

EMPIRE

1974 GUIDE TO SOUND DESIGN

© beim Hersteller
Archiv Michael Otto
HiFi-Classic.de

main radio

6 Frankfurt am Main
Hauptgeschäft Kaiserstraße
Autoradio Einbaustation
Kaiserplatz Bethmannstraße
Telefon-Sammelnummer 21
Nordwest-Zentrum Telefon
Main Taunus Zentrum
Telefon (06 11) 31 94 73
Im Flughafen Telefon 6 90 5

Stereo Cartridges
Turntable Systems
Speaker Systems



**All The Way To
50,000 Hz.**

**Plays Any
4 Channel System
Perfectly.**

**Plays Stereo
Even Better than Before.**

EMPIRE'S NEW WIDE RESPONSE 4000D SERIES CARTRIDGE features our exclusive™ "4 DIMENSIONAL" diamond stylus tip.

This phenomenal new cartridge will *track* (stay in the groove) any record below 1 gram and *trace* (follow the wiggles) all the way to 50,000 Hz. Our exclusive nude™ "4 DIMENSIONAL" diamond tip has a .1 mil radius of engagement yet the very low force required for tracking prevents any discernible record wear.

Discrete 4 channel requires two full 20,000 Hz frequency spectrums. With a 50,000 Hz response you have plenty of extra sound to spare.

Even ordinary stereo is enhanced... true music reproduction depends upon wide frequency response. For example; a perfect square wave requires a harmonic span of 10 times the fundamental frequencies recorded. Obviously, to identify each instrument or sound nuance in a recording you must reproduce frequencies well beyond the range of normal hearing. Listening to a cartridge with a response to 50,000 Hz is a truly unique experience. Close your eyes and you'll swear the sound is live. Open your eyes and you'll never be satisfied with anything else.

™ -Trade Mark of the Empire Scientific Corporation

Technical Specifications			
Empire's Super 4000D Series Cartridge			
MODEL	Professional 4000 D/III	Deluxe 4000D/II	Standard 4000 D/I
Frequency Response	5-50,000 Hz	5-45,000 Hz	10-40,000 Hz
Output Voltage mv per channel	3.0	3.0	3.0
Channel Separation (left to right)	more than 35 dB	more than 35 dB	more than 35dB
Channel Separation (front to back)	more than 25 dB	more than 25 dB	more than 25dB
Tracking Force Grams	1/4 to 1-1/4	3/4 to 1-1/2	3/4 to 2
Stylus Tip	miniature nude diamond with .1 mil tracing radius ™ "4 DIMENSIONAL"	miniature nude diamond with .1 mil tracing radius ™ "4 DIMENSIONAL"	miniature diamond with .1 mil tracing radius ™ "4 DIMENSIONAL"
Stylus Replacement	S 4000 D/III White	S 4000 D/II Yellow	S 4000 D/I Black

Empire's Newest 2000 Super Quality Series

Model	2000E/III	2000E/II	2000E/I
Technical Specifications	Surpassed in overall quality only by the 4000D/III, 4000D/II, and 4000D/I. Outstanding tracking from 1/2 to 1-1/2 grams. Response covers 5-35,000 Hz. Separation exceeds 35dB, .2 x .7 mil bi-radial hand polished nude elliptical diamond stylus. (Clear)	Recommended for best quality record playback systems. Will track well from 1/2 to 1-1/2 grams. Response 6-33,000 Hz. Separation better than 35dB, .2 x .7 mil bi-radial hand polished nude elliptical diamond stylus. (Blue)	Ideal for good quality turntables and changers. Response 8-32,000 Hz. Tracking 3/4 to 1-1/2 grams. Separation 35dB, .2 x .7 mil bi-radial hand polished nude elliptical diamond stylus. (Green)

Measurement Standards

Model	1000ZE/X	999VE/X
Technical Specifications	Tracks as low as 0.1 gram in laboratory playback arms. Individually adjusted for extremely flat frequency response (± 1 dB) from 20-20,000 Hz. Useable output to 45,000 Hz. Separation 35dB at 1 Khz, 25dB or better to 20 Khz. No electrical or mechanical peaks. IM distortion at standard groove velocity does not exceed .05% at any frequency within the full spectrum. A .2 x .7 mil hand polished miniature nude elliptical diamond for extremely low mass. (Black)	Stereo tracking force 1/4 to 1-1/2 grams. Frequency response (± 1 dB) from 20-20,000 Hz with useable output to 40,000 Hz. Other technical specifications same as 1000ZE/X. Uses a .2 x .7 mil hand polished miniature nude elliptical diamond. Recommended for high performance turntables and changers only. (Purple)

