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## THE MICROSCOPE PROVES WHAT YOUR EAR SUSPECTS.

THESE UNRETOUCHED, <sup>1</sup> UNALTERED PHOTO-MICROGRAPHS SHOW THE ABSENCE OF WEAR ON A NEW RECORD, ONE 75 PLAYS OLD, AND ONE EVEN AFTER AN ASTOUNDING 200 PLAYS. STATISTICALLY SPEAKING, THE AVERAGE RECORD IS PLAYED ONLY 60 TIMES.

WHILE ADC'S ZLM CAN'T REPAIR THE RAVAGES OF LESSER CARTRIDGES ON YOUR RECORD COLLECTION, THEY CAN BRING OUT EVERY BIT OF SOUND THAT HAS SURVIVED.

THE ADC XLM II HAD LONG BEEN KNOWN FOR ITS UNCOLORED, TRUE SOUND REPRODUCTION.

THE ZLM GOES EVEN FURTHER.

SOUND REPRODUCTION IS COMPLETELY OPEN AND SPATIAL.

AND INDIVIDUAL INSTRUMENT PLACEMENT CAN NOW BE IDENTIFIED WITH EVEN GREATER EASE.

THE ZLM TRACKS BETWEEN  $\frac{1}{2}$  AND  $1\frac{1}{4}$  GRAMS. FREQUENCY RESPONSE IS  $\pm 1$ dB TO 20kHz. AND IS FLAT TO EVEN HIGHER FREQUENCIES; OUT TO 26kHz  $\pm 1\frac{1}{2}$  dB.

AS YOU CAN SEE, BY REDUCING THE TIP MASS EVEN FURTHER, WE'VE COME CLOSER TO THE ULTIMATE IN PURE SOUND REPRODUCTION. TO PROVE IT, EVERY ZLM COMES WITH ITS OWN INDIVIDUAL FREQUENCY RESPONSE CURVE, SIGNED BY THE ADC TECHNICIAN WHO <sup>2</sup> TESTED IT.

