

# Nuvo-7000LP Series

Intel® 9th/ 8th-Gen Core™ i7/ i5/ i3 Fanless Controller with 6x GbE Ports, MezIO™ Interface and Low-profile Chassis



## Key Features

- Intel® 9th/ 8th-Gen Core™ i hexa-core 35W/ 65W LGA1151 CPU
- Low-profile chassis with hot-swappable 2.5" HDD/ SSD tray
- MezIO™ interface for easy function expansion
- Rugged, -25°C to 70°C fanless operation
- Up to 6x GigE ports, supporting 9.5 KB jumbo frame
- M.2 2280 M key socket (Gen3 x4) supporting NVMe SSD or Intel® Optane™ memory
- 4x USB 3.1 Gen2 ports and 4x USB 3.1 Gen1 ports
- VGA/ DVI/ DP triple independent display, supporting 4K2K resolution

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## Introduction

The Neosys Nuvo-7000LP series is powered by Intel® 9th/ 8th-Gen Core™ i processors with up to 6-core/ 8-core architecture that offer a significant performance improvement over previous 6th or 7th-Gen platforms.

Nuvo-7000LP series is a derivative of Nuvo-7000 series that features the same level of ruggedness and versatility in a 79 mm low-profile chassis. In addition to effective fanless design, proprietary MezIO™ interface and plethora of on-board I/O interfaces, Nuvo-7000LP series features one front-accessible, hot-swappable HDD/ SSD tray which can be configured as RAID 0/1 when combined with the internal SATA port. It also leverages cutting-edge M.2 NVMe SSD technology for over 2000MB/s disk read/ write speed, or install an Intel® Optane™ memory for the ultimate system acceleration.

Neosys Nuvo-7000LP series consolidates the latest Intel® hexa/octa-core CPU, high-speed I/O interfaces, super-fast disk access and flexible storage configuration to form a high-performance ruggedized embedded controller. In addition, you can also take advantage of the built-in MezIO™ interface to add on modules for application-specific I/Os.

