

# Nuvo-8000 Series

Intel® 9th/ 8th-Gen Core™ i7/ i5/ i3 fanless rugged box-PC with up to 5 PCIe/ PCI expansion slots



CE FC

## Key Features

- Supports Intel® 9th/ 8th-Gen Core™ i7/ i5/ i3, Pentium and Celeron® LGA1151 CPU
- Up to five expansion slots, a mixed combination of x16 PCIe, x4 PCIe, and PCI slots
- Dedicated heat dissipation for -25°C to 60°C wide-temperature operation
- 2x GbE, 4x USB 3.0 and 5x COM ports with screw-lock
- Dual DVI display outputs
- Up to 2x 2.5" SATA HDD/ SSD accommodation and 1x mSATA socket
- Wall-mounting and rack-mounting available

Preliminary

## Introduction

Nuvo-8000 series systems are cost-effective box-PCs with up to 5 expansion slots that can perfectly replace your bulky rack-mount or wall-mount IPC systems. Leveraging Intel® 9th/ 8th-Gen Core™ i desktop processor with H310 chipset, it delivers the same computing power as traditional IPCs but in a much more compact footprint with a budgetary price.

There are four models in the Nuvo-8000 series with various expansion configurations. Customers can choose from a compact 3-slot PCIe system to a 5-slot system with up to three PCIe slots or up to four PCI slots, that best suit their industrial automation or machine vision application needs. It features front-accessible I/Os including two GbE, four USB 3.1 Gen1 and five COM ports that make it easier to access when it is rack-mounted or placed inside a cabinet. There is a screw-lock mechanism for all I/O ports so cables can be securely-tighten to offer extreme rugged connectivity. Storage wise, Nuvo-8000 series systems have two 2.5" SATA SSD/ HDD and one mSATA socket to support various storage devices. The system can also support a 120W NVIDIA GPU to offer TFLOPS computing power for modern deep-learning applications.

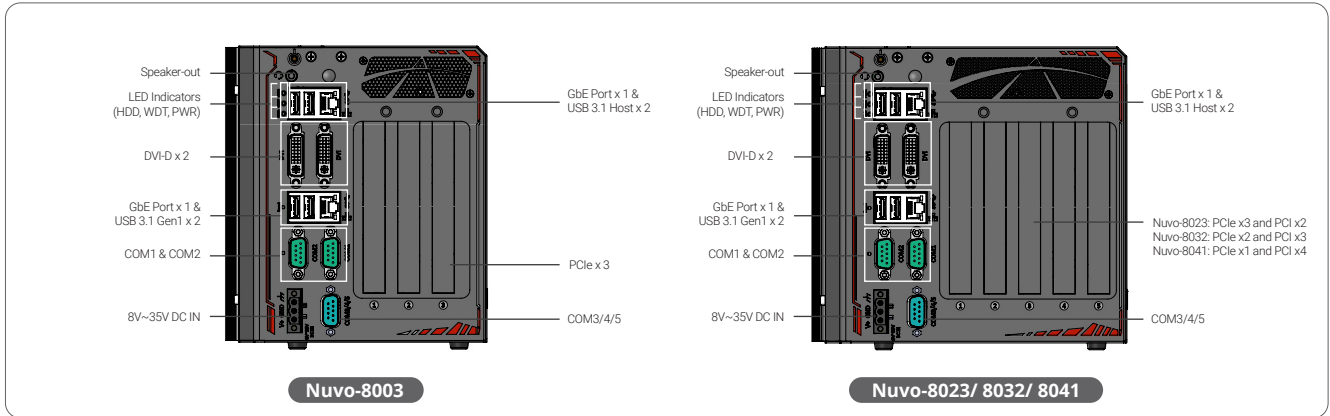
Nuvo-8000 series systems are designed with satisfying industrial demands in mind. Retaining traditional IPC expansion capabilities and fulfilling diverse application requirements in an extremely compact form-factor with industrial-grade reliability.

