"Our Products"

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

It's a big challenge but we are on a mission to deliver this vision.

Brigade is at the pinnacle of commercial vehicle and mobile 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 may 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.

- **Brigade Electronics Group Plc management systems are 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)**
- **Combinations of our camera monitor systems are certified to Regulation 46**
- **Cables are UNECE R118 compliant**
- **Our products comply with REACH and RoHS**

bsi. ISO 9001:2015 Quality Management

Contents

Backeye®eMirrors
Mirror replacement system

For a driver, being able to see blind spots around the vehicle is a necessity. Using a camera monitor system for visibility instead of mirrors can offer many benefits.

Replace conventional Class II and Class IV mirrors with high-definition externally mounted side-view cameras and a pair of high definition (HD) monitors typically mounted on the A-frame inside the cab. Installation is best carried out at or by a vehicle manufacturer or bodybuilder.

APIX Cable

Monitor
• High definition 1920 x 720
• 12.3"
• Anti glare glass
• Anti finger-print glass

APIX Cable

Camera
• High definition 1920 x 720
• Heater
• Anti glare glass
• Hydrophobic glass
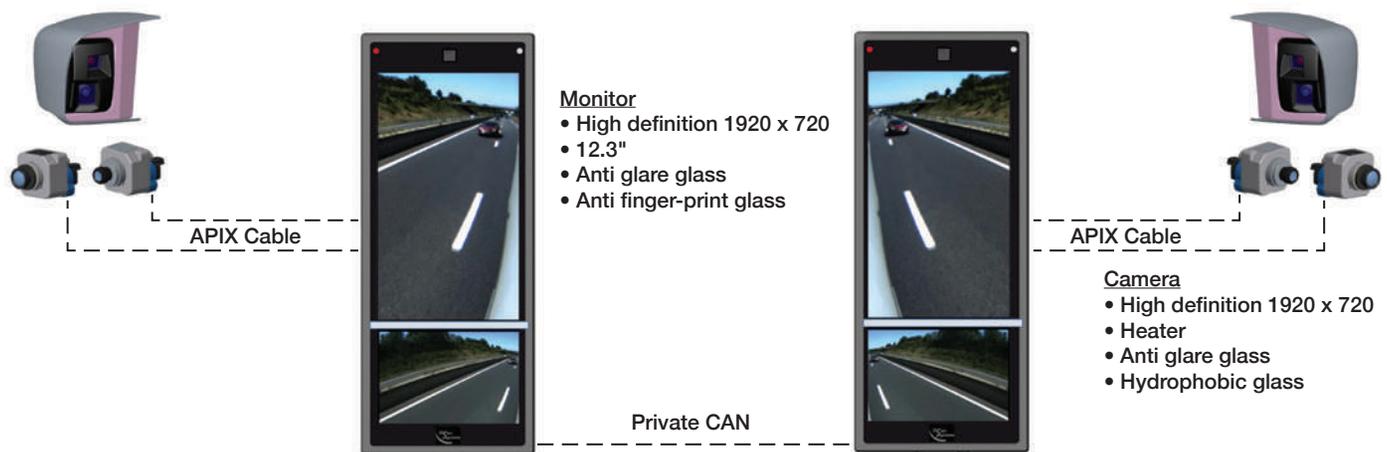
Private CAN

Monitor features:

• High Definition (HD)

• Screen layout can be configured to replicate the replaced mirror positions

• Built-in light sensor for automatic screen brightness

• Monitors are linked via a private CAN network for auto-screen balance/brightness and system operating data

• Anti glare and fingerprint glass ensures the image is always clear

• Distance markers

Camera features:

• High Definition (HD)

• Two cameras per side/housing (Class II and Class IV or Class V)

• Cameras mounted in housing, behind heated, anti-glare, hydrophobic treated glass

• Optional integrated lens cleaning with pressurized air or water.

Reduced glare from headlights

Improved visibility at night

Certification:

• UN ECE Regulation No 46 (R46), regarding devices for indirect vision and their installation. Only camera monitor systems with R46 approval may be installed in place of a compulsory mirror.

• ISO 16505

• ISO 26262

Why install a camera monitor system in place of mirrors?

- **Wider viewing angle**
  A camera has a wide viewing angle which allows the driver to see more than the minimum required field of view. A driver does not need to physically move to view a broader area as would be necessary with a conventional mirror.

- **No damage to mirrors and improved aerodynamics**
  Because of their size and the distance they protrude, mirrors are prone to being hit and broken. A smaller, flush-mounted camera reduces the risk of damage, lowering maintenance costs and vehicle downtime. Replacing mirrors with cameras also improves aerodynamics which contributes to lower fuel consumption.

- **No glare and reduced light reflection**
  Low sun and headlights can be dazzling for drivers, creating glare and making it difficult or impossible to define objects in mirrors. A camera system automatically adjusts to the lighting, significantly reducing glare and therefore improving driver visibility by displaying a clear image on the monitor.

- **Better visibility at night**
  Night time visibility is one of the key advantages a camera system has over a conventional mirror. Low-light (low lux) capability and auto-image enhancement mean greatly improved visibility in low light conditions and a clear image on the monitor, even in almost total darkness.

- **Better visibility in the rain**
  Mirrors are challenging to use in the rain. Not only does the driver need to see the vehicle and surroundings in the mirror, but through an equally wet and sometimes misted window. Water and dirt obscure the view, hugely reducing driver visibility. The camera aperture will focus through water on the lens, maintaining visibility in any type of environment or weather condition. A heated camera also helps to keep the lens free from moisture.

Backeye®360
360° Camera Monitor System

How it works

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

360° technology 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 so that a clear, real-time view of all around the vehicle is provided to the driver in a single image on the monitor.

Backeye®360 will work on most vehicles and machines, large or small. Our expert team of Applications Engineers can advise on installation to everything from a van to a 200 ton dump truck, including rigid and articulated trucks and buses, wheel loader, excavators, lift trucks, straddle carriers and many others.
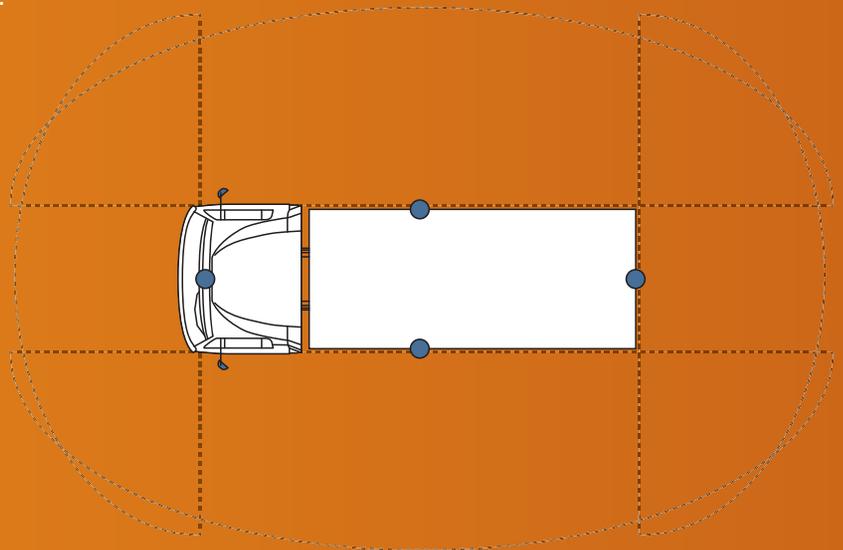
Backeye®360

Model	Part No:

NEW   AHD 360° CAMERA SYSTEM   HD

BN360-300 - High Definition Backeye®360 system   **5800**

- IP69K cameras
- 12-24Vdc
- Size (WxHxD) ECU
  178 x 113 x 26mm
  7 x 4.4 x 1 inches
- Size (WxHxD) Camera
  61 x 50 x 42mm
  2.4 x 2 x 1.7 inches
- 5 year warranty

AHD

Contents
- 1 x ECU
- 4 x BN360-1000C cameras
- 1 x Video output cable to connect to SELECT range monitor
- 1 x set-up/view-select button
- 1 x ECU power harness
- 1 x ECU interface/video input harness

Features
- 720p HD 360° image
- 15 different view modes (10 x landscape & 5 x portrait configuations)
  - Front & rear crossing-traffic
  - Customisable vehicle position
- 2 pre-defined configuration groups
- Configure & customise set up via PC calibration software
- Left, right, reverse & speed signal triggers
- Configurable on-screen parking markers
- Customisable overlay guidelines per camera view
- 2 x video outputs
- Ultra-wide viewing angle cameras (HxV) 182° x 118°
- 1/4" CMOS sensor
- Video output: AHD 1.0 and NTSC

Power
- Power consumption: 15 Watts
- Current: 1.22 Amps

Durability & Standards
- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- 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 13766-1:2018

NOTES:
- Calibration kit is required for installation.
- Monitor and camera extension cables not included
- Individual cameras not recordable on MDR - monitor output only.

NEW   BN360-300 CABLES   HD

BN360-H320	HD 20m/66' camera cable	5809
BN360-H315	HD 15m/49' camera cable	5810
BN360-H310	HD 10m/33' camera cable	5811
BN360-H305	HD 5m/16' camera cable	5812
BN360-H3025	HD 2.5m/8' camera cable	5813

NEW   BN360-300 360° CAMERA MONITOR SYSTEMS   HD

Complete 360 AHD camera monitor system for large rigid vehicles

SE-770H-300 - 360 AHD camera system with VBV-770HM - 7" AHD monitor   **6114**

- 1 x VBV-770HM AHD Monitor
- 1 x BN360-300 AHD 360 system
- 1 x BN360-H310 - 10m/33' camera cable
- 2 x BN360-H315 - 15m/49' camera cables
- 1 x BN360-H320 - 20m/66' camera cable

See individual products for detailed specifications and warranties

BN360-200/BN360-300 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

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**
  61 x 46 x 36mm
  2 x 1.8 x 1.4 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 configuations
   - Front & rear crossing-traffic
   - Left & right lane changing assist
   - Customisable 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°
• 1/3.7" 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: 51G
• 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

BN360-200 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

BN360-200 REQUIREMENTS FOR ARTICULATED VEHICLES

BN360-Enclosure	IP66 Enclosure kit to enable ECU to be installed on outside of vehicle	4723
SK-15-05	Articulated vehicle cable kit for BN360-200 (3-camera)	5066

BN360-200 360° CAMERA MONITOR SYSTEMS

Complete 360 camera monitor system for large rigid vehicles

SE-7104F-100 - 360 camera system with VBV-7104FM - 10.4" monitor   5378
SE-770-100 - 360 camera system with VBV-770M - 7" monitor   5379

VBV-7104FM
10.4"

VBV-770M
7"

・ **1 x 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

A Winning Range

Camera monitor systems are used in a wide range of on and off-road applications to meet a host of health and safety and legislative requirements.

