



Sights, Spotting Scopes, Night-Vision and Fire Control Systems

The **new** Sensor House

HENSOLDT
Detect and Protect.



Clear view, day and night

Observe, identify and finally aim: Snipers have tough calls to make, and the great distances to targets do not make these decisions any easier. These marksmen must remain motionless despite all the discomforts and often challenging weather that can turn a mission into a nerve-racking trial of endurance. Their concentration may never wane and they must always gather as much intelligence as they can through unflagging observation. Anything that wins time and helps collect information is good for the mission. The earlier a threat can be identified, the more options are available to address it.

Security forces today save lives, rescue hostages and conduct surveillance from afar. Police or military, all these units need visors and observation instruments of the highest optical and optronic quality to do their duty. Observing, identifying and making good decisions at a moment's notice are no easy tasks. The Hensoldt Line offers the perfect kit to get the job done for every mission posture. Equipped with visors, modular night-vision attachments and telescopic sights, snipers, infantrymen, forward observers and special forces can focus on what matters most – their mission.



Fully focused on the target

The Hensoldt Line offers visors and optics for short-, medium- and long-range observation and targeting. Our scopes support parallax correction and offer the marksman variable magnification settings. The brightness of cross-hairs are adjustable to suit the given light, thereby enabling the marksman to aim accurately regardless of the light conditions. The 6-24x72 SAM model even factors environmental parameters such as temperature and air pressure into the equation, and automatically calculates the ballistic compensation in terms of elevation and skew. This frees the marksman to focus fully on his mission.

Turning night into day

We offer two options for night-time observation, acquisition and aiming, one being residual image intensifiers and the other thermal imaging devices. Both offer the user specific advantages. Devices based on residual light intensification enable direct target identification. Cosmetic camouflage does little to deter thermal imaging devices so that they may be used to good advantage even during the day. The system's modular design permits night-vision add-ons to be attached and removed without requiring further adjustment or bore-sighting. With these assets, the marksman is ready for every situation.

Our product lines

- **Sights, Spotting Scopes and Night-Vision**
 - Telescopic sights/targeting optics 4
 - Observation optics 12
 - Night-vision attachments 16
 - Fire Control Systems 34
- **Airborne Optronics**
- **Maritime Optronics**
- **Surveillance Optronics**
- **Vehicle Optronics**
- **High-Performance Optics**



Telescopic sights / targeting optics



Hensoldt furnishes the right gear for every mission: long, intermediate or short range. All devices stem from the same reliable source, thus guaranteeing full modularity. Offering all the convenience of truly ergonomic design, these robust products deliver outstanding optical performance whatever the conditions may be.

Parallax compensation

Telescopic sights without parallax compensation are configured so that an object at a predefined distance – say 100 m – is exactly imaged in the reticle plane. Objects at other ranges appear either in front of or behind the reticle. This can result in parallax errors in conventional scopes. In contrast our telescopic sights provide parallax correction from 50m to ∞ .

Reticle illumination

The reticle is equipped with infinitely adjustable illumination, so targets can be acquired even at twilight.

First or second focal plane

If the reticle is in the first focal plane, its size changes in sync with the magnification. This makes it very easy to determine the range without having to recalculate. The size of a reticle in the second focal plane does not change when the magnification is adjusted.

The subtension of the reticle changes with the scale of the set magnification.

3–12x56 Long range

When using a telescopic sight with a night-vision attachment, every centimetre counts depending on the assembly options on the weapon. Therefore, our objective during development of the 3–12x56 telescopic sight was to deliver maximum performance while maintaining a short optical system.

In addition to a compact design, the adjustment range of the elevation turret also sets new standards. The 3–12x56, for example, provides an adjustment range of 400 cm at 100 m.

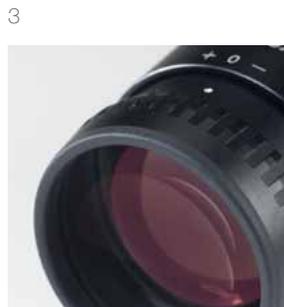
Main features & benefits

- Very compact design
- High adjustment ranges
- Reticles in the first or second focal plane
- Reticle in accordance with customer needs

1 Colored index lines and numeric values for easy orientation

2 Recognisable and noticeable magnification adjustment

3 Brilliant image quality throughout the adjustment range



4–16x56 FF LT Long range

In addition to high optical performance, the tactical possibilities for mission forces are decisive.

