



Industrial



New

Gobi-384

Smart cameras entering the world of infrared imaging

Imagine the invisible

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Xenics
Infrared Solutions



Smart thermal Gobi-384 manages your processes

The Gobi-384 is a compact thermal infrared camera fitted with a unique on-board Digital Signal Processor (DSP) for improved real-time image processing.

Designed for use in

- Quality control and quality assurance
- Temperature measurement for automated processes
- Alarm remote infrared detection

The Gobi-384 camera excels by its on-board calculating power in a compact yet complete camera system. With this plug-and-play camera you have the highest degree of flexibility in terms of frame rate, user interface and temperature range. You can readily fit the Gobi-384 into industrial environments for process control and use it as an IP network camera or connect it directly to a PC or video monitor.

Operating in the 8-14 micron wavelength range, the Gobi-384 camera can detect temperature differences as small as 0.05°C. The 384 x 288 pixel uncooled a-Si microbolometer detector array offers a 44% higher pixel count than other systems based on the same detector technology.

Need for customization? A variety of industry standard accessories is available.

Why long wave infrared technology?

Microbolometer detectors are based on heat detection, rather than on light detection or light amplification. All objects emit heat, or infrared radiation, detected by microbolometers in the 8-14 μm wavelength region. This means that objects can be “seen” in complete darkness with a sensitivity of less than a tenth of a degree. Moreover, these thermal cameras can perform non-contact temperature measurements, making them ideal for in-line inspection of moving objects.

Benefits

- Affordable multipurpose package
- High definition images and TCP/IP interface
- High sensitivity
- Suited for machine vision applications
- Smart infrared camera
- Flexible programming in an open architecture

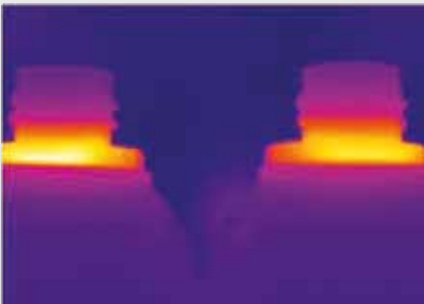
Features

- As easily tuned as an IP network camera or directly connected to a PC or video monitor.
- 44% higher pixel count than systems based on the same detector technology. Up to 50 images per second over a standard 100 Mbit/sec Ethernet connection.
- Detection of temperature differences as small as 0.05°C.
- Both Ethernet (TCP/IP) and CameraLink interfaces for easy communication and reliable data transfer.
- Custom image processing algorithms on the camera hardware.
- Software Development Kit (SDK) supporting C++, Visual Basic, Labview or Linux.

Applications

In-line process monitoring

In glass manufacturing you can precisely monitor the cooling down proces with the Gobi-384 camera. Thanks to the on-board image processing you can faster detect non uniform cooling that would otherwise result in poor quality and strain in the final product, causing the glass to break easier.



► Hot bottle inspection

Automotive

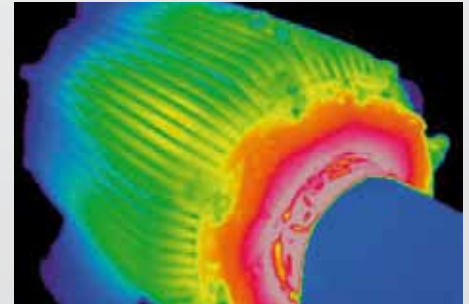
Quality assurance is a very important issue in the automotive industry. With the Gobi-384 you can quickly detect defects in the heating elements in for example the windscreen. Thanks to this early detection warranty claims and loss if brand images are avoided.



► Windscreen inspection

Maintenance

In hot processes like the petrochemical and chemical industry, some components may not exceed a certain temperature. Safety is assured for both equipment and personnel if you monitor these zones from a distance with the Gobi-384 camera.