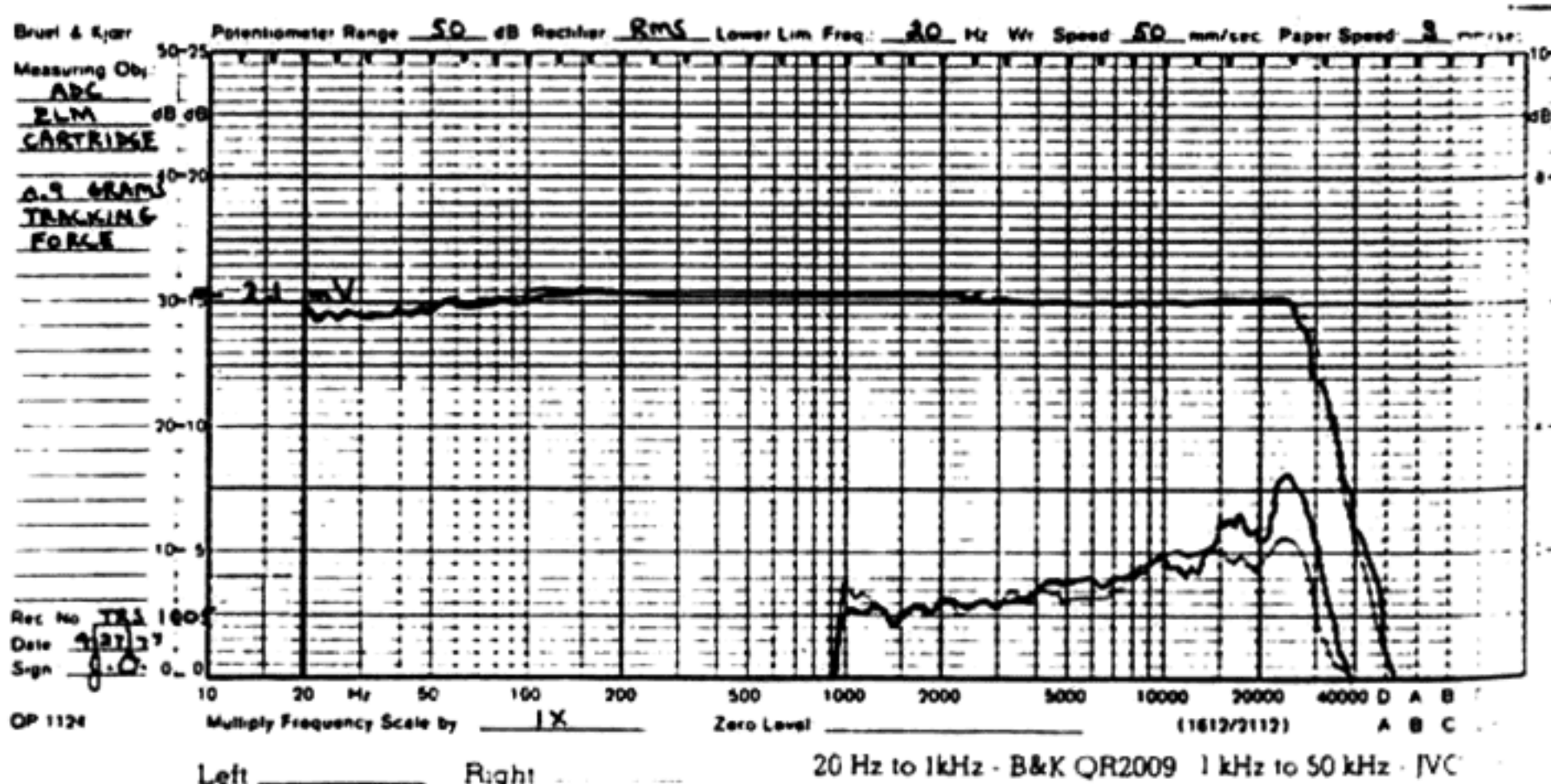
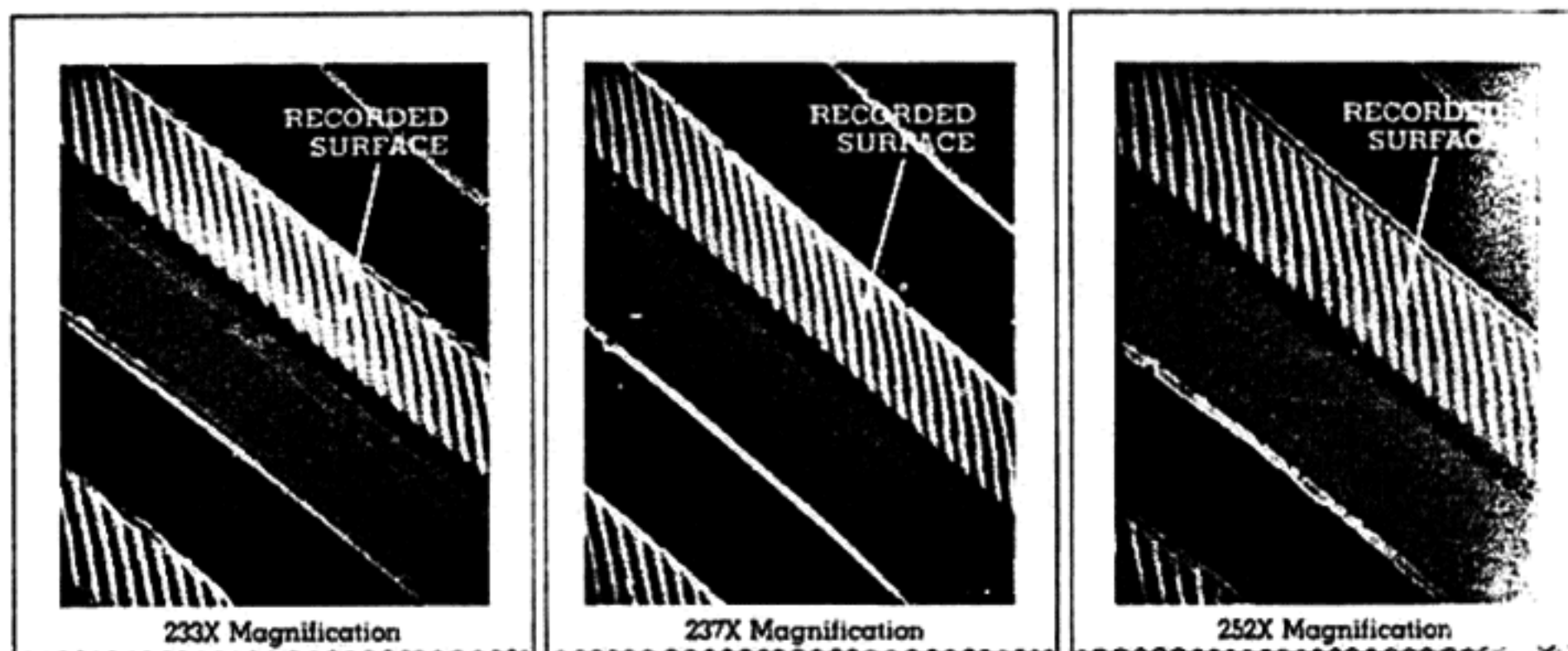
THIS MEANS THAT THE ZLM CARTRIDGE WILL REACH EVERY SOUND LYING DORMANT IN YOUR RECORDS AND TRANSMIT THEM FAITHFULLY THROUGH YOUR HI-FI SYSTEM, WITHOUT ALTERING THE SOUND OR THE HEALTH OF YOUR RECORDS.

