

DESCRIPTION

The Electro-Voice TL303 low frequency loudspeaker system is a vented-box (bass-reflex) design with gross internal volume of 76 cu. ft. The system has been designed for use with the Electro-Voice 30W 30 inch loudspeaker. The usable frequency range of the TL303 is roughly 19 to 600 Hz. The efficiency of the TL303 is 5% (half-space load, 30 to 400 Hz, 8 ohm nominal impedance) and as a result will generate outputs of 3 acoustic watts at the rated input of 60 watts.

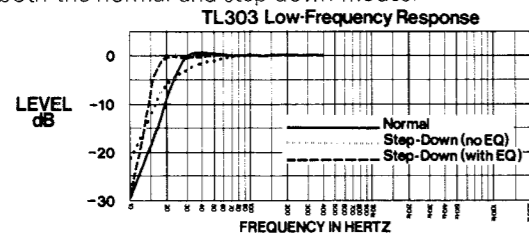
The design provides a selection of two different low frequency response curves by the optional use of a removable port cover. In the normal configuration (port cover off) the response is flat down to the lowest possible frequency. In the step-down configuration (port cover on) the response exhibits a sloping gradual low frequency rolloff but with about a one-half octave extension of low end response. The step down mode of operation is intended to be used with simple before-the-power-amp equalization to flatten the response (only 6 dB maximum boost required, equalizer details available on request).

The following table lists the box resonance frequency (f_B), the 3 dB down frequency (f_3) and the usable lower limit frequency (f_{LL}) for both configurations

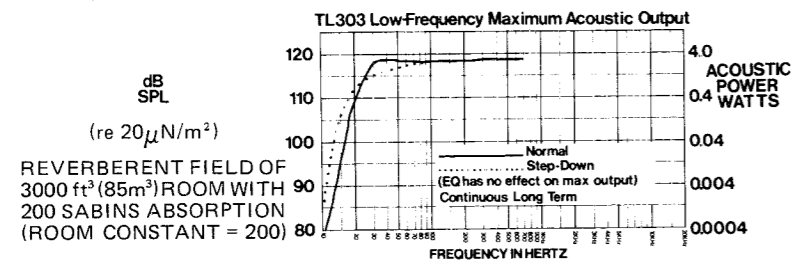
FREQUENCY	NORMAL	STEPDOWN
f_B	23 Hz	18 Hz
f_3	26 Hz	30 Hz
f_3 (with EQ)	--	17.5 Hz
f_{LL}^*	20 Hz	18 Hz

*The system can generate one-half acoustic watt or more down to f_{LL} .

The following graph shows the system's power output low frequency response in both the normal and step-down modes.

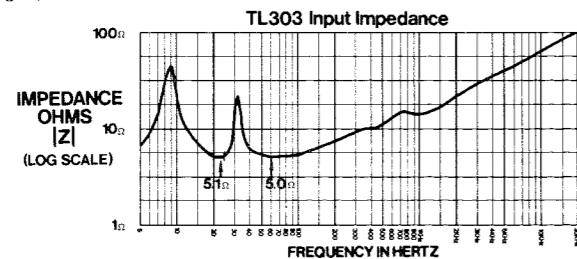


The curve which follows shows the system's low frequency maximum acoustic power output versus frequency. The maximum output is limited by either (1) the thermal power handling capacity of the speaker, or (2) the speaker's maximum linear cone excursion capabilities, whichever occurs first.



