

# SPECIAL OPTICAL EQUIPMENT

Since its inception in 1990 Newcon Optik manufactures and distributes worldwide state-of-the-art day and night optical systems: binoculars, night vision systems, laser rangefinders, etc. Newcon's bestsellers are efficient in the day time and at night and are renowned for their versatility: they can be used in military, law enforcement, search and rescue, surveillance, hunting, camping, professional and recreational marine activities.

Today Newcon Optik is among the largest exporters of electro-optical products. We are one of the four major manufacturers of night vision systems in the world. Up to 90% of our products support professionals in 60 countries.

Our regular clients are many international, military and law enforcement institutions around the world, such as:

- UN Peacekeepers
- US Army
- Federal Bureau of Investigation (FBI)
- British Army
- French Army
- Japanese Self-Defense Forces
- Royal Saudi Land Forces and many more.

Our R&D team is focused on maintaining the reputation of innovation leader in the design of night vision equipment, combined day/night systems, laser rangefinders, laser aimers/Illuminator, and stabilized binoculars.

Newcon supplies four major product lines:

**Night Vision Systems:**

- Image Intensifier tubes of Gen 2+ and Gen 3
- Goggles for ground troops and pilots
- Binoculars, monoculars, panoramic viewers
- Weapon scopes

**Laser Rangefinders and Speed Detectors:**

- Binoculars and monoculars working on 905, 1060 and 1550 nm lasers for recreational and professional use
- Laser speed detectors for police
- Laser rangefinder modules for OEM manufacturers

**Image Stabilized Binoculars for recreational and professional use:**

- Gyro stabilised binoculars
- Mechanically stabilised binoculars

**Laser Aimers and Illuminators, both visible and infrared**

Our success is based on four key factors:

**Quality:** All products undergo a triple quality assurance inspection. Newcon Optik is certified to ISO 9001:2000 standards.

**Warranty:** Comprehensive one year warranty covers all products, extended warranty is available.

**Service:** Full service is provided by factory-trained technicians and engineers at our facility in Toronto, Canada, where all necessary spare parts are kept in stock to expedite repairs and maintenance. To ensure prompt shipment we keep over million dollar worth inventory at our warehouses in Canada and the USA.

**Price:** Our products are usually less expensive versus the comparable models on the market.

Although most of our R&D, manufacturing and assembly is done in Canada and Europe, globalization allows Newcon Optik to source high-quality, competitively priced components from acknowledged leaders of the optical industry throughout the world. Our manufacturing processes use the most advanced technologies available in optics, night vision, and optical testing. Cutting-edge technologies, modern machinery and testing equipment enable us to manufacture complex optical, electronic, and precise mechanical parts for the devices designed to operate under the extreme conditions. We produce systems that meet and exceed all applicable industry standards, including rigorous military ones.

Commitment to the highest quality standards, reliable delivery schedule, competitive pricing, and client satisfaction have made Newcon Optik an internationally recognized market leader of specialty optics.



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# IMAGE INTENSIFIER TUBES SUMMARY



## Tube grades specifications

Part number	NC107663IF	NC10xxxx *	NCSDxxxx*	NC06xxxx *	NCXTxxxx *	N306xxxx *	N3XTxxxx
Generation	2	2+	2+	2+	2+	3	3
Grade	2	2+	SD – Standard Definition	HD – High Definition	XT – eXtra performance	HD – High Definition	XT – eXtra performance
Photocathode sensitivity:							
- integral, $\mu\text{A}/\text{lm}$	300	200-340	340-500	500-600	600-700	1,200-2,100	1,200-2,100
- with filter KS-17, $\mu\text{A}/\text{lm}$	150	120	180	220	280	700	700
- spectral at $\lambda=850\text{ nm}$ , $\text{mA}/\text{W}$	20	12	18	35	45	120	120
Resolution, min, lp/mm	30-36	32-40	40-45	45-57	57-64	45-57	57-64
Signal-to-noise ratio	3.2	8-12	12-16	16-20	18-22	18-24	20-24
Modulation transfer function (MTF), at spatial frequency, lp/mm:							
2.5	0.9	0.75	0.86	0.89	0.88	0.89	0.88
7.5	0.6	0.48	0.58	0.68	0.72	0.68	0.72
15	0.25	0.20	0.28	0.40	0.50	0.40	0.50
Mean time before failure (MTBF), h	2,000	3,000	7,000	10,000	10,000	10,000	10,000

## Tubes individual specifications \*\*\*

Specifications	Generation 2+										Generation 3			
	NC107663IF	NCxx4322	NCxx4329IC	NCxx4329IF	NCxx43298C	NCxx43318C	NCxx3631IC	NCxx3631IF	NC064331_25	N3064322	N3064329IC	N30643318C	N3063631IC	
Light gain, min, f/fo	$5 \times 10^4$	$2 \times 10^4$	$2.5 \times 10^4$							$2.5 \times 10^4$				
Dark background brightness, max, $\text{cd}/\text{m}^2$	$1.2 \times 10^{-3}$		$1 \times 10^{-3}$			$1.5 \times 10^{-3}$				$0.5 \times 10^{-3}$				
Voltage, V	$2.8 \pm 0.8$													
Current consumption, mA, max	35	20	16						25					
Dimensions, mm	$\varnothing 76 \times 63$	$\varnothing 43 \times 22.5$	$\varnothing 43 \times 29.4$		$\varnothing 43 \times 31.1$	$\varnothing 36.7 \times 31.1$		$\varnothing 43 \times 31.1$	$\varnothing 43 \times 22.5$	$\varnothing 43 \times 29.4$	$\varnothing 43 \times 31.1$	$\varnothing 36.7 \times 31.1$		
Weight, g	326	50	90				80	75	50	90	80			
Keep time, years	12	15										10		
Photocathode type	S-25 (multialkali)										GaAs			
Photocathode operating diameter, mm	25	18						25	18					
Image magnification	1													
Material of input window	FOE**	Glass C95-2								Glass A 54-1				
Material of output window	FOE** direct flat	Glass C95-2	FOE** inverting concave	FOE** inverting flat	FOE** direct concave	FOE** direct concave	FOE** inverting concave	FOE** inverting flat	FOE** inverting flat	Glass C95-2	FOE** inverting concave	FOE** direct concave	FOE** inverting concave	
Contact type	Plates	Flexible				Plates			Flexible	Flexible		Plates		
Typical equipment using this type of tubes	AN/PV S4 AN/TV S5	NVS7 NV S7/HD NVS4 DN S10	AN/PVS5			PVS7B	PVS14 PVS6 PVS9 NVS14		NVS7/WA	NVS7/HD	PVS5	PVS7B PVS7D	PVS14 PVS6 PVS9 NVS14	

\*\* 'x' symbol stands for any alphanumerical symbol

\*\* FOE – Fibre Optical Element

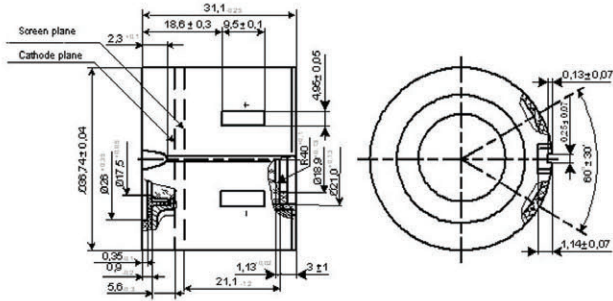
\*\*\* Customized production in accordance with customer's specification is possible



Small Generation 2+3 image intensifier series with direct image transfer.

These tubes have a microchannel plate, a multialkali metal (Gen. 2+) or GaAs (Gen.3) cathode, a yellow-green color screen, and a built-in power supply. Input window is made of flat surface glass; output window is made of a concave 180° rotation fiber-optical element.

This type of tubes complies with all relevant military standards and specifications.



