



# Product Catalog 2019

**Preventing Collisions  
and Saving Lives**

**North  
America**



# Brigade Vision

Zero lives lost in collisions  
with commercial vehicles  
and mobile machinery.





## **It's a big challenge but we are on a mission to deliver that vision.**

Brigade is at the pinnacle of commercial vehicle and machinery blind-spot safety...a founder and innovator of sensing and monitoring systems that have helped save lives for over forty years.

While our portfolio can be emulated, our commitment to vehicle safety, our reliable, trusted products and our dedicated team of experts, cannot. We invest in people as well as technology. Everyone in the Brigade family understands the life-changing significance of the products and service we provide and the importance of outstanding systems that work in the most demanding of situations.

For the future: We will continue to inform and work with policy makers and industries to ensure blind-spot mitigation is effective. We will recruit the highest calibre people who are passionate about what we do. We will impart expert knowledge and advice to help customers with their challenges. We will always seek to innovate and bring new products to market that help prevent collisions and save lives. We will strive to achieve our vision of zero lives lost by constantly improving the safe operation of commercial vehicles and mobile machinery around the world.



# **Preventing Collisions and Saving Lives**

# Warranties

## Peace of mind from Brigade

The quality of our product range is the cornerstone on which the continuing relationship with our customers is built. To reflect our confidence in the reliability of our products, some have a lifetime warranty. Elite range products and Backeye®360 have a 5 year warranty with the remainder of products a 3, 2 or 1 year warranty. The following quick reference chart indicates the warranty available on Brigade products.



### Lifetime New-For-Old Warranty (covers product for the life of vehicle)

bbs-tek® White sound® reversing alarms  
Self-adjusting backalarms



### 5 Year New-For-Old Warranty

Backeye®360 camera system  
ELITE range camera monitor systems



### 3 Year New-For-Old Warranty

SELECT range camera monitor systems  
MDR mobile digital recorders and accessories  
Ultrasonic object detection systems  
Backsense® radar object detection systems  
Digital wireless camera monitor connection



### 2 Year New-For-Old Warranty

Camera monitor system ancillaries  
Ultrasonic object detection on-screen display  
Ultrasonic object detection ancillaries and extras  
Alarm ancillaries  
Backchat® Speaking alarms  
Vehicle intercom  
QVS Quiet vehicle sounder



### 1 Year New-For-Old Warranty\*

ESSENTIAL camera monitor systems  
All products aside those specifically listed

## Warranty Terms and Conditions

Brigade warrants all goods to be free from defect in material and workmanship in normal use provided that they have been installed and operated in accordance with the instructions supplied. Normal wear-and-tear excluded. The commencement date of all warranties is the date of delivery to the purchaser unless otherwise agreed in writing by Brigade. The period during which the warranty applies is stated above. Brigade make no other warranty, express or implied, with respect to the goods, their marketability, quality or fitness for any particular use or purpose. In particular, but without prejudice to the general provisions of the conditions of sale, no responsibility is assumed for incidental or consequential loss by reason of any warranty express or implied. Full details of Brigade's Terms and Conditions are contained in the Price List.

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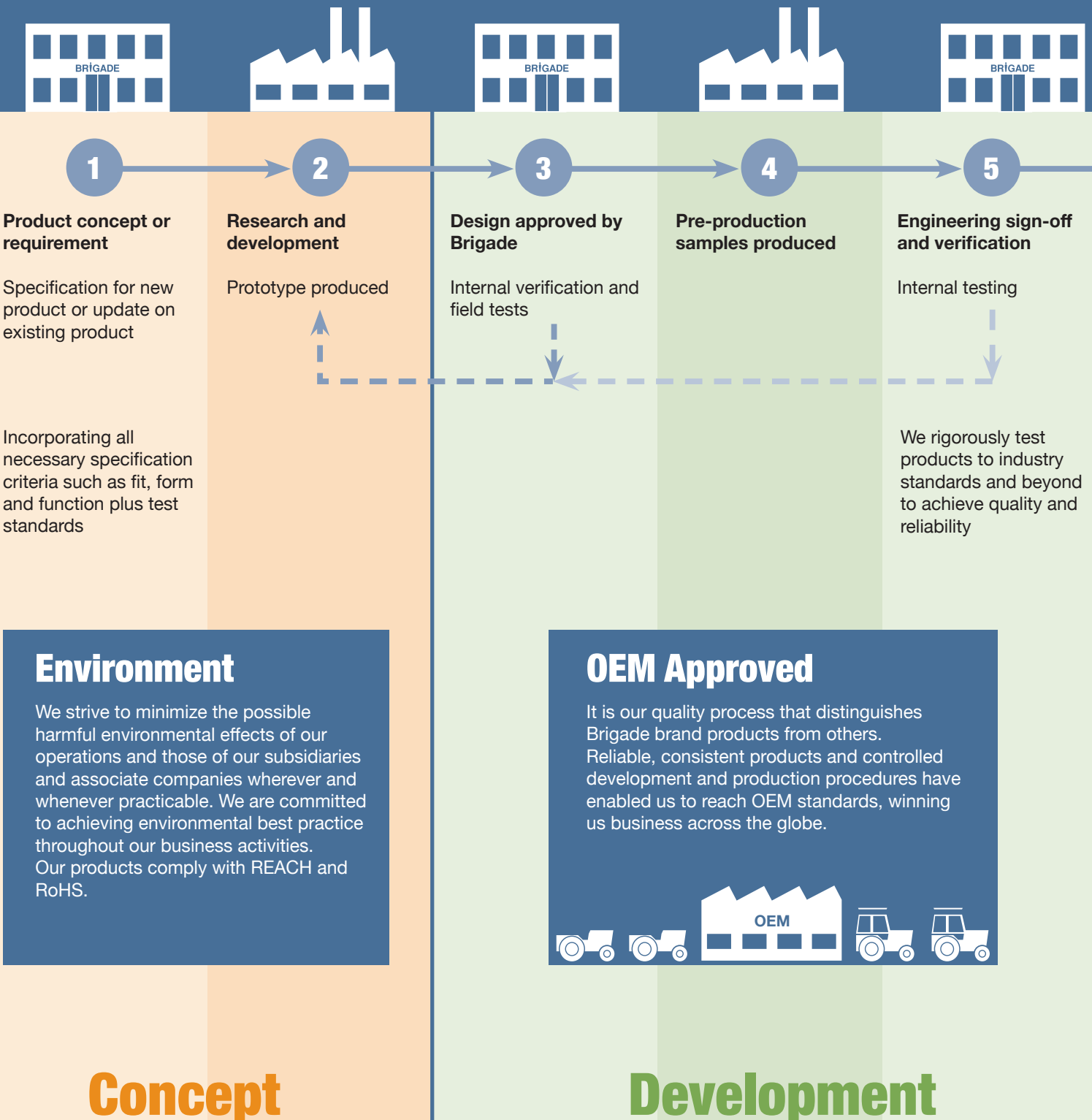
**Preventing Collisions  
and Saving Lives**

# Why Brigade?

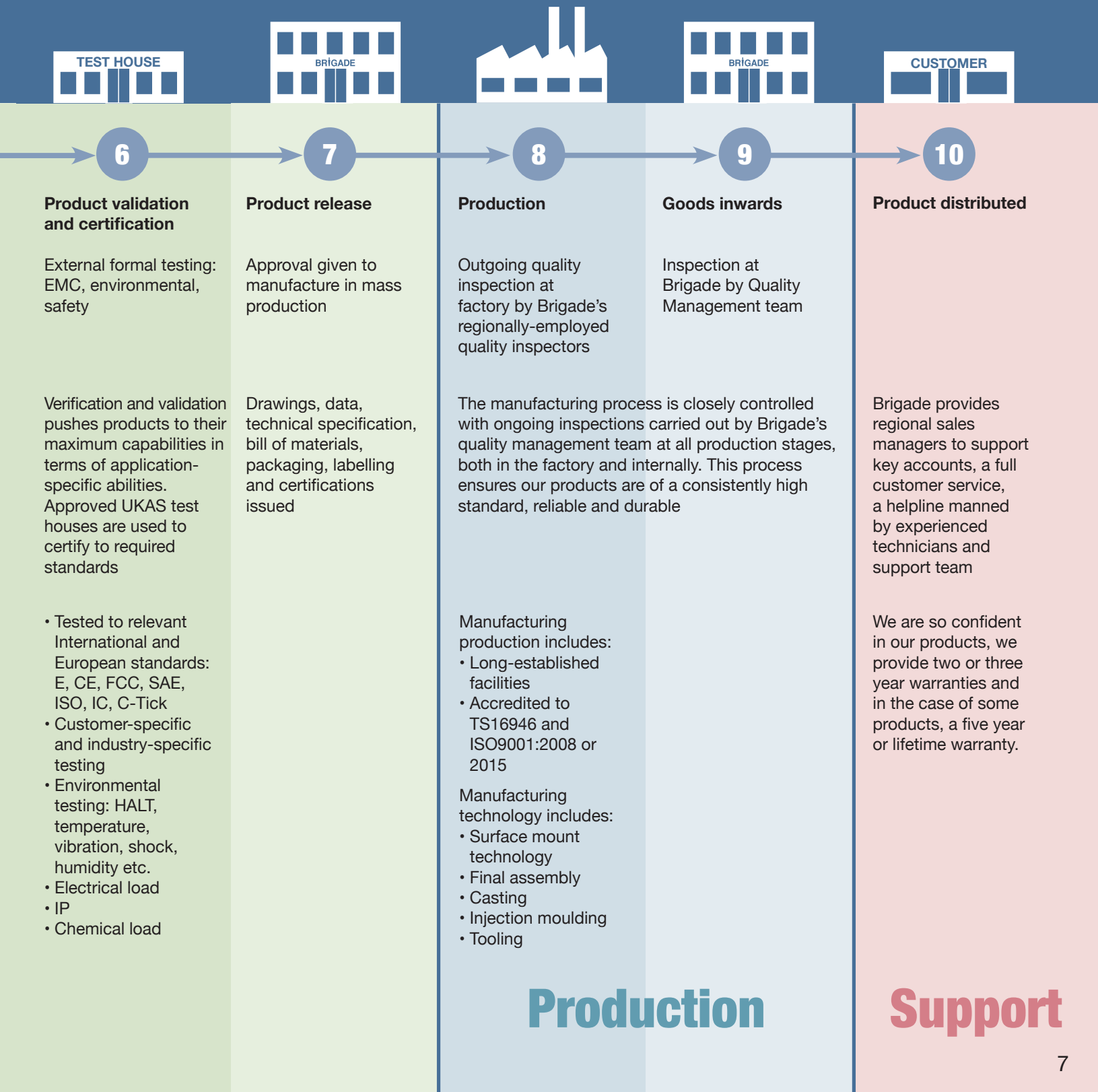
We understand that safety and efficiency can only be achieved with high quality, reliable products, which is why we go the extra mile in product development and testing of Brigade brand products; to make sure that safety is not compromised.

Whatever the product or technology, it has to pass rigorous and comprehensive testing; products are only released once we are confident they are fit for purpose.

A closely controlled design and manufacturing process plus in-house Research and Development is managed by a proficient engineering team that sets us apart from the competition.



- Brigade Electronics Group Plc management systems certified to ISO9001:2015
- Our principal manufacturing facilities are certified to IATS16949:2016
- All applicable products have CE-marking in Europe and FCC/IC approval in North America
- The majority of our products comply with UN ECE Regulation 10 (EMC)
- Various combinations of our camera monitor systems are certified to Regulation 46 (Indirect Vision)
- Cables are UNECE R118 compliant.





Actual Backeye®360 images

# Backeye®360° Camera Monitor Systems

All vehicles have blind spots – areas around the vehicle that are obscured to the driver by bodywork or machinery. When maneuvering, these blind spots present a significant danger to anything or anyone in the vehicle's path and inhibit the driver's ability to operate the vehicle safely.

Mirrors and single-view cameras can help but, even with this extra assistance, the driver may still not see everything in the vehicle's path.

Backeye®360 is an intelligent camera monitor system designed to assist low-speed maneuvering by providing the driver with a complete surround view of the vehicle in real time.

- Eliminates blind spots, improves safety
- Comprehensive view of the surrounding area in a single image
- Reduces collisions with people and objects

## Backeye®360 BN360-200 monitor view options



360 & mirrored rear view



Full 360 view



Full left/right view



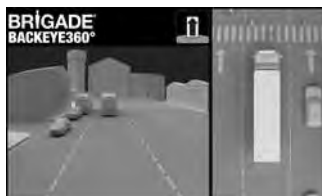
Full mirrored rear view



Front view & 360



Front cross-traffic & 360



Mirrored rear view & 360



Rear focus & 360



Front view & 360



Front cross-traffic view



Left/right view & 360



Full 360 left/right focus



Left/right view & 360



Left/right view &  
left/right focus 360

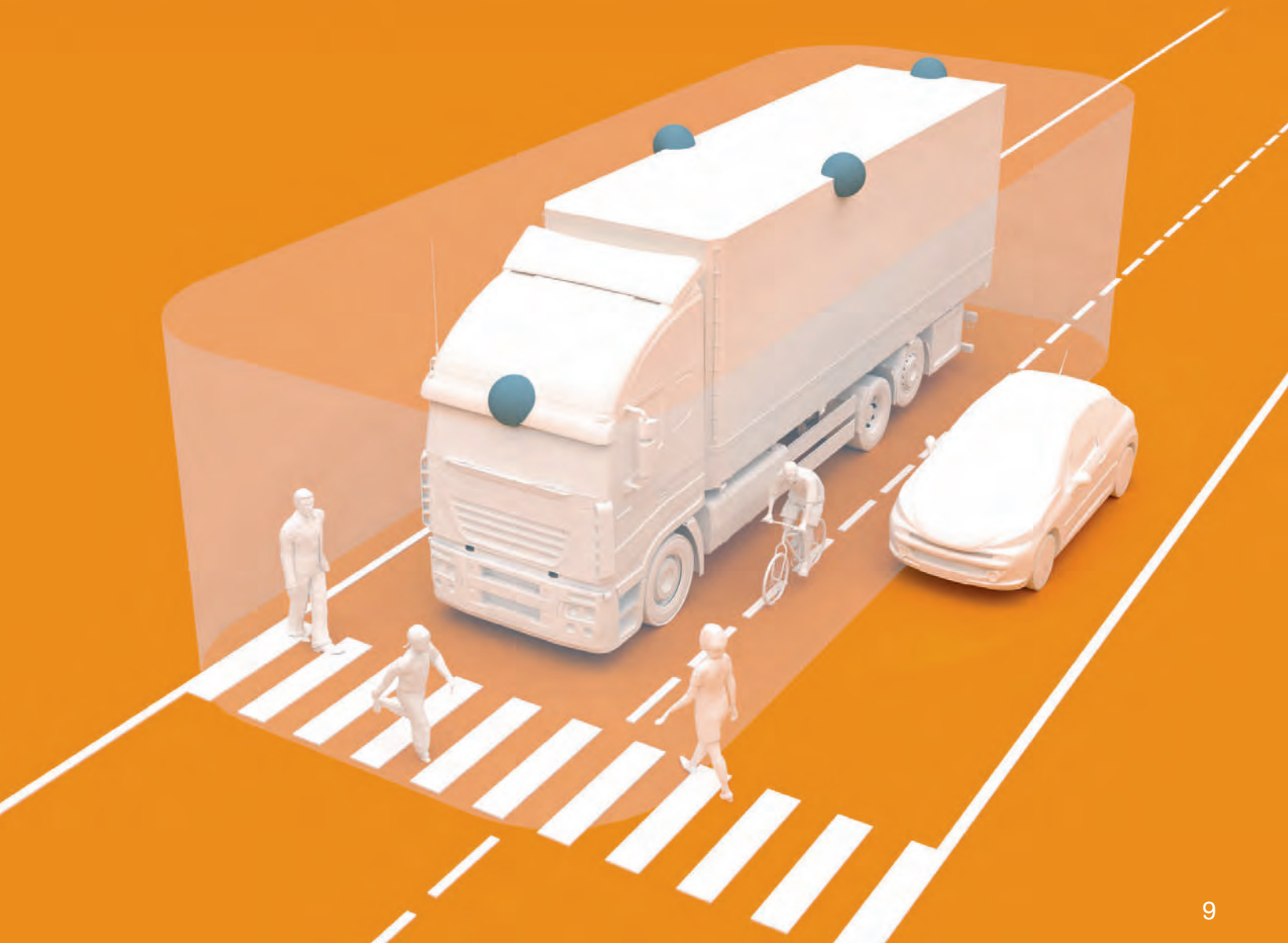
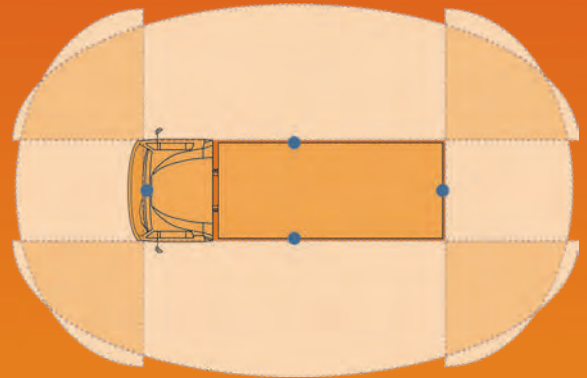
## How it works

Backeye®360 works with four ultra wide-angle cameras, each covering one full side of the vehicle with a viewing angle of over 180°.