Brigade's camera monitor systems enable drivers and operators to maneuver and drive safely. Vehicle-mounted cameras can help the driver to see blind spots by delivering a live feed on the monitor of everything in the camera view, including people or obstacles.

Whether you need an entry-level reversing camera or full-vehicle camera system, we can help. With single-to-multiple camera inputs and auto-triggers, Brigade cameras and monitors will work on any application in any industry.

Brigade's camera monitor systems are compatible with its range of Mobile Digital Recorders (MDR).

ELITE

Top of the range systems that are the first choice for Original Equipment Manufacturers (OEMs) and Bodybuilders. Exceptional quality and consistent performance in the harshest conditions. Rigorously tested to higher standards, the superior components and build quality are reflected in the Elite series' 5 year warranty. Ideal for heavy duty applications including semi-trucks, on/off-highway vehicles, agricultural machinery, and mobile mobile machinery used on Construction, Civil Engineering, Quarry and Mine sites.

SELECT

High quality, reliable, best-selling mid-range systems. First choice in the Aftermarket and popular also with OEMs and Bodybuilders. 3 year warranty. Ideal for medium to large on-highway vehicles and smaller off-highway mobile machinery.

ESSENTIAL

Entry level reversing solution for cost-conscious Aftermarket customers. Ideally suited for on-highway applications.

✓ = Compatible ✓ AC-035 = Compatible with adapter(s) shown ✗ = Not compatible	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	✗
ELITE — All other Elite cameras	✓	✓	✓ AC-007	✓ AC-007
SELECT — VBV-711C Shutter	✓ AC-035 & AC-006	✓ AC-035 & AC-006	✓ AC-035	✓
SELECT — All other Select cameras	✓ AC-006	✓ AC-006	✓	✓

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

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
(Black = solid/pins)

Male connector Select

Female connector Select

Male screw fit connector Elite

Female screw fit connector Elite

Male push fit connector Elite

Female push fit connector Elite

Male shutter connector Select

Female shutter connector Select

Male Backeye®360 connector

Female Backeye®360 connector

Model   **Part No:**

7" IP69K MONITOR   ELITE

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

7.0"

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

7" IP69K QUAD MONITOR   ELITE

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

7.0"

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

Model   **Part No:**

7" QUAD MONITOR   ELITE

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**

7.0"

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: 4000cd/m^2
• 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

7" MONITOR   ELITE

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**

7.0"

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^2
• 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

5.6" MONITOR   ELITE

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**

5.6"

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/m^2
• 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

What is WDR?

Wide Dynamic Range (WDR) automatically balances lighting in a camera image for improved detail in highlights and shadows.

This is particularly useful when working in environments where lighting quickly changes, for example; reversing into a dark loading bay on a sunny day. The transition from bright light to shadow will cause cameras that do not feature WDR to fail to pick up fine details. Areas of the picture will be bright and other areas extremely dark.

WDR Cameras balance lighting so no areas are under or over exposed, improving clarity and detail in the image.

Standard camera   WDR camera

Model   Part No:

CAMERA WITH DWDR   ELITE

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**

LED

DWDR

Features
- Intergrated 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

Model   **Part No:**

CAMERA WITH WDR   ELITE

BE-801C	- NTSC	1905
BE-801C(40)	- Narrow viewing angle: 32 x 24 x 41°	2085C
BE-801C(78)	- Narrow viewing angle: 69 x 51 x 92°	2084C
BE-891C	- Waterproof to IP69K, No microphone	5426

- **Viewing angle (HxVxD)**
  108 x 80 x 136° NTSC

- **IP68**

- **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: 8.5G
- Mechanical shock: 51G
- Operating temperature:
  -40 to +85°C / -40 to +185°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved
- ISO 13766:2006
- ISO 20653:2006
- EN13309:2010
- *Camera monitor system R46 approved BE-800C, BE-890C & BE-850C only

MINI CAMERA   ELITE

| 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 warrranty**

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

Model   **Part No:**

CAMERA TO MONITOR CABLES   ELITE

Model	Description	Part No:
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   ELITE

Model	Part No:
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

Elite Cables

Model   **Part No:**

TRUCK/TRAILER CABLE KIT   ELITE

SK-31E - Truck and trailer cable kit - unique pin layout   **1830**
Inclusive of SK-31E-T - Trailer kit

SP-7A   SC-7   SP-7B

• **BE-L110 - 10m/32.8' 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/65.6' extension cable for trailer**	**1143**
• **SP-7B - 7-pin bulkhead socket for trailer & trailer-end camera connector (unique pin layout)**	**1828**

TRUCK/TRAILER CABLE KIT   ELITE

SK-30E - Truck and trailer cable kit   **1144**
Inclusive of SK-30E-T - Trailer kit

SP-07C   SC-07   SP-07T

• **BE-L110 - 10m/32.8' 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/65.6' extension cable for trailer**	**1143**
• **SP-07T - 7-pin bulkhead socket for trailer & trailer-end camera connector**	**1142**

Model **Part No:**

TRUCK/TRAILER CABLE KIT — ELITE

SK-15-01 - Truck and trailer cable kit for three cameras **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

SP-15A-01   SC-15-01   SP-15B-01

TRUCK/TRAILER CABLE KIT — ELITE

SK-15-04 - Truck and trailer cable kit for single camera & single buzzer ultrasonic detection system **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

SP-15A-04   SC-15-01   SP-15B-04

Elite Cables

Model	Part No:

TRUCK/DRAWBAR TRAILER CABLE KIT ELITE

SK-50E - Truck and drawbar trailer cable kit for two cameras - unique pin layout   **1570**
Inclusive of SK-50E-A Truck kit and SK-31E-T trailer kit
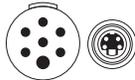
SK-50E-A - Truck only kit	1879	SK-31E-T - Trailer only kit	1886
• BE-L115 - 15m/49.2' cable for truck	0802	• BE-X020 - 20m/65.6' extension cable for trailer camera	1143
• BE-X005 - 5m/16.4' extension cable for truck camera	2099	• SP-7B - 7-pin bulkhead socket for cab & cab-end camera connector (unique pin layout)	1828
• 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		

SP-7A   SC-7   SP-7B

What is AHD?

An Analogue High Definition (AHD) camera monitor system is an analogue system that supports High Definition video resolutions. The resolution of HD & AHD systems is measured in pixels per square inch (p). AHD 1.0 supports 720p HD resolution and AHD 2.0 supports 1080p HD resolution.

What about PAL and NTSC formats?
HD cameras operating at 25Hz (25frames per second) are compatible with PAL format (so we call them PAL). HD cameras operating at 30Hz (30 frames per second) are compatible with NTSC format (so we call them NTSC).

What should I consider when choosing between AHD and traditional CVBS systems?
There are many factors to consider when choosing between AHD and traditional CVBS, including compatibility with other systems and bandwidth/memory capacity if connecting to a mobile digital recorder. (AHD systems will use more bandwidth for transmission and will take up more memory for the same time period). For the best HD quality results, all parts of the system should be AHD.

AHD camera image   **Traditional CVBS camera image**

Compatibility with existing traditional CVBS systems:
• Brigade HD cables can be used instead of traditional CVBS cables for all Brigade SELECT camera monitor systems.
• Brigade HD cameras can be used with our MDR-500 series Mobile Digital Recorders (MDR).
• Brigade's traditional CVBS cameras can be used with our new HD monitors (camera image will not be HD).
• Brigade's traditional CVBS monitors are not compatible with HD cameras.

Model   **Part No:**

NEW | **AHD 7" MONITOR**   **SELECT**

VBV-770HM -   7" High Definition LCD monitor   **5611**

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

7.0"

Features
• AHD and CVBS compatible
• High-definition, high contrast, wide view angle
• 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 AHD 1.0 / AHD 2.0 / NTSC

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

• Resolution: 1024 x 600
• Contrast ratio: 700:1
• Brightness: 500cd/m^2
• Viewing angles:
  Side 85° x Top 85° x Bottom 85°

Power
• Power consumption: 10 Watts
• Current: 0.8 Amps

Durability & Standards
• Mechanical vibration: 4G
• Mechanical shock: 51G
• Operating temperature:
  -30 to +70°C / -22 to +158°F
• CE marked
• E-Marked: UNECE R10 compliant
• HALT tested
• FCC approved
• IC approved

Select AHD

NEW | AHD CAMERA 1080p | SELECT

VBV-7101C   **- High definition (1080p-NTSC)**   **5467**
VBV-7191C   **- No audio. High definition (1080p-NTSC)**   **5471**

- **Viewing angle (HxVxD)**
  110° x 60° x 127°
- **IP69K**
- **Size (WxHxD)**
  81 x 77 x 70mm
  3.2 x 3 x 2.75 inches
- **3 year warranty**

LED   AHD

Features
- 4 high-power Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Microphone
- Mirror view
- * Backlight compensation
- Automatic white balance
- Sony CMOS 1/3" & Nextchip ISP
- TV System: AHD 1.0 (1080p)
- TV Lines: 800

Power
- Power consumption: 3 Watts
- Current: 0.2 Amps

Durability & Standards
- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- Operating temperature:
  -30 to +80°C / -4 to +176°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

NEW | AHD CAMERA 720p | SELECT

VBV-7001C   **- High definition (720p-NTSC)**   **5465**
VBV-7091C   **- No audio. IP69K High definition (720p-NTSC)**   **5469**