'Slim' ANVIS inverting tube is compatible with AN/PVS 6, 9, 14 and many other devices

**SPECIFICATIONS**

	NC063631IC	NCXT3631IC	N3063631IC	N3XT3631IC
Grade	HD	XT	HD	XT
Photocathode operating diameter, mm	18	18	18	18
Photocathode material	S-25	S-25	GaAs	GaAs
Resolution, lp/mm	51-54	57-64	45-57	57-64
Photocathode sensitivity, μA/lm	500-600	600-750	1,200-2,100	1,500-2,100
Light gain, minimum	25,000	25,000	25,000	25,000
Image magnification	1	1	1	1
Dark background brightness, max, cd/m <sup>2</sup>	1.5x10 <sup>-3</sup>	1.5x10 <sup>-3</sup>	0.5x10 <sup>-3</sup>	1.5x10 <sup>-3</sup>
Signal-to-noise ratio	16-20	18-22	18-24	20-24
Current consumption, max, mA	16	16	25	25
Voltage, V	2.8 ± 0.8	2.8 ± 0.8	2.8 ± 0.8	2.8 ± 0.8
Weight, g	80	80	80	80
Mean time before failure, hours	10,000	15,000	10,000	10,000
Storage time, years	15	15	15	15

**Environmental resistance**

Sinusoidal vibration (vibration strength):	
Frequency range, Hz	1-500
Acceleration, m/s <sup>2</sup> (g)	50 (5)
Mechanical shocks:	
Shock, m/s <sup>2</sup> (g)	5,000 (500)
Operating temperature range, °C	-50 ... +55

**Modulation transfer function**

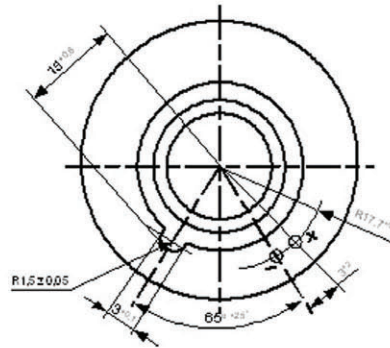
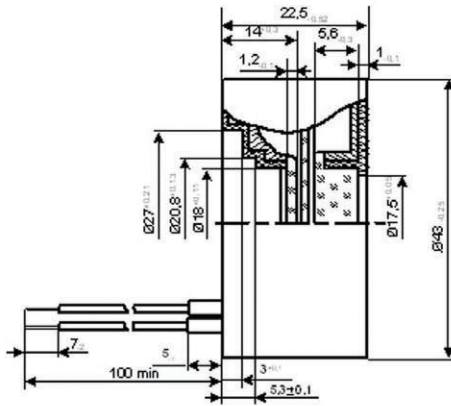
Frequency, lp/mm	HD grade	XT grade
2.5	0.89	0.88
7.5	0.68	0.72
15.0	0.40	0.50

**Field of view cleanness**

Zone Number	Circular zone Dimensions, mm	Maximum diameter of defects			Accepted total area of defects, mm <sup>2</sup>
		Neglected	Accepted		
			Diameter, mm	Quantity	
1	0 - 9.0	0.06	0.12	1	0.10
2	9.0 - 14.5	0.08	0.18	1	0.20
3	14.5 - 18.0	0.10	0.20	2	0.35

Small size Generation 2+3 image intensifier tubes with direct image transfer.

The tube has a microchannel plate, a photocathode made of multialkali metal (Gen. 2+) or GaAs (Gen.3), a yellow-green color screen, a built-in wrap-around power supply, and flat surface glass input and output windows. This type of tubes complies with all relevant military standards and specifications.



Compatible with most of NVS7 series goggles.

IMAGE INTENSIFIER TUBES

**SPECIFICATIONS**

	NC064322	NCXT4322	N3064322	N3XT4322
Grade	HD	XT	HD	XT
Photocathode operating diameter, mm	18	18	18	18
Photocathode material	S-25	S-25	GaAs	GaAs
Resolution, lp/mm	51-54	57-64	45-57	57-64
Photocathode sensitivity, $\mu\text{A}/\text{lm}$	500-600	600-750	1,200-2,100	1,500-2,100
Light gain, minimum	25,000	25,000	25,000	25,000
Image magnification	1	1	1	1
Dark background brightness, max, $\text{cd}/\text{m}^2$	$1.5 \times 10^{-3}$	$1.5 \times 10^{-3}$	$1.5 \times 10^{-3}$	$1.5 \times 10^{-3}$
Signal-to-noise ratio	16-20	18-22	18-24	20-24
Current consumption, max, mA	16	16	25	25
Voltage, V	$2.8 \pm 0.8$	$2.8 \pm 0.8$	$2.8 \pm 0.8$	$2.8 \pm 0.8$
Weight, g	50	50	50	50
Mean time before failure, hours	10,000	10,000	10,000	10,000
Storage time, years	15	15	15	15

**Environmental resistance**

Sinusoidal vibration (vibration strength):	
Frequency range, Hz	1-500
Acceleration, $\text{m}/\text{s}^2$ (g)	50 (5)
Mechanical shocks:	
Shock, $\text{m}/\text{s}^2$ (g)	5,000 (500)
Operating temperature range, $^{\circ}\text{C}$	-50 ... +55

**Modulation transfer function**

Frequency, lp/mm	HD grade	XT grade
2.5	0.89	0.88
7.5	0.68	0.72
15.0	0.40	0.50

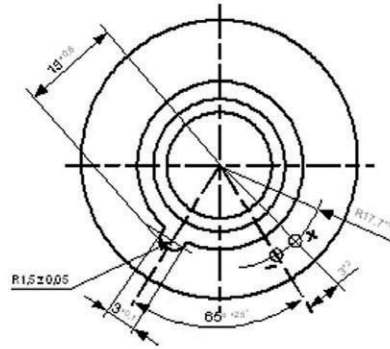
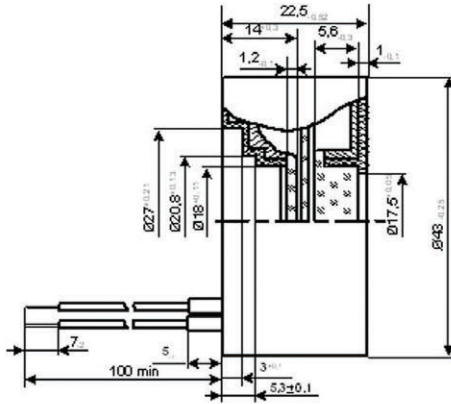
**Field of view cleanness**

Zone Number	Circular zone Dimensions, mm	Maximum diameter of defects		Accepted total area of defects, $\text{mm}^2$	
		Neglected	Accepted		
			Diameter, mm		Quantity
1	0 - 9.0	0.10	0.15	1	0.10
2	9.0 - 14.5	0.12	0.25	2	0.20
3	14.5 - 18.0	0.15	0.35	2	0.50



Small size Generation 2+3 image intensifier tubes with direct image transfer.

The tube has a microchannel plate, a photocathode made of multialkali metal (Gen. 2+) or GaAs (Gen.3), a yellow-green color screen, a built-in wrap-around power supply, and flat surface glass input and output windows. This type of tubes complies with all relevant military standards and specifications.



Compatible with most of NVS7 series goggles.

IMAGE INTENSIFIER TUBES

**SPECIFICATIONS**

	NC064322	NCXT4322	N3064322	N3XT4322
Grade	HD	XT	HD	XT
Photocathode operating diameter, mm	18	18	18	18
Photocathode material	S-25	S-25	GaAs	GaAs
Resolution, lp/mm	51-54	57-64	45-57	57-64
Photocathode sensitivity, $\mu\text{A/lm}$	500-600	600-750	1,200-2,100	1,500-2,100
Light gain, minimum	25,000	25,000	25,000	25,000
Image magnification	1	1	1	1
Dark background brightness, max, $\text{cd/m}^2$	$1.5 \times 10^{-3}$	$1.5 \times 10^{-3}$	$1.5 \times 10^{-3}$	$1.5 \times 10^{-3}$
Signal-to-noise ratio	16-20	18-22	18-24	20-24
Current consumption, max, mA	16	16	25	25
Voltage, V	$2.8 \pm 0.8$	$2.8 \pm 0.8$	$2.8 \pm 0.8$	$2.8 \pm 0.8$
Weight, g	50	50	50	50
Mean time before failure, hours	10,000	10,000	10,000	10,000
Storage time, years	15	15	15	15

**Environmental resistance**

Sinusoidal vibration (vibration strength):	
Frequency range, Hz	1-500
Acceleration, $\text{m/s}^2$ (g)	50 (5)
Mechanical shocks:	
Shock, $\text{m/s}^2$ (g)	5,000 (500)
Operating temperature range, $^{\circ}\text{C}$	-50 ... +55

**Modulation transfer function**

Frequency, lp/mm	HD grade	XT grade
2.5	0.89	0.88
7.5	0.68	0.72
15.0	0.40	0.50

**Field of view cleanness**

Zone Number	Circular zone Dimensions, mm	Maximum diameter of defects		Accepted total area of defects, $\text{mm}^2$	
		Neglected	Accepted		
			Diameter, mm		Quantity
1	0 - 9.0	0.10	0.15	1	0.10
2	9.0 - 14.5	0.12	0.25	2	0.20
3	14.5 - 18.0	0.15	0.35	2	0.50





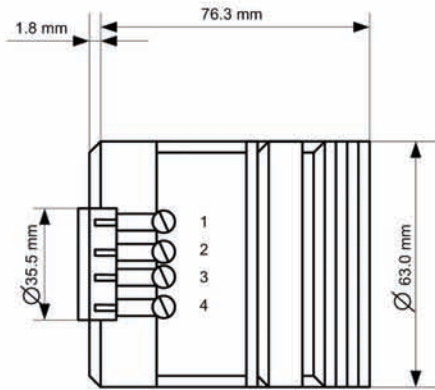
The NC107663IF enhanced image intensifier tube can boost performance of such well known systems as AN/PVS-4 weapon sight, M-32/M36 passive night vision elbow, AN/TVS-5 weapon sight, and other devices equipped with the original MX 9644 tube to the new levels. This tube is fully compatible with their optical, mechanical and electrical interfaces and can be installed by maintenance personnel via the routine tube replacement procedure.

