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# Night Vision Devices for Dismounted Soldiers and Pilots by THALES Angénieux

June. 2013

THALES



*More than 75 years of experience in high precision optics*

*Most advanced and lightweight Night Vision Devices available worldwide*



























*In-service in French, British, German, and many other armed forces*

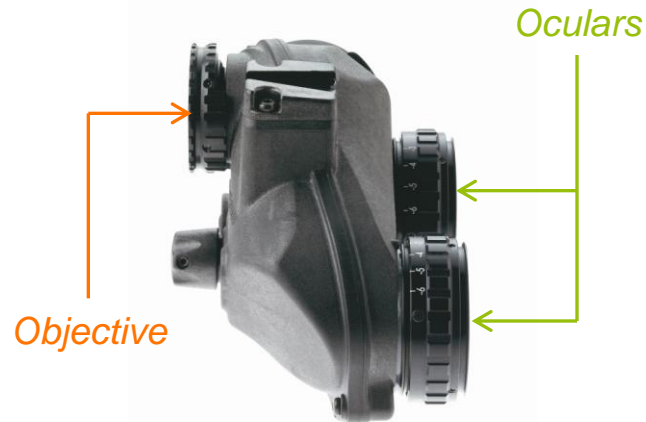
*Preferred supplier to several special forces across the world*

*Combat proven*

*N 1 night vision goggles manufacturer in Europe*

*Over 75,000 goggles in operation worldwide*

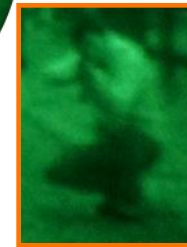
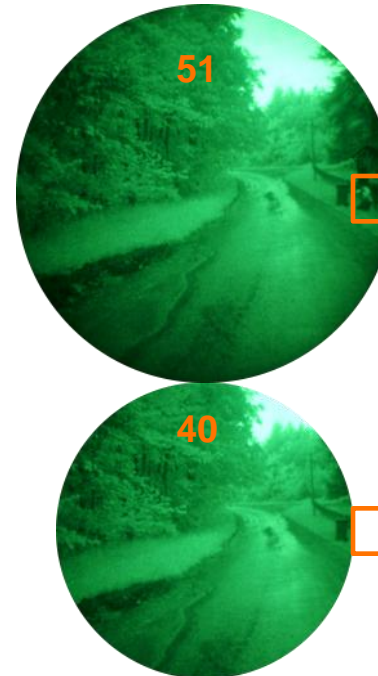
<b>Folded design</b>	<i>Compact &amp; Lightweight Goggles</i>		<b>LUCIE</b> 		<b>MINIE</b>  
	<i>Connected goggles</i>		<b>MINIE – D</b>  		<b>MINIE – DIR</b> 
	<i>Monocular</i>		<b>MONIE</b> 		<b>Bi-MONIE</b>  
<b>In-Line design</b>	<i>Goggles for Vehicle driving &amp; Airborne operations</i>		<b>BONIE</b>  		<b>HELIE / DVN</b>  
	<i>Monocular</i>		<b>COLIBRI</b> 		<b>Bi-COLIBRI</b>  



### Key characteristics of Thales bi-oculars :

- Lightweight, compact and low-profile allowing for a longer and more comfortable wearing.
- Wide field of view (51 deg) increasing by 70% the observed scene compared to conventional goggles.
- Large product line of accessories.

- Wide field of view for a better situational awareness and an improved mobility.



Threat is detected  
= Quick response  
and increased  
survivability

- A folded design reducing the torque of the helmet-mounted equipment.



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- Image intensified bi-ocular night vision goggle
- Lightweight (<435g)
- Compact and low-profile
- Enlarged field of view (51 deg)
- Head- or Helmet-mounted for hands-free use

*“The reference night vision goggle, with over 50,000 units in operation worldwide.”*

## CompactNight Vision Goggle





*“The lightest and most compact night vision goggle ever.”*

- Ultra low-profile
- Ultra compact and lightweight (<340g)
- Large field of view (51 deg)
- Outstanding long use comfort and reduced fatigue
- Ruggedized, waterproof design compliant with military standard requirements
- Qualified for land vehicle driving application
- Selected by UK Armed Forces

