Camera-Based Full Rack Readers

The Camera-Based range of compact whole rack 2D & 1D code readers offer fast identification of racked, 2D-coded sample storage tubes, without the need to remove tubes from racks.

Using advanced camera-based imaging systems, Camera-Based Full Rack Readers are ideal for more challenging applications and environments, such as integrating into robotic systems, or when speed and size of reader are important.

Camera-Based readers form the backbone of many sample storage and tracking systems, for applications including biobanks, compound libraries and other high-throughput storage environments.

An integrated multi-position Linear Barcode Reader is available for the simultaneous reading of rack linear 1D barcodes.

Key Features of the Camera-Based Reader Range

Flexible Applications through Advanced Design

- Using advanced camera-based systems, whole rack readers are ideal for more challenging applications, such as integration into robotic systems, cold store and low temperature environments and where speed and small footprint are important

Automation and Robotics Friendly

- All Camera-Based rack readers have a gripper cutout section around the scan window to enable easy robotic handling of shallow racks

- The Camera-Based Reader for SBS Racks has a small footprint, barely larger than the SBS rack itself, aiding greater compatibility with automated systems including liquid handling

Easy System Integration with Decoding Software

- Camera-Based Full Rack Barcode Reader systems used in conjunction with decoding software offer the most advanced data export options available

- Easy integration with database sample tracking and LIMS systems

- Compatible with multiple export templates including csv and pdf, with powerful design and formatting capabilities to create customized reports

Camera-Based Reader for SBS Racks

Camera Based Reader for Acoustic Tubes

Camera-Based Reader for SBS Racks and Cryo Boxes

✓ **Integration Friendly**

✓ **Compatible with FreezerPro®**

Additional Sample Security

- Storage tube racks can be supplied with the option of carrying a unique 2D-code identifier

- All Camera-Based Readers for SBS Racks are capable of reading both tube and rack 2D-codes simultaneously, to provide automatic rack orientation and greater sample security

Linear 1D Barcode Reader (optional)

- Integrated multi-position 1D linear barcode reader helps to simplify robotic integration, is ideal for decoding more challenging (non-Azenta) linear barcodes and provides rack orientation

Stored Rack Profiles

- Custom rack profiles can be set up for the regular use of routine, custom rack profiles, such as empty rows or control tubes in specific positions, saving set-up time

- Seamless Changing of Rack Format

- Using either built-in, or customized rack profiles, decoding software will automatically determine which rack type is being read

- Switch between 24, 48, 96, 240 and 384-format racks without making any changes to Camera-Based readers or decoding software
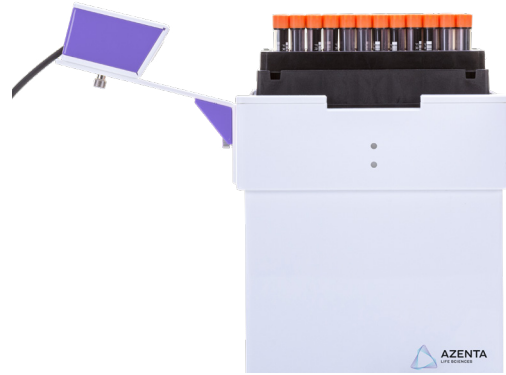
"No Tube" Feature Eliminates Errors

- Camera-Based Readers for SBS Racks are able to discriminate between a tube with a code that cannot be decoded, and an empty rack position

- The reader will not attempt to decode empty tube positions, so data files are kept clean

