ThermCAM-640

High Resolution LWIR
Ultra Compact Infrared
Camera for Non Contact
Temperature Measurement Solutions

ThermCAM-640 is a versatile thermal camera which can be used for a wide range of temperature measurement applications. ThermCAM-640 with resolution of 640 x 480 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-640 measures temperature of each pixels consistently and accurately .

Product Highlights

- ThermCAM-640 works at a long wavelength range from 8 - 14 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 connectivity.
- High shock and vibration tolerance for maintenance-free operation.
- Multiple ThermCAM-640 can be connected to a single InfraView™ Software.

Temperature Ranges

- -20°C - 120°C
- 100°C - 1000°C

} Switchable via Software

Detector

Uncooled FPA detector with 640 x 480 pixels resolution

Measurement Accuracy

±2% of reading in °C or °K

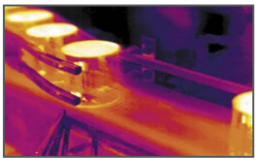
Software Features

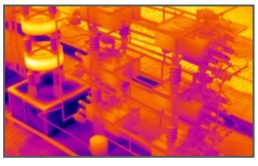
- Different Types of ROI for localized temperature monitoring and measurement
- Histogram and Trend Chart of ROI.
- Configurable Audio/Visual Alarm.
- Configurable Alarm output to I/O module.

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

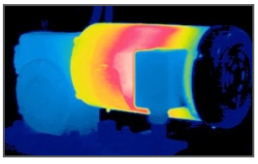
Typical Applications

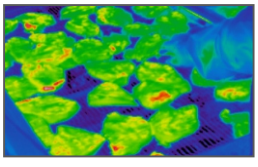

Process Automation

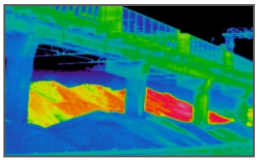

Electric Equipment Inspection


Process Control in Metallurgy


Ladle Monitoring


Critical Assets


Quality Management


Early Fire Detection


Building Thermography

ThermCAM-640

Overview

The compact design of the ThermCAM-640 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-640 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.

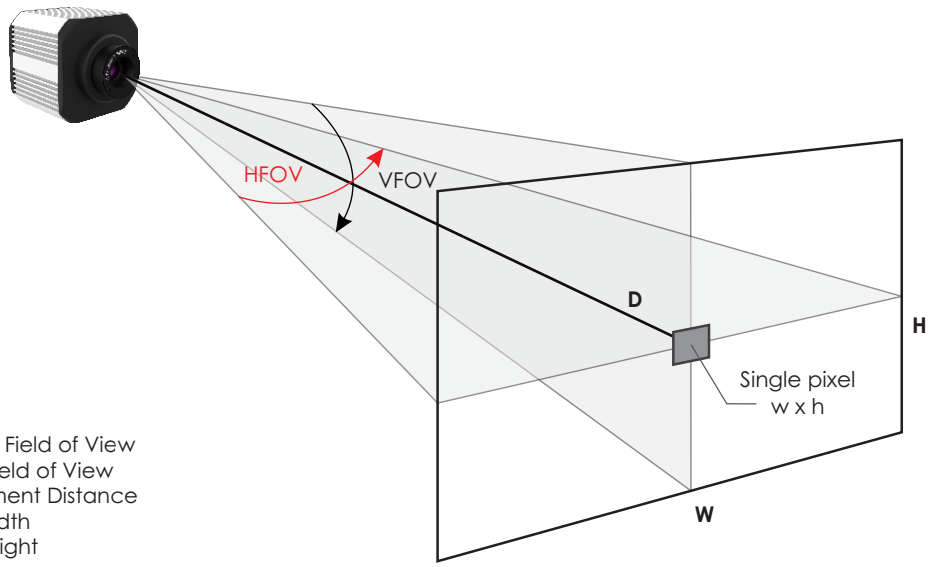
The built-in 100M-bit Ethernet allows the camera to be connected to the system for high speed data transmission to InfraView™ software for further analysis.

