

REFERECE SQ 63

USER MANUAL



#ITCANNEVERB2LOUD

INTRODUCTION: BUILT FROM EMOTION

The B2 Audio Reference SQ63 Series — a loudspeaker system crafted not just to play music, but to bring it to life. This series is a return to our beginnings — nearly 20 years ago — when sound was about emotion, not compromise. It’s a reflection of why we started: to build something authentic.

Crafted Without Compromise

The Reference Series wasn’t designed around a price point. It was built around a vision — one driven by passion, not production quotas. Every element is chosen with intent, built for those who demand more than just volume: those who seek depth, soul, and clarity in every note.

Tuned for Truth. Designed for Versatility.

This system is about accuracy above all — delivering a sound that’s honest, transparent, and rich with detail.

- No artificial coloring.
- No forced tuning.
- Just pure sonic integrity.

Whether you’re installing in an active DSP-controlled system or a refined passive network, the Reference Series adapts with ease — never sacrificing its core identity.

Follow our social media and visit our websites for continious news and updates  
b2audio.com - b2audioua.com - facebook.com/b2audio - instagram: @b2audiogram - tiktok: @b2audio - youtube.com/b2audio



AT THE HEART OF B2 AUDIO LIES A RELENTLESS PURSUIT OF EXCELLENCE. WE BELIEVE IN DOING THINGS DIFFERENTLY AND PUSHING THE BOUNDARIES OF WHAT’S POSSIBLE. OUR TALENTED TEAM OF AUDIOPHILES AND INDUSTRY ENTHUSIASTS IS UNITED BY A PASSION FOR DESIGNING THE BEST POSSIBLE PRODUCTS—PRODUCTS THAT ARE MORE THAN JUST “GOOD ENOUGH.” OUR UNWAVERING DEDICATION HAS ALLOWED US TO MAKE OUR MARK SINCE OUR FOUNDING IN 2008.

OUR JOURNEY HAS BEEN MARKED BY NUMEROUS MILESTONES AND ACCOLADES, REFLECTING OUR COMMITMENT TO PUSHING THE ENVELOPE AND SETTING NEW STANDARDS IN THE INDUSTRY. AS WE CONTINUE TO GROW AND EVOLVE, WE REMAIN DEDICATED TO OUR MISSION OF DELIVERING EXCEPTIONAL AUDIO PRODUCTS THAT INSPIRE AND DELIGHT.

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## ■ DESIGN SPECIFICATIONS

MODEL:

REF SQ MIDWOOFER

### 6.5" MIDWOOFER



#### Key Feature:

Multi-layered hexagonal carbonfiber cone and dustcap  
Non-conducting TIL Voice Coil former for minimum damping  
FEA optimized motor structure with copper shorting ring  
Vented aluminum basket with SAFT for optimum strenght and low compression  
Vented pole piece with smooth cell foam for reduced compression and noise  
Gold plated Top plate and T yoke with CNC aluminum ring

#### Power Handling :

100h RMS Noise Test (IEC-18-4)	100	Watts
Long Term Max Power (IEC-18-2)	200	Watts
X-over:2 Order HP Butterworth (IEC-268-5)	100	Hertz

#### Mounting Information:

Overall Diameter	OD	6.5 / 165	Inch / mm
Cutout Diameter	CD	5.51 / 140	Inch / mm
Total Depth	TD	3.23 / 82	Inch / mm
Mounting Depth	MD	2.99 / 76	Inch / mm

