**InfReC**
**InfraRed Camera**

**Infrared Thermal Imaging Camera**

## High Resolution Infrared Image for Professional Thermographer
# InfReC *R500* series

### 1.2 M pixels Infrared Thermal Imaging Camera
- Super Resolution Mode：1280×960 pixel
- Spatial Resolution：equivalent to 0.58mrad※

### High Sensitivity and High Measurement Accuracy
- Sensitivity (NETD) : 0.03℃
- Temperature accuracy : ±1℃

### Spatial Resolution 58μm with Standard Lens
- Minimum Spatial Resolution：equivalent to 58μm at 10cm distance <in Super Resolution(SR) Mode>※

### A Wide Viewing Angle Lens increases Working Efficiency
- Field of view(F.O.V.) : 32°(H)×24°(V)

### 5 M pixels visual camera
- Thermal and Visual "Split-screen Images" and "Fusion Images."

### Selectable 2models for your application
- R500Pro : Measuring range: -40 to +2000℃ Suitable for use in R&D, for making high temperature measurements, and for measuring sequential data.
- R500 : Measuring range: -40 to +500℃ Excellent choice for inspection of electrical facilities and remotely located pipes.
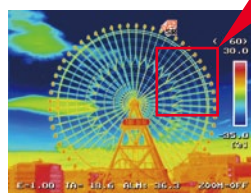
## 1.2 M pixels  Super Resolution Thermal Image Technology
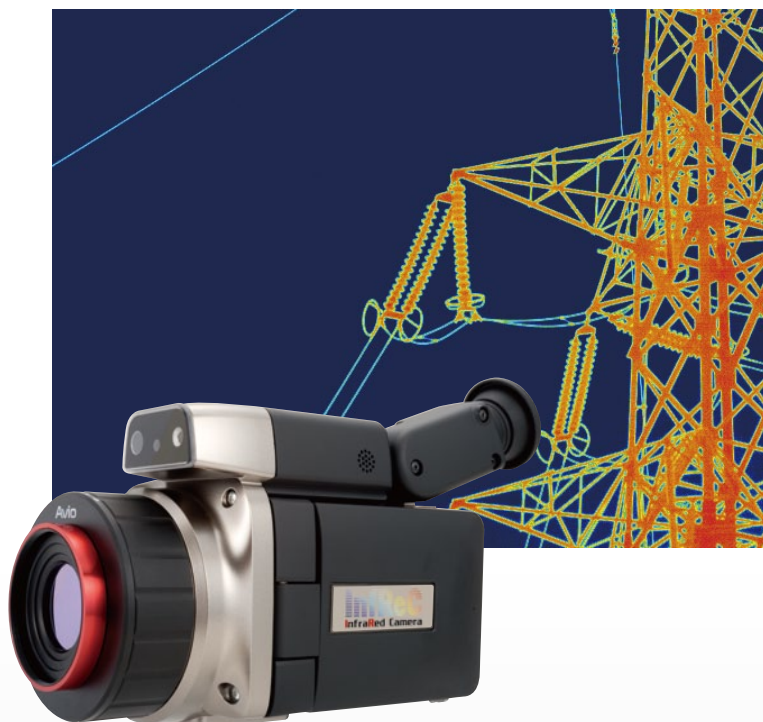


## High Resolution Infrared Thermal Imaging Camera backgrounded by Avio SR Technology!

**SR Mode OFF** （0.3 M pixels）
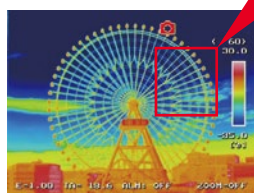
**SR Mode ON** （1.2 M pixels）

**4x Pixels Enhanement**

- Quickly capture Super Resolution (SR) image without PC
- Realize even Higher Sensitivity by "Multi-Flame Super Resolution Image Processing"

※This increased resolution results from detecting characteristic points within all frames acquired by the SR process and removing such effects as those caused by hand vibration.

