Benefits to consumers

Being able to accurately track and record the precise number of people present in a building or moving through high-traffic areas at any given time is an invaluable asset, not only for safety and security professionals, but also for marketing intelligence gathering initiatives, building automation and to allow organizations to optimize their staffing and energy levels.

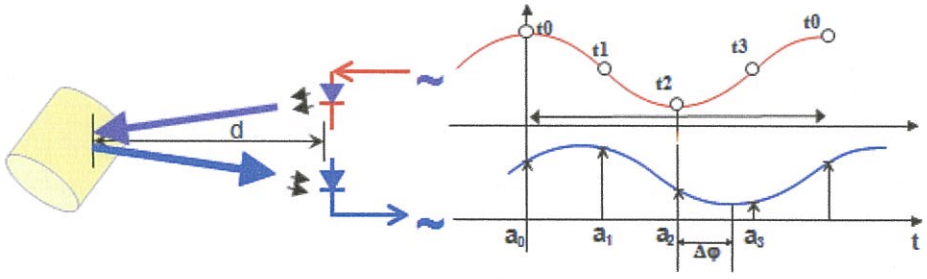
With IEE's unparallel 99% accuracy 3D MLI™ People Counter, occupancy is accurately detected at staircases, standard doors, sliding doors and even swinging doors. 3D MLI™ People Counter's accuracy surpasses any other people counting technology even in a dense high volume traffic scenario e.g. Train stations, Shopping malls, Airports ... The real time occupancy monitoring not only can control maximum or minimum occupancy, it could also trigger demand-controlled ventilation (DCV) and support evacuation measures if required, a indispensable tool for **Fire & Disaster Management.**

Product innovation

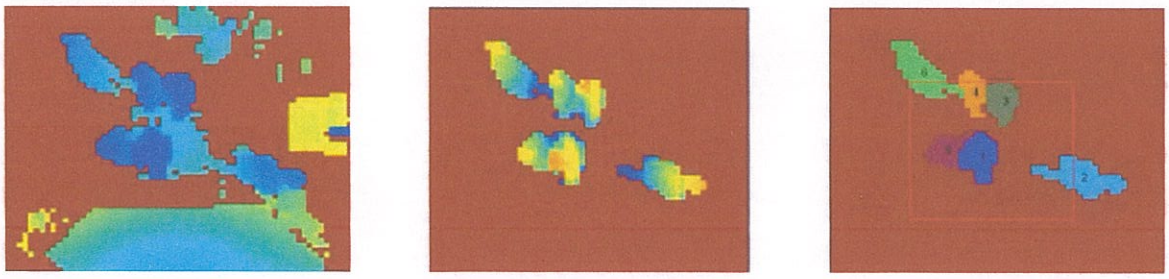
3D MLI Sensor™ technology was strategically developed by IEE based on the optical time of flight (TOF) principle, whereby a non-scanning light source emits modulated near-infrared light, and the phase difference between the light emitted by the source and the light reflected by the persons and objects in the field of view is measured to create a real-time topographic image of the monitored area.

$$d = \frac{c}{2f_m} \cdot \frac{\Delta\varphi}{2\pi}$$

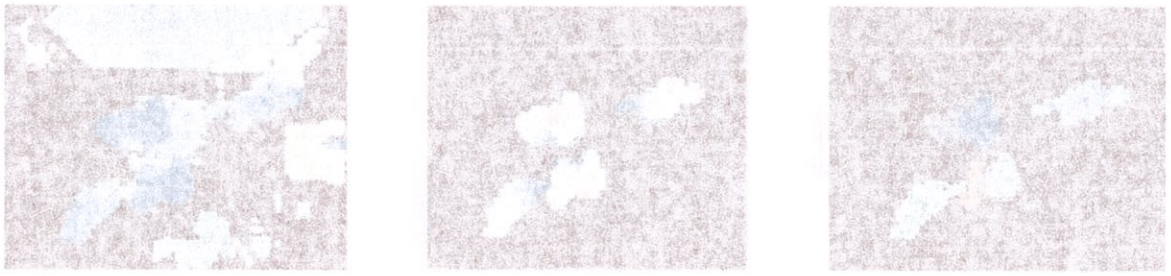
$$\frac{300000000m/s}{2*20000000Hz} = 7{,}5m$$



By means of TOF measurement and sophisticated embedded algorithms, the overhead-located 3D MLI Sensor™ measures and processes topographic 3D data, and is therefore able to detect the number of people in a specific area and accurately recognize scenarios such as tailgating, piggybacking, credential pass back, u-turn and crossing (bi-directional traffic).



With a 99.6% people counting accuracy rate, our solution has superseded current industry reliability standards, producing more precise data processing than other solutions, and outperforming other passive infrared imager, scanner or video based 2D systems on the market. We have over 24 patents related to 3D MLI Sensor™ technology, including one for 3D MLI™ People Counter which was filed in May 2010.

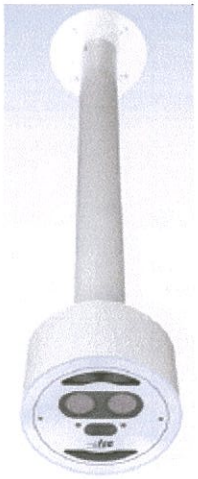


Design

3D MLI™ People Counter is built with an IP 30 power coated aluminum casing and equipped with standard connectors: Power, Ethernet and RS 485. Typically installed above entrance doors or turnstiles, the People Counter's optimized Design Housing allows easy and aesthetic integration into existing architecture. The Design Housing is available for in-, on- and under-ceiling mounting, providing flexibility for all kinds of ceiling structures.

After the installer has configured basic settings, such as detection area and mounting height, the sensor calibrates itself within a few seconds. During this calibration, the sensor surveys the detection area and captures the presence of any fixed objects (for example furniture) and walls. Unlike other solutions, the sensor has a built in firmware and functions independently without a PC.

User-friendliness of product and Significant of Unique feature



3D MLI™ People Counter Flow monitoring capabilities entails wrong-way detection and bi-directional counting. Thru its 99% accuracy, a precise determination of wait time allows efficient queue management could be derived e.g. Airline check in, Train queues ...

Embedded Software

For most of its applications the sensor does not require any additional controllers to process the data it captures. For single-door occupancy monitoring applications, the People Counter can automatically trigger occupancy alarms that may also be used for energy saving or climate control measures. Similarly, for wrong-way detection, the sensor can directly generate an alarm via its integrated buzzer, the data port and/or the web interface.

Reliability in Changing Light Conditions

Since the sensor emits its own illumination, the performance is not influenced by artificial light and the sensor also works in the dark

Double Doors and Staircases

Double doors, or doors swinging through its field of view, pose no problem for the People Counter. The sensor also functions in staircases.

Integrated Audible Alarm

An integrated alarm signal can provide an acoustic confirmation of a people count, and this in both directions. The integrated alarm can also sound when an occupancy threshold for single door areas has been met or if a sensor malfunction has been detected.

Summary

3D MLI™ People Counter is currently being implemented in several test projects at prominent international corporations and has received positive feedback from highly satisfied customers. The further integration of 3D MLI™ People Counter will most assuredly lead to safer public and commercial buildings, optimization of security staff, as well as a more secure environment for the general public. It is our hope that 3D MLI™ People Counter, with the continued support of respected industry publications, will achieve far-reaching success for the security sector in its continued effort, as our own vision asserts: to enable people to lead better, safer and easier lives.