FK00667919

SAMPLE TRACKING AND MANAGEMENT

Innovative solutions for Life Science

Ziath
From Azenta Life Sciences

azenta.com

Biozym
SCIENCE IS OUR BUSINESS

www.biozym.com

Introduction

Nearly 20 years ago, Ziath was the first company to develop a fast and easy to use rack reader that accurately read and decoded full 96-position racks of 2D tubes. Today Ziath is a global leader in the use of 2D bar-coded sample tubes in the management of large sample libraries. Our readers have an enviable reputation worldwide for working straight out of the box, giving years of uninterrupted service. We achieved this by designing and building all our own equipment and software in our UK factory. When you buy a Ziath reader, you are buying it from the scientists and engineers who originally developed it and are best positioned to help you get the most from your investment in our technology. Only Ziath can do this. We listen to our customers and develop new products to help solve their sample management problems.

Our continual investment in R&D has revolutionized the way 2D barcoded tubes can be used and integrated into your workflows. Ziath were first to produce a camera-based scanner, first to get the read time for 96 tubes down to under a second, first to offer nine data export formats, first to reliably read Acoustic tubes, first to use

Artificial Intelligence to discern empty wells and first to offer full network control of your scanners from any connected laptop, tablet or phone on the same network. And now, as part of Azenta Life Sciences, Ziath is the first to offer you a fully portable, network enabled whole-rack reader you can take to the freezer room or remote storage location.

Ziath instruments integrate into existing workflows. Ziath has direct experience at the lab bench, so we completely understand the applications and challenges faced by our users. With unparalleled technical support, we ensure our customers can spend more time on their research and less time worrying about the location of their samples.

With Ziath high-speed readers and automated tube selectors, sample tracking and inventory management has become easier and more secure. The efficiency, speed and accuracy of decoding these barcodes has become key to a successful workflow. With their ability to handle multiple formats, Ziath scanners are now the industry standard by which others are evaluated.

Camera-based scanners

Lux

The latest innovation from Ziath is the first truly portable camera-based rack reader that can be used in the lab as well as in front of your freezers or store. Lux boasts an average 8 hour battery life in everyday usage, will re-charge fully overnight and yet is small and light enough to carry comfortably. The latest DP5 software runs on a built-in computer and state of the art electronics with artificial intelligence are used to read your racks, process and store the data and find any unoccupied wells in the rack. It all folds away neatly for transport and will eliminate the tedious process of retrieving racks back to lab only to find that you need a different one! Once within range, Lux connects to your LAN and can send data directly or can store it on a plug-in USB storage device. An optional upgrade is available for Lux to read Azenta Acoustic tubes.

PORTABLE WHOLE RACK READER WITH NETWORK, USB OR INTERNAL DATA STORAGE

Cube

The Cube is a fast camera reader with a unique cuboid design that can read all rack types currently available on the market, including those which are larger than the SBS format, such as cryoboxes. The format is user-selectable through a quick and simple exchange of the screen bezel. This high-speed reader uses a dual camera system to decode 384-, 96-, 48- and 24-tube racks in 1-2 seconds on a normal computer. A robust build and minimal cabling make it great for both benchtop and integrated applications.

ALL SBS RACKS AND CRYOBOXES – 81, 100, 196

Express

The Express is a compact camera reader that decodes all SBS 2D barcoded racks, with a very fast image capture time. The Express is the smallest reader on the market and is only slightly larger than the SBS rack itself, it is ideal for on-deck robotic integration. The Express can decode even the smallest 2D barcodes found on 384-tube racks. It is recommended by many liquid-handling robot suppliers. An inverted version is available to read Bruker™ NMR tubes. Please ask us for a separate data sheet.

ALL SBS RACKS

Express NMR

Using the smallest footprint 2D barcode rack scanner on the market enabled the unique design of the Ziath Express NMR tube reader. The DataPaq™ Express 2D reader offers easy, out-of-the-box set up and is delivered pre-calibrated and ready to read. This instrument can scan all 2D-barcoded NMR tubes including Bruker and Norell™ and is supplied with a handy slide-out tray designed to hold Bruker tube racks in the correct orientation and in the correct position for successful barcode scanning.

ALL NMR TUBES

Ziath's DP5 control environment for our scanners uses fast and reliable cutting-edge communications protocols to simplify the operation of our camera-based scanners, while simultaneously offering an option for greater networking ability for more demanding applications. See page 4. All current Ziath models run our latest DP5 control software. For linear rack barcode readers to fit these units, please refer to page 9.

