

# NEON-2000 Series

## NVIDIA® Jetson™ TX2/Jetson™ Xavier NX-based Industrial AI Smart Camera for the Edge

### Features

- Integration of Jetson™ TX2 or Jetson™ Xavier NX, image sensor and vision software suites, ready to deploy
- All-in-one design minimizes cabling, footprint and maintenance
- FPGA base DI/O for accurate real-time triggering
- USB Type-C port for video, power and USB simplifies connectivity
- 1x microSD slot for external storage (not supported by NEON-2000-JT2-X)
- Choice of four different image sensors
- DI/O, 1x LAN and 1x COM
- Supports C-mount lens
- IP67 rated (NEON-2000-JT2-X Series)



### Introduction

ADLINK's NEON-2000 Series of the NVIDIA® Jetson™ based industrial AI cameras, integrate the Jetson™ Xavier NX or Jetson™ TX2, image sensor, optimized OS, and Rich I/O for vision applications in a compact chassis with verified thermal performance, saving users' Total Cost Ownership on integration and trouble shooting, as well as minimizing footprint and cabling required for installation.

Supporting four types image sensors, integration of DI/O, 1x communication port and 1x LAN port in a compact chassis, the NEON-2000 Series is ideal for the AI vision applications at the edge.

For harsh environments requiring ingress protection, the NEON-2000-JT2-X Series supports IP67, enabling AI vision capabilities in critical applications.

### Software Support

- Ubuntu 18.04 L4T (Linux for Tegra)
- Jetpack 4.3
- Basler Pylon 5.2.0.13457

Note: Supported software versions will be updated as released by NVIDIA.

### Accessories

- 1.8m USB Type-C cable with screw lock
- USB Type-C adapter/hub
- 2m DB-15 to DB-37 I/O extension cable
- I/O Extension Board (DIN-37D-01)
- 12V AC/DC adapter (for NEON-2000-JT2 and NEON-2000-JNX Series)
- C-mount lens, focal length 8mm, aperture f1.4
- IP67 USB Type-C cable (for NEON-2000-JT2-X Series)
- IP67 Ethernet cable (for NEON-2000-JT2-X Series)
- IP67 I/O & power cable (for NEON-2000-JT2-X Series)
- Lens protector (for NEON-2000-JT2-X Series)

Note: Use only recommended ADLINK power adapters and cables.

### Ordering information

- **NEON-201B-JT2**  
NVIDIA® Jetson™ TX2, color sensor, 1.2M 54fps, global shutter
- **NEON-202B-JT2**  
NVIDIA® Jetson™ TX2, color sensor, 1.9M 60fps, global shutter
- **NEON-203B-JT2**  
NVIDIA® Jetson™ TX2, color sensor, 2M 30fps, rolling shutter
- **NEON-204B-JT2**  
NVIDIA® Jetson™ TX2, color sensor, 5M 14fps, rolling shutter
- **NEON-201B-JT2-X**  
NVIDIA® Jetson™ TX2, color sensor, 1.2M 54fps, global shutter, IP67
- **NEON-202B-JT2-X**  
NVIDIA® Jetson™ TX2, color sensor, 1.9M 60fps, global shutter, IP67
- **NEON-203B-JT2-X**  
NVIDIA® Jetson™ TX2, color sensor, 2M 30fps, rolling shutter, IP67
- **NEON-204B-JT2-X**  
NVIDIA® Jetson™ TX2, color sensor, 5M 14fps, rolling shutter, IP67
- **NEON-201B-JNX**  
NVIDIA® Jetson™ Xavier NX, color sensor, 1.2M 54fps, global shutter
- **NEON-202B-JNX**  
NVIDIA® Jetson™ Xavier NX, color sensor, 1.9M 60fps, global shutter
- **NEON-203B-JNX**  
NVIDIA® Jetson™ Xavier NX, color sensor, 2M 30fps, rolling shutter
- **NEON-204B-JNX**  
NVIDIA® Jetson™ Xavier NX, color sensor, 5M 14fps, rolling shutter

