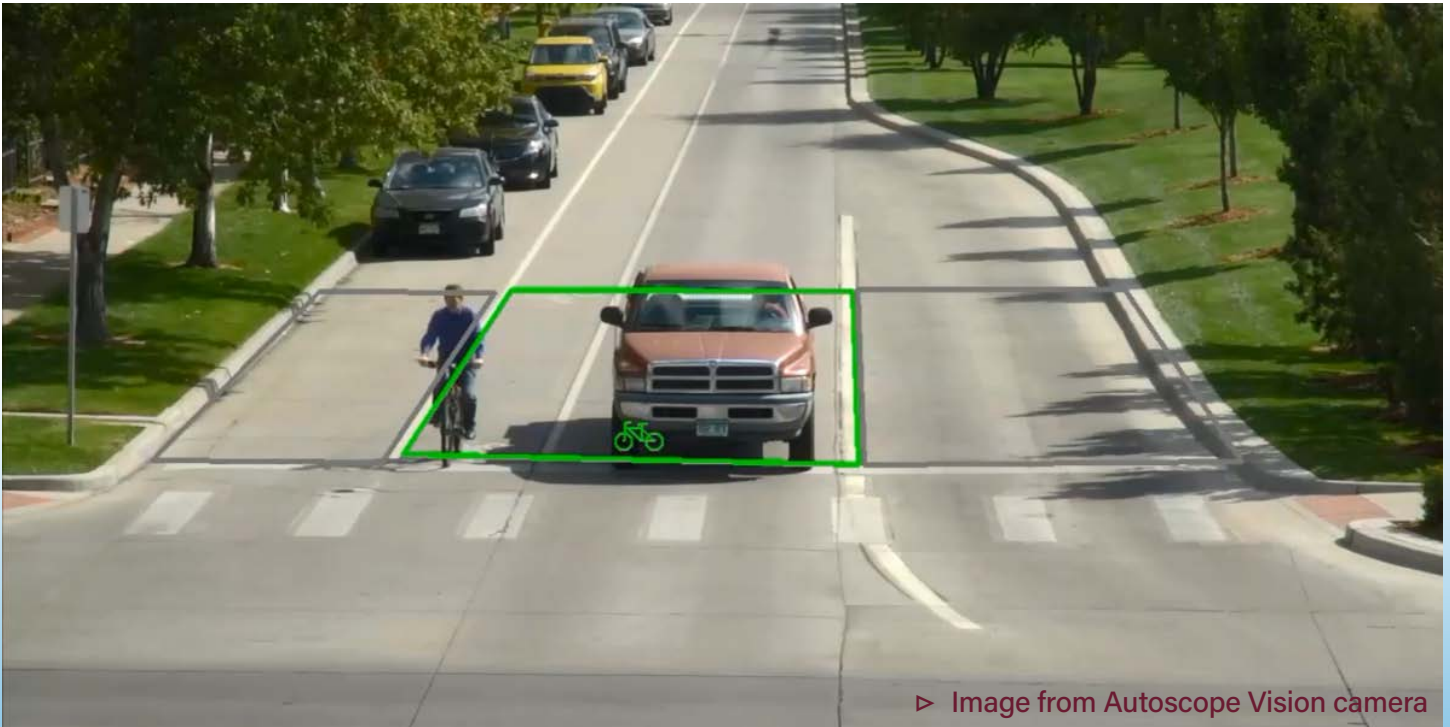# Autoscope Cyclescope™

▷ Image from Autoscope Vision camera

▷ ▷ Cyclescope helps transportation agencies provide safety for bicyclists by providing additional time to the intersection controller for safe passage through signalized intersections.

About Cyclescope

All Autoscope detectors can detect the presence of bicycles at the intersection. For 25+ years, this capability has been available in Autoscope products to satisfy multiple detection objectives. Bicycle lanes, stenciled bicycle markings, and cyclist behaviors indicated where to draw the virtual detectors.

Autoscope Cyclescope feature provides Bicycle Differentiation, meaning that as a tracked object approaches the detection zone, Cyclescope determines whether or not the object is a bicycle—in any lane. Cyclescope is available in many Autoscope ITS technology products, including Autoscope Vision™, Autoscope Duo®, Autoscope ENCORE®, Autoscope Solo® Terra, and the Autoscope RackVision™ Terra processor with the Autoscope Image Sensor products. Cyclescope is also available 24/7 in our latest solution - Autoscope Vision. Vision also supports stop bar and advance bicycle differentiation with high-definition (HD) video. Cyclescope is quick and easy to implement in any cabinet and with any traffic controller, and greatly simplifies the setup of bicycle detection.

