

CITATION[®] ELEVEN

PROFESSIONAL SOLID STATE STEREOPHONIC PREAMPLIFIER/AUDIO EQUALIZER



“... FOR THE SAKE OF MUSIC AND OUR DEMANDING LOVE OF IT.”

harman kardon

Introduction

When Harman-Kardon introduced the Citation A preamplifier several years ago, it represented a major breakthrough in solid state design. Within a short period of time, it became the audiophile's standard of excellence. In fact, the "A" is still recognized today by many audio authorities as the finest stereo preamplifier ever designed.

With the introduction of the Citation Eleven, Harman-Kardon has once again innovated a major change in the design and function of high performance solid state stereo preamplifiers. The Citation Eleven uses the potential of transistors more completely and creatively than any other preamplifier in existence. It is a computer-crafted instrument that easily meets or exceeds every performance parameter ever established for a preamplifier. The simple truth is that the Citation Eleven is the best stereo preamplifier ever made.

After you have seen and listened to this new Citation product, we think you'll agree that it is destined to become a classic—the definitive preamplifier for the discriminating music lover.

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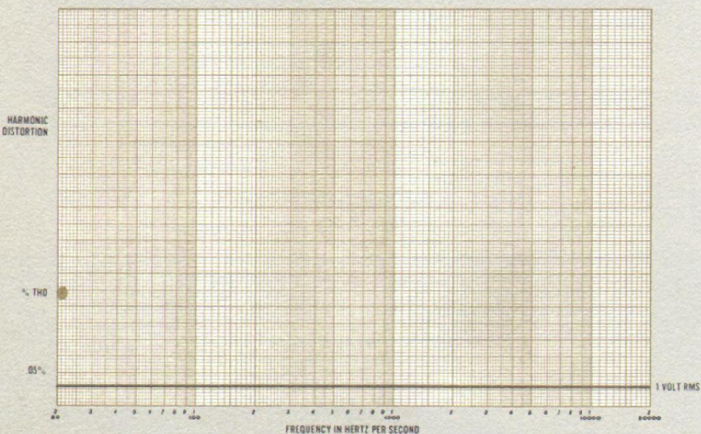


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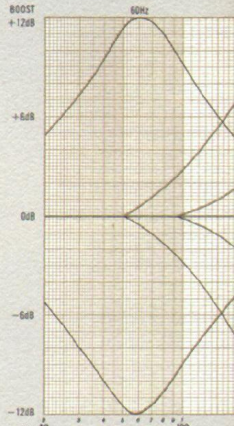
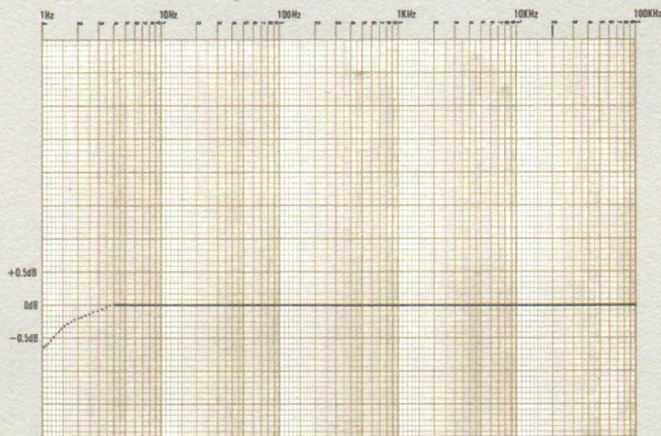
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PROFESSIONAL SOLID STATE STEREOPHONIC PRE