High-mounted on the front, rear and sides, the calibrated cameras capture all of the surrounding area including the blind spots of the vehicle or machine.

The four live images are simultaneously sent to an electronic control unit (ECU) where they are instantly processed, combined, blended and stitched. The distortion from the wide-angle camera lens is also corrected before delivering a clear, single, smooth, real-time image onto the driver's monitor.

Backeye®360 is compatible with Brigade's monitors and MDR recording systems.



## Model

## Part No:

### 360° CAMERA SYSTEM

BN360-200 - Backeye®360 system

5200



- IP69K cameras
- 12-24Vdc
- Size (WxHxD) ECU  
174 x 101 x 30mm  
6.9 x 4 x 1.2 inches
- Size (WxHxD) Camera  
36 x 61 x 46mm  
1.4 x 2.4 x 1.8 inches
- 5 year warranty

**MDR**  
COMPATIBLE

**R46**  
APPROVED\*

#### Contents

- 1 x ECU
- 4 x BN360-100C cameras
- 1 x Video output cable to connect to SELECT range monitor.
- 1 x set-up/view-select button
- IR receiver & remote control
- 1 x ECU power harness
- 1 x ECU interface harness

#### Features

- 360° image
- 19 different view modes (max 10 views per chosen configuration group) including:
  - Landscape or portrait configurations
  - Front & rear crossing-traffic
  - Left & right lane changing assist
  - Customizable vehicle position
- 4 pre-defined configuration groups
- Configure & customise set up via monitor and IR remote control
- Left, right, reverse & speed signal triggers
- Configurable on-screen parking markers
- 3 x video outputs
- Ultra-wide viewing angle cameras (HxV) 185° x142°
- 1/3.6" CMOS sensor
- TV system: NTSC or PAL via switch on ECU (cameras NTSC only)

#### Power

- Power consumption: 8 Watts
- Current: 0.65 Amps

#### Durability & Standards

- Mechanical vibration: 8.5G
- Mechanical shock: 50G
- Operating temperature: -30 to +75°C / -22 to +167°F
- IP30 ECU
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved
- ISO 20653:2006
- ISO 13766:2006
- EN 13309:2010
- \*Camera monitor system R46 approved

#### NOTES:

- **calibration kit is required for installation.**
- **Monitor and camera extension cables not included**

### BN360 CABLES AND ADAPTERS

BN360-L120	20m/66' camera cable	4493
BN360-L115	15m/49' camera cable	4495
BN360-L110	10m/33' camera cable	4496
BN360-L105	5m/16' camera cable	4498
BN360-L1025	2.5m/8' camera cable	4499
AC-305	Splitter cable for MDR (1 required per camera)	4903

### MOUNTING BRACKETS

BN360-100C-BKT01	Adaptable mounting bracket Can be shaped to allow installation on non-vertical surfaces	4649
BN360-100C-BKT02	Mounting bracket to adjust camera angle	4714
BE360-CD	Deflector to shield camera from knocks (To be used with BN360-100C-BKT02 Mounting bracket)	4701
BN360-100C-BKT03	Deflector to shield camera from knocks	4743

### REQUIRED FOR ARTICULATED VEHICLES

BN360-Enclosure	IP66 Enclosure kit to enable ECU to be installed on outside of vehicle	4723
SK-15-05	3-camera Backeye®360 cable kit for articulated vehicles	5066



**Model**

**Part No:**

## BN360 360° CAMERA MONITOR SYSTEMS

Complete kits including monitor, Backeye®360 camera system, cables and adapters

**SE-7104F-100 - 360 camera monitor system for large rigid vehicles**

**5378**



- 1 x VBV-7104FM - 10.4" monitor
- 1 x BN360-200 360 system
- 1 x BN360-L110 - 10m/33' camera cable
- 2 x BN360-L115 - 15m/49' camera cables
- 1 x BN360-L120 - 20m/66' camera cable

See individual products for detailed specifications and warranties

**SE-770-100 - 360 camera monitor system for large rigid vehicles**

**5379**



- 1 x VBV-770M 7" monitor
- 1 x BN360-200 360 system
- 1 x BN360-L110 - 10m/33' camera cable
- 2 x BN360-L115 - 15m/49' camera cables
- 1 x BN360-L120 - 20m/66' camera cable

See individual products for detailed specifications and warranties

# Backeye® Camera Monitor Systems

## Camera/monitor combinations approved to R46

UN ECE Regulation No 46 (R46) is a regulation which covers devices for indirect vision and their installation.

R46 is widely recognized as a mark of exceptional performance, reliability and quality. In order to comply with the R46 regulation, the components of a camera monitor system must reach specified performance standards and be installed within pre-defined guidelines. See [brigade-electronics.com](http://brigade-electronics.com) for further information.

An R46 approved camera monitor system can replace a conventional mirror for Class IV, V and VI viewing areas.

Camera/monitor combinations approved to R46			MONITORS		
			ELITE BE-870LM	SELECT VBV-770M	SELECT VBV-7104FM
CAMERAS	ELITE	BE-800C BE-890C BE-850C	✓ plus full and half screen using SS-002 screen splitter	✗	✗
	SELECT	VBV-300C VBV-320C	✓ plus full and half screen using SS-002 screen splitter	✓ plus full and half screen using SS-002 screen splitter	✓
		VBV-700C VBV-790C	✓ plus full and half screen using SS-002 screen splitter	✓ plus full and half screen using SS-002 screen splitter	✓
360		BN360-200	✗	✓ Full screen and standard split screen	✓ Full screen and standard split screen

## Active Detection & Warning Integrated On-screen display

*Backscan® & Sidescan® Ultrasonic Detection and On-Screen Display. See page 44*



*Backsense® Radar Detection and On-Screen Display. See page 48*



- Integration of Brigade's obstacle detection systems and camera monitor systems
- Ultrasonic OR radar detection warnings overlaid onto camera image and displayed on in-cab monitor
- Reduces driver stress and distractions as all information is in one view

### Sensor data and camera image combined

Brigade's obstacle detection systems minimize both vehicle damage and collisions by informing the driver of the distance between vehicle and objects, whether moving or stationary. Ideal for vehicles and machines maneuvering at low speed.

Working in conjunction with a Backeye® camera monitor system and up to two ultrasonic detection systems or two radar sensors, the on-screen display modules warn the driver of obstacles close to the vehicle by overlaying audible and visual data onto the camera image on the monitor.

## Which range is for you?

### Backeye® Elite

Top of the range systems for comprehensive blind-spot coverage. Suitable for large road-going vehicles, specialist applications, heavy duty off-road machines or where the cab is exposed to the elements.



### Backeye® Select

Mid-range systems suitable for medium to large road-going vehicles.



### Backeye® Essential

Entry level reversing solution ideally suited to light commercial vehicles and vans.



## Camera/monitor compatibility for building your own system.

Select your system from our range of popular standard kits or build your own, referring to the camera monitor compatibility chart below, adding cables and ancillaries to complete your system.

<div> <div>✓ = Compatible</div> <div>✓ AC-035 = Compatible with adapter(s) shown</div> <div>✗ = Not compatible</div> </div>			MONITORS			
			ELITE		SELECT	
			BE-970WFM BE-970WM BE-865DDM BE-870LM BE-870FM	BE-856GM	VBV-7104FM VBV-770FM VBV-770M VBV-750M	VBV-770M-S VBV-750M-S
CAMERAS	ELITE	BE-810C Shutter	✓	✓ SC-1000-ECU	✓ AC-007 + SC-1000-ECU	✗
		All other Elite cameras	✓	✓	✓ AC-007	✓ AC-007
	SELECT	VBV-711C Shutter	✓ AC-035 + AC-006	✓ AC-035 + AC-006	✓ AC-035	✓
		All other Select cameras	✓ AC-006	✓ AC-006	✓	✓



## Model

## Part No:

**NEW DWDR**

**ELITE CAMERA**



**BE-901C - Integrated fisheye correction**

**5278**

**BE-991C - Integrated fisheye correction - No audio**

**5280**

• Viewing angle (HxVxD)  
100 X 65 X 106°

• IP69K/IP68

• Size (WxHxD)  
86 x 72 x 80mm  
3.4 x 2.8 x 3.2 inches

• 5 year warranty



**DWDR**

### Features

- Integrated image correction for wide viewing angle (fisheye) lens distortion
- Digital Wide Dynamic Range for improved detail in shadows and highlights
- 5 Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Heater
- Microphone (BE-900c & BE-901C)
- Mirror / Normal view
- Automatic white balance
- Sony CMOS sensor
- TV lines: 350

### Power

- Power consumption: 4.5 Watts
- Current: 0.36 Amps

### Durability & Standards

- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- Operating temperature: -40 to +70°C / -40 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- ISO 20653:2006
- ISO 16750-4

**NEW WDR**

**ELITE CAMERA**



**BE-801C**

**1905**

**BE-800C(40) - Narrow viewing angle: 32 x 24 x 41°**

**1559**

**BE-800C(78) - Narrow viewing angle: 69 x 51 x 92°**

**1426**

**BE-890C - Waterproof to IP69K, No microphone**

**2871**

• Viewing angle (HxVxD)  
108 x 80 x 136°

• IP69K

• Size (WxHxD)  
86 x 72 x 80mm  
3.3 x 2.8 x 3.1 inches

• 5 year warranty



**R46**  
APPROVED\* **WDR**

### Features

- Wide Dynamic Range for improved detail in shadows and highlights
- 5 Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Heater
- Microphone
- Mirror / Normal view
- Automatic white balance
- Sony CMOS sensor
- TV lines: 600

### Power

- Power consumption: 4.5 Watts
- Current: 0.33 Amps (0.37 - 2.63 Amps BE-850C)

### Durability & Standards

- Mechanical vibration: 20G (HALT)
- Mechanical shock: 100G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved
- HALT tested
- ISO 13766:2006
- ISO 20653:2006
- ISO 16750-4
- EN13309:2010
- \*Camera monitor system R46 approved BE-800C, BE-890C & BE-850C only

## Model

## Part No:

**NEW** **WDR**

## ELITE CAMERA

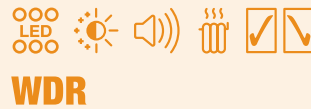


**BE-810C - Shutter camera**

**1241**



- **Viewing angle (HxVxD)**  
103 x 71 x 134°
- **IP68 / IP69K**
- **Size (WxHxD)**  
123 x 86 x 80mm  
4.8 x 3.3 x 3.2 inches
- **5 year warranty**



**WDR**

### Features

- Wide Dynamic Range for improved detail in shadows and highlights
- 5 Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Automatic shutter
- Heater
- Microphone
- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- Sony CMOS sensor
- TV System: NTSC
- TV Lines: 450

### Power

- Power consumption: 5.4 Watts
- Current: 0.45 Amps

### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 100G
- Operating temperature:  
-40 to +70°C / -40 to +158°F
- CE Marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved
- ISO 13766:2006
- EN 13309:2010

## ELITE CAMERA



**BE-821C - Mini camera (mirror image) NTSC**

**2002**

**BE-823C - Mini camera (normal image) NTSC**

**5100**



- **Viewing angle (HxVxD)**  
113 x 90 x 136°
- **IP68**
- **Size (WxHxD)**  
47 x 40 x 50mm  
1.8 x 1.6 x 1.7 inches
- **5 year warranty**

### Features

- Backlight compensation
- Automatic white balance
- 1/4" Sony CCD
- TV System: NTSC
- TV Lines: 600

### Power

- Power consumption: 0.9 Watts
- Current: 0.1 Amps

### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 100G
- Operating temperature:  
-40 to +80°C / -40 to +176°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved (NTSC models only)
- IC approved (NTSC models only)
- HALT tested
- ISO 20653:2006

### Camera icons



Infrared LEDs for ultra-low-light performance



Day/night sensor



Audio



Heater



Normal/mirror view

**WDR**

Wide Dynamic Range

**DWDR**

Digital Wide Dynamic Range

### Cable icons



Female connector



Male connector

## Model

## Part No:

### SELECT CAMERA



**VBV-701C**

**VBV-791C - Waterproof to IP69K, no audio**

**2575**

**2842**

- Viewing angle (HxVxD)  
88 x 68 x 115° PAL

- IP67

- Size (WxHxD)  
81 x 77 x 70mm  
3.2 x 3 x 2.8 inches

- 3 year warranty



#### Features

- 4 high-power Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Microphone
- Mirror view
- \* Backlight compensation
- Automatic white balance
- 1/3" Sharp CCD
- TV Lines: 750

#### Power

- Power consumption: 3 Watts
- Current: 0.2 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 51G
- Operating temperature:  
-30 to +70°C / -22 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- HALT tested
- \*Camera monitor system R46 approved  
VBV-700C & VBV-790C only

## UPDATED

### SELECT CAMERA



**VBV-711C - Heated Shutter camera**

Direct connection to VBV-770M-S and VBV-750M-S monitors  
via 5-pin 10m (/ 33' (VBV-L510) or 20m / 66' (VBV-L520) camera cable  
Use AC-035 5-pin to 4-pin adapter for connection to other Select monitors.

**2841**

- Viewing angle (HxVxD)  
98 x 73 x 108°

- IP68 / IP69K

- Size (WxHxD)  
122 x 85 x 82mm  
4.8 x 3.3 x 3.2 inches

- 3 year warranty



#### Features

- 4 high power infrared LEDs for ultra-low light performance
- Day / Night sensor
- Automatic Shutter
- Heater
- Microphone
- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- 1/3" Sharp CCD
- TV System: NTSC
- TV Lines: 580

#### Power

- Max Power consumption: 6 Watts
- Max Current: 0.5 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature:  
-30 to +70°C / -22 to +158°F
- CE Marked
- E-Marked: UNECE R10 compliant

## UPDATED

### SELECT CAMERA



**VBV-481C - Cylinder camera**

**2843**

- Viewing angle (HxVxD)  
96 x 71 x 126°

- IP69K/IP68

- Size (Diameter x Length)  
35 x 50mm  
1.4 x 2 inches

- 3 year warranty



#### Features

- 9 LEDs for ultra-low light performance
- Day/night sensor
- Mirror view
- Backlight compensation
- Auto white balance
- 1/3" Sharp CCD
- TV Lines: 800

#### Power

- Power consumption: 1.9 Watts
- Current: 0.2 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating Temperature:  
-30 to +70°C / -22 to +158°F
- E-Marked: UNECE R10 compliant
- CE marked
- FCC approved VBV-481C only
- IC approved VBV-481C only

## Model

Part No:

UPDATED

## SELECT CAMERA



### MD-51 - Mini dome camera NTSC

5736

- Viewing angle (HxVxD)  
68 x 38 x 80°
- IP68
- Size (Diameter x H)  
76 x 60mm  
3 x 2.4 inches
- 3 year warranty



#### Features

- Dome camera with 150° movement range in all directions
- Can be used internally or externally
- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- CMOS - 1/3" ON-Semiconductor
- ISP - Nextchip
- TV System: NTSC
- TV Lines: 600

#### Power

- Power consumption: 1 Watt
- Current: 0.07 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock 51G
- Operating temperature: -30 to +85°C / -22 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved

NEW

**AHD**  
720p

## SELECT CAMERA



### MD-60 - High definition mini dome camera (720p-25fps)

5305

### MD-61 - High definition mini dome camera (720p-30fps)

5306

- Viewing angle (HxVxD)  
68° x 38° x 80°
- IP68
- Size (Diameter x H)  
76 x 59.5 mm  
3 x 2.3 inches
- 3 year warranty



#### Features

- Dome camera with 150° movement range in all directions
- Can be used internally or externally
- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- High quality ON-Semiconductor image sensor
- High quality Nextchip image signal processor
- TV System: AHD 1.0 (720p)
- TV Lines: 900

#### Power

- Power consumption: 1 Watt
- Current: 0.55 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock 51G
- Operating temperature: -30 to +85°C / -22 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved

