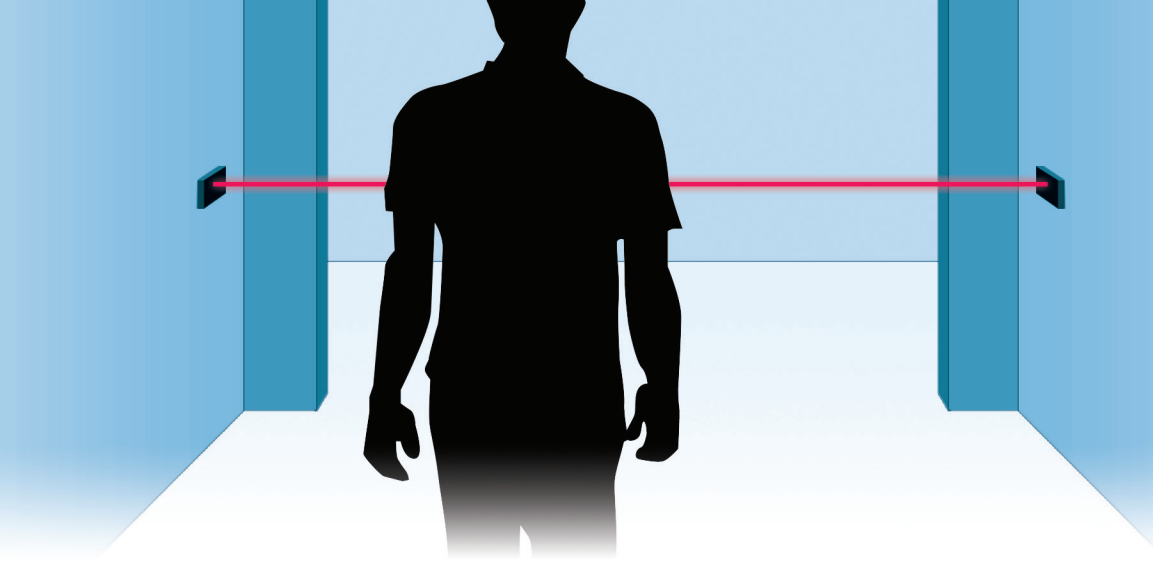


Which Type of People Counter is Best for You?

People counting technology can serve many purposes, beyond simply tallying up how many visitors come through your doors. Different solution sets can accurately track your busiest hours and days; chart how people actually move through your establishment; help you determine if you are over- or under-staffed; and even enhance your security/loss prevention capabilities.

Of course, not all people counters perform all these functions. The technology comes in many shapes and sizes, offering solutions that can be shaped for differing budgets, entrance configurations and building layouts, as well as required accuracy levels and analytical capabilities.

This eBook will explore currently available people counting technology options, highlighting the environments and business needs that each option is best suited for.



Horizontal Wired/Wireless Retail Counting Systems

The most basic type of people counting technologies are door-mounted horizontal systems. These include both wired and wireless options, using sensors mounted on your entrance door's frame that cast a horizontal infrared beam across the doorway. People are counted as they cross the threshold and "break" the beam.

The positives of horizontal systems are that they offer a less expensive option than overhead people counting technologies, making them a good starting point for retailers who are just testing the waters with such systems. Because the sensors are placed on door frames rather than in your building's ceiling, installation is generally quick and easy. For wireless options, lithium batteries can power such systems for a year or even longer without requiring replacement.

The negatives of such systems are their limitations in terms of accuracy. If several people are entering your store at the same time, some may block the beam, affecting the count's accuracy. Particularly with wider entrances, 10 people may have come through your doors but perhaps only seven or eight would be counted by a horizontal system.

For these and other reasons, horizontal systems are best for smaller physical establishments, since their accuracy can be compromised if the doorway entrance is wider than 10-15 feet. They work best in structures with narrow entrances that have a relatively low density of people moving through them at any given time. These factors, along with their affordability, make such systems a strong choice for small businesses seeking basic tools to measure traffic flow.



Overhead Retail Counting Systems

For retailers or other enterprises seeking a more accurate, detailed picture of customer/guest traffic, showing not only how many people are entering the building but what zones they may be entering while they're inside, people counters using overhead ceiling-mounted sensors are a strong option. These systems can feed data into analytics software that can map customer traffic across zones, help determine optimal staffing levels and schedules, and pinpoint the best placement for featured promotional items.

Overhead people counters use two different types of sensor technology, **thermal** and **video-based**. Each technology has its own pros and cons, and in some cases businesses may choose systems that utilize a combination of both sensor types.