Optics Variants

A wide range of lenses are available for the ThermCAM-640, 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)
22.9° x 17.2° (FL = 19 mm Fixed)	1	0.40	0.30	0.63
	5	2.03	1.52	3.17
	10	4.05	3.02	6.32
17.5° x 13.1° (FL = 25 mm Fixed)	1	0.30	0.23	0.48
	5	1.54	1.15	2.40
	10	3.07	2.29	4.80
8.8° x 6.6° (FL = 50 mm Fixed)	1	0.15	0.11	0.24
	10	1.54	1.15	2.40
	50	7.69	5.76	12.02
5.9° x 4.4° (FL = 75 mm Fixed)	1	0.10	0.07	0.16
	10	1.03	0.76	1.61
	50	5.06	3.84	7.96
4.4° x 3.3° (FL = 100 mm Fixed)	1	0.08	0.06	0.12
	10	0.77	0.58	1.20
	50	3.84	2.88	6.00

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

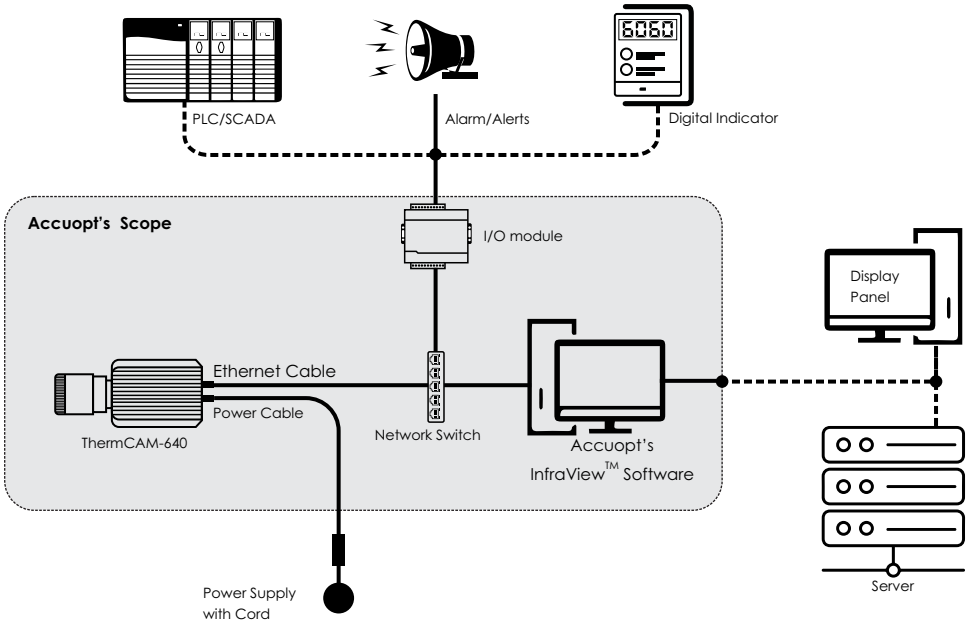
SYSTEM CONFIGURATION

Accuopt thermal imagers offer several configuration options.

