OLYMPUS

Your Vision, Our Future

Linear PCM Recorder

LS-10





Sound Quality

LS-10. Capture every sound, exactly as it is ...

Easy to Use



Perform. Capture. Upload.

Anywhere, anytime.

Offering the ultimate in live recording capability, the Olympus LS-10 uses the linear PCM recording format for optimal digital recording without compression. With a 24-bit/96 kHz sampling frequency that takes quality above and beyond CD quality, the LS-10 captures every sound around you, exactly as it is.



Musicians –

Do you want to listen back to your practice sessions and concerts and hear every note? Capture music and audio in superb stereo sound and play it back wherever you want. You can edit it on your PC with the supplied CUBASE LE4 software. Post it online to share with fans, friends and family.



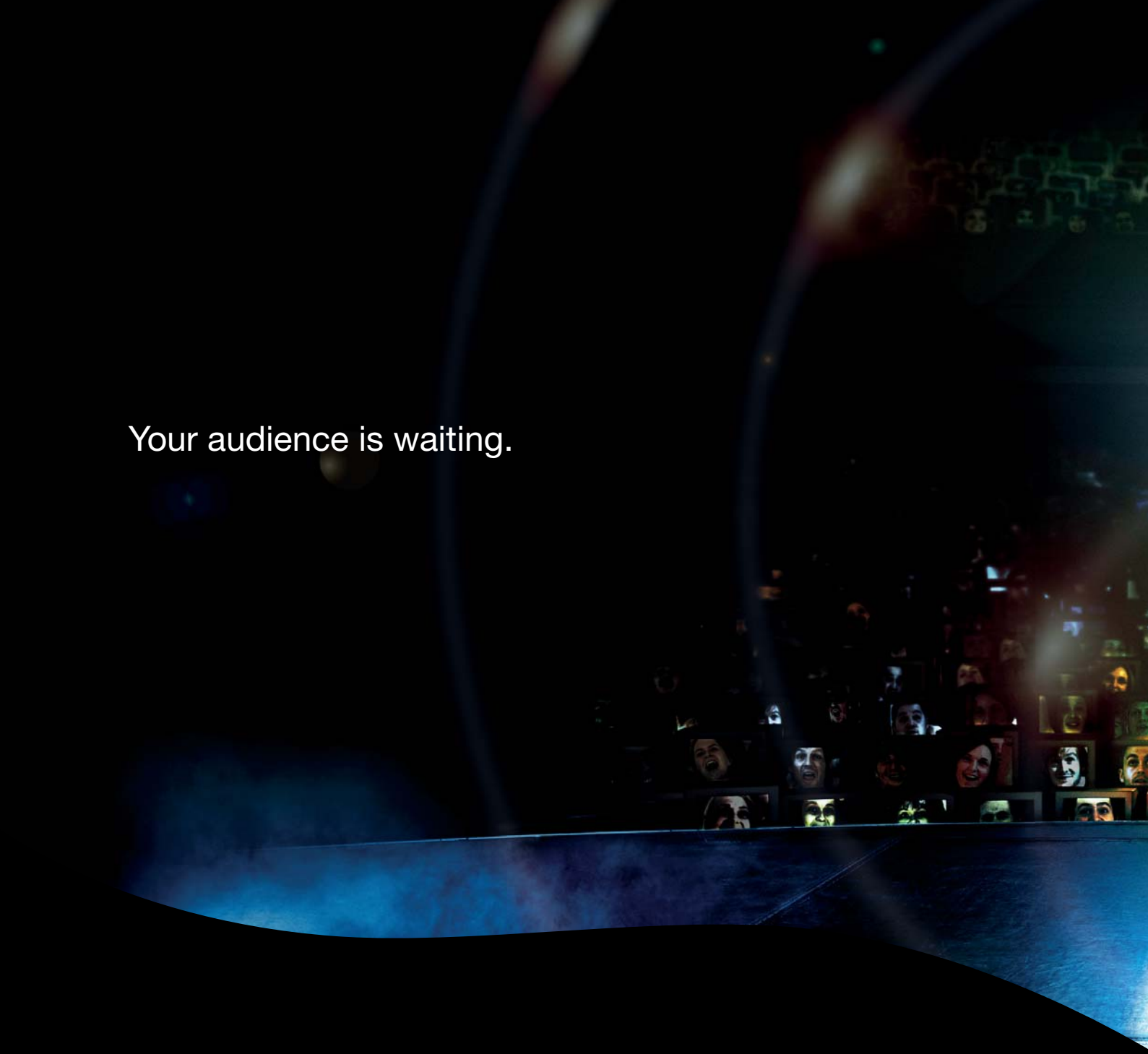
Bands and artists –

Do you want to record your own music and share it online for all to enjoy? Don't spend a fortune in the studio. Take the LS-10 with you to every gig, practice session and jam, and record your tunes in stunning sound quality. Then upload your best sounds straight to the Internet, where they can be enjoyed by everyone.



Nature lovers –

Do you want to capture the sounds of your favourite beauty spot in near-perfect quality? Take a walk on the wild side with the LS-10. Thanks to its amazingly sensitive microphones and high-quality recording capabilities, you can capture the sounds of nature (or any other outdoor environment) in perfect stereo.



Linear PCM's wider dynamic range can capture every detail of the sound.

Stereo Microphones & Amp Circuitry

The built-in stereo microphones employ carving-processed aluminium with higher vibration absorbing characteristics. The microphone amplifier uses discrete left and right-channel amp circuits to suppress interference, making high-quality 'original sound' recording possible.

Manual Recording Level Adjustment

The LS-10 allows you to fine-adjust the recording level manually with switchable limiter to obtain the optimum level by checking the level meter display on the LCD panel and the PEAK indicator. An automatic level control function is also provided.

24-bit/96 kHz Linear PCM Recording