Camera-based scanners

Mirage

Ziath's most popular rack reader, the Mirage, was designed around low profile and low cost of ownership. With both achieved, the Mirage can be used for both desktop and automation applications and comes at an affordable price. It can read all commonly used SBS format racks. An optional upgrade is available for Mirage to read Azenta Acoustic tubes.

SBS RACKS 24/48/96 INCLUDING ACOUSTIC RACKS

RiTrack Mirage

A revolution in cryogenic sample management – locate tubes with RFID even if the rack is covered in ice

Ziath from Azenta Life Sciences is proud to present an era-defining change in the way that frozen samples stored in 2D-barcoded tubes can be managed. Overcoming the problems of ice on the base of tubes and racks using novel RiTrack radio-frequency tagging eliminates the frustration of racks and tubes that cannot be read due to excessive frosting.

FEATURES

- Stores individual tube IDs, up to 128 characters, for up to 96 tubes in a rack
- Works with racks covered in ice and with racks stored in vapour-phase LN2 – no warming or thawing necessary – protects thermally sensitive samples
- No need to buy special racks; Tags fit most commercially available SBS racks – lowers your cost of operation
- Tags last and function for the whole life of your racks – increase your RoI and lower your cost of ownership

- Quick and easy read out with any smartphone through a simple App – Improves productivity in the lab
- Write and re-write unlimited times to the same tag with a RiTrack Mirage – Quick & convenient whilst keeping costs under control
- Unique RFID technology exclusive to Ziath from Azenta Life Sciences – Take advantage of the smart route to cryogenic sample management

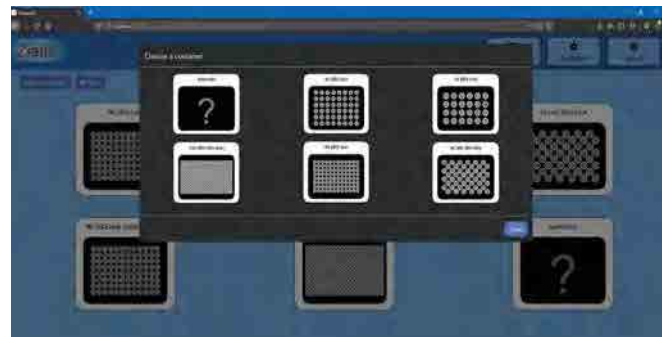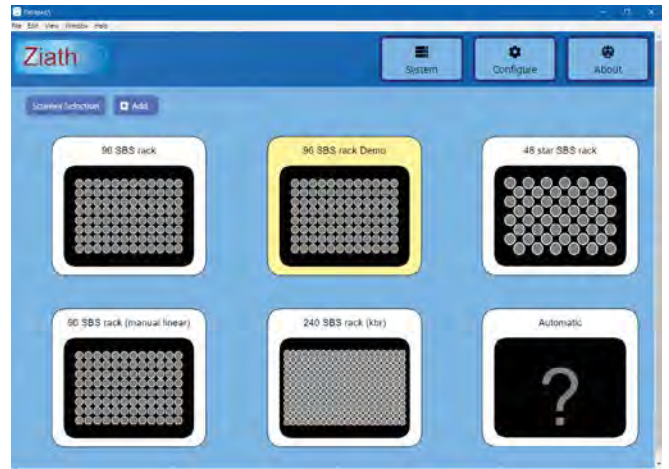# Camera-based readers running DP5

DP5 – the novel technology at the heart of Ziath readers

Using high-speed, web-based, communications protocols allows DP5 to run just one reader in your lab, or multiple readers connected over a local area network. In the advanced DP5 Network application, readers can be controlled directly from Wi-Fi connected smartphones, tablets or laptops. DP5 represents the very latest technology applied to laboratory sample tracking and identification in an easy to use and scalable format that can adjust to the needs of your laboratory. Combined with the unrivalled accuracy and speed of Ziath Datapaq camera-based readers, tube identification and sample tracking has never been easier or more convenient. DP5 Network unchains you from the bench, allowing a reader to operate anywhere on your LAN from your own tablet or phone. DP5 Standard simplifies day-to-day reader operation through an intuitive and uncluttered user interface that is ready to go in just minutes, straight out of the box.