- **Viewing angle (HxVxD)**
  107° x 64° x 126°
- **IP67**
- **Size (WxHxD)**
  81 x 77 x 70mm
  3.2 x 3 x 2.75 inches
- **3 year warranty**

LED   AHD

Features
- 4 high-power Infrared LEDs for ultra-low light performance
- Day / Night sensor
- Microphone
- Mirror view
- * Backlight compensation
- Automatic white balance
- Sony CMOS 1/3" & Nextchip ISP
- TV System: AHD 1.0 (720p)
- TV Lines: 600

Power
- Power consumption: 3 Watts
- Current: 0.2 Amps

Durability & Standards
- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- Operating temperature:
  -30 to +80°C / -4 to +176°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

Model	Part No:

NEW · AHD EYEBALL CAMERA · SELECT

VBV-3001C - High Definition Flush-mount eyeball camera
Mirror view - (720p-NTSC) · **5455**
VBV-3021C - High Definition Flush-mount eyeball camera
Normal view - (720p-NTSC) · **5457**

· **Viewing angle (HxVxD)**
VBV-3001C / VBV-3021C:
127° x 71° x 142°)

· **IP69K**

· **Size (WxHxD)**
57 x 42 x 70mm
2.2 x 1.7 x 2.8 inches

· **3 year warranty**

LED ☀ 🔊 AHD

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" Sony CMOS
• TV System: AHD 1.0 (720p)
• TV lines: 600

Power
• Power consumption: 1.5 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

OPTIONAL EXTRAS

SM-3XX-25 Surface mounting adapter (25mm deep) · **4596**

AHD MINI CAMERA · SELECT

DMC-1031 - High definition mini camera (internal use) (720p-30fps) · **5303**
DMC-1035 - High definition mini camera (internal use) (720p-25fps) · **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
• CMOS - 1/3" ON-Semi ISP - Nextchip
• 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°FC
• CE marked
• E-Marked: UNECE R10 compliant
• FCC approved
• IC approved

Select AHD

Model	Part No:

AHD DOME CAMERA · SELECT

MD-61   - High definition dome camera (720p-NTSC)   5738
MD-61(SW) - High definition dome camera - Superwide view angle (720p-NTSC)   5690
MD-61(W)   - High definition dome camera - Wide view angle (720p-NTSC)   5698

· **Viewing angle (HxVxD)**
  68° x 38° x 80°
  (SW) 150° x 85° x 180°
  (W)   93° x 51° x 110°

· **IP68**

· **Size (Diameter x H)**
  76 x 59.5 mm
  3 x 2.3 inches

· **3 year warranty**

☑ ◲ **AHD**

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-Semi ISP - Nextchip
• TV System: AHD 1.0 (720p)
• TV Lines: 900
• TV Lines: 600 (SW & W)

Power
• Power consumption: 1 Watt
• Current: 0.57 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

NEW | AHD CAMERA CABLES · SELECT

VBV-H420   - 20m / 66' cable   5513
VBV-H415   - 15m / 49' cable   5514
VBV-H410   - 10m / 33' cable   5516
VBV-H405   - 5m /16' cable   5519
VBV-H4025 - 2.5m / 8' cable   5522

Model **Part No:**

10.4" QUAD MONITOR SELECT

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

10.4"

4 5 🔊 🔒

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

7" MONITOR SELECT

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

Also available in High Definition model

- 12-24Vdc

- Size (WxHxD)
  196 x 118 x 26mm
  7.7 x 4.6 x 1 inches

- 3 year warranty

7.0"

3 3 🔊 🔒

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/m²
- 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

Select Monitors

Model	Part No:

5" MONITOR — SELECT

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**

5.0"

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/m²
- 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

7" QUAD MONITOR — SELECT

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**

7.0"

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

CAMERA MONITOR SYSTEM ANCILLARIES — SELECT

BMM-019-ARM - 68mm/2.7" replacement arm (Select range)   **3348**

- **68mm/2.7" mounting bracket arm**
- **Allows montor 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:**

CAMERA | SELECT

VBV-701C   **- NTSC**   **2575**
VBV-791C   **- Waterproof to IP69K, no audio NTSC**   **2842**

Also available in High Definition (720p & 1080p) models

- **Viewing angle (HxVxD)**
  86 x 72 x 122°

- **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

SHUTTER CAMERA | SELECT

VBV-711C - Shutter camera   **2808**
              Direct connection to VBV-770M-S and VBV-750M-S monitors via 5-pin 10m (VBV-L510) or 20m (VBV-L520) camera cable.

- **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: PAL
- 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

Select Cameras

Model	Part No:

EYEBALL CAMERA　　　　　　　　　　　　　　　　　　　　　SELECT

VBV-301C - Flush-mount eyeball camera - Mirror view - NTSC　　5213
VBV-321C - Flush-mount eyeball camera - Normal view - NTSC　　5217

Also available in High Definition (720p) models

- **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**

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

OPTIONAL EXTRAS

SM-3XX-25 Surface mounting adapter (25mm/82" deep)　　4596

CYLINDER CAMERA　　　　　　　　　　　　　　　　　　　　SELECT

VBV-481C - Cylinder camera NTSC　　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

DOME CAMERA   `SELECT`

MD-51   - Dome Camera NTSC   **5736**
MD-51(SW) - Dome Camera - Superwide view angle NTSC   **5686**
MD-51(W)   - Dome Camera - Wide view angle - NTSC   **5694**

Also available in High Definition (720p) models

· **Viewing angle (HxVxD)**
  (SW) 150° x 85° x 180°
  (W)   93° x 51° x 110°

· **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
- CMOS - 1/3" ON-Semi ISP - Nextchip
- TV System: NTSC
- TV Lines: 600

Power
- Power consumption: 1 Watt
- Current: 0.57 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**

MINI CAMERA   `SELECT`

DMC-1021 - Mini camera (internal use) NTSC   **5715**

Also available in High Definition (720p) models

· **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
- CMOS - 1/3" ON-Semi ISP - Nextchip
- 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

Model	Part No:

SELECT CAMERA CABLES	**SELECT**

Model	Part No:
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**

TRUCK/TRAILER CABLE KIT   SELECT

SK-15-05 - Truck and trailer cable kit for 3-camera Backeye®360   **5066**

- **SP-15A-05 - 15-pin bulkhead socket for cab & cab-end connector plus 3x connections for Backeye®360 Select 5064**
- **SP-15B-05 - 15-pin bulkhead socket for trailer & trailer-end connector plus 3x connections for Backeye®360 Select 5065**

- **SC-15-01 - Coiled shielded cable with 15-pin plugs**   **3268**

SP-15A-05   SC-15-01   SP-15B-05

TRUCK/ DRAWBAR TRAILER CABLE KIT   SELECT

VSK-50E - Truck and drawbar trailer cable kit for two cameras   **2540**
Inclusive of VSK-50E-A Truck kit and VSK-30E-T Trailer kit

VSK-50E-A - Truck only kit   **2541**

- **VBV-L420 - 20m/66' cable for truck 1380**
- **VBV-L405 - 5m/16' camera cable for truck camera**   **1499**
- **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**

VSK-30E-T - Trailer only kit   **2542**

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

VSP-47A   SC-07-24S   VSP-47B

TRUCK/DRAWBAR TRAILER CABLE KIT   SELECT

VSK-505E - Truck and drawbar trailer cable kit for two Select shutter cameras   **4005**

- **VBV-L420 - 20m/66' cable for truck 1380**
- **VBV-L520 - 20m/66' camera cable for truck camera**   **3664**
- **VBV-L505 - 5m/16' camera cable for cab**   **4001**
- **VCS-020 - Two-way camera selector 1844**
- **2 x AC-035 - 5-pin to 4-pin shutter camera adapter**   **3702**

- **VSP-57A - 7-Pin bulkead socket for cab & cab-end camera connector**   **3869**
- **VSP-57B - 7-pin bulkhead socket for trailer & trailer-end camera connector**   **3870**
- **SC-07-24S - Coiled cable with 7-pin plugs**   **1227**

VSP-57A   SC-07-24S   VSP-57B

Select Cables

Model	Part No:

TRUCK/TRAILER CABLE KIT · SELECT

VSK-31E - Truck and trailer cable kit - unique pin layout   **2539**
Inclusive of VSK-31E-T - Trailer kit

- 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

SP-7A   SC-7   SP-7B
(Select connecton via supplied adapter cables)

TRUCK/TRAILER CABLE KIT · SELECT

VSK-30E - Truck and trailer cable kit   **2538**
Inclusive of SK-30E-T - Trailer only kit

- 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

VSP-47A   SC-07-24S   VSP-47B

TRUCK/TRAILER CABLE KIT · SELECT

VSK-305E - Truck and trailer cable kit for Select shutter camera   **3871**

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

VSP-57A   SC-07-24S   VSP-57B

Model   **Part No:**

CAMERA MONITOR SYSTEMS   **SELECT**

VBV-770-301 - Single flush-mount camera monitor system for rigid vehicles   **4779**

	Part No:
• VBV-770M - 7" monitor	4288
• VBV-301C - flush-mount camera	5213
• VBV-L420 - 20m/66' cable	1380

See individual products for detailed specifications and warranties

VBV-770-000N - Single camera monitor system for rigid vehicles   **4693**

	Part No:
• VBV-770M - 7" monitor	4288
• VBV-701C - camera	2575
• VBV-L420 - 20m/66' cable	1380

See individual products for detailed specifications and warranties

VBV-750-000N - Single camera monitor system for rigid vehicles   **4706**

	Part No:
• VBV-750M - 5" monitor	4287
• VBV-701C - camera	2575
• VBV-L420 - 20m/66' cable	1380

See individual products for detailed specifications and warranties

OPTIONAL EXTRA

**Add VBV-301C (low mount) or VBV-321C (high mount) side view camera
+ VBV-L405 (5m/16' cable) to spot cyclists.**

Select/Essential Kits

Model	Part No:

CAMERA MONITOR SYSTEMS — SELECT

VBV-770-311 - Single flush-mount camera monitor system for small rigid and vans 4783

