PROFESSIONAL LINE - Super Tweeter

ST200

Super tweeter for outstanding detail and clarity in high-frequencies without harshness. The ST200 may be used individually in lower power systems or arrayed for increased coverage and SPL in higher power systems.

The bullet-shape horn design offers a longer throw 40° x 40° dispersion.

The plastic injected housing is stable and durable.

The phenolic annular diaphragm is long-lasting, cost-effective and more natural-sounding than metallic diaphragms.

The use of high-temperature materials and adhesives improves power handling and produces exceptionally high acoustic output.

A precisely engineered diaphragm structure and alignment mechanism for easy, reliable, cost effective repair in case of diaphragm failure.

SPECIFICATIONS

Nominal impedance:		8	Ω
Minimum impedance @ 5,000 Hz:		7.4	Ω
POWER USING CROSSOVER (12dB/oct)	ACTIVE	PASSIVE	
AES (HPF -- Hz)[5]	--	--	W
AES (HPF -- Hz)[5]	--	--	W
RMS (NBR 10.303) (HPF 2.000 Hz)[6]	--	70	W
RMS (NBR 10.303) (HPF 4.000 Hz)[6]	--	100	W
MUSICAL PROGRAM (HPF 2.000 Hz)[1]	--	140	W
MUSICAL PROGRAM (HPF 4.000 Hz)[1]	--	200	
Sensitivity			
On horn, 1W@1m, on axis[2]		105	dB SPL
Frequency response @ -6 dB:		2,000 to 20,000	Hz
Sound dispersion (H x V):		40 x 40	degress
Diaphragm material:			Phenolic
Voice coil diameter:		46 (1.75)	mm (in)
Re:		6.0	Ω
Flux density:		1.1	T
Minimum recommended crossover (12 dB / oct):		--	Hz

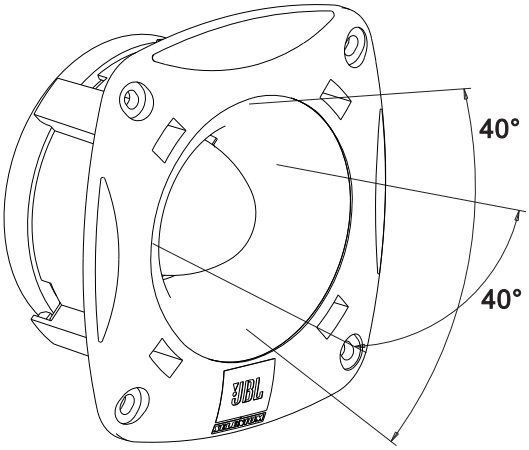
[1] Power handling specifications refer to normal speech and/or music program material, reproduced by an amplifier producing no more than 5% distortion. Power is calculated as true RMS voltage squared divided by the nominal impedance of the loudspeaker. This voltage is measured at the input of the recommended passive crossover when placed between the power amplifier and loudspeaker.
Musical Program= 2 x W RMS.
[2] Measured with HL14-25 horn, 1,000 - 3,500 Hz average.
[3] The sensitivity represents the SPL in a 25 mm terminated tube, 600 - 1,500 Hz average.
[5] Test with duration of 2h with pink noise (from 6dB crest factor) and filtered a decade of often-cut.
[6] Brazilian standard NBR 10.303, with pink noise during 2 uninterrupted hours.

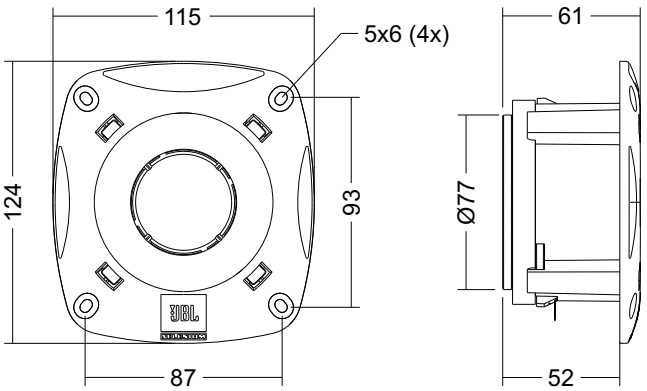
ADDITIONAL INFORMATION

Magnet material:	Barium ferrite	
Magnet weight:	220 (7.72)	g (oz)
Magnet diameter x depth:	90 x 10 (3.54 x 0.39)	mm (in)
Magnetic assembly weight:	650 (1.42)	g (lb)
Housing material:	ABS polymer	
Housing finish:	Black	
Magnetic assembly steel finish:	Zinc-plated	
Voice coil material:	Copper	
Voice coil former material:	Polyimide (Kapton®)	
Voice coil winding length:	2.9 (9.4)	m (ft)
Voice coil winding depth:	2.2 (0.08)	mm (in)
Wire temperature coefficient of resistance ($\alpha 25$):	0.00356	1/°C
Volume displaced by driver:	0.5 (0.017)	l (ft^3)
Net weight:	750 (1.65)	g (lb)
Gross weight:	890 (1.96)	g (lb)
Carton dimensions (W x D x H):	12 x 13.5 x 8 (4.6 x 5.3 x 3.1)	cm (in)

