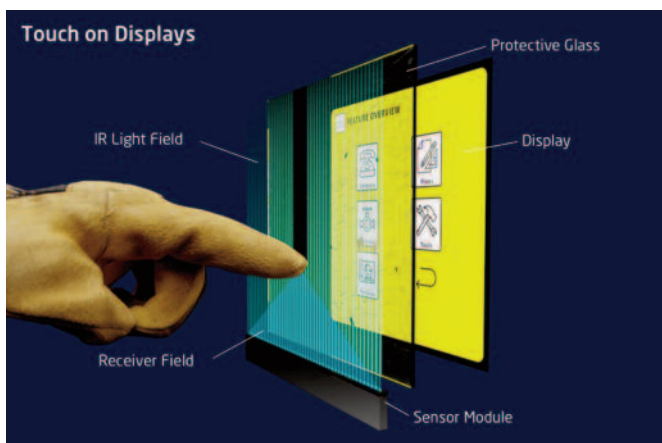


Play it from the Rough

Neonode® zForcetouch interaction gives you total control—even when you're wearing gloves.

Add versatility and performance to your equipment by including zForce optical sensing technology to any display or surface—even in the most demanding environments.

Don't settle for ordinary touch controls or display panels when you can design in a reliable, rugged and economical zForce into your next product today!



Climate Independent

Outfit your display for bad weather or dirty environments with easily adjustable detection distance.



Gloves On!

Neonode Touch Sensors work with all gloved hands—regardless of glove material or thickness.



Light Resistant

Neonode Technology works in environments with intense or glaring light without any aging effect.



No Electromagnetic Interference (EMI)

Neonode Sensors provide reliable interaction without EMI issues in sensitive environments.



Temperature Robustness

Neonode Touch Sensors add interaction to any surface in hot or cold temperatures without degradation.

Over 64 million consumer products and 3 million cars have used zForce. Contact your regional Neonode Sales Representative to design zForce optical Sensors into your next application.



www.neonode.com

zForce Basic Principals, Performance & Technical Specifications

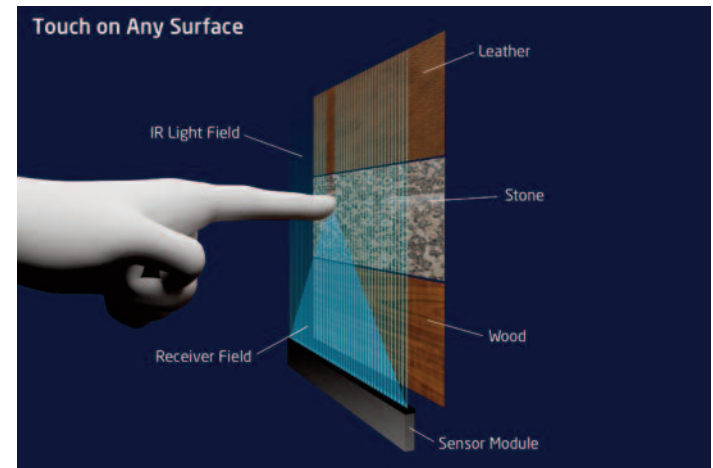
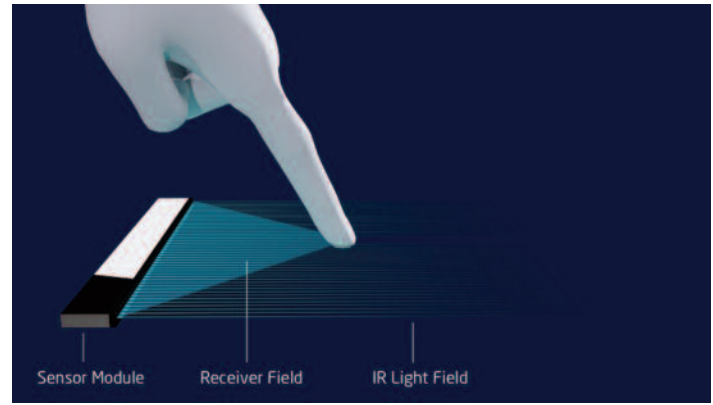
Neonode zForce (Zero-Force) optical reflective platform is based on light reflection technology, integrating optics and electronics in a thin strip along one side of an intended interactive area, creating a 2-dimensional interactive plane.

Neonode optical reflective technology interacts with the position and movement of any reflective object within its range.

It enables reliable touch interaction on any display or surface, with any overlay/protective front cover. Works with any input, including gloves, wet and greasy hands.

Designed for implementation in harsh environments, Neonode rugged solutions enables robust and reliable high speed touch sensing without EMI issues for ruggedized applications at a minimal system cost.

zForce Sensor Touch Interaction



Technical Specifications:

Item	Sensor Variant	Specifications	
Module Size (L x H x W)	0° Type	L x 3.46 x 14.5 mm	(L depending on product variant)
	90° Type	L x 3.46 x 15.45 mm	(L depending on product variant)
Power Consumption I2C Interface Active mode (100 Hz)	72 mm Sensor	57 mW	
	208.8 mm Sensor	80 mW	
	345.6 mm Sensor	104 mW	
Power Consumption I2C Interface Active mode (25 Hz)	72 mm Sensor	44 mW	
	208.8 mm Sensor	45 mW	
	345.6 mm Sensor	47 mW	

Touch Performance Specifications

Item	Specifications
Input methods	Finger, hand or glove
Minimum object size (diameter)	5 mm
Number of touch objects	1,2, or more (depending on application)
Touch accuracy	<5 mm for sensors >180 mm <7.5 mm for sensors <180 mm
Touch Resolution	0.1 mm
Touch activation force	0 N (No activation force required)
Touch active area	Up to 345.6 x 208.5 mm
Response time	16-46 ms (initial touch, at 36 Hz in idle mode) 10 ms (continuous tracking at 100 Hz in active mode)
Scanning frequency	Configurable up to 900 Hz, depending on product variant