- VBV-770M - 7" monitor — 4288
- VBV-301C - Flush-mount eyeball camera — 5211
- VBV-L410 - 10m/33' cable — 1386

See individual products for detailed specifications and warranties

VBV-750-311 - Single flush-mount camera monitor system for rigid vehicles 4782

- VBV-750M - 5" monitor — 4287
- VBV-301C - Flush-mount eyeball camera — 5211
- VBV-L410 - 10m/33' cable — 1386

See individual products for detailed specifications and warranties

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

ESSENTIAL MONITOR — ESSENTIAL

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

4.3"

Features
- On screen milti-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/m^2
- 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

Model   **Part No:**

| NEW | CAMERA MONITOR SYSTEM | ESSENTIAL |

VBV-671-000 - NTSC Camera monitor system   5816
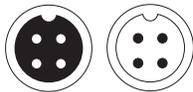
- **Camera Viewing angle (HxVxD)**
  89 x 65 x 114°
- **IP67**
- **Camera Size (WxHxD)**
  76 x 59 x52mm
  3 x 2.3 x 2 inches
- **Monitor Size (WxHxD)**
  205 x 126 x 26mm
  8 x 5 x 1 inches
- **1 year warranty**

7.0" | 2 | 1 | ✓ | ↘

Contents
- 1 x VBV-670M monitor
- 1 x monitor sunshield
- 1 x monitor bracket
- 1 x VBV-63XC camera
- 1 x 20m VBV-L4020 extension cable
- Fitting kit

Camera Features
- Normal view
- 1/3" PixelPlus CMOS
- TV Lines: 425

Monitor Features
- 2 camera inputs
- 1 auto trigger
- Sun shield
- Multi-lingual menus
- Normal/Mirror via OSD menu

Picture Quality
- Monitor resolution: 800x400
- Contrast ratio: 500:1
- Brightness: 250 cd/m^2
- Monitor viewing angles:
  Side 70° x Top 45° Bottom 65°

Power
- Power consumption: 4.2 Watts
- Current: 0.4 Amps

Durability & Standards
- Mechanical vibration:
  Camera: 8.5G Monitor: 4G
- Operating temperature:
  -30 to +70°C / -4 to +158°F
- CE marked
- FCC approved

TO CONNECT AN ADDITIONAL CAMERA

VBV-631C - Essential Camera - NTSC   5817

VBV-L4020 - 20m/66" Essential extension cable   5773

| CAMERA MONITOR SYSTEM | ESSENTIAL |

VBV-650-000N - NTSC Single-camera monitor system   4766
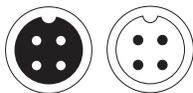
- **Camera Viewing angle (HxVxD)**
  81 x 59 x 108°
- **IP67**
- **Camera Size (WxHxD)**
  65 x 59 x 55mm
  2.5 x 2.3 x 2 inches
- **Monitor Size (WxHxD)**
  150 x 99 x 31mm
  6 x 4 x 1.2 inches
- **1 year warranty**

5.0" | 1 | ↘

Contents
- 1 x VBV-670M monitor
- 1 x monitor bracket
- 1 x VBV-621C camera
- 1 x 20m VBV-L4020 extension cable
- Fitting kit

Camera Features
- Mirror view
- CMOS
- TV Lines: 420

Monitor Features
- 1 camera input

Picture Quality
- Monitor resolution: 640x480
- Monitor viewing angles:
  Side 70° x Top 50° Bottom 70°

Power
- Power consumption: 2 Watts

Durability & Standards
- Operating temperature:
  -30 to +70°C / -4 to +158°F

Adapter Cables

Model	Part No:

BRIGADE CAMERA MONITOR ADAPTERS

Model	Part No:
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 long	4267
AC-305 - Splitter cable connects 1 x BN360-200 camera to MDR & ECU	4903
AC-306 - Splitter cable connects 1 x (Non HD) Select camera to MDR & monitor	4904
AC-307 - Splitter cable connects 1 x Elite camera to MDR & Monitor	4905

MISCELLANEOUS CAMERA MONITOR ADAPTERS

Model	Part No:
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
             with camera prep   **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 Mercedes 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   **3183**
(video & audio input, 12Vdc output)

AC-028 - Connects AV to Select cable   **3335**

AC-064 - Connects Elite camera to BNC adapter cable   **4948**

Ancillaries

Model	Part No:

DIGITAL WIRELESS CONNECTION SYSTEM

DW-1001-TX - Digital Wireless Transmitter   **4282**
DW-1001-RX - Digital Wireless Receiver   **4283**

Elite

Select

- **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. Not AHD compatible

CAMERA MONITOR SYSTEM ANCILLARIES

Elite

Select

CS-020 - Two-way camera selector (Elite range connectors)   **1571**
VCS-020 - Two-way camera selector (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**
- **2 year warranty**   Not AHD compatible

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
- **2 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

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

Notes:
- A relay is required if connected to a device that is higher than 1.2 Amps
- Not compatible with HD systems

CAMERA MONITOR SYSTEM ANCILLARIES | SELECT

SS-002 - Twin camera screen splitter (Select range connectors) 3044
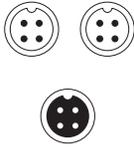
- **12-24Vdc**
- **2 camera inputs**
- **Size (WxHxD)**
  147 x 37 x 78mm
  5.7 x 1.5 x 3 inches
- **2 year warranty**

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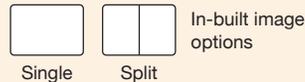
Features
- Offers split-screen option for monitors without in-built functionality
- 3 trigger inputs per camera
- Shutter camera compatible with adapters (Elite - AC-035) (Select - TS-1000-ECU)
- TV System: NTSC
- Manual Mirror/Normal switching - choose from horizontal normal/mirror or vertical normal/flip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

Adapter required for Elite range monitors
Not AHD compatible

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 | ELITE

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
- **2 year warranty**

| Single | Split | Triple | Quad | Picture in picture |

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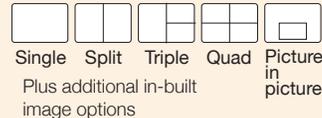
Features
- Shutter camera compatible (inputs 1,2&3)
- AV input to accept DVD, sat nav or other add-ons
- 5 manual or auto-triggers for each camera
- On screen distance markers
- Mirror / Normal image switch for each camera
- Selectable camera audio
- Auto-scanning function
- Adapter required for Select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

Power
- Power consumption: 20 Watts
- Current: 2 Amps

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

Not AHD compatible

MDR
Mobile Digital Recording

Providing your witness

Brigade's Mobile Digital Recording (MDR) systems are now capable of capturing vehicle data and footage from up to 16 vehicle-mounted cameras. The MDR range includes models with 4G and WiFi connectivity capabilities, allowing data to be accessed from the recorder without having to physically go to the vehicle.

To take full advantage of the benefits of 4G connectivity, Brigade has launched Bridge, a fully managed service for 4G enabled systems so that operators do not have to set up and maintain their own servers and manage SIMs and mobile data.

New IP Cameras and Network Expansion Modules mean that up to 6 cameras can be connected to our 4-channel MDR and up to 16 cameras can be connected to our 8-channel MDR.

MDRs are compatible with all Brigade Backeye® camera monitor systems, including Backeye®360 – BN360-200 and IP Cameras. .
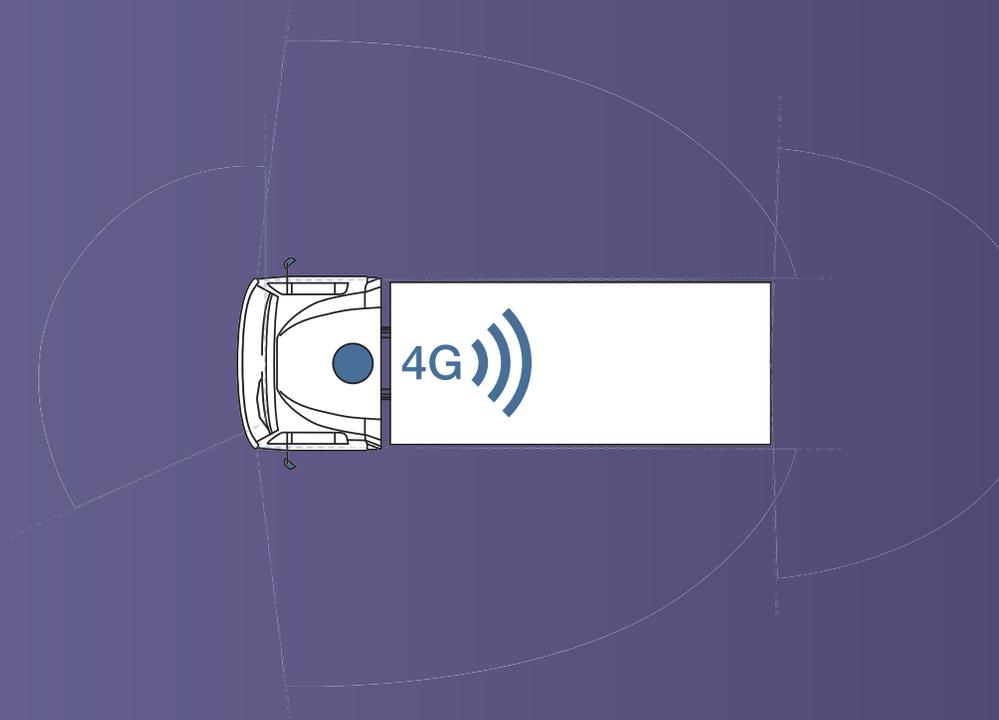
BRIDGE
MDR 4G Hosted Service

The MDR range includes models with 4G connectivity capabilities, allowing data to be accessed from the recorder without having to physically go to the vehicle.

To take full advantage of the benefits of 4G connectivity, Brigade has launched Bridge, a fully managed service for 4G enabled systems so that operators do not have to set up and maintain their own servers and manage SIMs and mobile data.

BRIDGE
Cloud Service from Brigade

Benefits of having remote access to the MDR can include:

● **Playback of historical footage and metadata from MDR or server** - Metadata includes: GPS location, speed, G-force, events and alarms.

