

# NIAGARA 7000EU

Low-Z Power | Noise-Dissipation System



Owner's Manual

audioquest®

- EN** Instructions in English are available at the link below.
- ES** Las instrucciones de instalación en el español se encuentran disponibles en el enlace que se indica a continuación.
- FR** Les instructions d'installation en français sont disponibles au lien suivant.
- ZH** 安裝說明請詳見下列網址連結。
- JA** 日本語 のインストールガイドは下記リンク先でご覧いただけます。

 [www.audioquest.com/Niagara7000/manual](http://www.audioquest.com/Niagara7000/manual)

## Caractéristiques du Niagara 7000EU 4

Introduction 4

## Installation 6

Unpacking 6

Safety Information/Warnings 6

Servicing/Return to AudioQuest 6

Power Source 6

Placement 7

## Connection to Audio/Video Components 7

AC Cable Routing 7

High Current/Low-Z Power Banks 8

Ultra-Linear Noise-Dissipation System/Dielectric-Biased Symmetrical Power Banks 8

## Suggested AC Connections 9

## Operation and Continuous Use 11

Power Switch/Circuit Breaker and LED Power Indicator 11

Rear-Panel Power Correction Switch/Niagara 7000 Current Draw 11

Ground Fault Circuit Interrupter (GFCI) "Test" Button/Momentary Switch 12

Extreme Voltage Indicator 12

XFMR-1 and XFMR-2: Front-Panel Circuit Breaker Reset Buttons 13

Break-in Time/Continuous Use 13

## Specifications 14

## Trouble-Shooting Guide 15

## Warranty 20

## Caractéristiques du Niagara 7000EU

- **Transformateurs d'isolation CA à polarisation diélectrique** : cette technologie brevetée d'AudioQuest réduit grandement les distorsions non linéaires qui ont antérieurement affecté même les systèmes magnétiques les plus perfectionnés, tout en augmentant la largeur de bande et l'efficacité de la dissipation du bruit des transformateurs.
- **Correction des fluctuations de puissance** : fournit un réservoir de plus de 90 ampères de courant instantané de crête et réduit l'impédance de ligne pour les amplificateurs de puissance appauvris en courant, que ceux ci incorporent des alimentations linéaires ou à découpage.
- **Système de dissipation du bruit de fond** : cette technologie brevetée d'AudioQuest réduit grandement le bruit de fond sans compromettre la sécurité des utilisateurs ni créer de boucles de mise à la terre de bas niveau.
- **Technologie de dissipation du bruit ultra-linéaire** : garantit la plus grande largeur de bande et la plus grande uniformité de la dissipation du bruit, en évitant les résultats inégaux des conditionneurs de puissance CA minimalistes, qui produisent des crêtes de résonance à nœuds multiples.
- **Entrées et sorties CA de série NRG à impédance ultra-faible** : non seulement ces entrées et sorties sont munis d'une pince qui réduit de beaucoup la résistance (grâce à une masse beaucoup plus grande que celle des conceptions conventionnelles ou audiophiles), mais elles sont également recouvertes d'une épaisse plaque d'argent par un procédé de suspension qui garantit la plus basse impédance aux radiofréquences, et autorise ainsi une dissipation supérieure du bruit.

### Introduction

L'alimentation en courant alternatif (CA) est une science complexe qui nécessite beaucoup d'attention car les difficultés surgissent dans les menus détails. En fait, le courant alternatif que fournissent les services publics est maintenant devenu archaïque, en raison de l'augmentation colossale des signaux radio transmis sur les lignes secteur et par voie aérienne, combinée à la surcharge des lignes de transport d'énergie et à la demande électrique sans cesse croissante des composants audio-vidéo à haute définition.

Pour l'approvisionnement en courant alternatif, nous devons nous fier sur une technologie centenaire qui a été créée pour les lampes incandescentes et les moteurs électriques – technologie qui n'a certainement jamais été conçue pour alimenter les circuits analogiques et numériques perfectionnés qu'utilisent les systèmes audio-vidéo de premier plan. Pour réaliser la promesse actuelle d'une croissance continue de la largeur de bande et de la plage dynamique, nous devons atteindre un niveau de bruit extraordinairement bas sur une large gamme de fréquences.

D'autre part, les amplificateurs de puissance actuels sont forcés de fournir un courant de crête instantané, même lorsqu'ils fonctionnent à volume moyen. Bien que le logiciel audio ait réussi à augmenter considérablement la dynamique et les graves, les haut parleurs que nous employons pour reproduire ces signaux ont une efficacité comparable à celle des haut parleurs fabriqués il y a plusieurs décennies. Il en résulte des exigences accrues sur l'alimentation des amplificateurs de même que sur leur source de courant alternatif.

Les composants sensibles de nos systèmes ont réellement besoin d'un meilleur courant alternatif — ce qui explique la mise en marché d'une foule de topologies de conditionneurs de courant alternatif, de transformateurs d'isolation, d'amplificateurs de régénération et de systèmes de batterie de secours. Des tests d'échantillonnage différentiel et d'analyse du spectre ont démontré que plus du tiers d'un signal audio à haute résolution (bas niveau) peut être perdu, masqué ou fortement déformé par les niveaux très élevés du bruit présent sur les lignes électriques qui alimentent les composants. Ce bruit de fond du courant est présent dans les circuits de signalisation et dans les gaines de mise à la terre, où il crée une distorsion permanente et/ou un masquage du signal source.

*Nous devons applaudir toutes les tentatives sincères de résolution de ce problème car la perte d'un signal audio vidéo est sans recours...*

Pour AudioQuest, la protection du signal source ne s'est jamais limitée à l'utilisation de « pièces de qualité audiophile » ou d'une technologie exclusive — deux approches très répandues sur le marché audiophile. Depuis des années, nous subissons les débats interminables des audiophiles : tubes électroniques ou transistors; technologie analogique ou numérique; les câbles peuvent ils vraiment faire la différence? Ces débats ne mènent nulle part. Même si nous pourrions nous aussi nous vanter des nombreuses technologies qui nous appartiennent exclusivement, nous sommes

conscients du fait que la véritable optimisation audio vidéo ne se limite jamais à un seul secret ou un seul circuit exotique. Lorsqu'il s'agit de dissiper le bruit provenant de l'alimentation CA, plusieurs approches peuvent donner des résultats significatifs. Cependant, ces approches peuvent produire accessoirement des problèmes de résonance, de compression du courant et de distorsion non linéaire qui sont pires que le bruit de fond lui-même. Le Niagara 7000 utilise donc simultanément notre système breveté de dissipation du bruit de fond CA, les premiers transformateurs d'isolation CA à polarisation diélectrique au monde, et le circuit de dissipation du bruit offrant la plus grande largeur de bande linéarisée de l'industrie. Notre circuit exclusif de correction passive/active des fluctuations de puissance est doté d'un réservoir capable de fournir instantanément un courant de crête de plus de 90 ampères, lequel est conçu spécifiquement pour les amplificateurs de puissance modernes, généralement appauvris en courant. Alors que la plupart des produits d'alimentation CA qui offrent des « prises de courant à haute intensité » se contentent de minimiser la compression de courant, le Niagara 7000 la corrige entièrement.

