

## RAVEN R 1.0

### Pure Ribbon Transducer

This exceptional high frequency transducer is a true Pure Ribbon tweeter (not to be confused with metalized film ribbon tweeters). In a dome tweeter the signal is carried through the voice coil wire, and the sound is radiated by the dome attached to the voice coil former. Here, the carrier of the electrical signal and the

radiating diaphragm are one part: the ribbon. Furthermore the ribbon itself is 100% pure conductive material (100% pure aluminum foil, no metalized film). The almost immaterial ribbon (1/30th of the mass and more than 10 times the area of a comparable dome) is immersed in a massive magnetic field created by a unique magnet structure. This impressive transducer integrates the most advanced materials (NeFeB, low carbon alloy, high precision high purity aluminum microfoil) together

with the most advanced techniques (FEA assisted magnet design, FEA assisted electromechanical design, precision

CNC machining, multi-layer plating, controlled viscosity damping). Each unit

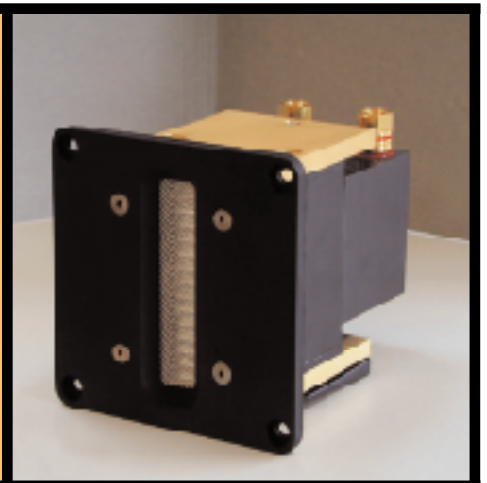
comes with its built in matching transformer (low insertion loss, wide bandwidth) and individual response curve.

The R 1.0 is a dedicated high efficiency tweeter of extraordinary finesse. It can be used from 2,000 Hz and up. We recommend our own high order slope crossover for optimum rejection of low frequencies. At the same time the very predictable impedance curve of the R 1.0 makes it easy to design simpler crossovers.

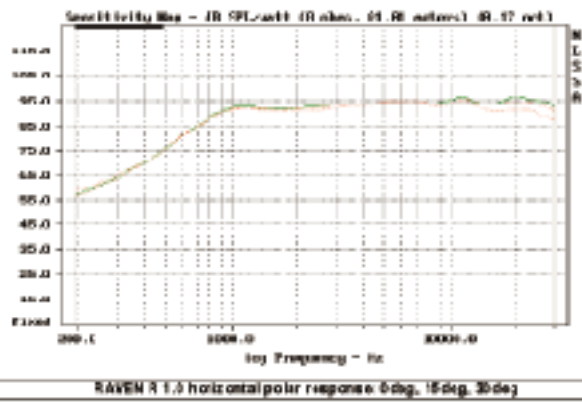
Subjective evaluation: if you have been using excellent dome tweeters that sound quite colorless to you, then you are going to discover with the R 1.0 that "colorless" is a relative term. You are also going to discover how long the natural decay of ringing instruments such as a triangle can be. The exceptional dispersion of the R 1.0 will help create, with the appropriate drivers and crossovers, a wide, deep, and extremely reliable sound field.

### Specifications

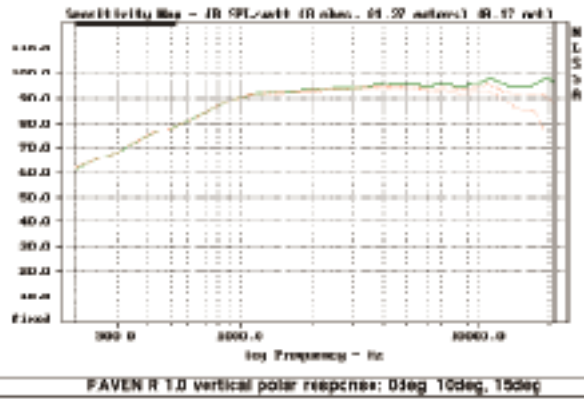
ribbon material	pure aluminum
ribbon mass	.008g
ribbon area	595 mm <sup>2</sup>
gap flux	0.55 Tesla
transformer, secondary impedance	0.05
transformer, primary impedance	4
DCR	3.3
frequency range	2000 - 35000Hz
sensitivity	95 dB / 2.83V / 1m
power handling, nominal	15W
power handling, maximum	40W
total mass	4.5 lbs