This tube will extend operational life of the unit and upgrade its performance to the levels of the systems currently procured for military use. The tube comprises a fiber optic faceplate, a microchannel plate (MCP) current amplifier, and a phosphor screen.

Advanced automatic brightness control covers over five orders of magnitude of input illumination providing constant output image brightness. Manual brightness adjustment is also available.

Sophisticated power supply has built-in photocathode protection against bright light exposure.

The tube complies with all relevant military standards and specifications.



25 mm inverting tube  
Compatible with AN/PVS 4,  
AN/PVS 5 and many other devices

**FEATURES:**

- Improved range performance
- Higher photo response, resolution and S/N ratio
- Long operational life
- Instantaneous flash response recovery
- Auto brightness control
- Bright light protection

**SPECIFICATIONS**

<b>Photocathode operating diameter</b>	<b>24.5 mm</b>
<b>Resolution</b>	<b>30-36 lp/mm</b>
<b>Photocathode sensitivity</b>	<b>220-650 <math>\mu\text{A}/\text{lm}</math></b>
<b>Signal-to-noise ratio</b>	<b>3-10</b>
<b>EBI, max</b>	<b><math>2.5 \times 10^{-11} \text{ lm}/\text{cm}^2</math></b>
<b>Light gain, @ <math>2 \times 10^{-6} \text{ fc}</math></b>	<b>50,000-90,000 fl/fc</b>
<b>Tube life</b>	<b>2,000 h</b>
<b>Input current</b>	<b>35 mA</b>

Battle-tested NVS 14 night vision monocular meets any military or law enforcement observational need under the darkest conditions. This model is in service with many militaries around the world. The device is manufactured with Gen. 2+ or Gen. 3 standard ANVIS-size image intensifier tube. Extreme durability combined with crisp, clear image have created its impeccable reputation. NVS 14 is one of the smallest and lightest products of this type, while it is made of durable materials to meet military specifications.

NVS 14 can be hand held, mounted on a weapon, head or helmet, including PASGT helmet. An optional afocal lens turns monocular into 3x night vision sight.

Head mount enables user to flip the monocular from left to right eye or turn upright for unobstructed vision. In Auto mode NVS 14 automatically switches off when turned upright. When the unit is head/helmet mounted this feature eliminates a chance of the user being detected by greenish gleam on the face and extends battery life.

Two monoculars with a dual mount adapter form wide angle goggles. With optional add-on afocal lenses this combination becomes night vision binoculars. Video camera adaptable.

The newest NVS 14-3 is the first mass produced 3rd generation night vision device built without US components and, thus, it is not subject to the US export restrictions.



NVS 14 Monocular



NVS 14 Binoculars



Connected to video camera



Mounted on a weapon

SPECIFICATIONS	NVS 14 with 1x lens			NVS 14 with afocal 3x lens	
Image intensifier tube (IIT)	18 mm, Gen. 2+ or Gen. 3				
Magnification	1x			3x	
Field of view	40°			13°	
Objective F number	F1.17			F1.5	
Objective focal length	27.5 mm			82.5 mm	
Focus range	0.25 m - infinity			2 m - infinity	
Exit pupil				25 mm	
Eye relief				30 mm	
Dioptr adjustment range				+5 to - 6	
Battery				1 AA or 1 CR123	
Battery life				Over 40 h without IR, over 20 h with IR	
Low battery indicator				✓	
IR ON indicator				✓	
Waterproof 1 m/30 minutes or up to 20 m (optional)				✓	
Dimensions	118x48x69 mm			206x63x69 mm	
Weight	300 g			540 g	
Model	NVS14 HD	NVS14 HDX	NVS14 XT	NVS14-3 HD	NVS14-3 XT
Generation	2+			3	
IIT model	NC063631IC	NC063631IC	NCXT3631IC	N3063631IC	N3XT3631IC
IIT resolution	51-54 lp/mm	54-57 lp/mm	57-64 lp/mm	45-57 lp/mm	57-64 lp/mm



NVS 6 night vision goggles enable safe night piloting of helicopters and low altitude planes. They can also be used for surveillance, reconnaissance, target acquisition and aiming. Along with military uses this advanced system with true stereoscopic vision may benefit boating, driving, and other activities at night.

The mounting system quickly attaches goggles to a helmet and enables flipping them upright for unobstructed view. The unit is powered by standard AA batteries or an on-board (27V) network.

The device has passed all applicable tests and has been accepted for use by several air forces around the world.

## FEATURES:

- Advanced Gen 2+ or 3 tubes
- Stereo vision
- Automatic shut-off in the upright position
- Ergonomic compact design
- Full peripheral vision
- Multiple adjustments for optimum viewing position
- Quick detachment
- Adaptable to most aviation helmets (ANVIS mount)
- Automatic brightness control
- Lightweight

## ACCESSORIES:

- ANVIS helmet mount
- Lens covers
- Carrying case
- Manual
- Warranty card

## OPTIONAL ACCESSORIES:

- Counter weight
- Power adapter for use with on-board network
- Light interference filters
- Class A/B (minus blue) and leaky green filters
- Adapters for various helmet systems
- Adapter for HUD or Eye Cam video recording



## SPECIFICATIONS

<b>Generation</b>	2+ or 3
<b>Magnification</b>	1x
<b>Field of view</b>	40°
<b>Lens aperture</b>	25 mm
<b>Exit pupil</b>	15 mm
<b>Eye relief</b>	20mm
<b>Dioptre adjustment range</b>	± 4
<b>Interpupillary distance</b>	56 mm -72 mm
<b>Focus range</b>	0.25 m - infinity
<b>Power supply</b>	2xAA or on-board (with adapter)
<b>Operational temperature range</b>	-40°C ... +55°C
<b>Dimensions</b>	55x82x140 mm
<b>Weight</b>	0.610 kg

# NVS 7 SERIES OF NIGHT VISION GOGGLES

The battle-tested NVS 7 goggles meet all military or law enforcement requirements for night observation. This type of goggles is in service in 42 militaries around the world. A variety of models is available to satisfy any user needs. Waterproof, lightweight and compact - this advanced system is also the most affordable at the world market.

NVS 7 equipped with improved Gen. 2 tubes provides tactical characteristics equivalent to the 3rd generation models at a much lower price.

NVS 7-3 is the first mass produced 3rd generation goggles built without US components. It is not subject to US export regulations.

Optional 3x or 5x afocal easy-to-attach lenses further extend the viewing capability.



NVS 7



NVS 7 mounted on a helmet

SPECIFICATIONS						
Field of view	40°					
Eye relief	25 mm					
Objective focal length	27.5 mm					
Objective F / T numbers	F 1.2 / T 1.25					
Magnification	1x					
Interpupillary distance	57-73 mm					
Focus range	0.25 m - infinity					
Dioptre correction	±5					
Battery	2 AA					
Battery life	Over 80 h without IR; over 30 h with IR					
Low battery indicator	✓					
IR ON indicator	✓					
Momentary IR button	-					
Waterproof (1 m, 30 min)	✓					
Dimensions	150x120x55 mm					
Weight	480 g					
Model	NVS7-2/SD	NVS7-2/HD	NVS7-2HDX	NVS7-2/XT	NVS7-3/HD	NVS7-3/XT
Generation	2+	2+	2+	2+	3	3
IIT model	NCSD36311C	NC0636311C	NC0636311C	NCXT36311C	N30636311C	N3XT36311C
IIT resolution	40-45 lp/mm	51-54 lp/mm	54-57 lp/mm	57-64 lp/mm	45-57 lp/mm	57-64 lp/mm

NIGHT VISION EQUIPMENT

The battle-tested NVS 7 binoculars, based on the popular NVS 7, are eminently suitable for defense, marine and rescue operations under the darkest conditions.

Standard 4x or 8x objective lens can be easily replaced by a 1x, 3x or 5x lens. This upgrade leaves intact goggles' durability, water resistance and nitrogen filling. The optional 8x catadioptric lens with large aperture makes NVS 7/8x binoculars a unique device for long range observation at night. For additional convenience 8x lens has a tripod socket.

NVS 7/4x is the smallest and the lightest night vision binoculars with uncompromising optical characteristics in its class.