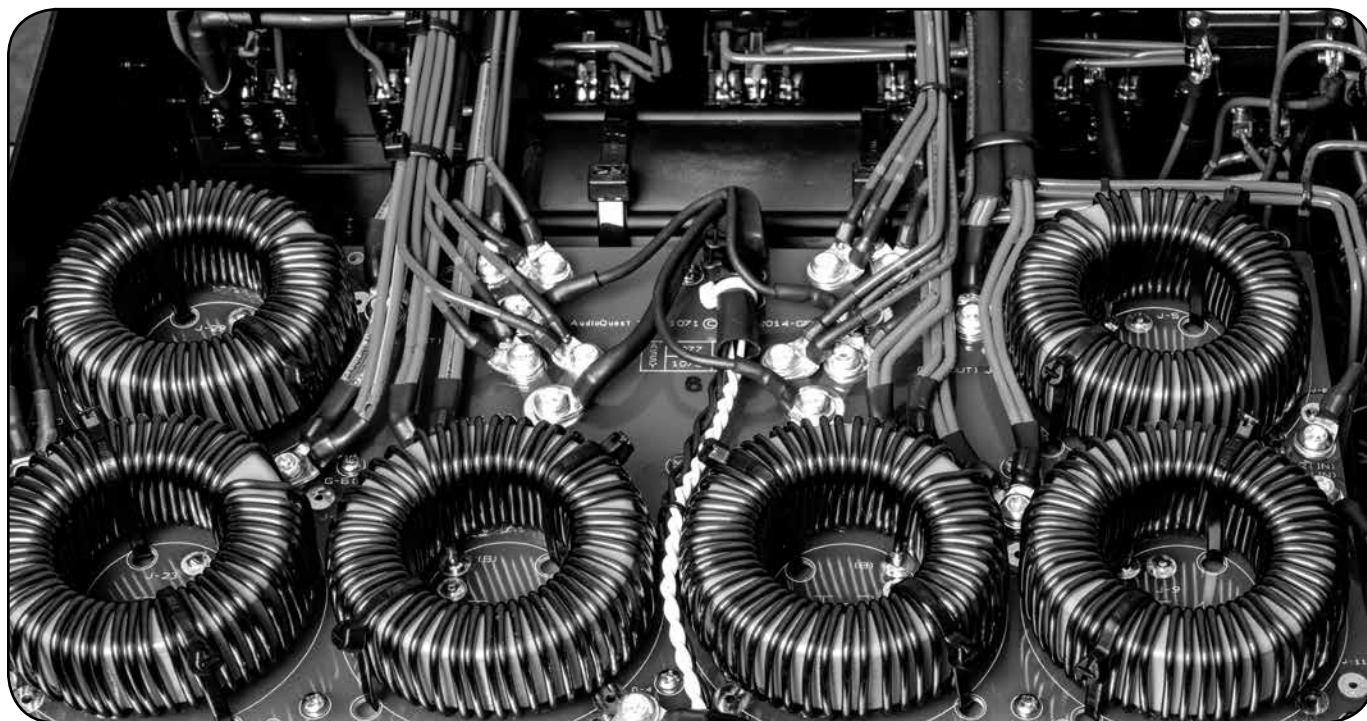
Il est facile de se vanter mais il est moins facile de créer une solution cohérente, holistique, fonctionnelle et basée sur des données scientifiques vérifiables. Il ne suffit pas de réduire sur une seule octave le bruit de la ligne CA et les distorsions associées, car cette limite laisse les octaves adjacentes et les partiels vulnérables au bruit, aux crêtes de résonance ou à une réduction insuffisante du bruit. La réduction du bruit doit absolument être uniforme. Nous ne devons jamais accepter une résolution supérieure dans une octave s'il faut pour cela subir des effets de masquage une demi octave plus loin et des artéfacts de suroscillation à deux octaves de distance. C'est le critère principal sur lequel a été basé le système de dissipation du bruit et d'alimentation à faible impédance d'AudioQuest.

Le Niagara 7000 est le résultat de plus de 20 ans de recherche exhaustive et de fabrication de produits éprouvés d'alimentation CA destinés aux audiophiles, aux ingénieurs de radiodiffusion et aux applications audio professionnelles. Comme tous les détails concevables ont été analysés, le Niagara 7000 offre une directivité radiofréquence optimisée; des technologies de formage des condensateurs pendant le rodage qui ont été élaborées par le Jet Propulsion Laboratory et la NASA; et des contacts d'entrée et de sortie CA recouverts d'une épaisse plaque d'argent sur du cuivre d'une extrême pureté, garantissant l'adhérence la plus forte qui soit.

Pour être remarquable, un système doit être bâti sur des bases solides qui mettent l'alimentation au premier plan. Grâce au Niagara 7000 d'AudioQuest, vous connaîtrez pour la première fois la clarté, la dimensionnalité, l'extension des fréquences, le contraste dynamique et la prise que votre système aurait toujours pu vous fournir — si seulement son courant d'alimentation avait été correctement conditionné!

Nous vous invitons à faire l'expérience du Niagara 7000 et à constater par vous-même les résultats remarquables que peuvent produire une gestion hautement optimisée de l'alimentation : des silences d'une profondeur saisissante, une liberté dynamique superbe, une extraction remarquable des repères d'ambiance et une délimitation splendide des instruments et des musiciens dans l'espace. Cette expérience vous semblera si élégante, si logique et si facile que vous vous demanderez pourquoi vous ne l'avez jamais éprouvée auparavant.

—Garth Powell, directeur des produits d'alimentation, ingénierie, AudioQuest



# Installation

## Déballage

Avant de déballer votre Niagara 7000, inspectez l'emballage pour voir si les boîtes et le matériel de protection interne n'auraient pas été endommagés. S'il est probable que le contenu a été endommagé ou si le produit a été visiblement endommagé pendant le transport, veuillez contacter le transporteur. **Veillez conserver tout le matériel d'emballage et d'expédition.** Si vous déménagez ou si vous devez transporter votre Niagara 7000 pour toute autre raison, ce matériel d'emballage garantira le transport le plus sûr.

La boîte en carton ondulé devrait contenir le Niagara 7000 (à prises CA Edison 120V pour l'Amérique du Nord), deux cales en mousse, le manuel du propriétaire, le guide de démarrage rapide, un chiffon de polissage pour le panneau avant et la carte d'enregistrement de garantie. Nous vous recommandons de remplir la carte d'enregistrement. De cette manière, si vous perdez les originaux des documents de propriété, vous pourrez consulter les données enregistrées pour déterminer si l'unité est toujours sous garantie.

## Consignes de sécurité et avertissements

Avant d'utiliser le Niagara 7000, veuillez lire et observer toutes les consignes de fonctionnement et de sécurité (ou, à tout le moins, le guide de démarrage rapide). Conservez ces instructions pour pouvoir les consulter ultérieurement.

- Ne démontez et ne modifiez d'aucune façon le Niagara 7000. Il n'y a aucune pièce interne qui peut être réparée par l'utilisateur.
- Gardez l'appareil à l'abri de l'eau et de l'humidité excessive.
- Veillez à ce qu'aucun liquide ou objet ne pénètre dans l'appareil.

## Entretien ou retour à AudioQuest

L'entretien du Niagara 7000 doit être exécuté par AudioQuest et est uniquement requis dans les cas suivants :

- Le Niagara 7000 a été exposé à la pluie, à une inondation ou à une humidité extrême.
- Le Niagara 7000 ne semble pas fonctionner normalement (voir le Guide de dépannage.)
- Le Niagara 7000 a subi une chute qui a causé des dommages considérables.

Si vous expédiez le Niagara 7000 à AudioQuest pour un entretien (ou pour toute autre raison), veuillez utiliser le matériel d'emballage approuvé par l'usine. Si vous avez perdu une partie de ce matériel (boîte en carton ondulé, deux cales en mousse, un sac de plastique), veuillez demander des pièces de rechange à AudioQuest. Nous vous fournirons ces pièces à un coût minime mais les frais d'expédition devront être payés par la personne ou l'entreprise qui a fait la demande. Veuillez éviter toute autre méthode d'emballage, y compris celles conseillées par les magasins d'expédition et d'emballage. Ces méthodes risquent d'endommager gravement le produit ou son fini. Même l'absence du sac en plastique est suffisante pour endommager de façon permanente le fini pendant le transport. Si vous avez perdu le matériel d'emballage d'origine, veuillez demander du matériel de rechange à AudioQuest.