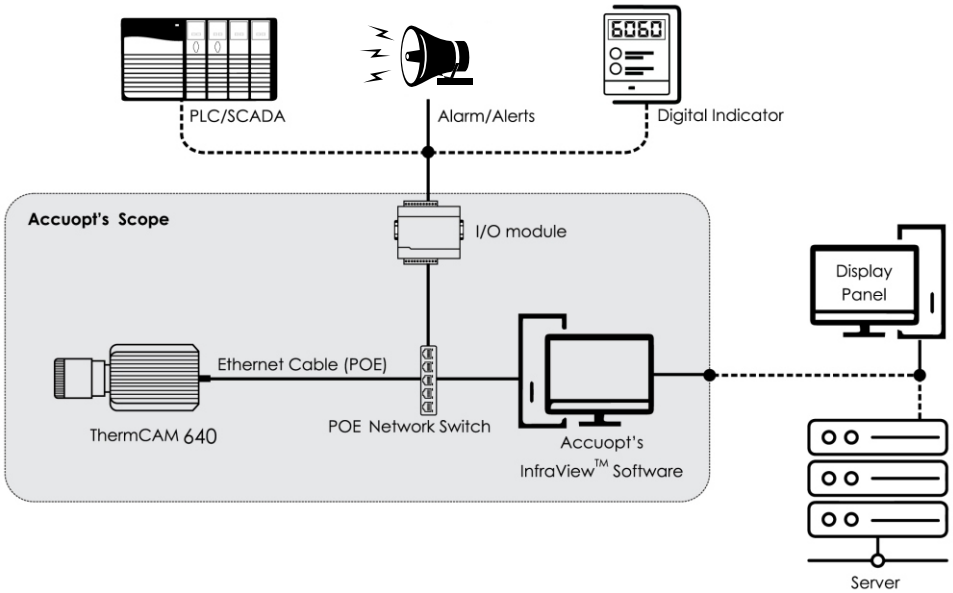
ThermCAM-640 Over Network

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-640 with Ethernet Configuration



