



CAR AUDIO 2008

# Innovation is key to the Focal sound



> Grande Utopia™ EM™ 260kg, 2m.  
(573.2 lb, 78<sup>3/4</sup>in)

Innovation is key to the Focal sound. For 25 years, through the pursuit of constant new advances in technology, Focal has been able to develop a harmonious research and production system that enables us to continuously improve our products and introduce new ones, all with the same goal: the most faithful reproduction of music.

The latest example of this philosophy has been the introduction of Beryllium in our top products, which has become a new reference worldwide.

Constantly pursuing innovation is the embodiment of Focal's corporate strategy and that goal involves every facet of the company. From R&D to production to quality control, all our teams are fully involved and focused on this one objective: continual progress through innovation.

In today's world, where globalization and the pursuit of chasing

cheaper production methods have tempted most companies to splinter their organizations, Focal has opted to be different. Though we have grown tremendously through the years, our R & D, headquarters and manufacturing facilities remain based in Saint-Etienne (France).

We have learned that true innovation is not simply work carried out at the research department, but is also a question of comprehensive management and the direct control of the different production phases. The example of Beryllium is a significant one. Only three years ago no one was capable of producing tweeters with a pure Beryllium foil dome. Focal innovated a solution based on research and the invention of specific in-house industrial processes.

Such an approach has given us an important advantage over our competitors: we develop our own technology, which allows

us to consistently provide true quality production using our own methods.

In 2008, the Focal Car range gets richer with a new amplifier line: Solid. This perfectly sums up Focal's commitment for high musical quality from the entry-level contrary to the general tendency that consists in looking for the cheapest prices in priority instead of performance. The result is music standardization and trivialization, which is highly prejudicial to sound quality. Focal cultivates this difference... this is the core strength of our brand and our company. This is the Spirit of Sound.

We want to share this with you...

*It is our Utopia...*



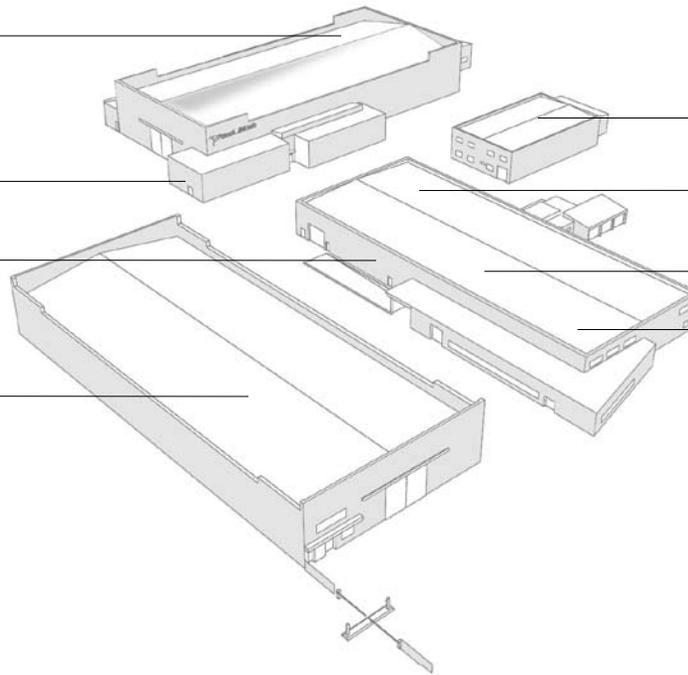
Focal-JMlab site map  
in Saint-Etienne (France)

> Our logistic department supplies  
worldwide distribution

> On site Corporate Headquarters  
(please see picture below)

> Utopia series assembly line

> Supply store



> R&D center  
> 500m<sup>3</sup> anechoic chamber  
> Two listening rooms

> Car audio assembly unit

> Home audio assembly unit

> Drive unit and tweeter  
production area





# Utopia Be<sup>TM</sup>

*Cultivate the exceptional*

Both radical and exclusive, the Utopia Be range is, above all, the result of an extraordinary human endeavour with the aim to reach an exceptional level of sound resolution. Working without constraints has allowed us to introduce, by the manufacture of a tweeter with a pure Beryllium inverted dome, a genuine world's first that pushes back the limits of musical reproduction.

This material, 100 times more expensive than gold, is largely responsible for the sound quality revolution Focal has created. By obtaining an extension of the band-width out to 40kHz, real – and enormous - technological progress has been made and results in the reproduction of the very tiniest detail.

In addition, by lowering the resonant frequency to 1.2kHz, an optimal coupling is made between the tweeter and the mid-range, creating a sound stage with incomparable width and precision.

The design of the composite sandwich "W" cones, for the mid-range drivers and subwoofers, allows the complete control of a wide range of parameters, including rigidity, lightness and damping. This assures a more neutral and realistic sound. Utopia Be could not have been created without a demanding and unique mix of technical innovation, hand-made precision and the full in-house control of all manufacturing processes.

Beryllium has set new standards for musical quality. We are convinced that the history of hi-fidelity will include a before and after Utopia Be reference point.

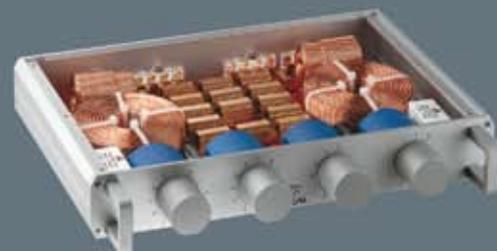


## "W" composite sandwich cone woofer

The unmatched rigidity offered by the glass layers delivers extreme linearity over a wide frequency range without any low frequency distortion. The structural foam central core's lightness allows optimal acceleration, without decay, while damping derived from the "W" material produces a neutral, coloration free sound.

## Crossblock

This concept combines the advantages of a tailored crossover with its 4480 all-in-one crossovers to a great flexibility of use. The highest quality components fully reflect the Utopia Be approach and its goal; exceptional musicality, whatever difficulty is brought in by vehicle configuration.



## Beryllium inverted dome tweeter

Dome/coil optimization delivers an outstanding energy response beyond what is obtainable with conventional domes. As to Beryllium, it does offer an unmatched extended impulse response from 1000Hz to 40kHz, ensuring neutrality, as well as a perfect link between the tweeter and the woofer thanks to its very low resonance frequency.



# Utopia Be

From extreme technology to sound sensuality

- ↳ *Two years of research and development*  
**Sets a world standard in acoustic performance**

Pure Beryllium inverted dome tweeter in combination with Poron® surround

- ↳ **Extended frequency response at 40kHz for outstanding sound definition and extraordinary accuracy**

- ↳ Composite sandwich "W" cone woofer  
**High rigidity and low mass ensure unrivaled neutrality**

- ↳ Crossblock crossover, 4480 different settings  
**Ideal matching in any installation as complex as it may be**

- ↳ Compact basket with integrated surround  
**Vibration and blur free**

## Kit N° 6 / N° 6 Active

- > 2 way 165mm (6<sup>1/2</sup>" ) kit, separate crossover (passive version), grilles included. **The defining standard dedicated to the most accurate sound reproduction in the low, midrange and high frequencies.**



\* Also available in N°6 active version (without crossblock).



## Kit N° 5 / N° 5 Active

- > 2 way 130mm (5") kit, Crossblock separate crossover (passive version), grilles included. **The defining standard with the most accurate sound reproduction of midrange and high frequencies.** Woofer addition is advised.



## Kit N° 7 / N° 7 Active

- > 3 way 165mm (6<sup>1/2</sup>" ) kit, 80mm (3") midrange driver, Crossblock separate crossover (passive version), grilles included. **The defining standard combines outstanding sound reproduction quality in both low, midrange and high frequencies and allowing multiple midrange driver and tweeter mounting positions for optimal sound staging.**

	Kit N° 5 / N° 5 Active	Kit N° 6 / N° 6 Active	Kit N° 7 / N° 7 Active	
Max. power	150W	200W	200W	
Nom. power	75W	100W	100W	
Sensitivity (2.83 V/1m)	89.5dB	91.5dB	89dB	
Frequency response (+/- 3dB)	75Hz - 40kHz	66Hz - 40kHz	55Hz - 40kHz	
Nom. impedance	4 Ohms	4 Ohms	4 Ohms	
Tweeter	TBe, Beryllium inverted dome	TBe, Beryllium inverted dome	TBe, Beryllium inverted dome	
Woofer	130mm (5 <sup>1/8</sup> " ), "W" composite sandwich cone	165mm (6 <sup>1/2</sup> " ), "W" composite sandwich cone	Midrange: 80mm (3"), "W" composite sandwich cone	Woofer: 165mm (6 <sup>1/2</sup> " ), "W" composite sandwich cone
Magnet	Neodymium	Neodymium	Neodymium	
Voice coil	32mm (1 <sup>1/4</sup> " )	40mm (1 <sup>9/16</sup> " )	25mm (1")	40mm (1 <sup>9/16</sup> " )
Cut-out diameter	115.5mm (4 <sup>9/16</sup> " )	143mm (5 <sup>5/8</sup> " )	73mm (2 <sup>7/8</sup> " )	143mm (5 <sup>5/8</sup> " )
Mounting depth	63mm (2 <sup>1/2</sup> " )	72mm (2 <sup>13/16</sup> " )	35.8mm (1 <sup>7/16</sup> " )	72mm (2 <sup>13/16</sup> " )
Crossover	Crossblock / without crossover (active)	Crossblock / without crossover (active)	Crossblock / without crossover (active)	
Controls	4480 controls (passive version)	4480 controls (passive version)	4480 controls (passive version)	

