

# User Manual

F100312-13



## Revision History

Revision Number	Description of Revision	Date of Revision
1	Initial Draft	January 27, 2016
2	Revision	February 28, 2016
3	Revision	March 7, 2016
4	Initial Release	March 24, 2016
5	Updated Specifications	May 17, 2016
6	Updated Configuration Settings	August 04 2016
7	Updated Report Templates	August 19, 2016
8	Updated Installation Flow	April 09, 2017
9	Updated Formatting	August 22, 2017
10	Updated Counter Replacement	August 25, 2017
11	Updated Import Centre	August 28, 2017
12	Updated Counter Management Section	September 20, 2017
13	Updated Server Installation Requirements	Nov 15, 2017

## Information Classification

C1	C2	C3	C4
----	----	----	----



This document is classified as **Classified Information**.

This document may contain confidential and propriety information belonging exclusively to FootfallCam International Inc. No confidential or propriety information contained in this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopied, recorded or otherwise without prior written permission of FootfallCam International Inc.



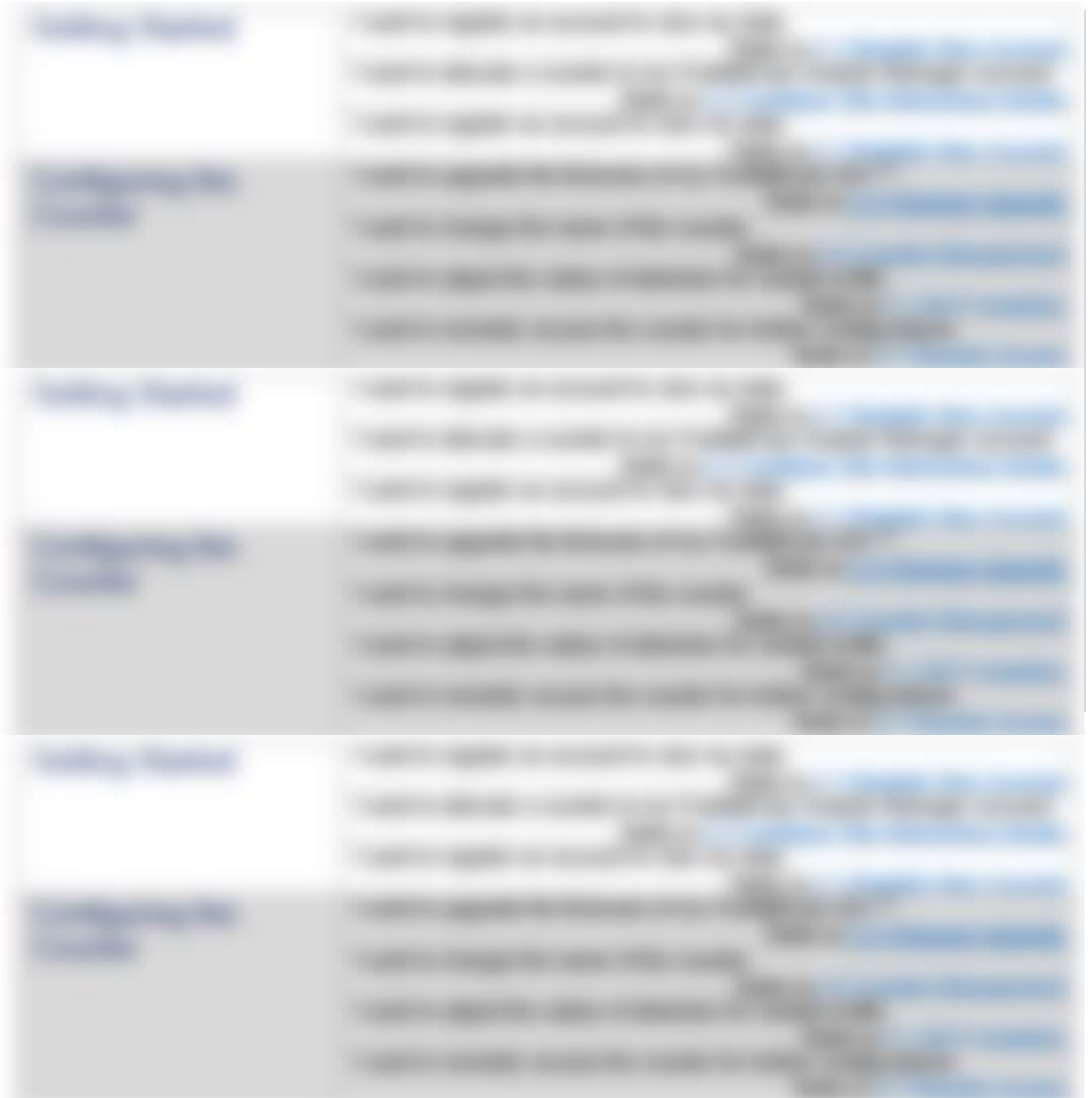
Copyright© 2002-2017, FootfallCam



Year	Country	Value
2000	USA	100
2001	USA	100
2002	USA	100
2003	USA	100
2004	USA	100
2005	USA	100
2006	USA	100
2007	USA	100
2008	USA	100
2009	USA	100
2010	USA	100
2011	USA	100
2012	USA	100
2013	USA	100
2014	USA	100
2015	USA	100
2016	USA	100
2017	USA	100
2018	USA	100
2019	USA	100
2020	USA	100
2021	USA	100
2022	USA	100
2023	USA	100
2024	USA	100
2025	USA	100
2026	USA	100
2027	USA	100
2028	USA	100
2029	USA	100
2030	USA	100
2000	China	50
2001	China	50
2002	China	50
2003	China	50
2004	China	50
2005	China	50
2006	China	50
2007	China	50
2008	China	50
2009	China	50
2010	China	50
2011	China	50
2012	China	50
2013	China	50
2014	China	50
2015	China	50
2016	China	50
2017	China	50
2018	China	50
