

Understanding SD memory cards

Memory cards can be very difficult to get your head around, and thus you may often end up buying the wrong cards for your needs. Please note, that this guide is aimed at photography only, I don't do videography so I am not sure of how interchangeable this guide is.

What is SD/SDHC/SDXC?

The first thing to point out here is that there is **NO DIFFERENCE** in the quality or the security between these cards. **SD** stands for Secure Digital, **SDHC** stands for Secure Digital High Capacity and **SDXC** stands for Secure Digital Extended Capacity. There are also other formats that include MicroSD and MiniSD but your DSLR will not accept these. Memory cards that are labelled as SDHC have a capacity of 4GB to 32GB. SDXC can have much larger memory but if you are only doing photography, then a SDHC card will be sufficient for your needs.

Class

You will see a Class 2,4,6 or 10 on SD Cards. This is the speed rating which measures maximum transfer speed for reading and writing images to and from a memory card, expressed as **megabytes per second**. So, the higher the number, the faster the card will work with less buffering. The speed class is not based in maximum performance, but the minimum sustained speed required for recording an even rate of video onto the card without dropping a frame. This is still important for still photography though because if you are shooting in RAW or at a high resolution JPEG the files that your camera can create are very large files. The faster the card, the faster it can save the file and be ready to take another picture. You can really notice speed differences with high-megapixel DSLR cameras when using multi-shot burst mode.

Speed

The speed of a memory card is important for two reasons – **read and write speeds**.

A card's **read speed** describes how fast data can be retrieved from a card. This performance is seen when transferring card contents to computers and printers for example. A faster read speed will transfer images to your computer more rapidly also (depending on how the SD card is wired up to the computer, as a direct connection vs USB 2 vs FireWire 800 vs USB 3 will make a significant difference also, as will, potentially, your hard disk or SSD storage memory speed).

The **write speed** describes how fast images can be saved onto a card, which is important when shooting bursts of images in continuous shooting mode, HD video or when using high resolution cameras that shoot particularly large files.

So if you're doing **sports photography**, especially with a high continuous burst shooting mode, you will need a card with a **fast writing speed**.

Or if you are **shooting weddings** and **downloading a lot of Raw files** to your computer then it would be worth investing in a card with a **fast reading speed**.

Two types of card speed:

You'll find an indication of a memory card's read or write speed from the various cryptic markings on it. But before you get out your school algebra book and attempt some mathematical calculations, remember read speed is faster than write speed.

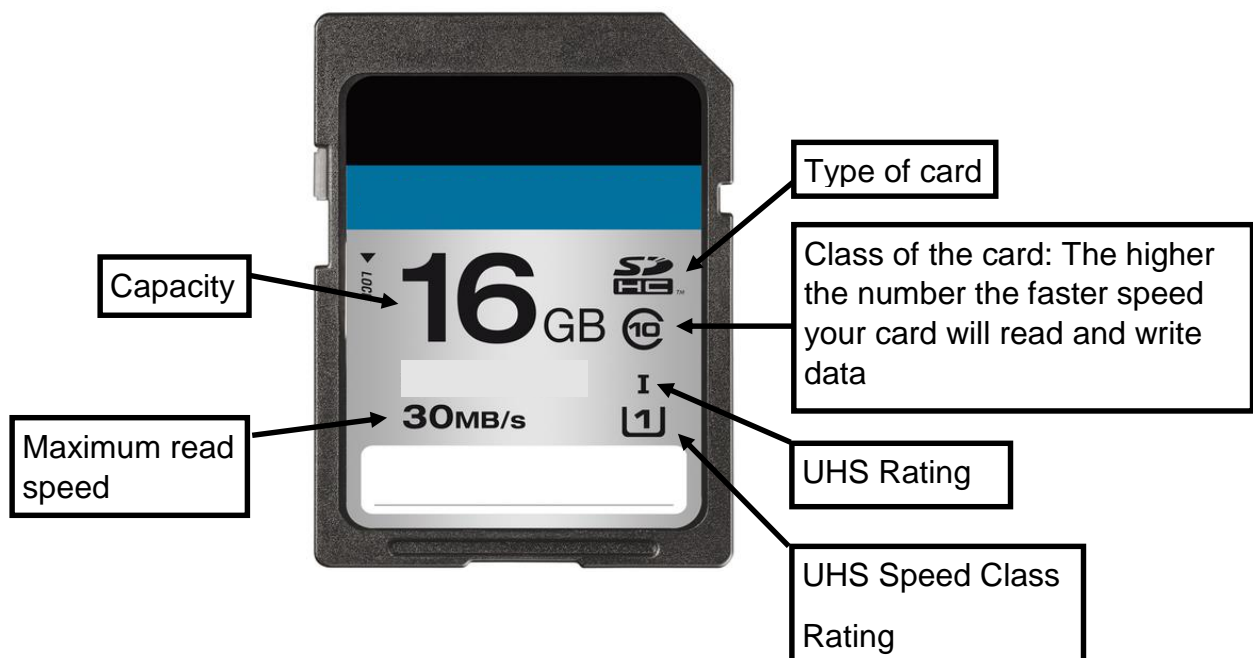
UHS Rating

The UHS rating of a card determines the maximum bus speed at which a card can read, assuming the memory in the card is fast enough to match it. Non-UHS cards max out at 25 MB/s, while UHS-I cards support up to 104 MB/s, and UHS-II cards support up to 312 MB/s. Both the card reader and card must support the same standard to benefit from the increased speeds, but UHS cards are backward compatible with older readers—they just won't be as fast in them. UHS is an older version of the Class system described above.

UHS Speed Class Rating

This is the minimum sustained writing speed of the card; important for video recording. UHS Speed class 3 cards will never write slower than 30 MB/s, UHS Speed class 1 cards never slower than 10 MB/s

The card 'map'



I hope this helps you understand a little more about SD memory cards and will help you to buy the right card for you. I personally mainly use Sandisk Ultra 8GB SDHC cards (class 10 and a maximum read speed of 40mb/s).