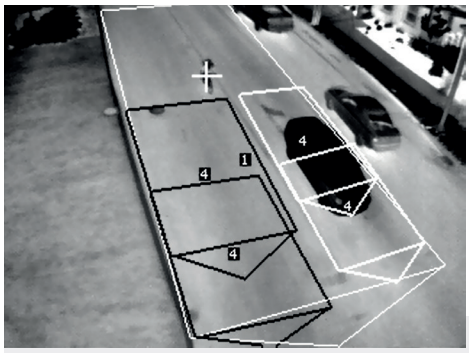
**INTELLIGENT THERMAL TRAFFIC SENSOR WITH V2X**

# FLIR THERMICAM2 V2X

ThermiCam2 V2X is an intelligent thermal sensor for vehicle, pedestrian, and bike detection. Integrated V2X technology allows simultaneous thermal detection and V2X message processing. Since the ThermiCam2 V2X relies on thermal energy rather than light, it offers 24/7 traffic monitoring and can detect road users at night, through glare, and in harsh weather conditions.

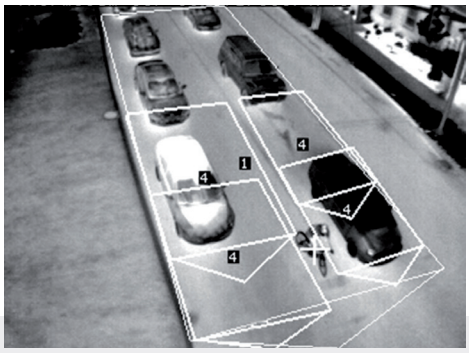
www.flir.com/Traffic



## V2X TECHNOLOGY

Built-in V2X communication technology works with other fixed and mobile V2X devices to create safer, more efficient traffic.

- Streamlined traffic signal priority for public transportation and emergency vehicles
- Supports US Standard IEEE 802.11p and SAE J2735 Basic Safety Messages (BSM)
- Easy-to-install detector using three-core signal cable for power and communications over powerlines for outputs and TCP/IP



## VEHICLE, BICYCLE, AND PEDESTRIAN DETECTION

ThermiCam2 V2X can distinguish between vehicles and bicyclists, gathering relevant data and protecting vulnerable road users.

- Adapt green times according to specific road user type
- Collect traffic volume, speed, occupancy, headway, gap time, and vehicle classification data
- Detect waiting and crossing pedestrians

## RELIABLE THERMAL IMAGING

Trusted FLIR thermal imaging allows ThermiCam2 V2X to detect pedestrians. Bicyclists, and vehicles in complete darkness, through glare, and in harsh weather conditions.

- Fast, clear detection without the need for visible light
- Intelligent presence detection, data collection, and wrong-way driver detection
- Field-proven 24/7 monitoring

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **System Overview** | |
| Detection functionalities | Vehicle and bicycle presence detection at the stop bar and in advance<br>Pedestrian presence detection<br>Traffic flow monitoring in free flow traffic<br>(counts, occupancy, classification, speeds, headway, gap, level of service)<br>Wrong way driver detection (optional license)<br>Traffic data collection at the stop bar: counts, occupancy, classification (optional license)<br>ITS-IQ Wi-Fi travel time monitoring (optional license)<br>ITS-IQ cloud communication (optional license)<br>V2X traffic signal priority (optional license) |
| # detection zones | 24 vehicle detection zones \ 8 bicycle detection zones \ 8 pedestrian zones \<br>6 traffic data zones \ 6 wrong way driver zones |
| Configuration | Web page setup via secure Wi-Fi, Ethernet or BPL |
| **Camera** | |
| Type | Focal Plane Array (FPA), uncooled VOx microbolometer<br>Long wave Infrared (7 – 14 µm) |
| Resolution | VGA (640x480) |
| Frame Rate | 30 fps |
| Compression | H.264, MPEG-4, MJPEG |
| Streaming Video | RTSP |

**Product Types**

| | Part Number | Resolution | Focal distance | Field of view | Detection distance for vehicle presence |
|---|---|---|---|---|---|
| ThermiCam2 V2X 690 | 10-7450 | VGA | 7.5mm | Horizontal: 90°<br>Vertical: 69° | 2 – 30 m /<br>6 - 100ft |
| ThermiCam2 V2X 645 | 10-7454 | VGA | 7.5mm | Horizontal: 45°<br>Vertical: 35° | 10 – 75 m /<br>32 - 245ft |
| ThermiCam2 V2X 632 | 10-7456 | VGA | 9mm | Horizontal: 32°<br>Vertical: 26° | 15 – 75 m /<br>100 - 300ft |

| | |
|---|---|
| **Housing** | |
| Material | Aluminum housing with integrated polycarbonate sunshield |
| Dimensions (incl. mounting bracket) | Vertically mounted: 45 cm x 16 cm x 12 cm (9.8 in x 6.3 in x 4.7 in)<br>Horizontally mounted: 41 cm x 18cm x 12cm (16.2 in x 7.1 in x 4.7 in) |
| **Power, outputs, communication** | |
| Input power | 24 – 42 V AC/DC |
| Power consumption | < 11 W |
| Output contacts | 1 N/O and 1 N/C dry contacts direct<br>16 N/C dry contacts via TI BPL2 EDGE interface<br>16 output channels via TI BPL2 EDGE and PIM module (SDLC) |
| Ethernet | 10/100 Mbps<br>for configuration, video streaming, monitoring, JSON public API |
| PoE | PoE mode A |
| BPL | 50 Mbps Broadband over Powerline communication via TI BPL2 EDGE interface |
| Wi-Fi | IEEE 802.11 for configuration and Wi-Fi travel time monitoring |
| **V2X** | |
| V2X Access Layer | DSRC IEEE 802.11p |
| Transport & Network layer | WSMP IEEE 1609.3 WAVE |
| Facilities Layer | SAE J2735 BSM, SPaT, MAP |
| **Environmental** | |
| Schock & Vibration | NEMA TS2 specs |
| Materials | All weatherproof UV resistant |
| IP Rating | IP 67 |
| Temperature Range | -34°C to + 74°C / -29°F to +165°F |
| **Regulatory** | |
| FCC / EU Directives | FCC part 15 class A, EMC 2014/30/EU, RoHS 2011/65/EU, LVD 2014/35/EU,<br>RED 2014/53/EU |

Specifications are subject to change without notice. For the most up-to-date specs, go to www.flir.com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