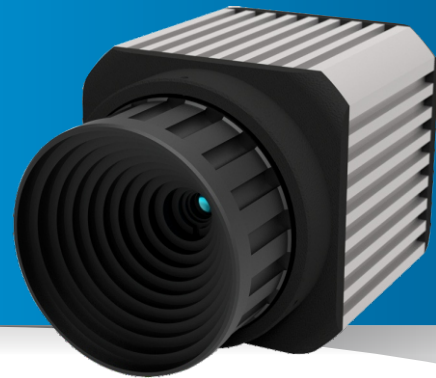# ThermCAM-160

Long Wavelength
Ultra Compact Infrared
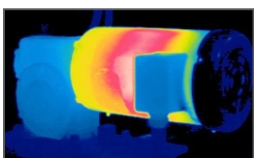Camera for Non Contact
Temperature Measurement Solutions

ThermCAM-160 is a versatile thermal camera which can be used for a wide range of temperature measurement applications. ThermCAM-160 with resolution of 160 x 120 pixels, provides optimum image resolution as well as thermal data transfer to PC via 100 Mbps Ethernet connectivity. With InfraView™ Software, it can fit many industrial applications off-the-shelve. Whether in quality control, process monitoring or process automation ThermCAM-160 measures temperature of each pixels consistently and accurately .

Product Highlights

- ThermCAM-160 works at a long wavelength range from 8 - 14 μm.
- Configurable storage and temperature video recording.
- Provide continuous thermal video in InfraView™ Software in PC via an Ethernet connectivity.
- High shock and vibration tolerance for maintenance-free operation.
- Multiple ThermCAM can be connected to single InfraView™ Software.

Temperature Ranges

- -20°C - 120°C
- 100°C - 1000°C

} Switchable via Software

Detector

Uncooled FPA detector with 160 x 120 pixels resolution.

Measurement Accuracy

±2% of reading in °C or °K

Software Features

- Different Types of ROI for localized temperature monitoring and measurement
- Histogram and Trend Chart of ROI.
- Configurable Audio/Visual Alarm.
- Configurable Alarm output to I/O module.

Output Interface

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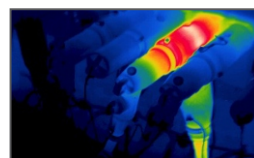- Digital and analog input/output modules
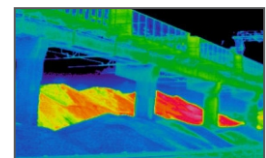
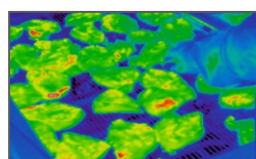## Typical Applications

Critical Assets

HVAC Inspection

Electric Equipment Inspection

Early Fire Detection

Conveyer Belt Monitoring

Quality Management
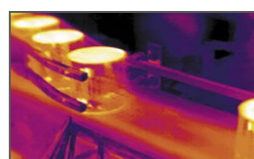
Process Automation

Research and Development

Accurate Opto Electronics Pvt. Ltd.

