VWR126X Very wide range midwoofer

Features	Benefits
Thermoformed strand-oriented polypropylene cone	Self damping for lower distortion
Cast aluminum basket	Provides rigid mounting and avoids budget look of plastic or stamped steel
Copper plated dust cap	Signature CSS look
Ferrite magnet	Cost effective against neodymium
XBL^{TM}	The most linear multigap motor structure
RevSurround^{TM}	Allows greater stroke, better linearity, more surface area on the cone
Copper sleeve on pole with aluminum shorting rings	Inductance control and lowering
Aluminum former	Improved heat dissipation
Closed foam gasket, screws, gold plated disconnects	Everything needed for easy installation

PARAMETERS These reflect our ongoing commitment to provide accurate data, The Fs may change due to soft part variation or break in time. Recommended that testing be done after operation of at least 100 hours. Measured at 6 volts stimulus to reflect actual operating conditions. Measurements taken at milliwatt signal levels may vary.

PARAM	VALUE	PARAM	VALUE	PARAM	VALUE
Fs	65.2 Hz	Vas	4.64 liters	Pnom	100W
Qms	2.38	SPL	84.1 dB @ 1W, 1m	Pmax	150W
Qes	0.78			VCID	25.4mm
Qts	0.59			VC height	6mm
BL	4.39 N/A	Znom	8 Ω	VC Layers	4
Rms	1.02	Zmin	7.87 Ω	Gaps	2 x 2.75mm
Mms	5.83 grams	Zmax	27 Ω	Xmax (Klippel)	5.9mm
Cms	1.02 mm/N	DCR	6.31 Ω	Xmax (limit)	10.4mm
Sd	56.75 cm²	Le	0.17 mH	Weight	960 grams

November 1, 2013 update

The tests on the following 2 pages were performed by Red Rock Acoustics using Klippel and demonstrate the difference in signal strength in determining parameters.

Small signal Parameters

Electrical Parameters

Re	6.62	Ohm	electrical voice coil resistance at DC
Krm	0.0038	Ohm	WRIGHT inductance model
Erm	0.67		WRIGHT inductance model
Kxm	0.0127	Ohm	WRIGHT inductance model
Exm	0.55		WRIGHT inductance model
Cmes	270.31	µF	electrical capacitance representing moving mass
Lces	8.76	mH	electrical inductance representing driver compliance
Res	18.33	Ohm	resistance due to mechanical losses
fs	103.4	Hz	driver resonance frequency

Mechanical Parameters   (using laser)

Mms	5.786	g	mechanical mass of driver diaphragm assembly including air load and voice coil
Mmd (Sd)	5.303	g	mechanical mass of voice coil and diaphragm without air load
Rms	1.168	kg/s	mechanical resistance of total-driver losses
Cms	0.409	mm/N	mechanical compliance of driver suspension
Kms	2.44	N/mm	mechanical stiffness of driver suspension
Bl	4.627	N/A	force factor (Bl product)

Loss factors

Qtp	0.882	total Q-factor considering all losses
Qms	3.219	mechanical Q-factor of driver in free air considering Rms only
Qes	1.163	electrical Q-factor of driver in free air considering Re only
Qts	0.855	total Q-factor considering Re and Rms only

Other Parameters

Vas	1.8656	l	equivalent air volume of suspension
n0	0.170	%	reference efficiency (2 pi-radiation using Re)
Lm	84.52	dB	characteristic sound pressure level (SPL at 1m for 1W @ Re)
Lnom	82.33	dB	nominal sensitivity (SPL at 1m for 1W @ Zn)
rmse Z	2.95	%	root-mean-square fitting error of driver impedance Z(f)
rmse Hx	2.64	%	root-mean-square fitting error of transfer function Hx (f)
Series resistor	0.00	Ohm	resistance of series resistor
Sd	56.75	cm²	diaphragm area

Large Signal Parameters

Note: for accurate small signal parameters, use LPM module

Delta Tv = Tv-Ta		44	0	0	K	increase of voice coil temperature during the measurement
Xprot	6.6	6.6	1.6	mm	maximal voice coil excursion (limited by protection system)

Re (Tv)   7.73   6.62   6.62   Ohm   (imported) voice coil resistance considering increase of voice coil temperature Tv

Le (X=0)   0.18   0.18   0.19   mH   voice coil inductance at the rest position of the voice coil

L2 (X=0)   0.78   0.78   0.49   mH   para-inductance at the rest position due to the effect of eddy current

R2 (X=0)   0.52   0.52   0.72   Ohm   resistance at the rest position due to eddy currents

Cmes (X=0)   337   337   300   μF   electrical capacitance representing moving mass

Lces (X=0)   19.35   19.35   10.18   mH   electrical inductance at the rest position representing driver compliance

Res (X=0)   17.91   17.91   15.21   Ohm   resistance at the rest position due to mechanical losses

Qms (X=0, Tv) 2.36   2.36   2.61   mechanical Q-factor considering Rms only

Qes (Tv)   0.82   0.70   1.03   electrical Q-factor considering Re (Tv) only

Qts (X=0, Tv)   0.61   0.54   0.74   total Q-factor considering Re (Tv) and Rms only

fs   62.3   62.3   91.1   Hz   driver resonance frequency

Mms   5.786   5.786   5.786   g   (imported) mechanical mass of driver diaphragm assembly including voice-coil and air load

Rms (X=0)   0.959   0.959   1.269   kg/s   mechanical resistance of total-driver losses

Cms (X=0)   1.13   1.13   0.53   mm/N   mechanical compliance of driver suspension at the rest position

Kms (X=0)   0.89   0.89   1.90   N/mm   mechanical stiffness of driver suspension at the rest position

Bl (X=0)   4.63   4.63   4.63   N/A   (imported) force factor at the rest position (Bl product)

Vas   5.1134 5.1134 2.3932 l   equivalent air volume of suspension

N0   0.145   0.169   0.169   %   reference efficiency (2Pi-sr radiation using Re)

Lm   83.8   84.4   84.4   dB   characteristic sound pressure level

Sd   56.75   56.75   56.75   cm²   diaphragm area

Ø126.0mm / 4 15/16"

Ø115.5mm / 4 17/32"

Ø8.5mm

Ø4.3mm

Ø126mm / 4 61/64"

5.7mm / 3/16"

49mm / 1 59/64"

54.7mm / 2 7/64"

Ø 95mm / 3 47/64"