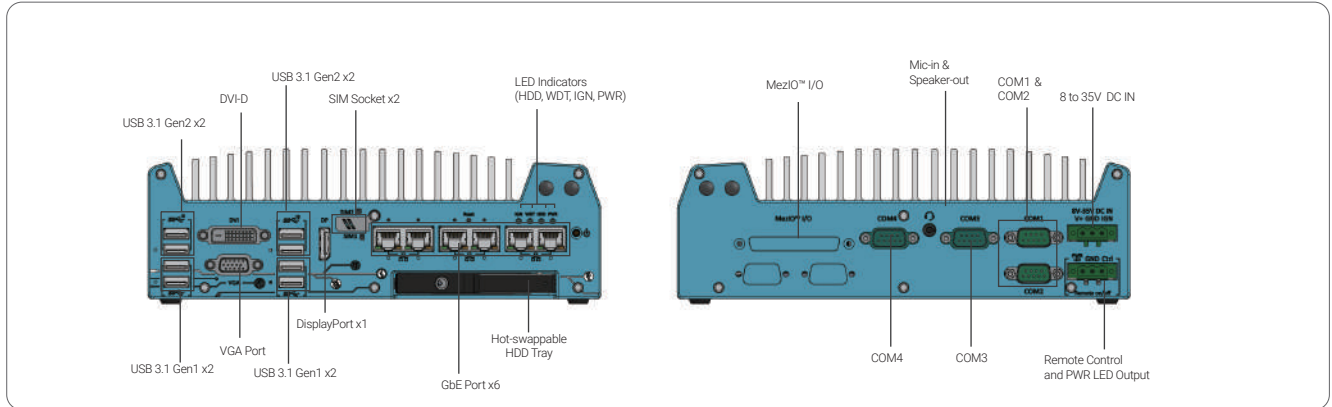
## Specifications

System Core		Expansion Bus	
<b>Processor</b>	Supporting Intel® 9th/ 8th-Gen CPU (LGA1151 socket, 65W/ 35W TDP) - Intel® Core™ i7-9700E/ i7-9700TE/ i7-8700/ i7-8700T - Intel® Core™ i5-9500E/ i5-9500TE/ i5-8500/ i5-8500T - Intel® Core™ i3-9100E/ i3-9100TE/ i3-8100/ i3-8100T - Intel® Pentium® G5400/ G5400T - Intel® Celeron® G4900/ G4900T	<b>Mini PCI Express</b>	1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA)
<b>Chipset</b>	Intel® Q370 platform controller hub	<b>M.2</b>	1x M.2 2242 B key socket with dual front-accessible SIM sockets
<b>Graphics</b>	Integrated Intel® UHD graphics 630	<b>Expandable I/O</b>	1x MezIO™ expansion port for Neosys MezIO™ modules
<b>Memory</b>	Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)	<b>Power Supply</b>	
<b>AMT</b>	Supports AMT 12.0	<b>DC Input</b>	1x 3-pin pluggable terminal block for 8 to 35V DC input
<b>TPM</b>	Supports TPM 2.0	<b>Remote Ctrl. &amp; LED Output</b>	1x 3-pin pluggable terminal block for remote control and PWR LED output
<b>I/O Interface</b>		<b>Mechanical</b>	
<b>Ethernet</b>	2x Gigabit Ethernet ports by I219 and I210 (Nuvo-7002LP) 6x Gigabit Ethernet ports by I219 and 5x I210 (Nuvo-7006LP)	<b>Dimension</b>	240 mm (W) x 225 mm (D) x 79 mm (H)
<b>PoE+</b>	Optional IEEE 802.3at PoE+ PSE for Port 3 ~ Port 6 100 W total power budget	<b>Weight</b>	3.1 kg
<b>USB 3.1</b>	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports	<b>Mounting</b>	Wall-mount (standard) or DIN-rail mount (optional)
<b>Video Port (Integrated Graphics)</b>	1x VGA, supporting 1920 x 1200 resolution 1x DVI-D, supporting 1920 x 1200 resolution 1x DisplayPort, supporting 4096 x 2304 resolution	<b>Environmental</b>	
<b>Serial Port</b>	2x software-programmable RS-232/422/485 ports (COM1/ COM2) 2x RS-232 ports (COM3/ COM4)	<b>Operating Temperature</b>	with 35W CPU -25°C ~ 70°C ** with 65W CPU -25°C ~ 70°C */** (configured as 35W TDP) -25°C ~ 50°C */** (configured as 65W TDP)
<b>Audio</b>	1x 3.5 mm jack for mic-in and speaker-out	<b>Storage Temperature</b>	-40°C ~ 85°C
<b>Storage Interface</b>		<b>Humidity</b>	10%~90%, non-condensing
<b>SATA HDD</b>	1x front-accessible, hot-swappable 2.5" HDD/ SSD tray 1x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1	<b>Vibration</b>	Operating, MIL-STD-810G, Method 514.6, Category 4
<b>M.2</b>	1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation	<b>Shock</b>	Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
<b>mSATA</b>	1x full-size mSATA port (mux with mini-PCIe)	<b>EMC</b>	CE/FCC Class A, according to EN 55032 & EN 55024
		<b>Safety</b>	UL62368-1, IEC62368-1