ThermCAM-160

Overview

The compact design of the ThermCAM-160 enables the integration of the camera into compact process applications, while the durable and robust housing guarantees reliability even in most harsh industrial environments. The ThermCAM-160 can be installed with an optional IP65 enclosure with air purge unit for additional protection in harsh industrial environments where ambient temperatures exceed ~50°C.
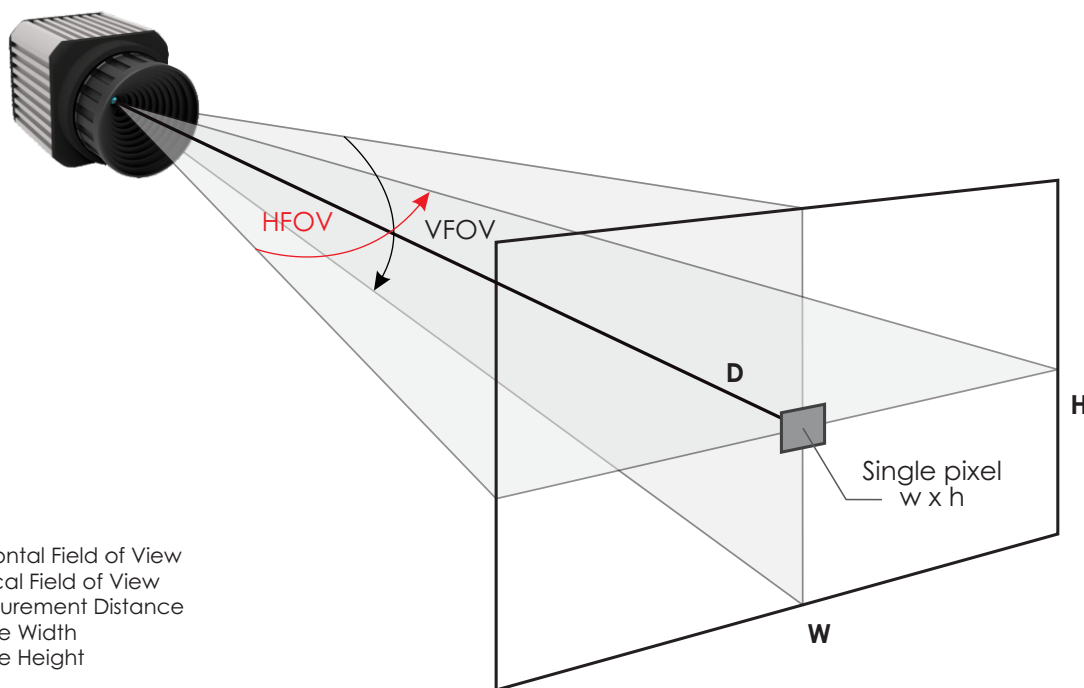
The built-in 100M-bit allows the camera to be connected to the network for high speed data transmission to InfraView™ software for further analysis.

Optics Variants

A wide range of lenses are available for the ThermCAM-160, 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)
31° x 23° (FL = 5 mm Fixed)	1M	0.55	0.40	3.43
	5 M	2.77	2.03	17.14
	10 M	5.54	4.06	34.29

