



UNLEASH THE MUSIC

2014 / 2015



UNLEASH THE MUSIC

Over three and a half decades of engineering, designing and manufacturing some of the world's premier speakers make surpassing previous achievements a challenge. But knowing there is always room for progress can serve as a driving force, enabling us to define barriers and determine how to provide solutions through advanced material use, innovative engineering, and perfecting manufacturing processes. This solution-oriented approach forms the building blocks of Morel's business and its success.

Our dedicated engineers are continually striving to perfect Morel products by constantly researching for a better understanding of how speakers work beyond the mechanical level. In the automotive world, it is extremely critical that we comprehend the delicate balance between acoustic parameters of a car and mechanical limitations in speaker design.

Morel's pursuit to achieve perfect reproduction and musical accuracy is also an accomplishment owed to our total manufacturing control and the special cooperation between our research and development and manufacturing teams.

The new car audio range represented in these pages demonstrates Morel's mastery of creating the near perfect balance between the machine and acoustic performance.

A JOURNEY OF DISCOVERY: THE FAT LADY PROJECT

The Morel *fat lady* is more than just an iconic, high-end home audio loudspeaker system. It started as a three year project conducted by our engineers that enabled us to push boundaries, stretch the imagination, and to look for new ways to build a loudspeaker that could genuinely recreate "the live experience", that electric feeling of really "being there" at a concert.

Throughout the development process, Morel learned how to exploit the acoustic potential of new materials and techniques, some of which were borrowed from Formula One racing and the aerospace industry. Some examples are the extensive use of carbon fibre in the very complex *fat lady* cabinet and drive units, and a high-tech material called Rohacell (used between two carbon fibre layers to form a sandwich construction for some Morel woofer cones).

The *fat lady* project also led to a new topology in crossover design. Much of what was learned was adapted to the new Morel car audio line, bringing the quest for "sound stage" and "image" stability within the car environment much closer to reality.

Such a radical product demands meticulous attention to detail throughout its journey, from a mass of parts to a finished and tested speaker system ready for sale. In order to facilitate this, Morel created new advanced manufacturing and testing procedures, which all Morel products benefit from.

THE ULTIMATE TEST

Each Morel car audio system was designed to present music as close to the real thing as possible. Hearing is believing, so experience Morel for yourself!

Technology Bar

- One-piece Carbon cone
- Hexatech™ aluminum VC
- EVC™ structure
- Acuflex™ coated - midrange & tweeter
- Neodymium magnet motor
- Titanium bobbin -woofer
- Shielded magnet
- C.A.R. Filter™
- Uniflow™ Air Chassis technology
- Low resonance rear cavity - midrange & tweeter
- Silver-plated Van Den Hul linear crystal wire -midrange terminal
- Lotus Grille
- Extra Large 3" voice coil

38 ANNIVERSARY LIMITED EDITION

The new 38 Anniversary Limited Edition system is the culmination of over three decades of R&D and manufacturing expertise, marking the next evolution for high-end car audio.

What sets this speaker system apart from the competition? It starts with the materials, like the titanium voice coils (in the woofers), carbon fibre/Rohacell sandwich cones and the machined aluminum face plates for the tweeter and midrange. Add the advanced crossover with top quality components and Lotus grille and you begin to see why the 38 is a CEA 2014 Innovations Award recipient.

This speaker set embodies some of our best ideas brought to life. With a specially designed new Uniflow™ Air technology that can provide

increased air and sound flow in the woofer (up to four times more than in previous Morel drivers), the 38 has an open and aerodynamic chassis and magnet system design that reduces inter-modulation distortion, stretching the neodymium high grade magnet segment even further.

The 38 LE marks a new level of sound quality with incredible accuracy in audio reproduction combined with exceptional musicality. This set, available as a 2- or 3-way system, delivers what you would expect to hear from speakers of this stature—a beautifully natural, dynamic and articulated sound, placing the listener in the best seat in the house for an emotionally engaging life-like experience.

WOOFER	TWEETER & MIDRANGE		CROSSOVER	
	38 LE W	38 LE TW	38 LE M	
Nominal Impedance (Ohm)	4	Nominal Impedance (Ohm)	6	6
Power Handling (WRms)	140	Power Handling (WRms)	130	100
Sensitivity (2.83V/1M) dB	88	Sensitivity (2.83V/1M)	90	88
Resonant Freq. Fs Hz	47	Frequency Response Hz	1000-20000	300-6000
Voice Coil Diameter mm (inch)	74 (3)	FS (Hz)	1200	450
Voice Coil Type/Bobbin	Titanium	Voice Coil Diameter mm (inch)	28 (1.125)	54 (2.125)
Cone Type	Triple layer sandwich cone	Magnet System	Double Neodymium Magnet	Neodymium rear vented
Cone Material	Carbon fiber/Rohacell sandwich	Dome Type	Acuflex™ hand coated soft dome	Acuflex™ hand coated soft dome
Unit Diameter mm (inch)	165 (6.50)	Unit Diameter mm (inch)	62.6 (2.4)	100.18 (3.93)
Mounting Depth mm (inch)	61 (2.4)	Mounting Depth mm (inch)	14.25 (0.56)	18 (0.7)
		Crossover Point	W:600Hz/12dB M:6dB/3300Hz/12dB T:4000Hz/12dB	W:2000Hz/12dB T:1800Hz/12dB
		Crossover Controls	Tweeter +/- 2dB Midrange +2dB	Tweeter +/- 2dB
		Wiring Options	Bi Wire / Bi amp	Bi Wire / Bi amp





Technology Bar
One-Piece carbon cone
Hexatech™ Aluminum VC
EVC™ structure
Acuflex™ coated tweeter
Double Neodymium Magnet Motor
Shielded Magnet
MXR direct Crossover
C.A.R Filter™
Uniflow™ Chassis
Lotus transparent grille
Copper shorting rings
Under-hung Voice Coil
Extra large 3" voice coil



SUPREMO

The Supremo is Morel's reference mobile audio sound system. Employing technical innovation from Morel's flagship home audio speaker, the *fat lady*. This new generation Supremo is the a recipient of the 2012 CEA Innovation award.

The Supremo represents a tour de force of Morel's expertise and craftsmanship, elevating car audio musical presentation to a whole new level.

We challenge you to experience the Supremo. You will be drawn irresistibly to the music, feeling the same adrenaline rush as being present at a live concert, but this time in your own car.

Supremo Woofer

An optimized version of the *fat lady* mid-bass woofer, for precision, linearity, dynamics, and wide frequency range.

Supremo Piccolo Tweeter

Seamlessly matches the Supremo woofer with an exceptionally low resonance point and flat frequency response.

MXR Crossover

Engineered to meet the most challenging acoustic conditions of a car, the new MXR crossovers employ Mundorf components, positive phase, sharp roll-off, and resistor-free signal paths to create total sound integration between the Supremo components for a realistic three-dimensional sound.