Deluxe Series

Model	999TE/X	999SE/X	999E/X
Technical Specifications	This cartridge combines high compliance with low tip mass for excellent tracking between 1/2 and 1-1/2 grams. Full frequency response is 6-32 Khz, separation 35dB, .2 x .7 mil bi-radial hand polished nude elliptical diamond stylus. (White)	Delivers a fine frequency response of 8-32,000 Hz in top quality manual and automatic turntables and tone arms tracking from 1/2 to 1-1/2 grams. Separation 35dB, .2 x .7 mil bi-radial hand polished nude elliptical diamond stylus. (Blue)	Designed to track from 3/4 to 1-1/2 grams in many of today's better changers. Faithfully reproduces frequencies between 10-30,000 Hz, of channel separation. .2 x .7 mil bi-radial hand polished nude elliptical diamond stylus. (Green)

Which Empire Cartridge Can You Use

AR	BSR			DUAL			EMPIRE			PE
XB	810	610A/X	510A/X	1229	1218	1216	598	498	398	3060
2000E/I	4000D/II	2000E/II	2000E/II	4000D/III	4000D/II	4000D/I	4000D/III	4000D/III	4000D/III	4000D/II
2000E	4000D/I	2000E/I	2000E/I	4000D/II	4000D/I	2000E/III	4000D/II	4000D/II	4000D/II	4000D/I
2000	2000E/III	2000E	2000E	2000E/III	2000E/III	2000E/II	4000D/I	4000D/I	4000D/I	2000E/II
999SE/X	2000E/II	2000	2000	2000E/II	2000E/II	2000E/I	2000E/III	2000E/III	2000E/III	2000E/I
999E/X	2000E/I	999SE/X	999SE/X	1000ZE/X	2000E/I	2000E	2000E/II	2000E/II	2000E/II	999VE/X
90EE/X	999VE/X	999E/X	999E/X	999VE/X	999VE/X	999TE/X	1000ZE/X	1000ZE/X	1000ZE/X	999TE/X
909/X	999TE/X	90EE/X	90EE/X	999TE/X	999TE/X	999SE/X	999VE/X	999VE/X	999VE/X	999SE/X
	999SE/X	909/X	909/X	909SE/X	999SE/X	999E/X	999TE/X	999TE/X	999TE/X	999E/X
	999E/X				999E/X	909E/X	999SE/X	999SE/X	999SE/X	

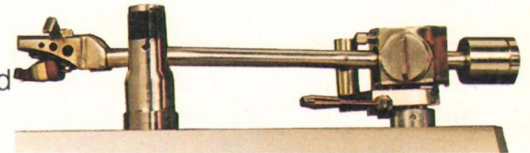


The Best Turntable In The World

The Troubador Model 598III Created By Our Total Effort On One Superb Model

The only turntable system designed exclusively for premium low tracking force cartridges that won't wear out your records. Exceeds every broadcast specification for professional playback equipment. The Troubador 598III turntable must truly be considered a classic. It is a harmony of proven engineering principles and precision production techniques. The selection of superior raw materials for the Troubador 598III attests to Empire's commitment to produce the finest in electronic playback equipment.

The extraordinary Troubador system features the world's most perfectly designed playback arm. It can track the world's finest cartridges as low as 0.1 gram, yet arm friction measures a hundred times less than that. With the lowest fundamental resonant frequency of any arm, an inaudible 6 Hz, acoustic feedback is unheard of even with gain and bass turned all the way up.



The coordinated anti-skating adjustment provides the necessary force for the horizontal plane. It is micrometer calibrated to eliminate channel imbalance or unnecessary record wear.

Stylus force is dialed with a calibrated clock mainspring more accurate than any commercially available stylus pressure gauge.

Empire's exclusive Dyna-Lift automatically raises the arm off the record after the last band of music.