YOU CAN SEE WHY WE THINK THE ZLM IS ONE OF THE MOST EXCITING CARTRIDGE DESIGNS TO COME ALONG IN YEARS.

# ADC Cartridges

LAST YEAR ADC CLAIMS THE XLM MK II SHOWS "NO PERCEIVABLE WEAR OVER THE LIFE OF A RECORD" AND PROVES IT.

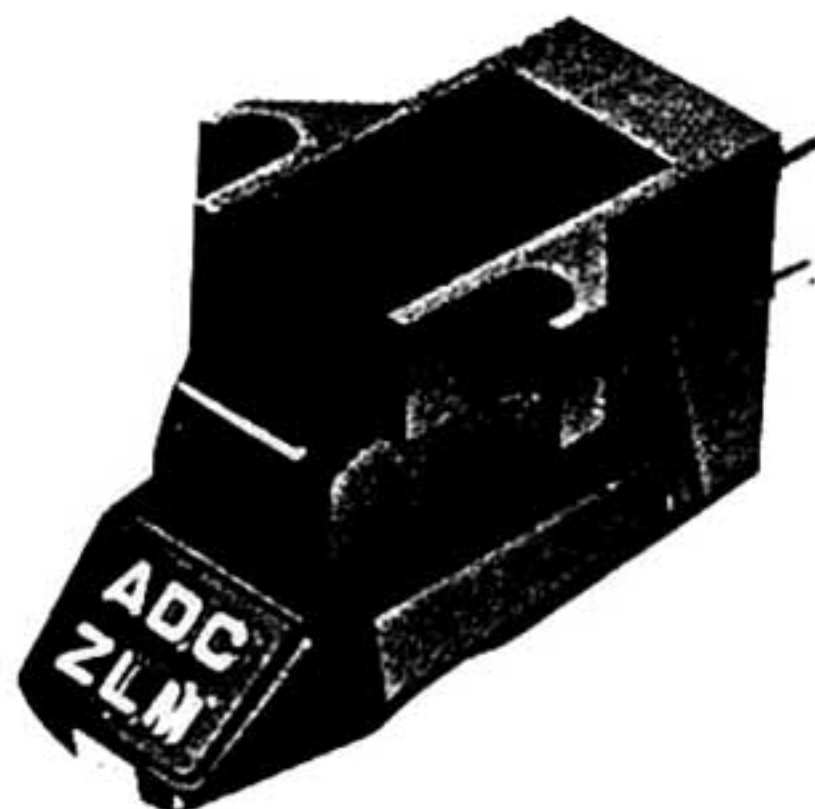
THIS YEAR ADC CLAIMS THE NEW ZLM WITH THE ALIPTIC™ STYLUS HAS EVEN LOWER WEAR AND BETTER PERFORMANCE. AND PROVES IT AGAIN.





