

Why a CD?

Some will question the seriousness of CD as a demo medium at all. Isn't CD so last millennium in comparison with newer high resolution formats? Technically, the question may be relevant and deserves a considered response. CD quality, (stereo, 44.1 kHz sampling rate and 16-bit constant bit depth) has been criticised since the early 1980's for limited bandwidth, restricted bit resolution and dynamic range of "only" 96 dB.

Many early CD releases were irrefutably bad; cold, aggressive, anaemic bass, harsh top end, perhaps because the best recording and mastering engineers still focused on the LP. CD required a new skill set, continued development of digital recording technologies and new techniques for transferring and mixing analogue tapes. With a steep learning curve, CD quality is now much improved. 96 dB dynamic range, properly captured, 20 Hz – 20 kHz frequency bandwidth, properly rolled off, etc., are more than up to the task of handling demanding performances with surprising verisimilitude.

One could argue that the main value of high resolution formats is that they allow engineers and manufacturers of digital recording equipment more leeway in exploring the dynamics and extended frequency response of hi-rez media. Extracting outstanding sound from CD is altogether more demanding.

It should also be noted that many recordings come nowhere near testing the technical limits of CD. Extreme dynamic compression is applied in pop genres for CD and download to boost levels to a constant high "loudness" to make music more "exciting" on cheap headphones, portable players or in a car. The sound of many modern performances and even remasterings of older recordings is compressed to a narrow 10 – 15 dB dynamic range, by turning down dynamic peaks and boosting quiet passages so that the track's high uniform loudness grabs and holds the listener's attention. This is quite a departure from the hi-fi goal of natural, engaging musicality.

In this context, 96 dB of dynamic range is more than adequate and, properly deployed, can offer near perfection. The day may well come when audiophiles look back in nostalgic gratitude that we were ever allowed to experience a widespread high quality medium like CD, before the mainstream consumer was steered towards MP3 and other heavily compressed formats vastly inferior to CD.

Let us enjoy the wealth of musical treasures available to us now – Long live the CD!

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