



Pure Crystal Sound



**Loudspeakers**  
**systems & parts**  
full line catalogue  
2005 - 2006  
[www.tr.ca](http://www.tr.ca)

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**Belisle Acoustics Laboratories Inc.** was founded in 1979 by brothers Bruno and Luc Belisle. It first started as a loud-speaker repair enterprise. Years later, they led one of the three largest recone centers in North America. During that period, they became distributors of famous British products such as Fane, Turbo and ATC, finally becoming involved in the professional sound market.

In response to the ever increasing demand of audio specialists, this activity soon led to the manufacturing of their own brand of speakers and enclosures. Belisle Acoustics Inc. started to design and build high-tech/Hi-Fi enclosures for professional musicians under the brand name of **Transparence™**. Their products were distributed in professional music stores and rental centers everywhere. One of the major developments has been Bruno Belisle's innovative design of speaker loading techniques which gives enclosures unique performance capabilities. He also obtained a patent on an acoustic horn for a sound projection system.

**Belisle Acoustics Inc.** has since then integrated a research and development department, committed to improve the **Transparence™** line of products. Their products are now sold all over the world.



Since 1979, Belisle's **Transparence™** has been a synonym of clarity and power. Their reputation is based on the sound precision of their enclosures in small venues to outdoors and stadiums.





## Our goal

For more than two decades, constant quest for perfection has brought us closer and closer to our ultimate goal : providing the most accurate and dedicated sound equipment ever. When we design our line of audio products, our minds are set on sparing no expenses, efforts or resources, in order to provide professional sound products rendering the liveliest, clearest and most dependable sound ever.

## Devoted people

Relentless efforts, ongoing research and development, state-of-the-art technologies and highly qualified human resources enable us to maintain the edge on sound technology. Good communication with our customers and resellers in addition to researches in new technologies led us to be continuously inspired by new ideas. Thus, we can create new systems and improve different aspects of our existing products.

## New electronics department for amplification systems

To maintain our commitment to sound, we developed an electronics department for amplification systems within our company. Indeed, two new electronic engineers have joined our TR team to improve the quality and the research in new technologies.

With these advanced technologies, we created the "D-AMP"; a 10 pound digital amplifier that gives 1600 watts in bridge mode. This year, we put all our energies into creating the "POWERED BOX SERIES", a serie that integrates a digital amplifier in a bass or top enclosure. These boxes generate between 500 watts and 1000 watts per enclosure.

\* **Each enclosure includes:** urethane finish, perforated metal grille, Speakon connections, cabinet material: 5/8 Birch 13 ply, Opt. Hard: plate for mounting rail. **For more informations and specifications** on our products, visit our web site: [www.tr.ca](http://www.tr.ca) or e-mail us at: [info@tr.ca](mailto:info@tr.ca)

Belisle acoustics inc. pursues an active Research & Development program and reserves the right to alter specifications without prior notice.

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## Montreal Bell Center

This sport complex's system totals 32 suspended enclosures divided in 16 groups. All of them were custom manufactured by Belisle Acoustics. These enclosures' constant dispersion covers approximately 1,000,000 m<sup>2</sup> of air while giving 70 Kw of power. This audio **Transparence™** arrangement can easily cut out cheers of audiences of up to 21,600 ecstatic fans.



## Montreal Olympic Stadium

Belisle Acoustics designed and manufactured all 92 of the enclosures for this stadium. Designed for medium and long throw positions, the enclosures generate as much as 137 dB from each cabinet using only 100 Watts/channel amplifiers. Using advanced horn design concepts, the horns provide constant levels and high intelligibility, drastically reducing the echoes in highly resonant stadiums which are often filled with as many as 70,000 raging fans.



## Van Halen concert

This project included the design and production of three hundred sixty (360) S4 enclosures that met the specific criterias required by the customer, this all done in a record time of six weeks. These S4 enclosures are now known for their world famous performance. Intended for approximately seventy thousand (70,000) people.



## Outdoor festival

**Transparence™** loudspeakers are ideal for outdoor sound. They were designed to work well even under tropical conditions. This project in Jamaica included 32 **CenterPoint** and 32 **NAC-218** for an audience of more than 35,000 people.



# OTHER APPLICATIONS

Churches



Night Clubs



Auditoriums



Concert Halls



**Transparence™** loudspeakers are used all over the world in a variety of applications going from small clubs, lounges, restaurants and even home surround sound systems to theatres, auditoriums, sport centers and outdoor concert installations.

# ASYMETRICAL SERIES

## ASM-8H1

The **ASM-8h1** has an asymmetrical dispersion horn that delivers PA and stage monitor performances with no compromise. The horn's shape gives a wide coverage in short throw (for the closest listener) and a narrow coverage in long throw while keeping the sound pressure constant and the information precise. It has a 60° x 100° horizontal horn control and a 50° vertical dispersion. This enclosure is one of the most versatile and compact system available on the market.



## ASM-10H1

The **ASM-10H1** is the newest model of this series. Besides a 350W RMS 10" woofer, a 50° x 90° horn control and 60° vertical dispersion, it features the same overall characteristics of its siblings.



## ASM-12H2

A two-way multiple purpose monitor for horizontal and vertical uses. With its asymmetrical horn, this unit will give you the flexibility you need for multiple applications. The **ASM-12H2** was designed with the most advanced technologies for a maximum linearity at high power levels.



## ASM-15H2

This two-way 15' monitor has an asymmetrical horn that provides LF reinforcement up to 40 Hz. It can be used as a stage monitor or in a vertical position. The 15' woofer produces a very sensitive and transient response. A powerful multiple use cabinet ideal for vocals.



## ASM-28H1

This enclosure is designed for users that need more SPL and RMS power than the with the **ASM-8H1**, but the same advantages. It has two 8" woofers (400W RMS) and an asymmetrical horn (with wide coverage in short throw, narrow coverage in long throw). With its horizontal horn control of 60° x 100° and 50° vertical dispersion, this enclosure is one of the most full-range compact system available on the market.



DESCRIPTION	ASM-8H1	ASM-10H1	ASM-12H2	ASM-15H2	ASM-28H1
Frequency range	70 Hz - 19 kHz	N/A	50 Hz - 20 kHz	40 Hz - 18.5 kHz	65 Hz - 19 kHz
Sensitivity (SPL 1W @ 1m)	94 dB	99 dB	99 dB	101 dB	96 dB
Maximum SPL	124	130.5	135	139	129
RMS (W)	250	350	500	800	500
Peak power (W)	500	700	1000	1600	1000
Impedance (Ohms)	8	8	8	8	4 (2 x 8 Ohms)
Passive crossover	2.4 KHz	1.6 KHz	1.6 KHz	1.6 KHz	2.2 KHz
Dispersion (Horiz./Vert.)	100° x 60° x 50° (1°)	90° x 50° x 60° (1°)	100° x 60° x 50° (2°)	100° x 60° x 50° (2°)	100° x 60° x 50° (1°)
High frequencies	1" Driver	1" Driver	2" Driver	2" Driver	1" Driver
Low frequencies	1 x woofer 8"	1 x woofer 10"	1 x woofer 12"	1 x woofer 15"	2 x woofer 8"
Height (In/cm)	16 3/4" / 42.55	23 5/8" / 60.02	17" / 43.18	20 1/4" / 51.44	21 5/8" / 47.58
Width In/cm)	10" / 25.40	14" / 35.56	25" / 63.50	29 1/4" / 74.30	13 7/8" / 30.53
Depth (In/cm)	10 1/4" / 26.04	13" / 33.02	16 3/8" / 41.61	20 1/4" / 51.44	12 5/8" / 27.78
Weight (lbs/Kg)	43.5 / 19.77	45 / 20.45	71 / 32.27	91 / 41.36	40 / 18.18
Fixing points	12 points	12 points	11 points	11 points	12 points

# CENTERPOINT SERIES



## CP-158

This cabinet has a 3 way biamplified full range system. It includes a 15" woofer with a proprietary 8" patented horn loaded, a 1" midrange cone driver and an exit compression HF unit installed to the matching flare. It has horn and phasing plug designs that dramatically improve the quality and the definition in the vocal range BAL while the cone driven woofer extends patterns to the lowest octaves. The **CP-158** is made for uses in a variety of indoor and outdoor applications where directivity is an important factor. The sound can nearly reach 300 feet up. It is the ideal choice where high quality reproduction and higher output are required. Great results when teamed with our own famous **NAC-118, TH-118B or TH-2X15B.**

## CP-1510

This is a 3 way biamplified full range system and is only slightly different from the **CP-158**. It has a 15" woofer with the proprietary 8" patented horn loaded, a 2" midrange cone driver and an exit compression HF unit installed to the matching flare. It has the same horn, plug phasing and cone driven woofer design qualities as the **CP-158**. The **CP-1510** is made for uses in a variety of indoor and outdoor applications where directivity is an important factor. It is the ideal choice where high quality reproduction and a higher output are required.

## CP-15H10

This is a 3 way triamplified full range system. It has a 15" woofer with a 50° x 40° horn, a proprietary patented horn loaded 10" midrange cone driver with a 2" exit compression HF unit installed to the matching flare. It accomplishes amazing outside performances even with cross winds of 30 Km/h (18 mph). It also has a minimum of phase shift with high frequency and is mechanically time aligned.

## CP-215H2

This two-way speaker system is equipped with some 2" x 15" high performance woofers and one 2" throat compression driver mounted behind our special design horn. This cabinet can be used in passive and active mode. The **CP-215H2** is surely one of the most astonishing loudspeaker system available today. It has a high performance level, and wheels for easy handling.

DESCRIPTION	CP-158	CP-1510	CP-15H10	CP-215H2
Frequency range	40 Hz / 18.5 kHz	47 Hz / 18.2 kHz	100 Hz / 19 kHz	47 Hz / 18.2 kHz
Sensitivity (SPL 1W @ 1m)	99 dB	LF 102 dB/MF 106 dB/HF 109 dB	LF 104 dB/MF 107 dB/HF 109 dB	LF 107 dB/HMF 109 dB
Maximum SPL	133	LF 137/MF 138/HF 138	LF 139/MF 139/HF 138	LF 145/HMF 138
RMS (W)	750	3 way passive LF 800/MF 400/HF 200	LF 800/MF 400/HF 200	Passive 1800/active LF 2x800/HF 200
Peak power (W)	1500	3 way passive LF 1600/MF 800/HF 400	LF 1600/MF 800/HF 400	Passive 3600/active LF 2x1600/HF 400
Impedance (Ohms)	LF 4/MHF 8	LF 4/MHF 8	LF 8/MF 8/HF 8	LF 4/MHF 8
Passive crossover	250 Hz / 2.6 KHz	250 Hz / 2.6 KHz	250 Hz / 2.6 KHz	1.6 KHz
Dispersion (Horiz./Vert.)	60° x 40° (1")	50° x 50° (2")	50° x 40° (1")	50° x 40° (2")
High frequencies	1 x woofer 8"	1 x woofer 10"	1 x woofer 10"	-
Low frequencies	1 x woofers 15"	1 x woofer 15"	1 x woofer 15"	2 x woofer 15"
Height (In/cm)	38" / 96.52	38" / 96.52	42 7/8" / 108.90	50 1/8" / 127.32
Width (In/cm)	20 3/4" / 52.71	20 3/4" / 52.71	24 1/2" / 62.23	24 1/2" / 62.23
Depth (In/cm)	19 1/4" / 48.90	20 1/8" / 51.12	22 3/4" / 57.79	22 3/4" / 57.79
Weight (lbs/Kg)	100 / 45.45	110 / 50	200 / 90.91	161 / 73.18
Fixing points	8 points	8 points	8 points	8 points

# FOUNDATION SERIES

## FD-6T FD-8T

These models set the standard in small forefront systems for a vast range of applications (theaters, concert halls, churches, nightclubs, restaurants). These high quality speakers are used in small clubs and home surround sound systems. The system's advanced technology triggers exceptional performances and power handling. Constant directivity, very low distortion and extended low frequency response and a smooth high end are some of their characteristics.