2.ThermCAM-640 with PoE Configuration

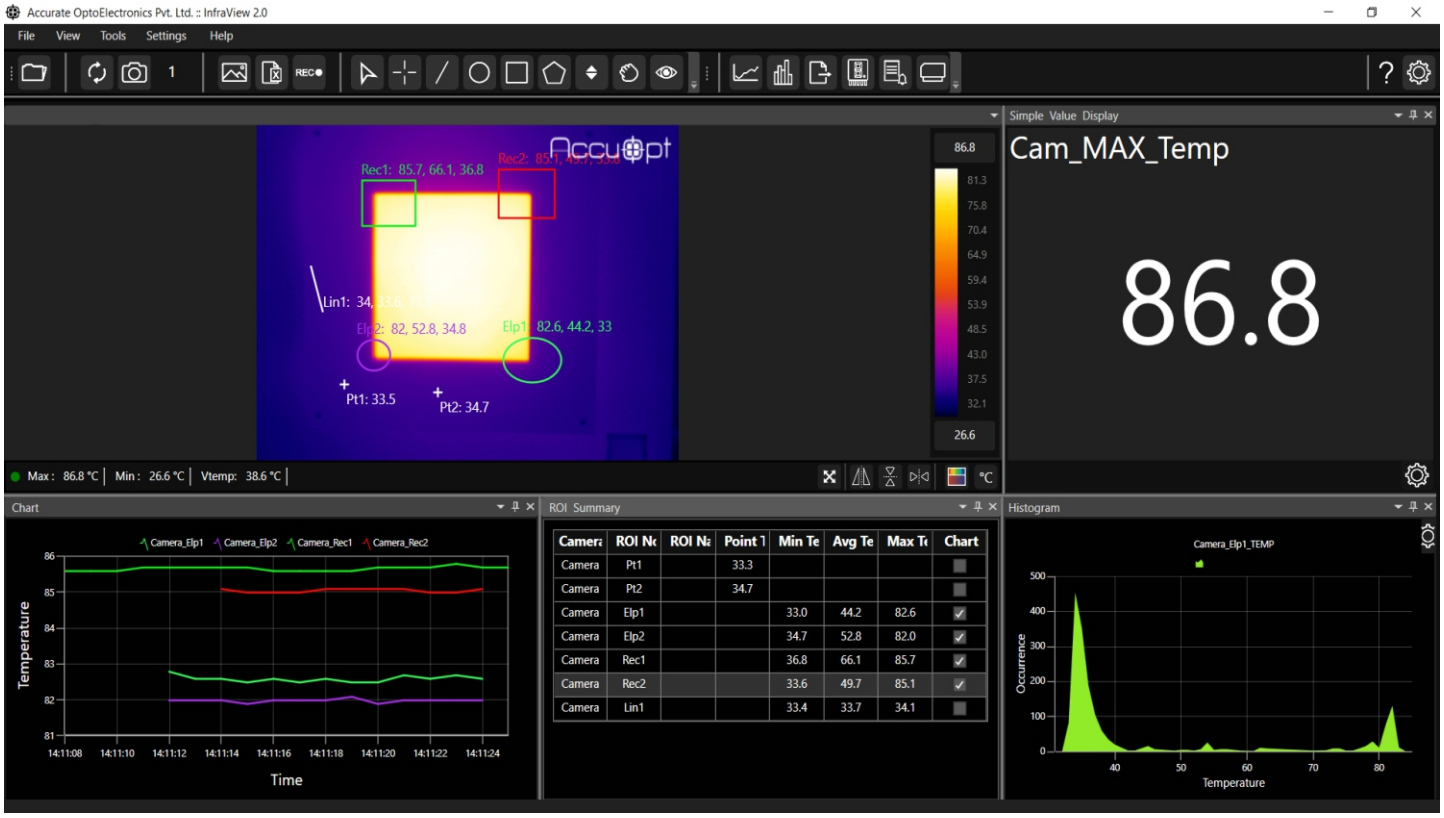


ThermCAM-640

INFRAVIEW™ SOFTWARE

ThermCAM-640 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

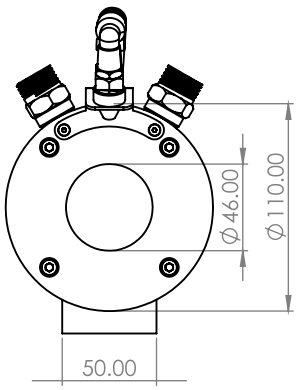
- Configurable emissivity, Transmissivity Settings
- Real-time display of thermal images
- Includes 9 different color palates
- Multiple types of ROI including point, line, and area with min./max./avg. temperature display
- Includes analysis tools like histogram and temperature trend chart for multiple 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
- 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.

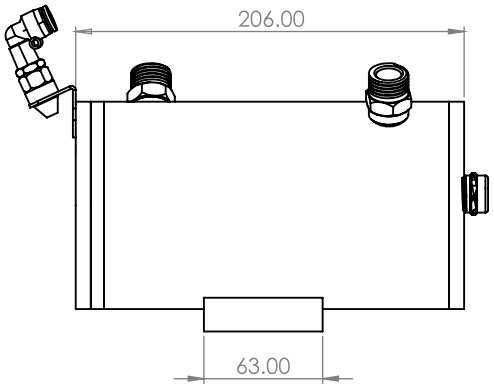
STANDARD ACCESSORIES

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

OPTIONAL ACCESSORIES

Water Cooling Jacket with Air Purge





I/O Module

I/O Module

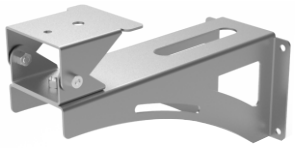
The I/O module consist of digital input/digital output(relay output) and analog 4 - 20mA, which can be mounted on Din-rail. It provides analog and relay outputs with respect to temperature. These outputs can be customized for temperature indication, alarm generation or error reporting.

- 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 i7 8th Generation or Higher
- RAM : 8 GB
- HDD : 1 TB or Higher
- SSD : 256GB
- 2 Nos Gigabit Ethernet or USB 2.0 port
- Operating System : Windows 10Pro