## OPTIONAL EXTRAS



### MD-50SM-30 - Surface mounting adapter (30mm/1.2" deep)

5003

### MD-50AM-15 - Angled surface mounting adapter (adds 15°)

5004

### MD-50AM-25 - Angled surface mounting adapter (adds 25°)

5005

#### Camera icons



Infrared LEDs for ultra-low-light performance



Day/night sensor



Audio



Heater



Normal/mirror view

**AHD**

Analogue High Definition

## Model

## Part No:

### SELECT CAMERA



**VBV-301C - Compact flush-mount eyeball camera - Mirror view - NTSC**  
**VBV-321C - Compact flush-mount eyeball camera - Normal view - NTSC**

**5213**  
**5217**

- **Viewing angle (HxVxD)**  
111 x 80 x 153°
- **IP69K**
- **Size (WxHxD)**  
57 x 42 x 70mm  
2.2 x 1.7 x 2.8 inches
- **3 year warranty**



**R46**  
APPROVED\*

#### Features

- 5 high power infrared LEDs for ultra-low light performance
- Day / Night sensor
- Lens swivel adjustment: 26° (Top) x 4° (Bottom) x 4° (Left) x 4° (Right)
- Lens rotation adjustment: ±180°
- Microphone
- Backlight compensation
- Automatic white balance
- 1/3" Sharp CCD
- TV System: NTSC
- TV lines: 600

#### Power

- Power consumption: 2.3 Watts
- Current consumption: 0.16 Amps

#### Durability & Standards

- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- Operating temperature: -30 to +70°C / -22 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- \*Camera monitor system R46 approved VBV-300C & VBV-320C only

### OPTIONAL EXTRAS

**SM-3XX-25 Surface mounting adapter (25mm / 1" deep)**

**4596**

**NEW**

**AHD**  
720p

### SELECT CAMERA



**DMC-1031 - High definition mini camera (internal use) (720p-30fps)**  
**DMC-1035 - High definition mini camera (internal use) (720p-25fps)**

**5303**  
**5304**

- **Viewing angle (HxVxD)**  
68 x 38 x 80°
- **IP30**
- **Size (WxHxD)**  
43 x 45 x 37.5mm  
1.7 x 1.8 x 1.5 inches
- **3 year warranty**



**AHD**

#### Features

- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- High quality ON-Semiconductor image sensor
- High quality Nextchip image signal processor
- TV System: AHD 1.0 (720p)
- TV Lines: 900

#### Power

- Power consumption: 1.0 Watt
- Current: 0.55 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 51G
- Operating temperature: -30 to +85°C / -22 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

Model

Part No:

UPDATED

SELECT CAMERA



DMC-1021 - Mini camera (internal use) NTSC

5715



• Viewing angle (HxVxD)  
68 x 38 x 80°

• IP30

• Size (WxHxD)  
43 x 45 x 37.5mm  
1.7 x 1.8 x 1.5 inches

• 3 year warranty



#### Features

- Mirror / Normal view
- Backlight compensation
- Automatic white balance
- High quality ON-Semiconductor image sensor
- High quality Nextchip image signal processor
- TV System: NTSC
- TV Lines: 600

#### Power

- Power consumption: 1.0 Watt
- Current: 0.55 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 51G
- Operating temperature:  
-30 to +60°C / -22 to +140°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

#### Camera icons



Infrared LEDs for ultra-low-light performance



Day/night sensor



Audio



Heater



Normal/mirror view

#### Cable icons



Female connector



Male connector

## Model

## Part No:

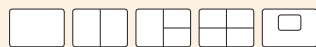
### ELITE MONITOR

#### BE-970WFM - Waterproof 7" Quad digital LCD monitor

3560



- 12-24Vdc
- IP69K
- Size (WxHxD)  
194 x 124 x 48mm  
7.6 x 4.9 x 1.9 inches
- 5 year warranty



Plus additional in-built image options

#### Features

- 4 camera inputs
- Shutter camera compatible (inputs 1&2)
- Backlit touch screen button panel
- 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Mirror / Normal switching from menu
- On screen distance and vertical line markers
- Audio
- Speed switch trigger to turn monitor on/off or trigger a split screen
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 500cd/m²
- Viewing angles:  
Side 65° x Top 50° x Bottom 60°

#### Power

- Power consumption: min 28 Watts
- Current: max 2.15 Amps

#### Durability & Standards

- Aluminium die-cast casing
- Mechanical vibration: 10G
- Mechanical shock: 100G
- Operating temperature:  
-40 to +75°C / -40 to +167°F
- CE marked
- E-Marked: UNECE R10 compliant
- ISO 16750
- ISO 20653: 2006
- HALT tested

### ELITE MONITOR

#### BE-970WM - Waterproof 7" Digital LCD monitor

3351



- 12-24Vdc
- IP69K
- Size (WxHxD)  
194 x 124 x 48mm  
7.6 x 4.9 x 1.9 inches
- 5 year warranty



#### Features

- 2 Camera inputs
- Shutter camera compatible - both inputs
- Backlit touch screen button panel
- 'Button-lock' anti-tamper feature
- 2 Auto-triggers
- Mirror / Normal switching from menu
- On screen distance and vertical line markers
- Audio
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 500cd/m²
- Viewing angles:  
Side 65° x Top 50° x Bottom 60°

#### Power

- Power consumption: 11 Watts
- Current: 0.9 Amps

#### Durability & Standards

- Aluminium die-cast casing
- Mechanical vibration: 20G
- Mechanical shock: 100G
- Operating temperature:  
-40 to +70°C / -40 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- ISO 16750
- ISO 13766: 2006
- HALT tested

## Model

## Part No:

### ELITE MONITOR

#### BE-870LM - 7" Digital LCD monitor

2705



- 12-24Vdc
- Size (WxHxD)  
197 x 128 x 34mm  
7.8 x 5 x 1.3 inches
- 5 year warranty



#### Features

- 2 Camera inputs
- Shutter camera compatible - both inputs
- 'Button-lock' anti tamper feature
- 2 Auto-triggers with configurable trigger-off delays
- Mirror / Normal switching from menu
- On-screen distance and vertical line markers
- Audio
- Sun shield
- Auto-dimmer and keypad illumination
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen

- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 400cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

#### Power

- Power consumption: 12 Watts
- Current: 1 Amp

#### Durability & Standards

- Mechanical vibration: 2.5G
- Mechanical shock: 51G
- Operating temperature:  
-30 to +70°C / -22 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- \*Camera monitor system R46 approved

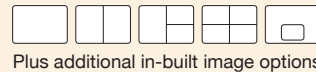
### ELITE MONITOR

#### BE-870FM - 7" Digital LCD monitor

2146



- 12-24Vdc
- Size (WxHxD)  
197 x 135 x 30mm  
7.8 x 5.3 x 1.2 inches
- 5 year warranty



Plus additional in-built image options

#### Features

- 4 camera inputs
- 5 Auto-triggers
- Shutter camera compatible
- 'Button-lock' anti-tamper feature
- Mirror / Normal switching from menu
- On-screen distance & vertical line markers
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 400cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

#### Power

- Power consumption: 21 Watts
- Current: 1.9 Amps

#### Durability & Standards

- Mechanical vibration: 6G
- Mechanical shock: 100G
- Operating temperature:  
-40 to +70°C / -40 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- HALT tested

#### Monitor icons

- Number of camera inputs
- Number of auto-triggers
- Audio
- 'Button-lock' anti-tamper feature
- On-screen distance and vertical line markers
- Normal/mirror view - switching from menu

#### Cable icons

- Female connector
- Male connector

## Model

## Part No:

### ELITE MONITOR

#### BE-856GM - 5.6" Digital LCD monitor

3756



- 12-24Vdc
- Size (WxHxD)  
172 x 115 x 32mm  
6.8 x 4.5 x 1.2 inches
- 5 year warranty



#### Features

- 2 camera inputs
- 2 Auto-triggers
- Mirror / Normal switching from menu
- On-screen distance & vertical line markers
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 640 x 480
- Contrast ratio: 500:1

- Brightness: 350cd/m²
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

#### Power

- Power consumption: 11 Watts
- Current: 0.9 Amps

#### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature:  
-40 to +70°C / -40 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- ISO 13766: 2006
- ISO 16750
- HALT tested

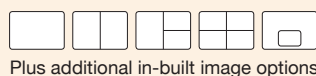
### SELECT MONITOR

#### VBV-7104FM - 10.4" Digital LCD Monitor

4474



- 12-24Vdc
- Size (WxHxD)  
267 x 193 x 30mm  
10.5 x 7.6 x 1.2 inches
- 3 year warranty



Plus additional in-built image options

#### Features

- 4 camera inputs
- 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Configurable trigger delay
- Mirror / Normal switching from menu
- On-screen distance markers
- Built-in speaker
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 30,000 hours life)
- Anti-glare screen
- Resolution: 1024 x 768
- Contrast ratio: 500:1
- Brightness: 400cd/m²
- Viewing angles:  
Side 70° x Top 60° x Bottom 60°

#### Power

- Power consumption: 31 Watts
- Current: 2.8 Amps

#### Durability & Standards

- Mechanical vibration: 4G
- Mechanical shock: 50G
- Operating temperature:  
-20 to +70°C / -4 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- HALT tested
- \*Camera monitor system R46 approved

#### Monitor icons

- Number of camera inputs
- Number of auto-triggers
- Audio
- 'Button-lock' anti-tamper feature
- On-screen distance and vertical line markers
- Normal/mirror view - switching from menu

#### Cable icons

- Female connector
- Male connector

## Model

## Part No:

### SELECT MONITOR



**VBV-770M - 7" Digital LCD monitor**

**4288**

**VBV-770M-S - 7" Digital LCD monitor**

**4697**

Includes 1 x 5-pin input for connection to VBV-710C shutter camera



- 12-24Vdc
- Size (WxHxD)  
196 x 118 x 26mm  
7.7 x 4.6 x 1 inches
- 3 year warranty



#### Features

- 3 camera inputs
- 3 Auto-triggers
- Mirror / Normal switching from menu
- 'Button lock' anti-tamper feature
- On-screen distance markers
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 400cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

#### Power

- Power consumption: 18 Watts
- Current: 1.5 Amps

#### Durability & Standards

- Mechanical vibration: 4G
- Mechanical shock: 100G
- Operating temperature:  
-30 to +70°C / -4 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- HALT tested
- \*Camera monitor system R46 approved VBV-770M only

### SELECT MONITOR



**VBV-750M - 5" Digital LCD monitor**

**4287**

**VBV-750M-S - 5" Digital LCD monitor**

**4710**

Includes 1 x 5-pin input for connection to VBV-710C shutter camera



- 12-24Vdc
- Size (WxHxD)  
149.5 x 99 x 22mm  
5.9 x 3.9 x 0.8 inches
- 3 year warranty



#### Features

- 3 camera inputs
- 3 Auto-triggers
- Mirror / Normal switching from menu
- On-screen distance markers
- 'Button lock' anti-tamper feature
- Audio
- Sun shield
- Auto-dimmer
- Multi-lingual menus
- Auto-switching PAL / NTSC

#### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 350cd/m<sup>2</sup>
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

#### Power

- Power consumption: 11.5 Watts
- Current: 0.95 Amps

#### Durability & Standards

- Mechanical vibration: 4G
- Mechanical shock: 100G
- Operating temperature:  
-30 to +70°C / -4 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- HALT tested

### CAMERA MONITOR SYSTEM ANCILLARIES



**BMM-019-ARM - 68mm replacement arm (Select range)**

**3348**

- 68mm/2.7 inches mounting bracket arm
- Allows monitor to be dash-mounted in portrait position

A further range of camera/monitor brackets and mounting adapters is available. Please contact us for details

**Model**

**Part No:**

## SELECT MONITOR

**VBV-770FM - 7" Digital LCD monitor**

**4982**



- 12-24Vdc
- Size (WxHxD)  
182 x 122 x 27mm  
7.2 x 4.8 x 1 inch
- 3 year warranty



Plus additional in-built image options

### Features

- 4 camera inputs
- 'Button-lock' anti-tamper feature
- 5 Auto-triggers
- Mirror / Normal switching from menu
- On-screen distance markers
- Audio
- Sun shield
- Multi-lingual menus
- Auto-switching PAL / NTSC

### Picture Quality

- LED backlighting (gives 20,000 hours life)
- Anti-glare screen
- Resolution: 800 x 480
- Contrast ratio: 500:1
- Brightness: 400cd/m²
- Viewing angles:  
Side 70° x Top 50° x Bottom 70°

### Power

- Power consumption: 27 watts
- Current: 2.2 Amps

### Durability & Standards

- Mechanical vibration: 4G
- Mechanical shock: 50G
- Operating temperature:  
-30 to +70°C / -4 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant

## ESSENTIAL MONITOR

**VBV-243M - 4.3" Digital Mirror monitor**

**5323**



- 12-24Vdc
- Size (WxDxH)  
280 x 92 x 30.5mm  
11 x 3.6 x 1.2 inches
- 1 year warranty



### Features

- On screen multi-lingual display menu
- Digital LCD panel
- 2 Auto-trigger
- Auto dimmer
- Illuminated keypad
- On-screen distance markers
- TV system: PAL / NTSC

### Picture Quality

- Resolution: 480 x 272
- Contrast ratio: 600:1
- Brightness: 1000cd/m²
- Viewing angles:  
Side 65° x Top 60° x Bottom 50°

### Power

- Power consumption: 6.6 Watts
- Current: 0.53 Amps

### Durability & Standards

- Vibration rating: 6G
- Operating temperature:  
-20 to +70°C / -4 to +158°F
- CE marked
- FCC approved

## RIGID VEHICLES

## ESSENTIAL RANGE CAMERA MONITOR SYSTEM

**VBV-650-000N - Single Camera Rear View Systems for Large Rigid Vehicles;  
eg Trucks, Buses, Dump Trucks, etc**

**4766**



- VBV-650M - 5" TFT LCD colour monitor
- VBV-621C - Color ultra-low-light CMOS camera, NTSC format
- VBV-L420 - 20m / 66' camera cable
- 1 year warranty



### Monitor

- 12-24Vdc
- 1 camera input
- Size (WxHxD)  
148 x 110 x 30.2mm  
5.8 x 4.3 x 1.2 inches

### Camera

- Viewing angle (HxVxD)  
81 x 59 x 106°
- IP67
- Size (WxHxD)  
64.5 x 59 x 55mm  
2.5 x 2.3 x 2.2 inches

**Model**

**Part No:**

## RIGID VEHICLES ELITE RANGE CAMERA MONITOR SYSTEM

**BE-870L-000N - Single camera monitor system for rigid vehicles**

**3131**



- BE-870LM - 7" TFT LCD color monitor
- BE-801C - Color ultra-low-light camera
- BE-L120 - 20m / 66' camera cable

See individual products for detailed specifications and warranties

## RIGID VEHICLES SELECT RANGE CAMERA MONITOR SYSTEMS

**VBV-770-301 - Single camera monitor system for rigid vehicles**

**4779**



- VBV-770M - 7" TFT LCD color monitor
- VBV-301C - color flush-mount camera, NTSC format
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications and warranties

**VBV-770-000N - Single camera monitor system for rigid vehicles**

**4693**



- VBV-770M - 7" TFT LCD color monitor
- VBV-701C - NTSC color ultra-low-light camera
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications and warranties

**VBV-750-301 - Single camera monitor system for rigid vehicles**

**4778**



- VBV-750M - 5" TFT LCD color monitor
- VBV-301C - color flush-mount camera, NTSC format
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications and warranties

**VBV-750-000N - Single camera monitor system for rigid vehicles**

**4706**



- VBV-750M - 5" TFT LCD color monitor
- VBV-701C - color ultra-low-light camera, NTSC format
- VBV-L420 - 20m / 66' camera cable

See individual products for detailed specifications and warranties

## Model

## Part No:

**VBV-750-100N - Single camera monitor system for rigid vehicles**

**4709**



- VBV-750M - 5" TFT LCD color monitor
- VBV-711C - color ultra-low-light shutter camera, NTSC format
- VBV-L520 - 20m / 66' camera cable

See individual products for detailed specifications and warranties

## SMALL RIGID VEHICLES AND VANS SELECT RANGE CAMERA MONITOR SYSTEMS

**VBV-770-311 - Single flush-mount camera monitor system for small rigid and vans**

**4783**



- VBV-770M - 7" TFT LCD color Monitor
- VBV-301C color flush-mount camera, NTSC Format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications

• 2 year system warranty

**VBV-770-010N - Single camera monitor system for small rigid and vans**

**4694**



- VBV-770M - 7" TFT LCD color monitor
- VBV-701C color ultra-low-light camera, NTSC format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications and warranties

**VBV-770-100N - Single shutter camera monitor system for rigid vehicles**

**4770**



- VBV-770M - 7" TFT LCD color monitor
- VBV-711C color Ultra-low-light shutter camera, NTSC format
- VBV-L520 20m / 66' camera cable