- Reading speed is optimized as wasted data entry is eliminated

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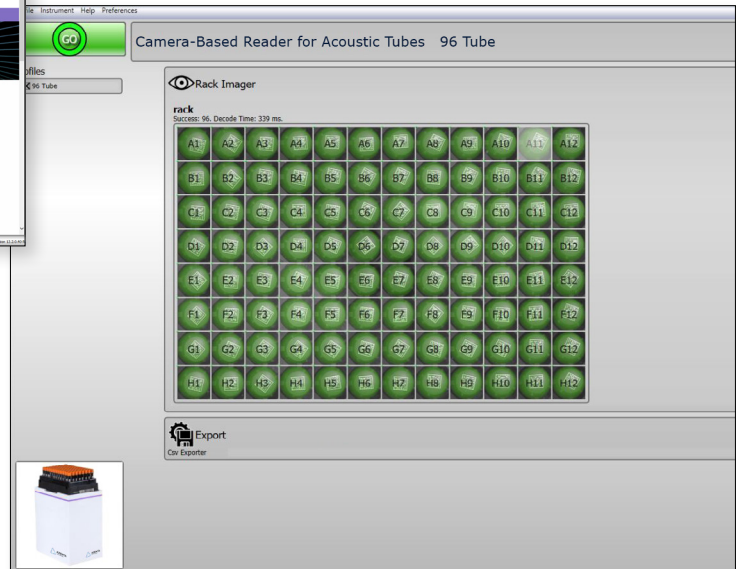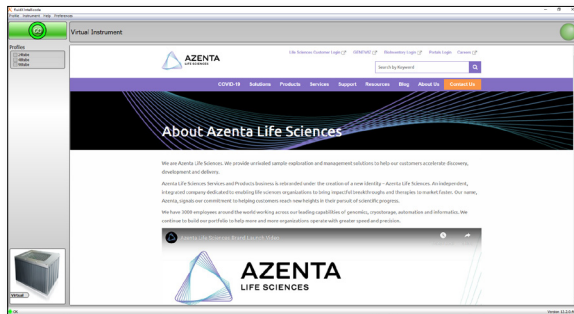
Camera-Based Reader for SBS Racks

Providing even greater clarity, the Camera-Based range of compact whole rack 2D & 1D barcode readers offers fast identification of racked, 2D-coded sample storage tubes, without the need to remove tubes from racks.

Using high definition, camera based imaging systems, Camera-Based whole rack readers are ideal for more challenging applications and environments, such as integrating into robotic systems, cold environments or when speed and size of reader are important.

Features & Benefits:

- Compatibility – Use with any 2D-coded tubes in SBS format rack

- Footprint – Small footprint for integration

- Speed – Decode a full rack of tubes in less than 1 second

- High Definition – Reliably decode a variety of tubes

- Avoid Waste – "No tube" feature ensures wasted data entries are avoided

- Integration – Automation friendly design

- Linear Barcode Reading – Available with integrated multi-position linear barcode reader

Available in 3 models:

- Camera-Based Reader for SBS Racks
- Camera Based Reader for Acoustic Tubes
- Camera-Based Reader for SBS Racks and Cryo Boxes

Integration Friendly   **Compatible with FreezerPro®**

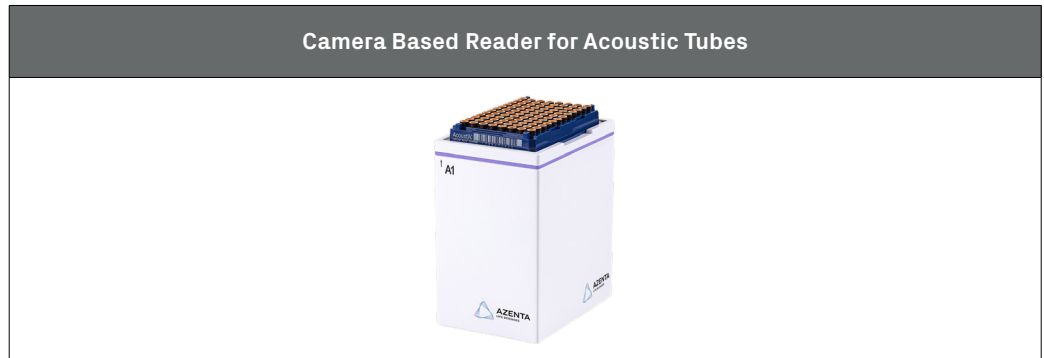| Camera-Based Reader for SBS Racks	
Part Number	20-4018
Dimension (W x L x H)	97mm x137mm x 160mm
Weight	1000g
Camera Resolution	18 MegaPixel
Power supply	Powered by USB
Communication	USB 3.1
Linear Barcode Reader	Optional (70-4012) – Plug directly into PC
Decodable Formats	2D Datamatrix, QR Codes, ISO 16022, Square and Rectangular Format, ECC 200, 0 - 20 grid sizes, White on Black and Black on White, Numeric and Alphanumeric
Tube Formats	Almost all tubes in SBS format rack. Either 24, 48, 96, 240 or 384-formats.
Total Read TIme	<1 second
Operating Systems	Windows 7, Windows 8, Windows 10