## FD-10T

The **FD-10T** is a passive two-way enclosure incorporating a proprietary 10" LF, a high frequency TWT driver in a ported trapezoid style. It can be used as a stage front monitor or surround sound cabinet. The **FD-10T** has an exceptional transient response, crisp high frequencies great for theatres, discos, pubs, clubs, and permanent installations.

## FD-300T

This economical design is the right choice for mobile discos, conferences, multi media or anywhere clear efficient sound is needed. This portable cabinet is a powerful unit that has many uses.

## FD-12H1

A two-way direct radiator system that offers smooth frequency response, uniform coverage and uncolored sound. This cabinet system provides quality reproduction for P.A., theatres, raves and permanent installations.

## FD-15H1 FD-15H2

These are two way, full range, high SPL enclosures for sound reinforcement applications. It incorporates a 15" woofer and a respective 1" and 2" compression driver. They provide high output, full range response in a versatile 100 dB compact system. They are the ideal loudspeaker systems for musicians and DJ's playing in small to medium venues.

**Also available amplified.**

DESCRIPTION	FD-6T	FD-8T	FD-10T	FD-300T	FD-12H1	FD-15H1	FD-15H2
Frequency range	50 Hz - 19 kHz	70 Hz - 19 kHz	45 Hz - 20 kHz	50 Hz - 20 kHz	50 Hz - 18 kHz	55 Hz - 18 kHz	50 Hz - 18.5 kHz
Sensitivity (SPL 1W @ 1m)	93 dB	94 dB	97 dB	100 dB	99 dB	99 dB	100 dB
Maximum SPL	120.8	124	127.8	130.8	129	130	134.8
RMS (W)	150	250	300	300	250	400	750
Peak power (W)	300	500	600	600	500	800	1500
Impedance (Ohms)	8	8	8	8	8	8	8
Passive crossover	3.5 KHz	3.5 KHz	3 KHz	3.5 KHz	2.2 KHz	2.2 KHz	1.6 KHz
Dispersion (Horiz./Vert.)	Conical	Conical	Radial	Radial	100° x 40° (1°)	60° x 40° (1°)	50° x 50° (2°)
High frequencies	Biradial/Tweeter	Biradial/Tweeter	Biradial/Tweeter	Biradial/Tweeter	1" Driver	1" Driver	2" Driver
Low frequencies	1 x Woofer 6"	1 x Woofer 8"	1 x Woofer 10"	1 x Woofer 12"	1 x Woofer 12"	1 x Woofer 15"	1 x woofers 15"
Height (In/cm)	13 3/8" / 33.99	16 3/4" / 42.55	21 5/8" / 54.93	25 1/2" / 64.77	25 1/2" / 64.77	29 1/4" / 74.30	29 1/4" / 74.30
Width In/cm)	8 1/2" / 21.59	10" / 25.40	14" / 35.56	15 1/2" / 39.37	15 1/2" / 39.37	18 3/4" / 47.63	18 3/4" / 47.63
Depth (In/cm)	8 1/4" / 20.96	10 1/4" / 26.04	13" / 33.02	16 1/8" / 40.97	16 1/8" / 40.97	18 1/2" / 46.99	18 1/2" / 46.99
Weight (lbs/Kg)	15.5 / 7.05	25 / 11.36	45 / 20.45	61 / 27.73	65 / 29.55	76 / 34.55	82 / 37.27
Fixing points	-	-	9 points	11 points	9 points	9 points	9 points



# FOUNDATION SERIES



**FD-115M** This multiple cabinet is a passive two-way enclosure incorporating a proprietary 15" low frequency driver with another high frequency driver in a ported trapezoid style. It's a cost effective fully passive sound reinforcement system used by bands, solo artists and in permanent installations in pubs, clubs, theatres or other venues where high quality sound is required. It can also be used in multiple positions.



**FD-118W**  
**FD-121W** These enclosures not only have a unique and special design; they produce an astonishing bass (down to 36 dB!). Combined to our FD-315H1, FD-215H1, FD-215H2 or CP-15H10, it results in a perfect match for discos, raves, permanent installations and theaters.



**FD-215B** Extensive research by the TR team led to the development of the **FD-215B**. It features an extremely compact cabinet and high power handling with high sensitivity. The combination of a newly designed speaker enclosure on a unique 15" driver along with a precisely tuned surround results in a highly accurate, wide bass range response with very low power compression.



**FD-315H1** Originally designed for the spectral music of small bands and accordion players, this unique concept combines clear vocals in harmony with instruments. This unique 10" midrange is an excellent side field, drum monitor and compact PA enclosure.



**FD-215H1**  
**FD-215H2** To maintain on the leading edge, we invested a great deal in both human and technological resources. In fact, the crossover was especially designed for this cabinet. A cascade of precise filters make the TR sound warm and natural, while producing extremely high SPL's. With superior output and performance characteristics along with an extremely attractive price, the **FD-215H1** and **FD-215H2** are ideal choices for theatres, discos, permanent installations, bands and mobile djs.

DESCRIPTION	FD-115M	FD-215B	FD-118W	FD-315H1	FD-215H1	FD-215H1
Frequency range	55 Hz - 18 kHz	45 Hz - 500 kHz	45 Hz - 500 kHz	34 Hz - 18 kHz	40 Hz - 20 kHz	34 Hz - 19 kHz
Sensitivity (SPL 1W @ 1m)	98 dB	100 dB	102 dB	100 dB	100 dB	100 dB
Maximum SPL	130	136.4	136.5	133.4	135	135.8
RMS (W)	400	1100	700	550	800	950
Peak power (W)	800	2200	1400	1100	1600	1900
Impedence (Ohms)	8	4 opt. 8	8 opt. 4	8 opt. 4	4 opt. 8	4 opt. 8
Passive crossover	2.2 KHz	120 Hz	120 Hz	400 Hz / 2.2 KHz	2.2 KHz	1.6 KHz
Dispersion (Horiz./Vert.)	100° x 100° (1°)	-	-	100° x 100° (1°)	60° x 40° (1°)	60° x 40° (2°)
High frequencies	1" Driver	-	-	1" Driver & 10" Woofer	1" Driver	2" Driver
Low frequencies	1 x Woofer 15"	2 x Woofer 15"	1 x Woofer 18"	1 x Woofer 15"	2 x Woofer 15"	1 x Woofer 15"
Height (In/cm)	28 1/2" / 72.39	32" / 81.44	36 7/8" / 93.68	28 3/4" / 73.03	45 3/8" / 115.27	45 3/8" / 115.27
Width In/cm)	19 1/4" / 48.90	25 7/8" / 65.72	24 1/4" / 61.60	22" / 55.88	22 1/8" / 56.21	22 5/8" / 57.47
Depth In/cm)	16 1/4" / 41.28	19 7/8" / 50.48	36 1/8" / 91.77	19 1/4" / 48.90	25" / 63.50	25" / 63.50
Weight (lbs/Kg)	76 / 34.55	140 / 63.64	160 / 72.73	85 / 38.64	132 / 60	136 / 61.82
Fixing points	11 points	-	-	9 points	9 points	9 points

# MULTI SERIES

## MS-10H1

This small multiple use cabinet approaches "HiFi" quality of sound with the ruggedness and SPL of a true workhorse cabinet. With its extremely wide bandwidth, smooth response and tight directivity control, the **MS-10H1** produces rich intelligible vocals and impressive music output. This cabinet will impress even the most skeptics. Using a 10" driver specifically made for flat response, low distortion, and extremely extended LF, this cabinet is at home in almost any audio or A/V environment.



## MS-12H1

This two-way stage wedge monitor was developed to be used on the floor. Its 60° x 40° horn provides optimum coverage for any application. The **MS-12H1** was designed to ensure the maximum linearity at high power levels with the use of the most advanced technologies. The 12" woofer produces extraordinary sensitivity and response curve linearity.



## MS-12H2

The **MS-12H2** is a flexible two-way system. The 2" exit compression driver allows long term high output. In horizontal position, it is a powerful low profile unit for stage monitoring. Mounted vertically, it is a very effective PA capable of high power reference quality reproduction. A selector allows the option of passive or active mode.



## MS-210H1

This is an asymmetrical enclosure that can be used as a low profile stage monitor or vertically stand mounted for PA applications. The **MS-210H1** has two 10" LF output drivers and 1" HF exit driver. It is capable of high sound pressure levels while keeping a clean detailed sound.



## MS-212H2

This enclosure can be used as a low profile stage monitor or vertically stand mounted for PA applications. The **MS-212H2** has two 12" LF output drivers and 2" HF exit driver, coupled to a proprietary 50° x 50° horn. It is capable of high sound pressure levels while keeping a clean detailed sound.



DESCRIPTION	MS-10H1	MS-12H1	MS-12H2	MS-210H1	MS-212H2
Frequency range	45 Hz - 18 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz		46 Hz - 20 kHz
Sensitivity (SPL 1W @ 1m)	98 dB	100 dB	98 dB		100 dB
Maximum SPL	129.5	132	132		135.5
RMS (W)	350	400	700 (LF 600/MHF 100)		900 (LF 800/MHF 100)
Peak power (W)	700	800	1400 (LF 1200/MHF 200)		1800 (LF 1600/MHF 200)
Impedance (Ohms)	8	8	8		4
Passive crossover	2.2 KHz	2.2 KHz	1.6 KHz		1.6 KHz
Dispersion (Horiz./Vert.)	100° x 100° (1°)	60° x 40° (1°)	50° x 50° (2°)		50° x 50° (2°)
High frequencies	1" Driver	1" Driver	2" Driver		2" Driver
Low frequencies	1x Woofer 10"	1 x Woofers 12"	1 x Woofers 12"		2 x Woofer 12"
Height (In/cm)	23 5/8" / 60.01	24 7/8" / 63.18	24 7/8" / 63.18		34" / 86.36
Width In/cm)	14" / 35.56	15 1/4" / 38.74	15 1/4" / 38.74		15 1/4" / 38.74
Depth (In/cm)	13" / 32.02	14 1/2" / 36.83	14 1/2" / 36.83		14 1/2" / 36.83
Weight (lbs/Kg)	45 / 20.45	64 / 29.09	70 / 31.82		90 / 40.91
Fixing points	11 points	11 points	11 points		11 points

## STAGE MONITOR SERIES



### SM-12H1

The **SM-12H1** is a flexible two way system. A 60° x 40° horn provides optimum coverage for any application. This monitor is designed to ensure the maximum linearity at high power level with the most advanced technology. Excellent as a stage monitor and in small to medium size PA. It's a powerful, small, and low profile stage monitor.



### SM-12H2

The **SM-12H2** is also a flexible two way system. The 2" exit compression driver allows long term high output. Excellent as a stage monitor positioned horizontally, it is a powerful small, low profile stage monitor.



### SM-15H1

The **SM-15H1** is good as a stage monitor or for a small to medium size PA company. A 60° x 40° horn provides optimum coverage for any application. This monitor is designed to ensure the maximum linearity at high power level with the use of the most advanced technology. The 15" woofer produces very good sensitivity and response curve linearity.



### SM-15H2

A two-way full range monitor which includes a 15" woofer and a 2" throat with proprietary horn. For uncompromised sound quality, it is capable of high power reference quality reproduction. It offers a switchable active/passive mode option.