Configuration	NVS 7/4X	NVS 7/8X
Tube model	2HD / 2XT / 3HD / 3XT	2HD / 2XT / 3HD / 3XT
Image intensifier tube (IIT)	18 mm Gen. 2+ or Gen. 3	18 mm Gen. 2+ or Gen. 3
IIT resolution	45-57 lp/mm (HD); 57-64 lp/mm (XT)	45-57 lp/mm (HD); 57-64 lp/mm (XT)
Magnification	4x	8x
Interpupillary distance	57-73 mm	57-73 mm
Field of view	10°	5°
Objective lens focal length	100 mm	216.4 mm
Eye relief	25 mm	25 mm
Focus range	10 m - infinity	20 m - infinity
Dioptre correction	±5	±5
Objective F number	1.5	2.0
Battery	2 AA batteries	
Battery life	Over 80 hours without IR, over 30 hours with IR	
Tripod socket ¼"	-	V
Dimensions	165 mm x 120 mm x 70 mm	240 mm x 130 mm x 130 mm
Weight	0.690 kg	1.470 kg
Model	NVS 7/4X WA	NVS 7/8X WA
Image intensifier tube (IIT)	25 mm Gen. 2+	25 mm Gen. 2+
IIT model	NC064331_25	NC064331_25
IIT resolution	45-64 lp/mm	45-64 lp/mm
Magnification	4x	8x
Interpupillary distance	57-73 mm	57-73 mm
Field of view	15°	7.5°
Objective focal length	100 mm	216.4 mm
Eye relief	15 mm	15 mm
Focus range	10 m - infinity	20 m - infinity
Dioptre correction	±5	±5
Objective F number	1.5	2.0
Battery	2 AA batteries	
Battery life	Over 80 hours without IR, over 30 hours with IR	
Tripod socket ¼"	-	V
Dimensions	165x120x70 mm	240x130x130 mm
Weight	0.690 kg	1.470 kg

## NVS 3X / 5X AFOCAL MAGNIFIER LENSES

Our 3x and 5x afocal lenses are designed to increase magnification of 1x night vision systems and, thus, dramatically improve detection range and enhance viewing.

NVS 3x and NVS 5x feature F/1.5 optics and mounts to the objective lens of various standard Mil. Spec. night vision devices.

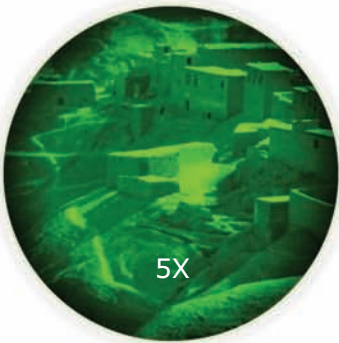
The lenses are sturdy, compact, lightweight and can be snapped (using adapters) or threaded onto objective lenses.



NVS 14 with attached 3x lens



3X



5X



NVS 7 with attached 5x lens

### ACCESSORIES:

- Soft carrying case
- Lens cover
- Threaded lens cover
- Lens assembly

Model	NVS 3x	NVS 5x
Magnification	3x	5x
Field of view	13°	7.5°
Objective lens focal length	55 mm	56 mm
Focus range	20 m - infinity	25 m - infinity
Objective F number	1.5	1.5
Dimensions	70x68x88 mm	50x56x93 mm
Weight	228 g	270 g

3x/5x lens are compatible with	
NVS 7-2/HD	NVS 14-2/HD
NVS 7-2/WA	NVS 14-2/XT
NVS 7-2/XT	NVS 14-3/HD
NVS 7-3/HD	NVS 14-3/XT
NVS 7-3/XT	



NVS 8 is a unique long-range night vision surveillance device: a combination of a modern image intensifier tube, bright FMC optics and advanced electronics enables observation at up to 2.5 km at night. The exceptional observation range makes NVS 8 irreplaceable for border protection, especially at sea or in the desert, long-range night reconnaissance, and wild life observation.

As a powerful optical instrument NVS 8 uncovers its full potential when mounted on ships, stationary observation points or moving platforms of any kind. Its design enables photo shooting and videorecording by most commercial cameras.

### FEATURES:

- Long observation Range (2,500 m at low light levels)
- High image quality across the screen
- Unique fast optics enables high light transmission
- Bright light cut-off
- Automatic protection from lateral or frontal light sources
- Automatic brightness control with manual override (optional)
- Low power consumption
- Heavy-duty telescopic tripod



### SPECIFICATIONS

Image intensifier tube	NC064322
IIT type	Gen. 2+, 18 mm
Magnification	9x
Field of view	3.83°
Objective lens focus length / F number / T number	204 mm / F1.0 / T1.4
Angular resolution at ambient illumination $5 \times 10^{-3}$ lx	50 seconds of arc
Dioptre adjustment	±4
Eye relief	50 mm
Exit pupil	4.5 mm
Reticle scale-division value	5 mils
Voltage	3 V
Power supply	2xAA batteries
Battery life	Over 80 h
Operating temperature	-40°C ... +55°C
Relative humidity	Up to 98 %
Dimensions	400x250x240 mm
Weight, net / with tripod / gross	12 kg / 25 kg / 40 kg

## NIGHT WITNESS SURVEILLANCE SYSTEM

Compact and lightweight Night Witness monocular is designed for low light observation and photo/video surveillance. It is the most versatile night vision system for law enforcement and rescue teams, professional photographers, coast guard, etc. Sturdy water- and corrosion-proof body made from light aluminum and titanium alloys guarantees long trouble-free operation. Replaceable humidity collector filled with desiccant substantially improves monocular reliability in rapidly changing environment.

Night Witness is distinguished by its handy modular design along with an intelligent control system. It is offered in two versions: 1.25x and 5x.

This monocular can be enhanced with professional lenses made by Sigma, Canon, Nikon and other manufacturers. It can be also attached to CCTV, photo and video cameras by the means of professional optical adapters.

Unique design effectively protects image intensifier tube from bright light. Intelligent TTL sensor measures the illumination level directly on photocathode surface and shuts off power faster and more reliably than the autogating mechanism of many other expensive image intensifier tubes.



With 1x lens



Rear view



Attached to video camera

### SPECIFICATIONS

<b>Magnification</b>	1x	5x
<b>Focal length / F number</b>	25 mm / F1.4	100 mm / F1.7
<b>Field of view</b>	40°	10.5°
<b>Focus range</b>	3 m - infinity	
<b>Image intensifier tube</b>	18 mm, Gen. 2+ or Gen. 3, 45 – 72 lp/mm	
<b>Lens mount</b>	C-mount, 1" – 32 TPI	
<b>Eyepiece</b>		
<b>Focal length</b>	20 mm	
<b>Eye relief</b>	16 mm	
<b>Exit pupil</b>	7 mm	
<b>Diopter adjustment range</b>	-4 ... +4	
<b>Power supply</b>	1xAA or external power supply 3.5-15 V, 50 mA	
<b>Battery life at 20°C</b>	10 hours (5 hours with infrared illuminator)	
<b>Operational / Storage temperature range</b>	-40°C ... +55°C / -40°C ... +65°C	
<b>Relative humidity</b>	up to 98%	
<b>Dimensions</b>	104x70x45 mm	220x70x60 mm
<b>Weight with battery</b>	550 g	390 g
<b>Tripod socket</b>	standard 1/4", 20 TPI	



DN 482/483 is a modern multi-purpose night vision weapon scope built to fit the most demanding military specifications. Large quantities of DN 482/483 are in service in several militaries around the world. This scope is easy to service and maintain.

This model uses standard image intensifier tubes, available from leading American and European manufacturers. The body of the scope is made of lightweight composite materials.

Available with 4x and 6x objective lenses.



DN 482 - 4x



DN 482 - 6x



DN 482 on a sniper rifle



DN 482 on a AR-15 type rifle

### FEATURES:

- Long observation range
- Various weapon mounts are available (including European side mount)
- Shockproof, built for use with heavy recoil weapons
- Automatic brightness control
- Illuminated mil-dot reticle with adjustable brightness
- Reticle color (red or yellow) selection
- Long eye relief
- Accurate windage /elevation adjustment with audible clicks
- Lightweight reinforced plastic body
- Powerful infrared illuminator (optional)
- Camera/video adapter (optional)

### SPECIFICATIONS

Model	DN 482/483 4x	DN 482/483 6x
Magnification	3.7x	6.1x
Field of view	10°	6.25°
Objective lens, focal length / F number	100 mm / F 1.5	165 mm / F 2.0
Eye relief		45 mm
Dioptre correction		-4 ... +3
Image intensifier tube (IIT)	ANVIS type Gen. 2+ (DN 482) / Gen. 3 (DN 483)	
Battery	2xAA	
Battery life	Over 60 h	
Operating temperature range	-40°C ... +55°C	
Relative humidity	up to 98%	
Dimensions	265x85x75	355x110x91
Length w/o eye cup	220 mm	310 mm
Weight	0.83 kg	1.1 kg

The NVS 22 is a high-resolution night vision add-on attachment that represents the latest developments in tactical night vision weapon sight technology.

This unit mounts on the same MIL-STD-1913 rail (or its extension) in front of a daytime scope, thus eliminating a need for the boresight adjustment. With NVS 22 switching between day and night modes takes a few seconds and requires no tools.

Wide exit pupil makes this device compatible with most existing daytime riflescopes. NVS 22 has field of view wider than that of most daytime riflescopes, therefore the unit does not bring any additional limitations during nighttime aiming.

NVS 22 is designed without cathadioptric lens to ensure the brightest and sharpest image possible, still it is compact and lightweight. This advanced durable unit is irreplaceable for those, who need round the clock performance.