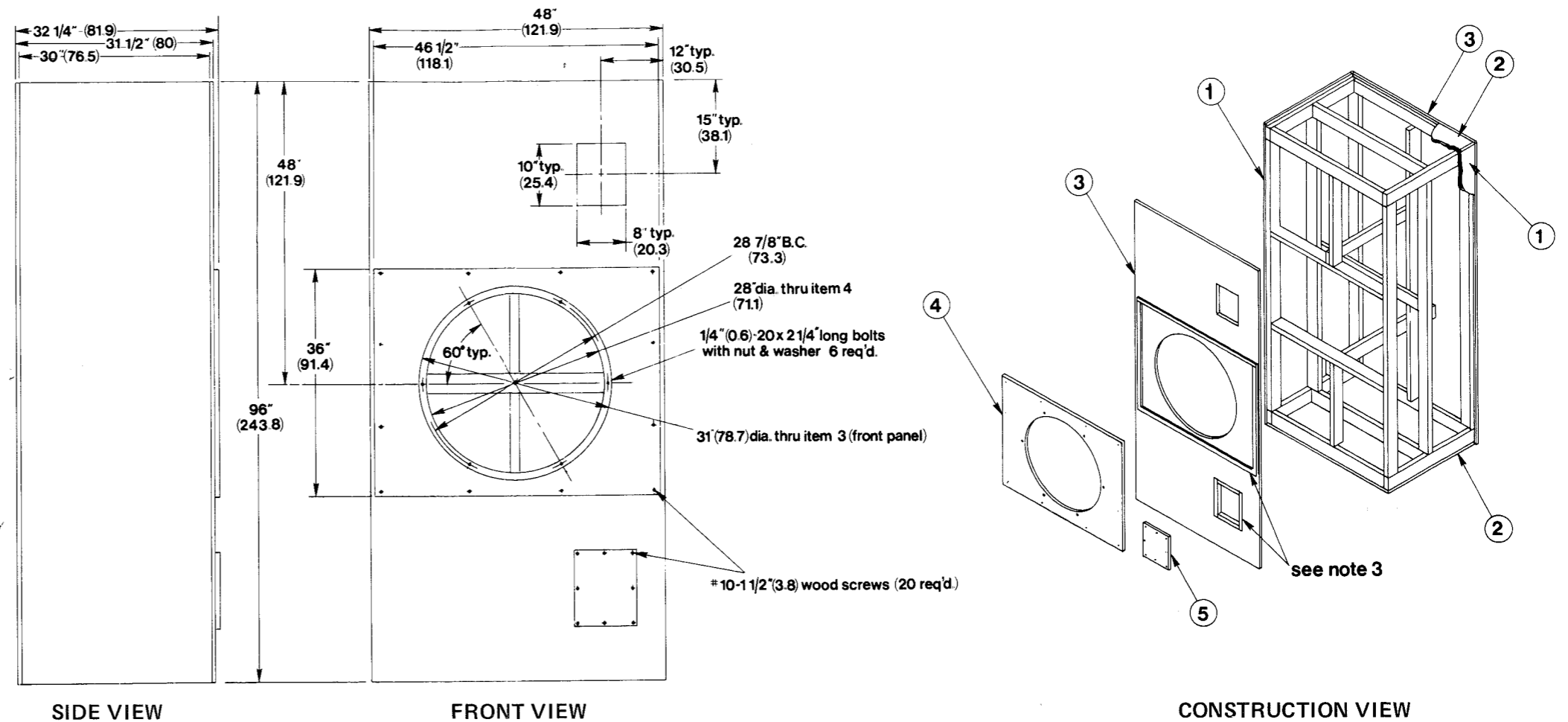
Note that some 2 to 3 dB of maximum output in the 30 to 45 Hz range is sacrificed when the step-down mode is used.

The TL303 input impedance versus frequency is shown in the following graph (normal mode).



TL303 Builders Plans

30W 76 CU. FT. BASS BOX



CONSTRUCTION NOTES:

- All joints should be securely glued and nailed (or stapled).
- All joints must be airtight. Seal questionable joints with silicon based caulking compound.
- Use 1/2" wide weather stripping tape around port cover (item 5) and baffle (item 4) for airtight seal.
- Speaker must be mounted on back of baffle (item 4) and then mount baffle plus speaker to front of cabinet.
- Handles, trunk corners, and furniture glides or casters may be added at builders option.
- Input connector should be selected by builder and mounted on rear.
- Grille cloth may be attached to baffle (item 4).
- Parts listed and dimensioned in chart below must conform to dimensions on drawing for proper cabinet tuning.
- The builder may select material and dimensional fit for parts not listed in chart.
- CAUTION:** This cabinet is big and heavy (550 lbs)! Make sure it can be moved from where it is constructed
- Line top, both sides, and back with 3" fiberglass insulation. Insulation must not block port opening on inside of cabinet. Lining not required if system will be used only below 200 Hz.
- Material requirements: (5) sheets 3/4" x 4' x 8' plywood or particle board and (14) fir 2" x 4" x 8' for cleats.

PARTS LIST - TL303

ITEM	MATERIAL	SIZE	QTY.	REMARKS
1	3/4" (1.9) Plywood or particle board	30" (76.2) x 96" (243.8)	2	Sides
2		30" (76.2) x 46-1/2" (118.1)	2	Top and bottom
3	36" (91.4) x 46-1/2" (118.1)	48" (121.9) x 96" (243.8)	2	Front and back
4		36" (91.4) x 46-1/2" (118.1)	1	Baffle
5		10" (25.4) x 12" (30.5)	1	Port cover