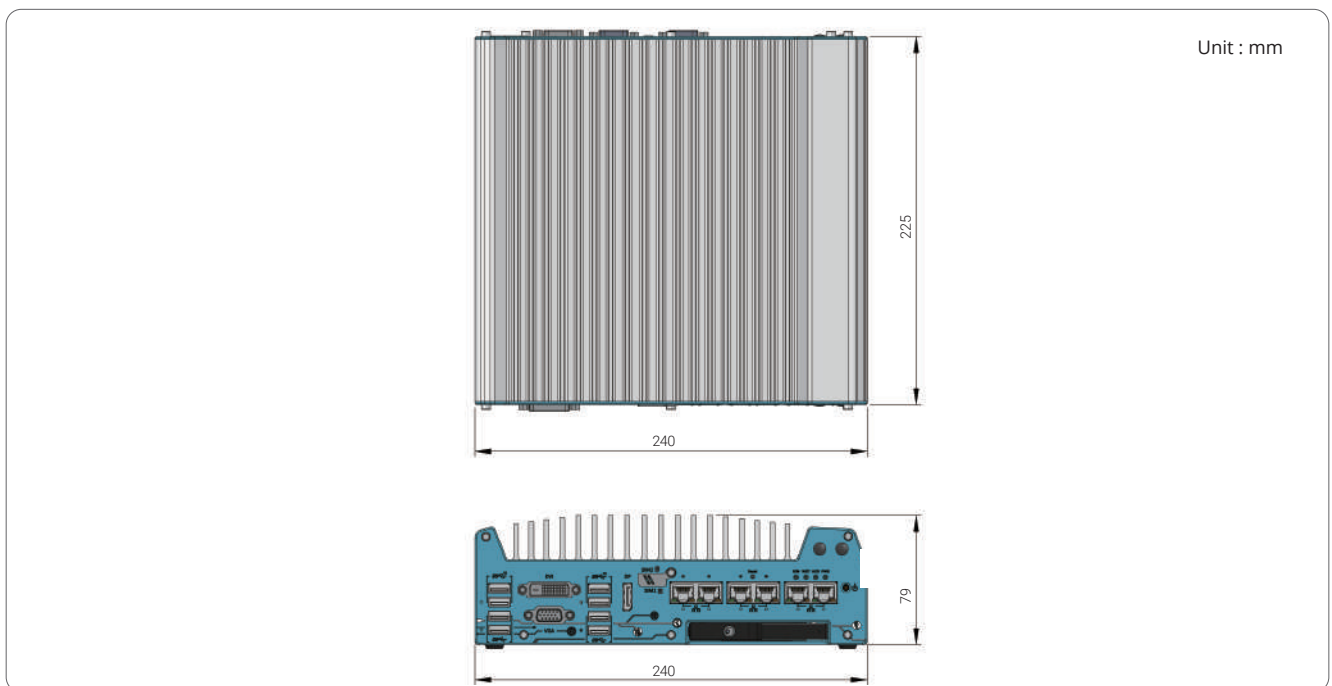
\* For i7-9700E and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.

\*\* For sub-zero operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.

## Appearance



## Dimensions



## Ordering Information

Model No.	Product Description
Nuvo-7002LP	Intel® 9th/ 8th-Gen Core™ fanless controller with 2x GbE ports, MeziO™ interface and low-profile chassis
Nuvo-7006LP	Intel® 9th/ 8th-Gen Core™ fanless controller with 6x GbE ports, MeziO™ interface and low-profile chassis
Optional IEEE 802.3at PoE+ for GbE ports 3 ~ 6	

## Optional Accessories

PA-160W-OW	160W AC/DC power adapter 20V/8A;18AWGx4C/120cm, cord end terminals for terminal block, operating temperature : -30 to 70°C.
DINRAIL-O	DIN-rail mount assembly for Nuvo-7000 series
Dmpbr-Nuvo5000_7000	Neosys' patented damping brackets assembly for Nuvo-7000E/DE/P/ Nuvo-7000LP
ETHY-100-2008S	Ethernet I/O expansion module with 8 isolated digital inputs and outputs
ETHY-100-2604S	Ethernet I/O expansion module with 8 isolated digital inputs and 4 relays outputs (coming soon)

### MeziO™ Modules

MeziO™ -C180	MeziO™ module with 4x RS-232/ 422/ 485 ports and 4x RS-232 ports
MeziO™ -C181	MeziO™ module with 4x RS-232/ 422/ 485 ports and 4x RS-422/ 485 ports
MeziO™ -D220	MeziO™ module with 8-CH isolated digital input and 8-CH isolated digital output
MeziO™ -D230	MeziO™ module with 16-CH isolated digital input and 16-CH isolated digital output
MeziO™ -V20-EP	MeziO™ module with ignition power control function for in-vehicle application
MeziO™ -U4	MeziO™ module with 4x USB 3.1 ports
MeziO™ -G4	MeziO™ module with 4x GigE ports
MeziO™ -G4P	MeziO™ module with 4x IEEE 802.3at PoE+ ports

Only Nuvo-7006LP-PoE supports MeziO-G4P