TABLE I. Output signals for z-cut lithium niobate gauges relative to quartz gauges.

Sample	$\rho_0 c$ [a] (g cm^{-2} μsec^{-1})	i_L/i_Q [b]
PMMA [c]	0.35	5.2
6061-T6 aluminum	1.74	6.7
Mild steel	4.67	8.3
Tungsten	10.0	9.1

[a]Nominal acoustic impedance values are shown for illustrative purposes. ρ_0 is the density and c is the dilatational wave velocity.

[b]i_L and i_Q are currents from z-cut lithium niobate and x-cut quartz, respectively, for common gauge dimensions and common stress in the sample. The ratio is calculated in the low-stress limit utilizing the linear acoustic mismatch $\sigma_g = 2Z_g(Z_g + Z_s)^{-1}\sigma_s$, where σ_g and σ_s are the stress in the gauge and the incident stress in the sample, respectively. Similarly, Z_g and Z_s are acoustic impedances, $\rho_0 c$, of the gauge and sample. $Z_Q = 1.52$ g cm^{-2} μsec^{-1}, and $Z_L = 3.4$ g cm^{-2} μsec^{-1}.

[c]Polymethyl methacrylate.

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