## Specifications

Model Name	NEON-201B-JT2	NEON-202B-JT2	NEON-203B-JT2	NEON-204B-JT2
<b>Image Sensor</b>				
Resolution (HxV)	1280x960	1600x1200	1920x1080	2592x1944
Resolution	1.2M	1.9M	2M	5M
Frame Rate (fps)	54	60	30	14
Color/Mono	Color	Color	Color	Color
Shutter	Global	Global	Rolling	Rolling
Sensor Size	1/3"	1/1.8"	1/3.7"	1/2.5"
Pixel Size (µm)	3.75 x 3.75	4.5 x 4.5	2.2 x 2.2	2.2 x 2.2
Sensor Vendor	ON Semiconductor	e2v	ON Semiconductor	ON Semiconductor
Sensor Model	AR0134	EV76C570	MT9P031	MT9P031
Lens Mount	C-Mount			
Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run			
<b>System</b>				
Computing Platform	NVIDIA® Jetson™ TX2			
Processor	ARM Cortex-A57 and NVIDIA® Denver 2			
Supported OS	Ubuntu 18.04			
GPU	256-core NVIDIA® Pascal GPU			
Memory/Storage	8GB LPDDR4/32G B eMMC (integrated on TX2 module)			
<b>Connectors and Functions</b>				
Ethernet	Supports 10/100/1000 Mbps			
USB Type-C Port	Video output (Display-Port), 1920x1080 @ 30fps			
	1x USB 3 and 1x USB 2			
	Power supply for camera (when connected to USB charger or adapter)			
	Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub)			
D-Sub Socket	4x DI and 4x DO			
	1x UART (TXD, RXD, GND)			
Micro-USB	USB OTG (for system flash)			
microSD Slot	For extended storage			
Wafer Connector	For system flash			
<b>Mechanical &amp; Power</b>				
Dimensions	123.3 x 77.5 x 66.81 mm			
Weight	700g			
Power Input	DC jack (12VDC) or USB Type-C (15VDC)			
Power Consumption	<30W (camera only)			
<b>Environmental &amp; Certification</b>				
Operating Temperature	0°C to 45°C			
Storage Temperature	-20°C to 70°C			
Humidity	40% to 75% (non-condensing)			
Vibration	Operating, 5-500 Hz, 5 Grms, 3 axes			
Shock	Operating, 11ms duration, 30G, half sine, 3 axes			
ESD	Contact ± 4kV, Air ± 8kV			
EMC	CE and FCC Class A (EN61000-4/-2)			
Safety	UL and cB			

Note: the DC power source can be either from the DC jack or from the USB Type-C port.

## Specifications

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Model Name	NEON-201B-JT2-X	NEON-202B-JT2-X	NEON-203B-JT2-X	NEON-204B-JT2-X
<b>Image Sensor</b>				
Resolution (HxV)	1280x960	1600x1200	1920x1080	2592x1944
Resolution	1.2M	1.9M	2M	5M
Frame Rate (fps)	54	60	30	14
Color/Mono	Color	Color	Color	Color
Shutter	Global	Global	Rolling	Rolling
Sensor Size	1/3"	1/1.8"	1/3.7"	1/2.5"
Pixel Size (µm)	3.75 x 3.75	4.5 x 4.5	2.2 x 2.2	2.2 x 2.2
Sensor Vendor	ON Semiconductor	e2v	ON Semiconductor	ON Semiconductor
Sensor Model	AR0134	EV76C570	MT9P031	MT9P031
Lens Mount	C-Mount			
Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run			
<b>Protection</b>				
Ingress Protection	IP67			
<b>System</b>				
Computing Platform	NVIDIA® Jetson™ TX2			
Processor	ARM Cortex-A57 and NVIDIA Denver 2			
Supported OS	Ubuntu 18.04			
GPU	256-core NVIDIA Pascal GPU			
Memory/Storage	8GB LPDDR4/32G eMMC (integrated on TX2 module)/64G from internal microSD card			
<b>Connectors and Functions</b>				
M12 8-pin FML for Ethernet	Support 10/100/1000 Mb			
M12 USB Type-C FML for Video, USB and Power	Video output (Display Port), 1920x1080 @ 30fps			
	1x USB 3 and 1x USB 2			
	Power supply for the camera (when connect to the Type C charger or adaptor, DC 15V/2A)			
	Power supply (5 W) for external Type C Hub (when connect to Type C hub)			
M12 17-pin FML for I/O and power	2x DI and 2x DO			
	1x UART (TXD, RXD, GND)			
	USB port & I/O for flashing the TX2			
	DC 24V power input			
<b>Mechanical &amp; Power</b>				
Dimensions	137.3 x79.55x 74.85 mm			
Weight	900g			
Power Consumption	<30W (camera only)			
<b>Environmental &amp; Certification</b>				
Operating Temperature	0°C to 45°C			
Storage Temperature	-20°C to 70°C			
Humidity	40% to 75% (non-condensing)			
Vibration	Operating, 5-500 Hz, 5 Grms, 3 axes			
Shock	Operating, 11ms duration, 30G, half sine, 3 axes			
ESD	Contact ± 4kV, Air ± 8kV			
EMC	CE and FCC Class A (EN61000-4/-2)			
Safety	UL and cB			