► Machinery

Electronics inspection

It is critical to control heat dissipation in a working instrument to optimize its lifecycle. With the Gobi-384 you can measure the temperature of components on printed circuit boards, installed in these systems, and therefore avoid overheating which would otherwise result in limited performance.



► PCB inspection

Process monitoring

In the drying process of paper manufacturing, it is crucial to have a uniform temperature distribution through the paper sheet. Because water had a high heat capacity, you can detect cool areas in the drying process as zones with more moisture.



► Paper inspection

Thermal monitoring of waste

Storage of bulk products like coal or crops can lead to spontaneous local combustion. Monitoring with the thermal Gobi-384 camera offers you a very early warning system to prevent hard to extinguish fires.

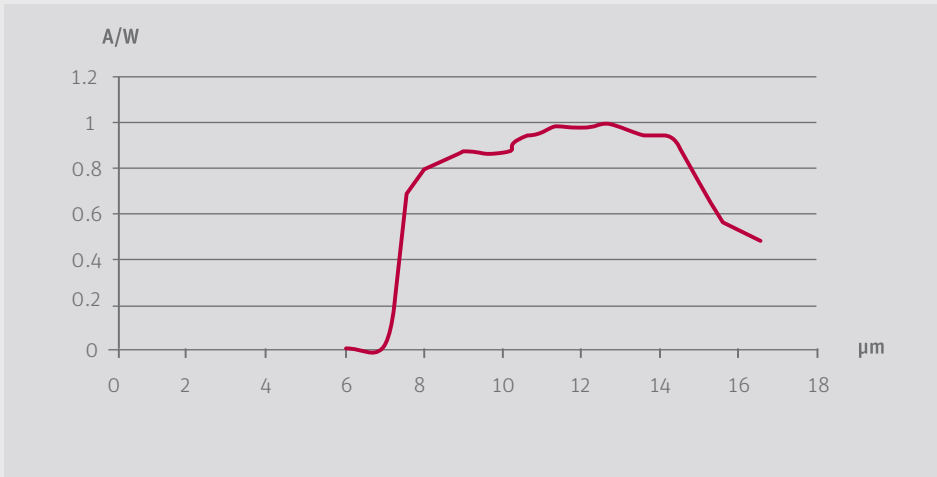


► Waste combustion


Array Specifications	
Array Type	Uncooled microbolometer (a-Si)
Spectral band	8 μm to 14 μm
# Pixels	384 x 288
Pixel Pitch	25 μm
Array Cooling	Uncooled
Exposure time range	7 μs – 9 ms
Pixel operability	> 99%

Camera Specifications	Gobi Digital	Gobi Analog
Lens (included)		
Focal length	18 mm f/1, HFOV 25.5°, standard manual focus	
Imaging performance		
Frame rate:		
Ethernet	50 Hz in 8 bit mode 25 Hz in 16 bit mode (depending on network load)	-
Video Out	-	30 Hz over NTSC
Interfaces		
Camera control	Ethernet (TCP/IP), CameraLink	
Image acquisition	CameraLink: 14 bit full frame rate Analog: PAL or NTSC	
Trigger	Trigger in and out; LVCMOS	
Graphical User Interface (GUI)* <small>*only for digital</small>	Xeneth Advanced Xeneth Radiometric Thermography Studio	
Power requirements		
Power consumption	3.6 W at room temperature	
Power supply	12 V	
Physical characteristics		
Camera cooling	Forced convection cooling	
Ambient operating temperature	0 to 50°C	
Humidity	Non-condensing	
Dimensions	58 L x 62 W x 72 H mm	
Weight camera head	380 g (lens not included)	