HARMONIC DISTORTION VS. FREQUENCY RESPONSE



FREQUENCY RESPONSE TONE CONTROLS DEFEATED

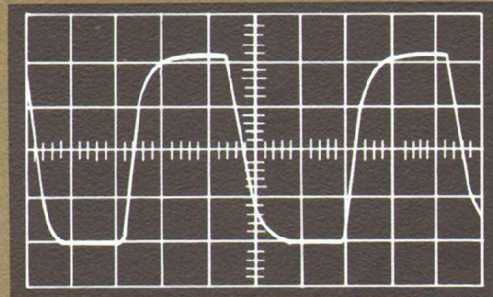
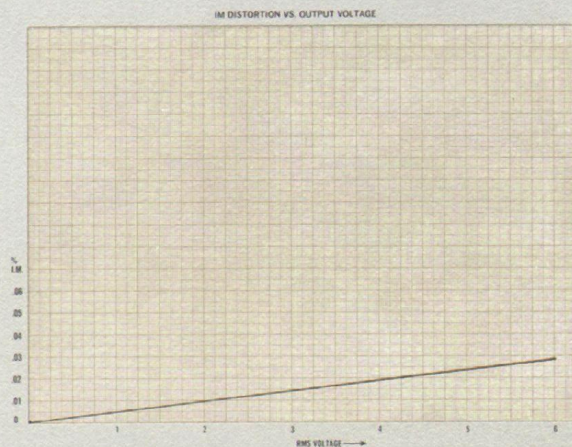
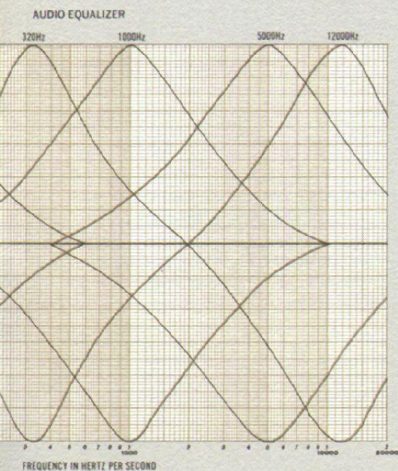




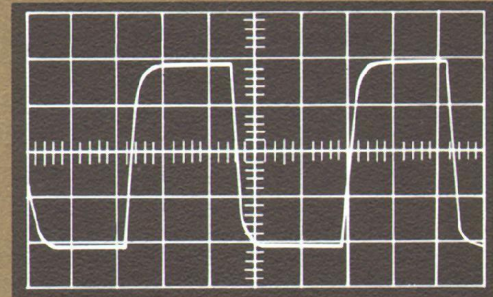
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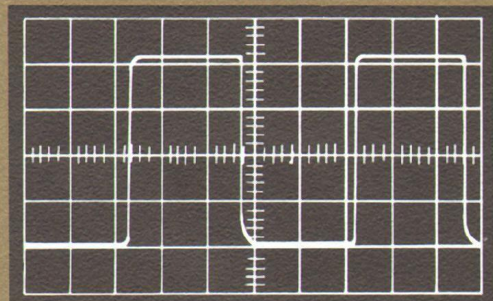
AMPLIFIER/AUDIO EQUALIZER



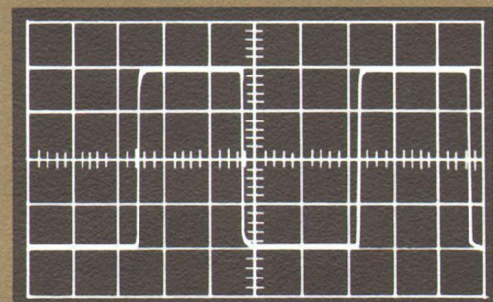
200 kHz square wave
 1 microsecond/centimeter



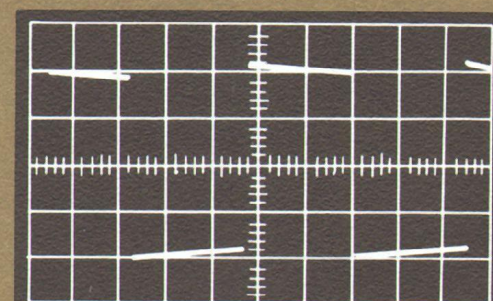
100 kHz square wave
 2 microseconds/centimeter



20 kHz square wave
 10 microseconds/centimeter



10 kHz square wave
 20 microseconds/centimeter



20 Hz square wave
 10 microseconds/centimeter

"A Straight Wire With Gain"

Ideally, a preamplifier should behave as though it were a straight wire with gain. Any change of the input signal other than its amplitude must be regarded as a form of distortion. Therefore, ideally, our preamplifier should have unlimited bandwidth, no trace of harmonic or intermodulation distortion, no phase shift, no transient distortion, no hum and noise and tremendous dynamic range.