Note: The DC power source can be either from the M12 17-pin or M12 USB Type-C connector

# Specifications

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Model Name	NEON-201B-JNX	NEON-202B-JNX	NEON-203B-JNX	NEON-204B-JNX
<b>Image Sensor</b>				
Resolution (HxV)	1280x960	1600x1200	1920x1080	2592x1944
Resolution	1.2M	1.9M	2M	5M
Frame Rate (fps)	54	60	30	14
Color/Mono	Color	Color	Color	Color
Shutter	Global	Global	Rolling	Rolling
Sensor Size	1/3"	1/1.8"	1/3.7"	1/2.5"
Pixel Size (µm)	3.75 x 3.75	4.5 x 4.5	2.2 x 2.2	2.2 x 2.2
Sensor Vendor	ON Semiconductor	e2v	ON Semiconductor	ON Semiconductor
Sensor Model	AR0134	EV76C570	MT9P031	MT9P031
Lens Mount	C-Mount			
Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run			
<b>System</b>				
Computing Platform	NVIDIA® Jetson™ Xavier NX			
Processor	6-core NVIDIA Carmel ARM® v8.2 64-bit CPU			
Supported OS	Ubuntu 18.04			
GPU	384-core NVIDIA® Volta™ GPU with 48 Tensor Cores			
Memory/Storage	8GB LPDDR4/16G eMMC (integrated on NX module)			
<b>Connectors and Functions</b>				
Ethernet	Supports 10/100/1000 Mbps			
USB Type-C Port	Video output (Display-Port), 1920x1080 @ 30fps			
	1x USB 3 and 1x USB 2			
	Power supply for the camera (when connect to the Type C charger or adaptor)			
	Power supply (5 W) for external Type C Hub (when connect to Type C hub)			
D-Sub	4x DI and 4x DO			
	1x UART (TXD, RXD, GND)			
Micro-USB	USB OTG (for system flash)			
microSD Slot	For extended storage			
Wafer Connector	For system flash			
<b>Mechanical &amp; Power</b>				
Dimensions	123.3 x 77.5 x 66.81 mm			
Weight	700g			
Power Input	DC jack (12VDC) or USB Type-C (15VDC)			
Power Consumption	<30W (camera only)			
<b>Environmental &amp; Certification</b>				
Operating Temperature	0°C to 45°C			
Storage Temperature	-20°C to 70°C			
Humidity	40% to 75% (non-condensing)			
Vibration	Operating, 5-500 Hz, 5 Grms, 3 axes			
Shock	Operating, 11ms duration, 30G, half sine, 3 axes			
ESD	Contact ± 4kV, Air ± 8kV			
EMC	CE and FCC Class A (EN61000-4/-2)			
Safety	UL and cB			

Note: The DC power source can be either from the DC jack or from the USB Type-C port.