### FEATURES:

- Mounts in front of a daytime rifle scope on a Picatinny rail leaving boresight intact
- Brings no limitations to rifle scope's functionality
- Takes full advantage of fast optics combined with modern image intensification technology
- Optimized for sniper rifles
- Waterproof (IP 54)
- Equipped with internal focus adjustment mechanism
- Optional infrared illuminator



NVS 22 shown on a sniper rifle model

### SPECIFICATIONS

<b>Magnification</b>	1x
<b>Field of view</b>	8°
<b>Objective lens focal length / F number</b>	110 mm / F1.66
<b>Image intensifier tube</b>	18 mm, Gen. 2+ or Gen. 3
<b>IIT resolution</b>	45-64 lp/mm
<b>Magnification of day scope, recommended</b>	3-5x
<b>Magnification of day scope, maximum</b>	20x
<b>Battery</b>	2xAA
<b>Battery life</b>	60 h
<b>Operational temperature</b>	-50°C ... +55°C
<b>Relative humidity</b>	up to 98%
<b>Dimensions</b>	235x98x80 mm
<b>Weight</b>	0.870 kg



The world's first integrated day/night binoculars make round the clock observation possible: from bright sunny day through misty twilight to total darkness with one BDN 14x50.

True wide-angle fast lenses coupled with a high-quality image intensifier tube create an outstanding observational device. A turn of a lever switches BDN between day and night modes.

Ergonomic, lightweight, compact, weather and shockproof, BDN binoculars are the best of its kind.



#### SPECIFICATIONS

	Day	Night
<b>Magnification</b>	14x	5x
<b>Field of view</b>	4.7°	14.7°
<b>Objective lens</b>	50 mm	
<b>Dioptre adjustment</b>	±5	
<b>Image intensifier tube (IIT)</b>	Gen. 2+ or Gen. 3	
<b>Operating temperature range</b>	-40°C ... +55°C	
<b>Battery</b>	2xAA	
<b>Battery life</b>	65 h (without IR) or 18 h (with IR)	
<b>Dimensions</b>	235x168x74 mm	
<b>Weight</b>	1.5 kg	

A unique universal day / night riflescopes of DN 5 series feature two interchangeable eyepieces for day and night use. Replace daytime eyepiece with a night vision and the scope is ready for action, no re-zeroing or tools are required!

DN 510 features 3x-6x variable magnification, while DN 532 is offered with either 7x or 11x. With optional IR illuminator these scopes enable shooting in total darkness.

DN 532 night vision eyepiece can also be used as a stand alone 1x night vision monocular. With an add-on NVS Lens 3x the monocular turns into a 3x observation device.

Built-in windage and elevation adjustment mechanism, matte-black body finish and water resistant design make these scope indispensable when 24/7 operation ability is required.



**APPLICATIONS:**

- Night surveillance / Hunting
- Police / Law Enforcement
- Patrol / Search and Rescue

**FEATURES:**

- Interchangeable day / night eyepieces - keep rifle zeroed day and night
- Vision range is 400-1000 m and 100-250 m in total darkness (with optional IR illuminator)
- Night eyepiece also works as a standalone 1x monocular (or 3x with optional lens DN 532 only)
- Unique high-quality day/night optics (100 mm / F1.5 or 66 mm / F2.0)
- Wide field of view
- Wide range of focus adjustment
- Accurate internal windage / elevation adjustment knobs with tactile audible clicks and true 1/4 MoA step
- Water resistant
- Optional powerful IR illuminator (35, 75 or 200 mW)



DN 510 on a rifle

SPECIFICATIONS	DN 510	DN 532-7x	DN 532-11x
Objective focus length / F number	100 / F2.0	100 / F1.5	166 / F2.0
Magnification (day/night)	3.0x-6.0x / 3.7x-7.3x	7.0x / 3.7x	11.2x / 6.0x
Field of view(day/night)	10.0° - 5.2°	3.7° / 7.4°	2.3° / 4.6°
Objective lens diameter	50 mm	66 mm	83 mm
Eye relief	45 mm	60 mm	60 mm
Diopter adjustment		- 4 ... + 2	
Battery		1xCR123 Lithium	
Voltage		3 V	
Battery life minimum		40 h	
Length	340 mm	360 mm	440 mm
Weight (day/night)	0.97 kg / 1.10 kg	0.99 kg / 1.05 kg	1.17 kg / 1.23 kg
Operating temperature range		-40°C ... + 50°C	
Relative humidity		up to 98%	
Image intensifier tube			
Type	Gen. 2+, 18mm		Gen. 3, 18mm
Photosensitivity	550 µA/lm		1,200 µA/lm
Light gain	30,000x		35,000x
Resolution, min		45 lp/mm	



NVS 10MG is a unique integrated day/night weapon scope. User can switch between day and night modes, eliminating the need to carry separate night and day scopes. No re-zeroing is required when switching between day and night mode.

The scope fits various weapons, including machine guns, antitank guns, grenade launchers, etc. This scope features an adjustable lit ballistic reticle. The reticle can be changed (at the factory) to match the particular weapon/ammunition combination.

**FEATURES:**

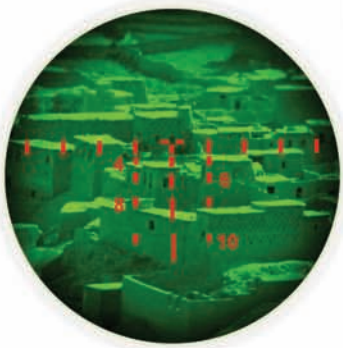
- Fits a variety of weapons, including M16, AK-47, Carl Gustaf Grenade Launcher, RPG, various machine guns
- Can be supplied with weaver mount (MIL-STD-1913), East Block side mount or a custom mount
- Accurate internal windage/elevation adjustment mechanism
- Lit ballistic reticle with adjustable brightness
- Automatic brightness protection

**ACCESSORIES:**

- Carrying case
- Manual
- Warranty card



NVS 10MG with East European side mount



Various ballistic reticles are available



NVS 10MG on Picatinny rail

**SPECIFICATIONS**

<b>Magnification</b>	4x
<b>Field of view</b>	9° (day) - 14°(night)
<b>Objective lens focal length / F number</b>	108 mm / F1.5
<b>Objective lens diameter</b>	72 mm
<b>Focus range</b>	50 m - infinity
<b>Eye relief</b>	50 mm
<b>Exit pupil diameter</b>	9 mm
<b>Windage/elevation adjustment range</b>	±34 MoA
<b>Windage/elevation step</b>	0.7 MoA
<b>Image intensifier tube</b>	18 mm, Gen. 2+ or 3
<b>Battery</b>	2xAA
<b>Battery life</b>	60 h
<b>Operation temperature range</b>	-55°C ... +55°C
<b>Storage temperature range</b>	-55°C ... +70°C
<b>Dimensions</b>	308x190x95 mm
<b>Weight</b>	1.8 kg

Give your night vision device a performance boost with an IR illuminator! These compact infrared "flashlights" provide illumination visible only through night vision devices.

A typical 1st generation night vision device with an illuminator outperforms 2nd or 3rd generation night vision devices used without one at a fraction of the cost. Night vision devices of 2nd or 3rd generation equipped with IR illuminator deliver a drastically improved observation distance and image resolution.

IR beam can be either focused for longer viewing distance or widened over an observation area.



IR 75 illuminator



IR 400 illuminator



IR 200 illuminator

**FEATURES:**

- Long illumination range
- Adjustable illumination angle
- Variable output power settings
- Shockproof water resistant body
- Standard batteries
- Can be installed on many night vision devices
- Compact
- Lightweight

**SPECIFICATIONS**

Models	IR 75	IR 200	IR 400
Emitter type	IR diode (eye safe)	IR laser (not eye safe)	IR laser (not eye safe)
Output power	75 mW	200 mW	400 mW
Wavelength	805 nm	820 nm	820 nm
Beam angle	5° - 20°	4° - 16°	1° - 15°
Power supply	3 V	3 V	6V
Battery	2x AA or 1xCR123	2x AA	2x CR123
Battery life	7 h	5 h	2 h
Tripod socket	1/4"	1/4"	-
Operating temperature range		-40°C ... +55°C	
Weight	132 g	110 g	200 g
Dimensions	120x40x25 mm	Ø22x200 mm	Ø40x165 mm

The unique infrared or visible laser light instruments of the LAM series provide an instant aiming dot for accurate firing. A sturdy waterproof metal body houses powerful long-range lasers. LAM 10M is an eye-safe aimer that reaches targets 200 meters away. LAM 10M 3A and LAM 2 IR use a more powerful non eye-safe laser that reaches targets as far as 2 kilometers away.

Both LAMs can be momentarily turned on/off with a remote membrane switch, which can be attached to a convenient place on a rifle with Velcro tape. Using momentary switch saves battery life and decreases the time the shooter is seen through night vision devices.

A simple reliable mechanism enables precise windage and elevation beam adjustment. Both Picatinny and barrel mounts are available.

LAM 2 IR provides the utility and operational effectiveness of aimer and variable spot scene illuminator combined in one compact device, that can be quickly mounted on a weapon.

Short range mode of LAM 2 IR is designed for force on force training. Mechanical safety block protects user from unintended switch into non-eye-safe long range mode.