We addressed this aspect while reworking our 4–16x56 FF (LT variance still available). The redesigned turrets are self-locking, i.e. unintentional adjustment of the reticle is not possible.

The elevation turret provides ballistic compensation of 14.5 mrad (145 clicks) in one revolution.

Due to a total adjustment range of 22 mrad the user has sufficient reserves for zeroing. Users can specify themselves if the turret stops at 0 or at 5, for example.

The short design and optical quality were not compromised.

Main features & benefits

- Magnification: 4–16x
- Elevation clicks: 145 – single turn
- Overall length: 334 mm
- Special features: locking turrets, zero-stop



1



2



3



3.5–26x56 FF

Long range

Our newly developed 3.5–26x56 is a unique all-rounder among telescopic sights. With its large magnification range (3.5 – 26x), it can be used for both short and long ranges.

The enormous adjustment ranges, which also enable ballistic compensation at maximum range, are unique. The elevation turret provides 36 mrad (360 clicks) over two noticeable rotations.

To simplify use in all climate zones, the turret does not stop at 0, but continues to -5, resulting in a total of 365 clicks!

The length of the system is particularly important for the use of night-vision devices, an area where this telescopic sight is in a class of its own. At 37 cm, it is only minimally longer than our 4–16x56 telescopic sights.

Main features & benefits

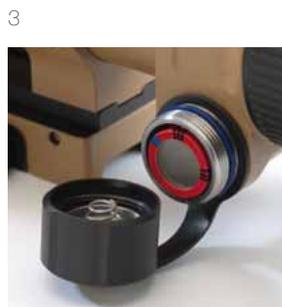
- Extended magnification range
- Extremely high adjustment range
- Short and ultra-compact design

1 Double turn turret with 180 clicks per revolution



3 Compact powerful design optimised for night-vision devices. CR-123 powered reticle illumination for all temperatures

2 High-performance fluoride lenses for optical clarity



6-24x72

Long range

The lens diameter considerably influences the optical capabilities of a telescopic sight. With increasing magnification, the brightness of the scene diminishes. This factor plays a key role in the military, in particular, where long ranges are common. Under adverse weather conditions such as precipitation, twilight and haze, high magnification often leads to unwanted results.

Therefore, we have limited our 6x to 24x telescopic sights to a magnification range that is both beneficial and noticeable to the user and combined it with a 72 mm lens.

Our 6-24x72 is the right telescopic sight when extremely precise adjustability and very high magnification are required.

Main features & benefits

- Extended magnification range
- 2nd focal plane reticle
- 72 mm lens diameter for maximum light intensity

1 When more precision is needed - click resolution of 0.05 mrad allows very precise adjustment of the target line on our 6-24x56



2 The high-speed, 72 mm lens increases the twilight factor by 13 percent over the 56 mm model

3 Specifications such as the reticle or a customized finish are tailored to customer demands

1



2



3



Technical data

Long range

Optical data	3–12x56	3–12x56 FF	3.5–26x56	4–16x56
Magnification (M)	3x – 12x	3x – 12x	3.5x – 26x	4x – 16x
Exit pupil Ø in mm	14.9 to 4.6	14.9 to 4.6	9.6 to 2.2	14.0 to 3.5
Field of view (at 1000m)	120m to 34m	117m to 34m	100.9m to 13.8m	90m to 25m
Diopter adjustment	–2.5 to +2 dptr			
Transmission in %	approx. 92			
Elevation/azimuth click stops in mrad	0.1 (1cm/100m)			
Max. elevation adjustment range in cm/100m	400	300	400	300
Max. azimuth adjustment range in cm/100m	±50	±50	±100	±50
Parallax compensation in m	50 to ∞			
Reticle	2 nd focal plane	1 st focal plane	1 st focal plane	2 nd focal plane
Dimensions, weight				
Length/width/height in mm (depending on configuration)	325/94/77	325/94/77	370/95/85	334/94/77
Ring diameter (assembly) in mm	34	34	36	34
Weight in g	800	800	1300	900
Electrical data				
Reticle illumination	Red			
Automatic reticle illumination shutoff	After 3 hours (adjustable according to customer needs)			
Low battery display	Optical, illuminated reticle pulses after it is turned on			
Power supply	3V CR 2032 to –20°C button cell; alternatively: 3V BR 2032 to –40°C; 3V, on 3.5 – 26 x 56: CR 123A			
Ambient conditions				
Environmental test	MIL-STD-810G, DIN ISO 9022 (excerpt)			

