



## TECH BULLETIN

IR REFLECTIVITY of  
**Vikuiti™ Clear Card Filter**

## PURPOSE OF BULLETIN:

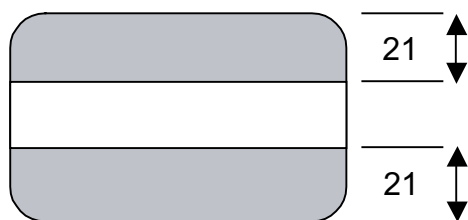
The purpose of this document is to communicate the procedure which is used to measure the IR Reflectivity of specified areas of a card test sample that uses the Vikuiti™ Clear Card Filter. This test is required for card applications where card detection is based on light transmittance between LED lights emitted at 860 nm and 950 nm and a detector.

## TEST APPARATUS:

Suitable apparatus for reflectivity measurements are represented by spectrophotometers with an integrating sphere light diffusing chamber capable of measuring opacity over a spectral range of 400 nm to 1200 nm with an aperture of 8 mm.

## PROCEDURE:

- Pre-condition the sample card in an environment at a temperature of  $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$  ( $73^{\circ}\text{F}\pm 5^{\circ}\text{F}$ ) and a relative humidity of 40-60% before testing and conduct the test in this environment.
- Calibrate the spectrophotometer following the manufacturer's instructions.
- Conduct tests within the areas of the card shown shaded in the figure below.

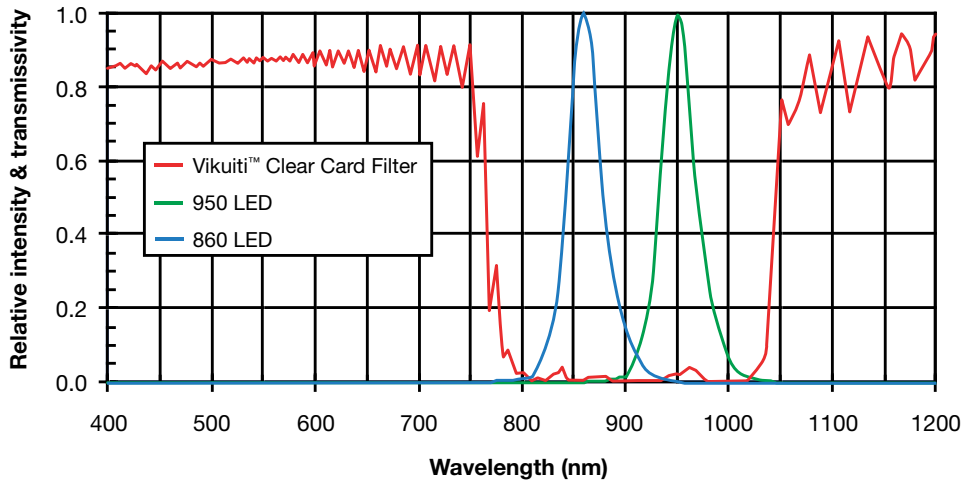


- Record the transmissivity over the range of wavelengths 400 nm to 1200 nm, taking measurements at wavelength intervals of 20 nm.

**NOTE:** Drawing not to scale and dimensions are in millimeters.

## REPRESENTATIVE CARD DATA USING VIKUITI™ CLEAR CARD FILTER:

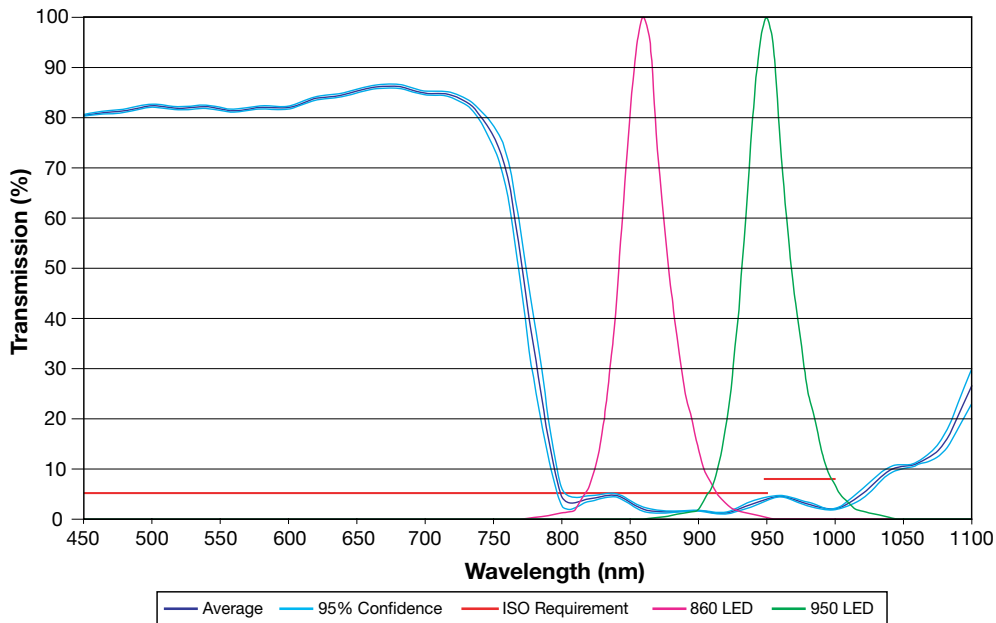
A typical IR Reflectance spectrum for the Vikuiti clear card filter is shown in the following figure:



Typical statistical performance to specification is shown below:

### Vikuiti™ Clear Card Filter Transmission Spectrum

Data generated by independent lab for 3M.



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