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

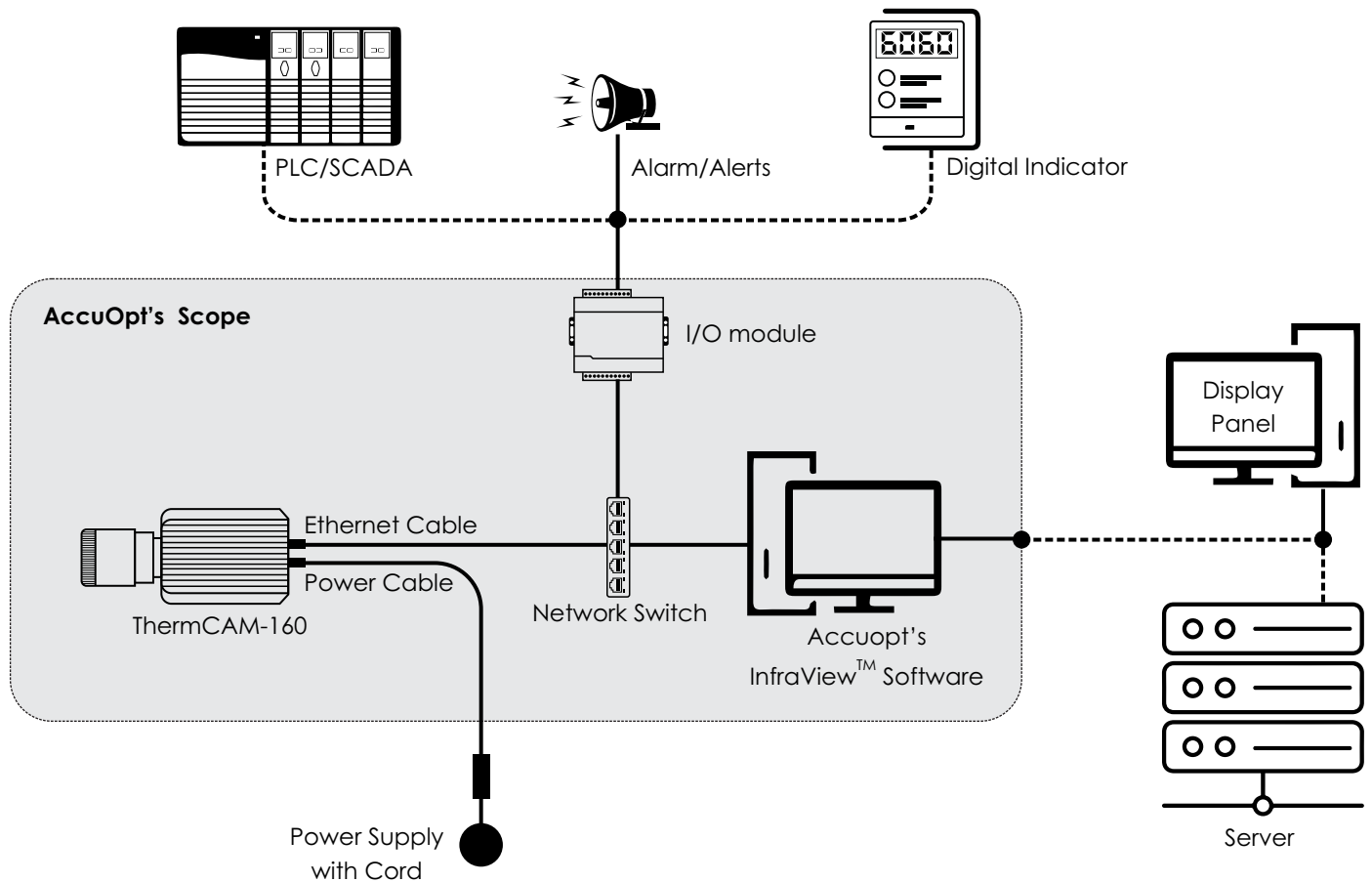|		
HFOV	=	Horizontal Field of View
VFOV	=	Vertical Field of View
D	=	Measurement Distance
W	=	Image Width
H	=	Image Height

SYSTEM CONFIGURATION

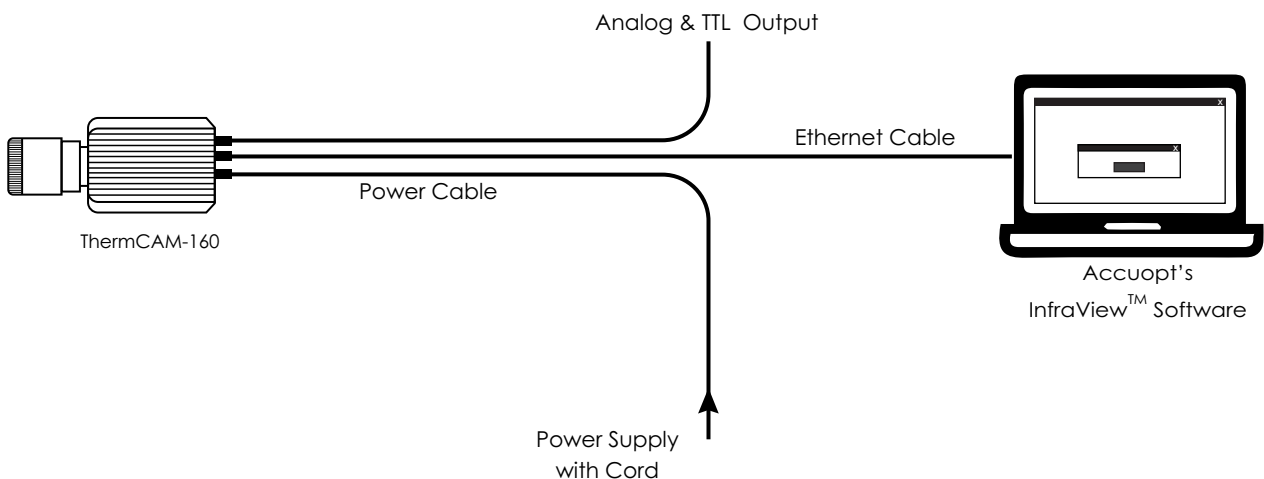AccuOpt thermal imagers offer several configuration options.

