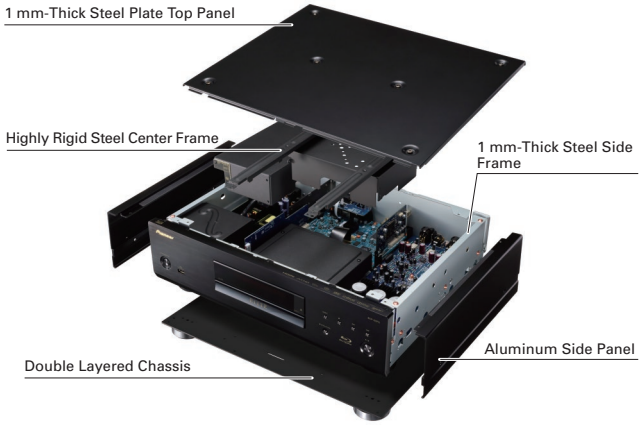
* Drive case anti-vibration paint only on BDP-88FD

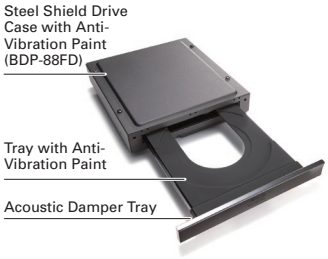
Acoustic Damper Tray

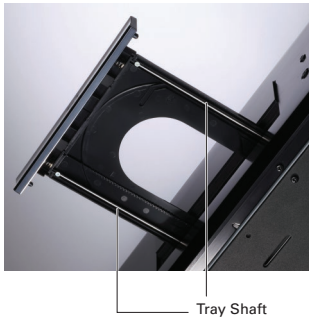
The Acoustic Damper Tray features separate disc tray cover and tray base which are connected by springs. The design provides enhanced damping effect by preventing the vibration generated inside the drive from being transferred to the chassis via the tray.

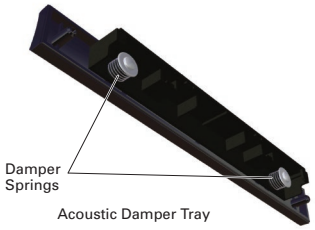
High-Rigidity & Low Noise Design (BDP-88FD)

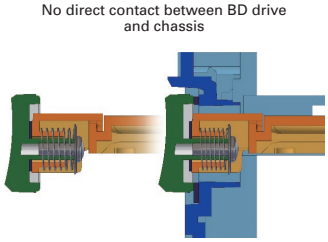












When closed, the tray panel (green) fits tightly against the front panel (blue), but only contacts the tray base (orange) via the damper springs.

Acoustic Damper Tray in Section

Precise Pixel Driver

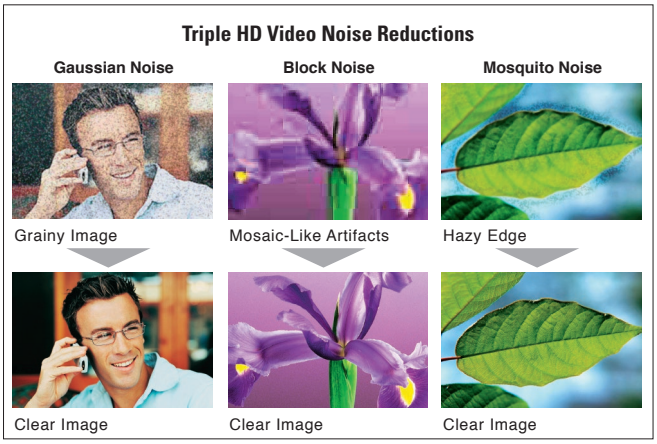
88FD 85FD

The Precise Pixel Driver, featuring HD Detail Enhancer and Triple HD Noise Reduction, thoroughly brings out all information contained in the full HD content to reproduce more detailed and beautiful image.

HD Detail Enhancer extracts texture from the image and applies the appropriate compensation to increase the texture of the details. This results in more precise and beautiful picture.

Triple HD Noise Reduction effectively reduces grainy random noise included in the content, block noise typical of MPEG compressed video, and mosquito noise, providing a clear and high-quality video reproduction.

- **Component Frame Noise Reduction (YNR/CNR):** effectively reduces the grainy Gaussian noise found in wide areas like a sky, for a clearer image
- **Block Noise Reduction:** effectively reduces block noise caused by MPEG compression found in flat areas
- **Mosquito Noise Reduction:** effectively reduces noise caused by MPEG compression along the outline of images



4K Reference Converter

88FD 85FD

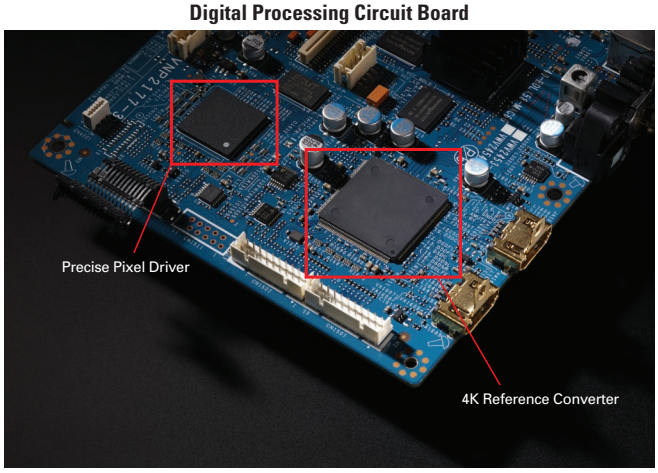
The 4K Reference Converter converts HD video content up to full-spec 4K signals (24p YCbCr 4:4:4/36-bit, 60p YCbCr 4:2:2/36-bit, 60p YCbCr 4:4:4/24-bit, 60p RGB 4:4:4/24-bit). With Pioneer-original tuning, the up-converter creates high-resolution images worthy of viewing on a 4K display.

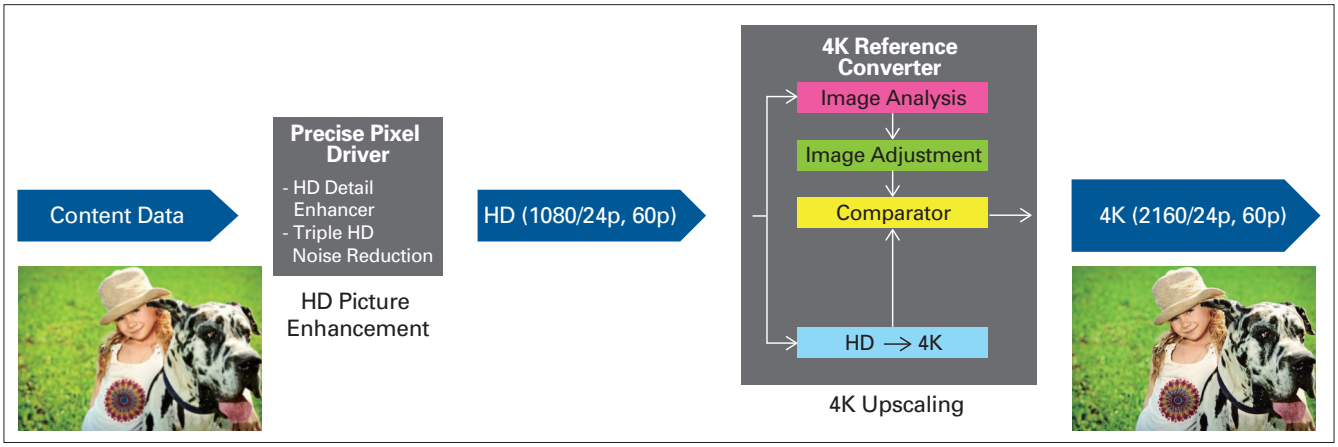
4K/60p Ultra HD Upscaling

Texture processing: Performs the suitable processing according to the frequency-range and brightness, and expresses detailed texture in vivid clarity.

