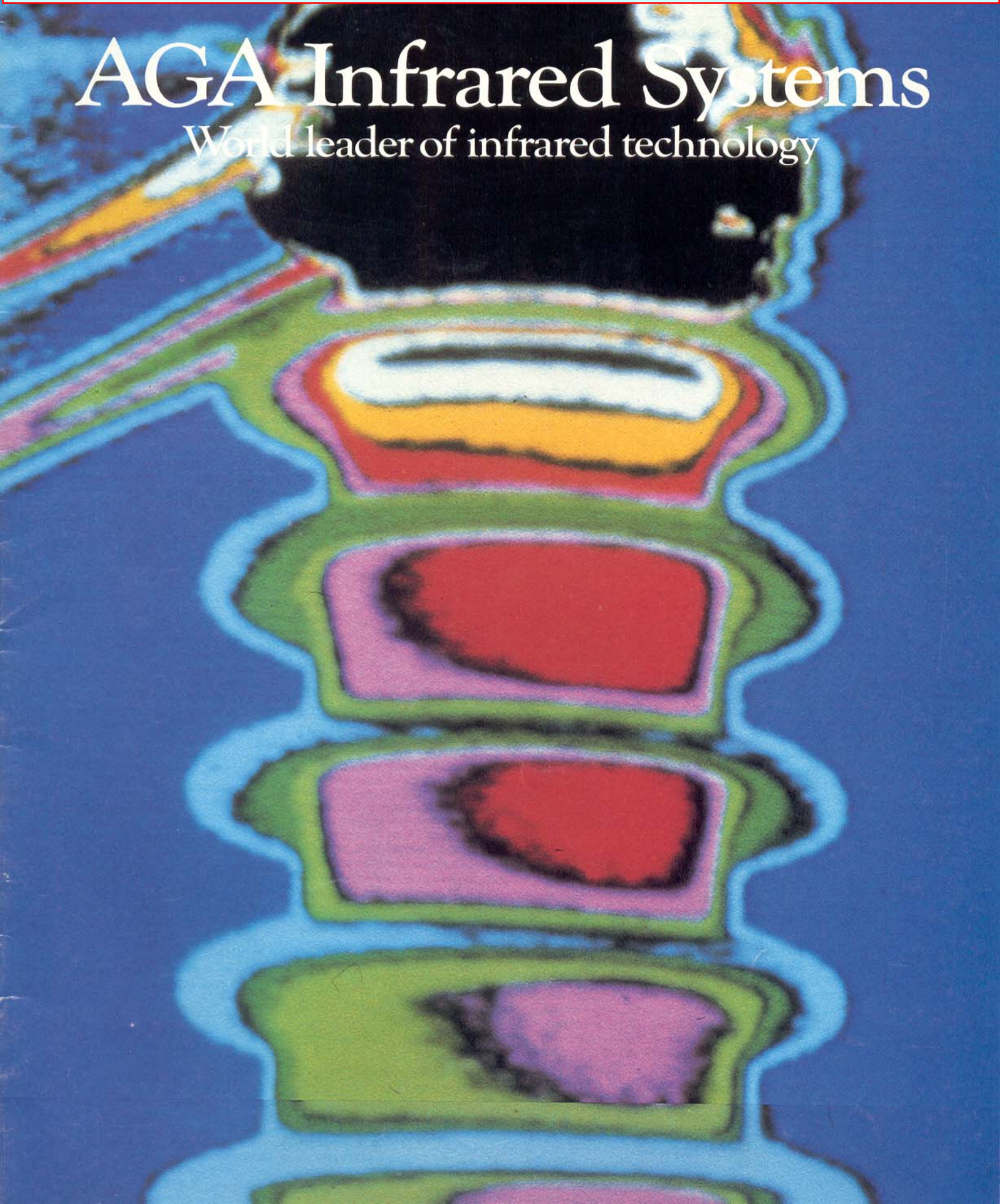


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AIR LEAK DETECTION TOOLS, AND RELATED INFORMATION at InspectApedia.com

AGA Infrared Systems

World leader of infrared technology

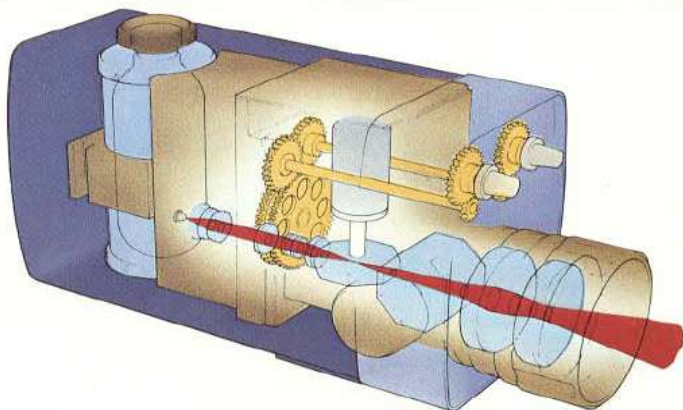


World leader in commercial use of infrared technology

AGA Infrared Systems is an international company, more than 95% of our business is outside Sweden. Our leading market position owes much to the policy of selling through world-wide subsidiaries and specially trained representatives.

Direct contact with the market provides an insight into how the equipment is used and feedback on the future needs of the user. Customers have a closer contact with the source of the technology and can therefore influence development so that the systems produced are more closely adapted to their specific needs.

Subsidiaries also have their own training centers which offer courses in infrared technology and its applications. In addition, they offer equipment customizing and local service.



Sectioned drawing of an infrared scanner

From research to reality

Research scientists and engineers were the main early users of infrared technology.

However, the technology quickly spread from the laboratory to industrial applications, demonstrating its cost-effectiveness through improved efficiency of production and processes.

Later, energy conservation emerged as an added incentive, with infrared systems stimulating more energy-efficient operations.

At the same time, thermography has also been developed for research and diagnostic purposes within medicine.