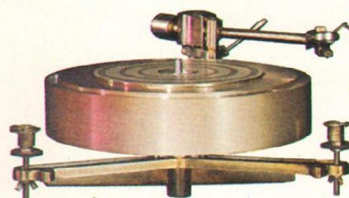


A true-vertical cueing control floats the tone arm up or down from a record surface bathed in light. Choose the exact selection you want — even in a darkened room.

The cartridge mounting system allows instant cartridge demount and interchange. Empire's spectacular new wide response 4000D/III cartridge is a standard feature on the Troubador 598 III. With the ability to track effectively at stylus forces as low as 0.1 gram (in laboratory environments), the 4000D/III never subjects the disc, whether vinyl pressing or master laquer, to any visible wear or groove deformation.



Empire's damped suspension system cradles the arm and platter. You can dance, jump or rock without bouncing the stylus off the record.



Outstanding design and performance — a 12-inch platter and 3-inch thick balanced drive flywheel (the most massive used in a home system) contribute to the lowest rumble ever tested: — 90dB RRLL. Wow and flutter are an almost immeasurable .01%.

The finest motor available, a hysteresis synchronous type of exceptional design, drives the massive platter.

The motor reaches full speed in less than one third of a revolution and locks in on AC line frequency to maintain speed accuracy with essentially zero error. For the perfectionist — a built-in strobe disc and pitch adjustment for precision speed control.

The flexible drive belt isolates motor from platter and is ground to \pm one tenth of one thousandth of an inch accuracy. A 5 wire circuit eliminates ground loops.



Troubador 598III Technical Specifications:

- Speeds, 33-1/3 and 45 rpm
- Built-in 45 rpm spindle
- Push button power control
- Satin gold finish
- Overall dimensions (with base and dust cover): 17-1/2" width; 15-1/8" depth; 8" height
- Includes Empire's 4000 D/III wide response cartridge, satin walnut base, and plexiglas dust cover

Inside The Empire Speaker System

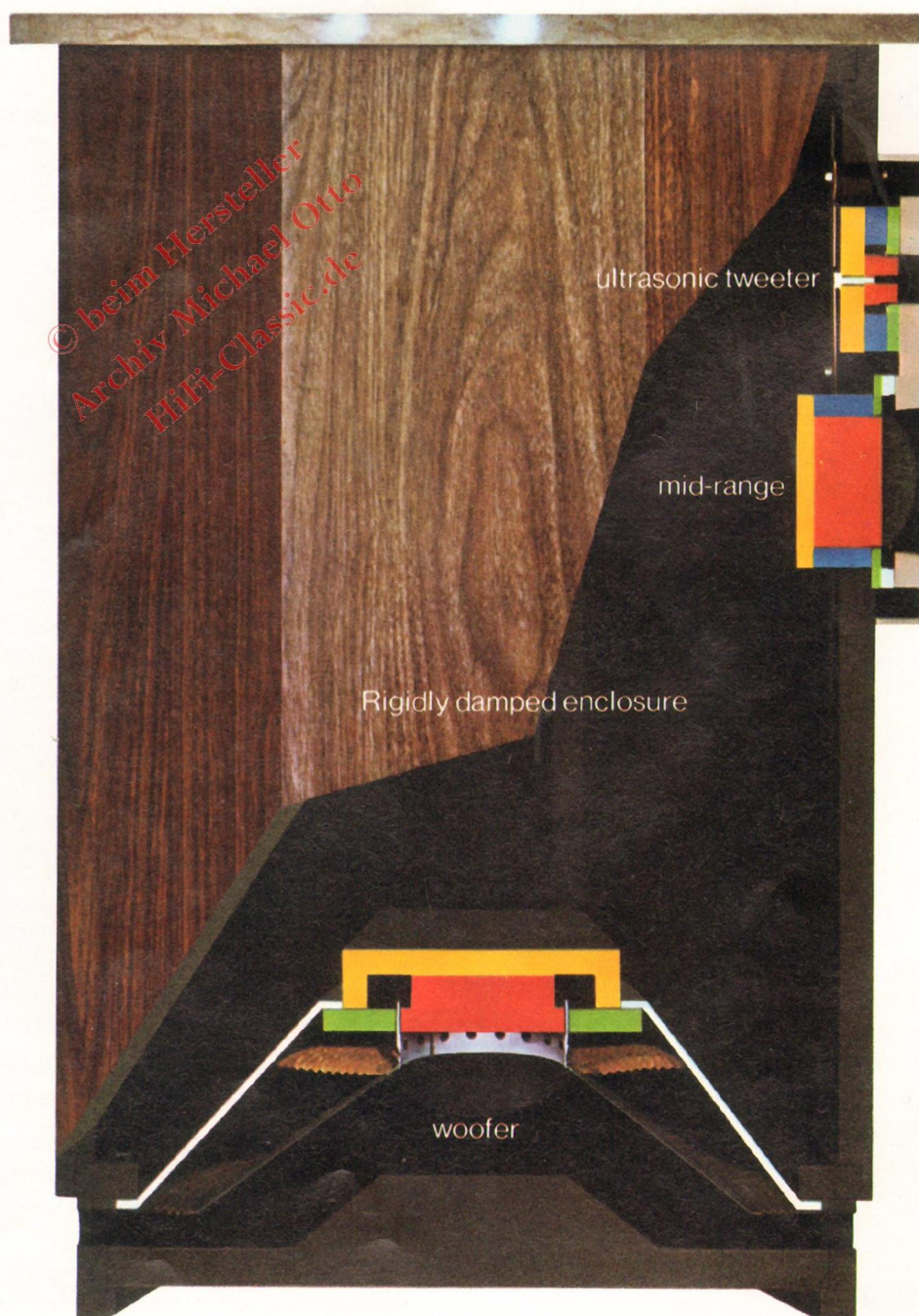
Our exclusive sonic column is a totally dampened and rigid speaker enclosure, more rigid than any "box." There are no cabinet vibrations to color the sound.