Edge processing: By analyzing the peripheral pixels, precise compensation and double-reflection suppression are performed for a detailed and natural three-dimensional effect.

The processed video is compared to the 4K-converted video to confirm that proper video processing is performed. The video processing effects can be set by the Super Resolution item on the Video Adjust menu. By combining the technology with the Precise Pixel Driver's high-resolution video processing, an extremely natural and emotion-rich image is realized.





Stream Smoother

88FD 85FD

Stream Smoother is a newly developed video adjustment feature for watching network content on your home theater. It reduces block noise and mosquito noise on low bit rate video content such as YouTube, offering finer and clearer images.

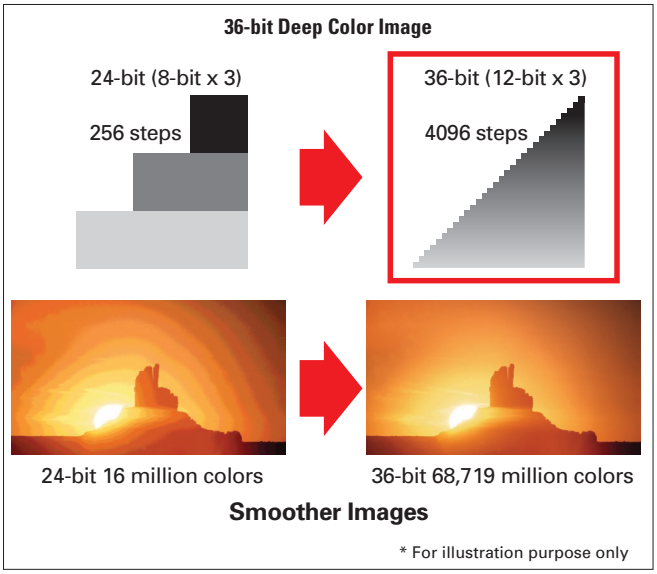
Stream Smoother OFF　　Stream Smoother ON

* For illustration purpose only

Deep Color

88FD 85FD

Pioneer Blu-ray Disc players support 36-bit Deep Color, featuring smooth gradation steps with more accurate precision of brightness and color information, resulting in superbly detailed, natural color.



* For illustration purpose only

"x.v.Color"

88FD 85FD

Pioneer Blu-ray Disc players support "x.v.Color" , which almost doubles the range of colors (known as the 'gamut') that can be accurately captured, and reproduced on a compatible display, thereby more closely matching the natural characteristics of the human eye.

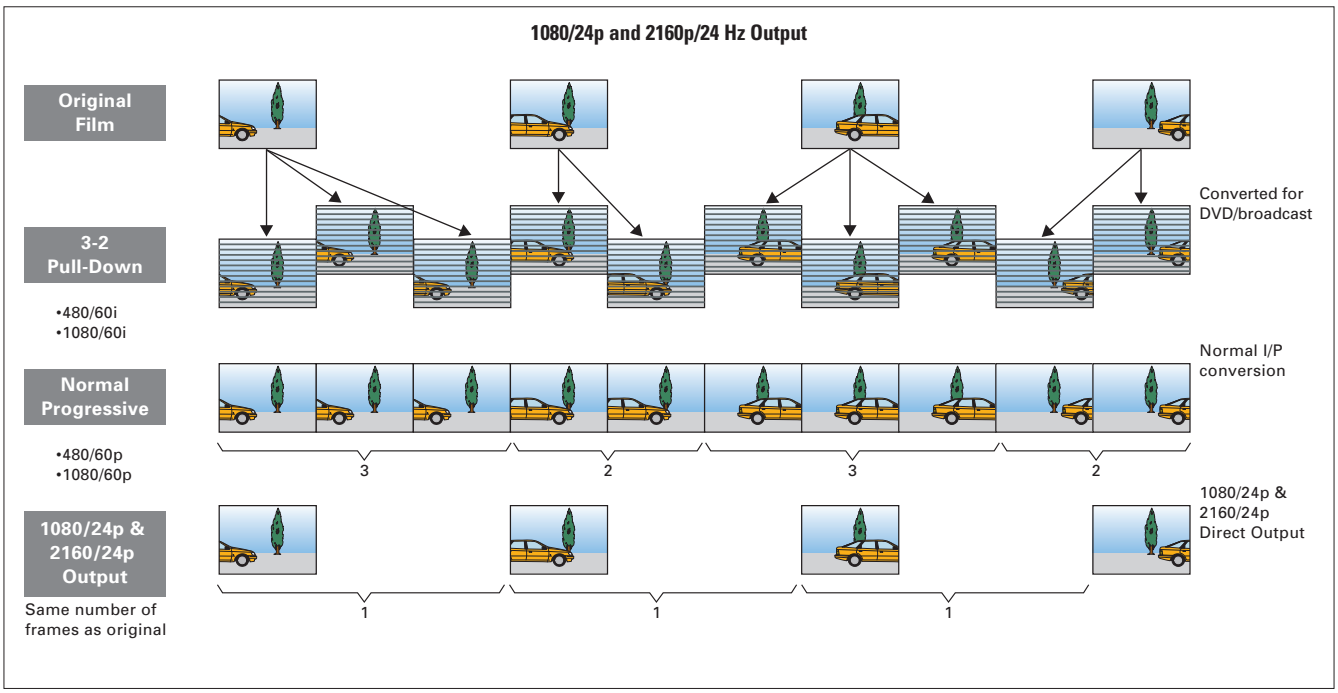
x.v.Color

HDMI 1080p/24 Hz & 2160p/24 Hz Output

88FD 85FD

The Blu-ray Disc players support 1080p/24 Hz & 2160p/24 Hz video output, the same number of frames per second (fps) as the original film. Enjoy the natural and smooth image, just as the creator intended.

*** 1080p/24 Hz & 2160p/24 Hz compatible TV and HDMI cable required.**



Video Adjust

88FD 85FD

You can change settings on 13 video adjustment items including video noise reduction and detail adjustments. Up to three video settings can be saved on the memory.

Preset Video Adjust Mode

The Blu-ray Disc players feature Preset Video Adjust Modes which are optimized for the playback content and the connected display. Reference mode plays the source as it is, with no signal processing. You can also select your saved video settings from Memory 1-3.

Video Setting Options

1	Progressive Motion	Adjusts the motion and still picture quality for progressive video output.
2	Pure Cinema	Optimizes the progressive scanning circuit for film materials.
3	Stream Smoother	Improves picture quality with the built-in high picture quality circuit by reducing mosquito noise and block noise and enhancing sharpness. Effective for playing network and low-bit rate video content.
4	YNR	Reduces noise in the luminance (Y) signal.
5	CNR	Reduces noise in the chroma (C) signal.
6	BNR	Reduces block noise (block-shaped distortion generated upon MPEG compression).
7	MNR	Reduces the mosquito noise (distortion along the contours of the picture generated upon MPEG compression).
8	Detail	Adjusts the clarity of the details
9	Brightness	Adjusts the picture's brightness.
10	Contrast	Adjusts the picture's contrast.
11	Hue	Adjusts the color (green and red) balance of the picture.
12	Chroma Level	Adjusts the density of the colors.
13	Super Resolution	Reproduces detailed feel of materials and accurate outlines. Select from 0 (off), 1, 2, or 3 (maximum detail).

