# ThermCAM-384G

## High Resolution LWIR Ultra Compact Infrared Camera for Glass Industry Temperature Measurement Solutions.

### Features

- Temperature Range: 150°C to 1500°C
- Detector: Uncooled FPA detector with 384 x 288 pixels resolution
- Measurement Accuracy: ±2% of reading in °C or °K

### Output Interface

- Fast thermal data acquisition in real time via 100M-bit Ethernet with built-in 4-20mA, TTL O/P.
- Digital and analog input/output modules


ThermCAM-384G is a versatile thermal camera with a spectral range of 7.9µm, which can be used for a wide range of temperature measurement for glass industry applications as well as accurate temperature measurement of Thin Plastic material.

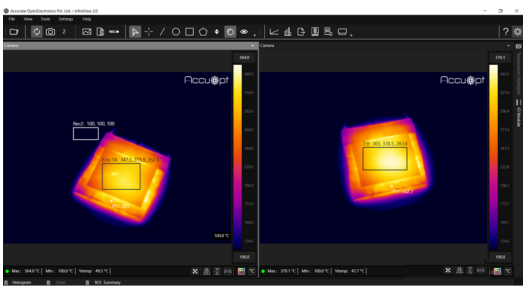
ThermCAM-384G with resolution of 384 x 288 pixels, provides optimum image resolution as well as thermal data transfer to PC via 100 Mbps Ethernet. With InfraView Software, it can fit many glass industrial applications off-theshelve.

Whether in quality control, process monitoring, glass sheet tempering or process automation ThermCAM-384G measures temperature of each pixel consistently and accurately.

## Product Highlights

- ThermCAM-384G works at a wavelength range of 7.9 µm.
- Various Lens options for area of measurement.
- Configurable storage and temperature video recording.
- Provide continuous thermal video in InfraView Software in PC via an Ethernet.
- High shock and vibration tolerance for maintenance-free operation.
- Multiple ThermCAM can be connected to single InfraView Software

## InfraView Software



| Performance Specifications | |
|---|---|
| Temperature Range | 150°C to 1500°C |
| Optical Resolution | 384 x 288 pixels |
| Detector | Uncooled FPA Detector |
| Spectral Range | 7.9 µm |
| Pixel Pitch | 17 µm |
| Frequency | Upto 30Hz |
| Sensitivity / NETD | <50mK@f1.0, 30Hz 300 K |
| Accuracy | ±2°C or ±2% of reading in °C or °K |

| Interface Specifications | |
|---|---|
| Video | Ethernet |
| Connection | Power Connector, RJ-45 Ethernet Connector |
| Video Format for Saving | Mp4 |
| Image Format for Saving | JPEG |

| Optics | |
|---|---|
| Lens Type | Fixed / Motorized |

| Electrical Specifications | |
|---|---|
| Power Supply | 12 to 24 V DC |
| Power Consumption | <4 Watt |

| Environmental / Mechanical Specifications | |
|---|---|
| Ambient Temperature | 0°C - 50°C |
| Storage Temperature | -40°C - 70°C |
| Relative Humidity | ≤95% non-condensing |
| Shock Resilience | 25G |
| Vibration Resilience | 2G |
| Weight | ~400 gms |
| Protection Class | IP65 |
| EMC | CE |
| Size | 60 x 70 x 80 mm |
| Mounting | UNC 1/4”-20 , UNC 3/8”-16 Standard Mount |

| I/O Module Specifications | |
|---|---|
| Analog Output | 4 Channel Analog Current Output (4 - 20mA) |
| Digital Input | 2 Isolated Inputs |
| Digital Output | 2 Relay Outputs |
| Power Supply | 5 V DC |

| Cooling Jacket Specifications | |
|---|---|
| Inlet/Outlet (Cooling) | ½" BSP Thread |
| Inlet For Air Purging | PU Pipe suitable for 8 mm nozzle |
| Water Flow Rate | 6-8 L/min |
| Air Pressure | Min. 3 bar (Moist Free) |
| Mounting | 5 x M5 Thread |

