

DVS - R151/R159

01. DVS Direct Vision Standard

02. DVS vs R151/R159

03. Example

- Regulatory Enhancement



DVS
Direct Vision
Standard



Transitioning from providing blind-spot visibility assistance to proactive graded warnings.



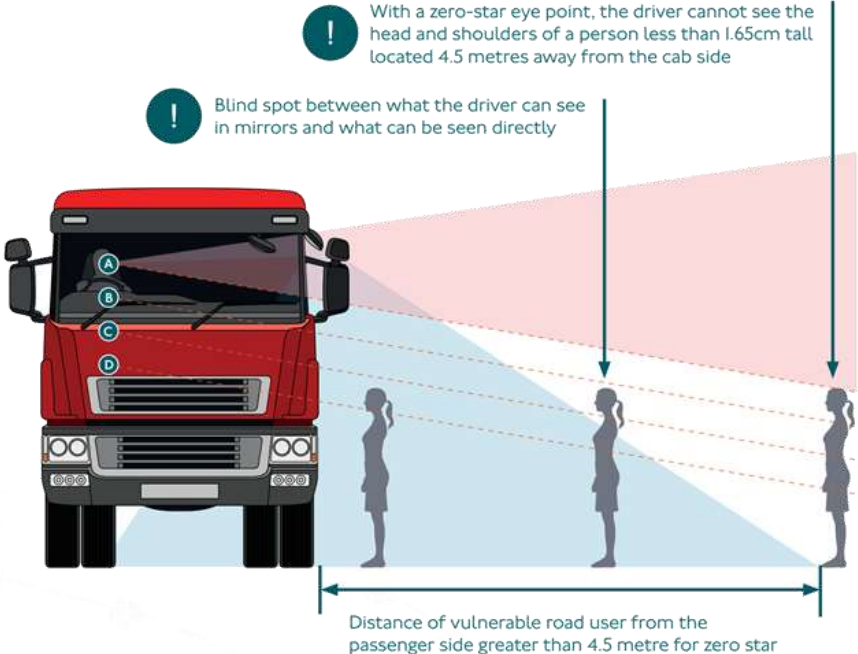
PSS
Progressive
Safe System



Upgrading of Freight Transport Safety Admission Regulations in the Great Britain

Starting from October 28, 2024, HGV exceeding 12 tons will be required to obtain a three-star rating (DVS) or install a progressive safety system (PSS) to operate in London.

- Direct Vision Standard

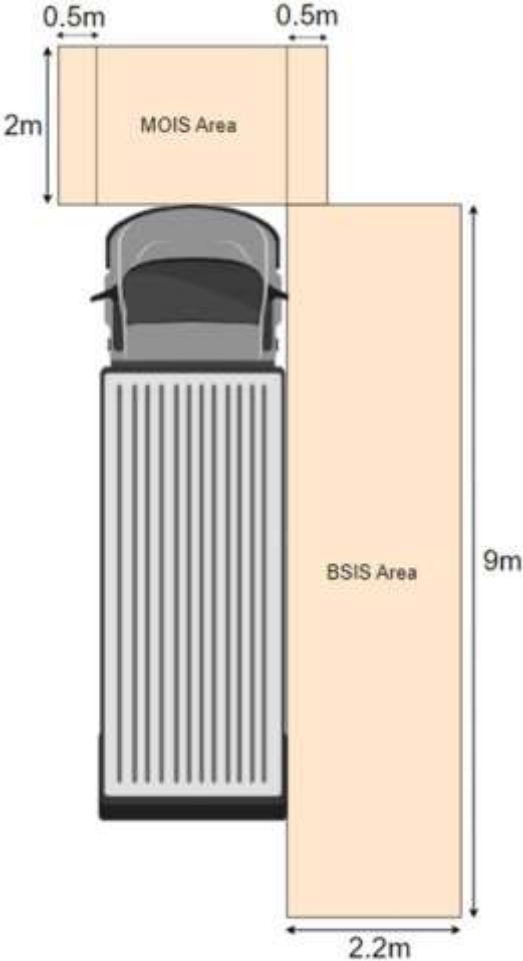


Sight line	Description
A	Zero-star eye point
B	One-star eye point
C	Three-star eye point
D	Five-star eye point