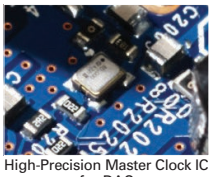
Video Adjust Options

1	PJ Digital Cinema	Select a mode according to the AV equipment and the viewing material: ·PJ mode: for viewing with a projector ·FPD mode: for viewing on a flat panel TV ·Digital Cinema: for viewing movies with CGI and digital processing ·Film Cinema: for conventional film movies ·Live: for concert videos
2	PJ Film Cinema	
3	PJ Live	
4	FPD Digital Cinema	
5	FPD Film Cinema	
6	FPD Live	
7	Reference	Plays the source as it is with no video signal processing
8	Memory 1-3	For saving your selected settings.

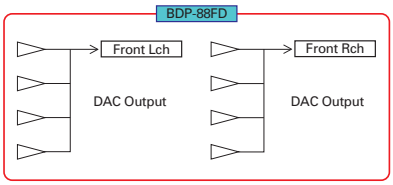
ESS SABRE[32] Reference DAC (ES9018)

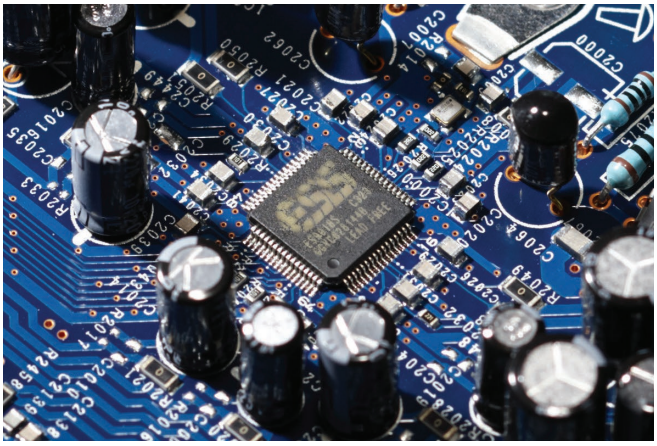
88FD

The left and right channels each feature a 4ch parallel drive of the ESS SABRE[32] Reference DAC (ES9018) for a highly-precise D/A conversion. The original tuning by experienced engineers let you enjoy clear audio playback (2ch) in quality sound.



High-Precision Master Clock IC for DAC





SABRE[32] Reference DAC (ES9018)

ESS SABRE[32] Ultra DAC (ES9011)

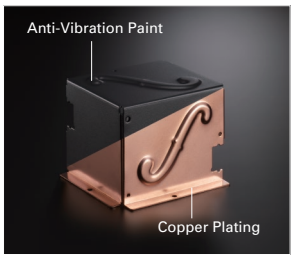
85FD

The highly acclaimed 192 kHz/32-bit ESS SABRE[32] Ultra DAC (ES9011) is adopted to deliver exceptional sound, with ultra-low distortion and high signal-to-noise ratio. It offers jitter-free performance for an astounding audio reproduction with rich deep bass.

Large-Capacity Power Supply Transformer

88FD

The Blu-ray Disc player comes with a large capacity transformer dedicated for audio with high response. As shown on right, the analog and digital power supply pathways are separated, so as to prevent digital noise from interfering with the audio circuit at the power supply stage. This transformer, combined with Pioneer-original select capacitors, constitute a power supply circuit capable of high instantaneous current supply. The shield case with copper plate and anti-vibration paint cuts out the unwanted electromagnetic wave generated from the high power transformer, in isolation from noise and vibration. The embossing on the shield case also helps to suppress standing waves within the case, thereby achieving sound quality with both dynamic and silent features.



Double Layer Image: Copper Plating + Anti-Vibration Paint

Acoustic Custom Capacitors and Other High-Grade Parts

88FD 85FD

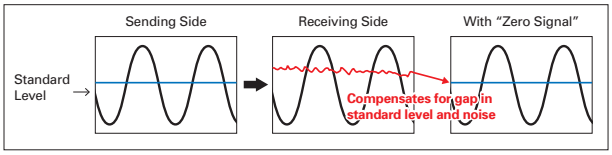
High-grade parts such as exclusive capacitors co-developed with a parts manufacturer and gold-plated terminals are used for superior audio performance.

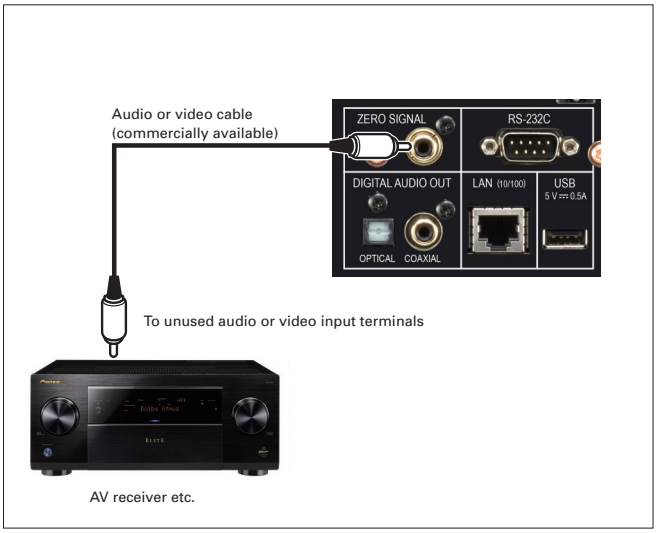
Acoustic Custom Capacitors

Zero Signal Terminal

88FD 85FD

The Zero Signal Terminal is a Pioneer-original feature for the specific use of audio and video quality tuning. The terminal only connects to the Blu-ray Disc player's GND, and transmits neither audio nor video signals, and just works as the reference (GND) for tuning. By connecting the Zero Signal Terminal with an unused audio/video input terminal of an input device such as an AV receiver, the reference level (GND) of the audio/video signals can be matched between the two devices, allowing a precise and high-quality signal transmission.



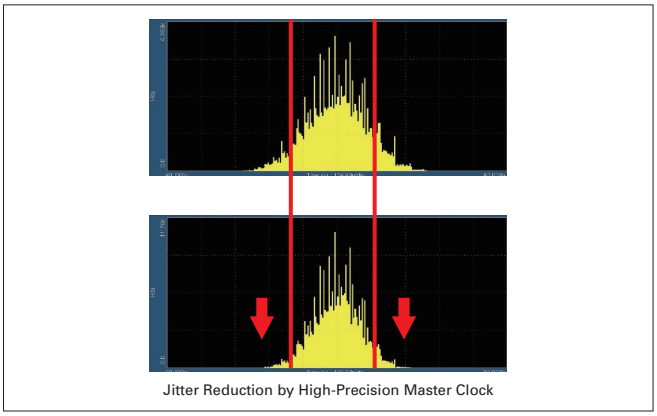


Precision Audio

88FD

Jitter which negatively affects sound quality occurs when transmitting or processing digital signals. Precision Audio drastically eliminates jitter in the analog audio output. At the SABRE[32] Reference DAC's input stage, by referring to the highly-precise clock generated by the dedicated clock IC, the input signal's phase between Lch and Rch is matched, generating signals with ultra-low jitter. Then, with the high-precision master clock for DAC, the SABRE[32] Reference DAC performs an even more precise D/A conversion.

