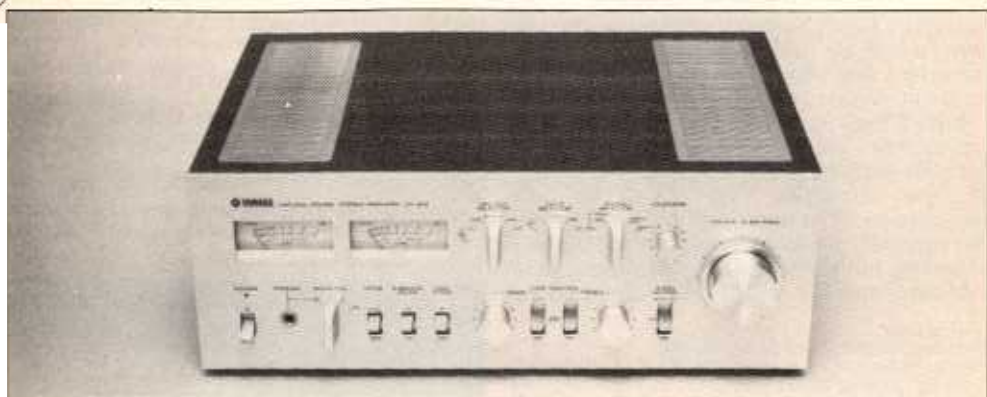


BEST BUY

Yamaha CA-810
Natural Sound Systems Ltd., 10 Byron Road, Wealdstone,
Harrow, Middlesex. 01-863 8622.



To start with, this amplifier has one feature which comes as a surprise; the two front panel level meters, which are calibrated in decibels above and below maximum output and in watts into 8 ohms, are actually useful. Unlike other amplifiers the meters had a fast rise time, and really did indicate peak levels and the onset of distortion.

A headphone jack socket and two sets of loudspeakers connections are provided, with switch selection of 'off' and either or both sets of loudspeakers in parallel. However caution is required in the selection of suitable loudspeakers, as the amplifier does not take kindly to 2 ohm loads with the result that audible distortion occurred when using two loudspeakers of nominal 8 ohm impedance in parallel, particularly when loudspeakers of a nasty impedance characteristic were used.

In other respects the power capabilities of this amplifier were really excellent, with minimal harmonic and intermodulation distortion and a very wide power bandwidth, the intermodulation distortion above the audio frequency band being incredibly good.

The noise associated with all the inputs was to a high standard, the magnetic phono cartridge input being unusually good, and whilst the measured output noise at the worst case volume setting looks poor, in practice the use of the attenuator associated with the volume control gave an extremely good output noise performance.

Input source selection is by two rotary switches, one of which selects the auxiliary, tuner or one of the two tape inputs plus the

second switch which selects a choice of three phono cartridge inputs. Two of these are for magnetic pick-up cartridges, and the third for a moving coil cartridge with a sensitivity of 60µV and good noise performance. A slightly odd arrangement is that this selector switch also selects a choice of three input impedances for the 'phono 1' input, measured as 98/67/49k ohms, and it is felt that this function would have been better separated from the selector switch.

The source to be recorded onto tape is selected by a further rotary switch which allows a choice, dubbing in either direction between tape units and also the selection of the tuner, auxiliary or any pick-up input. No DIN connections are fitted to this amplifier, but in addition to the inputs there is available the interface between the pre-amplifier and the power amplifier for the connection of equalisers or decoders etc.

In addition to the amplifier's frequency response being normally rolled off at low frequencies, a high pass filter of good design is fitted in addition to the low pass filter which has its -3dB point at 10kHz with an attenuation rate of 12dB per octave. The subjective effect of this filter suggested that its frequency is set on the high side to be effective as a scratch filter or for reducing tape noise.

The treble and bass tone controls both have a choice of two turnover frequencies, the controls themselves being of the eleven position type and offering a fine correction in view of the sensible limited range.

Finally there is a variable loudness control

which acts as an attenuator at the same time as altering the frequency response, and of course the volume control which is concentric with a good balance control.

Subjective testing of this amplifier gave pleasing results with 8 ohm loudspeakers, and crosstalk between inputs etc. was to a very high standard, but this amplifier is not recommended with 4 ohm loudspeakers if they have awkward impedance characteristics.