#### Electrical Data:

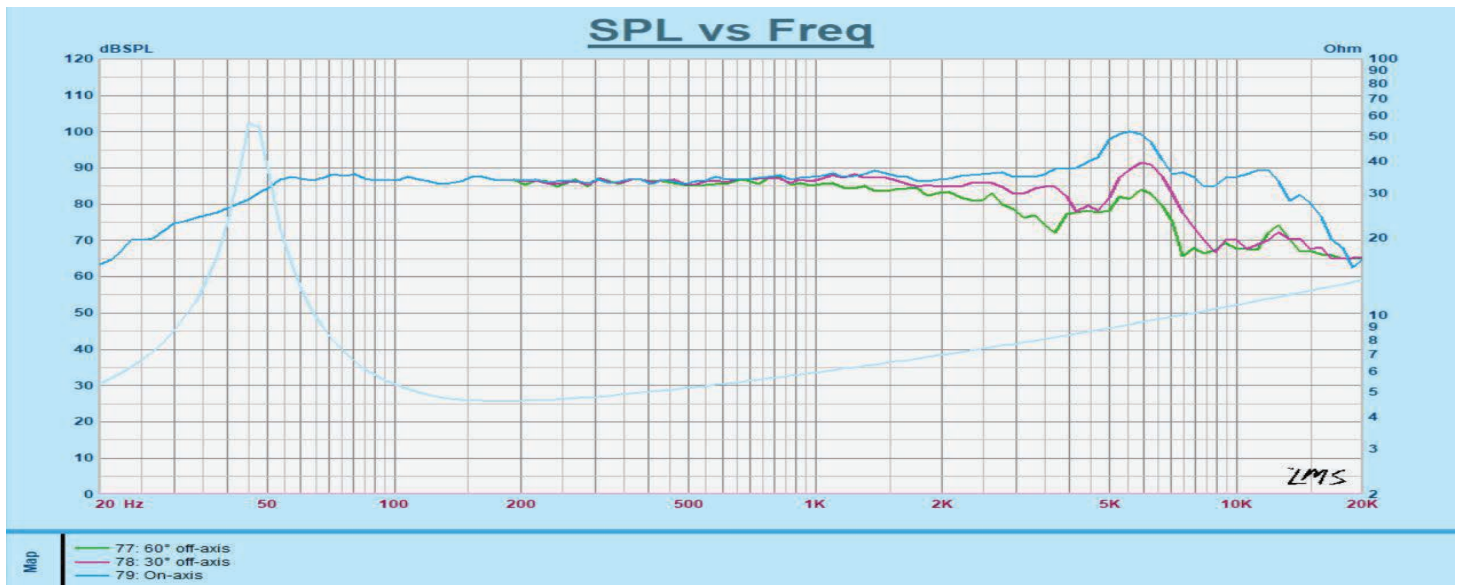
Nominal Impedance	Zn	4.0	$\Omega$
DC Resistance	Re	3.34	$\Omega$
Maximum Impedance	Zo	68.829	$\Omega$
Minimum Impedance	Zmin	4.019	$\Omega$
Minimum Frequency	Fmin	201.265	Hz
Voice Coil Inductance (1khz)	Le	0.279	mH

#### T-S Parameters:

Resonance Frequency	Fs	46.318	Hz
Mechanical Q Factor	Qms	10.396	
Electrical Q Factor	Qes	0.530	
Total Q Factor	Qts	0.504	
Force Factor	BL	6.204	T-M
Mechanical Resistance	Rms	0.588	Ns/M
Moving Mass without Air Load	Mmd	20.113	g
Moving Mass within Air Load	Mms	20.992	g
Suspension Compliance	Cms	0.562	mm/N
Effective Piston Area	SD	132.732	cm <sup>2</sup>
Equivalent Volume	Vas	14.071	Ltr
Reference Efficiency	No	0.255	%
Frequency Response (-3db)	Free Air	50~5000	Hz
Sensitivity @1W/1M ( $\pm 3$ db)	E	87.6	db

#### Mechanical Data :

Voice Coil Diameter	Id	1.4 / 35.5	Inch / mm
Voice Coil Former	VCfm	TIL	
Voice Coil Wire Composition		Copper	
Voice Coil Winding Length	h	16	mm
Voice Coil Layers	n	2	
Magnetic Material		Ferrite	
Magnet Diameter	Sm	100	mm
Magnet Weight	MW	20	Oz
Magnetic Flux Density	HG	N/A	Tesla
Magnetic Gap Height	HE	6.0	mm
Linear Excursion	P-P	10	mm
Max Mech. Excursion	P-P	$\pm 13$	mm
Unit Weight	UW	1700	Grams



## ■ DESIGN SPECIFICATIONS

MODEL:

REF SQ MIDRANGE

### 3" FULLRANGE



#### Key Feature:

Multi-layered hexagonal carbonfiber cone and dustcap  
Non-conducting TIL Voice Coil former for minimum damping  
FEA optimized motor structure with copper shorting ring  
Vented aluminum basket for optimum strenght and low compression  
Vented pole piece with smooth cell foam for reduced compression and noise  
Gold plated Top plate and T yoke with CNC aluminum ring

#### Power Handling :

100h RMS Noise Test (IEC-18-4)	50	Watts
Long Term Max Power (IEC-18-2)	100	Watts
X-over:2 Order HP Butterworth (IEC-268-5)	200	Hertz