High-Precision Clock IC for Audio



Jitter Reduction by High-Precision Master Clock

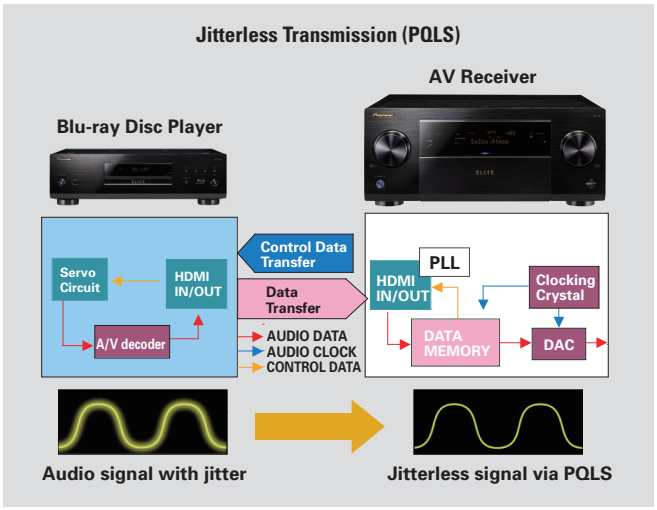
PQLS Bit-stream

88FD 85FD

With the precision quartz controller on a compatible AV receiver, Pioneer's Precision Quartz Lock System (PQLS) eliminates distortion caused by timing errors. It controls the amount of audio signals from the AV receiver to the Blu-ray Disc player, giving the best possible digital-to-analog conversion.

PQLS Bit-stream

For PQLS to be effective, Control with HDMI needs to be on.



Dual HDMI Output

88FD 85FD

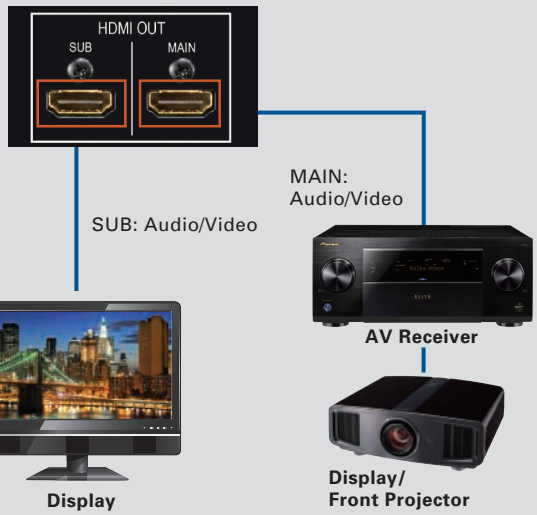
The Blu-ray Disc player comes with dual HDMI output terminals. The audio and video signals can be separately transferred via the main and sub HDMI terminals. The isolation of the audio signals creates pure sound free of interference. Output signals from each terminal differ by connection mode.

HDMI DUAL OUTPUT BY CONNECTION MODE

Mode	Main	Sub
Dual	Audio/Video	Audio/Video
Separate	Video	Audio
Pure Audio	—	Audio
Single	Audio/Video	—

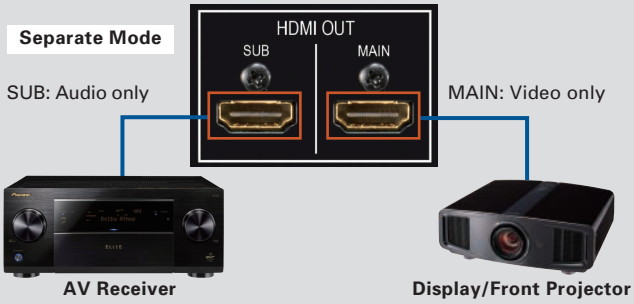
HDMI Dual Output Connection Example

Dual Mode

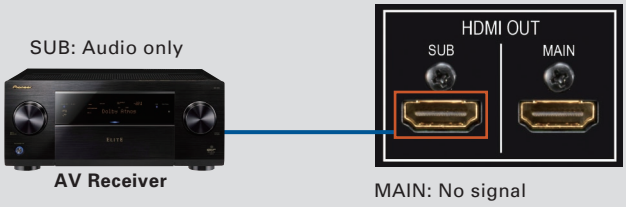


* When devices are connected to both main and sub HDMI in Dual Mode, video and audio signals are output in a format to match the performance of both devices.

Separate Mode



Pure Audio Mode



Audio Scaler

88FD

Pioneer's latest Audio Scaler technology consists of Hi-bit32, Up-Sampling, and Digital Filter, with manual and auto settings.

Hi-bit32

Hi-Bit32 creates a wider dynamic range from digital sources such as CDs, DVDs, or Blu-ray Discs. The technology requantizes 16, 20, and 24-bit PCM as well as compressed audio to 32 bits, and the high frequency component is interpolated during the data processing for a smoother and more subtle musical expression.

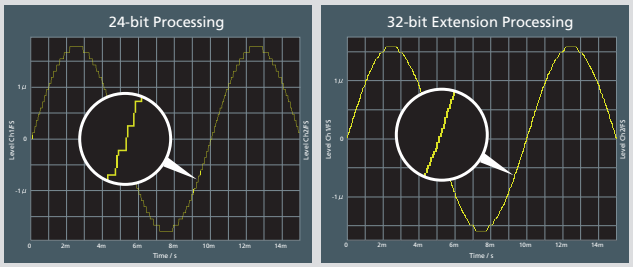
Up Sampling (2ch)

Up Sampling reduces the noise in the audible range, provides clear sound reproduction, and vividly brings out the delicate sound details that are often buried within the noise. With manual settings, you can select from Off/x2/x4 sampling rates.

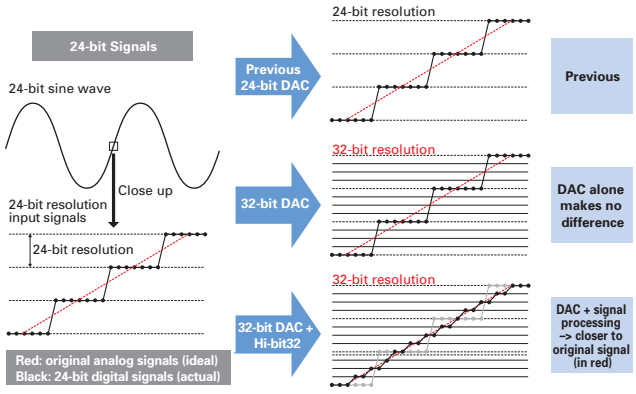
Digital Filter

The function improves the response characteristics typical of digital signals. By removing the pre-echo, the outline of the sound stands out, and audio full of transient feel can be reproduced. Select"Sharp" for solid and tight sound, and "Slow" for soft and warm sound.