Thermal Overhead Sensors

As their name implies, thermal sensors use the heat from people's bodies to determine how many customers are entering and moving through a building. They provide a high degree of accuracy, particularly in locations where a lot of ambient light (such as direct sunlight shining on a store's entrance) might affect video-based sensing technology. They also work in low light or darkness, adding to their utility for security/loss prevention functionality or in restaurant/hospitality locations featuring an intimate ambiance.

Other positives of thermal sensing technologies include:

- They can gather multidirectional data about people's movements in and out of a building.
- They can cover wide entrances with no loss of accuracy
- They offer overall accuracy rates of 95% or higher
- Today's systems are offered with wireless capability, with ranges that can be extended (using repeaters) to fit almost any building size or layout.

Among the "cons" of thermal systems are that you must pay for their enhanced functionality; they are more expensive than basic horizontal technologies. Compared to the best video-based people counters, thermal solutions offer somewhat less resolution and a lower field of vision, making it difficult to determine what type of people (adults vs. children) are shopping at any given time.

In addition, people must be in motion for thermal sensors to pick up their "signal," and the thermal sensors' performance and accuracy can be affected by external weather conditions.

Video-Based Overhead Sensors

These people counting technologies use ceiling-mounted video to, literally, provide moving pictures of customer traffic in your establishment. They operate best in locations that have consistent lighting, and they are able to provide you with detailed data about who is entering when and where.

The positives of video-based sensors include:

- Ability to handle wide areas with multiple units
- Easily upgradeable software
- Support for remote video capture, e.g. on an Internet-connected laptop or tablet
- Data can be safely stored in the event of a power outage, with flash memory storing up to 10 days' worth of data
- Systems can adjust to changes in lighting and temperature
- Ability to filter carts, children, and strollers, providing a more accurate count of actual shoppers versus total number of people in the store.

Video-based systems' negatives include:

- They are costlier than systems using infrared beams or thermal sensors
- If the systems are not fully embedded in your store's IT system, they can require the use of separate PCs for control and monitoring
- Installation time and costs can be greater than for thermal sensor systems
- Counting accuracy can be affected by shadows, background, and varying light levels.

Given the positives and negatives of each type of overhead system, retailers or other businesses requiring highly accurate people counting and movement data to support sophisticated analytics, may opt for a combined thermal and video-based system. Such solutions offer the option to view both streams simultaneously via a Web browser, providing users with the ability to compare a live video stream with results captured by the thermal sensors.



Optimum Environments for Overhead Systems

The higher accuracy levels and detailed data provided by both thermal and video-based overhead systems makes them a strong choice for establishments that will reap multiple benefits from people counting solutions. These can include retail stores with large physical layouts and numerous departments, as well as those handling large volumes of customers/guests.

Overhead systems can bring a solid return on investment (ROI) in areas that include:

- Measuring conversion (i.e. the percentage of people coming into the store who actually buy something)
- Testing promotions and marketing strategies
- Analyzing store layouts for better traffic flow
- Mapping customer movements to increase awareness of specific departments or products
- Ensuring staffing levels are appropriate, and determining whether staff are being deployed where associates can most effectively improve customer service and increase conversion rates
- Enhancing security and loss prevention capabilities.

Summary

While overhead systems can require a significant investment, both in actual costs and time for installation and integration with your existing IT systems, they offer a wealth of information for both day-to-day operations and deeper analyses, charting how customers actually interact with your brick-and-mortar store, the products you carry, and the people on your staff.

Even the more basic horizontal door-mounted people counting solutions can deliver a strong ROI, particularly in environments that don't require highly detailed directional data. Smaller stores, restaurants, and establishments, or those handling a generally lower volume of customers, can benefit by learning how many people are coming into their stores, at what times of day and days of the week. These lower-cost systems can also be a first step towards the use of more sophisticated people counting systems, which can be adapted as your needs change and your business grows.

About Traf-Sys

From our headquarters and data center in Pittsburgh, PA, [Traf-Sys Inc.](#) provides people counting systems, software and support to more than 7,000 locations. We offer a broad range of traffic counting solutions that deliver unparalleled accuracy and reliability. Our people counting solutions solve a variety of traffic monitoring challenges for all types of organizations, including some of the largest shopping centers, retail store chains, universities, libraries and casinos in the United States.

Whether you are trying to measure traffic to support project funding, optimize labor, determine advertising effectiveness, or increase conversion ratios, [Traf-Sys](#) provides the tools to leverage key metrics to improve the performance of your business. Our people counting solutions provide actionable information that helps organizations increase profitability and optimize operational efficiency by analyzing visitor traffic to make informed business decisions.



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