

# EX-PROOF THERMAL ANALOGUE CAMERAS IN COMPACT DESIGN

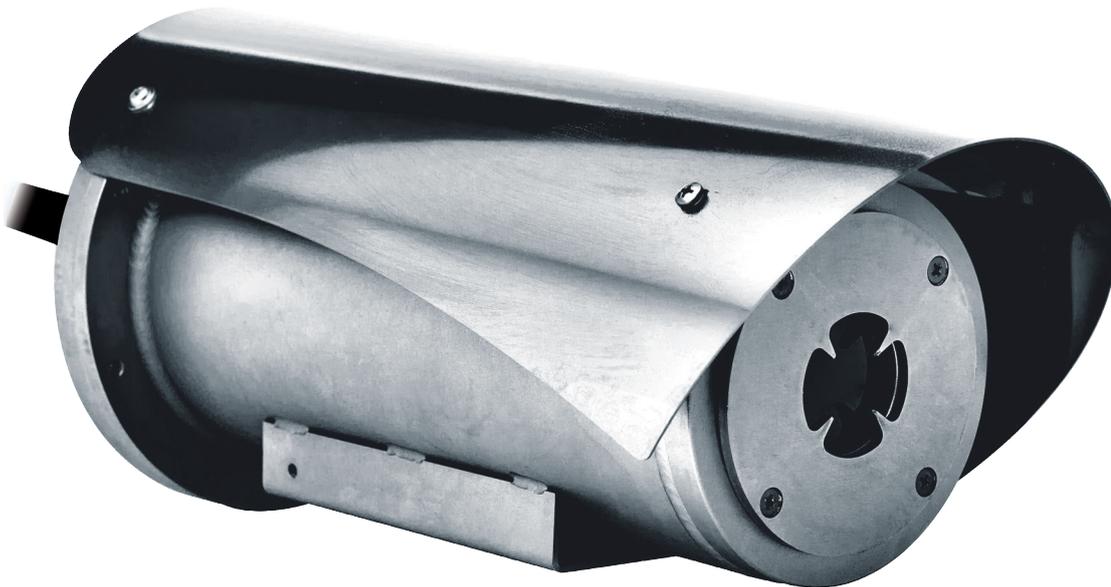
EC-840S-TIC-19A - Series

STAHL

The explosion protected EC-840S-TIC thermal cameras are perfect for effective video surveillance and process control in harsh settings where the presence of gases or flammable dust can create a potentially explosive environment, a reality often found in the oil and gas industries or marine and industrial sectors. The thermal cameras are able to detect a person or an object in the most difficult environmental conditions, such as total darkness or other levels of lighting, heavy smoke, rain or dust and across long distances. One striking advantage offered by the EC-840S-TIC cameras is their extremely easy and secure "plug and play" installation, with multipolar wiring. These cameras arrive ready to use, avoiding the complex electrical connections that are typical for this kind of device.

The housing is compact yet functional and is made entirely out of AISI316L stainless steel. Its resistance to corrosion is not only guaranteed, but is also enhanced by way of polishing processes. Another important feature of the cameras is the extended temperature range of -50°C to 65°C, along with a sophisticated cold start system, which allows it to operate in harsh environments as standard.

An equally noteworthy point is that the IP66/IP68 ratings guarantee the complete protection against harsh weather and the submersion in up to 5 metres of water for 2 hours. The EC-840S-TIC range of cameras meets every installation need, providing maximum performance and excellent value for money.



## MAIN FEATURES

- ▶ Electropolished and silicon micro shot peened AISI 316L stainless steel
- ▶ Certifications for use in Zones 1 and 2, IIC T5 Group (Gas) and in Zones 21 and 22, IIIC T100°C Group (Dust)
- ▶ Sensor: Uncooled microbolometer (VOx)
- ▶ Lens: 19mm
- ▶ Resolution 336x256 or 640x512
- ▶ Image frequency: 8.3Hz
- ▶ 1 alarm input and 1 relay output
- ▶ 4m (13ft) preinstalled armored multipolar cable with cable gland (ATEX, IECEx) or alternatively 4m cable set (NEC, CEC)
- ▶ Power supply: 12-24V DC/24V AC