## Source d'alimentation électrique

Idéalement, le Niagara 7000 devrait être branché sur une source d'alimentation monophasée à tension nominale de 120 volts et intensité efficace de 20 ampères. Cependant, le Niagara 7000 peut très bien fonctionner sur une prise de courant de 15 ampères. Si l'intensité admissible de la prise est de 15 ampères et si le système dépasse cette capacité, il se peut qu'un disjoncteur du panneau électrique se déclenche. Ce problème est sans danger car il est normal que le disjoncteur du panneau électrique se déclenche en cas de dépassement de l'intensité maximale admissible.

Pour fonctionner correctement, le Niagara 7000 doit être raccordé à un fil de terre de sécurité (normalement compris dans la prise murale CA du secteur).

## Mise en place

Le Niagara 7000 est muni de quatre pieds en polymère texturé caoutchouc qui permettent de le placer en toute sécurité sur une table, une armoire, une étagère ou sur le sol. Si l'appareil doit être monté dans un bâti, il est possible d'enlever les pieds en utilisant un tournevis Phillips standard. La conception du Niagara 7000 rend inutile l'emploi de pieds isolants standard ou de haute qualité. De tels pieds sont parfaitement inutiles pour le Niagara 7000 même s'ils sont recommandés pour d'autres produits audiovisuels.

Il n'est pas essentiel de placer le Niagara 7000 à proximité des autres composants et, dans des conditions normales d'utilisation, l'appareil ne produit pas de chaleur appréciable. Le Niagara 7000 peut être monté dans un bâti standard de 19 pouces en fixant sur l'appareil les équerres 3 RU de série Niagara. Pour cela, vous devez d'abord enlever les trois vis à tête plate Phillips qui se trouvent à gauche et à droite de la face avant du châssis. Ensuite, placez les équerres à plat sur l'envers du panneau avant. Enfin, fixez les équerres à l'aide des vis SEMS à tête cylindrique bombée Phillips, comprises dans la trousse de montage.

Lorsqu'il n'y a pas suffisamment de place pour installer l'appareil sur une étagère ou une armoire, vous pouvez placer le Niagara 7000 à la verticale. Une telle disposition ne nuit aucunement à la sécurité ou à la performance de l'appareil, mais nous recommandons de placer sous l'appareil une serviette douce ou une moquette pour protéger le châssis et le panneau avant contre les éraflures et les taches.

## Connexion des composants audio vidéo

### Acheminement du câble CA

Une fois que le Niagara 7000 est en place, il faut brancher un cordon CA à intensité nominale de 20 ampères sur le connecteur d'entrée (IEC C20) du panneau arrière. Ce cordon CA doit être muni d'un connecteur femelle IEC C19 et d'une fiche mâle avec mise à la terre Edison/NEMA de 120 V c.a. destinée à l'Amérique du Nord et à Taiwan. Nous recommandons fortement l'emploi du cordon CA de 20 ampères série NRG d'AudioQuest mais nous garantissons que le Niagara 7000 fonctionnera correctement avec tout cordon CA conforme aux exigences mentionnées précédemment.

Lorsque vous êtes devant le panneau arrière du Niagara 7000, l'entrée IEC C20 se trouve dans le coin inférieur gauche de l'appareil. L'autre extrémité du cordon d'alimentation doit être connectée sur une prise CA appropriée (voir « Source d'alimentation », page 4). Dans la mesure du possible, il faut maintenir une distance d'au moins trois pouces (environ 7 cm) entre les câbles CA et les câbles de signalisation. Si les conditions pratiques de câblage du système ne permettent pas de respecter cette règle, il est préférable pour réduire le bruit induit de placer les câbles CA à 90 degrés par rapport aux câbles de signalisation.

### Connecting AC cables to the Niagara 7000EU's NRG Schuko AC outlets

The AudioQuest NRG Edison AC outlets feature the strongest grip of any commercially available AC outlet in history. There are many reasons this was done—lower impedance, superior transient current delivery, and vastly reduced noise, to name a few. However, there is a price to be paid for superior performance: It will take some time and patience to both insert an AC cord into and remove an AC cord from these receptacles.

The AudioQuest NRG Schuko AC outlets feature (as do all Schuko female receptacles), reversible polarity connection. Though both orientations are safe to use, only one is correct for lowest noise and thus, best performance. The high current banks (1 through 4) can be measured with a polarity checking device, to determine which orientation is best for the AC cord that is connected to your walls AC service outlet. Make certain you turn the front panel power switch/breaker off between measurements and unplugging the cords.

It is important to note that the symmetrical power outlets (5 through 12), may not be used with a polarity checking device, as an isolation transformer such as this cannot read it properly. It will typically read open ground and both Line and Neutral as hot (this is normal).

To determine the optimum orientation of the outlets AC cords, a polarity check device or even a digital multi-meter is not ideal. This is because many component power supplies feature bi-directional supplies, but one direction typically has less current leakage than the other. It is best to listen to each component one at a time and determine which orientation is best, then mark the outlet and the AC cords plug. The simplest means of determining this, is with no signal, but with all volume controls set to maximum. The quieter of the two orientations is the correct one. For line-level components it may be necessary to place your ear by the loudspeaker high frequency driver in a quiet environment, or; use audio to determine the most coherent non-distorted sound.

Marking polarity or orientation on AC outlets or cord plugs should be done discreetly with a tape or ink pen that can be removed with either isopropyl alcohol or household cleaner on a cotton swab

### **High Current/Low-Z Power Banks**

There are four High Current/Low-Z Power outlets (labeled "1" through "4"). The outlets feature our Transient Power Correction Technology, and are designed to enhance the performance of power amplifiers via our circuit's low-impedance transient current reservoir. Power amplifiers, mono-block amplifiers, integrated amplifiers, powered receivers, or powered subwoofers should be connected to these four outlets. The *primary* mono, stereo, or multi-channel power amplifier(s) should be connected to outlet 1. This enables the standby sense circuit, which requires the current draw of a power amplifier connected to (and only to) outlet 1. In terms of sonic performance, there is no difference between outlet 1 and 3, and minimal difference between 1 and 3 versus 2 and 4. If the standby sense circuit is not utilized, and the sense circuit bypass switch is set to "Enabled," any of the four outlets may be utilized.

For systems with only one or two power amplifiers, the two uppermost outlets of the four 1 and 3 will provide *slightly* superior performance due to their closer proximity to the AC outlets' radio frequency noise-dissipation circuit. However, the outlets located directly below will certainly afford exemplary performance!

Regardless of class of operation or circuit topology (valve, solid-state, digital, or otherwise), the Transient Power Correction Circuit will not compress the current of any power amplifier. Quite to the contrary, it will improve the amplifier's performance by supplying the low-impedance current source that the amplifier's power supply so desperately needs.

However, the other eight AC outlets (Ultra-Linear Noise-Dissipation/Dielectric-Biased Symmetrical Power), are not appropriate for power amplifiers. They have been optimized for line-level audio preamplifiers, DACs, universal players, turntables, and video products that utilize constant current voltage amplifier circuits. These circuits never suffer from current compression, but their lower input level and higher gain require a more robust means of noise dissipation. This is key to the Niagara 7000EU's discrete AC power banks, in that not every circuit is treated the same, but rather isolated bank by bank and optimized for best performance.