#### Mounting Information:

Overall Diameter	OD	3.62 / 92	Inch / mm
Cutout Diameter	CD	3.02 / 76.8	Inch / mm
Total Depth	TD	2.11 / 53.6	Inch / mm
Mounting Depth	MD	1.52 / 38.6	Inch / mm

#### Electrical Data:

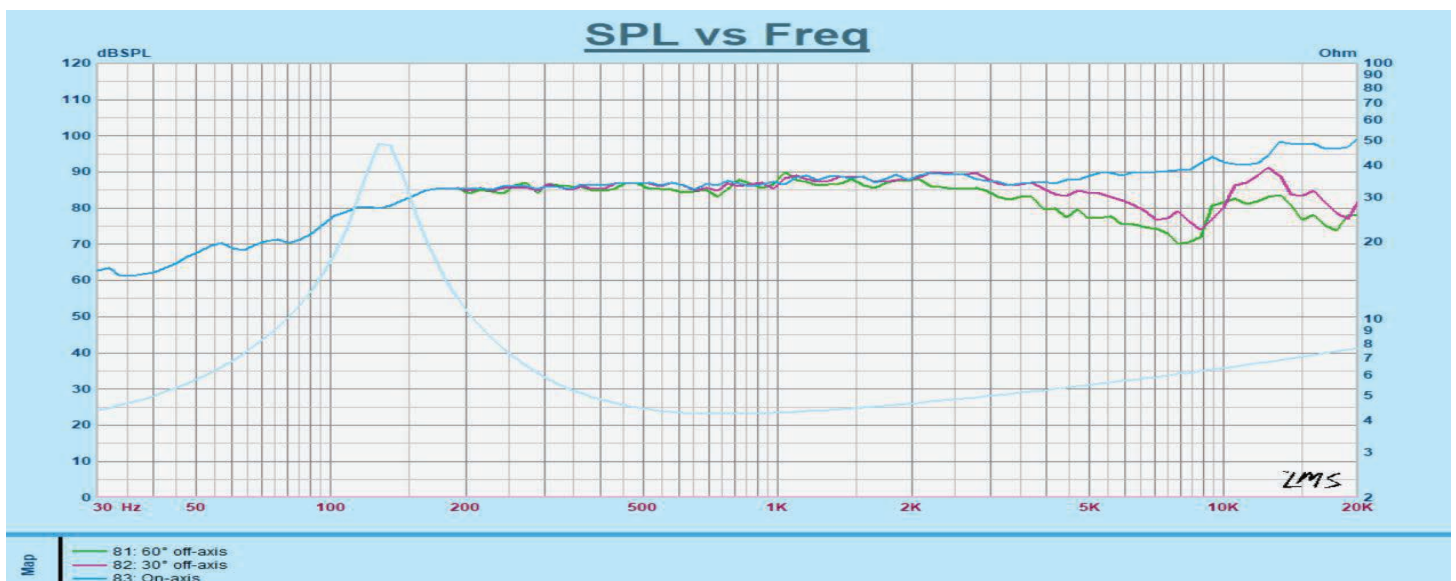
Nominal Impedance	Zn	4.0	Ω
DC Resistance	Re	3.35	Ω
Maximum Impedance	Zo	52.653	Ω
Minimum Impedance	Zmin	3.974	Ω
Minimum Frequency	Fmin	752.841	Hz
Voice Coil Inductance (1khz)	Le	0.151	mH

#### T-S Parameters:

Resonance Frequency	Fs	131.816	Hz
Mechanical Q Factor	Qms	5.575	
Electrical Q Factor	Qes	0.379	
Total Q Factor	Qts	0.355	
Force Factor	BL	5.392	T-M
Mechanical Resistance	Rms	0.590	Ns/M
Moving Mass without Air Load	Mmd	3.874	g
Moving Mass within Air Load	Mms	3.970	g
Suspension Compliance	Cms	0.367	mm/N
Effective Piston Area	SD	30.190	cm <sup>2</sup>
Equivalent Volume	Vas	0.475	Ltr
Reference Efficiency	No	0.278	%
Frequency Response (-3db)	Free Air	200~20,000	Hz
Sensitivity @1W/1M (±3db)	E	88	db