Wall Mounting



Power Supply

Tripod

Network Devices

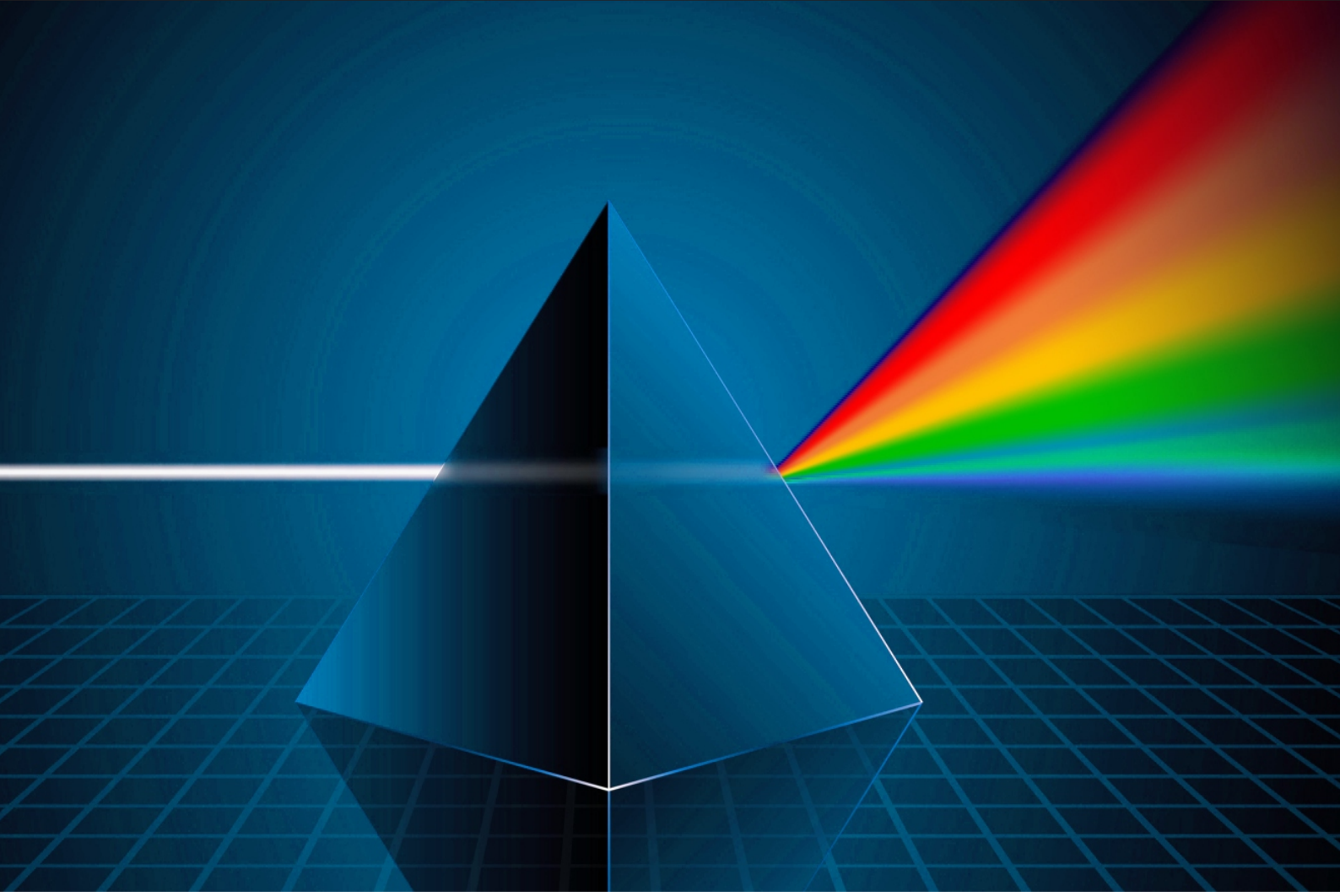
ThermCAM-640

TECHNICAL DATA

Performance Specifications	
Temperature Range	-20°C to 120°C | 100°C to 1000°C Switchable via Software
Optical Resolution	640 x 480 pixels
Detector	Uncooled FPA Detector
Spectral Range	8 to 14 µm
Pixel Pitch	12 µm
Frequency	Upto 15Hz
Sensitivity / NETD	<50mK@f1.0, 30Hz 300 K
Accuracy	±2°C or ±2% of reading in °C or °K
Emissitivity	0.01 - 1.0 adjustable

Interface Specifications	
Video	100MBit/s Ethernet
Connection	Power Connector, RJ-45 Ethernet Connector
Video Format for Saving	MPEG-4
Image Format for Saving	BMP/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 8mm 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.

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