

THIEL/SMALL PARAMETERS

The parameters given are based on drivers that are broken in. That is, a new driver will not perform to it's maximum potential in a given enclosure until it is sufficiently worked to loosen up the suspension components and thermally set the voice coil assembly. The enclosure recommendations are based on PG's extensive knowledge and experience with the QXe line and represent the "best fit" transfer functions for the application. PG includes the T/S parameters for your experimentation. You must remember that the majority of computer modeling programs base the given transfer function on a half space prediction. The measured in vehicle SPL response will substantially deviate from this with an increased output with the lowering of frequency (20-80Hz). If your modeling program allows, determine the excursion capability of the woofer in the chosen enclosure for the power applied. A compromise must be made as to low frequency (F3) and excursion limits. Remember too, that the ports necessary can become unwieldy in size and in number relative to the enclosure size.

WOOFER SPECIFICATIONS

	QXe104	QXe108	QXe124	QXe128
R_{eVC} (DC VC re/parallel)	3.96 Ω	6.78 Ω	4.02 Ω	6.78 Ω
L_{eVC} (Inductance@1KHz)	1.15mH	1.66mH	1.31mH	1.78mH
F_0 (Res Freq)	29.95Hz	32.88Hz	28.50Hz	29.00Hz
S_d (Piston Area)	0.033m ²	0.033m ²	0.049m ²	0.049m ²
BL (Flux Length)	9.69TM	12.11TM	9.88TM	13.27TM
SPL ₀ (SPL @ 1W)	88dB	88dB	87dB	88dB
Q_{ms} (Mech Q)	5.72	6.27	6.30	6.01
Q_{es} (Elec Q)	0.50	0.60	0.73	0.69
Q_{ts} (Total Q)	0.46	0.54	0.65	0.62
V_{as} (Acous Vol)	70.15L	58.61L	106.87L	103.68L
C_{ms} (Compliance)	450 μ M/N	376 μ M/N	316 μ M/N	306 μ M/N
M_{ms} (Total Mass)	62.80g	62.36g	98.75g	98.31g
P_e (Therm Power Handling)	150W	200W	250W	250W
X_{max} (P-P Lin. Excursion)	12.1mm	11.6mm	11.6mm	13.6mm
V_c (Voice Coil Diameter)	1.5in	2.0in	2.0in	2.5in
V_{dd} (Driver Displacement)	70in ³	138in ³	224in ³	385in ³
Mounting Diameter	7 3/16in	9 3/8in	11 in	13 7/8in
Mounting Depth	3 7/8in	4 3/4in	5 1/4in	6 3/4in

ENCLOSURE RECOMMENDATION

	SEALED Vb*	VENTED			Vl	BANDPASS					
		Vb*	Fb	Vd		Vsealed*	Vvented*	Fb	Vd	Vl	
QXe104											
MUSICAL	1.50	2.25	35Hz	3"ABS	3.75"	2.00	1.00	45	3"ABS	6.75"	
SPL	0.60	1.75	45Hz	3"ABS	2.25"	1.00	1.00	53	3"ABS	4.25"	
QXe108											
MUSICAL	1.50	2.25	35Hz	3"ABS	3.75"	2.00	1.00	45	3"ABS	6.75"	
SPL	0.60	1.75	45Hz	3"ABS	2.25"	1.00	1.00	53	3"ABS	4.25"	
QXe124											
MUSICAL	2.00	2.5	35Hz	4"ABS	6.50"	3.00	1.75	40	4"ABS	8.50"	
SPL	1.00	1.50	45Hz	4"ABS	6.75"	1.75	2.00	47	4"ABS	4.25"	
QXe128											
MUSICAL	2.00	2.5	35Hz	4"ABS	6.50"	3.00	1.75	40	4"ABS	8.50"	
SPL	1.00	1.5	45Hz	4"ABS	6.75"	1.75	2.00	47	4"ABS	4.25"	

*Enclosure volumes do not account for speakers, braces or ports

ENCLOSURE CONSTRUCTION: The low frequency enclosure shape is not critical. The enclosure panels need to be rigid and air tight at all seams. Cross bracing is recommended, as is using 3/4" material. Preferably Medium Density Fiberboard (MDF). Screws or an air stapler are excellent construction fasteners when used with a strong bonding "yellow" wood working glue that can fill joint gaps. Lining the walls with Polyester batting (recommended) or bonded fiberglass 1-3" thick is sufficient. Box "stuffing" is only suitable for sealed enclosures.

USING THE ENCLOSURE RECOMMENDATION CHART: Your PG dealer has extensive technical knowledge, tools and experience needed for the design and construction necessary for your QXe application. We also recommend that you consult with your dealer for technical assistance relevant to your installation details.

The charts provided should be used as a reference when building an enclosure for your QXe speakers. Depending on the application desired, either Musical (Sound Quality) or SPL, the charts shown contain three different types of enclosure designs: sealed, vented, and bandpass. Each enclosure type provides particular performance features. For Musical needs, the bass produced will be both accurate and deep. SPL is exactly that. Higher output, but less extended bass in the lower frequencies. Sealed boxes are less complicated to construct and provide excellent low frequency response in small enclosures. Vented enclosures can be manipulated to exhibit a more extended LF output, or peaked SPL output, at the expense of a larger enclosure and slightly more complex design effort. The Bandpass enclosures are capable of very high SPL with limited bandwidth and are definitely more intensive to design.

Due to ongoing research and developments, all specifications effective 10/99 are subject to change without notice.