2019	China	50
2020	China	50
2021	China	50
2022	China	50
2023	China	50
2024	China	50
2025	China	50
2026	China	50
2027	China	50
2028	China	50
2029	China	50
2030	China	50
2000	Germany	75
2001	Germany	75
2002	Germany	75
2003	Germany	75
2004	Germany	75
2005	Germany	75
2006	Germany	75
2007	Germany	75
2008	Germany	75
2009	Germany	75
2010	Germany	75
2011	Germany	75
2012	Germany	75
2013	Germany	75
2014	Germany	75
2015	Germany	75
2016	Germany	75
2017	Germany	75
2018	Germany	75
2019	Germany	75
2020	Germany	75
2021	Germany	75
2022	Germany	75
2023	Germany	75
2024	Germany	75
2025	Germany	75
2026	Germany	75
2027	Germany	75
2028	Germany	75
2029	Germany	75
2030	Germany	75
2000	Japan	80
2001	Japan	80
2002	Japan	80
2003	Japan	80
2004	Japan	80
2005	Japan	80
2006	Japan	80
2007	Japan	80
2008	Japan	80
2009	Japan	80
2010	Japan	80
2011	Japan	80
2012	Japan	80
2013	Japan	80
2014	Japan	80
2015	Japan	80
2016	Japan	80
2017	Japan	80
2018	Japan	80
2019	Japan	80
2020	Japan	80
2021	Japan	80
2022	Japan	80
2023	Japan	80
2024	Japan	80
2025	Japan	80
2026	Japan	80
2027	Japan	80
2028	Japan	80
2029	Japan	80
2030	Japan	80
2000	India	20
2001	India	20
2002	India	20
2003	India	20
2004	India	20
2005	India	20
2006	India	20
2007	India	20
2008	India	20
2009	India	20
2010	India	20
2011	India	20
2012	India	20
2013	India	20
2014	India	20
2015	India	20
2016	India	20
2017	India	20
2018	India	20
2019	India	20
2020	India	20
2021	India	20
2022	India	20
2023	India	20
2024	India	20
2025	India	20
2026	India	20
2027	India	20
2028	India	20
2029	India	20
2030	India	20
2000	UK	60
2001	UK	60
2002	UK	60
2003	UK	60
2004	UK	60
2005	UK	60
2006	UK	60
2007	UK	60
2008	UK	60
2009	UK	60
2010	UK	60
2011	UK	60
2012	UK	60
2013	UK	60
2014	UK	60
2015	UK	60
2016	UK	60
2017	UK	60
2018	UK	60
2019	UK	60
2020	UK	60
2021	UK	60
2022	UK	60
2023	UK	60
2024	UK	60
2025	UK	60
2026	UK	60
2027	UK	60
2028	UK	60
2029	UK	60
2030	UK	60