# Utopia Be Subwoofers

*Absolute fidelity down to extreme bass*

- ↳ **Multiferrite magnet**  
**Powerful magnetic field, air decompression for better power handling**
- ↳ **Composite sandwich "W" cone**  
**Highly defined low frequencies reproducing perfectly the input signal, distortion and decay free**
- ↳ **Bass-reflex or closed enclosure use**  
**Customization to all types of listening styles**
- ↳ **Self-regulated coil cooling system**  
**Optimal reliability, performance consistency**
- ↳ **Limited inner volume (between 15 and 30 litres)**  
**Exceptional bass reproduction in a compact environment**



## 33 WX

- > 33cm (13") subwoofer, Multiferrite magnet made of 12 ferrites.  
**High sensitivity and power are its assets to reproduce deep and detailed bass frequencies.**



## 13 WS

- > Compact 13cm (5") subwoofer developed for mounting at the front of the vehicle, 22mm (0.78") high linearity voice coil, Neodymium magnet.  
**High power handling, significant energy contribution in a well limited inner volume environment in order to achieve exceptional bass reproduction.**



## 21 WX

- > 21cm (8") subwoofer, Multiferrite magnet.  
**21 WX combines smaller dimensions and limited inner volume for deep, high-impact bass reproduction.**

	13 WS	21 WX	33 WX
Load	Sealed	Sealed or vented	Vented
Load volume	3 - 7 litres (0.106-0.247 Ft <sup>3</sup> )	15 - 30 litres (0.530-1.059 Ft <sup>3</sup> )	35 - 50 litres (1.236-1.766 Ft <sup>3</sup> )
Max. power	150W	500W	800W
Nom. power	75W	250W	400W
Sensitivity (2.83 V/1m)	88dB	86.5dB	92dB
Frequency response (+/- 3dB) *	36Hz - 1500Hz	29Hz - 500Hz	27Hz - 350Hz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms
Subwoofer	13cm (5"), "W" composite sandwich cone	21cm (8"), "W" composite sandwich cone	33cm (13"), "W" composite sandwich cone
Magnet	Neodymium	Multiferrite (12 ferrites)	Multiferrite (12 ferrites)
Voice coil	32mm (1 <sup>1/4</sup> ")	50mm (2")	77mm (3")
Cut-out diameter	116mm (4 <sup>5/16</sup> ")	182mm (7 <sup>3/16</sup> ")	320mm (13")
Mounting depth	66mm (2 <sup>5/8</sup> ")	106mm (4 <sup>3/16</sup> ")	150mm (6")

\* Depending on load



# K2 Power<sup>TM</sup>

*The Spirit of Sound ... with a kick !*

Developed to allow you to reach the very top levels of acoustic resolution and sound pressure, the K2 Power range symbolises Focal's expertise. Combining an evocative mix of pure sound control with detail and dynamics, speed and sophistication; the "Power Hi-Fi" concept developed by Focal has all the hallmarks of a reference quality range. The aramid fiber inverted dome tweeter combines smoothness, precision and slight directivity, optimizing imaging and producing an astonishingly broad and realistic soundstage. This key component, too often neglected, makes the difference between a good and an excellent installation.

Another element essential to Focal's reputation for creating the very highest quality sound, are the woofers and subwoofers from this range. They combine very high power handling and an extremely detailed sound thanks to the exceptional rigidity of the K2's composite sandwich cone technology.

And because precision, impact and the culture of car audio define "the Spirit of Sound", our common passion will always make the difference.



## K2 composite sandwich cone woofer

This cone structure features a thermoformed, structural foam central core, coated with an Aramid fiber layer on the front side and a glass layer directly derived from the Utopia series, on the back side. This hybrid technology significantly improves membrane rigidity without raising the weight. Long coil, distortion free even at high level.

## Crossover

K2 Power crossovers are equipped with the leading performance audiophile components, therefore following Focal's long standing high standards. The Polypropylene capacitors provide very high definition alongside the air core inductors which offer great dynamics. For optimal integration, KP series kits are equipped with a tweeter level control switch (0/-3dB, -6dB per action) and midrange position matching.

## TNK & TN53K tweeters

The aramid fiber flexibility combined with the resin hardness are at the source of the excellent rendering of this new tweeter generation. The soundstage is very precise thanks to the directivity controlled by the TN53K partial horn loading. The magnet ring structure brings an important magnetic flow in the air gap that ensures an optimal control of the voice coil. The inverted dome is slightly deepened to reduce directivity and accentuate the link between the cone and the voice coil.

# K2 Power KR

Depth, definition...

- ↳ **TNK inverted dome tweeter**  
**Smoothness and details**
- ↳ **Zamak chassis**  
**Rigid and non-magnetic**
- ↳ **Butyl surround**  
**Excellent reliability**
- ↳ **Neodymium magnet**  
**Excellent tweeter linearity**



## 165 KR

- > 2 way 165mm (6<sup>1/2</sup>" ) kit, high precision crossover with tweeter level control and midrange control, grilles included.  
**The defining standard that combines easy installation and bass quality.**



## 100 KRS

- > 2 way 100mm (4") kit, shallow mounting depth, high precision separate crossover, tweeter level control, midrange control, grilles included.  
**Especially developed for optimized staging, thanks to a woofer set up high in the vehicle door or on the dashboard.**



## 130 KR

- > 2 way 130mm (5") kit, high precision separate crossover, tweeter level control, midrange control, grilles included.  
**Standard basket dimensions, simplified mounting. The perfect compromise between easy installation and performance.**

	100 KRS	130 KR	165 KR
Max. power	100W	140W	160W
Nom. power	50W	70W	80W
Sensitivity (2.83 V/1m)	90dB	90dB	91 dB
Frequency response (+/- 3dB)	120Hz - 20kHz	70Hz - 20kHz	60Hz - 20kHz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms
Tweeter	TNK inverted dome tweeter	TNK inverted dome tweeter	TNK inverted dome tweeter
Woofer	100mm (4")	130mm (5")	165mm (6 <sup>1/2</sup> " )
Magnet	Neodymium	85mm (3.3")	85mm (3 <sup>1/3</sup> " )
Voice coil	25mm (1")	25mm (1")	25mm (1")
Cut-out diameter	93mm (3 <sup>2/3</sup> " )	115mm (4 <sup>1/2</sup> " )	142mm (5 <sup>9/16</sup> " )
Mounting depth	39mm (1 <sup>9/16</sup> " )	61mm (2 <sup>3/8</sup> " )	71mm (2 <sup>13/16</sup> " )
Controls	Tweeter level: 0, -3, -6dB Midrange (mif flat/mid high)	Tweeter level: 0, -3, -6dB Midrange (mif flat/mid high)	Tweeter level: 0, -3, -6dB Midrange (mif flat/mid high)

# K2 Power KR

...and extreme precision

3 levels (3dB per action) adjustable tweeter control, midrange control

→ **High accuracy control, easy installation**

165 KRX3 kit mounting accessories

→ **Easier installation on the windshield upright**

Long copper wound voice coil

→ **Distortion free and high SPL**

Pure Aluminum phase plug

→ **Midrange regulation**

TN53K inverted dome tweeter

with wave guide

→ **Smoothness, high definition and accuracy combined with controlled directivity and optimal staging.**



## 165 KRX3

> 3 way 165mm (6<sup>1/2</sup>"<sub>u</sub>) kit, 80mm (3<sup>1/8</sup>"<sub>u</sub>) midrange, high precision separate crossover, 162 adjustment possibilities, inventive accessories. Grilles supplied. **High-power kit that permits multiple midrange and tweeter for optimized soundstage.**



## 165 KR2

> 2 way 165mm (6<sup>1/2</sup>"<sub>u</sub>) kit, 2Ω impedance, high precision separate crossover, tweeter level control, midrange control, grilles included.

**The audio contest audiophile's reference combining high power handling, extended and solid bass, midrange purity, sweetness and precision.**



## 165 KRX2

> 2 way 165mm (6<sup>1/2</sup>"<sub>u</sub>) kit, 2Ω impedance, high-precision separate crossover, integrating a tweeter level adjustment, a choice of the cut-off frequencies. Grilles supplied.

