# ⃝N Nematron

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# *i*PC-Fanless Series

## Embedded High Performance Ultra-Thin 12.1" to 19" TFT Industrial PCs

**NEW!**

intel Atom *inside*

Made with Pride in the USA

**iPC1900T-N2800**
*SXGA*

**iPC1500T-N2800**
*XGA*

**iPC1700T-N2800**
*SXGA*

**nPC300**
*Node*

(intel)  CE  (UL)  cUL

Nematron is expanding the iPC-Series line of high performance industrial PCs, by offering it with an Intel ATOM N2800 fanless CPU. The ATOM N2800 fanless processor helps to eliminate many of the maintenance & reliability issues associated with overheating in industrial PCs that use CPU cooling fans.
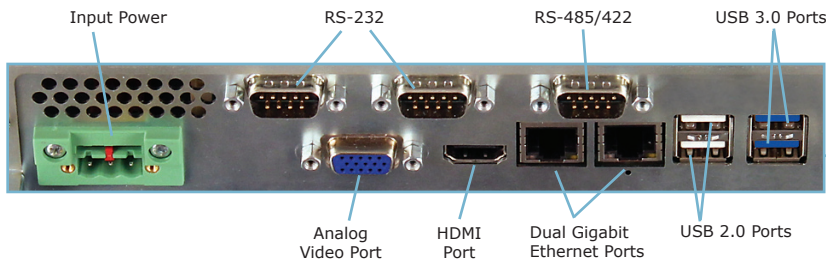
**55°C** *Approved for 55° C Operation*

## Standard Features

- Choice of: 12.1" SVGA to 19" SXGA Color TFT LED-backlit displays [1]
- High Performance / Very Low Power Fanless Processor
  - Intel® Dual Core ATOM N2800 *(1.86 GHz, 1 MB cache, 4 Threads)*
- 5-wire Analog Resistive Touchscreen
  - Optional Non-Touch with clear Lexan window (polycarbonite) [1]
- 2 GB DRAM *(4 GB Optional)*
- 80 GB Easily Removable SATA Solid State Drive
  - Optional larger SSD sizes and rotating Hybrid Hard Drive
- Ultra-Thin panel mounting depth, less than 3.2"

- Extensive I/O Connectivity
  - Dual Gigabit *(10/100/1000)* Ethernet ports
  - Two USB 2.0 ports
  - Two USB 3.0 ports
  - One RS-485/422 serial port
  - Two RS-232 serial ports
  - Additional Analog Video port or HDMI port - supports dual video with internal LCD and one port *(Optional HDMI to DVI cable available - sold separately)*
- Integrated 100-240 VAC power supply
  - 24 VDC optional
- Powder Coated Aluminum Front Panel *(optional Stainless Steel)* [1]

- Optional Rack Mount Front Panel *(iPC1900 only)* [1]
- NEMA 4/4x/12 front panel [1]
- UL and cUL Ordinary Locations Listed
- UL and cUL Hazardous Locations Listed
  - Class I Division 2, Groups A, B, C, & D; Class II Division 2, Groups F & G; Class III when mounted in a NEMA enclosure
- FCC & European CE compliant
- Windows® 7 Professional (32-bit) pre-installed
  - Windows XP Professional (32-bit) or Windows 7 Ultimate (32-bit) optional
- 2-year Warranty

[1] Not applicable on the nPC300 Fanless Node Industrial PC.
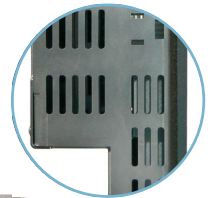
# Features & Benefits