Ordering Information

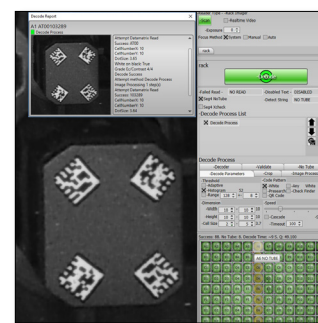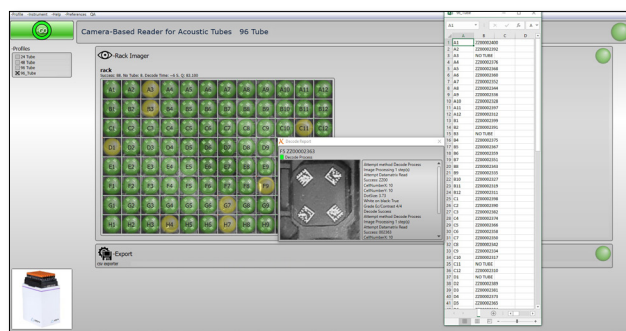| 20-4018	**Camera-Based Reader for SBS Racks,** Whole rack reader for racks of 2D labeled tubes; small-footprint single camera based solution for very rapid reading and ideal for integration, USB 3.1 cable
70-4012	**Multiple Position Linear Barcode Adaptor,** including USB Opticon Barcode Reader for Camera-Based Reader for SBS Racks (20-4018)

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Camera Based Reader for Acoustic Tubes

✓ **Integration Friendly**   ✓ **Compatible with FreezerPro®**

Camera Based Reader for Acoustic Tubes	
Part Number	20-4013
Dimension (W x L x H)	97mm x137mm x 160mm
Weight	1000g
Camera Resolution	18 MegaPixel
Power supply	Powered by USB
Communication	USB 3.1
Linear Barcode Reader	Optional (70-4012) – Plug directly into PC
Decodable Formats	2D Datamatrix, Camera Based Reader for Acoustic Tubes 2D4 Codes, QR Codes, ISO 16022, Square and Rectangular Format, ECC 200, 0 - 20 grid sizes, White on Black and Black on White, Numeric and Alphanumeric
Tube Formats	Almost all tubes in SBS format rack. Either 24, 48, 96, 240 or 384-formats.
Total Read Time	<1 second
Operating Systems	Windows 7, Windows 8, Windows 10

Ordering Information

20-4013	**Camera Based Reader for Acoustic Tubes, Whole rack reader for racks of 2D labeled tubes**, including Acoustic Sample Tube – Echo® Qualified Consumable; small-footprint single camera based solution for very rapid reading and ideal for integration, USB 3.1 cable
70-4012	**Multiple Position Linear Barcode Adaptor,** including USB Opticon Barcode Reader for Camera-Based Reader for SBS Racks (20-4018) and Camera Based Reader for Acoustic Tubes (20-4013)

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Camera-Based Reader for SBS Racks and Cryo Boxes

✅ **Integration Friendly**   ✅ **Compatible with FreezerPro®**

Camera-Based Reader for SBS Racks and Cryo Boxes	
Part Number	20-4016
Dimension (W x L x H)	147mm x147mm x 224mm
Weight	1350g
Camera Resolution	18 MegaPixel
Power supply	Powered by USB
Communication	USB 3.1
Linear Barcode Reader	Optional (70-4013) – Plug directly into PC
Decodable Formats	2D Datamatrix, QR Codes, ISO 16022, Square and Rectangular Format, ECC 200, 0 - 20 grid sizes, White on Black and Black on White, Numeric and Alphanumeric
Tube Formats	Almost all tubes in SBS format rack and Freeze Boxes. Either 9×9, 10×10, 13×13, 14×14, 24, 48, 96, 240 or 384-formats.
Total Read Time	<1 second
Operating Systems	Windows 7, Windows 8, Windows 10