### **Ultra-Linear Noise-Dissipation System/Dielectric-Biased Symmetrical Power Banks**

There are two banks (with eight outlets) that utilize this technology within the Niagara 7000EU. Further, the first bank (AC outlets 5 through 8), are 100% isolated from the second bank (AC outlets 9 through 12). All eight of these outlets are in turn, 100% isolated from the High-Current/Low-Z bank (outlets 1 through 4). This offers a great advantage in controlling the complex interactions of RF (radio frequency) and other induced noises present in the AC power supplied from your utility, the noise that will be present on and in every AC cord, and the noise that is produced within your system's components and that "backwashes" into the Niagara 7000EU's output circuits.

Though it would be simple to recommend putting the digital or video components into bank two (outlets 5 through 8), and the line-level audio components and turntables into bank three (outlets 9 through 12), the quest for optimal performance is more complex. This scenario will work, and likely work well, but a certain amount of experimentation is best given the fact that no filter or screen can eliminate 100% of all noise, the size of many of these RF-induced waveforms is as small as the edge of this paper you're reading, and the interactions are complex. So long as the power amplifiers are in their appropriate banks, and the other components are in banks 2 and 3, you should experience exemplary performance. Still, for the audiophile with patience, the reward will be system performance with the highest possible resolution and lowest possible noise.

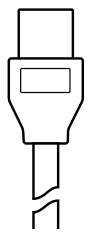
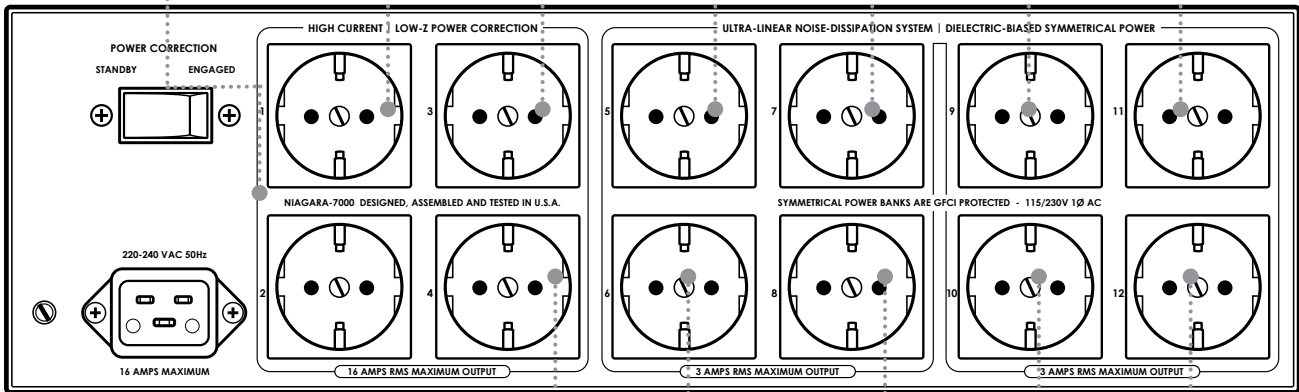
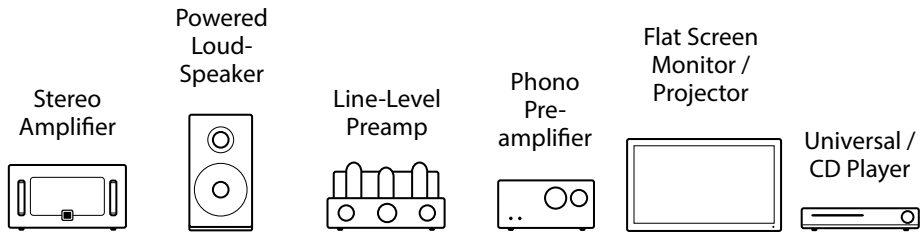
To achieve that optimal performance, we recommend the following guidelines. For systems that utilize very few components, bear in mind that it is advantageous to use the uppermost outlets in each bank as they have a closer



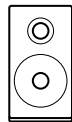
# Suggested AC Connections

1

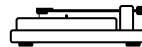
“Engaged” position must be default setting. See page 11 for use of “Standby” mode



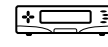
16 Amp Rated AC Cord



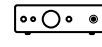
Powered Loud-Speaker



Turntable



Cable / Satellite Box



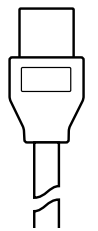
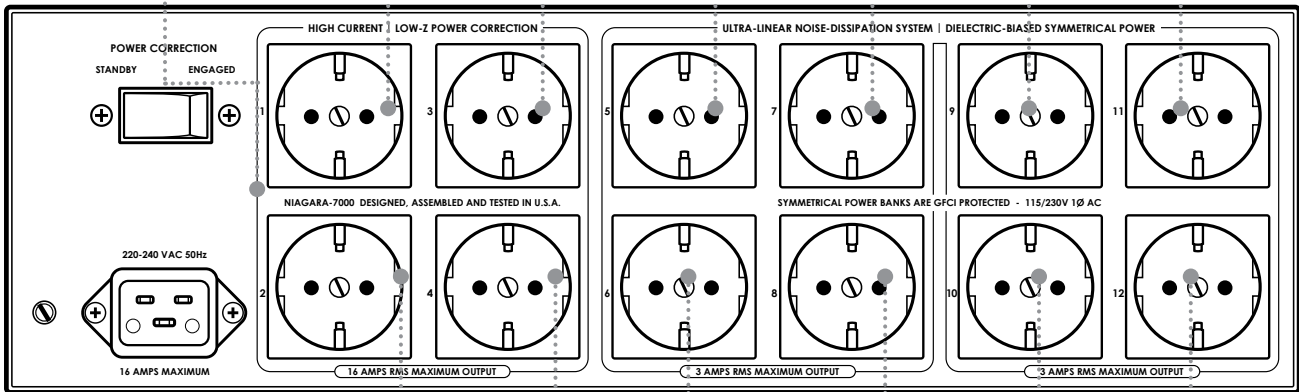
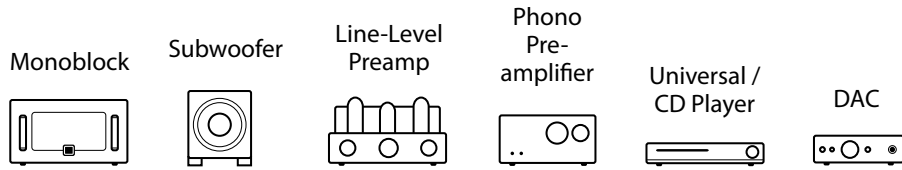
DAC

**Note:** Bank 2 (outlets 5 through 8) and bank 3 (outlets 9 through 12) are subject to many variables and circuit conditions, so experimentation for best results is encouraged. Power amplifiers **must** be connected to bank 1 (outlets 1 through 4).

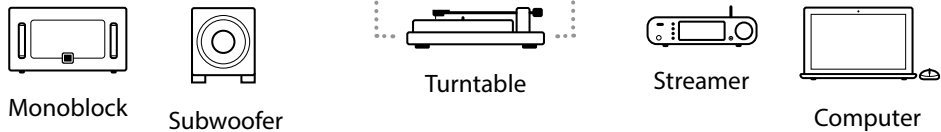
# Suggested AC Connections

2

“Engaged” position must be default setting. See page 11 for use of “Standby” mode



16 Amp Rated AC Cord



**Note:** Bank 2 (outlets 5 through 8) and bank 3 (outlets 9 through 12) are subject to many variables and circuit conditions, so experimentation for best results is encouraged. Power amplifiers **must** be connected to bank 1 (outlets 1 through 4).

proximity to the final stage noise-dissipation circuits. (The same holds true for the High-Current banks.) Again, because bank 2 is 100% isolated from bank 3, placing a DAC and/or universal player in one isolated group, and a preamplifier and turntable in another, would be an excellent way to start. For systems that are much larger and require more outlets, try starting with the most basic setup, then adding one component at a time. Try either of the two isolated bank groups to see which works best for you. The bank that *sounds* best (yielding the greatest resolution) is the best one for *your system!*

## Power Switch/Circuit Breaker and LED Power Indicator

Once the AC cords are properly connected to the AC source tap, and the components are connected to the appropriate outlet banks, it is safe to energize (or re-energize if you have already tested the AC cords for orientation or polarity), the Niagara 7000EU. On the right-hand side of the Niagara 7000EU's front panel, there is a black rocker switch. Firmly press the rocker switch so that its upper portion is flush with the front panel. Typically within a couple of seconds, you should hear an audible "clack" sound(s) from one or more relays within the Niagara 7000EU. At the same time, the front-panel LED power indicator will glow blue, signifying that the unit is operational. (If this does not occur, see the "Trouble-Shooting Guide" in this manual.)