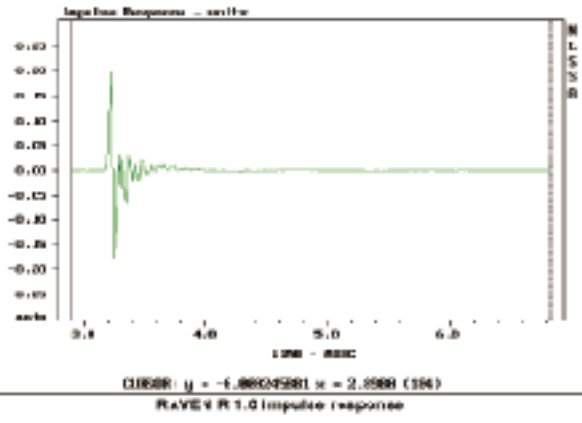
**HORIZ. POLAR RESPONSE**



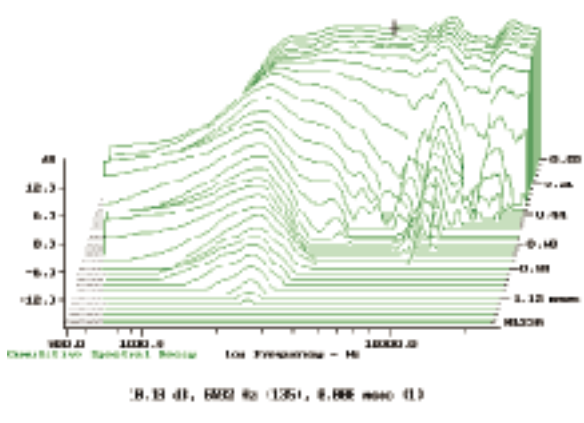
**VERT. POLAR RESPONSE**



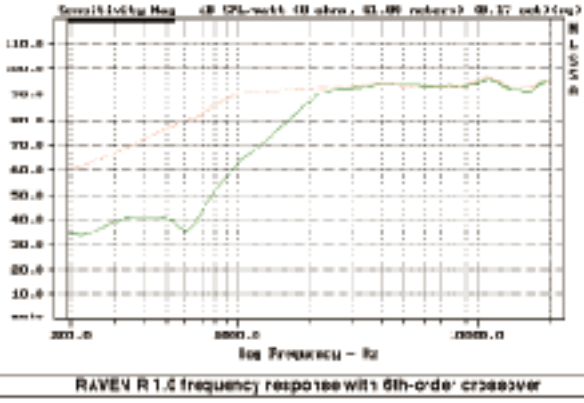
**IMPULSE RESPONSE**



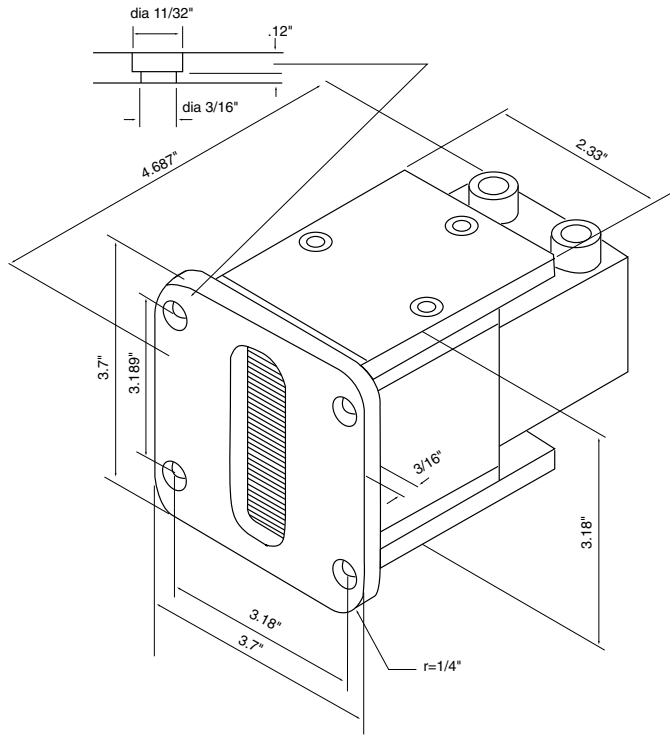
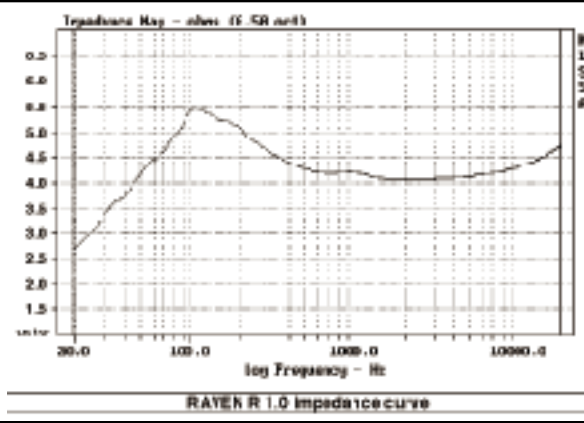
**WATERFALL**