Technical data

Long range

Optical data	4 – 16x56 FF LT	6 – 24x56	6 – 24x72
Magnification (M)	4x – 16x	6x – 24x	6x – 24x
Exit pupil Ø in mm	13.4 to 3.5	9.3 to 2.3	12.0 to 3.0
Field of view (at 1000m)	87 m to 25 m	61 m to 17 m	61 m to 17 m
Diopter adjustment	–2.5 to +2 dptr		
Transmission in %	approx. 92	≥88	approx. 90
Elevation/azimuth click stops in mrad	0.1 (1 cm/100 m)	0.05 (0.5 cm/100 m)	0.1 (1 cm/100 m)
Max. elevation adjustment range in cm/100 m	224	160	200
Max. azimuth adjustment range in cm/100 m	±50	±50	±35
Parallax compensation in m	50 to ∞		
Reticle	1 st focal plane	2 nd focal plane	2 nd focal plane
Dimensions, weight			
Length/width/height in mm (depending on configuration)	334/104/86	385/94/78	380/94/94
Ring diameter (assembly) in mm	34	30	34
Weight in g	900	850	1100
Electrical data			
Reticle illumination	Red		
Automatic reticle illumination shutoff	After 3 hours (adjustable according to customer needs)		
Low battery display	Optical, illuminated reticle pulses after it is turned on		
Power supply	3V CR 2032 to –20°C button cell; alternatively: 3V BR 2032 to –40°C; on 6 – 24 x 72 SAM additionally 2x CR123		
Ambient conditions			
Environmental test	MIL-STD-810G, DIN ISO 9022 (excerpt)		

Targeting optics

4 x 30i

Intermediate range

4x30i targeting optics deliver excellent optical performance, particularly in adverse visibility conditions. The twilight performance is extraordinary for targeting optics: With an exit pupil of 7.5 mm, the 4x30i is particularly well-suited for the twilight and practically optimised for the human eye.

This benefit now carries over to the use of a night-vision attachment. Combined with our NSV 600, in particular, users can now take advantage of the large field of view of 140m at 1000m even at night. Riflemen maintain an overview despite the 4x

magnification.

Optimised adjustment of the eye relief, pupil diameter and field of view with maximum edge definition make the 4x30i targeting optics a superior targeting instrument for intermediate ranges.

Available as 4x30 with and without reticle illumination. Also available as 4x30rd with illuminated red dot.

Main features & benefits

- 4x magnification with a very large field of view
- Eye relief: 6.5 cm
- Reticle illumination powered by 1 AA battery (1.2 – 3.5 V)

2 Integrated Picatinny rail to attach additional equipment

1 Internal adjustment to minimise the risk of unintended adjustments caused by jolts or removal of the targeting optics



3 Recommended – reticle with projected ballistics

Multiple mounting options and battery positions



Targeting optics

6x36i

Intermediate range

As an enhancement of our 4x30, the 6x36 is our approach to the current demand for increased assertiveness at middle ranges.

We want to offer a more economical alternative to a traditional telescopic sight that does not require additional training. Therefore, this optical device is as easy to use as the 4x30.

Under the aspect of higher magnification (6x) and thus longer ranges, we have only made minor modifications to these optics. The field of view of 5.3° (93m/1000m) is very comfortable and enables a good overview.

In line with tactical requirements, the 6x36 also sits very low on the weapon. It is also possible to use a red dot sight on the CQB rail.

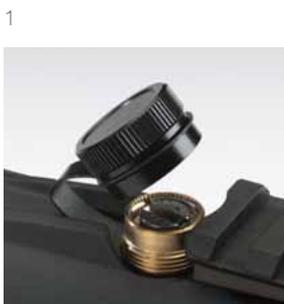
Main features & benefits

- Very compact 6x optics
- Illuminated reticle
- Field of view 5.3° (93m/1000m)
- Powered by 1 AA battery (1.2 – 3.5 V)

