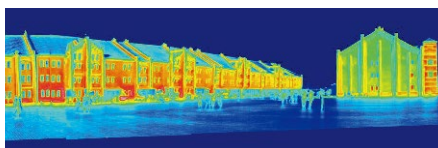# InfReC InfraRed Camera

Avio

Thermo GEAR
G120EX/G100EX Series

New EX Series with Upgraded Performance!!

▶ Measures high temperature up to 1500°C

▶ NETD : 0.04°C (with S/N improvement at 30°C)

▶ 'Averaging Improvement' function for better image quality
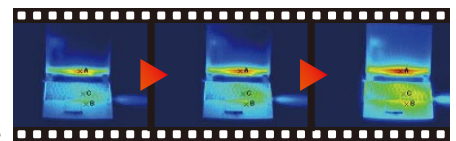
▶ Standard grip belt for better safety & operability

Wide-Angle Shot
World's First *1
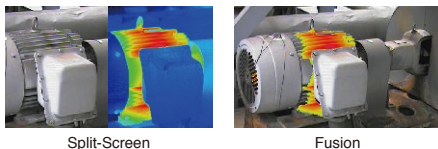Panoramic Thermal Image *2

Thermal Image Movie
Direct Recording on SD Card in Fully Radiometric
(G120EX:10fps, G120EXD:8.5fps)*2

IR/Visual Integrated Display
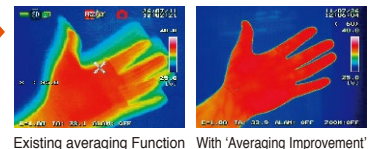Split-Screen, Fusion, Alpha Blending

Split-Screen   Fusion

Averaging Improvement
Minimizes residual images of moving object while averaging

Existing averaging Function   With 'Averaging Improvement'

Alarm Function
World's First *1
Vibration*2
Sound and Display

High Temp Measurement
Up to 1500°C, Standard

3.5 inch LCD Screen
Tilting Display for Flexible Easy Shooting Posture

Wide Field of View
Ideal for Short Distance
32°(H) × 24°(V)

Macro Shot
Min. Focus Distance:10cm

Easy Operation
GUI and Joystick for Intuitive Operation, Auto Focus/ Level-Sense

*1:World's first [Panoramic Thermal Image Shooting Function],[Vibration Alarm Function] (Surveyed by our company at end of December,2009.) *2:Provided on G120EX Series only.

NIPPON AVIONICS CO.,LTD.

An NEC Group Company

Specifications

Item	G120EX	G120EXD	G100EX	G100EXD
Basic Performance				
Infrared Detector	Uncooled Focal Plane Array (microbolometer)			
Spectral Range	8 to 14μm			
Measuring Range	-40 to 1500°C			
Sensitivity (NETD)	0.04°C at 30°C (with S/N improvement)			
Accuracy	±2°C or ±2%*1			
Frame Rate	60Hz	8.5Hz	60Hz	8.5Hz
Detector Pixels	320(H)×240(V) pixels			
Field of View	32°(H)×24°(V) (with standard lens)			
Spatial Resolution	1.78mrad			
Focal Distance	10cm to infinity (with standard lens)			
Focus	Auto / Manual			
Image Display				
Auto Functions	Auto-scale, Auto-focus, Full-auto			
Color Pallet	Rainbow, Iris, Brightness, Hot iron, Hot white, Hot black			
Gradation	256/16/8 tones			
Visual Camera	CMOS camera 2M pixels			
Fusion	Yes			
Picture-In-Picture	Yes			
Alpha Blending	Yes			
Side-by-Side	Yes			
Display Functions Digital Zoom	1 to 4 times continuous zoom			
Multi-Image-Display	Display 9 images(replay mode)			
Image Quality Improvement Averaging	Off / Σ4/ Σ8/ Σ16 (with ghost rejection)			
Edge Enhancement	Yes		N/A	
Filtering	Yes			
Measuring Functions				
Point Temperature	1 Center Point, 5 Movable Points			
Temperature Search	MAX/MIN			
Delta Temperature	Yes			
Temperature Display in Assigned Region	MAX, MIN and AVG in Box (for up to 5 Boxes)			
Line Profile	Horizontal, Vertical or Horizontal & Vertical			
Alarm function	Alarm Sound, Alarm Display, Color Alarm(ISO)			
Vibration Alarm	Yes		N/A	
Alarm Recording	Yes			
Alarm Output	Yes			
Temperature Correction Function	Emissivity, Environment/Background, Distance, NUC			
Emissivity	Multi-Point Correction, Emissivity Reverse Calculation, Emissivity Table			
Storage / Output				
Storage Device	SD Card, Compatibility SDHC			
Data Storage	Still Image : JPEG with Temperature Data (14 bit), Movie : SVX file (exclusive), Visual Image Simultaneously Recorded		Still Image : JPEG with Temperature Data (14 bit), Visual Image Simultaneously Recorded	
Panoramic Image	Horizontal Equivalent to 100°, Vertical Equivalent to 75°		N/A	
Movie Recording	Max 10 fps in SD Card	Max 8.5 fps in SD Card	N/A	
Interval Recording	3s to 60min, Visual Image Simultaneously Recorded			
Voice Annotation	30sec Recording/Replay per Image			
Text Annotation	Annotate up to 128 Characters with each Thermal Image Import Characters from SD Card			
Interface USB2.0	Mass-Storage			
Video output	NTSC or PAL (Simultaneous use with LCD not available)			
Alarm output	Available (Contact Closure. No Voltage)			
Auxiliary Measuring Functions				
Graphical User Interface's Supported Language	English, French, Spanish, German, Italian, Portuguese, Russian, Finnish, Danish, Norwegian, Swedish, Dutch, Chinese (Traditional, Simplified), Korean and Japanese.			
Display	3.5" LCD Monitor (with Tilt and Brightness Adjustment Available)			
Auxiliary Device Laser Pointer	Yes (Class-2 Red color)			
LED Light	Yes			
Others				
Environment Resistance Operating temperature / Humidity	-15°C to 50°C, 90%RH			
Vibration / Shock	29.4m/sec²(3G), 294m/sec²(30G)			
EMC	Compliant to CE (Class A)			
Dust / Splash Proof	IP54			
Battery Operation	4hours (typ), Rechargeable Li-Ion battery			
AC Power	100V to 220V AC, 50/60Hz			
Power Consumption	4.3W (typ)			
Dimensions	Approx. 212mm(H) × 75mm(W) × 138mm(D) (excluding projections)			
Weight	Approx. 800g (including Battery Pack)			
Standard Accessories	AC Adapter ×1, Battery Charger ×1, Rechargeable Li-Ion Battery ×1, SD Card ×1, USB Cable ×1, Wristband ×1, Grip Belt ×1, Software ×1, Operation Manual ×1, and Carrying Case ×1			
Standard Software	InfReC Analyzer NS9500LT			