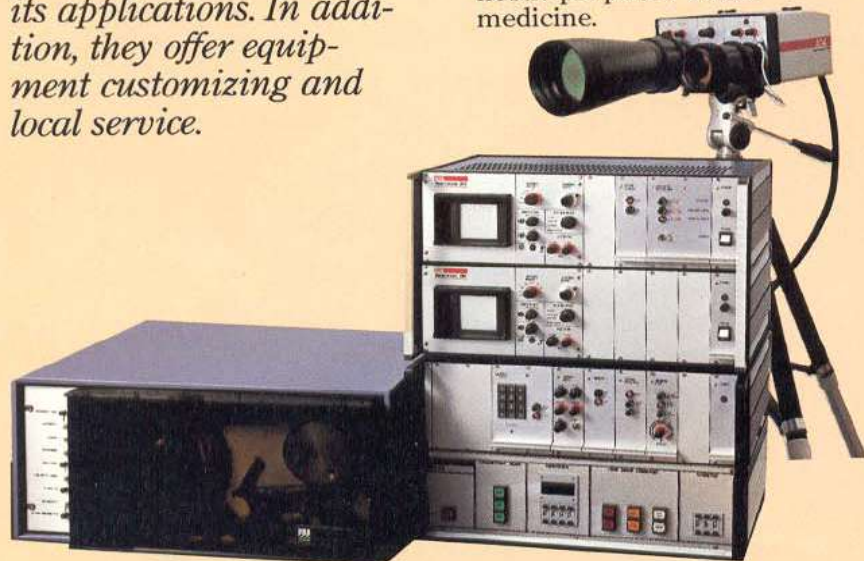
From simple to sophisticated

The needs of the different markets for infrared systems are highly varied, ranging from simple, low-priced units to more sophisticated systems.



Systems specially designed for research and development range from simple analogue measurement instruments to highly complex equipment offering image analysis by microprocessor and mini-computer.

Inspection systems include a wide range of portable units from point measurement devices, to highly portable simple imaging and more elaborate image measurement systems.



WORLD-WIDE MARKETS

Research & Development

Inspection

Monitoring

Medicine



Thermopoint® 80

Thermovision® 720

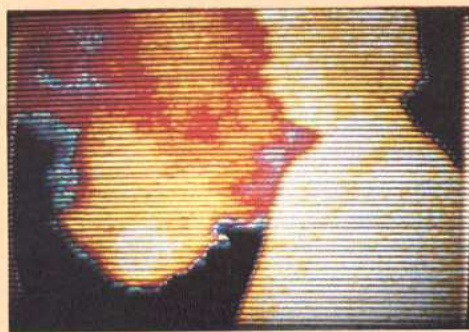
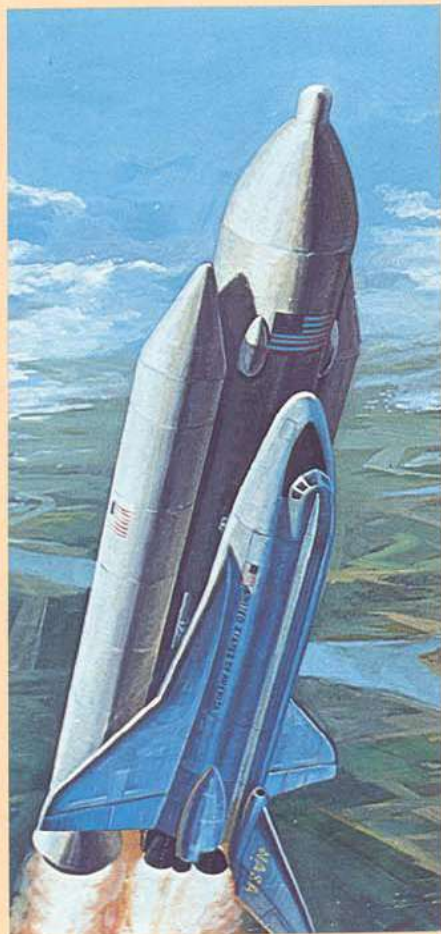
Thermovision® 110

Thermovision® 780/782

Field Service Engineering

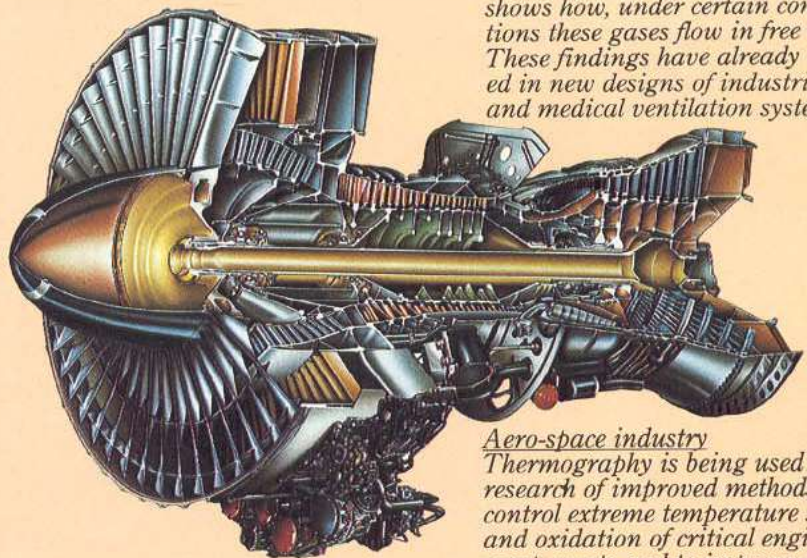
Research & Development

Research & Development is a major market for AGA Infrared Systems. It is a demanding market involving complex, variable and often very sophisticated applications, requiring highly trained sales engineers to analyse customer needs and problems. Combining technical insight with imagination our specialists work with the customer to apply infrared technology to meet his requirement.



