2019
OPTICOELECTRON
DAY SIGHTS • COLLIMATORS • DESIGNATORS

Land, Naval And Air Optical Technologies Since 1971
**MNV-50 Night Vision Monocular**

**NSN 5855-50-001-1726**

**Description:**
Designed to fit your specific night vision needs. The brightest and sharpest images available due to a High Resolution Super Gen, 3rd Generation or 4G type Image Intensifier Tube.

**Technical characteristics:**
- **Magnification:** 1 x
- **F/No:** 1.2
- **Focal length:** 50 mm
- **Adjustment range of the focal:** 1 m to infinity
- **Field of View:** ≥ 19.85°
- **Diopter adjustment:** -2 to +2 dptr
- **Eye relief:** 24 mm
- **Power supply:** 1pc. Battery AA
- **Operating temperature:** -40°C to +50°C
- **Storing temperature:** -40°C to +60°C
- **Weight without battery:** 0.570 kg
- **Dimensions (LxWxH):** 180 x 55 x 74 mm
- **Mounting interface:** Picatinny (MIL STD 1913)

*Note: The low operating temperature depends on the power supply source.*

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**NOS 4B Night Vision Scope For SPG-9**

**NSN 1240-50-001-2541**

**Description:**
Designed for aiming at night for SPG-9. Ballistic and long range reticle.

**Technical characteristics:**
- **Magnification:** 4 x
- **F/No:** 1.41
- **Field of View:** 11°
- **Eye relief:** 30 mm
- **Exit pupil diameter:** 4.5
- **Objective focus:** From 25 mm to infinity
- **Diopter adjustment:** Fixed, minus 0.75 dptr
- **Power supply source:** 1pc. Battery AA
- **Operation time with 1.5V battery:** 12 h
- **Operation time with 3.0V battery:** 50 h
- **Image Intensifier Tube:** All type 18 mm, Auto Gating
- **Operating temperature:** -40°C to +50°C
- **Storing temperature:** -40°C to +60°C
- **Weight:** 1,200 kg (including battery)
- **Dimensions (LxWxH):** 232 x 78 x 96 mm (without eyecup)
- **Mounting interface:** Picatinny (MIL STD 1913)
- **Ballistic and long range reticle:** ‘KVM’ or ‘OCK’
- **Reticle illumination, LED:** 610 mm
- **Adjustment range:** ± 1° in elevation and direction
- **Adjustment accuracy:** MOA, with fixation

*Note: The low operating temperature depends on the power supply source.*
NOS4D Night Vision Scope

Description:
Designed for aiming at night using various weapons as assault rifles, snipers, hunting and sport rifles. Ballistic and a long range reticle.

Technical characteristics:
- Magnification: 4x from 25 m to infinity
- Objective focus: +2 to -6 dptr
- Diopter adjustment: 1 pc Battery AA
- Power supply source:
- Operational time with 1.5 V battery: 12 h
- Operational time with 3.6 V battery: 50 h
- Image Intensifier Tube: All type 18 mm, Auto Gating
- Effective focal length: 90 mm
- F#: 1.61
- Field of View: 11°
- Eye relief: 30 mm
- Exit pupil diameter: 4.5 mm
- Operating temperature: -40°C to +50°C
- Storing temperature: -40°C to +60°C
- Weight with mounting adaptor: ≤ 940 g (without battery)
- Dimensions (LxWxH): 236 x 75 x 102 mm (without eyecup)
- Mounting interface: Picatinny (MIL STD 1913)

Ballistic and long range reticle
- Reticle illumination, LED:
- Adjustment range: ± 1° in elevation and direction
- Adjustment accuracy: IMOA, with fixation

* Note: The low operating temperature depends of the power supply source

NOS6D Night Vision Scope

Description:
Designed for aiming at night using various weapons as assault rifles, sniper, machine guns, hunting and sport rifles, ballistic and a long-range scale.