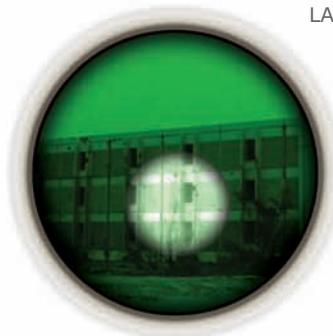
All models meet full military specifications. Compact but robust, precise and lightweight these aimers are the best choice for night missions.



LAM 2 IR



LAM 10M 3A



Illuminator



Laser aimer

**FEATURES:**

- Full mil specs
- Compact, lightweight
- Quick release mount (LAM 2 only)
- Windage/elevation adjustment mechanism
- Remote membrane switch
- 'Laser On' warning indicator

**ACCESSORIES:**

- Case
- Weapon mount (MIL-STD-1913)
- Allen keys (LAM 10M only)

SPECIFICATIONS	LAM 2 IR		LAM 10M	LAM 10M 3a
	Illuminator	Aimer		
Visibility distance	2,000 m	2,000 m	>200 m	>1000 m
Beam divergence	3-105 mrad	0.3 mrad	0.5 mrad	
Wavelength	850 nm	830-850 nm or 650 nm	830-850(IR) or 650 (visible)	
Spot size at 100 m	>10.5 m	30 mm	50 mm	
Eye-safety	Short range mode – eye-safe Long range mode – not eye-safe		Eye-safe	Not eye-safe
Windage/elevation adjustment range	±20 mrad		±20 mrad	
Adjustment step	50 mm/100 m (0.5 mrad)		50 mm/100 m (0.5 mrad)	
Adjustment accuracy after 1000 shots	0.5 mrad		0.1 mrad	
Adjustment accuracy after 100 install/remove operations	0.25 mrad		1.0 mrad	
Battery	CR123 Lithium		CR123 Lithium or AA	
Battery life, hours of continuous work	>10 h		>30 h	>10 h
Operating temperature range	-40°C ... +60°C		-40°C ... +60°C	
Dimensions	122x81x41 mm		113x45x32 mm	
Weight	0.300 kg		0.150 kg	

## TVS 7B THERMAL IMAGER

TVS 7B Highly sensitive compact thermal vision goggles enable seeing in darkness by transforming invisible infrared radiation into visible image.

Some of the tasks suitable for the instrument:

- Search and rescue
- Surveillance, counter-terrorist measures
- Hunting and animals observation
- Industrial research and process control
- Inspection of thermal insulations in residential and industrial buildings
- Inspection of high voltage transmission lines



This unit has black hot or white hot image polarity. Image may be transferred to an external monitor via circular connector.

TVS 7B detects extremely small differences in temperature, so that user can distinguish people from their immediate surroundings. Unlike night vision devices the thermo vision units operate 24 hours a day, in daytime and at night, even in total darkness of enclosed space. Thermo vision scope enables aiming seeing through smoke or fog.

Modern uncooled bolometer array and electronic signal processing enables detecting temperature difference below 0.1°K.

SPECIFICATIONS	
Objective lens diameter	25 mm
Focal length	25 mm
Field of view	11x8 degrees
FOV	19 m x14 m @ 100m
Magnification	1.7x or 3.4x (digital)
Lens type	Germanium
Detection range, human	475 m
Detection range, car	900 m
Detector	Amorphous silicon
Sensor	Uncooled Microbolometer
Display resolution	640x480
Output resolution, format	640x480, NTSC
Thermal sensitivity	<100 mk
Spectral Response	7-14 um
Operating time on one set of batteries	up to 5 hours
Water resistant	Yes
Battery	Lithium or rechargeable CR123 or external
Dimensions	157x60x78 mm
Weight	450 g





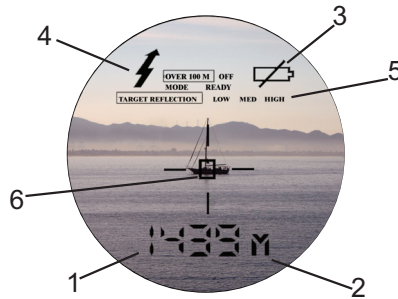
Laser Rangefinder Monocular series comprises three models suitable for a wide range of tasks from golfing to amateur hunting.

These systems provide instant distance and speed (SPD modification) measurements consistently and accurately. Optical channel provides sharp, clear image under all conditions.

All devices use the same ergonomic lightweight body with rubberized grip.



LRM 1500



LRM 1500SPY

**FEATURES:**

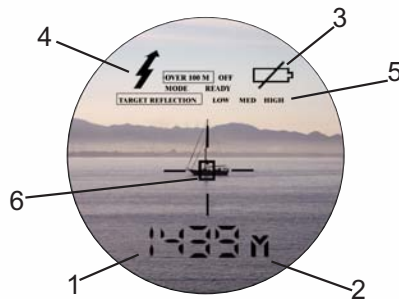
- 1 - Measurement result
- 2 - Units of measurement (yards, meters)
- 3 - Low battery indicator
- 4 - Indicator of active laser
- 5 - Target quality indicator
- 6 - Reticle (cross or rectangular selectable)

SPECIFICATIONS	LRM 1200	LRM 1500	LRM 1500 SPD / SPY
<b>Optics</b>			
Magnification	7x		
Objective lens diameter	25 mm		
Field of view	8°		
Laser Type	Class 1 eye-safe		
<b>Range Finder</b>			
Measuring range, m	20-1,200 m	20-1,500 m	20-1,500 m
Accuracy	± 1 m	± 1 m	± 1 m
Meters/Yards display	✓	✓	✓
Target quality indicator	✓	✓	-
Last 10 readings recall	✓	✓	✓
Reticle shape selection (+ or □)	✓	✓	✓
Automatic rain mode	✓	✓	✓
'Best Target' measurement	✓	✓	✓
Optional speed detector	-	-	✓
<b>Miscellaneous</b>			
Battery	9 V		
Tripod socket	✓		
Weight without battery	420 g		
Dimensions	120x122x60 mm		

## LRB 7X50 CLOSE RANGE LRF BINOCULARS

LRB 7x50 laser rangefinder binoculars equipped with powerful eye-safe laser and FMC optics enable ranging targets up to a distance of 1,500 meters while providing a sharp clear image. A single advanced unit combines features of two optical devices in one ergonomic rubberised body.

Compact, lightweight and waterproof, LRB 7x50 binoculars measure distance in meters and yards, keep last 10 measurements in memory, feature target quality indicator and a variable reticle shape.



### FEATURES:

- 1 - Result of measurement
- 2 - Units of measurement (yards, meters)
- 3 - Low battery indicator
- 4 - Indicator of active laser
- 5 - Target quality indicator
- 6 - Reticle (cross or rectangular selectable)

### SPECIFICATIONS

#### Optics

Magnification	7x
Objective lens diameter	50 mm
Exit pupil diameter	7 mm
Eye relief	25 mm
Field of view	5°
Interpupillary distance	58-72 mm
Diopter adjustment range	± 4
Rangefinder laser type	Eye safe 905nm
Measuring range	20-1,500 m
Accuracy	±1 m
Resolution	1 m
Measurement time	<1 sec
Meters/Yards display	✓
Last 10 readings recall	✓
Reticle shape selection (+ or □)	✓
Target quality indicator	✓
Automatic rain mode	✓
'Best Target' measurement	✓
Miscellaneous	
Battery	Standard 9V
Battery capacity	>2,500 shots
Low battery indicator	✓
Rubber armour	✓
Water resistant design	✓
Tripod socket	1/4"
Dimensions	210x150x80 mm
Weight	1.3 kg



Medium range laser rangefinder monocular family comprises four models: three of them use unified ergonomic lightweight black body with rubberized grip, while LRM 2000PRC uses the same body, but of camouflage colour. The models, identical in optics, deliver their outstanding features via advanced data processing algorithms implemented in electronics. All models measure distance to terrain features and still objects as well as speed of moving vehicles. Results can be displayed either in kilometers or in miles.

Additionally:

- LRM 2000PRO/2000PRC features a consumer-quality digital compass.
- LRM 2500/2500CI models enable immediate data acquisition through RS232 port, making them compatible with computers and various GPS receivers.
- Target selection and gating algorithm (LRM 2500/2500CI only) dramatically improves reliability of measurement in unfavourable ranging conditions (rain, snow, bushes, wires, etc.)
- With a built-in high-quality digital compass and inclinometer LRM 2500CI instantly measures height, azimuth, and elevation.