The woofer faces downward, close to the reflecting floor surface, feeding through a front loaded horn with a full circle aperture throat. This construction provides 360 degree radiation for full dispersion of sound. It puts the lows on the bottom where they belong and spreads them across the room like a carpet of sound.

Only perfect 3-way systems with massive woofer, mid-range and tweeter drivers are used in Empire speakers. Empire speakers are probably the most powerful home speakers in use today. Each can handle large amounts of power without burnout or overload — more than enough to fill a large auditorium. No orchestral crescendo will ever distort or muddy the great Empire sound.

A low mass voice coil in our ultrasonic tweeter extends the frequency response beyond audibility while a compression type mid-range direct radiator creates spectacular presence and realism. The Empire wide angle sound dispersion system is unsurpassed by ordinary speakers.

Empire's unique design means that you can use your speakers anywhere. They need not be placed in corners or against walls. The Empire speaker system affords complete stereophonic or quadraphonic flexibility and fidelity. Empire's concert hall effect allows you to sit or move anywhere in the room, no fixed position to hamper your listening pleasure. Volume and tone quality remain constant virtually everywhere in this total Empire environment of sound.



Why Buy An Empire Speaker System?

No one factor in your home music system is more crucial to sound reproduction than the quality of your speakers. The speaker system receives the complex mechanical waveforms of your records, translates them into electronic impulses, and amplifies and converts them into the sound you hear. The sound of your system is only as good as your speaker reproduction.

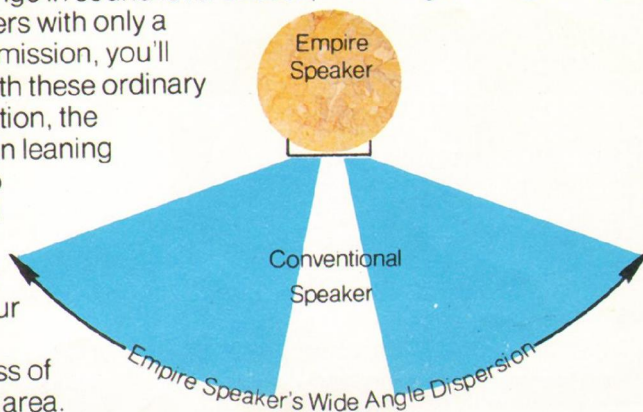
Heavy magnet assemblies are the key to Empire's superlative sound reproduction. Each amplified impulse from your playback system causes a precision wound voice coil to move as its attraction to a powerful permanent magnet is varied. The driver diaphragm, coupled to the voice coil, vibrates the surrounding air with precise control. The sonic waves created become full-bodied tones indispensable to faithful sound reproduction.