In truth, audio technology has not advanced to the point where a straight wire with gain is a viable reality. But if you study the performance specifications of the new Citation Eleven, we think you will be amazed at how close we have come toward achieving perfection.

THE CITATION ELEVEN STEREOPHONIC PREAMPLIFIER/EQUALIZER CONTROL CENTER

As you listen to the new Citation Eleven you get the feeling that you're listening *through* the electronics clear back to the original performance. The finer nuances of tonal shading stand out clearly and distinctly, making listening to recorded program material a truly emotional experience. Instruments take on the same balance and perspective they exhibit at a live performance. You can actually feel the concert hall and the depth and breadth of the orchestra.

The new Citation Eleven is representative of Citation Sound . . . which essentially is no sound at all. The more you listen to this new stereo preamplifier, the more aware you become of the music and of the performance, and the less aware of the electronics. This impressive performance is achieved because all forms of distortion are at the residual levels of laboratory test equipment. There is nothing within the electronics to mask or color the sound.

Total Flexibility And Control Over Acoustics

An important new design concept has been incorporated into the Citation Eleven to make it the most versatile stereo preamplifier ever created for home use. H/K engineers have determined that standard tone controls, even professional switched types, limit flexibility for they do not permit precise adjustment of program material over the entire audio range. The Citation Eleven employs a professional type audio equalizer which gives the user complete control over program material, room acoustics and deficiencies within the speakers. Operating at predetermined hinge points, the audio equalizer adds or deletes audio energy to any of five points within the audio spectrum to compensate for inaccuracies in program material or within the playback system. It is no longer required to match room acoustics to the speakers by re-positioning furniture or by adding draperies and rugs to the room. The Citation audio equalizer controls room acoustics by permitting the user to set the five controls to suit his own personal requirements. Hot spots, ear-piercing highs, frequency response drop out, excessive bass and even mid-frequency harshness can now be cancelled out by adding or deleting audio energy at the specific points in the audio spectrum where these problems occur.

A Few Technical Considerations

The Citation Eleven employs low noise silicon epitaxial transistors and close tolerance components to insure the

lowest hum and noise figures in the field. The shape and tolerance of the RIAA playback curve is held at $\pm 0.5\text{dB}$ to guarantee total accuracy when playing back stereo discs. A carefully designed power supply delivers individually decoupled voltages to each feedback pair for optimum stability and lowest noise. Recovery to musical transients is instantaneous without hangover or breakup.

One of the limitations of many solid state preamplifiers is their inability to cope with strong phono signals, especially when used with pickups which deliver inordinately high output. Severe overload in the preamplifier stage causes audible distortion. High frequencies become edgy and the transparency of the system becomes masked. This usually results in severe listening fatigue. The Citation Eleven preamplifier can handle a dynamic range of 35 dB which permits the preamplifier to reproduce the full output of any pickup without distortion.

Component parts are mounted on rugged printed circuit boards which are plugged into special connectors on the chassis. The boards are held rigidly in place with nylon clamps. All rotary switches are high quality components which utilize diallylphthalate wafers for maximum reliability.

Among its other unusual features the Citation Eleven includes two headphone receptacles which accommodate all types of low impedance stereo phones when the preamplifier is connected in the manner described in the operation manual. A speaker selector switch is also part of the Citation Eleven's front panel. It permits the selection of stereo speakers in one or two rooms independently or simultaneously. All controls and switches are arranged in logical groups to facilitate operation. In short, the total control over program material provided by the new Citation Eleven, enables you to recreate perfectly every nuance and characteristic of the original performance.

