FLIR *ITS-Series Rail*

Intelligent thermal camera for public transportation safety

The FLIR ITS-Series Rail is an integrated thermal camera and detector for obstacle detection in public transportation environments. The FLIR ITS-Series Rail camera does not need light to operate, but uses thermal energy emitted from obstacles to detect vehicles, people and large animals in the darkest of nights, over a long range and in the most difficult weather conditions. The result is reliable, 24/7 detection for a wide range of applications.

PLATFORM, TUNNEL AND TRACK SAFETY

The FLIR ITS-Series Rail is a cost-effective solution for the detection of people falling off a platform, entering a tunnel or walking on rail tracks. The system uses advanced detection algorithms in order to accurately detect people without being triggered by unwanted objects like small animals or passing trains.

OBSTACLE DETECTION AT LEVEL CROSSINGS

The FLIR ITS-Series Rail can be used to prevent collisions by detecting vehicles that are stuck on a level crossing and blocking the passage of an approaching train. The intelligent thermal sensor will transmit its detection information over contact closures or over a TCP/IP network to a control room, where the detection event and live thermal video is shown. This information can be used by an operator to decide whether an oncoming train must be stopped or slowed down.

FIRE DETECTION IN TUNNELS

Fires in railway tunnels, caused by the electrical systems, are always an actual risk. The calibrated FLIR ITS-Series Rail camera can measure the temperature of any object in its field of view, which allows it to detect fires at an early stage. The camera does not need to make physical contact with smoke or heated gasses to be able to detect excessive heat caused by fire or other malfunctions. As a result, fire is detected within seconds of ignition, long before it is capable of triggering any traditional fire detection system. The camera's smart video analytics take into account multiple parameters such, as size, dynamics, growth rate, movement, etc..., resulting in unprecedented fire detection accuracy.

Platform, tunnel & trackside monitoring

Stopped vehicle detection

Fire detection in railway tunnels

◆FLIR® | The World's Sixth Sense®

Specifications

System Overview	
Detector type	Focal Plane Array (FPA) uncooled VOx microbolometer
Spectral range	7.5 to 13.5 μm
Resolution	640 x 512
Field of View	90° x 69° 69° x 56° 44° x 36° 32° x 26° 25° x 19° 17° x 14°
Image processing	Automatic Gain Control (AGC), Digital Detail Enhancement (DDE)

System Features	
Automatic heater	Clears ice from windows Automatic deicing

Image presentation	
Video over Ethernet	Two independent channels of H.264 or M-JPEG
Analog video output	Configurable NTSC and PAL

Analytics	
Trackside Monitoring	Automatic detection of people on and alongside the tracks with advanced train filtering
Level crossing safety	Detection of stopped vehicles on a level crossing
Fire Detection	Early Fire detection in tunnels

Power Consumption

Consult product manuals for detailed power requirements	Source	POE (802.3af)	POE+ (802.3at)	12VDC	24VDC	24VAC(VA)
	Heater off	<5.5W	<5.5W	<5.5W	<5.5W	<8W
	Heater on (@ 100%)	N/A	<25W	<25W	<25W	<32W

Environmental	
IP Rating	IP66 & IP67
Operating Temperature Range	-50°C to 70°C (continuous operation) -40°C to 70°C (cold start)
Storage Temperature Range	-50°C to 85°C/-58°F to 185°F
Humidity	0-95% relative humidity
Shock	MIL-STD-810G "Transportation"
Vibe	IEC 60068-2-27

Approvals	
Approvals	CE: EN55022 Class A; FCC 47 CFR Part 15, Subpart B, Class A (within CISPR 22:2008 Class A limits)
Surge Immunity on AC Power Lines	EN 55024: 2010 and 55022: 2010 to 4.0kV on AC aux power lines; EN 50130-4:2011; IEC 62599-2:2010
Surge Immunity on Signal Lines	EN 55024: 2010 and 55022: 2010 to 4.0kV

Standard package	
Thermal imaging camera, operator manual	

www.flir.com

◆FLIR® | The World's Sixth Sense®