DESCRIPTION	SM-12H1	SM-12H2	SM-15H1	SM-15H2
Frequency range	50 Hz - 20 kHz	50 Hz - 20 kHz	45 Hz - 20 kHz	45 Hz - 20 kHz
Sensitivity (SPL 1W @ 1m)	98 dB	98 dB	99 dB	99 dB
Maximum SPL	130	131	132	132
RMS (W)	400	550(LF 450/HF 100)	500	550(LF 450/HF 100)
Peak power (W)	800	1100(LF 900/HF 200)	1000	1100(LF 900/HF 200)
Impedence (Ohms)	8	8	8	8
Passive crossover	2.2 KHz	1.6 KHz	2.2 KHz	1.6 KHz
Dispersion (Horiz./Vert.)	60° x 40°(1")	50° x 50°(2")	60° x 40°(1")	90° x 40°(2")
High frequencies	1" Driver	2" Driver	1" Driver	2" Driver
Low frequencies	1 x Woofers 12"	1 x Woofers 12"	1 x Woofers 15"	1 x Woofers 15"
Height (In/cm)	22 3/8" / 56.83	22 3/8" / 56.83	26" / 66.04	26" / 66.04
Width In/cm)	14 7/8" / 37.78	14 7/8" / 37.78	18 3/8" / 46.67	18 3/8" / 46.67
Depth (In/cm)	13 3/8" / 33.97	13 3/8" / 33.97	15 3/8" / 39.07	15 3/8" / 39.07
Weight (lbs/Kg)	63 / 28.64	66 / 30	85 / 38.64	90 / 40.91
Fixing points	-	-	-	-

# POWERED SERIES

## P-115B

This portable and compact amplified subwoofer has high sensitivity, high efficiency and extraordinary 600W RMS power handling capabilities. It challenges and surpasses many of the larger single 15" enclosures in today's market. Ideal for small venues and groups that want a "bass in the face" sound, the **P-115B's** small size can even allow a few more seats in the room, and yet deliver the desired LF output.



## P-118B

This compact **amplified** subwoofer has a LF extension and output that meet the needs of today's musicians. Like the **P-115B**, the **P-118B** has amazing SPL capabilities, delivering a more extended, yet tight LF punch. Its extremely smooth, wide range bass response makes it a very flexible addition to existing installations and traveling systems.



## TR-3X

The **TR-3X** DSP-based Digital Crossover Module allows 2-way, 3-way or 4-way output configurations. It can also be assembled into loudspeaker cabinets (TR's **Powered Series**). By migrating the same technology applied to the DLP series, the performance is not compromised.



### Each powered enclosure includes:

- Low noise high power amplifier(s) perfectly matching the loudspeakers drivers.
- Limiter for maximum SPL and protection of amplifiers and drivers.
- Sub sonic filter 24 dB octave at 25 Hz
- Balanced input, link and high pass filter (left and right)
- Variable low pass filter frequency
- Switchable phase
- Master gain control



\*Switching power supply available instead of transformer



DESCRIPTION	P-115B	P-118B	TR 3X
Frequency range	43 Hz - 440 Hz	35 Hz - 500 Hz	
Sensitivity (SPL 1W @ 1m)	-	-	• 1 Inputs and 3 Outputs with flexible routing
Maximum SPL	-	-	• 32-bit (40-bit extended) floating point DSP
RMS (W)	500	500	• High Performance 24-bit A/D Converters
Peak power (W)	1000	1000	• 96kHz sampling rate
Impedance (Ohms)	-	-	• 1 Hz Frequency Resolution
Passive crossover	-	-	• 6 Parametric Equalizers for each Input and Output
Dispersion (Horiz./Vert.)	N/A	N/A	• Multiple Crossover types with Full Function Limiters
High frequencies	-	-	• Precise Level, Polarity and Delay
Low frequencies	1 x Woofers 15"	1 x Woofer 18"	• Level Pot for Level Adjustment
Height (In/cm)	21 1/2" / 54.61	21 1/2" / 54.61	• 4 LED's for Power and Signal
Width In/cm)	18" / 45.72	24 7/8" / 63.18	• RS-232 Interface for PC Control and Configuration
Depth (In/cm)	19 5/8" / 49.85	23 3/4" / 60.33	• Options include Digital Audio I/O and CobraNet
Weight (lbs/Kg)	85 / 38.64	108 / 49.09	
Fixing points	-	-	

## POWERED SERIES



### P-12H1 P-12H2

These **amplified** systems offer smooth frequency response, uniform coverage and uncolored sound. These cabinets provide quality reproduction for P.A., theatre, raves and permanent installations.

### P-15H1 P-15H2

These two-way **amplified** enclosures are cost effective fully passive systems used by musicians and DJ's as well as for permanent installations in pubs, clubs, theatres or other venues where high quality sound is required. The **P-15H1** and **P-15H2** are perfect choices for full range, high SPL sound reinforcement applications.

### P-115M

This **amplified** cabinet is a passive two-way enclosure incorporating a proprietary 15" low frequency driver with another high frequency driver. It's a cost effective fully passive sound reinforcement system used by bands, solo artists and in permanent installations where high quality sound is required. Can be used in multiple positions.

#### Each powered enclosure includes:

- Master gain control
- Defeat switch for CD Line input
- Bass, treble and CD line control
- XLR Mic input with separate gain control
- Balanced XLR inputs and outputs for linking.
- Separate bass and treble gain control for CD Line
- Preamp with Mic/Line XLR or 1/4 input and gain control.
- Limiter for maximum SPL and protection of amplifiers and drivers.
- Switchable high pass filter 60Hz / 100Hz for perfect match with sub.
- Inset carrying/lift handles and / or internal socket for stand mounting.
- Low noise high power amplifier(s) matching the loudspeakers drivers.
- Active crossover with filters for precise directivity control at crossover point.

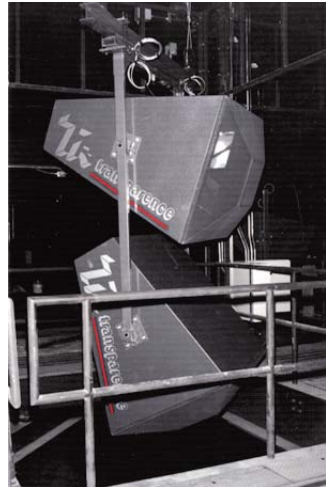
DESCRIPTION	P-12H1	P-12H2	P-15H1	P-15H2	P-115M
Frequency range	50 Hz - 18 kHz	50 Hz - 20 kHz	55 Hz - 18 kHz -	50 Hz - 18.5 kHz	55 Hz - 18 kHz
Sensitivity (SPL 1W @ 1m)	-	-	-	-	-
Maximum SPL	-	-	-	-	-
RMS (W)	LF 500/MHF 100	LF 800/MHF 200	LF 500/MHF 100	LF 800/MHF 200	LF 500/MHF 100
Peak power (W)	LF 1000/MHF 200	LF 1600/MHF 400	LF 1000/MHF 200	LF 1600/MHF 400	LF 1000/MHF 200
Impedance (Ohms)	-	-	-	-	-
Passive crossover	-	-	-	-	-
Dispersion (Horiz./Vert.)	60° x 40° (1°)	60° x 40° (2°)	60° x 40° (1°)	50° x 50° (2°)	100° x 100° (1°)
High frequencies	1" Driver	2" Driver	1" Driver	2" Driver	1" Driver
Low frequencies	1 x Woofer 12"	1 x Woofer 12"	1 x Woofer 15"	1 x woofers 15"	1 x Woofer 15"
Height (In/cm)	25 1/2" / 64.77	25 7/8" / 65.74	29 1/4" / 74.30	29 1/4" / 74.30	28 1/2" / 72.39
Width (In/cm)	15 1/2" / 39.37	19" / 48.26	18 3/4" / 47.63	18 3/4" / 47.63	19 1/4" / 48.90
Depth (In/cm)	16 1/8" / 40.96	18 1/2" / 46.99	18 1/2" / 46.99	18 1/2" / 46.99	16 1/8" / 40.96
Weight (lbs/Kg)	73 / 33.18	79 / 35.90	84 / 38.18	84 / 38.18	84 / 38.18
Fixing points	9 points	9 points	9 points	9 points	11 points

# STADIUM SERIES

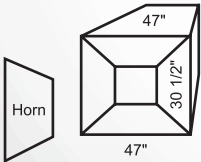
S-25X40 / S-40X45 / S-60X60

**Uncompromised design, unequaled performance, and superb efficiency ; this series' characteristics fill all of the acoustic voids without voiding your budget.**

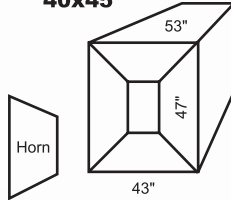
The **Transparence™ Stadium Series** designs are typical two-way, three-driver loudspeaker systems. The high intelligibility and tightly controlled vocal performances are achieved through dual phasing devices and specific custom designed horn coverage. They have unbelievable directivity control (even into very low frequencies) while maintaining the highest audio quality, a part of the unassailable trademarks of the **Transparence™ Stadium Series**. This series is the ideal choice for stadiums, arenas, coliseums, large halls, or anywhere long throw projection and high directivity control are required.



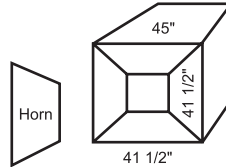
**25x40**



**40x45**



**60x60**



## DESCRIPTION EACH STADIUM SERIES ENCLOSURE

<b>Frequency range</b>	125 Hz / 900 kHz
<b>Sensitivity (SPL 1W @ 1m)</b>	LMF 110 dB / HF 112 dB
<b>Maximum SPL</b>	133.8
<b>RMS (W)</b>	1000
<b>Peak power (W)</b>	2000
<b>Impedence (Ohms)</b>	4
<b>Active crossover</b>	900 Hz
<b>Dispersion (Horiz./Vert.)</b>	-
<b>High frequencies</b>	2" compression driver
<b>Low frequencies</b>	2 x woofer 15"
<b>Height (In/cm)</b>	see sketch
<b>Width In/cm)</b>	see sketch
<b>Depth (In/cm)</b>	see sketch
<b>Weight (lbs/Kg)</b>	145 / 65.9
<b>Fixing points</b>	-

## STADIUM SERIES

### CENTERLINE

Our new **Centerline** system isn't based on a conventional approach. Indeed, the sound only comes from a unique source, avoiding problems inerrant of direct radiate in conventional speakers when laid out horizontally. This creates a wave in the sound commonly called "wave front", and improves overall efficiency.. The proximity of the speakers in the horn allows the coherence necessary to create the line array effect. **Centerline** is ideal for large gatherings or where an average and long throw system is needed. It is the perfect match to our subwoofers **NAC-218** and **NAC-221**.



#### DESCRIPTION EACH CENTERLINE ENCLOSURE

Frequency range	80 Hz / 21.5 kHz
Sensitivity (SPL 1W @ 1m)	104 dB
Maximum SPL	139.8
RMS (W)	1500
Peak power (W)	3000
Impedence (Ohms)	8
Passive crossover (kHz)	8 Std
Dispersion (Horiz./Vert.)	120° x 20°
High frequencies	4 x woofer 6"
Low frequencies	2 x woofer 12"
Height (In/cm)	20" / 50.8
Width (In/cm)	47" / 119.38
Depth (In/cm)	38 1/2" / 97.79
Weight (lbs/Kg)	230 / 103.5
Fixing points	-

# THEATRE SERIES

## TH-12H1

The **TH-12H1**'s natural sound is due to a constant directivity, a rich midrange, a high resistance to feedback, a short throw, 250W wide coverage system and a 100° x 40° horn.

## TH-12H2

High vocal intelligibility without sacrificing audio quality. A 2" compression driver in a 12" system gives the speaker a high power handling capability (400W RMS). A long throw 50° x 50° constant directivity horn teamed with a 2" compression driver and a 12" speaker results in high SPL performances and substantial long throw penetration.

