InfraRed Camera

NEC

NEW

S30 Series Networkable Infrared Thermal Imager

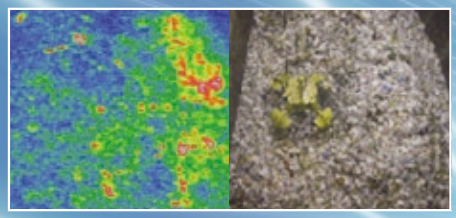
Compact & Rugged Design Ensures and Broadens Integration Possibility into Various Process Monitoring Systems

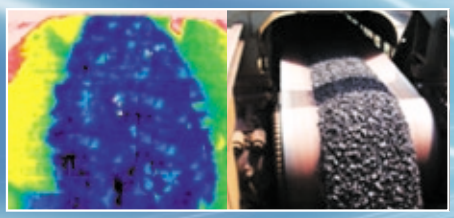
Ideal for Monitoring Processes / Facilities for Quality Control & Predictive Maintenance

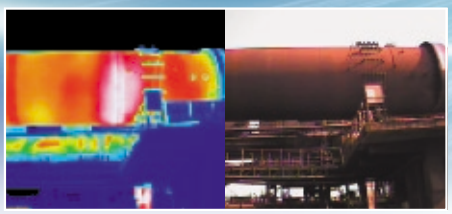
Temperature Monitoring Applications representing Low-Pressure Casing, Flaw Detection, Fire Prevention. Integration into Machinery / Robot

Integrator / User's Own System, Software Development Supported

SDK (Software Development Kit)* supports customized system design. Simple remote control & viewer software comes with







Small, Light & Robust

- Flexible and easier installation / placement even in a limited / restricted room availability
- IP67 rated protective casing makes it possible to be used in harsh environment

Network-Configured and -Controlled

- Ethernet Interface incorporated for remote operation and flexible system building

Alarm Output

- When adequately programmed, the camera can operate for monitoring to output alarm signal on its own (disconnected from network), too.

Image and Measurement

- 160 x 120 pixel image sensor allows high-resolution thermal image measurement
- Visible light camera incorporated. Each single picture (still image) can be embedded with visible image (selectable). Either IR or visible image can be viewed via analogue video output.
- Measuring Temperature Range is to be chosen from either -20°C to +350°C (S30W) or 0°C to +600°C (S30H)

Software and Tools

- Remote Control Software as a standard accessory to configure, program and operate over the network
- Thermal image viewer, analysis and report generator software (for captured images) comes with (NS9500LT)
- Software Development Kit (SDK) available free for purchasers*

* Software Development Kit (SDK) is provided on request raised by users via our website

ISO9001 JQA-1598 ISO14001 JQA-EM0260 HEAD OFFICE

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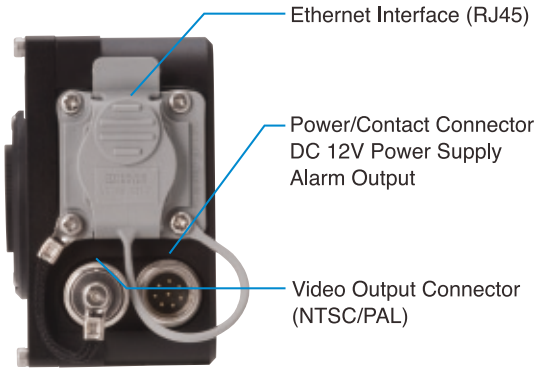
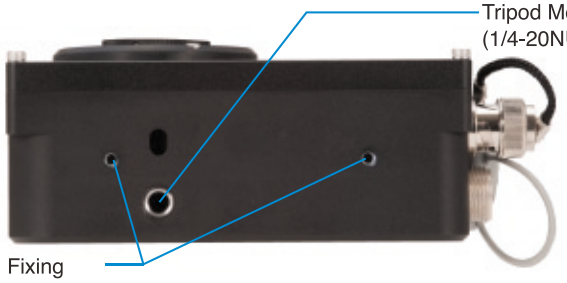
Features and Parts Description

