

# Nuvo-9650AWP Series

Affordable IP66 Waterproof Computer with Intel® 14th/ 13th/ 12th-Gen Core™ CPU, 4x M12 PoE+ and Dual-mode Type-C DisplayPort/ USB3 Port

## Key Features



- Intel® 14th/ 13th /12th-Gen Core™ 24C/ 32T 35W/ 65W CPU
- Affordable IP66-rated design for waterproof and dustproof
- Up to 96GB DDR5 4800 SODIMM
- -25°C to 70°C wide-temperature fanless operation
- 3x 2.5Gb and 1x Gb Ethernet ports via M12 X-coded connectors, with 802.3at PoE+ option
- 1x waterproof USB3.2 Type-C port supporting alternative mode for DisplayPort and USB3.2 dual output
- 8V to 48V DC input with built-in ignition power control



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## Introduction

Nuvo-9650AWP is a cost-effective IP66 waterproof computer with Intel® 14th/13th/12th-Gen Core™ processor designed for harsh and demanding environments. Thanks to its streamlined waterproof chassis and standardized cable kit, Nuvo-9650AWP redefines affordable total cost of ownership (TCO) for industrial computing with significant enhancements including ruggedness against extended operating temperature, intensive shock and vibration, dust, humidity and salinity.

Nuvo-9650AWP offers abundant I/O functionality for generic application requirements, including multiple 2.5GbE/ GbE, USB 2.0 and isolated RS-232 and RS-422/485 ports, all through waterproof M12 connectors. It also has a specialized waterproof type-C connector supporting Type-C alternative mode, or it can enable both 5 Gbps USB3 data transmission speed and 4K DisplayPort video output via a Type-C hub. Moreover, Nuvo-9650AWP is equipped with 8-48V wide-range DC input with ignition power control, and is compliant with MIL-STD-810H shock/ vibration certification for in-vehicle installation, such as mining trucks and farming vehicles.

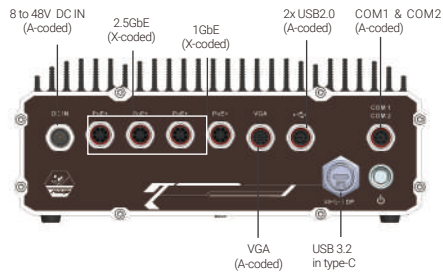
The integration of IP66 waterproof capability with embedded computer eliminates environmental limitations where exposure to dust or liquids may be of concern. Its affordable waterproof design further reduces the gap in TCO for budget-conscious projects which is defining a new category of embedded computer that strikes a sweet spot between ruggedness performance and cost.

## Specifications

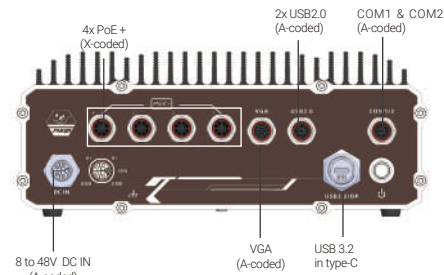
System Core		Storage Interface	
Processor	Supporting Intel® 14th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-14900/ i9-14900T - Intel® Core™ i7-14700/ i7-14700T - Intel® Core™ i5-14500/ i5-14400/ i5-14500T - Intel® Core™ i3-14100/ i3-14100T	Supporting Intel® 12th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-12900E/ i9-12900TE - Intel® Core™ i7-12700E/ i7-12700TE - Intel® Core™ i5-12500E/ i5-12500TE - Intel® Core™ i3-12100E/ i3-12100TE - Intel® Pentium® G7400E/ G7400TE - Intel® Celeron® G6900E/ G6900TE	SATA HDD: 2x Internal SATA port for 2.5" HDD/ SSD installation
	Supporting Intel® 13th-Gen Core™ CPU (LGA1700 socket, 65W/ 35W TDP) - Intel® Core™ i9-13900E/ i9-13900TE - Intel® Core™ i7-13700E/ i7-13700TE - Intel® Core™ i5-13500E/ i5-13400E/ i5-13500TE - Intel® Core™ i3-13100E/ i3-13100TE		M.2: 1x M.2 2280 M key socket (PCIe Gen4 x4) for NVMe SSD
Chipset	Intel® H610E platform controller hub	Internal Expansion Bus	
Graphics	Integrated Intel® UHD Graphics 770 (32EU) / 730 (24EU)	Mini PCI Express	2x full-size mini PCI Express socket (PCIe + USB2)
Memory	Up to 96 GB DDR5 4800 SDRAM (two SODIMM slots)	M.2 B key	1x M.2 2242/3052 B key socket with SIM slot for M.2 5G/ 4G module
TPM	Supports dTPM 2.0	Power Supply	
I/O Interface		DC Input	8V to 48V DC input with built-in ignition power control
Ethernet	1x Gigabit Ethernet port by Intel® I219-LM (M12 X-coded) 3x 2.5G Ethernet ports by Intel® I226-IT (M12 X-coded)	Mechanical	
PoE+	Optional IEEE 802.3at PoE+ PSE for 4x 2.5GbE/GbE ports 100 W total power budget	Dimension	225mm (W) x 286mm (D) x 90mm (H)
USB 3.2	1x USB 3.2 Gen1 (5 Gbps) port in type-C waterproof connector 1x reserved USB 3.2 Gen1 type-A connector (rear side)	Weight	5.25 kg
USB 2.0	2x USB 2.0 (M12 A-coded) 1x USB 2.0 (internal)	Mounting	wall-mounting (Optional)
Video Port (Integrated Graphics)	1x DisplayPort in type-C waterproof connector, supporting 4096 x 2304 resolution 1x VGA (M12 A-coded), supporting 1920 x 1200 resolution 1x reserved DisplayPort, supporting 4096 x 2304 resolution (rear side)	Environmental	
Serial Port	1x isolated RS-232 port (COM1) 1x isolated RS-422/485 ports (COM2) via M12 A-coded, 8-pin connector	Operating Temperature	Operating Temperature with 35W CPU -25°C – 70°C* with 65W CPU -25°C – 70°C* (configured as 35W TDP mode) -25°C – 50°C* (configured as 65W TDP mode)
		Storage Temperature	-40°C to 85°C
		Humidity	10% to 90% , non-condensing
		Vibration	MIL-STD-810H, Method 514.8, Category 4
		Shock	MIL-STD-810H, Method 516.8, Procedure I
		EMC	CE/FCC Class A, according to EN 55032 & EN 55035

