



UDO

ULTRA DENSITY OPTICAL

PERMANENT ARCHIVAL STORAGE

Ultra Density Optical (UDO) is the world's first blue laser professional optical storage technology and the successor to 5.25 inch Magneto Optical (MO) products. First generation multifunction UDO drives have a 30GB storage capacity and support both Rewritable and true Write Once media formats. Designed specifically for the

long-term archival storage of business critical information, UDO's true Write Once technology meets international data storage compliance regulations for corporations and governmental agencies. UDO is leading the industry with Permanent, Professional and Cost Effective archival storage for enterprise environments.



Plasmon Overview

Founded in 1987, Plasmon has more than 16 years experience in the design and manufacture of professional removable data storage solutions and has been listed on the London Stock Exchange since 1996 (LSE: PLM). The company has over 500 employees and annual sales revenues in excess of \$100 million.

Plasmon's worldwide headquarters are in Cambridge, United Kingdom, where the company develops and manufactures optical disk media and provides specialized technology consulting to the CD-R and DVD disc manufacturing industry. Plasmon has more than 12 years experience manufacturing Phase Change optical disks with a dedicated team of engineers and scientists engaged in its UDO media development and manufacturing program.

Plasmon designs and manufactures optical disk drives and optical disk and tape libraries at its ISO 9001 facility in Colorado Springs, Colorado. Plasmon is the leading manufacturer of 12 inch optical disk drives and is using this highly experienced engineering team for UDO drive development. The concurrent design of both UDO drives and media is unique in the storage industry, resulting in shortened development cycles and highly reliable products.

Plasmon has sales offices throughout Europe and the US and sells its products through distribution and OEM channels. Typical end-users of Plasmon products include banks, hospitals, insurance companies and government agencies, where the secure archival of business critical information is required.



PERMANENT

UDO provides a level of data permanence unmatched by magnetic disk, tape and consumer orientated CD/DVD optical storage. True Write Once UDO media uses irreversible Phase Change data recording technology that cannot be altered after information has been written. UDO drives also provide full sector level verification during the write process to ensure that data is accurately recorded. UDO media has a life of over 50 years and is housed in an ISO standard, anti-static cartridge that protects against damage and particle contamination. Only UDO offers such a high level of data and media permanence for critical archival applications.

PROFESSIONAL

UDO technology is designed specifically to meet the needs of demanding professional archival storage environments. UDO drive mechanisms are rated at 750,000 load/unload cycles to deliver highly reliable operation for automated library configurations. Libraries supporting UDO are available from Plasmon and other leading automation manufacturers that offer terabytes of low cost, highly secure archival storage.

UDO is an excellent archival storage solution for today and into the future. Starting at 30GB, UDO's well defined, multiple generation roadmap extends to 60GB and 120GB products. Second and third generation UDO drives will provide backward compatibility for earlier generations of media, minimizing technology disruption and maintaining data access continuity. UDO media, drives and libraries are available with the global warranty and support services expected by corporations and government organizations.

COST EFFECTIVE

When calculating the total cost of ownership for long-term archival storage it's vital to consider the ongoing cost of maintaining the entire storage environment including equipment maintenance, media replacement, software, data life cycle management and support personnel. At \$2/GB, UDO media is very price competitive, but it's the extremely low ongoing maintenance costs that make UDO such a compelling choice. When compared to magnetic disk, tape or DVD storage, UDO offers much greater media life and virtually zero media maintenance cost (replacement, cleaning, etc.). The data stability provided by UDO dramatically reduces the need for redundant media, the requirement for backing up the archive and eliminates periodic data migration as is necessary with disk and tape archives. UDO affords a very low TCO and aggressive ROI when compared to magnetic disk, tape and DVD technologies used for permanent archival storage.

GLOBAL COMPLIANCE FOR ARCHIVAL STORAGE

The need for the permanent, unalterable, archival storage of business critical information is becoming ever more important. Global economic and security concerns have forced corporations and government institutions to carefully examine digital data and reassess their strategies for the creation and management of permanent information archives. The inability to quickly retrieve key information can result in business down time, reduced competitiveness, penalties, fines, and costly litigation.

Government and industry regulatory bodies worldwide have recognized just how damaging and destabilizing information loss can be and have defined directives that mandate processes and procedures for the long-term archival storage of information. The creation of these compliance regulations is a growing global trend that will have a major influence on the archival storage of information for governments and corporations.

Most regulations define which information must be retained and for what period of time it must be stored. In some cases, these regulations specifically call for the use of Write Once (WORM) media because it provides a secure, unalterable format that facilitates clear data audit trails. Whether mandated by compliance regulations or required as part of an internal corporate procedure, the need for an information archival storage strategy is becoming vitally important, and UDO technology meets or exceeds regulatory specifications for permanent archival storage.

UDO TECHNOLOGY

Unlike previous generation MO drives that use a red laser for recording data on an optical disk, UDO employs the latest blue laser recording technology. Blue lasers facilitate much greater data densities, resulting in dramatically higher media capacity and a multiple generation roadmap for the future. At 30GB, first generation UDO media offers a three-fold increase in capacity and a five-fold decrease in storage cost per GB when compared to earlier 9.1GB MO media.

Multifunction UDO drives support both Write Once and Rewritable media using Phase Change recording technology. Rather than recording data with a magnetic head as used in disk and tape drives, UDO optical drives write data marks by heating the media with the blue laser, which changes the phase of the crystalline structure on the recording layer. The recording layer for UDO Rewritable media can be reheated so that data can be erased and rewritten, while UDO Write Once media uses an irreversible layer structure making it physically impossible for the drive to alter the data on the recording surface after it has been written.

