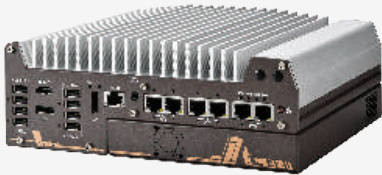


# Nuvo-11000 Series

Intel® Core™ Ultra 200 Series Fanless Embedded Computer with 2.5GbE/ GbE, USB 3.2, 8-CH DIO, optional 10GbE and Expansion Cassette & MeziO® Interface

Preliminary

## Key Features



- Supports Intel® Core™ Ultra 200 Series 24C/ 24T 35W/ 65W LGA1851 CPU
- Rugged, -25°C to 70°C fanless operation
- Up to 5x 2.5GbE and 1x GigE ports with optional PoE+, supporting 9.5 KB jumbo frame
- Up to 8x USB 3.2 Gen2 ports
- 4-CH isolated DI and 4-CH isolated DO
- 1x optional 10GBASE-T Ethernet
- Expansion Cassette for PCIe add-on card accommodation
- MeziO® interface for easy function expansion



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## Introduction

Nuvo-11000 series is Neosys' flagship rugged embedded computer built on the Intel® Core™ Ultra 200 series platform. Powered by TSMC's advanced 3nm photolithography, the latest Core™ Ultra 200 processors offer up to 24 cores/ 24 threads with higher CPU clock rates, and an integrated neural processing unit (NPU) for AI acceleration. This results in a 1.2x boost in CPU performance and AI computing capabilities of up to 36 TOPs. Combined with DDR5-6400 memory and PCIe Gen5 support, it delivers a significant improvement in computing power, enhancing performance across diverse industrial applications.

Nuvo-11000 series provides comprehensive I/O capabilities for industrial applications. It includes five 2.5Gb and a 1Gb Ethernet ports with optional PoE+ capability, one optional 10GbE port for high-speed data transfer or 10Gb industrial camera, and eight USB 3.2 Gen2 ports for USB3 cameras. Additionally, an upgraded M.2 Gen5x4 slot supports the latest NVMe SSDs, achieving read/ write speeds over 11,000 MB/s and the system also features 4x isolated DI and 4x isolated DO for automation and machine vision applications.

For extended functionality, the series supports add-on cards via its expansion Cassette, proprietary MeziO® interface, and internal mini-PCIe slots, ensuring adaptability to diverse application requirements.

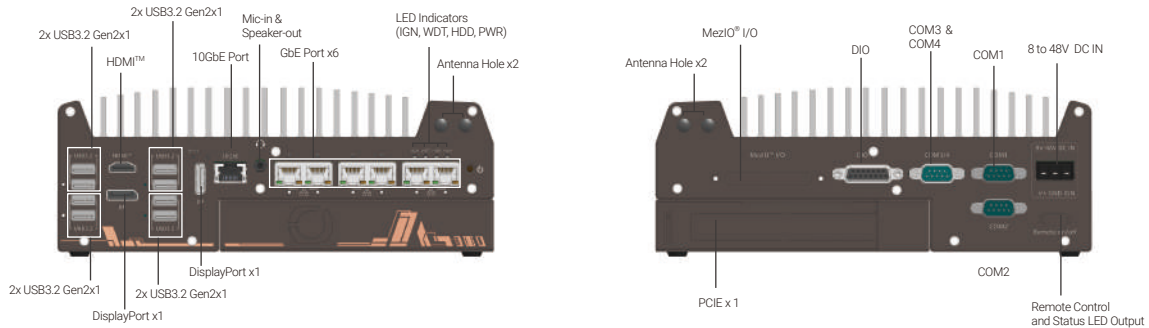
The advanced Intel® Core™ Ultra 200 processors also bring better energy efficiency to the Nuvo-11000 platform. Compared to the previous generation, they can deliver nearly 120% the performance while consuming only 80% of the power\*. Combining a proven thermal design with versatile I/O functions, Nuvo-11000 offers a rugged, high-performance embedded computing solution tailored for a wide range of industrial applications.

\* Benchmarked using PassMark PerformanceTest.

