

# Imation Black Watch™ 3590 and 3590E Half-Inch Tape Cartridges

High-capacity tapes  
for high-powered applications

**Now**  
"H" Model Drive  
**Certified**



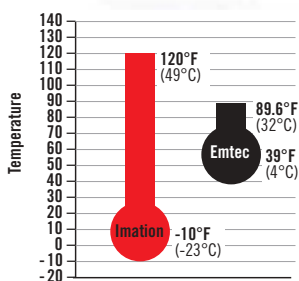


Commercializing the first computer tape was just the beginning of our partnership with industry leaders like IBM. Backed by our 50-year history, Imation continues to meet the demands of data centers by working in tandem with industry leaders. And it is our reputation for dependability and superior technology that makes Imation the most preferred removable storage media in the world.

- **Established Leader**—Co-developed with IBM, Imation has shipped over 15 million 3590 and 3590E cartridges.
- **Servo-Writing Excellence**—Servo-writing accuracy is crucial to ensuring proper tape tracking. Imation developed the world's first servo-written tape cartridge—the 3590. Imation continues to lead advancements in servo technology and has shipped nearly 30 million servo-written half-inch tape cartridges (more than four times our nearest competitor).
- **Imation Certified**—Every single cartridge is tested to ensure uncompromising reliability and out-of-the-box performance.
- **Cleaning Cartridge**—Magstar 3590 (Models “B”, “E” and “H”) drive compatible cleaning cartridge provides up to 100 cleanings.
- **World-Class Technical Service Organization**—Imation tape technology experts partner with our customers to optimize tape storage system performance.

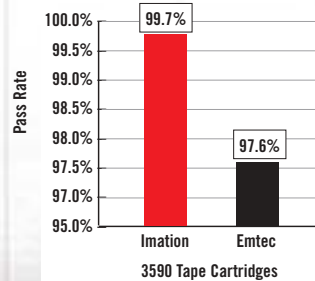
- **Built to withstand exposure to real world conditions**—Imation's superior tape formulation and cartridge construction ensure that Imation media will perform properly even after exposure to high or low temperatures during transportation.

#### Manufacturer's Specifications for Transportation Conditions



Imation media is manufactured to a higher standard for real world conditions. Cartridges that are en route or transferred off-site can easily reach temperatures of 100°F or more inside a truck.

#### Extreme Conditions Performance Testing



Performance measurement of 3590 cartridges after exposure to extreme shipping and storage conditions.

### 3590/3590E Cartridge Compatibility

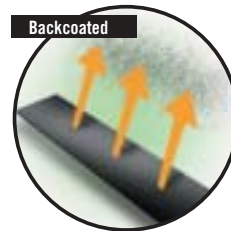
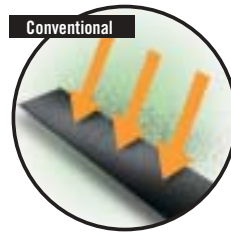
IBM Drives	Imation Media	
	3590/“J” Cartridge	3590E (Extended 3590)/“K” Cartridge
3590 “B” Model (128 track)	10GB Capacity (up to 30GB compressed) 9MB/s Transfer Rate*	20GB Capacity (60GB compressed) 9MB/s Transfer Rate*
3590 “E” Model (256 track)	20GB Capacity (60GB compressed) 14MB/s Transfer Rate*	40GB Capacity (120GB compressed) 14MB/s Transfer Rate*
3590 “H” Model (384 track)	30GB Capacity (90GB compressed) 14MB/s Transfer Rate*	60GB Capacity (180GB compressed) 14MB/s Transfer Rate*

\*Transfer rates depend on drive connectivity and are listed as native.

# Imation Black Watch™ Half-Inch Tape Cartridge features you've relied on for years:

## Proprietary backcoating

Imation's textured backcoating safeguards your data by repelling error causing static electricity. Imation's backcoating also acts like a cushion to absorb wound-in debris safely to decrease the chance of data loss and minimizes inter-layer slippage for uniform signal output.



## Co-developed with Industry Leaders

We've been partnering with the world's leading drive manufacturers for decades. By working in tandem with IBM to develop 3590 and 3590E tape cartridges, you can be guaranteed maximum reliability between the drive and media.

## The world trusts Imation for data storage

Data storage can make or break a business. And as the world's information needs continue to intensify, millions of data center managers, IT professionals and computer users look to Imation for the proven quality, reliability and performance they need to manage, store and secure their data.

It all started 50 years ago when we introduced the world's very first computer tape in 1952. And we continue to meet the demands of today's data centers by working with IBM and other industry leaders. It's that history, along with our reputation for dependability and superior technology, that makes Imation's full line of products the most preferred media for data center, network and desktop customers all over the world.

