

## Advantages of Curved MicroTouch™ ClearTek™ in Gaming Replacement

Casino managers and game manufacturers consider high performance and reliability of the utmost importance in their touch screen buying decision. Ensuring player satisfaction and system uptime is also important to 3M. We want to ensure that the right decision is made, whether buying new machines or replacement components. Take advantage of our expertise in the field of touch by understanding the technical decisions facing you.



### Ease of Replacement

- Speed of replacement is critical to casino floor maintenance.
- 3M's factory-linearized ClearTek touch screens will be accurate within 1% True Positional Error (TPE) from the moment they are dropped in (after video alignment).
- Touch International touch screens require manual 25-point linearization after drop-in to be as accurate (after video alignment). This requires a separate computer set-up with specialized software. Manual linearization can introduce error if not performed correctly.

### Surface Wear Functional and Cosmetic Endurance

- Survival of the surface of a capacitive touch screen is critical to casino gaming. If the surface wears out, touch doesn't happen. Based on customer feedback, in 1995 we decided to add a hard coat to our ClearTek product due to the harsh environment and unpredictability of vandalism in casinos.
- The ClearTek™ hard coat is proven to be six times more durable using MIL-C-675C test than Touch International and has offered remarkable protection on millions of units shipped over the past decade into the casino gaming market.

### Optical Quality

- Using ClearTek will result in consistent optical characteristics between units placed side by side, helping to prevent a change of play for better looking optics. The statistical variation of 3M ClearTek's optical haze, clarity, and gloss is significantly less than Touch International's TI-C.
- Although similar in light transmission\* properties, 3M ClearTek has three times less haze\* and 4.4% higher clarity\* on average than Touch International TI-C. TI-C tested 23% less gloss\* than 3M's most popular gaming touch screen. If low gloss is important, 3M has alternative surface finishes that can minimize gloss.

*\* Definitions of optical characteristics are located in the "Optics" section on page 2.*

### Warranty

- 3M does not warrant the performance of the total touch system when a non-3M touch component is connected to a 3M touch component.
- 3M's warranty separately covers a 3M touch screen (5-years) and a 3M controller (5-years) and covers an entire system when used together.
- If another vendor's touch screen damages a 3M controller, 3M does not warrant that 3M controller.

### 3M Reputation

- The leading touch component provider for gaming manufacturers
- Financially stable (\$18 billion company in 2003)
- Award-winning customer service and support
- Extensive worldwide gaming expertise

## 3M MicroTouch™ ClearTek™ Capacitive (Curved) vs. Touch International TI-C Capacitive (Curved)

A statistically valid number of samples of each product were tested (using a 3M controller) including 17 inch and 19 inch curved units for both vendors to best represent a replacement scenario. The products tested comparatively except for the following:

Test	Conclusion	3M ClearTek™	Touch International TI-C
<b>Ease of Replacement</b>			
Out-of-box Test for Accuracy (no manual linearization)	ClearTek factory linearization eliminates need for manual on-site linearization.	99% within 1% TPE* 0% greater than 2% TPE* <i>* TPE = True Positional Error</i>	30% within 1% TPE* 9% greater than 2% TPE* 100% within 1% TPE* after 25 point manual linearization.
<b>Surface Wear</b>			
Accelerated Wear Endurance Test*	ClearTek tested six times more durable than TI-C under accelerated wear conditions.	2742 (ave) rubs before failure	393 (ave) rubs before failure
<i>*Based on Severe Abrasion Test, MIL-C-675C, where front surface is rubbed over same path with standard MIL-E-12397 eraser at a force of 2.0-2.5 pounds continuously applied until functional failure.</i>			
Single Location Endurance Test		3M Specification: 225 million touches in a single location using a 5/8" diameter silicone finger with a 350g load at 2 touches per second.	Touch International Specification: Electrical Touch Durability: 50 million touches in a single location. Cosmetic Touch Durability: 250 million touches in a single location.
<b>Optics</b>			
<b>Haze</b>	ClearTek has three times less haze than TI-C.	2.43 (ave) Standard deviation: 0.3022	7.66 (ave) Standard deviation: 2.3345
<i>High haze results in a cloudy appearance.</i>			
<b>Clarity</b>	ClearTek has 4.4% higher clarity on average than TI-C.	98.3 (ave) Standard deviation: 0.286	93.9(ave) Standard deviation: 1.381
<i>High clarity results in a crisper image.</i>			
<b>Transmission</b>	ClearTek has slightly better optical transmission than TI-C.	80.0 (ave) Standard deviation: 0.251	78.9 (ave) Standard deviation: 0.384
<i>High transmission results in a brighter image.</i>			
<b>60° Gloss</b>	TI-C has 23% less gloss on average than ClearTek.	144.9 (ave) Standard deviation: 3.01	111.6 (ave) Standard deviation: 14.41
<i>High gloss results in increased surface reflection.</i>			

NOTICE: Given the variety of factors that can affect the use and performance of a 3M Touch Systems Product (the "Product"), including that solid state equipment has operation characteristics different from electromechanical equipment, some of which factors are uniquely within User's knowledge and control, it is essential that User evaluate the product and software to determine whether it is suitable for User's particular purpose and suitable for User's method of application. 3M Touch Systems' statements, engineering/technical information, and recommendations are provided for User's convenience, but their accuracy or completeness is not warranted. 3M Touch Systems products and software are not specifically designed for use in medical devices as defined by United States federal law. 3M Touch Systems products and software should not be used in such applications without 3M Touch Systems' express written consent. User should contact its sales representative if User's opportunity involves a medical device application.

IMPORTANT NOTICE TO PURCHASER: Specifications are subject to change without notice. These 3M Touch Systems' Products and software are warranted to meet their published specifications from the date of shipment and for the period stated in the specification. **3M Touch Systems makes no additional warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose.** User is responsible for determining whether the 3M Touch Systems Products and software are fit for User's particular purpose and suitable for its method of production, including intellectual property liability for User's application. If the Product, software or software media is proven not to have met 3M Touch Systems' warranty, then 3M Touch Systems' sole obligation and User's and Purchaser's exclusive remedy, will be, at 3M Touch Systems' option, to repair or replace that Product quantity or software media or to refund its purchase price. 3M Touch Systems has no obligation under 3M Touch Systems' warranty for any Product, software or software media that has been modified or damaged through misuse, accident, neglect, or subsequent manufacturing operations or assemblies by anyone other than 3M Touch Systems. **3M Touch Systems shall not be liable in any action against it in any way related to the Products or software for any loss or damages, whether non-specified direct, indirect, special, incidental or consequential (including downtime, loss of profits or goodwill) regardless of the legal theory asserted.** (7/02)



3M Touch Systems  
3M Optical Systems Division  
300 Griffin Brook Park Drive  
Methuen, MA 01844 USA  
1-866-407-6666

Worldwide Manufacturing Plants:  
Methuen, Massachusetts  
Milwaukee, Wisconsin  
Vancouver, BC Canada

For more information on 3M touch products,  
visit [3Mtouch.com](http://3Mtouch.com)

MicroTouch and ClearTek are trademarks of 3M. CTCOMPARE-0504