Listening quality of the Citation Eleven is superb, and not easily described in terms of laboratory measurements. The preamplifier offers solidity combined with an openness that sets it apart from all others. The more you listen to the Eleven, the more you become aware of the great achievement it represents. Anyone who wants the very best and will not be satisfied with anything less than the finest, will be well-advised to see and hear the new Citation Eleven.

PROFESSIONAL FEATURES

- Flexibility of professional audio equipment employed in recording studios.
- Controls arranged in logical groupings to facilitate operation.
- Professional audio equalizers replace standard tone controls. Hinge points located at five critical sections of the audio spectrum give user total control over room acoustics, program material and speaker sound. Settings are instantly repeatable.
- Special defeat switch removes audio equalizers from circuit for absolutely linear response. Provides instant comparison of equalized and flat response.
- Audio equalizers may be used while taping by connecting second audio output from preamplifier to input of tape recorder.
- Pushbutton on/off switch enables user to turn system on and off without upsetting careful setting of operating controls.
- Two sets of tape recorder outputs permit connection of two tape recorders to the preamplifier at the same time without necessitating use of "Y" connectors or similar external devices. Both pair of tape recorder outputs provide a signal unmodified by the volume control.
- Two tape monitor switches on front panel permit individual monitoring of two tape recorders.
- Front panel speaker selector permits use of two separate stereo speaker systems in different sections of the home. Listener may select speaker system one, system two or both speaker systems simultaneously.
- Two low impedance headphone receptacles.
- Specially designed high frequency filter provides sharp cut off of highs without introducing ringing.
- Subsonic noise filter (15 hertz) removes annoying rumble and other low frequency disturbances without drastically affecting the character of the sound.
- Specially designed power supply delivers individually decoupled voltages to each feedback pair for optimum stability and lowest noise.
- Shape and tolerance of the RIAA equalization playback curve is held tightly to plus or minus 0.5 dB.
- Close tracking volume control provides exceptionally close balance between the two stereo channels. This precise balance is maintained down to the cut off point of the control.
- Phenomenal frequency response results in superb square waves at all frequencies from below 5 hertz to beyond 100,000 hertz. This is an indication of virtually non-existent phase and transient distortion.
- Plug-in printed circuit modules provide easy accessibility and professional appearance.
- Extremely high dynamic range prevents overload distortion of the preamplifier stage.
- Six position function selector switch with two low level positions permits use of two individual record players with low level magnetic pickups and four high level sources.
- Two sets of audio outputs enable user to connect preamplifier to two individual power amplifiers, or to connect the second set of audio outputs to a tape recorder to permit use of the audio equalizers while recording.
- Pushbutton switches for equalizer defeat, tape monitor 1, tape monitor 2, high cut, subsonic filter and on/off.
- Mode selector switch has provision for stereo, stereo reverse, mono, left channel and right channel.
- Four A.C. receptacles are located on rear panel. One A.C. receptacle is unswitched.
- Special connections on rear panel for connecting power amplifier and speakers to permit use of special speaker switching and headphone receptacles.
- 117 volt, 50/60 Hz or 220 volt operation. A.C. line fuse.
- Two year service warranty on parts and labor for factory wired preamplifier. Two year warranty on parts for kit.

All Features and Specifications Subject to Change Without Notice.