Automotive industry
Infrared technology is used in a variety of applications to improve manufacturing, development and design processes; including engine development, component testing, heating and ventilation.

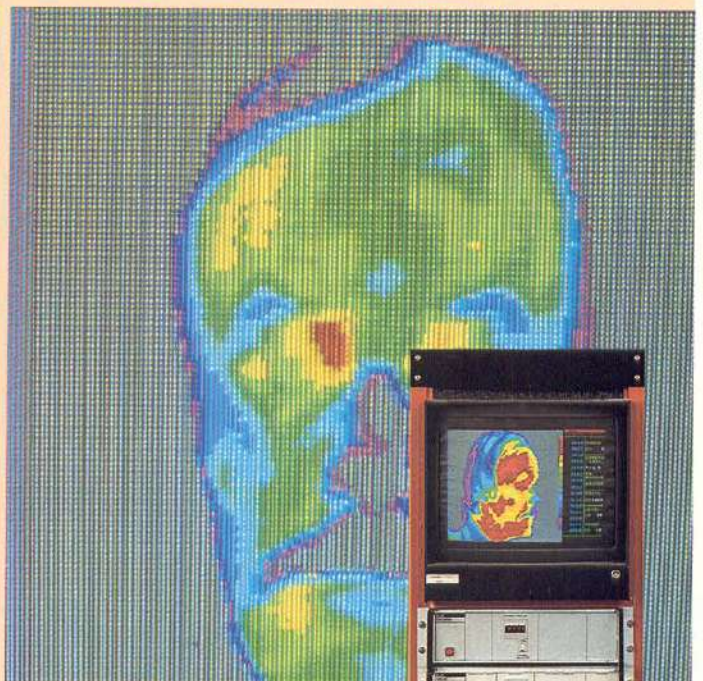
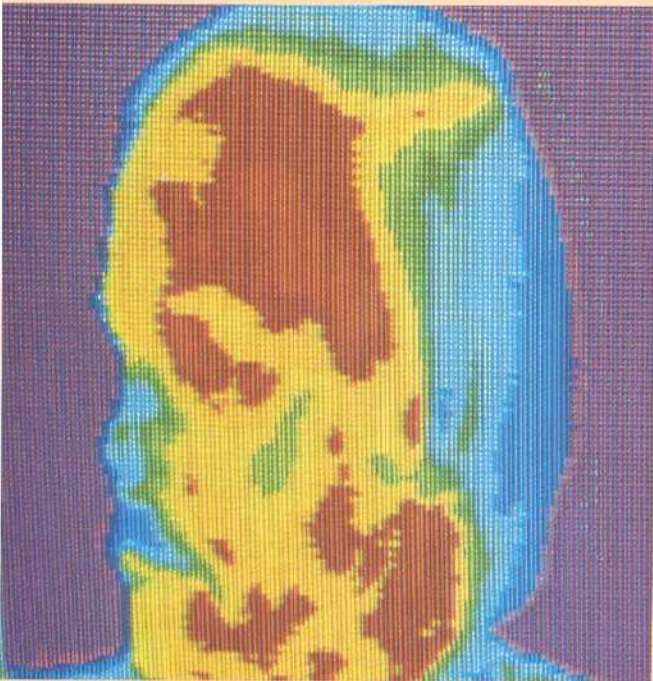
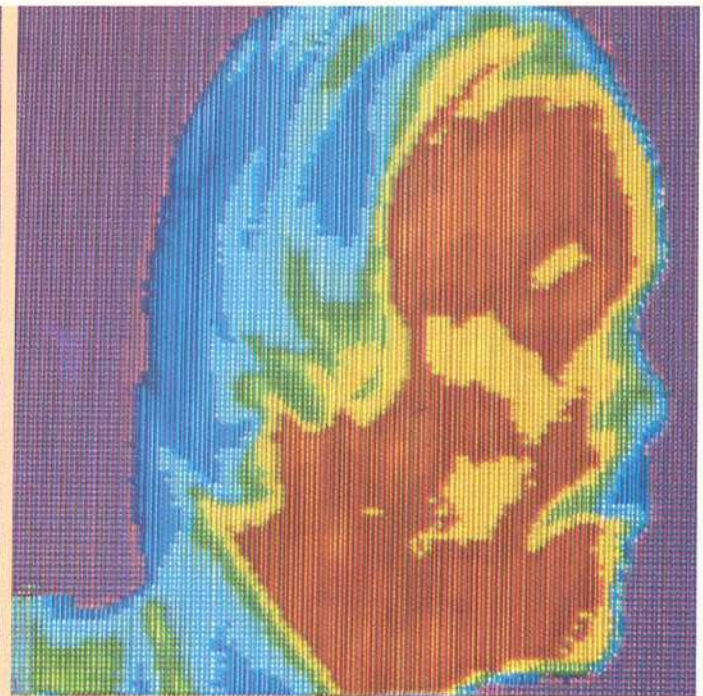
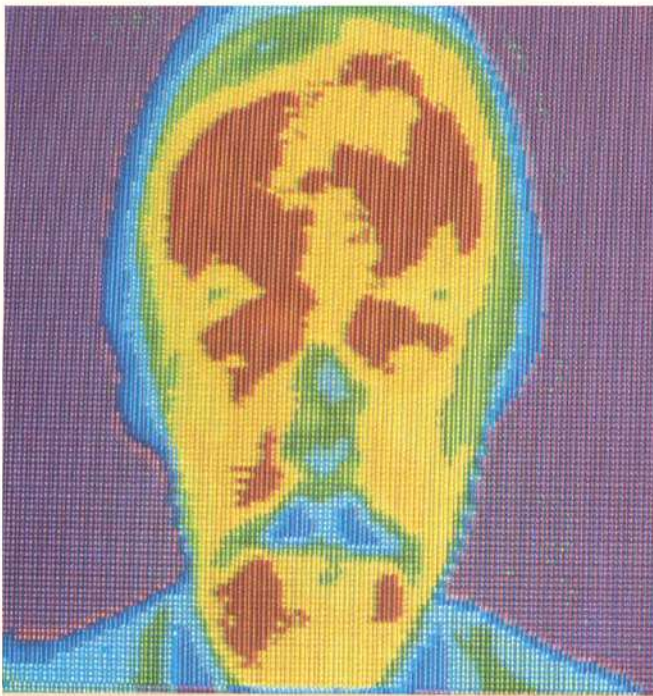
Environmental health
Ventilation systems installed to protect workers handling gaseous pollutants might actually be increasing the danger to employees. Thermovision[®] shows how, under certain conditions these gases flow in free air. These findings have already resulted in new designs of industrial and medical ventilation systems.



