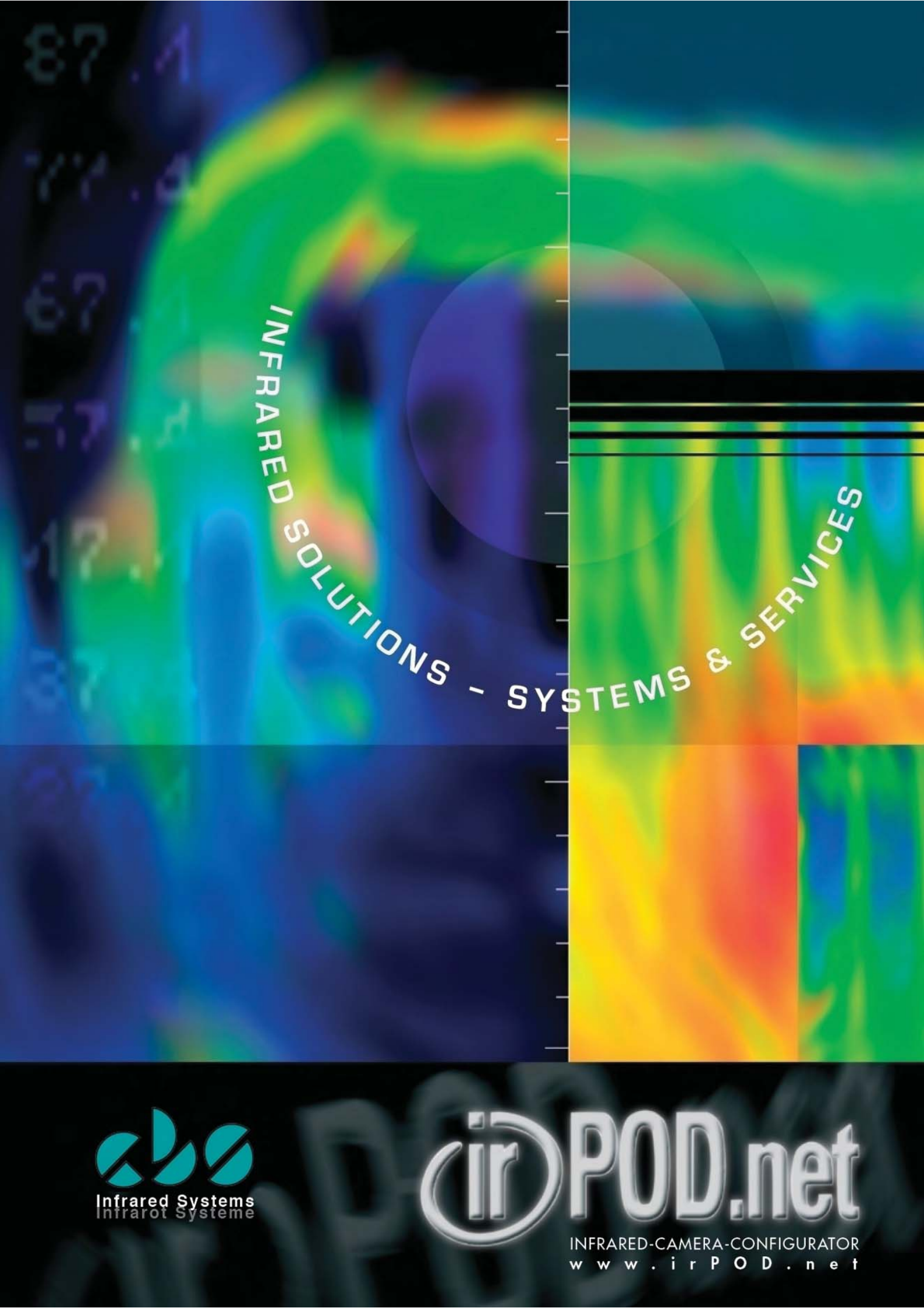

Infrared Systems
Infrarot Systeme

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INFRARED-CAMERA-CONFIGURATOR
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TI330+

Gas Thermal Imaging Camera for effective CH_4 Gas Leak Detection

ULIRVISION TI330+ is equipped with a cooled detector (QWIP, NETD <25mk) to detect gas leaks and pinpoint the gas leaks location accurately, also standard temperature measurement is offered. It is a multifunctional high sophisticated device for gas leakage detection and thermography applications.

