NAD C 320BEE Integrated Amplifier

• 2 x 50W Minimum Continuous Power into 4 / 8 ohms • 110W, 160W, 210W, IHF Dynamic power into 8, 4 and 2 ohms, respectively • PowerDrive™ amplifier technology • Headphones socket • Relay Input Switching • High Current Holmgren™ Toroidal Power Transformer • 7 Line inputs, including two tape in/outs • All discrete circuitry • Short signal path from input to output • All sockets Gold Plated • Bass and Treble controls with Tone Defeat switch • Main-amp Input & Pre-amp Output • NAD Soft Clipping™ • IR Input & Output • 12V Trigger Output • Full System Remote control including Stand-by/Off

NAD has always had a formidable reputation when it comes to high performance budget amplifiers. The NAD 3020 in its various guises, and more recently the NAD C 320 and C 370 all have received world-wide accolades for their outstanding musical performance and superb value. As an encore NAD is proud to present an updated version of it's most popular amplifier, further enhancing that reputation.

Many of NAD's most innovative circuit designs have come from the creative mind of Bjorn Erik Edvardsen, Director of Advanced Developments. The BEE moniker for NAD's latest amplifier recognizes Erik's contribution to the marque, now in it's 30th year. Building on the class leading performance of the C 320, the BEE version includes many circuit refinements and upgrades, as well as a striking new revision of NAD's classic, understated industrial design.

Features

The C 320BEE is fully remote controlled and comes supplied with the NAD SR4 system remote control. The remote control will also operate other NAD products such as CD players, and tuners. Flexibility is another NAD strong point. The C 320BEE has 7 line inputs (including 2 tape in/outputs with dubbing facility) and the pre-amplifier section can be separated from the power amplifier for easy upgrades or adding ancillary equipment. Thus the C 320BEE can be expanded to meet future system needs.

For remote on/off switching of ancillary components in a system, such as power amplifiers or active speakers, the C 320BEE is equipped with a 12V trigger system. When switching the amplifier on, the 12V trigger output is also activated, which in turn can activate a 12V trigger input and switch on the remote devices. Besides the 12V trigger, the C 320BEE also has an AC switched outlet (North American version only) so you can easily switch your entire system on or off with the remote control or from the front panel.

It is fashionable to omit tone controls nowadays: However, provided that the tone controls are properly designed, they can be really useful tools in making improvements to the overall sound. The C 320BEE tone controls only work at the frequency extremes leaving the critical mid-band essentially unaltered. The tone control circuits can be completely bypassed by using the tone defeat switch.

The C 320BEE also incorporates NAD's acclaimed switchable "Soft Clipping™" circuit, which significantly reduces the risk of damage to loudspeakers due to prolonged high power operation.

Design

PowerDrive™:

NAD takes a stance to the overblown power ratings quoted by many competitors, which don't give a realistic indication of an amplifier's true capabilities. NAD's Full Disclosure Power ratings give the guaranteed minimum continuous power output under the "worst case" loading of 4 Ohms and 20Hz to 20kHz with all channels driven simultaneously, as well as the more meaningful in actual use dynamic power ratings.

The C 320BEE benefits from NAD's proprietary PowerDrive™ topology, this further refinement of Power Envelope and ISC, is now well established and used throughout much of the NAD product range. PowerDrive™ endows the C 320BEE with tremendous dynamic power and low impedance drive capability, seemingly contradictory traits to be found in a single amplifier. This is accomplished by using a multistage power supply with a very sophisticated analog amplifier determining whether to switch in a high voltage or a high current rail depending on the specific operating condition. This optimization is fully automatic and utterly transparent in operation; the result is that the C 320BEE sounds far larger and more powerful than its continuous power rating would suggest.

PowerDrive™ is a practical approach to enable an amplifier to easily deal with musical dynamics and difficult speaker loads. Most impressive are the C 320BEE's dynamic capabilities; up to 210W into 2 ohms and up to 50 amps peak current capability!

Performance

Compared to the original C 320, the BEE version features many circuit refinements trickled down from the award winning C 370 (European Amplifier of the Year 2001-

2002) including active current sources and common base current followers in the power amp section. The effect of this is to improve supply rejection to unprecedented levels, well beyond the audible frequency range. This dramatically reduces dynamic intermodulation distortion between music signal components in different frequency ranges, and between the music signals and the power supply ripple and distortion components. In measurement terms, static and dynamic IM distortion are reduced by between 10dB to 20dB. (to between -90dB and - 100dB.) In audible terms this improves definition, purity and resolution, hence imaging.