Aero-space industry
Thermography is being used in the research of improved methods to control extreme temperature stress and oxidation of critical engine components and to improve engine cycle efficiency and fuel consumption.

Thermovision[®] in space
Infrared measurement systems are incorporated into the Space Shuttle Program to evaluate how the extreme conditions on re-entry affect space vehicles.

Thermography is also widely used in the electronics industry and within fields such as materials testing, non-destructive testing and metallurgical studies.



Thermovision® Oscar-Pericolor System

The OSCAR-Pericolor is a specially designed digital image processing system for use with the Thermovision® 780.

Infrared images are digitised, stored and recorded in OSCAR (Off-line System for Computer Access and Recording), a highly flexible interactive system which allows the user full control over the transfer process. An OSCAR-Pericolor complement, the OSCARIDE, allows for temperature calibration with absolute temperature read-out from the colour display screen.



Inspection

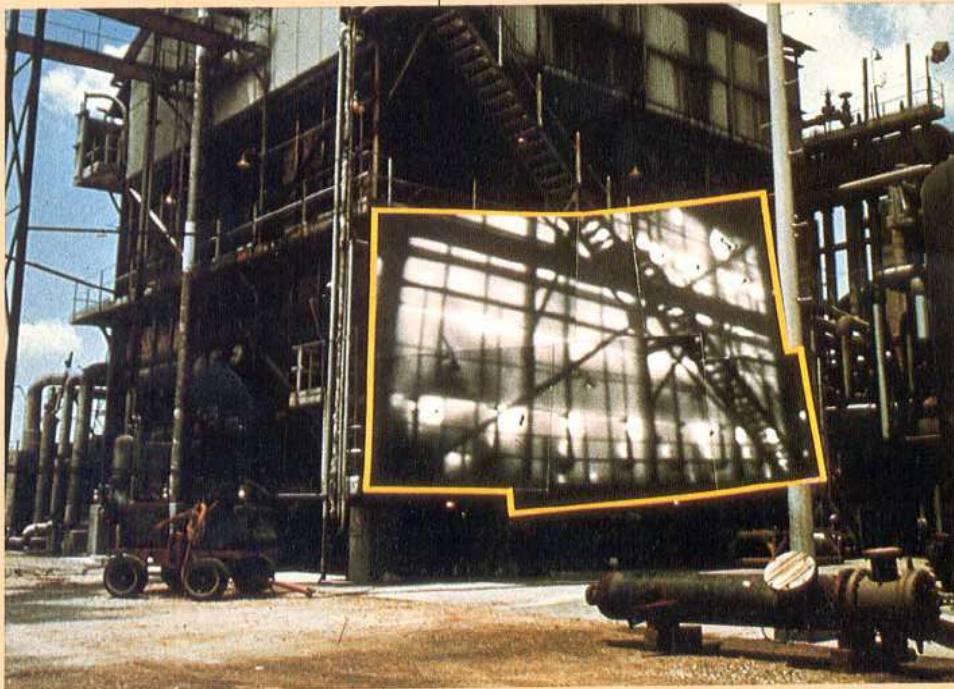
Highly portable thermal inspection equipment is cost-effective in preventing production downtime, avoiding hazardous situations and providing an efficient method of keeping processes and equipment continuously operational. Thus, thermal inspection offers greater process security and reduced operational costs for maintenance and inspection all resulting in increased overall revenues.



Energy conservation
Thermography is applied in the field of energy conservation as a means to improve designs and determine construction standards, assess quality of workmanship, and detect component failures. Applications for this technique can be found in nearly all energy consuming industries as well as in residential buildings.

Electrical utilities.
Today, thermography is used throughout the electrical supply industry in identifying and assessing problem areas in the generation, transmission and distribution of electricity. The technique helps avoid electrical failures. Quickly and obviously, long before a minor fault turns into a major maintenance operation, the thermogram pinpoints the problem.

Petrochemical and refining industries.
Infrared technology is widely used within the petrochemical and refinery field, where an additional factor, inspection of refractory material is important. In addition, it is also used to monitor the efficient flow of liquids and gases through the process plant, identifying and locating blockages in components such as relief valves and heat exchangers. This kind of trouble-shooting often allows on-stream repairs to be made, or the process condition to be adjusted so as to allow continued operation until the next planned shut-down.