UDO TECHNOLOGY MEETS INTERNATIONAL REGULATIONS FOR LONG-TERM INFORMATION ARCHIVAL STORAGE

Financial / Banking and Tax Records

SEC 17a-4

GDPdU and GoBS (Germany)

Electronic Ledger Storage Law (Japan)

Medical Records and Images

HIPAA

FDA 21 CFR Part 11

11MEDIS-DC (Japan)

Legal Admissibility

ISO 18501 / 18509

BSI PD0008 (UK)

Canadian Uniform Electronic Evidence Act

NF Z 42-013 (France)

AIPA (Italy)

Government Record Management

Sarbanes-Oxley Act

PRO Government Standards (UK)

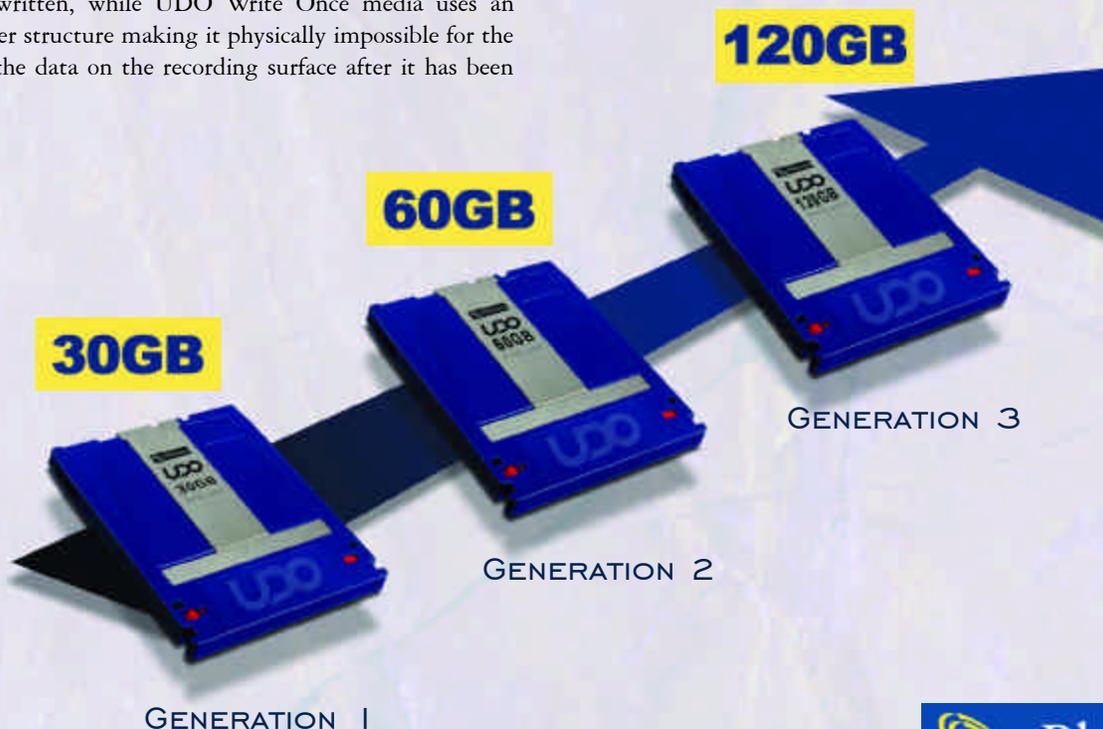
European Union Regulations on Personal Data Processing

e-Commerce

Canadian Uniform Electronic Commerce Act

SUMMARY

UDO technology is a major breakthrough in high capacity, highly secure optical storage that's changing the industry's perception of information permanence. It has received global endorsements from regulatory agencies, storage industry analysts, leading system integrators, library manufacturers and a wide range of independent software developers. UDO is the only technology designed specifically to provide a Permanent, Professional and Cost Effective solution for the archival storage of business critical information.



PERMANENT

- *Unmatched media and data permanence*
- *True Write Once media cannot be altered after data has been written*
- *Greater than 50 year media life*
- *Full sector level verification during the write process*
- *ISO standard 5.25 inch antistatic dual-shutter cartridge protects media against impact damage, handling wear, dust contamination and UV exposure*
- *Totally non-magnetic recording makes media impervious to damage from magnetic field exposure and bit drift*
- *Recording head makes no contact with the media, eliminating media wear considerations*
- *Unique media serial numbers and optional bar codes for audit trail and media tracking*



PROFESSIONAL

- *Designed specifically for high-demand professional environments*
- *Enterprise class MSBF and MTBF ratings*
- *Integrated with multiple terabyte library configurations*
- *Easy and secure off-line and vaulted media management*
- *Multiple generation roadmap for higher capacity drives and media*
- *Backward compatibility with previous generation UDO technology*
- *Global warranty and support services*

COST EFFECTIVE

- *UDO offers highly affordable permanent archival storage*
- *Extremely competitive \$2/GB media pricing with first generation technology*
- *Low ongoing maintenance costs for drives and libraries*
- *Zero media maintenance and replacement expense*
- *Eliminates the necessity for redundant media to guard against media failure*
- *Eliminates the necessity to perform backups of the optical archive*
- *Delivers very low TCO and high ROI when compared to magnetic disk, tape and DVD/CD technologies used for permanent archival storage*

FOR MORE INFORMATION REGARDING PLASMON'S ULTRA DENSITY OPTICAL, VISIT:

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