**Very easy installation, aluminum chassis for a better control of the magnetic field.**

	165 KR2	165 KRX2	165 KRX3	
Max. power	160W	200W	200W	
Nom. power	80W	100W	100W	
Sensitivity (2.83 V/1m)	93dB	93dB	93dB	
Frequency response (+/- 3dB)	70Hz - 20kHz	70Hz - 20kHz	45Hz - 20kHz	
Nom. impedance	2 Ohms	2 Ohms	4 Ohms	
Tweeter	TNK inverted dome tweeter	TN53K	TN53K	
Woofer	165mm (6 <sup>1/2</sup> " <sub>u</sub> )	165mm (6 <sup>1/2</sup> " <sub>u</sub> )	Midrange 80mm (3 <sup>1/8</sup> " <sub>u</sub> )	Woofer 165mm (6 <sup>1/2</sup> " <sub>u</sub> )
Magnet	90mm (3 <sup>9/16</sup> " <sub>u</sub> )	100mm (4" <sub>u</sub> )	Neodymium	120mm (4 <sup>3/4</sup> " <sub>u</sub> )
Voice coil	32mm (1 <sup>1/4</sup> " <sub>u</sub> )	40mm (1 <sup>9/16</sup> " <sub>u</sub> )	25mm (1" <sub>u</sub> )	40mm (1 <sup>9/16</sup> " <sub>u</sub> )
Cut-out diameter	141mm (5 <sup>9/16</sup> " <sub>u</sub> )	141mm (5 <sup>9/16</sup> " <sub>u</sub> )	73mm (2 <sup>7/8</sup> " <sub>u</sub> )	141mm (5 <sup>9/16</sup> " <sub>u</sub> )
Mounting depth	73mm (2 <sup>7/8</sup> " <sub>u</sub> )	77mm (3 <sup>1/16</sup> " <sub>u</sub> )	36mm (1 <sup>7/16</sup> " <sub>u</sub> )	79mm (3 <sup>1/8</sup> " <sub>u</sub> )
Controls	Tweeter level: 0, -3, -6dB Midrange (mif flat/mid high)	Tweeter level: 0, -3, -6dB Midrange (mif flat/mid high)	162 possible adjustments	

# K2 Power KRC

*K2 composite sandwich legendary range*

- ↳ *K2 composite sandwich cone*  
**Impact and precision**
- ↳ *Kapton® 25mm (1") voice coil*  
**Very high power handling**
- ↳ *Adjustable tweeter level control*  
**Level control in accordance to positioning**
- Air core inductors and Polypropylene capacitors*  
↳ **Natural reproduction of high frequencies**



## 165 KRC

- > 2 way coaxial 165mm (6<sup>1/2</sup>" ) kit, separate crossover integrating tweeter level adjustment. Grilles supplied.  
**High-end coaxial kit, separate crossover.**



## 130 KRC

- > 2 way coaxial 130mm (5") kit, separate crossover integrating tweeter level adjustment. Grilles supplied.  
**High power and soundstage adaptation thanks to the tweeter double orientation.**

	130 KRC	165 KRC
Max. power	140W	160W
Nom. power	70W	80W
Sensitivity (2.83 V/1m)	92dB	93dB
Frequency response (+/- 3dB)	70Hz - 20kHz	60Hz - 20kHz
Nom. impedance	4 Ohms	4 Ohms
Tweeter	inverted dome tweeter	inverted dome tweeter
Woofers	130mm (5")	165mm (6 <sup>1/2</sup> " )
Magnet	85mm (3 <sup>1/3</sup> " )	85mm (3 <sup>1/3</sup> " )
Voice coil	25mm (1")	25mm (1")
Cut-out diameter	116 (4 <sup>9/16</sup> " )	141 mm (5 <sup>9/16</sup> " )
Mounting depth	66mm (2 <sup>5/8</sup> " )	77 mm (3 <sup>1/16</sup> " )
Controls	Tweeter level: 0, -3, -6dB	Tweeter level: 0, -3, -6dB

# K2 Power Subwoofers

*K2 solid down to extreme bass*

- ↳ **K2 composite sandwich cone**  
**Light and rigid to allow fast bass response without distortion.**
- ↳ **Multiferrite motor assembly**  
**Creates a powerful magnetic field to help suppress compression and give better power handling**
- ↳ **Long throw Butyl surround gives extra extension**  
**Important if the frequency response is to reach down to 30Hz.**
- ↳ **Double 65mm (2.6") /4 layer voice coil, 2x2 Ohms, 32mm (1.3") high**  
**High power handling, bass without distortion and impedance flexibility to allow an optimized connection with the amplifier.**
- ↳ **Self regulated coil cooling system**  
**Optimal reliability, performance consistency**



## 33 KX

- > 33cm (13") double coil subwoofer, K2 composite sandwich cone, multi ferrite magnet.  
**K2 Power subwoofer combines absolute sound reproduction fidelity, high power handling and a wide and dynamic bass.**



## 27 KX

- > 27cm (11") subwoofer, simple coil, K2 composite sandwich cone, Multiferrite magnet.  
**27 KX subwoofer allows dynamic bass in restricted volumes for extended frequency response at the low end of the spectrum.**



## 40 KX

- > 40cm (16") subwoofer, double coil, K2 composite sandwich cone, Multiferrite magnet.  
**K2 Power subwoofer is dedicated to solid bass down to extreme frequencies.**



## 46 KX 4

- > 46cm (18") subwoofer, quadruple coil, K2 composite sandwich cone, Multiferrite magnet.  
**State-of-the-art audio contest contender, 46 KX 4 combines successfully sound reproduction quality and high SPL.**

	27 KX	33 KX	40 KX	46 KX 4
Load	Sealed	Sealed	Sealed	Vented
Load volume	20 - 40 litres (0.706-1.413 Ft <sup>3</sup> )	30 - 50 litres (1.059-1.766 Ft <sup>3</sup> )	40 - 80 litres (1.413-2.825 Ft <sup>3</sup> )	80 - 160 litres (2.825-5.650 Ft <sup>3</sup> )
Max. power	600W	800W	1000W	2000W
Nom. power	300W	400W	500W	1000W
Sensitivity (2.83 V/1m)	88dB	90dB	92.5dB	96.5 dB
Frequency response (+/- 3dB) *	35Hz - 1500Hz	30Hz - 1000Hz	25Hz - 1000Hz	20Hz - 500Hz
Nom. impedance	4 Ohms	2x2 Ohms	2x2 Ohms	4x1 Ohm
Subwoofer	27cm (11"), K2 composite sandwich cone	33cm (13"), K2 composite sandwich cone	40cm (16"), K2 composite sandwich cone	46cm (18"), K2 composite sandwich cone
Magnet	Multiferrite (12 ferrites)	Multiferrite (18 ferrites)	Multiferrite (18 ferrites)	Multiferrite (18 solid ferrites)
Voice coil	65mm (2 <sup>9/16"</sup> )	Double voice coil 65mm (2 <sup>9/16"</sup> )	Double voice coil 65mm (2 <sup>9/16"</sup> )	Quadruple voice coil 77mm (3")
Cut-out diameter	233mm (9 <sup>3/16"</sup> )	289mm (11 <sup>3/8"</sup> )	351mm (13 <sup>13/16"</sup> )	428mm (16 <sup>7/8"</sup> )
Mounting depth	119mm (4 <sup>11/16"</sup> )	161mm (6 <sup>1/3"</sup> )	188mm (7 <sup>3/8"</sup> )	214mm (8 <sup>7/16"</sup> )