Model	Size & Configuration	Power Handling (Wrms) / Peak Power (W)	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)	Crossover
SUPREMO 602	6½" 2-way	140 / 600	89	40-25000	MXR SUPREMO





Technology Bar
One-Piece DPC cone
Hexatech™ Aluminum VC
EVC™ structure
28mm Acuflex™ coated tweeter
Titanium bobbin
Shielded Magnet
C.A.R Filter™
Uniflow™ Chassis
Lotus grille-tweeter & midrange
Octopus Grille-woofer
Extra large 3" voice coil



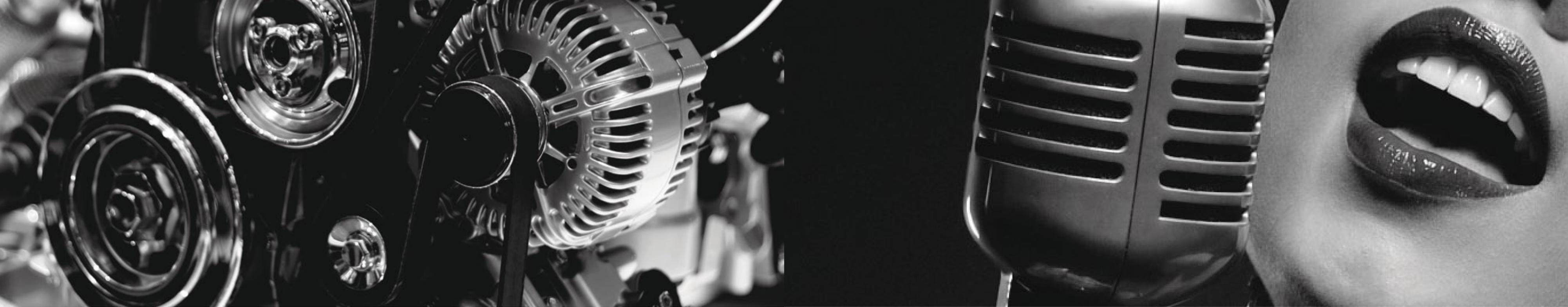
ELATE TITANIUM

The Elate is recognized as an icon in car audio. Morel's R&D re-engineered this series to combine newly developed technologies to deliver precision, musicality and high power capability like never before.

Borrowing technologies from Morel's high-end cutting-edge hifi raw-drivers, the Elate Titanium woofers feature a new titanium bobbin (voice coil former) made to produce a quick transient response that aligns with the acoustic challenges of the car, allowing the woofer to match different enclosures for different car doors. The woofers continue to employ Morel's C.A.R filter™ and 3-inch EVC™ with Hexatech™ technology. Complementing the woofers is the new MT350 hand-crafted Acuflex™ soft dome tweeter with a vented cavity design for improved transiency and dynamic range. The tweeter has a smaller footprint and a completely new mounting design for easier installation in factory locations. An improved CDM880 Acuflex™ soft dome midrange provides lower resonance and a higher X-Max.

When it all comes together, the new Elate Titanium series recreates a soundstage with astounding transparency and imaging, while being more musically dynamic than ever.

Model	Size & Configuration	Power Handling (Wrms) / Peak Power (W)	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)	Crossover
ELATE TI 503/502	5¼" 3-way / 2-way	160 / 1000	87	40-25000	
ELATE TI 603/602	6½" 3-way / 2-way	180 / 1000	88	30-25000	MXT380 / MXT280
ELATE TI 903/902	8¾" 3-way / 2-way	200 / 1000	89	25-25000	



Technology Bar

- Hybrid: One-Piece DPC cone
- Hybrid Integra: Paper Composite Cone
- Hexatech™ Aluminum VC
- EVC™ structure
- Acuflex™ coated tweeter
- Hybrid Magnet Motor
- Shielded Magnet
- MXR direct Crossover
- Hybrid: C.A.R Filter™
- Hybrid Integra: Integra time aligned structure
- Uniflow™ Chassis
- Octopus Grille
- Large 2" voice coil



HYBRID & HYBRID INTEGRA

Some proclaim the Hybrid as one of the best sounding speaker systems we produce, and the latest generation takes it steps closer to perfection. At the heart of the new Hybrid is an unconventional, innovative and highly effective Hybrid magnet system. These woofers are now paired up with our famed MT230 tweeters and MXR crossovers to deliver extraordinary sound that's even more pleasing to the ear than before.

The addition of the 2013 CEA Innovation award winning Hybrid Integra expands the installation options of the Hybrid series. Morel's Integra concept minimizes phase error and allows the sound field to be constant in all directions, making it easy to achieve audiophile grade performance even when space is limited.

Model	Size & Configuration	Power Handling (Wrms) / Peak Power (W)	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)	Crossover
HYBRID 402	4" 2-way	100 / 300	89	70-25000	MXR240.3
HYBRID 502	5¼" 2-way	120 / 500	90	60-25000	MXR240.3
HYBRID 602	6½" 2-way	140 / 600	91	50-25000	MXR240.3
HYBRID INTEGRA 402	4" Point source	80 / 250	89	80-25000	MXR250i
HYBRID INTEGRA 502	5¼" Point source	90 / 250	90	70-25000	MXR250i
HYBRID INTEGRA 602	6½" Point source	100 / 300	91	65-25000	MXR250i



DESIGN AND TECHNOLOGY

Innovative technology and a distinct design philosophy have been the guiding ideas at the heart of Morel. Since the founding of the company, Morel established a reputation for manufacturing original and distinctive products that meet the challenge posed by the acoustic limitations in a car in order to achieve realistic audio performance and better product reliability. This can only be achieved by Morel's total control over all manufacturing and testing processes.

The following explains some of the iconic technological traits that have become the foundation of Morel speaker designs:



Lotus Grille

The new Morel grille has a specific pattern of holes in different shapes and diameters engineered to minimize the "horn" effect (high frequency peak caused by the resonant frequency of multiple same-size holes). Innovative metal processing enabled the construction of a very thin nearly transparent grille that hardly affects the sound at all frequencies whilst maintaining structural integrity to protect the drivers.

The Lotus grille is a registered design protecting Morel's intellectual property.

Woofer Cones

Strength, shape, weight and damping-finding the correct correlation between these four aspects of a cone require technical experience and practical know-how. Our latest generation of drivers takes these carefully balanced parameters to a new level, utilizing shallow, one-piece cone constructions for wide dispersion, accuracy and low distortion.

Carbon Fibre

Derived from the drivers of our award winning *fat lady* speaker system, this cone design is comprised of two exterior carbon fibre skins sandwiching a layer of Rohacell, a high strength, featherweight foam. The combination forms a cone that is light, strong and properly damped for naturally uncoloured audio reproduction.

DPC

DPC, or Damped Polymer Cone, is a direct derivative of the cones Morel has built its reputation upon. With high self-damping characteristics, this cone provides exceptional sound quality without coloration or harshness.

Paper Composite

In use since the first loudspeakers, paper continues to be an exceptional material of choice. Morel's latest paper composite cones are ultra lightweight, making them an exceptional pairing for drivers using smaller motors and voice coils.

