

Tech Tip 160045

VISIX V-Series All-in-One Cameras/VTOF People Counting Camera/VERA Thermal Camera – Analytics Setup Guidelines

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Product Affected:	VISIXI V-Series All-in-One Cameras (Including VTOF and VERA Thermal Camera)
Purpose:	This document provides the reader with supplementary information regarding the configuration of VCA Analytic Rules on VISIX V-Series All-in-One Cameras (including the VTOF People Counting Camera and the VERA Thermal Camera).

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1 Introduction

3xLOGIC has several guidelines and tips regarding the successful configuration of a V-Series All-in-One Camera’s VCA analytics. This information can enable a user to more confidently identify issues with their analytics rule configuration, making for quicker configuration process and higher rule accuracy/reduced occurrences of failures or false counts.

For more information and configuration tips, please proceed through the remaining sections of this guide.

2 All V-Series All-in-One Cameras (Including VTOF and VERA Thermal)

2.1 VCA Analytics Configurations – Guidelines

2.1.1 Calibration

One of the most critical factors regarding the accuracy of VCA analytics rules on V-Series cameras is proper calibration of the camera. Always be sure to properly calibrate a camera’s analytics engine for height and perspective angle. These settings are imperative to successful VCA object detection, and should be as configured as accurately as possible.

V-Series Calibration settings can be edited by navigating to *Setup>VCA>Calibration* in the camera’s web UI.

2.1.2 Scene Motion

Always be sure to assess a camera's field-of-vision/scene for excessive motion. The more extraneous motion that exists within an image (leaves and branches swaying, background traffic, moving shadows), the more likely detection analytics are to generate false events.



Note: Some forms of extraneous motion may not effect certain cameras (i.e. Moving shadows will not affect either the VERA Thermal Camera or the VTOF Camera's sensors).

Always avoid having any portion of an analytics zone over sections of the image that frequently experience motion which is extraneous to object detection.

2.1 VCA Analytics Configurations - Settings Non-Factors

Several "non-factors" exist regarding configuration of VCA Analytics rules on VISIX V-Series All-in-One Cameras (including the VTOF and VERA Thermal Camera). Often, users believe these settings can greatly affect the accuracy of their analytics rules, and consequentially spend a great amount of time trying to achieve more accurate analytics by adjusting these irrelevant settings. Read through the below sub-sections for more information.

2.1.1 Resolution

The V-Series' analytics engine always runs analytics against a QCIF resolution, regardless of the camera's configured resolution. Analytics are unaffected, regardless of the chosen resolution.

2.1.2 Image Color

The V-Series' analytics engine always runs against a greyscale image. Image color has no effect on analytics. This includes the color mode selected on VERA Thermal Cameras to display the temperature differential.

2.1.3 Framerate

As the V-Series Cameras process all analytics on-board prior to the image encoding process, framerate value has no effect on analytic accuracy.

3 VTOF People Counting Camera - VCA Configuration Guidelines

The following guidelines should be taken into account when configuring a VISIX Time of Flight People Counting Camera's VCA Analytics.

3.1 Positioning, Perspective and Distance

The positioning of your VTOF Camera is imperative in regards to successful detection of objects. The VTOF is intended to track people indoors, in small areas clear of any other objects. The camera should be positioned two to four meters off the ground, with the optimal range considered to be between three and four meters. The optimal detection range for the camera is four to six meters.

Also, the camera should always be installed and positioned so that distance between the camera and potential detection targets falls within its operating range of two to eight meters.

3.2 Sunlight / Light Interference

When configuring a VTOF People Counting Camera, always be aware of areas of the image which may become oversaturated with sunlight during certain periods of the day. Intense sunlight interference can disrupt the camera's stereoscopic sensor and can potentially contribute to false and failed detection. Optimally, only artificial lighting should be present within the camera's field-of-vision. Always be sure to physically install and position a VTOF Camera to limit sunlight interference as much as possible.

3.3 Reflective Surfaces

When configuring a VTOF People Counting Camera, always be aware of areas within the camera's field-of-vision/scene containing reflective surfaces. Reflective surface can potentially disrupt the VTOF Camera's sensor and result in false and failed detection. Always be sure to physically install and position a VTOF Camera to limit the amount of reflective surface area visible within the camera's field-of-vision. Optimally, the environment should contain no reflective surfaces within the camera's field-of-vision.

3.4 Nearby Objects

As the VTOF Camera uses a stereoscopic sensor to detect and track people, the presence of other objects (garbage can, office chair, mannequin, etc...) within the camera's field-of-vision can potentially disrupt the sensor and can often contribute to false/or and failed detection. Always be sure to physically install and position a VTOF Camera so that its field-of-vision contains as much open space as possible. Always attempt to keep the VTOF's field-of-vision free of other objects.

4 VERA Thermal Camera - VCA Configuration Guidelines

The following guidelines should be taken into account when configuring a VISIX VERA Thermal Camera's VCA Analytics.

4.1 Surface Temperature

When configuring VCA analytics rules on a VERA Thermal Camera, always be aware of the different backgrounds and surfaces present within the camera's field of vision. Certain surfaces such as pavement, steel and cement can become very hot during daylight hours and objects with similar temperatures can blend into them, potentially preventing detection by the camera. Distance also tends to exacerbate this issue, with objects over high-temperature backgrounds becoming increasingly difficult to detect at lengthier distances. Installing to achieve optimal perspective can often help to alleviate detection failures stemming from this issue. Section 4.2 contains more information on VERA Thermal Camera position and perspective.

4.2 Positioning, Perspective and Distance

Although overhead perspective is possible, 3xLOGIC highly recommends installing and positioning the VERA Thermal Camera to utilize a downward-facing perspective for applications requiring VCA analytics. Utilizing a downward angle allows the camera to more easily differentiate between objects and backgrounds of similar temperatures by providing a more appropriate vantage point to accurately gauge space between them. In many cases this can increase analytics object detection accuracy and decrease false detections and failures.

When the VERA Thermal Camera is positioned straight out, its perspective is essentially flat, giving the camera very little means of detecting space between objects and the background. Without angular perspective, detection of objects becomes very difficult or impossible in some applications.

5 Contact Information

If you require more information, or if you have any questions or concerns, please contact 3xLOGIC Support:

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