CITATION ELEVEN SPECIFICATIONS

Audio Output:	Up to 6 volts RMS into 10k ohms.
Frequency Response:	Below 5 hertz to beyond 125k hertz \pm 0.5 dB. Below 2 hertz to beyond 250k hertz \pm 1.0 dB.
Square Wave Rise Time:	Less than 1 microsecond at 20,000 hertz.
Square Wave Tilt:	Less than 5% at 20 hertz.
Total Harmonic Distortion:	Less than 0.05% at 6 volts RMS from 10-30,000 hertz. Below residual level of most test instrumentation at 2 volts RMS and below.
Intermodulation Distortion:	Less than 0.05% at the equivalent 6 volts RMS output.
Noise (Unweighted):	Low Level: 65 dB below 6 volts at 10 millivolts input reference. High Level: 80 dB below 6 volts (volume control wide open). Residual: 90 dB below 6 volts.
Sensitivity:	Low Level: 1.5 millivolts for 2 volts output. High Level: 150 millivolts for 2 volts output in all auxiliary positions except Aux. 3 which is 300 millivolts for 2 volts output.
High Cut Filter:	— 8 dB @ 10,000 Hz, 6 dB per octave slope.
Subsonic Filter:	— 12 dB @ 15 hertz, 6 dB per octave slope.
Input Impedance:	Phono: 47,000 ohms. Aux: 20,000 ohms.
Output Impedance:	Source Impedance: Less than 500 ohms. Recommended Load: 10,000 ohms or greater.
Phono Overload:	Greater than 115 millivolts.
Audio Equalizers:	Five sliding controls operating at the following hinge points: 60, 320, 1k, 5k and 12k hertz. Boost and cut \pm 12 dB, each position.
Phono Equalization:	RIAA curve, \pm 0.5 dB.
A.C. Convenience Receptacles:	Three switched. One unswitched.
On/Off Switch:	Pushbutton, heavy duty rating.
Function Selector:	Mag. Phono 1, Mag. Phono 2, four high level positions.
Mode Selector:	Stereo, Stereo Reverse, Mono, Left Channel only, Right Channel only.
Balance Control:	Zero to infinity type.
Volume Control:	Close tracking dual potentiometers, frequency insensitive within range of frequency response specifications.
Tape Monitor:	Two separate tape monitor switches permit monitoring of two recorders while recording. Instant comparison of program vs. recorded material. Tape Monitor #2 takes precedence over Tape Monitor #1 to avoid mixing of both channels.
Audio Equalizer Defeat:	Bypasses audio equalizer circuit for absolutely flat, uncompensated response.
Speaker Selector:	Permits choice of speaker system 1, system 2 or both at once when preamplifier connected in the manner described in instruction manual.
Headphone Receptacles:	Two low impedance headphone receptacles controlled by front panel speaker selector switch. May be switched in or out at user's discretion.
Output Receptacles:	Four main preamplifier outputs. Four outputs for tape recording.
Inputs:	2 pair for low level phonograph. 4 pair for high level equipment. 2 pair for tape monitor. 2 grounding terminals.
Special Features:	Input receptacle on rear of preamplifier connects power amplifier and preamplifier through special cable. This permits speaker switching and use of low level headphones. Cabinet installation from front. Simple attachment to mounting board. Controlled turn on circuit to delay initial surge into power amplifier.
Dimensions:	16 $\frac{1}{4}$ " W x 4 $\frac{3}{4}$ " H x 12" Deep.
Weight:	20 pounds.

harman kardon

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Montreal 760, Quebec, Canada

Citation Eleven

stereophonic preamplifier



Citation Eleven Stereo-Vorverstärker

Audio-Technologie ist noch nicht so weitentwickelt, daß eine Verstärkung durch den verbindenden Draht selbst möglich ist. Doch das Leistungsvermögen des Citation Eleven wird Ihnen eindrucksvoll beweisen, wie nahe wir der Perfektion gekommen sind.

Der ideale Verstärker funktioniert so, als sei er ein direkter Draht mit verstärkenden Eigenschaften. Jede Veränderung des Eingangssignals — mit Ausnahme seiner Amplitude — muß als Verzerrung betrachtet werden. Idealerweise sollte unser Vorverstärker daher folgende Merkmale aufweisen: unbegrenzte Bandbreite, keine Spur harmonischer- oder Intermodulationsverzerrungen, keine Phasenverschiebungen, keine Übertragungsfehler, kein Brummen und Rauschen und schließlich einen enormen Dynamikumfang.

