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Gazelle Series



Professional People Counting Devices

..... Product Information

Gazelle Series



IP enabled thermal detection and video people counters

All the benefits of thermal technology in a range of devices which combine form and function, with a host of features, outstanding performance and low cost of ownership.

The **Gazelle™** series comprises:

Gazelle DualView™

Designed-for-purpose thermal detection people counting device with optics, sensor, signal processing and interfacing electronics all contained within a custom housing. The counter is used in a downward looking configuration and functions by detecting the heat emitted by people passing underneath, using this information to track and count people.

The **Gazelle DualView** device features a video camera within the housing. The video camera is capable of viewing a '3 counter wide' area on the floor, so one video equipped unit provides coverage of its own thermal view, plus the thermal view of a unit either side i.e. three thermal units in total.

The sensing area of the detector is a square on the floor, with width approximately equal to mounting height (e.g. when mounted at 3.5m a 60° unit 'sees' a 3.25 x 3.25m square on the floor).

Offers absolute verification capability provided by video feed, combined over a single IP channel. This added video capability provides a live, real-time image of a scene, allowing a counter to be configured locally or remotely, with a high degree of certainty and accuracy.

Gazelle IP

Gazelle IP offers exactly the same features as the **Gazelle DualView** device, but without the video camera.

Both the devices have a robust and secure, high-performance IP capability allowing remote configuration and data collection over IP infrastructure, either over an in-store LAN, or for worldwide access from remote locations over the internet.

Gazelle IP Node

When used in conjunction with the **Gazelle DualView** or **Gazelle IP** master devices, the **Gazelle Node** offers the unique **WideTracker™**, wide-opening counting capability, allowing accurate counting over an extended area.



Gazelle Series

Overview of Gazelle series

Low profile design, with a choice of casing and mounting options:

Aesthetic and unobtrusive bulkhead mounting, with IP cable entries hidden from view:

- Simple removable front cover for painting or custom colouring
- User configurable area for the addition of badges or logos
- Engineering drawings available for custom cover design

Fully recessed design for true in-ceiling mounting:

- Simple front plate for painting or custom colouring
- Exceptionally discreet
- Internal basic module for utility mounting situations

Secure and universal IP applications:

- Full Power over Ethernet (PoE) capability
- Single IP address for data collection and configuration
- Secure SSL IP protocol
- Push data configuration to output data from within end-user firewalls
- Full proxy-server support capability
- FTP and e-mail data delivery options
- Full range of APIs for development (Java, .NET, Win32, Linux)
- Robust, flexible and powerful IP infrastructure.

Gazelle series key features include:

- Built-in data log with time stamped and variable time periods
- Non-volatile setting storage
- User-definable count lines
- Web-browser set-up tool for remote configuration
- **WideTracker™** capability for up to 8 units, allowing for effective coverage of entrances up to 36m wide at maximum mounting height

- Built in relays for data input and output functions (2 input, 2 output)
- Up to 16 count lines and 32 count registers for multi-directional counting and additional advanced line logic operations
- Advanced count line logic for embedded, advanced analytics
- 60° and 40° lens options available for use over a wide range of mounting heights 60° (2.2 - 4.8m) and 40° (4.0 - 7.5m).

Additional Gazelle DualView features include:

- Integrated video camera
- Visual auditing and configuration for wide-opening with up to 3 linked units
- Simultaneous video and thermal target view for configuration and count accuracy determination.

Gazelle series key benefits include:

- Operation independent of ambient light
- Minimal set up
- Full remote configuration capability
- Lowered installation costs
- Lower ongoing support costs; minimal return visit requirement and industry-leading low cost of ownership
- Highly accurate, verifiable counting performance
- Robust and accurate counting algorithms
- Advanced behaviour analysis
- Flexible configuration for wide range of applications
- Seamless tracking across wide openings and spaces.

Additional Gazelle DualView benefits include:

- Simultaneous video and thermal target view for configuration and count accuracy determination
- Remote verification capability
- High-speed video download.



The **Gazelle** series is accompanied by a suite of modular software tools, to remotely support and maintain **Gazelle** devices, as single units or as part of a worldwide estate.

This suite includes a:

- Secure **People Counter Set-up and Configuration Tool**, allowing video and thermal views to be observed simultaneously
- Professional **Validation Tool** to support remote validation and audit of people counting performance
- **Estate Manager™** tool for users to manage an estate of **Gazelle** devices via a centrally located, unified framework for task scheduling, video file download and management, error and diagnostic reporting, device configuration and firmware upgrading. Will also allow management of the older 3000 series IP units.
- **Harvester™** data tool to collect people counting data from **Gazelle** units to a central database.