Technical characteristics:
- Magnification: 6x from 25 m to infinity
- Objective focus: from -2 to +6 dptr
- Diopter adjustment: 1 pc Battery AA
- Power supply source:
- Operational time with 1.5 V battery: 12 h
- Operational time with 3.6 V battery: 60 h
- Image Intensifier Tube: All type 18 mm, Auto Gating
- Effective focal length: 134 mm
- F#: 1.4
- Field of View: 7°
- Eye relief: 30 mm
- Exit pupil diameter: 4.5 mm
- Operating temperature: -40°C to +50°C
- Storing temperature: -40°C to +60°C
- Weight with mounting adaptor: ≤ 1650 g (without battery)
- Dimensions (LxWxH): 255 x 90 x 144 mm (without eyecup)
- Mounting interface: Picatinny (MIL STD 1913)

Ballistic and long range reticle
- Reticle illumination, LED:
- Adjustment range: ± 1° in elevation and direction
- Adjustment accuracy: IMOA, with fixation

* Note: The low operating temperature depends of the power supply source
OENG-E
Night Vision Goggles

Description:
Provide night fighters with the ability to see, maneuver and shoot at night or during periods of reduced visibility. Applications: night surveillance, police, law enforcement, hunting, patrol, rescue etc.

Features:
- Adjustable interpupillary distance
- Built-in IR illuminator
- Illuminator indication
- Battery state indication
- Flipping-up headmount

Technical characteristics:
- Magnification: 1 x
- Image Intensifier Tube: II Gen, II+ Gen, III Gen
- Field of view: 40°
- Objective: 26 mm
- Diopter adjustment: +4 to -4 dptr
- Interpupillary adjustment: 58 to 72 mm
- Power supply source: 2 pcs Batteries AA
- Rated voltage: 3 V
- Relative humidity: up to 98%
- Operating temperature: *-40°C to +50°C
- Storing temperature: *-40°C to +60°C
- Weight: 0.44 kg
- Dimensions (LxWxH) without mask: 123 x 150 x 61 mm

*Note: The low operating temperature depends on the power supply source.

OENAG
Night Vision Goggles

NSN 5855-00-001-4050

Description:
The "OENAG" are self-contained, helmet-mounted passive night vision goggles, that provides the capability for pilots to fly in terrain flight modes at night. The system amplifies ambient light from sources such as the moon, stars and sky glow, so the viewed scene becomes clearly visible to the operator. The "OENAG" has the following important features: Powered by batteries and board power; Low-battery indicators on the helmet mount and power pack lights; if the battery power is low level; Eye-span, vertical distance, tilt, eye relief, diopter adjustable.

Technical characteristics:
Operational adjustment limits

<table>
<thead>
<tr>
<th>Item</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical</td>
<td>18 mm total travel</td>
</tr>
<tr>
<td>Fore and aft</td>
<td>27 mm total travel</td>
</tr>
<tr>
<td>Eye span</td>
<td>51 mm to 72 mm</td>
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<tr>
<td>Tilt</td>
<td>10° total travel</td>
</tr>
<tr>
<td>Diopter adjustment</td>
<td>from -5 to +5 dptr</td>
</tr>
<tr>
<td>Objective focus</td>
<td>from 25 cm to «</td>
</tr>
</tbody>
</table>

Electrical data
- Voltage/battery power supply: 2x2 pcs. Batteries AA
- Voltage/on-board power supply: 9 - 32 VDC
- Current/ battery power supply: 100 mA, maximum
- Current/ board power supply: 30 mA, maximum
- Batteries life at 20°C alkaline: 20 hours (minimum/one container)

Optical data
- Magnification: Unity (1x)
- Field of view: 42°

Environmental Data
- Operating temperature: *-40°C to +50°C
- Storing temperature: *-40°C to +60°C
- Encapsulation rating: IP65
- Illumination required: Overcast starlight to moonlight

Mechanical data
- Goggles breakaway force: 10 G
- Goggles weight: 0.690 kg
- Mount assembly weight: 0.180 kg
- Power pack weight (without batteries): 0.380 kg

*Note: The low operating temperature depends on the power supply source.
EVERY NIGHT IS A NEW DAY!

NIRECON® Night Vision Goggles

Description:
The OE NIRECON Night Vision Goggles are among the smallest and lightest night vision goggles ever produced. Their unique design makes them comfortable and easy to use, whilst retaining a high performance night vision capability.