● **Vehicle tracking** - Includes: GPS location, speed and alarms. Dual-screen support with dedicated location map.

● **Live view of vehicle cameras and metadata** - Metadata includes: GPS location, speed and alarms. Up to 64 cameras can be viewed from multiple MDRs on one screen.

● **Download footage**
  - **Scheduled:** one-off download to the server that will commence once vehicle is online.
  - **Automatic:** Pre-alarm and post-alarm footage (e.g. 30 seconds) will automatically save to the server.
  - **Manual:** Download historical footage from the MDR to local storage.

● **Geo-fencing** - Easily set up geographical boundaries to know when your vehicle enters and/or leaves areas.
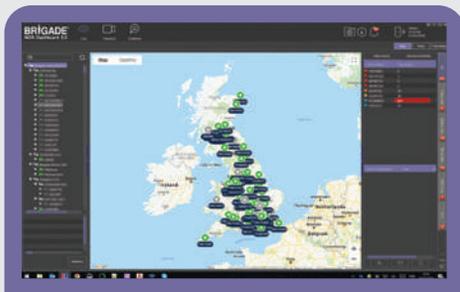
Vehicle Tracking on MDR Dashboard
PC software and MDR App

Example of 4-channel playback
MDR Dashboard PC software

All Bridge packages include

· **4G connection**
· **Competitively-priced 12 month contract, rolling thereafter**
· **SIM card**
· **Remote access to MDR via secure cloud server**

· **Technical helpline and online tutorials**
· **Access to data via MDR Apps for iOS and Android systems**
· **Access to data via MDR Dashboard PC software:** Windows OS required (minimum Windows 7)

For further information, visit brigade-electronics.com/bridge

At the time of print, 4G Hosted Services only available in selected countries.

Model   **Part No:**

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 AHD 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, IP cameras 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

OPTIONAL EXTRA

Expand the channel capability of the MDR with the addition of an Expansion Module and IP cameras:
See pages 52-53

IP-EM4 - Expansion Module adds 4 channels to MDR-508 = 12 channels

IP-EM8 - Expansion Module adds 8 channels to MDR-508 = 16 channels

Mobile Digital Recorders

Model   **Part No:**

MOBILE DIGITAL RECORDER

Model	Description	Part No:
MDR-504-2000	- 4 channel 2TB hard disk recorder	5563
MDR-504-1000	- 4 channel 1TB hard disk recorder	5561
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-504G-2000	- 4 channel 2TB hard disk recorder with 4G	5546
MDR-504G-1000	- 4 channel 1TB hard disk recorder with 4G	5548
MDR-504W-2000	- 4 channel 2TB hard disk recorder with WiFi	5567
MDR-504W-1000	- 4 channel 1TB hard disk recorder with WiFi	5565

- **9-32Vdc**
- **4 camera inputs - Supports AHD 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, IP cameras 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

OPTIONAL EXTRA

Expand the channel capability of the MDR with the addition of an Expansion Module and IP cameras:
See pages 52-53

IP-EM4 - Expansion Module adds 2 channels to MDR-504 = 6 channels

Model		Part No:

500 SERIES MOBILE DIGITAL RECORDER ACCESSORIES

AC-305	- Splitter cable connects 1 x Backeye®360 BN360-200 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/19.7" cable for Remote status & interface panel	**4873**
MDR-GS-02	- External G-sensor	**4988**
MDR-03GSC	- 3m/9.8" G-sensor cable	**4874**
MDR-508GW-EXP-0	- Wi-Fi & 4G upgrade Expansion Module For MDR-508 models only. SD card not included	**S5542**
MDR-508G-EXP-0	- 4G upgrade Expansion Module For MDR-508 models only. SD card not included	**S5543**
MDR-508W-EXP-0	- Wi-Fi upgrade Expansion Module For MDR-508 models only. SD card not included	**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 with 32GB industrial grade Class 10 SD card	**4896**

What are IP cameras & Expansion Modules?

An Internet Protocol (IP) camera is a high-definition digital camera with its own IP address. Instead of transmitting video over a video cable to a monitor or MDR, the IP camera transmits digital video to the MDR over a data connection (ethernet cable) where the images are saved to the HDD memory.

Brigade Expansion Modules use Power Over Network (PON) Switch technology to expand the channel capability of the MDR by transmitting digital video images from IP cameras over the top of existing analogue video cables/signals. The MDR on-screen display allows easy camera set up without need for specific IP camera knowledge

Benefit: Connecting IP cameras increases the number of channels available on the MDR:

MDR-504	- 4 x Analogue channels plus 1 x IP channel	= 5 channels
MDR-504 and PON switch	- 4 x Analogue channels plus 2 x IP channels	= 6 channels
MDR-508	- 8 x Analogue channels plus 1 x IP channel	= 9 channels
MDR-508 and PON switch	- 8 x Analogue channels plus up to 8 x IP channels	= 16 channels

Model   **Part No:**

NEW | **IP CAMERA**

IP-1000C - Internal forward-facing camera   5935

- **Viewing angle (HxVxD)**
  87 x 48 x 95°
- **IP20**
- **Size (WxHxD)**
  75 x 122 x 40mm
  3 x 5 x 1.6 inches
- **3 year warranty**

Features
- High-definition picture quality
- Windscreen flush-mounted to avoid reflections
- Microphone
- Normal view - mirror view via OSD settings or IP web interface
- Backlight compensation
- Automatic white balance
- Supports web browser access
- Fast setup feature in MDR 500 series to auto-assign camera IP address
- Picture Elements: 1920(H) x 1080(V)
- Imaging device: CMOS
- TV Lines: 800

Power
- Power consumption: 2.5 Watts
- Current: 0.2 Amps

Durability & Standards
- Mechanical vibration: 4.7G
- Mechanical shock: 51G
- Operating temperature:
  -40 to +70°C / -40 to +158°F
- Video output signal: H264 or H.265
- Network protocol: MDR5, ONVIF, TCP/IP, HTTP, DHCP, NTP, FTP
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

Note: For use with MDR only

NEW | **IP CAMERA**

IP-1200C - Surface-mount dome camera   5937

- **Viewing angle (HxVxD)**
  94 x 53 x 95°
- **IP65**
- **Size (WxHxD)**
  102 x 55 x 96 mm
  4 x 2 x 3.8 inches
- **3 year warranty**

Features
- High-definition picture quality
- Surface mount
- Heater
- Normal view
- Backlight compensation
- Automatic white balance
- Supports web browser access
- Fast setup feature in MDR 500 series to auto-assign camera IP address
- Picture Elements: 1920(H) x 1080(V)
- Imaging device: CMOS
- TV Lines: 700

Power
- Power consumption: 3.5 Watts
- Current: 0.3 Amps

Durability & Standards
- Mechanical vibration: 4.7G
- Mechanical shock: 51G
- Operating temperature:
  -40 to +70°C / -40 to +158°F
- Video output signal: H264 or H.265
- Network protocol: MDR5, ONVIF, TCP/IP, HTTP, DHCP, NTP, FTP
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

Note: For use with MDR only

NEW | IP CAMERA

IP-1100C - Surface-mount camera   5936

- **Viewing angle (HxVxD)**
  84 x 46 x 103°
- **IP67**
- **Size (WxHxD)**
  96 x 52 x 58mm
  3.8 x 2 x 2.3 inches
- **3 year warranty**

Features
- High-definition picture quality
- Surface mount
- Built-in G-sensor for automatic image orientation
- High power infrared LED for low-light performance
- Day/night sensor
- Normal view
- Backlight compensation
- Automatic white balance
- Supports web browser access
- Fast setup feature in MDR 500 series to auto-assign camera IP address
- Imaging device: CMOS
- Picture elements: 1920 x 1080
- TV Lines: 800

Power
- Power consumption: 5 Watts
- Current: 0.2 Amps

Durability & Standards
- Mechanical vibration: 8.5G
- Mechanical shock: 51G
- Operating temperature:
  -40 to +70°C / -40 to +158°F
- Video output signal: H264 or H.265
- Network protocol: MDR5, ONVIF, TCP/IP, HTTP, DHCP, NTP, FTP
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

Note: For use with MDR only

NEW | IP EXPANSION MODULES

IP-EM4 - PON 4-channel switch   5860
IP-EM8 - PON 8-channel switch   5861

- **12-24Vdc**
- **4 or 8 IP camera inputs**
- **Size (WxHxD)**
  IP-EM4: 149 x 44 x 127mm
        6 x 1.7 x 5 inches
  IP-EM8: 174 x 54 x 129.5mm
        7 x 2 x 5 inches
- **3 year warranty**

Features
- Expands the channel capability of the MDR by enabling the addition of IP cameras:
  IP-EM4 - adds 2 channels to MDR-504
  IP-EM4 - adds 4 channels to MDR-508
  IP-EM8 - adds 8 channels to MDR-508
  IP-EM8 not compatible with MDR-504

Power
- Power consumption: 3 Watts

Durability & Standards
- Mechanical vibration: 2.3G
- Mechanical shock: 150G
- Operating temperature:
  -40 to +70°C / -40 to +158°F
- CE marked
- E-Marked: UNECE R10 compliant
- FCC approved
- IC approved

NEW | IP CAMERA ACCESSORIES

IP-EC-1 - CAT5E Ethernet cable 1m / 3.3'   5865
IP-EC-5 - CAT5E Ethernet cable 5m / 16'   5866

IP-EM-PC - MDR-PON Power cable   5864

IP-L601 - IP Camera extension cable 1m / 3.3'   5867
IP-L603 - IP Camera extension cable 3m / 10'   5902
IP-L605 - IP Camera extension cable 5m / 16'   5903
IP-L610 - IP Camera extension cable 10m / 33'   5982
IP-L615 - IP Camera extension cable 15m / 49'   5904
IP-L620 - IP Camera extension cable 20m / 66'   5983
IP-L630 - IP Camera extension cable 30m / 98'   5984

IP-1XXX-PC - IP Power and Ethernet cable -   5985
To connect a single camera to an MDR without the PON Switch

WARNING: There is a latency (time lag) in all digital video transmission, including IP Cameras. Although this time lag is small (~800ms), it is unacceptable for a camera that a driver is using as a safety and manoeuvring aid. Brigade IP cameras are an excellent choice for general monitoring (eg bus interior, doors, luggage compartment) and recording purposes, but should not be used as a driver aid for manoeuvring or blind-spot monitoring. Analogue cameras are still the best choice for safety critical manoeuvring and blind spot monitoring applications.