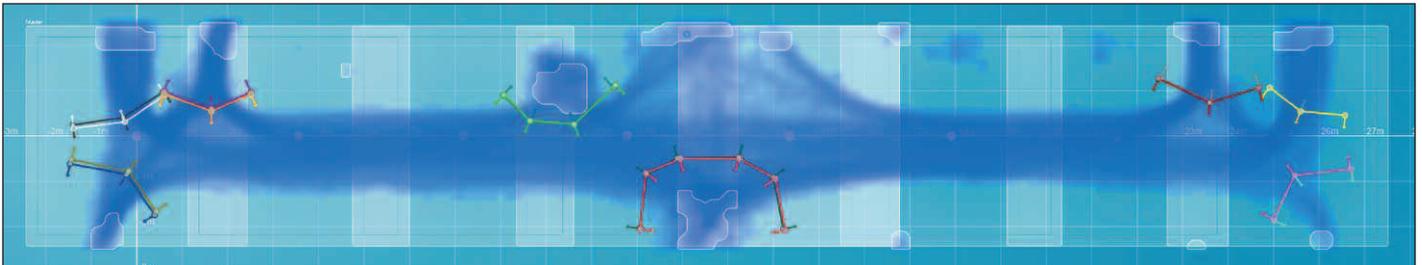
The devices and software combine to form the **Gazelle** Intelligent Analytics Platform, providing an unmatched people counting solution to deliver reliable and accurate performance analytics.



Gazelle Series

WideTracker

Linking multiple people counters to give an accurate count over wide openings, **WideTracker** is a unique feature which can be accessed via the **People Counter Set-Up Tool (PCST)** and comes as standard with each device.



This image shows a network of 8 counters creating a continuous field of view, covering approximately 28m on the ground. This combination requires one **Gazelle** master unit, plus seven node devices; configuration of the wide-opening system is via one connection to the **Gazelle** master device.

Path mapping, counting lines and initialisation zones

1. Path mapping: The blue pattern in the foreground shows the paths of movement of people, within the scene. The darker the colour, the more people have moved in that direction, along that part of the path. Provides an immediate, visual reference to where counting lines should be positioned for optimum counting accuracy.
2. Counting lines: Sixteen counting lines are visible in the view. Generally used in pairs, one line counts 'in' and the other counts 'out', although they operate independently. Each counting line is associated with a direction, indicated by the arrow attached to the line.
3. Initialisation zones: The light-blue contours visible around the wide area, indicate where people are first initialised as valid targets when they enter into the counter's field of view. They highlight regions where it is inadvisable to place counting lines.

Path mapping and initialization zones aid installation by showing where counting lines should be positioned for best accuracy, whether on-site or via remote configuration.

Count line logic

Count line logic is an advanced function, allowing counts to be incremented based on combinations of count line activity. Examples of this include: sequential (crossing two or more lines in the correct, configured order), summation (addition and/or subtraction of counts from multiple lines into one total) and alternative (crossing of any two or more lines).



Gazelle DualView & IP - Technical Specification

Technical specifications:			
Coverage Pattern	The mounting height determines the maximum coverage area available, as shown below.		
Height Options	Height Range (m)	Field of View (m)	Video Detection Region (m)
60° Field of View	2.2 - 4.8	1.8 - 2.5	5.4 - 14.3*
40° Field of View	4.0 - 7.5	1.8 - 4.3	9.8 - 23.5*
	*Allows video view of equivalent size from up to three thermal views (one dual view unit and a node unit either side).		
Detection Speed Range	0.5ms ⁻¹ – 3ms ⁻¹		
Temperature Sensitivity	< 2.0K		
Count Lines and Registers	Count lines can be set to count in both directions (e.g. 'in' and 'out'). Up to 16 count lines and 32 registers can be implemented in any device or wide opening network, allowing for bi-directional counting in up to 8 directions. A register holds count values derived from people crossing count lines. The additional registers can be used in association with the advanced count line logic to provide additional information outputs. The lines may be user-configured in a number of ways.		
1. User Configurable	The count lines are user configured by a drag and drop mechanism. Both line position and shape may be modified.		
2. Count Direction	People are counted when they cross the count lines. Different 'count modes' are available (see below). The direction of line crossing which increments the count is user selectable.		
3. Count Modes	Various count modes are available, including: a. Count increment as soon as a person crosses line b. Count increment when line crossed and then person leaves the field of view c. Ignore or register U-turns d. Count every line crossing or only the first line crossing.		

Technical specifications:	
4. Advanced Count Line Logic	Embedded within all Gazelle devices is the ability to use multiple count lines to extract more detailed information about people's movements within the field of view of the counter. Using logic such as Sequential, Summation and Alternative, it is possible to get advanced analytical information for a variety of applications e.g. using sequential line logic; a new register can be created that will only increment when a person crosses eight count lines in a predetermined order. Such an application is useful in determining the flow of people in different directions from an entrance.
5. Placement Restrictions	The user is free to place and adjust the count lines, providing that a certain amount of initialisation space is allowed between the edge of the counters field of view and the count line. This is dependent on the height of the counter and other factors - see IPU 40503 Applications Notes.
6. Wide Opening Networks	Often essential for use in shopping mall installations and transport hubs and beneficial in retail installations, the Gazelle series ability to be used in a Wide Opening Network configuration can be highly advantageous. In a wide opening situation up to 8 people counters can be linked together and configured as a single unit with a wide footprint. People moving between the fields of view of each counter will be tracked. Count lines can be configured in a variety of formats. A single pair of count lines can be implemented across all 8 units or alternatively, several pairs of count lines can be placed at any point in the extended field of view.