The larger the speaker magnet, the more driving force it exerts on the voice coil and the more perfectly it reproduces every nuance of music. Every Empire driver is constructed around the largest magnetic structure to be found in any speaker of comparable price. These drivers are precision engineered for superb voice coil control, unsurpassed linear response and distortion-free musical reproduction.

Empire speakers are specially constructed to give you tone quality second only to a live performance. The magnetic structures in these speakers can reproduce frequencies as high as 20,000Hz. Although few people can directly hear pure tones this high, these very high frequencies are necessary as harmonics to complement the lower audible frequencies required to reproduce the exact character of each instrument. With an Empire speaker system a bassoon always sounds like a real bassoon and a piano like a real piano.

Try This Simple Test

Take a few moments to try this simple test. Walk in an arc around an Empire speaker. You'll notice no change in sound level of bass, mid-range, or highs. If you walk around ordinary speakers with only a narrow angle of sound transmission, you'll notice a fragmented tone. With these ordinary speakers, slight shifts of position, the turning of one's head, or even leaning to one side may cause sharp changes in the listening level and tone. But with Empire speakers, full frequency and separation are assured by our exclusive wide-angle sound dispersion system, regardless of your position in the listening area.

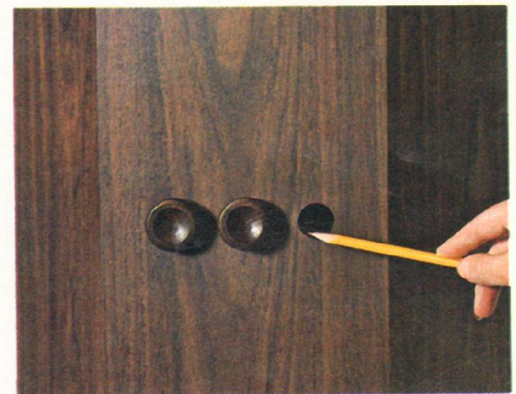
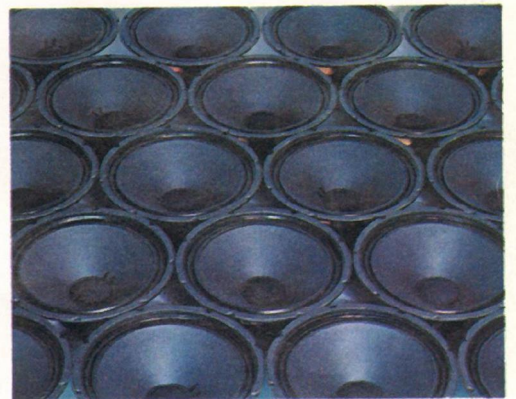


© beim Hersteller
Archiv Michael Otto
HiFi-Classic.de



© beim Hersteller
Ruf bei Michael Otto
Hör- & Musik-Physik.de

The Grenadier 6000MII Super Compact "Music in the Round"



Empire's Dynamic Reflex Stop System

The bass and treble of your 6000MII speaker can be adjusted to suit your individual room acoustics. Maximum bass is obtained with all stops out.

Grenadier 6000MII Technical Specifications:

- Frequency response: 30-20,000 Hz
- Continuous power ratings: 30-450 Hz... 50 watts RMS; 450-5000 Hz... 30 watts RMS; 5000-20,000 Hz... 20 watts RMS; total power handling capacity 100 watts RMS.
- Nominal impedance: 8 ohms
- Overall dimensions: 18" diameter; 24-3/8" height
- Finish: satin walnut or antique oak

The Grenadier 6000MII is the only omni-directional speaker system of its kind priced under \$120. To provide a Grenadier for every budget we reduced the size, not the quality, of our model 6000MII. Despite the price, the 6000MII is a complete three-way system featuring Empire's exclusive total "stereo-in-the-round" design. In the Grenadier tradition, there is no ugly, dust-catching grille-cloth. Empire designers and engineers have created the handsome wide-angle sonic lens that adorns this elegant cabinet. It has a down-facing 10-inch woofer, a mid-range radiator and a wide-angle ultrasonic tweeter, all in an absolutely rigid, non-resonating cylindrical cabinet. It's great power handling capacity can easily cope with the most powerful receivers available today.