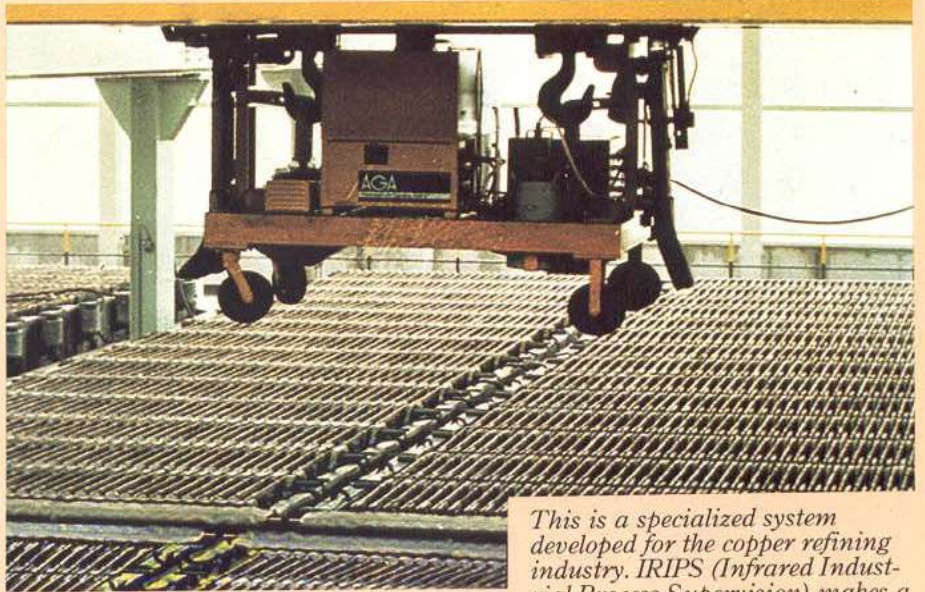




A wide range of instruments
AGA Infrared Systems serves industrial markets with a wide range of portable equipment. All requirements are met: simple point measurement: *Thermopoint® 80*, thermal viewing: *Thermovision® 110*, a complete thermographic inspection package: *Thermovision® 720*, the versatile *Thermovision® 782* system with optional use of a colour monitor or video tape recorder.

Process monitoring

Infrared technology can be used directly in the production process itself. Here the measurement of infrared energy at some point is used in the actual running of the process. The output of the infrared equipment is used to adjust or regulate the operation of the process. These applications involve highly dedicated equipment, specifically developed for the industry in question. Each of these systems call for a great deal of engineering and considerable specialist assistance to the customer during the analysis, construction and installation phases. The current trend within this field is toward more and more OEM (Original Equipment Manufacturer) business in which AGA Infrared Systems supplies the essential components of an infrared system to manufacturers of process systems.

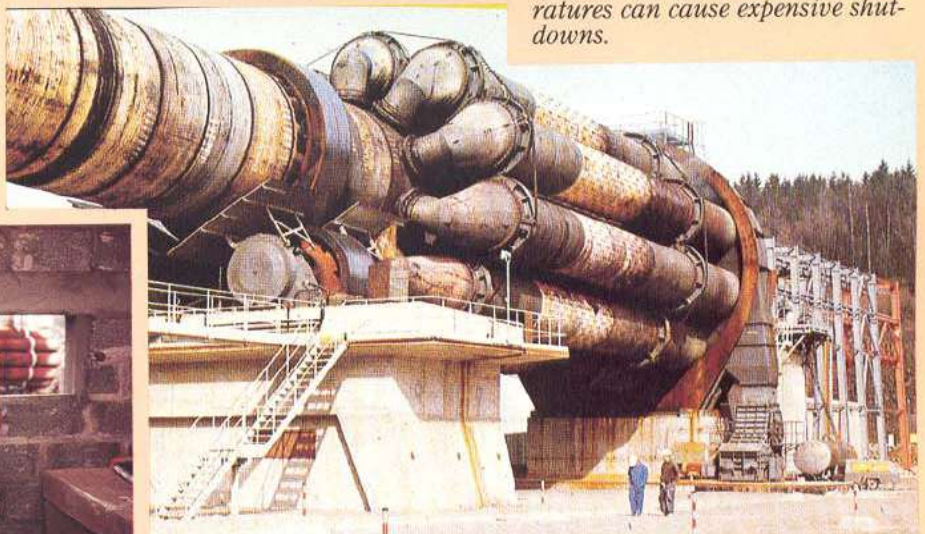


This is a specialized system developed for the copper refining industry. IRIPS (Infrared Industrial Process Supervision) makes a thermal map of the electrolytic tanks, which show short circuits, defective electrolyte flows, hot current rails and missing anodes.



IRBIS (Infrared Blast Furnace Inspection System) has been developed for the steel industry. Mounted on top of a blast furnace, it is specifically designed to show the temperature distribution of the burden of iron ore.

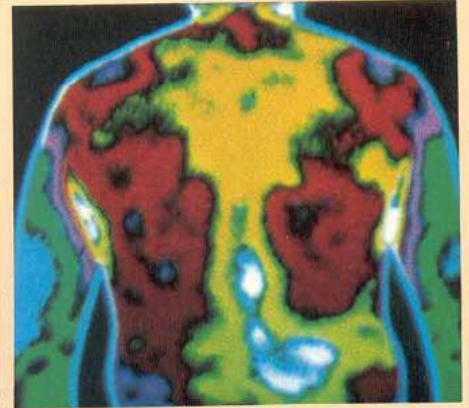
CEMSCANNER is a system used throughout the world by the cement industry to monitor the shell temperature of the rotating kiln used to process cement. This gives an indication of the refractory condition, where excess temperatures can cause expensive shut-downs.



Medicine

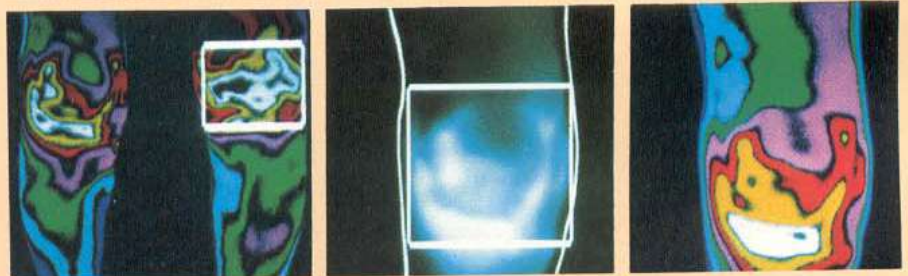
Every individual has a unique thermal pattern, just like a fingerprint. Thermography, the use of thermal patterns in medicine is a non-specific diagnostic tool which can indicate abnormality based on variations in surface temperatures. A major benefit is its total non-invasiveness.

