



DVS 2024

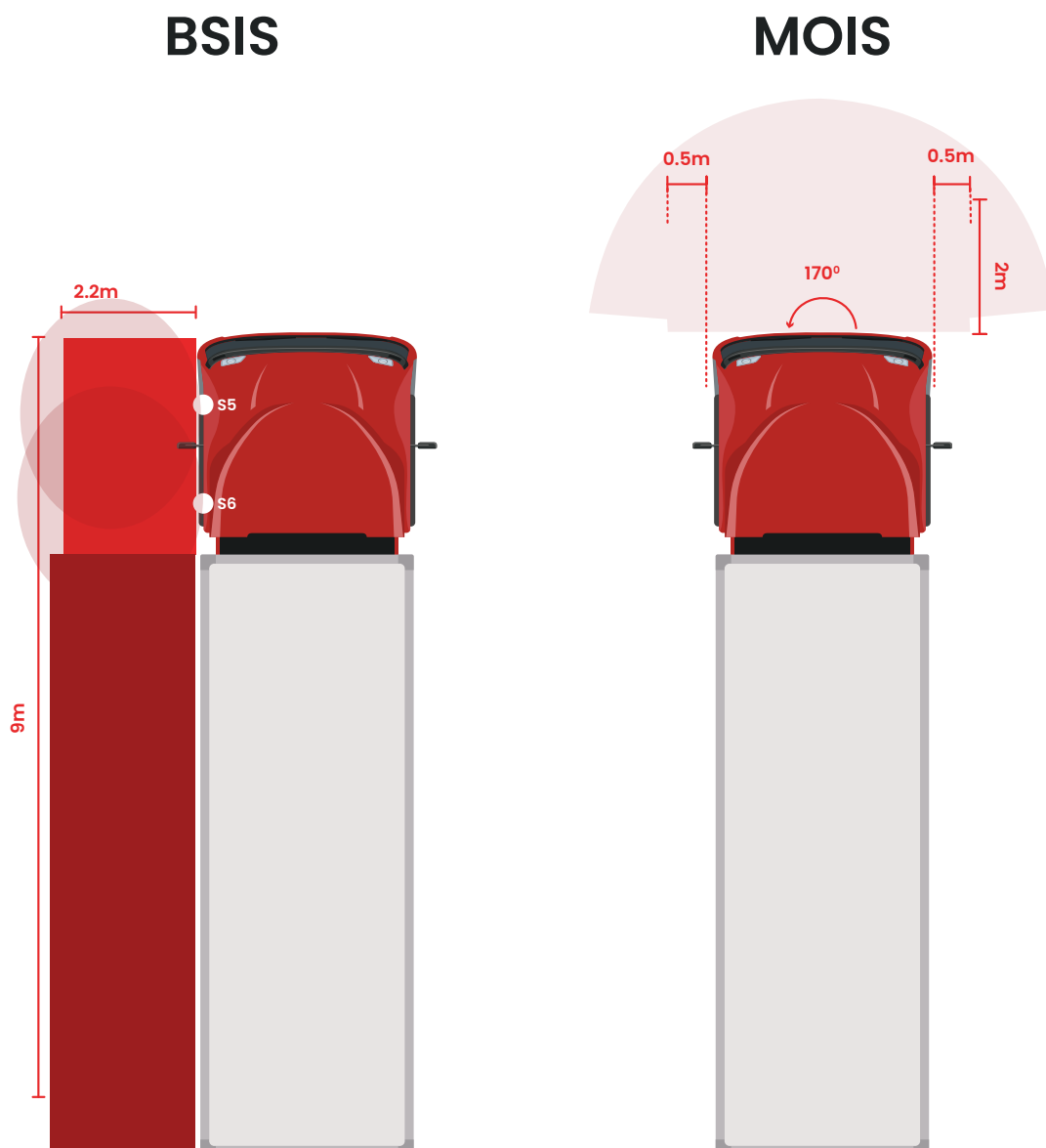
AI SENSOR SYSTEM



The Direct Vision Standard (2024 Update)

The Direct Vision Standard (2024 Update) implemented by Transport for London (TfL) is a legislation aimed at increasing the safety of HGVs (Heavy Goods Vehicles) weighing over 12 tonnes operating within Greater London.

From October 2024, this will be raised to a minimum **3-star rating**. MOIS and BSIS systems are required for compliance.



COMMERCIAL VEHICLE AI CAMERA + AI SENSORS + MICROWAVE RADAR



BAT1002



Working Conditions

⦿ The BSIS sensor and radar work when the speed is under 30km/h, however the alarm will not sound when the speed is over 30km/h. Note, the Radar and Sensor are still active.

