Gyro-stabilized Panoramic Periscope PERI-R17 A2

ZEISS

We make it visible.

PERI-R17 A2
By Day and Night:
Panoramic Vision. All-round Safety.

- For the commander's station
- For integration into fire control systems of armored vehicles
- Easy operation

The stabilized PERI-R17 A2 panoramic periscope provides the commander of an armored vehicle with optimum panoramic vision – not only to the front, but also all round.

And that is not all: even in extremely rugged terrain, the stabilized line of sight ensures a clear, stationary image. Perfect observation, detection, recognition and identification - by day, at night, and in adverse visibility.

Benefits, that show

The PERI-R17 A2 has been specially designed to withstand the rough environmental conditions associated with military use. The periscope resists shock, vibration and temperature extremes. Reliable observation during motion is also ensured by the two-axis primary stabilized line of sight.

Due to its functions and design, the PERI-R17 A2 can be easily integrated in fire control systems. It can be used in the visual and in the infrared spectral ranges.

With its four operation modes the PERI-R17 A2 meets the full range of mission requirements for the command of armored vehicles:

- The commander controls the periscope (observation mode):
  Independent orientation, regardless of gun position.
- The commander monitors the target (alignment mode):
  The periscope is slaved to the gun.
- The commander controls the main weapon by the periscope (designation mode):
  The gun is slaved to the periscope.
- The periscope is positioned at 12 o'clock or 6 o'clock relative to the major vehicle axis (index position).

As a further development of the PERI-R17 A1, proven modules and sub-modules were retained for the PERI-R17 A2. As a result, the PERI-R17 A1 and the PERI-R17 A2 logistics correspond to a large extent.

Zeiss periscopes in service

The PERI-R17 A2 is already in service in the Leopard 2 battle tank in Germany, the Netherlands and Sweden. In addition, Zeiss periscopes are also used in the armed forces of Spain, Austria, Denmark, Argentina, and Switzerland.

Turning night into day

For night vision, Carl Zeiss Optronics developed the OPHELIOS thermal camera range, which consists of cross-section modules. The Zeiss OPHELIOS-P thermal camera was especially designed for integration into the PERI-R17 A2.

The sensitive IR-CCD detector of the OPHELIOS-P, which guarantees a large range, contains 96 x 4 detector elements for the wavelength range from 7.5 µm to 10.5 µm. The total unit – detector cooler with control and read-out electronics, MUX/ADC and system electronics – forms a very compact assembly which is optimized for minimum power requirements.

The use of a special scan principle and a 2:1 interlace provides a resolution of 576 pixels in vertical and 786 pixels in horizontal direction.

Specifications

PERI-R17 A2

Visual Channel

Magnification	2x / 8x
Field of view	27° / 7°
Entrance pupil	8 mm/40 mm
Diopter setting, eyepiece	± 4 D
Viewing	monocular
Sun protection filter	transmission: $\tau = 0.1$
Laser protection filter	against radiation of 1064 nm
Field of regard	Elevation: -13° to +20° Azimuth: n x 360°
Residual stabilization error	< 50 µrad (rms) (when driving on APG track)

Developed in cooperation with STN Atlas Elektronik GmbH.

Options

TV-CCD camera for visual channel
Interface for target pointer
(positioning the line of sight on the viewing direction of a pre-determined angular mirror)
Automatic drift compensation.

OPHELIOS-P Thermal Camera

Spectral range	7.5 µm to 10.5 µm
Resolution (horizontal x vertical)	784 x 576 pixels
Field of view	3.6° x 4.8° and 12.3° x 16.4°

OPHELIOS is a joint development of Carl Zeiss Optronics GmbH, Oberkochen; STN Atlas Elektronik GmbH, Bremen; and AEG Infrarot Module GmbH, Heilbronn.

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