Actual Effects
24-bit vs 32-bit signal wave form comparison

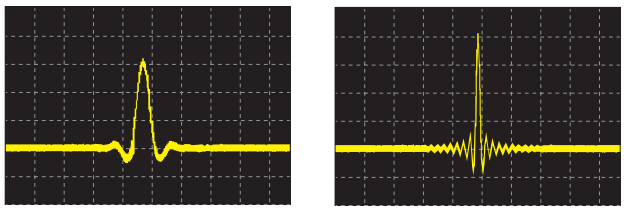


Effects of Bit Expansion Processing



Bit expansion processing required to bring out the real performance from 32-bit DAC.

Digital Filter



Balanced Analog Audio Output

88FD

The Blu-ray Disc player is equipped with a pair of balanced analog audio output terminals, letting you enjoy quality sound for audio playback.

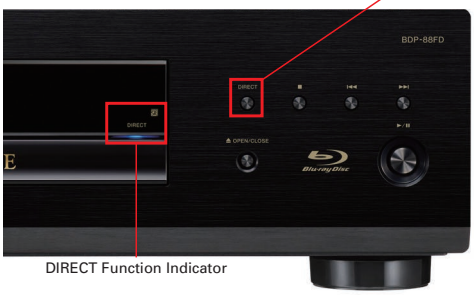
Direct Function

88FD 85FD

By a push of a key on the remote control or the front panel, you can turn the DIRECT function on. The function blocks the audio/video digital signal processing which can affect analog audio. This allows you to enjoy pure, high-quality sound from Hi-Res 2ch audio files or CDs.

DIRECT Key on Remote Control

DIRECT Key on Front Panel



DIRECT Function Indicator

SACD Compatible

88FD 85FD

The Blu-ray Disc player can play back SACD (2ch/Multi-ch) — high-fidelity audio format far exceeding CD in capacity and sound quality. The unit can also output DSD signals.

SUPER AUDIO CD

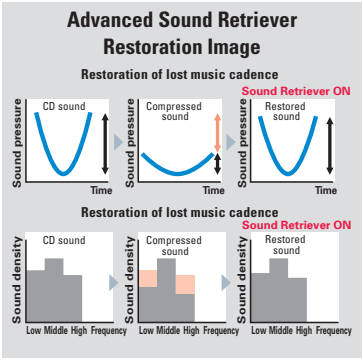
Sound Retriever Link

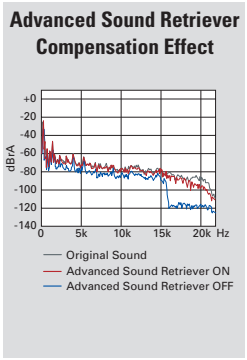
88FD 85FD

The Advanced Sound Retriever on Pioneer's AV receiver restores the lost music cadence on compressed audio. For low bit rate content, Auto Sound Retriever automatically detects and improves the sound quality. Through HDMI connection, Sound Retriever Link on Pioneer's AV receiver detects the original audio file information such as source type, codec, and bit rate played on a compatible Pioneer Blu-ray Disc player, and automatically switches to the most suitable Sound Retriever. So there is no need to switch on/off according to the source. Advanced Sound Retriever is selected for Blu-ray Disc and DVD sources, and Auto Sound Retriever is selected for other sources.

SOUND RETRIEVER LINK

Sound Retriever on Pioneer's AV Receiver





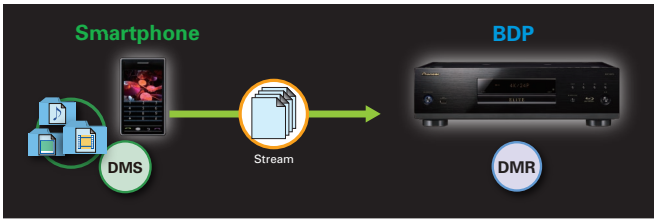
DLNA Certified™ (1.5)

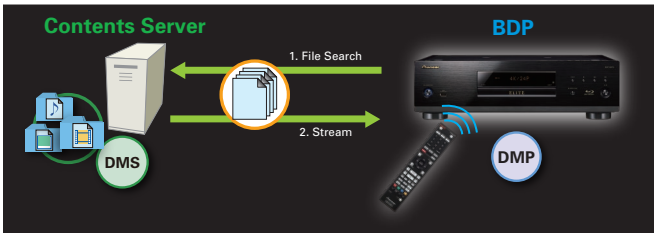
88FD 85FD

The Blu-ray Disc players work both as a DMP (digital media player) and a DMR (digital media renderer). With the DMP function, it lets you search content in a DMS for playback on the Blu-ray Disc player. If you use it as a DMR, you can stream DMS content for playback on the Blu-ray Disc player. For example, you can stream a movie from your smartphone functioning as a M-DMS (Mobile DMS), and play it on the Blu-ray Disc player as a DMR. By using Wi-Fi Direct connection, you can stream your smartphone content to the Blu-ray Disc player without having an access point (wireless router).

DMR

* Depending on file structure and server capacity, it may not be possible to play certain files, including those listed on page 15 as playable formats. Files protected by DRM (Digital Rights Management) cannot be played. Only play/pause can be controlled during DMR operation. AVCHD contents cannot be played via LAN.





iControlAV5 Remote App Ready (for iPhone/iPod touch/ iPad, for Android)

88FD 85FD

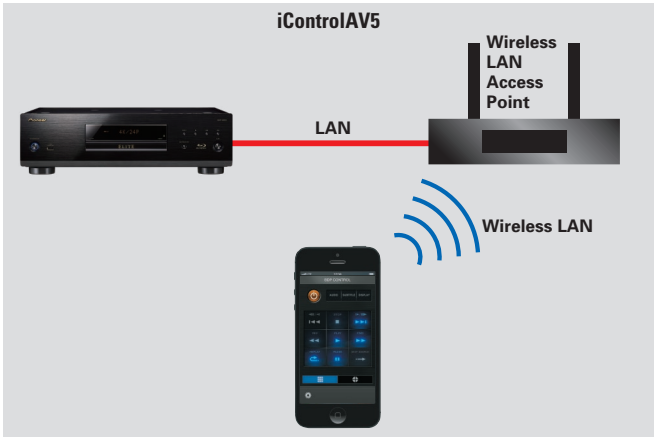
With the free app, you can use your iPod touch, iPhone or iPad as a remote for controlling the Blu-ray Disc player's basic functions. The app is also compatible with Android. Enjoy smooth control from your device, with support for 8 languages (same setting as your device).

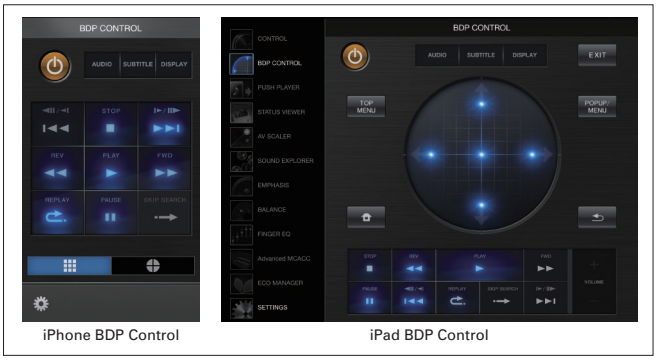
iControlAV5

* Blu-ray Disc player needs to be connected to a home LAN network in a wireless LAN environment.

For more information, visit

http://pioneer.jp/product/soft/iapp_icontrolav5/en.html (iPhone/iPod touch/iPad)
http://pioneer.jp/product/soft/aapp_icontrolav5/en.html (Android)





iPhone BDP Control iPad BDP Control

YouTube Video/Picasa Viewing

88FD 85FD

You can easily view YouTube video or Picasa photos on your TV screen by connecting a Pioneer Blu-ray Disc player to the internet.