# AUDIOFILE test report

## ADC-ZLM cartridge



The new ADC ZLM phono cartridge replaces the XLM as the top of the line model: the main difference being a semi-Shibata stylus ADC calls an "Aliptic". This stylus has a lower radius of 0.2 mil and an upper radius of 1.5 mils and the advantages are better high frequency resolution and tracking coupled with a marked reduction in record wear. In fact, the manufacturers say that for all practical purposes there is "zero record wear". This claim is backed up by micro-photographs and a leaflet enclosed with the cartridge states that a complete explanation will be sent after the warranty registration form is returned.

Like the XLM, in fact all ADC cartridges, a moving magnet design is employed and the stylus is user-replaceable. The cartridge is packaged in a neat silver plastic case which looks rather like a rocket nose cone (or a robot) and the contents include fixing hardware, stylus cleaning brush and a small screwdriver.

### For the technically-minded

For the initial tests, the ZLM was mounted in a Sansui SR-838 arm which has very low vertical and lateral friction and the 838 turntable itself is a quartz-controlled model with some very impressive specifications. The cartridge shell is a low-mass type and no difficulty was experienced in mounting the ZLM. Rated tracking force was set to the suggested maximum of 1 1/4 grams and the anti-skating device set to a similar value.

The first test was for frequency response and crosstalk as shown in figure 1. The high frequency response actually extends to about 25kHz before rolling off. Crosstalk measured just over 30dB in the center of the band, decreasing to 14dB at 20kHz. The square wave resolution, using the CBS STR 110 record, showed a single well-damped overshoot (figure 2). Maximum tracking velocity measured 22 cm/sec at low frequencies and 30cm/sec at high frequencies using the Shure TTR 102 and 103 test records. The ERA III "Obstacle Course" was passed with ease, although tracking force had to be increased to 1.75 grams to track the heavily modulated bass drum on section 5. This is the absolute maximum force possible as the cantilever retracts and reduces the already tiny clearance between the body of the cartridge and the record.

As far as the measurements are concerned, the ZLM, as expected, ranks with the best. Several can track higher velocities at low frequencies but these stringent tests are much more severe than would be met with in practise.

### Listening tests

A number of records were played and the overall impression was one of transparency with no audible coloration. String tone was smooth and natural, yet transients were reproduced with an effortless clarity — as exemplified by the sizzling brass in *Big Band Jazz* (UMD.DD4, Umbrella Direct Disc). A good test for

orchestral balance is the New Hampshire Music Festival recording of *Mozart's Symphony No. 35*, the Haffner (Sonar Records, Box 455 Kingsbridge Station, Bronx, NY 10463). The number is SD-150 and a sleeve note says it gives a magnificent clarity when played through a QS decoder. Yet another record that sounded quite impressive was a new Canadian disc called *Museum Pieces* played by Moe Koffman and his Quintet augmented by thirteen strings under Rick Wilkins. The cut named "Rocks" has a heavy bass line and the clarity rivals some direct-disc recordings. The museum in question is the Royal Ontario and — I almost forgot — the number of the record is GRT 9230-1072.

### Summary

Back to the ADC-ZLM, there is no question that this is one of the finest cartridges now available. It's not cheap at well over \$100 but I am sure many people — especially those with large record collections — will find it well worth the money. Naturally, it deserves a really good tonearm and one recommended is the ADC LMF-12, a low-mass carbon fiber model which we will review in the near future.