Der Citation Eleven verwendet rauscharme Silizium-Epitaxial-Transistoren und engtolerante Bauteile, um die niedrigsten Brumm- und Rauschwerte zu erreichen, die möglich sind. Die Abweichung des Entzerrer/Vorverstärkers von der RIAA-Kennlinie wird mit einer maximalen Toleranz von $\pm 0,5$ dB garantiert. Ein sorgfältig ausgelegtes Netzteil liefert getrennte Betriebsspannungen zu jeder Verstärkerstufe und erzielt

so optimale Stabilität und niedrigste Rauschpegel. Impulsspitzen werden ohne Einfluß auf die Signalqualität verarbeitet.

Zu den anderen ungewöhnlichen Merkmalen des Citation Eleven gehören zwei Klinkenbuchsen für den Anschluß niederohmiger Stereo-Kopfhörer und ein Lautsprecher-Wahlschalter für zwei einzeln oder zusammen ansteuerbare Boxenpaare. Alle Regler und Schalter sind auf der Gerätevorderseite in logischen Gruppen angeordnet, was ihren Gebrauch wesentlich erleichtert. Kurz, die sichere Beherrschung des Programm-Materials mit dem Citation Eleven erlaubt Ihnen, jede Nuance und Eigenheit des Originals perfekt wiederzugeben.

Die Hörqualität des Citation Eleven ist überragend und mit Meßdaten schwer zu erfassen. Sein kraftvolles, durchsichtiges Klangbild offeriert einen Hörgenuß, der ihn von allen anderen Vorverstärkern unterscheidet. Je öfter Sie den Eleven hören, umso mehr werden Sie sich bewußt werden, welchen Fortschritt er repräsentiert.

Viele Vorverstärker sind nicht in der Lage, Signale magnetischer Tonabnehmer mit hoher Ausgangsspan-

nung sauber zu verarbeiten. Ernsthaftige Überlastung des Vorverstärkers aber verursacht hörbare Verzerrungen; der Hochtonbereich wird unausgewogen und die Wiedergabe allgemein farblos und langweilig. Der Citation Eleven weist eine Übersteuerungsfestigkeit von 35 dB auf und wird damit jedem magnetischen Tonabnehmer-System gerecht.

Klangkontrolle und Raumakustik
Standard- Klangregelnetzwerke, auch professionelle Studioschaltungen, begrenzen ihren Effekt auf genau fixierte Veränderungen der Ausgangsparameter. Der Citation Eleven gewährt eine uneingeschränkte Klangregelung, womit Programm-Material, Raumakustik und Lautsprechersysteme berücksichtigt werden können. Ein professioneller Entzerrer — an fünf vorher bestimmten Punkten eingreifend — erhöht oder erniedrigt den Signalpegel soweit, daß Schwächen des Programm-Materials oder der Lautsprecher kompensiert werden. Fünf Schieberegler erlauben die Korrektur des Klangbildes bei den Frequenzen, die sich als kritisch erweisen.

harman/kardon

Technische Daten

Garantierte Mindestwerte

Ausgangsspannung:	2 x 6 V, RMS, an 10 kOhm.
Frequenzgang:	5 Hz bis 125 kHz, $\pm 0,5$ dB; 2 Hz bis 250 kHz, $\pm 1,0$ dB.
Rechteck-Anstiegszeit:	< 1 μ sec bei 20 kHz.
Rechteck-Dachschräge:	< 5 % bei 20 Hz.
Klirrfaktor:	< 0,25 %, von 10 Hz bis 30 kHz, bei voller Ausgangsleistung.
Intermodulation:	< 0,05 %, bei voller Ausgangsleistung.
Signal-Fremdspannungsabstand:	Bezogen auf 6 V Ausgangsspannung — Phono 1 + 2 = 65 dB, bei 10 mV, Aux. 1 + 2 = 80 dB, Aux. 3 = 90 dB.
Eingangsempfindlichkeit:	Bezogen auf 2 V Ausgangsspannung — Phono 1 + 2 = 1,5 mV, Aux. 1 + 2, Monitor 1 + 2 und Tuner = 150 mV, Aux. 3 = 300 mV.
Höhenfilter:	8 dB bei 10 kHz, Steilheit 6 dB/Oktave.
Rumpelfilter:	12 dB bei 15 Hz, Steilheit 6 dB/Oktave.
Eingangsimpedanz:	Phono = 47 kOhm, Aux = 20 kOhm.
Ausgangsimpedanz:	Innenwiderstand = 500 Ohm, Last ≥ 10 kOhm.
Übersteuerungsfestigkeit:	> 35 dB, 115 mV.
Phonoentzerrung:	RIAA, Abweichung < $\pm 0,5$ dB.
Klangregelung:	5 Schieberregler, Einsatzpunkte bei 60, 320, 1.000, 5.000 und 12.000 Hz; max. Anhebung und Absenkung ± 12 dB.
Abmessungen:	40,6 x 12,0 x 30,5 cm (b x h x t).
Gewicht:	9,0 kg.
Gehäuse:	Auf Wunsch Nußbaumgehäuse lieferbar.



