

## GLASS OPTICS IN HEALTHCARE DIAGNOSTICS

Optics and related technologies now have a significant presence in healthcare diagnostics. Optical applications provide a non-contact means for measuring fluid velocity and performing chemical analysis.

Glass has the unique ability to be formulated for the transmission or absorption of light for a specific purpose. A common application includes current Point-of-Care instrumentation that can utilize a glass capillary tube for blood samples to measure hematological parameters across specific wavelengths.

Glass is an ideal substrate for optical applications because it:

- Can be fully transparent in the visible spectrum or tailored to absorb specific wavelengths,
- Has optical characteristics (transmission level / index of refraction) that are not altered during or after processing,
- Will not discolor through the visible range,
- Can be produced in various geometries (tubing/rod) that can provide optical effects through lensing/magnification without changing its wavelength transmission characteristics, and
- Has a chemical composition that can be tailored to absorb laser light for creating a hermetic seal in electronic applications.

Additionally, the optical properties of glass can support other applications that include:

- Flow Cytometry cell analysis for clinical diagnostics and pharmaceutical drug development,
- Variable drug delivery applications,
- Glass tube fluorescent marking for identification and information needs, and
- UV adhesive bonding through transparent glass.

As the healthcare market embraces non-invasive diagnostic methods, glass and its optical properties offer unique features and benefits to serve this emerging market.