

MicroTouch Solar Touch Screens



MicroTouch™ Near Field Imaging (NFI) touch screens are a preferred touch solution for applications that require durability in unsupervised or outdoor applications. The NFI touch screen solution is now available with Vikuiti™ Solar Reflecting Film (SRF), a non-metallic multi-layer film technology that reflects infrared (IR) solar energy while transmitting visible light. Typical applications include displays with direct exposure to sunlight, such as outdoor kiosks, outdoor ticketing devices, industrial devices, outdoor web phones and ATM machines. This document explains the features and benefits of an NFI touch screen laminated with Vikuiti SRF.

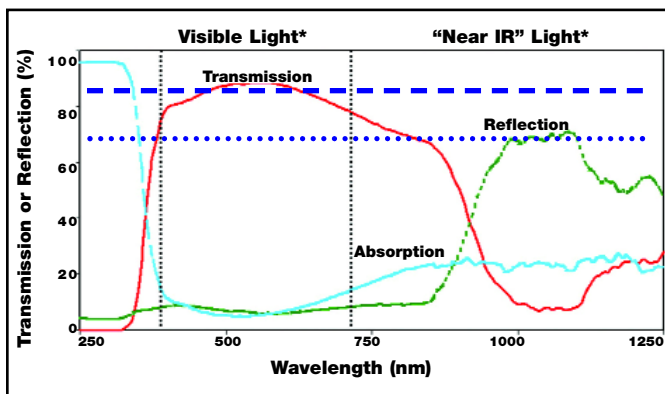
Near Field Imaging with Solar Reflecting Film

A MicroTouch Near Field Imaging (NFI) touch screen with Vikuiti Solar Reflecting Film (SRF) reflects a high percentage of heat-producing infrared (IR) light and permits high transmission of visible light. Because the SRF film is laminated within the NFI touch sensor, the film is protected from scratches, general wear, and many environmental conditions.

3M Innovation: High Transmission of Visible Light with Solar Reflecting Film

For years, manufacturers of various outdoor technologies have tried to reflect as much IR energy as possible while maximizing the transmission of visible light. The non-metallic properties of SRF allow significantly higher visible light transmission than is generally possible with metallic films.

Figure 1: Typical Transmission and Reflection of Light: NFI Touch Screen with Vikuiti Solar Reflecting Film (0 degrees of Incidence)*



--- In the visible light phase of the spectrum, 89% of visible light gets through

..... In the IR phase of the light spectrum, 71% of harmful IR is reflected

* The visible light spectrum is generally considered to be in the 400-700nm range and the Near IR spectrum begins at 700nm. At 550nm (the standard center of the visible spectrum), transmission of visible light is high. In the IR range, there is a significant drop in transmission and a corresponding jump in reflection.



Advantages of NFI Touch Screens with Solar Reflecting Film

Maximize reflection (and limit absorption) of IR energy. SRF technology is designed to maximize reflection of the IR part of the spectrum. This portion of the IR (sometimes called “near IR”) is most responsible for heating. See Figure 1.

Provide high transmission of visible light. The polymer design (a multi-layer stack-up of film) of SRF helps provide high transmission of visible light (Figure 1), helping to ensure good visibility of the display.

Durable. Because SRF is laminated within the NFI touch sensor, the film is protected from scratches, general wear, and environmental conditions.

Will not interfere with electromagnetic signals from the touch screen or display.

Comparing Visible Light Transmission of NFI Touch Screens With and Without Solar Reflecting Film

Table 1 compares typical visible light transmission for the NFI touch screen model with Solar Reflecting Film and without Solar Reflecting Film and shows that both models offer high transmission.

Table 1: Visible Light Transmission for NFI Touch Screen Models With and Without Solar Reflecting Film

NFI Touch Screen Model	Visible Light (at 550nm)*		
	Transmission	Reflection	Absorption
NFI-xxxx-AG60-AR-SRF NFI with Solar Reflecting Film	89	8	3
NFI-xxxx-AG60-AR NFI without Solar Reflecting Film and with anti-reflective coating	92	6	2

**The transmission and reflection tolerance is +/- 2% Measurements taken at 0 degrees incidence angle*



Courtesy of Radiant Systems

Radiant Systems utilizes NFI with SRF in outdoor ticketing kiosk

"The Radiant Outdoor Ticketing Kiosk enables cinema operators to provide an innovative and cost-effective way to offer convenient, fast ticketing to patrons before they enter the theatre lobby," says Troy Larson, kiosk product manager at Radiant Systems, an Atlanta-based provider of point-of-sale, self-service kiosks and back-office technology.

The K600 with NFI technology has given Radiant an edge over its competitors as well. "The outdoor kiosk enables operators to place kiosks where they reach more patrons and add the most value," says Larson. "Our customers are pleased, and they are ordering more units."

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NFISRF-0304