Ultrasonic Object Detection Systems

Sensor Systems

Reducing blind spots and improving driver visibility are important issues for operators of road-going vehicles. Brigade's ultrasonic detection 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.

The detection system alerts the driver of objects close to the vehicle, whether moving or stationary. An in-cab warning informs of distance while an optional external speaking alarm can be added to alert cyclists and pedestrians that the vehicle is turning.

On-Screen Display

Working in conjunction with a 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 vehicle's monitor.

- **Integration of Brigade's ultrasonic obstacle detection systems and 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**
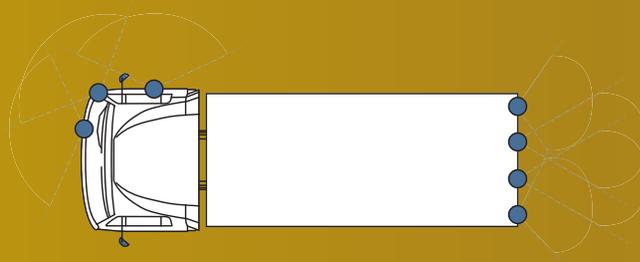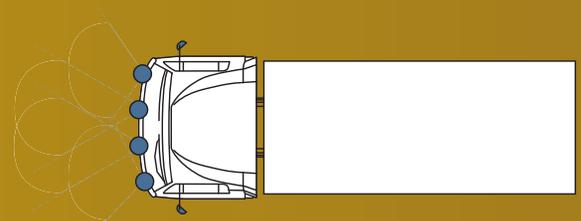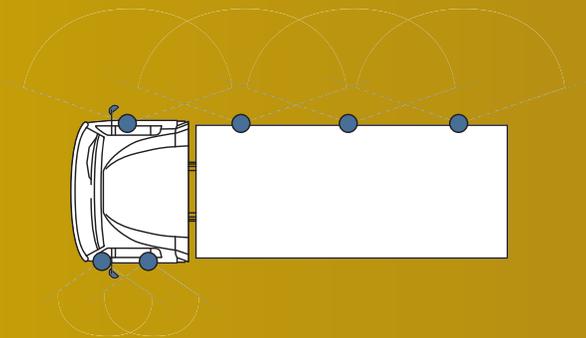
Ultrasonic Detection On-Screen Display Module

● **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.
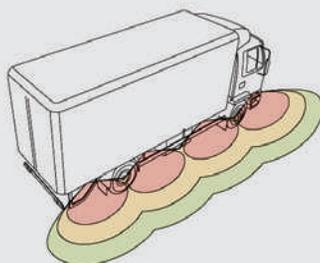
Model	Part No:

ULTRASONIC ON-SCREEN DISPLAY MODULE

UDS-OSD21-ECU - On-screen display module NTSC   **5347**

- **Allows 3-stage audible and visual Ultrasonic data to be overlayed 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 overlayed 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 +70ºC +22 to +158°F
- IP30
- Dimensions (WxDxH): 74 x 118 x 28 mm 2.9 x 4.6 x 1.1 inches
- CE marked
- E-Marked: UNECE R10 compliant
- FCC Approved
- IC Approved

Note: Not compatible with HD camera monitor systems

Model   **Part No:**

BACKSCAN® ULTRASONIC DETECTION SYSTEM

BS-4000W - Backscan® Rear reversing sensor system   **3744**

- **4 sensor system**
- **12-24Vdc**
- **2.5m 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/49' display cable
- 4 x 2.5m/8' 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 (3.3') 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 +80ºC / -22 to +176ºC
- 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 ouptput trigger	

Sidescan®Flex

Flexible side detection

Sidescan®Flex is a four-sensor system fitted to the side of a vehicle to detect objects in the nearside blind spot, where cyclists or pedestrians can otherwise go undetected.

An advancement to the standard Sidescan® system, Sidescan®Flex allows the operator to choose from four detection configurations, each with different detection distances and audible and visual alerts (see table).

Sidescan® Flex has an increased maximum detection range of 2.5 metres / 8.2 feet.
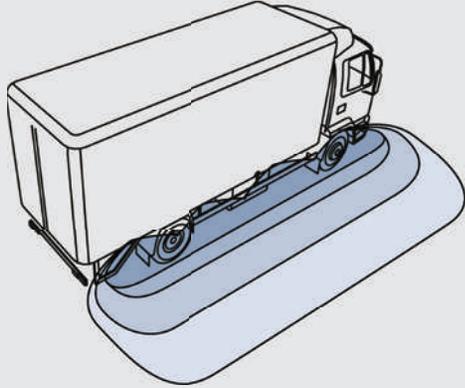
Detection distance		Config 1	Config 2	Config 3	Config 4
0 - 0.6m 0 - 2'	Beeps per second	Constant 8	Constant 8	Constant 8	Constant 8
	Flashes per second				
0.6 - 0.9m 2 - 3'	Beeps per second	Constant 8	4 8	4 8	4 8
	Flashes per second				
0.9 - 1.5m 3 - 4.9'	Beeps per second	4 4	- 4	- 4	1 4
	Flashes per second				
1.5 - 2.5m 4.9 - 8.2'	Beeps per second	1 1	- 1	- -	- -
	Flashes per second				

Model   Part No:

SIDESCAN®FLEX ULTRASONIC DETECTION SYSTEM

SS-4200W - Sidescan®Flex sensor system with mute function **5916**
SS-4200W-000 - Sidescan®Flex sensor system with mute function, **6075**
low speed trigger module and turn indicator sensor kit
Includes LS-60-A low speed trigger module and TS-001ECU turn indicator sensor

- **4 sensor system**
- **12-24Vdc**
- **Detection zones - 0 - 2.5m (0 - 8.2') (4 audible/visual configuarions, selectable via dip switches)**
- **Underslung and flush-mount fixings included**
- **1 Output trigger**
- **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/33' buzzer cable
- 4 x 4.5m/15' sensor cables
- 2 x 2.5m/8' 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
- Self-diagnostic function

- Environment Learning Mode prevents false alarms from ancillary equipment that intrudes in the first 100cm (3.3') of the detection zone

Durability & Standards
- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80ºC / -22 to +176ºC
- 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

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 ouptput trigger

Model   **Part No:**

SIDESCAN® ULTRASONIC DETECTION SYSTEM

SS-4100W -	**Sidescan® Side sensor system with mute function**	**5257**
SS-4100W-000 -	**Sidescan® 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**
- **1.0/1.5m (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/33' buzzer cable
- 4 x 4.5m/14.7' sensor cables
- 2 x 2.5m/8.2' 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

Durability & Standards
- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80ºC/ -22 to +176ºC
- 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

SIDESCAN®/SIDESCAN®FLEX 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**

SIDESCAN®/SIDESCAN®FLEX RECOMMENDED EXTRAS

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

SIDESCAN®/SIDESCAN®FLEX 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:**

FRONTSCAN® ULTRASONIC DETECTION SYSTEM

FS-4000W - Frontscan® 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' buzzer cable
- 4 x 2.5m/8' 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 (3.3') of the detection zone
- Self-diagnostic function
- 1 x Trigger output

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

Power
- Power consumption: 2.4 Watts
- Current: 200mA

RECOMMENDED EXTRA

LS-60-A   **Low speed trigger module**   4851
Enables sensors below designated speed

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 ouptput trigger

CORNERSCAN® ULTRASONIC DETECTION SYSTEM

CS-3100 - Cornerscan® 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' buzzer cable
- 3 x 2.5m/8' 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 (3.3') 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 +80ºC / -22 to +176ºC
- 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**   4851
Enables sensors below designated speed

Model	**Part No:**

STEPSCAN™ ULTRASONIC DETECTION SYSTEM

ST-2100 -   **Stepscan™ Step sensor system with mute function**   **5262**
ST-2100-60-A - **Stepscan™ Step sensor system with mute function and**   **5345**
                    low speed trigger module
                    Includes UDS-4.5SC 4.5m/14.7' extension cable

- **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 (3.3') of the detection zone
- Self-diagnostic function

Durability & Standards
- Mechanical vibration: 5G
- Mechanical shock: 10G
- Operating temperature: -30 to +80ºC / -22 to +176ºC
- 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**   **4851**
                    Enables sensors below designated speed

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**

Backsense®
Radar Object Detection Systems

BRIGADE®

FMCW technology

Backsense® heavy-duty radar sensor systems are designed for heavy-duty machines to detect people and objects in blind spots. They detect stationary and moving objects, providing the driver with in-cab visual and audible warnings – alerting the operator whose attention cannot be focused on all danger areas.

Backsense® radar uses Frequency Modulated Continuous Wave (FMCW) technology, transmitting a continuously varying radar frequency signal with unique time stamps to each instance of the wave. The time of the returning wave is referenced to the stamp without the radar needing to pause transmitting. This gives more accurate detection than alternative radar products using Pulsed Radar technology that transmit a burst of radar and listen for the returning wave.

Radar Models

- **Backsense®** systems are available with fixed and programmable detection ranges and a programmable model with an IP69K in-cab display. Custom detection areas can be programmed to calibrate-out fixed objects or bodywork.

- **Backsense® Network radar** allows you to link up to eight radar sensors. The system provides object detection in CAN message format which may be processed to display data on control panels/displays on the vehicle or used to control aspects of the machine.