Technical characteristics:
- Image intensifier tube: Gen 2+, Gen 3, 4G
- Magnification*: 1 x
- Field of View: 40°
- Objective focal length: 26 mm
- F/#: 1
- Focus range: 0.2 m to infinity
- Diopter adjustment: +2 to -8 dptr
- Eye relief distance: > 20 mm
- Interpupillary adjustment: 57 - 75 mm
- Exit pupil diameter: 9 mm
- Battery: 2 pcs. Batteries AA from 2V to 3.5V
- Power supply: from 2V to 3.5V
- Battery life: > 20 h at 20°C
- IR source: > 12 h at 20°C
- IR source: LED
- Relative humidity: 95% at 35°C
- Encapsulation rating: IP 67
- Operating temperature: -40°C to +50°C
- Storage temperature: -40°C to +60°C
- Weight without battery: 0.350 kg
- Dimensions (LxWxH) without mask: 155 x 73 x 58 mm

* Note: The low operating temperature depends on the power supply source

Features:
- Build-in IR illuminator;
- Indication of work illuminator;
- Low voltage battery indicator;
- Head gear;
- Extremely low weight;
- Color -Matt black;
- Reverse polarity protection for the batteries;
- Automatic brightness control;
- Automatic shut-off system;
- 9 mm exit pupil diameter;
- Not “remember” images from high intensity light sources;
- Afolocal 3x or 5x magnification

THERECON 35 Thermal Sight

Description:
The Terecon 35 is designed for aiming at day and night using various weapons as assualt rifles, machine guns, sniper, hunting and sport rifles. Terecon 35 can be equipped with ballistic and a long-range reticle. The sight provides clear and sharp picture of the battlefield regardless of the wheather, thereby increasing the operational efficiency and precision of the staff as its security.

Technical characteristics:
- Detector: Uncooled Microbolometer
- Spectral response: 8-14 μm
- Detector resolution: 384 x 288 / 640 x 480
- Detector pitch: 17 μm
- Detector sensitivity: < 50 mK
- Frame rate: 30 Hz
- Digital zoom: x2, x3, x4
- Polarity control: Black hot, White hot, Pallettes
- Shutterless NUC: Yes
- Detail enhancement: Yes
- Display: AMOLED 800 x 600 or AMOLED 1024 x 768
- USB 2.0 Interface: Yes, standard
- Video output: Digital Serial LVDS interface
- Video resolution: 660 x 600
- Remote control: Multiplied over video interface
- Relicles: User defined set of reticles, no retilce mode
- Boreights:
- Local ballistic reticle shift: Yes, with 1 mili resolution
- Reticle color selection: Black, White, Light grey and Dark Grey
- Auto-shutdown function: 5 min, 15 min, 30 min
- Buttons control: 5 or 6 - buttons/joy stick control
- Available lens: 35 mm, fixed
- Physical parameters:
- Weight without batteries: 0.750 kg
- Dimensions (LxWxH): 225 x 75 x 82 mm
- Mounting interface: Picatinny (Mil STD 1913)
- Power:
- Power source: External, 4 pcs Batteries AA (2.7..10V), USB,
- Operating time: > 7 h

Image / Video captures:
- Storage type: Internal, non-removable
- Image Access: USB 2.0
- Storage capacity: 8 GB
- Snapshot file type: 8-bit BMP

* Note: The low operating temperature depends on the power supply source
### TERECON 75 S / TERECON 75 S

**Thermal Sight / Clip-on Thermal Scope**

**Description:**
The Terecon 75S/75C are designed for aiming at day and night using various weapons as assault rifles, machine guns, sniper, hunting and sport rifles. Terecon 75S/75C can be equipped with ballistic and a long-range reticle. The sights provide clear and sharp picture of the battlefield regardless of the weather, thereby increasing the operational efficiency and precision of the staff as its security.

**Technical characteristics:**
- **Detector:** Uncooled Microbolometer
- **Spectral response:** 8-14 μm
- **Detector resolution:** 384 x 288 / 640 x 480
- **Detector pitch:** 17 μm
- **Detector sensitivity:** < 50 mK
- **Frame rate:** 30 Hz
- **Digital zoom:** x2, x3, x4, x8
- **Polarity control:** Black hot, White hot, Pallettes
- **Shutterless NUC:** Yes
- **Detail enhancement:** Yes
- **Display:** AMOLED 800 x 600 or AMOLED 1024 x 768
- **USB 2.0 Interface:** Yes, standard
- **Video output:** Digital Serial LVDS interface
- **Video resolution:** 600 x 600
- **Remote control:** Multiplexed over video interface
- **Relicdes:** User defined set of relicles, no relicde mode
- **Bore sight:** Yes
- **Local ballistic reticle shift:** Yes, with 1mil resolution
- **Relicle color selection:** Black, White, Light Grey, Dark Grey, Colour
- **Auto-shutdown function:** 5 min, 15 min, 30 min
- **Buttons control:** 5 or 6 - buttons / joystick control
- **Available fans:** 75 mm, manual focus

