



iris INTELLIGENT
SENSING

IRMA 6 R2

A new standard for future-proof, Automatic
Passenger Counting and object recognition



FEATURES



PRECISE + FAST

- High-tech sensor to differentiate and count people and objects (adults, children, bicycles, wheelchairs) based on 3D data and AI algorithms
- Simultaneous detection of the direction of movement of passengers boarding and alighting (even with low door heights and crowds)
- Latest generation 4-core processor, AI processor, graphics processor, digital signal processor
- Real-time transfer of highly accurate raw data to the on-board computer, a server or to the Cloud (IoT-capable)

USER-FRIENDLY + ADAPTABLE

- Plug&Play: Straightforward installation with an integrated mounting system and few configuration parameters
- Simple commissioning of the sensor through import/export of the configuration
- Customer-specific accessories and a large choice of cables for different installation requirements
- Intuitive, secure, multilingual web interface for installation and service

SECURE

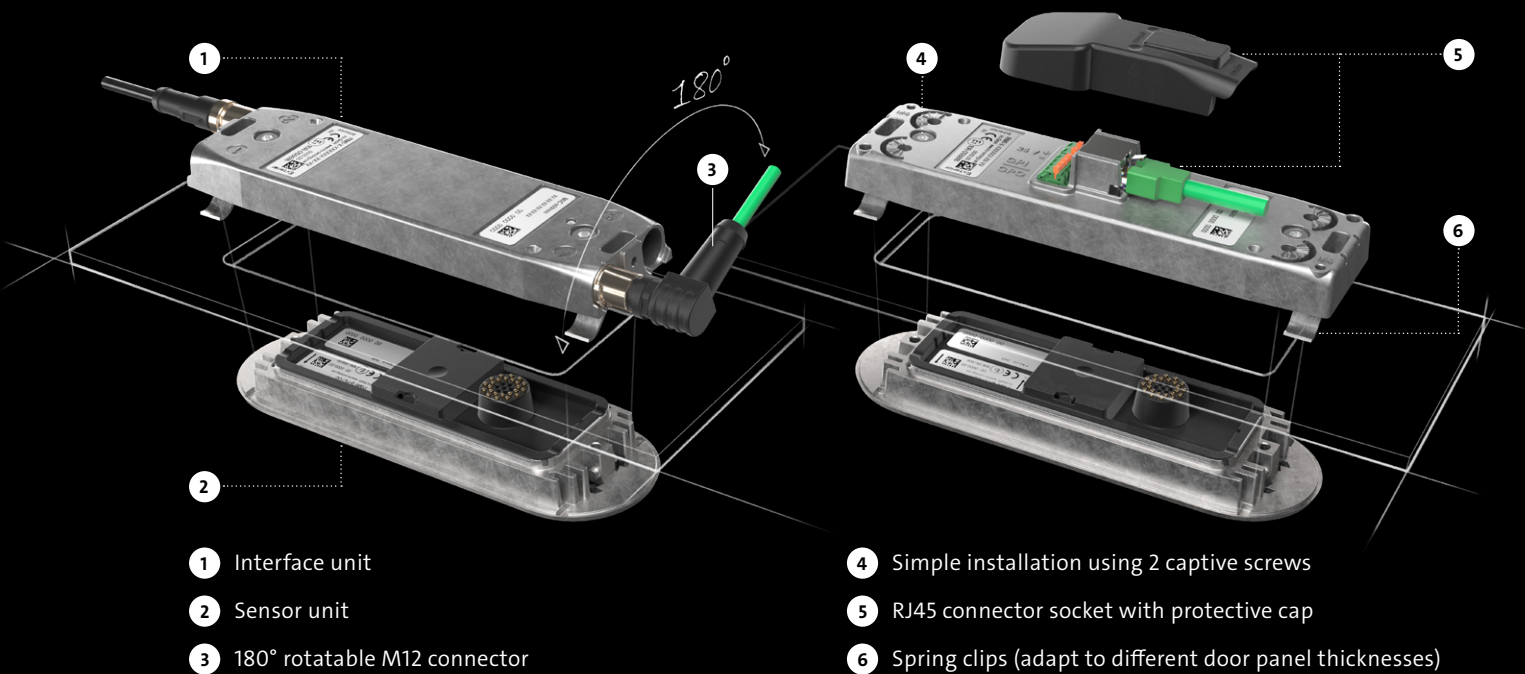
- Role-based user management
- Secure firmware and firmware updates through signing
- Event logging even in the case of power outages for troubleshooting and security incidents