1 Precise 0.1 mrad internal adjustments

2 Integrated Picatinny rail to attach additional equipment

3 Low profile optical sight



Targeting optics

Technical data

Intermediate range

Optical data		4 x 30i / 4 x 30
Magnification (M)		4x
Lens diameter in mm		30
Exit pupil Ø in mm		7.5
Eye relief (mm)		65
Field of view (at 1000 m)		8°/140 m
Diopter adjustment		Fixed (-0,5 dptr)
Transmission in %		>80
Elevation/azimuth click stops in mrad		0.2 (2 cm/100 m)
Max. elevation adjustment range in cm/100 m		±100
Max. azimuth adjustment range in cm/100 m		±100
Reticle		Customised
Dimensions, weight		
Length/width/height in mm		4 x 30i: 139/65/76.5 4 x 30: 139/57/67.5
Weight in g		4 x 30i: 600 with battery + mount 4 x 30: 465 with mount
Interface		MIL STD 1913 rail
Ambient conditions		
Environment test		(MIL-STD 1913) MIL-STD-810G, DIN ISO 9022 (excerpt)

Targeting optics

Technical data

Intermediate range

Optical data		6x36i
Magnification (M)		6x
Lens diameter in mm		36
Exit pupil Ø in mm		6
Eye relief (mm)		65
Field of view (at 1000 m)		5.3°/93 m
Diopter adjustment		Fixed (-0,5 dptr)
Transmission in %		>80
Elevation/azimuth click stops in mrad		0.1 (1 cm/ 100 m)
Max. elevation adjustment range in cm/100 m		±70
Max. azimuth adjustment range in cm/100 m		±70
Reticle		Customised
Dimensions, weight		
Length/width/height in mm		180/67/76.5
Weight in g		697 with battery + mount
Interface		MIL STD 1913 rail
Ambient conditions		
Environment test		(MIL-STD 1913) MIL-STD-810G, DIN ISO 9022 (excerpt)

Targeting optics

RSA-S Reflex sight

Short range

The RSA-S a compact collimator sight, is ideal for fast reaction and close quarters combat. Precision optics and state-of-the-art electronics enable fast target acquisition in all situations.

Reliable engagement up to 200m can be easily achieved. The RSA-S reflex sight is watertight and extremely resistant to jolts and vibrations. It is designed for two-eye operation, which allows very fast target acquisition.

With only 100g, the RSA-S is truly a lightweight instrument.

Main features & benefits

- Compact and lightweight
- Hybrid power supply
- One-button operation
- Continuously adjustable brightness of the illuminated dot

1 Hybrid power supply – the solar panel automatically switches to battery operation if there is insufficient light to power the sight



2 Light sensor – the brightness of the red dot adapts automatically to ambient light conditions, but can also be adjusted manually



Targeting optics

Technical data

Short range

Optical data	RSA-S
Magnification (M)	1
Field of view (at 1000 m)	
Eye relief in mm	unlimited
Elevation adjustment range in cm/ 100 m	120
Azimuth adjustment range in cm/ 100 m	120
Parallax compensation in m	Parallax-free
Interface	Fast clamping on Picatinny rail
Dimensions, weight	
Length in mm	63.5
Weight in g	100
Electrical data	
Power supply	3 V CR 2032 button cell or Solarcell
Ambient conditions	
Environmental test	MIL-STD-810G, DIN ISO 9022 (excerpt)

Targeting optics Accessories

Long, intermediate and short range

Polarising filter

Masks reflections from windows and water. Also improves green rendition because it partially suppresses blue reflections, from the sky for example.

Honeycomb filter

Reduces the light reflections on the lens of a telescopic sight. Honeycomb filters are available for 56 mm and 72 mm lenses.

Rubber eyecups

Prevent lateral incidence of sunlight and stray light on a night-vision attachment.

Yellow filter

Specially used to emphasise the foreground. Enables natural tone differentiations.

Sun shield

Reduces lateral incidence of sunlight and thus stray light. Sun shields are available for 56 mm and 72 mm lenses.

Laser protection filter

Reduces laser radiation through absorption or reflection, thus protecting the eye.