# General Questions

This section lets you quickly search for a section you may be concern about or a function you would like to know about.



## **Part A: Product Information**

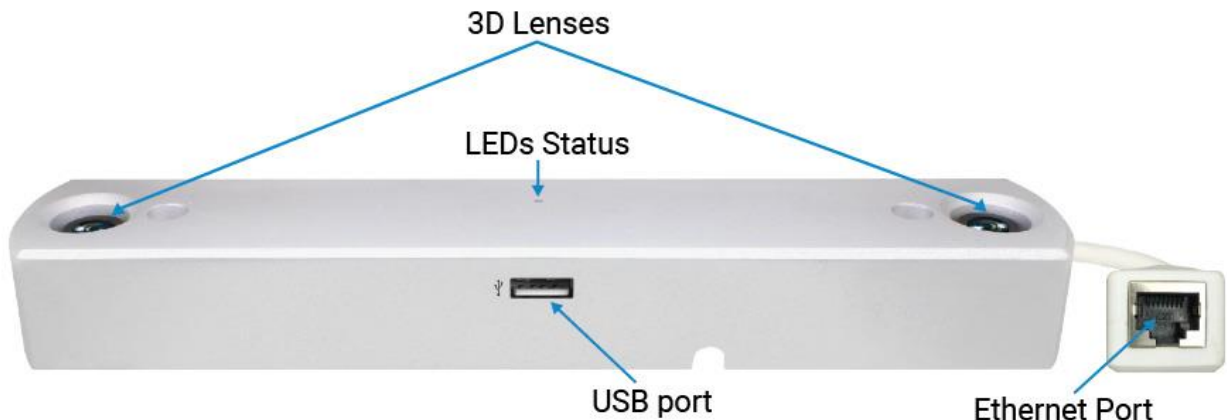
# 1.0 Product Description

FootfallCam 3D+ Wi-Fi is embedded with a powerful 1GHz processor, specifically to run its complex video processing algorithm. Our GPU Processor is powered by the latest algorithm which uses both colour and texture pattern to identify the person, producing far superior accuracy than when using colour pattern alone. Our algorithm can also achieve real time performance for a high definition stereo system processing of 1024 x 1024 images.

FootfallCam is equipped with lenses which provide a super wide-angle view in ensuring good depth of view as compared to telephoto lenses. The wide field of view will also make sure a complete coverage to achieve the highest accuracy.

- Stereo Vision/ Two camera lens - Mimicking human eyes and achieve better accuracy, eliminating shadow issue
- Bi-directional counting
- Most Powerful Processor with Dual technology
  - 3D stereo vision video counting (>95% high accuracy)
  - Wi-Fi counting
- Dual Operating system - Ensure zero data corruption by - In the unlikely circumstances, of a memory corruption due to electric shock, part of the disc space is damage and may cause the counter do not function properly, the second and third OS will put in action and auto rebuild first OS.
- Hardware Watchdog- Ensure Zero down time by auto reboot the system after a checklist of the heartbeat is failed.
- Remote management and support, including firmware upgrade.
- Adjustable human height for none-count purpose (e.g. discount children with less than 1.3m height)
- Path tracking and heat map analytic mode available
- Zone tracking mode available
- Flush mount selection

The following image provides a diagram of the FootfallCam 3D Plus.