\* Depending on load

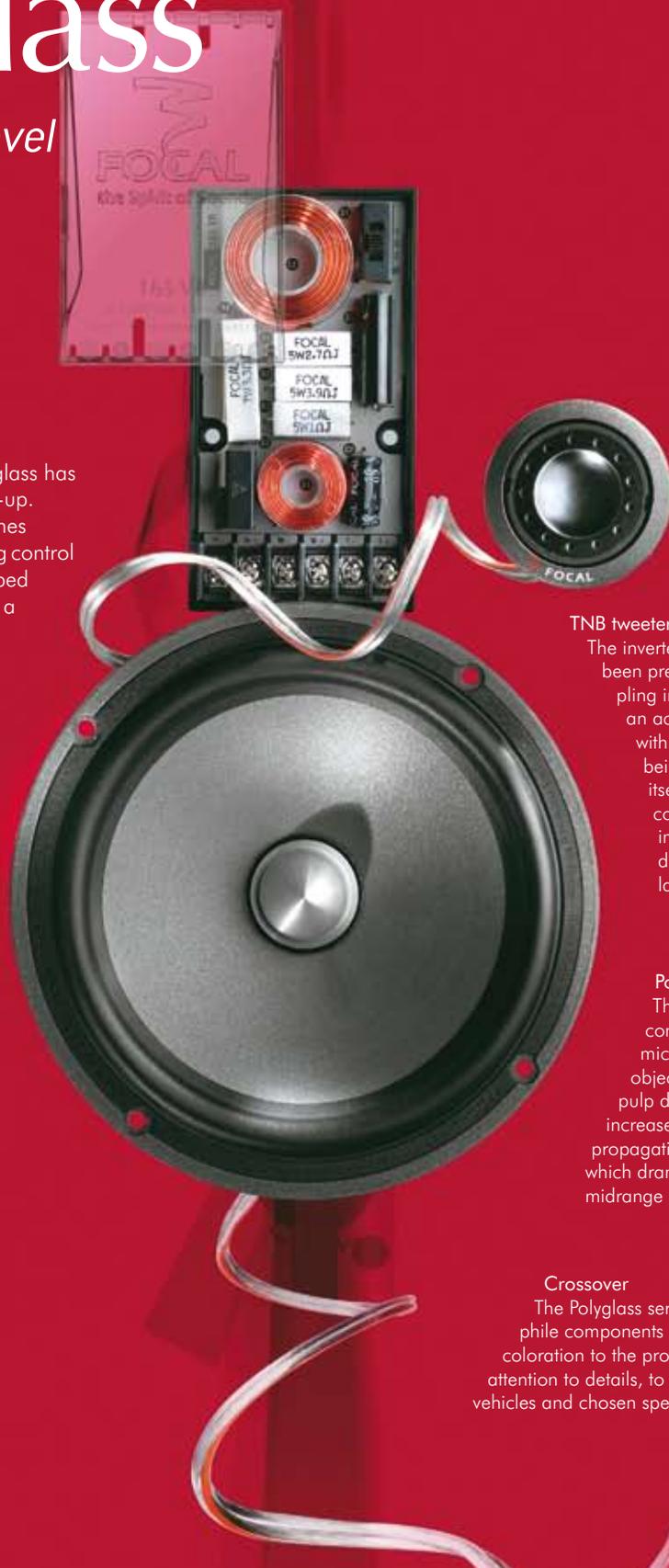


*Dust cap bonding on a Polyglass woofer*

# Polyglass™

*Sound Pleasure Level*

Since the very beginning of the brand, Polyglass has symbolized the very heart of the Focal line-up. The specific character of this range combines advanced technologies, total manufacturing control and unique know-how, continually developed over more than twenty-five years, to reach a sound quality universally recognized as excellent while still remaining affordable. To arrive at this subtle balance, extreme care must be taken over multiple details, which is why all of the key elements are always manufactured in-house. The Polyglass cone, fully exploits the remarkable properties of glass. The uniform deposit of hollow glass microballs over the whole of a cellulose pulp cone greatly increases its rigidity without adding significant weight. The overall finesse of the Polyglass range comes from a combination of the properties of both the tweeter and woofer, creating a wholly neutral sound with excellent detail in a product which output is entirely reserved for recreating the emotion of music.



#### TNB tweeters

The inverted dome tweeter is a Focal specialty that has been precisely developed to optimize dome/coil coupling in order to transform the electrical energy into an acoustical wave with minimal loss in comparison with a conventional dome. The voice coil diameter being two thirds of the diameter of the dome itself supports it evenly on its entire surface. The concave dome profile also provides a much improved three dimensional radiation, which, during listening, translates into a surprisingly large soundstage.

#### Polyglass woofer

The Polyglass technology, another Focal specialty, consists in the controlled deposit of hollow silica micro-spheres over a cellulose pulp. The main objective of that technology is to combine cellulose pulp damping properties with glass rigidity at very little increase of the overall mass of the cone. The sound propagation velocity is increased on the hard surface which dramatically improves accuracy and neutrality in the midrange spectrum.

#### Crossover

The Polyglass series crossovers feature the most refined audiophile components in order to avoid potentially damaging coloration to the products' neutrality. Treble level controls allow attention to details, to facilitate better integration to all sorts of vehicles and chosen speaker locations.

# Polyglass VR3

The most sophisticated Polyglass systems

- ↳ Self-regulated voice coil cooling system  
**Optimal reliability, power compression cancellation**
- ↳ 3 levels adjustable tweeter control  
**Optimal integration for exceptional sound stage**
- ↳ 3 way kit  
**Numerous midrange and tweeter integration solutions**
- ↳ Zamak cast alloy frame  
**Rigid, non-magnetic and non-resonant speaker frame**
- ↳ 12/12/12dB/octave crossover  
**High precision filtering**



## 165 VR3

- > 3 way 165mm (6<sup>1/2</sup>in) kit with 100mm (4") low depth midrange driver, separate crossover with tweeter level control. Grilles included.  
*The 165 VR3 kit allows optimal staging thanks to its shallow mount midrange driver and offers many installation solutions high up in car doors or in dashboard.*

### 165 VR3

Max. power	160W	
Nom. power	80W	
Sensitivity (2.83 V/1m)	93dB	
Frequency response (+/- 3dB)	55Hz - 28kHz	
Nom. impedance	4 Ohms	
Tweeter	TNB Aluminum/Magnesium inverted dome	
Woofer	Midrange 100mm (4"), Polyglass cone	Woofer 165mm (6 <sup>1/2</sup> in), Polyglass cone
Magnet	Neodymium	85mm (3 <sup>1/3</sup> in)
Voice coil	25mm (1")	25mm (1")
Cut-out diameter	93mm (3 <sup>2/3</sup> in)	141mm (5 <sup>9/16</sup> in)
Mounting depth	40mm (1 <sup>9/16</sup> in)	68mm (2 <sup>11/16</sup> in)
Controls	Tweeter level: 0, -3, -6dB	

# Polyglass VR Slim

*Focal sound in the most difficult locations*

- ↳ **Polyglass cone**  
**Coloration free, neutral sound**
- ↳ **Neodymium magnet**  
**Compact, easy to install**
- ↳ **Adjustable tweeter level**  
**Tweeter level control adjustable according to its location**
- ↳ **TNB Inverted dome tweeter**  
**Smoothness, definition and controlled directivity**
- ↳ **Double Neodymium push-pull magnet**  
**Very high linearity tweeter**



## 165 VRS

- > 2 way 165mm (6<sup>1/2</sup>" ) low depth kit, separate crossover with tweeter level control. Grilles included.  
**165 VRS is the perfect kit for positioning in factory locations, even in tight spaces. 165 V Slim delivers punchy bass and allows direct connection to a High Power car radio.**



## 130 VRS

- > 2 way 130mm (5" ) low depth kit, separate crossover with tweeter level control. Grilles included.  
**130 VRS is the perfect kit for installation in factory locations, even in shallow spaces. Its high efficiency allows direct connection to a High Power car radio.**



## 100 VRS

- > 2 way 100mm (4" ) low depth kit, separate crossover with tweeter level control. Grilles included.  
**Specially developed to optimize sound stage with installation high in doors or on the dashboard.**

	100 VRS	130 VRS	165 VRS
Max. power	80W	100W	120W
Nom. power	40W	50W	60W
Sensitivity (2.83 V/1m)	91dB	91dB	93dB
Frequency response (+/- 3dB)	90Hz - 28kHz	80Hz - 28kHz	70Hz - 28kHz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms
Tweeter	TNB inverted dome	TNB inverted dome	TNB inverted dome
Woofer	100mm (4"), Polyglass cone	130mm (5"), Polyglass cone	165mm (6 <sup>1/2</sup> " ), Polyglass cone
Magnet	Neodymium	Neodymium	Neodymium
Voice coil	25mm (1")	32mm (1 <sup>1/4</sup> " )	32mm (1 <sup>1/4</sup> " )
Cut-out diameter	93mm (3 <sup>2/3</sup> " )	115mm (4 <sup>1/2</sup> " )	141mm (5 <sup>9/16</sup> " )
Mounting depth	39.5mm (1 <sup>9/16</sup> " )	48.5mm (1 <sup>15/16</sup> " )	56mm (2 <sup>3/16</sup> " )
Controls	Tweeter level: 0, -3, -6dB	Tweeter level: 0, -3, -6dB	Tweeter level: 0, -3, -6dB

# Polyglass VR

Power, balance and contrast

- ↳ Polyglass cone  
**Neutral, coloration free sound**
- ↳ TNB Inverted dome tweeter  
**Smoothness and precision with controlled directivity**
- ↳ Double push-pull Neodymium magnet  
**Extreme linearity tweeter**
- ↳ Adjustable tweeter level control and midrange matching  
**High accuracy equalization, installation flexibility**
- ↳ Zamak cast alloy frame  
**Rigid, non-magnetic and non-resonant frame**



## 130 VR

- > 2 way 130mm (5") kit, separate crossover with tweeter level control, midrange matching. Grilles included.  
*130 VR stands out for its exceptional linearity throughout the whole spectrum and by its midrange purity while offering also high sensitivity.*



## 165 VR

- > 2 way 165mm (6<sup>1/2</sup>") kit, separate crossover with tweeter level control, midrange matching. Grilles included.  
*The line's best-seller, Polyglass 165 VR is equipped with a 11mm (0<sup>7/16</sup>") high coil for a very high 94.5dB sensitivity in order to reach distortion free high sound levels.*