**FREQUENCY RESPONSE**



**IMPEDANCE CURVE**



Raven R 1.0



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# RAVEN

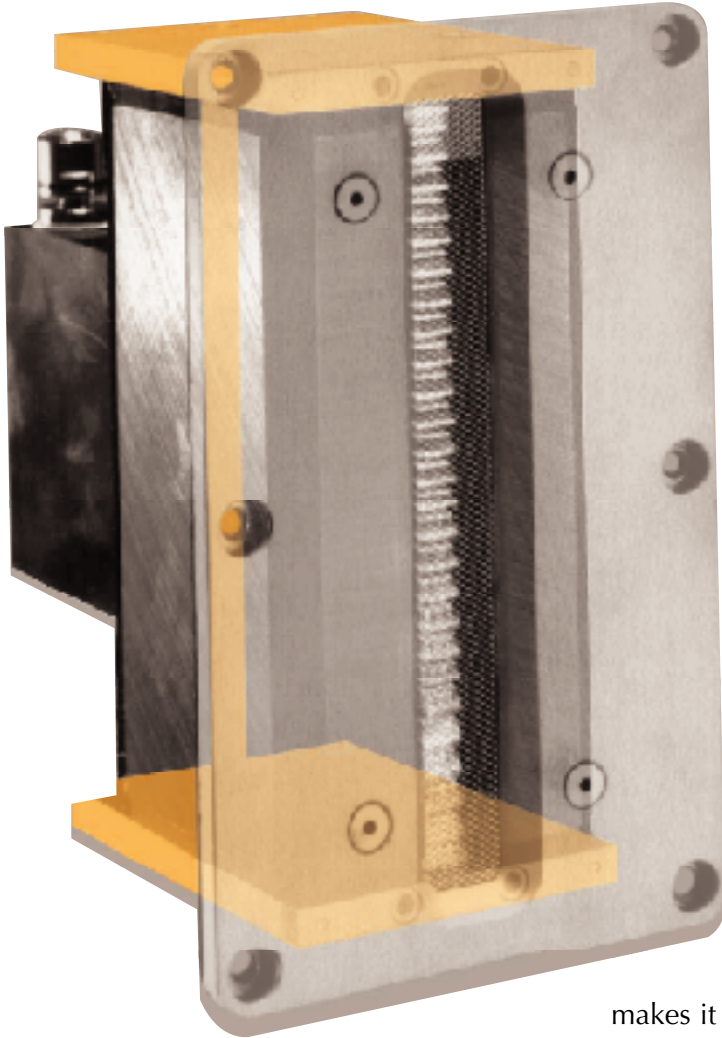
## RAVEN R 2.0

### Pure Ribbon Transducer

This exceptional speaker drive unit is a true Pure Ribbon tweeter (not to be confused with metalized film ribbon tweeters). In a dome tweeter the signal is carried through the voice coil wire, and the sound is radiated by the dome attached to the voice coil former. Here, the carrier of the electrical signal and the radiating diaphragm are one part: the ribbon. Furthermore the ribbon itself is 100% pure conductive material (100% pure aluminum foil, no metalized film). The almost immaterial ribbon (1/20th of the mass and more than 20 times the area of a comparable dome) is immersed in a massive magnetic field created by a unique magnet structure. This impressive transducer integrates the most advanced materials (NeFeB, low carbon alloy, high precision high purity aluminum microfoil) together with the most advanced techniques (FEA assisted magnet design, FEA assisted electromechanical design, precision CNC machining, multi-layer plating, controlled viscosity damping). Each unit comes with its built in matching transformer (low insertion loss, wide bandwidth) and individual response curve.