Titanium Bobbin

The bobbin material has influence on the acoustical parameters of the driver, its power handling and the reproduced sound quality. By using titanium bobbin, Morel intended to raise the Mechanical Factor (QMS) in order to enable a wider selection of enclosure types and sizes. As for the sound quality, one is able to discern a distinctively "crisper" sound when compared to an equivalent driver with aluminum bobbin. The rigid characteristic of titanium, along with its other advantages produce a driver that is tonally balanced and accurate, with exceptionally fast transient response.



Hexatech™ Aluminium Voice Coil

Made from 100% aluminium wire shaped like a honeycomb, the Hexatech™ voice coil reduces air gaps in the coil windings, thereby increasing efficiency by up to 20%. Being lightweight, Hexatech™ voice coils are largely responsible for the extraordinary fast transient response Morel drive units are known for.

Acuflex™ Technology

A specially engineered damping compound applied to the soft domes of specific Morel tweeters and midranges. The combination of these materials creates a diaphragm that exhibits controlled cancelling break up (accurate-flexing), meaning each break-up mode is counteracted by another in the opposite direction. This cancellation of break-up modes leaves nothing but the pure, natural sound Morel tweeters and midrange are famous for.

Integra

Derived from the word "integrate", Integra is a speaker consisting of both a woofer and tweeter that share a common chassis. Unlike a coaxial, its recessed tweeter is concentrically aligned with the woofer cone. This minimizes phase error and allows the sound field to be constant in all directions, creating a near perfect time alignment.

Magnet Technology

Morel's experience in motor design has allowed it to harness the magnetic energy in extremely effective manners. Typically the bigger the magnet the more energy however; in automobiles, there is often not the space for physically large magnets. Morel offers a number of solutions to deal with this problem.

HYBRID INTEGRA CUT SECTION

Flat cone profile provides open clear sound and better dispersion over wider listening area.

Acuflex™ hand treated coating, and large soft dome for wider frequency response and smooth musical tonal sound known as "Morel's Sound".

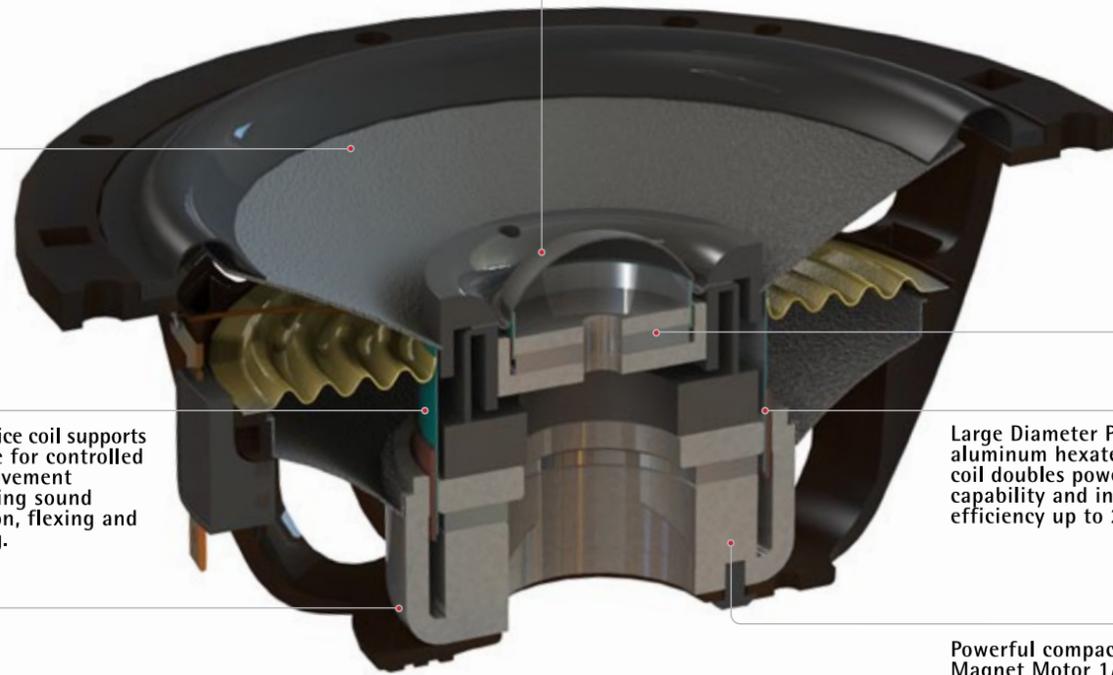
Powerful neodymium magnet motor and larger hexatech™ aluminum voice coil

Giant voice coil supports the cone for controlled cone movement minimizing sound distortion, flexing and buckling.

Large Diameter Pure aluminum hexatech voice coil doubles power handling capability and increases efficiency up to 20%.

The external voice coil design places the motor magnets within the voice coil, enabling the creation of a high performance driver with extremely compact dimensions.

Powerful compact Hybrid Magnet Motor 1/5 the size of a conventional motor with similar power, means available amp. Power is converted into more sonic energy plus leaves more enclosure space for the bass to build up.



Ferrite

Ferrite magnets are the most commonly used in speakers. While they look similar, there are several grades of magnets. Morel uses only the highest intensity available in its designs. As a result, Morel's magnetic systems are highly compact yet deliver more magnetic flux than conventional ferrite magnets.

Neodymium

The most powerful magnet available, neodymium enables Morel to create physically compact speakers, such as tweeters and midrange, that fit in very limited spaces without limiting the quality of sound.

Double Ferrite

Morel's double ferrite drive system generates more magnetic energy than a single magnet of similar size, increasing efficiency and the dynamic range. The position of the secondary magnet fixed above the top plate in the motor is the key in controlling stray magnetic flux, thus generating a more focussed magnetic field while also contributing to the "shielded" characteristic of our speakers.

Hybrid

The Hybrid motor drive system uses a ferrite magnet together with a very powerful neodymium magnet. Combined they create a compact, lightweight motor system that is up to four times more powerful than conventional designs of the same size. With Hybrid, more amplified power is converted into sonic energy for flawless performance, even in a small driver.

External Voice Coil (EVC)™ Technology

Morel speakers with EVC™ technology utilize voice coils that are up to three times larger than those used in conventional loudspeakers. The EVC™ design moves the magnetic drive system to within the voice coil, eliminating stray magnetic flux by effectively directing all the magnetic energy to the voice coil. The result is an ultra efficient and powerful design, that is highly compact with efficient heat dissipation and reduced cone breakup for lower distortion.

Under-Hung Voice Coil

An under-hung voice coil features a voice coil winding height shorter than the magnetic gap. This means the voice coil is within the magnetic energy field at all times leading to greater articulation and transient response.