## 1.1 Product Specification

Power Unit Specifications	
Power Over Ethernet (PoE)	Yes (IEEE802.3at)
PoE Mode	Mode B
Consumption	10w
AC input	110V – 240V, 50/60Hz

s

Key Specifications	
Device Dimension	Device dimensions (WxDxH): 246mm x 46mm x 28mm Packing dimensions (WxDxH):255mm x 210mm x 55mm
Weight	Device weight: 0.6 kg; Package weight: 1.02kg
Lens	Min. height 2.4 meters, Max. height 4.5 meters 2x 5MP resolutions (Live Stream will only display 320x420 resolution to reduce bandwidth sent to database for verification purpose)
Casing	Aluminium oxide alloy, Water and dust resistant
Field Upgradable	Auto Software upgrade
Power	Power over Ethernet: 47V DC, 0.12A (6W)
Illumination	Minimum 300 lux
LEDs	LEDs troubleshooting for counting issues
Environmental Specs	Operating environment: Temperature 10°C to 45°C, Humidity 10% - 90% Storage environment: Temperature -40°C to 80°C, Humidity 10% - 95%
Output	2.7MP Omni vision 5647 Camera Module
Frame Rate	15 fps
Storage	Micro SD, 4 GB memory
Cabling	Cat5
Tracking Technology	3D- Depth Recreation Technology
Firmware Feature	Dual Operating System Hardware watchdog
IP Rating	IP 31
Origin	Designed in the UK

Software Specifications	
Interface	Http
Operating System	Footfall Counter OS
Ethernet	10/50 Mb Ethernet
Time	NTP, Adjustable time zone, automatic day light saving adjustments
Data Delivery	TCP/IP
Database Type	SQLite
Report format	csv, .xml, .txt
Data Storage	10 Years storage with auto sync
Data Backup	Yes



## 1.2 Installing FootfallCam Analytic Manager

Users that would like to install the software of FootfallCam Analytic manager on their corporate servers must meet the following minimum server requirements.

Minimum Server Requirements	
Operating System	Windows Server 2008 R2 and above
Storage	500GB to 1TB (For up to 2000 Counters)
Memory	16GB
Database	MS SQL Server 2016 and above
Web Server	Internet Information Services (IIS)7.0 and above
Microsoft. NET	4.0
CPU Processor	3.1 GHz (64-bit Processor) with Multi-Core
Recommended Drive	(C:) Drive

Once users have ensured that the above minimum requirements have been met, the user will have to contact FootfallCam sales team at [sales@footfallcam.com](mailto:sales@footfallcam.com) to request for a quotation for the installation of the software on a corporate server.

### Software Required for Installation

#### Remote Desktop Protocol

For more details on running the RDP, please refer to this [link](#).

#### Any Desk

You may download the application from this direct link available [here](#).

#### TeamViewer 11

You may download the application from the following [link](#).

Once one of the above application has been downloaded, users will be required to provide FootfallCam the credentials for FootfallCam to proceed with the server installation.



#### Note:

The Server Installation will only be scheduled after the user have been issued a quotation for the service.

### Network Configurations

Port	Protocol	Purpose
80 (Http)	TCP	To enable data uploading/downloading to/from server/ cloud
22 (SSH)	TCP	To enable remote support to the counter
26 (SMTP)	149.202.72.16	To enable mail server to receive scheduled reports



#### Note:

Users must choose to allow [footfallcounter.com](http://footfallcounter.com) to allow remote access for verification purposes.