Polarizing filter



Honeycomb filter



Sun shield



Catalog numbers	
Polarising filter	000000-0454-268
Clampable 56 mm honeycomb filter	330297-9028-000
Clampable 72 mm honeycomb filter	330296-9028-000
Screwable 56 mm honeycomb filter	330297-9032-000
Screwable 72 mm honeycomb filter	330296-9032-000
Rubber eyecups	330296-9031-000
Yellow filter	330296-9026-000
Clampable 56 mm sun shield	521680-8060-000
Clampable 72 mm sun shield	330296-9027-000
Screwable 56 mm sun shield	330297-9024-000
Screwable 72 mm sun shield	330296-9024-000
Screwable laser protection filter	330296-9025-000



Observation optics



Our observation optics are fine-tuned for the special tasks that they have been engineered to perform. Robust enough for use in every climatic environment, these extremely powerful optics offer unprecedented clear vision.

They serve to observe troop movements, acquire target details, pinpoint booby traps, confirm hits and, if necessary, enable spotters to make targeting adjustments. In short, Hensoldts' powerful observation optics support modern-day security forces across the board.

The benchmark for high-performance optics is how well they image details at long range. Reconnaissance is the key to making well-informed decisions and to taking pre-emptive action rather than relying on reaction. Hensoldts' spotting scopes raise the performance bar with optics tailored to the needs of the military. They help combatants accomplish their mission in defiance of blistering heat, arctic cold or heavy rain.

Observation optics

Spotter 60 / Spotter 45

Three key features make the 20–60x72 spotting scope, or Spotter 60, from Hensoldt Optronics the ideal instrument for the observation and identification of objects, and target hit monitoring: high magnification (20x to 60x), a 72mm lens and a MIL-DOT reticle with continuously adjustable illumination whose size changes congruent with the magnification level.

To make these excellent optics available for a wider range of applications, we also offer the Spotter 45 which features variable magnification of 15–45x. In hot climates, in particular, the beginning magnification of 20x on the Spotter 60 is often not beneficial because of disturbances by mirage.

Main features & benefits

- Magnification range of 20x–60x / 15x–45x
- Bright, high-contrast image at all magnification levels
- 1st focal plane reticle with continuously adjustable illumination
- Compact design for concealed observation, rubber armouring also available sand coloured

- 1 Up to five Picatinny rails to attach additional equipment
- 2 RSA-S as optional fast sight



- 4 The automatic brightness memory permits fast selection of the already stored reticle brightness level

- 3 MIL-DOT or customised reticle



Observation optics

Technical data

Spotter 60 / Spotter 45

Optical data	Spotter 60	Spotter 45
Magnification (M)	20x - 60x	15x - 45x
Lens diameter in mm	72	
Exit pupil Ø in mm	3.6 - 1.2	4.8 - 1.6
Eye relief (mm)	20.5	30.5
Field of view (at 1000 m)	49 m - 19 m	
Diopter adjustment	±3 dptr	+2 to -3 dptr
Transmission in %	approx. 85	
Reticle/laser protection	Yes/ optional	
Dimensions, weight		
Length/width/height in mm (depending on configuration)	340/90/165	350/90/165
Weight in g	1770	
Colour	Black/ Tan/ Dark Earth Brown	
Front filter thread	M 73 x 0.75	
Tripod connector in inches	3/8" thread with locking pin, optional adapter for 1/4"	
Electrical data		
Reticle illumination	Red	
Automatic reticle illumination shutoff	After 3 hours (adjustable according to customer needs)	
Low battery display	Optical, illuminated reticle pulses after it is turned on	
Power supply	3V CR 2032 to -20°C button cell; alternatively: 3V BR 2032 to -40°C	
Ambient conditions		
Environmental test	MIL-STD-810G, DIN ISO 9022 (excerpt)	

Observation optics Accessories

Laser protection filter

Reduces laser radiation through absorption or reflection, thus protecting the eye.

Picatinny rail

Spotter 60/Spotter 45 can accommodate up to five Picatinny rails to enable the attachment of additional modules.

Neoprene protective cover

Protects the spotter against shocks and moisture. The spotter can be covered with desert or olive drab camouflage.

Digi adapter

The proven connector for the spotter and a digital still or video camera. Commercially available compact cameras can be used to document mission scenarios with a super tele lens. The swing mechanism permits a quick change between observation and recording. The extremely sturdy design weighs only around 870g.

Tripods

A variety of tripods and tripod heads are available.

