DNVS 4

Optronics Systems

SITUATIONAL AWARENESS CAMERAS

Our driver and local situational awareness cameras provide a complete range of cameras for installation on to military vehicles to provide passive, wide-angle indirect view observation. Designed to enhance the operability of armoured vehicles, these cameras provide optimum vision and improved situational awareness for today's 24-hour all-weather battlefield environment.

DNVS 4 is the latest generation of the company's DNVS family. This addition is based on the successful DNVS 3 camera, which is combat proven and in-service with the UK and other armed forces on more than 14 different vehicle types, both wheeled and tracked.

Cameras can be used for the driver's forward or rear vision, or in a number of positions around the vehicle to facilitate safe navigation and transit in areas of danger. One or more of the cameras can be combined with one or more of the company's vehicle display screen units.

Cameras can be fitted as an independent system to provide enhanced vision, or as part of an indirect vision system to provide the vehicle with a full 360 degree field of regard. All versions of the cameras are fully interchangeable, so that thermal imaging night vision, low light monochrome cameras, and colour day/light cameras can be chosen as required to meet operational requirements.

KEY BENEFITS

- Affordable driver's and local situational awareness vision sensor
- 24-hour operating capability
- Directly interchangeable with other cameras in the company's product range
- Modular construction fits most vehicles
- Near instantaneous operation
- Optional wash/wipe and soft cover
- Low whole life costs

DNVS 4

DNVS 4

Digital Dual Channel Thermal/Colour Camera
The DNVS 4 camera contains both a 640x480 high resolution thermal imaging camera and a colour day/ night camera to provide optimum vision and situational awareness 24-hours a day, and in conditions of smoke and battlefield obscurants.

DNVS 4 provides both traditional analogue video outputs and digital video outputs (Def Stan 00-82 or GigE Vision). This enables full interchangeability between the current driver's night vision or local situational awareness systems, or future, fully digital, integrated vehicle electronics architectures (e.g. Def Stan 23-09 Generic Vehicle Architecture (GVA).

DNVS 4 OUTPUTS

Analogue video outputs from the two cameras are available either simultaneously as two separate video outputs or switchable on a single video output. The DNVS 4 cameras are fully backward compatible and interchangeable with the previous generation of DNVS cameras. Digital video outputs from the two cameras are available simultaneously from a single Ethernet connection.

DNVS 4 INTEGRATION

DNVS 4 can be integrated with a single display to provide enhanced driver's vision, or as part of a full local situational awareness system, such as Road Marshall, to provide the vehicle with a full 360 degree field of regard. DNVS is a modular design concept providing maximum flexibility of installation across a wide range of vehicles, whilst the use of common line-replaceable units (LRUs) reduces the logistics burden and minimises fleet support costs.

KEY BENEFITS

- Dual channel thermal imaging and colour CCD cameras in a single unit provide optimised 24-hour all-weather indirect vision for under-armour operation
- High resolution 640x480 thermal imaging sensor
- Larger field of view than standard DVE units provides improved situational awareness and reduced blind are
- Simultaneous video outputs available from both cameras

TECHNICAL SPECIFICATIONS

QUALIFIED FOR MILITARY ARMOURED FIGHTING VEHICLE USE AND PROTECTED MOBILITY	
Operating Temperature	-32 to +71°C (including Solar Loading)
Weight	2.5Kg
	6.6Kg (with Wash/Wipe Module)

THERMAL IMAGER	
Spectral Band	8 to 14µm
Field of View	52°Horizontal x 39°Vertical
Detector Type	Uncooled Micro-Bolometer
Detector Pixels	640 x 480

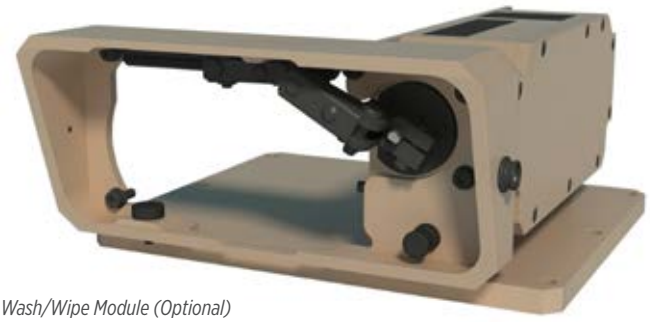
INTEGRAL CCD CAMERA	
Colour CCD, switching to Monochrome at low light.	
Sensitivity	1 to 100,000 Lux
Field of View	62°Horizontal x 46.5°Vertical
Detector Pixels	752 x 582
Detector Format	1/3" CCD
Resolution	>550 TV Lines in Daylight

VIDEO OUTPUT STANDARDS	
Digital Video Format	Def Stan 00-82 or GigE Vision on 1000 BASE-T Ethernet
Analogue Video Format	CCIR or RS 170

OPERATIONAL STATUS
In service with the British Army on wheeled and trackedvehicles.

DIMENSIONS WIDTH X HEIGHT X DEPTH (MM) (INC. CONNECTOR)	
DNVS 4	142 x 83 x 181
With Wash/Wipe Module	199 x 92 x 221

CONFIGURATION OPTIONS
Default Camera - DNVS 4 Dual Channel Thermal/Colour Camera
(Canvas Cover - Optional)



Wash/Wipe Module (Optional)
(Canvas Cover - Optional)

DNVS 4C

Single Channel Colour Day/Night Situational Awareness Camera

The DNVS 4C colour day/night camera version provides the best full colour video performance at higher light levels, switching to monochrome operation once light levels fall below a threshold, providing an improved low-light picture. The monochrome night mode maintains excellent performance at scene illumination levels down to 0.1 lux.