- **Backsense® on-screen display** works in conjunction with Backeye® camera monitor systems and up to two radar sensors. It warns the driver of objects in the danger zone by overlaying 5-stage audible and visual radar data onto the camera image on the monitor.
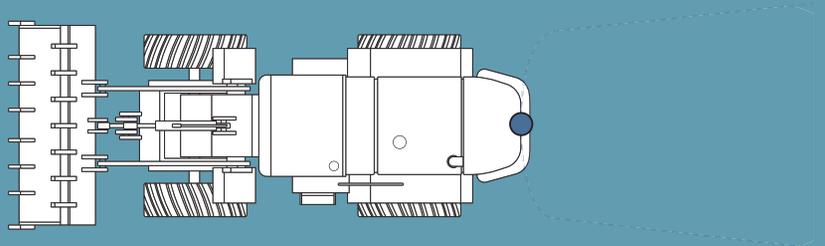
Backsense® Radar Object Detection

Model   Part No:

NEW — IP69K PROGRAMMABLE BACKSENSE® OBJECT DETECTION SYSTEM

BS-9000-WD - Waterproof display - Programmable detection range   5713

- 9-32Vdc
- Detection length: up to 30m/98' (minimum programmable distance 0 - 3m / 0 - 9.8')
- Detection width: 2 to 10m / 6.6 to 33'
- Rugged design for harsh environmental conditions
- Sensor size (WxHxD) 217 x 129 x 50mm 8.5 x 5 x 1.9 inches
- Display size without bracket (WxHxD) 118 x 97 x 55 mm 4.6 x 3.8 x 2.2 inches
- IP69K sensor
- IP69K display
- 3 year warranty

Contents
- 1 x BS-9000 Radar sensor
- 1 x IP69K audible and visual display with mounting bracket
- 1 x Extension cable 9m/29.5'
- 1 x Network Y Cable
- 1 x Network terminator
- 1 x Mini USB cable

Features
- Frequency modulated continuous wave (FMCW) radar technology
- Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output
- 2nd trigger output for optional external alarm
- Programmable:
  Detection area
  Blind zones - system ignores fixed objects
  Trigger activation
  Buzzer
- 5 stage audible and visual distance warning display
- 3 set volume levels (maximum 95dB) with volume lock

- AMPS hole pattern for alternative mounting with industry-standard bracket
- Resistant to water, moisture, dust, vibration, heat, cold, mud and glare

Power
- Current: 0.9 Amps
- Power consumption: 8 Watts

Durability & Standards
- Mechanical shock- sensor: 100G
- Mechanical shock- display: 50G
- 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

Configuration Software
- *Available via Brigade website or USB (purchased separately)

OPTIONAL EXTRAS

CT-470 - Constant tone external alarm - 102dB   1346
***BS-WD-USB** - USB -programming software, port driver and operating guide   5637

PROGRAMMABLE BACKSENSE® OBJECT DETECTION SYSTEM

BS-8000 - Standard display - Programmable detection range   4530

- 9-32Vdc
- Detection length: up to 30m/98' (minimum programmable distance 0 - 3m / 0 - 9.8')
- Detection width: 2 to 10m/ 6.5 to 33'
- Rugged design for harsh environmental conditions
- Sensor size (WxHxD) 217 x 129 x 50mm 8.5 x 5 x 1.9 inches
- Display size with bracket (WxHxD) 101 x 71 x 70mm / 4 x 2.8 x 2.7"
- IP69K sensor
- 3 year warranty

Contents
- 1 x Configurable radar sensor
- 1 x Audible and visual display with USB socket and mounting bracket
- 1 x 9m/29.5' extension cable
- 1 x Mini USB cable
- 1 x Software CD

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 adjustable audible and visual distance warning display
- Sensor 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

Model   **Part No:**

FIXED BACKSENSE® OBJECT DETECTION SYSTEMS

BS-7030 - Standard display - 3m/10' length x 2.5m/8' width detection range   4527
BS-7045 - Standard display - 4.5m/14.8' length x 3.5m/11' width detection range   4528
BS-7060 - Standard display - 6m/20' length x 4.5m/14.8' width detection range   4529

- **9-32Vdc**

- **Maximum detection range of either 3m, 4.5m or 6m (9.8', 14.8' or 20')**

- **Rugged design for harsh environmental conditions**

- **Sensor size (WxHxD) 217 x 129 x 50mm 8.5 x 5 x 1.9 inches**

- **Display size with bracket (WxHxD) 101 x 71 x 70mm / 4 x 2.8 x 2.7"**

- **IP69K sensor**

- **3 year warranty**

Contents
- 1 x Non-configurable radar sensor
- 1 x Standard audible and visual display with mounting bracket
- 1 x 9m/29.5' extension cable

Features
- Frequency modulated continuous wave (FMCW) radar technology
- Effectively detects stationary, moving and multiple objects
- 1 activation input
- 1 trigger output
- 5 stage adjustable audible and visual distance warning display
- Sensor 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

BACKSENSE® RADAR OBJECT DETECTION ACCESSORIES

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

BS-00NYC - Network Y Cable for 9000 series radar   5270

BS-02PIC   - Network power input cable for 9000 series radar   5271

BS-00NT   - 120 Ohms Network Terminator for 9000 series radar   5291

BKT-017   - Adjustable radar bracket   4676
             with 105mm/4.1" depth bracket mounting arms

BKT-018   - Low-profile adjustable radar bracket   4758

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

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.

Model   Part No:

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 overlayed onto camera images on in-cab monitor**
- · **12-24Vdc**
- · **Detection length: up to 30m/ 98' (minimum programmable distance 3m/9.8')**
- · **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 ouputs**
- · **3 year warranty**

Contents
- • 1 x OSD Radar ECU
- • 1 x BS-9000 Radar sensor
- • 1 x Network power cable
- • 1 x Extension cable 9m/29.5'
- • 3 x Network Y-cable
- • 2 x Network terminator

Features
- • Frequency modulated continuous wave (FMCW) radar technology
- • 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 configuaration via PC
- • Compatible with MDR, non-HD 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 +85ºC / -40 to +185°F
- • OSD: IP30
- • CE marked
- • E-Marked: UNECE R10 compliant
- • FCC Approved
- • IC Approved

Configuration Software
- • *Available via Brigade website or USB (purchased separately)
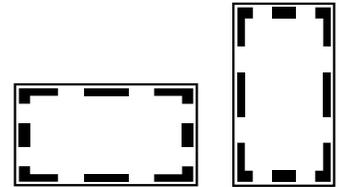
To not obstruct camera views, each radar can be shown in one of eight positions around the edge of the monitor

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		

OPTIONAL EXTRAS

***BS-9001-USB**	**- USB - programming software, port driver and operating guide**	**5656**
AC-007	**- Adapter cable to connect a Select range monitor**	**1984**
AC-020	**- Adapter cable to connect a Select range camera**	**2590**

Backsense® CAN Radar

For 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 a 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 interact with aspects of the machine.

Each connected radar sensor is allocated a unique ID and will transmit data for up to 8 closest objects. With a detection range of up to 30m/98' length and 10m/33' width, it provides a flexible system to meet customer specific requirements.

- **Provides object detection in CAN message format**
- **Independent CAN Bus may communicate with existing CAN network via CAN Gateway**
- **Separate CAN message & ID for each object detected (up to 8 per sensor)**

Model   **Part No:**

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 BS-9000 Radar sensor

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

Note: For CAN message format, refer to user manual at brigade-electronics.com

Warning Alarms & Quiet Vehicle Sounder

BRIGADE®

Warning and Back Up Alarms

Vital safety devices needed to warn workers and pedestrians that a vehicle is maneuvering.

bbs-tek® white sound® are 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.

Q QUIET MARK noise abatement society approved

bbs-tek® White Sound® Smart alarms auto-adjust to 5-10dB above ambient.

Heavy duty
For 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.

Quiet Vehicle Sounder

Designed for electric and hybrid-electric vehicles of all types, the QVS Electric Vehicle Sounder warns pedestrians and other vulnerable road users 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.
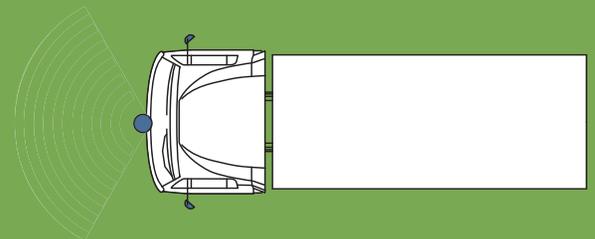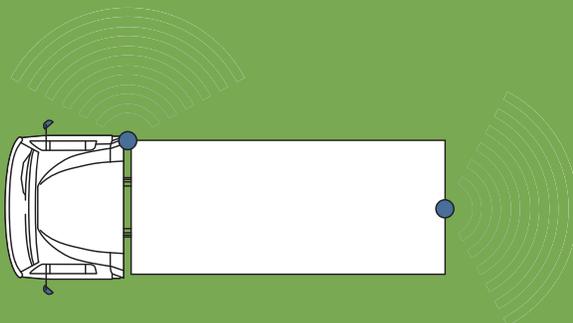
bbs-tek® White Sound® Alarms

Model   **Part No:**

WHITE SOUND® SMART BACK UP 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 5-10dB 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 BACK UP 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 5-10dB 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

noise abatement society

WHITE SOUND® BACK UP 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

WHITE SOUND® BACK UP ALARM

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

- 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

ADR version

Model   **Part No:**

WHITE SOUND® BACK UP 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**

noise abatement society

bbs tek®

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)

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**

bbs tek®
technology

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 vulnerable road users 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 fades out above a pre-set speed threshold.**
- **Designed for electric and hybrid-electric vehicles of all types.**

Speaking Alarms

Model   **Part No:**

NIGHTSHIFT® SPEAKING ALARM

BC-01(NS) - Single reversing message - Nightshift - 90 or 0 Decibels	0378
BC-01(NS-B) - Bespoke single message - Nightshift - 90 or 0 Decibels	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	0077
BC-01(B) - Bespoke single message - 90 Decibels	0079
BC-02(B) - Bespoke dual message - 90 Decibels	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

Model	Part No:

SPEAKING HANDBRAKE WARNING ALARM

2 wire version

BC-01(H/Brake) - Single message - 2 wire - 90 Decibels   0849
BC-01(4W)(H/Brake) - Single message 4 wire - 90 Decibels   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

Model	Part No:

VEHICLE INTERCOM

BC-VI - Normally open channel rear to cab; button press cab to rear   0815
BC-VI-2 - Normally closed channel; button press communication   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 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

ALARM ANCILLARIES

TCO-47 - Timed auto-reset reversing alarm 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
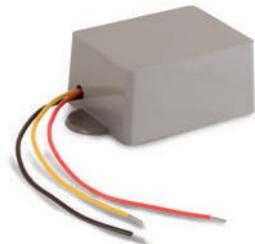
NS-2 - Nightshift reversing alarm cut-out switch   0334
NS-3 - Nightshift reversing alarm cut-out switch (auto gearbox)   0974

- 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

Warranties

LIFETIME

Lifetime New-For-Old Warranty (covers product for the life of vehicle)
bbs-tek® White sound® back up alarms
Self-adjusting back up alarms

5 YEARS

5 Year New-For-Old Warranty
Backeye®360 camera system
ELITE range camera monitor systems

3 YEARS

3 Year New-For-Old Warranty
SELECT range camera monitor systems
MDR mobile digital recorders, IP cameras and accessories
Ultrasonic object detection systems
Backsense® radar object detection systems
Digital wireless camera monitor connection

2 YEARS

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

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 can be found at www.brigade-inc.com.

