

PureActiv[®] VEHICLE COUNTING

ACCURATE COUNTING UTILIZING CAMERAS

A rising incident of travelers rage, mounting complaints, illegal parking, lost revenue and high emissions from cars looking for parking spaces have institutions searching for a better way to route cars to available parking spaces. Expansive parking structures and high cost of installing traditional counting systems further complicate the issue. That's where the PureActiv Vehicle Counting technology can help.

TURN CAMERAS INTO INTELLIGENT COUNTING SENSORS

Using advanced digital signal processing (DSP), PureActiv Vehicle Counting transforms video cameras into intelligent counting sensors. Its stand-alone design enables it to detect and count vehicles utilizing video received from IP video cameras. The software even stabilizes the video image to remove camera and vibration effects. Advanced background algorithms then ignore any nuisance images, such as shadows or lighting changes. Once an object is detected, a filter is applied to avoid counting non-vehicle items, such as humans and luggage, or vehicles not moving in the desired counting direction. An accurate count is then sent to the parking management system to determine count by floor or zone.

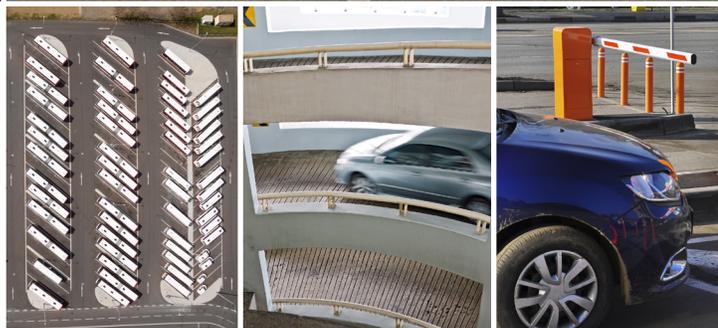
HIGHER ACCURACY, EASIER INSTALL OVER LOOP DETECTORS

PureActiv's Vehicle Counting is an edge device or a server based system, processing the video at a central monitoring location. That means there is no need to make expensive cuts into existing pavement or pre-stressed concrete, as is often required for loop sensor systems.

The system also maintains a very high counting accuracy, versus loop detectors which tend to be very inaccurate, perhaps only achieving 50%-60% accuracy. In actual customer installations, the PureActiv system achieves rates over 99%. This can translate directly to revenue dollars and increased customer satisfaction, by keeping spaces full and insuring spaces are really available when directing a parking customer to a floor or zone. The system even counts in difficult areas such as low ceiling areas and helixes.

OPEN ARCHITECTURE

PureActiv Vehicle Counting converts cameras into intelligent counting sensors, communicating directional count data to parking management systems via XML over TCP/IP. This open communication standard allows it to easily integrate into new or existing parking management systems.