## Rear-Panel Power Correction Switch/Niagara 7000EU Current Draw

The default position for this switch should always be "**Engaged**"—even for applications in which there are no power amplifiers of any kind powered by the Niagara 7000EU. Defaulting to "Engaged" serves two functions: It activates the Transient Power Correction Circuit for power amplifiers that would be energized by outlet bank 1 (outlets 1 through 4), and also provides a portion of the Ultra-Linear Noise-Dissipation Circuit for outlet banks 2 and 3 (outlets 4 through 12). Although no damage to the Niagara or the connected components will occur, performance will be noticeably compromised when this switch is not set to the "Engaged" position.

However, there is one exception to this. Niagara 7000 has an internal current sense circuit that will automatically engage the Transient Power Correction Circuit, as well as turn it off when your audio/video system is placed in standby mode. To utilize this feature, two things must be present:

1. The primary power amplifier(s) or powered receiver must be connected to High Current/Low-Z Power Correction Bank 1 *only* (as it is the only power bank with the current sense monitoring for this circuit function).
2. The primary power amplifier(s) or powered receiver must have a power standby mode, and its current consumption at 230VAC in *standby mode* must not exceed 28 watts. (Although 1 watt is an industry standard for standby power, many great amplifiers routinely dismiss it for reasons of performance over power savings. Therefore, you should consult the specification sheet in your amplifier's user manual.)

If these two requirements cannot be met, simply place the power correction circuit switch in the "Engaged" position and leave it there! Rest easy, knowing that you will receive every last bit of performance the circuit can deliver.

However, if your system allows for the scenario listed above and your amplifier or powered receiver meets the criteria listed above, you may wish to take advantage of the standby circuit. (It is likely that many systems will meet these criteria. However, if the standby function is not important to you, simply leave the switch in the "Engaged" position).

The standby function was not created to place the connected system into a standby or switched mode, but

rather to place the Transient Power Correction Circuit into standby mode (disengaged), for instances when the system is powered but not functioning (i.e., when there is no signal present). This was implemented because the Transient Power Correction Circuit creates a reactive current draw of as much as 9 to 10 amps RMS at idle (real world draw is a small fraction of an amp), and electrical technicians who connect a current probe to a product such as this are frequently alarmed: They suspect that the product is either broken or that it is drawing a distressingly high amount of current from the wall outlet (akin to a pair of mono-block power amplifiers left in full operational mode)

This is actually far from the truth. If the Niagara 7000EU was consuming that much current (or even 20% of that level), it would need to *dissipate that energy loss in heat*. It would be quite warm (even hot) to the touch, just like most power amplifiers while in operation. In fact, the Niagara 7000EU runs cool, precisely because this current reading is false. The circuit utilizes massive capacitive reactance across the AC line, which, akin to a battery, will both absorb and immediately release the current several times per second. Further, when incorporated with power supplies such as those found in power amplifiers, the current readings actually come down! This is due to what's known as a *vector load*, and it's quite dynamic in an audio system. In this scenario, there is one thing that can run somewhat warmer than it might otherwise: the AC cord that supplies power to the Niagara 7000EU. This is because the wiring and the circuit breaker that supplies power to Niagara 7000EU simply look at RMS current and do not distinguish between reactive loads, resistive loads, or inductive loads, but your utility does.

This circuit and many like it have been utilized for many years, and, when tested into buildings with absolutely no loads present aside from the transient power correction circuit, there was virtually zero power draw from the utilities power meter. Still, in an age where so-called "smart" power utility meters are omnipresent, and some utilities may or may not change their standards for "what type of power or current is suitable for billing," we have gone to great lengths to offer an alternative to those who may be concerned, but who nevertheless wish to achieve the best possible audio or video performance.

Again, if you wish to utilize this feature, and your amplifier and/or powered receiver meet the criteria, simply place the Power Correction Switch in the "Standby" position. Otherwise, please leave the switch in the "Engaged" position.

### **Ground Fault Circuit Interrupter (GFCI) "Test" Button/Momentary Switch**

To offer unparalleled safety and security for both you and your valuable equipment, the Niagara 7000EU features a ground fault interruption circuit for the Ultra-Linear Noise-Dissipation Dielectric-Biased Symmetrical Power outlets. This will trip the front-panel power switch (which also acts as an ultra-low resistance 16-amp RMS magnetic circuit breaker) if there is ever more than 5.5mA of current leakage from Line to Ground or Neutral to Ground. This is extremely rare, and only exists as these two outlet banks (outlets 5 through 12) utilize two isolation transformers as part of their circuitry. Since the output is Symmetrical (Balanced), there is voltage potential on Neutral relative to Ground. In and of itself, this is not at all a problem or danger; in fact, it is precisely the feature used by the transformer in most components with a linear power supply (in that application, called "center tapped").

However, if a connected component's power supply were to suffer a catastrophic failure, there would be a remote possibility of some AC voltage being present on the component chassis. With the incorporation of the GFCI, this is not possible, as the current fault would shut off the main power switch within a fraction of a second. Because we insisted on creating it for optimal performance *and* safety, this method of redundancy protection is complex and costly. As a result, the symmetrical outlet banks in the Niagara 7000EU are safer to use than those found in any home, office, or hospital.

To ensure the circuit is functioning properly, simply lightly press the button. (It is a *momentary* switch, so it will not latch.) This should instantly disengage the front panel's power switch/circuit breaker, and the blue power indicator will no longer light. Once this "test" has been performed, you will not need to do so again unless the unit is moved or has been serviced.

## Extreme Voltage Indicator

One portion of the Niagara 7000EU's non-sacrificial surge protection is dedicated to a fast-acting extreme voltage shutdown circuit. If more than 270VAC is present on the incoming AC line for more than a quarter of a second, the circuit will instantly open a high-current relay that will disengage the AC power from all of the Niagara 7000EU's AC outlets, activating the red front-panel LED "Extreme Voltage" warning indicator. Once the event has passed, or the building wiring fault has been corrected, the circuit will automatically re-engage.

## XFMR-1 and XFMR-2: Front-Panel Circuit Breaker Reset Buttons

If either AC outlet bank three (XFMR-1) or bank 2 (XFMR-2) exceed 3 amps RMS capacity, the circuit breaker will trip, the output to those AC outlet banks will no longer be present, and the breaker will need to be reset. (The tip of a pencil or pen will work well for resetting the breaker.) If you are uncertain about the current that your connected products will draw at 220-240VAC input, consult your user manuals. Note: We are referring to 3 amps per *isolated dielectric-biased symmetrical power group*; this will have no effect on power amplifiers that can draw far in excess of 3 amps! Most line-level audio products will draw far less than one amp—typically, a fraction of an amp. Most projectors and flat-screen televisions are also well under 3 amps, though there are exceptions. Most plasma televisions are also under 3 amps, and, contrary to myth, are *not* current-starved devices; they utilize voltage amplifiers with *constant current draw*. The Dielectric-Biased Symmetrical Power outlets are the appropriate AC outlets for these devices. It is quite unlikely that you would ever need to reset these, and far less likely that you would need to reset *both*.

