

FLIR ThermiCam

The world's first integrated thermal traffic sensor



ThermiCam is an integrated thermal camera and detector for vehicle, bicycle and pedestrian detection. ThermiCam does not need light to operate, but provides reliable traffic detection in the darkest of nights, over a long range and in the most difficult weather conditions, based on the thermal energy emitted from vehicles, bicyclists and pedestrians. ThermiCam's algorithms are based on proven performance of more than 20 years.

VEHICLE, BICYCLE AND PEDESTRIAN PRESENCE DETECTION

ThermiCam can be used to control traffic signals by detecting vehicles and bicycles at and nearby the stop bar and by detecting pedestrians and bicyclists at and nearby the crossing. The ThermiCam sensor will transmit its detection information over contact closures or over TCP/IP to the traffic signal controller and will thus allow a more dynamic control of traffic signals. This results in reduced vehicle idling time, improved traffic flow and improved safety and mobility for motorists, bicyclists and pedestrians. Typical intersection applications are 'green on demand' and 'lengthening clearance times'.

The intelligent ThermiCam sensor can distinguish between vehicles and bicyclists, which allows traffic controllers to make more intelligent decisions and adapt green times according to the specific road user type. ThermiCam also allows traffic controllers to adapt traffic signals for pedestrians or activate presence-based warning signals to make pedestrians more visible on crossings.



Vehicle & bicycle presence detection

VEHICLE AND BICYCLE COUNTING

ThermiCam also offers vehicle and bicycle counting. This functionality can work simultaneously with the presence detection functionality and uses the same detection zones and regions.

TRAFFIC DATA COLLECTION & FLOW MONITORING

ThermiCam is capable of collecting traffic data, including volume, speed, occupancy, headway, gap time and vehicle classification (up to 5 classes). The integrated traffic data can be provided for each lane and each vehicle class separately. Additionally, ThermiCam can give outputs and/or events when a change in the traffic flow (flow speed, zone occupancy, giving level of service (LOS)) is detected.

INVERSE DIRECTION DETECTION

Through real-time analysis of thermal images, ThermiCam will detect wrong-way drivers on highways, highway entries and exits, or inter-urban roads in a matter of seconds.

KEY BENEFITS:

- CAMERA AND DETECTOR INTEGRATED INTO ONE UNIT
- SIMPLE AND QUICK INSTALLATION
- FIELD PROVEN DETECTION PERFORMANCE
- 24-HOUR DETECTION, AT NIGHT AND IN THE MOST DIFFICULT WEATHER CONDITIONS, NO NEED FOR ADDITIONAL LIGHTING
- DETECTION OVER LONG RANGE AND ACROSS DIFFERENT LANES (TYPICALLY UP TO 4 - DEPENDING ON LENS)



On-crossing pedestrian detection

Technical Specifications

System Overview		ThermiCam			
Detection functionalities	Vehicle and bicycle presence detection, vehicle and bicycle counting, pedestrian presence detection, traffic data collection, traffic flow monitoring, inverse direction detection				
# detection zones	24 vehicle presence zones \ 8 bicycle presence regions 8 pedestrian zones \ 8 traffic data zones \ 8 inverse direction zones				
Camera					
Resolution	QVGA (336 x 256)				
Frame rate	30 FPS				
Type	Long wave Infrared (7 – 14 µm)				
Compression	H.264, MPEG-4, MJPEG				
	Part number	Focal distance	Field of view	Functionality	Detection distance for vehicle presence
ThermiCam ETH/BPL 390 (wide angle)	ETH: 10-7040 BPL: 10-7030	7.5 mm	Horizontal: 90° Vertical: 69°	Vehicle presence, Bicycle presence, Inverse direction, Vehicle and bicycle counting, Pedestrian presence Traffic data collection and flow monitoring	0 - 25 m
ThermiCam ETH/BPL 335 (medium angle)	ETH: 10-7041 BPL: 10-7031	9 mm	Horizontal: 35° Vertical: 27°	Vehicle presence, Bicycle presence, Inverse direction, Vehicle and bicycle counting, Pedestrian presence Traffic data collection and flow monitoring	15 - 75 m
ThermiCam ETH/BPL 325 (narrow angle)	ETH: 10-7042 BPL: 10-7032	13 mm	Horizontal: 25° Vertical: 19°	Vehicle presence, Bicycle presence, Inverse direction	30 - 90 m
ThermiCam ETH/BPL 317 (super narrow angle)	ETH: 10-7043 BPL: 10-7033	19 mm	Horizontal 17° Vertical 13°	Vehicle presence, bicycle presence	45-120m
Housing					
Material	Aluminum				
Dimensions (incl. mounting bracket)	Vertically mounted 45cm x 16cm x 12cm Horizontally mounted 41cm x 18cm x 12cm				
Sunshield	Optional				
Power, outputs, communications					
Contact closures	3 for ETH versions, direct or via optional ETH interface (PN 10-6075) 16 for BPL versions, via T1 x-stream BPL interface (PN 10-6085)				
Ethernet	For communication of output state events, configuration & monitoring (streaming video)				
Input Power	12-42VDC, 12-30VAC				
Current Consumption	BPL: < 230 mA @ 24VDC (< 320mA @ 24VDC peak at startup) ETH: < 130 mA @ 24VDC (< 250mA @ 24VDC peak at startup)				
Power Consumption	BPL: < 5.5W (< 7.5W peak at startup) ETH: < 3.1W (< 6W peak at startup)				
PC tool for set-up	Traficon Configuration Tool (TCT)				
PC tool for data retrieval	Traficon Data Tool (TDT)				
PC Tool for traffic monitoring, event and data reporting	FLUX				
Regulatory					
EU Directives	EMC 2004/108/EC, RoHS 2011/65/EU				
Environmental					
Shock & Vibration	NEMA TS2 specs				
Materials	All weatherproof (UV-resistant)				
Protection Grades	Housing = IP68, Connectors = IP67				
Temperature Range	From -34°C to +74°C (-29°F to 165°F)				
FCC	FCC part 15 Class A				

Specifications are subject to change without notice
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FLIR Intelligent Transportation Systems
Marke, Belgium
PH: +32 (0) 56 37 22 00

FLIR Systems, Inc
Santa Barbara, USA
PH: +1 805.690.5097

PORTLAND
Corporate Headquarters
FLIR Systems, Inc
27700 SW Parkway Ave.
Wilsonville, OR 97070
USA
PH: +1 866.477.3687

FLIR Systems, Inc.
Singapore
PH: + 65 8727 5581

FLIR Systems Australia Pty Ltd
PH: +61 1300 729 987
(NZ: 0800 785 492)

EUROPE
FLIR Commercial Systems
Luxemburgstraat 2
2321 Meer - Belgium
PH: +32 (0) 3665 5100
Fax: +32 (0) 3303 5624
Email: flir@flir.com

www.flir.com
NASDAQ: FLIR