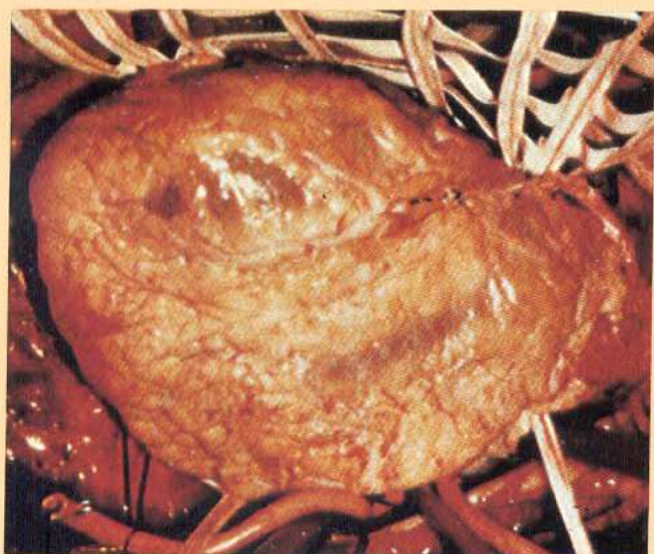
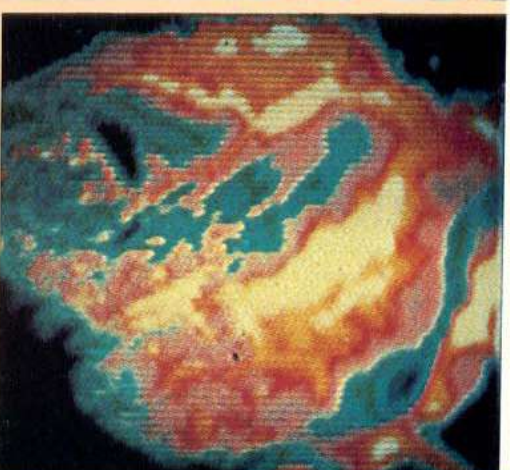
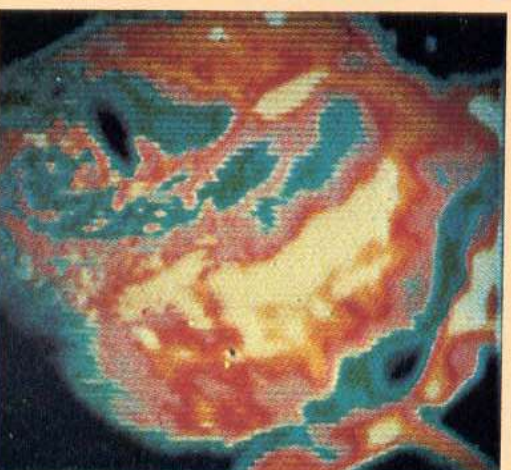
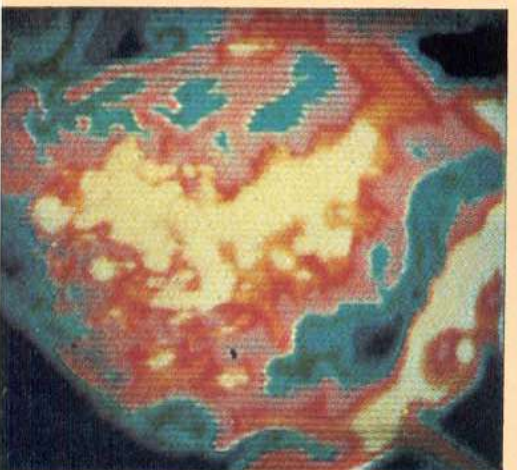
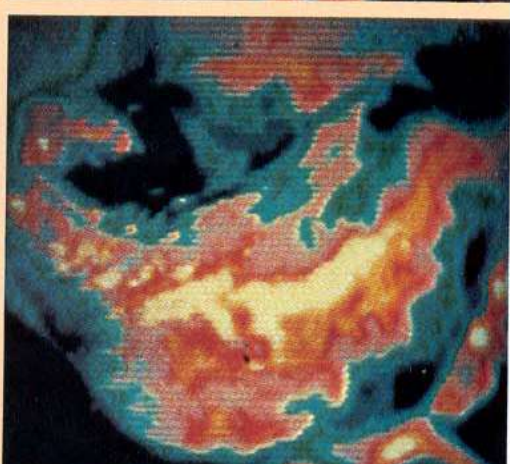
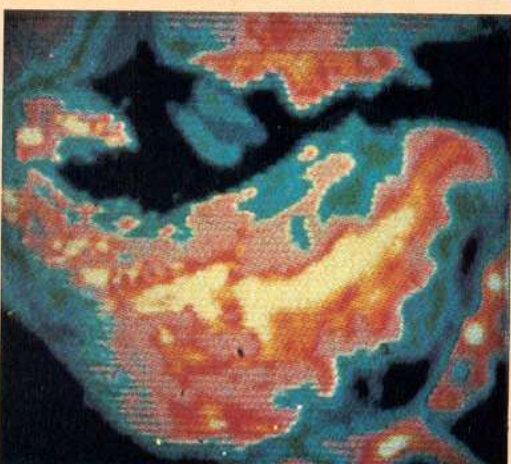
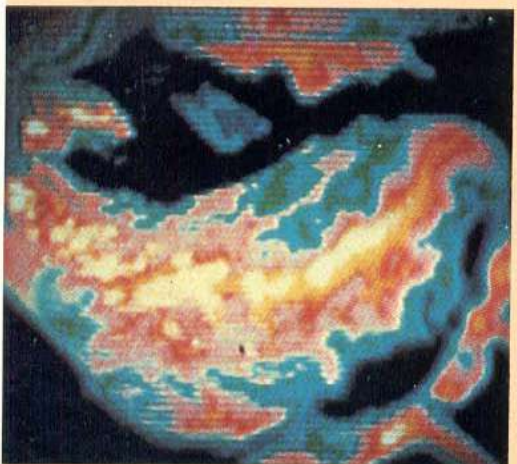
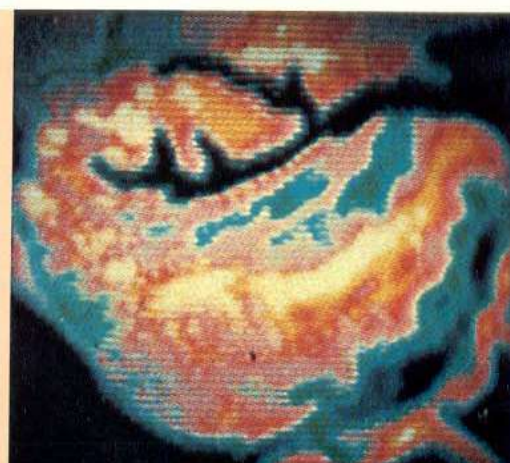
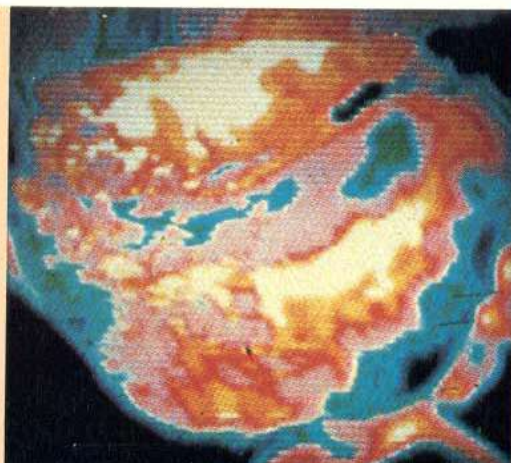
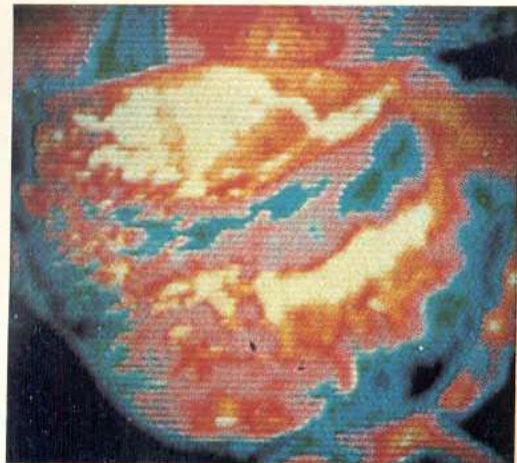
Thermography is used in the diagnosis of deep vein thrombosis and back disorders. It is used for monitoring of treatment in rheumatoid arthritis and peripheral vascular disease. In breast examinations it has proven valuable both as an aid in diagnosis and for prognosis in cases of cancer. Thermography can also be useful in orthopaedic and sports medicine in determining whether injuries are sufficiently healed to allow the athlete to return to active participation in the sport.