The MOIS camera gives the alarm when speed is 0-5km/h,

⦿ still working but does not sound the alarm when speed is over 5km/h.

Product Feature

- GPS with gyroscope to detect speed more accurately
- Led and Audio Warning
- Easy to Install
- Perfect for Safety Driving
- Algorithm ECU

Sensor Specification

Sensor Frequency:	58 KHz
Working Voltage:	12 ~ 32V
Working Current:	< 500mA
Operating Temperature:	- 40 ~ 80°C
Sensor Waterproof IP Rating:	IP69
Alarm Distance :	2.5m
Horizontal Detection Angle:	120 degree
Vertical Detection Angle:	60 degree
Number of sensor:	up to 10
GPS search time:	sensors < 60 seconds

AI Camera Specification

Working Voltage:	12~36V
Working Current:	<500mA
Operating	-40~85 degrees
Temperature: Camera	MOIS front camera: 170 degrees 1080P
Angle:	30pfs
Clarity:	Front 2 meters (l) * 3 meters (w)
Detection Range:	

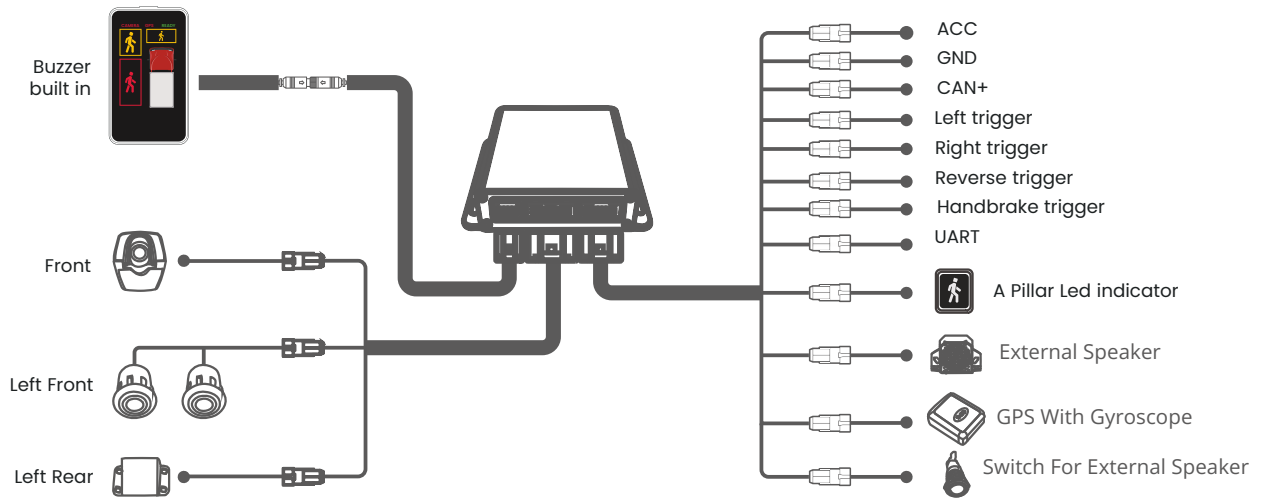
External Alarm Specification

Rated Voltage:	DC 12 / 24V
Working Current:	< 500mA@24V
Sound Frequency:	500Hz ~ 7KHz
Waterproof IP	IP69
Rating: Volume:	80-85 dB at 1m
Function:	With On/Off switch and mute function, mute time: at 23:30pm and 07:00am
Certification:	CE/E-mark