	130 VR	165 VR
Max. power	100W	150W
Nom. power	50W	75W
Sensitivity (2.83 V/1m)	94dB	94.5dB
Frequency response (+/- 3dB)	80Hz - 28kHz	80Hz - 28kHz
Nom. impedance	4 Ohms	4 Ohms
Tweeter	TNB Aluminum/Magnesium inverted dome	TNB Aluminum/Magnesium inverted dome
Woofer	130mm (5"), Polyglass cone	165mm (6 <sup>1/2</sup> "), Polyglass cone
Magnet	90mm (3 <sup>1/2</sup> ")	90mm (3 <sup>1/2</sup> ")
Voice coil	32mm (1 <sup>1/4</sup> ")	32mm (1 <sup>1/4</sup> ")
Cut-out diameter	115mm (4 <sup>1/2</sup> ")	141mm (5 <sup>5/16</sup> ")
Mounting depth	61mm (2 <sup>3/8</sup> ")	70mm (2 <sup>3/4</sup> ")
Controls	Tweeter level: 0, -3, -6dB	Tweeter level: -2, 0, +2dB

# Polyglass VB

Full sound and large soundstage

- ↳ Polyglass cone  
**Neutral, coloration free sound**
- ↳ Kapton® support 25mm (1") voice coil  
**High power handling**
- ↳ Built-in voice coil cooling system  
**Performance consistency, optimal reliability**
- ↳ Aluminum / magnesium inverted dome tweeter  
**Treble smoothness and high definition, very large soundstage**
- ↳ Adjustable tweeter level control  
**Tweeter level control according to location**



## 165 VB

> 2 way 165mm (6<sup>1/2</sup>" ) kit, separate crossover with tweeter level control. Grilles included.

**165 VB allows direct connection to a High Power car radio thanks to its very high efficiency and is also remarkable by its balance, its large soundstage and its versatility.**

## 130 VB

> 2 way 130mm (5" ) kit, separate crossover with tweeter level control. Grilles included.

**130 VB allows direct connection to a High Power car radio thanks to its high efficiency while offering as well a highly defined, accurate treble.**

	130 VB	165 VB
Max. power	120W	140W
Nom. power	60W	70W
Sensitivity (2.83 V/1m)	91dB	93dB
Frequency response (+/- 3dB)	75Hz - 28kHz	60Hz - 28kHz
Nom. impedance	4 Ohms	4 Ohms
Tweeter	TNB, Aluminum/Magnesium inverted dome	TNB, Aluminum/Magnesium inverted dome
Woofer	130mm (5"), Polyglass cone	165mm (6 <sup>1/2</sup> " ), Polyglass cone
Magnet	85mm (3 <sup>1/3</sup> " )	85mm (3 <sup>1/3</sup> " )
Voice coil	25mm (1")	25mm (1")
Cut-out diameter	117mm (4 <sup>5/8</sup> " )	141mm (5 <sup>9/16</sup> " )
Mounting depth	56mm (2 <sup>3/16</sup> " )	65mm (2 <sup>9/16</sup> " )
Controls	Tweeter level: -3, 0, +3dB	Tweeter level: -3, 0, +3 dB

# Polyglass CVX

Efficiency and balance ...

- ↳ Polyglass cone  
**Neutral, coloration free sound**
- ↳ Butyl surround  
**Excellent power handling**
- ↳ Aluminum rotating inverted dome tweeter  
**Smoothness and definition with controlled directivity**
- ↳ ABS painted DIN frame, 20% glass fiber fill  
**Rigid, non resonant molded frame, easy to install**
- ↳ Kapton support 25mm (1") voice coil  
**High power handling**
- ↳ 12dB/octave audiophile crossover  
**Time saving during installation, sound quality**



## 165 CVX

- > Coaxial 165mm (6<sup>1/2</sup>" ) kit, built in crossover, rotating tweeter. Grilles included.  
*The CVX series defining reference in terms of tonal balance and an extended bass response. Its 93dB high sensitivity allows direct connection to a High Power car radio.*



## 100 CVX

- > Coaxial 100mm (4") kit, built in crossover, rotating tweeter. Grilles included.  
*Excellent performance for factory locations.*



## 130 CVX

- > Coaxial 130mm (5") kit, built in crossover, rotating tweeter. Grilles included.  
*130 CVX combines easy installation and good sonic imaging thanks to an aluminum inverted dome rotating tweeter.*



## 690 CVX

- > Coaxial 164x235mm elliptical (6"x9") kit, built in crossover, rotating tweeter. Grilles included.  
*The ideal addition to your system for rear deck installation.*

	100 CVX	130 CVX	165 CVX	690 CVX
Max. power	100W	120W	140W	160W
Nom. power	50W	60W	70W	80W
Sensitivity (2.83 V/1m)	90dB	91dB	93dB	93dB
Frequency response (+/- 3dB)	90Hz - 20kHz	75Hz - 20kHz	60Hz - 20kHz	50Hz - 20kHz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms	4 Ohms
Tweeter	Aluminum inverted dome	Aluminum inverted dome	Aluminum inverted dome	Aluminum inverted dome
Woofer	100mm (4"), Polyglass cone	130mm (5"), Polyglass cone	165mm (6 <sup>1/2</sup> " ), Polyglass cone	164x235mm (6 <sup>1/2</sup> x9 <sup>1/4</sup> " ), Polyglass cone
Magnet	72mm (2 <sup>13/16</sup> " )	85mm (3 <sup>1/3</sup> " )	85mm (3 <sup>1/3</sup> " )	90mm (3 <sup>9/16</sup> " )
Voice coil	25mm (1")	25mm (1")	25mm (1")	30mm (1 <sup>3/16</sup> " )
Cut-out diameter	94mm (3 <sup>11/16</sup> " )	117mm (4 <sup>5/8</sup> " )	140mm (5 <sup>1/2</sup> " )	149x222mm (5 <sup>7/8</sup> x8 <sup>3/4</sup> " )
Mounting depth	59mm (2 <sup>5/16</sup> " )	61mm (2 <sup>3/8</sup> " )	70mm (2 <sup>3/4</sup> " )	93mm (3 <sup>2/3</sup> " )

# Polyglass Subwoofers V2

*Extremely reliable bass in closed box*

- ↳ Polyglass cone  
**Neutral, coloration free sound**  
Voice coil with a large copper wire on 2 layers (21V2)  
or 4 layers (27V2 and 33V2)
- ↳ **Very high power handling**
- ↳ Self-regulated ventilation system  
**Optimum reliability, performance consistency**
- ↳ Zamak frame  
**Rigid, non-magnetic and non-resonant frame**
- ↳ NBR surround with long excursion  
**Deep bass**



## 27 V2

- > 27cm (11") Polyglass cone subwoofer, double voice coil.  
*This subwoofer procures a round bass for a reliable sound reproduction.*



## 21 V2

- > 21cm (8<sup>1/4</sup>") Polyglass cone.  
*This subwoofer conciliates extended frequency response in the bass and very small volume.*



## 33 V2

- > 33cm (13") Polyglass cone subwoofer, double voice coil.  
*This subwoofer permits to go very low in the bass frequencies with a perfect respect of the original sound. Excellent compromise between size and sound restitution.*

	21 V2	27 V2	33 V2
Load	Sealed	Sealed	Sealed
Load volume	12 - 20 litres	15 - 30 litres	25 - 50 litres
Max. power	500W	600W	800W
Nom. power	250W	300W	400W
Sensitivity (2.83 V/1m)	85dB	88dB	90dB
Frequency response (+/- 3dB) *	40Hz - 500Hz	35Hz - 500Hz	30Hz - 500Hz
Nom. impedance	4 Ohms	2 x 4 Ohms	2 x 4 Ohms
Subwoofer	21cm (8 <sup>1/4</sup> "), Polyglass cone	27cm (10 <sup>5/8</sup> "), Polyglass cone	33cm (13"), Polyglass cone
Magnet	Double ferrite 120mm (4 <sup>3/4</sup> ")	Double ferrite 156mm (6 <sup>1/8</sup> ")	Double ferrite 156mm (6 <sup>1/8</sup> ")
Voice coil	50mm (1 <sup>5/16</sup> ")	Double voice coil 65mm (2 <sup>9/16</sup> ")	Double voice coil 65mm (2 <sup>9/16</sup> ")
Cut-out diameter	184mm (7 <sup>1/4</sup> ")	232mm (9 <sup>1/8</sup> ")	287mm (11 <sup>5/16</sup> ")
Mounting depth	114mm (4 <sup>1/2</sup> ")	133mm (5 <sup>1/4</sup> ")	159mm (6 <sup>1/4</sup> ")

# Polyglass V1 Subwoofers

Energy and efficiency in Bass-reflex enclosures

- ↳ Polyglass cone  
**Excellent rigidity/weight ratio for remarkable neutrality**
- ↳ 65mm (2<sup>9/16</sup>" )/4 layer coil  
**High power handling**
- ↳ Built-in voice coil cooling system  
**Optimal reliability, power compression cancellation**
- ↳ 156mm (6<sup>1/8</sup>" ) magnet (33 V1, 40 V1)  
**Powerful magnetic field**
- ↳ Zamak cast alloy frame  
**Rigid, non-magnetic and non-resonant frame**



## 33 V1

- > 33cm (13") Polyglass cone subwoofer.  
Its oversized 65mm (2<sup>9/16</sup>" ) diameter, 26mm (1" ) high coil, delivers high dynamic bass and high power handling.