## NIPPON AVIONICS CO.,LTD.

## User-Friendly Operation

### Easy to shoot from Any Angle

Multi-angle Tilting LCD Display and 2 Shutter-buttons enable flexible and comfortable one-hand operation.

REC Key

REC Key

Easy to use at various angle or height

## Various mixing mode

### Easy to compare 1.2M pixels thermal image with 5M pixels visual image.

Picture-in-Picture          Split-Screen          Alpha Blerding

## Various Measurement functions

### Automatically calculate Emissivity by inputting object temperature

**Emissivity Reverse Calculation**
Emissivity of an object can be calculated by inputting known temperature of object.
it is very convenient when measuring
temperature of an object of the same material.

**Multi-Point Correction**
Each point's emissivity can be set independently.

POINT EMISS
POINT      a
P.EMISS 0.50
P.TEMP   30.8
BACK

## Measuring Distance and F.O.V

Field of View and Spatial Resolution are the same magnification with measuring distance.

| Lens Type | | | 2x Telephoto Lens | Standard Lens | 0.5x Wide Angle Lens |
|---|---|---|---|---|---|
| | Field of View (H)× (V) | | 29×22cm | 57×42cm | 128×92cm |
| L=1m | Spational Resolution | Normal Mode | 0.45mm | 0.9mm | 2.0mm |
| | | Super Resolution(SR mode)*3 | 0.3mm | 0.6mm | 1.3mm |

