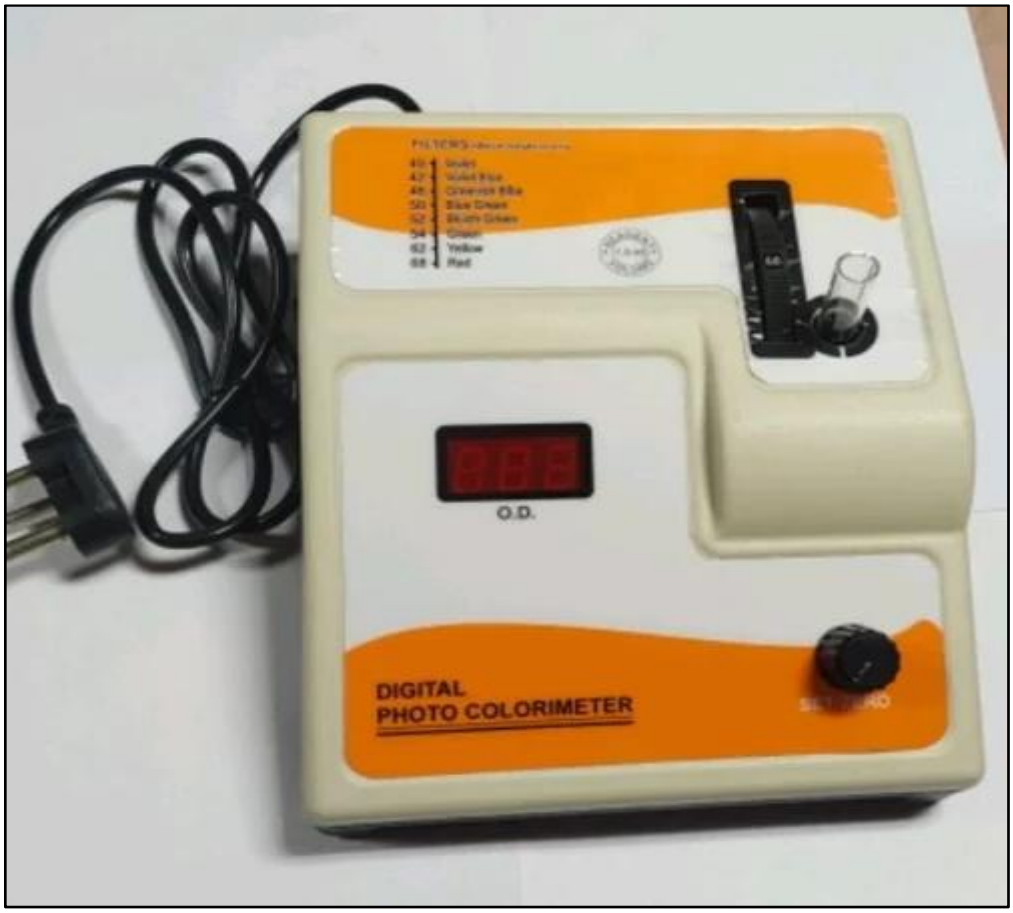
Digital photo colorimeter



A **digital photo colorimeter** is an analytical instrument used to measure the concentration of a substance in a solution based on its color intensity. It works by passing light through a sample and measuring the absorbance of specific wavelengths of light. Key features and applications include:

- **Principle**: Based on **Beer-Lambert's Law**, which states that the absorbance of light is proportional to the concentration of the absorbing substance in the solution.
- **Components**: Consists of a light source, optical filters (to select specific wavelengths), a sample cuvette, and a photodetector to measure light intensity.
- **Digital Output**: Provides quantitative measurements of absorbance or concentration, displayed on a digital screen or connected to software for analysis.
- **Applications**:
    - Water quality testing (e.g., measuring chlorine, pH, or turbidity).
    - Chemical analysis in laboratories.
    - Food and beverage industry (e.g., checking color consistency).

    - Educational experiments in chemistry and biology.
- **Advantages**: Easy to use, portable, and provides quick, accurate results for color-based analysis.

It is commonly used in fields where colorimetric analysis is required for concentration determination.