## 27 V1

- > 27cm (11") Polyglass cone subwoofer.  
High density bass reproduction in small volumes.



## 40 V1

- > 40cm (16") Polyglass cone subwoofer.  
Tight, "fleshy" bass for sub bass lovers.

	27 V1	33 V1	40 V1
Load	Vented	Vented	Vented
Load volume	15 - 30 litres (0.530-1.059 Ft <sup>3</sup> )	25 - 40 litres (0.883-1.413 Ft <sup>3</sup> )	40 - 60 litres (1.413-2.119 Ft <sup>3</sup> )
Max. power	500W	800W	800W
Nom. power	250W	400W	400W
Sensitivity (2.83 V/1m)	90dB	92dB	93.5dB
Frequency response (+/- 3dB) *	35Hz - 1000Hz	30Hz - 1000Hz	25 Hz - 1000Hz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms
Subwoofer	27cm (11"), Polyglass cone	33cm (13"), Polyglass cone	40cm (16"), Polyglass cone
Magnet	120mm (4 <sup>3/4</sup> " )	156mm (6 <sup>1/8</sup> " )	156mm (6 <sup>1/8</sup> " )
Voice coil	50mm (2" )	65mm (2 <sup>9/16</sup> " )	65mm (2 <sup>9/16</sup> " )
Cut-out diameter	233mm (9 <sup>13/16</sup> " )	288mm (11 <sup>1/3</sup> " )	351mm (13 <sup>13/16</sup> " )
Mounting depth	130mm (5" )	158mm (6 <sup>1/4</sup> " )	185mm (7 <sup>5/16</sup> " )

\* Depending on load

# Polyglass V1 Enclosures

*Punchy bass in bass-reflex*

- ↳ 16mm (5/8") thick, MDF bass-reflex enclosure, internal damping material, flared vent  
**Ultra-rigid box, vibration free, "chuff" free vent**
- ↳ 300W built-in amplifier (Bomba 27 V1)  
**Amplification especially developed to match the subwoofer parameters**
- ↳ Phase, cut-off frequency and level controls (Bomba 27 V1)  
**Box/existing system coupling optimization**
- ↳ 3 positions Bass boost level control (Bomba 27 V1)  
**3 types of performance to satisfy all musical tastes**
- ↳ Polyglass cone subwoofer  
**Deep and tight bass**



## Bomba 27 V1

- > Bass-reflex enclosure with 27 V1 Polyglass cone subwoofer, flared vent, 300W built-in amplifier, multiple controls available. Installation kit provided.  
**The Polyglass solution that focuses on amplification and enclosure to produce a punchy bass from a small box.**

## SB 27 V1

- > Flared vent bass-reflex enclosure reducing vent chuffing noise, using the 27 V1 Polyglass cone subwoofer. Installation kit provided.  
**High density bass in carefully optimized enclosure.**

## SB 33 V1

- > Flared vent bass-reflex enclosure reducing vent chuffing noise, using 33 V1 Polyglass cone subwoofer. Installation kit provided.  
**The most impressive Polyglass enclosure providing high dynamic bass and high power handling in order to reach extremely high sound levels.**

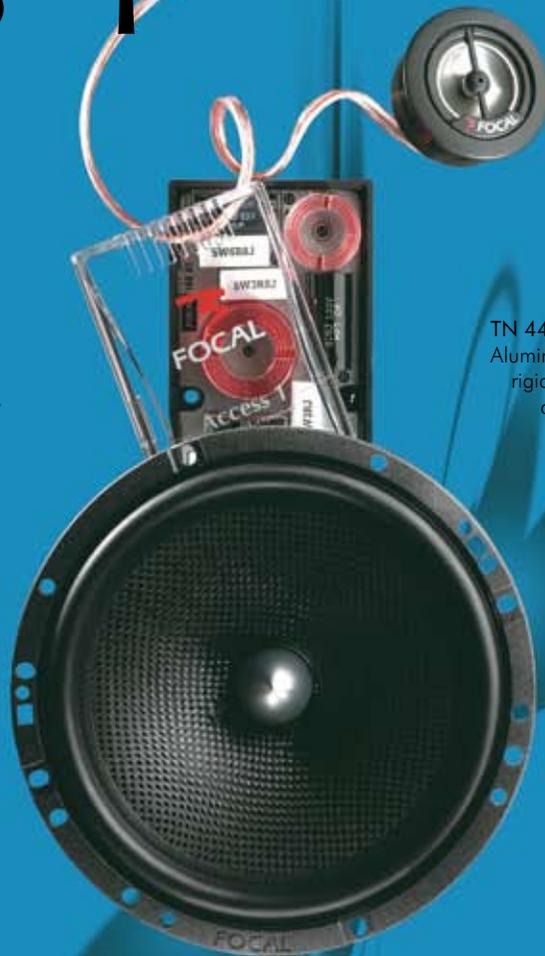
	SB 27 V1	SB 33 V1	Bomba 27 V1
Load	Vented	Vented	Vented
Max. amplification	-	-	300W
Max. power	500W	800W	-
Nom. power	250W	400W	-
Sensitivity (2.83 V/1m)	90dB	92dB	-
Frequency response (+/- 3dB)	36Hz - 500Hz	38Hz - 500Hz	36Hz - 500Hz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms
Subwoofer	27cm (11"), Polyglass cone	33cm (13"), Polyglass cone	27cm (11"), Polyglass cone
Magnet	120mm (4 <sup>3/4</sup> ")	156mm (6 <sup>1/8</sup> ")	120mm (4 <sup>3/4</sup> ")
Voice coil	50mm (2")	65mm (2 <sup>9/16</sup> ")	50mm (2")
Dimensions (H x L x D)	310x466x371mm (12 <sup>3/16</sup> "x18 <sup>1/32</sup> "x14 <sup>5/8</sup> ")	360x515x375mm (14 <sup>3/16</sup> "x20 <sup>1/4</sup> "x14 <sup>3/4</sup> ")	310x466x371mm (12 <sup>3/16</sup> "x18 <sup>1/32</sup> "x14 <sup>5/8</sup> ")
Controls	-	-	Sound level, phase, Bass-Boost, cut-off frequency, high and low level input



# Access<sup>TM</sup> 1

*Access the musicality  
Fill up on sensations !*

Discover the world of Focal sound quality via a range that reconciles technology, performance and affordability. The same Focal character and our philosophy of "The Spirit of Sound" is displayed by the extreme attention to detail found at every development stage for the various transducers and crossovers. The essential component in terms of quality of reproduction, richness of timbre plus image detail is the inverted dome aluminum tweeter whose inclusion represented a true challenge: how to bring a unique Focal technology into a more affordable market segment. At the same time, the woofers and subwoofers combine high sensitivity and high power handling. The humidity resistant woven glass fibre cone combines the dynamics and precision of the mid-range while offering a deep and articulated bass.



#### TN 44 tweeter

Aluminum inverted dome tweeter technology offers significant rigidity and lowers distortion. Ideal air coupling, the main advantage of the inverted dome shape, allows a very wide soundstage and very accurate image, unlike a convex (traditional) dome that is moving more on its periphery than on its center causing a weak coil/dome energy transfer.

**All weather woven glass fiber cone woofer**  
The Access woofers built with a light and stiff cone, coupled with a butyl rubber surround offer a degree of quality never before encountered at this price level. The special all weather cone will perform in hot and humid environments without distortion or warping. The woofer's power handling and reliability are remarkable thanks to deliberately oversized voice coils, resulting in deep and accurate bass.

#### Crossover

The Access crossovers fully reflect Focal's philosophy which is oriented towards product application and uncompromising quality requirements. Polypropylene capacitors bring to these products high and distortion free dynamics. Level control available in 2 way systems allows to refine the tuning of the tweeter in all locations.