Camera-based readers running DP5

DP5 comes in two versions:

DP5 Standard

- Runs like any other desktop application from a connected PC or laptop
- Autoscaling allows DP5 Standard to work with the latest 4K displays
- Runs all Ziath Datapaq camera based readers: Mirage, Cube and Express
- Export data directly to a database, text, PDF, XML, JSON, Excel® or e-mail
- Remote control function allows direct integration with popular liquid handling robots, compound stores and other external compatible devices

- Scanner and export settings can be assigned individually for each type of rack in use
- Automatic rack type detection and rack template creation as standard

DP5 Network

- Advanced operation via a LAN allows readers to be controlled directly from a Wi-Fi connected phone, tablet, desktop PC or laptop
- Control multiple readers on one server from one hand-held device, laptop, tablet or desktop computer
- Scripting feature allows a high level of post-run data processing automation – send data to LIMS, e-mail, Excel or any other compatible program
- Take a reader anywhere on site, run a scan on a hand-held device and send that file back to any computer in a variety of formats

Version	Code	Description
DP5 Standard with network storage only	DP5-LUX-80	Lux portable rack reader and DP5 Standard
DP5 Standard	DP5-M-STD 601023-DP5 DP5-C-STD 601063-DP5 DP5-E-STD 601043-DP5	Mirage Standalone and DP5 Standard Mirage Standalone with Cryoprotection and DP5 Standard Cube Standalone and DP5 Standard Cube Standalone with Cryoprotection and DP5 Standard Express Standalone and DP5 Standard Express Standalone with Cryoprotection and DP5 Standard
DP5 Network	DP5-M-NET DP5-M-NET-80 DP5-M-NET-CYS DP5-M-NET-80-CYS DP5-E-NET 601043-DP5-NET	Mirage LAN and DP5 Network Mirage LAN with Cryoprotection and DP5 Network Mirage LAN and DP5 Network with Cyclops linear scanner port Mirage LAN with Cryoprotection and DP5 Network with Cyclops linear scanner port Express LAN and DP5 Express Express LAN with Cryoprotection and DP5 Express (Please Note: DP5 Network is not available on Cube or required on Lux)
Upgrades	601088 DP5-UP-AT DP5-NET1	Upgrade from 3.18 to DP5 Standard (requires return to UK workshop) Upgrade to DP5 to reads Azenta Acoustic tubes (all models) Upgrade DP5 Standard to DP5 Network with up to 3 licences. Per licence
Express NMR	DP5-E-STD-NMR	Express NMR tube reader
RiTrack Mirage	DP5-M-STD-80-RT RT-TAG-SBS-50 RT-TAG-SBS-IT	DP5 Mirage camera-based rack reader with integral RiTrack module Pack of 50 RiTrack tags for standard SBS tube racks with interstitial spaces RiTrack Tag Insertion Tool for SBS racks

Some of your frequently asked questions answered by Ziath

1: I have FluidX and Matrix tubes – will they work with your scanner?

Ziath readers are designed to work with all currently available and most legacy types of tubes. If your tubes are not on the list on the Ziath website, a specific template can be made for your tubes.

2: My tubes are not in a 96-well SBS format, can I still read them on your readers?

Ziath readers from Azenta can be configured with different "templates" that tell the reader where to look for the barcodes in any given rack. So if you have 24, 48, 96, 138 or 240 tubes in the standard SBS/SLAS footprint, Ziath have already pre-loaded the operating software with templates for these racks. If you have the high-density 384-position racks, you will need either the DP5 Express or Cube readers to decode these smaller tubes, but again the DP5 software has the templates there already.

3: My tubes have a "97th barcode" underneath the rack, can you read that too?

The so-called "97th code" is properly called an orientation barcode. It prevents the racks from being read on the scanner glass the wrong way around. Only if the orientation barcode is detected in the correct position will the rack be decoded, it also contains the rack barcode information. This may also appear in a linear barcode along one or more edges of the rack. All Ziath rack readers can identify and decode orientation barcodes and store the position in the rack template.

4: My racks have a linear code printed on the side, but no orientation barcode underneath, can I still get the rack code in my results?

Yes you can, but you'll need to order the Cyclops Linear Barcode Scanner Accessory. This contains a laser scanner specially optimised for reading the linear barcode from the short end of your rack. If, for some reason, the code is only on the long side of the rack, Ziath can supply a special bracket to hold the Cyclops on the long side. Once selected as Active in DP5, the rack barcode will appear at the head of your tabulated data for each set of barcoded tubes that are read.

