Laser light is confined in a hollow waveguide between two highly reflective mirrors. This waveguide cavity is used to conduct Cavity Ringdown Absorption Spectroscopy of loss mechanisms in the cavity including absorption or scattering by gases, liquid, solids, and/or optical elements.

23 Claims, 8 Drawing Sheets
Fig. 1

Entrained Gas

Laser Source

Gas Cell Volume

Gas Analyte

Mirror, R1

Mirror, R2

IR Detector

Fig. 2

\begin{align*}
    n_{x=0} &= 1 \\
    n_{x \text{ odd}} &= 3.4 + i \times 10^{-5} \\
    n_{x \text{ even}} &= 1.4 + i \times 10^{-7}
\end{align*}