Spectral response curve

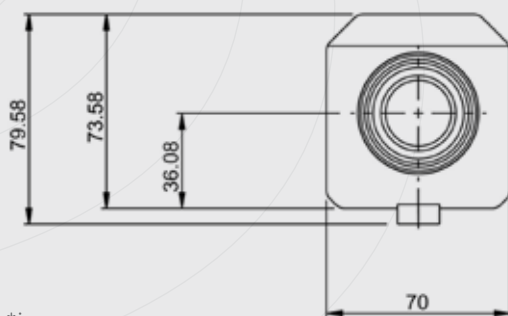


Software

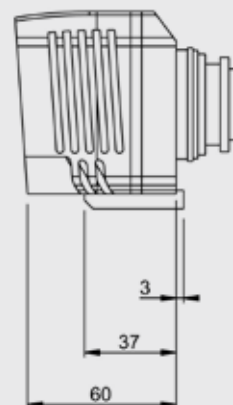
Xeneth Advanced	Xeneth Radiometric (optional)
<ul style="list-style-type: none"> Image live view Store digital Pictures / Movies Image histogram Line profiles, Spot meters, Time profiles 	<ul style="list-style-type: none"> Xeneth Advanced features + thermography
<ul style="list-style-type: none"> Black hot/ White hot False color mode with various color palettes 	IQR Recording Software (optional)  <ul style="list-style-type: none"> Network video viewing and recording software
<ul style="list-style-type: none"> Advanced image processing features Including Filter wheel control, Superframing 	
Xeneth SDK	Thermography Studio (optional)
<ul style="list-style-type: none"> Installer package for windows (dll's) platform, operability with C, C++, C#, VB.Net (Visual Studio), Visual Basic and Delphi Installer package for Linux (.so), operability with C and C++ (gcc, ... SDK validated on Fedora 9.0) Sample code and hands on for Labview 	<ul style="list-style-type: none"> Analysis and report-generating software of real-time and static images



Mechanical drawings*



*in mm.



Product Selector Guide

Gobi-384 Part number	Digital	Frame rate (Hz)	Analog out	Thermography option
G004C500S	✓	50	✓	✓
G004C501S	✓	9	✓	✓
G004C510S*	-	50	✓	-
G004C511S*	-	9	✓	-
G004C520S	✓	50	✓	✓
G004C521S	✓	9	✓	✓

* NTSC or PAL configured: G004C510S: PAL configured, G004C510SN: NTSC configured

Accessories

Lenses Part number	Focal Length	Optional	Available on following cameras
XC509-302	18mm f/1	Included	All
XC509-303	25mm f/1	✓	
XC509-306	50mm f/1	✓	
XC509-305	75mm f/1	✓	
XC509-307	100mm f/1	✓	
XC509-309	60mm f/1.25	✓	

* Please specify lens order code on the order.

Cables Part number	Type	Description	Available on following cameras
XC615-301	Ethernet	RJ45, cat. 5E	G004C500S, G004C501S, G004C520S, G004C521S
XC602-305	Trigger in	Microcoax	All
XC411-304	Power supply	Hirose 4 pin female push-pull connector	
XC606-301	CameraLink	SDR-26	G004C520S, G004C512S
XC603-303	Video	Hirose 4 pin female push-pull connector	All

Thermography Part number	Description	Available on following cameras
TH0120	Temperature calibration from -20°C to 120°C	G004C500S, G004C501S, G004C520S, G004C521S
TH0400	Temperature calibration from 0°C to 400°C	
TH0800	Temperature calibration from 0°C to 800°C	
TH1200	Temperature calibration from 0°C to 1200°C	

Software Part number	Description	Available on following cameras
XEADV	Xeneth Advanced	G004C500S, G004C501S, G004C520S, G004C521S
XESDK	Xeneth SDK	
TST08	Thermography Studio	
XERAD	Xeneth Radiometric	

Information furnished by Xenics is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. This information supersedes all previously supplied information.





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About Xenics

Xenics is a leading developer of innovative infrared detection solutions. We design, manufacture and sell infrared detectors and cameras, both linescan and 2-D, covering the infrared wavelength ranges from 0.4 to 14 micrometers. In addition, Xenics delivers tailor-made solutions produced according to customer-agreed specifications and planning. As a European vendor with a worldwide service and distributor network, we are strategically placed to serve global markets with highly innovative products drawing on a strong science and technology background.

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