ThermCAM-160 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.

PLC/SCADA   Alarm/Alerts   Digital Indicator

AccuOpt's Scope

I/O module

Display Panel

Ethernet Cable

ThermCAM-160   Power Cable

Network Switch   Accuopt's InfraView™ Software

Server

Power Supply with Cord

ThermCAM-160 Standalone System

Additionally, the camera can be used with a desktop PC or with a laptop for a standalone monitoring system.

Analog & TTL Output

Ethernet Cable

ThermCAM-160   Power Cable   Accuopt's InfraView™ Software

Power Supply with Cord

ThermCAM-160

ThermCAM-160 comes with thermal image processing software InfraView™ at the core of a thermal imaging system which is Windows based Software with many useful features.

AccuOpt's InfraView™ 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.
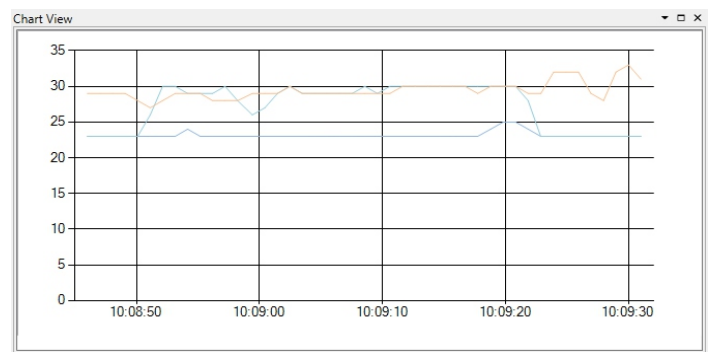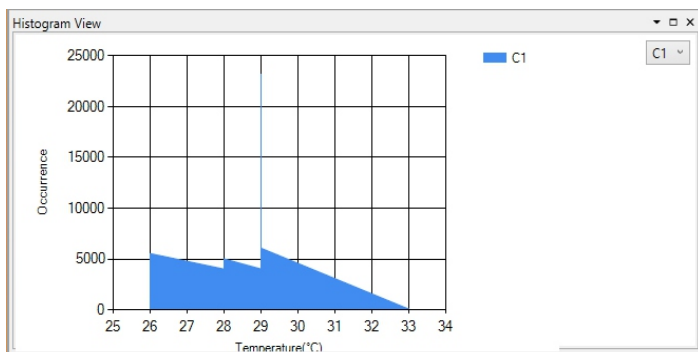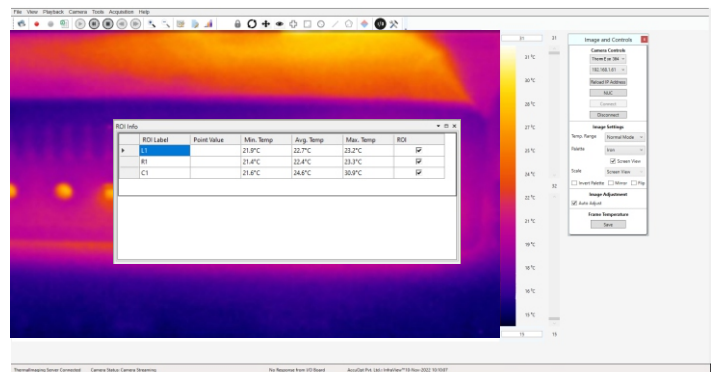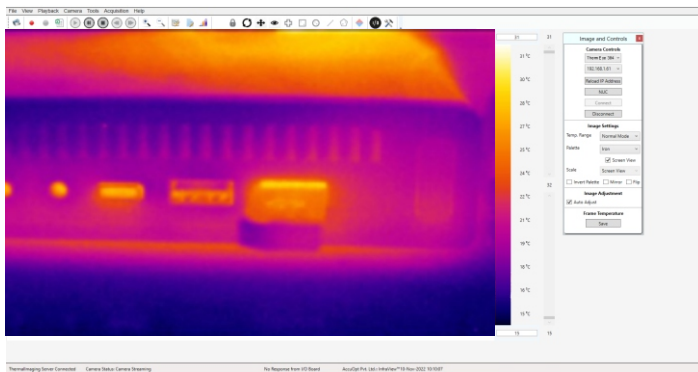