## CERTIFICATES



NEC



CEC

## AMBIENT TEMPERATURE RANGE

-50°C up to +65°C

## IP SAFETY

IP 66, 68 - 69 (Housing only)

# TECHNICAL DATA

## GENERAL

AISI 316L stainless steel construction  
Electropolished and silicon micro shot peened external surfaces  
Silicone O-ring seals  
Plug and play  
4m (13ft) preinstalled armored multipolar cable with cable gland (ATEX, IECEx) or alternatively 4m cable set (NEC, CEC)

## MECHANICAL

Sunshield  
Unit weight: 8kg (18lb)

## HOUSING WINDOW

Internal antireflection treatment  
Material: Germanium  
External scratch-resistant treatment: Hard Carbon Coating (DLC)  
Spectral range: from 7.5µm up to 14µm  
Medium transmittance: (from 7.5µm up to 11.5µm): 94%  
Medium transmittance: (from 11.5µm up to 14µm): 90%

## ELECTRICAL

Power supply/  
Current consumption: • 24V AC, 2.2A, 50/60Hz  
• 24V DC, 2.2A  
• 12V DC, 3.5A  
I/O alarm card: • Alarm inputs: 1  
• Relay outputs: 1 (1A, 30V AC/60V DC max)  
Heater: T-on 15°C±3°C (59°F ±5°F),  
T-off 22°C±3°C (77°F±5°F)

## I/O INTERFACE

Cable length: 200m (656ft) max

## COMMUNICATIONS

Configuration through OSD  
Serial interface  
RS-485 line, half-duplex

## THERMAL CAMERA

	<b>PAL</b>	<b>NTSC</b>
Image sensor:	Uncooled VOx microbolometer	
Standard resolution EC-840S-TIC-19A-332-xxx:	336x256	336x240
High resolution EC-840S-TIC-19A-642-xxx:	640x512	640x480
Pixel dimensions:	17µm	17µm
Spectral response - long wave infrared (LWIR):	from 7.5µm to 13.5µm	
Internal shutter (only for sensor compensation):	Video stop < 1sec.	
Digital Detail Enhancement (DDE):	yes	yes
Digital zoom EC-840S-TIC-19A-332-xxx:	2x, 4x	2x, 4x
EC-840S-TIC-19A-642-xxx:	2x, 4x, 8x	2x, 4x, 8x
Image updating frequency:	8.3 fps	7.5 fps
Scene range (High Gain):	-40°C ÷ +160°C (-40°F ÷ +320°F)	
Scene range (Low Gain):	-40°C ÷ +550°C (-40°F ÷ +1022°F)	
Horizontal field of view EC-840S-TIC-19A-332-xxx:	17°	17°
EC-840S-TIC-19A-642-xxx:	32°	32°
Vertical field of view: EC-840S-TIC-19A-332-xxx:	13°	13°
EC-840S-TIC-19A-642-xxx:	26°	26°
F-number:	F/1.25	F/1.25
Thermal sensitivity (NEΔT):	< 50mK to f/1.0	
Person (detection / recognition / identification):	570m / 144m / 72m (1870 / 472 / 236ft)	
Auto (detection / recognition / identification):	1550m / 400m / 200m (5085ft / 1312ft / 656ft)	

## PROTOCOLS

Serial communication protocol: • PANASONIC: 9600baud, 19200baud  
• PELCO D: 2400baud, 9600baud

## ENVIRONMENT

Environment temperature: T5: from -60°C (-76°F) up to +65°C (149°F) (versions with armoured cable) or from -50°C (-58°F) up to +65°C (149°F) (versions with cable set)

Operating temperature:  
Cold start from: -40°C (-40°F) up to +65°C (149°F)  
Running from: -50°C (-58°F) up to +65°C (149°F)

