

# M-DISC™

## Features & Advantages

- Permanently stores digital information
- Backwards compatible – readable in current Blu-Ray and DVD drives
- Eliminates costly “data rotation”
- Archived at the point of origin
- Web searchable/random accessible
- Relaxed storage requirements
- Green technology – store it and forget it

## Why not use standard archival DVDs?

Archival-quality DVDs are known to randomly fail leading to permanent data loss. The major failure mechanism is rooted within the data layer, the very core of recordable DVD technology. This layer consists of organic dyes that are chemically altered when data is written. Information is “burned” into the disc by creating light or bleached spots. The data is the contrast between light and dark spots. However, the dark spots fade over time, nullifying the burning process. This is why natural processes corrupt the data on the DVD in just a few short years. The National Archives warns that the shelf life of a regular DVD is only 2-5 years<sup>1</sup>. The degradations can begin in as little as 90 days.

## What makes the M-DISC™ different?

The M-DISC™ disc is constructed of inorganic, synthetic materials that preserve data forever. These materials cannot be overwritten, erased, or corrupted by natural processes. It is as if data were etched in “stone.”

The unique materials used in the M-DISC™ require a new disc drive technology to engrave data permanently. The M-DISC™ and M-Ready drives have been designed and optimized to work as one to etch data into the permanent synthetic stone layers within the M-DISC™.

In addition to preserving data permanently, the M-DISC™ is designed to be backward compatible with current Blu-Ray and DVD drives. Once data is stored on the M-DISC™ it is readily accessible using a common DVD drive.

## How do we know?

The Naval Air Warfare Center at China Lake tested the M-DISC™ against the best conventional archival discs on the market produced by Mitsubishi, Verbatim, Taiyo Yuden, Delkin and MAM-A. The conditions were based on the 85°C/85% relative humidity industry test standard, supplemented with full-spectrum sunlight. The Navy's goal was to simulate conditions at sea or in combat, which experience has shown to be a disc killer. The conclusion? The M-DISC™ suffered no data degradation at all while discs from Mitsubishi, Verbatim, Taiyo Yuden, Delkin and MAM-A failed after the stress period.

The Naval Air Warfare Center at China Lake has published these conclusions in the study, “Accelerated Life Cycle Comparison of Millenniata Archival DVD.” Conventional optical discs subjected to the same level of testing failed within 2 days while the M-DISC™ was not affected.

<sup>1</sup>Frequently Asked Questions (FAQs) about Optical Storage Media: Storing Temporary Records on CDs and DVDs (FAQ #6). The National Archive. Web: [www.archives.gov/records-mgmt/initiatives/temp-opmedia-faq.html](http://www.archives.gov/records-mgmt/initiatives/temp-opmedia-faq.html)