SALIENT FEATURE LIST FOR INFRAVIEW™ SOFTWARE

- Configurable emissivity, Transmissivity 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
- Password controlled user access
- Data export to text or Microsoft Excel (includes thermal image, ROI table summary/data, image data) or to text
- Analyze previously recorded images using RAW data
- Saving Thermal Video in MP4 format
- Optional SDK
- Additional software for Real Time Temperature dashboard, analysis and report generation.

STANDARD ACCESSORIES

- Power Cord 3 Mtr.
- Ethernet Cable 10Mtr.
- Standard Infraview™ Software

- Lens
- SMPS

OPTIONAL ACCESSORIES

Water Cooling Jacket with Air Purge

206.00

⌀ 46.00
⌀ 110.00
50.00
63.00
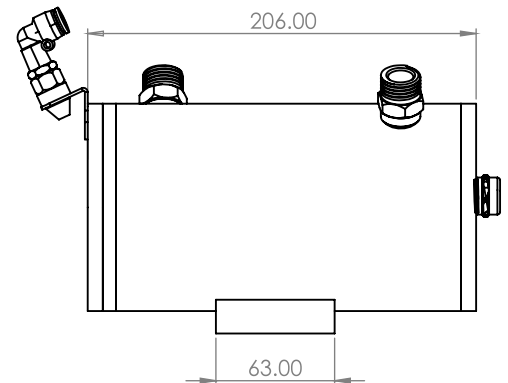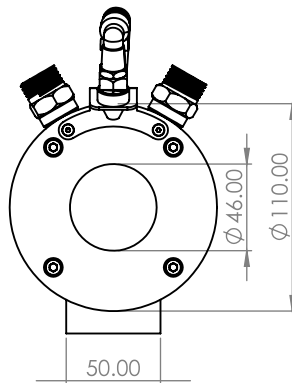
I/O Module

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 i3 6th Generation or Higher
- RAM : 8 GB
- HDD : 1 TB or Higher
- SSD : 256GB
- 2 Nos Gigabit Ethernet port
- Operating System : Windows 10Pro
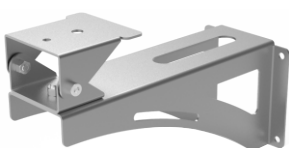
Wall Mounting   **Power Supply**   **Tripod**   **Network Devices**

