

Theory of Technology Job Aid



The CLINITEK Status®+ Analyzer optical and measuring systems consist of six light emitting diodes, a light guide, a mirror, a lens and a detector.

- Light from the LEDs travels along the light guide and reflects off the calibration bar, strip pad, or cassette onto the mirror at specific wavelengths (470 nm, 525 nm, 565 nm, 625 nm, 660 nm and 845 nm).
- Intensity of the reflected light is dependent upon the degree of color change in the test pad and is directly related to the concentration of the analyte being tested.
- Light is directed through an aperture on the lens and then focused onto the detector.
- Detected light intensity is converted into electrical impulses, which are processed by the instrument's microprocessor and converted into clinical results.

How Strip Tests are Read

The test table and test strip are pulled slowly into the analyzer, which then reads the calibration bar. The analyzer then pulls the test table into the instrument and confirms the presence of the test strip before closing the shutter. The test table positions the reagent test pads in the "read area" and checks the electronics and signals. It then takes reference readings of the white calibration bar at all six wavelengths (470 nm, 525 nm, 565 nm, 625 nm, 660 nm, and 845 nm). All test pads are read simultaneously.

The light reflected from the test pad is dependent upon the degree of color change in the pad and is directly related to the concentration of the particular constituent in the urine.

The reference and test readings are used to determine the presence and/or semi-quantitative amount of each constituent in the urine sample.



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How Cassette Tests are Read

The test table and cassette are pulled into the analyzer, which confirms the presence of the cassette. The table then pulls completely into the instrument, closing the shutter. The instrument positions the table and checks the electronics and signals. It then takes reference readings of the white calibration bar on the test table.

The detector scans the “read area” at two wavelengths (525 nm and 845 nm) for the test, reference, and control lines that form after urine has been applied. The reference and control lines always form, whereas the test line forms only if hCG is present in the sample. The test and references readings are used to determine the presence or absence of hCG in the urine sample.

