

**CorDEX**»  
**INSTRUMENTS**  
SAFETY IN FOCUS

**TC7000**

320 x 240 Radiometric Thermal Camera

# INTRINSICALLY SAFE THERMAL IMAGING CAMERA

TC7000 from **CorDEX** Instruments



- » No waiting for hot work permits with intrinsically safe certification Zone 1 IIC T4 I/II/M2/2GD
- » Find the smallest defects with the high resolution 320 x 240 IR detector
- » Be productive with the comfortable ergonomic handle grip containing 3 AA batteries providing up to 4 hours operation



- » Link your images and data to the location using the built-in RFID tag scanner
- » Go anywhere with a rugged shock and drop tested case to IEC EN60079-11
- » Swivel the lens to minimise screen reflections and comfortably access high and low areas

- » Perform safe electrical inspections with RFID compatibility to CorDEX Intelligent IR Windows
- » Make decisions in the field with all the onboard analysis features you expect from a high resolution, fully radiometric thermal imaging camera
- » Save time with a simple and intuitive joystick control



- » See hotspots easily with the clear and bright 3.2" Backlit LCD Display
- » No note taking with built-in voice annotation linked to RFID tag or CorDEX Intelligent IR Windows
- » Hotspot reporting and trending through CorDEX CONNECT™
- » Stay safe with single handed operation and wrist strap supplied





### WHAT DOES INTRINSICALLY SAFE MEAN?

An intrinsically safe instrument has been designed from the ground up to use low voltage and current together with detailed electronic and mechanical design to eliminate any possibility of generating an ignition source in a hazardous (explosive) area. The instrument must be approved by a notified body to international standards such as ATEX and IECEx. The IEC standard that TC7000 complies with is IEC EN 60079 – 11.

### WHAT ELSE DOES IECEx CERTIFICATION OFFER?

An instrument complying with ATEX/IECEx will have been rigorously tested not only to ensure it will not generate a spark but also that it is robust enough to maintain that integrity when impacted or subjected to extremes of temperature. An ATEX/IECEx certified instrument will of necessity be much tougher than an equivalent safe area product even if for example the IP rating is similar.

### WHAT AREAS CAN I ENTER WITH AN INTRINSICALLY SAFE INSTRUMENT?

Hazardous areas must be defined by the employer into designated zones and instruments must be certified for those zones. The type of hazardous atmosphere (gas, dust, mining ) must be specified and the auto ignition temperature of that Zone must be identified with instruments selected that are rated safe for that temperature.



EMPLOYER DESIGNATED ZONE



CERTIFIED PRODUCT LOGO

**CorDEX**  
INSTRUMENTS  
SAFETY IN FOCUS

### WHAT DOES THIS RATING MEAN?

- » TC7000 is certified Ex ib IIC T4 Gb/Db
- » Ex denotes IEC Ex certification
- » Ib denotes the protection type - intrinsically safe
- » IIC denotes the apparatus group, in this case II refers to surface industry and C refers to the gas group
- » T4 denotes the temperature class, in this case maximum 135°C
- » Gb/Db denotes both gas and dust certified