Small but sturdy packaging with solid aluminum body, standard tripod mount and screw holes for flexible installation





Pin Assignment of Power / Contact Connector*

A	+12V±1V	DC Power Supply	B	Reserve
G	GND		C	Reserve
E	COM+	Contact	D	Reserve
F	COM-	Rating: 24V/100mA	H	Reserve

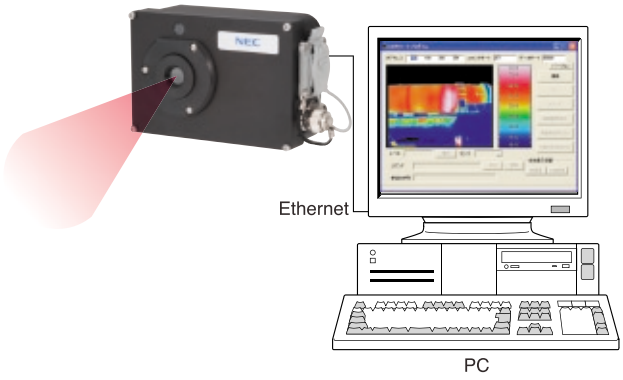
Leave these Unconnected

*Dedicated connector comes with the camera. To facilitate evaluation and or installation, it is strongly suggested to take and start with Quick Start Kit: S30-351 / 352 since it is comprised of the cable for DC Power / Alarm output, AC / DC Adaptor, AC Cable and Ethernet cable with dust / splash protection.

Examples of System Architecture

PC Connection Mode

Ethernet interface enables remotely-controlled monitoring and real-time thermal image transfer and recording by PC (pier to pier or over the network). Graphics such as point temperature are displayed on image coming from analogue video output, which helps setup process.



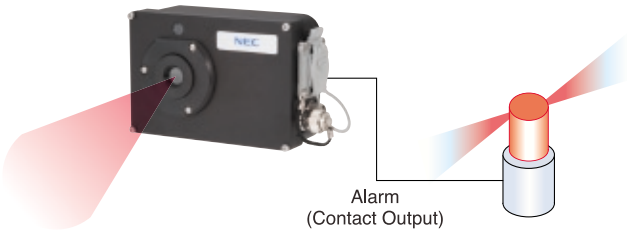
Functions of the Remote Control Software:

- Setting Measurement Parameters
- Setting Alarm Parameters
- Capturing Thermal and Visible Light Image Data*1
- Simultaneous Capturing of Thermal and Visible Light Images. (for still images only)
- File Formats*2 Still Image:SIX Format
  Video File:SVX Format

*1 With the InfReC Analyzer Lite (standard accessory), saved data can be displayed as thermal / visible light images or used for temperature analysis.
*2 These are NEC's original file formats.
*3 Software Development Kit (SDK) is provided on request raised by users via our website
*4 Frame rate might be affected, depending on the number of connected cameras and other network conditions

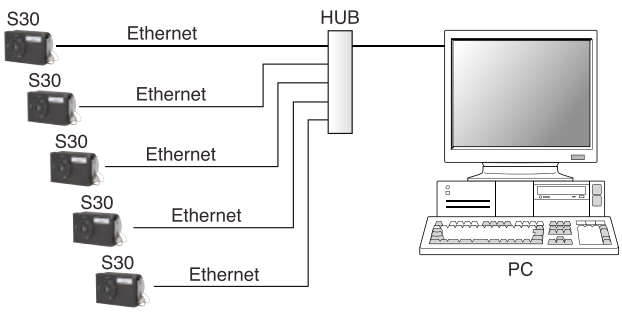
Stand-Alone Mode

Once various parameters have been set using the Remote Control Software, the camera can be disconnected from the PC to operate as a Stand-Alone Monitoring Unit.
Temperature Alarm can be programmed and kept operated to give out alarm signal (1 condition: threshold below/ above, box / entire FOV, number of pixel and frame etc.). Real-time Image is monitored with user's preprogrammed graphics (point temp) via analogue video output.



