

# Nuvo-7000LP Series

Intel® 9th/ 8th-Gen Core™ i7/ i5/ i3 Fanless Controller with 6x GbE Ports, MezzIO™ 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
- MezzIO™ 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

## 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 MezzIO™ 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 MezzIO™ interface to add on modules for application-specific I/Os.

## Specifications

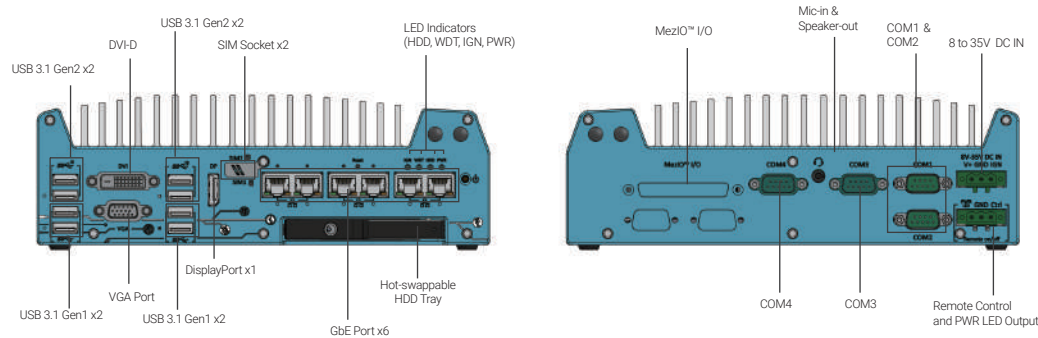
System Core	
Processor	Supporting Intel® 9th/ 8th-Gen CPU (LGA1151 socket, 65W/ 35W TDP)
	- Intel® Core™ i7-9700E/ i7-9700TE/ i7-8700/ i7-8700T
	- Intel® Core™ i5-9500E/ i5-9500TE/ i5-8500/ i5-8500T
	- Intel® Core™ i3-9100E/ i3-9100TE/ i3-8100/ i3-8100T
	- Intel® Pentium® G5400/ G5400T
Chipset	Intel® Q370 platform controller hub
Graphics	Integrated Intel® UHD graphics 630
Memory	Up to 64 GB DDR4 2666/ 2400 SDRAM (two SODIMM slots)
AMT	Supports AMT 12.0
TPM	Supports TPM 2.0
I/O Interface	
Ethernet	2x Gigabit Ethernet ports by I219 and I210 (Nuvo-7002LP) 6x Gigabit Ethernet ports by I219 and 5x I210 (Nuvo-7006LP)
PoE+	Optional IEEE 802.3at PoE+ PSE for Port 3 ~ Port 6 100 W total power budget
USB 3.1	4x USB 3.1 Gen2 (10 Gbps) ports 4x USB 3.1 Gen1 (5 Gbps) ports
Video Port (Integrated Graphics)	1x VGA, supporting 1920 x 1200 resolution 1x DVI-D, supporting 1920 x 1200 resolution 1x DisplayPort, supporting 4096 x 2304 resolution
Serial Port	2x software-programmable RS-232/422/485 ports (COM1/ COM2) 2x RS-232 ports (COM3/ COM4)
Audio	1x 3.5 mm jack for mic-in and speaker-out
Storage Interface	
SATA HDD	1x front-accessible, hot-swappable 2.5" HDD/ SSD tray 1x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1
M.2	1x M.2 2280 M key socket (PCIe Gen3 x4) for NVMe SSD or Intel® Optane™ memory installation
mSATA	1x full-size mSATA port (mux with mini-PCIe)

Expansion Bus	
Mini PCI Express	1x full-size mini PCI Express socket with internal SIM socket (mux with mSATA)
M.2	1x M.2 2242 B key socket with dual front-accessible SIM sockets
Expandable I/O	1x Mezio™ expansion port for Neosys Mezio™ modules
Power Supply	
DC Input	1x 3-pin pluggable terminal block for 8 to 35V DC input
Remote Ctrl. & LED Output	1x 3-pin pluggable terminal block for remote control and PWR LED output
Mechanical	
Dimension	240 mm (W) x 225 mm (D) x 79 mm (H)
Weight	3.1 kg
Mounting	Wall-mount (standard) or DIN-rail mount (optional)
Environmental	
Operating Temperature	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)
	Storage Temperature -40°C ~ 85°C
Humidity	10%~90% , non-condensing
Vibration	Operating, MIL-STD-810G, Method 514.6, Category 4
Shock	Operating, MIL-STD-810G, Method 516.6, Procedure I, Table 516.6-II
EMC	CE/FCC Class A, according to EN 55032 & EN 55024
Safety	UL62368-1, IEC62368-1

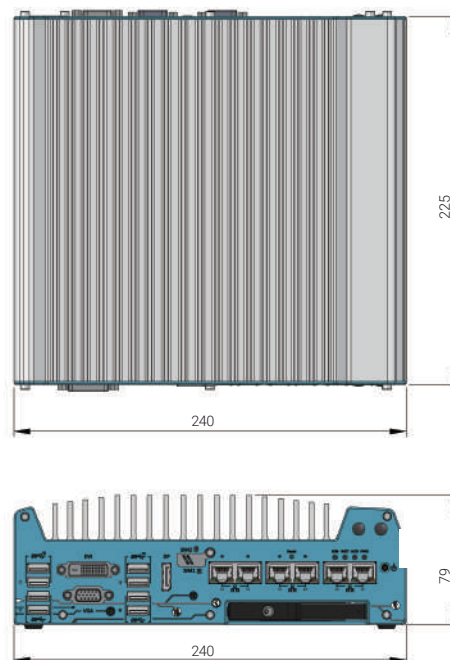
\* For i7-9700E and i7-8700 running at 65W mode, the highest operating temperature shall be limited to 50°C and thermal throttling may occur when sustained full-loading applied. Users can configure CPU power in BIOS to obtain higher operating temperature.

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

## Appearance



## Dimensions



Unit : mm

## Ordering Information

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

## Optional Accessories

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

### MeziO™ Modules

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

Only Nuvo-7006LP-PoE supports MeziO-G4P