© beim Hersteller
Archiv Michael Otto
HiFi-Classic.de

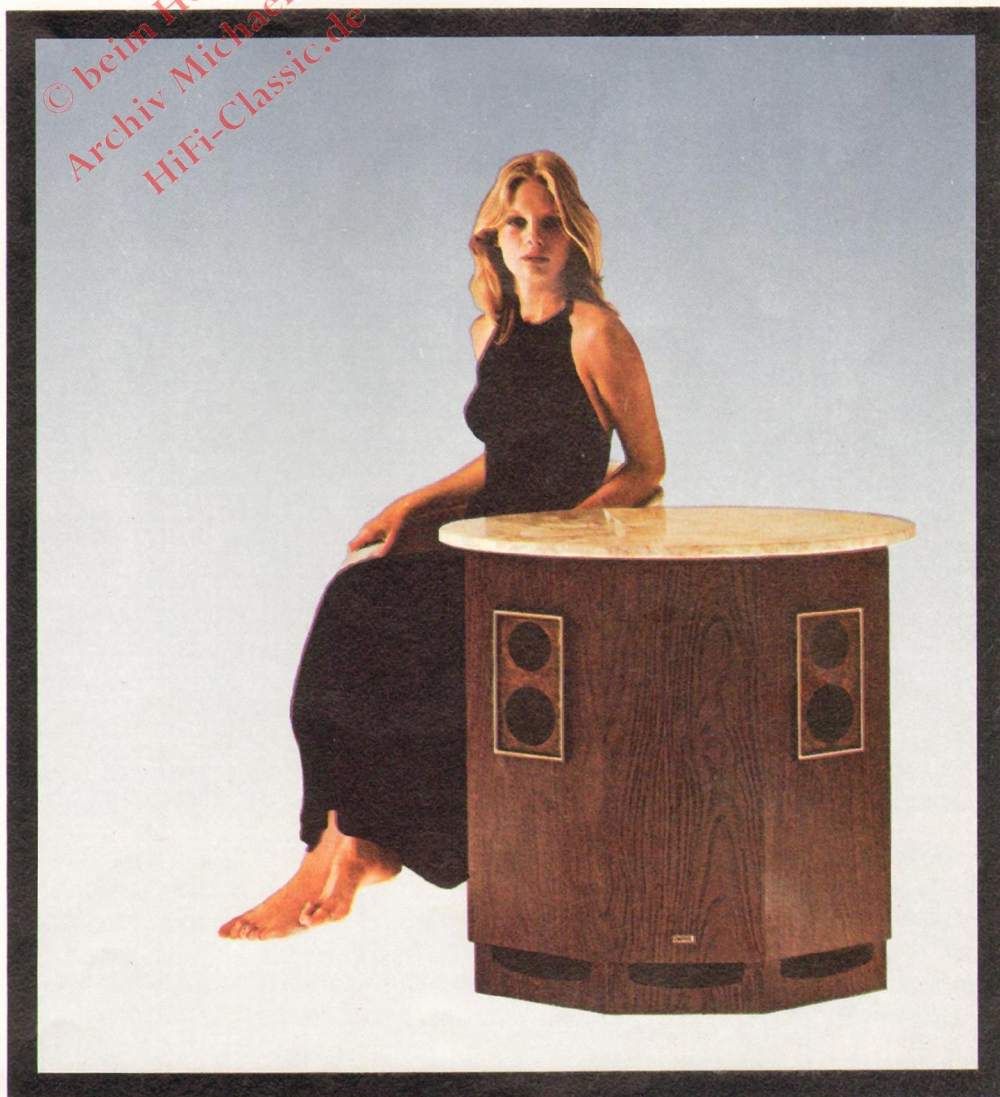
The New Grenadier 9500 MII Super Speaker "Your Personal Concert Hall"

Empire's top-of-the-line speaker, the new Grenadier 9500 MII has six drivers in two three-way systems featuring dual 12 inch down-facing woofers (acoustically equivalent to an 18-inch driver) and two Empire wide angle lens assemblies. Each 9500 MII has an automatic circuit breaker and "Sound Beacon". The sound of the 9500 MII is powerful. It can roar like thunder through any house or auditorium. Above all the 9500 MII offers a kind of versatility that other speakers can't match. Use it as one speaker. Use it as two speakers. A perfect answer for stereo or 4 channel sound.