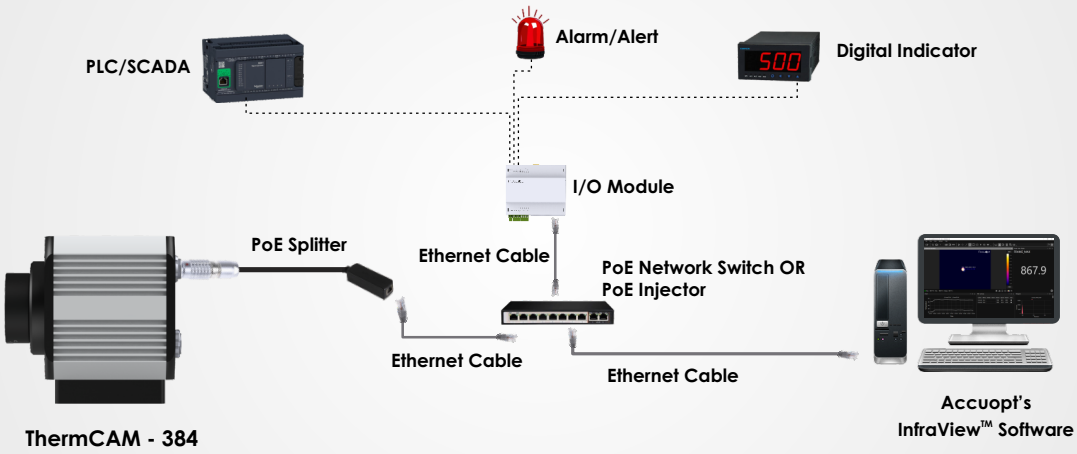
# ThermCAM-384G

## SYSTEM CONFIGURATION

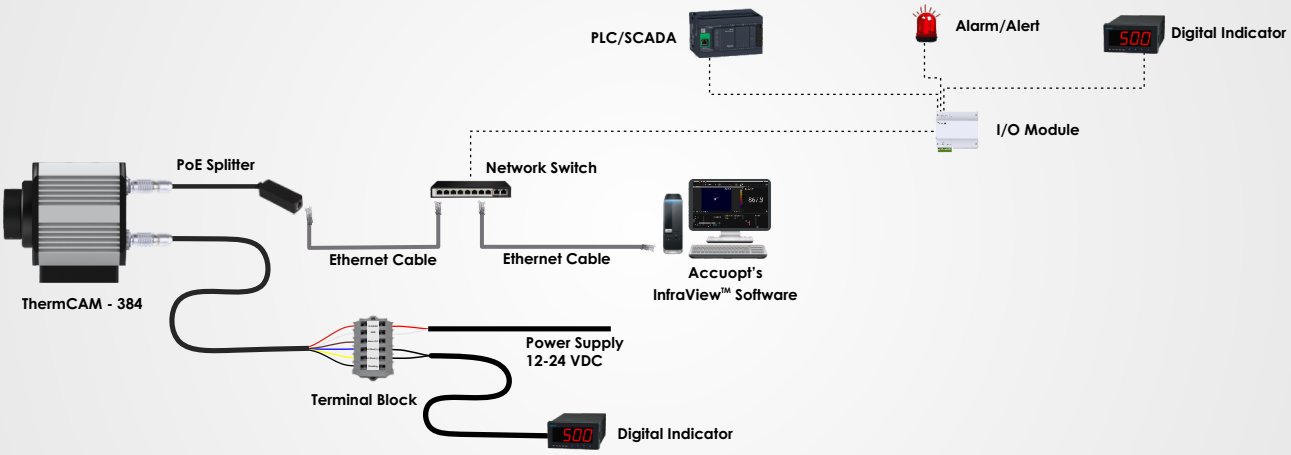
**ThermCAM-384G Over Network**

The system can be set up by connecting the camera directly to a dedicated computer using Ethernet connection which can be extended for remote access/intranet. Also camera can be paired with a network device(switch) which can be further connected with I/O module to get alarm/alerts, analog/digital output for digital indicator and PLC/SCADA systems.