*** Blu-ray Disc Player needs to be connected to the internet via a home LAN network.**

Various Playable Formats

88FD 85FD

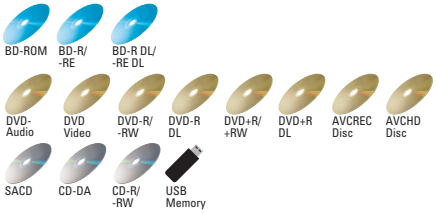
Various audio, video, and image files including Hi-Res Audio such as WAV, FLAC, AIFF, ALAC, and DSD, can be played back via USB, network, or discs.

The Hi-Res Audio logo is used for Pioneer products capable of 96 kHz/24-bit or above WAV/FLAC file playback, and Pioneer amplifiers, speakers, or headphones supporting over 40 kHz high-frequency reproduction, designed to derive maximum performance from Hi-Resolution Audio.

Playable Files (Extensions)	Playable Media			File Specifications
	BD-R/RE/-R DL/-RE DL/-R LTH, DVD-R/RW/-R DL/+R/+RW/+R DL, CD-R/RW	USB Device*	Network	
MP3 (.mp3)	•	•	•	Sampling frequencies: Up to 48 kHz Bit rate: Up to 320 kbps Audio type: MPEG-1 Audio Layer 3
WMA** (.wma)	•	•	•	Sampling frequencies: Up to 48 kHz Bit rate: Up to 192 kbps Audio type: WMA version 9
AAC (.m4a)	•	•	•	Sampling frequencies: Up to 96 kHz Bit rate: Up to 320 kbps Audio type: MPEG4-AAC
MPEG2 AAC (.aac)	•	•	•	Sampling frequencies: Up to 48 kHz Bit rate: Up to 320 kbps Audio type: MPEG2-AAC
WAV (.wav)	•	•	•	Sampling frequencies: Up to 192 kHz Quantization bitrate: 16 bit, 24 bit Channel: 2ch/Multi (7.1 ch) (PCM codec)
FLAC (.flac)	•	•	•	Sampling frequencies: Up to 192 kHz Quantization bitrate: 16 bit, 24 bit Channel: 2ch/Multi (5.1 ch)
Monkey's Audio (.ape)	•	•	•	Sampling frequencies: Extra-high support up to 48 kHz High support up to 96 kHz Quantization bitrate: 16 bit, 24 bit Channel: 2ch
DSD (.dff/.dsf)	•	•	•	2.8 MHz Channel: 2ch/Multi (5.1 ch)
AIFF (.aif/.aiff)	•	•	•	Sampling frequencies: Up to 192 kHz Quantization bitrate: 16 bit, 24 bit Channel: 2ch (PCM codec)
ALAC (.m4a)	•	•	•	Sampling frequencies: Up to 192 kHz Quantization bitrate: 16 bit, 24 bit Channel: 2ch (PCM codec)
JPEG (.jpg/.jpeg)	•	•	•	Maximum resolution: 4000 x 3000 pixels
MPO (.mpo)	•	•	•	3D photo image
PNG (.png)	•	•	•	Maximum resolution: 2048 x 1024 pixel Animated PNG files are not supported.
GIF (.gif)	•	•	•	Maximum resolution: 2048 x 1024 pixel Animated GIF files are not supported. Rotate is not supported.
DivX (.avi/.divx/.mkv)	•	•	•	Supported versions: Through DivX® PLUS HD Maximum resolution: Up to 1920 x 1080 (DivX® PLUS HD) Up to 1280 x 720 (MKV)
MP4 (.mp4)	•	•	•	Maximum resolution: Up to 1920 x 1080 Video: MPEG4, MPEG-4 AVC (level 4.1) Audio: AAC, MP3
WMV (.wmv)	•	•	•	Maximum resolution: Up to 1920 x 1080 Video: WMV9, WMV9AP (VC-1) Audio: WMA
AVI (.avi)	•	•	•	Maximum resolution: Up to 1920 x 1080 Video: MPEG4 Audio: MP3, AAC
3GP (.3gp)	•	•	•	Video: H.263, MPEG4, H.264 Audio: MPEG-4 AAC
FLV (.flv)	•	•	•	Video: Sorenson H.263 (FLV1), VP6 (FLV4), H.264 Audio: MP3, AAC

* Supports FAT16, FAT32 and NTFS file systems.
** WMA Pro, Lossless and Voice are not supported.
• Depending on the file structure, the server capacity and the network environment, some files may not play back even if listed above.
• Files protected by DRM (Digital Rights Management) cannot be played (except DivX VOD files).
• AVCHD contents cannot be played via LAN.

Playable Media



Continue Mode

88FD 85FD

With the Pioneer-original Continue Mode, you can easily continue watching Blu-ray Discs from where you left off. Press the "CONTINUED" key on the remote control during playback, then turn off the power. To re-start, turn the power back on, select "Yes" on the pop-up message, and playback starts from the memorized point.

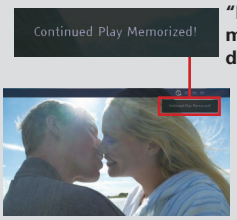
Continue Mode

1 Press "CONTINUED" key during playback.

2 Power off without removing disc.

3 Turn power back on and playback the title.

4 Playback continues from the memorized scene.



"Memorized" message is displayed

Pop-up message appears

Select "Yes" to start playback from the memorized point.

"CONTINUED" key on remote control

- Continue Mode is effective even when the power is turned off, as long as the disc remains unremoved.
- While the pop-up message is displayed, the Blu-ray Disc continues normal playback in the background.
- Continue Mode may not work depending on disc conditions.

30 sec Skip Forward/10 sec Skip Back

88FD 85FD

If you want to skip the ad, or take another look at a scene you've missed, you can easily skip forward 30 seconds or skip back 10 seconds with a push of a button on the remote control.

Quick View (x1.5) with Audio

88FD 85FD

Get full viewing in shorter time. For busy people who want to get the most out of their time, Quick View with Audio can play a one hour video in 40 minutes.

Auto Power Off

88FD 85FD

The Blu-ray Disc player will automatically turn off after being left uncontrolled for a certain time set by the user.

Firmware Update (USB/Network)

88FD 85FD

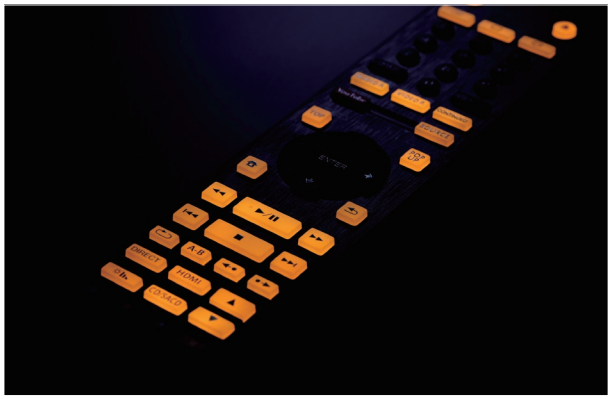
Firmware updates can be done through LAN connection*, or by using a USB memory device.

*** Blu-ray Disc player needs to be connected to the internet via a home LAN network**

User-Friendly Remote Control

88FD 85FD

The self-illuminating remote control allows easy operation even in a darkly-lit home theater. The keys are clearly laid out in four groups according to their functions, offering smooth control. The remote is designed to fit comfortably in your hand.