Science and practice of thermography in medicine.

The Thermovision® 780M is a comprehensive system incorporating many features for advanced medical thermography. New dimensions of quantitative image interpretation are possible through the use of precise analogue analysis. In other medical fields where complex image patterns are a regular occurrence, computer analysis is a standard option. The Thermovision® 720 M is a thermographic instrument designed for easy operation and routine work in hospitals and private clinics.





Open-heart surgery

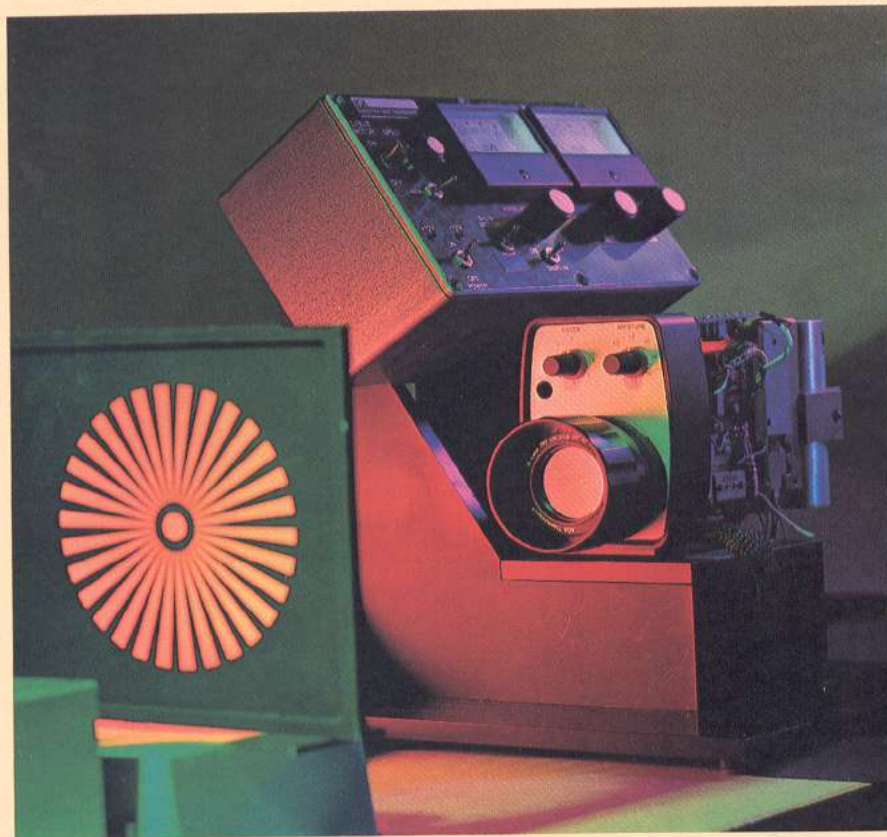
During surgery for the repair of defective coronary circulation, real-time thermography of the exposed heart clearly delineates those areas of the beating heart inadequately supplied with blood. Thermovision® shows such areas to be significantly cooler. By either by-passing or replacing defective arteries, blood supply to the ischemic heart is restored. Many thousands of these procedures are done every year.