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

## Appearance

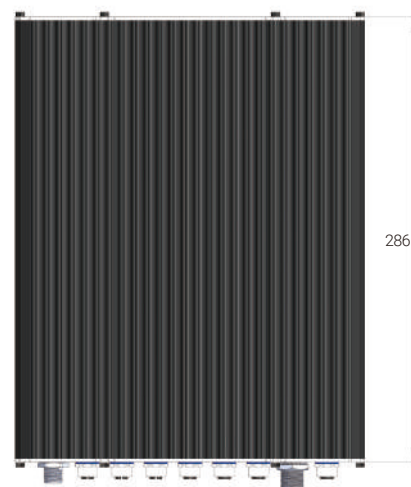
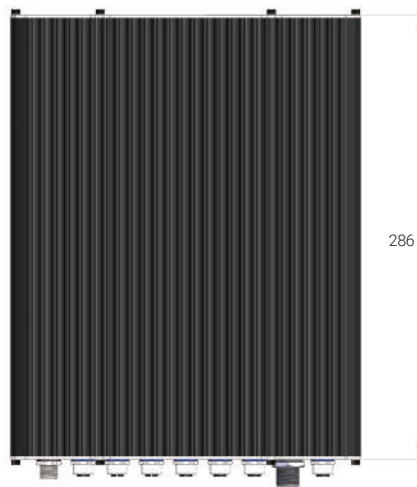


**Nuvo-9650AWP**

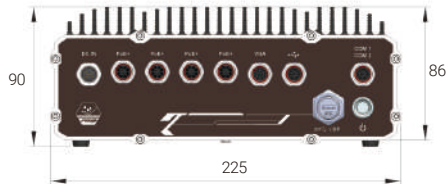


**Nuvo-9650AWP-PoE**

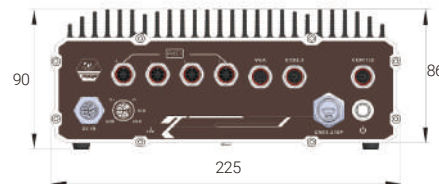
## Dimensions



Unit : mm



**Nuvo-9650AWP**



**Nuvo-9650AWP-PoE**

## Ordering Information

Model No.	Product Description
<b>Nuvo-9650AWP</b>	Affordable IP66 waterproof Intel® 14th/ 13th/ 12th-Gen Core™ computer with 4x 2.5GbE/GbE and USB3.2 Type-C ports supporting DP display
<b>Nuvo-9650AWP-PoE</b>	Affordable IP66 waterproof Intel® 14th/ 13th/ 12th-Gen Core™ computer with 4x M12 PoE+ and USB3.2 Type-C ports supporting DP display

## Optional Accessories

<b>PA-160W-OW</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>PA-280W-CW6P-2P</b>	280W AC-DC power adapter 24V 11.67A, 85~264VAC, -30~+70°C w/ Wafer FML6P to 2P End Terminal cable for AWP/ SEMIL (recommended for 65W CPU or 35W CPU with PoE+ option)
<b>Cblkit-M12-Nuvo-9650AWP</b>	Nuvo-9650AWP M12 cable kit, including 4x Cbl-M12X8M-RJ45F-100CM, 1x Cbl-M12A8M-2U2TA-180CM1, 1x Cbl-M12A17M-VGA-180CM2, 1x Cbl-M12A8M-2DB9M-180CM, 1x Cbl-M12A5F-OW3-180CM
<b>Cblkit-M12-Nuvo-9650AWP-PoE</b>	Nuvo-9650AWP-PoE M12 cable kit, including 4x Cbl-M12X8M-RJ45F-100CM, 1x Cbl-M12A8M-2U2TA-180CM1, 1x Cbl-M12A17M-VGA-180CM2, 1x Cbl-M12A8M-2DB9M-180CM, 1x Cbl-M12L5F-OW5-180CM
<b>Cbl-TpCPlug-DPM-1M</b>	TypeC Male Plug to DP Male Cable, Length : 1M
<b>Cbl-TpCPlug-U3TA-50CM</b>	TypeC Male Plug to USB3.0 Type-A FML, Length: 50CM
<b>Cbl-TpCPlug-UTpCF-50CM</b>	TypeC Male Plug to USB Type-C FML Cable, Length : 50CM
<b>Wmkit-Nuvo9650AWP</b>	Wall mounting assembly for Nuvo-9650AWP