## Break-in Time/Continuous Use

The Niagara 7000EU is made of a variety of passive and active components. Though every attempt has been made to reduce the necessity of so-called "break-in," "burn-in," or "run-in" time—including high-power run-in of every critical capacitor in the Ultra-Linear Noise-Dissipation Circuits—the Niagara 7000EU will benefit from continuous use, just like any other audio/video component. This is not to say that you will be made to "suffer" through weeks or months of intolerable performance until that "magic day" when the parts are fully formed and ready. On the contrary, the Niagara 7000EU will perform very well from the first moment you use it. It will improve gradually, in small increments, over a period of approximately two weeks. While leaving the Niagara 7000EU turned on during this period will aid the process, it is also perfectly acceptable to turn the unit off; doing so will simply increase the time it takes to reach final "break-in."

The Niagara 7000EU has a five-year warranty, but it was designed to last for over two decades. Provided that the Niagara 7000EU is used inside a home, store, studio, or office with a reasonable climate (7 degrees to 38 degrees Celsius, with less than 20% humidity), it can be left on continuously; there are no parts that will wear out.

|  |   |
|--|---|
| <b>Surge Suppression:</b>  | Non-sacrificial (nothing to damage with repeated 6000V/3000A input surge tests, which is the maximum that can survive through a building's AC electrical panel).  |
| <b>Extreme Voltage Shutdown Voltage:</b>                                 | 270VAC (will activate the main high-current relay to open within less than 0.25 second; automatically resets once the incoming power is within a safe range).   |
| <b>Common-Mode Noise Dissipation:</b>                                    | In excess of 30dB from 60Hz to 100MHz, linearized for dynamic (rising) line impedance with frequency (source) and 10 to 50 ohm load, <i>system current dependent</i> .  |
| <b>Transverse-Mode Noise Dissipation:</b>                                | In excess of 24dB from 3kHz to 1GHz, linearized for dynamic (rising) line impedance with frequency (source) and 10 to 50 ohm load, <i>system current dependent</i> .  |
| <b>Input Current Maximum Capacity:</b>                                   | 16 amps RMS (total).  |
| <b>Ultra-Linear Dielectric-Biased Symmetrical Power AC Outlet Banks:</b> | <b>2</b> (100% isolated groups). Group two is AC outlets <b>5/6/7/8</b> and group three is AC outlets <b>9/10/11/12</b> (3 amps RMS total per group, maximum output current capacity).  |
| <b>Number of AC Outlets:</b>   | <b>12</b> ( <b>4</b> High Current/Transient Power Correction; <b>8</b> Ultra-Linear/Dielectric-Biased Symmetrical Power).   |
| <b>Power Consumption:</b>  | Typically, less than 0.25 amps at 230VAC input, or with the power correction switched to Standby setting.<br><i>(This is dependent on a reactive vector load. For more info, see "Operation and Continuous Use: Rear-Panel Power Correction Switch – Niagara 7000EU current draw.")</i> |
| <b>Dimensions:</b>   | 445mm W x 133mm H x 437mm D (3-RU rack-mounting ears, optional)   |

**Weight:**

37 kg.

---

At AudioQuest, we always appreciate hearing from you. However, if you have questions, problems, or suspect that your Niagara 7000EU requires service, please start here.

### **There is no power to any of the AC outlets.**

When the Niagara 7000EU's front-panel LED power indicator glows blue, the unit is operational. If the Power On indicator is not lit, consider the following: Is the upper portion of the front-panel rocker switch fully flush with the chassis? Is the input AC cord fully inserted into the Niagara 7000EU's AC inlet? Is the input AC cord properly plugged into the wall AC service outlet? Is the wall's AC outlet functioning properly? Plug into the outlet another component, product, or lamp to verify that power is present and that the electrical panel's circuit breaker has not tripped.

If there are only one or two AC outlets that have no output power, a component may be malfunctioning. Verify the AC output with a known simple device such as a lamp.

### **There is no power to any of the AC outlets and the red front-panel**

#### **Extreme Voltage indicator is lit.**

This indicates that either there is more than 270VAC (+/-3V) present on the wall's AC service outlet, or the Niagara 7000EU's protection circuit is mis-calibrated. The latter is quite rare. (This circuit is adjustable, but it's tested and retested before it leaves the factory). Use an AC voltage meter to determine if your outlet has too much voltage to be safe for operation, or if there is a wiring fault that is causing this to occur.

Once the power is brought into a safe range for operation (190VAC to 265 VAC), the Niagara 7000's protection circuit will automatically switch to operational mode and the blue power indicator will light.

### **There is no power to any of the "Ultra-Linear Dielectric-Biased Symmetrical Power" outlets.**

The front panel has two 3-amp circuit breaker reset buttons that are slightly inset from the edge of the panel. The button to the left controls AC outlet bank 3, and the button to the right controls AC outlet bank 2. It would be VERY unlikely that both circuit breakers would trip from too much RMS current draw per outlet group. However, if one outlet group (banks 2) or the other group (banks 3) has no output, check to see if the breaker for that AC outlet group has tripped. To reset the breaker: Using the back of a pencil or pen, press the appropriate circuit breaker reset button into the chassis until it reaches its normal state—slightly loose, with little spring tension.

When resetting or testing the reset of one or both of the front-panel 3-amp XFMR-1 and XFMR-2 circuit breakers, it is important that the AC outlet group is not connected to a component or product that is defective and has shorted. To verify that the circuits are working, we recommend disconnecting all but one known properly functioning product from the AC outlet group.

If after verifying that the circuits are operating (or, if after resetting the circuit breaker for one of the power groups), you discover that one or multiple products activate the circuit breaker, check the current consumption rating of that/those products. (Typically, this information can be found on the last page of the component's owner's manual; it should be listed as the power consumption at 230VAC.)

The current specification will typically be in watts. Know that 3 amps at 230VAC equal 690 watts. (You will want to be at least slightly under that number.) You may simply add wattage ratings to calculate your total consumption: If you have four components into group one (bank 3 - outlets 9/10/11/12), the maximum capacity of all four outlets combined is just under 690 watts or 3 amps. The same is true for group two (banks 2 - outlets 5/6/7/8).



## **The main power rocker switch/circuit breaker tripped to the lower (off) position while the system was playing.**

You may have exceeded the maximum current capacity of the Niagara 7000EU. This should be rare, but it may be possible. Typical power amplifiers draw about one-third of their maximum current consumption at 230VAC, as listed in the product's specifications (typically found in their owner's manual). This is further complicated by the fact that the power consumption to AC outlet group one (banks 3) and two (banks 2) is an additional draw on the maximum current capacity of 16 amps that will trip this switch/magnetic circuit breaker.

The Transient Power Correction Circuit may also contribute to the overall draw seen by the circuit breaker. Still, it should be rare that the total capacity is exceeded, but, given that some televisions, projectors, and power amplifiers can draw substantial current, it is certainly not impossible. If this is the case, an additional Niagara 7000EU or Niagara 5000EU, and a discrete 16 amp AC service on the same phase of the electrical panel (for buildings with a 3 phase service), will be required for some or all of the power amplifiers.

## **When a component was plugged into one of the Ultra-Linear Dielectric-Biased Symmetrical Power outlets and switched on, the main power rocker switch/circuit breaker tripped to the lower (off) position.**

You have likely tripped the GFCI circuit (ground fault protection). This circuit ensures that even in the event of a catastrophic failure to the connected components' power supply and/or circuits (*demonstrated by full shorting and possible smoke*) there will be no AC voltage on the components' chassis that could possibly shock a person. This circuit instantly recognizes if there is more than 5.5mA of current leakage from Line to AC Ground, or Neutral to AC Ground. This is the maximum current allowed for ALL 8 of the Symmetrical AC outlets. If this current leakage is detected, the main power switch/magnetic circuit breaker will immediately switch off, thus protecting the system operator and all others that might come in contact with the system.