*1 Operating Temperature : 0 to 40°C

InfReC InfraRed Camera — [InfReC] is the coined abbreviation word of "Infrared Camera" and also has the meaning of [The Device Recording Infrared Information] . Our product research and development is targeted at improving the quality of life by protecting people and simplifying their daily tasks while measuring temperature, controlling environments, enhancing security, etc.

PC Software

InfReC Analyzer NS9500 Lite

Thermal Image Processing and Report Generator Software
Easily identifiable menu system guides you to intuitive operation

【Features】

- **Easy Report Generation (MS-WORD/MS-EXCEL Format)**
- **Rich Processing Functions**

Fusion Display of Thermal Image / Visual Image Subtraction Function for Thermal Image

Panoramic Composite Function for Thermal Image Radiation Heat Quantity Analysis[1]

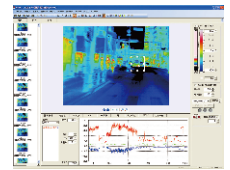Length Measuring/Area Calculation Function[1] for Thermal Image
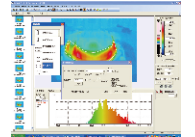
Trend Graph Display[1]

Line Profile Display

Drawing Function for Designated Point / Line / BOX / Circle[1] / Polygon Shape[1]

Analysis for Max./Min./Peak Temperature

[1]: Optional Software Model NS9500 Standard only
※ Compatible PC configuration, OS system and associated application software are to be consulted beforehand. Some old or new system might not be supported.

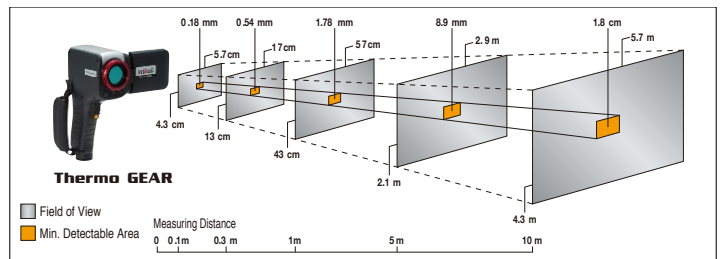**Trend Graph Display**

Radiation Heat Quantity Analysis

Panoramic Composite Function for Thermal Image

Options

Options	Model	Specifications / Remarks
2 x Telephoto Lens	IRL-TX02A-B	16°(H) x 12°(V) 0.89mrad (f=28mm)
Rechargeable Battery Pack	2UR18650F	2,500mAh, 4 Hours of Continuous use (typical)
Battery Charger	NC-LSC05-110V / NC-LSC05-220V	110v or 220v
AC Adapter	RC60G-09D-110V / RC60G-09D-220V	
LCD Hood	IRU-F01A	
Video cable	FVC-135A	3.5mm plug, 1.5m
Tripod (small)	U9800BK	
InfReC Analyzer Standard	NS9500STD-B	PC Software

Dimensions of Measuring Distance and Field of View (Standard 14mm Lens)

Thermo GEAR

0.18 mm 0.54 mm 1.78 mm 8.9 mm 1.8 cm
5.7 cm   17cm   57cm   2. 9 m   5.7 m
4.3 cm   13 cm   43 cm   2.1 m   4.3 m

☐ Field of View
☐ Min. Detectable Area

Measuring Distance
0 0.1m   0.3 m   1m   5 m   10 m

NIPPON AVIONICS has long experience and expertise in developing infrared cameras since the early 1970's.
There is a wide range of portable and fixed mount thermal imagers available.To find out more, visit us at : www.avio.co.jp/english/ or contact our local distribution partners.

■ Listed specifications, appearance and design are subject to change without notice. ■ Company and commodity names are trade names or registered trade marks of each company. ■ NIPPON AVIONICS Co., Ltd. will not be responsible for any damage of infrared detectors due to incoming strong light (e.g. laser) through lens(es). ■ This product is subject to Japanese Export Control Law. Depending on its destination, prior assessment and authorization may be required. When exporting from country of initial purchase destination, please be sure to follow that country's export regulations as it may require an export permit beforehand.

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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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