## I ALREADY HAVE A THERMAL IMAGING CAMERA, WHY DO I NEED ONE WITH INTRINSICALLY SAFE CERTIFICATION?

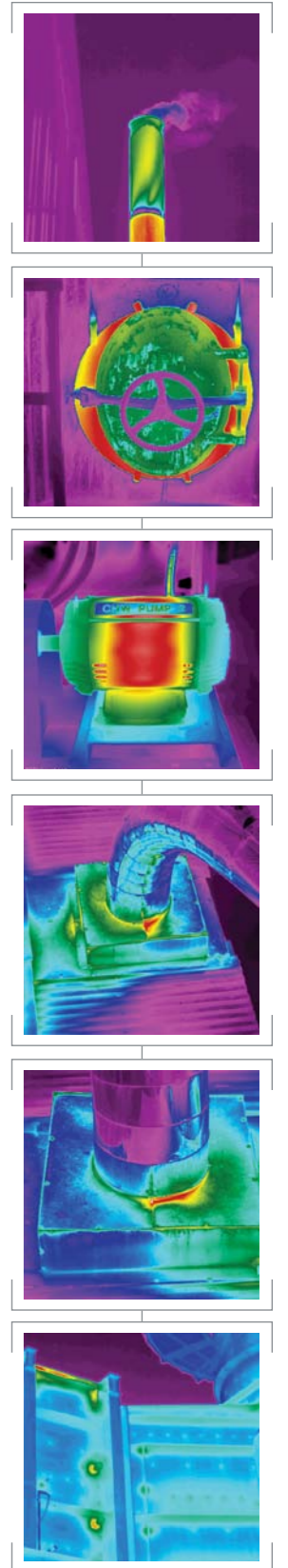
### SAFETY AND COMPLIANCE - CUT OUT THE RISKS AND DELAYS OF A HOT WORK PERMIT

If you work in the petrochemical industry you will already be aware of the Zone 1 hazardous areas in your workplace and the restrictions on uncertified instruments. Within those areas you will want to regularly scan for hotspots in:

- » Refractory lining – crackers, heaters
- » Pipe insulation, missing or damaged
- » Steam traps
- » Electrical systems and switchgear
- » Flares
- » Tank insulation and level
- » Motor bearings, gearboxes, electrical connections, shaft misalignment
- » Pipe trace heating and missing or degraded insulation

There are however many other industries with hazardous (explosive) areas:

- » Explosive dust environment in sugar, grain, chemical, foodstuff industry
- » Mining industry, coal, ore, precious metals
- » Marine, all LNG and other petrochemical carriers
- » Pharmaceutical – dust and inflammable vapours
- » Aerospace – presence of jet fuel
- » Water and sewage processing – methane presence



**CorDEX**  
INSTRUMENTS  
SAFETY IN FOCUS

**RELATED PRODUCTS**

Intelligent IR Windows with built in RFID Tag.



Explosion Proof Digital Cameras for hazardous (vapour) areas.



Intrinsically Safe Ultrasonic Thickness Gauge for hazardous (vapour/dust) areas.

Authorised distributor

**Certificate Information**

ATEX / IECEx Certificate No	TRAC12ATEX0037X / IECEx TRC 12.0019X
ATEX / IECEx Certificate Types	» Ex ib IIC T4 Gb Tamb -10°C to +40°C (Vapor) » Ex ib IIIC T200°C Db Tamb -10°C to +40°C (Dust) » Ex ib I Mb (Mining)

**Temperature Information**

Measurement Range	-4°F to 1112°F (-20°C to +600°C )
Accuracy	± 2°C or 2% of reading

**Imaging**

Image Frequency	9Hz
Detector	320 x 240 uncooled microbolometer
Thermal Sensitivity/NETD	50mK
Spectral Range	8µm to 14µm
Field of View (FOV)	25° x 20.5°
Spatial resolution (IFOV)	1.38 mrad
Minimum focus distance	≈ 4" (10cm)
Lens	F 1.2

**Image Capture**

File Storage	10GB
File Formats	CDX (Radiometric) JPEG (Non-radiometric)
Voice Annotation	YES
RFID Tag Reader	» Operates with 13.54MHz passive tags » Detection range up to 5cm (1.9in) » Supports ISO/IEC15693-2, ISO/IEC18000-3 tag formats

**General**

Operating Temperature	-4°F to 104°F (-20°C to +40°C)
Storage Temperature	-40°F to +158°F (-40°C to +70°C)
Display	3.2" Backlit LCD
Software	CorDEX CONNECT (Included)
Batteries	3 x MN1500 primary cell
Battery Life	Upto 4 hours

**TC7000 is supplied complete as standard with:**

- » Intrinsically Safe Thermal Imaging Camera
- » 3 x MN1500 primary Cells
- » Hard carry case
- » Wrist strap
- » 5 x RFID Tags
- » USB communication wand
- » Documentation CD

Why not visit CorDEX Instruments website for the latest news and downloads and learn more about the technology CorDEX Instruments provide.



**For more information and customer testimonials, contact...**

**Global Headquarters**  
**CorDEX Instruments Ltd**  
 Unit 1, Owens Road,  
 Skippers Lane Industrial Estate,  
 Middlesbrough,  
 Cleveland TS6 6HE

**Tel:** +44 (0) 1642 454373  
**Tel USA:** 1 877 836 0764  
**Email:** sales@cord-ex.com  
**Web:** www.irwindows.com  
 www.cordexinstruments.com

**CorDEX**  
**INSTRUMENTS**  
 SAFETY IN FOCUS

CorDEX Instruments reserve the right to make changes to the instrument at anytime and without notice. \*Check operations maintenance manual for compatibility.