## Specifications

| | Feature | R500Pro | R500Pro-D | R500 | R500-D |
|---|---|---|---|---|---|
| Basic Performance | Infrared Detector | Uncooled Focal Plane Array (Microbolometer) | | | |
| | Spectral Range | 8 to 14μm | | | |
| | Measuring Range | −40 to 2000°C | | −40 to 500°C | |
| | Sensitivity (NETD) | 0.03°C at 30°C (with S/N improvement) | | | |
| | Accuracy | ±1°C *1 | | | |
| | Frame Rate | 30Hz | 7.5Hz | 30Hz | 7.5Hz |
| | Detector Pixels | 640(H)× 480(V) pixels | | | |
| | Recording Pixels | Standard ：640(H) × 480(V) | | | |
| | | Super Resolution (SR mode): 1280(H) × 960(V) *2 | | | |
| | Field of View | 32°(H) × 24°(V) (with standard lens) | | | |
| | Spatial Resolution | Standard 0.87mrad | | | |
| | | Super Resolution (SR mode): 0.58mrad equivalent *3 | | | |
| | Focal Distance | 10cm to infinity (with standard lens) *4 | | | |
| | Focus | Auto/Manual | | | |
| Image Display | Auto Function | Auto Scale, Auto Focus, Full Auto | | | |
| | Color Pallets | 7 pallets (Rainbow, Brightness, Hot-white, Hot-black, etc.) | | | |
| | Gradation | 256 / 32 / 16 / 8 grade | | | |
| | Visual Camera | CMOS camera 5M pixels | | | |
| | Visual/Thermal Fusion | Fusion, Picture-In-Picture, Split-Screen, Alpha Blending (transparency Changeable) | | | |
| | Display Functions | 1 to 8 times continuous zoom (with display positioning scroll), Grid Overlay, 9 images multi-display (replay mode) | | | |
| | Image Quality Improvement | Averaging (with ghost rejection), Filtering, Edge enhancement | | | |
| Measuring Functions | Point Temperature | 10 Movable Points, Temperature search: MAX/MIN x 1 each, Delta T | | | |
| | Line Profile | Horizontal, Vertical, Horizontal & Vertical | | | |
| | Temperature Display in Assigned Region | MAX, MIN and AVG in Box (for up to 5 Boxes) | — | | |
| | Alarm Function | Alarm Display, Alarm Sound, Color Alarm, Alarm Recording, | | | |
| | | Alarm Signal Output | — | | |
| | Temperature Correction | Emissivity, Environmental/Background, Distance, NUC | | | |
| | Emissivity | Multi-point Correction, Emissivity Table | | | |
| | | Emissivity Reverse Calculation | — | | |
| | Drift Stabilizer | Provided | — | | |
| Storage & Output | Storage Device | SD card, Conforms to SDHC | | | |
| | Data Storage | Still Image : JPEG with Temperature Data (14 bit), Recorded, | | | |
| | | Movie : SVX file (exclusive), Visual Image Simultaneously | | | |
| | Super Resolution (SR) | Provided | | | |
| | Quick Panorama | Horizontal equivalent to 100° / Vertical equivalent to 75° | | | |
| | SD Movie Recording | Max 3Hz | | | |
| | Interval Recording | 3 sec to 60 min interval, Visual image Simultaneously Recorded | | | |
| | External Trigger Recording | Provided | — | | |
| | Voice Annotation | 30sec Recording/Replay per Image | | | |
| | Text Annotation | Annotate up to 256 Characters with each Thermal Image Import Characters from SD Card | | | |
| | Interface | | | | |
| | USB2.0 | Mass-Storage, movie transfer (Thermal Image Max 15Hz with Visual Image) *5 | | | |
| | Video Output | NTSC / PAL Changeover | | | |
| | Alarm Output | Contact Closure. No Voltage | — | | |
| | External Trigger Input | Pulse Signal | | | |
| Other | Display | 3.5" LCD Monitor (with Tilt and Brightness Adjustment Available),Color View Finder (with Tilt Mechanism) | | | |
| | Auxiliary | Laser Pointer (red, class 2, PSC compliant), LED Light, Remote Controller | | | |
| Environment Resistance | Operating Temperature & Humidity | −15°C to 50°C, 90%RH (non-condensing) | | | |
| | Storage Temperature & Humidity | −40°C to 70°C, 90%RH (non-condensing) | | | |
| | Vibration & shock | 29.4m/sec² (3G), 294m/sec² (30G) | | | |
| | EMC | Conforms to CE regulations (Class A) | | | |
| | Dust & splash proof | Protection class IP54 equivalent | | | |
| | Battery Operation | 2.5h (Typ), Rechargeable Li-Ion battery, (7.5 hours with optional long time battery) *6 | | | |
| | AC Power | 100V − 220V AC, 50/60Hz | | | |
| | Dimensions | Approx. H121mm×W105mm×D195mm (excluding projection) | | | |
| | Weight | Approx. 1.3kg (including Battery Pack) | | | |
| | Standard Software | InfReC Analyzer NS9500Pro | | InfReC Analyzer NS9500Std *5 | |

## Options

| Options | | Model | Specification/remarks |
|---|---|---|---|
| Lens | 2x Telephoto Lens | IRL-TX02D | 16°(H)×12°(V) |
| | 0.5x Wide Angle Lens | IRL-WX02D | 64°(H)×48°(V) |
| Accessory | Rechargeable Battery Pack | T2UR18650F-5928 | 2500mAh Driving Hours: 2.5 Hours (typical) |
| | Battery Charger | NC-LSC05-110V/220V | 110v or 220v |
| | LCD Hood | IRU-F01A | |
| | Portable Power | TVB-C501 | Contains of 2 batteries. Battery not included |

*1 Only the Range 1 at the environmental temperature of 20 to 30°C.In other range, it is ±2°C or±2%.
*2 Still Image Only
*3 This increased resolution results from detecting characteristic points within all frames acquired by the SR process and removing such effects as those caused by hand vibration.
*4 For defined Temperature Accuracy supported : 30 to cm to infinity
*5 To Transfer thermal image movie data by R500 is required to up grade to "InfReC Analyzer NS9500 Professional" (optional software)
*6 2 extra batteries (optional parts) are required for 7.5 hours operation.

**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.

Distributor:

Catalog ref : AV016  U1403A3