## Specifications

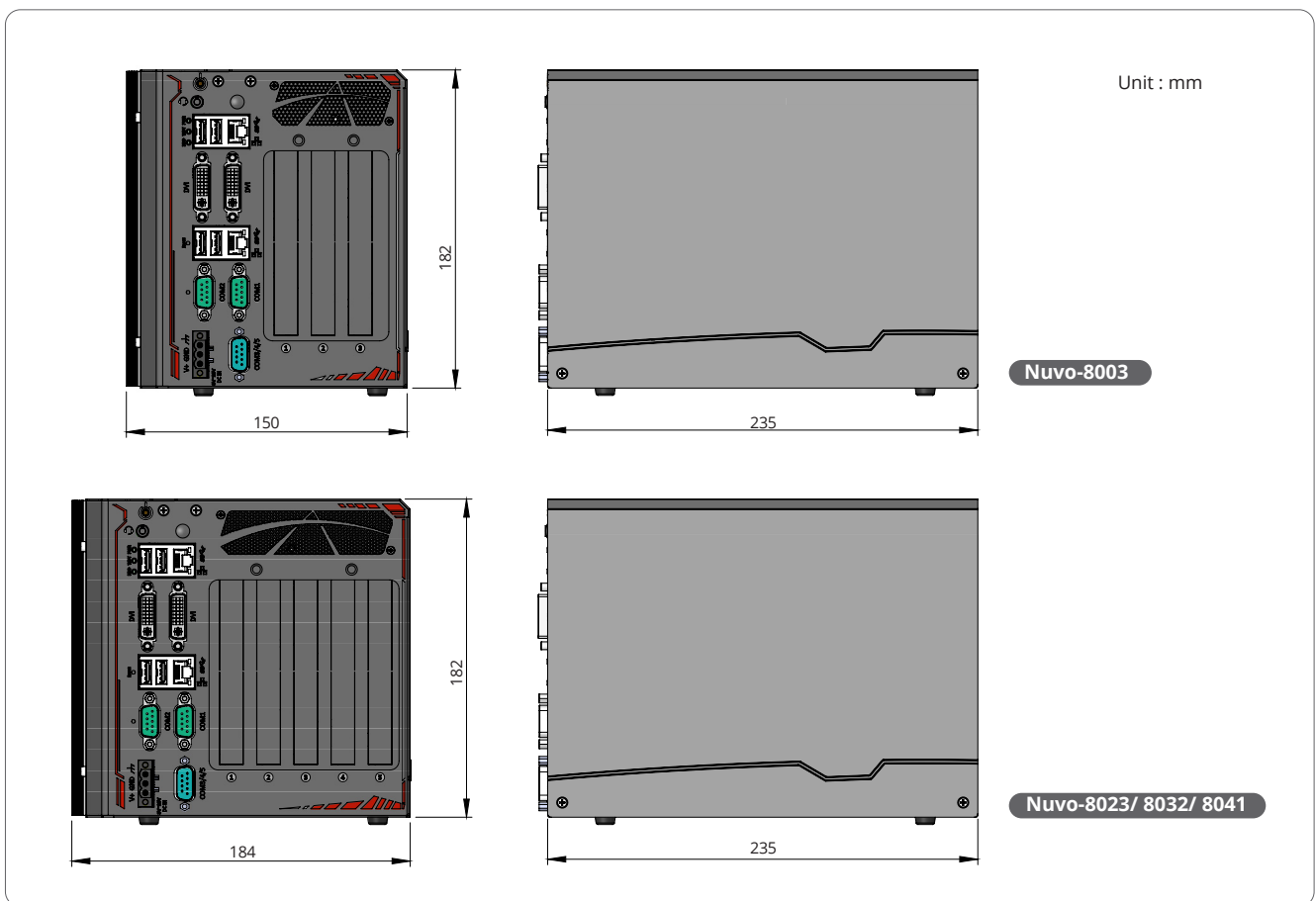
	Nuvo-8003	Nuvo-8023	Nuvo-8032	Nuvo-8041		Nuvo-8003	Nuvo-8023	Nuvo-8032	Nuvo-8041
<b>System Core</b>					<b>Expansion Bus</b>				
Processor	Supporting Intel® 9th/ 8th-Gen Core™ CPU (LGA1151 socket) - Intel® Core™ i7-9700E*/ i7-9700TE/ i7-8700*/ i7-8700T - Intel® Core™ i5-9500E*/ i5-9500TE/ i5-8500*/ i5-8500T - Intel® Core™ i3-9100E*/ i3-9100TE/ i3-8100*/ i3-8100T - Intel® Pentium® G5400T (4M Cache, 3.1GHz, 35W TDP) - Intel® Celeron® G4900T (2M Cache, 2.9GHz, 35W TDP)				PCI/PCI Express	1x PCIe x16 slot @Gen3, 16-lanes 1x PCIe x8 slot @Gen2, 4-lanes 1x PCIe x4 slot @Gen2, 1-lane	1x PCIe x16 slot @Gen3, 16-lanes 1x PCIe x4 slot @Gen2, 2-lanes 1x PCIe x4 slot @Gen2, 1-lane	1x PCIe x16 slot @Gen3, 16-lanes 1x PCIe x8 slot @Gen2, 4-lanes	1x PCIe x16 slot @Gen3, 16-lanes
Chipset	Intel® H310 platform controller hub				PCI	-	2x 33MHz/ 32-bit 5V PCI slots	3x 33MHz/ 32-bit 5V PCI slots	4x 33MHz/ 32-bit 5V PCI slots
Graphics	Integrated Intel® UHD Graphics 630, or independent 120W GPU via x16 PEG port				mSATA	1x full-size mSATA socket (mux with USB 2.0 signals)			
Memory	Up to 32 GB DDR4 2666 SDRAM (one SODIMM slot)				<b>Power Supply</b>				
<b>I/O Interface</b>					DC Input	1x 3-pin pluggable terminal block for 8~35VDC DC input			
Ethernet	1x Gigabit Ethernet port by Intel® I219-LM with screw-lock 1x Gigabit Ethernet port by Intel® I210-TT with screw-lock				<b>Mechanical</b>				
Video Port (Integrated Graphics)	2x DVI-D connectors, each supporting 1920x1200 resolution				Dimension	150 mm (W) x 235 mm (D) x 182 mm (H)	184 mm (W) x 235 mm (D) x 182 mm (H)		
Serial Port	1x software-programmable RS-232/ 422/ 485 ports (COM1) 1x software-programmable RS-422/ 485 ports (COM2) 3x 3-wire RS-232 ports (COM3/ COM4/ COM5)				Weight	4 Kg	4 Kg		
USB 3.1	4x USB 3.1 Gen1 (5 Gbps) ports with screw-lock				Mounting	Wall-mount (standard) DIN-Rail mounting (optional) Rack-mount (optional)			
USB 2.0	2x USB 2.0 ports with Type-A connectors (internal)				<b>Environmental</b>				
Audio	1x 3.5 mm jack for mic-in and speaker-out				Operating Temperature	-25°C ~ 60°C			
<b>Storage Interface</b>					Storage Temperature	-40°C ~ 85°C			
SATA HDD	2x internal SATA ports for 2.5" HDD/ SSD installation				Humidity	10%~90% , non-condensing			
mSATA	1x full-size mSATA port (mux with mini-PCIe)				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 EN55032 & EN55024			

