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Find the *National Instruments NI-1712* at our website: *Click HERE*

Technical Sales

(866) 531-6285
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For user manuals and dimensional drawings, visit the product page resources tab on ni.com.

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Value Smart Cameras for Embedded Vision



- Real-time machine vision
- High-quality monochrome VGA (640x480) or SXGA (1280x1024) CCD image sensors
- High-performance embedded processors
- Includes NI Vision Builder for Automated Inspection software
- Performance increase of 1.5X versus corresponding previous-generation value models

Overview

The value line of NI Smart Cameras simplifies machine vision by analyzing images directly on the camera with a powerful, embedded processor capable of running the entire suite of NI vision algorithms. You can use these cameras in a variety of applications including part location, defect detection, code reading, and assembly verification. The combination of the onboard processor with a charge-coupled device (CCD) image sensor provides an easily distributed, all-in-one vision system that transmits inspection results along with or in place of raw images. Housed in a rugged metal case designed for use in industrial applications, these NI Smart Cameras offer built-in I/O, multiple industrial protocols, built-in web servers, and many other features. You can configure NI Smart Cameras with the included NI Vision Builder for Automated Inspection (AI) software or program the camera with the NI LabVIEW Real-Time Module.

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Application and Technology

	NI 1712	NI 1732	NI 1752	NI 1754
Processor	400 MHz	400 MHz	600 MHz	600 MHz
System Memory	256 MB	256 MB	256 MB	256 MB
Firmware and Job Storage	512 MB	512 MB	512 MB	512 MB
Resolution	640x480	640x480	640x480	1280x1024
Sensor Size (in.)	1/3	1/3	1/3	1/3
Acquisition Rate (frames per second)	60 fps	60 fps	60 fps	13 fps
Digital Inputs	1	2	2	2
Digital Outputs	1	2	2	2
Ethernet Ports	1	2	2	2
RS232	√	√	√	√
Lighting Trigger	-	√	√	√
Quadrature Encoder Input	-	√	√	√
Current Controller	-	-	500 mA DC, 1 A Strobed	500 mA DC, 1 A Strobed
Operating Temperature				

Range	0 °C to 45 °C	0 °C to 45 °C	0 °C to 45 °C	0 °C to 45 °C
Included Configuration Software	Vision Builder AI	Vision Builder AI	Vision Builder AI	Vision Builder AI
Housing Material	Metal	Metal	Metal	Metal

Software

Unmatched Scalability

All NI Smart Cameras include the NI Vision Builder for Automated Inspection (AI) configurable vision application development environment so you can build and deploy complete machine vision applications quickly and easily. Vision Builder AI applications are based on an easy-to-use state diagram model. With this model, you can configure sophisticated inspections that include loops and branches without programming. Vision Builder AI also features all of the steps you need to develop complete machine vision systems, including advanced triggering, acquisition from DAQ devices, communication with human machine interfaces (HMIs) and programmable logic controllers (PLCs), and control of digital I/O lines.

For more advanced applications, NI Smart Cameras are also full-featured LabVIEW Real-Time targets. This adds the power of LabVIEW and the world-class algorithms in the NI Vision Development Module to this new platform. Other modules supported in LabVIEW Real-Time, such as the LabVIEW Control Design and Simulation Module, also work with NI Smart Cameras.

NI vision software makes it easy to move between a configurable environment and a programming environment. With Vision Builder AI, you can create an inspection and easily convert it to LabVIEW code. If you want to use Vision Builder AI but need a bit more flexibility than it offers, you can also create custom steps for Vision Builder AI using LabVIEW.

Ordering Information

Model Number	Part Number
NI 1712	782433-01
NI 1732	781682-01
NI 1752	781683-01
NI 1754	781684-01

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Support and Services

System Assurance Programs

NI system assurance programs are designed to make it even easier for you to own an NI system. These programs include configuration and deployment services for your NI PXI, CompactRIO, or Compact FieldPoint system. The NI Basic System Assurance Program provides a simple integration test and ensures that your system is delivered completely assembled in one box. When you configure your system with the NI Standard System Assurance Program, you can select from available NI system driver sets and application

development environments to create customized, reorderable software configurations. Your system arrives fully assembled and tested in one box with your software preinstalled. When you order your system with the standard program, you also receive system-specific documentation including a bill of materials, an integration test report, a recommended maintenance plan, and frequently asked question documents. Finally, the standard program reduces the total cost of owning an NI system by providing three years of warranty coverage and calibration service. Use the online product advisors at ni.com/advisor to find a system assurance program to meet your needs.

Calibration

NI measurement hardware is calibrated to ensure measurement accuracy and verify that the device meets its published specifications. To ensure the ongoing accuracy of your measurement hardware, NI offers basic or detailed recalibration service that provides ongoing ISO 9001 audit compliance and confidence in your measurements. To learn more about NI calibration services or to locate a qualified service center near you, contact your local sales office or visit ni.com/calibration.

Technical Support

Get answers to your technical questions using the following National Instruments resources.

- **Support** - Visit ni.com/support to access the NI KnowledgeBase, example programs, and tutorials or to contact our applications engineers who are located in NI sales offices around the world and speak the local language.
- **Discussion Forums** - Visit forums.ni.com for a diverse set of discussion boards on topics you care about.
- **Online Community** - Visit community.ni.com to find, contribute, or collaborate on customer-contributed technical content with users like you.

Repair

While you may never need your hardware repaired, NI understands that unexpected events may lead to necessary repairs. NI offers repair services performed by highly trained technicians who quickly return your device with the guarantee that it will perform to factory specifications. For more information, visit ni.com/repair.

Training and Certifications

The NI training and certification program delivers the fastest, most certain route to increased proficiency and productivity using NI software and hardware. Training builds the skills to more efficiently develop robust, maintainable applications, while certification validates your knowledge and ability.

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- **Course kits** - lowest-cost, self-paced training that you can use as reference guides.
- **Training memberships** and training credits - to buy now and schedule training later.

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Extended Warranty

NI offers options for extending the standard product warranty to meet the life-cycle requirements of your project. In addition, because NI understands that your requirements may change, the extended warranty is flexible in length and easily renewed. For more information, visit ni.com/warranty.

OEM

NI offers design-in consulting and product integration assistance if you need NI products for OEM applications. For information about special pricing and services for OEM customers, visit ni.com/oem.

Alliance

Our Professional Services Team is comprised of NI applications engineers, NI Consulting Services, and a worldwide National Instruments Alliance Partner program of more than 700 independent consultants and integrators. Services range from start-up assistance to turnkey system integration. Visit ni.com/alliance.

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