### Network Bandwidth Requirement

Description	Bandwidth Use	Upload to Server
Counting Data (JSON)	Approx. 6KB/counter	Every hour
Wi-Fi Data (JSON)	Approx. 5KB/counter	Every Hour
Client Data (JSON)	Approx.50KB "350 detected clients	1/day
Video	Approx. 25MB/video	3/day (Until accuracy audit study completed)
Internet Speed (Video for fine tuning)	20MB per seconds	

# 1.3 Key Features of 3D Video Counting

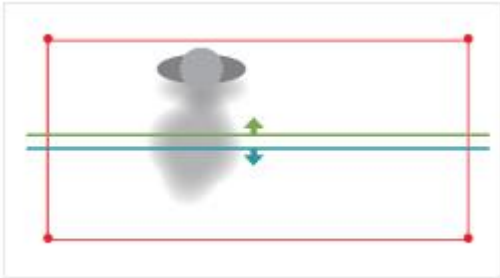
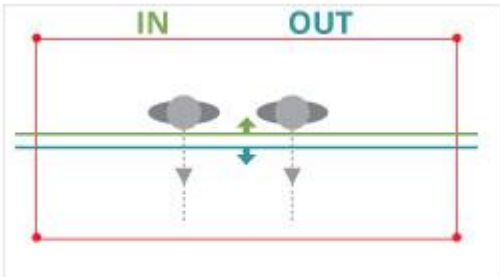

## Mimicking Human Eyes

Identified People Accurately 3D Stereoscopic is using 2 lenses to facilitate depth perception and 3D-reconstruction in an image. Information capture from the two differing views will be combined and interpreted into depth data, which are inversely proportional to the differences in distance to the objects.

FootfallCam 3D Plus™ is an industry leading product, and have many advantages over the older generation people counter such as beam counter, thermal counter, 2D video counter, and etc.

3D Stereoscopic is using 2 lenses to facilitate depth perception and 3D-reconstruction in an image. It can achieve high accuracy in varying store condition such as high traffic, low ceiling, crowded entrance, strong shadowing, wide entrance, swinging door. It provides consistent accuracy level throughout the time with minimal tuning effort.

## Benefits

	<p><b>Eliminating Overcount due to Shadow Issues</b></p> <p>By viewing a scene from two slightly different angles has the ability to extract 3D information (depth data) from the digital images, eliminating shadowing problem.</p>
	<p><b>Accurate Counting for Multiple Visitors</b></p> <p>Depth information allows counter to distinguish a group of people as separate objects, such as one person in front of another.</p>
	<p><b>Differentiate Between Trolley and Children</b></p> <p>Based on the shape and size of the polygon tracked, FootfallCam counter intelligently discounted non-human object such as a trolley, baby pushchair, etc.</p>