George W. Tillett

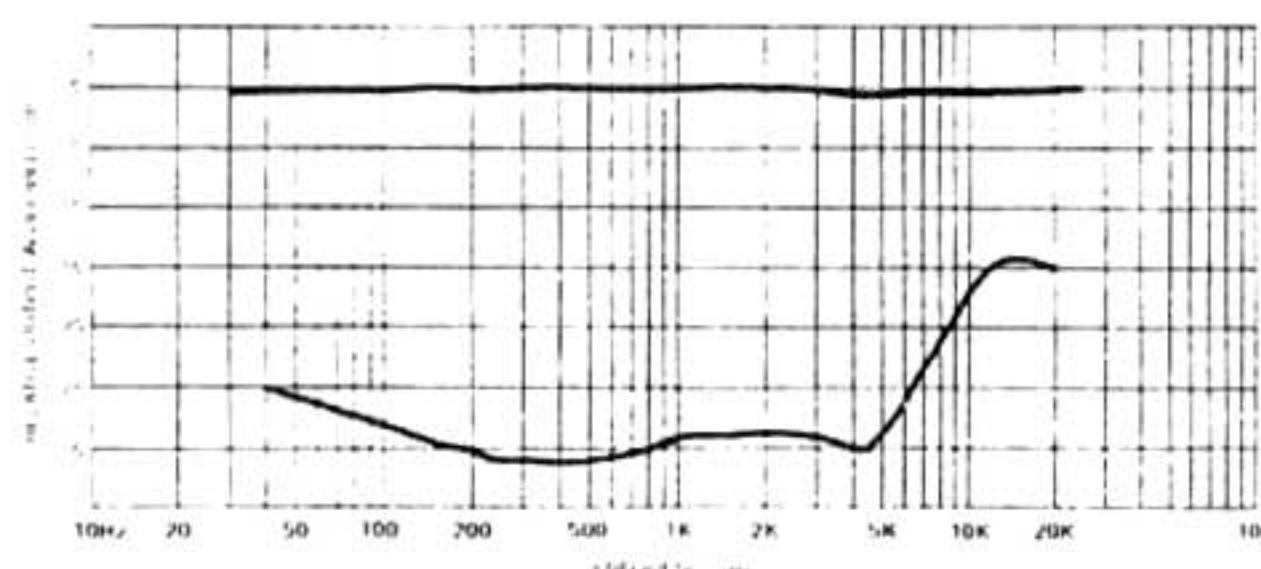


Fig. 1 — Frequency response and crosstalk.

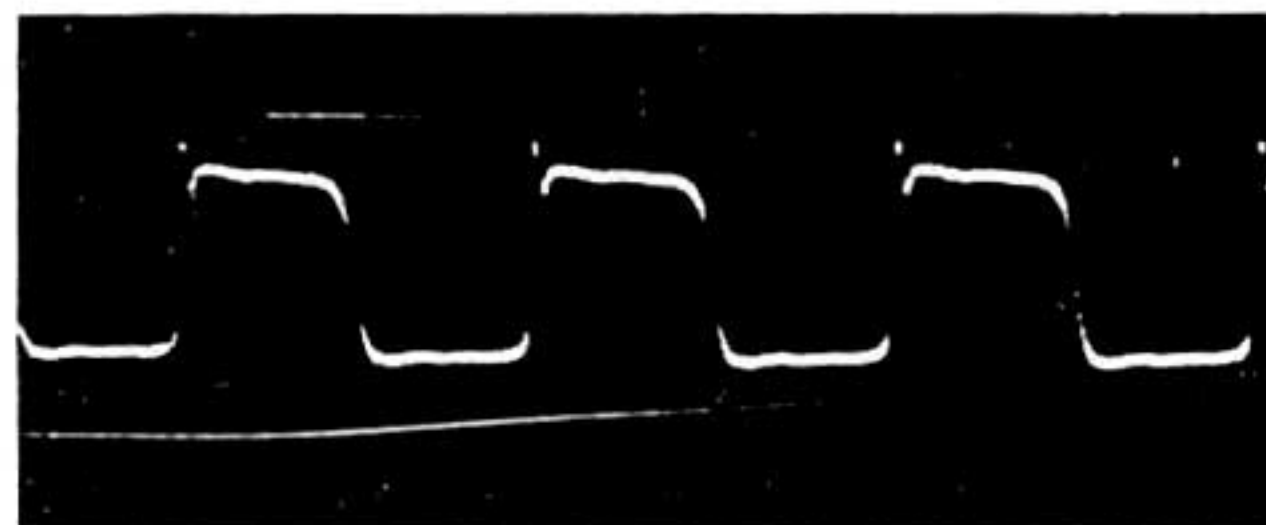


Fig. 2 — Showing square wave resolution.