## Ultra-compact Night Vision Goggle





# Connected devices for dismounted soldiers



Video and/or Data feeds



Data display



Data display + Fusion I<sup>2</sup>-IR



Video display



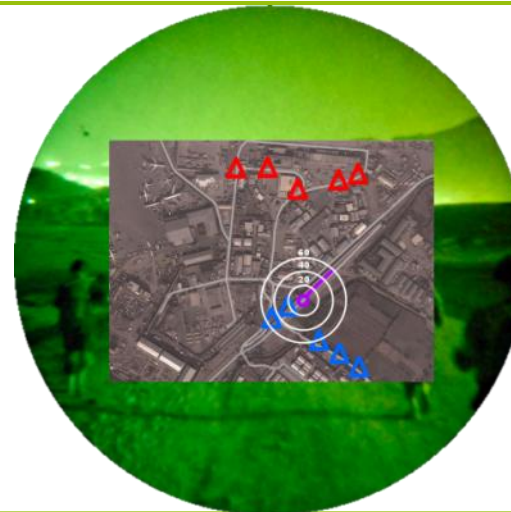
*In-service for French FELIN and German GLADIUS new soldier programs. ”*

- Ultra-compact and lightweight (<370g), allowing remote aiming, I<sup>2</sup>-IR optical fusion and data display
- Compliant with all types of new soldier system
- Large field of view video display (42.5 deg)
- Compliant with all video standards
- Large I<sup>2</sup> field of view (51 deg)
- Ruggedized, waterproof design compliant with military standard requirements

## Night Vision Goggle with Video Display



*Feed from  
weapon  
sight for  
shoot-  
around-the-  
corner  
capability*



*Map  
enriched  
with  
symbology  
(red/blue  
forces  
position )*

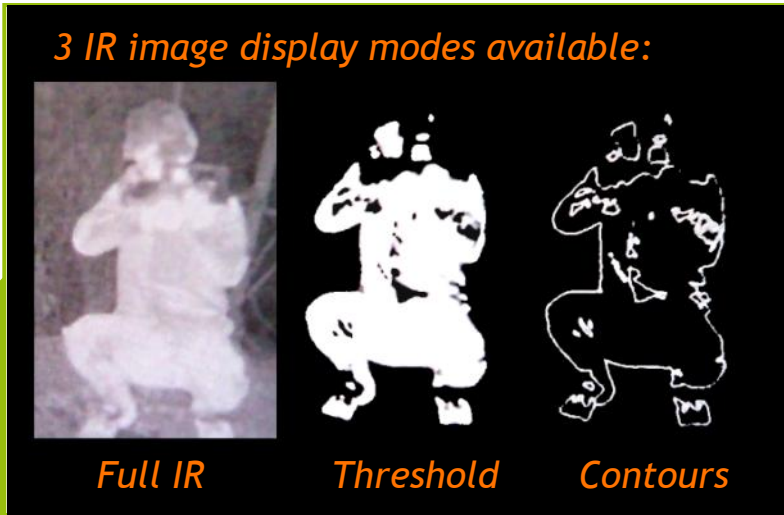
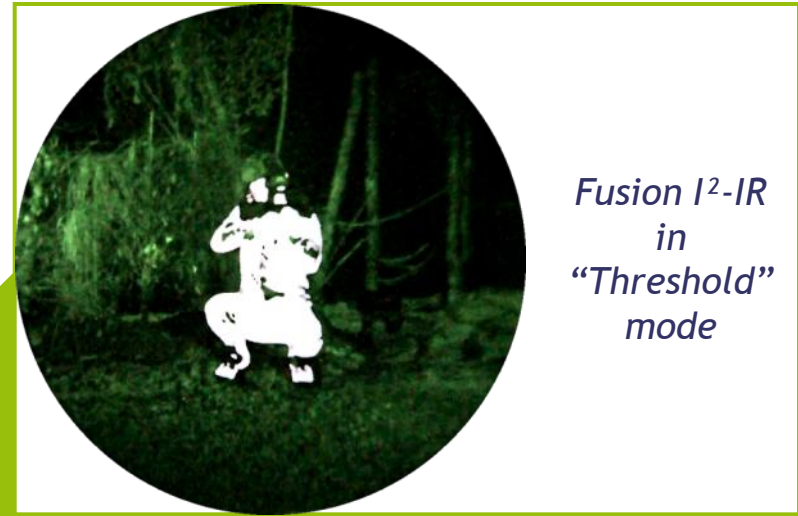


*“The revolution in fused sensors  
night vision”*

- Fusion of Intensified (I<sup>2</sup>) and Infrared (IR) images for mobility and decamouflage of potential threats
- Outstanding quality and large Field of View for both I<sup>2</sup> and IR images
- Various IR image display modes ("Full IR", "Threshold", "Contours"), with distinct colors for I<sup>2</sup> and IR images
- Connectivity to C4I systems:
  - Display of external video feeds
  - Display of data from soldier system (maps, ...)
  - IR video export functionality
- Completely passive and discreet
- Modular, compact, low-profile and lightweight (490g)

**THALES**

Connected Fused Sensors Night Vision Goggle – Decamouflage capability





*“The lightest and most compact night vision monocular”*

- Ultra-compact and lightweight (<280g)
- Large field of view (51 deg)
- Hands-free use when mounted on a face-mask, helmet or weapon
- Left eye or right eye use
- Better depth perception in BI-MONIE configuration (driving, special forces)