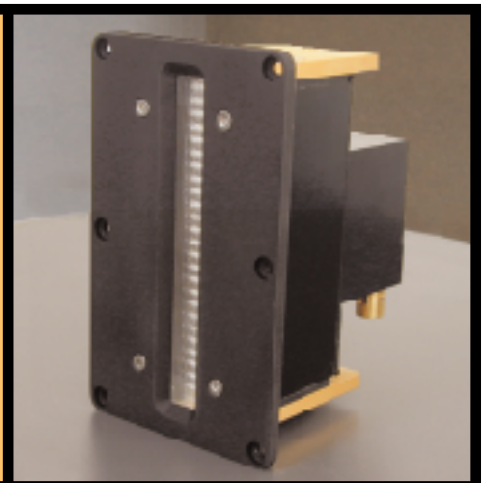
The R 2.0 is a dedicated high efficiency tweeter of extraordinary finesse. It can be used from 1,800 Hz and up. We recommend our own high order slope crossover for optimum rejection of low frequencies. At the same time the very predictable impedance curve of the R 2.0 makes it easy to design simpler crossovers.

Subjective evaluation: if the R 1.0 is the new reference, the R 2.0 offers yet another degree of freedom in terms of dynamics. To the point that it can be shocking: a crashing cymbal is suddenly a crashing cymbal, you fear for the driver, or for the system, you are checked by the unexpected violence. The R 2.0 also sounds a little bit "warmer", strangely enough. Not from coloration, but from the fact that it has more energy in the lower range of the tweeter spectrum. Like the R 1.0, the R 2.0 creates a beautiful natural cylindrical wave that will develop your listening room into a very vivid, full size sound field.

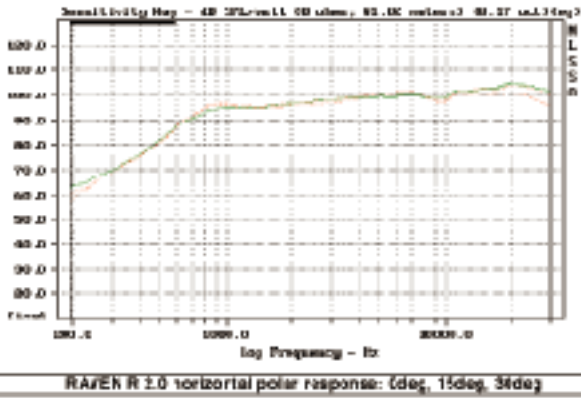


### Specifications

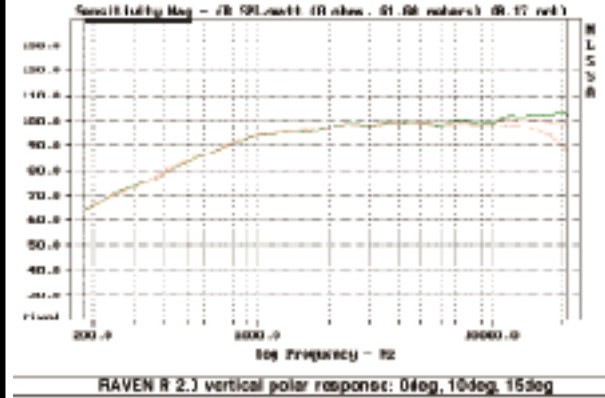
ribbon material	pure aluminum
ribbon mass	.015 g
ribbon area	1105 mm <sup>2</sup>
gap flux	0.55 Tesla
transformer, secondary impedance	0.09
transformer, primary impedance	4
DCR	3.3
frequency range	1800 - 32000Hz
sensitivity	98 dB / 2.83V / 1m
power handling, nominal	15W
power handling, maximum	40W
total mass	9 lbs