**Physical parameters**
- **Weight without batteries:** 0.950 kg
- **Dimensions (LxWxH):** 270 x 75 x 90 mm
- **Mounting interface:** Picatinny (MIL STD 1913)

**Power**
- **Power source:** External, 4 pcs Batteries AA (2.7-18V), USB,
- **Operating time:** > 7 h

**Image / Video captures**
- **Internal, non-removable**
- **USB 2.0**
- **9 GB**
- **8-bit BMP**
- **USB 2.0**
- **Digital Serial LVDS interface**
- **Video output:** 800 x 600
- **Remote control:** Multiplexed over video interface
- **Relicdes:** User defined set of relicles, no relicde mode
- **Bore sight:** Yes
- **Local ballistic reticle shift:** Yes, with 1mil resolution
- **Relicle color selection:** Black, White, Light Grey, Dark Grey, Colour
- **Auto-shutdown function:** 5 min, 15 min, 30 min
- **Buttons control:** 5 or 6 - buttons / joystick control
- **Available fans:** 100 mm, manual focus

**Physical parameters**
- **Weight without batteries:** 0.950 kg
- **Dimensions (LxWxH):** 310 x 95 x 85 mm
- **Mounting interface:** Picatinny (MIL STD 1913)

**Power**
- **Power source:** External, 4 pcs Batteries AA (2.7-18V), USB,
- **Operating time:** > 7 h

### TERECON 100

**Thermal Scope**

**NSN 5865-50-001-2545**

**Description:**
The Terecon 100 is designed for aiming at day and night using various weapons as assault rifles, machine guns, sniper, hunting and sport rifles. Terecon 100 can be equipped with ballistic and a long-range reticle. The sight provides clear and sharp picture of the battlefield regardless of the weather, thereby increasing the operational efficiency and precision of the staff as its security.

**Technical characteristics:**
- **Detector:** Uncooled Microbolometer
- **Spectral response:** 8-14 μm
- **Detector resolution:** 384 x 288 / 640 x 480
- **Detector pitch:** 17 μm
- **Detector sensitivity:** < 50 mK
- **Frame rate:** 30 Hz
- **Digital zoom:** x2, x3, x4, x8
- **Polarity control:** Black hot, White hot, Pallettes
- **Shutterless NUC:** Yes
- **Detail enhancement:** Yes
- **Display:** AMOLED 800 x 600 or AMOLED 1024 x 768
- **USB 2.0 Interface:** Yes, standard
- **Video output:** Digital Serial LVDS interface
- **Video resolution:** 800 x 600
- **Remote control:** Multiplexed over video interface
- **Relicdes:** User defined set of relicles, no relicde mode
- **Bore sight:** Yes
- **Local ballistic reticle shift:** Yes, with 1mil resolution
- **Relicle color selection:** Black, White, Light Grey, Dark Grey, Colours
- **Auto-shutdown function:** 5 min, 15 min, 30 min
- **Buttons control:** 5 or 6 - buttons / joystick control
- **Available fans:** 100 mm, manual focus

**Physical parameters**
- **Weight without batteries:** 0.950 kg
- **Dimensions (LxWxH):** 310 x 95 x 85 mm
- **Mounting interface:** Picatinny (MIL STD 1913)

**Power**
- **Power source:** External, 4 pcs Batteries AA (2.7-18V), USB,
- **Operating time:** > 7 h
**OE THERMO IP**

**IP Imager Series**

**Description:**
The IP series cameras are controlled by new CMS VSPro 3.0.1 T software for monitoring, data storage, data transfer/management. The software supports 1/4/1/91/6/4 display, GSID setting, lock-back, record playback, alarm control and motion detection (MD).

The interface is friendly and easy to use, it can help to control more than one device in the same time and main functions below:
- Remote monitor and control functions;
- Support alarms (ND/DM level adjustable);
- Support NG (remote play/local play) / private mask / picture snap;
- Support SMTP send picture to mail box when alarm;
- Support DDNS / HTTPS;
- Support long-distance online upgrade;

