



Irisys People Counting

Red Hot Intelligence

IRC3000 Series

IP ENABLED INDOOR PEOPLE COUNTER

The Irisys IRC3000 series people counter is the latest model in the Irisys thermal array based people counter family, now with IP connectivity, which allows direct connection of the counter to LAN based systems for remote configuration, and data collection using IP infrastructure, and browser based applications. The IRC3000 also incorporates an in-built data logger providing a universal people counting detector. It is applicable to a wide variety of counting applications:

- Retail, Shopping Malls & Shops
- Leisure, Hotels & Casinos
- Transportation
- Smart Buildings

The key benefits include:

- Operation independent of ambient light
- Minimal set up
- User-Definable Count Lines & functionality
- Wide Opening Capability up to 8 units
- Built in data logging
- Direct IP Connectivity
- Web browser setup for local or remote Configuration
- Lower installation costs
- Low ongoing support costs

An API suite for developing IP enabled software applications is available.

Description of the IRC3000 Series

The IRC3000 and IRC3010 are people counting devices with the imaging optics, sensor, signal processing and interfacing electronics all contained within a moulded plastic housing. The unit is used in a downward looking manner, as the unit functions optically 'seeing' the heat emitted by people passing underneath as Infra-Red radiation, collected through a germanium lens with a 60° field of view. The sensing area is a square on the floor whose width is approximately equal to the mounting height, for example, at 3.5m the unit 'sees' a 3.25 x 3.25m square on the floor. Mounting height ranges between 2.2 and 4.8m can be covered with the standard lens, whilst a 40° field of view version offers a mounting height range of 3.5 to 7.5m.

An IRC3010 IP 'master' counter can be used as a single counting node which can be connected directly to an Ethernet Local Area Network (LAN). Additionally, the IP master can be connected to a number of IRC3000 CAN Node Counters to cover a wide entrance. Up to 8 units can be linked together to span the wide opening and these will appear to the user system as a single counter unit with a wide 'footprint'. Only one IP address is required.

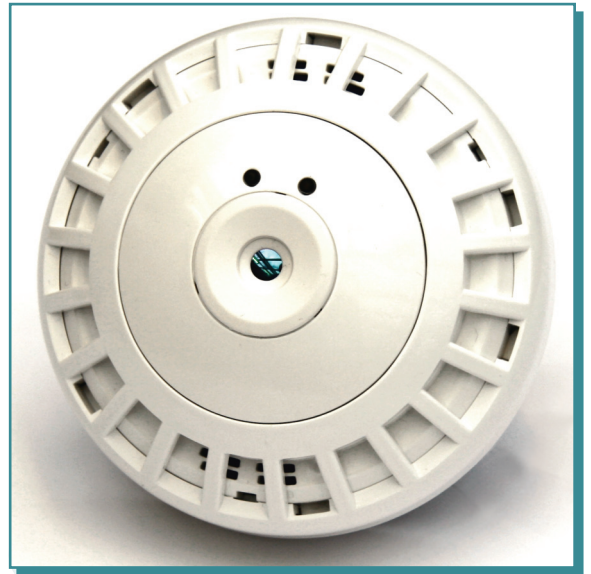
Both data output and counter configuration is handled via the IP connection. This allows true remote configuration and data integration via IP. An alternative method of configuring is via direct serial connection to the master counter, if required, using the Irisys Accessory IWC3062 serial cable. A serial to USB convertor is also included. Firmware upgrades to the counter may also be made available periodically; these can also be performed, remotely, via IP.

An API and documentation is available to developers who wish either to develop their software applications using IP or to integrate the counter within an existing system.

The set-up tool is any PC with an Internet Browser compatible with the Microsoft 'SilverLight' (v2) add-on (this is free to download from the Microsoft website). The set-up tool is used to configure the counting lines which can be configured uniquely to the requirements of the scene, as described overleaf. A serial version of the set-up software is available for on-site direct connection between PC and counters.

The Product Family

- IRC3010 IP Master Counter
- IRC3000 CAN Node Counter



“ The IRC3000 is a universal indoor people counting detector with full IP capability for remote data access and configuration. ”



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SPECIFICATION

Coverage Pattern:

The mounting height determines the maximum coverage area available, as shown below.

Mounting Height Options	Mounting Height Range (m)	Width of Field of View (m)
60° Field of View IRC3000/3010/3020	2.2 - 4.8	1.8 - 4.3
40° Field of View IRC3001/3011/3021	3.5 - 7.5	1.8 - 4.3

Detection Speed Range: $0.5\text{ms}^{-1} - 3\text{ms}^{-1}$
Temperature Sensitivity: $< 2.0\text{K}$

Count Lines:

There are two count lines, allowing counting in both directions (e.g. 'in' and 'out'). 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. Figure 1 shows a standard line position, whilst Figure 2 shows a user configured alternative.

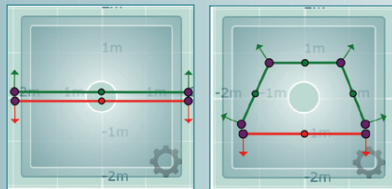


Figure 1

Figure 2

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 and is indicated by the arrows on the counting lines shown in Figures. 1 & 2 above.

3. Count Functionality.

Various count modes are available, including:

- Count increment when person crosses line
- Count increment when person leaves the field of view
- Ignore or register U-turns
- Count every line crossing or only the first line crossing

4. 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 dependant on the height of the counter and other factors, see 'IPU40184 Applications Notes'

Counter System Implementations

- Single counter connected via IP
- 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 cable connected to a socket on the counter base.

The IP connection when used with an additional third party WiFi adapter and a WiFi enabled laptop will also allow wireless configuration.

Power Supply Requirements:

Supply voltage: 10-28V
 Ripple: $< 2\text{Vpk-pk}$ within supply range
 Typical Supply Current: 24V 12V
 IP 80mA 160mA
 CAN Node 50mA 80mA

A power injector accessory is available for powering over CAT5 cable if required (part numbers IWC3060 and optional 24V PSU IWC3061).

IP Interface Specification:

Standard RJ45 sockets are provided on the rear of the unit for structured cable (CAT5) connection. Power can be supplied over the CAT5 with the Irisys Power Injector accessory IWC3060 or directly to the power terminals on the unit base. Power over the Ethernet (PoE) is not supported.

Mechanical:

Housing: White ABS
 Dimensions: 111mm diameter x 70mm deep
 Weight: 0.2kg
 Mounting: Four fixing holes in base

The front part of the unit is removable from the base in a 'twist and pull' action.

Limitations to Use:

Users are requested to observe the following guidelines:

Safety Critical Use: The IRC3000 series is not intended for use in any safety critical or personal safety application.

*See Irisys publication 'IPU40184 Applications Notes' for guidance on the use and application of the IRC3000 series detectors.

Environment:

The counters are intended for use in indoor environments, free from rapid changes in temperature or humidity. For more severe environments the outdoor version should be used (available 2009).

Operating Temperature: 0°C to $+40^{\circ}\text{C}$ (Non-condensing)

Storage Temperature: -10°C to $+50^{\circ}\text{C}$

InfraRed Integrated Systems Limited

Park Circle Tithe Barn Way Swan Valley Northampton NN4 9BG UK

Tel: +44 (0) 1604 594 200

Fax: +44 (0) 1604 594 210

Email: sales@irisys.co.uk

Web site: www.irisys.co.uk