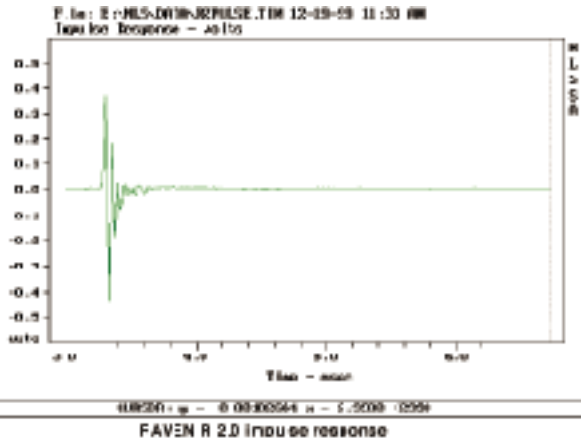
**HORIZ. POLAR RESPONSE**



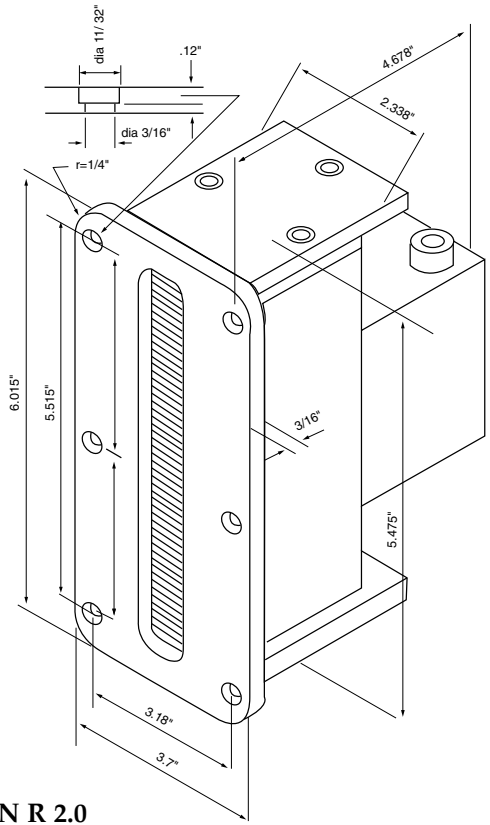
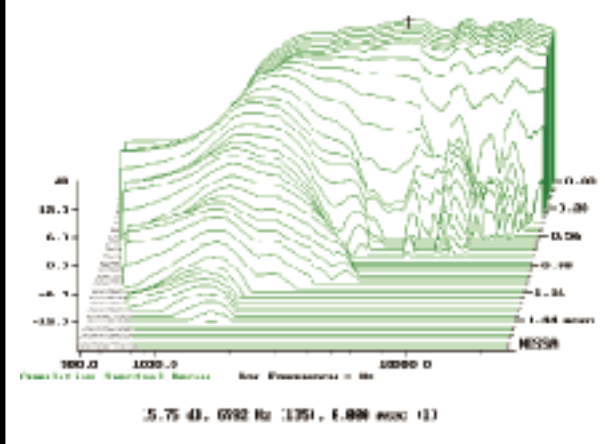
**VERT. POLAR RESPONSE**