See individual products for detailed specifications and warranties

**VBV-750-311 - Single flush-mount camera monitor system for rigid vehicles**

**4782**



- VBV-750M - 5" TFT LCD color monitor
- VBV-301C color flush-mount camera, NTSC format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications and warranties

**VBV-750-010N - Single camera monitor system for vans**

**4707**



- VBV-750M - 5" TFT LCD color monitor
- VBV-701C color ultra-low-light camera, NTSC format
- VBV-L410 - 10m / 33' camera cable

See individual products for detailed specifications and warranties

## Model

## Part No:

### VBV-750-910 - Single camera monitor system for vans

4220



- VBV-750M - 5" color monitor
- VBV-791C - color camera
- VBV-L410 - 10m / 33' cable

See individual products for detailed specifications and warranties

### VBV-770-910 - Single camera monitor system for vans

4221



- VBV-770M - 7" color monitor
- VBV-791C - IP69K color camera
- VBV-L410 - 10m / 33' cable
























See individual products for detailed specifications and warranties

## Model

## Part No:
















### BRIGADE CAMERA MONITOR ADAPTERS



 	AC-006 - Connects Select camera (not shutter) to Elite cable	1983
 	AC-007 - Connects Select monitor to Elite cable	1984
 	AC-014 - Connects Elite camera to Select cable	2094
 	AC-014(5M) - Connects Elite camera to Select cable, 5m/16.4' long	5049
 	AC-020 - Connects Elite monitor to Select cable	2590
 	AC-035 - 5-pin to 4-pin Select shutter camera adapter	3702
 	AC-055(5M) - 5-pin to 4-pin Select cable, 5m/16.4' long	4267
  	AC-305 - Splitter cable connects 1 x BN360 camera to MDR & ECU	4903
  	AC-306 - Splitter cable connects 1 x Select camera to MDR & monitor	4904
  	AC-307 - Splitter cable connects 1 x Elite camera to MDR & Monitor	4905

### MISCELLANEOUS CAMERA MONITOR ADAPTERS

























 	AC-056 - Connects Select camera to Orlaco monitor	4401
 	AC-062 - Connects Elite camera to Orlaco monitor	4691
 	AC-063 - Connects Elite camera to Orlaco monitor, screw fit	4925
 	AC-066 - Connects Orlaco camera to Elite monitor	5027
 	AC-067 - Connects Orlaco camera to Select monitor	5028
 	AC-24-12(009) - In-line 24/12Vdc converter - Select camera to Mekra 507405 monitor	4926
  	AC-308 - Splitter cable to connect MDR to Mekra 507405 CMS	4949

## Model

## Part No:

### OEM CAMERA MONITOR ADAPTERS















		AC-041 - Connects Elite camera to John Deere 7-pin amp output	4245
		AC-042 - Connects Select camera to John Deere 7-pin amp output	4246
		AC-044 - Connects Select camera to Molex M12 (Fendt)	4279
		AC-045 - Connects Elite camera to Molex M12 (Fendt)	4280
		AC-068 - Connects Select camera to MAN Harman unit	5234
		AC-069 - Connects Select camera to MAN/Scania Harman unit without camera prep.	5318
		AC-24-12(002) - In-line 24/12Vdc converter - Elite camera to Daimler monitor	4266
		AC-24-12(004) - In-line 24/12Vdc converter - Select camera to MAN MMT HSD	4281
		AC-24-12(006) - In-line 24/12Vdc converter - Select camera to Volvo FH(4) & FM(4)	4719
		AC-24-12(007) - In-line 24/12Vdc converter - Select camera to Iveco connect system	4762
		AC-24-12(008) - In-line 24/12Vdc converter - Select camera to Mercedes sprinter	4763

A further range of OEM-specific adapters to connect Brigade cameras to factory-fit monitors is available

### GENERAL CAMERA MONITOR ADAPTERS



		AC-016 - Connects AV to Camera input of Elite monitor	2150
		AC-019 - Connects Elite camera to male phono (video only)	2589
		AC-021 - Connects BNC/FLIR PathFindIR camera to Elite cable	2704
		AC-024 - Connects AV to Select monitor (video & audio input, 12Vdc output)	3183
		AC-028 - Connects AV to Select cable	3335
		AC-064 - Connects Elite camera to BNC adapter cable	4948

# Cables / Truck and Trailer Connection

## Model

## Part No:

### ELITE CAMERA CABLES



BE-L130	- 30m / 98' cable	0800
BE-L120	- 20m / 66' cable	0801
BE-L115	- 15m / 49' cable	0802
BE-L112	- 12m / 39' cable	3008
BE-L110	- 10m / 33' cable	0803
BE-L108	- 8m / 26' cable	3007
BE-L105	- 5m / 16' cable	0804
BE-L101	- 1m / 3.3' cable	5042
BE-L1003	- 0.3m / 1' cable	2797

### ELITE CAMERA EXTENSION CABLES



BE-X025	- 25m / 82' extension cable	1907
BE-X020	- 20m / 66' extension cable	1143
BE-X015	- 15m / 49' extension cable	2101
BE-X010	- 10m / 33' extension cable	2100
BE-X005	- 5m / 16' extension cable	2099
BE-X003	- 3m / 10' extension cable	0805

### SELECT CAMERA CABLES



VBV-L430	- 30m / 98' cable	2108
VBV-L420	- 20m / 66' cable	1380
VBV-L415	- 15m / 49' cable	3150
VBV-L412	- 12m / 39' cable	3106
VBV-L410	- 10m / 33' cable	1386
VBV-L407	- 7m / 23' cable	3151
VBV-L406	- 6m / 20' cable	3152
VBV-L405	- 5m / 16' cable	1499
VBV-L403	- 3m / 10' cable	4977
VBV-L4025	- 2.5m / 8' cable	1554
VBV-L520	- 20m / 66' 5-pin shutter camera cable	3664
VBV-L510	- 10m / 33' 5-pin shutter camera cable	3663
VBV-L505	- 5m / 16' 5-pin shutter camera cable	4001

#### Cable icons



Female connector



Male connector

**Model**

**Part No:**

## ELITE TRUCK/TRAILER CABLE KIT



**SK-31E - Cable kit for articulated trucks - unique pin layout**

**1830**

Inclusive of SK-31E-T - Trailer only kit

- BE-L110 - 10m/33' cable for cab 0803
- SP-7A - 7-pin bulkhead socket for cab & cab-end camera connector (unique pin layout) 1827
- SC-7 - Coiled cable with 7-pin plugs (unique pin layout) 1829

**SK-31E-T - Trailer only kit 1886**

- BE-X020 - 20m/66' extension cable for trailer 1143
- SP-7B - 7-pin bulkhead socket for trailer & trailer-end camera connector (unique pin layout) 1828

## ELITE TRUCK/TRAILER CABLE KIT



**SK-30E - Cable kit for articulated trucks**

**1144**

Inclusive of SK-30E-T - Trailer only kit

- BE-L110 - 10m/33' cable for cab 0803
- SP-07C - 7-pin bulkhead socket for cab & cab-end camera connector 1140
- SC-07 - Coiled cable with 7-pin plugs 1046

**SK-30E-T - Trailer only kit 1885**

- BE-X020 - 20m/66' extension cable for trailer 1143
- SP-07T - 7-pin bulkhead socket for trailer & trailer-end camera connector 1142

## ELITE TRUCK/TRAILER CABLE KIT



**SK-15-01 - Three camera cable kit for articulated trucks**

**3427**

- SP-15A-01 - 15-pin bulkhead socket for cab & 3 cab-end camera connectors 3423
- SP-15B-01 - 15-pin bulkhead socket for trailer & 3 trailer-end camera connectors 3422
- SC-15-01 - Coiled shielded cable with 15-pin plugs 3268

## ELITE TRUCK/TRAILER CABLE KIT



**SK-15-04 - Single camera & single buzzer Ultrasonic Detection System (new generation) cable kit for articulated trucks**

**3997**

- SP-15A-04 - 15-pin bulkhead socket for cab & cab-end camera connector plus stripped wires and display/buzzer connection for Ultrasonics 3955
- SP-15B-04 - 15-pin bulkhead socket for trailer & trailer-end camera connector plus stripped wires and display/buzzer connection for Ultrasonics 3956
- SC-15-01 - Coiled shielded cable with 15-pin plugs 3268

# Truck and Trailer Connection

**Model**

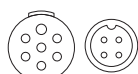
**Part No:**

## ELITE TRUCK/DRAWBAR TRAILER CABLE KIT

### SK-50E - Twin camera cable kit with unique pin layout for truck with drawbar trailer

Inclusive of SK-50E-A Truck only kit and SK-31E-T trailer only kit

**1570**



SP-7A



SC-7



SP-7B

#### SK-50E-A - Truck only kit

**1879**

- BE-L115 - 15m/49' cable for truck 0802
- BE-X005 - 5m/16' extension cable for truck camera 2099
- CS-020 - Two way camera selector 1571
- SP-7A - 7-pin bulkhead socket for trailer & trailer-end camera connector (unique pin layout) 1827
- SC-7 - Coiled cable with 7-pin plugs (unique pin layout) 1829

#### SK-31E-T - Trailer only kit

**1886**

- BE-X020 - 20m/66' extension cable for trailer camera 1143
- SP-7B - 7-pin bulkhead socket for cab & cab-end camera connector (unique pin layout) 1828

## SELECT TRUCK/TRAILER CABLE KIT

### VSK-31E - Cable kit for articulated trucks - unique pin layout

Inclusive of VSK-31E-T - Trailer only kit

**2539**



SC-7



SP-7A



SP-7B

- VBV-L410 - 10m/33' cable for cab 1386
- SP-7A - 7-pin bulkhead socket for cab & cab-end camera connector (unique pin layout) 1827
- AC-014 - Adapter cable 2094
- SC-7 - Coiled cable with 7-pin plugs (unique pin layout) 1829

#### VSK-31E-T - Trailer only kit

**2543**

- VBV-L420 - 20m/66' cable for trailer 1380
- AC-006 - Adapter cable 1983
- SP-7B - 7-pin bulkhead socket for trailer & trailer-end camera connector (unique pin layout) 1828

## SELECT TRUCK/TRAILER CABLE KIT

### VSK-30E - Cable kit for articulated trucks

Inclusive of SK-30E-T - Trailer only kit

**2538**



VSP-47A



VSP-47B



SC-07-24S

- VBV-L410 - 10m/33' cable for cab 1386
- VSP-47A - 7-pin bulkhead socket for cab & cab-end camera connector 1847
- SC-07-24S - Coiled cable with type 24S 7-pin plugs 1227

#### VSK-30E-T - Trailer only kit

**2542**

- VBV-L420 - 20m/66' extension cable for trailer 1380
- VSP-47B - 7-pin bulkhead socket for trailer & trailer-end camera connector 1846

**Model**
**Part No:**

### SELECT TRUCK/TRAILER CABLE KIT


**VSK-305E - Cable kit for articulated trucks - Shutter camera**
**3871**

- |  |      |  |      |
|--|------|--|------|
| • VBV-L510 10m/33' cable for cab                                   | 3663 | • VSP-57B 7-pin bulkhead socket for trailer & trailer-end camera connector | 3870 |
| • VBV-L520 20m/66' cable for trailer                               | 3664 |  |      |
| • VSP-57A 7-pin bulkhead socket for cab & cab-end camera connector | 3869 | • SC-07-24S - Coiled cable with type 24S 7-pin plugs                       | 1227 |

### SELECT TRUCK/TRAILER CABLE KIT


**SK-15-05 - 3-camera Backeye®360 cable kit for articulated vehicles**
**5066**

- |   |      |  |      |
|---|------|--|------|
| • SP-15A-05 - 15-pin bulkhead socket for cab & cab-end connector plus 3x connections for Backeye®360 Select       | 5066 | • SC-15-01 Coiled shielded cable with 15-pin plugs | 3268 |
| • SP-15B-05 15-pin bulkhead socket for trailer & trailer-end connector plus 3x connections for Backeye®360 Select | 5065 |  |      |

### SELECT TRUCK/ DRAWBAR TRAILER CABLE KIT


**VSK-50E - Twin camera cable kit for truck with drawbar trailer**
**2540**
Inclusive of VSK-50E-A Truck only kit and VSK-30E-T Trailer only kit

- | VSK-50E-A - Truck only kit                                  | 2541 | VSK-30E-T - Trailer only kit                         | 2542 |
|---|------|--|------|
| • VBV-L420 - 20m/66' cable for truck                        | 1380 | • VBV-L420 - 20m/66' cable for trailer               | 1380 |
| • VBV-L405 - 5m/16' camera cable for truck camera           | 1499 | • VSP-47B - 7-pin camera bulkhead socket for trailer | 1846 |
| • VCS-020 - Two-way camera selector                         | 1844 |  |      |
| • 1 x VSP-47A - 7-pin camera bulkhead socket for truck rear | 1847 |  |      |
| • SC-07-24S - Coiled cable with 7-pin sockets               | 1227 |  |      |

### SELECT TRUCK/DRAWBAR TRAILER CABLE KIT


**VSK-505E - Twin shutter camera cable kit for truck with drawbar trailer**
**4005**

- |  |      |  |      |
|--|------|--|------|
| • VBV-L420 - 20m/66' cable for truck                 | 1380 | • VSP-57A 7-Pin bulkhead socket for cab & cab-end camera connector         | 3869 |
| • VBV-L520 - 20m/66' camera cable for truck camera   | 3664 | • VSP-57B 7-pin bulkhead socket for trailer & trailer-end camera connector | 3870 |
| • VBV-L505 - 5m/16' camera cable for cab             | 4001 | • SC-07-24S - Coiled cable with 7-pin plugs                                | 1227 |
| • VCS-020 - Two-way camera selector                  | 1844 |  |      |
| • 2 x AC-035 - 5-pin to 4-pin shutter camera adapter | 3702 |  |      |

## Model

## Part No:

**UPDATED**

## DIGITAL WIRELESS CONNECTION SYSTEM



Elite



Select

**DW-1001-TX - Digital Wireless Transmitter**

**4282**

**DW-1001-RX - Digital Wireless Receiver**

**4283**

- Digital technology
- 12-24Vdc
- 1 camera input
- IP69K (Transmitter)
- Size (WxHxD)  
113 x 114 x 31mm  
4.4 x 4.5 x 1.2 inches
- 3 year warranty

### Features

- Image Latency: 200 milliseconds
- No need for retractable coiled cables
- Reduces installation time
- Re-pair facility allows for interchangeable trailers
- Triggered by reverse gear
- TV System NTSC
- Secure connection

### Power

- Maximum Current Amps:  
TX: 0.85 RX: 0.17

- Power consumption:  
TX: 9.8 Watts RX: 2.2 Watts

### Durability & Standards

- Operating temperature:  
-40 to +70°C / -40 to +158°F
- Mechanical vibration: 6G
- Mechanical shock: 20G
- CE marked
- E-Marked: UNECE R10 compliant

Includes connectors/adapters for both Elite and Select range cameras and monitors

## CAMERA MONITOR SYSTEM ANCILLARIES



Elite



Select



**CS-020 - Two-way camera selector (Elite range connectors)**

**1571**

**VCS-020 - Two-way camera switcher (Select range connectors)**

**1844**

- Allows a 2nd camera to be connected to a monitor
- 2nd camera view selected by trigger wire
- Full screen view only
- 3 year warranty

## CAMERA MONITOR SYSTEM ANCILLARIES



**LS-60-A - Speed switch**

**4851**

- 12-24Vdc
- Auto-triggers safety equipment at the designated speed
- Size (WxHxD)  
44 x 16 x 64mm  
1.7 x 0.6 x 2.5 inches
- 3 year warranty

### Features

- Normally closed - safety device on by default, turning off at designated speed
- 10 speed threshold settings
- Compact size
- Easy to install and set up
- Short circuit protection on camera inputs
- Reverse polarity protected
- Compatible with Brigade products

### Power

- Power consumption: 21.6 Watts
- Max current: 1.8 Amps
- Switch Output max. current: 1.2 Amps

### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant

**Note:** A relay is required if connected to a device that is higher than 1.2 Amps

**Model**

**Part No:**

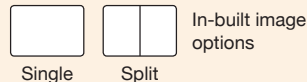
## CAMERA MONITOR SYSTEM ANCILLARIES

**SS-002 - Twin camera screen splitter (Select range connectors)**

**3044**



- **12-24Vdc**
- **2 camera inputs**
- **Size (WxHxD)**  
147 x 37 x 78mm  
5.7 x 1.5 x 3 inches
- **3 year warranty**



### Features

- Offers split-screen option for monitors without in-built functionality
- 3 trigger inputs per camera
- Shutter camera compatible with adapters (Elite - AC-035) (Select - TS-1000-ECU)
- TV System: PAL / NTSC
- Manual Mirror/Normal switching - choose from horizontal normal/mirror or vertical normal/flip
- Short circuit protection on camera inputs
- Reverse polarity protected

Adapter required for Elite range monitors

### Power

- Power Consumption: 8.4 Watts
- Current: 0.7 Amps

### Durability & Standards

- Mechanical vibration: 10G
- Mechanical shock: 50G
- Operating temperature: -30 to +70°C / -22 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

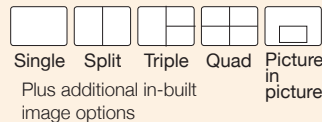
## CAMERA MONITOR SYSTEM ANCILLARIES

**EDM-50 - Multi-camera module and screen splitter (Elite range connectors)**

**2152**



- **12-24Vdc**
- **4 camera inputs**
- **Size (WxHxD)**  
154 x 28 x 105mm  
6 x 1.1 x 4.1 inches
- **3 year warranty**



### Features

- Shutter camera compatible (inputs 1,2&3)
- AV input to accept DVD, sat nav or other add-ons
- 5 manual or auto-triggers for each camera
- On screen distance markers
- Mirror / Normal image switch for each camera
- Selectable camera audio
- Auto-scanning function
- Adapter required for Select range monitors

### Power

- Power consumption: 20 Watts
- Current: 2A

### Durability & Standards

- Mechanical vibration: 5G
- Operating temperature: -25 to +70°C / -13 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant

## CAMERA MONITOR SYSTEM ANCILLARIES

**SC-1000-ECU - Shutter camera module**

**3666**



- Allows BE-810C shutter camera to function on non-shutter enabled inputs on Elite range monitors (using Elite range cables)
- Adapter required for Elite range monitors

- **Current: 2A**
- **CE marked**
- **E-Marked: UNECE R10 compliant**
- **3 year warranty**

# MDR 4G Hosted Service

Brigade's Mobile Digital Recording (MDR) systems capture footage from up to eight vehicle-mounted cameras. The MDR range includes models with WiFi and/or 4G connectivity capabilities, allowing data to be accessed from the recorder without having to physically go to the vehicle. Immediate access to data can be invaluable in the event of an incident, to refute claims, assess which party is culpable and reassure drivers in the event of an emergency.