DVS (Direct Vision Standard)

- **Purpose:** Protect vulnerable road users
- **Suitable Vehicle Types:** HGVs weighing 12 tons and above
- Direct visual solution, implemented through physical mirrors or CMS (Camera Monitoring System)
- Rating based on the driver's visibility of external blind spots
- Implemented in the London area after March 1, 2021
- Multi-window setup affects driver safety
- **Certification Method:** Self-certification through document submission

- Progressive Safe System (AI)

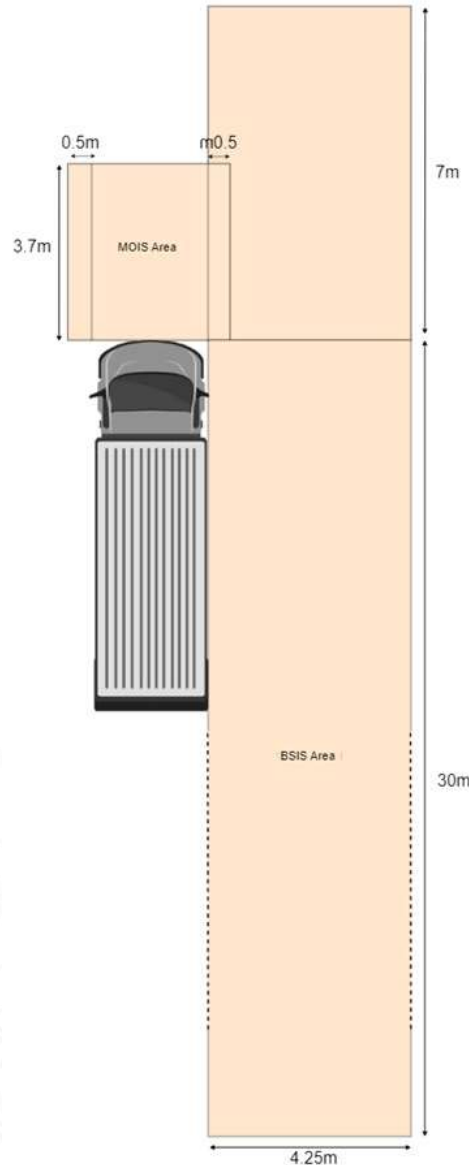


PSS (AI) & New DVS

Progressive Safe System

- Purpose:** Protect vulnerable road users
- Suitable Vehicle Types:** HGVs weighing 12 tons and above
- Detect pedestrians and provide proactive graded warnings
- Clearly defined detection zones
- Implementation includes CMS (Camera Monitoring System)
- October 28, 2024** London Region requires HGVs to comply with this regulation
- Certification Method:** Self-certification through document submission

• R151/R159 (AI)



R151/R159 (AI)

- **Purpose:** Protect vulnerable road users
- **Adaptable Vehicle Types:** N2, N3, M2, M3
- Detect pedestrians and provide proactive graded warnings
- Clearly defined detection zones with a broad range
- Standard front installation, requiring complete vehicle inspection
- Implementation methods are not restricted; currently available solutions include radar, vision, etc.
- Mandatory requirement for new registered vehicles in the EU after July 7, 2024
- **Certification Method:** Compliance with regulations inspection.

- Regulatory Comparison

Indicators	Old DVS	PSS (New DVS)	R151/R159
Vehicle Types	HGVs of 12 tons and above	HGVs of 12 tons and above	N2、N3、M2、M3
Implementation	Physical mirrors or CMS	Visual detection alarm, requires CMS	No restrictions on the solution, visual detection alarm (CMS not mandatory) or radar.
Detection Area	Not clearly defined, criteria requirements are relatively vague	Vehicle side: 2.2 meters wide, 9 meters long Vehicle front: Extends 2 meters forward, extends 0.5 meters on each side laterally	Vehicle side: 4.5 meters wide, 37 meters long Vehicle front: Extends 3.7 meters forward, extends 0.5 meters on each side laterally
Pedestrian Recognition Alarm	N/A	√	√
Graded Alarm Requirements	N/A	√	√
Certification Method	Self-certification through document submission	Self-certification through document submission	Compliance with regulations inspection, front-end whole vehicle installation