**IMPULSE RESPONSE**

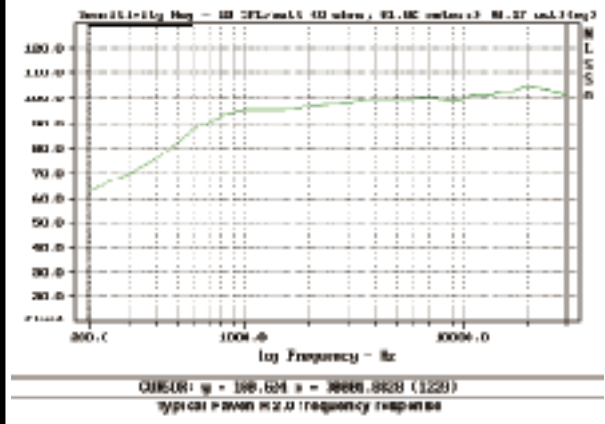


**WATERFALL**

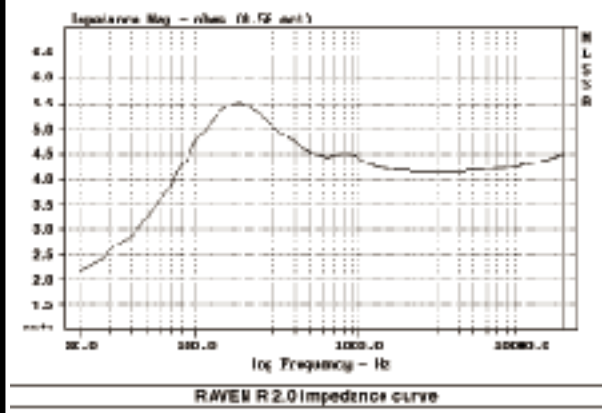


RAVEN R 2.0

**FREQUENCY RESPONSE**



**IMPEDANCE CURVE**



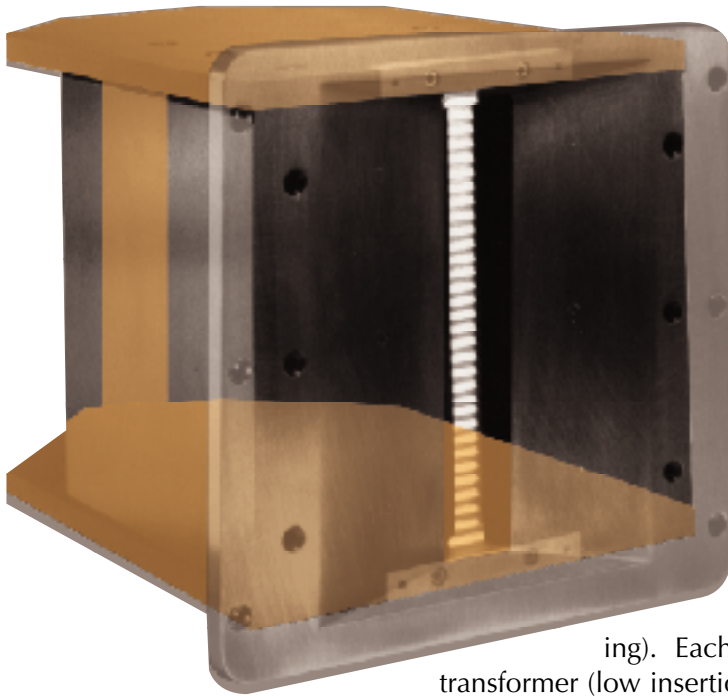
**ORCA Design & Manufacturing Corp.**  
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## RAVEN R 3.0

### Pure Ribbon Transducer



This exceptional speaker drive unit is a true Pure Ribbon (not to be confused with metalized film diaphragm) wide band transducer. In a dome tweeter the signal is carried through the voice coil wire, and the sound is radiated by the dome attached to the voice coil former. Here, the carrier of the electrical signal and the radiating diaphragm are one part: the ribbon. Furthermore the ribbon itself is 100% pure conductive material (100% pure aluminum foil, no metalized film). The almost immaterial ribbon (1/10th of the mass and more than 60 times the area of a dome tweeter) is immersed in a massive magnetic field created by a unique magnet structure. This impressive transducer integrates the most advanced materials (NeFeB, low carbon alloy, high precision high purity aluminum microfoil) together with the most advanced techniques (FEA assisted magnet design, FEA assisted electromechanical design, precision CNC machining, multi layer plating, controlled viscosity damp- ing). Each unit comes with its built in matching

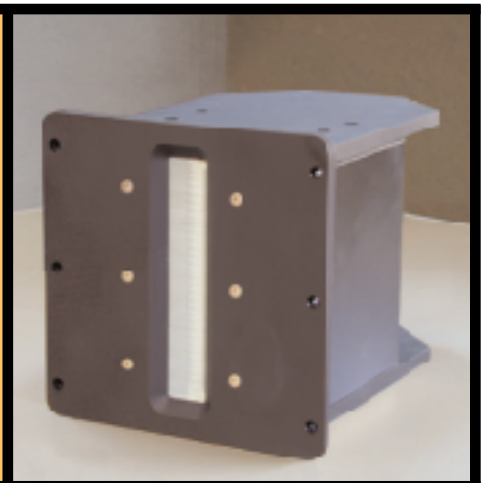
transformer (low insertion loss, wide bandwidth) and individual response curve.