Shielded Magnet Technology

The modern car environment is highly sensitive to stray magnetic fields. Vehicles now use several computer control devices throughout the car, and conventional non-shielded speakers can be a threat to the vehicle's electrical integrity. Morel speakers featuring the company's EVC™ technology are more than 90% shielded—safe for installation in today's high-tech vehicles.

C.A.R. Filter™ (Controlled Acoustic Resistance)

In most automotive applications, speakers are installed in a virtual free-air environment, such as a door, which provides minimal acoustic loading. The C.A.R. Filter™ improves the acoustic loading by controlling airflow within the driver, mimicking the effects of a cabinet while improving power handling by 30%. This provides greater control over the cone movement for improved bass dynamics.

Uniflow™ Chassis

Uses an open design that is aerodynamically efficient, allowing air and sound waves to flow uniformly and smoothly. Its geometric shape also eliminates interference with the woofer's moving components, enabling the use of a low-profile spider for greater support and stability.

PFS™ - Progression Field Symmetry engineering

Produces longer linear excursion enabling the spider and surround to reach optimal performance especially at high output levels. Under extreme conditions, the spider and surround progressively act as "shock absorbers" to prevent voice coil displacement and bottoming, and improve voice coil linearity.

MXR Crossover

Morel Crossover Resolution (MXR) is derived from the tour de force *fat lady* speaker system and combines several new concepts and features that improve the sound presentation and sound quality of Morel's systems.

Soundstage

Provides improved sound presentation by allowing the acoustic lobe to be aimed at the tweeter, so all the sound seems to be elevated to the height of the tweeters within the vehicle.

No resistors in the signal path

Minimizes colouration through the crossover, and high frequencies are delivered with the greatest sense of air and space.



Technology Bar
Paper Composite Cone
Hexatech™ Aluminum VC
EVC™ structure
Acuflex™ coated tweeter
Double Ferrite Magnet Motor
Shielded Magnet
MXR direct Crossover
C.A.R Filter™
Octopus Grille
Large 2" voice coil



VIRTUS

The recent Virtus series offers Morel's core technological virtues at an exceptional value.

Available as two and three-way component systems, each Virtus set adheres to Morel's trademark acoustic signature, thus providing car audio enthusiasts complete system design flexibility for every front, rear and center channel application.

The Virtus series embodies Morel's technological advancements, featuring the Unified woofer chassis, a compact design that allows it to fit in the size constraints of today's cars, a new MT120 Acuflex™ soft dome tweeter and the new MXR crossover technology for total component integration of the carefully refined acoustic parameters, between tweeter, midrange and woofer. The Virtus is the culmination of design and technology working in concert to bring emotion to music with a balance of rich, natural midrange, high frequency detail and vibrant bass.

Model	Size & Configuration	Power Handling (Wrms) / Peak Power (W)	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)	Crossover
VIRTUS 402	4" 2-way	100 / 300	88	70-22000	MXR200.3
VIRTUS 503 / 502	5¼" 3-way / 2-way	120 / 300	90	65-22000	MXR300 / MXR200.3
VIRTUS 603 / 602	6½" 3-way / 2-way	140 / 300	91	55-22000	MXR300 / MXR200.3





Technology Bar
Treated Paper Composite Cone
28 mm soft dome tweeter (2-way)
25 mm soft dome tweeter (Integra)
MXR direct crossover
High grade ferrite magnets
Integra structure - Integra
1.5" voice coil - woofer

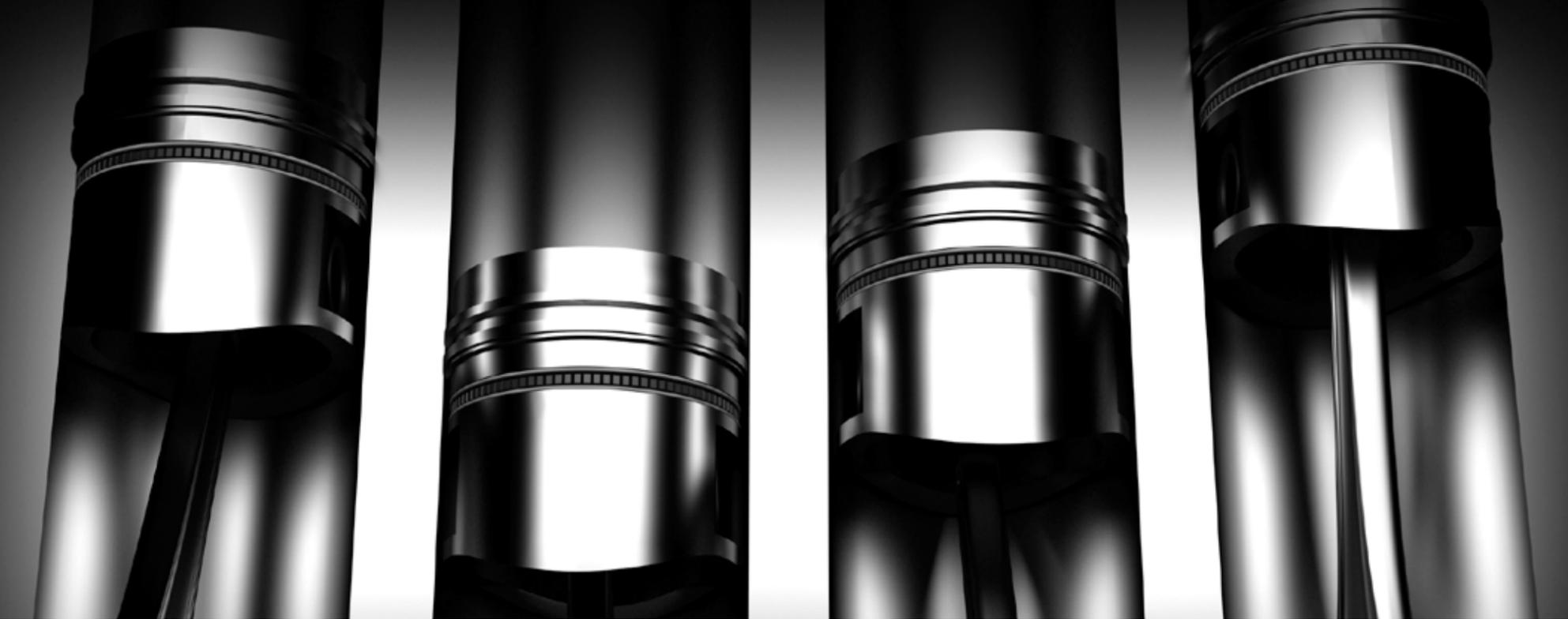
TEMPO ULTRA & TEMPO ULTRA INTEGRA

The new additions to the Tempo series practically elevate the line into another class. The Tempo Ultra features both 2-way and point source solutions for those music aficionados who demand outstanding sonic performance and power while still getting tremendous overall value. The new models feature a large voice coil and a stronger magnet system, which provide increased power handling (up to 30% more than the current Tempo), with lower distortion levels and improved bass response. Morel's renowned 1.1" (28mm) soft dome tweeter delivers the detail and dynamics for a truly memorable musical experience.

