



HSS-BI-T Long-Range 3D ToF People Flow Detector

Wide-area, image-free 3D sensing for outdoor and high-flow environments.

HSS-BI-T combines laser ToF sensing, 3D spatial data and edge intelligence for people-flow counting and motion analysis across wide passages and large outdoor areas. It is designed for applications where coverage, environmental robustness and flexible mounting matter.

270°

Detection angle

15 m

Detection range

36 W

Power consumption

IP65

Outdoor protection

Key Capabilities

Wide-area 3D sensing

Up to 270° detection angle with long-range spatial coverage for large entrances, pathways and open areas.

Image-free sensing

3D distance data without RGB imagery as the primary sensing input, supporting privacy-sensitive deployments.

Edge intelligence

Real-time target detection, counting, direction, speed, region events and lingering analysis processed at the device.

Flexible detection zones

Square, triangular and custom polygon regions can be configured; up to 32 recognition regions are supported.

Outdoor operation

Designed for demanding environments with IP65 protection and an operating range of -30°C to +70°C.

Open integration

Ethernet and TCP/IP IPv4/IPv6 interfaces support integration with third-party platforms and analytics systems.

Typical Applications

Parks & Scenic Areas

Pathways, attraction entrances, visitor-flow monitoring

Transit & Metro

Station entrances, hubs, high-flow public spaces

Campuses & Public Facilities

Large entrances, perimeter pathways, shared outdoor spaces

Commercial & Pedestrian Areas

Shopping streets, wide entrances, public walkways

Technical Specifications

Model: HSS-BI-T

Computing Unit

CPU	Quad-core ARM A57 @ 1.43 GHz
Storage	32 GB high-speed memory
Communication interface	1 x Gigabit RJ45 interface
System environment	Ubuntu 18.04

Laser / ToF Sensing

Wavelength	940 nm
Laser safety	Class 1, IEC 60825-1:2014 eye-safety level
Acquisition frequency	30 FPS
Angular resolution	0.25°
Detection range	15 m
Detection angle	270°
Installation height	2.5 m - 5 m
Custom detection zones	Square, triangle, custom polygon
Detection accuracy deviation	±2 cm

Intelligent Recognition

Algorithm detection frequency	20 FPS
Algorithm processing latency	50 ms
Target output	ID, coordinates, direction, quantity, time, speed
Region recognition	Multi-region recognition, up to 32 regions; customizable region range
Target types	Human body, vehicle
Behavior recognition	Passenger counting; motion direction; motion speed; moving-target contour; region intrusion / boundary crossing; lingering detection

Interfaces & Protocols

External interface	100 Mbps RJ45 x 1
Supported protocols	TCP/IP, IPv4 / IPv6

Mechanical & Environmental

Dimensions	280 mm x 100 mm x 130 mm
Operating temperature	-30°C to +70°C
Protection	IP65
MTBF	>30,000 hours
Power input	DC 12 V, 3 A
Power consumption	36 W
Installation	Wall-mounted or pole-mounted

Integration Notes

HSS-BI-T is designed as a sensing layer for integration with partner platforms. The device outputs structured target and flow data over Ethernet using TCP/IP. For project evaluation, HYD can support site-specific selection, mounting-angle review, detection-zone configuration and interface alignment.