

Future of DVD

Blu-ray – While current optical disc technologies such as DVD, DVD±R, DVD±RW, and DVD-RAM use a red laser to read and write data, the new format uses a blue-violet laser instead, hence the name Blu-ray. Despite the different type of lasers used, Blu-ray products are backwards compatible. The benefit of using a blue-violet laser is that it has a shorter wavelength than a red laser which makes it possible to focus the laser spot with even greater precision. This allows data to be packed more tightly and stored in less space, so it's possible to fit more data on the disc even though it's the same size as a CD/DVD. A single-layer Blu-ray Disc can hold 25GB, which can be used to record over 2 hours of HDTV or more than 13 hours of standard-definition TV. There are also dual-layer versions of the discs that can hold 50GB.



HD-DVD – Next-generation DVD (where HD stands for both high-density and high-definition) use blue-violet lasers to read smaller pits, increasing data capacity to 15 GB per layer for the -R and 20 GB per layer for the -RW. High-density formats use high-definition MPEG-2 video and also use advanced encoding formats, supporting 720p and 1080p video. Like Blu-ray, HD-DVD is backward compatible, so devices based on these discs will play back current DVDs. HD-DVD is more closely related to its predecessor – but only in that the disc's physical structure is virtually identical to that of current DVD media. Proponents of the HD-DVD format point to that trait as an asset that makes ramping up production more seamless than doing so with Blu-ray Discs.



Nashua will be introducing both of these formats / products as they become commercially available. (expected late 2005)

Comparison of rewritable Blu-ray and HD-DVD formats

	Blu-ray	Blu-ray	HD-DVD	HD-DVD
Number of Recording Layers	Single	Double	Single	Double
Capacity	25GB	50GB	20GB	40GB
Laser wavelength	405nm	405nm	405nm	405nm
Numerical aperture (NA)	.085	.085	.065	.065
Protection layer	.01mn	.01mn	.06mn	.06mn
Data transfer rate	36Mbps	36Mbps	36Mbps	36Mbps
Hours of High Definition Video	2+	4 - 5	2	4