

**AMPEX**

## specifications

### 874 series

### 1600 CPI/3200 FCI

### complete area tested tape

GENERAL TESTS	SPECIFICATIONS
<b>Physical</b>	
Base Film:	1.5 mil polyester
Width:	0.498" $\pm 0.002$ "
Total Thickness Base Film and Oxide Coating:	0.00190" $\pm 0.0003$ "
Dynamic Skew:	Less than 2 microseconds between outside tracks at 800 CPI
Curvature:	Less than 1/8" in 36"
Yield Force:	Minimum 7 lbs.
Adhesion — Layer-to-Layer:	None
Splices:	None
<b>Magnetic</b>	
Intrinsic Coercivity (Hci):	255 $\pm 10\%$ oersteds — 5%
Remanence ( $\phi_r$ ):	1.45 $\pm 0.20$ maxwells
Magnetization Saturation:	90% value is below 900 oersteds
Signal Dropouts:	None
Noise Pulses:	None exceeding 10%
Surface Resistance:	$1 \times 10^6$ — $1 \times 10^8$ ohms/linear inch $5 \times 10^5$ — $5 \times 10^7$ ohms/square
<b>Signal Level Referenced to Industry Standard</b>	
556 CPI:	$\pm 5\%$
800 CPI:	$\pm 10\%$
1600 CPI/3200 FCI:	$\pm 10\%$
<b>Environmental Conditions Recommended</b>	
<b>Operating</b>	
Temperature: R.H.	50°F. to 90°F. 20% — 80%
<b>Storage</b>	
Temperature: R.H.	40°F. to 120°F. 20% — 80%

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LITHO IN U.S.A. — T-270-644

# specifications Ampex tapes for IBM and IBM compatible computers

## Materials

Tapes are made of strong yet flexible base material, coated on one side with a strong, flexible layer of ferromagnetic material dispersed in a suitable binder. The base material is an oriented polyester. Long-wearing tape is made of a specially formulated long-life magnetic coating. Nominal lengths are 2400 feet and 1200 feet with a tolerance of plus 100 feet, minus 0 feet. Width of the tape is 0.498 inch, plus or minus 0.002 inch. Over-all thickness is 0.0019 inch, plus or minus 0.0003 inch. Base material thickness is 0.00145 inch, plus or minus 10%. Curvature of the tape is less than 0.125 inch per 96 inches of length. No splices are permitted in the usable area of the tape.

## Physical requirements

The tape has a tensile strength of 12 pounds. Elastic elongation under 5 pounds tension is 0.5% or less. Change in width is less than 0.25% under operating limits. For these tests, the tape is rewound three times in succession with a recommended tension of 0.5 to 0.75 pound — in a room conditioned at 65° to 80° Fahrenheit with a 40% to 60% relative humidity — with a 24-hour storage period under those conditions preceding the testing.

## Performance testing

Ampex 832/838 is performance tested with a 7-channel head. The write track width is 0.0480 inch, and the read track width is 0.0300 inch — both plus 0.0000 inch, minus 0.0007 inch — with channel spacing between centers of 0.070 inch, plus or minus 0.001 inch. The center line of track one is 0.040 inch, plus or minus 0.0025 inch from the reference edge. The write head gap length is 0.0005 inch, plus or minus 10%, and per-

pendicular to the plane of travel. The read head gap length is 0.00025 inch, plus or minus 10%, and perpendicular to the plane of travel. The reference edge of the tape is the top edge when viewing the oxide-coated side of the tape, with the beginning of the tape to the observer's right.

Average peak output is defined as the envelope voltage of a minimum of one thousand pulses sensed by the head in contact with the tape at a constant speed — which is no less than 75 ips nor greater than 150 ips — with a square wave recorded on it at saturation (NRZ recording) at 556 CPI for type 832 tape; types 838 and 839 are checked under the same conditions at 800 CPI. The average peak output of the magnetic tape, when compared to an Ampex standard tape does not vary from the standard tape's average peak output more than plus or minus 5% for 832 and plus or minus 10% for 838.

Ampex 839 full width tested tape is uniformly checked across the full width of the tape with a sensitivity equivalent to that of the 7-channel test at 50%.

Ampex 836 phase encoded tape is uniformly checked across the full width of the tape. The average peak output of the magnetic tape, when compared to an Ampex standard tape, does not vary more than plus or minus 15% from the standard tape's average peak output.

There are no repeatable write skips in each of two consecutive write passes when recording to saturation on all seven channels — with all ones recorded and read throughout the usable length of the tape. Type 832 is checked at 556 NRZ characters per linear inch; types 838 and 839 checked at 800 NRZ characters per linear inch; type 836 is tested at 1600 CPI phase encoded.

When testing for noise, the tape is completely and continuously saturated in one direction. There is no noise signal greater than 10% of the average peak output. The coercive force is no more than 280 oersteds. When stored at 150°F. for 8 hours, there is no layer-to-layer signal transfer greater than 1% of standard reference average peak output.

## Operating and storage conditions

The recommended operating limits for this tape are +60° to +90°F., 20% to 80% relative humidity. The recommended long-term storage conditions for this tape are +60° to +90° F., 20% to 80% relative humidity.

The short term storage conditions are -40° to 120° F., up to 100% relative humidity. Under these conditions there is no deterioration of tape which will prevent it from meeting specifications.

## Control markings

Photo sensing markers are attached to the base side of each tape, and these markers are not less than 1 inch in length, with a width of  $\frac{3}{16}$  inch (plus or minus  $\frac{1}{64}$  inch). The end-of-tape marker is attached with the

1-inch dimension parallel to the edge of the tape, 14 feet (plus 1 foot, minus 0 feet) from the end of the tape nearest the reel hub — and not more than  $\frac{1}{32}$  inch from the top edge as the tape lies coated side down, with the hub end to the left. The beginning of the tape marker is placed 10 feet (plus 5 feet, minus 0 feet) from the other end of the tape, not more than  $\frac{1}{32}$  inch from the bottom edge of the tape as viewed from above.

## Tape identification

Each reel of tape is marked with an individual serial number, applied to the tape itself.

## Reels

Reels are normally constructed of a warp-resistant plastic material. Available colors are gray, blue, yellow, red, tan, white, black, green, orange for rear flanges; front flanges are clear plastic, and hubs are aluminum. Gray reels are supplied on all tape types unless otherwise specified. Outside reel diameter is 10.5 inches nominal and the center hole radius is 3.688 inches nominal. There is a slot on the hub to permit the insertion of a file protect ring, which is supplied inserted with each reel of tape. Non-card-holder reels are supplied unless otherwise requested.

## Containers

Tape containers are constructed of warp-resistant plastic. They are so constructed that the reel is supported at the hub only; reel flanges do not contact the container. Containers have dust inhibiting gaskets and an expansion device for locking. Closed containers have an interlocking stacking action.

## Packaging for shipment

Reels of tape are packed in the plastic container, and the containers are sealed inside a plastic bag. The container assemblies are then packed in suitable heavy-duty commercial shipping containers.

**NOTICE:** In its continuing efforts to supply a superior magnetic tape for use on IBM and IBM compatible drives, as well as the complete tape using industry, Ampex reserves the right to change specifications without notice. Any changes in tape specifications for tape intended for use on IBM and IBM compatible drives will reflect nothing that will affect the compatibility of the tape for its intended use.