**Extensive I/O Connectivity**

Input Power    RS-232    RS-485/422    USB 3.0 Ports

Analog Video Port    HDMI Port    Dual Gigabit Ethernet Ports    USB 2.0 Ports

**Easily Removable SATA Solid State Drive**
- Larger SSD Sizes or Rotating Hybrid Hard Drive optional

**Ultra-thin, extremely compact design**

**Optional 5-wire Analog Resistive Touchscreen**

**Made with Pride in the USA**

**UL/cUL 508, Class I Div 2, CE Approvals**

**Integral 100-240 VAC or 24 VDC Power Supply**

**USB Retention Bracket**

- Brackets on nPC300

**Powder Coated Aluminum or Stainless Steel Front Panels**

**NEMA Panel Mounting via Clips**

**USB & Ethernet Cord Hold Down**

**VESA Mounting**
- *i*PC1200/1500/1700: 75mm
- *i*PC1900: 100mm

**HDMI Cable Retention Bracket**
- Optional HDMI to DVI cable sold separately

**High Performance / Very Low Power Fanless Processor**
- Intel® Dual Core ATOM N2800 *(1.86 GHz, 1 M cache, 4 Threads)*

**2 YR. WARRANTY**

**Standard 2-year warranty**
- Covers parts and service

CE   UL   c UL

# Technical Specifications

| **Physical** | **iPC1200T-N2800** | **iPC1500T-N2800** | **iPC1700T-N2800** | **iPC1900T-N2800** | **nPC300-N2800** |
|---|---|---|---|---|---|
| **Overall Dimensions** *H x W x D* | 10.475" x 12.9" x 3.42" (266.1mm x 327.7mm x 86.75mm) | 12.80" x 15.80" x 2.95" (325.1mm x 401.3mm x 74.9mm) | 14.48" x 17.14" x 3.10" (367.8mm x 435.4mm x 78.7mm) | 15.70" x 18.66" x 3.25" (398.8mm x 474.0mm x 82.6mm) | 7.750" x 12.00" x 2.15" (196.8mm x 304.8mm x 54.61mm) |
| **Overall Dimensions w/ Mounting Brackets** | - | - | - | - | 7.750" x 13.30" x 2.45" (196.8mm x 337.82mm x 62.23mm) |
| **Panel Mounting Depth** | 3.165" (80.4mm) | 2.70" (68.6mm) | 2.85" (72.4mm) | 3.00" (76.2mm) | - |
| **Cutout Dimensions** *H x W* | 9.68" x 12.10" (245.9mm x 307.3mm) | 12.00" x 15.00" (305.0mm x 381.0mm) | 13.70" x 16.35" (348.0mm x 415.3mm) | 14.90" x 17.75" (378.5mm x 450.9mm) | |
| **Weight** | 10.5 lbs (4.76kg) | 15.0 lbs (6.80kg) | 19.0 lbs (8.63kg) | 22.5 lbs (10.22kg) | 6.5 lbs (2.9 kg) |
| **Shipping Weight** | 14.0 lbs (6.35kg) | 19.5 lbs (8.84kg) | 23.5 lbs (10.67kg) | 27.5 lbs (12.49kg) | 8.0 lbs (3.6 kg) |
| **Option Weight** *(SS)** | +2.5 lbs (1.13kg)* | +3.5 lbs (1.58kg)* | +3.75 lbs (1.70kg)* | +4.0 lbs (1.81kg)* | - |

*\* Additional weight for Stainless Steel option.*

| **Display** | **iPC1200T-N2800** | **iPC1500T-N2800** | **iPC1700T-N2800** | **iPC1900T-N2800** | **nPC300-N2800** |
|---|---|---|---|---|---|
| **Display Diagonal** | 12.1" (307.34mm) | 15.0" (381.0mm) | 17.0" (431.8mm) | 19.0" (482.6mm) | - |
| **Display Size** *Active Area H x V* | 9.69" x 7.26" (246.0mm x 184.5mm) | 11.97" x 8.98" (304.0mm x 228.1mm) | 13.30" x 10.64" (337.9mm x 270.3mm) | 14.82" x 11.85" (376.3mm x 301.1mm) | - |
| **Native Resolution** | SVGA, 800 x 600 | XGA, 1024 x 768 | SXGA, 1280 x 1024 | SXGA, 1280 x 1024 | - |
| **Brightness / Contrast Ratio** | 450 nit / 600:1 | 400 nit / 600:1 | 350 nit / 1000:1 | 300 nit / 2000:1 | - |
| **Horz/Vert Viewing Angle** | 140°/120° | 140°/120° | 170°/170° | 178°/178° | - |
| **Backlight Life / Typical** | 50,000 hrs | 50,000 hrs | 50,000 hrs | 50,000 hrs | - |

| **Typical\* Power** | **iPC1200T-N2800** | **iPC1500T-N2800** | **iPC1700T-N2800** | **iPC1900T-N2800** | **nPC300-N2800** |
|---|---|---|---|---|---|
| **Input Power** | 45W | 45W | 55W | 65W | 35W |