Documentation or observation with maximum image quality: Simply slide the camera into and out of position. The proper seat is reliably secured with a notch



Laser protection filter



Picatinny rail



Catalog numbers	
Laser protection filter	331090-9007-000
Picatinny rail	331060-9015-000
Neoprene protective cover (desert)	331060-0040-000
Neoprene protective cover (olive drab)	331060-0041-000
Digi adapter	331060-9016-000
Gopro Adapter	10227886
Tactical cover (coyote brown)	10234874

VIS-IR

Handheld observation device

VIS-IR is a handheld system for quick observation and effective reconnaissance in all light conditions. It is equipped with two viewing channels for day and night vision. Switching between the two channels is quick and easy, there are no unnecessary information or other overlays shown. The image from the night vision channel is displayed on an internal OLED, so that false-colour superimposition is possible. The handheld VIS-IR functions with standard batteries, which can be

easily exchanged. With the device's extra video output, the IR image can be displayed on an external monitor.



Main features & benefits

- uncooled detector
- two spectral ranges: visually (400 to 700nm) and in the thermal imaging range (8 to 14µm).
- lightweight
- video output

Magnification	Day vision	Night vision
Magnification	8x	8x
Lens diameter	32 mm	32 mm
Field of view	8°	8° x 6°
Dioptr adjustment	±3 dpt	±3 dpt
Sensor	Uncooled thermal imaging device 17 µm	
Resolution	640 x 480 px	
Refresh rate	50 Hz	
Focus range	5 m bis ∞	
Electronic data		
Battery	4x CR123A	
Usage period	4.5 h	
Video output	PAL	
Display	Colour-OLED	
Mechanical data		
Dimensions (L x W x H)	250 x 182 x 96 mm	
Weight	1.54 kg (with batteries)	
Tripod thread	3/8"	
Interface	DIN4503 and ISO 1222	
Environmental conditions		
Temperature range storage	-40°C to +70°C	
Temperature range use	-35°C to +63°C	
Tightness	4 m for 2 hours under water	



Night-vision attachments



Experience shows, that supervisory elements preferably use twilight and harsh weather conditions to surprise their enemy.

To maintain superiority elite forces around the world use Hensoldt night-vision attachments.

Residual light intensifiers

Designed to intensify residual light our night-vision attachments need no time to ramp or heat up. A night-vision system is easily configured – simply mount the night-vision attachment in front of the targeting optics.

With 1:1 magnification there is no need to align night-vision components. Additionally marksmen and spotters need not to change their habits because these state-of-the-art light intensifiers are so remarkably light. Users can continue relying on their familiar daylight optics without any readjustment.

Thermal imagers

Thermal imaging technology works without the visible light that the human eye needs to see. It detects infrared radiation and renders it in images

so that the human eye can see what normally escapes its detection. This is a tremendous asset for military missions.

This technology offers two tactical advantages. For one, targets disguised by purely visual camouflage are readily identified because a heat source is difficult to conceal. Unlike residual light intensifiers, thermal imagers can also be used during the day. And the other tactical benefit of uncooled thermal imagers is that they are silent.

Night-vision

NSV 600 Night-vision attachment

Intended for assault rifles, lightweight machine guns and sniper's weapons, the NSV 600 delivers impressive optronic features despite its compact size.

Key elements such as the focussing knob are optimally positioned from an ergonomic standpoint to enable ease of use for both right- and left-handers.

In addition to high-end optics, we also offer the latest military-capable residual light intensifier tubes in Europe as part of our night-vision attachments.

Main features & benefits

- Compact and lightweight
- Manual gain control
- Extremely low maintenance

1 Manual gain control

2 The integrated maintenance management system enables users to export vital information about the intensifier tubes such as service hours, on/off cycles or installation date

3 Optional Picatinny rail to attach additional equipment, e.g. an IR illuminator



4 Intelligent power supply – a 1.2 – 3.6V AA battery for 50 hours of operation



Night-vision

NSV 1000 Night-vision attachment

The NSV 1000 combines high optronic performance with compact dimensions and moderate weight. It is suitable for snipers' weapons. The height of the assembly on the weapon can be adjusted, making it possible to use the NSV 1000 on different weapons.

Main features & benefits

- The integrated maintenance management system enables users to export vital information about the intensifier tubes such as service hours, on/off cycles or installation date
- Very long range
- Gain control

1 Optional Picatinny rail to attach additional equipment

2 85 mm lens for high residual light yield



4 Intelligent power supply – a 1.2 – 3.6V AA battery for 50 hours of operation

3 Variable assembly on the weapon



Night-vision

NSV LL Night-vision attachment

The NSV Long Range (LL) outperforms the expectations regarding maximizing residual light yield as well as the custom fit for long range sniper's weapons including .50 caliber.