Ordering Information

20-4016	**Camera-Based Reader for SBS Racks and Cryo Boxes,** Whole rack reader for 14×14, 10×10, 9×9, 7×7 5×5 Square Cryo Racks of 2D labeled tubes and 24, 48, 96, 240, 384 SBS-format racks; Single camera based solution for very rapid reading, with USB 3.1 cable
70-4013	**Multiple Position Linear Barcode Adaptor,** including USB Opticon Barcode Reader for Camera-Based Reader for SBS Racks and Cryo Boxes (20-4016)

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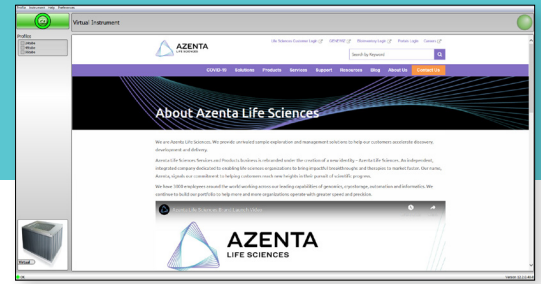
Decoding Software

Decoding Software is intuitive software, designed with the input of users, for decoding 1D and 2D-coded sample storage tubes and racks.

Rapidly and simultaneously decodes Azenta sample storage tubes as well as any 2D datamatrix coded tubes, including those supplied by Greiner, Matrix, Nunc and Micronic.

Decoding Software can automatically determine rack types with the Profile Auto Detection feature, and provides a secure audit trail of all decoding performed creating export files and customized reports in multiple formats including csv and pdf, as well as secure data export to an SQL database.

Key Features

Easy Set-up Saves Time

- Decoding Software is pre-configured for use with 24, 48, 96, 240 and 384-format SBS racks

- Simply place your rack on the sample storage tube reader and the Decoding Software will do the work

- Simple, automatic profile creation for any readable 2D-coded tubes at the push of a button

- Determines rack profile (24, 48, 96, 240 and 384), automatically decodes and saves your data

Ultra-Fast Decoding

- Decoding Software takes only 3.1 milliseconds to decode a sample storage tube, using the Camera-Based Reader for SBS Racks

- Dual Decoding Engine, so both Azenta proprietary decoding and industry-standard decoding engines work simultaneously for additional power and speed

- With true Multi-Core optimization, our Decoding Software is designed for use with modern PCs. This parallel processing enables a rack of 96 2D-coded tubes to be imaged and decoded in less than one second

Unique and Secure Audit Trail

- Decoding Software keeps a secure audit trail of all decoding performed

- To recreate any export files, change file format or make a backup copy, simply set the data range required and the Decoding Software will generate the export file as required

Simple File Export to LIMS or Database

- The built-in generator will customize the export file so that it is compatible with any LIMS or database system (txt or CSV files)

- Alternatively, use the auto-generate function to create a file in standard export format

- Use the built-in database connector for secure transfer of scanned tube data to your corporate SQL database

Creative Report Generation

- Design your own, customized MS Word template with images, logos and format

- Decoding Software can automatically use this template to create professional and elegant data reports for your internal and external customers

Remote Use

- Decoding Software can be remotely controlled using a console or TCIP.

Advanced Rack ID Functionality

- Decoding Software can perform both 2D and 1D rack decoding when used in conjunction with a Scanner-Based whole rack scanner with Linear Barcode Reader

- A manual input option is available if the rack scanner is unable to read a rack barcode, or if an independent linear barcode reader is to be used

"No Tube" Feature

- Our decoding software is able to discriminate between a tube with a code that cannot be decoded and a rack position containing no tube, and will not attempt to decode empty tube positions

- Data files are kept clean as wasted data entry is avoided, resulting in a faster rack reader and better data
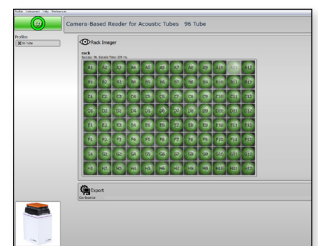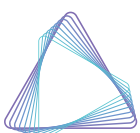

Share Profiles and Data Files

- User profiles and export files can be shared between users on a single PC, and across a network, reducing set-up time and facilitating work streams

✓ **Integration Friendly**   ✓ **Compatible with FreezerPro®**

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