Multi-Unit Network Connection Mode

Software Development Kit (SDK)*3 allows users to design their own system to operate maximum of 15*4 cameras in parallel.

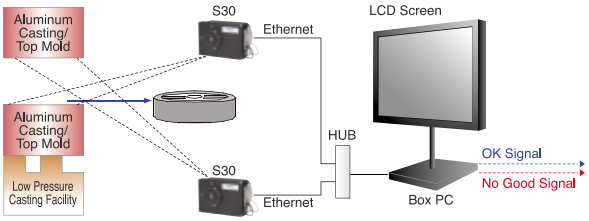


System Application Examples

Applications with Limited Space

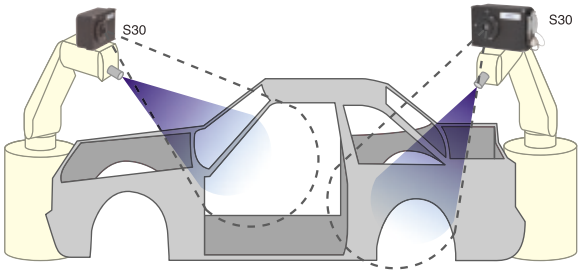
Monitoring the Performance of Low-Pressure Casting Facilities

This system measures the temperature of top and bottom molds in low-pressure casting while synchronizing them with the manufacturing facility. The system outputs a “No Good” signal when an abnormality is detected in comparison with the temperature settings.



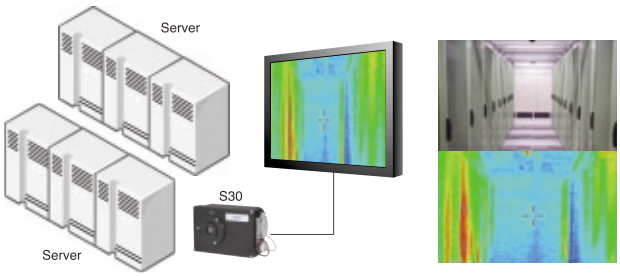
Judging Performance of Production Lines

In this system, S30 units are mounted onto robotic arms to be used as instruments for verifying the quality of painting, welding or other tasks.



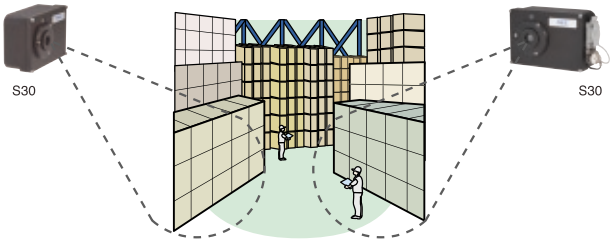
Energy Efficiency System

This System is designed for determining the heat that is generated by a server rack in a data-center. By calculating the heat generation of each server the cooling system can be adjusted to maximize efficiency.



Monitoring for Fire in Warehouses

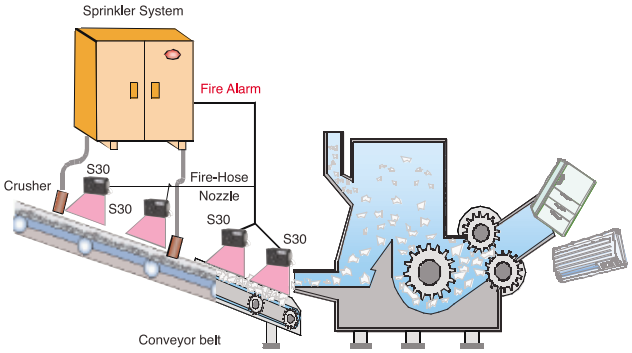
Monitoring systems inside warehouses tend to have blind spots as there are space limitations where a monitoring device can be installed. Due to the compact size of the S30, there are minimal restrictions to where it can be installed. Since the unit is low cost, more units can be installed to reduce the blind spots while remaining affordable.

