

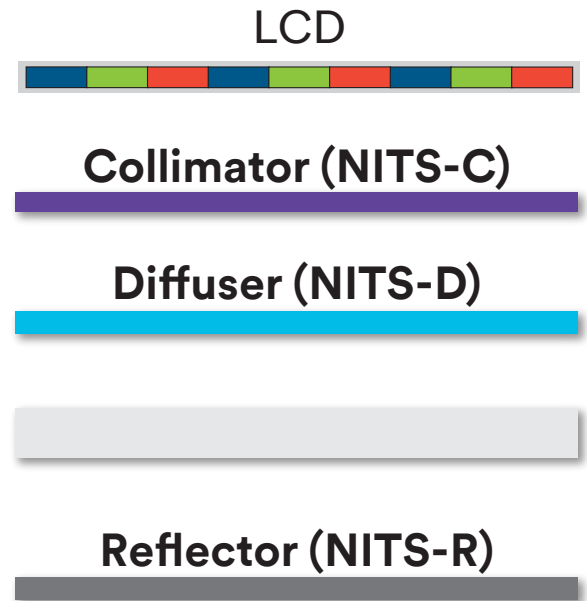
# 3M™ Near Infrared Transmission System (NITS)

**Collimator (NITS-C)**

**Diffuser (NITS-D)**

**Reflector (NITS-R)**

A system to allow biometric security in any LCD smartphone.



## Product Description

3M Near Infrared Transmission System (NITS) allows near infrared camera sensors to detect and read fingerprint for quick and secure access into the phone.

The system has three components: collimator; diffuser; and reflector.

The new optimized ULS system provides 97% brightness or more, improved viewing angle, and equal thinness compared to the conventional LCD system.

System adapts to full screen or notch designs as well as providing under LCD sensor design with transmissions at 940 nm applicable for fingerprint biometric sensing.

## Physical Characteristics

### 3M NITS Collimator (NITS-C) features:

Diffuse coating on panel side

~45% visible haze

~65% 940 nm specular T

Anti wet-out features on panel and backlight side

~85 μm thickness

### 3M NITS Diffuser (NITS-D) features:

Diffuse coating on panel side

~79% visible haze

~58% 940 nm specular T

Anti wet-out feature on backlight side

~60 μm thickness

### 3M NITS Reflector (NITS-R) features:

~98% visible reflectivity

~83% 940 nm specular T

Anti wet-out feature on panel side

~85 μm thickness

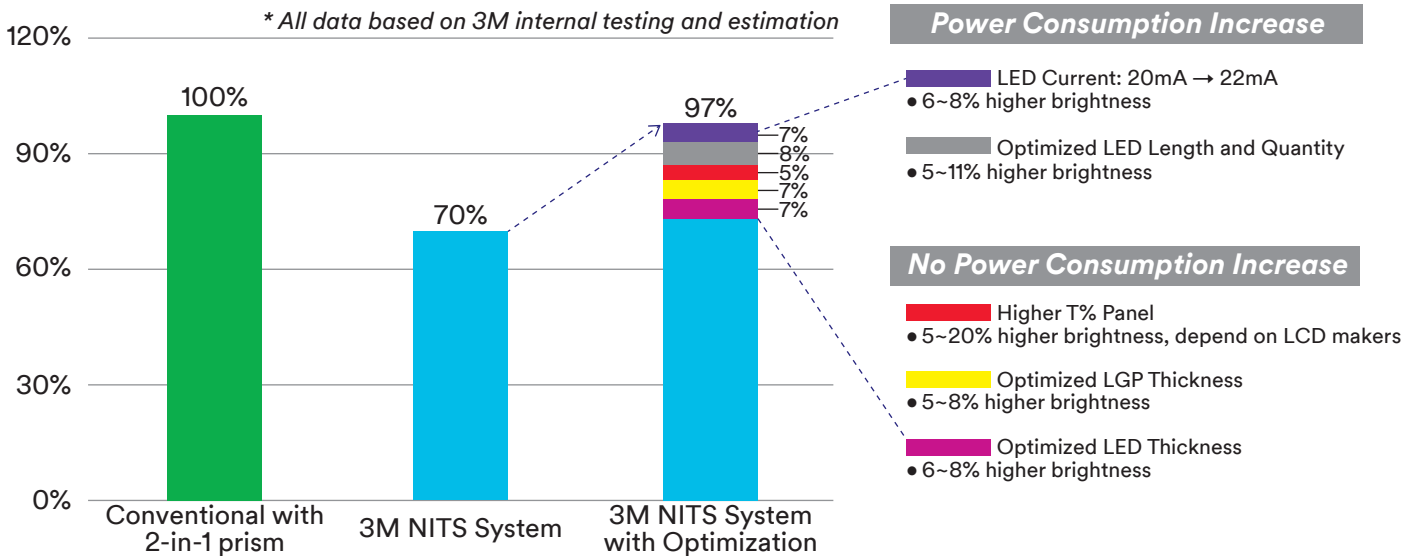
*3M NITS-C reflects light that would otherwise be absorbed by the panel's absorbing polarizer.*

*Its design also provides polarized "collimation" allowing the removal of prism films that are difficult to image through.*

*3M NITS-D utilizes 3M coating technology to optimize visible light scattering similar to conventional diffuser films and minimizes 940 nm scattering for exceptional imaging capability.*

*3M NITS-R is specifically designed to reflect >98% of the backlight's visible spectrum for optimal display brightness while transmitting approximately 80% of 940 nm light for imaging applications.*

## System Brightness Optimization



## Durability Performance to Environmental Conditions

The following environmental tests were conducted in the 3M laboratory under the conditions specified without any appreciable deterioration in optical quality.

LGP Design	Display Visual Quality
40 µm v-cut pitch	Good
60 µm v-cut pitch	Good
80 µm v-cut pitch	Good
120 µm v-cut pitch	Good
140 µm v-cut pitch	Good

### Storage

- Avoid applying pressure or resting objects on the product to prevent marking, denting, or deforming the surface.
- Wear gloves to prevent fingerprints or nail marks when handling.
- Product needs to be unpacked and handled in a clean-room facility.
- Product must be protected from light exposure.
- Store in sealed, foil bag under -20°C to 30°C and less than 70% relative humidity. If removed from cold storage, ensure no condensation on packaging.

### Regulatory

For regulatory information about this product, please contact your 3M representative.

### Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes reliable, but the accuracy or completeness of such information is not guaranteed.



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