Remote Control Illumination

FEATURE COMPARISON & SPECIFICATIONS: BLU-RAY DISC PLAYERS

	BDP-88FD	BDP-85FD
Construction		
Three-Chamber Structure	•	
Double-Layered Chassis	•	•
Highly Rigid Center Frames	•	
Steel Plate Top Panel and Aluminum Side Panels	•	
Steel Plate Bonnet		•
Rigid & Quiet BD Drive	•	•
Steel Shield Drive Case with Anti-Vibration Paint	•	• (Without Anti-Vibration Paint)
Steel Drive Base	•	•
Tray Shaft	•	•
Tray with Anti-Vibration Paint	•	•
Acoustic Damper Tray	•	•
Video Features		
Precise Pixel Driver	•	•
4K Reference Converter	•	•
Stream Smoother	•	•
36-bit Deep Color	•	•
"x.v.Color"	•	•
HDMI 1080p/24 Hz & 2160p/24 Hz Output	•	•
Video Adjust	•	•
Audio Features		
ESS SABRE^{32} DAC	SABRE^{32} Reference DAC (ES9018)	SABRE^{32} Ultra DAC (ES9011)
Large-Capacity Power Supply Transformer	•	
Acoustic Custom Capacitors and Other High-Grade Parts	•	•
Zero Signal Terminal	•	•
Precision Audio	•	
PQLS Bit-stream	•	•
Dual HDMI Output	•	•
Audio Scaler	•	
Hi-bit32	•	
Up Sampling	•	
Digital Filter	•	
Balanced Analog Audio Output	•	
Direct Function	•	•
SACD Compatible	•	•
Sound Retriever Link	•	•
Network Features		
DLNA Certified™ (1.5)	•	•
iControlAV5 Remote App Ready	•	•
YouTube/Picasa Viewing	•	•
Various Playable Formats	•	•
Convenience		
Continue Mode	•	•
30 sec Skip Forward/10 sec Skip Back	•	•
Quick View (x1.5) with Audio	•	•
Auto Power Off	•	•
Firmware Update (USB/Network)	•	•
User-Friendly Remote Control	•	•
Specifications		
Power Requirements	AC 120 V 50/60 Hz	AC 120 V 50/60 Hz
Power Consumption	40 W	27 W
Power Consumption during Standby Mode (Network On)	0.5 W (6 W or less)	0.5 W (6 W or less)
Dimensions (W x H x D)	17-1/8 x 5-1/8 x 13-3/8 inches (435 x 130 x 339 mm)	17-1/8 x 4-5/8 x 13-5/16 inches (435 x 118 x 338 mm)
Weight	29 lbs. 8 oz. (13.4 kg)	21 lbs. 12 oz. (9.9 kg)

Product Sheet

BDP-88FD

BDP-85FD

ELITE

BDP-88FD

Flagship Blu-ray 3D™ Disc Player with Heavy and Stable Chassis, Rigid and Quiet BD Drive, 4K/60p/4:4:4/24-bit Upscaling, Precision Audio, PQLS, Dual HDMI Output, and Network Features

Construction

- Three-Chamber Structure with Separate Blocks for Power Supply, Digital Processing, and Audio Circuits
- Double-Layered Chassis for Low Centre of Gravity and Overall Rigidity
- Highly Rigid Center Frames for Reducing Unwanted Vibration
- Aluminum Side Panels and Steel Plate Top Panel
- High Performance Rigid and Quiet BD Drive
- Acoustic Damper Tray
- Disc Tray with Anti-Vibration Paint
- Acoustic Electric Capacitors and Other High-Grade Parts
- Gold-Plated Terminals

Video Features

- Precise Pixel Driver with HD Detail Enhancer and Triple HD Noise Reduction
- Ultra HD Upscaling (4K/60p/4:4:4/24-bit) by 4K Reference Converter
- Blu-ray 3D™ Playback
- Stream Smoother
- 36-bit Deep Color/"x.v.Color"
- HDMI 1080p/24 Hz & 2160p/24 Hz Output

Audio Features

- Highly Precise D/A Conversion with ESS SABRE^{32} Reference DAC (ES9018)
- High Quality Audio by Large-Capacity Power Supply Transformer
- Precision Audio
- PQLS Bit-stream/Multi-Surround/2ch
- Dual HDMI Output (see right chart)
- Auto Sound Retriever/Sound Retriever Link
- Audio Scaler
  - Hi-bit32
  - Up Sampling
  - Digital Filter
- Independent Quartz for 44.1 kHz/48 kHz
- Direct Function for Pure Analog Audio Output

Network Features

- DLNA Certified™ (1.5) to work as DMP/DMR, plays files from smartphones
- iControlAV5 Remote App Ready (for iPhone/iPod touch/iPad, for Android)*
- YouTube/Picasa Viewing
- Various Playable Formats (see right chart)

Convenience

- BD-Live™/BONUSVIEW™
- Front USB Input
- Continue Mode
- 30 sec Skip Forward/10 sec Skip Back
- Quick View (x1.5) with Audio
- Control with HDMI
- Auto Power Off
- Firmware Update (USB/Network)

Playback Discs

- BD-ROM/BD-R/BD-RE
- DVD-Video/DVD-R (DL)/DVD-RW/DVD+R (DL)/DVD+RW
- AVCHD
- DVD-Audio/SACD
- CD/CD-R/CD-RW/DTS-CD

HDMI Output Mode

Mode	Main	Sub
Dual	Audio/Video	Audio/Video
Separate	Video	Audio
Pure Audio	–	Audio
Single	Audio/Video	–

Table of Playable Files (Disc/USB/Network)

Audio	MP3 (.mp3)	WMA (.wma)	AAC (.m4a)
	MPEG2 AAC (.aac)	WAV (.wav)	FLAC (.flac)
	Monkey's Audio (.ape)	DSD (.dff/.dsf)	AIFF (.aif/.aiff)
	ALAC (.m4a)		
Video	AVI (.avi)	WMV (.wmv)	DivX (.avi/.divx/.mkv)
	MP4 (.mp4)	3GP (.3gp)	FLV (.flv)
Image	JPEG (.jpg/.jpeg)	MPO (.mpo)	PNG (.png)
	GIF (.gif)		

Supports FAT16, FAT32 and NTFS file system

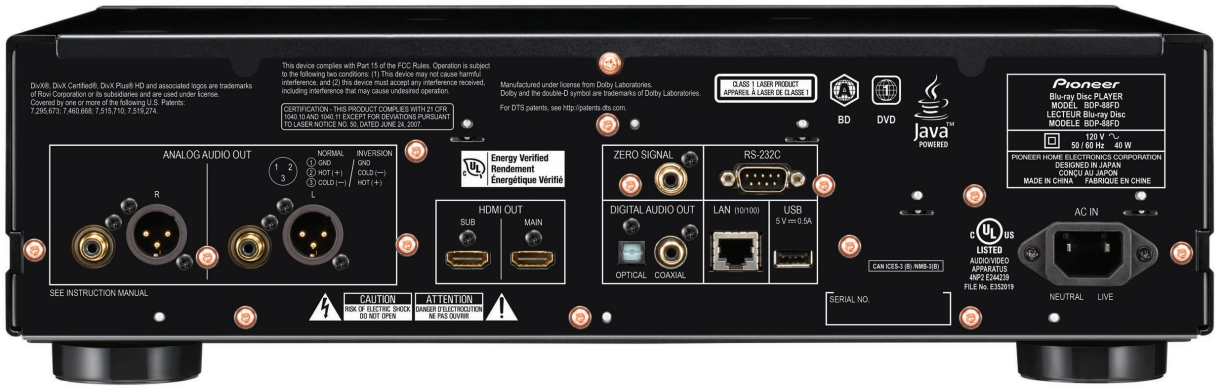
* Available for free download from the App Store for iPhone/iPod touch/iPad, from the Google Play™ Store for Android.