#### Mechanical Data :

Voice Coil Diameter	Id	1.2 / 30.5	Inch / mm
Voice Coil Former	VCfm	TIL	
Voice Coil Wire Composition		Copper	
Voice Coil Winding Length	h	7	mm
Voice Coil Layers	n	2	
Magnetic Material		Neodymium	
Magnet Diameter	Sm	60	mm
Magnet Weight	MW	4	Oz
Magnetic Flux Density	HG	N/A	Tesla
Magnetic Gap Height	HE	4	mm
Linear Excursion	P-P	3	mm
Max Mech. Excursion	P-P	±6.5	mm
Unit Weight	UW	450	Grams





## ■ DESIGN SPECIFICATIONS

MODEL:

REF SQ TWEETER

### 1" WIDEBAND TWEETER



#### Key Feature:

1" Ceramic dome for increased accuracy and clarity  
 DSCC (Direct Surround to Coil Connection) eliminates dome alterations & interaction  
 CCAW voice coil for reduced mass and increased sensitivity  
 Ventilated coil cooling system with a copper cap conduction  
 Machined Aluminum housing reduces resonance and acts as heat dissipation  
 Low distortion dual neodymium Inter magnetic circuit

#### Power Handling :

100h RMS Noise Test (IEC-18-4)	50	Watts
Long Term Max Power (IEC-18-2)	100	Watts
X-over: 2 Order HP Butterworth (IEC-268-5)	1500	Hertz

#### Mounting Information:

Overall Diameter	OD	2.24 / 57	Inch / mm
Cutout Diameter	CD	1.79 / 45.4	Inch / mm
Total Depth	TD	1.61 / 41	Inch / mm
Mounting Depth	MD	1.1 / 28	Inch / mm

#### Electrical Data:

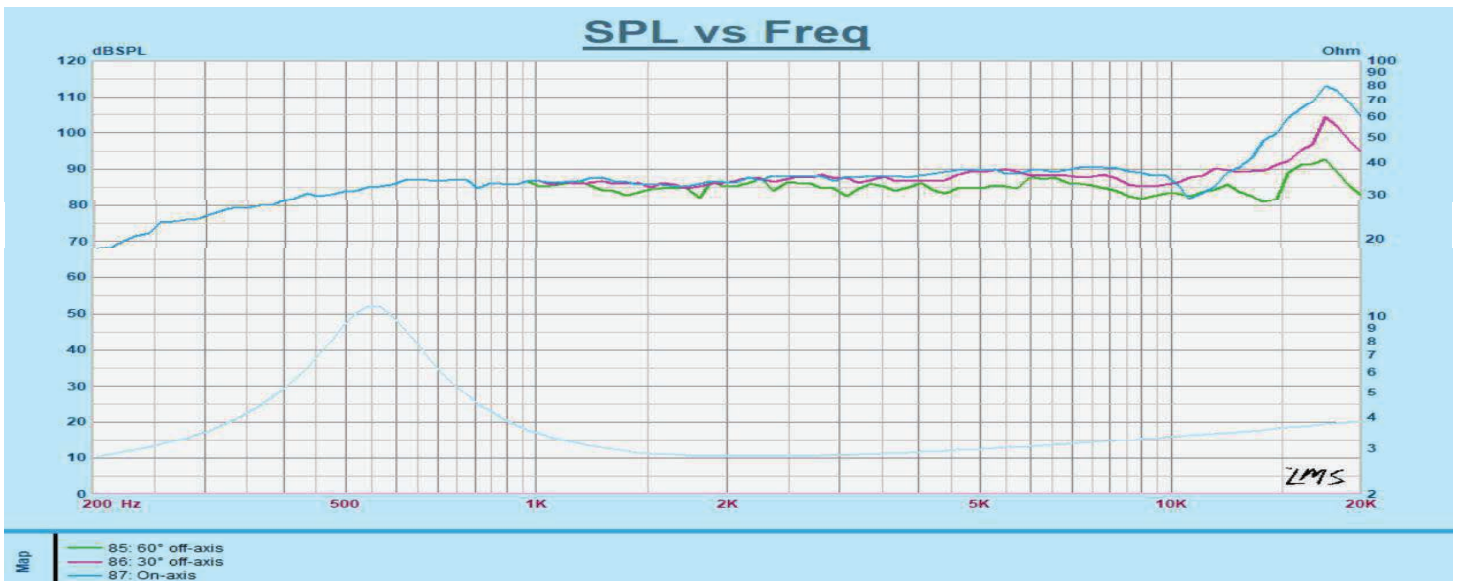
Nominal Impedance	Zn	3.0	Ω
DC Resistance	Re	2.3	Ω
Maximum Impedance	Zo	10.955	Ω
Minimum Impedance	Zmin	2.903	Ω
Minimum Frequency	Fmin	1595	Hz
Voice Coil Inductance (1kHz)	Le	0.040	mH