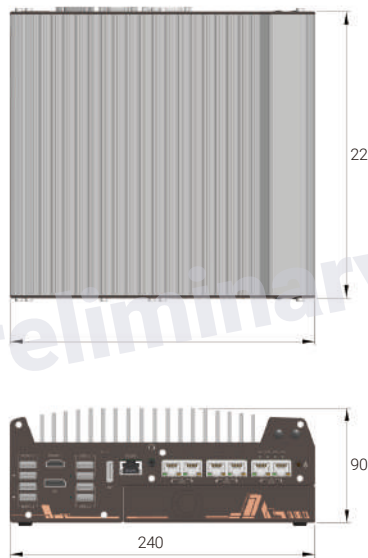
## Specifications

| System Core          |   | Internal Expansion Bus   |   |
|----------------------|---|--|---|
| <b>Processor</b>     | Supports Intel® Core™ Ultra 200 series CPU (LGA 1851 socket), 35W and 65W TDP<br>- Intel® Core™ Ultra 9 285/285T<br>- Intel® Core™ Ultra 7 265/265T<br>- Intel® Core™ Ultra 5 245/245T/225/225T   | <b>PCI Express</b>   | 1x PCIe x16 slot@Gen4, 16-lanes PCIe signals in Cassette (Nuvo-11002E/ 11006E)<br>2x PCIe x16 slots@Gen4, 8-lanes PCIe signals in Cassette (11006DE)                                  |
| <b>Chipset</b>       | Intel® H810/ Q870 Platform Controller Hub   | <b>Mini PCI Express</b>  | 2x full-size mini PCI Express socket  |
| <b>Graphics</b>      | Integrated Intel X® LPG Graphics  | <b>Expandable I/O</b>  | 1x MeziO® expansion port for Neosys MeziO® modules  |
| <b>AI Engine</b>     | Integrated neural processing unit   | <b>Power Supply</b>  |   |
| <b>Memory</b>        | Up to 96 GB non-ECC DDR5 6400 SDRAM (Dual SODIMM slots)   | <b>DC Input</b>  | 1x 3-pin pluggable terminal block for 8V to 48VDC DC input (V+/ GND/ IGN)   |
| <b>AMT</b>           | Supports Intel vPro/ AMT 16.0   | <b>Remote Ctrl. &amp; LED Output</b>   | 1x 10-pin (2x5) wafer connector for remote on/off control and status LED output   |
| <b>TPM</b>           | Supports dTPM 2.0   | <b>Mechanical</b>  |   |
| <b>I/O Interface</b> |   | <b>Dimension</b>   | 240 mm (W) x 225 mm (D) x 90 mm (H) (Nuvo-11000E series)<br>240 mm (W) x 225 mm (D) x 110.5 mm (H) (Nuvo-11000DE series)<br>240 mm (W) x 225 mm (D) x 79 mm (H) (Nuvo-11000LP series) |
| <b>Ethernet</b>      | 1x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM (Nuvo-11002E/LP) with screw-lock<br>5x 2.5G Ethernet by I226-IT and 1x Gigabit Ethernet by I219-LM (Nuvo-11006E/DE/LP) with screw-lock<br>1x optional 10GBASE-T Ethernet (Nuvo-11006E/ DE/ LP) | <b>Weight</b>  | 3.58 kg (Nuvo-11000E Series)/ 3.89 kg (Nuvo-11000DE series)<br>3.36 kg (Nuvo-11000LP series)  |
| <b>PoE+</b>          | Optional IEEE 802.3at PoE+ PSE for Port 3 – Port 6 100 W total power budget   | <b>Mounting</b>  | Wall-mount (standard) or DIN-rail mount (optional)  |
| <b>USB</b>           | 8x USB 3.2 Gen2 ports (Nuvo-11006LP/E/DE)<br>2x USB 3.2 Gen2, 2x USB3.2 Gen1 and 4x USB2.0 ports (Nuvo-11002LP/E)   | <b>Environmental</b>   |   |
| <b>Isolated DIO</b>  | 4-CH isolated DI and 4-CH isolated DO   | <b>Operating Temperature</b>   | With 35W CPU<br>-25°C to 70°C*<br>With 65W CPU<br>-25°C to 70°C* (configured as 35W TDP)<br>-25°C to 50°C* (configured as 65W TDP)  |
| <b>Video Port</b>    | 1x HDMI™, supporting 3840 x 2160 resolution<br>2x DisplayPort, supporting 4096 x 2304 resolution  | <b>Storage Temperature</b>   | -40°C to 85°C   |
| <b>Serial Port</b>   | 2x software-programmable RS-232/ 422/ 485 ports (COM1/ 2)<br>2x 3-wire RS-232 ports (COM3/ 4)   | <b>Humidity</b>  | 10% to 90% , non-condensing   |
| <b>Audio</b>         | 1x 3.5 mm jack for mic-in and speaker-out   | <b>Vibration</b>   | MIL-STD-810H, Method 514.8, Category 4  |
| <b>I/O Interface</b> |   | <b>Shock</b>   | MIL-STD-810H, Method 516.8, Procedure I   |
| <b>M.2 NVMe</b>      | 1x M.2 2280 M key NVMe socket (PCIe Gen5x4) for NVMe SSD (Nuvo-11006E/DE/LP)  | <b>EMC</b>   | CE/FCC Class A, according to EN 55032 & EN 55035  |
| <b>SATA HDD</b>      | 2x internal SATA port for 2.5" HDD/ SSD installation, supporting RAID 0/ 1 (Nuvo-11000E/11000DE)<br>1x hot-swappable 2.5" HDD tray (7mm HDD/ SSD) and 1x internal 2.5" SATA port, supporting RAID 0/ 1 (Nuvo-11000LP)   | * For sub-zero and over 60°C operating temperature, a wide temperature HDD/ SSD/ NVMe is required. |   |