LRM 2000PRC

**FEATURES:**

- 1 - Measurement result
- 2 - Units of measurement (yards, meters, km/h, mph, Mills, Degrees)
- 3 - Low battery indicator
- 4 - Indicator of active laser
- 5 - Target quality indicator
- 6 - Reticle (cross or rectangular selectable)



SPECIFICATIONS	LRM 2000PRO (PRC)	LRM 2500	LRM 2500CI
<b>Optics</b>			
Magnification		7x	
Objective lens diameter		25 mm	
Field of view		8°	
<b>Range Finder</b>			
Laser Type	Eye safe 905 nm	Eye safe 905 nm	Eye safe 905 nm
Distance measurement range	20-2,000 m	20-2,500 m	20-2,500 m
Azimuth measurement range	360°	-	6,400 mils / 360°
Elevation measurement range	-	-	±60°
Distance accuracy	±1 m	± 1 m	±1 m
Azimuth accuracy	±1°	-	±1°
Elevation accuracy	-	-	±1°
Distance resolution	1 m	1 m	1 m
Distance measurement time	0.5 sec	0.5 sec	0.5 sec
Elevation measurement time	-	-	0.1 sec
First / Last logic	√	√	√
Gating capability	-	100-2,500 m	100-2,500 m
Gating step	-	100 m	100 m
Meters/Yards display	√	√	√
Computer output	-	RS232	RS232
Last 10 readings recall	√	√	√
Reticle shape selection (+ or □)	√	√	√
Target quality indicator	√	√	√
Scan mode	√	√	√
Speed detector	√	√	√
<b>Miscellaneous</b>			
Battery		9V Lithium non-magnetic	
Low battery indicator		√	
Tripod socket		√	
Weight without battery		420 g	
Dimensions		120x122x60 mm	

## LRB 3000PRO / LRB 4000CI

Medium range laser rangefinder binoculars LRB 3000PRO and LRB 4000CI incorporate the latest achievements in optonics, laser technology and electronics in their design. These binoculars combine uncompromised optics with advanced data processing algorithms. Both models instantly measure distance and speed using the highly accurate time-of-flight delay method.

LRB 3000PRO measures azimuth with built-in consumer-quality digital compass. An advanced digital compass with inclinometer built into LRB 4000CI enables accurate height, azimuth, and elevation measurement.

LRB 4000CI also features RS-232 interface, that enables immediate data acquisition by computers or various GPS receivers. Gating algorithm implemented in LRB 4000CI dramatically improves reliability of measurement in unfavourable measurement conditions (rain, snow, bushes, wires, etc.)

Low power consumption (one battery lasts for over 5000 shots!), ergonomic rubber-armoured body, long eye relief, simple two-button operation, and wide objective lens make observation and distance measurement with these binoculars accurate and comfortable.



LRB 4000CI



LRB 3000PRO



SPECIFICATIONS	LRB 3000PRO	LRB 4000CI
Magnification	7x	7x
Objective lens	40 mm	50 mm
Exit pupil diameter	5.7 mm	7 mm
Eye relief	20 mm	25 mm
Field of view	6°	5°
Interpupillary distance	60-70 mm	58-72 mm
Diopter adjustment range	±4	±4
Laser type	Eye safe 905 nm	Eye safe 905 nm
Distance measurement range	20-3,000 m	20-4,000 m
Azimuth measurement range	6,400 mils / 360°	6,400 mils / 360°
Elevation measurement range	-	±60°
Distance measurement accuracy	±1 m	±1 m
Azimuth measurement accuracy	±1°	±1°
Elevation measurement accuracy	-	±1°
Range measurement time	0.5 sec	0.5 sec
Elevation measurement rate	-	0.5 sec
First / Last logic	√	√
Gating capability	-	100-4,000 m
Gating step	-	100 m
Meters/Yards display	√	√
Computer output	-	RS232
Last 10 readings recall	√	√
Reticle shape selection (+ or □)	√	√
Target quality indicator	√	√
Scan mode	√	√
Speed detector	√	√
Battery	9V Lithium non-magnetic	9V Lithium non-magnetic
Battery capacity, shots	>5,000	>5,000
Low Battery indicator	√	√
Rubber armour	√	√
Waterproof construction	√	√
Protection against non eye-safe lasers	√	√
Tripod socket	1/4"	1/4"
Dimensions	158x145x69 mm	210x150x80 mm
Weight	0.970 kg	1.300 kg

LRB 20000A Long Range LRF is a professional bi-ocular laser rangefinder designed for ground surveillance, target observation and distance measurement up to 20 km.

This rangefinder employs proven time-of-flight delay algorithm to ensure the highest accuracy and a single strong impulse to minimise exposure time.

With an optional angular mount it can also measure horizontal angles and magnetic azimuth, and vertical angles. Result of distance measurement is displayed through the eyepiece and can be transferred for processing via computer output. Unit has a remote control button.

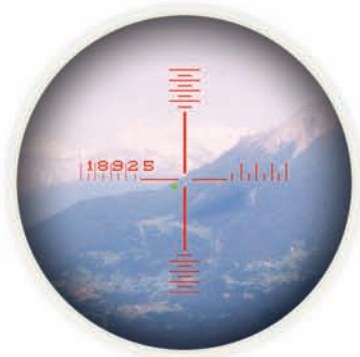
This robust rangefinder can benefit geological and engineering surveying, construction and repair works, maritime navigation, meteorology, and other activities that require accurate long range distance measuring.

## FEATURES:

- Distance measurement up to 20 km
- First or last target selection
- Illumination for dark conditions
- Parallel port



Rear view



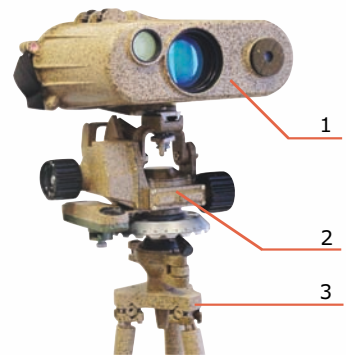
## ACCESSORIES:

- Framed lens
- Eye shield
- Coordinate converter
- Cables
- Rechargeable battery
- Software
- Special tools and spare parts
- Tripod (optional)
- Angular mount (optional)



## SPECIFICATIONS:

Magnification	7x
Field of view	7°
Distance measurement range	100-20,000 m
Range measurement accuracy	±5 m
Dioptr correction, visual channel	± 5
Dioptr correction, LED display	-0.6 ... -1.5
Laser wavelength	1060 nm
Pulse power	15 mJ
Minimum eye safe distance	2,000 m
Pulse width	6 ns
Beam divergence	0.6 mrad
Power supply	12-14.5V DC or 22-29V DC
Operating temperature range	-40 ... +55°C
Dimensions	225x215x110 mm
Weight, rangefinder only	2.5 kg
Weight, with case and accessories	17 kg



- 1 - Rangefinder
- 2 - Angular mount
- 3 - Tripod

## LRB 21 K / LRB 25000 LONG RANGE LRF

LRB 21K and LRB 25000 are long range binocular laser rangefinders capable of measuring distance up to 21 km or 25 km accordingly utilizing time-of-flight delay algorithm and a single-pulse laser technology. The binoculars operate on 1540 nanometer lasers and are Class 1 eye-safe.

Result of measurement is displayed through the eyepiece and can be transferred for processing via computer port (RS232). LRBs have can be remotely activated and operated. These instruments have comprehensive digital display and variable range settings.

Compact and lightweight, designed to withstand to withstand wide range of environmental conditions, these binoculars are beneficial for topography, geodesy, marine navigation, highway and power line construction, airborne altimetry and location, meteorology and other professional activities.

### FEATURES:

- First/Last target selection
- High fog/smoke penetration
- Invisible to night vision devices



LRB 25000



LRB 25000 with NVS 14 night vision monocular attached



LRB 21 K

### SPECIFICATIONS:

	LRB 21K	LRB 25 000
<b>Laser Type</b>	Erbium Glass	Erbium Glass
<b>Wavelength</b>	1.54 mkm	1.54 mkm
<b>Pulse energy</b>	5-8 mJ	5-8 mJ
<b>Pulse duration at ½ width</b>	~25 ns	~30 ns
<b>Photo detector type</b>	Ge Avalanche	Ge Avalanche
<b>Measuring range</b>	50-21,000 m	60-25,000 m
<b>Accuracy</b>	± 2.5 m	± 5 m
<b>Gating range</b>	50-4,000 m	60-4,500 m
<b>Gating accuracy</b>	25 m	20 m
<b>Laser beam divergence (at 80% of power level)</b>	1.0 mrad	1.0 mrad
<b>Pulse repetition rate</b>	0.15 Hz	0.15 Hz
<b>Dioptr adjustment</b>	± 4	± 4
<b>Magnification</b>	7x	7.5x
<b>Field of view</b>	7.5°	5.5°
<b>Visual channel objective lens aperture</b>	50 mm	43 mm
<b>Operating temperature range</b>	-30°C ... +60°C	-30°C ... +60°C
<b>Protective filter against non eye-safe lasers</b>	Optional	Optional
<b>Tripod socket ¼"</b>	Optional	Optional
<b>Interface</b>	RS 232	RS 232
<b>Power supply</b>	DC 12V / NiCd battery	DC 12V / NiCd battery
<b>Dimensions</b>	200x210x90 mm	220x200x90 mm
<b>Weight</b>	1.95 kg	1.9 kg



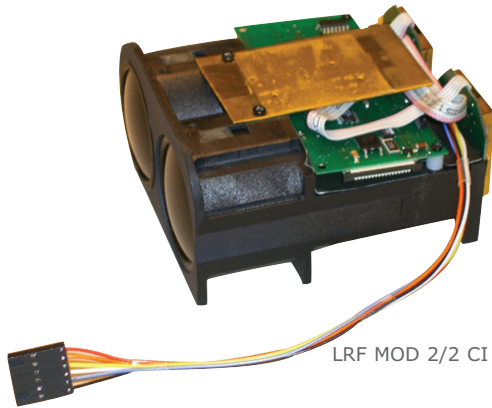
The LRF Modules use the same electronics and optics as rangefinder monoculars and binoculars. These modules can add various range finding capabilities to bigger systems: distance measurement (all modules), azimuth, elevation, and height measurement (CI modification), speed (MOD2 and MOD4CI). All modules support RS232 interface.

