



Battlefield LIVE

OPTIK SENSOR FACT SHEET

Optik Sensors

If you can see 'em / you can shoot 'em

A key element of live gaming is the sensor system. The sensors are an important factor in creating an enjoyable experience for gamers. At its heart, Battlefield LIVE is a shooting game, so gamers want to see they have made hits. Combined with S*A*T*R's real-time hit feedback the Optik sensors make for authentic combat entertainment.

Each Battlefield Sports' gaming gun includes an integrated Optik sensor system. The system has three sensor domes: one placed on the forehead, one on the center of the back of the head, and one on the gun barrel. When the sensor system receives a digital signal, the gaming gun takes a "hit" and the health reduces by one "hit point." Years of commercial experience has shown that the most important element of live gaming is the participants think the game is fair. With Battlefield Sports' Optik sensors performance is reliable. Our focus on simplicity and fairness suits high traffic attractions. Some of the factors that have influenced our Optik sensor development are:

- *The sensor system must be as unintrusive as possible; in order to support appropriate or themed costumes.*
- *Location and design of the sensors must afford genuine 360 degree hitability.*
- *The sensor system must make it challenging for a gamer, while in play, to try and hide their sensors.*
- *A minimum number of sensors to be used for gaming gun for simplicity and maintainability.*
- *The sensor system must perform well in board range of lighting and weather conditions.*
- *Maintaining hygiene was a must.*

High speed digital

The Optik sensor supports high speed digital data transmission which underpins the S*A*T*R system. The head sensor features a heavy duty 6 core cable (that can also come with an adaptor for our older 4 core plug) which increases the average life span of the cable. It also supports S*A*T*R's ability to configure the sensor hit light color in software. The sensor comes with a smokey grey dome that looks attractive and discrete. Our team has designed a surface mount PCB which has enabled us to keep a compact size of the sensor. Our sensors are approximately the size of a silver dollar. These sensors simply attach with Velcro to any hat or cap or headband. This is particularly useful if you are using a particular style of costume as part of your attraction's theming. The Optik sensor also has more varnish on the board surface therefore increasing its water resistance. The dome polycarbonate covers are tough as nails, but easily maintainable.

Long range outdoor / Short range indoor

With the S*A*T*R software the range of the sensors is easily configurable depending on where you plan to play. There are four software range settings in S*A*T*R - (indoor, short, medium, long) so it is possible to change the settings quickly to find the right game balance.

SENSOR SECRETS

The game of Battlefield LIVE has been developed by gamers. So we understand the importance of using costumes as vital "props" for live gaming.

As entertainers we strive for gamers to be immersed in the combat entertainment experience. In other words, to suspend disbelief. This might be as simple as using straw hats and black BDUs to represent Viet Cong and olive drab combat fatigues for the US Forces. So *gone* are the old style laser tag vests replaced with the new Battlefield Sports' optik sensor system.

Battlefield Sports offers an extremely flexible mounting system which is discrete so detracts the least from costuming.



Long Range

All smaller gaming guns like the P90, Scorpion and Spitfire have a common combat range of up to 100 meters (330ft), but when configured with in “long” range tests have exceeded 200 meters (660ft). The Commando and Pulse Rifle have a common combat range of up to 150 meters (approx 500ft), but when configured with in “long” range tests have exceeded 250 meters (820ft). Our long arms, the Morita Sniper, Morita SAW, M4 and M16, all have common combat range of up to 200 meters (660ft), but when configured with in “long” range tests have exceeded 300 meters (985ft). We have even the exceptional result when testing the Morita Sniper (with the telescopic scope) out to 450 meters (1,480ft) plus! There are other factors that can affect range.

- *How well the scope is zeroed (and the type of scope). It is especially important the scopes are properly zeroed once per week.*
- *The type of sensor (current Optik sensors increases range).*
- *Battery power level.*
- *The amount of sunlight shining on the target sensor.*
- *The cleanliness of the target sensor dome and the shooter’s lens.*

Hiding Sensors?

One of the top the problems with old-style indoor laser tag vests is the ease players can observe the enemy without exposing themselves to fire. Players for example could look around corners to watch for an enemy without any risk of being hit, even if an enemy spotted them. Battlefield Sports has elegantly solved this problem with our three-sensor system. All Battlefield Sports’ gaming guns come with three integrated Optik sensors: one placed center of the forehead, one at the back of the head, and one on the gun barrel.

Part of our solution, also lies in the way our gaming guns shoot. Traditional laser tag have a very wide beam of infrared light. Our gaming guns instead have a narrow, tightly focused beam, so gamers must aim (either with a red dot or telescopic scope) to hit an opponent. Of course, to aim, gamers need to look with their eyes; our front head sensor is mounted directly over their eyes, so to aim, the gamers must expose their head sensor. Blind firing in Battlefield LIVE is dangerous given the gun barrel sensor.

LIVE Gaming Everywhere

Arctic Tundra to Tropical Rainforest

Live gaming is played all over the world. Battlefields exist from near the arctic circle to the tropics, from dedicated indoor facilities to the hot desert terrain. Traditional lasertag sensor systems were designed for a controlled (temperature & lighting) indoor environment. The sun emits a huge amount of ambient infrared light, so our sensors must detect only our signals and ignore the rest. Battlefield Sports gives you a robust and reliable solution.

The system was originally designed for the tropics, so hygiene was vital. Helmets and vests with permanently installed sensors inevitably become soaked with perspiration over the course of a busy day. Also with children playing battlefield operators need to consider head lice. With our system, every gamer gets a clean hat to hire for the duration of their session. Further, we can tell the teams with one clean wearing army hats (see right, above) and the other caps (see right, below).

In Summary

We are entertainers. We want to leave people with the best experience that we can. Gamers have been brought up on ever-more realistic combat simulation games. Gamers are remarkably knowledgeable about weapons and infantry combat history. They appreciate well thought out authentic Live-Plays. And the sensor that goes along with our games, therefore, must also be authentic.