## Appearance



## Dimensions



Unit : mm

## Ordering Information

| Model No.                  | Product Description  |
|----------------------------|--|
| <b>Nuvo-11002E</b>         | Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 2x 2.5GbE/GbE, USB 3.2, single-slot PCIe Cassette & MeziO® Interface |
| <b>Nuvo-11006E</b>         | Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 6x 2.5GbE/GbE, USB 3.2, single-slot PCIe Cassette & MeziO® Interface |
| <b>Nuvo-11006DE</b>        | Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 6x 2.5GbE/GbE, USB 3.2, dual-slot PCIe Cassette & MeziO® Interface   |
| <b>Nuvo-11002LP</b>        | Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 2x 2.5GbE/GbE, USB 3.2, MeziO™ Interface & 2.5" HDD tray             |
| <b>Nuvo-11006LP</b>        | Intel® Core™ Ultra 200 Series Rugged Embedded Computer with 6x 2.5GbE/GbE, USB 3.2, MeziO™ Interface & 2.5" HDD tray             |
| <b>PoE+ Option</b>         | Option of 802.3at PoE+ PSE for 2.5GbE port 3 to port 6   |
| <b>10G Ethernet Option</b> | Option of 10GBASE-T Ethernet port  |

## Optional Accessories

|                            |  |                      |   |
|----------------------------|--|----------------------|---|
| <b>PA-280W-ET2</b>         | 280W AC/DC power adapter 24V/ 11.67A ; 16AWG/ 100cm; cord end terminals for terminal block, operating temperature : -30°C to 60°C. (recommended for 65W CPU or 35W CPU with PoE+ option) |                      |   |
| <b>PA-600W-ENC</b>         | 160W AC-DC power adapter 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30°C to 70°C. (recommended for 35W CPU)                                     |                      |   |
| <b>Dmpbr-Nuvo5000_7000</b> | Neousys' patented damping brackets assembly for Nuvo-11000 series  |                      |   |
| <b>DINRAIL-O</b>           | DIN-rail mount assembly for Nuvo-11000 series  |                      |   |
| <b>MeziO® Modules</b>      |  |                      |   |
| <b>MeziO®-C180</b>         | MeziO® module with 4x RS-232/ 422/ 485 ports and 4x RS-232 ports   | <b>MeziO®-V20-EP</b> | MeziO® module with ignition power control function for in-vehicle application |
| <b>MeziO®-C181</b>         | MeziO® module with 4x RS-232/ 422/ 485 ports and 4x RS-422/ 485 ports  | <b>MeziO®-U4</b>     | MeziO® module with 4x USB 3.1 ports   |
| <b>MeziO®-D220</b>         | MeziO® module with 8-CH isolated digital input and 8-CH isolated digital output  | <b>MeziO®-G4</b>     | MeziO® module with 4x GigE ports  |
| <b>MeziO®-D230</b>         | MeziO® module with 16-CH isolated digital input and 16-CH isolated digital output  | <b>MeziO®-G4P</b>    | MeziO® module with 4x IEEE 802.3at PoE+ ports                                 |
| <b>MeziO®-D330</b>         | MeziO® module with 16-CH isolated DI and 16-CH isolated DO MeziO® module   |                      |   |

Only Nuvo-11006LP/E/DE-PoE support MeziO-G4P