## TH-15H1

The **TH-15H1** is a heavy duty workhorse with impressive bass performance, designed to increase the low end of the vocal spectrum which is often missing. With a smooth midrange and a wide bandwidth, the **TH-15H1** is ideal for vocal performances, acoustic groups and small clubs sound reinforcement.

## TH-15H2

Designed for active or passive uses in medium to large venues, this enclosure has an outstanding bandwidth and choices of dispersion ideal for short and long throw. The 90° x 40° horn produces a wide near field coverage with a smooth response. The **TH-15H2** is used in a wide range of applications.

## TH-212H2

This cabinet is slightly more specialized. Tandem LF speakers and 60° vertical dispersion horn provide constant SPL coverage in large venues from the 1st row to the 2nd balcony. A 40° horizontal dispersion enables cabinet grouping with minimal phase cancellation. The cabinet's wide bandwidth allows low crossover points (120Hz), has a smooth, rich midrange and well controlled directivity.

## TH-215H2

This cabinet has a smart design and an impressive driver complement. Its crossover gives great performances in passive mode, and when used with an out-board processor, produces superior sound with little distortion even under extreme demands. It has the features of a top line PA cabinet ; 1200W RMS power handling, high sensitivity, extended and smooth LF response, audio coverage, a rich midrange and a smooth extended high end.



DESCRIPTION	TH-12H1/1X	TH-12H2	TH-15H1	TH-15H2	TH-212H2	TH-215H2
<b>Frequency range</b>	50 Hz - 20 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz	45 Hz - 19 kHz	60 Hz - 20 kHz	45 Hz - 20 kHz
<b>Sensitivity (SPL 1W @ 1m)</b>	98 dB / 100dB	99 dB	99 dB	101 dB	100 dB	103 dB
<b>Maximum SPL</b>	129.5 / 132	132	131	135.8	135	139.8
<b>RMS (W)</b>	350 / 400	500	400	700	800	1200
<b>Peak power (W)</b>	700 / 800	1000	800	1400	1600	2400
<b>Impedance (Ohms)</b>	8 / 8	8	8	8	4 opt. 8	4 opt. 8
<b>Passive crossover</b>	2.2 KHz / 2 KHz	1.6 KHz	2 KHz	1.6 KHz	1.6 KHz	1.6 KHz
<b>Dispersion (Horiz./Vert.)</b>	100° x 40° / 60° x 40°(1°)	50° x 50°(2°)	60° x 40°(1°)	90° x 40° (2°)	40° x 60° (2°)	60° x 40° (2°)
<b>High frequencies</b>	1" Driver	2" Driver	1"Driver	2" Driver	2" Driver	2" Driver
<b>Low frequencies</b>	1 x Woofer 12"	1 x Woofer 12"	1 x Woofer 15"	1x Woofer 15"	2 x Woofers 12"	2 x Woofer 15"
<b>Height (In/cm)</b>	25 1/2" / 64.77	25 1/2" / 64.77	29 1/4" / 74.3018	31" / 78.74	45 1/8" / 114.62	50 1/8" / 127.32
<b>Width (In/cm)</b>	15 1/2" / 39.37	15 1/2" / 39.37	3/4" / 47.63	21 1/2" / 54.61	16 1/8" / 40.97	21 1/2" / 54.61
<b>Depth (In/cm)</b>	16 1/8" / 40.96	16 1/8" / 40.96	18 1/2" / 46.99	18 3/8" / 46.67	19 5/8" / 49.85	18 1/4" / 46.36
<b>Weight (lbs/Kg)</b>	65 / 29.55	71 / 32.27	76 / 34.55	94 / 42.73	129 / 58.64	135 / 61.36
<b>Fixing points</b>	9 points	9 points	9 points	9 points	11 points	11 points



## THEATRE SERIES



### TH-115B

An extremely portable and very compact passive subwoofer, the **TH-115B** is commonly known as the "Cube 15" because of its small size. With its high sensitivity and efficiency and its extraordinary 600W RMS power handling, the **TH-115B** challenges and surpasses many of the larger single 15" enclosures in today's market. The first audition of the **TH-115B** often makes the listener ask to be shown the additional subs; but there aren't any... Ideal for small venues and groups that want a "bass in the face" sound, the **TH-115B**'s small size can even allow a few more seats in the room, and yet deliver the desired LF output.



### TH-118B

The **TH-118B** is a compact subwoofer with LF extension and output that meet the needs of today's musicians and contractors. Like the **TH-115B**, the **TH-118B** has amazing SPL capabilities, delivering a more extended, yet tight LF punch. Another similarity to the **TH-115B** is its ability to mate with all of the Foundation or Theatre Series top mid/high cabinets. Also, its extremely smooth, wide range bass response makes the **TH-118B** a very flexible addition to existing installations and traveling systems.



### TH-218B

Extensive research by the TR team led to the development of the **TH-218B**. It features an extremely compact cabinet with very high power handling and sensitivity. Using twin high power and high efficiency 18" driver, the **TH-218B** also offers a bass extension down to 34Hz. It can be used with any of the **Foundation Series** or **Theatre Series**' top mid/high cabinets or add new life and punch to existing systems. This exceptional 1200W RMS bass cabinet can even withstand the ultimate punishment of raves, mosh pits, and large discos.



### TH-2X15B

This high powered loudspeaker with 1000W RMS (2000W peak) will provide plenty of SPL reserve. **TH-2X15B**'s deep solid bass sound is formulated for theatres, discotheques, small clubs or anywhere you have limited space but need big sound.

DESCRIPTION	TH-115B	TH-118B	TH-218B	TH-2X15B
Frequency range	43 Hz - 440 kHz	35 Hz - 500 kHz	34 Hz - 400 kHz (-6 dB)	44 Hz - 400 kHz
Sensitivity (SPL 1W @ 1m)	100 dB	101 dB	102 dB	101 dB
Maximum SPL	133.8	136.8	140.8	138.8
RMS (W)	600	750	1500	1200
Peak power (W)	1200	1500	3000	2400
Impedance (Ohms)	8 opt. 4	8 opt. 4	4 opt. 8	4 opt. 8
Passive crossover	100 Hz	100 Hz	100 Hz	100 Hz
Dispersion (Horiz./Vert.)	N/A	N/A	N/A	N/A
High frequencies	-	-	-	-
Low frequencies	1 x Woofer 15"	1 x Woofer 18"	2 x Woofer 18"	2 x Woofer 15"
Height (In/cm)	21 1/2" / 54.61	21 1/2" / 54.61	21 3/4" / 55.25	31 1/2" / 80.01
Width In/cm)	18" / 45.72	24 7/8" / 63.18	44 3/8" / 112.71	26 7/8" / 68.26
Depth (In/cm)	19 5/8" / 49.85	23 3/4" / 60.33	29 1/8" / 73.98	19 3/4" / 50.17
Weight (lbs/Kg)	69 / 31.36	92 / 41.82	135 / 61.36	100 / 45.45
Fixing points	-	-	-	-

## THEATRE SERIES

### NAC-115

A very efficient system packing a very serious low frequency punch for its size. The **NAC-115** puts out tight, precise bass with virtually no audible distortion. A perfect match to the Theatre Series' single 12" and 15" top cabinets. This sub also fits in existing systems in clubs, discos, theaters, and sanctuaries. The perfect touring companion for bands playing in small venues - especially for the perfectionist bass player. The transient snap and wide dynamics will put punch into the shyest systems. Compact size and easy handling makes it a great road cabinet for bands and DJ's. Also great when paired with the **FD-12H1**, **FD-15H1** and **FD-215H1**.



### NAC-118

A unique sub woofer that uses a very powerful 18" LF driver to produce extended bass at almost unbelievable levels considering its size. This new design from the TR team is very likely the best of its gender. The **NAC-118** maintains high sensitivity and efficiency while pouring out deep, accurate bass with precise definition and transient characteristics. It is meant for the same uses as the **NAC-115**. The ideal choice when more level and more extended bass are desired and available space won't allow a double 15" or double 18" subwoofer.



### NAC-218

Ultra efficiency, high sensitivity and high power handling (more than 1200W RMS) make the **NAC-218** one of the most impressive subwoofers in the market today. Where high SPL and extremely low and precise LF extension are required, the **NAC-218** is the right choice. Any touring group will welcome a high performance sub suited for medium and large venues that is small for its SPL output.



\*NEW\*

### NAC-221

Our most recent realisation will surely delight the sub-bass amateurs. The **NAC-221** generates not less than earthquake-like infra-bass. Where two 18" woofers weren't enough, these 21" will be.



DESCRIPTION	NAC-115	NAC-118	NAC-218	NAC-221
Frequency range	34 Hz - 134 Hz	45 Hz - 120 Hz	35Hz/140 Hz	29 Hz -140 Hz
Sensitivity (SPL 1W @ 1m)	100 dB	102 dB	106 dB	108 dB
Maximum SPL	133.8	136.8	143.8	146
RMS (W)	600	750	1500	1500
Peak power (W)	1200	1500	3000	3000
Impedance (Ohms)	8 opt. 4	8 opt. 4	4 opt. 8	4 opt. 8
Passive crossover	100 Hz	100 Hz	100 Hz	100 Hz
Dispersion (Horiz./Vert.)	N/A	N/A	N/A	N/A
High frequencies	1 x Woofer 15"	1 x Woofer 18"	2 x Woofers 18"	2 x Woofers 21"
Low frequencies	-	-	-	-
Height (In/cm)	30 1/2" / 77.47	30 1/2" / 77.47	30 1/2" / 77.47	36" / 91.44
Width In/cm)	21 1/2" / 54.61	21 1/2" / 54.61	42 1/2" / 107.95	46" / 116.84
Depth (In/cm)	25 1/4" / 64.14	25 1/4" / 64.14	25 1/4" / 64.14	29 3/4" / 75.56
Weight (lbs/Kg)	120 / 54.55	125 / 56.82	195 / 88.64	200 / 90.90
Fixing points	-	-	-	-



## UB-6H1

The **Transparence™ UB-6H1** sets the standard for small foreground systems used in a vast range of applications: theaters, concert halls, churches, nightclubs, restaurants and even in theme entertainment park's rides. These small high quality speakers easily qualify for small clubs and home sound systems. Their advanced technology provides exceptional performance and power handling. Constant directivity, high power handling, very low distortion and extended low frequency response with a smooth high end are the stand out characteristics of this enclosure.



## UB-8H1

The **UB-8H1's** asymmetrical dispersion horn provides high performances without compromises. This horn will deliver a wide coverage in short throw (for the closest listener) and a narrow coverage for long throw while keeping the sound pressure constant. With its sophisticated horn control of 60° x 100° horizontal and 50° vertical dispersion, the UB-8H1 is one of the most versatile, full-range, compact system available on the market.



## UB-26H1

The **UB-26H1** sets the standards for small dual LF foreground systems. It is used in the same range of applications as the **UB-6H1**. These high quality speakers easily qualify in any environment requiring low profile yet high quality audio. The **UB-26H1**, with its constant directivity, perfectly suits horizontal and vertical close mount positioning or offset vectorial ball mount installations. The system's advanced technology provides exceptional performances and power handling. Constant directivity, high power handling, very low distortion and low frequency response with a smooth high end are also its stand out characteristics.



## UB-28H1

Recent introduction of the **UB-28H1** is a huge step forward. The dual 8" LF foreground system increases its functions. With a power handling ability exceeding 600W RMS, 100dB (1w @ 1m) of sensitivity, the **UB-28H1** transcends the norm. It qualifies for uses in any environment requiring a low profile yet high SPL and high quality audio. Constant directivity makes this unit suitable for horizontal and vertical close mount positioning or offset vectorial ball mount installations. It serves the same range of applications as the **UB-6H1**.