For further information about this product or for the name and address of your nearest ADC dealer, write to BSR Canada Ltd., 970 McEachran Ave., Montreal, P.Q. H2V 3E3 or phone (514) 273-8354.





## ADC's New Pickup: Idiosyncratic, but Superb in Sound

**The Equipment:** ADC Model ZLM Deluxe, a stereo magnetic pickup cartridge. Price: \$135. Warranty: "limited," one year parts and labor. Manufacturer: ADC (a BSR company), Pickett District Rd., New Milford, Conn. 06776.

**Comment:** ADC seems to have come full circle. The original XLM cartridge was a leader in the trend toward ultracompliant stylus suspensions. It was followed by the XLM Mk. II, which in one giant step went to a suspension that was much stiffer. The new ZLM, judging by its (almost ideal) 9.8-Hz resonance in the SME-3009 tone arm, takes another step away from the outmoded "ideal" of ultra-compliance.

This change is reflected in the minimum vertical tracking force (11.5 millinewtons, or 1.15 grams) at which the ZLM can negotiate the "obstacle course" tracking test administered at the CBS Technology Center. The new value is more than 50% in excess of that required by the XLM Mk. II in the same test, despite the fact that the older cartridge had a stylus assembly twice as massive as that in the ZLM. Compared with this lab data, ADC's recommended range of tracking forces (0.75 to 1.25 grams) seems a trifle optimistic. The lab used the figure from the torture test in making its other measurements; for convenience in adjusting the stylus-force mechanism on our tone arms, we ran the listening tests at the upper extreme of the recommended range.

The low- and mid-frequency response of the ZLM is commendably flat, with one or two broad but negligible excursions (on the order of 1 dB). High-end peakiness is a good deal less apparent than in most of the pickups we have tested, one channel rising in response by 2½ dB at 20 kHz and the other rolling off by 1 dB at the same frequency. The channels match fairly closely (and are dead on at 1 kHz in the lab's measurements), but there is nonetheless enough variation between them to cause a slight instability in the stereo image. This is most noticeable with a soloist at center front. Channel separation is very good; nominal sensitivity is on the high side.

Performance of the ZLM with respect to second harmonic distortion is slightly better than average, as is that for intermodulation distortion. The measured vertical tracking angle of 23 degrees—greater than "standard"—is