Glossary

ADPCM
An audio file format, optimized for storing digitised data at a low sampling rate.

AHD
Analogue high definition video standard that uses standard cable to transmit HD video from cameras to Monitor/DVR

Amp
Unit of electric current.

Auto-trigger
Enables automatic triggering of an action e.g. 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^2). Higher the measure the brighter the picture.

CAN bus
Controller Area Network is a robust vehicle standard designed to allow microcontrollers and devices to communicate with each other without a host computer.

A Controller Area Network (CAN bus) is a robust vehicle bus standard designed to allow microcontrollers and devices to communicate with each others' applications without a host computer.

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).

CVBS
Composite Video Blanking and Sync. An analogue video signal format that carries standard-definition video as a single channel.

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

EN 13309:2010
Construction machinery. Electromagnetic compatibility of machines with internal power supply

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

FMCW
Frequency-Modulated Continuous Wave radar. A known stable frequency continuous wave is transmitted and then received from any reflecting objects.

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.

ISO 20653: 2006
Road vehicles — Degrees of protection (IP-Code) of electrical equipment against foreign objects, water and access

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.

RoHS 2
The restriction of the use of certain hazardous substances in electrical and electronic equipment

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.

You're safer with us

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 and partnerships with 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, We have 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.
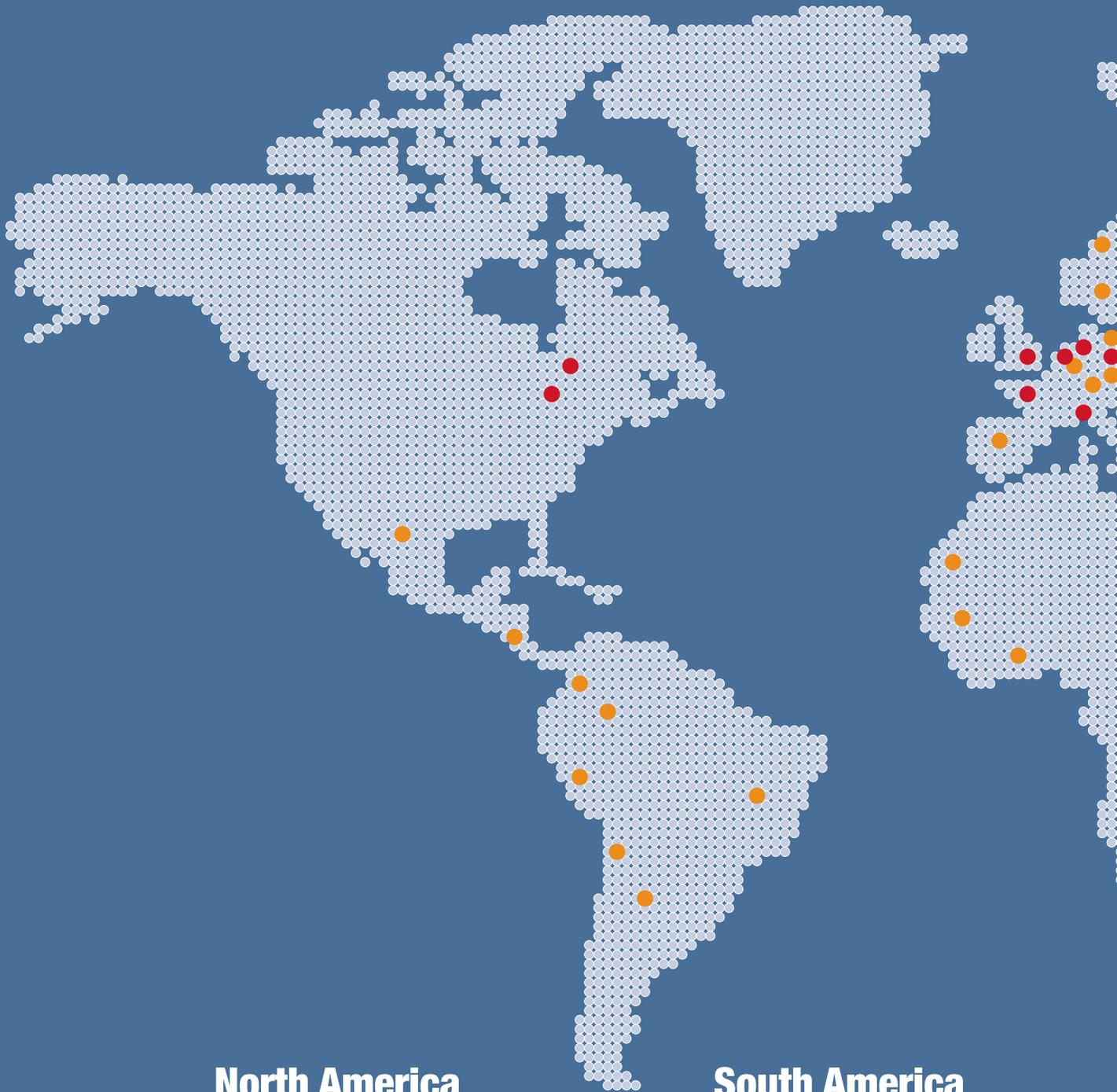
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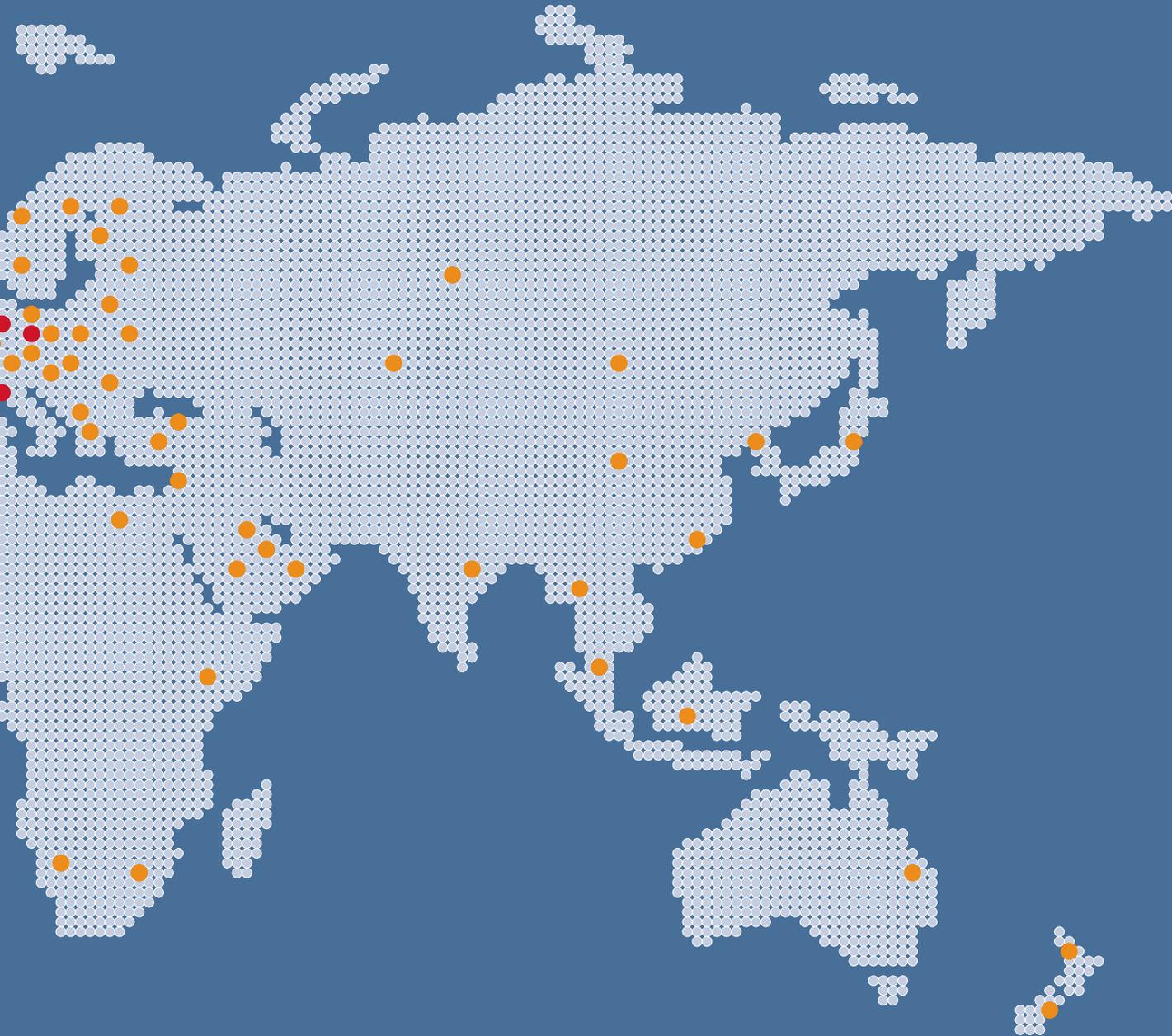
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