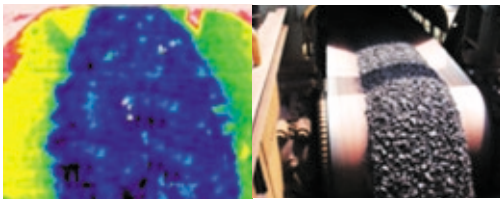


Examples of Multiple Camera Monitoring Systems

Monitoring for Fire on a Crusher’s Conveyor Belt

In this system, the S30 is installed over conveyor belts behind the crushing process. In the instance that heat buildup is detected in the crushed objects, a signal is sent to the sprinkler system at the location of the heat and the fire alarm is triggered. The sprinkler system can generate a signal to stop the conveyor belt, which will extinguish the heat buildup.

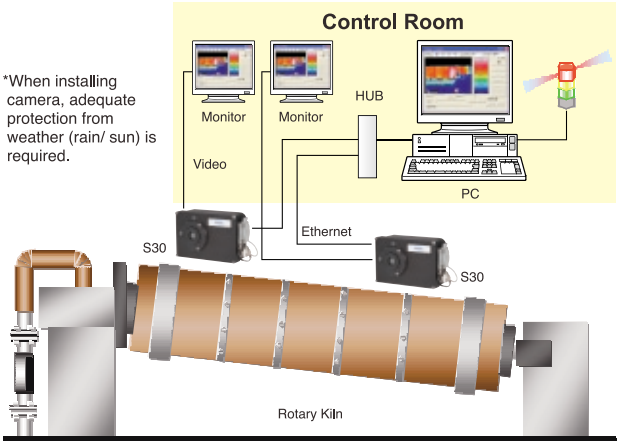


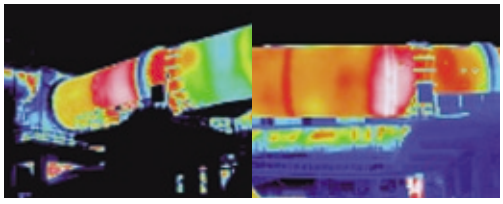


Measuring the Deterioration Status of a Rotary Kiln

This System measures the surface of a rotary kiln and an alarm signal is generated when an abnormal temperature is detected. The video signal from the S30 also allows real-time observation(Infrared/Visible) on a monitor from a remote location.

*When installing camera, adequate protection from weather (rain/ sun) is required.





Specifications

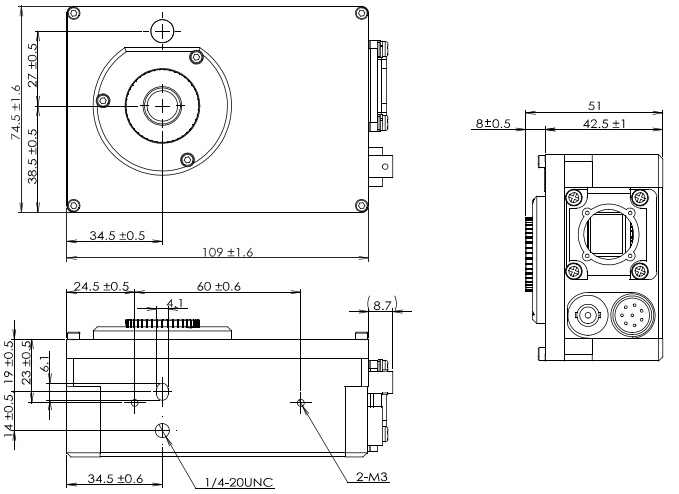
Item		S30W	S30H
Detector		Uncooled Focal Plane Array (Microbolometer)	
Resolution		160 x 120	
Measuring Range		-20˚C to +350˚C	0˚C to +600˚C
Spectral Range		8~13μm	
Thermal Sensitivity (NETD)		<0.2˚C at 30˚C	<0.5˚C at 30˚C
Accuracy		±2˚C or ±2% of Reading (whichever is greater)	
Field of View		28˚(H) x 21˚(V) Accuracy: ±10%	
IFOV		3.1mrad (Horizontal)	
Focal Distance		50cm to Infinity	
Frame Rate		8.5 frames/second	
Operating Temperature / Humidity		0°C to +50°C , at <90%RH (non-condensing)	
Power Supply		DC12V±1V	
Power Consumption		3.0W (typical) at 35˚C in RUN Mode	
Dust / Splash Proof		Protection Code: IP67 Equivalent	
Interface	Ethernet	RJ-45	
	Contact/Power	Dedicated 8 pin Round Connector Tajimi R04-R8M	
	Video	BNC	
Standard Accessories		Remote Control Software, InfReC Analyzer Lite, Power Connector, Operation Manual	