Grenadier 9500 MII Technical Specifications:

- Frequency response: 20-20,000Hz
- Components: 6 drivers in dual 3-way systems
- Continuous power ratings (in parallel, 4 ohms): 20-450Hz...140 watts RMS; 450-5000Hz...70 watts RMS; 5000-20,000Hz...40 watts RMS; Total power handling capacity 250 watts RMS.
- Distortion at 10 watt level: 100Hz...0.75%
1,000Hz...0.15%; 10,000Hz...0.05%
- Overall dimensions: 30" width; 20-3/4" depth; 28" height,
- Finish: satin walnut

© beim Hersteller
Archiv Michael Otto
HiFi-Classic.de



The Grenadier 7500 MII Super Value "Perfect for Tomorrow's Sound"

The favorite of audio experts and interior designers alike, the Grenadier 7500 MII is a perfect synthesis of form and function... truly a super-value speaker. Using Empire's high powered down-facing 15-inch woofer (for bass you can feel as well as hear) and our wide angle lens assembly (180 degree radiation) with its ultra-sonic domed tweeter and mid-range direct radiator, the Grenadier 7500 MII can accommodate every fine amplifier or integrated receiver. These speakers spectacularly reproduce any program material — powerful rock to concert classics — all driven with equal force and clarity. The 7500 MII Grenadiers use Empire's automatically resetting circuit breakers that prevent overload and burnout regardless of how hard you drive the speaker, as well as our visual display "Sound Beacon" (laser like beams that pulse and throb in rhythm with the music).

Grenadier 7500 MII Technical Specifications:

- Frequency response: 25-20,000Hz
- Components: 15-inch high compliance woofer, domed mid-range direct radiator, ultrasonic domed tweeter, coupled with Empire's wide-angle acoustic dispersion system.
- Crossovers: 450 and 5,000Hz
- Controls: 3 position treble response switch
- Continuous power ratings 25-450Hz...70 watts RMS; 450-5000Hz...35 watts RMS; 5000-20,000Hz...20 watts RMS; Total power handling capacity...125 watts RMS.
- Impedance: 8 ohms
- Overall dimensions: 20" diameter; 26-3/4" height
- Finish: satin walnut or antique oak



© beim Hersteller
Archiv Michael Otto
HiFi-Classic.de

Introducing the Jupiter 6500II— Super Idea Empire's Newest Addition to Modern Musical Living

Jupiter 6500II Technical Specifications:

- Frequency response: 30-20,000Hz
- Continuous power ratings: 30-450 Hz... 60 watts RMS; 450-5000 Hz... 30 watts RMS; 5000-20,000 Hz... 20 watts RMS; Total power handling capacity... 100 watts RMS.
- Impedance: 8 ohms
- Crossover frequencies: 450Hz and 2500Hz
- Three way system: 12-inch woofer, mid-range radiator, ultrasonic tweeter
- Overall dimensions: 17-1/4" diameter; 25-1/2" height.
- Finish: gloss white

The virtually indestructible, non-resonating enclosure for the new Jupiter 6500II speaker is made of a new space age acoustic material that can withstand wind, rain and sun. Its rugged surface is marproof and spillproof, making it perfect for today's casual living.



This ideal three-way system[†] uses Empire's heavy 12-inch down facing woofer for deep solid bass, a powerful mid-range for crisp, clear alto and voice tones, and a lightweight ultrasonic tweeter with wide angle dispersion. The power of the Jupiter 6500II speaker is awesome either indoors or out. It can deliver an impressive performance without overload, burnout or strain from any receiver or amplifier. Its all-around sound is simply phenomenal, radiating to all directions: front, rear, left or right.

[†] Jupiter speaker drivers are completely weatherproof for indoor or outdoor use.

An Empire Guide To Sound Performance

A recommended sampling of stereo and 4 channel recordings that provides a true test of full-frequency performance.