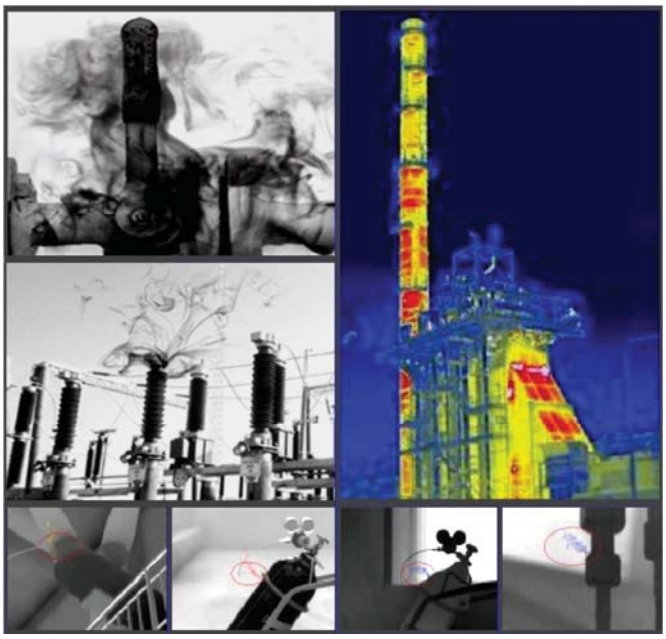
TI330+ is an ideal device for environment safeguard. It provides safe & efficient inspection at long distance without shutting systems down, scans large areas & numerous objects rapidly, sees into areas that are difficult to reach with contact measurement tools and enhances predictive maintenance at the same time. The major applications can be found in the **chemical/petrochemical industry such as offshore platforms, oil refineries and natural gas processing plants.**

Features

- Cooled QWIP detector, sensitivity <0.025°C, pinpoint gas leaks location quickly
- CH_4 Detection accuracy ≤ 0.001ml/s
- Dual-application: Gas leakage detection and thermograph application
- Temperature range: -20 up to 180°C
- Inspection without process interruption
- Interchangeable lenses available
- Built-in 5.0MP digital camera
- Folding and 270°rotatable display

Applications

Gas leakage detection: Methane (CH4), Ethylbenzene, Propylene, Ethane, MEK, Methyl alcohol, Butane, Xylene, Octane, Isoprene, Pentane, Heptane, Hexane, Propane, Ethylene, MIBK, Ethyl alcohol, 1-Pentene, etc.



Multiple Gas leak infrared thermal imager with radiometric temperature measurement

Localization and quantification of hydrocarbon gases and methane (natural gas) including volatile gas & vapor as organic compounds [Volatile Organic Compounds (VOC)]

Our powerful infrared thermal imaging systems are ideally suited already to detect even minimal gas leakages. The differentiated live image allows long-range scanning of areas and the detailed views at hardly accessible regions. The work is carried out with due safety distance, to avoid adverse health influence to the operator and sensible facilities during the inspection. Gas leaks can be detected unerringly and escaping hydrocarbons, alcohols, aldehydes, organic acids and some solvents, liquid fuels and materials synthesis and some organic compounds are designated material to detect. Our systems can be operated during almost all active processes; there is no need to shut down the running productions. This ensures a high uptime rate for the running production or procedural processes; this reduces costs for preventive maintenance and ensures the reduction of risk potentials.

Production accompanying tracking of refrigerants

Our powerful infrared thermal imaging systems are especially designed for the inspection of active plant facilities. Especially when tracking of refrigerants within the production and storage facilities, our portable devices are best suitable. Global are manifold refrigerant in use. These are found primarily in refrigeration equipment, storage and trade, at energy producers, nautical, aerospace, food & beverage industry, in the chemical and pharmaceutical industries as well as automotive manufacturers and suppliers. The smooth function and the full efficiency of a refrigeration unit is the guarantee for maintaining the value of the chilled goods and the components to be cooled. Through the environmental friendly use and minimization of refrigerant gases, or even avoiding losses, material costs and expenses for a specific maintenance can be reduced. The investment and acquisition costs for a combined gas detection and radiometric IR thermal imager would be amortized soon.

The early leakage detection of fluctuating SF6 sulfur hexafluoride gases

Our powerful infrared thermal imaging camera systems are designed for the detection of harmful greenhouse gases. Uncontrolled escaping or unconsciously wasting of SF6, which is preferably used in power generators within the high-voltage equipment and substations, for the effective isolation of current break switches, can dramatically be decreased. Weathered or age-related sealing components are localized promptly and can be timely repaired or maintained. This safes immediately blatant operating and follow-up costs

Middle IR-Wavelength Range for Gas Detection of:

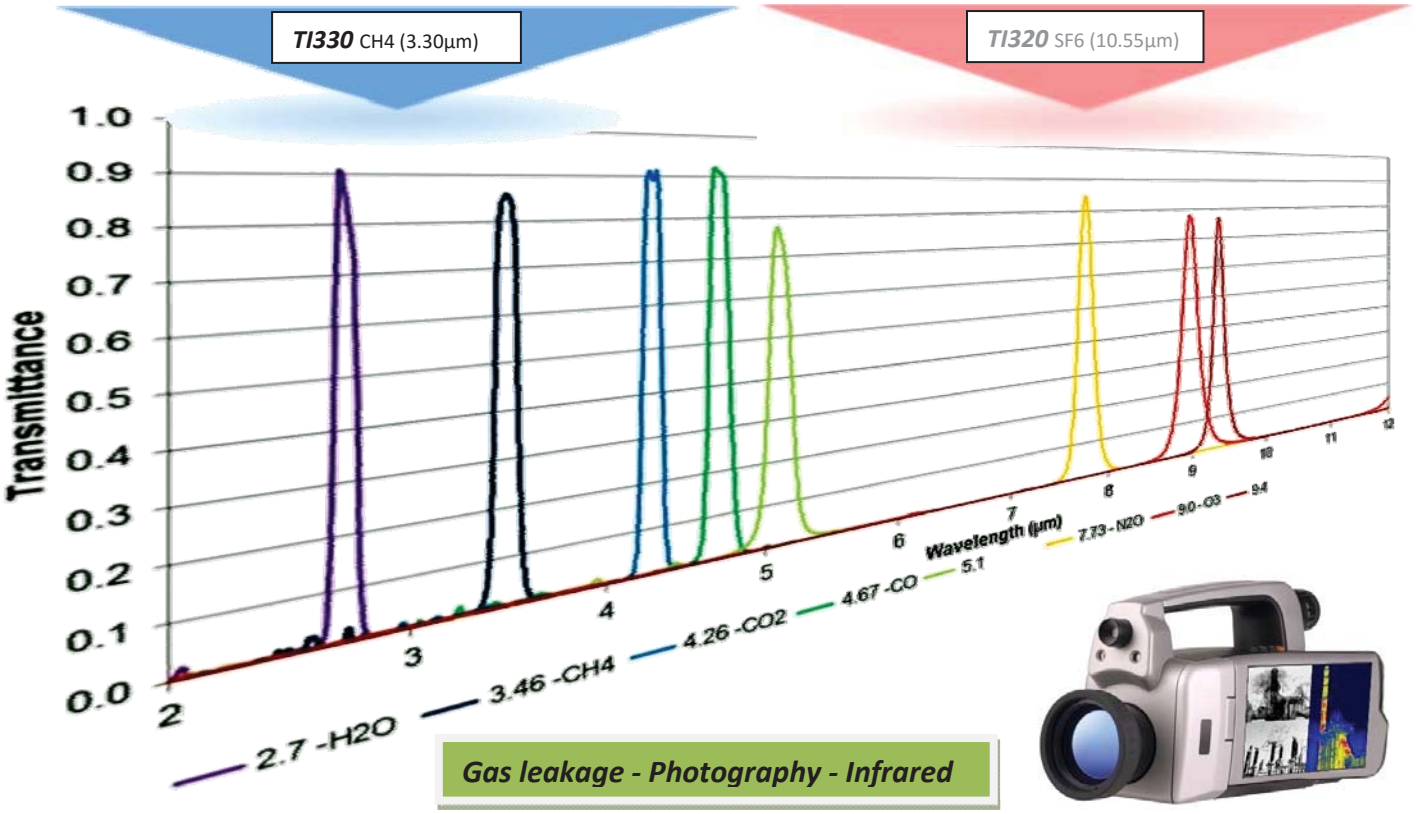
Methan (CH4), Ethan, Propan, Butan, Oktan, Pentan, Heptan, Hexan, Ethylen, Propylen, Ethylbenzol, Xylol, Äthylalkohol, Methylalkohol, Isopren, MEK, MIBK, 1-Penten

Methane(CH4), Ethane, Butane, Propane, Octane, Pentane, Heptane, Hexane, Ethylene, Propylene, Ethylbenzene, Xylene, Ethyl alcohol, Methyl alcohol, Isoprene, MEK, MIBK, 1-Pentene

Long IR-Wavelength Range for Gas Detection of:

Schwefelhexafluorid (SF6), Ammoniak (NH3), Cyanoacrylate, Chlordioxid, Essigsäure, Freon-12, Ethylen, Methylethylketon (MEK)

Sulfur Hexafluoride (SF6), Ammonia (NH3), Cyanoacrylate, chlorine dioxide, acetic acid, freon-12, Ethylene, methyl ethyl ketone (MEK)