# Access CA1

Experience Focal sound in factory-installed locations

- ↳ Aluminum adjustable inverted dome tweeter  
**Soundstage optimization**
- ↳ 20% glass fiber filled ABS chassis  
**Rigid, non-magnetic and non-resonant basket**
- ↳ All weather woven glass fiber cone  
**Dynamic bass and humidity resistant, accurate midrange**
- ↳ Built-in voice coil cooling system  
**Optimal reliability, power compression cancellation**
- ↳ Butyl surround  
**Performance consistency**



## 165 CA1

- > Coaxial 165mm (6<sup>1/2</sup>" ) kit, built-in crossover, rotating tweeter. Grilles included.  
**The 165 CA1 combines excellent power handling, dynamics, bass quality and good sensitivity. It will also allow direct connection to a High Power car radio.**



## 130 CA1

- > Coaxial 130mm (5") kit, built-in crossover, rotating tweeter. Grilles included.  
**The 25mm (1") voice coil combined with the 85mm (3<sup>1/3</sup>" ) magnet provides high power handling as well as extremely dynamic sound.**



## 100 CA1

- > Coaxial 100mm (4") kit, built-in crossover, rotating tweeter. Grilles included.  
**Great performance in factory-installed locations.**

	100 CA1	130 CA1	165 CA1
Max. power	80W	100W	120W
Nom. power	40W	50W	60W
Sensitivity (2.83 V/1m)	89dB	91dB	92dB
Frequency response (+/- 3dB)	90Hz - 20kHz	65Hz - 20kHz	60Hz - 20kHz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms
Tweeter	Aluminum inverted dome	Aluminum inverted dome	Aluminum inverted dome
Woofers	100mm (4") all weather woven glass fiber cone	130mm (5") all weather woven glass fiber cone	165mm (6 <sup>1/2</sup> " ) all weather woven glass fiber cone
Magnet	70mm (2 <sup>3/4</sup> " )	85mm (3 <sup>1/3</sup> " )	85mm (3 <sup>1/3</sup> " )
Voice coil	25mm (1")	25mm (1")	25mm (1")
Cut-out diameter	94mm (3 <sup>11/16</sup> " )	117mm (4 <sup>5/8</sup> " )	141mm (5 <sup>9/16</sup> " )
Mounting depth	53mm (2 <sup>1/16</sup> " )	56mm (2 <sup>3/16</sup> " )	66mm (2 <sup>5/8</sup> " )



## 690 CA1

- > Coaxial 164x235mm (6"x9") kit, built-in crossover, rotating tweeter. Grilles included. *The ideal add-on to your system, in rear deck location. Deep bass too.*



## 570 CA1

- > Coaxial 130x180mm (5x7") kit, rotating tweeter, built-in crossover. Grilles included. *Especially made for Ford, Jaguar and Mazda.*



## 210 CA1

- > Coaxial 210mm (8.3")kit, rotating tweeter, built-in crossover. Grilles included. *Especially made to be installed on the parcel shelf and to give very high quality bass frequencies.*

	210 CA1	570 CA1	690 CA1
Max. power	160W	120W	150W
Nom. power	80W	60W	75W
Sensitivity (2.83 V/1m)	93dB	91dB	91dB
Frequency response (+/- 3dB)	50Hz - 20kHz	65Hz - 20kHz	50Hz - 20kHz
Nom. impedance	4 Ohms	4 Ohms	4 Ohms
Tweeter	Aluminum inverted dome	Aluminum inverted dome	Aluminum inverted dome
Woofers	200mm (8") all weather woven glass fiber cone	130x180mm (5x7") all weather woven glass fiber cone	164x235mm (6x9") all weather woven glass fiber cone
Magnet	100mm (4")	85mm (3.3")	90mm (3.5")
Voice coil	30mm (1.2")	25mm (1")	30mm (1.2")
Cut-out diameter	186mm (7.3")	127x182mm (5x7")	149x222mm (5.8x8.7")
Mounting depth	85mm (3.4")	60.5mm (2.4")	93mm (3.6")

# Access A1 & A3

Dynamics and soundstage

- ↳ Aluminum inverted dome tweeter  
**Smooth and accurate treble**
- ↳ All weather woven glass fiber cone  
**Dynamic bass, humidity-resistant and accurate midrange**
- ↳ Voice coil cooling chassis system  
**Reliability, performance consistency**
- ↳ Adjustable tweeter level control  
**Tweeter level control according to location**
- ↳ 85mm (3<sup>1/3</sup>" ) magnet  
**High efficiency**



## 165 A3

- > 3 way separate 165mm (6<sup>1/2</sup>" ) kit, separate crossover integrating tweeter level adjustment. Grilles supplied.  
**The quality of a 3 way kit combined with high-power handling.**



## 130 A1

- > 2 way 130mm (5") kit, separate crossover with tweeter level control.  
**130 A1 kit combines dynamics, large soundstage, smooth and accurate treble and punchy bass.**



## 165 A1

- > 2 way 165mm (6<sup>1/2</sup>" ) kit, separate crossover with tweeter level control. Grilles included.  
**The Access line's defining reference combines high power handling, extended low frequency response, large soundstage, high dynamics and high efficiency. It will even allow direct connection to a High Power car radio.**

	130 A1	165 A1	165 A3	
Max. power	100W	120W	160W	
Nom. power	50W	60W	80W	
Sensitivity (2.83 V/1m)	91dB	92dB	90dB	
Frequency response (+/- 3dB)	65Hz - 20kHz	60Hz - 20kHz	55Hz - 20kHz	
Nom. impedance	4 Ohms	4 Ohms	4 Ohms	
Tweeter	TN 44 Aluminum inverted dome	TN 44 Aluminum inverted dome	TN 44 Aluminum inverted dome	
Woofer	130mm (5") all weather woven glass fiber cone	165mm (6 <sup>1/2</sup> " ) all weather woven glass fiber cone	Midrange 100 mm (4") all weather woven glass fiber cone	Woofer 165mm (6 <sup>1/2</sup> " ) all weather woven glass fiber cone
Magnet	85mm (3 <sup>1/3</sup> " )	85mm (3 <sup>1/3</sup> " )	72mm (2 <sup>13/16</sup> " )	85mm (3 <sup>1/3</sup> " )
Voice coil	25mm (1")	25mm (1")	25mm (1")	25mm (1")
Cut-out diameter	117mm (4 <sup>5/8</sup> " )	141mm (5 <sup>9/16</sup> " )	94mm (3 <sup>11/16</sup> " )	141mm (5 <sup>9/16</sup> " )
Mounting depth	54mm (2 <sup>1/8</sup> " )	66mm (2 <sup>5/8</sup> " )	53mm (2 <sup>1/16</sup> " )	69mm (2 <sup>11/16</sup> " )
Controls	Tweeter 0,-3,-6dB	Tweeter 0,-3,-6dB	Tweeter +3, 0, -3dB	

# Access 1 Subwoofers

Power handling and dynamics

- ↳ Self-regulated voice coil cooling system  
**Optimal reliability, performance consistency**
- ↳ 4 layer voice coil  
**Very high power handling**
- ↳ Butyl surround excellent bass extension  
**Excellent power handling**
- ↳ All weather woven glass fiber cone  
**Dynamic bass, humidity resistant**
- ↳ 145mm (5<sup>11/16</sup>" ) magnet  
**High efficiency**



## 30 A1 DB

- > All weather woven glass fiber cone 30cm (13") subwoofer.  
*Extended frequency response in the bass without distortion.*



## 25 A1

- > All weather woven glass fiber cone 25cm (11") subwoofer.  
*Excellent compromise between diameter and performance. The 25 A1 offers good dynamics as well as high power handling.*



## 30 A1

- > All weather woven glass fiber cone 30cm (13") subwoofer.  
*Its high sensitivity (94dB) lends itself to high SPL.*

	25 A1	30 A1	30 A1 DB
Load	Vented	Vented	Sealed
Load volume	20 - 40 litres (0.706-1.413 Ft <sup>3</sup> )	30 - 60 litres (1.059-2.119 Ft <sup>3</sup> )	25 - 40 litres (0.883-1.413 Ft <sup>3</sup> )
Max. power	400W	500W	500W
Nom. power	200W	250W	250W
Sensitivity (2.83 V/1m)	92dB	94dB	91dB
Frequency response (+/- 3dB) *	32Hz - 500Hz	27Hz - 500Hz	25Hz - 500Hz
Nom. impedance	4 Ohms	4 Ohms	2x4 Ohms
Subwoofer	25cm (11") all weather woven glass fiber cone	30cm (13") all weather woven glass fiber cone	30cm (13") all weather woven glass fiber cone
Magnet	145mm (5 <sup>11/16</sup> " )	145mm (5 <sup>11/16</sup> " )	170mm (6 <sup>11/16</sup> " )
Voice coil	50mm (2")	50mm (2")	65mm (2 <sup>9/16</sup> " )
Cut-out diameter	232mm (9 <sup>1/8</sup> " )	275mm (10 <sup>13/16</sup> " )	275mm (10 <sup>13/16</sup> " )
Mounting depth	118mm (4 <sup>5/8</sup> " )	134mm (5 <sup>1/4</sup> " )	134mm (5 <sup>1/4</sup> " )

\* Depending on load

# Access 1 BUS

*Bomba Under seat*

- ↳ *Remote control*  
**Keeping control**
- ↳ *High and low level inputs*  
**Directly connected to the speaker outputs of your car radio**
- ↳ *Aluminum compact chassis*  
**Low height, high rigidity**
- ↳ *Ready to use*  
**Supplied wiring kit**