DESCRIPTION	UB-6H1	UB-8H1	UB-26H1	UB-28H1
Frequency range	87.2 Hz - 19 kHz	70 Hz - 19 kHz	80 Hz - 17.2 kHz	70 Hz - 19 kHz
Sensitivity (SPL 1W @ 1m)	93 dB	94 dB	94 dB	95 dB
Maximum SPL	122	124	126	128
RMS (W)	200	250	400	500
Peak power (W)	400	500	800	1000
Impedance (Ohms)	8 opt.4	8 opt.4	4 opt.8	4 opt.8
Passive crossover	2.2 KHz	2.2 KHz	2.2 KHz	2.2 KHz
Dispersion (Horiz./Vert.)	Constant directivity 110°	100° x 60° x 50°(1°)	70° x 50° opt.100° x 60° x 50° (1°)	70° x 50°(1°)
High frequencies	1 3/8" dome tweeter	1" Driver	1" Driver	1" Driver
Low frequencies	1x woofer 6"	1 x Woofer 8"	2 x Woofer 6"	2 x Woofer 8"
Height (In/cm)	15 3/4" / 40.01	16 3/4" / 42.55	20 3/8" / 51.75	24 3/8" / 61.91
Width In/cm)	8 1/2" / 21.59	10" / 25.40	8 3/8" / 21.27	10" / 25.40
Depth (In/cm)	8 1/4" / 20.96	10 1/4" / 26.04	11 3/4" / 29.85	10 3/8" / 26.35
Weight (lbs/Kg)	20 / 9.09	27 / 12.27	30 / 13.64	42 / 19.09
Fixing points	8 points	12 points	8 points	8 points

# ELECTRONIC CROSSOVERS

## TR ALMS ELECTRONIC PROCESSOR

The **TR ALMS** is a 2 channel stereo 3/4 ways mono sound processor with integrated limiters functioning as crossover filters. Phase alignment and an output limiter in standard mode.



## TR 4080D DIGITAL CONTROLLER

The **TR 4080D** is a 4 input - 8 output digital loudspeaker management system. It has 32-bit (40-bit extended) floating point processors and high performance 24-bit Analog Converters and its high-bit DSP prevents noise and distortion. A complete set of parameters include I/O levels, delay, polarity, 6 bands of parametric EQ per channel, multiple crossover selections and full function limiters. Precise frequency control is achieved with its 1 Hz resolution. Inputs and outputs can be routed in multiple configuration to meet any requirements.



## TR 408D DIGITAL CROSSOVER

4 inputs and 8 outputs coupled with an easy user interface, the **TR 408D Digital Crossover/System Processor** has all the audio processing tools needed for precise crossover and sound control. Each input allows gain and delay control, six parametric, low or high shelf filters. In addition to setting crossover frequencies, each output may be assigned to any one or a combination of inputs, allowing programing of four parametric, low or high shelf filters, delay for time delay adjustments, output gain, reverse polarity and a compressor/limiter for speaker protection.



## TR 3060 DIGITAL CONTROLLER

The **TR-3060** is a cost efficient 3 input - 6 output digital loudspeaker management system. It is used with 32-bit (40-bit extended) floating point processors and high performance 24-bit Analog Converters. The high-bit DSP prevents noise and distortion. A complete set of parameters include I/O levels, delay, polarity, 6 bands of parametric EQ per channel, multiple crossover selections and full function limiters. Precise frequency control is achieved with its 1 Hz resolution. Inputs and outputs can be routed in multiple configuration to meet any requirements.



### TR ALMS

- Heavy duty 19 x 1U rack mount
- Two Inputs - Four Outputs
- 2 way stereo connexions
- 3 or 4 way mono connexions
- Independent FET-limiter on each band (max. 32:1 ratio)
- Limiter ON/OFF switch
- Integrated limiters functioning as fixed crossover filters
- AC main connector
- Balanced inputs and outputs
- Signal control (independent per frequency)
- On-panel indicators
- Customized quick-change crossover cards (plugin modules)
- Additional quick-change slots for further sound customization
- Optional 4-band parametric equalizer

### TR 4080D

- AES/EBU digital in/outs
- Ethernet Network Capability built in
- 96kHz sampling rate
- High performance 24-bit A/D converters
- 1 Hz frequency resolution
- 6 parametric equalizers for each Input and Output
- Multiple crossover types with full function limiters
- Precise level, polarity and delay
- CPU and DSP upgrade via PC
- Signal control (independent with linking capability)
- 4-Line x 26 character backlit LCD display
- Full 5-segment LED's on every input and output
- Storage of up to 30 program setups
- Multiple levels of security locks
- RS-232 interface for PC control and configuration
- Options include digital audio I/O and CobraNet

### TR 408D

- One rack space
- Four inputs - Eight outputs
- Outputs assignable to any input
- Crossover, EQ, delay and limiter functions
- Linkwitz-Riley, Bessel and Butterworth filters
- 12, 18, 24 and 48dB/Octave slopes
- Parametric EQ: full bandwidth, 1/64th to 4 Octave range
- Input and output delay
- Limiter on each output
- Intuitive user interface
- Programmable by Front Panel, PC or MIDI
- AMX compatible NetLinX control
- Individual Input and output metering
- Balanced inputs and outputs
- XLR audio connections
- Four levels of security

### TR 3060

- 3 inputs and 6 outputs with flexible routing
- 32-bit (40-bit extended) floating point DSP minimizes errors
- 48kHz sampling rate
- High performance 24-bit A/D converters
- 1 Hz frequency resolution
- 6 parametric equalizers for each input and output
- Multiple crossover types with full function limiters
- Precise level, polarity and delay
- CPU and DSP upgrade via PC
- Individual C channel buttons with linking capability
- 2 Line x 16 character backlit LCD display
- Full 5-segment LED's on every input and output
- Storage of up to 30 program setups
- Multiple levels of security locks
- RS-232 interface for PC control and configuration
- Options include digital audio I/O and CobraNet

# POWER AMPLIFIERS



## TR-P3800

The **TR-P3800** from **Transparence™** amplifiers is a tool designed for professional use. It generates accurate and uncolored sound with very low distortion and features a three-mode switch, protection guards against shorted output, general overheating, unwanted DC, ON/OFF transient electrical spikes and MAINS induced interference, a heat-sinking device and independant power supplies. This amp will work for the most demanding professional high power applications.



## TR-P4800

The professional **TR-P4800** amplifier will give accurate and uncolored sound with a very low distortion level. It also features Bridge, Stereo and Parallel modes, advanced protection circuitry guards, massive heat-sinking and Grounded Output topology to maintain low temperature operating conditions without restricting the output power and some fully independant power supplies with respective transformers, rectifiers and reservoir capacitors.



## TR-P5800

The **TR-P5800** features a three-mode switch that allows amplifier settings that will best suit even the sound professionals' most demanding needs. Its fully independant power supplies have separate power transformers, rectifiers and reservoir capacitors which guarantee sustained high current flow. The **TR-P5800** will give a powerful and reliable performance.



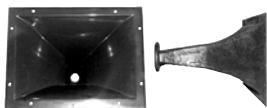
## TR-P6800

This last version of the **TR Professional Power Amplifier Series** assures accurate and uncolored sound with low distortion. Its Bridge/Stereo/Parallel switch allows customized settings, its protection guards prevent shorted output, general overheating, unwanted DC, ON/OFF transient electrical spikes and MAINS induced interference, its heat-sinking device maintains internal low temperatures and its independant power supplies guarantee sustained high current flow. Giving a powerful, reliable performance, this amp will work for the most demanding professional high power applications.

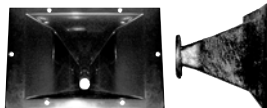
MODEL	P1800	P2800	P3800	P4800	P5800	P6800
Power (RMS) 80hms	220W x2	330W x2	520W x2	850W x2	1100W x2	1500W x2
Power (RMS) 40hms	400W x2	550W x2	800W x2	1200W x2	1640W x2	2150W x2
Power (RMS) 20hms	510W x2	680W x2	1050W x2	1700W x2	2100W x2	2800W x2
Bridged Power (RMS) 80hms	800W	1100W	1600W	2400W	3280W	4300W
Bridged Power (RMS) 40hms	1020W	1360W	2100W	3400W	4200W	5600W
THD+N (below rated power, 1kHz)	< 0.05%					
IMD SMPTE at 100W	< 0.05%					
Frequency response	20 Hz -20 kHz, +0, -0.3 dB at 1W					
Damping factor	> 400	> 400	> 600	> 600	> 600	> 600
Input sensitivity	Rated power, 0.775 V RMS/1.1 V RMS or 26 dB (selector)					
Input impedance	20 kOhms balanced, 10 kOhms unbalanced					
Signal to noise ratio (A-weighted)	> 100 dB					
Crosstalk	> 60 dB					
Input connectors	Two Canon connectors					
Output connectors	Speakon, speaker cables terminal					
Cooling	Two proportional speed DC fans					
Gain control	2 x 41 step trimming					
Indicator	LED indicator, including power, bridge, parallel, signal, limiter and protect					
Protecting circuitry	Temperature, DC output, shorted, turn on/off					
Dimensions (width, height, depth)	482 mm x 88 mm (2U) x 450 mm				482 mm x 132 mm (3U) x 485 mm	
Weight (kg)	21	23	25	34	34	37

# HORN SERIES

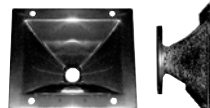
BRC L60/40/1"



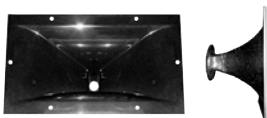
BRC 60/40/1"



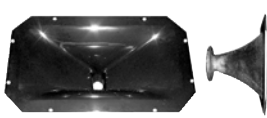
BSE 70/50/1"



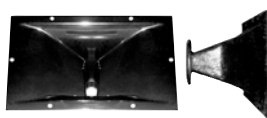
BRC 90/40/1"



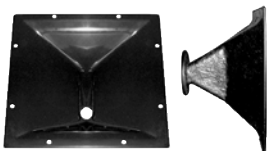
BSC 90/40/1"



BRC 100/40/1"



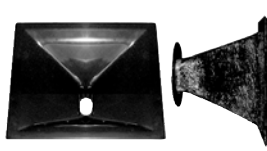
BRC 100/60/1"



BRC 100/100/1"



BRC 60/40/1,5"



BRC ASY/1"



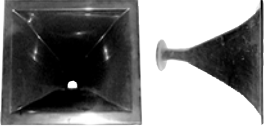
BRC ASY/2"



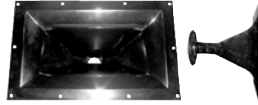
MODEL	SPREAD	APERTURE	WIDTH	HEIGHT	DEPTH	FRONT DEPTH	CUT OU FREQ.	USAGE FREQ.	WEIGHT
BRC L60/40/1"	60° x 40°	1"	15 1/8"	11"	13 3/4"	7/32"	500 Hz	1.2 kHz	2.5 lbs
BRC 60/40/1"	60° x 40°	1"	12 1/2"	7 7/8"	7 1/8"	7/32"	600 Hz	1.2 kHz	1.5 lbs
BRC 70/50/1"	70° x 50°	1"	7 1/4"	6"	2 7/8"	5/32"	1.6 kHz	2.7 kHz	0.65 lbs
BRC 90/40/1"	90° x 40°	1"	16"	8 7/8"	6"	5/32"	650 Hz	1.6 kHz	1.6 lbs
BSC 90/40/1"	90° x 40°	1"	14 3/4"	8 7/8"	5 7/8"	5/32"	650 Hz	1.6 kHz	1.6 lbs
BRC 100/40/1"	100° x 40°	1"	12 1/2"	7 7/8"	6"	5/32"	650 Hz	1.6 kHz	1.9 lbs
BRC 100/60/1"	100° x 60°	1"	11"	11"	6 1/2"	1/4"	600 Hz	1.6 kHz	1.25 lbs
BRC 100/100/1"	100° x 100°	1"	10"	8 3/4"	5 1/4"	5/32"	800 Hz	1.2 kHz	1.1 lbs
BRC 60/40/1.5"	60° x 40°	1.5"	11"	8.5"	7 3/4"	7/32"	800 Hz	1.6 kHz	1.8 lbs
BRC ASY/1"	100° x 60° x 50°	1"	11"	11"	6 1/4"	5/32"	650 Hz	1.2 kHz	2.1 lbs
BRC ASY/2"	100° x 60° x 50°	2"	11"	11"	6 1/4"	5/32"	500 Hz	1.2 kHz	2.1 lbs