We have also improved the accuracy of the tone controls, increasing their boost/cut range by 1.5dB and have specified a better quality volume control. While some of these are small improvements in and of themselves, there is an additive effect that results in a more refined and authoritative sound, building on the strengths of the already very good design of the original C 320. The sensible Tone Control characteristics, sonically transparent relay input switching, and Pure Class A modular preamp stages and power amp driver stages, are carried over from the previous model. So are the patented power amp output stages, unique low resistance binding post design, copper bus bars for high-current paths, and low-noise discrete regulators.

The chosen topology and use of low noise FET class A preamp stages ensures very high S/N ratio, even at low volume settings. In fact, the noise level produced by even the most efficient speakers is well below 0 dBA SPL, by definition inaudible. This is 10-15 dB better than the industry average - even for very high end component hi-fi!

SPECIFICATIONS - NAD C 320BEE

Pre-Amp Section

Line level inputs	
Input impedance (R+C)	200k ohm / 320pF
Input sensitivity; rated power	220mV
Frequency response (-3dB 3Hz - 70kHz)	±0.3dB

Line level outputs

Output impedance	80 ohm
Tape	Source Z + 1k ohm
Phones	220 ohm
Signal/noise ratio	106dB

Tone controls

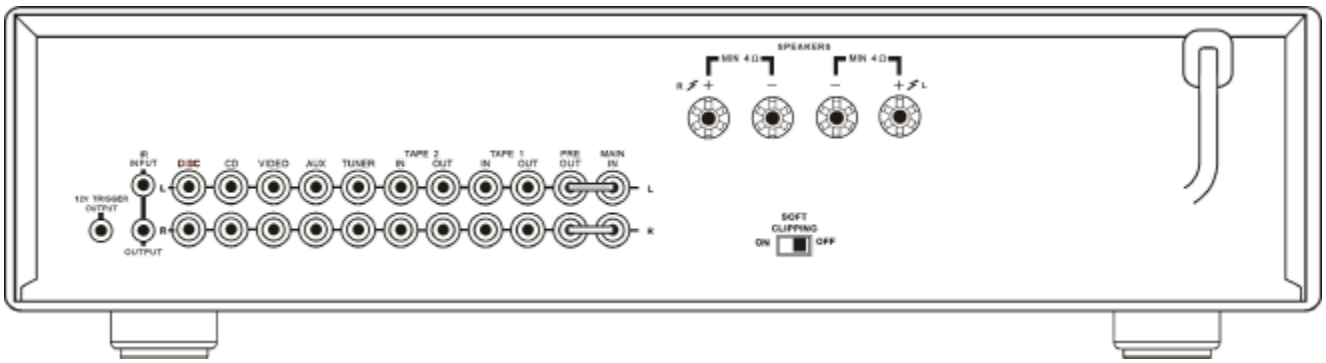
Treble	5dB at 10kHz
Bass	8dB at 100Hz
Remote Control	Yes

Power Amp Section

Continuous output power	50W (17dBW)
Rated distortion (THD 20Hz-20kHz)	0.03%
Clipping power	68W (18dBW)
IHF dynamic headroom at 8 ohm	+3.4dB
IHF dynamic power at 8 ohm	110W (20.41dBW)
IHF dynamic power at 4 ohm	160W (22.04dBW)
IHF dynamic power at 2 ohm	210W (23.2dBW)
Damping factor (ref. 8 ohm, 50Hz)	>60
Input impedance	20kohm/ 470pF
Input sensitivity (for rated power into 8 ohm)	630mA
Voltage gain	29dB
Frequency response; 20Hz-20kHz	+/-0.3dB
-3dB at:	3Hz/70kHz
Signal/noise ratio; ref 1W	100dB
Signal/noise ratio; ref rated power	117dB

Physical Specifications

Dimensions (W x H x D)	$17^{1/8}$ x $3^{15/16}$ x $11^{7/16}$"
	(435 x 100 x 290mm)
Net weight	14.33 lbs (6.5kg)
Shipping weight	16.98 lbs (7.7kg)



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