The LS-10 is compatible with the extra high quality linear PCM recording with a quantization bit rate of up to 24 bits and sampling frequency of up to 96 kHz – far exceeding standard CD quality of 16-bit/44.1 kHz. You can easily convert your recordings to CDs with the same quantization and sampling rate.

A Variety of Recording Formats

In addition to WAV format non-compression linear PCM recordings, the LS-10 is also compatible with the MP3 and WMA formats, offering you more versatility and enabling longer recording times.





Long Battery Operation

Long battery life design allows you to record up to 16 hours (in 16-bit/44.1 kHz recording mode) with two optional AA Ni-MH batteries, or up to 12 hours (16-bit/44.1 kHz mode) with two AA alkaline batteries (provided).

Long-Term Recording Capability

The built-in 2 GB flash memory assures longer recording time, while the SD card slot allows you to use the SD and SDHC memory cards for expanded capacity.

Large 1.8-inch LCD Panel

The semi-transmissive LCD panel is much easier to view when used outdoors, while the backlit design makes it easy to read even in the dark.

Stereo Speakers in a Compact Body

Despite its compact, 165-gram design, the LS-10 incorporates built-in stereo speakers that allow you to enjoy high-quality sound playback anywhere, anytime.

Wireless Operation via Infrared Remote

An optional exclusive remote control set* allows you to start or stop recording on the LS-10 from a distance.

* Planned for release in spring 2008.

LS-10. High-quality audio technology.

High-Sensitivity Microphones for Superb Sound

The LS-10 incorporates built-in stereo microphones with higher sensitivity and lower noise. A rigid microphone housing constructed of carving-processed aluminium effectively withstands vibrations while making possible high-precision alignment. To derive the maximum performance in terms of frequency response and directivity, the microphone unit size and the opening of the case have been designed with extremely high precision. Recording capability is also enhanced by a layout that positions the microphone units with a 90-degree outward orientation. This design makes it possible to record wider and more natural stereo sound fields without worrying about centre positioning.