## 1.4 Key Features of Wi-Fi Tracking

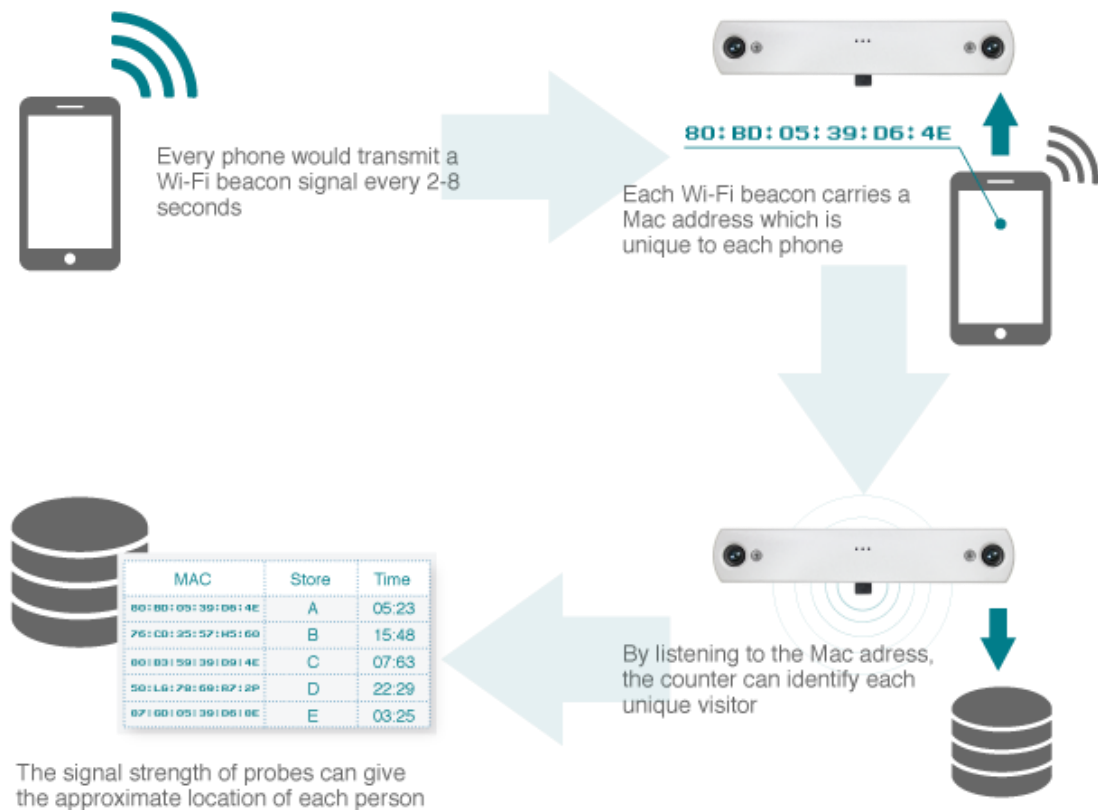
Wi-Fi technology on FootfallCam 3D Plus™ added a lot of contextual data on top of In and Out data. FootfallCam™ counter is a Wi-Fi hotspot itself. It is able to detect the Wi-Fi signals emitted by the smartphones. It able to differentiate visitors based on the unique identifier associated with the Wi-Fi enabled devices. By combining Video and Wi-Fi technology, FootfallCam™ can measure a deep customer insight, for example, their dwell time, storefront conversion, returning rate, cross shopping and more.

Wi-Fi technology on FootfallCam 3D Plus™ added a lot of contextual data on top of In and Out data. FootfallCam™ counter is a Wi-Fi hotspot itself. It is able to detect the Wi-Fi signals emitted by the smartphones. It able to differentiate visitors based on the unique identifier associated with the Wi-Fi enabled devices.

By combining Video and Wi-Fi technology, FootfallCam™ can measure a deep customer insight, for example, their dwell time, storefront conversion, returning rate, cross shopping and more.

### How does it work?

Every phone would transmit a Wi-Fi beacon signal every 2 to 8 seconds. Each Wi-Fi beacon signal transmitted carries a Mac address which is unique to each phone. By listening to the Mac address, the counter can identify each unique visitor. The signal strength of probes can give an approximate location of each person.



## 1.5 Key Business Metrics

### Visitor Count

Measures the number of people entering and leaving the store through the use of video counting technology. It is capable of measuring in hourly, daily, and weekly trends and ensures that the accuracy will achieve at least 95% by using video footage.

### Outside Traffic

Visualize how many people passed by your store. Detect user position within 100m radius, and based on the signal strength, we can determine rough location of the customers. This allows the retailer to grab the business opportunity, for example, distribute flyer at the most peak hour time, or make operation decision like store opening and closing time based on the outside traffic of your store.

### Visit Duration

Measure how long your customer tends to stay in your shop. Retailers are able to measure the customer engagement or efficiency of store staff serving the customer by the figure of how long they stayed. Approximate the time of people entering and leaving the store.

### Returning Customer

Measure how many of customers are frequent visitors. Distinguishes if the customer has visited the store before by comparing the Mac address with previous records. The retailer is able to measure the customer loyalty via the frequency of visit and their visit behaviour.

# END OF PREVIEW

Please contact [sales@footfallcam.com](mailto:sales@footfallcam.com) for complete training manual.