

MLSSA measured the impedance of a power resistors in the audio band. MLSSA calculates inductance using a curve fit against a perfect inductor model.

The inductances shown below are calculated from 10kHz to 20 kHz, and with cross correlation factor shown, R=1.000 being absolutely perfect fit to an inductor model. The curve fit was taken above from 10kHz to 20kHz as there there would be too little impedance shift at lower frequencies to get a good calculation. Straight wire was measured as a control to show the accuracy of MLSSA's measurement.

The closer "R" to 0.5 and the closer the estimation is to random match (ie its non-inductive).

The "relative loss" column calculates the loss due the inductive impedance rise at 20kHz relative to 100Hz, assuming the inductor is loaded by 8 ohms.

Part Measured	100 Hz Impedance (Ω)	20kHz Impedance (Ω)	Relative loss (dB) at 20kHz into 8 ohm load	Inductance (μ H)	R
2" 12 guage copper stranded wire	0.005	0.03	0.03	0.21	0.986
3' of AudioStream Ultraline AC-50 12 gauge stranded copper straight wire	0.013	0.177	0.18	1.35	0.999
3' of Home Depot 18 guage copper stranded	0.08	0.218	0.15	1.27	1
Radio Shack 1 Ω , 10W sand cast (20yrs old)	1.069	1.072	0.00	0.469	0.876
Solen Lynk Metal Oxide 1.5 Ω , 10W, 5%	1.5	1.53	0.03	0.468	0.772
Vishay Dale RH-25 wirewound 5 Ω , 25W, 1%	5.13	5.26	0.09	2.25	0.884
Solen Lynk Metal Oxide 5.6 Ω , 10W, 5%	5.65	5.78	0.08	1.68	0.772
Dale RW67 wirewound 6.8 Ω , 5W, 5%	6.85	7.03	0.10	2.9	0.878
Dale CP-5 wirewound sand cast 8 Ω , 5W, 10%	8.46	8.67	0.11	2.8	0.819
TRW 8318 wirewound sand cast, 8 Ω , 5W, 10%	8	8.2	0.11	2.65	0.811
Dale RH-50 wirewound, 8 Ω , 50W, 1%	8.1	8.34	0.13	3.68	0.88
Vishay Dale RS-10 wirewound 10 Ω , 10W, 1%	10.08	10.37	0.14	7.39	0.954
Vishay Dale CW-10 wirewound 10 Ω , 10W, 5%	9.96	10.23	0.13	5.85	0.932
Dale CP-10 wirewound sand cast 10 Ω , 10W, 10%	10.14	10.42	0.13	3.54	0.837
Prel-Ohm wirewound sand cast 27 Ω , 10W	27.9	28.8	0.22	12.3	0.852
Vishay Dale RS-10 wirewound 33 Ω , 10W, 1%	33.34	34.56	0.25	21.6	0.912
Dale CW-5 wirewound 50 Ω , 5W, 5%	50.1	52.14	0.30	32.1	0.889
Dale RS-5 wirewound 402 Ω , 5W, 1%	407.84	444.47	0.73	1160	0.866

Higher resistor value have higher inductance (all else equal).

Higher resistor power ratings have higher inductance (all else equal).

Sand cast wirewounds seem no worse for inductance than standard wirewounds.

All inductances at 50 ohms or below were fairly benign.