

# Video Analytics



## Wavestore Video Analytics

Wavestore’s Deep Learning Video Analytics capability is a powerful extension to our core VMS software, adding the ability to detect and search for a wide range of behaviours and events, system-wide, to provide a truly intelligent Video Management System.

Utilising virtually any IP camera, Wavestore Video Analytics can easily be deployed as part of a new project or retro-fitted to existing systems.

Wavestore Video Analytics servers are available in two versions, able to accommodate up to 32 and 64 analytics channels and can run up to four different types of analytic simultaneously on each channel. These include people and vehicle counting with speed and direction filters, intrusion detection and loitering.

Image stabilisation to improve image quality and tamper detection to alert operators of unauthorised camera obstruction or movement, are included as standard.

Video channels are re-streamed to Wavestore Video Management Software (VMS) storage/ recording servers together with metadata which can be used to trigger a host of actions using Wavestore’s ‘Cause and Effect’ event rules engine. Streams with bounding box overlays are also available to ensure operators are instantly aware of detected persons or objects of interest within Wavestore’s WaveView client software.

To improve detection accuracy across the entire scene, as well as minimise false alarms and speed up deployment, a built-in 3D calibration tool is used on set-up to define the height, angle and perspective of subjects over various distances within the field of view. The Metadata from the Video Analytics Appliance can also be collected, via an API, for reporting purposes.

## Deep learning

Because humans and vehicles are usually the only things of interest, deep learning has been deployed within Wavestore Video Analytics to filter out environmental and other unwanted activity from giving false-positive alerts. As such, activity from things like moving trees, clouds, car headlight reflections and animals etc., which can all cause false positive readings, are identified through deep learning and ignored by the analytic algorithms.

This ensures the highest possible levels of accuracy from the system and greatly reduces the opportunity for false alerts.

## Creating logical rules using single or multiple analytics

Wavestore Video Analytics have been designed to reliably detect humans and vehicles and alert operators to exceptional events. This is achieved through pre-configured rules that are set up using the on-board rules creation engine, via a simple-to-use web interface. Logical rules can be configured for single or multiple sets of analytics which, when triggered, perform a wide variety of actions via Wavestore’s powerful Event Rules capability.

Wavestore’s ‘Cause and Effect’ Event Rules are programmed using the WaveView client software and can action powerful and sophisticated responses across the system; changes to recording, display of cameras and layouts in WaveView clients themselves as well as driving third-party equipment such as alerts to Intrusion and Access Control systems, controlling lighting and issuing automated audio warnings via IP loudspeakers when an event occurs. PTZ cameras can also be programmed to go to a pre-set on a specific event, it can even notify authorised personnel by e-mail that an event has taken place. The possibilities are endless.

## At a glance

Video Analytics with AI-based Deep Learning Capability  
 32-Channel and 64 Channel Models  
 Up to 40 Zones and Rules per Channel  
 Deep-Learning Filter for Improved Detection and False Alarm Rejection  
 1U Rack-Mount Form Factor

## Analytics include:

- Intrusion detection
- Enter filter
- Exit filter
- Appear filter
- Disappear filter
- Counting lines & zones
- Stopping filter
- Tailgating
- Abandoned object
- Removed object
- Dwell filter
- Speed filter
- Direction filter

## Ordering information:

### WA-VADL-32

Wavestore DL Video Analytics Server for up to 32 Video Analytics Channels.

No channel licences included – add number of WA-VACL-1 as required

### WA-VADL-64

Wavestore DL Video Analytics Server for up to 64 Video Analytics Channels.

No channel licences included – add number of WA-VACL-1 as required

### WA-VACL-1

Wavestore DL Video Analytics Single Channel Licence

TECHNICAL SPECIFICATION	WA-VADL-32	WA-VADL-64
<b>General</b>		
Maximum No. of Channels	32 channels @ D1 30fps 16 channels @ 720p 30fps 8 channels @ 1080p 30fps	64 channels @ D1 30fps 32 channels @ 720p 30fps 16 channels @ 1080p 30fps
Supported Browsers for Setup	Ubuntu Linux 18.04 IE, Safari, Chrome, Firefox (with HTML5 Support). No Plugins required.	
<b>Hardware</b>		
CPU	Intel® Core™ i5-9600	Intel® Core™ i7-9700K
Graphics Adapter	GTX 1650 4GB	GTX 1660 6GB
<b>Available Rules</b>		
Zones and Tripwires	Detect any activity either in an area or crossing a point of interest. Up to 40 can be set per channel.	
Counting and Count Lines	Counts objects in a zone or crossing a line. Option for on-screen count display. Includes unique calibration tool to separate individual targets and generate accurate counts.	
Speed filter	Detect and display the speed of targets in a zone or crossing a line. Requires one-off calibration for the individual scene.	
Appear / Disappear	Detect an object or target that suddenly appears or disappears within a zone.	
Enter / Exit	Detect an object or target that enters or exits a zone.	
Stopped and Dwelling	Detect when a target has stopped or is moving within a zone for a predetermined time.	
Direction Filter	Detect if a target turns or goes in a specific direction. Can be set through 360 degrees.	
Tailgating	Detect if more than one object or target goes through tripwire or zone within a set time.	
Removed or Abandoned Object	Detect if an object within a zone has been left for a set time or removed from the scene.	
<b>AI Deep Learning</b>		
Deep Learning Filter	AI filter to the rule set to very accurately detect human or vehicle targets and their activity. Requires no calibration.	
<b>Event Reporting</b>		
Logical Rules	Combine rules to create specific rules using AND, OR, CONTINUOUS (happened for at least 3 seconds) and PREVIOUSLY (happened within last 3 seconds).	
Event Triggers	Events triggered by Analytics Rules directly or by combinations using Logical Rules are immediately available as Event Causes in Wavestore Event Rules Engine.	
<b>System Setup and Diagnostics</b>		
3D Calibration	Tool to enable the scene to be calibrated to accurately establish the type of target; person, group, vehicle, animal etc., regardless of the depth of the scene.	
Shake Cancellation	Stabilises image due to camera movement and vibration.	
Camera Tamper	Detect changes in video including video-loss, camera covered, camera moved.	
<b>Video Sources</b>		
Video Input Method	RTSP & ONVIF	
Supported Video Formats	H.264, MJPEG	
Frame Rates	15fps to 30fps	
Minimum Resolution	320 x 240	
<b>Physical</b>		
Form Factor	1U rackmount	
Dimensions (D x W x H)	410mm x 483mm x 44.5mm	
Weight	5.0kg (approx)	
Operating temperature range	5°C to 40°C 41°F to 104°F	
Operating relative humidity	20% - 80% (non-condensing)	
<b>Power</b>		
Power input	100-240v AC 50/60Hz	
Power consumption	100W typical	
<b>Warranty</b>		
Standard warranty	3-year return to base	
Extended warranty	Up to 5-years	



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