The Integra point source design was developed to reproduce a constant and coherent sound field. Whether it is being used for rear-fill or as the main components for a front stage, the Tempo Ultra Integra will offer great dynamics, soundstage orientation and neutrality.



Model	Size & Configuration	Power Handling (Wrms) / Peak Power (W)	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)	Crossover
TEMPO ULTRA 502	5¼" 2-way	100	89	65-22000	
TEMPO ULTRA 602	6½" 2-way	120	90	55-22000	WF: 3200Hz 6dB TW: 3200Hz 6dB (±2dB)
TEMPO ULTRA 572	5x7" 2-way	110	90	60-22000	
TEMPO ULTRA 692	6x9" 2-way	130	91	50-22000	
TEMPO ULTRA INTEGRA 402	4" Point source	60	85	80-22000	
TEMPO ULTRA INTEGRA 502	5¼" Point source	100	89	55-22000	
TEMPO ULTRA INTEGRA 602	6½" Point source	110	90	50-22000	
TEMPO ULTRA INTEGRA 572	5x7" Point source	100	90	60-22000	
TEMPO ULTRA INTEGRA 692	6x9" Point source	140	92	35-22000	



Technology Bar
Treated Paper Composite Cone
28mm coated tweeter
MXR direct Crossover
High grade ferrite magnets



TEMPO & TEMPO COAX

Outstanding performance, power and value.

Featuring some of Morel's key innovative technologies, Tempo speaker systems promise car audio enthusiasts the best performance in their class. Morel designed Tempo to be efficient, easy to install, while offering great power handling. Tempo can be connected to a quality amplifier to achieve a powerful yet musical performance.



Model	Size & Configuration	Power Handling (Wrms) / Peak Power (W)	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)	Crossover
TEMPO 5	5¼" 2-way	110 / 280	89	60-22000	3800 Hz WF:LPF-6dB TW:HPF-6dB
TEMPO 6	6½" 2-way	120 / 280	90	50-22000	
TEMPO COAX 4	4" Coaxial	50	88	75-22000	4000 Hz
TEMPO COAX 5	5¼" Coaxial	100	89	65-22000	4000 Hz
TEMPO COAX 6	6½" Coaxial	110	90	55-22000	4000 Hz
TEMPO COAX 5X7	5x7" Coaxial	90	90	65-22000	4000 Hz
TEMPO COAX 6X9	6x9" Coaxial	140	91	50-22000	3800 Hz



Technology Bar
Treated Paper Composite Cone
High grade ferrite magnets
Soft Dome Tweeter
MXR direct Crossover
Hybrid magnet motor – Maximus
Corrugated ultra light surround – Maximus
Low energy loss crossover network – Maximus

MAXIMO & MAXIMO COAX

The Maximo series is an opportunity to discover the sound Morel is famous for without breaking the budget. Engineered to easily integrate with most factory head units or be powered with a small amplifier, the Maximo series will elevate any audio system to new performance level.



MAXIMUS

The new Maximus was designed to provide Morel's high quality sound with easy car integration and installation.

With its newly developed high efficiency hybrid magnet motor it delivers lively bass and a powerful overall performance. Even when driven by a factory head unit, it can deliver up to three times more output than the stock system—which shows how a simple upgrade can make a world of difference.



Model	Size & Configuration	Power Handling (Wrms) / Peak Power (W)	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)	Nominal impedance	Crossover
MAXIMO 5	5¼" 2-way	80 / 220	90	60-20000	4 ohm	
MAXIMO 6	6½" 2-way	90 / 240	91	50-20000	4 ohm	
MAXIMO COAX 4	4" Coaxial	45	87	75-20000	4 ohm	3500 Hz WF-LPF-12dB
MAXIMO COAX 5	5¼" Coaxial	70	89.5	65-20000	4 ohm	TW:HPF-12dB
MAXIMO COAX 6	6½" Coaxial	80	91	55-22000	4 ohm	
MAXIMO COAX 6X9	6x9" Coaxial	100	92	50-20000	4 ohm	
MAXIMUS 602	6½" 2-way	60	94	60-22000	4 ohm	Integrated crossover 6dB / 12dB



THE ULTIMATE BASS EXPERIENCE

The same uncompromising dedication to innovation, craftsmanship and sound quality that have made Morel the choice of music aficionados worldwide, bring you leading subwoofer design and technology for the ultimate bass experience.

Morel's design principles take a broader approach than what is found in common subwoofers that focus on enclosure size and output, creating a balance of control, extension and transparency within a system.

The subwoofer seems to disappear into a system, becoming an instrument of the music.



Technology Bar
One piece carbon Hybrid Cone
Hexatech™ Aluminum VC
EVC™ structure
Double Ferrite Magnet Motor
Uniflow™ Chassis
Extra large 5.1" voice coil
PFS architecture
Large X-MAX (Ultimo)
Accucenter™ (Ultimo)



ULTIMO AND ULTIMO SC

Engineered to set a new standard in subwoofer technology and bass performance, the Ultimo and Ultimo SC are equipped with a gigantic 5.1" Hexatech™ External Voice Coil (EVC™) that is constructed of a heavy gauge, high temperature aluminum wire around an extra thick aluminum former to produce articulated output up to their respective RMS power ratings. The new DMM™ (Dual Magnet Motor) motor design achieves over 90% efficiency and the PFS™ (Progression Field Symmetry) spider/surround technology stiffens the spider as excursion level increases ensuring maximum linearity, minimum distortion, and truly flat response.

The Ultimo and the Ultimo SC share similar technologies, but are designed to offer different power handling and price options.

Model	Nominal Impedance (Ohms)	Power Handling (Wrms)	Max. Trans. Pwr Handling (10ms) W	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)
ULTIMO 122	2	1000	3000	88	10-900
ULTIMO 124	4	1000	3000	87	10-900
ULTIMO 102	2	1000	3000	87	10-900
ULTIMO 104	4	1000	3000	86	10-900
ULTIMO 802	2	800	3000	85	20-900
ULTIMO 804	4	800	3000	84	20-900
ULTIMO SC 122	2	600	2000	90	10-900
ULTIMO SC 124	4	600	2000	89	10-900
ULTIMO SC 102	2	600	2000	88	10-900
ULTIMO SC 104	4	600	2000	87	10-900



Technology Bar
Paper Composite Cone
High efficiency motor design
Copper coated aluminum voice coil

PRIMO

The Primo was engineered to offer the Morel build and sound quality to those who are looking for exceptional value. Available in 8", 10" and 12" sizes, Primo subwoofers feature stiff, treated paper cones, high-grade ferrite magnets and 2-inch voice coils to provide superior electromechanical force, ensuring linearity.

Primo was designed to work well in both sealed and vented applications, to deliver great efficiency, enabling it to generate high output levels (dB's) even with a modest power amplifier.

