

## Gas Cloud Imager

## GF320-YT

### Features

- High-Precision Pan-Tilt Unit : Control accuracy: 0.1° with vibration-free imaging during movement
- Dual Backup System : Ensures data integrity during power outages
- Power-Off Memory : Automatically restores pan-tilt position and lens state after reboot
- All-Weather Design: Integrated wiper system; 316L stainless steel housing with anti-corrosion coating
- Advanced Detection Capabilities : High sensitivity & fast response for early warning ; Cooled detector for accurate CH<sub>4</sub>/VOCs leak detection
- Multi-Spectral Imaging: Supports IR/visible light modes with gas-enhanced display

### Application

- Hazardous Areas (Indoor/Outdoor Explosion-proof Zones)
- Refineries and Petrochemical Plants
- Natural Gas Pipelines
- Offshore Oil Drilling Platforms
- Chemical, Natural Gas and Hazardous Chemical Storage & Transportation Fields

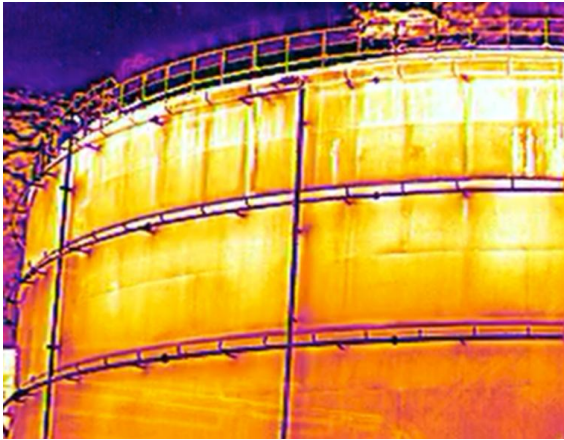
### Description

GF320-YT Gas Cloud Imaging Telemetry System is an explosion-proof thermal imaging camera for gas leak monitoring, developed through deep integration of infrared thermal imaging and visible light technologies. This system employs non-contact remote infrared imaging to detect methane (CH<sub>4</sub>) and other volatile organic compounds (VOCs) in real time, while visually pinpointing gas leak locations through imaging for rapid safety inspection of equipment, facilities and the environment.

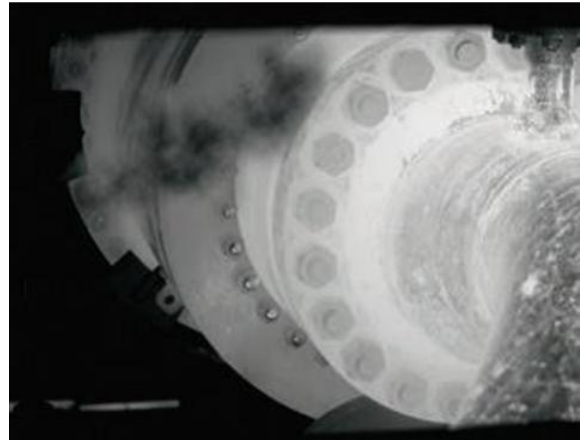
The GF320-YT features real-time temperature field monitoring of target surfaces and is certified for Group IIA, IIB, IIC explosive atmospheres. It enables 24/7 continuous monitoring at high-risk sites including refineries, natural gas pipelines, and offshore oil platforms. The system supports customizable patrol configurations with scheduled sequential inspections at preset points, where patrol frequency can be flexibly adjusted to operational requirements.



## 1. Imaging Effect Diagram



VOCs Leakage Detection



Methane Leakage Detection

## 2. Parameter

| Imager                    |                                                                                                                                                                                                                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement distance      | 500 m (Note: When gas plume diameter is 1 m)                                                                                                                                                                                                                                                      |
| Response wavelength       | 3.0 $\mu\text{m}$ ~3.5 $\mu\text{m}$                                                                                                                                                                                                                                                              |
| Thermal sensitivity       | <15mK@20°C                                                                                                                                                                                                                                                                                        |
| Field of view             | 23.6° × 19° @ 23 mm lens                                                                                                                                                                                                                                                                          |
| Focal length              | 30~50 mm                                                                                                                                                                                                                                                                                          |
| Detectable gases          | Methane, Ethane, Propane, Butane, Hexane, Heptane, Octane, Ethylene Oxide, Propylene Oxide, Ethylene, Propylene, Butene, Pentene, Butadiene, Isobutene, Styrene, Methanol, Propanol, Isopropanol, Benzene, Toluene, Ethylbenzene, Xylene, Propionaldehyde, Butanone, Acetic Acid, and other VOCs. |
| Detector                  |                                                                                                                                                                                                                                                                                                   |
| Detector Type             | Mercury Cadmium Telluride (MCT) Cooled Infrared Detector                                                                                                                                                                                                                                          |
| Cooler                    | R5058                                                                                                                                                                                                                                                                                             |
| Resolution                | 320 × 256                                                                                                                                                                                                                                                                                         |
| Pixel Pitch               | 30 $\mu\text{m}$                                                                                                                                                                                                                                                                                  |
| Gas Detection Sensitivity | 0.001ml/s                                                                                                                                                                                                                                                                                         |
| Spectral Band             | 3.2±0.1 $\mu\text{m}$ ~3.5±0.1 $\mu\text{m}$                                                                                                                                                                                                                                                      |
| Frame Rate                | 60 Hz                                                                                                                                                                                                                                                                                             |
| Pseudo Color              | Support                                                                                                                                                                                                                                                                                           |
| Start-up Time             | ≤8min@20°C                                                                                                                                                                                                                                                                                        |
| Cooler Lifespan           | ≥10000 h                                                                                                                                                                                                                                                                                          |
| Aperture                  | F2.0                                                                                                                                                                                                                                                                                              |
| Image Display             |                                                                                                                                                                                                                                                                                                   |
| Sensor Type               | 1/1.8" Progressive Scan CMOS                                                                                                                                                                                                                                                                      |