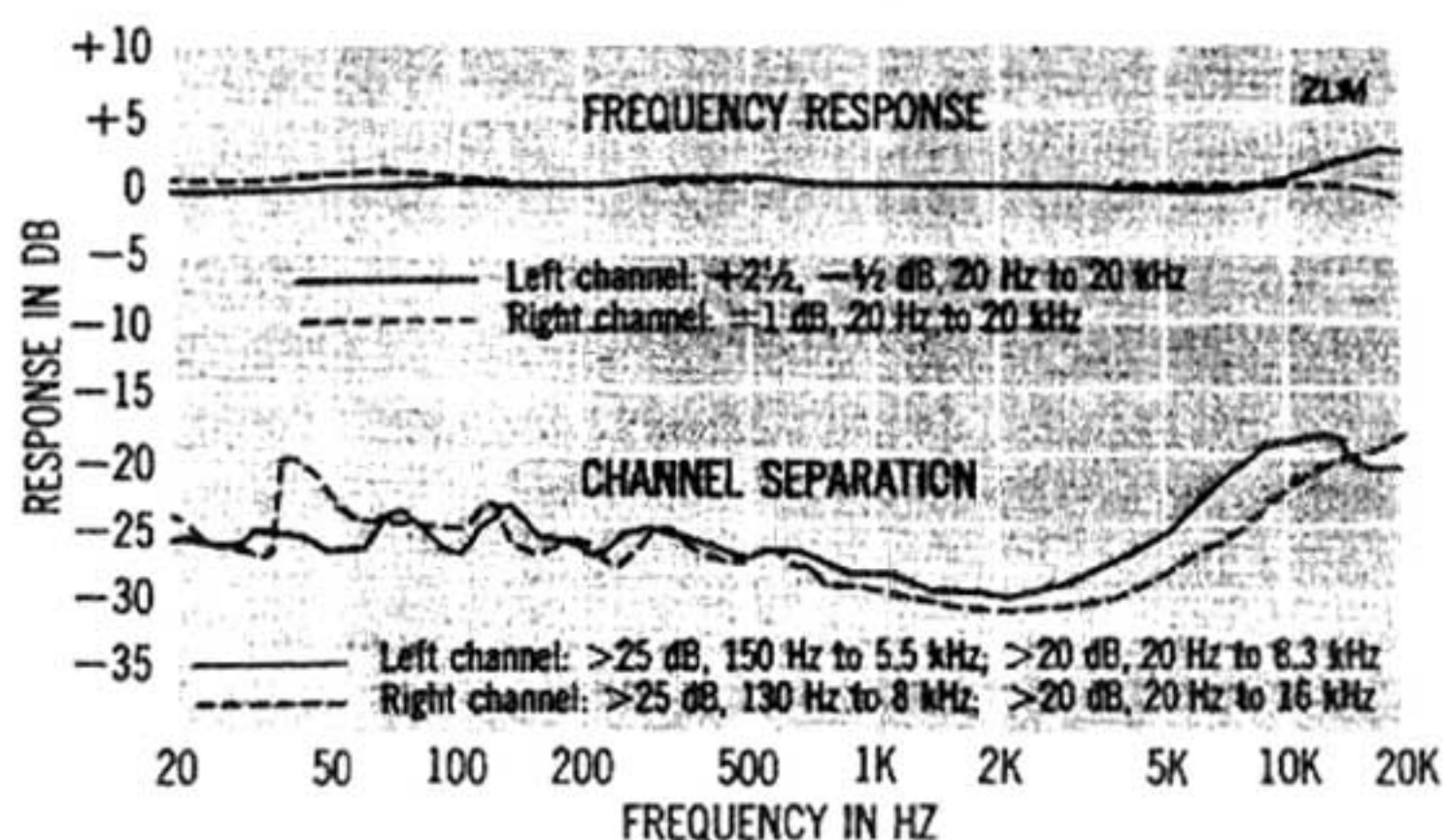
close to what most cartridge manufacturers seem to have been using lately. The stylus tip shows good alignment and polish together with an extended area of contact that should spread the VTF over enough vinyl to compensate for any tendency to increased wear that the slightly high VTF might create. Transient behavior, as evidenced by the square-wave test, is well controlled.

From our listening tests, the ZLM appears to be a little fussy about its loading—as are many other fine cartridges. Feeding a high-quality feedback-equalized phono stage with no provision for custom capacitive loading (and an unknown input capacitance), the unit sounds like a first-rate phono cartridge; loaded correctly and isolated from undesirable interaction by a buffer stage, the ZLM is simply superb. The sound is full, detailed, and airy, with a generally neutral frequency balance and virtually no harshness. High-frequency details are outlined in a way that some might consider a trifle clinical or overly analytic, but the effect is slight—and might be counted a virtue by others. The ZLM may have its minor eccentricities, but when they are satisfied, it certainly can do a lot for the sound of a record.

CIRCLE 134 ON READER-SERVICE CARD



Square-wave response



### ADC ZLM Cartridge Additional Data

Maximum tracking levels (11.5 mN; re RIAA 0 VU)

300 Hz +12 dB  
1 kHz +6 dB  
10-20 kHz >-5 dB

Output per cm/sec of groove velocity (at 1 kHz)  
1.125 mV

Channel balance (at 1 kHz) no measurable difference