## Imation Data Center Professional Services

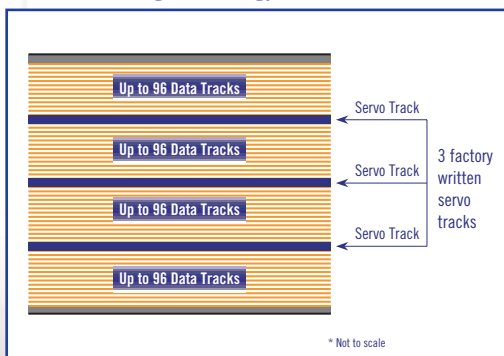
Let our five decades of experience in storage media design and manufacturing work for you. We offer collaborative, solid solutions to your data center challenges, helping you streamline your operations and improve efficiency. Imation Data Center Professional Services include:

- Media Migration
- Best practices evaluation
- Data Center assessment
- Media migration strategy
- Care and handling seminars

## Certified 128-track, 256-track and 384-track recording capability

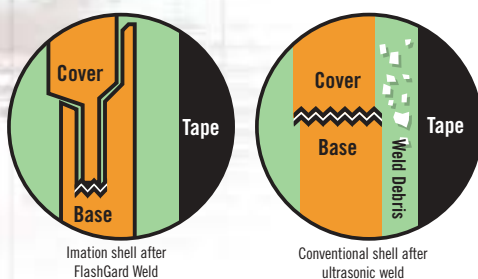
Factory-written servo pattern keeps tape heads aligned for precise data reading/writing and ensures proper tracking over the entire length of the tape. Imation is the leader in servo-writing development, from the world's first servo-written tape (3590) to new formats like 3590E and 9840 tape cartridges.

### Servo-Writing Technology (3590)



## Patented Imation FlashGard™ Weld

Creates a "wall within a wall" to trap unwanted weld debris or "flash," keeping it away from the tape pack. This process enhances cartridge ruggedness and helps protect against drop damage.





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The Imation Cleaning Cartridge provides up to 100 cleanings and is compatible in all 3590 "B", "E" and "H" model drives.

**Order Number**  
**51111-43838**

## Product Specifications

### 3590/3590E Half-Inch Tape Cartridges

	<b>3590 Cartridge ("J" Cartridge)</b> 51111-43832	<b>3590E Cartridge ("K" Cartridge)</b> 51122-40852
<b>Physical Characteristics</b>		
Substrate	PET	PEN (Polyethylene naphthalate)
Native Capacity		
"B" Model (128 track)	10GB	20GB
"E" Model (256 track)	20GB	40GB
"H" Model (384 track)	30GB	60GB
Thickness		
Substrate	0.56 mils nominal (14.2 microns)	0.25 mils nominal (6.3 microns)
Total	0.63 mils nominal (16.0 microns)	0.35 mils nominal (8.9 microns)
Length	1,050 feet nominal (320 meters)	2,070 feet nominal (631 meters)
Durability		
Long Length	Test mode of 400 full file read-while-write passes	Test mode of 400 full file read-while-write passes
Short Length	Test mode of 120,000+ read-forward passes	Test mode of 120,000+ read-forward passes
<b>Magnetic Characteristics</b>		
Intrinsic Coercivity (Hc) with time constant of 0.3 seconds	1,625 Oersteds (129.3 kA/m) +- 75 Oe using VSM	
Broad Band Signal-To-Noise (average signal power to average integrated broad band [floor] noise power)	No more than 1.0 dB lower than reference tape	
<b>Error Characteristics</b>		
Analog Dropouts (25% Signal Remaining Threshold) Signal Track Multi-Track/Coincident	Less than one dropout for each 5 x 10 <sup>7</sup> bits No more than 10	
Digital/System Errors Permanent Errors	Zero	
<b>Safety Characteristics</b>		
Toxicity	Non-hazardous to human health in anticipated use	
Flammability	Self-extinguished per UL94	
<b>Cartridge Shell Conditions</b>		
Leader Block Loading/Unloading	Minimum of 5,000 load/unloads	
Cartridge Drop Test	Suitable for single use after drop of up to 39.4 inches (1m)	
<b>Environmental Recommendations</b>		
Operating Conditions 78°F (26°C) wet bulb maximum	60°F to 90°F (15°C to 32°C) 20% RH to 80% RH	
Storage Conditions 80°F (27°C) wet bulb maximum	40°F to 90°F (4°C to 32°C) 5% RH to 80% RH	
Transportation Conditions (10 days maximum)	-10°F to 120°F (-23°C to 49°C) 5% RH to 80% RH 80°F (27°C) wet bulb maximum with no condensation	
<b>Ordering Information</b>		
<b>Cartridge</b>	<b>3590</b>	<b>3590E</b>
Standard	51111-43832	51122-40852
Labeled	51111-43834	51122-40882
Labeled & Initialized	51111-43836	51122-42149
<b>Cleaning Cartridge</b>		
(10 pack)	51111-43838	51111-43838

For more information about the Imation Black Watch™ 3590 and 3590E Half-Inch Tape Cartridges or data center services, contact your authorized Imation dealer or your sales representative.

[www.imation.com/3590](http://www.imation.com/3590)