*\* Typical power is measured with all possible I/O ports functioning.*

## COMMON SPECS

### Processor Options

| | |
|---|---|
| **Type & Processor** | Intel Dual Core ATOM N2800 |
| **Core Speed** | 1.86 GHz |
| **Cores / Threads** | 2 / 4 |
| **L2 Cache** | 1MB |
| **Chipset** | Intel NM10 Express |
| **Graphics Controller** | Integrated Intel GMA 3650 [1] |
| **Ethernet Controller** | Intel 82574L Gigabit 10/100/1000 (2 ports) |

[1] Video Memory is allocated as needed with DVMT (Dynamic Video Memory Technology).

### Memory & I/O

| | |
|---|---|
| **DRAM** | 2GB Single Module *(204-pin DDR3 SO-DIMM, non-ECC, unbuffered, 1066 MHz)*; Optional 4GB max |
| **Standard/Optional Storage** | 80GB SATA Solid State Drive; Optional 160GB or 300GB Solid State Drive; 500GB SATA Hybrid Hard Drive [2] |
| **Available I/O** | (1) HDMI Port, (2) USB 2.0, (2) USB 3.0, (2) RS-232, (1) RS-485/422, (1) Analog Video Port (supports dual video), (2) Ethernet 10/100/1000 Ports |

[2] Hybrid Hard Drives have a solid state adaptive memory cache to significantly increase read/write performance. These are rotating hard drives and do not carry any extra part warranty.

### Touchscreen

| | |
|---|---|
| **Technology** | 5-wire Analog Resistive *(Not applicable on the nPC300 model)*; No Touchscreen option |

### Operating System

| | |
|---|---|
| **Standard OS** | Windows 7 Professional (32-bit); Optional Windows XP Professional (32-bit), Windows 7 Ultimate (32-bit), or No OS installed |

### Electrical

| | |
|---|---|
| **AC Input Voltage/Max Current** | 100-240 VAC, 50-60 Hz, 1.0 A Maximum |
| **DC Input Voltage/Max Current** | 18-36 VDC, 6.0 A Maximum |

### Environmental

| | **Operating** | **Non-operating** |
|---|---|---|
| **Temperature [3] / Humidity** | 0°C to 55°C / 20% to 80% RH, noncondensing | -20°C to 70°C / 20% to 80% RH, noncondensing |
| **Shock [4]** | 15g peak acceleration, 11msec | 30g peak acceleration, 11msec |
| **Vibration** *(5-2000 Hz)* [4] | .006" peak to peak displacement, 1.0g maximum acceleration | .015" peak to peak displacement, 2.5g maximum acceleration |
| **Altitude [5]** | Sea level to 10,000 feet | Sea level to 40,000 feet |

[3] Temperature specifications are for air temp surrounding the unit (i.e. inside any enclosure being utilized). Meets US Federal Requirements specified in 46 CFR 111.01-15 (d) for offshore electrical systems. [4] Shock & Vibration specifications established with Solid State drives and no rotating media. [5] Altitude specification is established by using all internal component specifications.

### Agency Approvals

| | |
|---|---|
| **Front Panel NEMA Rating** | NEMA 4/4X/12, IP66 |
| **FCC** | 47 CFR, Part 15, Class A |
| **EU CE Marking Compliance** | CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1 |
| **Safety Agency Approvals \*** | UL508 Listed, ANSI/ISA 12.12.01-2012 [6], cUL Listed CSA C22.2, #142, cUL Listed CSA 22.2, #213 *(see notes below on model-specific HazLoc approvals)* |

*\* iPC-Series: Class I Division 2, Groups A, B, C, D; Class II, Division 2, Groups F & G; Class III; Temp. Code: T4A, when installed on a flat surface of a Type 1, 4, 4X, or 12 enclosure.*
*\* nPC300: Class I Division 2, Groups A, B, C, D; Temp. Code: T4A, when installed on a flat surface of a Type 1 enclosure.*
[6] ANSI/ISA 12.12.01-2012 is the new standard listed to show Hazardous Locations Agency Approval. UL1604 discontinued July 31, 2012.