Gazelle DualView & IP - Technical Specification continued

Technical specifications:	
Counter System Implementations	Single counter connected via IP or a group of counters installed together to give a single count output, controlled via an IP Master Counter.
Configuration	Configuration of the counter is carried out either by IP connection (which may be local or remote) or by a plug-in configuration serial cable connected to a socket on the counter base; serial to bluetooth adaptor is also available. The IP connection when used with an additional third party WiFi adaptor and a WiFi enabled laptop, will also allow wireless configuration.
Power Supply Requirements	
Supply voltage:	12 - 28V SELV or PoE
Ripple:	<2Vpk-pk within supply range
Typical supply current:	24V 12V
DualView	84mA 168mA
IP Master	72mA 141mA
IP Interface Specification	Standard RJ45 socket are provided on the rear of the unit for structured cable (CAT5) connection. IPv4, IPv6 compatible IP address: Fixed or via DHCP IP protocols supported: HTTPS: unit configuration, web services interface for data download and configuration SFTP: for video and data download Certificate: capability to upload customer supplied certificate is provided.
Video	Gazelle DualView video view provides 12fps at native resolution of 1600 x 1200. This provides a digital zoom capability when mounted at higher heights with no loss of video quality.

Technical specifications:	
Mechanical	
Housing material:	White/black ABS
Bulkhead mount:	
Dimensions:	190mm x 111mm x 63mm deep
Weight:	0.3kg
Mounting:	Four fixing holes in ceiling mounting plate
Recess mount:	
Dimensions:	190mm x 111mm x 63mm deep
Weight:	0.3kg
Mounting:	Four fixing holes in ceiling mounting plate.
Limitations to Use	Users are requested to observe the following guidelines: Safety critical use: The Gazelle series is not intended for use in any safety critical or personal safety application. *See Irisys publication IPU 40503 Applications Notes for guidance on the use and application of the Gazelle series detectors.
Environment	The counters are intended for use in indoor environments, free from rapid changes in temperature or humidity.
Operating Temperature:	0°C to + 40°C (non-condensing).
Storage Temperature:	-10°C to + 50°C.

Gazelle IP Node - Technical Specification

Technical specifications:										
Coverage Pattern	The mounting height determines the maximum coverage area available, as shown below.									
Height Options	<table border="1"> <thead> <tr> <th>Height Range (m)</th> <th>Field of View (m)</th> <th>Video Detection Region (m)</th> </tr> </thead> <tbody> <tr> <td>60° Field of View</td> <td>2.2 - 4.8</td> <td>1.8 - 2.5</td> </tr> <tr> <td>40° Field of View</td> <td>4.0 - 7.5</td> <td>1.8 - 4.3</td> </tr> </tbody> </table>	Height Range (m)	Field of View (m)	Video Detection Region (m)	60° Field of View	2.2 - 4.8	1.8 - 2.5	40° Field of View	4.0 - 7.5	1.8 - 4.3
Height Range (m)	Field of View (m)	Video Detection Region (m)								
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40° Field of View	4.0 - 7.5	1.8 - 4.3								
	*Allows video view of equivalent size from up to three thermal views (one dual view unit and a node unit either side).									
Detection Speed Range	0.5ms ⁻¹ – 3ms ⁻¹									
Temperature Sensitivity	< 2.0K									
Configuration	All configuration is carried out through the Gazelle master device – this can be either a Gazelle DualView master or a Gazelle IP master; configuration instructions can be found in the specification information for these devices. The Gazelle IP node cannot be used alone and must be connected to a master device.									
Wide Opening Networks	Often essential for use in shopping mall installations and transport hubs and beneficial in retail installations, the Gazelle series ability to be used in a Wide Opening Network configuration can be highly advantageous. In a wide opening configuration up to 8 people counters can be linked together and configured as a single unit with a wide footprint. People moving between the fields of view of each counter will be tracked. Count lines can be configured in a variety of formats.									
Counter System Implementations	As a node device in group of counters installed together to give a single count output, controlled via an IP Master Counter.									

Technical specifications:	
Counter System Implementations	As a node device in group of counters installed together to give a single count output, controlled via an IP Master counter
Power Supply Requirements	
Supply voltage:	12 - 28V SELV or PoE
Ripple:	<2Vpk-pk within supply range
Typical supply current:	24V 12V 80mA 160mA
IP Interface Specification	Standard RJ45 socket are provided on the rear of the unit for structured cable (CAT5) connection to a Gazelle Dualview or IP master unit
Mechanical	
Housing material:	White/black ABS
Bulkhead mount:	
Dimensions:	190mm x 111mm x 63mm deep
Weight:	0.3kg
Mounting:	Four fixing holes in ceiling mounting plate
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Operating Temperature:	0°C to + 40°C (non-condensing).
Storage Temperature:	-10°C to + 50°C.

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