In order to take full advantage of the benefits of 4G connectivity, Brigade now provide a fully managed service for 4G enabled MDRs so that operators do not have to install, host and maintain their own servers\*. Brigade will manage set-up of the SIM and secure, protected server and provide a dedicated technical helpline, for advice and support. Brigade will also keep software up to date to help fleets run smoothly and efficiently.

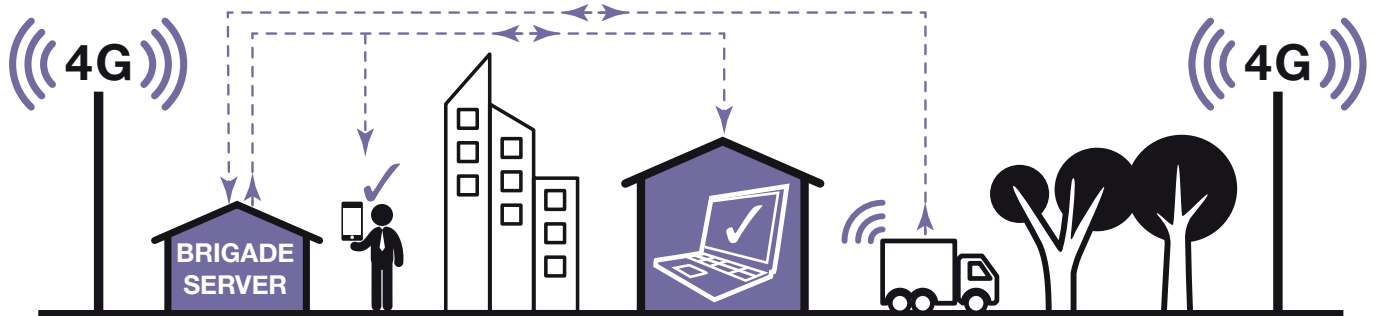
Brigade's Dashboard software and Mobile App enables access to footage.

Customers can schedule and automate data downloads so that they do not have to manually retrieve footage - saving time and increasing efficiency.



## Benefits of the hosted service include:

- Remote, real-time access via Dashboard 5.0 software or Brigade Mobile App.
- Playback of video
- Scheduled, automatic and manual data downloads via 4G
- Live tracking - View vehicle location via Google Maps
- Compatible with Google Maps
- Bolt-on option to set up email or text message notifications for triggered events:
  - HDD error - If there is a fault with the HDD
  - Video loss - If a camera is not working
  - Overspeed - If the vehicle exceeds a pre-set speed
  - Geo-fencing - Easily set up geographical boundaries to receive notification if a vehicle enters and/or leaves the area
  - G-Force - In case of impact
- Multi-vehicle GPS tracking
- View up to 64 live cameras from multiple vehicles.



## Brigade Hosted Service

4G Rolling out in 2019

Contact us for more information

- 4G connection
- Competitively-priced 12 month contract
- Remote, real-time access to MDR via Brigade-hosted secure server

### Managed Service by Brigade:

- Supply and activation of the SIM
- Set up of the server
- Maintenance and updates to the server, Dashboard and Mobile App

- Access to data via Dashboard software or Brigade Mobile App
- Technical helpline and online tutorials

- 4G data usage and notifications
- Identification of network/SIM issues
- Technical helpline

Fitting a mobile digital recorder to your fleet brings a multitude of benefits, with the potential to save your business a significant amount of time and money by countering false claims or tracking vehicle theft. By logging data from a variety of cameras and sensors, proof can be generated about your vehicle's location and whether it has entered or left geo-fenced areas, while G-sensor events will log the time and location of accidents or severe braking events.

- Manage your vehicle or fleet efficiently
- Track accidents and incidents with built-in G-Sensor
- Trace vehicle location and route using GPS
- Use Geo-fencing to prevent vehicle theft or misuse
- Pro-actively enhance driver safety through performance tracking
- Connect remotely to monitor and download data via optional 4G or WiFi
- Back-up claims and manage situations live using video data

## Which system is for you?

Brigade's New 500 Series Mobile Digital Recorders include a range of four and eight channel models with the options to choose between 500GB, 1TB and 2TB hard drives depending upon your camera choice and storage requirements. These models can be specified with WiFi and/or 4G in order that they can be used with Brigade's Service packages which allow for the live streaming or downloading of meta-data and video data without having to access the MDR or, in the case of 4G, while your vehicle/s are out on the road.







## Model

## Part No:

### NEW MODELS

### MOBILE DIGITAL RECORDER

MDR-508-2000	- 8 channel 2TB hard disk recorder	5577
MDR-508-1000	- 8 channel 1TB hard disk recorder	5126
 	MDR-508GW-2000 - 8 channel 2TB hard disk recorder with WiFi and 4G	5556
	MDR-508GW-1000 - 8 channel 1TB hard disk recorder with WiFi and 4G	5127
	MDR-508G-2000 - 8 channel 2TB hard disk recorder with 4G	5550
	MDR-508G-1000 - 8 channel 1TB hard disk recorder with 4G	5539
	MDR-508W-2000 - 8 channel 2TB hard disk recorder with WiFi	5579
	MDR-508W-1000 - 8 channel 1TB hard disk recorder with WiFi	5129



- 9-32Vdc
- 8 camera inputs - Supports ADH High definition cameras
- 8 trigger/alarm inputs
- Lockable and interchangeable Hard Drive Unit
- Fast, easily downloadable recordings and data
- Size (WxHxD)  
224 x 85 x 221mm  
8.8 x 3.3 x 8.7 inches
- 3 year warranty

#### Main Contents

- Mobile Digital Recorder with 2.5" SATA HDD caddy unit
- Wired Mouse
- 64Gb industrial grade Class 10 SD card
- Input / Output Cable
- Power Cable
- GPS Antenna
- 4G Antenna (G and GW models)
- Wi-Fi Antenna (W and GW models)
- USB A to B Cable (3.0)
- Security Key
- Bracket and Fixings

#### Features

- Remotely access MDR units using wireless (WiFi models only) and/or Mobile network (4G models only)
- Mobile apps for remote view (WiFi/4G models only)
- Geo-fencing (WiFi/4G models only)
- Mobile Standards: 2G/3G/4G
- Audio (cameras must have microphones)
- Robust aluminum housing
- Anti-vibration mounting allows for installation at any angle
- Built-in GPS
- Internal G-sensor and built-in buzzer
- Recordings saved to hard disk (protected by non-visible digital watermark) and in-built Mirror recording onto 64Gb SD card
- Recording modes: normal, alarm and timer (all watermarked)
- Configurable alarm trigger settings (speed, G-force, motion detection, video loss, voltage)
- Record images prior to alarm activation and after vehicle switched off

- MDR-Dashboard (full player) and MDR-Player (portable) with Google and MS Bing maps (English only)
- Search by date, time or triggered events
- Multi-level password protected access
- Hard drive unit directly pluggable to PC via USB port
- 8 x trigger Inputs, 2x trigger outputs and 1x12V power output
- Built-in HDD heater
- MDR Control using USB Mouse or optional IR remote control
- USB 3.0 connection
- TV System: PAL/NTSC/AHD
- Compatible with Brigade's vehicle CCTV camera monitor systems and Backeye@360 systems

#### Image and Audio Quality

- High quality H.264 image compression
- ADPCM - audio compression
- Choice of 8 low to high resolution settings
- Record at between 1 and 25 frames per second, per channel

#### Power

- Max power consumption: 80 Watts
- Current: 6.6 Amps

#### Durability & Standards

- Mechanical vibration: 1G
- Mechanical shock: 51G
- Operating temperature: -40 to +70°C / -40 to +158°F
- E-Marked: UNECE R10 compliant
- CE marked
- FCC approved
- IC approved
- RoHS2 Compliant

## Model

## Part No:

### NEW MODELS

### MOBILE DIGITAL RECORDER

MDR-504-2000	- 4 channel 2TB hard disk recorder	5563
MDR-504-1000	- 4 channel 1TB hard disk recorder	5561
MDR-504-500	- 4 channel 500GB hard disk recorder	5122



MDR-504GW-2000	- 4 channel 2TB hard disk recorder with WiFi and 4G	5554
MDR-504GW-1000	- 4 channel 1TB hard disk recorder with WiFi and 4G	5552
MDR-504GW-500	- 4 channel 500GB hard disk recorder with WiFi and 4G	5497



MDR-504G-2000	- 4 channel 2TB hard disk recorder with 4G	5546
MDR-504G-1000	- 4 channel 1TB hard disk recorder with 4G	5548
MDR-504G-500	- 4 channel 500GB hard disk recorder with 4G	5536



MDR-504W-2000	- 4 channel 2TB hard disk recorder with WiFi	5567
MDR-504W-1000	- 4 channel 1TB hard disk recorder with WiFi	5565
MDR-504W-500	- 4 channel 500GB hard disk recorder with WiFi	5125



- 9-32Vdc
- 4 camera inputs - Supports ADH High definition cameras
- 8 trigger/alarm inputs
- Lockable and interchangeable Hard Drive Unit
- Fast, easily downloadable recordings and data
- Size (WxHxD)  
190 x 75 x 222mm  
7.5 x 3 x 8.7 inches
- 3 year warranty

#### Main Contents

- Mobile Digital Recorder with 2.5" SATA HDD caddy unit
- Wired Mouse
- 32Gb industrial grade Class 10 SD card
- Input / Output Cable
- Power Cable
- GPS Antenna
- 4G Antenna (G and GW models)
- Wi-Fi Antenna (W and GW models)
- USB A to B Cable (3.0)
- Security Key
- Bracket and Fixings

#### Features

- Remotely access MDR units using wireless (WiFi models only) and/or Mobile network (4G models only)
- Mobile apps for remote view (WiFi/4G models only)
- Geo-fencing (WiFi/4G models only)
- Mobile Standards: 2G/3G/4G
- Audio (cameras must have microphones)
- Robust aluminum housing
- Anti-vibration mounting allows for installation at any angle
- Built-in GPS
- Internal G-sensor and built-in buzzer
- Recordings saved to hard disk (protected by non-visible digital watermark) and in-built Mirror recording onto SD card
- Recording modes: normal, alarm and timer (all watermarked)
- Configurable alarm trigger settings (speed, G-force, motion detection, video loss, voltage)
- Record images prior to alarm activation and after vehicle switched off

- MDR-Dashboard (full player) and MDR-Player (portable) with Google and MS Bing maps (English only)
- Search by date, time or triggered events
- Multi-level password protected access
- Hard drive unit directly pluggable to PC via USB port
- 8 x trigger Inputs, 2x trigger outputs and 1x12V power output
- Built-in HDD heater
- MDR Control using USB Mouse or optional IR remote control
- USB 3.0 connection
- TV System: PAL/NTSC/AHD
- Compatible with Brigade's vehicle CCTV camera monitor systems and Backeye@360 systems

#### Image and Audio Quality

- High quality H.264 image compression
- ADPCM - audio compression
- Choice of 8 low to high resolution settings
- Record at between 1 and 25 frames per second, per channel

#### Power

- Max power consumption: 60 Watts
- Current: 5 Amps






#### Durability & Standards

- Mechanical vibration: 1G
- Mechanical shock: 51G
- Operating temperature: -40 to +70°C / -40 to +158°F
- E-Marked: UNECE R10 compliant
- CE marked
- FCC approved
- IC approved
- RoHS2 Compliant

## Model

## Part No:

### 500 SERIES MOBILE DIGITAL RECORDER ACCESSORIES

	AC-305 - Splitter cable connects 1 x BN360 camera to MDR & ECU	4903
	AC-306- Connects 1 x Select camera to MDR and monitor	4904
	AC-307- Connects 1 x Elite camera to MDR and monitor	4905
	MDR-RP01- Remote status & interface panel with panic button	4872
	MDR-06RPC- 6m cable for Remote status & interface panel	4873
	MDR-GS-02- External G-sensor	4988
	MDR-03GSC- 3m G-sensor cable	4874
	MDR-508GW-EXP-0 - Wi-Fi & 4G upgrade Expansion Module <small>For MDR-508 models only. SD card not included</small>	S5542
	MDR-508G-EXP-0 - 4G upgrade Expansion Module <small>For MDR-508 models only. SD card not included</small>	S5543
	MDR-508W-EXP-0 - Wi-Fi upgrade Expansion Module <small>For MDR-508 models only. SD card not included</small>	5311
	MDR-500-500-MCU - Caddy unit with 500GB HDD	5132
	MDR-500-1000-MCU - Caddy unit with 1TB HDD	5157
	MDR-500-2000-MCU - Caddy unit with 2TB HDD	5330
	SD-32GB-IND - 32GB industrial grade Class 10 SD card	4875
	SD-64GB-IND - 64GB industrial grade Class 10 SD card	4876
	MDR-FPB32-01 - External SD Mirror-recorder in fireproof housing <small>with 32GB industrial grade Class 10 SD card</small>	4896

# Ultrasonic Object Detection



Sensor systems to inform driver of objects within close proximity, whether moving or stationary. Perfect for road going commercial vehicles regularly operating in confined spaces or maneuvering at low speeds.

## Which system is for you?

**Sidescan®** - 4 sensor system fitted to side of vehicle increasing safety when turning or low speed maneuvering. Particularly relevant for near side blind spot where cyclists or pedestrians can otherwise go undetected.

**Backscan®** - 4 sensor system fitted to rear of vehicle as an invaluable aid to safe reversing. Gives greater protection to pedestrians and workers, while minimizing damage to vehicle and other objects.

**Cornerscan™** - 3 sensor system fitted to near side corner of vehicle cab detects objects in front near side blind spot. Minimizes the risk of damage to the vehicle cab while maneuvering at low speed.

**Frontscan®** - 4 sensor system fitted to front of vehicle improving safety when maneuvering at low speed. Particularly relevant for front blind spot on high cabs where low objects or pedestrians can be hidden.

**Stepscan™** - 2 sensor system fitted to near side cab step giving awareness to the driver of objects to the side when turning and reversing. Minimizes the risk of damage to the vehicle cab from otherwise unseen objects.



## Ultrasonic Detection On-Screen Display Module

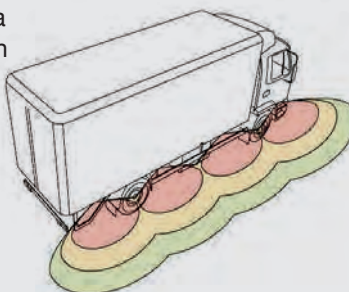


- Integration of Brigade's ultrasonic obstacle detection systems and Backeye® camera monitor systems
- Ultrasonic detection warnings overlaid onto camera image on in-cab monitor
- Reduced driver stress and distractions as all information is in one view

### Sensor data and camera image combined

Brigade's ultrasonic proximity sensors minimize both vehicle damage and collisions with pedestrians, cyclists or objects. Perfect for road-going commercial vehicles operating in confined spaces or maneuvering at low speed.