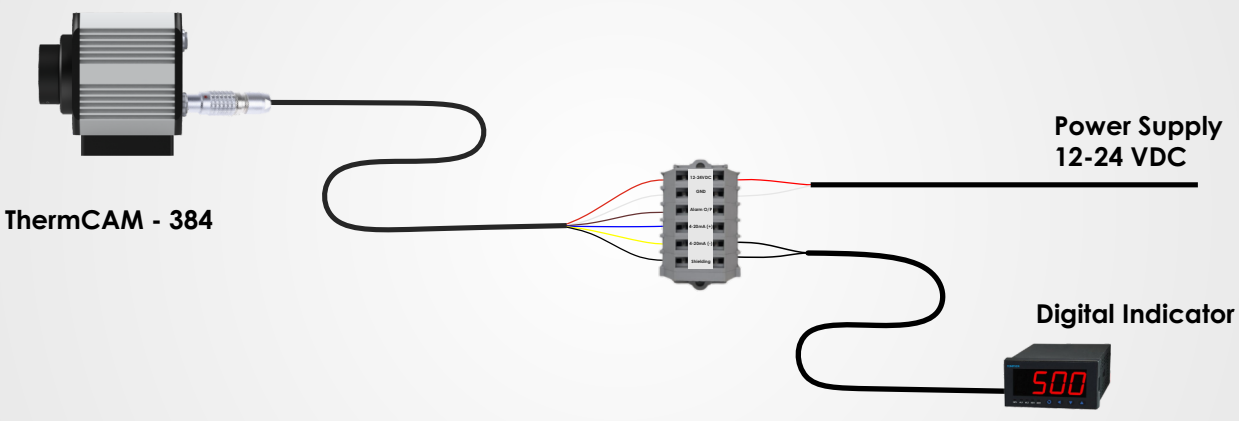
### 1. ThermCAM-384G with PoE Configuration




### 3. ThermCAM-384G with Ethernet Configuration




### 4. ThermCAM-384G with Autonomous configuration



# ThermCAM-384G

## OVERVIEW

The compact design of the ThermCAM-384G enables the integration of the camera into compact process applications, while the durable and robust housing guarantees reliability even in harshest industrial environments. The ThermCAM-384G can be installed with an optional IP67 enclosure with air purge unit for additional protection in harsh industrial environments where ambient temperatures exceed ~50°C.

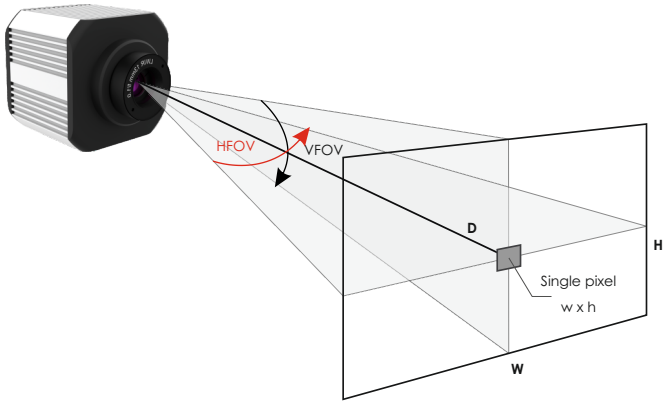
The built-in 100M-bit Ethernet allows the camera to be connected to the system for high speed data transmission to InfraViewTM software for further analysis.

## OPTICS VARIANT

A wide range of lenses are available for the ThermCAM-384G, making it suitable for most industrial applications. The table and picture show the correlation between the measurement distance, different optics, and the size of the measurement fields.

| Measurement Field (HFOV x VFOV) | Distance of object | Width (m) | Height (m) | Pixel WxH (mm) |
|---|---|---|---|---|
| 28.2° x 21.3° (FL = 13 mm fixed) | 1 M | 0.50 | 0.37 | 1.31 |
| | 5 M | 2.51 | 1.88 | 6.54 |
| | 10 M | 5.02 | 3.76 | 13.08 |
| 24.6° x 18.5 (FL = 15 mm fixed) | 1 M | 0.43 | 0.32 | 1.13 |
| | 5 M | 2.18 | 1.62 | 5.67 |
| | 10 M | 4.36 | 3.25 | 11.33 |
| 19.5° x 14.7° (FL = 19 mm fixed) | 1 M | 0.34 | 0.25 | 0.90 |
| | 5 M | 1.72 | 1.29 | 4.49 |
| | 10 M | 3.45 | 2.58 | 8.98 |
| 7.5° x 5.6° (FL = 50 mm fixed) | 1 M | 0.13 | 0.09 | 0.34 |
| | 10 M | 1.31 | 0.97 | 3.41 |
| | 50 M | 6.55 | 4.89 | 17.03 |
| 4.9° x 3.7° (FL = 75 mm fixed) | 1 M | 0.08 | 0.06 | 0.22 |
| | 10 M | 0.85 | 0.64 | 2.24 |
| | 50 M | 4.27 | 3.23 | 11.18 |
| 3.7° x 2.8° (FL = 100 mm fixed) | 1 M | 0.06 | 0.04 | 0.17 |
| | 10 M | 0.64 | 0.48 | 1.69 |
| | 50 M | 3.23 | 2.44 | 8.45 |