At A Glance

▷ Provides true differentiation between vehicles and bicycles at signalized intersections

▷ Satisfies many state and local statues requiring minimum bicycle green timing even when sharing a lane

▷ Leverages Autoscope's ability to collect traffic data helping to demonstrate success of bicycle-friendly programs

▷ Easy set-up

▷ No additional detectors required

● ECONOLITE

Description

In combination, the general Autoscope bicycle detection capabilities and the new Cyclescope feature allow engineers to offer bicycle timings in their traffic control strategy with minimal changes to the intersection configuration, with no changes to the cabinet wiring, and with little or no changes to the controller.

While Autoscope has always been capable of detecting the presence of bicycles, the Cyclescope feature adds the ability to differentiate between bicycles and other vehicles as they approach the intersection. Cyclescope, introduced in version 10.5.0 of the Autoscope Software Suite, detects the presence of approaching bicycles and distinguishes them from other types of vehicles in the same lane of traffic.

Cyclescope is also available with our latest solution - Autoscope Vision and version 2.0 software.

With Cyclescope, no special pavement markings are necessarily required—a major benefit in some communities. Cyclescope detects bicycles in all lanes, rather than only in bicycle lanes or special areas designated for bicycles. Though many cyclists still ride closer to the curb, more cyclists today behave like motorized vehicles and make turns from the turning lane.

Overall, bicycle detection is more robust with Cyclescope Bicycle Differentiation.

Easy Setup

Bicycle Differentiation is intended for across-the-intersection head-on fields of view. It can be established for a zone that uses either a Stop Line Detector or a Presence Detectors/Detector Function combination.

Adding Cyclescope Bicycle Differentiation to existing Autoscope Stop Line detectors or Autoscope Presence detectors is quick and easy. The "Bicycle Differentiation" parameter gives these detectors two possible outputs: the standard true ON state and the Bicycle true state. No additional detectors are necessary— just use the existing vehicle detectors to achieve bicycle detection in all approaching lanes.

There are two output options for handling the bicycle detection information:

- Add the bicycle detection to the existing output to the controller—doubling the detection ability with both bicycle presence and bicycle differentiation to the existing vehicle detection. Autoscope can provide additional extension timing as needed.

- Provide a separate bicycle output to the controller and handle bicycle timing there.

Bicycle Phase Timings

The simplest option is to use the same phase timings for bicycles as for other vehicles—when choosing this strategy, Cyclescope adds more robustness to the detection of bicycles. But the normal vehicle minimum green and vehicle extension times are not always long enough to provide safe crossing time for a bicycle. And adjusting the vehicle times to always provide enough time for bicycles (whether bicycles are present or not) is not an efficient use of green time for most intersections. Using pedestrian timing for a bicycle is also inefficient, since bicycles can cross more quickly than pedestrians. Therefore, the safest and most efficient option is to provide a unique bicycle timing that allows cyclists an appropriate amount of time to cross the intersection safely—either timed in the Autoscope or timed in the controller. (It is best not to do both—this could double the bicycle times.)

Autoscope can provide the Bike Min Green timing, or it can support a controller's bicycle detector input. Within the detector layout, Autoscope can provide extra time at the start of green for bicycles to cross the intersection, which emulates the timing features of newer traffic controllers without the need to upgrade older controllers in the cabinet (e.g., older model Traconex, Type 170, etc.). Or, for controllers that have a bicycle detector input and a Bike Min Green feature, Autoscope can provide a separate bicycle detector output for each phase or each lane. (A different extension time during green is also possible for a bicycle—timed either by the Autoscope or by the controller. Contact Autoscope Technical Support for assistance with this or any detector layout concerns.)

Measures of Effectiveness (MOEs)

With Autoscope's capability to collect traffic data, an agency can measure how often bicycles actuate each intersection. For example, many intersections have bicycles just a few times an hour, and mostly during daylight. Each agency can configure the data collection to answer the MOE questions that are most important to them. These MOEs can then help the agency demonstrate the success of their bicycle-friendly programs.