

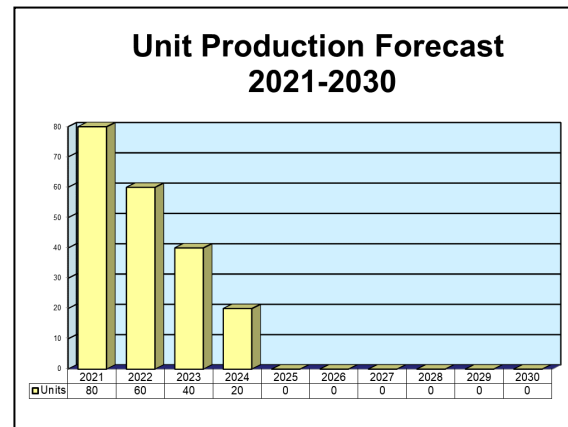
ARCHIVED REPORT

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LION

Outlook

- The next several years may see diminishing production of the Lightweight Infrared Observation Night system as newer versions and competitor systems cut into the market
- List of previous LION purchaser nations includes Malaysia, the Netherlands, and the United Kingdom



Orientation

Description. The Lightweight Infrared Observation Night (LION) sight is a handheld, uncooled, thermal imaging binocular observation sight for use both day and night.

Sponsor

The Royal Netherlands Army
 Afdeling Werving & Selectie
 Postbus 8310
 1005 AH Amsterdam
 The Netherlands

Status. Limited production.

Application. The LION was designed for use by infantry soldiers, but it can also be adapted for operation in combat vehicles and unmanned vehicles and as a fire control system.

Price Range. Based on a comparison with similar technology, the LION has an approximate price of \$3,000.

Contractors

Prime

Thales	http://www.thalesgroup.com , Tour Carpe Diem, 31 PI des Corolles- CS 20001, Paris, La Defense Cedex, France, Tel: + 33 1 57 77 80 00, Fax: + 33 1 57 77 86 59, Prime
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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

LION**Technical Data**

	<u>Metric</u>
Dimensions	
(H x W x D)	100 mm x 200 mm x 2,401 mm
Weight	<2 kg
Performance	
Magnification	x 3
Field of view	10° H x 5° V
Focus range	7 m to infinity
NETD	0.15 K
Spectral band	8-12 μm
Display type	Binocular, CRT
Start-up time	5 sec
Acoustic noise	Inaudible at 2 m
Interface options	Remote control, external video, CCIR
External power	24 V
Power consumption	7 W
Battery type	Lithium, Ni/Cd or alkaline
Operating time	10 hr on lithium battery
Reticle	Aiming mark

Design Specifications. The LION is a handheld binocular designed for use by infantry soldiers, and is based on the pyroelectric focal plane array detector operating in the 8- to 12-μm atmospheric window. It features a diffractive single-field infrared objective, a microscanned, uncooled focal plane detector, and fully integrated signal processing electronics with automatic contrast and brightness control.

The camera can be easily held. Unlike cooled systems, it is inaudible and cannot be detected by opposing forces. The LION is equipped for remote operation and can be used both day and night and during adverse weather conditions.

With a high mean time between failures (MTBF) of 5,000 hours, the LION has a low overall life-cycle cost compared to conventional cooled thermal cameras. It has only minimal need for periodic maintenance and uses rechargeable batteries for training purposes.

Although the LION is designed as an infantry observation sight, it can be modified for use in thermal weapon sights, drivers' viewing systems, fire control systems, explosive ordnance disposal robotic vehicles, and unmanned aerial vehicles.

Program Review

The LION was designed for use by Royal Netherlands Army infantry soldiers as a handheld binocular. The original contract, funded by the CODEMA of the Netherlands, was for the development and evaluation of LION prototypes, which were reportedly completed in 1996. A product of Delft Sensor Systems, the LION was demonstrated during night firing trials at the IDEX show in March 1997.

On May 7, 1998, the Royal Netherlands Army contracted Signaal USFA/Delft Sensor Systems for the production of 803 LION systems. Production began in early 1998, and deliveries of the 803 systems began soon after.

In December 1999, the U.K. Ministry of Defence awarded a contract to Pilkington Optronics (Signaal USFA's British sister company, now owned by Thales) to supply 73 LION units.

In 2000, Delft Sensor Systems became OIP Sensor Systems. That same year, Thomson-CSF took over Signaal USFA. The larger company subsequently changed its name to Thales.

Thales Optronics announced in July 2001 that it had completed initial deliveries of 20 LION systems to the Malaysian Army under a contract that had been signed at the end of 2000. Follow-on orders were expected.

LION

Through 2002, work on contract fulfillment for previous orders continued.

Production and procurement of LION were given renewed impetus in 2003 and 2004 in conjunction with the military participation of the U.K. and the Netherlands in Operation Iraqi Freedom. Thales was awarded a contract by the Royal Netherlands Army, Marine Corps, and Air Force in November 2004 for 242 LION imagers.

Thales has introduced a new version called LION Advance, which presumably improves on earlier versions.

In a sign that the market for handheld sights will always be tight, in May 2018, the Netherlands announced the purchase of 1,266 new handheld Thermal Handheld Imaging System (THIS) units from Safran. These systems replace LION units the nation had used since the mid-1990s.

Funding

Development of the LION was funded by the Royal Netherlands Army.

Contracts/Orders & Options

Contractor	Award (\$ millions)	Date/Description
Signaal USFA/ Delft Sensor Systems	N/A	May 1998 – Contract to provide the Royal Netherlands Army with 803 LION systems.
Pilkington Optronics	N/A	Dec 1999 – Contract from the U.K. Ministry of Defence for 73 LION systems.
Thales	N/A	Nov 2004 – Order from the Royal Netherlands Army, Marine Corps, and Air Force for 242 LION units.

N/A = Not Available

Worldwide Distribution/Inventories

The LION system is used by the **Royal Netherlands Army** and has been purchased by the **United Kingdom** and **Malaysia**.

Forecast Rationale

The next several years may see diminishing production of the Lightweight Infrared Observation Night (LION) system as newer versions and competitor systems cut into the market. No major contracts have been announced through open sources in several years.

In a sign that the market for handheld sights will always be tight, in May 2018, the Netherlands announced the purchase of 1,266 new handheld Thermal Handheld

Imaging System (THIS) units from Safran. These systems replace LION units the nation had used since the mid-1990s.

The wide distribution of the systems should be enough to ensure some level of support for the next several years. A version of the system called LION Advance is in use by many NATO armed and peacekeeping forces.

LION**Ten-Year Outlook**

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program		High Confidence				Good Confidence			Speculative			
	Thru 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Thales Nederland BV												
Lion <> Multi-agencies												
Note: Worldwide												
	4,543	80	60	40	20	0	0	0	0	0	0	200
Total	4,543	80	60	40	20	0	0	0	0	0	0	200