Classical and Operatic

Bach: Organ Favorites/E. Power Biggs	Columbia	MS-6261
Bizet: Carmen/Price, Corelli, Merrill, Freni; Vienna Philharmonic, Karajan	RCA Victor	LDS-6164
Dukas: The Sorcerer's Apprentice/Israel Philharmonic, Solti	London	STS-15005
Holst: The Planets/New Philharmonia Orchestra	Angel	36420
Mahler: Symphony No. 1/Boston Sym., Leinsdorf	RCA Victor	LSC-2642
Prokofiev: Alexander Nevsky/Chicago Sym., Reiner	RCA Victor	LSC-2395
Rachmaninoff: Rhapsody on a Theme of Paganini/Op. 43/Boston Pops	RCA Victor	LSC-2678
Stravinsky: Firebird Suite/London Sym., Stokowski	London	SPC 21026
Tchaikovsky: 1812 Overture/Phila. Orch., Ormandy	Columbia	MS-6073

On the Lighter Side

Clockwork Orange/Soundtrack	Warner Bros.	2573
Hair/Original Broadway Cast	RCA Victor	LSO-1150
Oliver/Original Broadway Cast	RCA Victor	LSOD-2004
Pops Roundup/Boston Pops, Fiedler	RCA Victor	LSC-2595
West Side Story/Soundtrack	Columbia	OS-2070

Jazz, Popular, Vocal and Miscellaneous

The Forty Minute Raga/Ali Akbar Khan	Connoisseur Society	CS-2008
Great Songs of Love and Faith/Mahalia Jackson	Columbia	CS-8624
In the Wind/Peter, Paul, and Mary	Warner Bros.	(S) 1507
Johnny Puleo and His Harmonica Gang/Vol. 2	Audio Fly	5859
Non Stop Dancing/James Last Band	Polydor	S2371-269
South of the Border/Herb Alpert	A & M	(4) 108
Switched-On Bach	Columbia	MS-7194
Time Out/Dave Brubeck	Columbia	CS-8192

Contemporary

Abraxas/Santana	Columbia	KC-30130
Creedence Clearwater Revival	Pendulum- Fantasy	8410
Close to the Edge/Yes	Atlantic	SD-7244
Emerson, Lake & Palmer	Cotillion	SD-9040
Exile on Main Street/Rolling Stones	Rolling Stone Records	COC-8-2900
Gold/Neil Diamond	Universal	73084
Honkey Chateau/Elton John	Uni	93135
Joe Cocker	A & M	4224
John Barleycorn Must Die/Traffic	U. A.	5504
Let It Be/Beatles	Apple	34001
Parsley, Sage, Rosemary & Thyme/Simon & Garfunkel	Columbia	CS-9363
Pearl/Janis Joplin	Universal	73096
Summer Breeze/Seals and Crofts	Warner Bros.	BS-2629
Tarkio/Brewer & Shipley	Kama Sutra	KSBS-2024
The Turning Point/John Mayall	Polydor	24404

4 Channel

Tchaikovsky: Symphony No. 4 in F minor/ Stokowski, American Symphony Orchestra	Vanguard*	VSQ30001
The Fantastic Philadelphians, Vol. 2/Ormandy	RCA**	ARD1-0017
Touch/Morton Subotnick	Columbia*	MQ31019
No. No. Nanette/Original Cast	Columbia*	SQ30563
Company/Original Cast	Columbia*	SQ30993
Godfather/Hugo Montenegro	RCA**	APD1-0001
Come From The Shadows/Joan Baez	A & M*	8Z54339
Berlioz: Requiem/Utah Sym., Maurice Abravanel	Vanguard*	VSQ300067
Mancini Salutes Sousa	RCA**	APD1-0013
The Fantastic Philadelphians, Vol. 1/Ormandy	RCA**	ARD1-0002
Symphony No. 15, Shostakovich	RCA**	ARD1-0014

*Matrix 4 Channel; **Discrete 4 Channel

Printed in U.S.A.
Form No. 907-B-176

EMPIRE SCIENTIFIC CORP., 1055 Stewart Avenue, Garden City, N.Y. 11530
CANADA: EMPIRE SCIENTIFIC CORP., LTD., 65 Martin Ross Ave., Downsview, Ontario