# HORN SERIES

BRC 40/45/2"



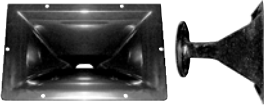
BRC 40/60/2"



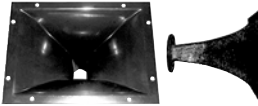
BRC 60/60/2"



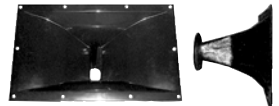
BRC 50/50/2"



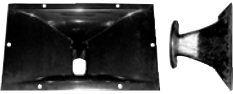
BRC 60/40/2"



BRC 90/40/2"



BRC 100/40/2"



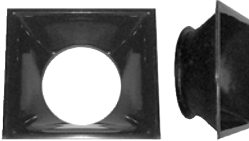
NAC 100/40/2"



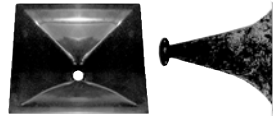
FLAIR 10"



FLAIR 15"



BRC 40/25/2"



MODEL	SPREAD	APERTURE	WIDTH	HEIGHT	DEPTH	FRONT DEPTH	CUT OFF FREQ.	USAGE FREQ.	WEIGHT
BRC 40/45/2"	40° x 45°	2"	16 1/4"	18"	16 1/2"	7/32"	700 Hz	900 kHz	4.7 lbs
BRC 40/60/2"	40° X 60°	2"	17 7/8"	11 1/8"	9 3/4"	1/4"	600 Hz	1.2 kHz	2.8 lbs
BRC 60/60/2"	60° X 60°	2"	13 1/4"	18"	11 1/4"	1/4"	600 Hz	1.2 kHz	2.8 lbs
BRC 50/50/2"	50° X 50°	2"	12 1/2"	7 7/8"	7 3/8"	7/32"	530 Hz	1.2 kHz	1.4 lbs
BRC 60/40/2"	60° X 40°	2"	15 1/4"	11"	12"	5/32"	450 Hz	1.2 kHz	3 lbs
BRC 90/40/2"	90° X 40°	2"	17 7/8"	11 1/8"	9 5/8"	1/4"	650 Hz	1.2 kHz	3 lbs
BRC 100/40/2"	100° X 40°	2"	12 1/2"	7 7/8"	6"	7/32"	850 Hz	1.6 kHz	1.8 lbs
NAC 100/40/2"	100° x 40°	2"	15"	6 7/8"	5 3/8"	5/32"	500 Hz	1.2 kHz	1.9 lbs
FLAIR 10"	40° x 30°	10"	17"	11 1/2"	13 1/4"	7/32"	140 Hz	240 Hz	4.6 lbs
FLAIR 15"	100° x 40°	15"	22 3/4"	20 1/8"	11 1/2"	5/16"	120 Hz	140 Hz	7.5 lbs
BRC 40/25/2"	40° x 25°	2"	19"	16 1/4"	21"	1/4"	650 Hz	900 kHz	5.1 lbs

# STUDIO LOUDSPEAKERS

TR 6MB-250

TR 8MB-250

TR 10MB-300

TR 10B-500



ELECTRICAL MECHANICAL PARAMETERS	TR 6MB-250	TR 8MB-250	TR 10MB-300	TR 10B-500
Peak power (W)	250	250	300	500
Power Rms (W)	125	125	150	250
SPLo (SPL à 1W) (dB)	92	94	94	96
Surround	Half roll foam	Double M-Roll	Double M-Roll	Double M-Roll
Dust cap	Paper	Paper	Paper	Paper
Voice coil material - diameter (in/mm)	Co - 1 1/2" / 38	Co - 1 1/2" / 38	Co - 2 1/2" / 64	Co - 2 1/2" / 64
Revc (DC Vc Res) (ohm)	5.9	5.9	5.4	5.4
Fs (Resonance / Frequency) (HZ)	63.83	57	71.59	48.44
Zo (Zmax at Fo) (ohm)	63.83	-	51.38	100.81
Sd (Piston area) (m2)	0.013	0.022	0.033	0.033
BL (Flux lenght) (TM)	8.12	13.26	9.78	13.14
no (Ref efficiency) (%)	1.08	1.9	1.69	0.83
Qms (Mech Q)	8.42	2.9	5.44	8.12
Qes (Elec Q)	0.34	0.36	0.64	0.46
Qts (Total Q)	0.33	0.31	0.57	0.44
Vas (Acoustic volume) (Litr)	14.56	35.15	30.44	34.59
X-max (mm)	+/- 4 mm	+/- 4 mm	+/- 3 mm	+/- 7 mm
Cms (Compliance) (uM - N)	656.12	511.49	196.81	223.69
Mms (Total mass) (g)	9.48	14.49	25.12	48.27
Mmd (Diapm mass) (g)	8.67	12.61	21.67	44.82
MOTOR IMPEDANCE PARAMETERS				
Levc (Induction at 1kHz) (mH)	-	-	0.60	1.08
Levc (Induction at 20kHz) (mH)	-	-	0.28	0.61
Krm (Resistance cons) (ohm)	5.14	2.38	8.15	18.71
Kxm (Reaction cons) (mH)	18.92	17.44	5.70	5.82
Rem (Resistance at 1kHz) (ohm)	-	-	2.58	4.08
Rem (Resistance at 20kHz) (ohm)	-	-	18.58	25.81
Erm (Resistance expont)	0.70	0.85	0.66	0.62
Exm (Reaction expont)	0.63	0.71	0.74	0.81
MOUNTING INFORMATION				
Overall diameter (in/cm)	6 19/32" / 16.75	8 1/4" - 26.35	10 3/8" / 26.35	10 3/8" / 26.35
Baffle hole diameter (in/cm)	5 19/32" / 14.21	7" / 23	9 3/32" / 23	9 3/32" / 23
Depth (in/cm)	3 13/16" / 9.69	4 5/32" / 12.06	4 3/4" / 12.06	4 3/4" / 12.06
Fixing holes (in/cm)	4 11/32" / 11.04	5 1/2" - 9.4	3 11/16" / 9.4	3 11/16" / 9.4
Flange thickness (in/cm)	5/32" / 0.16	5/32" / 1.19	15/32" / 1.19	15/32" / 1.19
Fixing hole diameter (in/cm)	6 1/8" / 15.56	7 3/4" - 24.68	9 23/32" / 24.68	9 23/32" / 24.68
Front / Rear sealing gaskets	Standard	Standard	Standard	Standard
Weight (lbs/kg)	8 / 3.66	9.5 / 4.35	12 / 5.5	12 / 5.5
Recom. enclosure vol. (cu.ft)	0.25 / 0.50	0.57 / 1.14	1.5 / 3.0	1.5 / 3.0
Shipping weight (lbs/kg)	10.5 / 4.81	11.5 / 5.27	14 / 6.5	14 / 6.5
Packing carton dim. (H/W/D)	-	-	7 1/4" / 20 3/4" / 10 3/4"	7 1/4" / 20 3/4" / 10 3/4"



# STUDIO LOUDSPEAKERS

TR 10MB-500

TR 10MB-600

TR 12MB-500

TR 12B-600



ELECTRICAL MECHANICAL PARAMETERS	TR 10MB-500	TR 10MB-600	TR 12MB-500	TR 12B-600
<b>Peak power (W)</b>	500	600	500	600
<b>Power Rms (W)</b>	250	300	250	300
<b>SPL<sub>0</sub> (SPL à 1W) (dB)</b>	97	101	97	97
<b>Surround</b>	Double M-Roll	Double M-Roll	Double M-Roll	Double M-Roll
<b>Dust cap</b>	Paper	Paper	Paper	Paper
<b>Voice coil material - diameter (in/mm)</b>	Co - 2 1/2" / 64	Co - 2 1/2" / 64	Co - 2 1/2" / 64	Co - 2 1/2" / 64
<b>Revc (DC Vc Res) (ohm)</b>	6.5	6	6.7	6.4
<b>Fs (Resonance / Frequency) (HZ)</b>	53.81	67.41	47	57.14
<b>Zo (Zmax at Fo) (ohm)</b>	76.14	143.45	90.61	140.18
<b>Sd (Piston area) (m2)</b>	0.033	0.033	0.053	0.054
<b>BL (Flux lenght) (TM)</b>	13.91	17.83	16.71	17.23
<b>no (Ref efficiency) (%)</b>	0.81	2.57	1.88	3.70
<b>Qms (Mech Q)</b>	5.74	6.45	5.37	7.28
<b>Qes (Elec Q)</b>	0.54	0.28	0.43	0.35
<b>Qts (Total Q)</b>	0.49	0.27	0.40	0.33
<b>Vas (Acoustic volume) (Litr)</b>	28.68	24.47	80.32	71.40
<b>X-max (mm)</b>	+/- 3.5 mm	+/- 3.5 mm	+/- 3.5 mm	+/- 6 mm
<b>Cms (Compliance) (uM-N)</b>	185.45	158.24	189.14	172.42
<b>Mms (Total mass) (g)</b>	47.18	35.23	60.62	44.99
<b>Mmd (Diapm mass) (g)</b>	43.73	31.78	53.61	37.78
<b>MOTOR IMPEDANCE PARAMETERS</b>				
<b>Levc (Induction at 1kHz) (mH)</b>	0.94	0.54	0.91	0.73
<b>Levc (Induction at 20kHz) (mH)</b>	0.45	0.31	0.43	0.31
<b>Krm (Resistance cons) (ohm)</b>	4.73	18.98	4.37	14.13
<b>Kxrm (Reaction cons) (mH)</b>	7.91	2.62	8.16	8.49
<b>Rem (Resistance at 1kHz) (ohm)</b>	3.43	3.40	3.1	3.65
<b>Rem (Resistance at 20kHz) (ohm)</b>	32.71	20.13	29.48	29.49
<b>Erm (Resistance expont)</b>	0.75	0.59	0.75	0.64
<b>Exm (Reaction expont)</b>	0.76	0.82	0.75	0.72
<b>MOUNTING INFORMATION</b>				
<b>Overall diameter (in/cm)</b>	10 3/8" / 26.35	10 3/8" / 26.35	12 1/4" / 31	12 1/4" / 31
<b>Baffle hole diameter (in/cm)</b>	9 3/32" / 23	9 3/32" / 23	11 1/8" / 28.26	11 1/8" / 28.26
<b>Depth (in/cm)</b>	4 3/4" / 12.06	4 3/4" / 12.06	5 3/4" / 14.60	5 3/4" / 14.60
<b>Fixing holes (in/cm)</b>	3 11/16" / 9.4	3 11/16" / 9.4	4 1/2" / 11.3	4 1/2" / 11.3
<b>Flange thickness (in/cm)</b>	15/32" / 1.19	15/32" / 1.19	7/32" / 0.55	7/32" / 0.55
<b>Fixing hole diameter (in/cm)</b>	9 23/32" / 24.68	9 23/32" / 24.68	11 5/8" / 29.5	11 5/8" / 29.5
<b>Front / Rear sealing gaskets</b>	Standard	Standard	Standard	Standard
<b>Weight (lbs/kg)</b>	12 / 5.5	19 1/2 / 8.75	17 / 7.5	19 1/2 / 8.75
<b>Recom. enclosure vol. (cu.ft)</b>	1.5 / 3.0	1.5 / 3.0	1.8 / 4.2	1.8 / 4.2
<b>Shipping weight (lbs/kg)</b>	14 / 6.5	21 1/2 / 9.5	19 1/2 / 8.75	21 1/2 / 9.75
<b>Packing carton dim. (H/W/D)</b>	7 1/4" / 10 3/4" / 10 3/4"	7 1/4" / 10 3/4" / 10 3/4"	8" / 12 3/4" / 12 3/4"	8" / 12 3/4" / 12 3/4"