harman deutschland

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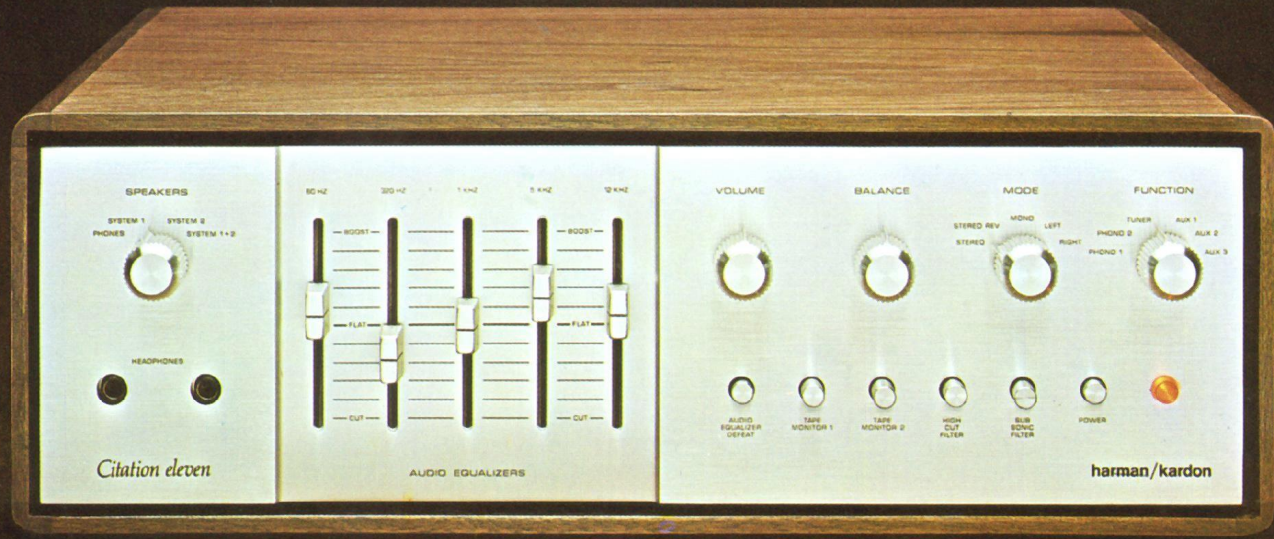
harman/kardon

55 Ames Court, Plainview, N. Y. 11803

All specifications and features are subject to
change without notice.

Citation Eleven

stereophonic preamplifier



Audio technology has not advanced to the point where a straight wire with gain is possible. But, the performance of the Citation Eleven will impress you with how close we have come to achieving perfection.

Ideally, a preamplifier should behave as though it were a straight wire with gain. Any change of the input signal other than its amplitude must be regarded as a form of distortion. Ideally then, our preamplifier should have unlimited bandwidth, no trace of harmonic or intermodulation distortion, no phase shift, no transient distortion, no hum and noise and tremendous dynamic range.

