



CD MASTERING GUIDELINES

The price estimate sent to you by our Sales team is based on the supply of a finished and *ready to manufacture* master disc. If you have no means of creating a master from the data you have, or need help in amending or enhancing your project, we will be happy to undertake this task to your exact specification. We have lots of experience in all kinds of multimedia work, so give our team a call for an estimate. If you wish to send us your files, rather than a finished master disc, please enquire as to the best method for supplying this.

Here are some general guidelines for creating and supplying your master disc(s):

- Always supply your master in the correct format. CDs are manufactured from a disc image (rather than the distribution of files from a computer system, as is often presumed) so your master disc and copies must be like-for-like in format. For example, if you require CDs and supply us the data on a DVDR, a new CD master will need to be created for you at cost.
- Use a quality brand of blank media to create your master, but do not use rewritable discs.
- Burn your master with appropriate software (see further guidelines below) and at the slowest speed available. Burning your master at high speed is counter-productive and can cause data drop-outs, which may lead to manufacturing problems.
- Please thoroughly check your master disc for issues prior to sending it to us as mistakes can be expensive to rectify once the manufacture has begun. Always test audio CDs on a CD player and data discs (CD-ROM) on PC and Mac, if possible.
- Do not include your print artwork files on the master disc itself. Send these files on another disc, via email, FTP or web host (see our Print Artwork Guidelines for more details).
- Avoid making just one master disc and sending that to us. We always advise that you send us one and keep one back for your own reference.
- Please label your master disc(s) using a suitable marker pen, with your company (or name) and/or estimate reference number; we may not be able to process unsolicited or unidentifiable masters. If your order comprises a multiple-disc set, ensure each master is uniquely identifiable (e.g. Disc 1, Disc 2 etc.) Never use any kind of paper or taped labels on CDs. The application of a label causes rotational imbalance and may cause playback problems or render the disc unreadable – they can also shatter during rotation and thus we must reserve the right to refuse the processing of any masters that we think may cause such problems.
- Send your discs packaged individually and well-protected in a hard case of some kind. Loose discs or multiple discs packed back-to-back are easily rendered useless by scratches and scuffs to their underside reading surface. If they're sent with only a paper or plastic sleeve to protect them within an envelope, they can be cracked by the rollers of mail sorting machines or cracked in transit to us.
- Send your master to us via courier or Recorded Mail where possible. We cannot be held responsible for items missing or arriving late for a deadline if sent via a standard UK postal service.

Copy protection

There are many kinds of copy protection and content scrambling systems (CSS) available, but please note that this feature is *normally* available for replicated discs only. A one-off encryption set-up cost is incurred, plus a per-disc royalty surcharge depending on the brand of encryption used. If such protection is important for your project, let us know at the outset and we'll work out the best way to proceed, depending on the type of project on which you're working.

Return of your master disc

We do not return master discs along with your manufactured units as a matter of course. This is primarily for any future reorders you may require, but also that we need to keep the master for reference in the unlikely instance of a manufacturing fault on your product. If it is imperative that your master is returned to you, we'd be happy to do this – but only once the order is completed and paid in full. Please also be aware that once a master has been returned to you, we cannot uphold any future claims of faults on the manufactured units.

CD-ROM

We recommend that your CD-ROM (or 'data') master is burned using professional recording software, such as Nero, Gear, Toast etc. This will allow you to create a volume label (the title that shows on your computer when the disc is inserted) and also close/finalise the burning session. Avoid using a Windows/Mac drag-and-drop method of creating your master, despite any advice you may see in your computer's Help files. Finalising/closing the burning session is important for data discs, particularly if your disc contains executable software or subfolders. Without the File Allocation Table (FAT) automatically added during the finalisation, duplicated copies of such masters may be unreadable.

The industry-recommended maximum data allowance for CD-ROM is 650MB, though duplicated discs can generally hold up to 700Mb.

Audio CD (CDA)

Firstly, please ensure that you do send us a bona fide audio disc and not a data disc containing audio files (such as MP3, WAV or AIFF) otherwise your finished units will be produced as CD-ROM and not playable in most audio CD players. As per the CD-ROM notes above, you should only use appropriate software to create your final audio disc; neither Windows nor iTunes can do this properly. Not only are the MP3 files associated with iTunes a poor quality audio format, but the program cannot be relied upon to add commonly-required data such as ISRC codes and CDtext.