# STUDIO LOUDSPEAKERS

TR 12MB-600    TR 12MB-800    TR 12MB-1000    TR 15B-1100



ELECTRICAL MECHANICAL PARAMETERS	TR 12MB-600	TR 12MB-800	TR 12MB-1000	TR 15B-1100
<b>Peak power (W)</b>	600	800	1000	1100
<b>Power Rms (W)</b>	300	400	500	550
<b>SPLo (SPL à 1W) (dB)</b>	101	100	98	95
<b>Surround</b>	Double M-Roll	Double M-Roll	Wave	Wave
<b>Dust cap</b>	Paper	Paper	Paper	Paper
<b>Voice coil - material / diameter (in/mm)</b>	Co - 2 1/2 / 64"	Co - 3" / 75	Co - 3" / 75	Co - 4" / 102
<b>Revc (DC Vc Res) (ohm)</b>	5.7	5.9	5.2	5.1
<b>Fs (Resonance / Frequency) (HZ)</b>	49.17	41.68	55.45	28.23
<b>Zo (Zmax at Fo) (ohm)</b>	116.95	122.90	88.09	47.22
<b>Sd (Piston area) (m2)</b>	0.054	0.054	0.054	0.113
<b>BL (Flux lenght) (TM)</b>	16.84	19.67	23.30	22.09
<b>no (Ref efficiency) (%)</b>	3.13	2.88	1.56	2
<b>Qms (Mech Q)</b>	6.14	4.8	5.53	10.04
<b>Qes (Elec Q)</b>	0.32	0.24	0.35	0.34
<b>Qts (Total Q)</b>	0.30	0.23	0.33	0.30
<b>Vas (Acoustic volume) (Litr)</b>	85.58	99.60	32.83	316.56
<b>X-max (mm)</b>	28 - 7.19	28 - 7.19	+/- 4mm	+/- 9mm
<b>Cms (Compliance) (uM-N)</b>	206.66	240.54	79.29	172.64
<b>Mms (Total mass) (g)</b>	50.70	60.62	103.90	184.08
<b>Mmd (Diapm mass) (g)</b>	43.83	53.41	96.69	162.05
<b>MOTOR IMPEDANCE PARAMETERS</b>				
<b>Levc (Induction at 1kHz) (mH)</b>	0.92	1.24	1.56	-
<b>Levc (Induction at 20kHz) (mH)</b>	0.46	0.60	0.73	-
<b>Krm (Resistance cons) (ohm)</b>	21.93	8.90	8.53	15.28
<b>Kxm (Reaction cons) (mH)</b>	7.04	10.29	15.18	26.26
<b>Rem (Resistance at 1kHz) (ohm)</b>	3.46	4.56	4.66	-
<b>Rem (Resistance at 20kHz) (ohm)</b>	19.61	38.65	40.31	-
<b>Erm (Resistance expont)</b>	0.58	0.71	0.72	0.74
<b>Exm (Reaction expont)</b>	0.77	0.76	0.74	0.74
<b>MOUNTING INFORMATION</b>				
<b>Overall diameter (in/cm)</b>	12 1/4" / 31	12 1/4" / 31	12 1/4" / 31	15 3/8" / 39
<b>Baffle hole diameter (in/cm)</b>	11 1/8" / 28.26	11 1/8" / 28.26	11 1/8" / 28.26	14" / 35.56
<b>Depth (in/cm)</b>	5 3/4" / 14.60	5 3/4" / 14.60	5 3/4" / 14.60	6 3/8" / 16.19
<b>Fixing holes (in/cm)</b>	4 1/5" / 11.3	4 1/2" / 11.3	4 1/2" / 11.3	5 9/16" / 14.13
<b>Flange thickness (in/cm)</b>	7/32" / 0.55	7/32" / 0.55	7/32" / 0.55	15/32" / 1.19
<b>Fixing hole diameter (in/cm)</b>	11 5/8" / 29.5	11 5/8" / 29.5	11 5/8" / 29.5	14 5/8" / 37.2
<b>Front / Rear sealing gaskets</b>	Standard	Standard	Standard	Standard
<b>Weight (lbs/kg)</b>	23 / 10.5	23 / 10.5	25 / 11.36	30 / 13.5
<b>Recom. enclosure vol. (cu.ft)</b>	1.8 / 4.2	1.8 / 4.2	1.8 / 4.2	2.5 / 5.3
<b>Shipping weight (lbs/kg)</b>	25 / 11.36	25 / 11.36	21 / 12.27	32 / 14.5
<b>Packing carton dim. (H/W/D)</b>	8" / 12 3/4" / 12 3/4"	8" / 12 3/4" / 12 3/4"	8" / 12 3/4" / 12 3/4"	9 1/2" / 15 3/4" / 15 3/4"

# STUDIO LOUDSPEAKERS

TR 15B-1200



TR 15CSB-1200



TR 15LB-1600



ELECTRICAL MECHANICAL PARAMETERS	TR 15B-1200	TR 15MB-1200	TR 15CSB-1200	TR 15LB-1600
<b>Peak power (W)</b>	1200	1200	1400	1600
<b>Power Rms (W)</b>	600	600	700	800
<b>SPL<sub>0</sub> (SPL à 1W) (dB)</b>	98	99	99	100
<b>Surround</b>	Triple waves	Triple waves	Triple waves	M-Roll
<b>Dust cap</b>	Paper	Paper	Paper	Paper
<b>Voice coil - material / diameter (in/mm)</b>	Co - 4" / 102	Co - 4" / 102	Co - 4" / 102	Co - 4" / 102
<b>Revc (DC Vc Res) (ohm)</b>	5.4	5.10	6.10	6.30
<b>F<sub>s</sub> (Resonance / Frequency) (HZ)</b>	39.84	44.93	43.60	53.81
<b>Z<sub>0</sub> (Zmax at F<sub>0</sub>) (ohm)</b>	139.52	76.25	161.53	133.49
<b>Sd (Piston area) (m2)</b>	0.089	0.089	0.089	0.089
<b>BL (Flux lenght) (TM)</b>	23.09	16.91	26.48	28.08
<b>no (Ref efficiency) (%)</b>	2.63	2.74	4.36	2.78
<b>Qms (Mech Q)</b>	8.09	6.65	6.60	7.66
<b>Qes (Elec Q)</b>	0.33	0.48	0.26	0.37
<b>Qts (Total Q)</b>	0.31	0.45	0.25	0.36
<b>Vas (Acoustic volume) (Litr)</b>	139.82	149.09	137.88	70.06
<b>X-max (mm)</b>	+/- 12mm	+/- 7mm	+/- 5mm	+/- 5mm
<b>Cms (Compliance) (uM-N)</b>	124.31	132.55	122.58	62.28
<b>Mms (Total mass) (g)</b>	128.37	94.67	108.70	140.48
<b>Mmd (Diapm mass) (g)</b>	13.11	79.40	93.43	125.21
<b>MOTOR IMPEDANCE PARAMETERS</b>				
<b>Levc (Induction at 1kHz) (mH)</b>	1.76	1.44	2.89	1.51
<b>Levc (Induction at 20kHz) (mH)</b>	0.82	0.60	1.43	0.71
<b>Krm (Resistance cons) (ohm)</b>	29.13	11.74	10.07	11.19
<b>Kxm (Reaction cons) (mH)</b>	16.20	18.12	22.35	13.77
<b>Rem (Resistance at 1kHz) (ohm)</b>	5.95	5.12	7.03	6.16
<b>Rem (Resistance at 20kHz) (ohm)</b>	36.76	41.04	66.26	53.50
<b>Erm (Resistance expont)</b>	0.61	0.70	0.75	0.72
<b>Exm (Reaction expont)</b>	0.75	0.71	0.77	0.75
<b>MOUNTING INFORMATION</b>				
<b>Overall diameter (in/cm)</b>	15 3/8" / 39	15 3/8" / 39	15 3/8" / 39	15 3/8" / 39
<b>Baffle hole diameter (in/cm)</b>	14" / 35.56	14" / 35.56	14" / 35.56	14" / 35.56
<b>Depth (in/cm)</b>	6 3/8" / 16.19	6 3/8" / 16.19	6 3/8" / 16.19	6 3/8" / 16.19
<b>Fixing holes (in/cm)</b>	5 9/16" / 14.13	5 9/16" / 14.13	5 9/16" / 14.13	5 9/16" / 14.13
<b>Flange thickness (in/cm)</b>	15/32" / 1.19	15/32" / 1.19	15/32" / 1.19	15/32" / 1.19
<b>Fixing hole diameter (in/cm)</b>	14 5/8" / 37.2	14 5/8" / 37.2	14 5/8" / 37.2	14 5/8" / 37.2
<b>Front / Rear sealing gaskets</b>	Standard	Standard	Standard	Standard
<b>Weight (lbs/kg)</b>	30 / 13.5	32 / 14.5	32 / 14.5	32 / 14.5
<b>Recom. enclosure vol. (cu.ft)</b>	2.5 / 5.3	2.5 / 5.3	2.5 / 5.3	2.5 / 5.3
<b>Shipping weight (lbs/kg)</b>	32 / 14.5	34 / 15.5	34 / 15.5	34 / 15.5
<b>Packing carton dim. (H/W/D)</b>	9 1/2" / 15 3/4" / 15 3/4"	9 1/2" / 15 3/4" / 15 3/4"	9 1/2" / 15 3/4" / 15 3/4"	9 1/2" / 15 3/4" / 15 3/4"