Working in conjunction with a Backeye® camera monitor system and up to two ultrasonic detection systems, the on-screen display module warns the driver of obstacles close to the vehicle by overlaying 3-stage audible and visual ultrasonic data onto the camera image on the monitor.



## ULTRASONIC ON-SCREEN DISPLAY MODULE

UDS-OSD20-ECU - On-screen display module PAL

5099

UDS-OSD21-ECU - On-screen display module NTSC

5347



- Allows 3-stage audible and visual Ultrasonic data to be overlaid onto camera image on vehicle monitor

- 12-24Vdc
- 2 camera inputs
- 2 trigger inputs
- 2 UDS inputs
- 2 UDS outputs
- 2 year warranty

### Contents

- OSD ECU
- Power cable
- Splitter cable
- Trigger cable

### Features

- Overlay on monitor of vehicle icon and detection data from up to 2 x ultrasonic detection systems
- Compatible with 1x Sidescan® Frontscan® and Backscan®
- UDS overlay will appear on a black background if no cameras installed
- Graphics can be overlaid left or right on the monitor
- Audible warning via monitor
- Ultrasonic system fault displayed on monitor
- Compatible with MDR

### Power

- Power consumption: 1.7 Watts
- Current: 140mA

### Durability & Standards

- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +70°C / +22 to +158°F
- IP30
- Dimensions (WxDxH): 74 x 118 x 28mm 2.9 x 4.6 x 1.1 inches
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved

## Model

## Part No:

### SIDESCAN® ULTRASONIC DETECTION SYSTEM

SS-4100W -	Side sensor system with mute function	5257
SS-4100W-000 -	Side sensor system with mute function, low speed trigger module and turn indicator sensor kit	5344
Includes LS-60-A low speed trigger module and TS-001ECU turn indicator sensor		



- 4 sensor system
- 12-24Vdc
- .0/1.5m (3.2/4.9') detection range - (selectable via dip switch)
- Audible distance warning
- Underslung and flush-mount fixings included
- 2 levels of sensitivity - (selectable via dip switch)
- 3 year warranty

#### Contents

- 4 x sensors
- Buzzer
- 4 x 0° flush mount fixings
- 4 x 11° flush mount fixings
- 4 x underslung fixings
- Waterproof control box
- 10m buzzer cable
- 4 x 4.5m sensor cables
- 2 x 2.5m extension cables

#### Features

- Obstacles detected in under 200 milliseconds
- Buzzer with audible distance warning, LED & adjustable volume control
- Buzzer will silence after 4 seconds if there is no movement from detected object or vehicle
- Environment Learning Mode prevents false alarms from ancillary equipment that intrudes in the first 100cm of the detection zone
- Self-diagnostic function

#### Power

- Power consumption: 2.4 Watts
- Current: 200mA

#### Durability & Standards

- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80°C / -22 to +176°F
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved



### ADDITIONS FOR ARTICULATED VEHICLES

SK-15-04	Truck/trailer camera/sensor cable kit	3997
SK-UDS-05	Truck/trailer sensor only cable kit (required)	4219
UDS-10BC	10m/33' display cable (required)	3716
SS-4100W	Additional Sidescan sensor system for cab (optional)	5257

### RECOMMENDED EXTRA

LS-60-A	Low speed trigger module enables sensors below designated speed	4851
TS-001ECU	Turn indicator trigger for system activation	1362

### OPTIONAL EXTRA

SS-BC-08	Backchat speaking alarm with side turn warning for cyclists/pedestrians Note: TS-001ECU Turn indicator trigger is required	1334
TCO-47-01	Latched auto-reset Backalarm cut-out (dash mount)	4752



**Model**

**Part No:**

## BACKSCAN® ULTRASONIC DETECTION SYSTEM

**BS-4000W - Rear reversing sensor system**

**3744**



- 4 sensor system
- 12-24Vdc
- 2.5m/8.2' detection range - outer sensors 2.5m/0.6m (8.2/2') (selectable via dip switch)
- Graduated visual and audible distance warning display
- Underslung and flush-mount fixings included
- 50cm/1.2' compensation range for sensors fitted inboard of vehicle rear (selectable via dip switch)
- 3 year warranty

### Contents

- 4 x sensors
- Visual and audible display
- 4 x 0° flush mount fixings
- 4 x 11° flush mount fixings
- 4 x underslung fixings
- Waterproof control box
- 15m display cable
- 4 x 2.5m sensor cables

### Features

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from tow-hooks and other ancillary equipment that intrudes in the first 100cm of the detection zone
- Self-diagnostic function
- 1 x Trigger output

### Power

- Power consumption: 2.4 Watts
- Current: 200mA

### Durability & Standards

- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80°C / -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved



## ADDITIONS FOR ARTICULATED VEHICLES

SK-15-04	Truck/trailer camera/sensor cable kit	3997
SK-UDS-05	Truck/trailer sensor only cable kit	4219
UDS-10BC	10m/33' Buzzer/display cable	3716



## OPTIONAL EXTRA

UDS-RELAY-24	Trigger-out diode protected relay 24Vdc	4215
UDS-RELAY-12	Trigger-out diode protected relay 12Vdc	4216

To power a device switched by the output trigger

**Model**

**Part No:**

## FRONTSCAN® ULTRASONIC DETECTION SYSTEM

**FS-4000W - Front sensor system**

**3747**



- 4 sensor system
- 12-24Vdc
- 2.0m/1.0m (6.8'/3.2') detection range - outer sensors can be reduced to 0.6m (2') (selectable via dip switches)
- Audible distance warning
- Flush-mount
- 3 year warranty

### Contents

- 4 x sensors
- Buzzer
- 4 x 11° flush mount fixings
- 4 x 18° flush mount fixings
- 4 x 26° flush mount fixings
- Waterproof control box
- 2.5m (8.2') buzzer cable
- 4 x 2.5m (8.2') sensor cables

### Features

- Obstacles detected in under 200 milliseconds
- Environment Learning Mode prevents false alarms from tow-hooks and other ancillary equipment that intrudes in the first 100cm (3') of the detection zone

- Self-diagnostic function
- 1 x Trigger output

### Power

- Power consumption: 2.4 Watts
- Current: 200mA

### Durability & Standards

- Operating temperature: -30 to +80°C / -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- E-Marked: UNECE R10 compliant

## RECOMMENDED EXTRA



**LS-60-A**

**Low speed trigger module**

Enables sensors below designated speed

**4851**

## OPTIONAL EXTRA



**UDS-RELAY-24**

**Trigger-out diode protected relay 24Vdc**

**4215**

**UDS-RELAY-12**

**Trigger-out diode protected relay 12Vdc**

**4216**

To power a device switched by the output trigger

## CORNERSCAN® ULTRASONIC DETECTION SYSTEM

**CS-3100 - Corner sensor system with mute function**

**5261**



- 3 sensor system
- 12-24Vdc
- 0.6/1.0m (2/4') detection range - (selectable via dip switch)
- Audible distance warning
- Flush-mount
- 2 levels of sensitivity - (selectable via dip switch)
- 3 year warranty

### Contents

- 3 x sensors
- Buzzer
- 3 x 11° flush mount fixings
- 3 x 18° flush mount fixings
- 3 x 26° flush mount fixings
- Waterproof control box
- 2.5m (8.2') buzzer cable
- 3 x 2.5m (8.2') sensor cables

### Features

- Obstacles detected in under 200 milliseconds
- Buzzer with audible distance warning, LED & adjustable volume control
- Buzzer will silence after 4 seconds if there is no movement from detected object or vehicle
- Environment Learning Mode prevents false alarms from

ancillary equipment within the first 100cm (3') of the detection zone

- Self-diagnostic function

### Power

- Power consumption: 2.4 Watts
- Current: 2 Amps

### Durability & Standards

- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80°C / -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved

## RECOMMENDED EXTRA



**LS-60-A**

**Low speed trigger module**

(enables sensors below designated speed)

**4851**

# Ultrasonic object detection

**Model**

**Part No:**

## STEPSCAN™ ULTRASONIC DETECTION SYSTEM

**ST-2100 - Step sensor system with mute function**  
**ST-2100-60-A - Step sensor system with mute function and low speed trigger module**  
 Includes UDS-4.5SC 4.5m extension cable

**5262**  
**5345**



- 2 sensor system
- 12-24Vdc
- 0.6/1.0m (2/3.2') detection range - (selectable via dip switch)
- Audible distance warning
- Flush-mount
- 2 levels of sensitivity - (selectable via dip switch)
- 3 year warranty

### Contents

- 2 x sensors
- Buzzer
- 2 x 11° flush mount fixings
- 2 x 18° flush mount fixings
- 2 x 26° flush mount fixings
- Waterproof control box
- 2.5m (8.2') buzzer cable
- 2 x 2.5m (8.2') sensor cables

### Features

- Obstacles detected in under 200 milliseconds
- Buzzer with audible distance warning, LED & adjustable volume control
- Buzzer will silence after 4 seconds if there is no movement from detected object or vehicle
- Environment Learning Mode prevents false alarms from ancillary equipment that

- intrudes in the first 100cm (3.2') of the detection zone
- Self-diagnostic function

### Durability & Standards

- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80°C / -22 to +176°C
- Waterproof sensors to IP68
- Waterproof control box to IP69K
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved

### Power

- Power consumption: 2.4 Watts
- Current: 200mA



## RECOMMENDED EXTRA

**LS-60-A Low speed trigger module**  
 enables sensors below designated speed

**4851**

## EXTENSION CABLES



**UDS-2.5BC - Buzzer/display extension cable 2.5m/8.2'**

**3717**

**UDS-10BC - Buzzer/display extension cable 10m/33'**

**3716**

**UDS-15BC - Buzzer/display extension cable 15m/49'**

**3746**

**UDS-2.5SC - Sensor extension cable 2.5m/8.2'**

**3719**

**UDS-4.5SC - Sensor extension cable 4.5m/14.7'**

**3720**

**UDS-7.0SC - Sensor extension cable 7.0m/23'**

**5623**

# Radar Object Detection



Informs driver of distance between vehicle and objects, whether moving or stationary.

## Which model is for you?

### Programmable

Top of the range programmable system allowing custom detection areas up to 30m/98.4ft in length and 10m/32.8ft in width, with the ability to calibrate out fixed objects or bodywork.



### Fixed

Fixed detection length and width. Ideal on machines where no calibration is required. Detection range of up to 6 metres/19.6ft.



### Network

Aimed at OEM and specialist application markets, Brigade's Network Radar allows you to connect and link up to 8 sensors to cover large, sometimes complex blind spot zones around the vehicle or machine. The system provides object detection in CAN (Controller Area Network) message format which may be processed to display data on control panels/ displays on the vehicle or used to control aspects of the machine.



**Model**

**Part No:**



## Backsense® Radar On-Screen Display

- Integration of Brigade's Backsense® radar detection and Backeye® camera monitor systems
- Up to 2 Radar detection warnings overlaid onto camera image on in-cab monitor
- Reduced driver stress and distractions as all information is in one place



### Radar sensor data and camera image combined

Brigade's Radar sensors minimize both vehicle damage and collisions by informing the driver of the distance between vehicle and obstacles, whether moving or stationary. Ideal for vehicles and machines maneuvering at low speed.

Working in conjunction with a Backeye® camera monitor system and up to two Backsense® Network radar detection systems, the on-screen display module warns the driver of obstacles in the danger zone by overlaying 5-stage audible and visual radar data onto the camera image on the monitor.

**NEW**

## BACKSENSE® RADAR ON-SCREEN DISPLAY KIT

**BS-9001-OSD - Radar sensor & On-screen display module**

**5658**



- Allows 5-stage audible and visual radar data to be overlaid onto camera images on in-cab monitor
- 12-24Vdc
- Detection length: up to 30m/ 98' (minimum programmable distance 3m/10')
- Detection width: 2 to 10m / 6.5 to 33'
- Sensor size (WxHxD)  
217 x 129 x 50mm  
8.5 x 5 x 1.9 inches
- OSD ECU size (WxHxD)  
195 x 120 x 35mm  
7.7 x 4.7 x 1.4 inches
- 2 camera inputs
- 2 BS-9000 Backsense® inputs
- 3 trigger inputs
- 3 trigger outputs
- 3 year warranty

### Contents

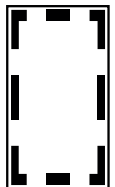
- 1 x OSD Radar ECU
- 1 x BS-9000 Backsense® radar sensor
- 1 x Power cable
- 1 x Extension cable 9m
- 3 x Network Y-cable
- 2 x CANBUS terminator

### Features

- Overlay on monitor of detection data from up to 2 BS-9000 radar sensors
- Each radar can be shown in one of 8 positions around the monitor/vehicle
- Compatible with Backsense® BS-9000 Network radar sensors only
- Programmable:  
Detection area  
Blind zones - system ignores fixed objects  
Overlay transparency level
- Radar system fault displayed on monitor
- USB connection for configuration via PC
- Compatible with MDR, Backeye®360 & Elite range camera monitor systems (Select range via adapters)
- Audible warning via monitor or optional internal buzzer
- Supports external warning alarm

### Durability & Standards

- Operating temperature:  
-40 to +85°C / -40 to +185°F
- OSD: IP30
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved



To not obstruct camera views, each radar can be shown in one of eight positions around the edge of the monitor

Camera monitor system not included

## TO ADD AN ADDITIONAL RADAR SENSOR

1 x BS-9000	- Network Radar sensor	5266
1 x BS-00NYC	- Network Y Cable	5270
1 x Extension cable:		
BS-05DCX	- 5m/16' extension cable	4550
BS-09DCX	- 9m/30' extension cable	4551
BS-25DCSX	- 25m/82' extension cable (Female end connector supplied loose)	4975



## Model

## Part No:

**NEW**

## NETWORK BACKSENSE® OBJECT DETECTION



### BS-9000 - Backsense® CAN object detection radar

5266

- 12-24 Vdc
- Detection length: up to 30m/98'
- Detection width: up to 10m/33'
- Sensor size (WxHxD) 217 x 129 x 50mm 8.5 x 5 x 1.9 inches
- IP69K sensor
- 3 year warranty

#### Contents

- 1 x Network radar
- Fixings

#### Features

- Frequency modulated continuous wave (FMCW) radar technology
- Network up to 8 sensors
- Extremely rugged design for severe weather conditions and all terrains
- Communication via CAN Gateway
- Configurable CAN ID
- Complies with CAN2.0A Base Frame Format
- Separate CAN message & ID for each object detected (up to 8 closest objects per sensor)

#### Power

- Current: 0.4 Amps
- Power consumption; 4 Watts

#### Durability & Standards

- Mechanical shock: 100G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- BS EN 13309: 2010
- ISO13766: 2006

## EXTENSION CABLES



BS-02DCX - 2m/6.6' extension cable

5272

BS-05DCX - 5m/16' extension cable

4550

BS-09DCX - 9m/30' extension cable

4551

BS-25DCSX - 25m/82' extension cable (Female end connector supplied loose)

4975

## NETWORK ACCESSORIES



BS-00NYC - Network Y Cable

5270

BS-02PIC - Network power input cable

5271

BS-00NT - 120 Ohms Network Terminator

5291

## OPTIONAL EXTRAS



BKT-017 - Adjustable radar bracket

with 1105mm / 4.1" depth bracket mounting arms

4676

BKT-018 - Low-profile adjustable radar bracket

4758

# Backsense® Radar object detection

## Model

## Part No:

### PROGRAMMABLE BACKSENSE® OBJECT DETECTION SYSTEM

#### BS-8000 - Programmable detection range

Sensor, AV display, 9m /29.5' cable, Programming software

4530



- 12-24Vdc
- Detection length: up to 30m (minimum programmable distance 3m)
- Detection width: 2 to 10m
- Rugged design for harsh environmental conditions
- Sensor size (WxHxD)  
217 x 129 x 50mm  
8.5 x 5 x 1.9 inches
- IP69K sensor
- 3 year warranty

#### Features

- Frequency modulated continuous wave (FMCW) radar technology
- Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output
- Programmable:
  - Detection area
  - Blind zones - system ignores fixed objects
  - Trigger activation
  - Buzzer
- 5 stage audible and visual distance warning display
- Resistant to water, moisture, dust, vibration, heat, cold, mud and glare

#### Power

- Current: 0.8 Amps
- Power consumption: 8 Watts

#### Durability & Standards

- Mechanical shock: 100G
- Mechanical vibration: 8.3G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- BS EN 13309: 2010
- ISO13766: 2006

### FIXED BACKSENSE® OBJECT DETECTION SYSTEMS

#### BS-7030 - 3m/10' detection range, 2.5m/8' width

Sensor, AV display, 9m cable

4527

#### BS-7045 - 4.5m/15' detection range, 3.5m/11' width

Sensor, AV display, 9m cable

4528

#### BS-7060 - 6m/20' detection range, 4.5m width

Sensor, AV display, 9m cable

4529



- 12-24Vdc
- Maximum detection range of 6m /19.6'
- Rugged design for harsh environmental conditions
- Sensor size (WxHxD)  
217 x 129 x 50mm  
8.5 x 5 x 1.9 inches
- IP69K sensor
- 3 year warranty

#### Features

- Frequency modulated continuous wave (FMCW) radar technology
- Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output
- 5 stage audible and visual distance warning display
- Resistant to water, moisture, dust, vibration, heat, cold, mud and glare

#### Power

- Current: 0.8 Amps
- Power consumption: 8 Watts

#### Durability & Standards

- Mechanical shock: 100G
- Mechanical vibration: 8.3G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- BS EN 13309: 2010
- ISO13766: 2006

### EXTENSION CABLES

#### BS-05DCX - 5m/16' extension cable

4550

#### BS-09DCX - 9m/30' extension cable

4551

#### BS-25DCSX - 25m/82' extension cable (Female end connector supplied loose)

4975



### OPTIONAL EXTRAS

#### BKT-017 - Adjustable radar bracket

with 105mm / 4.1" depth bracket mounting arms

4676

#### BKT-018 - Low-profile adjustable radar bracket

4758

# Warning Alarms



Vital safety devices needed to warn workers and pedestrians that a vehicle is maneuvering. Our range includes bbs-tek® white sound® alarms, smart alarms which adjust to the ambient noise level, speaking alarms which provide a real speech warning of imminent danger and electric vehicle sounders.