If operation is required at very low light levels or complete darkness, a high performance near IR illuminator option is available. Matching the IR Illuminator with the camera provides a flat, uniform illumination for the camera field of view that is invisible to the naked eye. This can offer a more cost effective solution to imaging at very low light levels when compared to thermal imaging solutions.

The near IR Illuminators are supplemented by a power supply/switching unit which allows the illuminators to be easily controlled from our ange of vehicle display units. An optional digital module providing digital video outputs (Def Stan 00-82 or GigE Vision) is available for internal installation.

Alternatively, the DNVS 4 product provides both analogue and digital video outputs and combines both thermal and visual wavebands into a single camera unit.

This range of cameras provides both traditional analogue video outputs, and digital video outputs, allowing the cameras full interchangeability between the current driver's night vision or local situational awareness systems, or future, fully digital, integrated vehicle electronics architectures.

TECHNICAL SPECIFICATION

QUALIFIED FOR MILITARY ARMOURED FIGHTING VEHICLE USE AND PROTECTED MOBILITY	
Operating Temperature	-32 to +71°C (including Solar Loading)
Weight	2.2Kg 6.3Kg (with Wash/Wipe Module)

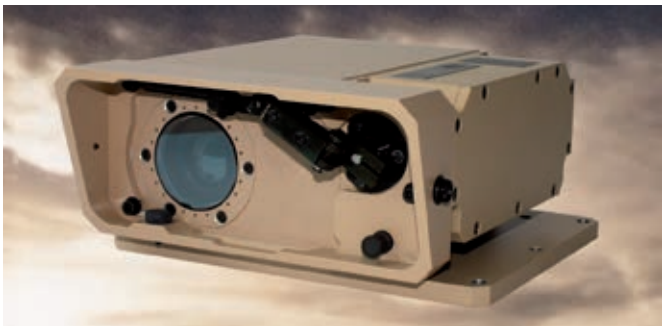
COLOUR DAY/NIGHT CAMERA	
Sensitivity	1 to 100,000 Lux (Colour) 0.1 to 100,000 Lux (Monochrome)
Nominal Fields of View	Option 1 - 90°Horizontal x 68°Vertical Option 2 - 64°Horizontal x 48°Vertical
Detector Pixels	752 x 582
Detector Format	1/3" CCD
Horizontal Resolution	480 TV Lines
Range with/without Illuminator	Data on request
Digital Video Output over Ethernet	Def Stan 00-82 or GigE Vision (optional)

OPERATIONAL STATUS
In service with the British Army on wheeled and tracked vehicles.

DIMENSIONS - WIDTH X HEIGHT X DEPTH (MM) (INC. CONNECTOR)	
DNVS 4C	142 x 83 x 181
With Wash/Wipe Module	199 x 92 x 221

IR ILLUMINATOR	
Nominal IR Frequency	Near IR
Input Power (Max)	45W

Typical Camera and IR Illuminator installation



CONFIGURATION OPTIONS
Default Camera - DNVS 4 Dual Channel Thermal/Colour Camera (Canvas Cover - Optional)

Wash/Wipe Module with or without Grille (Optional) (Canvas Cover - Optional)

IR Illuminator (Optional)

DNVS 4

DNVS 4M

Single Channel Low Light Monochrome Situational Awareness Camera

The DNVS 4M monochrome low light camera provides the best performance at/in near darkness levels, maintaining excellent performance at scene illumination levels down to 0.01 lux. If operation is required at very low light levels or total darkness, then a high performance IR illuminator option is available.

Matching the IR Illuminator with the camera provides a flat, uniform illumination for the camera field of view that is invisible to the naked eye. This can provide a more cost effective solution to imaging at very low light levels compared to thermal imaging solutions. The IR illuminators are supplemented by a power supply/switching unit which allows the illuminators to be easily controlled from our range of vehicle displays.

An optional digital module, providing digital video outputs (Def Stan 00-82 or GigE Vision) is available for internal installation. Alternatively, the DNVS 4 product provides both analogue and digital video outputs and combines both thermal and visual wavebands into a single camera unit.

This range of cameras provides both traditional analogue video outputs, and digital video outputs, allowing the cameras full interchangeability between the current driver's night vision or local situational awareness systems, or future, fully digital, integrated vehicle electronics architectures.

TECHNICAL SPECIFICATIONS

QUALIFIED FOR MILITARY ARMOURED FIGHTING VEHICLE USE AND PROTECTED MOBILITY	
Operating Temperature	-32 to +71°C (including Solar Loading)
Weight	2.2Kg
	6.3Kg (with Wash/Wipe Module)

COLOUR DAY/NIGHT CAMERA	
Sensitivity	0.01 to 100,000 Lux
Nominal Fields of View	Option 1 - 90°Horizontal x 68°Vertical
	Option 2 - 64°Horizontal x 48°Vertical
Detector Pixels	752 x 582
Detector Format	1/3" Monochrome CCD
Horizontal Resolution	>500 TV Lines
Range with/without Illuminator	Data on request
Digital Video Output over Ethernet	DEFSTAN 00-82 or GigE Vision (Optional)

OPERATIONAL STATUS
In service with the British Army on wheeled and tracked vehicles.

DIMENSIONS - WIDTH X HEIGHT X DEPTH (MM) (INC. CONNECTOR)	
DNVS 4M	142 x 83 x 181
With Wash/Wipe Module	199 x 92 x 221

IR ILLUMINATOR	
Nominal IR Frequency	Near IR
Input Power (Max)	45W

CONFIGURATION OPTIONS
DNVS 4M Single Channel Low Light Monochrome Situational Awareness Camera

Wash/Wipe Module with or without Grille (Optional)
(Canvas Cover - Optional)

IR Illuminator (Optional)

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