5: I'm working with tubes that come straight from a -80C freezer or from LN2, can I read these on a Ziath Mirage?

The DP5 Mirage, Express and Cube readers all work with cold racks straight from LN2 or the freezer. You will need the passive Cryoprotection™ option when ordering. Cryoprotection prevents water vapour condensing on the underside of the reader glass, inside the machine, when cold racks are placed on the unit. It does not heat up your samples, it merely provides an anti-condensation coating on the glass – so it is safe to use with your precious biological samples and will not damage them.

6: I need to integrate your reader with other equipment. Do you have API documentation?

For the latest DP5 software Ziath offer a RESTful interface plus sample code in Java, C++, Python and Go with a Swagger interface.

Further questions? Contact us at **info@zaith.com**

Single tube readers

Uno Single Tube Reader

Designed with ease-of-use in mind, this scanner rapidly reads single tubes in less than one second per tube. The single tube scanner is very easy to configure, and the 'keyboard wedge' functionality enables users to enter barcode data directly into their application software. This scanner is very robust, and the mineral glass scanning window is scratch-resistant.

Duo Single Tube reader with linear barcode scanner

By popular request, Ziath has added the convenience of linear barcode scanning to the single tube reader, so that you can now read the bottom of the tube using the 2D code or a linear code printed along the side of the rack. Either one will punch the appropriate barcode into any open programme on a connected device, using the 'keyboard wedge' function. All now in one neat compact unit.
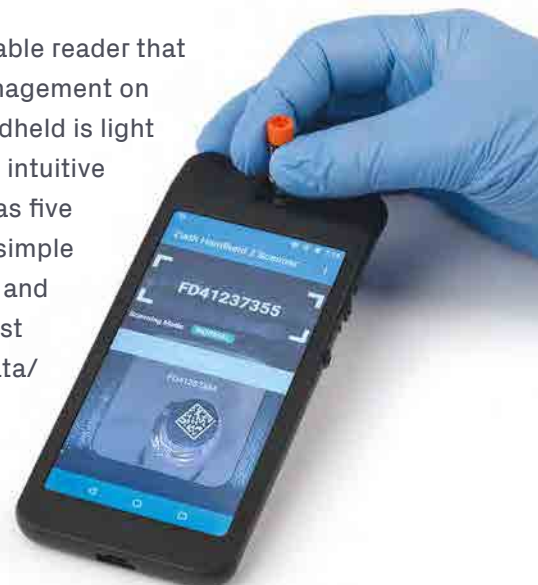
Azenta Acoustic tube reader option

A chargeable option is available to allow Uno and Duo to read the special barcodes found on the base of Azenta Acoustic tubes.

Handheld reader

The first truly portable reader that allows sample management on the move. The Handheld is light and robust with an intuitive user interface. It has five operating modes; simple tube reading, read and display data, picklist operations, edit data/ add new sample, and the optional 'Scripts', which enables wireless access to your database. Connection to a database, Excel, FreezerPro, LIMS or wireless keyboard wedge are all options – please discuss these with your Ziath representative. Users can also define unique applications for the Handheld and Ziath will implement them. Acoustic tube upgrade available.

Code	Description
ZTS-UNO	DataPaq™ Uno Single Tube Reader
601075	DataPaq™ Uno Single Tube Reader with Cryoprotection
601076	DataPaq™ Duo Single Tube Reader with Linear Scanner
601077	DataPaq™ Duo Single Tube Reader with Linear Scanner and Cryoprotection
ZTS-HND	DataPaq™ Handheld Tube Reader
ZTS-HND-80	DataPaq™ Handheld Tube Reader with Cryoprotection™
601096	Handheld Server Option
ZTS-UP-AT	Azenta Acoustic upgrade for Uno, Duo and Handheld

Reader options

Cryoprotection

When samples are removed from a minus 80 °C freezer, there is frequently a high level of ice build-up on the racks. This can often obstruct the 2D barcode and prevent it from reading properly. A simple solution is to blot the rack onto a sponge soaked in alcohol. The rack temperature can still cause problems with "fogging" of the scanner glass as condensation forms on the glass which has been cooled by the application of the cold racks straight from the freezer.