General Data

Hum modulation at rated output into 8Ω
50/100/150Hz 0dB
Damping factor ref 8Ω at 1 kHz 86
D C offset at loudspeaker and headphones L/R . . 1.5/6mV
Crosstalk at 1W output 100Hz/1kHz/
10kHz. ->80/-80/-66dB
Loudness control effect ref 1kHz 100Hz/10kHz +11/+6dB
Frequency response deviation from 20Hz to
20kHz aux/tape/tuner. 0.5dB

Power performance

Power output into 8Ω both L/R 89W
Power output into 8Ω single L/R 100W
Power output into 4Ω both L/R 120W
Power output into 4Ω single L/R 140/141W
Burst output into 8Ω single L/R 100W
Burst output into 4Ω single L/R 149/153W
Power output into half rated load L/R 2Ω 15W
Power bandwidth 8Ω 32+W L/R 10Hz to 110kHz
Power bandwidth 4Ω 40W L/R 10Hz to 92kHz

Distortion

Total harmonic distortion at 1W into 8Ω
1kHz/10kHz 0.01/0.02%
Total harmonic distortion at 1W into 4Ω
1kHz/10kHz 0.02/0.03%
IM distortion at half rated power into 8Ω
DF2 1/10/100kHz -80/70/70dB
IM distortion at half rated power into 8Ω
DF3 1/10/100kHz -80/80/72dB
IM distortion at 1W from auxiliary input DF3
1/10/100kHz -77/80/73dB
IM distortion at 1W from phono input DF3
1/10/100kHz -80/80/72dB

Noise performance

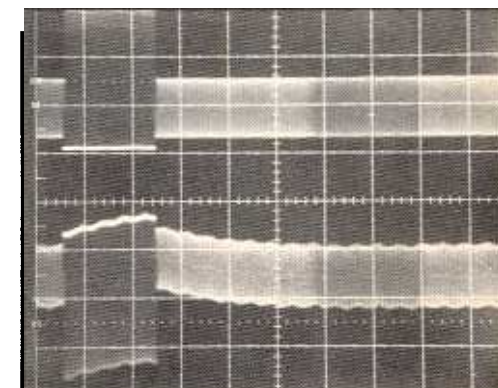
Noise ref to input — average L/R CCIR/22kHz
aux/tuner/tape 106.5/110dBV
Noise ref to input — average L/R CCIR/22kHz
Phono 115/122dBV
Noise ref to input — average L/R CCIR/22kHz
Mic -dBV
Output noise power at zero volume (8Ω)
CCIR/22kHz 0.05/0.03µW
Worst case volume setting auxiliary input (8Ω)
CCIR/22kHz 0.50/0.13µW
Burst dynamic range aux input ref 8Ω worst
channel CCIR 92.5dB

Inputs and outputs

Input impedance on aux/tuner/tape
. 65/50k 130;110;100pF
Input impedance on phono 98/67/49k 250pF

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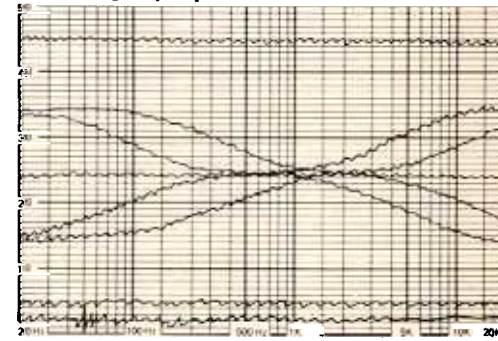
Input impedance on mic ∞
Input sensitivity and clipping point at 1kHz
aux/tuner/tape 160mV 20V
Input sensitivity and clipping point at 1kHz
phono 2.6mV 255mV
Input sensitivity and clipping point at 1kHz mic -mV
Output voltage and impedance for rated output —
headphone 23V 340Ω
Output voltage and impedance for rated output —
tape 160mV VARIΩ
Output voltage and impedance for rated output —
DIN -kΩ
Typical selling price including VAT £249.00



Overload recovery performance



Overall frequency response and effect of filters



Effect of tone controls and accuracy of RIAA equalisation