The Citation Eleven employs low noise silicon epitaxial transistors and close tolerance components to insure the lowest hum and noise figures in the field. The shape and tolerance of the RIAA playback curve is held at ± 0.5 dB to guarantee total accuracy when playing back stereo discs. A carefully designed power supply delivers individually decoupled voltages to each feedback pair for optimum stability and lowest noise. Recovery to musical transients is instantaneous without hangover or breakup.

Among its other unusual features the Citation Eleven includes two headphone receptacles which accommodate all types of low impedance stereo phones when the preamplifier is connected in the manner described in the operation manual. A speaker selector switch is also part of the Citation Eleven's front panel. It permits the selection of stereo speakers in one or two rooms independently or simultaneously. All controls and switches are arranged in logical groups to facilitate operation. In short, the total control over program material provided by the new Citation Eleven, enables you to recreate perfectly every nuance and characteristic of the original performance.

Listening quality of the Citation Eleven is superb, and not easily described in terms of laboratory measurements. The preamplifier offers solidity combined with an openness that sets it apart from all others. The more you listen to the Eleven, the more you become aware of the great achievement it represents.

Many solid state preamplifiers are unable to cope with phono pickups which deliver extraordinarily high output. Severe overload in the pre-

amplifier causes audible distortion; high frequency material becomes edgy, and the music generally grows dull and lifeless. The Citation Eleven can handle a wide dynamic range of 35dB accommodating the full output of any phono pickup without distortion.

TONE CONTROLS AND ROOM ACOUSTICS

Standard tone controls, even professional switched types, limit their effect only to fixed changes in the output characteristics of the preamplifier. The Citation Eleven offers unlimited tonal control of program material, room acoustics, and speaker systems. A professional type audio equalizer, operating at five predetermined hinge points, increases or decreases audio energy to compensate for deficiencies in the program or speakers. Hot spots and deficient bass can now be controlled by adjusting the audio energy at the frequencies where these problems occur.

harman/kardon

Citation[®] Eleven specifications

Audio Output:	Up to 6 volts RMS into 10k ohms.
Frequency Response:	Below 5 hertz to beyond 125k hertz $\pm 0.5\text{dB}$ Below 2 hertz to beyond 250k hertz $\pm 1.0\text{dB}$.
Square Wave Rise Time:	Less than 1 microsecond at 20,000 hertz.
Square Wave Tilt:	Less than 5% at 20 hertz.
Total Harmonic Distortion:	Less than 0.05% at 6 volts RMS from 10-30,000 hertz. Below residual level of most test instru- mentation at 2 volts RMS and below.
Intermodulation Distortion:	Less than 0.05% at the equivalent 6 volts RMS output.
Noise (Unweighted):	Low Level: 65dB below 6 volts at 10 milli- volts input reference. High Level: 80dB below 6 volts (volume control wide open). Residual: 90dB below 6 volts.
Sensitivity:	Low Level: 1.5 millivolt for 2 volts output. High Level: 150 millivolts for 2 volts output in all auxiliary positions except Aux. 3 which is 300 millivolts for 2 volts output.
High Cut Filter:	-8dB @ 10,000 Hz, 6 dB per octave slope.
Subsonic Filter:	-12dB @ 15 hertz, 6 dB per octave slope.
Input Impedance:	Phono: 47,000 ohms. Aux: 20,000 ohms.
Output Impedance:	Source Impedance: Less than 500 ohms. Recommended Load: 10,000 ohms or greater.
Phono Overload:	Greater than 115 millivolts.
Audio Equalizers:	Five sliding controls operating at the following hinge points: 60, 320, 1k, 5k and 12k hertz. Boost and cut $\pm 12\text{dB}$, each position.
Phono Equalization:	RIAA curve, $\pm 0.5\text{ dB}$.
Dimensions:	16 $\frac{1}{8}$ " W x 4 $\frac{3}{4}$ " H x 12" Deep. [40.6 cm. W x 12.0 cm. H x 30.5 cm. D]
Weight:	20 pounds. [9.0 kg.]