



VISIDOT READER

KEY BENEFITS:

- Accuracy: 100% identification
- Speed: Capture hundreds of tags in seconds
- Lower Cost: No additional investment in costly tags
- Efficiency: High automation and labor cost reduction
- Visual Display: for easy correction
- Easy deployment: Off-the-shelf modular product
- Suitable for harsh environments

VISIDOT READER: FAST, RELIABLE AND COST EFFECTIVE AIDC

Visidot Reader, an imaging-based AIDC product, utilises high resolution capture devices with a large field of view, enabling it to decode any number and type of existing, low-cost visual tags (1D barcodes, Data Matrix and QR Code) with 100% accuracy. It is a high performance solution capable of capturing hundreds of tags in mere seconds.

Visidot Reader can be configured to capture tags on either stationary or moving assets. The fully-featured, patented image processing software accurately decodes all captured tags regardless of location and orientation. Visidot Reader is even able to detect tags that are partially blocked from view or corrupted.

All decoded information is stored in an XML file and transferred to the Visidot Director for subsequent business application use. Additionally, this information is made available on a designated viewer, enabling users to intuitively locate and review the assets and tags decoded information.



Visidot Reader is essentially a combination of hardware units - capture devices, lighting elements and others - and state-of-the-art software. The system's high durability allows it to perform reliably even in the harshest of environments, including sites characterized by high humidity, high EM radiation, dust, heat, cold or other adverse environmental conditions.

“Run the pallet by a Visidot reader, and all the serial numbers are captured as the pallet is received.”

September 8, 2008 - SCDigest



Capture Hundreds of Barcodes in Mere Seconds

In a typical deployment, assets labeled with barcode (1D), Data Matrix (2D) or other industry standard tags are transported past a Visidot Gate. Once triggered, Visidot Reader powers up illumination units and activates an optional busy status signal. It then initiates image capture utilizing one or more capture devices, simultaneously scanning hundreds of tags in a single pass. Images captured on all capture devices are quickly processed and decoded by the Visidot Reader software, then transferred to the Visidot Controller software component.

The Controller software component merges all decoded data, eliminating duplicated data from overlapping captures or applying highly granular, user-specified data filters, and delivers captured results in the form of XML files to a calling business application, such as Visidot Director for SCT. These XML files contain data on the number of items detected, their location and orientation, and even indications of tags that could not be properly detected.



Detect and Decode Assets in Motion

Visidot Reader's sophisticated ability to quickly identify and correlate information from successive frames, enables accurate detection and decoding of assets in motion. This capability means that no tag is left unidentified while duplicate detections are effectively eliminated.

Accurate reading of assets in motion is particularly useful in dock door deployments, where loading/unloading, routing & sequencing decisions must be made in mere seconds.

Identify Assets without Line of Sight

In cases where no line of sight exists between capture device and one or more assets, Visidot offers a Palletization process which captures and decodes the tags on the assets as the pallet is being constructed/picked. Assets pass in front of the capture device, either individually or in small groups, prior to being stacked on pallets. Visidot Reader consolidates the information decoded from all individually captured assets, then ensures that even when no line of sight is available, all of the solution's inherent benefits - 100% accuracy, significant time savings and minimized manual labor - are maintained.

A Virtually Unlimited Field of View

The actual field of view and the amount of detail that can be picked up by a single capture device are defined by the ratio between barcode modules' physical size and the capture device's resolution. Should the desired field of view exceed the coverage range of a single capture device, Visidot Reader utilizes numerous capture devices. Visidot Reader is capable of assembling the decoded data from these multiple capture devices, delivering clear and consolidated results as if produced by a single capture device in a single shot.

Custom Triggers and Control

Visidot Reader may be prompted to action via a variety of triggering methods, including push buttons (wired or wireless remote controls), sensors (motion/directional detectors and others) and Visidot Director software triggers.

Visidot Reader may be configured to control additional devices, so as to ideally streamline operations. Devices that may be controlled by Visidot Reader include rotating tables, shrink-wrap machines, conveyors, scaling systems, print & apply and traffic lights to serve as status indicators.

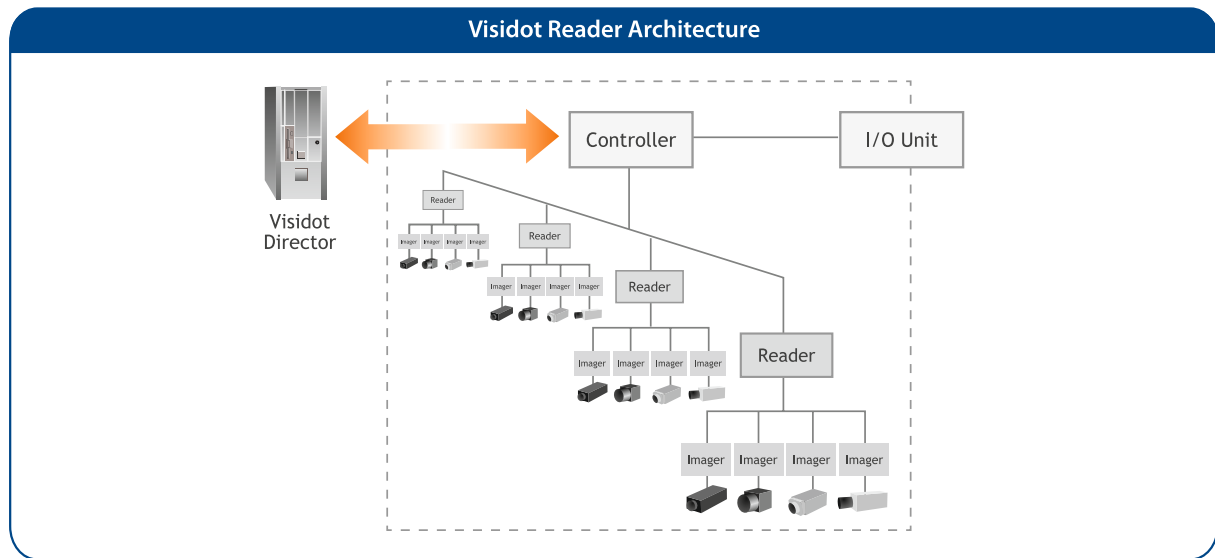
Product Architecture

Visidot Reader typically comprises the following:

- One or more **capture devices** - color or monochromatic, for stationary or in-motion capture
- **Imagers** (in each capture device) - for image processing and decoding of tagged information
- One or more Visidot Reader **software** instances, each of which receives information from one or more imagers,

consolidates this information and performs advanced processing

- A **controller** that packages the information delivered by all Visidot Reader software instances and ensures close coordination and synchronization among all capture devices, mechanical elements, lighting units and the user application



Deployment Options

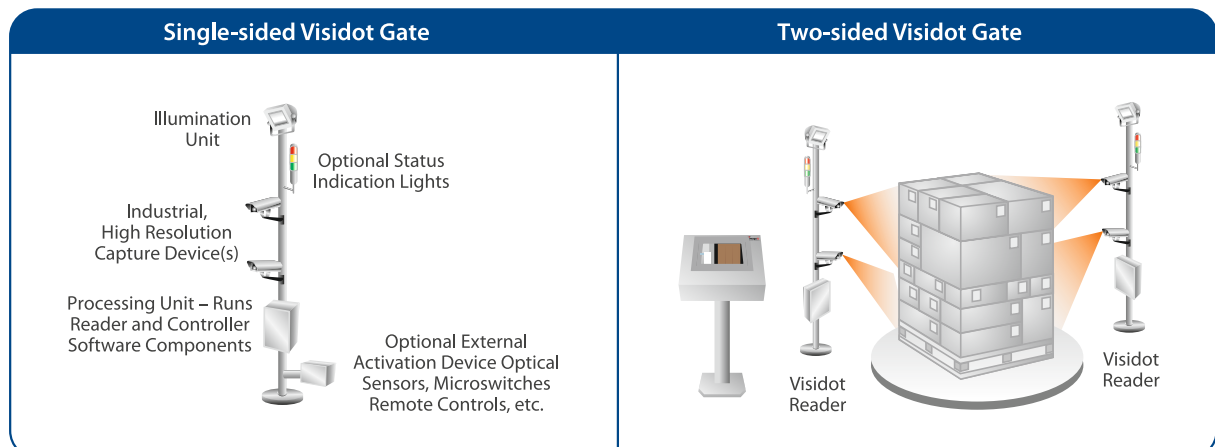
Visidot Reader supports a variety of deployment options, as per specific customer needs, coverage considerations and environmental constraints (available space, background lighting, electric outlet availability and others).

Typical deployments involve installation of a single-sided Visidot Gate comprising physical mounting infrastructure, illumination units and a processing unit, as well as one or more capture devices and an optional external activation device.

Also common are configurations comprising two-sided Visidot

Gates, which reduce the amount of time required to identify assets situated on two sides of a pallet.

When pallets contain assets arranged in more complex configurations, combinations of two-sided Visidot Gates and rotating tables are generally recommended. In such scenarios, Visidot Reader first captures two opposite sides of a pallet. The rotating table then turns 90 (or 180) degrees, allowing Visidot Reader to capture the remaining two sides. Rotation may also be performed by a shrink-wrap machine, thereby enabling enhanced functionality.



Visidot Reader Selection Guide

Reader type	Pallet stacking	Corrective action	Process interruption
Stationary	tags on 1-4 sides	manual	allowed
Motion	tags on 1-2 sides	fully automatic	not allowed
Palletization	not all tags have line of sight	manual / automatic	allowed

Features & Specifications

Key features	
	Rapid capture and decoding of hundreds of visual tags in mere seconds
	100% accuracy
	Visual indication of location and orientation of each captured tag
	Stationary or in-motion asset capture
	Color and monochrome asset capture
	Consolidation of data from multiple captures
	Peripheral device control (USB or Ethernet)
	Modular architecture supports a variety of capture device types
	Each Visidot Reader supports up to 4 capture devices

Interfaces	
	Firewire or Gigabit Ethernet connection between capture devices and computer
	LAN/WAN connection between Visidot Reader and Visidot Director for SCT
	RS-232 interface for control purposes
	XML software interface between Visidot Reader and Director software packages

Capture Device Specifications

	CDM2000 Motion / Palletization	CD6600 Stationary / Palletization
Capture time	70 msec	250 msec
Decoding time (typical)	70 msec	1.5 seconds
Motion tolerances	Barcode: 1.5 m/sec Data matrix: 5 m/sec	—
Viewing distance	10 cm to 10 m	
Skewed angle reading tolerance (± from normal)	Barcode: 30° Data matrix: 45°	
Rotation angle	0 - 360°	
Minimum print contrast	25%	
Minimum module resolution	Barcode: 1.2 pixels Data Matrix: 2.8 pixels	
Spectral sensitivity wavelength	630 nm	
Field of view (typical): Barcode module size: 0.4 mm Data matrix module size: 1.2 mm	0.54 m x unlimited 0.7 m x unlimited	1.0 m x 0.73 m 1.3 m x 0.9 m