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• CAM53



Distinguish to avoid false warnings



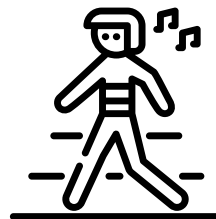
Pedestrians / Cyclist /
Vehicles / Objects

Power by Low Light 1.8T



Blacklight

System Effective Illuminance 0.1 Lux



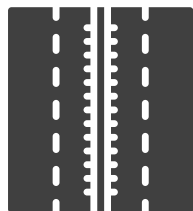
Movement Trend Prediction

More Accurate Risk Identification



50m Detection Range

50 * 4.25m Ultra wide range detection



Road Shoulder Detection

More Effective Risk Intervention



Multi-level Alarm

Avoid excessive interference with driver's operation



3 Channels

- High integration
- independent



CARVISION[®]

- CAM46



Distinguish to avoid false warnings



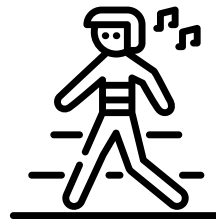
Pedestrians / Cyclist /
Vehicles / Objects

Power by Low Light 1T



Blacklight

System Effective Illuminance 3 Lux



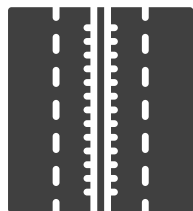
Movement Trend Prediction

More Accurate Risk Identification



20m Detection Range

20 * 4.25m Ultra wide range detection



Road Shoulder Detection

More Effective Risk Intervention



Multi-level Alarm

Avoid excessive interference with driver's operation





1 Channels



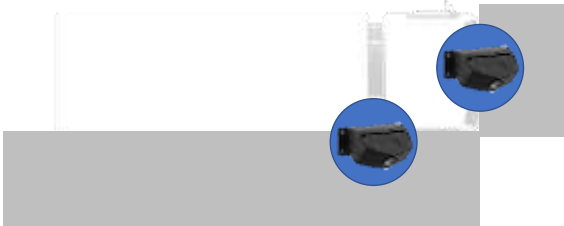
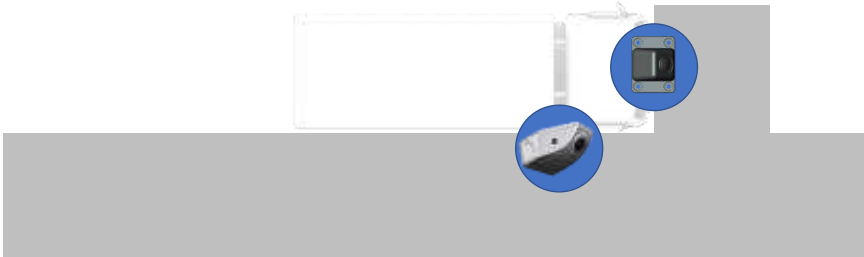
- BSD camera
- flexible solution configuration
- low cost

- BSD Solution Comparison



Product	BSIS DVS 2024	BSIS R151 / DVS 2024
Detection Area (Grey Area)		
Function Independently	✓	✓
Connect with Dashcam/MDVR	✓	✓
Pedestrian Detection	✓	✓
Road Shoulder Detection	✓	✓
Movement Trend Prediction	✓	✓
Low Light Performance	Blacklight	Blacklight

- BSD Solution Comparison

Product Image		
No.	CAM46*2 BSIS DVS 2024	CAM53+CAM51 BSIS R151 / DVS 2024
Scenarios		
Feature	Meet the UK DVS upgraded to PSS after regulations(CAM46*2), black light full color, AI BSD, hierarchical alarm, alarm and display linkage, AHD & IPC dual output, single camera solution flexible with (24Q1 take European standard R159 certification)	R151/R159 certified, black light full color, AI BSD, graded alarms, large detection area, max. 3 camera integration

CAM46 DVS Configuration

1

Side view



4

GPS-receiver
(Or TACHO signal)



5

AHD Monitor



2

In-vehicle Alarm
(Right Blind Spot)



3

External Alarm
(Left Blind Spot)



6

Front view



7

In-vehicle Alarm
(Front Blind Spot)



MDVR

- Existing product upgrade
- BSD system supports recording