It is very rare for this circuit to trip. If it does, the connected component that causes this is either defective (most likely), or it (and possibly another component on the same Symmetrical Power bank) may have a combined current leakage to ground that exceeds 5.5mA. Technically, this is not allowed in modern electronic circuit design, but that does not necessarily mean an otherwise well-performing product with an "unconventional" power supply is unsafe to use. Such a component may need to be used with either the Niagara 7000EU's high-current AC outlets, which do not utilize the GFCI protection circuit, or they may be powered by another discrete AudioQuest Niagara Series power product, thus preventing the GFCI nuisance tripping.

As a final check, inspect the GFCI test button on the left side of the Niagara 7000EU's front panel. It is a momentary switch and it will not latch; by pressing it lightly into the chassis, it will activate the GFCI protection circuit and trip the main power switch/magnetic circuit breaker. Though extremely rare, it is possible that the switch could be stuck in an "on" position from taking a blow during shipping. (The rest of the unit may be perfectly fine, but the tolerance of this test button switch to the chassis and front panel is tight.) When pressed, the switch should exhibit some "travel" or "give" and should not feel binding in any way. If the switch feels tight or stuck, there may be a problem. (This will require servicing, so please be certain.)

## **My power amplifiers sound muddy, compressed, or weak.**

The Transient Power Correction Circuit may not be operating. Be sure that all power amplifiers, powered receivers, powered loudspeakers, and or powered subwoofers are plugged into the High Current/Power Correction AC outlets. If any of these are plugged into the Ultra-Linear Dielectric-Biased Symmetrical Power outlets, the connected power amplifier(s) will be current compressed, as the impedance is too high for any power amplifier.

If the power amplifier(s) are plugged into the High Current/Power Correction AC outlets, make certain that the rear-panel Power Correction switch is in the "Engaged" position. Although it is possible for the Power Correction Circuit to work properly while the switch is in the "Bypass" position (see "Power Correction Switch," page 6), you might find that the unit sounds substantially better in the "Engaged" position. If this is the case, it is possible

## **Trouble-Shooting Guide, *continued***

that the main or primary power amplifier is not plugged into High-Current AC bank 1, the power amplifier has insufficient current draw to activate the circuit, or the circuit is miscalibrated.

When the Power Correction switch is set to the “Engaged” position, the current sense circuit will be defeated. Yet, even with the current sense circuit functioning properly, audiophiles *may* prefer the “Engaged” position, as it will slightly decrease the impedance of the Transient Power Correction Circuit.

### **My Niagara 7000EU has no power amplifiers connected to it, but it sounds odd or not quite as good as it once did.**

The Transient Power Correction Circuit also aids the Ultra-Linear Noise-Dissipation Circuits. Make certain that the rear-panel Power Correction switch is in the “Engaged” position.

### **A technician or electrician found that my Niagara 7000EU consumes over 8 amps of current. Is it broken?**

No, it’s not broken, and it’s not drawing 8+ amps in any conventional sense. The Niagara 7000EU’s Transient Power Correction Circuit creates a reactive current draw of as much as 9 to 10 amps RMS at idle, and, when incorporated with power supplies such as those found in power amplifiers, the current readings decrease. This is a vector load, which will vary with the connected equipment. When plugged into an AC service that has no other electrical draw, it is typical to see a real-world RMS power draw well below 15 watts at idle. (For an in-depth explanation of the circuit, see “Power Correction Switch,” page 11.)

### **I did not notice hum with any prior power device, but there is a hum in my system with the Niagara 7000EU.**

Typically, this will not occur. In fact, the Niagara 7000EU’s two Ultra-Linear Dielectric-Biased Symmetrical Power outlet groups are 100% isolated from one another, 100% isolated from the High Current/Power Correction outlet group, and floating. This allows opportunities to break up ground loops in an audio system. However, the hum created by ground loops (typically, a voltage differential from Neutral to Ground among two or more signal-connected devices in an audio/video system) can at times be quite complex and difficult to easily diagnose.

To diagnose the hum/ground loop: With everything else unplugged, start with the simplest system that can still play music through your loudspeakers. Use a source such as a universal player, computer, or a turntable so there is no external cable or satellite cable connected to ANY of the associated components. Is there any hum? If yes, and there is more than one line-level (non-power amplifier) component connected in this “minimalist” test, try placing one in Symmetrical Power group one and the other in group two.

If the hum no longer persists under these conditions (which is likely), try reconnecting each additional component into the Niagara 7000EU one at a time. Once you find the component that creates the hum, you can possibly achieve increased isolation by connecting it to a different Ultra-Linear/Symmetrical Power outlet group. This can typically help, as well as increase overall system performance by decreasing system noise. If adding a cable or satellite signal to the system reintroduces the ground-loop hum, that incoming signal line may require an isolation transformer or humbucker.

If it seems that hum didn’t occur before, but does now, it’s most likely that the hum was in fact always there. The difference is simply a matter of degree. Sometimes the ground loop difference is right on the edge of breaking into

an area where it's audible, instead of only measurable with electronic measurement instruments. The very act of creating better connections, thus minimizing the impedance to the power amplifiers, can tip the scales. If the hum/ground-loop exists on the incoming satellite or cable line, then it will be necessary to fix the real problem. This is common with large custom install systems. As these signal lines are always grounded in a different place and at a different *potential* than the rest of the system's ground return, the system will benefit greatly by utilizing isolation under these conditions.

In rare circumstances, there are some computer peripherals or DACs that feature grounded AC cords and whose circuits rely on a hard AC ground (i.e., they cannot be floated). Under these rare circumstances, you may obtain better results with that one component plugged into one of the High Current/Power Correction outlets or into an accompanying Niagara 5000, 1000, or 700 Low-Z Power Noise-Dissipation System.

### **My home or grounds were hit by lightning. The Niagara 7000EU seems to be functioning properly. Should it be sent in for inspection or service?**

If you see or smell smoke coming from the unit, it needs service. Otherwise, if it functions after such an event (which is very likely), there is nothing that would be compromised or damaged. If it fails after such an event, it will fail *totally*. However, it's unlikely that this would occur. The circuit is designed to easily handle any voltage or current surge that could possibly make it past an electrical panel. The force required to damage the Niagara 7000EU via a power surge would melt the panel and burn the building (in which case, the Niagara 7000EU is the least of your worries).

### **How do I clean the chassis and/or the electrical contacts?**

The Niagara 7000EU's black-painted chassis and dark chrome front panel can be cleaned with AudioQuest CleanScreen or a modest misting of household window cleaners. Please use soft cotton or wool toweling to remove the liquid from the metal and painted surface. Whenever possible, use the supplied polishing rag for the front panel, only using liquid cleaner when oil or grime is beyond the polishing cloth's capacity to thoroughly clean. Never use alcohol or solvent-based cleaners. They can damage the surfaces, paint, and silk-screening material.

The AC inlet, outlet posts, and grips are all generously plated with silver. There is no need to clean these if they are not exposed to foreign substances such as grease and dirt. Silver oxide is a superior conductor to silver itself. If cleaning is required, Isopropyl alcohol (preferably 99% purity) on a cotton swab is best for the inlet tabs. Some manufacturers provide specialized cleaners for the AC output surfaces. Again, however, cleaning these surfaces will most likely be unnecessary.