Optional Accessories

Quick Start Kit*	S30-351 (220V) S30-352 (110V)	Interconnecting cable to AC adaptor with alarm output leads, AC Adaptor (DC V12, compatible), Ethernet Cable with dust / splash proof over at one end

*The optional kit is highly recommended especially for your first purchase. It enables your instant set-up and best suits your efficient work for evaluation and system development.

Dimensions



Functions

Item		S30W	S30H
Measuring Functions		RUN/FREEZE	
	Temperature Span	-20˚C to +350˚C	0˚C to +600˚C
	Focus	Manual	
	Emissivity	0.10 to 1.00 (0.01 Step)	
Display Functions	Color Gradation	256 Tones	
	Color Palette	Rainbow (Shine), Iris (Fine), Brightness, Monochrome	
	Specific Point	Five (5) Points (including One Fixed Center Point)	
Alarm		One (1) Point (outputs contact signal when the temperature exceeds the alarm set condition)	
Data Display		Color Bar, Scale (upper and lower limit value), Cursor, Date and Time, Emissivity, Temperature Unit (˚C/˚F), Status Icon	
Communication Protocol		TCP/IP	
Video Output		NTSC/PAL (Selectable)	
Storage of Setup		Stores one (1) user setup	
Image Improvement	Averaging	Σ OFF, Σ2, Σ16	
Contact Output		One (1) Point (non-voltage A contact related with alarm)	

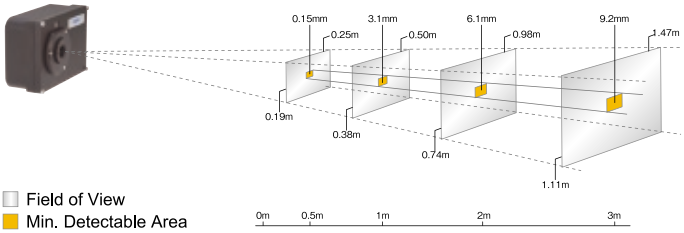
Visible Camera

Item	Specification
Sensor	CMOS Sensor
Effective Pixels	Approx. 1.3M Pixels (1280 x 1024)
Focal Distance	50cm to Infinity, Focus Free
Exposure	Auto-Exposure

Software Development Kit (SDK)

SDK is comprised of document and relevant drivers to be integrated into user's own software to communicate with camera. It allows users to design their own system to meet their needs. The SDK data is provided free for purchasers upon request raised by users via our website.

Measuring Distance and F.O.V.



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⚠ WARNINGS & CAUTIONS

- Before using this product, please carefully read the provided Operation Manual "WARNINGS" & "CAUTIONS" section to ensure proper operation.
- Please do not place the product in high temperature, high humidity or high inert gas environments.

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