### Ultra-compact Night Vision Monocular



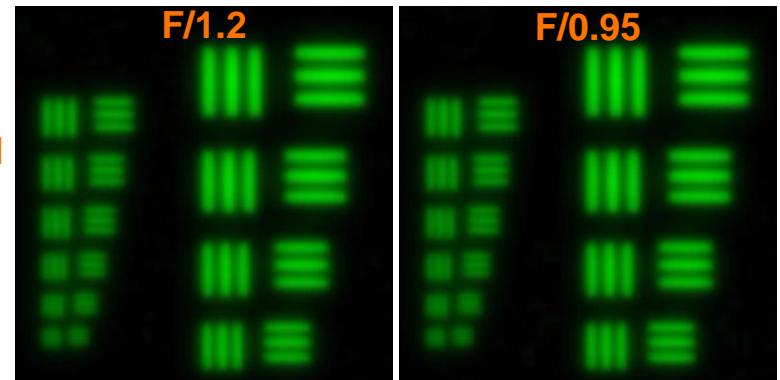


### Key characteristics of Thales binoculars:

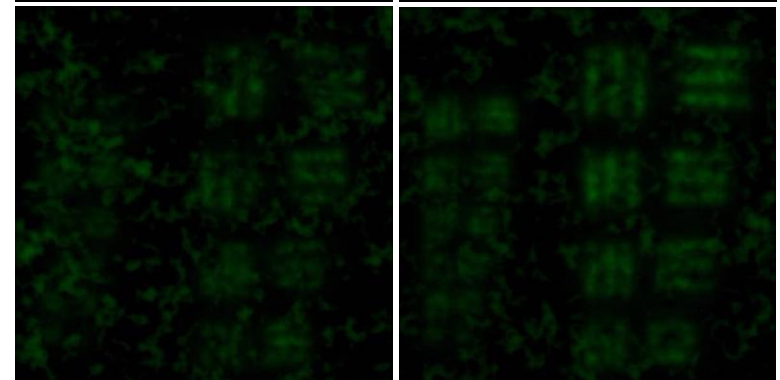
- Better depth perception due to the stereoscopic vision (3D).
- Ideal for vehicle driving and special operations.
- Large eye relief for an improved peripheral vision.
- Smart mechanical design enabling a perfect stability for an improved comfort.

- Wide objective lens aperture collecting 60% more light flow than classical binoculars, reducing the noise effect for users which means:
  - Less eyes fatigue during long-time wearing.
  - Better perception of edges and shapes.
  - Increased sensitivity in darkest conditions.

Clear full moon  
(0.3Lux)



Typical starlight  
(0.001Lux)



Intensifier Gen 3 (66lp/mm - 1800 $\mu$ A/Lm)

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*“Designed for vehicles driving operations at lowest light levels”*

- Image intensified binocular night vision goggle for vehicles drivers
- F/0.95 objective lens aperture enables operational capability and superiority during darkest nights
- Compact, lightweight and high-performance design based on aspherical lenses
- Ruggedized helmet adaptor suitable for driving operations on broken grounds



*“Designed for airborne operations at lowest light levels”*

- F/0.95 objective lens aperture enables operational capability and superiority during darkest nights
- Compact, lightweight and high-performance design based on aspherical lenses
- 25mm eye relief for optimum comfort and improved peripheral vision
- Compliant with all types of cockpit lighting due to internal or removable external filters (A,B,C class or 645 nm)
- Helmet adaptor compliant with standard ANVIS interface

## Binocular Night Vision Goggles for Airborne Operations





## Key characteristics of Thales in-line monocular:

- Ultra-compact and lightweight.
- Wide aperture of objective lens.
- Very versatile: can be used in various configuration (weapon mounted / binocular for stereoscopic vision...)



**Configuration #1:** Head- or helmet-mounted monocular configuration (left or right eye), leaving a dark-adapted eye with large peripheral vision (patrol, combat situations...)



**Configuration #2:** Head- or helmet-mounted binocular configuration for better depth perception, Ideal for vehicle driving, parachute jumps and special forces operations.



**Configuration #3:** Weapon-mounted, associated with a red dot sight or laser pointer.



*“Lightweight. Multipurpose.  
Unrivalled optical  
performances”*

- Ultra-compact and lightweight (<265g)
- Unrivalled optical performances for high sensitivity at low light levels
- Multipurpose: hand-held, head- or helmet mounted in monocular or binocular configuration, weapon mounted
- Two different versions to better meet users requirements:
  - COLIBRI LW (Lightweight)
  - COLIBRI HP (High Performance)

### Versatile Night Vision Monocular