**Note :** Other lens options are also available as per application requirements.



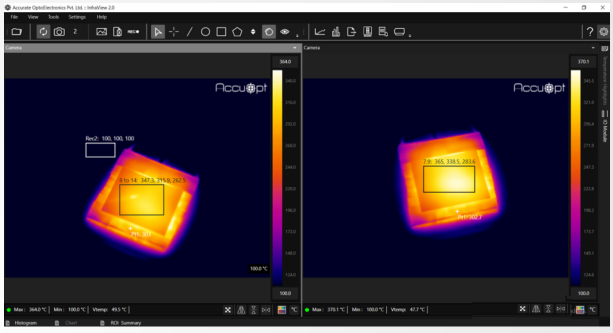

**HFOV** = Horizontal Field of View
**VFOV** = Vertical Field of View
**D** = Measurement Distance
**W** = Image Width
**H** = Image Height

## INFRAVIEW SOFTWARE

ThermCAM-384G comes with thermal image processing software InfraViewTM at the core of a thermal imaging system which is Windows based Software with many useful features. AccuOpt's InfraViewTM software allows you to stream thermal video on a PC , record thermal video, Draw ROI (Region Of Interest) in various shapes and sizes. It allows computed temperatures to be sent out via I/O card which in turn can be connected to PLCs.

### SALIENT FEATURE LIST FOR INFRAVIEW™ SOFTWARE

- Configurable emissivity Settings
- Real-time display of thermal images
- Includes 9 different color palates
- Multiple types of ROI including point, line, and area with min./max./avg. temperature display
- Includes analysis tools like histogram and temperature trend chart for multiple ROI's.
- Alarm generation for entire or ROI based on minimum, maximum or average temperature
- Analog and digital output module



- Triggered capture based on alarm conditions
- Data export option to .csv format.
- Radiometric snapshot for post analysis.
- ROI table summary.
- Analyze previously recorded video using RAW data.
- Saving Thermal Video in MP4 format.
- Additional SDK available for system integrator.
- Additional software for Real Time Temperature dashboard, analysis and report generation.

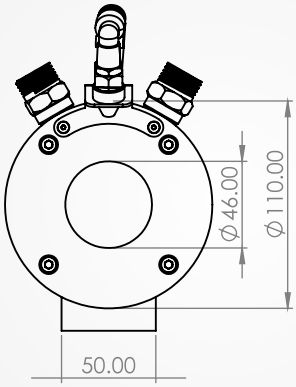
# ThermCAM-384G

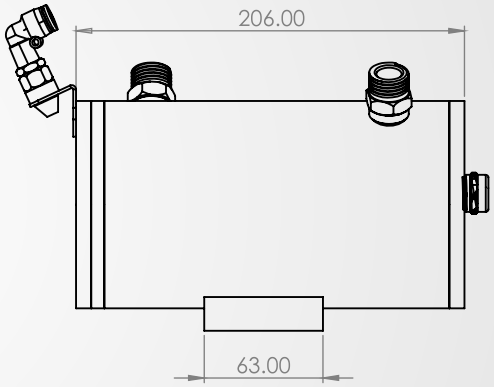
## STANDARD ACCESSORIES

- PoE Cable
- Power Cable
- Standard Infraview™ Software
- Lens
- SMPS

## OPTIONAL ACCESSORIES

### Water Cooling Jacket With Air Purge




### I/O Module

I/O Module

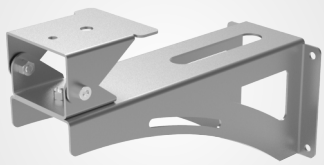
The I/O module consist of digital input/digital output(relay output) and analog 4 -20mA, which can be mounted on Din-rail. It provides analog and relay outputs with respect to temperature. These outputs can be customized for temperature indication, alarm generation or error reporting.

- All I/O are user settable for range and ROI selection
- I/O Channel parameters can be customized via software, as per requirement
- I/O works on Ethernet and provide with Din rail Mounting for Easy Installation

### Workstation/Laptop (for Single Camera Only)

- Processor : Intel i5 8th Generation or Higher
- RAM : 8 GB
- HDD : 1 TB or Higher
- SSD : 256GB
- 2 Nos Gigabit Ethernet
- Operating System : Windows 10Pro

### Wall Mounting



### Power Supply

### Tripod

### Network Devices

for any information, Visit **www.accuopt.com**
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AccuOpt – Accurate Optoelectronics Pvt Ltd. is a world-leading manufacturer of thermal imaging camera and solution. Based on technological innovations, AccuOpt Technology offers parts or end-to-end solutions for Industrial, Defense, Surveillance and Medical fields.



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