ELITE

BDP-88FD

Flagship Blu-ray 3D™ Disc Player with Heavy and Stable Chassis, Rigid and Quiet BD Drive, 4K/60p/4:4:4/24-bit Upscaling, Precision Audio, PQLS, Dual HDMI Output, and Network Features

Connections



Terminals

- HDMI 2 Out (1 Main, 1 Sub)
- Digital Coaxial Out
- Digital Optical Out
- USB 2 In (1 Front, 1 Rear)
- Ethernet
- RS-232C
- Analog Audio 2 Out (1 Balance, 1 Unbalance)
- Zero Signal Terminal (for Audio/Video Quality Tuning)

Specifications

- Power Requirements: AC 120 V 50/60 Hz
- Power Consumption: 40 W
- Power Consumption During Standby: 0.5 W/6 W or less (Network On)

Product Dimensions

- Dimensions (W x H x D): 17-1/8 x 5-1/8 x 13-3/8 inches (435 x 130 x 339 mm)
- Weight: 29 lbs. 8 oz. (13.4 kg)

Integrated Technologies

3D Compatible
iControlAV5
Super Playability
DMR

Specifications and design subject to change without notice.

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ELITE

BDP-85FD

Blu-ray 3D™ Disc Player with Heavy and Stable Chassis, Rigid and Quiet BD Drive, 4K/60p/4:4:4/24-bit Upscaling, PQLS, Dual HDMI Output, and Network Features

Construction

- Double-Layered Chassis for Low Centre of Gravity and Overall Rigidity
- Highly Rigid Bonnet Structure for Reducing Unwanted Vibration
- High Performance Rigid and Quiet BD Drive
- Acoustic Damper Tray
- Disc Tray with Anti-Vibration Paint
- Acoustic Electric Capacitors and Other High-Grade Parts
- Gold-Plated Terminals

Video Features

- Precise Pixel Driver with HD Detail Enhancer and Triple HD Noise Reduction
- Ultra HD Upscaling (4K/60p/4:4:4/24-bit) by 4K Reference Converter
- Blu-ray 3D™ Playback
- Stream Smoother
- 36-bit Deep Color/"x.v.Color"
- HDMI 1080p/24 Hz & 2160p/24 Hz Output

Audio Features

- Highly Precise D/A Conversion with ESS SABRE^{32} Ultra DAC (ES9011)
- PQLS Bit-stream/Multi-Surround/2ch
- Dual HDMI Output (see right chart)
- Sound Retriever Link
- Direct Function for Pure Analog Audio Output

Network Features

- DLNA Certified™ (1.5) to work as DMP/DMR, plays files from smartphones
- iControlAV5 Remote App Ready (for iPhone/iPod touch/iPad, for Android)*
- YouTube/Picasa Viewing
- Various Playable Formats (see right chart)

Convenience

- BD-Live™/BONUSVIEW™
- Front USB Input
- Continue Mode
- 30 sec Skip Forward/10 sec Skip Back
- Quick View (x1.5) with Audio
- Control with HDMI
- Auto Power Off
- Firmware Update (USB/Network)

Playback Discs

- BD-ROM/BD-R/BD-RE
- DVD-Video/DVD-R (DL)/DVD-RW/DVD+R (DL)/DVD+RW
- AVCHD
- DVD-Audio/SACD
- CD/CD-R/CD-RW/DTS-CD

HDMI Output Mode

Mode	Main	Sub
Dual	Audio/Video	Audio/Video
Separate	Video	Audio
Pure Audio	–	Audio
Single	Audio/Video	–

Table of Playable Files (Disc/USB/Network)

Audio	MP3 (.mp3)	WMA (.wma)	AAC (.m4a)
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	Monkey's Audio (.ape)	DSD (.dff/.dsf)	AIFF (.aif/.aiff)
	ALAC (.m4a)		
Video	AVI (.avi)	WMV (.wmv)	DivX (.avi/.divx/.mkv)
	MP4 (.mp4)	3GP (.3gp)	FLV (.flv)
Image	JPEG (.jpg/.jpeg)	MPO (.mpo)	PNG (.png)
	GIF (.gif)		

Supports FAT16, FAT32 and NTFS file system

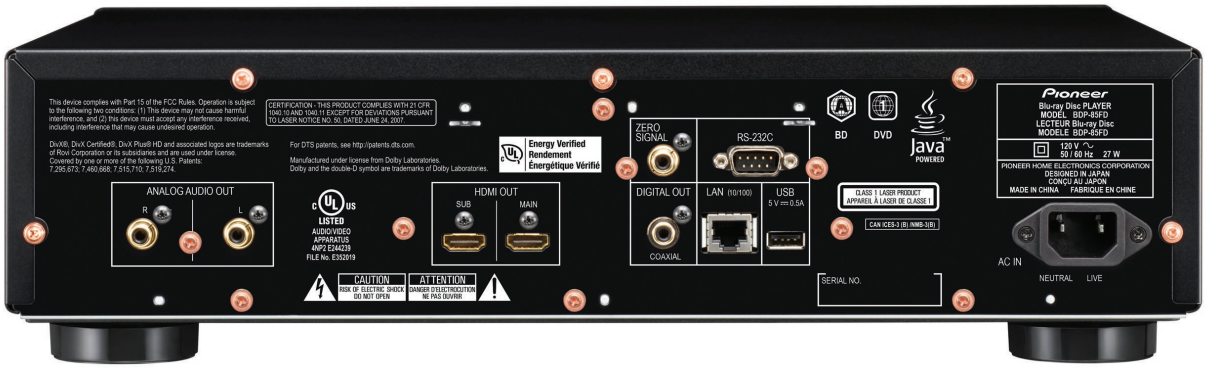
* Available for free download from the App Store for iPhone/iPod touch/iPad, from the Google Play™ Store for Android.

ELITE

BDP-85FD

Blu-ray 3D™ Disc Player with Heavy and Stable Chassis, Rigid and Quiet BD Drive, 4K/60p/4:4:4/24-bit Upscaling, PQLS, Dual HDMI Output, and Network Features

Connections



Terminals

- HDMI 2 Out (1 Main, 1 Sub)
- Digital Coaxial Out
- USB 2 In (1 Front, 1 Rear)
- Ethernet
- RS-232C
- Analog Audio Out (Unbalance)
- Zero Signal Terminal (for Audio/Video Quality Tuning)

Specifications

- Power Requirements: AC 120 V 50/60 Hz
- Power Consumption: 27 W
- Power Consumption During Standby: 0.5 W/6 W or less (Network On)

Product Dimensions

- Dimensions (W x H x D): 17-1/8 x 4-5/8 x 13-5/16 inches (435 x 118 x 338 mm)
- Weight: 21 lbs. 12 oz. (9.9 kg)

Integrated Technologies

3D Compatible | iControlAV5 | Super Playability | DMR

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