MULTI-FUNCTIONAL + ROBUST

- Independent of ambient light due to active illumination with laser-based VCSEL technology
- Self-diagnosis: Sensor status displayed via LEDs, web interface and log queries for quick troubleshooting
- Automation of updates, configuration and commissioning thanks to comprehensive API

FUTURE-PROOF

- Latest hardware with long-term availability and maximum computing power for durable operation in public transport
- Flexible sensor platform for future expansions and new features

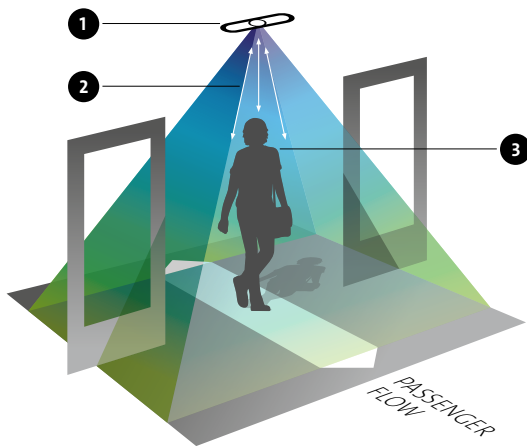


- 1 Interface unit
- 2 Sensor unit
- 3 180° rotatable M12 connector
- 4 Simple installation using 2 captive screws
- 5 RJ45 connector socket with protective cap
- 6 Spring clips (adapt to different door panel thicknesses)

APPLICATIONS

- Passenger load detection in real-time
- Effective passenger distribution
- Demand-based control of fleet use
- Vehicle design according to passenger requirements
- Cost reduction thanks to optimisation of routes
- Precise revenue sharing based on the transport service provided
- Comparison of passenger volume with ticket sales
- Transmission of the passenger load detection to traffic control systems or rescue services for emergency purposes

TECHNOLOGY



- 1 IRMA sensor (transmitter + receiver)
- 2 Distance
- 3 Person/object

IRMA sensors work according to the time-of-flight principle. The sensors measure the distance to objects based on the time of flight. This produces meaningful 3D data, which can be evaluated reliably and fully automatically.

TECHNICAL DATA

Dimensions (W × H × L, mm)	M12: 211±2 × 62 × 32.3* RJ45: 192 × 62 × 50.2*
Housing	Die-cast aluminium housing, optical openings made from polycarbonate
Protection class	M12: IP65 RJ45: IP20 (optionally IP41)*
Interface / connection	M12 • Ethernet M12 D-coded, 100 Mbit/s, IO M12 B-coded Power M12 A-coded RJ45 • Ethernet RJ45 100 Mbit/s, IO, Power: Terminals
Type approvals	EN50155, ECE, CE, EN50121-3-2, EN45545-2, EMV-06
Vehicle integration / system architecture	ITxPT, IBIS-IP (VDV 301), QIP, UIP retrofit
Power supply	24 V_{DC} POE (according to IEEE 802.3af: type 1, class 0)*
Weight	471 – 501 g
Pixels	76,800 pixels
MTBF	1.24 x 10⁶ h
Required outdoor lighting	0 lux
Installation height	1.8 to 2.5 m
Counting accuracy	up to 99%*
Inputs/outputs	1 each*

* see product data sheet