#### T-S Parameters:

Resonance Frequency	Fs	553.918	Hz
Mechanical Q Factor	Qms	3.359	
Electrical Q Factor	Qes	0.893	
Total Q Factor	Qts	0.705	
Force Factor	BL	2.691	T-M
Mechanical Resistance	Rms	0.837	Ns/M
Moving Mass without Air Load	Mmd	0.795	g
Moving Mass within Air Load	Mms	0.808	g
Suspension Compliance	Cms	0.102	mm/N
Effective Piston Area	SD	8.042	cm <sup>2</sup>
Equivalent Volume	Vas	0.009386	Ltr
Reference Efficiency	No	0.173	%
Frequency Response	Free Air	550~25,000	Hz
Sensitivity @1W/1M (±3db)	E	86	db

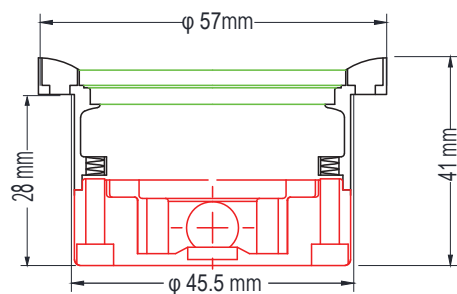
#### Mechanical Data :

Voice Coil Diameter	Id	1.0 / 25.4	Inch / mm
Voice Coil Former	VCfm	Polyimide	
Voice Coil Wire Composition		CCA	
Voice Coil Winding Length	h	3.2	mm
Voice Coil Layers	n	2	
Magnetic Material		NdFeB	
Magnet Diameter	Sm	Dual 25	mm
Magnet Weight	MW	1.1	Oz
Magnetic Flux Density	HG	N/A	Tesla
Magnetic Gap Height	HE	2	mm
Linear Excursion	P-P	1.2	mm
Max Mech. Excursion	P-P	±4	mm
Unit Weight	UW	150	Grams