MOUNTING INFORMATION

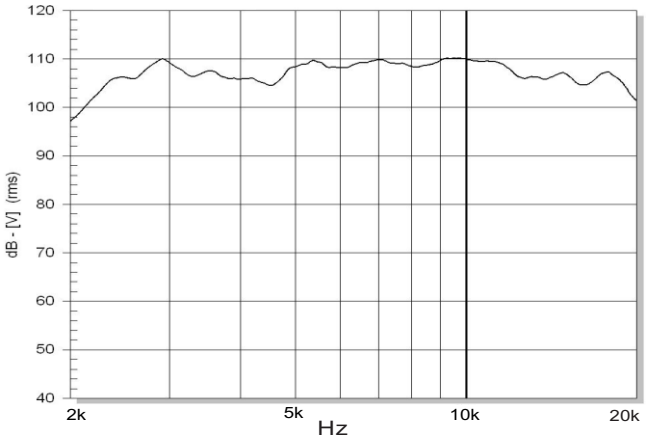
Number of bolt-holes:	8	
Bolt-holes dimension:	7.0 (0.28)	mm (in)
Distande between bolt-holes (H x V):	294 (11.57)	mm (in)
Baffle cutout diameter (front mount):	281 (11.06)	mm (in)
Connectors:	Solder	
Polarity:	Positive voltage applied to the positive terminal (red) gives diaphragm motion toward the horn throat	





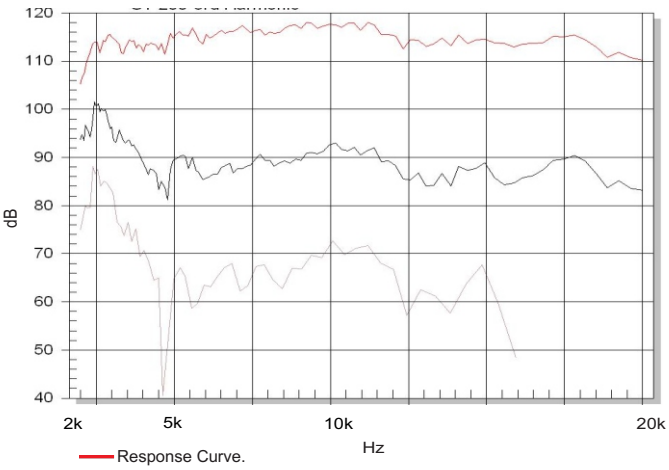
Dimensions in mm.

RESPONSE CURVE MENSURED IN ANECHOIC CHAMBER, 1 W / 1 m



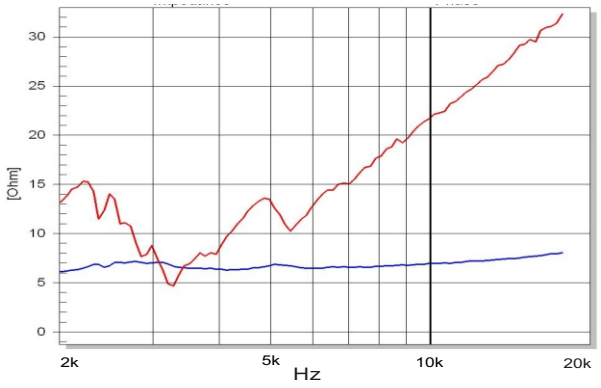
Response Curve.

HARMONIC DISTORTION CURVES, 7.5 W / 1 m.



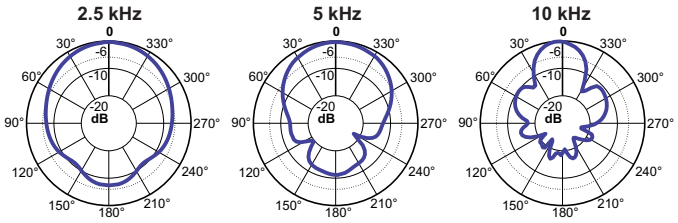
Response Curve.
Distortion Curve, 2nd harmonic.
Distortion Curve, 3rd harmonic.

IMPEDANCE AND PHASE CURVES MEASURED IN FREE-AIR.



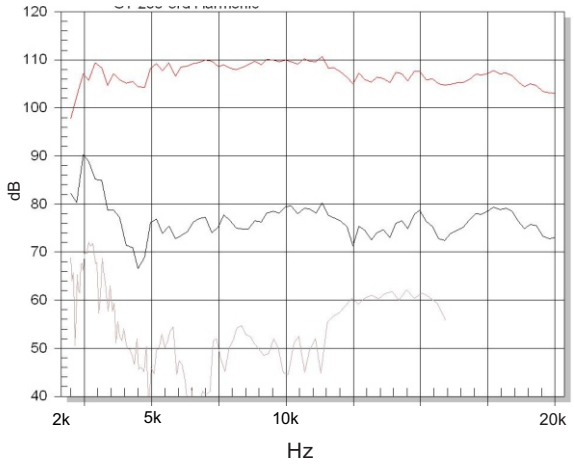
Impedance Curve.
Phase Curve.

POLAR RESPONSE CURVES



Polar Response Curve.

HARMONIC DISTORTION CURVES, 1 W / 1 m.



Response Curve.
Distortion Curve, 2nd harmonic.
Distortion Curve, 3rd harmonic.

HOW TO CHOOSE THE RIGHT AMPLIFIER

The power amplifier must be able to supply twice the RMS driver power. This 3 dB headroom is necessary to handle the peaks that are common to musical programs. When the amplifier clips those peaks, high distortion arises and this may damage the transducer due to excessive heat. The use of compressors is a good practice to reduce music dynamics to safe levels.

FINDING VOICE COIL TEMPERATURE

It is very important to avoid maximum voice coil temperature. Since moving coil resistance (R_E) varies with temperature according to a well known law, we can calculate the temperature inside the voice coil by measuring the voice coil DC resistance:

$$T_B = T_A + \left(\frac{R_B}{R_A} - 1\right)\left(T_A - 25 + \frac{1}{\alpha_{25}}\right)$$

T_A , T_B= voice coil temperatures in °C.
R_A , R_B= voice coil resistances at temperatures T_A and T_B, respectively.
α_{25}= voice coil wire temperature coefficient at 25 °C.

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