ThermCAM-160

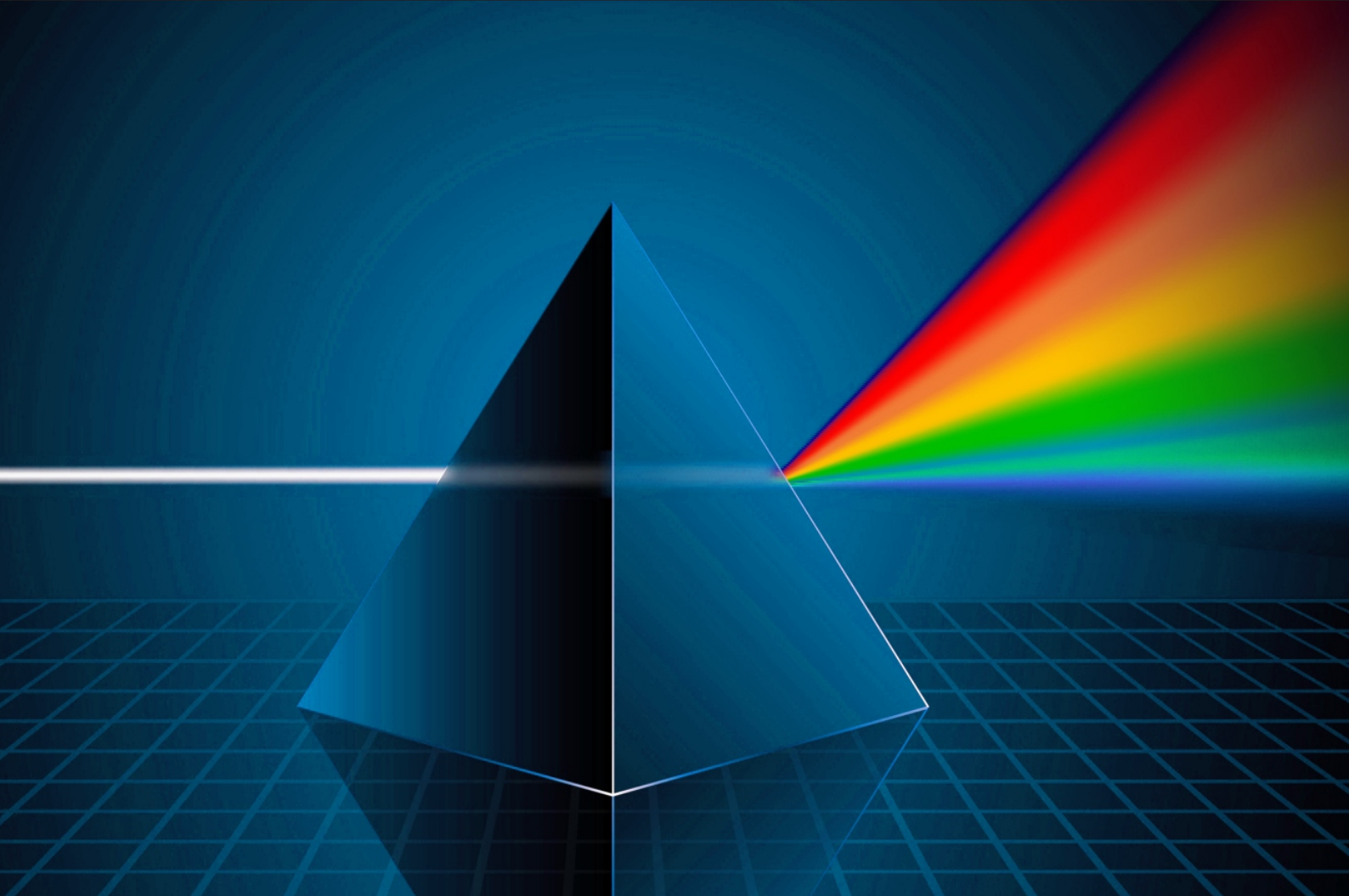| Performance Specifications	
Temperature Range	-20°C to 120°C |100°C to 1000°C Switchable via Software
Optical Resolution	160 x 120 pixels
Detector	Uncooled FPA Detector
Frequency	Upto 30Hz
Emissitivity	0.01 - 1.0 adjustable
Accuracy	±2% of reading in °C or °K (Ambient temp @25°C)
Spectral Range	8 to 14 µm
Sensitivity / NETD	<60mK@f1.0, 50Hz 300 K
Pixel Pitch	17 µm

Interface Specifications	
Video	100MBit/s Ethernet
Connection	Power Connector, RJ-45 Ethernet Connector
Output	4 - 20mA | 1 TTL output
Video Format for Saving	MP4
Image Format for Saving	JPEG

Electrical Specifications	
Power Supply	12 to 28 V DC
Power Consumption	<4 Watt Max.

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	~550 gms (with 5mm lens)
Protection Class	IP65
Size	60 x 60 x 95 mm (with 5mm lens)
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

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

ABOUT ACCURATE OPTOELECTRONICS

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.

Specifications are subject to change without notice. Not responsible for errors or omissions. Accurate Optoelectronics Private Limited.

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