|                                  |                                                                                                     |
|----------------------------------|-----------------------------------------------------------------------------------------------------|
| Maximum Image Size               | 2560 × 1440                                                                                         |
| Minimum Illumination             | Color Mode: 0.0005 Lux @ (F1.2, AGC ON)<br>B/W Mode: 0.0001 Lux @ (F1.2, AGC ON) ; 0 Lux with IR    |
| Focal Length & Field of View     | Focal Length: 6.0–240 mm (40× optical zoom)<br>Field of View (FOV): 56.6° (wide) – 1.8° (telephoto) |
| Maximum Aperture (F-number)      | F1.2                                                                                                |
| Zoom Speed                       | Approximately 4.8 s (optical, wide-angle to telephoto)                                              |
| Minimum Focus Distance           | 10~1500 mm (wide-angle to telephoto)                                                                |
| Fill Light Type                  | IR illuminator                                                                                      |
| Gas Enhancement Display          | IR illuminator                                                                                      |
| Laser Function                   | Supports laser indication and ranging, range up to 150M                                             |
| Digital Camera                   | 5MP CMOS with LED light                                                                             |
| Fill Light Distance              | Maximum range up to 200 m                                                                           |
| <b>Temperature measurement</b>   |                                                                                                     |
| Temperature Measurement Range    | 0°C ~500°C                                                                                          |
| Temperature Measurement Accuracy | ±1% or ±1.5°C                                                                                       |
| <b>Laser ranging</b>             |                                                                                                     |
| Laser Function                   | Supports laser designation and ranging, range up to 150M                                            |
| <b>Pan-Tilt</b>                  |                                                                                                     |
| Horizontal Range                 | 0°~360°                                                                                             |
| Vertical Range                   | -90°~90°                                                                                            |
| Horizontal Speed                 | 0.1°~25°/s                                                                                          |
| Vertical Speed                   | 0.1°~10°/s                                                                                          |
| Number of Presets                | 255 (visible light) 128 (gas cloud imaging)                                                         |
| Cruise Scan                      | 8                                                                                                   |
| <b>Interface</b>                 |                                                                                                     |
| Network                          | RJ45 10M/100M adaptive Ethernet port                                                                |
| Audio                            | 1 input (Line in), 1 output (Line out)                                                              |
| Alarm                            | 2 inputs, 2 outputs                                                                                 |
| Fiber Optic                      | FC fiber optic interface                                                                            |
| <b>Physical parameters</b>       |                                                                                                     |
| Product Dimensions               | 500mm*320mm*400mm                                                                                   |
| Device Weight                    | 50 kg                                                                                               |
| Material                         | SUS304/SUS316                                                                                       |
| Operating Temperature            | -40°C ~ + 60°C                                                                                      |
| Operating Humidity               | <98% RH, non-condensing                                                                             |
| General Functions                | Mirroring, password protection, watermarking, IP address filtering                                  |
| Wiper                            | Manual wiper                                                                                        |

|                             |                                                 |
|-----------------------------|-------------------------------------------------|
| Current & Power Consumption | Maximum power consumption: 100 W                |
| Power Supply Method         | AC: 100~240 V                                   |
| <b>Certification</b>        |                                                 |
| Protection                  | IP65 (IEC60529), dustproof, water jet resistant |
| Explosion-proof Type        | Not less than Ex ic nc IIC T4 Gc                |
| Interference Resistance     | ETSI EN 300 489-328, FCC Part 15.247            |
| Impact Resistance           | 25g(IEC60068-2-29)                              |
| Safety                      | EN/UL/CSA/PSE 60950-1                           |
| Vibration Resistance        | 2g(IEC60068-2-6)                                |