\* Due to thermal limitations, 65W CPUs will be configured to operate in 35W mode by default.

## Appearance



## Dimensions



## Ordering Information

Model No.	Product Description
Nuvo-8003	Intel® 9/ 8th-Gen Core™ i7/ i5/ i3 fanless rugged Box-PC with 3x PCIe expansion slots
Nuvo-8023	Intel® 9/ 8th-Gen Core™ i7/ i5/ i3 fanless rugged Box-PC with 3x PCIe and 2x PCI expansion slots
Nuvo-8032	Intel® 9/ 8th-Gen Core™ i7/ i5/ i3 fanless rugged Box-PC with 2x PCIe and 3x PCI expansion slots
Nuvo-8041	Intel® 9/ 8th-Gen Core™ i7/ i5/ i3 fanless rugged Box-PC with 1x PCIe and 4x PCI expansion slots

## Optional Accessories

PA-120W-OW	120W AC/ DC power adapter 20V/ 6A; 18AWG/ 120cm; cord end terminals for terminal block, operating temperature : -30°C to 70 °C
PA-160W-OW	160W AC/DC power adapter 20V/ 8A; 18AWGx4C/ 120cm, cord end terminals for terminal block, operating temperature : -30°C to 70 °C
PA-280W-ET2	280W AC/DC power adapter 24V/ 11.67A ; 16AWG/ 100cm; cord end terminals for terminal block, operating temperature : -30°C to 60°C.
Rmkit-Nuvo6000	Rack mounting assembly for Nuvo-6000/ 8000 series