An active, high technology company

World-wide developments in infrared technology deriving from military and commercial research, also require that we operate joint venture agreements with companies having access to technological advances in this field. Our essential expertise is thermal measurement but our know-how spans a wider field including electronics, optics, precision engineering and electro-optics. A critical aspect of our design activity is the specialized art of combining varied technologies into multiple cost-effective tools for industry.



AGA Infrared Systems Headquarters in Danderyd, Sweden.



Development

We are also alert to the needs of our markets around the world. In conjunction with our subsidiaries, our development department converts the latest available technology to users requirements, developing systems which offer practical solutions to real everyday problems.

Quality Assurance

Before a Thermovision[®] system is accepted into the sales stock it undergoes 40 different tests at various stages of production.

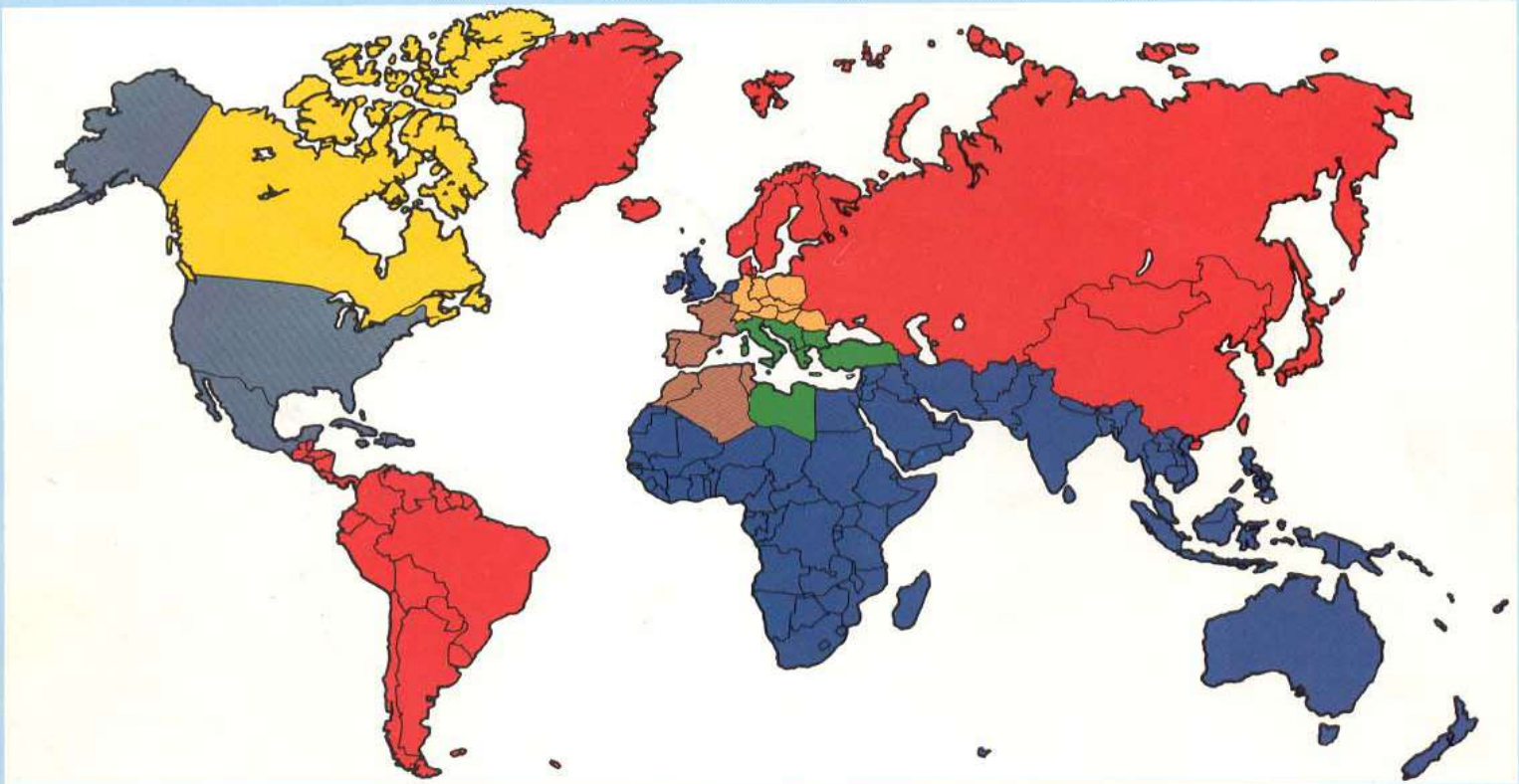
All mechanical, optical and electronic capabilities are adjusted and tested.

Field Service Engineering

Our Field Service Engineering Group ensures the proper level of service and technical assistance to customers all over the world.

On-the-spot technical assistance is also provided during the installation of specialized systems.

A world-wide organisation



- | | | | |
|--|--|--|--|
|  | <i>AGA Infrared Systems AB, Headquarters, Sweden</i> |  | <i>AGA Optronik GmbH, W. Germany</i> |
|  | <i>AGA Corporation, USA</i> |  | <i>AGA Infrared Systems Ltd., UK</i> |
|  | <i>AGAtronics Ltd., Canada</i> |  | <i>AGA Systèmes Infra-Rouges, S.A.R.L., France</i> |
|  | <i>AGA Italia, S.R.L., Italy</i> | | |

AGA

AGA Infrared Systems AB, a member of the Pharos Group, manufactures a complete range of thermal measurement systems. The entire AGA group has subsidiaries in 28 countries, and representatives in a further 50 countries.

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