## CERTIFICATIONS

ATEX (EN 60079-0: 2014, EN60079-1: 2015, EN60079-31: 2014): II 2 G Ex d IIC T5 Gb  
II 2 D Ex tb IIIC T100°C Db IP66/IP68  
-60°C ≤ Ta ≤ +65°C (versions with armoured cable)  
II 2 G Ex d IIC T5 Gb  
II 2 D Ex tb IIIC T100°C Db IP66/IP68  
-50°C ≤ Ta ≤ +65°C (versions with cable set)  
IECEx (IEC 60079-0: 2011Ed.6, IEC 60079-1: 2014-06 Ed.7, IEC 60079-31: 2013 Ed.2): Ex d IIC T5 Gb  
Ex tb IIIC T100°C Db IP66/IP68  
-60°C ≤ Ta ≤ +65°C (versions with armoured cable)  
Ex d IIC T5 Gb  
Ex tb IIIC T100°C Db IP66/IP68  
-50°C ≤ Ta ≤ +65°C (versions with cable set)  
NEC (T5, T100°C, with cable set, -50°C/ +65°C) Class I, Zone 1, AEx d IIC T5 Gb  
Class I Div 2 Group A,B,C,D T5  
Zone 21, AEx tb IIIC T100°C Db  
Class II Div 2 Group E, F and G T100°C  
CEC (T5, T100°C, with cable set, -50°C/ +65°C) Ex d IIC T5 Gb  
Class I Div 2 Group A,B,C,D T5  
Ex tb IIIC T100°C Db  
Class II Div 2 Group E, F and G T100°C

## ACCESSORIES (optional, all in stainless steel)

Pole adapter module EC-x40S	Order No. 251380
Corner adapter module EC-x40S	Order No. 251381
Parapet mounting bracket EC-x40S	Order No. 251386
Wall bracket EC-x40S	Order No. 251387
Ball joint x40S	Order No. 251388

## PACKAGE

Weight: 12.5 kg (28 lb)  
Dimensions: 60x30x60 cm (24x12x24 in)

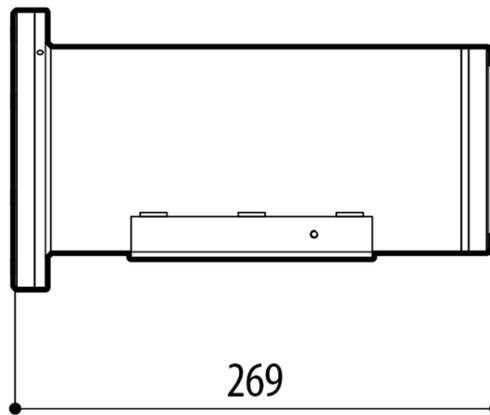
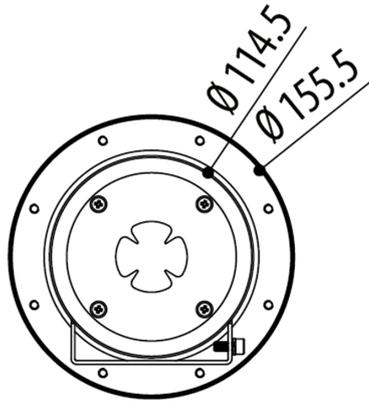
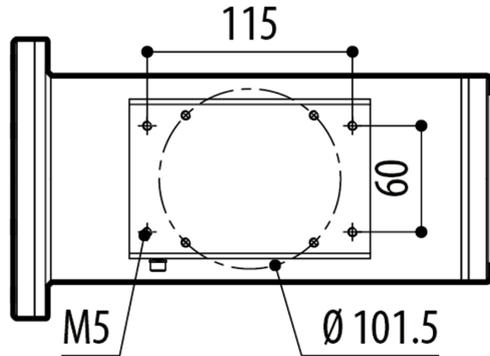
**MODELS**

<b>EC-840S-TIC-19A</b>	<b>332</b> Low Resolution	<b>-456</b>	T5 -60°C ... +65°C only with armoured cable 4m
	<b>642</b> High Resolution	<b>-F55</b>	T5 -50°C ... +65°C cable set for NEC / CEC 4m

Example: EC-840S-TIC-19A-332-F55 –Analogue Camera with cable set for T5 -50°C ... +65°C

**TECHNICAL DRAWINGS**

Sizes in millimeters



- without sunroof