### Options

| | |
|---|---|
| **Front Panel Options** | Powder-Coated Aluminum Front Panel; with No Logo; Machined 304 Stainless Steel; Rackmount Powder Coated Aluminum *(iPC1900 only)* [7] |

[7] Rackmount front panel is not NEMA 4/4X/12 and the unit is required to be installed on a rack in a Type 1 enclosure.

# Order Number Generation

Nematron

**Base unit configuration: iPCxx00T-N2800-2GB-80SS-W7**, where **xx** = 12, 15, 17, or 19 (for display size), includes a touchscreen, Intel Dual Core ATOM N2800, 2 GB DRAM, 80 GB SATA Solid State Drive, and Windows 7 Professional (32-bit).

*i*PC ____ ____ -N2800 ____ ____ ____ ____ ____

**Display Size:**

| | |
|---|---|
| **1200** | 12.1" SVGA LCD |
| **1500** | 15.0" XGA LCD |
| **1700** | 17.0" SXGA LCD |
| **1900** | 19.0" SXGA LCD |

**Input Options:**

| | |
|---|---|
| **T** | Touchscreen |
| **blank** | None |

**DRAM:**

| | |
|---|---|
| **-2GB** | 2 GB DRAM |
| **-4GB** | 4 GB DRAM |

**Hard Drive:**

| | |
|---|---|
| **-80SS** | 80 GB SATA Solid State Drive [1] |
| **-160SS** | 160 GB SATA Solid State Drive [1] |
| **-300SS** | 300 GB SATA Solid State Drive [1] |
| **-HD** | 500 GB (minimum) SATA Hybrid Hard Drive [2] |

**Operating System:**

| | |
|---|---|
| **-W7** | Windows 7 Professional (32-bit) |
| **-XP** | Windows XP Professional (32-bit) |
| **-W7U** | Windows 7 Ultimate (32-bit) |
| **-NOS** | No OS installed |

**Power Supply:**

| | |
|---|---|
| **blank** | 100-240 VAC |
| **-DC** | 24 Volt DC |

**Front Panel:**

| | |
|---|---|
| **blank** | Powder Coated Aluminum |
| **-NL** | Powder Coated Aluminum w/o Logo |
| **-SS** | Machined 304 Stainless Steel |
| **-RM** | Rackmount Powder Coated Aluminum (iPC1900 only) [3] |

iPC1200T

iPC1500T

iPC1700T

iPC1900T

**NEW!**

[1] Solid State Drive options carry a 5-year (part-only) warranty.
[2] Hybrid Hard Drives have a solid state adaptive memory cache to significantly increase read/write performance. These are rotating hard drives and do not carry any extra part warranty.
[3] Rackmount front panel is not NEMA 4/4x/12 and the unit is required to be installed on a rack in a Type 1 enclosure.

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**Base unit configuration: nPC300-N2800-2GB-80SS-W7**, includes Intel Dual Core ATOM N2800, 2 GB DRAM, 80 GB SATA Solid State Drive and Windows 7 Professional (32-bit).

*n*PC300-N2800 ____ ____ ____ ____

nPC300

**NEW!**

**DRAM:**

| | |
|---|---|
| **-2GB** | 2 GB DRAM |
| **-4GB** | 4 GB DRAM |

**Hard Drive:**

| | |
|---|---|
| **-80SS** | 80 GB SATA Solid State Drive [1] |
| **-160SS** | 160 GB SATA Solid State Drive [1] |
| **-300SS** | 300 GB SATA Solid State Drive [1] |
| **-HD** | 500 GB (minimum) SATA Hybrid Hard Drive [2] |

**Operating System:**

| | |
|---|---|
| **-W7** | Windows 7 Professional (32-bit) |
| **-XP** | Windows XP Professional (32-bit) |
| **-W7U** | Windows 7 Ultimate (32-bit) |
| **-NOS** | No OS installed |

**Power Supply:**

| | |
|---|---|
| **blank** | 100-240 VAC |
| **-DC** | 24 Volt DC |

[1] Solid State Drive options carry a 5-year (part-only) warranty.
[2] Hybrid Hard Drives have a solid state adaptive memory cache to significantly increase read/write performance. These are rotating hard drives and do not carry any extra part warranty.

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## Contact Information

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