<table>
<thead>
<tr>
<th>Technical characteristics:</th>
<th>IP9</th>
<th>IP13</th>
<th>IP15</th>
<th>IP25</th>
<th>IP35</th>
<th>IP50</th>
<th>IP90</th>
<th>IP100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field of view with zoom 1</td>
<td>30° x 22°</td>
<td>28° x 19°</td>
<td>17° x 13°</td>
<td>13° x 10°</td>
<td>9.3° x 7.7°</td>
<td>6.3° x 4.8°</td>
<td>3.3° x 2.5°</td>
<td>1.6° x 1.2°</td>
</tr>
<tr>
<td>Field of view with zoom 2</td>
<td>15° x 11°</td>
<td>14° x 10°</td>
<td>9° x 6.8°</td>
<td>7.5° x 5.8°</td>
<td>5.2° x 4.1°</td>
<td>3.1° x 2.3°</td>
<td>1.6° x 1.2°</td>
<td>0.8° x 0.5°</td>
</tr>
<tr>
<td>Aperture, F/IR</td>
<td>1:1.2</td>
<td>1:1.5</td>
<td>1:1.7</td>
<td>1:1.9</td>
<td>1:2</td>
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<tr>
<td>Weight</td>
<td>2.172</td>
<td>2.178</td>
<td>2.179</td>
<td>2.221</td>
<td>2.250</td>
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<tr>
<td>Humidity resistance (5%~95% RH)</td>
<td>50</td>
<td>50</td>
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<td>50</td>
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</tr>
<tr>
<td>Temperature resistance (5%~95% RH)</td>
<td>20° C</td>
<td>20° C</td>
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<tr>
<td>Humidity recognition</td>
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<td>Vehicle identification</td>
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</tr>
</tbody>
</table>

**Technical characteristics for the entire product series:**

- **Thermal Imaging:**
  - Uncooled VOx Microbolometer
  - Resolution: 320 x 240 / 640 x 480
  - Pixel pitch: 17 μm
  - Spectral band: 7.5 - 13.5 μm
  - Full frame rate: 9 Hz / 32 Hz
  - Sensitivity (NEAT): ≤ 50 mK @ 20°C
  - Time to image: ~ 3.5 sec.
  - Image optimization: Yes
  - Digital detail enhancement: Yes
  - Polarization control (black hot / white hot): Yes
  - Color & Monochrome Palettes (ụnụ ụnụ): Yes
  - Digital zoom: 2 x and 4 x
  - Flat field correction (FCC) duration: ≤ 0.5 sec.
  - Analogizing target threshold: Yes
  - Software license: Yes, Free

- **Prescription:**
  - H3507 TV Arm 928 • H. 264 Codec
  - Operating system: Linux 2.6.37
  - Video compression: H.264, H.264 Mux Profile at Level 3.0
  - Video Resolution: Full HD (1920 x 1080 @ PAL, 1080 x 1920 @ NTSC), HD (1280 x 720 @ PAL, 720 x 1280 @ NTSC)
  - Bit rate: 16 - 48 Mbps
  - Audio Input: CVBS, 1.0 Vp-p with 75Ω& balanced BT656 optional
  - Audio Input: 16-bit, 48 kHz
  - Audio Output: Balanced 1.0 Vp-p, 75Ω
  - Alarm input: 1 External alarm input
  - Alarm output: 1 relay output (NO) 12VDC/24VDC 1A
  - Storage: Support SD card / local storage
  - Ethernet: RJ-45 (10/100Base-T)
  - Power supply: TCP UDP (IP HTTP DHCP, UPnP)
  - Power supply: 220VAC (12VDC@24VDC optional)
  - Corrosion: < 1 A
  - Humidity (non-condensing between 5% and 85%): Yes
  - Encapsulation rating: IP66
  - Operating temperature: -40°C to +50°C
  - Storage temperature: -40°C to +60°C
  - Dimensions (LxWxH): 305 x 151 x 145 mm

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**SWIRECON**

**SWIR Series**

- **SWIRECON 100**
  - HIGH PERFORMANCE SHORT WAVE INFRARED
  - SWIR f = 100 x 1.5 AT

- **SWIRECON 50**
  - HIGH PERFORMANCE SHORT WAVE INFRARED
  - SWIR f = 50 x 1.5 AT

- **SWIRECON 25**
  - HIGH PERFORMANCE SHORT WAVE INFRARED
  - SWIR f = 25 x 1.8 AT

- **SWIRECON 14**
  - HIGH PERFORMANCE SHORT WAVE INFRARED
  - SWIR f = 14 x 1.8 AT

- **SWIRECON 12.5**
  - HIGH PERFORMANCE SHORT WAVE INFRARED
  - SWIR f = 12.5 x 1.2 AT