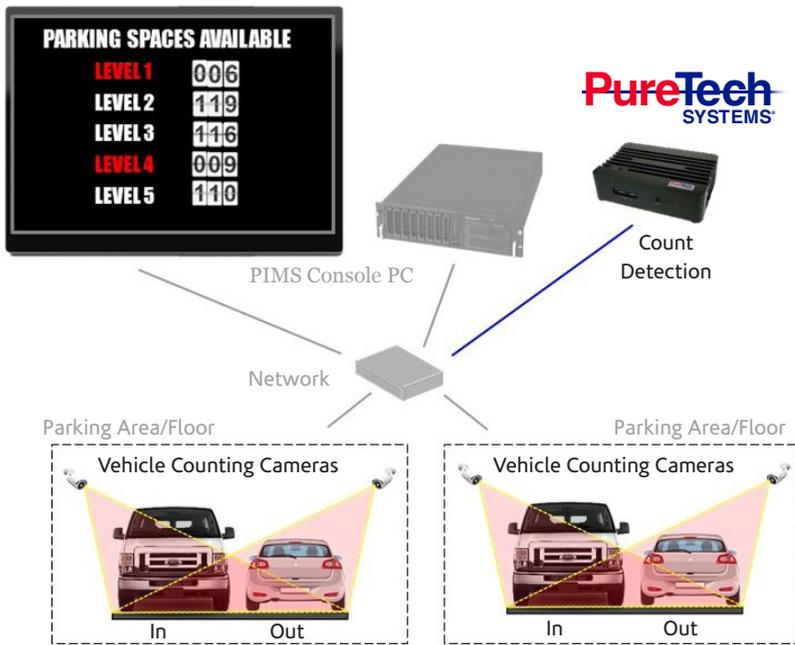
FEATURES

- Significantly more accurate than loop detectors (over 99% accuracy)
- Simple installation and less intrusive than loop detectors
- Utilize cameras to accurately count parking traffic by zone or floor
- Ignore non-vehicles (people, lighting, baggage carts)
- One way vehicle count per camera
- Reconfigurable (cameras can be easily moved)
- Integrates using standard XML counts
- Full vehicle view not required

BENEFITS

- Increase Revenue - Utilize full potential of parking structure with high accuracy rates
- Decrease Costs - Save installation dollars over traditional counting technologies
- Increase customer satisfaction
- Reduce emissions by getting cars to their parking space quicker

SYSTEM ARCHITECTURE DIAGRAM



SPECIFICATIONS

Computer Edge Devices support up to 4 IP cameras
Servers support 20 or 40 cameras

System Multiple Edge Devices/Servers integrate with Parking Intel & Management System (PIMS)



Video Input Accomodates IP Cameras
320x240 @ 15fps

Count Output API (XML over TCP/IP)

Inputs / Outputs 1 x Ethernet Gigabit RJ45

Installation Height Range 7' - 13'
Distance from Lane 0' - 6'
One Count Direction Per Camera

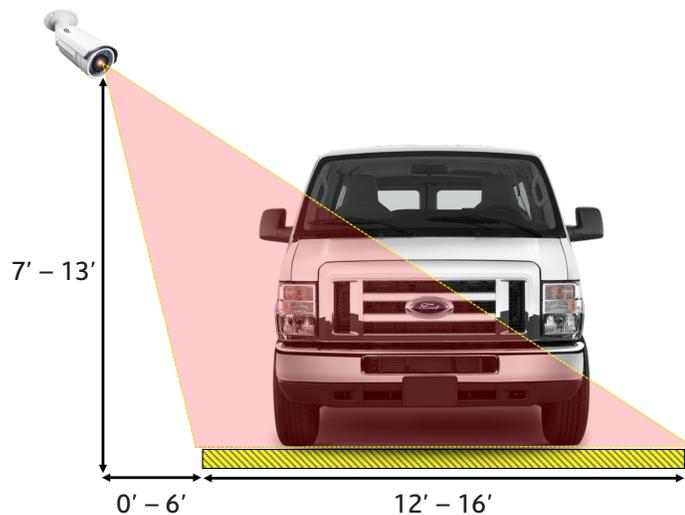


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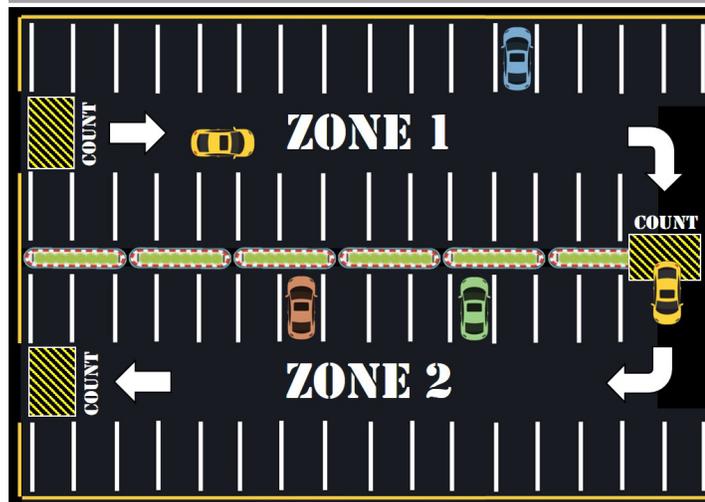
CAMERA BASED VEHICLE COUNTING



CAMERA COVERAGE



ZONE/FLOOR COUNTS



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