## Which alarm is for you?

### Heavy duty

For plant, quarry and construction machines or environments with high ambient noise.



### Medium duty

Ideal for commercial road going vehicles and environments with mid-level ambient noise.



### bbs-tek® white sound®

The safest alarms in the world due to their instant locatability and directional sound. The multi-frequency alarms are only heard in the danger zone, thus eliminating noise nuisance for local residents. bbs-tek® alarms are endorsed by PIEK and the Noise Abatement Society and have been awarded the Quiet Mark.



alarms are covered  
by the following patents:

AU2007200517  
EP1289798B2  
CN100488807C  
JP4798474B2  
NZ522190  
GB2345392C  
USRE44912

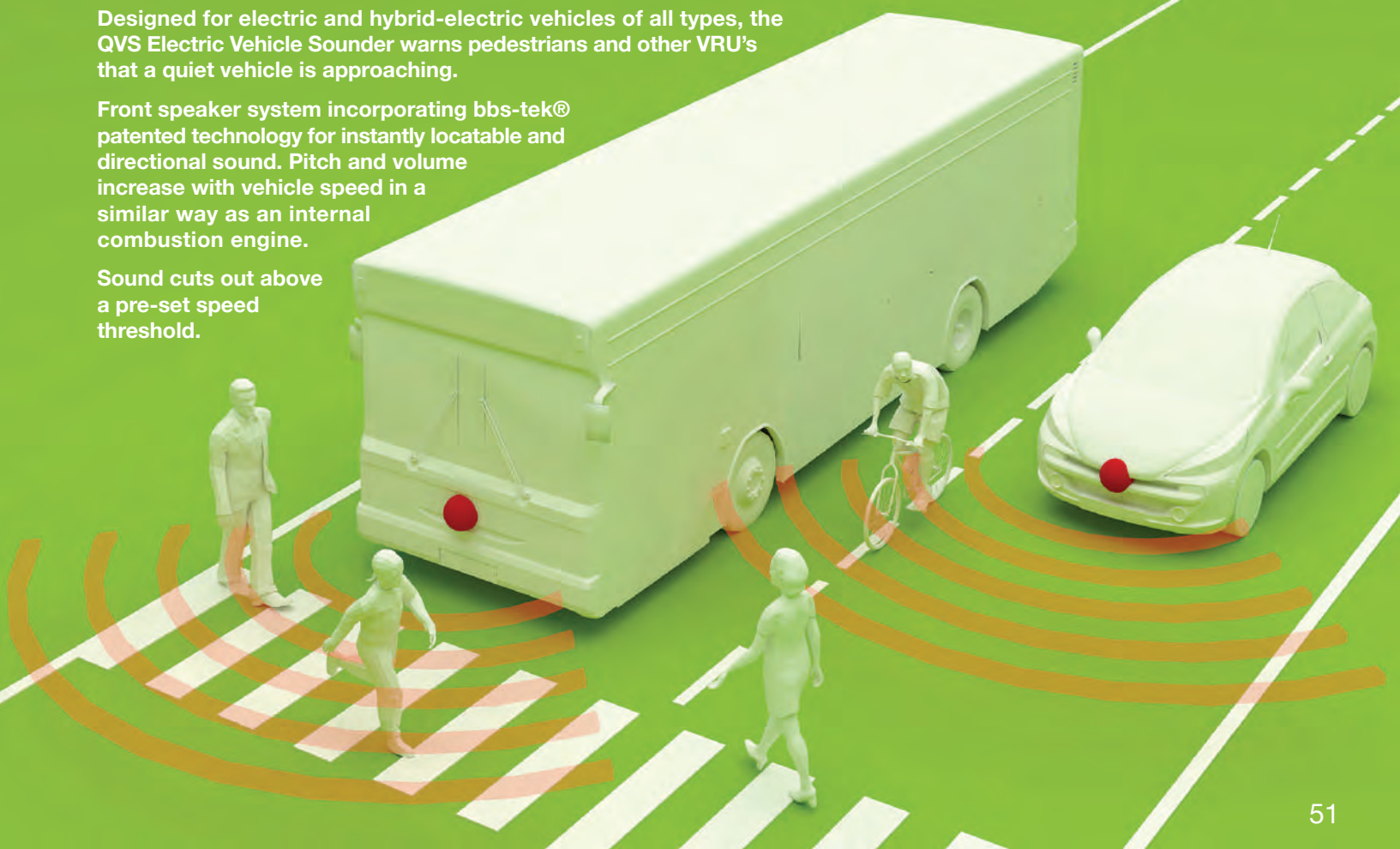


## QVS Quiet Vehicle Sounder (AVAS)

Designed for electric and hybrid-electric vehicles of all types, the QVS Electric Vehicle Sounder warns pedestrians and other VRU's that a quiet vehicle is approaching.

Front speaker system incorporating bbs-tek® patented technology for instantly locatable and directional sound. Pitch and volume increase with vehicle speed in a similar way as an internal combustion engine.

Sound cuts out above a pre-set speed threshold.



## Model

## Part No:

**NEW**

## QVS QUIET VEHICLE SOUNDER (AVAS)

**QVS-001-75 - Quiet Vehicle Sounder**

**5385**



- 12-24Vdc
- IP68 Speaker
- IP30 ECU
- **Size Speaker (WxHxD)**  
120 x 135 x 120mm  
4.7 x 5.3 x 4.7 inches
- **Size ECU (WxHxD)**  
93 x 26 x 185mm  
3.7 x 0.2 x 7.3 inches
- 2 year warranty



### Contents

- 1 x speaker
- 1 x ECU

### Features

- Warns pedestrians and other VRU's that a quiet vehicle is approaching
- Combined multi-frequency bbs-tek® technology and tonal sounds
  - Multi-frequency sound
  - Directional and locatable - The sound is only heard in the hazard zone.
- Front speaker system
- Pitch and volume increase with vehicle speed to mimic an internal combustion engine
- Operational below speeds of 20MPH
- Front sounder operational when ignition activated (silenced when parking brake applied)
- Uses Tachograph speed signal\*\*
- Sounder unit: Speaker

### Power

- Current: Max 0.1 Amps

### Durability & standards

- Mechanical vibration: 10G
- Operating temperature: -30 to +70°C / -22 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC Marked
- UNECE R138 compliant\*
- 49 CFR Part 571 and 585 Federal Motor Vehicle Safety Standards compliant\*

\* QVS helps achieve compliance for the vehicle.

\*\* If your vehicle is not equipped with a Tachograph, please contact us for alternative installation methods

## QVS Quiet Vehicle Sounder (AVAS)

- Warns pedestrians and other VRU's that a quiet vehicle is approaching.
- Incorporating bbs-tek® technology - Multi-frequency, directional and instantly locatable sound which is only heard in the hazard zone.
- Front speaker system.
- Pitch and volume increase with vehicle speed in a similar way as an internal combustion engine.
- Sound cuts out above a pre-set speed threshold.
- Designed for electric and hybrid-electric vehicles of all types.

Sound is an important contributor to road safety yet electric vehicles are almost silent; they are only audible once they have built up some speed. Studies by the University of California concluded that electric vehicles pose a danger to vulnerable road users (VRU) with pedestrians needing to be 74% closer to an electric vehicle over a vehicle with a combustion engine in order to hear it.

In order to protect VRU's, standards in both the US and EU have been introduced to ensure minimum sound requirements for electric vehicles. Sound generators will need to be fitted to make the engines "sound similar" to vehicles with combustion engines when traveling at low speed.

Since 2010, Brigade has been involved in the QRTV (Quiet Road Transport Vehicles) working group to establish requirements for the standard. We have developed a multi-frequency Quiet Vehicle Sounder, integrating our patented bbs-tek® technology. This gives greater directional information to the ear allowing the VRU to instantly locate where the sound is coming from and to take evasive action.

[www.brigade-inc.com/qvs](http://www.brigade-inc.com/qvs)  
[www.brigade-electronics.ca/qvs](http://www.brigade-electronics.ca/qvs)



If your vehicle is not equipped with a Tachograph, please contact us for alternative installation methods

## Model

## Part No:

### WHITE SOUND® SMART REVERSING ALARM



**SA-BBS-107 - Self-adjusting heavy-duty - 87-107 Decibels**

**1400**

- 12-24Vdc
- IP68
- Size (WxHxD)  
172 x 79 x 95mm  
6.7 x 3.1 x 3.7 inches
- Lifetime warranty

#### Features

- Alarm continually adjusts to 5 dBA above ambient
- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Driver
- Hole centers: 153mm / 6"

#### Power

- Current: Max 1 Amp

#### Durability & standards

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- SAE J994



### WHITE SOUND® SMART REVERSING ALARM

**SA-BBS-97 - Self adjusting - medium duty - 77-97 Decibels**

**1399**

**SA-BBS-97HV - Self adjusting - electric forklift - 77-97 Decibels**

**1398**

- 12-24Vdc
- 36-80Vdc (HV)
- IP68
- Size (WxHxD)  
127 x 76 x 65mm  
5 x 3 x 2.5 inches
- Lifetime warranty

#### Features

- Alarm continually adjusts to 5 dBA above ambient
- Multi-frequency white sound alarm
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Driver
- Hole centers: 98-108mm / 3.8-4.2"

#### Power

- Current: Max 1 Amp

#### Durability & standards

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- SAE J994
- NAS/PIEK approved for night-time delivery



### WHITE SOUND® REVERSING ALARM

**BBS-107 - Heavy duty - 107 Decibels**

**0899**

**BBS-102 - Heavy duty - 102 Decibels**

**0898**

- 12-24Vdc
- IP68
- Size (WxHxD)  
172 x 79 x 95mm  
6.8 x 3.1 x 3.7 inches
- Lifetime warranty

#### Features

- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Driver
- Hole centers: 153mm / 6"

#### Power

- Current: Max 1 Amps

#### Durability & standards

- Mechanical vibration: 10G
- Operating temperature: -40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- SAE J994

## Model

## Part No:

### WHITE SOUND® REVERSING ALARM

BBS-97 - Medium duty - 97 Decibels	0935
BBS-92 - Medium duty - 92 Decibels	0934
BBS-87 - Medium duty - 87 Decibels	0897
BBS-82 - Medium duty - 82 Decibels	0896



- 12-24Vdc
- IP68
- Size (WxHxD)  
105 x 65 x 37mm  
4.1 x 2.5 x 1.5 inches  
(BBS-97/92)  
105 x 65 x 32mm  
4.1 x 2.5 x 1.3 inches  
(BBS-87/82/77)
- Lifetime warranty

#### Features

- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Speaker
- Hole centers: 76mm / 3"

#### Power

- Current: Max 0.5 Amps

#### Durability & standards

- Mechanical vibration: 10G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- SAE J994
- NAS/PIEK approved for night-time delivery (BBS-82 only)

### WHITE SOUND® REVERSING ALARM

BBS-92HV - Electric forklift - 92 Decibels	1402
BBS-82HV - Electric forklift - 82 Decibels	1322
BBS-92ADR - Petrol tanker - 92 Decibels	2165



ADR version



- 12-24Vdc
- 36-80Vdc (HV)
- IP68
- Size (WxHxD)  
127 x 76 x 65mm  
5 x 3 x 2.5 inches
- Lifetime warranty

#### Features

- Multi-frequency broadband sound
- Instantly locatable
- Sound confined to danger area
- Eliminates noise nuisance
- Sounder unit: Speaker
- Hole centers: 98-108mm / 3.8-4.2"

#### Power

- Current: Max 0.3 Amps

#### Durability & standards

- Mechanical vibration: 10G
- Operating temperature:  
-40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- SAE J994

## Model

## Part No:

### NIGHTSHIFT® SPEAKING ALARM



BC-01(NS) - Single reversing message - Nightshift - 90 or 0 Decibels  
BC-01(NS-B) - Bespoke single message - Nightshift - 90 or 0 Decibels

0378  
1198

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

#### Features

- Real speech alarm
- \* BC-01(NS) message "Ssh! Stand well clear, vehicle reversing..."
- Bespoke message up to 8 seconds, under 4 seconds for best speech quality
- Double engage reverse to cut-out or reduce sound
- Sounder unit: Speaker
- Hole centers: 102mm / 4"

#### Power

- Current: 0.5 Amps

#### Durability & standards

- CE marked
- E-Marked: UNECE R10 compliant

### SPEAKING ALARM



BC-01 - Single reversing message - 90 Decibels  
BC-01(B) - Bespoke single message - 90 Decibels  
BC-02(B) - Bespoke dual message - 90 Decibels

0077  
0079  
0083

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

#### Features

- Real speech alarm
- \* BC-01 message "Ssh! Stand well clear, vehicle reversing..."
- Bespoke message up to 8 seconds, under 4 seconds for best speech quality
- Sounder unit: Speaker
- Hole centers: 102mm / 4"

#### Power

- Current: 0.5 Amps

#### Durability & standards

- CE marked
- E-Marked: UNECE R10 compliant

### SPEAKING HANDBRAKE WARNING ALARM



2 wire version

BC-01(H/Brake) - Single message - 2 wire - 90 Decibels  
BC-01(4W)(H/Brake) - Single message 4 wire - 90 Decibels

0849  
1715

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

#### Features

- Real speech alarm
- \* Message "Bleep! Handbrake not applied..."
- Sounder unit: Speaker
- Hole centers: 102mm / 4"

#### Power

- Current: 0.5 Amps

#### Durability & standards

- CE marked
- E-Marked: UNECE R10 compliant

### SPEAKING SIDE TURN WARNING ALARM



SS-BC-08 - Single side-turn message - 90 Decibels

1334

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

#### Features

- Real speech alarm
- \* Message "Ssh! Caution. Truck turning left..."
- Sounder unit: Speaker
- Hole centers: 102mm / 4"

#### Power

- Current: 0.5 Amps

#### Durability & standards

- CE marked
- E-Marked: UNECE R10 compliant

Note: TS-001ECU Turn indicator trigger is required 1362

# Speaking Alarms / Ancillaries

**Model**

**Part No:**

## SPEAKING ATTACK ALARM



**BC-AA(BUS) - Single bus specific message - 110 Decibels**  
**BC-AA(B) - Single bespoke message - 110 Decibels**

**0064**  
**1465**

- 12-24Vdc
- IP68
- Size (WxHxD)  
116 x 115 x 117.5mm  
4.5 x 4.5 x 4.7 inches
- 2 year warranty

- Features**
- Real speech alarm
  - BC-AA(BUS) message "This bus is under attack, please dial 999"
  - Activated by panic button, repeats continuously until deactivated by hidden switch
  - Sounder unit: Speaker
  - Hole centers: 48mm / 1.9"

- Power**
- Current: 0.5 Amps
- Durability & standards**
- CE marked
  - E-Marked: UNECE R10 compliant

## SPEAKING ALARM



**BC-01HP - Single reversing message - 110 Decibels**  
**BC-01HP(B) - Bespoke single message - 110 Decibels**

**0665**  
**1199**

- 12-24Vdc
- IP68
- Size (WxHxD)  
116 x 115 x 117.5mm  
4.5 x 4.5 x 4.7 inches
- 2 year warranty