# STUDIO LOUDSPEAKERS

TR 15B-2200

TR 18B-800

TR 18B-1100

TR 18B-1200



ELECTRICAL MECHANICAL PARAMETERS	TR 15B-2200	TR 18B-800	TR 18B-1100	TR 18B-1200
<b>Peak power (W)</b>	2200	800	100	1200
<b>Power Rms (W)</b>	1000	400	550	600
<b>SPLo (SPL à 1W) (dB)</b>	98	100	97	99
<b>Surround</b>	wave	wave	wave	Double M-Roll
<b>Dust cap</b>	Paper	Paper	Paper	Paper
<b>Voice coil - material / diameter (in/mm)</b>	Co - 4.5" / 114.30	Co - 3" / 75	Co - 4" / 102	Co - 4" / 102
<b>Revc (DC Vc Res) (ohm)</b>	5.5	6.0	5.1	5.5
<b>Fs (Resonance / Frequency) (HZ)</b>	41.68	20.88	31.34	41.68
<b>Zo (Zmax at Fo) (ohm)</b>	73.15	129.31	-	105.30
<b>Sd (Piston area) (m2)</b>	0.089	0.130	0.113	0.125
<b>BL (Flux lenght) (TM)</b>	20.02	28.51	19.30	19.88
<b>no (Ref efficiency) (%)</b>	2.00	5.7	2.93	4.71
<b>Qms (Mech Q)</b>	5.58	2.96	8.95	7.60
<b>Qes (Elec Q)</b>	0.45	0.14	0.35	0.42
<b>Qts (Total Q)</b>	0.42	0.13	0.13	0.40
<b>Vas (Acoustic volume) (Litr)</b>	129.82	934.92	353.95	281.66
<b>X-max (mm)</b>	+/- 11mm	+/- 5mm	+/- 9mm	+/- 6mm
<b>Cms (Compliance) (uM-N)</b>	115.42	389.57	193.03	126.94
<b>Mms (Total mass) (g)</b>	126.37	149.13	133.57	114.87
<b>Mmd (Diapm mass) (g)</b>	111.07	122.17	111.55	89.46
<b>MOTOR IMPEDANCE PARAMETERS</b>			1.22	
<b>Levc (Induction at 1kHz) (mH)</b>	0.100	1.22	1.51	1.79
<b>Levc (Induction at 20kHz) (mH)</b>	0.57	1.51	38.49	0.75
<b>Krm (Resistance cons) (ohm)</b>	117.59	38.49	45.26	13.51
<b>Kxm (Reaction cons) (mH)</b>	5.10	15.96	6.85	22.13
<b>Rem (Resistance at 1kHz) (ohm)</b>	4.55	6.85	40.45	5.57
<b>Rem (Resistance at 20kHz) (ohm)</b>	15.91	40.45	0.79	43.79
<b>Erm (Resistance expont)</b>	0.42	0.59	0.67	0.69
<b>Exm (Reaction expont)</b>	0.81	0.71		0.71
<b>MOUNTING INFORMATION</b>			18 3/8" / 46.67	
<b>Overall diameter (in/cm)</b>	15 3/8" / 39	18 3/8" / 46.67	16 3/4" / 42.54	18 3/8" / 46.67
<b>Baffle hole diameter (in/cm)</b>	14" / 35.56	16 3/4" / 42.54	7 15/16" / 20.16	16 3/4" / 42.54
<b>Depth (in/cm)</b>	6 3/8" / 16.19	7 15/16" / 20.16	6 11/16" / 16.9	7 15/16" / 20.16
<b>Fixing holes (in/cm)</b>	5 9/16" / 14.13	6 11/16" / 16.9	19/32" / 1.5	6 11/16" / 16.9
<b>Flange thickness (in/cm)</b>	15/32" / 1.19	19/32" / 1.5	17 7/16" / 29.5	19/32" / 1.5
<b>Fixing hole diameter (in/cm)</b>	14 5/8" / 37.2	17 7/16" / 29.5	Standard	17 7/16" / 29.5
<b>Front / Rear sealing gaskets</b>	Standard	Standard	33 / 15	Standard
<b>Weight (lbs/kg)</b>	32 / 14.5	33 / 15	3.5 / 7	33 / 15
<b>Recom. enclosure vol. (cu.ft)</b>	2.5 / 5.3	3.5 / 7	35 / 16	3.5 / 7
<b>Shipping weight (lbs/kg)</b>	35 / 16	35 / 16	10 1/2" / 19 3/4" / 19 3/4"	35 / 16
<b>Packing carton dim. (H/W/D)</b>	9 1/2" / 15 3/4" / 15 3/4"	10 1/2" / 19 3/4" / 19 3/4"		10 1/2" / 19 3/4" / 19 3/4"

# STUDIO LOUDSPEAKERS

TR 18CSB-1200



TR 18B-2000



TR 18B-2400



ELECTRICAL MECHANICAL PARAMETERS	TR 18CSB-1200	TR 18B-2000	TR 18B-2400
<b>Peak power (W)</b>	1200	2000	2400
<b>Power Rms (W)</b>	600	1000	1200
<b>SPLo (SPL à 1W) (dB)</b>	99	99	97
<b>Surround</b>	M-Roll	Material	Wave
<b>Dust cap</b>	Paper	Paper	Paper
<b>Voice coil - material / diameter (in/mm)</b>	Co - 4" / 102	Co - 4.5" - 114.3	Co - 4.5" / 114.3
<b>Revc (DC Vc Res) (ohm)</b>	4.90	5.5	5.3
<b>Fs (Resonance / Frequency) (HZ)</b>	37.95	41.68	36.56
<b>Zo (Zmax at Fo) (ohm)</b>	121.30	119.95	108.67
<b>Sd (Piston area) (m2)</b>	0.113	0.125	0.124
<b>BL (Flux lenght) (TM)</b>	20.34	27.38	20.12
<b>no (Ref efficiency) (%)</b>	3.02	1.84	4.3
<b>Qms (Mech Q)</b>	10.67	10.03	7.2
<b>Qes (Elec Q)</b>	0.45	0.5	0.36
<b>Qts (Total Q)</b>	0.43	0.47	0.35
<b>Vas (Acoustic volume) (Litr)</b>	177.25	128.82	336.77
<b>X-max (mm)</b>	+/- 9mm	+/- 11mm	+/- 11mm
<b>Cms (Compliance) (uM-N)</b>	97.75	58.06	154.24
<b>Mms (Total mass) (g)</b>	140.47	251.16	122.86
<b>Mmd (Diapm mass) (g)</b>	118.63	225.75	97.75
<b>MOTOR IMPEDANCE PARAMETERS</b>			
<b>Levc (Induction at 1kHz) (mH)</b>	2.00	1.03	-
<b>Levc (Induction at 20kHz) (mH)</b>	0.77	0.58	-
<b>Krm (Resistance cons) (ohm)</b>	28.95	40.65	9.59
<b>Kxm (Reaction cons) (mH)</b>	32.91	5.44	38.17
<b>Rem (Resistance at 1kHz) (ohm)</b>	7.14	3.44	-
<b>Rem (Resistance at 20kHz) (ohm)</b>	47.09	15.76	-
<b>Erm (Resistance expont)</b>	0.63	0.51	0.78
<b>Exm (Reaction expont)</b>	0.68	0.81	0.71
<b>MOUNTING INFORMATION</b>			
<b>Overall diameter (in/cm)</b>	18 3/8" / 46.67	18 3/8" / 46.67	18 3/8" / 46.67
<b>Baffle hole diameter (in/cm)</b>	16 3/4" / 42.54	16 3/4" / 42.54	16 3/4" / 42.54
<b>Depth (in/cm)</b>	7 15/16" / 20.16	7 15/16" / 20.16	7 15/16" / 20.16
<b>Fixing holes (in/cm)</b>	6 11/16" / 16.9	6 11/16" / 16.9	6 11/16" / 16.9
<b>Flange thickness (in/cm)</b>	19/32" / 1.5	19/32" / 1.5	19/32" / 1.5
<b>Fixing hole diameter (in/cm)</b>	17 7/16" / 29.5	17 7/16" / 44.47	17 7/16" / 44.47
<b>Front / Rear sealing gaskets</b>	Standard	Standard	Standard
<b>Weight (lbs/kg)</b>	33 / 15	33 / 15	33 / 15
<b>Recom. enclosure vol. (cu.ft)</b>	3.5 / 7	3.5 / 7	3.5 / 7
<b>Shipping weight (lbs/kg)</b>	35 / 16	35 / 16	35 / 16
<b>Packing carton dim. (H/W/D)</b>	10 1/2" / 19 3/4" / 19 3/4"	10 1/2" / 19 3/4" / 19 3/4"	10 1/2" / 19 3/4" / 19 3/4"

# TECHNO LOUDSPEAKERS

TR 10F-500

TR 12F-300

TR 12F-600

TR 15B-800



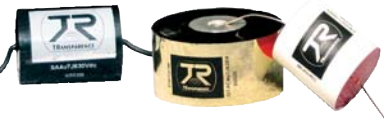
ELECTRICAL MECHANICAL PARAMETERS	TR 10F-500	TR 12F-300	TR 12F-600	TR 15B-800
<b>Peak power (W)</b>	500	300	600	1000
<b>Power Rms (W)</b>	250	150	300	500
<b>SPLo (SPL à 1W) (dB)</b>	94	97	97	101
<b>Surround</b>	Double M-Roll	Double M-Roll	Double M-Roll	M-Roll
<b>Dust cap</b>	Paper	Material	Material	Paper
<b>Voice coil - material / diameter (in/mm)</b>	Co - 2 1/2" / 64	Co - 2" / 51	Co - 2 1/2" / 64	Co - 3" / 785.9
<b>Revc (DC Vc Res) (ohm)</b>	6.3	7.0	5.9	5.4
<b>Fs (Resonance / Frequency) (HZ)</b>	62.53	38.66	57.14	35.33
<b>Zo (Zmax at Fo) (ohm)</b>	66.59	90.06	106.95	95.84
<b>Sd (Piston area) (m2)</b>	0.033	0.053	0.053	0.089
<b>BL (Flux lenght) (TM)</b>	12.57	13.83	18.51	18.24
<b>no (Ref efficiency) (%)</b>	1.28	2.52	4.06	3.44
<b>Qms (Mech Q)</b>	5.15	4.33	5.0	5.35
<b>Qes (Elec Q)</b>	0.538	0.365	0.292	0.32
<b>Qts (Total Q)</b>	0.49	0.34	0.28	0.30
<b>Vas (Acoustic volume) (Litr)</b>	29.13	164.77	65.59	257.42
<b>X-max (mm)</b>	+/- 3mm	+/- 3mm	+/- 4mm	+/- 5mm
<b>Cms (Compliance) (uM-N)</b>	188.41	413.07	164.44	228.86
<b>Mms (Total mass) (g)</b>	34.38	71.03	47.18	88.68
<b>Mmd (Diapm mass) (g)</b>	30.93	34.01	40.16	73.41
<b>MOTOR IMPEDANCE PARAMETERS</b>				
<b>Levc (Induction at 1kHz) (mH)</b>	0.68	0.67	0.67	1.52
<b>Levc (Induction at 20kHz) (mH)</b>	0.43	0.24	0.27	0.68
<b>Krm (Resistance cons) (ohm)</b>	19.69	5.49	5.74	15.05
<b>Kxm (Reaction cons) (mH)</b>	2.63	9.28	9.36	15.98
<b>Rem (Resistance at 1kHz) (ohm)</b>	2.38	2.62	2.69	5.66
<b>Rem (Resistance at 20kHz) (ohm)</b>	12.31	21.65	22.04	43.11
<b>Erm (Resistance expont)</b>	0.55	0.71	0.71	0.68
<b>Exm (Reaction expont)</b>	0.84	0.69	0.70	0.73
<b>MOUNTING INFORMATION</b>				
<b>Overall diameter (in/cm)</b>	10 1/4" / 31	12 1/4" / 31	12 1/4" / 31	15 3/8" / 39
<b>Baffle hole diameter (in/cm)</b>	9 3/32" / 23	11 1/8" / 28.25	11 1/8" / 28.25	14 1/16" / 35.71
<b>Depth (in/cm)</b>	4 3/4" / 12.06	5 1/2" / 32.40	5 1/2" / 32.40	5 1/8" / 13
<b>Fixing holes (in/cm)</b>	3 11/16" / 9.4	4 7/16" / 11.27	4 7/16" / 11.27	5 5/8" / 14.3
<b>Flange thickness (in/cm)</b>	15/32" / 1.19	3/16" / 0.47	3/16" / 0.47	15/32" / 1.19
<b>Fixing hole diameter (in/cm)</b>	9 23/32" / 24.68	11 5/8" / 29.5	11 5/8" / 29.5	14 5/8" / 37.2
<b>Front / Rear sealing gaskets</b>	Standard	Standard	Standard	Standard
<b>Weight (lbs/kg)</b>	13 / 59	14 / 7	20 1/2 / 9.25	23 1/2 / 10.5
<b>Recom. enclosure vol. (cu.ft)</b>	1.5 / 3.0	1.8 / 4.2	1.8 / 4.2	2.5 / 5.3
<b>Shipping weight (lbs/kg)</b>	15 1/2 / 7	16 / 7.25	22 1/2 / 10.25	25 1/2 / 11.5
<b>Packing carton dim. (H/W/D)</b>	7 1/2" / 12 3/4" / 12 3/4"	7 1/2" / 12 3/4" / 12 3/4"	7 1/2" / 12 3/4" / 12 3/4"	9 1/2" / 15 3/4" / 15 3/4"

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