The modules have a built-in computer interface, which enables immediate data acquisition by any system with standard serial interface as well as remote operation.

Depending on exact model, customer has a choice of various incorporated features, including, but not limited to gating capability, fast scan mode, speed measurement, object selection and more.

Typically a rangefinder module becomes a part of:

- Thermal imagers
- Day/night surveillance systems
- Airborne optical systems



LRF MOD 2/2 CI



LRF MOD 4CI

SPECIFICATIONS:	LRF MOD 2/2 CI	LRF MOD 4/4CI
Laser type	905 nm, eye-safe	
Measurement range	16m - 2,500m	16m - 4,000m
Distance measurement accuracy	±1 m	
Azimuth measurement range	6,400 mils/ 360°	
Elevation measurement range	±60°	
Azimuth measurement accuracy	±1°	
Elevation measurement accuracy	±1°	
Distance resolution	1 m	
Pulse repetition rate	200 Hz	
Pulse energy	0.03 mJ	
Measurement time	0.5 s	
Beam divergence	2.5 mrad	1 mrad
Power source	9V DC	
First / Last target logic	+	+
Gating capability	+	+
Interface	RS232	RS232
Dimensions with eyepieces	-	230x160x82 mm
Dimensions without eyepieces	92x86x48 mm	180x160x82 mm
Weight	0.17 kg	0.955 kg

## STABILIZED BINOCULARS SIB 20X50M

The newest SIB 20X50M brings stabilizing technology one step further. This unique optical instrument utilizes a revolutionary patented mechanical system (no batteries!) to stabilize an image. The improved stabilization mechanism increases recognition range by five times.

SIB 20X50M is the only model in the world that provides resolution of three angular seconds in stabilization mode. Weight and size put these binoculars above competition. An observer can use SIB 20x50M at any moving or vibrating platforms such as an aircraft, a land or marine vehicle.

### FEATURES:

- Stabilized image
- Rigid construction
- Weather proof
- Surveillance under any motion condition
- No batteries required
- Wide angle image



SPECIFICATIONS	Newcon SIB 20x50M	CANON 15x50 IS*	FUJINON S-1640*
Magnification	20x	15x	16x
Objective lens diameter	50 mm	50 mm	40 mm
Eye relief	11 mm	15 mm	12 mm
Field of view	3.2°	4.5°	3.4°
Apparent field of view	66°	67.5°	54.4°
Resolution in the center	2.8'	5.3'	10'
Stabilization system	Mechanical	Electronic	Mechanical-Gyro
Delay for stabilization start	0	0	1 minute
Batteries	Not required	2xAA	4xAA or 12CR5
Cold temperature operations	YES	Problematic	Problematic
Compensation angle	± 5°	± 0.7°	± 5°
Mean time before failure	50,000 h	3,000 h	2,000 h
Dimensions	217x158x59 mm	185x141x73 mm	200x210x96 mm
Weight	1.25 kg	1.25 kg	1.9 kg

\* Data for comparison only, product is not for sale.





Gyro Stabilized Binoculars incorporate gyroscopic image stabilization technology that enables user to observe distant objects from moving platforms without image resolution degradation caused by mechanical vibration or natural hand tremour.

Combining fully coated optics with high-speed gyro stabilizing system SIB 16x40WP binoculars are the ultimate instruments for long-range observation, tracking and surveillance.



SIB 16x40 WP

### FEATURES:

- Wide angle image
- Stabilized image
- Rigid construction
- Weatherproof
- Surveillance under any motion condition
- Alternative external power supply

### ACCESSORIES:

- Carrying case
- Strap
- Amber filters (optional)
- DC power regulator
- Night vision eyepiece (optional)
- Warranty card
- Manual

SPECIFICATIONS	Newcon SIB 16x40 WP
<b>Magnification</b>	<b>16x</b>
<b>Angular field of view</b>	<b>3.4°</b>
<b>Minimum focus</b>	<b>30 m</b>
<b>Interpupillary adjustment</b>	<b>58 mm - 72 mm</b>
<b>Battery</b>	<b>6xAA or 12V DC</b>
<b>Angular velocity of panning in any direction</b>	<b>0 - 6 degree/sec</b>
<b>Stabilization range</b>	<b>±5°</b>
<b>Operating temperature range</b>	<b>-30 ... +55°C</b>
<b>Relative humidity (at +25°C)</b>	<b>up to 100%</b>
<b>Dimensions</b>	<b>230x190x120 mm</b>
<b>Weight (w/o batteries)</b>	<b>2.40 kg</b>

AN series of binoculars, incorporating BAK-4 roof prisms and multi-coated lenses, delivers impressive light transmission and resolution for brilliantly clear vision.

Non-slip UV-resistant rubber armouring makes these binoculars comfortable to manipulate even in cold weather. They are waterproof and shockproof, feature military reticle and compass (AN 7x50 MC only) and adhere to the latest military standards.

Light and compact, these binoculars stand in line with the most modern warfare equipment.



AN 7x50MC  
with compass



AN 8x30



**FEATURES:**

- Lightweight
- Nitrogen filled
- Long eye relief and large eye piece
- Rangefinder reticle
- Individual focusing or center focusing
- Illuminated compass (AN 7x50 MC only)

**ACCESSORIES:**

- Case
- Straps
- Manual
- Warranty card
- Lens cleaning cloth

SPECIFICATIONS	AN 8x30	AN 7x50 MC
Magnification	8x	7x
Objective lens diameter	30 mm	50 mm
Prisms	BAK4	BAK4
Coating	FMC	FMC
Field of view	7.5°	7.5°
Apparent field of view	60°	52.5°
F.O.V. @1000 m	141 m	132 m
F.O.V. @1000 yd	423 ft	396 ft
Exit pupil diameter	3.8 mm	7.14 mm
Brightness index	13	51
Interpupillary adjustment distance	56-74 mm	56-74 mm
Eye relief	17 mm	23 mm
Focus	3 m - infinity	5 m - infinity
Waterproof	Yes	Yes
Shockproof	Yes	Yes
Drop test, height	1.8 m	1.8 m
M22 Reticle	Yes	Yes
Illuminated compass	No	Yes
Operating temperature range	-40°C ... +70°C	-40°C ... +70°C
Dimensions	160x48x123 mm	209x157x85 mm
Weight	0.560 kg	1.150 kg



The best optical technologies implemented in these binoculars provide an impressive light transmission and resolution thus delivering brilliantly clear vision. They are waterproof and shockproof, meeting all applicable military standards. Binoculars are nitrogen filled and hermetically sealed to secure instant fog-free observation even when moved from warm to cold environment.

Light and compact, they are perfectly comparable with the most modern warfare equipment.

**FEATURES:**

- Lightweight metal body with rubber armour for sure grip and great durability
- Specially designed shockproof prism system
- Fully broadband multi-layer coating optics
- The image is flat fielded, distortion free, and equally sharp from center to edge
- Long eye relief
- Nitrogen filled



AN 7x50 M22



AN 10x50 M22



**ACCESSORIES:**

- Case
- Straps
- Manual
- Warranty card
- Lens cleaning cloth

SPECIFICATIONS	AN 7x50 M22	AN 10x50 M22
<b>Magnification</b>	7x	10x
<b>Objective lens diameter</b>	50 mm	50 mm
<b>Prisms</b>	BAK4	BAK4
<b>Optics coating</b>	FMC	FMC
<b>Field of view</b>	7.5°	6.5°
<b>Apparent field of view</b>	53°	65°
<b>F.O.V. @1000 m</b>	131 m	114 m
<b>F.O.V. @1000 yd</b>	393 ft	341 ft
<b>Exit pupil diameter</b>	7.14 mm	5 mm
<b>Brightness index</b>	51	25
<b>Interpupillary adjustment distance</b>	56-74 mm	56-74 mm
<b>Eye relief</b>	23 mm	18.5 mm
<b>Focus</b>	5 m - infinity	6 m - infinity
<b>Waterproof</b>	Yes	Yes
<b>Shockproof</b>	Yes	Yes
<b>Drop test, height</b>	1.8 m	1.8 m
<b>M22 reticle</b>	Yes	Yes
<b>Operating temperature range</b>	-40°C ... +70°C	-40°C ... +70°C
<b>Dimensions</b>	204x203x75 mm	210x186x75 mm
<b>Weight</b>	1.150 kg	1.550 kg



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