The R 3.0 is a totally unique drive unit. Here we pushed the envelope of our original Pure Ribbon Transducers design to the extreme. The result of this effort is a transducer that has no real counterpart. Imagine that we somehow have here a transducer that is an extraordinary tweeter, and that, by some miracle, this extraordinary tweeter is also a phenomenal midrange. The benefits of the designs are many. The moving mass of your midrange is less than the moving mass of a dome tweeter, allowing exceptional, striking dynamics. The efficiency (about 100 dB over the whole bandwidth), a welcomed bi-product of the extremely favorable ratio moving mass/magnetic force, makes it the ideal companion of low power high quality amplifiers. The coincidence of midrange and high frequencies within a truly compact (although massive) device explains a phase response throughout the spectrum and a time coherency that have simply no match from any combination of even the best midrange and tweeter. The R 3.0 can be used from 600 Hz and up. We recommend our own high order slope crossover for optimum rejection of low frequencies. At the same time the very predictable impedance curve of the R 3.0 makes it easy to design simpler crossovers.

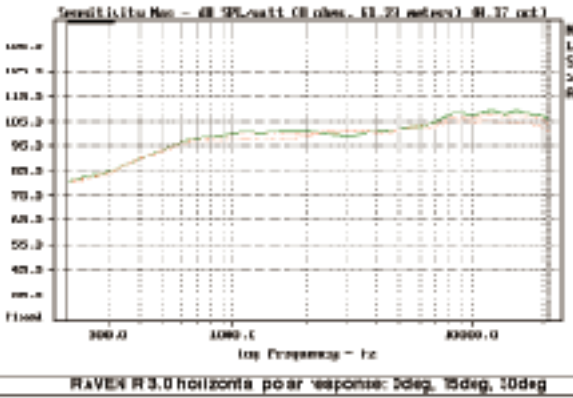
Subjective evaluation: to characterize a new experience with words is difficult. The first impressions is of extreme dynamics, a sudden "forte" makes you jump for the volume control, fearing that the whole system is going to explode, when it is only playing at 1 to 2 watts. Then there is the eerie sensation of what natural tones truly are. Later you will discover how much beauty there is in the inhabited silence following the last word to escape the soprano's lips.

### Specifications

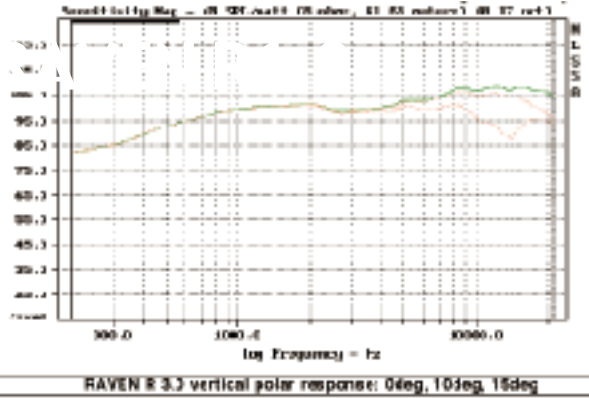
ribbon material	pure aluminum
ribbon mass	0.035g
ribbon area	2400 mm <sup>2</sup>
gap flux	1.0 Tesla
transformer, secondary impedance	0.06
transformer, primary impedance	4
DCR	3.3
frequency range	500 - 25000Hz
sensitivity	100dB / 2.83V / 1m
power handling, nominal	15W
power handling, maximum	60W
total mass	58 lbs