Furthermore the impressive optical design of the NSV LL allows identification ranges exceeding 1050 meters.

This ultimate solution for long range sniping combines moderate weight

with compact dimensions and state of the art ergonomic usage.

The adjustment to even low mounted scopes e.g. 36 mm height above the rail allows the NSV LL to be attached on to a large variety of weapons.

Optimized positioning of key elements as the on/off knob and the focus enable ease of both right- and left- handers.

Main features & benefits

- 100 mm lens for remarkable residual light yield
- Notably optimized for long range sniper's weapons including .50 caliber
- Best practice ergonomic and compact design



Optical data	NSV 600	NSV 1000	NSV LL
Magnification	1x		
Lens diameter in mm	55	85	100
Lens focal length in mm	124.5		103
Exit pupil Ø in mm	24		48
Field of view (at 1000m)	8°/140 m		10°
Angular resolution in the centre in mrad	≤0.25		≤0.20
Distance setting in m	20 to ∞		25 to ∞
Identification range (7 Lp/2.3 m) (NATO target wall, illumination 3 mlux)	>590 m at M >6x	>750 m at M >6x	>1050 m at M >6x
Dimensions, weight			
Length/width/height in mm	205/91/78	205/112/99	235/113/115
Weight in g (incl. battery and assembly)	870	1230	1450
Interface	MIL-STD 1913		MIL-STD 1913 / STANAG 4694
Electrical data			
Power supply voltage	1.2 to 3.6 V, if autogated tube is used only Lithium 1.5 V battery		3 V
Battery size	1x AA mignon		1x 123A Lithium
Service life at 20 °C	≥50 h, reduced service time if autogated tube is used		≥40 h
Low battery display	Pulsing image		Red light signal
II tube (design)	3-gen. PHOTONIS XD4 /XR5 or others		
Ambient conditions			
Operation temperature	-40 °C to +50 °C		-40 °C to +52 °C
Environmental test	MIL-STD-810G, DIN ISO 9022 (excerpt)		

Night-vision

IRV 600 A1 Thermal imager

The thermal sight attachment IRV 600 A1 is the enhancement of the well-tried IRV 600 – developed for assault rifles or light machine guns. With 640 x 480 pixels, the detector offers the highest geometric resolution available on uncooled devices.

The high performance is supplemented with following characteristics: The IRV 600 A1 can be either used as a clip-on system with 1x magnification or as a stand-alone aiming optic with digital zoom. A colour monitor enable

an easier target reconnaissance with a false colour presentation.

Unlimited usage for the program “Infantryman of the future” is possible.

Main features & benefits

- Long range
- Simple operating concept
- Video port for external monitor
- Noiseless
- Ready to use in only five seconds
- Additional Picatinny rail for optional accessories
- Practical battery pack for replacement without tools
- Central control panel



Night-vision IRV 900 A1 Thermal imager

The thermal sight attachment IRV 900 A1 is the enhancement of the well-tried IRV 900 - developed for sniper rifles or machine guns. As an in-line system it fulfills the high requirements of specialized troops.

The high performance was supplemented with following characteristics: The IRV 900 A1 can be either used as a clip-on system with 1x magnification or as a stand-alone targeting

optic with digital zoom. A colour monitor enables an easier target reconnaissance with false colour presentation.

Main features & benefits

- Long range
- Simple operating concept
- Video port for external monitor
- Noiseless and ready to use in only five seconds
- Additional Picatinny rail for optional accessories
- Practical battery pack for replacement without tools
- Central control panel