Model	Nominal Impedance (ohms)	Power Handling (Wrms)	Max. Trans. Pwr Handling (10ms) W	Sensitivity (2.83V/1M) (dB)	Frequency Response (Hz)
PRIMO 124	4	300	600	91	22-900
PRIMO 104	4	250	500	90	25-900
PRIMO 804	4	200	400	89	28-900



SUBWOOFERS	ULTIMO 122	ULTIMO 124	ULTIMO 102	ULTIMO 104	ULTIMO 802	ULTIMO 804	ULTIMO SC122	ULTIMO SC124	ULTIMO SC102	ULTIMO SC 104	PRIMO 124	PRIMO 104	PRIMO 804
Nominal Impedance (ohms)	2	4	2	4	2	4	2	4	2	4	4	4	4
Power Handling (Wrms)	1000	1000	1000	1000	800	800	600	600	600	600	300	250	200
Max. Trans.Pwr Handling (10 ms) W	3000	3000	3000	3000	3000	3000	2000	2000	2000	2000	600	500	400
Sensitivity dB (2.83V/1M)	88	88	87	86	85	84	89	89	88	87	91 dB	90 dB	89 dB
Frequency Response (Hz)	10-900	10-900	10-900	10-900	20-900	20-900	10-900	10-900	10-900	10-900	22-900	25-900	28-900
Cone Material	Carbon-fiber laminated paper	Carbon fiber laminated paper	Carbon fiber laminated paper	Laminated paper	Laminated paper	Laminated paper							
Net Weight Kg (pound)	6.7 (15)	6.7 (15)	6.5 (14.3)	6.5 (14.3)	6.1 (13.44)	6.1 (13.44)	6.3 (13.9)	6.3 (13.9)	6.1 (13.44)	6.1 (13.44)	4.70 (10.36)	4.56 (10.05)	3.86 (8.5)
Driver displacement L (cu.ft.)	2.6 (0.09)	2.6 (0.09)	2.34 (0.08)	2.34 (0.08)	2.0 (0.07)	2.0 (0.07)	2.6 (0.09)	2.6 (0.09)	2.34 (0.08)	2.34 (0.08)	2.6 (0.09)	2.34 (0.08)	2.0 (0.07)
Voice Coil Diameter mm (inch)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	51 (2)	51 (2)	51 (2)
Voice Coil Height mm (inch)	37 (1.45)	37 (1.45)	37 (1.45)	37 (1.45)	37 (1.45)	37 (1.45)	31 (1.2)	31 (1.2)	31 (1.2)	31 (1.2)	24 (0.94)	24 (0.94)	24 (0.94)
Voice Coil Type/ Former	Aluminum	Aluminum	Aluminum	Aluminum									
Voice Coil Wire	Hexatech™ Aluminum	Copper	Copper	Copper									
Number of Layers	2	2	2	2	2	2	2	2	2	2	2	2	2
Max. Linear Ex./Xmax - mm (inch)	± 12.5 (0.5) (Each way)	± 9.5 (0.37) (Each way)	± 8 (0.3) (Each way)	± 8 (0.3) (Each way)	± 8 (0.3) (Each way)								
Magnet System	Double Magnet Vented	High grade ferrite	High grade ferrite	High grade ferrite									
HE-Magnetic Gap Height - mm (inch)	12 (0.5)	12 (0.5)	12 (0.5)	12 (0.5)	12 (0.5)	12 (0.5)	12 (0.47)	12 (0.47)	12 (0.47)	12 (0.47)	8 (0.3)	8 (0.3)	8 (0.3)
B-Flux Density (T)	0.6	0.6	0.6	0.6	0.6	0.6	0.61	0.61	0.61	0.61	0.66	0.66	0.66
BL Product/BXL (T.M)	7.51	12	7.06	12.4	7.34	11	7.19	12.27	7.06	11	10.5	10.05	9.07
DC Resistance	1.56	3.5	1.7	3.7	1.7	3.7	1.3	3	1.3	3	3.2	3.2	3.2
Voice Coil Induct. @1 kHz (MH)	0.35	1	0.35	1	0.31	1	0.31	0.91	0.27	0.85	1.15	1.1	1.14
Suspension Compliance CMS - mm/N	0.261	0.263	0.32	0.22	0.2	0.23	0.245	0.215	0.25	0.3	0.23	0.27	0.19
Mechanical Q Factor	1.49	1.69	1.2	1.71	1.26	1.48	2.05	2.14	1.75	1.84	3.64	3.59	4.44
Electrical Q Factor QES	0.63	0.56	0.58	0.55	0.59	0.55	0.59	0.5	0.48	0.43	0.61	0.49	0.68
Total Q Factor QT	0.44	0.42	0.4	0.42	0.43	0.4	0.45	0.41	0.38	0.35	0.52	0.43	0.6
Mech.Resistance RMS	15.4	13.58	15.04	13.9	16	13.55	11.43	12.36	10.86	9.97	5.85	4.45	3.96
Moving Mass MMS gr	120	125	107	115	85	95	136	150	91.6	101.7	105	70	59
Equiv. Can Air Load VAS Liter (cu.ft.)	73.24 (2.58)	73.77 (2.60)	47.39 (1.67)	34.5 (1.22)	17 (0.60)	19.49 (0.68)	68.86 (2.43)	60.29 (2.12)	42 (1.48)	50 (1.77)	60 (2.11)	40 (1.41)	12.6 (0.44)
Resonant Frequency Fs Hz	26.41	26	27	29	37	40	27.51	28	33	29	32	35	45
Effective Piston Area SD Sq.cm	448	448	346	346	243	243	448	448	346	346	434	320	219
Unit Diameter mm (inch)	305 (12)	305 (12)	263 (10.53)	263 (10.53)	222 (8.74)	222 (8.74)	305 (12)	305 (12)	263 (10.53)	263 (10.53)	305 (12)	263 (10.53)	223 (8.77)
Mounting Depth mm (inch)	146.9 (5.78)	146.9 (5.78)	140.3 (5.52)	140.3 (5.52)	120 (4.72)	120 (4.72)	151.5 (5.96)	151.5 (5.96)	143 (5.62)	143 (5.62)	140 (5.51)	130 (5.11)	115 (4.52)
Mounting Cutout mm (inches)	270 (10.62)	271 (10.62)	232 (9.13)	233 (9.13)	200 (7.87)	201 (7.87)	263 (10.35)	264 (10.35)	225.15 (8.87)	225.15 (8.87)	270 (10.62)	230 (9.05)	194 (7.63)