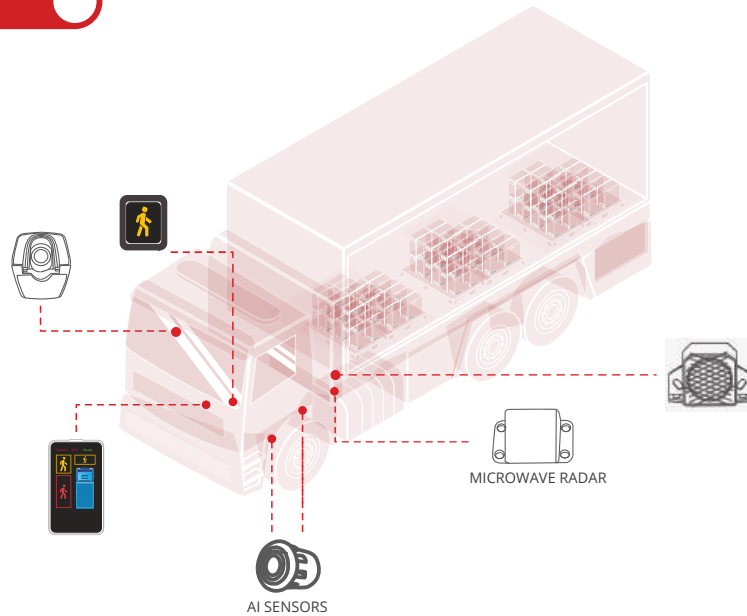
Radar Specification

Detection Target Type:	moving targets (vehicles / pedestrians / obstacles, etc.)
Number Of Transceiver Links:	2T4R
Working Mode:	FMCW (CS + MIMO)
Operating Frequency Range:	76GHz ~ 77GHz
Eir p:	≤ 30dBm
Distance Detection Range:	0.15m ~ 120m
Horizontal Detection Range:	± 75°
Vertical Detection Range:	± 10°
Distance Measurement Accuracy:	± 0.1m
Distance Resolution:	0.25m
Relative Speed Detection Range:	-400km/h ~ +200km/h
Relative Speed Measurement	± 0.15km/h
Accuracy: Relative Velocity Resolution:	0.5k m /h
Angle Measurement Accuracy:	± 0.4°
Angular Resolution:	4°
Maximum Number Of Target Tracks:	128
Data Output Refresh Rate:	≤ 50ms

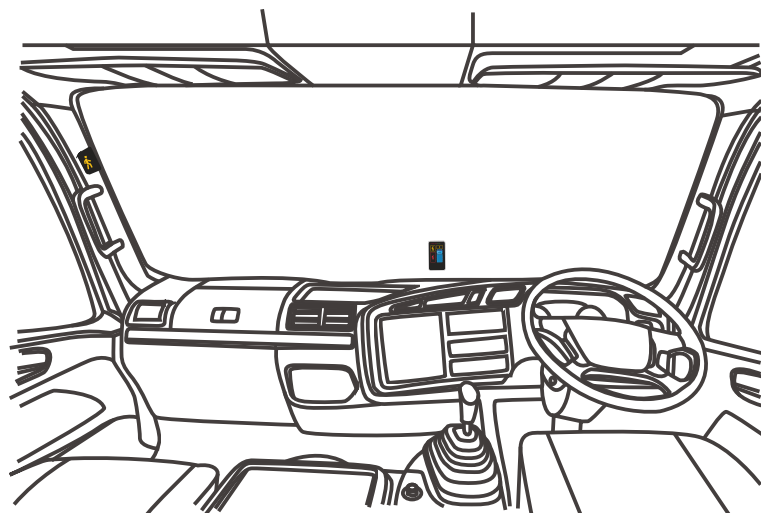
Wiring Diagram



Product Diagram



LED Displays Install In The Cab



AI SENSOR

System Working Condition

The BSIS sensor and radar work when the speed is under 30km/h, however the alarm will not sound when the speed is over 30km/h. Note, the Radar and Sensor are still active. The MOIS camera gives the alarm when speed is 0~5km/h, still working but does not sound the alarm when speed is over 5km/h. Both led display and a pillar indicator shows like the picture.