The best way to overcome this is to use glass with a proprietary coating that stops the fogging from occurring. Ziath offers such 'cryoprotection' on all its scanners as an option.
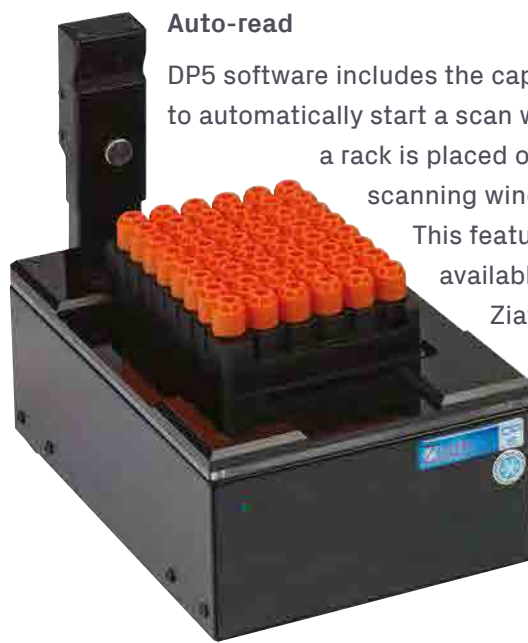

The advantage of a coating is that unlike physical methods, such as blowing air over the surface, it will not heat up and potentially damage delicate thermally-sensitive samples. In this image the reader on the left has cryoprotection, whereas that on the right uses standard glass. The cold rack has caused a layer of condensate to form across the surface of the untreated glass.

Cyclops 1D rack barcode scanner

All Ziath's rack readers can be fitted with a 1D scanner to scan the linear barcode on the side of the rack. This is usually recorded with the 2D codes from the tubes that it contains to ensure accurate sample tracking.

Auto-read

DP5 software includes the capability to automatically start a scan whenever a rack is placed onto the scanning window. This feature is available on all Ziath readers.

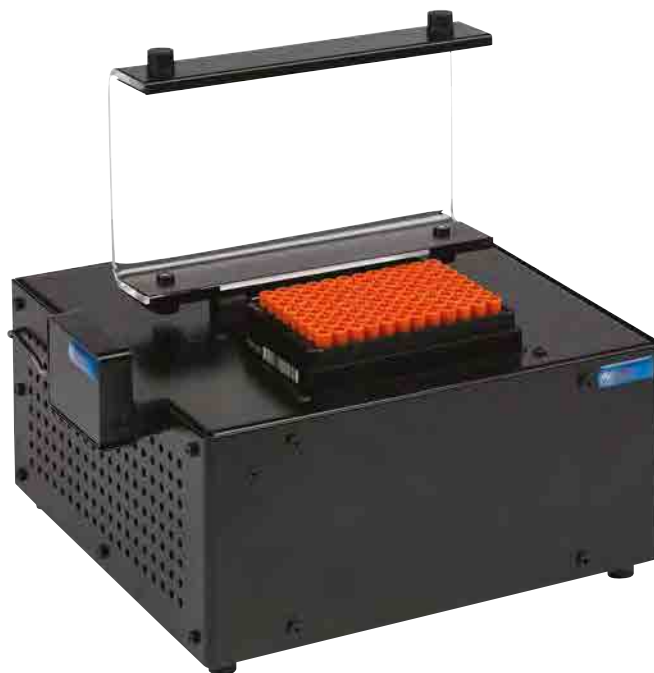| Code	Description
ZTS-CYS-E	Express Cyclops 1D rack scanner with bracket
ZTS-CYS-C	Cube Cyclops 1D rack scanner with bracket
ZTS-CYS-M	Mirage Cyclops 1D rack scanner with bracket

Tube devices

Mohawk

The Mohawk Semi-Automatic Tube Selector enables you to pick individual or groups of tubes directly from 48- or 96-well racks with ease. Trying to extract a single tube from a rack can be difficult and doing so manually can lead to positional errors. By using software to control up to 96 individual solenoids, the Mohawk can lift one, two or up to sixteen individual tubes at a time, making it easy to remove them from the rack and place in a subsidiary rack or other tube device.

The pins to be selected can be set in a "pick list" which can be generated manually from the on-screen graphical representation of the Mohawk deck or from an imported Excel spreadsheet. The Excel file can also be created manually or imported from Ziath's FreezerPro inventory management system or from your LIMS or another sample tracking programme that can export Excel® format files. The picklist can even include tubes that are contained in multiple racks.