If you have a finished audio CD that requires any of these codes adding, we can do this for you but it will require a complete remaster at cost, as the codes cannot simply be 'dropped in' during the manufacture. We strongly recommend that you have your audio CD fully mastered with any necessary text/codes before you send it on to us. If a remaster is needed, it's best to send us the original, individual audio files and have us newly create the master from those (rather than us ripping audio from disc in real time); it will always ensure the best quality results.

Always burn your master at the slowest speed available and use the Disc-at-Once method – this ensures the recording laser records the entire CD in one sweep without stopping. Audio masters burned using the Track-at-Once method often cause manufacturing problems.

Sony's Red Book Standard states that the recommended maximum playing duration of an audio CD is 74 minutes, though we can generally replicate CDs with up to 78 minutes of audio without issue. Do be aware that CDs made with higher durations may not play on some older CD players.

We are happy to accept DDP image files for audio projects, either supplied on disc or via file transfer (see Supplying Data section below).

Enhanced or Mixed Mode CD (ECD)

It is possible to create an audio CD with extra content (viewable on a computer) such as video, images, eBooks, web links etc. Depending on the software you're using to make the master, this often involves a two-stage burning process and can only be done with dedicated CD authoring software. This can be problematic for the inexperienced user, so let us know if you'd like us to author such a master for you. As a general rule, the audio partition of the disc will need to be burned first, any other data thereafter.

ISRC (International Standard Recording Code) is a kind of digital fingerprint which is embedded into a subchannel on an audio disc. ISRCs are commonly used by artists and labels for logging airplay and collecting royalties. Each track is assigned a permanent identifying code that must be added during the authoring of the master. ISRC codes can be sought from The International Federation of the Phonographic Industry (IFPI). See <http://www.ifpi.org> for further details.

CDtext is another type of embedded code which allows artist, album and track names to be displayed during playback, though only on a CD player that supports CDtext. Most modern car stereos, for example, feature this function. Be aware that computers, however, cannot read CDtext. For your song titles to show up in a media player (e.g. iTunes or Windows Media Player) you must register a complete, finished disc with an online database, such as Gracenote. You can find details on how to proceed with this at <http://www.gracenote.com>

Mini-CD

We do not require the master disc itself to be an 8cm CD, but do note the capacity restrictions of the medium:

80mm diameter – approx. capacity 195MB or 21m 40s of audio

CD-Card

As per mini-CD, we can accept masters on regular CDR. Also known as *Business Card CD*, these rectangular discs are available in two sizes:

86 x 56mm (credit card size) – approx. capacity 25MB or 2m 40s of audio

64 x 89mm (larger size) – approx. capacity 83.9MB or 9m 30s of audio

Supplying data for CD when you cannot send a master disc

If you need us to make a master for you and cannot supply the requisite data on a physical format (disc, memory stick or portable hard drive), upload your files to our FTP site or a web host. If the content is small enough in filesize, you can email it to us. We can generally accept individual emails with attachments of up to 25MB in filesize.

If you cannot send a master disc purely due to strict time constraints, you can upload to us an .iso image for CD-ROM or DVD-ROM if you have a disc already created. Always put the finished image file in a ZIP folder before sending.

If you wish to send files and/or folders, please make sure the structure of the data remains as you wish it to appear on the root of the finished discs and ZIP the entire contents. In such instances, we'll also need the Volume Label you require (the title that shows in a computer disc drive), to a maximum of 31 characters including spaces. Remember that for software requiring an auto-run function, the autorun.inf file needs to be on the root of the disc (not within a subfolder) to work. Also note that Apple systems will not auto-run anything and the auto-run functionality on a PC depends on the set-up of the individual's operating system. Generally, newer computer operating systems will not auto-run from an external source as a safety measure against computer virus infection.

For audio CD that requires no further timing, codes or mastering, a DDP image (Disc Description Protocol) is the preferred format for upload to us. Again, please ZIP the whole fileset before transfer.