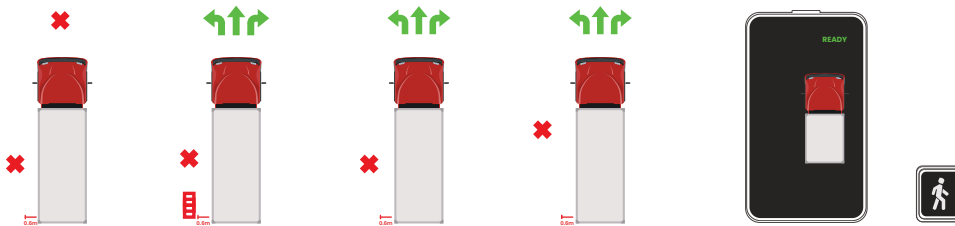
Led Display



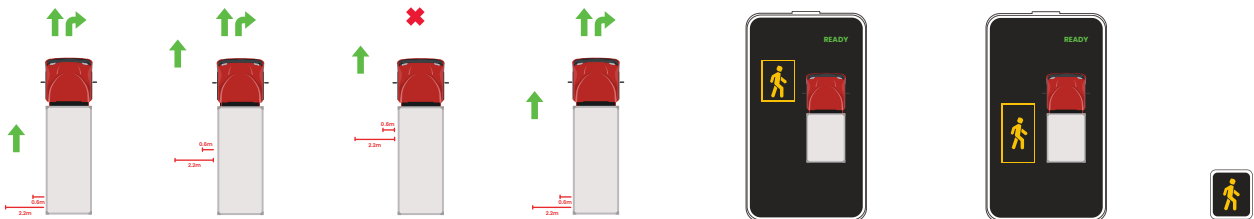
A Pillar LED Indicator

BSIS Working Method

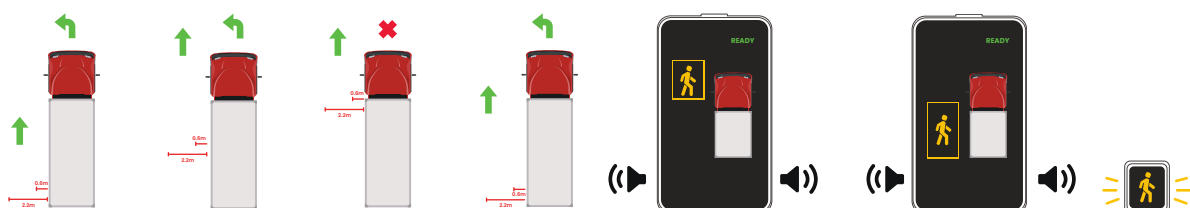
- 1 If there are no vehicle/VRU detected, there will be no visual and audio alarm.



- 2 When moving objects are detected vehicle/VRU, detection distance is from 0.6m to 2.2m, the display shows a yellow icon in the corresponding obstacle direction, and left A-Pillar led indicator shows a yellow icon warning, and no audio warning.



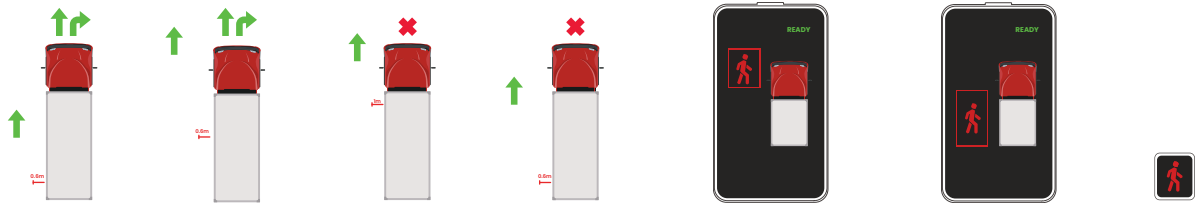
- 3 Speed at $0 < \text{speed} \leq 30 \text{ km/h}$, when VRU are detected by the left AI camera, the distance is between 1m and 2.2m. At this time, when the left turn signal is turned on or the steering wheel is turned, the display shows a yellow icon, the left A-pillar LED gives a yellow flashes, and the display emits an audible warning. Speed at 0km/h, no audio warning, but have information alarm



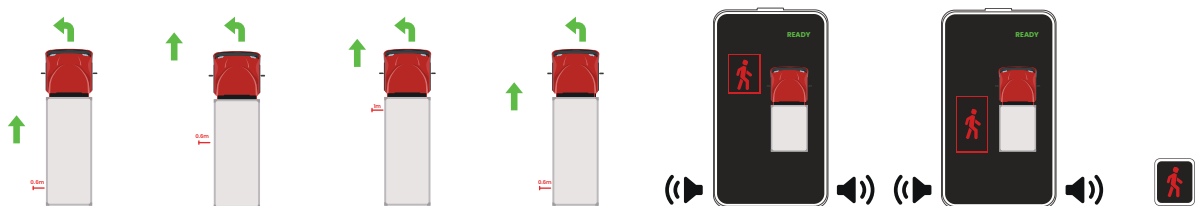
AI SENSOR

BSIS Working Method

- ④ When objects are detected (vehicle/VRU and stationary objects), detection distance is less than 0.6m, led display shows a red icon and a pillar led indicator shows a red warning.



- ⑤ Speed at $0 < \text{speed} \leq 30 \text{ km/h}$, when VRU are detected by the left AI camera, the distance is within 1m, at this time, when the left turn signal is turned on or the steering wheel is turned, the display shows a red icon, the left A-pillar LED gives a red flashes, and the display emits an audible warning. Speed at 0km/h, no audio warning, but have information alarm.



MOIS Working Method

System Working Condition

The MOIS camera gives the alarm when speed is 0~5km/h, the MOIS camera still working but does not sound the alarm when speed is >5km/h.

- ① When no objects are detected in front, led display shows like picture.
- ② Speed at 0km/h, when VRU are detected in front of the vehicle, the display shows a yellow icon and no audio warning.
- ③ Speed at $0 < \text{speed} \leq 5 \text{ km/h}$, when VRU are detected in front of the vehicle, the display shows a red icon and gives audio warning.