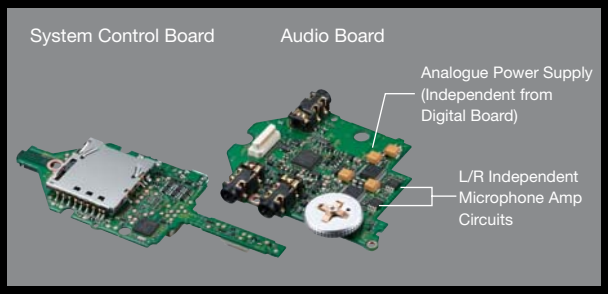


Low-Vibration Microphone Structure

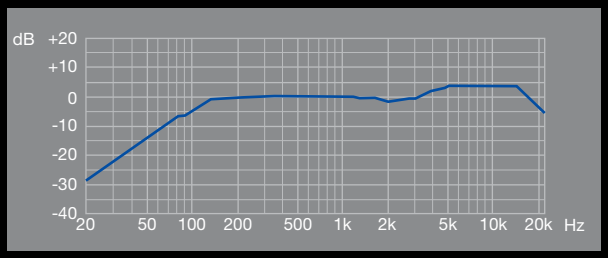
90-degree Microphone Unit Layout

High-Quality Microphone Amplifier Circuitry

For the purest sound reproduction, the sound signal picked up by the microphones must be transmitted and amplified as accurately as possible without any signal deterioration.
To achieve this, the circuit boards have been carefully designed according to the latest innovations in sound-conscious design.
The microphone amp circuitry employs discrete chips for the left and right channels to prevent interference with the signal between channels, assuring the clearest possible signal transmission with improved signal-to-noise ratio.
The analogue signal circuitry employs an independent power supply to reduce the interference from the power supply circuit so that the subtle nuances of the original sound are not affected, resulting in a superior S/N ratio.
The integrity of the signal is also maintained by completely separating the system control (digital) circuitry and the audio circuitry to reduce any possible noise.



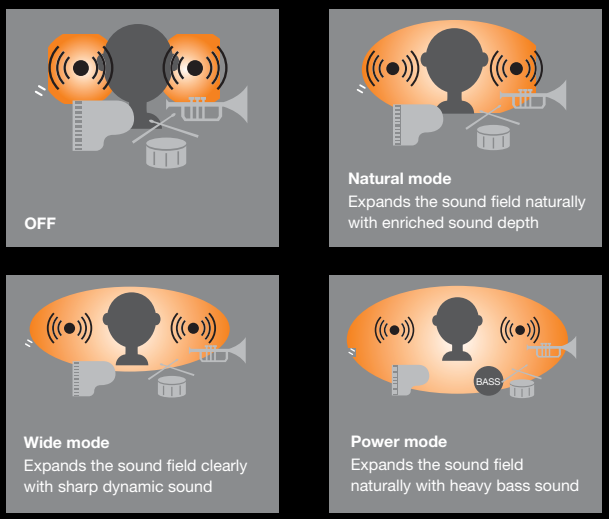
System Control (Digital)/Audio Circuitry Design