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WOOFERS	SUPREMO MW 6	ELATE TI MW 5	ELATE TI MW 6	ELATE TI MW 9	HYBRID MW 4	HYBRID MW 5	HYBRID MW 6	HYBRID INTEGRA 4	HYBRID INTEGRA 5	HYBRID INTEGRA 6	VIRTUS MW 4	VIRTUS MW 5	VIRTUS MW 6	TEMPO U MW 5	TEMPO U MW 6	TEMPO U MW 5x7	TEMPO U MW 6x9	TEMPO 5W	TEMPO 6W	MAXIMO 5W	MAXIMO 6W	
Nominal Impedance (Ohms)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Power Handling Wrms	140	160	180	200	100	120	140	80	90	100	100	120	140	100	120	110	130	100	120	80	90	
Max. Trans.Pwr Handling Wms	600	1000	1000	1000	300	500	600	250	250	300	300	300	300	250	250	250	280	280	280	220	240	
Sensitivity (2.83V/1M)	89dB	87dB	88dB	89 dB	89 dB	90dB	91 dB	89dB	90dB	91dB	87 dB	91 dB	92 dB	89 dB	90 dB	90 dB	91 dB	90 dB	91 dB	89	90	
Frequency Response Hz	30-15000	40-5000	30-4000	25-3000	50-4200	45-3000	35-3000	80-5000	70-3800	65-3300	70-4500	65-4000	55-4000	65-22000	55-22000	60-22000	50-22000	60-5000	50-5000	50-5000	60-5000	
Resonant Freq. Fs Hz	60	58	54	45	82	56	45	92	82	75	80	75	65	65	50	59	50	70	65	70	55	
Voice Coil Diameter mm (inch)	75 (3)	75 (3)	75 (3)	75 (3)	54 (2.1)	54 (2.1)	54 (2.1)	54 (2.10)	54 (2.1)	54 (2.1)	54 (2.1)	54 (2.1)	54 (2.1)	38 (1.50)	38 (1.50)	38 (1.50)	38 (1.50)	32	32	25	25	
Voice Coil Height mm (inch)	6 (0.23)	14.50 (0.57)	14.50 (0.57)	14.50 (0.57)	10.50 (0.41)	10.50 (0.41)	11 (0.47)	10 (0.39)	12 (0.48)	12 (0.48)	8 (0.51)	11 (0.47)	11 (0.47)	10 (0.39)	10 (0.39)	10 (0.39)	14 (0.55)	12 (0.48)	12 (0.48)	9.6 (0.378)	9.6 (0.378)	
Voice Coil Type/ Former	Aluminum	Titanium	Titanium	Titanium	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Kapton	Kapton	Kapton	Kapton	Aluminum	Aluminum	Aluminum	Aluminum	
Voice Coil Wire	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Hexatech™ Aluminum	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	
DC Resistance (Ohms)	3.5	3.6	3.6	3.6	3.2	3	3	3	3.3	3.3	3	2.7	2.7	3.0	3.0	3.0	3.2	3.2	3.5	3.5	3.1	
Voice Coil Induct. @1 kHz (MH)	0.13	0.615	0.615	0.615	0.21	0.21	0.22	0.17	0.26	0.31	0.23	0.25	0.33	0.32	0.32	0.32	0.36	0.32	0.5	0.28	0.26	
Magnet System	Neodymium double magnet	Double magnet rear vented	Double magnet rear vented	Double magnet rear vented	Hybrid rear vented	Hybrid rear vented	Hybrid rear vented	Neodymium	Neodymium	Neodymium	Double ferrite rear vented	Double ferrite rear vented	Double ferrite rear vented	High grade ferrite	High grade ferrite	High grade ferrite	High grade ferrite	Ferrite	Ferrite	High grade ferrite	High grade ferrite	
HE-Magnetic Gap Height mm (inch)	16 (0.64)	5 (0.20)	5 (0.20)	5 (0.20)	4 (0.16)	4 (0.16)	4 (0.16)	4 (0.16)	5 (0.20)	5 (0.20)	4 (0.16)	4 (0.16)	4 (0.16)	4 (0.16)	4 (0.16)	4 (0.16)	4 (0.16)	5 (0.20)	5 (0.20)	5 (0.20)	5 (0.20)	
B-Flux Density (T.M.)	0.65	0.66	0.75	0.74	0.83	0.83	0.83	0.9	0.9	0.85	0.48	0.65	0.65	0.76	0.76	0.76	1	0.85	0.9	0.9	0.9	
BL Product/BXL	5.19	5.15	5.15	5.15	4.16	4.2	4.2	3.97	5.16	4.65	3.33	3.67	3.41	4.70	4.70	4.90	6.60	4.43	5.47	4.47	4.61	
Max. Linear Ex./Xmax mm (inch)	±5 (±0.02)	±4.7 (±0.18)	±4.7 (±0.18)	±4.7 (±0.18)	±3.5 (±0.14)	±3.5 (±0.14)	±3.5 (±0.14)	±2 (±0.08)	±2.75 (±0.11)	±3.5 (±0.14)	±2 (±0.08)	±3.5 (±0.14)	±3.5 (±0.14)	±3 (±0.12)	±3 (±0.12)	±3 (±0.12)	±5 (±0.2)	±3 (±0.12)	±3 (±0.12)	±3 (±0.12)	±3 (±0.12)	
Suspension Compliance CMS - mm/N	0.41	0.33	0.33	0.33	0.57	0.78	1.1	0.66	0.6	0.42	0.73	0.63	0.57	0.59	0.65	0.46	0.47	0.61	0.35	0.54	0.56	
Electrical Q Factor QES	0.76	0.81	0.96	1.1	0.63	0.59	0.56	0.45	0.39	0.67	0.76	0.73	0.99	0.54	0.70	0.70	0.46	0.59	0.79	0.73	0.73	
QTS	0.57	0.59	0.70	0.80	0.46	0.45	0.44	0.36	0.32	0.54	0.55	0.56	0.74	0.50	0.63	0.59	0.40	0.51	0.61	0.6	0.61	
QMS	2.25	4.3	4.5	4.6	1.74	1.8	2.08	1.72	1.85	2.86	2	2.47	2.96	6.53	6.50	3.90	2.90	3.53	2.64	3.32	3.8	
Mech.Resistance RMS - Ohm/meter	2.64	3.68	3.63	3.63	1.98	1.96	1.5	1.44	1.7	1.52	1.42	1.60	1.57	0.63	0.50	1.49	2.19	1.07	2.51	1.18	1.32	
Moving Mass MMS - gr	14.59	14.0	17.0	26.6	6.8	9.9	11	4.4	6.11	8.12	5.96	9.9	12	10.11	15.9	15.5	19.45	8.67	15.73	8.43	14.44	
Equiv. Can Air Load VAS - L (cu.ft)	8.08 (0.28)	3.50 (0.12)	7.00 (0.24)	26.00 (0.91)	3.17 (0.11)	8.87 (0.31)	21(0.74)	1.40 (0.04)	2.72 (0.37)	3.80 (0.13)	4.17 (0.15)	7.20(0.25)	11.38 (0.45)	5.72 (0.2)	16.19 (0.57)	15.9 (0.56)	35.2 (1.24)	6.77 (0.23)	7.06 (0.24)	6.15 (0.22)	15.31 (0.54)	
Effective Piston Area SD sq.cm (sq. inch)	119 (18.45)	90 (13.95)	119 (18.45)	219 (33.95)	64 (9.92)	90 (13.95)	119 (18.45)	39 (6.04)	57 (8.83)	80 (37.8)	64 (9.92)	90 (13.95)	119 (18.45)	103 (15.97)	130 (20.15)	140 (21.7)	170 (26.35)	90 (13.95)	119 (18.45)	90	139	
Cone Type	One-piece formed	One-piece formed	One-piece formed	One-piece formed	One-piece formed	One-piece formed	One-piece formed	Formed paper	Formed paper	Formed paper	Formed paper	Formed paper	Formed paper	Formed paper	Formed paper	Formed paper	Formed paper	Paper composite cellular fiber				
Cone Material	Carbon fiber/Rohacell sandwich	DPC	DPC	DPC	DPC	DPC	DPC	Composite cellular fiber	Composite cellular fiber	Composite cell. fiber	Composite cellular fiber	Composite cellular fiber	Composite cellular fiber	Composite cellular fiber	Composite cellular fiber	Composite cellular fiber	Composite cellular fiber	Treated paper	Treated paper	Treated paper	Treated paper	
Unit Diameter mm (inch)	165 (6.50)	135 (5.25)	165 (6.50)	222 (8.75)	104 (4)	135 (5.25)	165 (6.50)	104 (4.0)	135 (5.25)	165 (6.5)	104 (4.0)	135 (5.25)	165 (6.50)	135 (5.31)	165 (6.49)	190x140	235x165	135 (5.25)	165 (6.5)	135 (5.25)	165 (6.50)	
Mounting Depth mm (inch)	61 (2.40)	60 (2.36)	61 (2.40)	71 (2.80)	50 (2.10)	60 (2.36)	61 (2.40)	50 (2.10)	60 (2.36)	61 (2.40)	50 (2.10)	56.5 (2.22)	61 (2.36)	57 (2.25)	64 (2.52)	62 (2.45)	85 (3.35)	59 (2.32)	62 (2.44)	56 (2.22)	63 (2.50)	
Mounting Cutout mm (inch)	141 (5.55)	120 (4.72)	141 (5.55)	192 (7.56)	95 (3.74)	120 (4.72)	141 (5.55)	95 (3.74)	120 (4.72)	141 (5.55)	95 (3.74)	120 (4.72)	141 (5.55)	112 (4.40)	141 (5.50)	176x126	218x150	112 (4.40)	142 (5.60)	112 (4.40)	141 (5.70)	
Net Weight Kg (lb)	1.47 (3.20)	1.05 (2.31)	1.18 (2.60)	1.42 (3.13)	0.53 (1.1716)	0.60 (1.32)	0.60 (1.32)	0.50 (1.10)	0.60 (1.32)	0.75 (1.65)	0.54 (1.92)	0.67 (1.21)	0.739 (1.61)	0.98 (2.16)	1.1 (2.42)	1.12 (2.46)	1.84 (4.05)	0.65 (2.32)	0.8 (2.86)	0.66 (2.36)	0.7 (2.50)	