	Bus 20	Bus 25
Max. power	120W	120W
Nom. power	60W	60W
Frequency response	50Hz - 400Hz	50Hz - 400Hz
Subwoofer	20cm (8") subwoofer. Aluminum active box.	25cm (10") subwoofer. Aluminum active box.
External remote level control	Supplied	Supplied
Height	76mm (3")	80mm (3 <sup>1/8</sup> ")
Length	348mm (13 <sup>11/16</sup> ")	371mm (14 <sup>5/8</sup> ")
Width	242mm (9 <sup>1/2</sup> ")	277mm (10 <sup>7/8</sup> ")

## BUS 25

- > Sealed bass enclosure 120W amplifier for a 25cm (9<sup>13/16</sup>") subwoofer, very small thickness.  
**Aluminum chassis that ensures high rigidity, wiring kit and remote control supplied.**

## BUS 20

- > Sealed bass enclosure 120W amplifier for a 20cm (7<sup>7/8</sup>") subwoofer, very small thickness.  
**Permits a location under the seat, high and low level input, wiring kit and remote control supplied.**

# Access 1 Enclosures

*Minimal box volume for maximal sensation*



## Solution 25 A1

- > Bass-reflex subwoofer enclosure, flared vent reducing air noise, built-in bi-amplification: one 300W subwoofer amp and two 100W amps for kit amplification, using the 25 A1 subwoofer, numerous controls available.  
**The ultimate solution combining flexibility and easy-install while offering 500W self-contained amplification capacity.**

# Access 1 Enclosures

Minimal box volume for maximal sensation

- ↳ 16mm (5/8") thick MDF enclosure  
**More rigidity, vibration free**
- ↳ Flared vent  
**Air chuffing noise cancellation**
- ↳ All weather woven glass fiber cone subwoofer  
**Dynamic bass, humidity-resistant cone**
- ↳ Protective grille  
**Subwoofer maximum protection and design**
- Professional spring clip terminals fitting
- ↳ 6mm<sup>2</sup> (1/4"²) cables  
**Reliable wiring reduces power loss**



## SB 30 A1

- > Bass-reflex subwoofer enclosure, flared vent reducing air noise, 30 A1 subwoofer.  
*This box allies deep bass, high sensitivity and high power handling.*



## BombA 20 A1

- > Bass-reflex subwoofer enclosure, flared vent reducing air noise, built-in 300W amplifier, 20cm (8") drive unit, all weather glass fiber woven cone, numerous controls available.  
*This two-in-one box reduces overall dimensions while offering a good bass level.*

## SB 25 A1

- > Bass-reflex subwoofer enclosure, flared vent reducing air noise. 25cm (10") drive unit.  
*This sub combines an extended low frequency response with solid bass and high power handling.*

	BombA 20 A1	Solution 25 A1	SB 25 A1	SB 30 A1
Load	Vented	Vented	Vented	Vented
Max. amplification	250W	500W	-	-
Max. power	-	300W subwoofer + 2x100W	400W	500W
Nom. power	125W	150W subwoofer + 2x50W	200W	250W
Sensitivity (2.83 V/1m)	-	-	92dB	94dB
Frequency response (+/- 3dB)	46Hz - 500Hz	42Hz - 500Hz	42Hz - 500Hz	40Hz - 500Hz
Nom. impedance	4 Ohms	-	4 Ohms	4 Ohms
Subwoofer	20cm (8") all weather woven glass fiber cone	25cm (10") all weather woven glass fiber cone	25cm (10") all weather woven glass fiber cone	30cm (11 <sup>13/16</sup> ") all weather woven glass fiber cone
Magnet	100mm (4")	145mm (5 <sup>11/16</sup> ")	145mm (5 <sup>11/16</sup> ")	145mm (5 <sup>11/16</sup> ")
Voice coil	40mm (1 <sup>9/16</sup> ")	50mm (2")	50mm (2")	50mm (1 <sup>15/16</sup> ")
Dimensions (H x L x D)	250x320x392mm (9 <sup>13/16</sup> "x12 <sup>5/8</sup> "x15 <sup>7/16</sup> ")	300x350x425mm (11 <sup>13/16</sup> "x13 <sup>3/4</sup> "x16 <sup>3/4</sup> ")	300x350x425mm (11 <sup>13/16</sup> "x13 <sup>3/4</sup> "x16 <sup>3/4</sup> ")	360x390x527mm (14"x15 <sup>3/8</sup> "x20 <sup>3/4</sup> ")
Controls	Phase, cut-off frequency, level, bass boost	Phase, hi-pass crossover, lo-pass crossover, level, bass boost, external remote control.	-	-

# We know what speakers need

Innovation and performance research are Focal key points. In the Car Audio field for around twenty years, Focal knows about the sound enthusiast's demands and has answered them with three compact amplifiers. Solid 1 is dedicated to use with a subwoofer, Solid 2 is made for strengthening your front system power, although other uses are also possible, and finally, Solid 4, which will supply either your front and rear speakers or pilot a subwoofer and a separate

kit at the same time. The three of them are available in two colors: Black and Red. These new and very compact amplifiers offer high flexibility. The design of their low-level "pseudo-balanced" input circuits permits to eliminate parasites created by the electrical systems of the vehicle. Each Solid amplifier is also equipped with high-level inputs that guarantee a perfect compatibility with original car radios. In that case, no need to look for a power on remote connection of

the amplifier, as they are equipped with a signal detection circuit that automatically ensures this function... The installation is then much easier. Thanks to these functions, the Solid amplifiers will very easily suit all types of vehicles to raise the power with very high sound quality.

# Solid amplifiers





# Solid 4

- **Versatility: 2, 3 or 4 channel mode**
- **Remote control supplied for sound level control**
- **Stable into 2 Ohms (4 x 100W)**

# Solid 2

- **Versatility: 1 or 2 channel mode**
- **2 x 75W RMS into 4 Ohms**
- **Stable into 2 Ohms**



# Solid 1

- **High-level input**
- **Remote control supplied for easy control of the bass**
- **Stable into 2 and 4 Ohms**



# Technical specifications



Remote control supplied



Remote control supplied

## Solid 1

## Solid 2

## Solid 4

Nominal power measured at 14.4V continuously into 4Ω THD + N < 1%	1 x 300W	2 x 75W	4 x 75W
Signal/Noise ratio (1 Watt output)	> 85dB (A)	> 77dB (A)	> 80dB (A)
Nominal power measured at 14.4V continuously into 2Ω THD + N < 1%	1 x 470W	2 x 100W	4 x 100W
Power in bridged mode measured at 14.4V continuously into 4Ω THD + N < 1%	-	1 x 200W	2 x 200W
Power in bridged mode measured at 14.4V continuously into 1Ω THD + N < 1%	1 x 600W (SPL mode/5 minutes only)	-	-
THD + N @ 4Ω	0,01% @ 50Hz	0,02% @ 1kHz	0,02% @ 1kHz
Signal/Noise ratio (RMS)	> 100dB (A)	> 95dB (A)	> 100dB (A)
Damping factor @ 4Ω	50 to 50Hz	100 to 1kHz	50 to 1kHz
Frequency response @ -1dB	10Hz – 150Hz	10Hz – 60kHz	10 Hz – 60kHz
Input impedance	20kΩ	20kΩ	20kΩ
Input sensitivity	0,2 – 5V	0,2 – 5V	0,2 – 5V
High-pass filter	-	50 – 150Hz (12dB/oct.)	50 – 150Hz (12dB/oct.)
Low-pass filter	50 – 150Hz (12dB/oct.)	50 – 150Hz (12dB/oct.)	50 – 150Hz (12dB/oct.)
SUBSONIC filter	35Hz (24dB/oct.)	-	-
Remote control	yes	-	yes
Adjustable BASS BOOST level	0 to + 9dB @ 50Hz	-	-
Variable phase	0 to 180°	-	-
Maximum cross section of speaker wires	10mm <sup>2</sup> 7 AWG	10mm <sup>2</sup> 7 AWG	10mm <sup>2</sup> 7 AWG
Maximum cross section of power wires	35mm <sup>2</sup> 2 AWG	35mm <sup>2</sup> 2 AWG	35mm <sup>2</sup> 2 AWG
Fuse(s)	2 x 25A	1 x 25A	2 x 25A
Protections	<ul style="list-style-type: none"> <li>• Short-circuit</li> <li>• Thermal overload</li> <li>• Overvoltage</li> <li>• Polarity reversal</li> </ul>	<ul style="list-style-type: none"> <li>• Short-circuit</li> <li>• Thermal overload</li> <li>• Overvoltage</li> <li>• Polarity reversal</li> </ul>	<ul style="list-style-type: none"> <li>• Short-circuit</li> <li>• Thermal overload</li> <li>• Overvoltage</li> <li>• Polarity reversal</li> </ul>
Dimensions (H x W x D)	1 3/4 x 11 13/16 x 7 7/8 " 45 x 300 x 200mm	1 3/4 x 8 2/3 x 7 7/8 " 45 x 220 x 200mm	1 3/4 x 11 13/16 x 7 7/8 " 45 x 300 x 200mm



R5423 PC1033



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