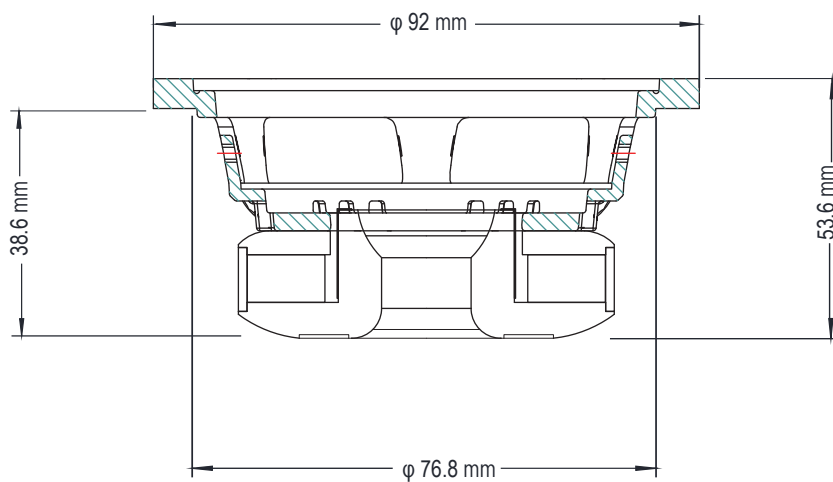


## ■ DIMENSIONAL DATA DRAWINGS

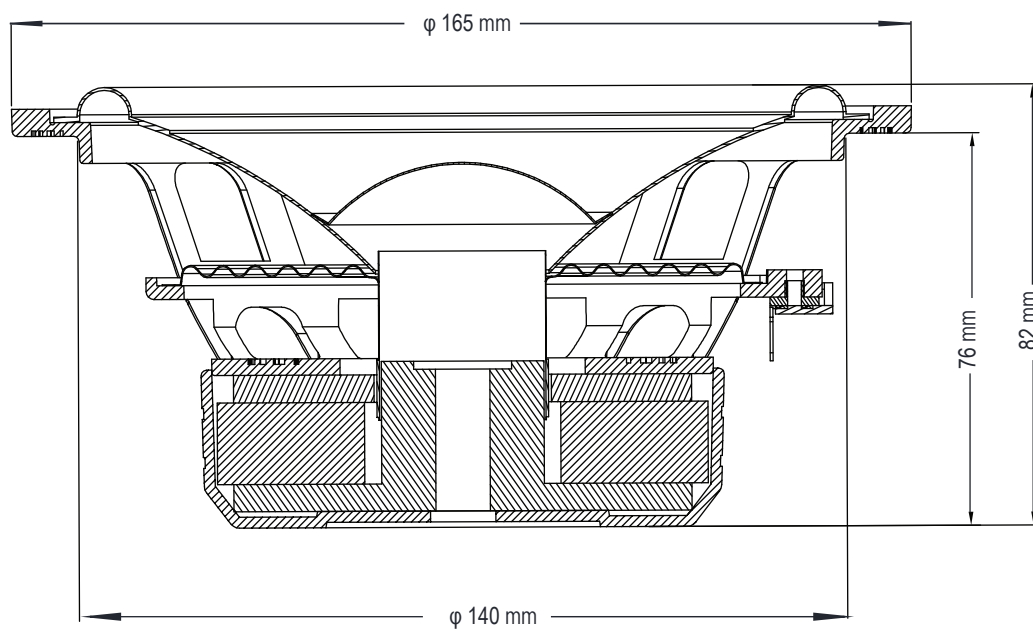
MODEL: REF SQ TWEETER

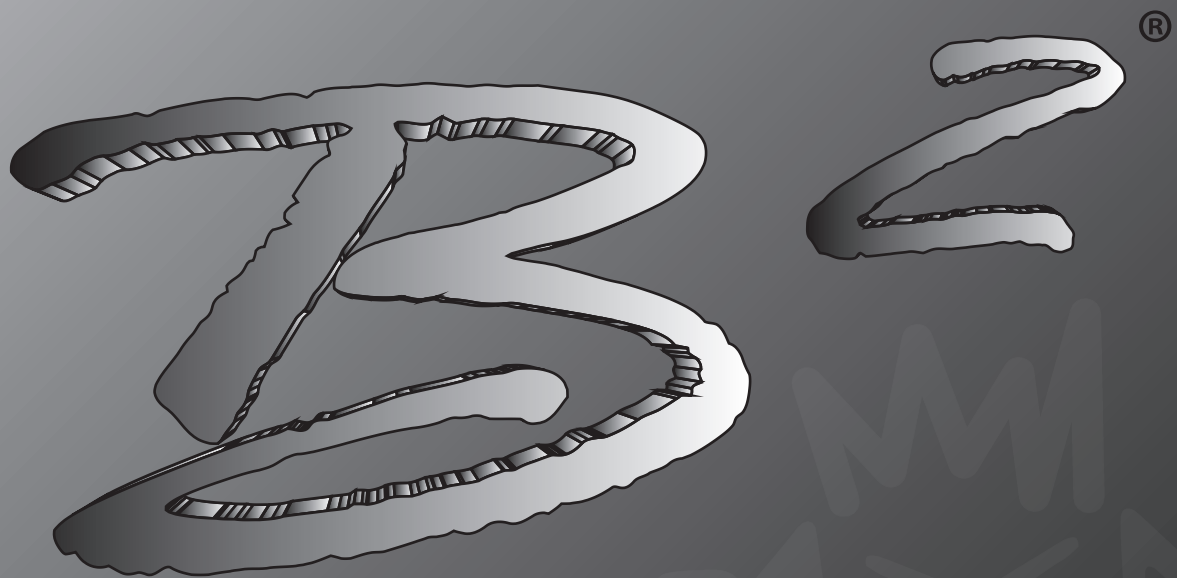


REF SQ MIDRANGE



REF SQ MIDWOOFER





#### LIMITED WARRANTY INFORMATION

B2 audio offers a limited warranty under the following terms:

The product is to be free of defects in material & workmanship under normal use for a period of 1 year from the date of the original purchase, when installed by an authorized dealer. Items not installed by authorized dealers will be warrantied for 30 days from the original purchase. Original sales receipts must be accompanied with all returns. The warranty applies to the original purchaser of the product & it being sold by authorized B2 audio dealers.

The warranty does not cover: 1. Damage caused by accident, abuse, misuse, improper operation, water / solvents & shipping.

2. Product modification, neglect, failure to follow installation instructions & misrepresentation by the seller.

3. Products used for competition purposes or are of such a character 4. Any product that has been opened.

5. Products that has had the serial number defaced, altered or removed.

6. The cost of shipping the product back for repair to an authorized repair centre & cost of return of non-defective items.