



FIG. 5.7 Temperature error, $(T_{\text{apparent}} - T_{\text{actual}})/T_{\text{actual}}$ (%), (absolute value) of common cryogenic thermometers arising from a magnetic field of 2.5 T. For most sensors, the relative magnetic-field errors diminish as temperature increases. Diode sensors are generally the most affected by magnetic field. Capacitance thermometers are the least affected, but they have poor reproducibility. Cernox™ and carbon-glass sensors are the best thermometers for magnetic field applications over the entire cryogenic range from 1 K to 300 K, whereas platinum resistors are also excellent above liquid-nitrogen temperature. (GaAlAs diode data are for 2.0 T rather than 2.5 T.) (Compiled from data supplied by Lake Shore Cryotronics 1995 and 1991, product literature, and Rubin et al. 1986.)