Frequency Response of Built-in Microphone

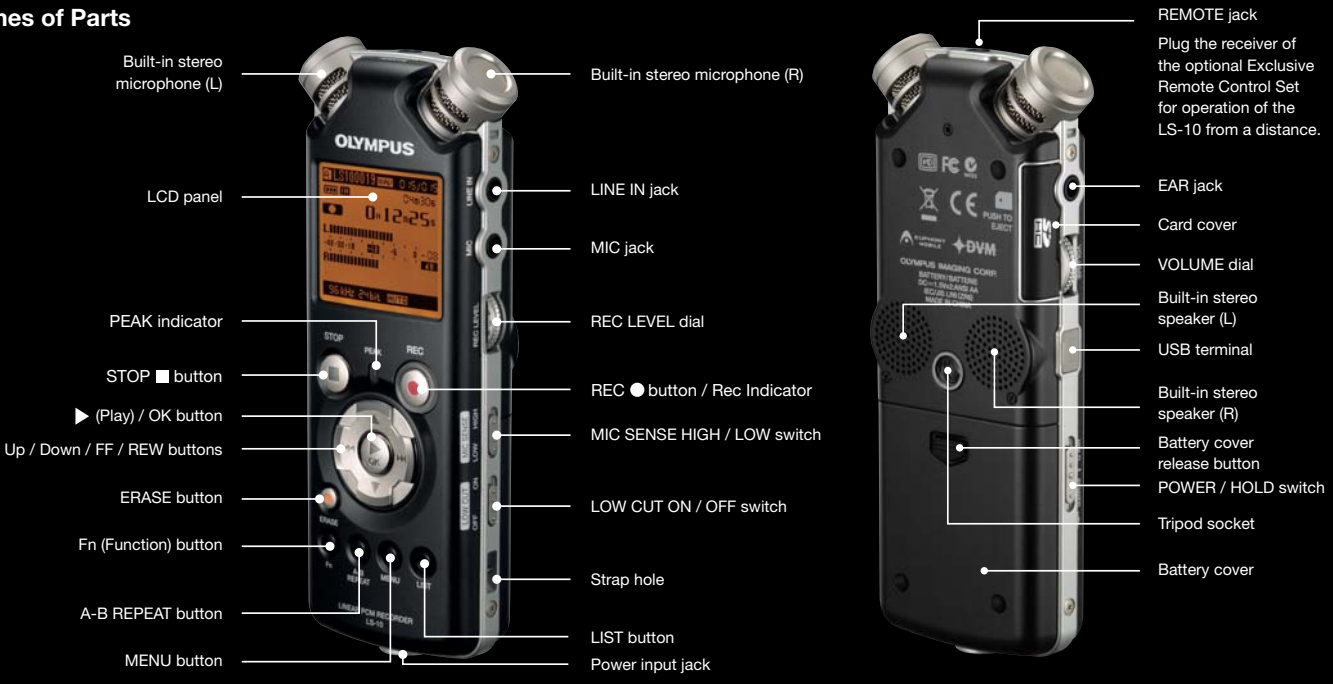
Stereo Music Playback Function

The Reverb function allows you to select the reverberation effect from 5 modes (NORMAL, STUDIO, CLUB, HALL, DOME) according to the music you want to listen to, or your preference. The advanced EUPHONY MOBILE surround sound also expands the sound space and presence even when listening via headphones. With its natural width and depth, the sound field is free of unwanted pressure or enclosed feeling, so you can enjoy fatigue-free music listening for an extended period of time. Select the EUPHONY setting from 4 preset modes (OFF, Natural, Wide, Power).



Sound Space with EUPHONY MOBILE Setting

Names of Parts



Main Specifications

Recording format	Linear PCM (Pulse Code Modulation) (WAV) MP3 (MPEG-1/MPEG-2 Audio Layer 3) WMA (Windows Media® Audio)
Maximum headphone output	3 mW + 3 mW (at load of 16 Ω)
Recording media	Built-in NAND flash memory (2 GB) SD/SDHC Card (8 GB maximum) (optional)
Speaker	Built-in 16 mm dia. round dynamic speaker x 2 (stereo)
MIC jack	3.5 mm dia. mini-jack, impedance 2 kΩ
LINE IN jack	3.5 mm dia. mini-jack, impedance 78 kΩ or more
EAR jack	3.5 mm dia. mini-jack, impedance 8 Ω or more
Maximum speaker output	200 mW + 200 mW (8 Ω load)
Power requirements	Batteries: Two AA batteries (LR6 or ZR6) or two Ni-MH rechargeable batteries (optional) External power supply: AC adapter 5 V (optional)
Compatible OS (for USB connection)	Microsoft® Windows® 2000/XP/Vista Mac OS X 10.2.8-10.5
Dimensions (H x W x D)	131.5 mm x 48 mm x 22.4 mm (without protrusions)
Weight	165 g (including two alkaline batteries)
Included items	AA battery x 2, USB cable, Connecting cord, Carrying case, Strap, Windscreen, DVD-ROM (Sound Editing Software "CUBASE LE4")

Sound Editing Software "CUBASE LE4"

With 48 sound tracks and a variety of effects, CUBASE LE4 makes it easy to edit recorded sound data on your computer.