Note: A pipe cleaner or cleaning swab with a wood stick and compact wool tip (available from an electronics supply house) will be superior to household swabs. When working in a small area such as an AC outlet, this is critical. Loose strands of cotton may damage the AC outlet. Damage to an AC inlet or outlet due to cleaning is not covered under your warranty. If you damage an inlet or outlet in an attempt to clean it, you will be charged for the repair and you will be responsible for all shipping costs (this is overseas - please use caution).EU

### **I hear a slight buzzing sound coming from the Niagara 7000. Is it damaged?**

No, it's not damaged (or, at least, damage is *very* unlikely). If you're in an extraordinarily quiet room and you hear this buzzing sound only when in relatively close proximity to the Niagara 7000EU, or only when you place your ear next to the unit, the buzzing is normal and, unfortunately, cannot be eliminated.

What you are experiencing is called *magnetostriction*. When an extraordinarily high quantity of harmonic distortion is present on an AC line, or when the AC line contains some DC offset voltage that should not be present, even the finest power transformers in the world will react to this problem. In order to reduce or eliminate this distortion, the power transformers try to turn it into heat, causing the transformers' steel alloy core to hum at 50 cycles per second and all harmonics above that. This has no effect on the performance of the Niagara 7000EU or its connected components.

Ninety-eight percent of installations never exhibit this problem, but that's no help to the 2% that do. The Niagara 7000EU features a very robust DC-blocking circuit that feeds the input or primary to each of the AC isolation transformers, but there are times when otherwise fabulous audio/video component or computer products can nevertheless backwash DC (or a severely asymmetrical chopped waveform) into the output secondary of the transformers. When this occurs, it is necessary to perform some experimentation: Remove each component and its AC cord, one at a time, from the Ultra-Linear Dielectric-Biased Symmetrical Power outlets - groups two and three. (The High Current/Power Correction Outlets are in no way connected to these transformers, so these may stay as they are.)

Once magnetostriction is present on a transformer core, the audible noise (saturation) becomes greater as the transformer is asked to pass more current. Moving some products, or a moderately high-current product, to the opposite transformer group may alleviate the problem. Additionally, many computer drives come with external (wall-wart type), switching power supplies that feature chopped AC waveforms. If mechanical noise is present, such power supplies may be better served by the Niagara 7000EU's High Current outlets or by using an additional, smaller Niagara Series product, such as the Niagara 5000 or Niagara 1000, which do not employ transformers.

If you notice that the slight buzzing sound has increased over time (i.e., was once negligible, but is now quite noticeable), please understand that the Niagara 7000EU's AC isolation transformers are like the proverbial "canary in a coal mine." In all likelihood, the Niagara 7000EU has not developed a problem. (If you remove all of the AC output cords and listen for the slight buzzing sounds, you will likely find that they are gone.) However, it is possible that otherwise state-of-the-art components are causing the problem.

Investigate valve or vacuum tube power supplies. If the tube(s) are wearing, some circuits will offset some DC onto the AC line and back to the Niagara 7000EU, or affect the AC waveform that the Niagara 7000EU feeds. If the components were going into a power filter or conditioner without transformers, you would never be aware of the problem, but transformers never lie: It's time to replace one (or more) of the power supply tubes!

Some pre-amplifier power supplies that utilize multiple W6550 power tubed for DC regulation can in some cases create enough asymmetry in the AC power waveform that is present on their AC cord, that the output of the Niagara-7000EU's isolation transformers may succumb to magnetostriction (excessive mechanical buzzing). In this instance, it may be necessary to utilize the high current outlets.

The Quest Group, DBA: AudioQuest, warrants to the original purchaser of this AudioQuest Niagara 7000EU, will be free from defects in material and workmanship for a period of five years. The purchaser of the product is encouraged to complete the warranty registration by mail or on-line at the AudioQuest website.

If the product does not conform to this Limited Warranty during the warranty period (as herein above specified), purchaser shall notify AudioQuest in writing (or e-mail), of the claimed defects. If the defects are of such type and nature as to be covered by this warranty, AudioQuest shall authorize the purchaser to return the product to the AudioQuest factory (2621 White Road, Irvine, California, 92614 USA). Warranty claims should be accompanied by a copy of the original purchase invoice showing the purchase date; this is not necessary if the Warranty Registration was completed either by mailing in the completed warranty card or by registering on-line at the AudioQuest website. Shipping charges to the AudioQuest factory (Irvine, California, USA) must be prepaid by the purchaser of the product. AudioQuest shall, at its own expense, furnish a replacement product or, at AudioQuest's option, repair the defective product. Return shipping charges back to the purchaser will be paid by AudioQuest.

All warranties contained herein are null and void if: the AudioQuest AC power product (Noise-Dissipation System) has been opened, improperly installed, altered in any way, or tampered with. AudioQuest is not responsible for any connected equipment or any claims of damage to connected equipment due to the occurrence of an AC power surge, spike, or over-voltage event, unless AudioQuest determines after thorough inspection and testing by AudioQuest (with product shipped to AudioQuest USA at the owner's expense), that the protection circuitry was in whole or in part improperly functioning. AudioQuest is not responsible for any connected equipment that is damaged due to external signal lines (non-AC power lines), that carry an electrical storm or signal wiring fault surge or spike (such as Ethernet, cable, and satellite connections).

All AudioQuest AC power products (Noise-Dissipation Systems), must be plugged directly into a properly wired AC power line with a protective ground. All AudioQuest AC power products (Noise-Dissipation Systems) cannot be "daisy-chained" together in serial fashion with other AC power strips, UPS's, other AC surge protectors, AC power conditioners, or AC extension cords. Any such installation voids the warranty. The AudioQuest warranty only protects against damage to properly connected equipment or AC cables where AudioQuest has determined, at its sole discretion, that the damage resulted from an AudioQuest power product (Noise-Dissipation System) circuit or protection circuit malfunction and does not protect against acts of God (other than lightning), such as flood, earthquake, war, terrorism, vandalism, theft, normal-use wear and tear, erosion, depletion, obsolescence, abuse, damage due to low-voltage disturbances (i.e., brownouts or sags), or system equipment modification or alteration. Do not use this product in any way with a generator, heater, sump pump, water-related devices, life-support devices, medical devices, automobile, motorcycle, or golf-cart battery charger. To be used indoors only and in dry areas. All warranties contained herein are null and void if used in any way with any of the aforementioned devices.

THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. AudioQuest does not warrant against damages or defects arising out of improper or abnormal use or handling of the product, against defects or damages arising from improper installation, against defects in products or components not manufactured by AudioQuest, or against damages resulting from such non-AudioQuest made products or components. This warranty shall be cancelled by AudioQuest at its sole discretion if the product is modified in any way without written authorization from AudioQuest. This warranty also does not apply to products upon which repairs have been affected or attempted by persons other than then pursuant to written authorized by AudioQuest.

THIS WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of AudioQuest shall be to repair or replace the defective product in the manner and for the period provided above. AudioQuest shall not have any other obligation with respect to this product or any part thereof, whether based on contract, tort, strict liability, or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, shall AudioQuest be liable for incidental,



special, or consequential damages. AudioQuest employees or representatives' ORAL OR WRITTEN STATEMENTS DO NOT CONSTITUTE WARRANTIES, shall not be relied upon by purchaser, and are not a part of the contract for sale or this limited warranty. This Limited Warranty states the entire obligations of AudioQuest with respect to the product. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

Warranty claims should be accompanied by a copy of the original purchase invoice showing the date of purchase. (If a Warranty Registration Card was mailed in at the time of purchase or if the product was registered on-line, this is not necessary.) Before returning any equipment for repair, please be sure it is adequately packed and cushioned in either the original or a new AudioQuest factory-supplied polybag, foam insert pair, and dual carton set to protect against damage in shipment, and that it is insured.

**audioquest**<sup>®</sup>