Gas leakage - Photography - Infrared

Technical Specifications

Detector Data	
Detector type	Cooled QWIP
Resolution	320×256 pixel
Pixel pitch	30 µm
Spectral range	3.1~3.5 µm, wave crest 3.3µm
Sensitivity/NETD	<25 mK @ 30°C
FOV/Min focus	10°× 7.5° / 0.5m standard 20° x 15° / 0.25m optional
Spatial resolution(IFOV)	0.55mrad (10°× 7.5°)
Image Performance	
Image frequency	60Hz
Focus	Auto/manual
Digital zoom	1~8 Continuous
Visual camera	5.0 Mega pixel
Spotlight	10cd/m²
Image Display	
Viewfinder	0.6" (~15,2mm) color OLED, with magnification eyepiece
Image display	5" (~130mm), 270° tiltable LCD, 800×480
Auto image adjustment	Linear or histogram based
Manual image adjustment	Level/Span
Image modes	Thermal image, visual image, High Sensitivity Mode
Measurement	
Temperature range	-20°C ~ 180°C
Temperature accuracy	±2K or ±2% of reading
Measuring calibration	Auto/Manual
Spotmeter	10 moveable spots
Area	5 adjustable boxes with max/min and average temperatures
Line profile	Horizontal/vertical
Emissivity correction	Variable from 0.01 ~ 1.0, or correct the emissivity by predefine values
Alarm	Sound and color
Color palettes	12 palettes (incl. Iron, rainbow, black hot, white hot)
Image adjustment	Auto/Manual brightness and Contrast adjustment
Set-up commands	Date/Time, Temperature units in °C, °F, K Language
Background temperature correction	Automatic, based on input background temperature
Atmospheric transmissivity correction	Automatic, based on input reflection environment temperature, distance, relative humidity, atmospheric transmission and external optical parameters
Multiple language menu	10 languages (English, French, Italian, German, Spanish, Portuguese, Russian, Korean Japanese, Simplified Chinese & Traditional Chinese)

Image Storage	
Storage card	8GB Micro SD(2 pcs), 32GB optional
IR image format	Single frame, JPG format, 16-bit measurement data included
Visual image format	Single frame, JPG format, visual images auto correlation with infrared images
Storage type	Manual/Auto single frame image storage, continuous visible and IR image
Periodic image storage	10 seconds to 24 hours
Voice annotation	40s voice annotation, stored as image/video
Video storage	High definition video stored in SD card (MPEG-4/H.264 format), recording time up to 4 hour for per video
Laser Pointer	
Grade/Type	Class II, 1 mW/635 nm red
Power System	
Battery	Li-ion, chargeable and replaceable
Operating time	~2 hours continuous operating (at normal temperature conditions)
Charging system	Intelligent charger, AC (Car-) adaptor
External power	12V
Power saving	Yes
Environmental Data	
Operating temp. range	-15°C ~ +40°C
Storage temp. range	-30°C ~ +60°C
Humidity	≤95% (non-condensation)
Electromagnetic compatibility	EN61000-6-4&EN61000-6-2 FCC47CFR Part15 class A EN61000-4-8,L5
IP level	IP54 (IEC60529)
Shock	25G, IEC60068-2-29
Vibration	2G, IEC60068-2-6
Physical Data	
Camera weight	≤2.4kg (incl. battery and standard lens)
Camera size (L×W×H)	306mm × 140mm× 162mm
Data Communication Interface	
USB	Radiometric images transfer to and from PC
Video output	CVBS
Audio output	Yes
Power	Yes
Size of screw on tripod	1/4" (6,35mm) standard adaptor

Gases Detection

Methane (CH4), Ethane, Butane, Propane, Octane, Pentane, Heptane, Hexane, Ethylene, Propylene, Ethylbenzene, Xylene, Ethyl alcohol, Methyl alcohol, Isoprene, MEK, MIBK, 1-Pentene, etc.

Packing

Thermal imaging camera with Standard lens, 2 Batteries, Battery charger, AC-Adapter, SD Card, SD Card reader, CD-ROM, Calibration certificate, Softwarepaket GasSee/IR and operating manual with material tables.

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INFRARED SOLUTIONS

Application / Anwendungsbereich	Model / Modell						
Building Investigation Gebäudethermografie	◑	◑	●	●		
Electrical Thermography Elektrothermografie	◑	◑	●	●		
Medical/Human Body Investigation Medizintechnische Anwendungen	◑	◑	●	●	○	
Predictive Maintenance Vorbeugende Instandhaltung	●	●	◑	◑		○
Research & Development Forschung & Entwicklung	○	○	●	●	◑	○
Automation/Conditional Monitoring Automation/Qualitätssicherung			◑	◑	●	○
Industrial Process Control Industrielle Prozesskontrolle			◑	◑	●	○
Surveillance/Rescue Management Fernbeobachtung/Sicherheitstechnik					●	
Traffic Control Verkehrsüberwachung					●	
Furnace/Glass melting industry Brennraum/Glasschmelze						●
Flame- and plastic measurement Flamm- und Folienmessung						●

○ capable geeignet ◑ well suitable gut geeignet ● particularly suitable sehr gut geeignet

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