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	MIDRANGES		TWEETERS							
	CDM880	CDM600	SUPREMO PICCOLO	MT350	MT230	MT220	MT120	TEMPO / TEMPO ULTRA	MAXIMO	
Nominal Impedance (Ohm)	6	6	6	6	6	4	4	4	4	
Power Handling (WRMs)	100	100	220	130	130	110	80	80	80	
Max Transient Power Handling W (10ms)	300	300	1000	350	350	300	250	250	230	
Sensitivity (2.83V/1M) dB	89	90	93	90	93	90	90	90	90	
Frequency Response Hz	300-6000	500-6000	1400-25000	1400-25000	1600-25000	1600-25000	1800-22000	1800-22000	2200-22000	
FS Hz	500	550	900	1000	1200	1150	1150	1200	1100	
Voice Coil Diameter mm (inch)	54 (2.125)	54 (2.125)	28 (1.125)	28 (1.125)	28 (1.125)	28 (1.125)	28 (1.125)	28 (1.125)	25 (1)	
Voice Coil Former	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	
Voice Coil Wire	Hexatech™ aluminum	Hexatech™ aluminum	Hexatech™ aluminum	Hexatech™ aluminum	Hexatech™ aluminum	Hexatech™ aluminum	Copper	Copper	Copper	
DC Resistance Ohm	5.0	6.2	5.2	5.2	5.2	3.7	3.7	3.4	3.2	
Magnet System	Neodymium rear vented	Neodymium rear vented	Neodymium flat pancake design	Double Magnet Neodymium rear vented	Double Magnet Neodymium	Neodymium	Neodymium	Neodymium	Neodymium	
Dome Type	Acuflex™ hand coated soft dome	Selected soft dome	Acuflex™ hand coated soft dome	Acuflex™ hand coated soft dome	Acuflex™ hand coated soft dome	Acuflex™ hand coated soft dome	Acuflex™ hand coated soft dome	Selected soft dome	Selected soft dome	
Dome Material	Silk	Silk	Silk	Silk	Silk	Silk	Silk	Silk	Silk	
Unit Diameter mm (inch)	88.00 (3.50)	88.00 (3.50)	67mm (2.6)	43.00 (1.69)	45.00 (1.8)	45.00 (1.8)	45.00 (1.8)	45.00 (1.8)	45.00 (1.8)	
Mounting Depth mm (inch)	21.00 (0.83)	21.00 (0.83)	32.00 (1.25)	13.00 (0.51)	20 (0.80)	20.00 (0.80)	20.00 (0.80)	20.00 (0.80)	20.00 (0.80)	
Mounting Cutout mm (inch)	75.50 (2.97)	75.50 (2.97)	55 (2.16)	46.00 (1.81)	50.00 (2.00)	50.00 (2.00)	50.00 (2.00)	50.00 (2.00)	50.00 (2.00)	
Net Weight Kg(lb)	0.22 (0.48)	0.2 (0.44)	0.35 (0.77)	0.07 (0.15)	0.067 (0.134)	0.06 (0.13)	0.06 (0.13)	0.06 (0.13)	0.06 (0.13)	

CROSSOVERS	MXR SUPREMO	MXT380	MXR300	MXT280	MXR250I	MXR240.3	MXR200.3
Crossover Point	2200Hz 24dB/Oct	W: 400Hz/12dB M:6dB/3000Hz/12dB T: 3000Hz/ 12dB	W: 500Hz / 12dB M:18dB/ 2200Hz/ 12dB T: 2200Hz / 6dB	W: 300Hz/12dB T: 2000Hz /12dB	2200Hz /12dB/Oct	W: 2200Hz / 12dB T: 2200Hz / 12dB	2200Hz/12dB
Crossover Controls	Tweeter +/- 2dB	Tweeter +/- 2dB Mid +2dB	Tweeter +/- 2dB	Tweeter +/- 2dB	Tweeter +/- 2dB	Tweeter 0 /- 2dB / -4dB	Tweeter +/- 2dB
Wiring Options	Bi Wire / Bi amp	Bi Wire / Bi amp	N/A	Bi Wire / Bi amp	N/A	N/A	N/A

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