- Features**
- Real speech alarm
  - BC-01HP message "Ssh! Stand well clear, vehicle reversing..."
  - Bespoke message up to 8 seconds, under 4 seconds for best speech quality
  - Sounder unit: Speaker
  - Hole centers: 102mm / 4"

- Power**
- Current: 0.5 Amps
- Durability & standards**
- CE marked
  - E-Marked: UNECE R10 compliant

## VEHICLE INTERCOM



**BC-VI - Normally open channel rear to cab; button press cab to rear**  
**BC-VI-2 - Normally closed channel; button press communication**

**0815**  
**0875**

- 12-24Vdc
- IP68
- Size (WxHxD)  
122 x 84 x 50mm  
4.8 x 3.3 x 2 inches
- 2 year warranty

- Features**
- Two-way communication system
  - Master unit volume control: 80-95dB
  - Includes master unit, slave unit and 25m/82' cable
  - Sounder unit: Speaker
  - Hole centers: 102mm / 4"

- Power**
- Current: 0.5 Amps
- Durability & standards**
- CE marked
  - E-Marked: UNECE R10 compliant
  - FCC Approved
  - IC Approved

**Model**

**Part No:**

## ALARM ANCILLARIES

**TCO-47 - Timed auto-reset Backalarm cut-out (dash mount)**

**0663**



- 12-24Vdc
- 2 year warranty

**Features**

- Single touch timed relay
- Allows driver to cut-out alarm if reversing between the hours of 11.30pm-7.00am
- Auto-resets after 3-4 mins delay

**Durability and Standards**

- CE marked
- EMC approved

## ALARM ANCILLARIES

**TCO-47-01 - Latched Side-turn alarm cut-out (dash mount)**

**4752**



- 12-24Vdc
- 2 year warranty

**Features**

- Single touch timed relay
- Allows driver to cut-out alarm between the hours of 11.30pm-7.00am
- Resets by switch or ignition

**Durability and Standards**

- CE marked
- EMC approved

## ALARM ANCILLARIES

**NS-2 - Nightshift Backalarm cut-out switch**

**0334**

**NS-3 - Nightshift Backalarm cut-out switch (auto gearbox)**

**0974**



- 12-24Vdc
- IP68
- 2 year warranty

**Features**

- Double engage reverse to cut-out alarm
- Resets when reverse gear disengaged
- No wiring necessary to cab

**Durability and Standards**

- CE marked
- EMC approved

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0897	BBS-87	54	2842	VBV-791C	16	4691	AC-062	28	5213	VBV-301C	18
0898	BBS-102	53	2843	VBV-481C	16	4693	VBV-770-000N	25	5217	VBV-321C	18
0899	BBS-107	53	2871	BE-891C	14	4694	VBV-770-010N	26	5234	AC-068	29
0934	BBS-92	54	3007	BE-L108	30	4697	VBV-770M-S	23	5257	SS-4100W	43
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1046	SC-07	31	3106	VBV-L412	30	4707	VBV-750-010N	26	5266	BS-9000	49
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# Glossary

## **Amp**

Unit of electric current.

## **Auto-trigger**

Enables automatic triggering of an action i.e. display of rear camera view when reverse gear engaged.

## **AVAS**

Acoustic Vehicle Alert System (AVAS) automatically emits an external synthesized sound to enable pedestrians to be audibly aware of the vehicle's presence.

## **A/V input/output**

Communication connection between electronic devices.

### **Input**

Receives audio/visual signals such as from DVD or satellite navigation.

### **Output**

Sends audio/visual signals to other devices such as to mobile digital recorder.

## **Brightness**

Brightness of the picture displayed on a monitor, measured in candelas per square metre (cd/m<sup>2</sup>). Higher the measure the brighter the picture.

## **CCD (Charged-Coupled Device)**

A tiny photocell used in cameras to convert light into a digital signal.

## **Contrast**

Light intensity ratio of a display device between darkest and lightest colour produced.

## **CE mark**

Confirmation that a product is in conformity with the essential requirements of any applicable directives e.g. 2004/108/EC (relating to Electromagnetic Compatibility).

## **Decibel (dB)**

Unit of measure of the pressure (intensity) of sound. The higher the rating the more intense the sound.

## **DWDR (Digital Wide Dynamic Range)**

Digitally Produces a greater dynamic range of luminosity for improved detail in highlights and shadows.

## **EMC (Electro-magnetic compatibility)**

Regulation concerning the type-approval tests for European automotive electronics.

## **E**

United Nations mark for approved vehicle components sold into the EU. And in some other countries under UN-ECE Regulation 10

## **FCC mark**

Certification for electromagnetic interference on products manufactured or sold in the United States which comply with the Federal Communications Commission.

## **Frequency**

Number of times a sound source vibrates per unit of time, measured in hertz (Hz). The higher the rating the higher the pitch.

## **GPS (Global Positioning System)**

Global satellite system providing positioning and timing services to worldwide users on a continuous basis.

**HALT (Highly Accelerated Life Test)** A comprehensive stress test applied to electronic equipment to identify design weakness.

## **IC (Industry Canada)**

Certification for electromagnetic interference on products manufactured or sold in Canada which comply with the Bureau of Innovation, Science & Economic Development

## **Illumination distance (camera)**

Distance a camera with infrared LEDs can see in ultra-low light conditions, measured in metres.

## **IP## (Ingress Protection)**

An international classification for the sealing of electrical equipment against the intrusion of solid objects (digit 1) and liquids (digit 2). Higher the rating the better protection in each case.

## **ISO 13766**

Specific standard for earthmoving equipment, includes requirements for some additional tests that are not covered in the tests for 'E' or 'e' under EMC.

## **ISO 16750**

Standard providing guidance regarding environmental conditions commonly encountered by electrical and electronic systems installed in vehicles.

### **LCD (Liquid Crystal Display)**

Thin, flat display device made up of any number of colour or monochrome pixels i.e. monitor screen.

### **LED (Light Emitting Diode - camera)**

Emits infrared light for high efficiency and performance in ultra-low light.

### **LED (Light Emitting Diode - monitor)**

Used to back light the monitor display for crisp images and superior image quality.

### **Mechanical shock**

Level of sudden acceleration or deceleration, such as impact or being dropped, to which product will still perform. Measured in gravitational force (G).

### **Mechanical vibration**

Level of continuous or repetitive motion, such as engine vibration, to which product will still perform. Measured in gravitational force (G).

### **NAS-PIEK**

The standard for quiet delivery vehicles in the UK, certified by the Noise Abatement Society.

### **NTSC (National Television Systems Committee)**

TV colour encoding standard.

### **PAL (Phase Alternating Line)**

TV colour encoding standard.

### **Quiet Mark**

An international approval associated with the UK Noise Abatement Society. It encourages companies worldwide to prioritise noise reduction.

### **R46**

UN ECE Regulation No 46 covers devices for indirect vision and their installation.

### **R118**

UN ECE Regulation No 118 determines the burning behaviour (ignitibility, burning rate and melting behaviour) of materials.

### **R138**

UN ECE Regulation concerning the approval of Quiet Road Transport Vehicles with regard to their reduced audibility.

### **Resolution (RGB)**

Number of pixels used to display an image. Measured in Width x 3 channels (Red, Green, Blue) x Height.

### **SAE J994**

Performance testing for electrically operated reversing alarms primarily intended for use on off-road, self-propelled construction and industrial machines.

### **Sounder unit**

Unit which produces the sound of an alarm.

### **TV Lines**

Number of horizontal lines used to create an image.

### **Viewing angles (camera)**

The maximum angle of vision.

### **Viewing angles (monitor)**

The maximum angle at which an image can be successfully viewed. Measured from the centre point on the monitor.

### **Vulnerable road user**

Road users most at risk in traffic – such as pedestrians, cyclists and public transport passengers. Children, older people and disabled people may also be included in this category.

### **Watt**

A measure of the electrical power needed to drive a product.

### **WDR (Wide Dynamic Range)**

Produces a greater dynamic range of luminosity for improved detail in highlights and shadows.

### **WiFi**

A facility allowing devices to communicate wirelessly. A wireless network creates a small, localised area within which your devices can receive signal.

### **4G**

A cellular data service available from mobile network providers.

# Driving Global Safety

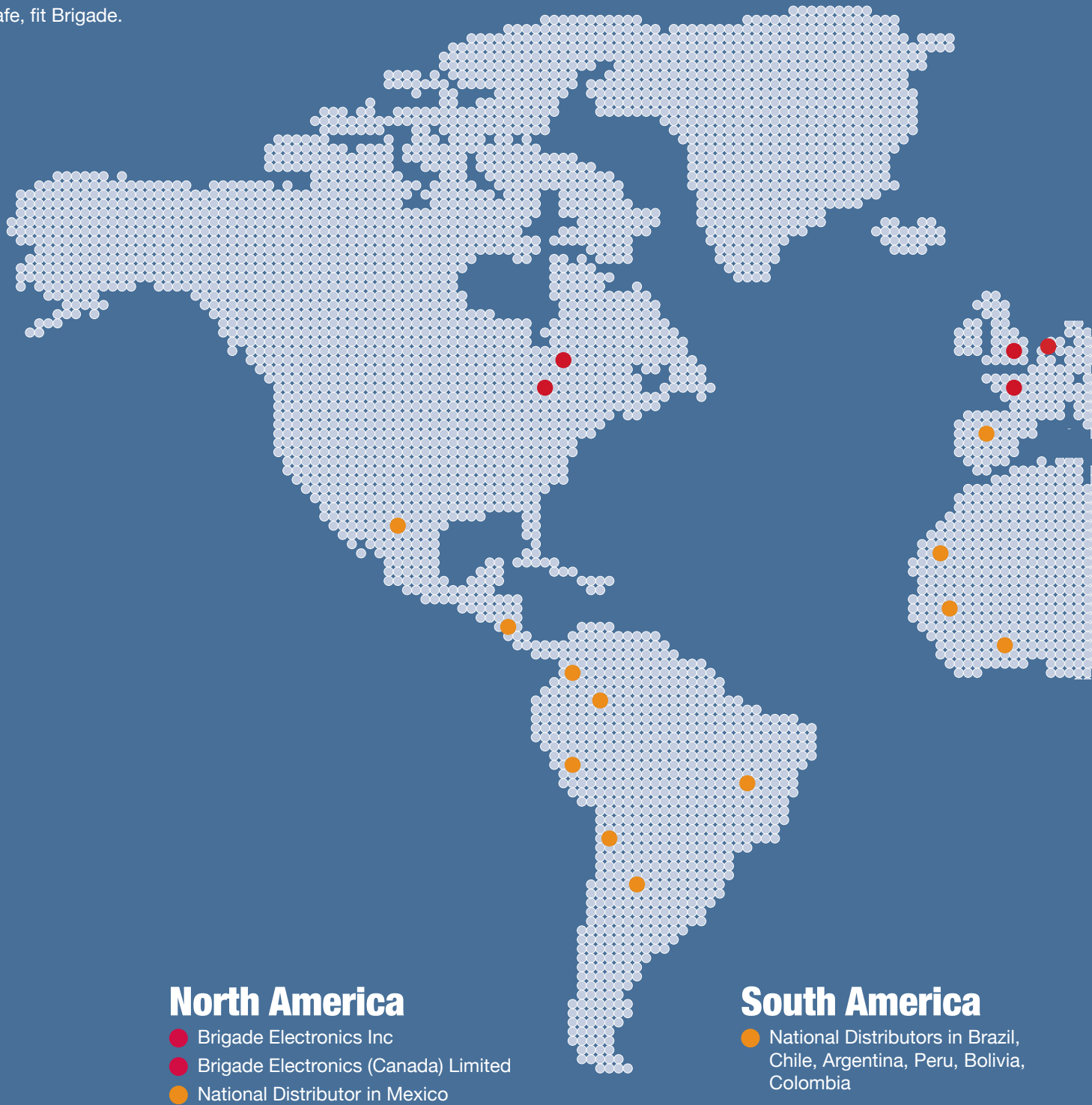
Brigade is committed to making roads and worksites safer for all. From our humble beginnings in the UK, we now have a network of overseas subsidiaries, joint venture companies and partnerships with over 80 approved international distributors, all chosen for their high level of service and expertise in vehicle safety.

Whether you operate an international, multi-vehicle fleet or a small business in a remote corner of the globe, Brigade has a local specialist to help with your safety requirements.

We can provide a solution for a specific problem or offer friendly advice and support if you are new to vehicle safety systems.

Wherever you are in the world, large road-going vehicles and mobile machinery continue to be a danger. Thankfully, Health & Safety culture is gradually improving to help combat these dangers, but whatever the local obligation, there is no excuse for compromising on safety.

Stay safe, fit Brigade.

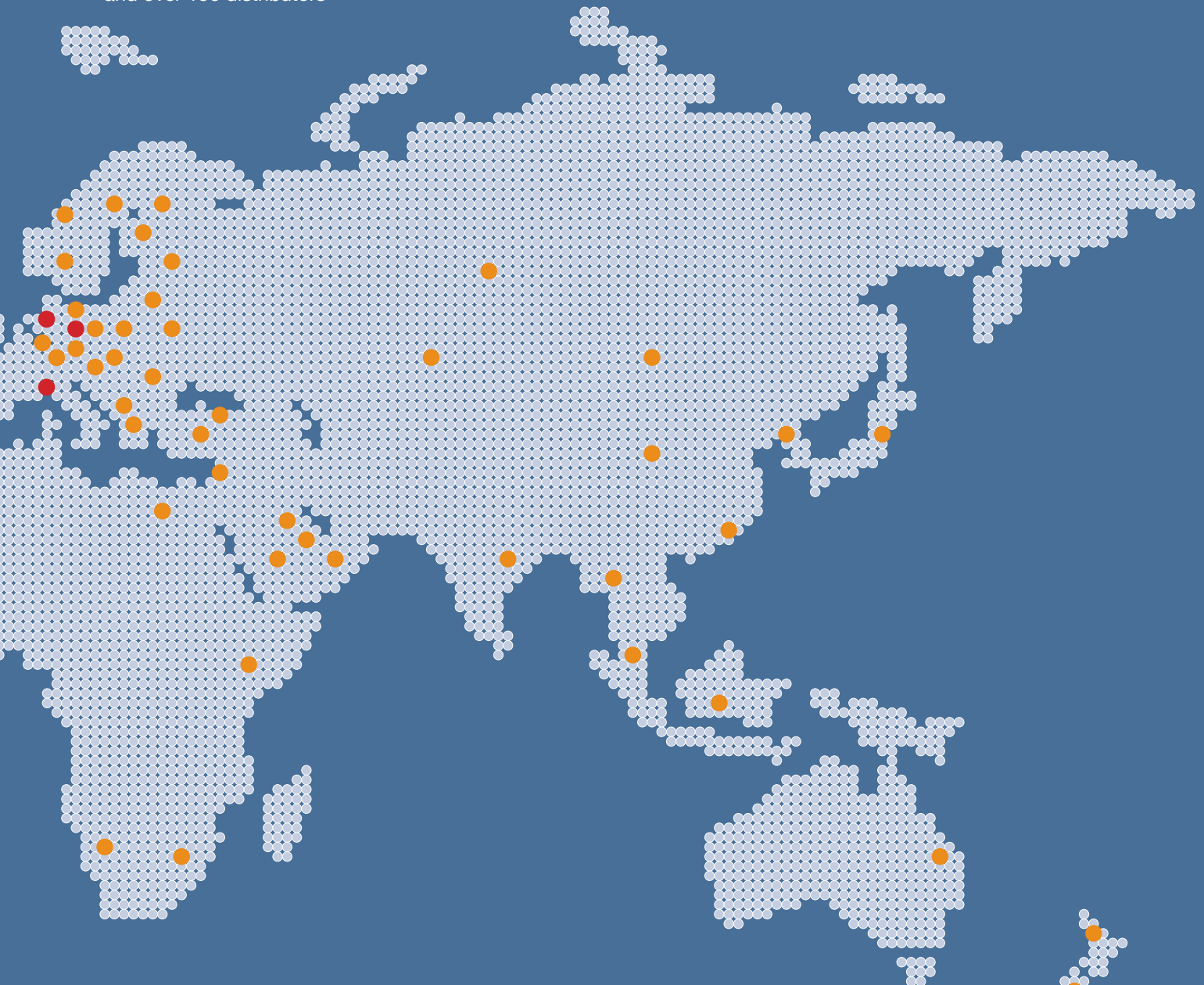


## United Kingdom

- Brigade Electronics Group Plc
- Brigade Electronics (UK) Ltd
- Brigade Service Partners:  
These are experienced, accredited technicians who provide service and support for anyone who has purchased our products. Operating from over 20 regional sites nationwide, each with fully equipped workshops and a team of engineers providing extensive parts availability, support and advice
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- Brigade Elektronik GmbH
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