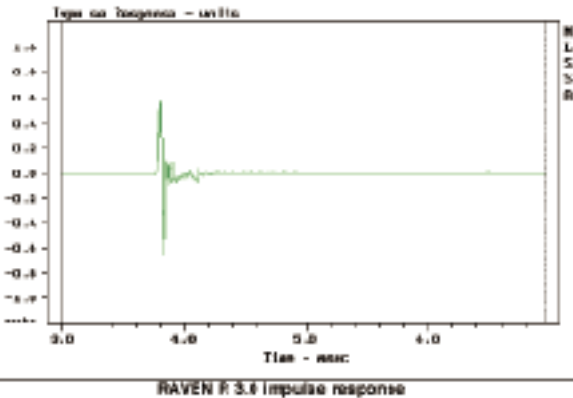
**HORIZ. POLAR RESPONSE**



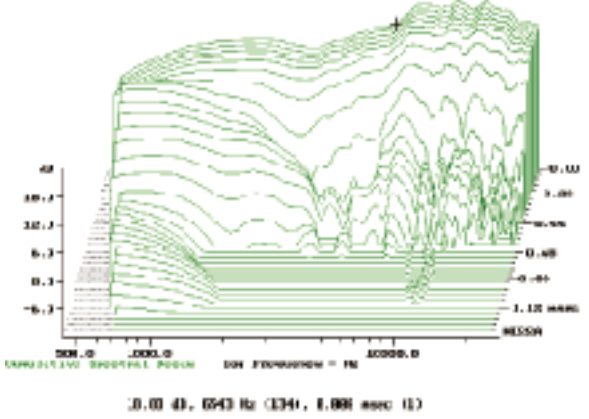
**VERT. POLAR RESPONSE**



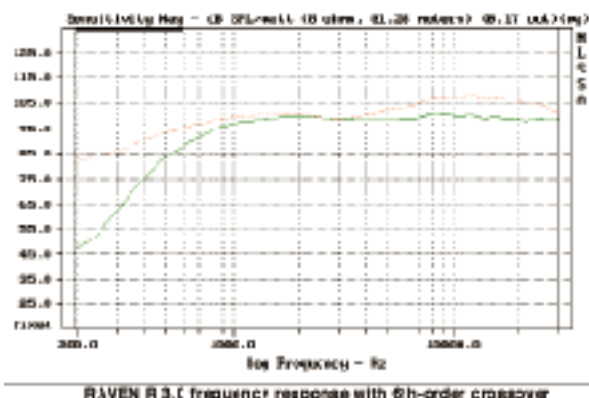
**IMPULSE RESPONSE**



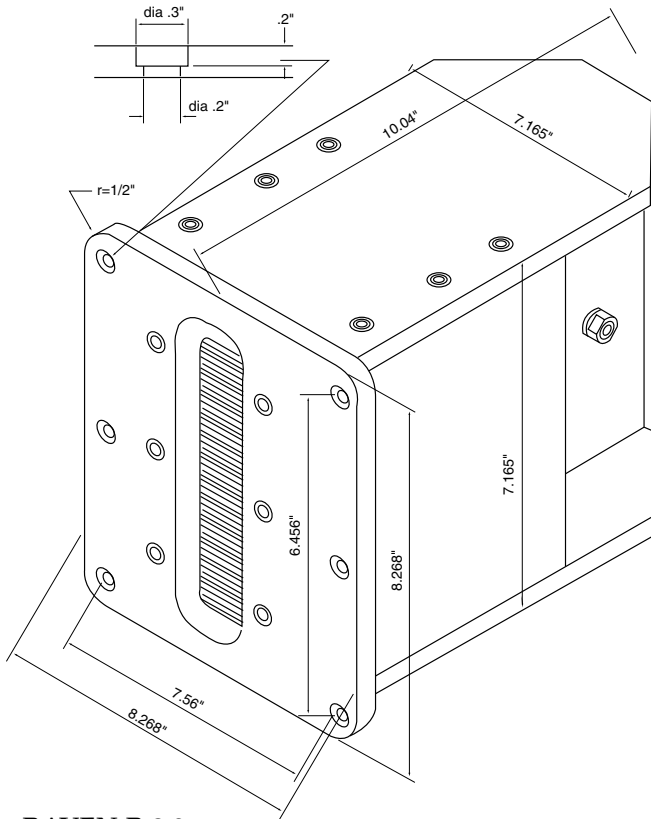
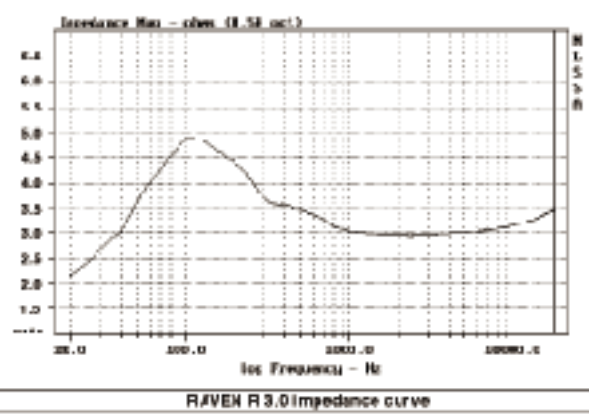
**WATERFALL**



**FREQUENCY RESPONSE**



**IMPEDANCE CURVE**



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