



Artemis J300 3D

Instrument Description & System Specifications

General Description

Artemis® is designed to be used only in conjunction with Ronin's Aims® inventory management software. The Artemis® instrument consist of an Artemis scanning instrument, its mounting system, control cable, ART® control cabinet and weather shield.

Artemis® is a 360°x 220° laser scanner with a range of 500m (>80% reflectivity) and an angular resolution of 0.0072° which, when used in conjunction with Aims® produces a 3D point cloud for an area with a 300m diameter.

The data derived from the point cloud is used by Aims® to create an accurate profile of the product being stored in the silo bin or stockpile.

The instrument has an IP65 rating and has a 24v±10% DC power requirement, with communication from the controller to the device being RS232 and from the controller to the network being TCP/IP V4.

The weather shield is made of 1mm stainless steel plate and is predominantly for UV protection

The ART® control cabinet is the communication and power interface to the Artemis® scanning instrument and contains an Ethernet to Serial Device Server and DIN rail mounted through-terminals for power and data. The 24VDC outputs are protected by suitably rated fuses with a breaking capacity of 1500A (1.5kA). Depending on the model the ART® cabinet receives power from a 24VDC power buss.

Similarly depending on the model the ART® cabinet can be supplied with either a 5 GHz Ethernet radio or a fibre optic switch both of which connect to the on-board Ethernet convertor.

Artemis® is designed for use in warehouse storage facilities, open air stockpiles and silo bins with multiple fill and discharge points and diameters greater than 18 meters.

Artemis® is recommended to be applied on products that have medium to high reflectivity and are not exposed to direct sunlight and where the measuring range does not exceed 150m.

Several Artemis® instruments can be deployed as part of a network where they can operate jointly in a bunker or stockpile or individually in a bin or silo. The point cloud density is configurable and ranges from 1 point per decimetre unto 1 point per square meter. Scan times are dependent upon point cloud densities.



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The accuracy of the scanner, which relies on the accuracy of the laser, being 1-3mm, (this can be impaired by the laser scanning against acute surfaces as well as by great distances), the accuracy of the motors' movement, which has a max error potential of $\pm 5\%$ of the motor step size, for both pan and tilt.

Artemis® can be mounted either overhead or alongside the product profile, however placement depends upon the field of view that a position provides and the quantity of instruments required for the store.

Ideally Artemis should be positioned so that the instruments full range of movement is used to its best potential. The instrument should be mounted so that the moving parts of the instrument neither contact against any structures nor against the product profile.

The maximum distance that the ART® cabinet can be installed from the Artemis® instrument is 20m and both the cabinet and the instrument should be installed in a position where they are accessible for maintenance purposes.

AIMS® maintains a diagnostic schedule which notifies the user to any system faults and where possible the cause thereof, many of these faults can be either diagnosed and resolved remotely and this service can be remotely provided by Ronin.

Artemis does not require any preventative maintenance or servicing, although dust can build up on the inside of the dust tubes and this may require for them to be cleaned on an annual or bi-annual basis, this can be simply done by maintenance personnel in-situ. Do not use high pressure or compressed air to blow away dust or dirt build-up.

In order to maintain its certification any repairs to the Artemis® instrument must be carried out by qualified personnel at a certified facility. However if a customer operates several Artemis® systems then we recommend that the customer maintains a service exchange stock as the laser can be replaced in-situ by maintenance personnel, as can the whole Artemis instrument if necessary.

Models

	Power Source	Network Connection
Artemis 300	Buss	LAN
Artemis 300 I	Onboard 24VDC - 110/220VAC switch mode PSU	5 GHz ethernet radio
Artemis 300 IRS	solar powered 430Wh/day, 3 days autonomy	5 GHz ethernet radio
Artemis 300 INRS	solar powered 430Wh/day, 3 days autonomy	Fibre optics convertor
Artemis 300 p	Portable battery pack 2hrs	Portbale 5 GHz ethernet radio