Thermal imagers

Technical data

IRV 600 A1 / IRV 900 A1

Optical data	IRV 600 A1	IRV 900 A1
Magnification	1x/2x/4X digital-zoom	1x /2x /4x digital zoom
Lens diameter	38 mm	63,75 mm
Fields of View (at 1000 m)	16° x 12° = 280 x 210 m	8° x 6° = 140m x 105m
Focus range	5 m to ∞	5 m at ∞
Recognition range (3LP / 1,7 m x 0,6 m)	≥ 500 m (with Targeting optic 4x)	≥ 760 m (with Targeting optic 4 x 30)
Electrical data		
Power supply	12V	12 V
Battery type	4x Lithium CR 123A	4 x Lithium CR 123A
Battery operating time at 20°C and maximum display brightness	≥ 4,6h	≥ 4,6h
Low battery indication	yes	yes
Detector type	uncooled 640 x 480px (17 µm pitch)	uncooled 640 x 480 px (17 µm pitch)
Wavelength range	8 to 14 µm	8 at 14 µm
Polarity switch	yes	yes
Night vision mode for display	yes	yes
Extended image display options	Extended grayscale / partial colour scheme / reticle display	Extended grayscale / partial colour scheme / reticle display
Electronic Interface	PAL/external video port	PAL / external video port
Mechanical data		
Dimensions (L x W x H)	150 x 108 x 83mm	202 x 108 x 89mm
Weight (incl. 4 x battery)	approx. 895g	approx. 996 g
Interface / Minimum height	MIL STD 1913 – STANAG 4694/32 mm	MIL STD 1913 – STANAG 4694 / 38mm
Environmental conditions		
Operating temperature	-35°C at +63°C	- 35°C at + 63°C
Environmental tests	MIL STD-810-G, DIN ISO 9022	MIL STD-810-G, DIN ISO 9022

HENSOLDT FIRE CONTROL SYSTEM

Sighting Device for shoulder launched weapon systems

The Sighting Device with integrated Fire Control System (FCS) is developed for shoulder launched weapon systems, like the RGW 90 family system. It is equipped with a laser rangefinder, ballistics computer and an internal micro display with electronic reticle. It allows the shooter to engage a target with a high first-hit probability even at a range of up to 1.200 meters. With an optical clip-on night-vision the system is also usable at night.

The FCS is attached to the launcher within seconds and the menu-guided operation of the FCS can be done by one person with no need for any further support. The gunner is able to measure the distance to the target and select the fuse mode. The integrated FCS ballistics computer calculates offset and lead angle to automatically display the aiming mark.

The type of ammunition can be identified, and the appropriate operating menu is selected automatically when attached to the launcher. Even if the battery is empty the Sighting Device can still be used for aiming and firing at targets at lower distances (direct hit operation by means of an etched reticle).

The Sighting Device is already prepared for use with guided missile systems (fire and forget) for a range up to 2000 meters. The gunner is also able to fight against targets in cover. The electronic interface of the weapon provides an input for an external video signal (seeker head camera) which can be viewed on the internal display to identify and mark the target object.

Main features & benefits

- Optical day sight
- Electronic sensors for air
- temperature/pressure, terrain
- angle and cant angle
- Laser rangefinder
- Optional clip-on night-vision
- Ballistics calculator
- Micro display
- Mechanical and electronic interface (including video signal input)
- Angular rate sensor



Hensoldt Fire Control System on Recoilless Grenade Weapon 90



Hensoldt Fire Control System with Night Sight Device NSV 600

Hensoldt Fire Control System

Technical data

Optical data	
Field of view	11°; 19.4 m/100 m
Magnification	5.5x
Identification Range	1200 m (human target) 2400 m (Nato Standard Target)
Internal Display of <ul style="list-style-type: none"> aiming mark seeker image 	max. resolution: 800 (v) x 600 (h) elevation angle: 0° to 10°, Azimuth: ~±3.8° monochrome video signal (PAL)
(internal shutter to block day sight view when seeker image displayed)	
Laser rangefinder	
Range	<2100 m (Nato Standard Target)
Resolution/Accuracy	± 1 m up to 1200 m distance
Measuring Time	max 0.5 sec
Transmitter	λ= 1550 nm, class 1 (eyesafe)
Beam Divergence	1 mrad x 1 mrad
Ballistics computer	
Calculation Time for position of aiming mark	< 1 sec
Interface to weapon	
Mechanical	According to MIL Standard 1913A (Picatinny Profile), extended base
<ul style="list-style-type: none"> including electronic contacts for 	serial data communication (RS 485) power supply (12 VDC) monochrome composite video input (mono, compatible with PAL standard)
Compatible weapon systems	
RGW 90 Family (DND); Enforcer (MBDA); Easy to customize for other systems	
General data	
Weight	~2.2 kg
Dimensions (LxHxW)	28 cm x 14 cm x 16 cm
Temperature Range	-40°C to +70°C (storage) -32°C to +63°C (operation)
Power Supply	4x batteries CR 123
Sensors	air temperature, air pressure, terrain & cant angle, angular rate

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