• Compatible OS: Microsoft® Windows® Vista/XP Professional/XP Home Edition, Mac OS X 10.4

Optional Accessories

- RS-30W Exclusive Remote Control Set (planned for release in March 2008)
- ME30W 2-Channel Professional Microphone Kit (omni-directional)
- AC Adapter (planned for release in spring 2008)

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Frequency Response

• LINE IN Jack (Recording/Playback)

Linear PCM Format

Rec mode	Frequency response
96 kHz	20 Hz to 44 kHz
48 kHz	20 Hz to 23 kHz
44.1 kHz	20 Hz to 21 kHz

MP3 Format

Rec mode	Frequency response
320 kbps	50 Hz to 20 kHz
256 kbps	50 Hz to 20 kHz
128 kbps	50 Hz to 17 kHz

WMA Format

Rec mode	Frequency response
160 kbps	50 Hz to 19 kHz
128 kbps	50 Hz to 19 kHz
64 kbps	50 Hz to 15 kHz

• Built-in Stereo Microphones (Recording): 70 Hz to 20 kHz

Reference Recording Time (Approx.)

Linear PCM Format

Rec mode	Built-in memory (2 GB)	SD/SDHC Card				
		512 MB	1 GB	2 GB	4 GB	8 GB
96 kHz 24-bit	55 min	10 min	25 min	55 min	1hr 50 min	3 hr 45 min
96 kHz 16-bit	1 hr 25 min	20 min	40 min	1 hr 20 min	2 hr 50 min	5 hr 45 min
48 kHz 24-bit	1 hr 55 min	25 min	55 min	1 hr 50 min	3 hr 50 min	7 hr 40 min
48 kHz 16-bit	2 hr 55 min	40 min	1 hr 25 min	2 hr 50 min	5 hr 45 min	11 hr 30 min
44.1 kHz 24-bit	2 hr 5 min	30 min	1 hr	2 hr	4 hr 10 min	8 hr 20 min
44.1 kHz 16-bit	3 hr 10 min	45 min	1 hr 30 min	3 hr 5 min	6 hr 15 min	12 hr 35 min

MP3 Format

Rec mode	Built-in memory (2 GB)	SD/SDHC Card				
		512 MB	1 GB	2 GB	4 GB	8 GB
320 kbps	14 hr 10 min	3 hr 30 min	7 hr	13 hr 50 min	28 hr	55 hr 40 min
256 kbps	17 hr 45 min	4 hr 20 min	8 hr 50 min	17 hr 20 min	35 hr	69 hr 40 min
128 kbps	35 hr 35 min	8 hr 50 min	17 hr 40 min	34 hr 50 min	70 hr 10 min	139 hr 30 min

WMA Format

Rec mode	Built-in memory (2 GB)	SD/SDHC Card				
		512 MB	1 GB	2 GB	4 GB	8 GB
160 kbps	27 hr 50 min	6 hr 50 min	13 hr 50 min	27 hr 10 min	54 hr 50 min	109 hr
128 kbps	34 hr 45 min	8 hr 30 min	17 hr 20 min	34 hr	68 hr 40 min	136 hr 20 min
64 kbps	69 hr 35 min	17 hr 20 min	34 hr 50 min	68 hr 10 min	137 hr 20 min	272 hr 50 min

- Recording times shown above are approximate values for reference.
- Maximum recording capacity per each file is limited to a maximum of approx. 4 GB due to file system restrictions.
- For WMA format, the maximum recording time is approx. 26 hours 40 minutes.
- Available recording time for SD/SDHC memory cards varies depending on the card used.
- For SD/SDHC memory cards confirmed as usable by Olympus, refer to the Olympus official website (http://www.olympus.com).



www.olympus-europa.com/LS-10

OLYMPUS

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OLYMPUS IMAGING EUROPA GMBH
Wendenstrasse 14-18, D-20097 Hamburg
P.O. Box 10 49 08, D-20034 Hamburg, Germany
Phone: +49 40 23773-0
Fax: +49 40 230761
www.olympus-europa.com
www.olympus.co.uk/LS-10