The integrated 1D barcode scanner identifies individual racks and the system software then uses this ID to look up the pre-defined picklist. This reduces the risks of the wrong tubes being selected during picking.

48-well version

The Mohawk works out of the box and needs no set up or calibration. In Automatic mode, The Mohawk allows for operation with minimal interaction of the control PC, while in Worklist mode, a file that describes the tubes that are to be selected is used to control the pins. It can be in excel, csv, text, xml or json format. The Mohawk works with both frozen and thawed tubes. It can work in combination with a Ziath Mirage, Express or Cube scanner to automatically create pick lists and then verify the contents of the subsidiary (or Daughter) racks and re-upload their new positions to FreezerPro or to your LIMS via an Excel file.

Low profile lid adapter and a release block are available to enable the Mohawk to operate safely with Azenta Acoustic tubes.

Code	Description
ZTS-MHK	Semi-automatic 96 position tube selector
601521	Low Profile Tube Rack Adaptor for Mohawk
ZTS-ATRP	Azenta Acoustic Tube Release Plate
601522	Semi-automatic 48 position tube selector

FreezerPro Sample Management System

The FreezerPro system is a scalable web-based sample inventory management system ideal for users managing hundreds of collections in all types of organizations ranging from lower throughput labs to central biorepositories with millions of records; delivers secure management of samples and sample information.

- Complete sample management
- Track samples in and out of freezers
- Reporting and data export/import (multiple formats)
- Live and smart search
- Full audit trails

Using cross-region servers and industry-defining storage technologies, the system is designed to keep samples in the right conditions and make retrieving them for study easier. We manage security through sample data encryption, both during sample transit and while they are at rest. FreezerPro is designed and developed as a web-based sample management system that provides access to sample information from anywhere in the world.

- **No IT Requirements Whatsoever** - By not requiring installation, individual labs within larger organizations gain more autonomy. Start-ups and other small labs can completely avoid all IT staffing and investment
- **Regulatory Liability Protection** - Remove nearly all liability concerns related to data security. Using FreezePro Cloud negates expensive information security upgrades for individual labs
- **Lower Capital Expenditure** - With FreezerPro Cloud, the total cost of deployment is significantly lower, compared to other sample management software options. FreezerPro is a class-leading frozen sample management solution that is indispensable to any modern scientific or pharmaceutical laboratory
- **Deployed in Hours, Not Weeks** - FreezerPro systems automate more daily sample management operations than expensive software solutions
- **Makes Daily Lab Operations Easier** - FreezerPro Cloud records information for sample check in and out, aliquotting and inheritance, plus storage location data with only a few clicks or a drag of the mouse
- **Enhances Accuracy and Availability of Lab Information** - Advanced data mining, automatic data validity checks, hundreds of alert settings and embedded integration with Microsoft Excel are just a few of the tools users and admins have to ensure that data is input properly and is immediately accessible for analysis and reporting

For pricing and licensing options, please visit azenta.com

Take the stress out of managing your samples. Leave it to us

Ziath's robust and reliable products are designed to integrate into existing workflows and are primed for automation. We pride ourselves on providing high-level technical support to ensure that our customers' sample tracking processes run smoothly and efficiently. Our commitment to the development of innovative products allows us to provide a truly bespoke experience for each customer. We can provide scanners to read every available rack and box format on the market with speed and accuracy.

Detailed information and technical specifications on all of our products are contained within our product data sheets and our e-Books provide useful hints and tips relating to sample tracking and information management for life science. Please visit our website at **www.ziath.com** to download your copies.

DP5 CUBE
2D barcode reader
for all racks and boxes

DP5 EXPRESS
Small, automation-friendly 2D
barcode reader

**DATAPAQ™ EXPRESS
NMR RACK READER**
2D barcoded NMR reader

DP5 MIRAGE
Economical 2D barcode camera
rack reader

RiTrack MIRAGE
Locate tubes with RFID
even if covered in ice

UNO AND DUO
Single tube readers

ZIATH HANDHELD
Handheld 2D
barcode reader

ZIATH CYCLOPS
1D rack
barcode scanner

MOHAWK
Semi-automated
tube picker

FreezerPro®
Sample Management
System

e-book 1
Sample management
tips and tricks

e-book 3
Getting the most from
2D barcoded tubes

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