

## Thermo Scientific Matrix 2D Storage Tubes

### Superior Chain of Custody with 2D, 1D, and Human Readable Codes

Thermo Scientific™ Matrix™ 2D Storage Tubes with triple redundant identifiers are the choice for biobanks and biorepositories that must maintain chain of custody of patient samples. Directly printed on the side of each screwtop tube is a linear barcode and numeric, human readable code matching the permanently bonded and unique 2D code on each tube bottom. Triple means of unique identification accommodate sample tracking within complex biobanking operations and sample sharing across facilities with different workflows and equipment. Linear barcodes and human readable codes allow visual sample identification during manual handling of samples, or in the absence of a 2D barcode reader, while eliminating the need for secondary tube labeling. The robust 2D datamatrix code enables fast scanning in 96 format racks for operational efficiencies.

#### Cryostorage Applications

- Biobanking & Biorepositories
- Sample sharing
- Genomic Storage
- Cell Cultures
- Compound Storage



Designed with perfect geometry, each V-bottom tube with anti-rotation fins and internally threaded screwcap is made from virgin, medical-grade polypropylene and passes leak testing to ensure a reliable seal for all storage applications. Uncapped tubes with cap trays sold separately are available for varying workflow needs. Polycarbonate racks pass drop testing even after storage in vapor phase of liquid nitrogen and are engineered for manual and automated workflows. We provide plain racks for those applying custom labels and barcoded racks for next level, group tracking.

Features	Benefits
Direct printing of linear barcodes and human readable codes; thermally adhered 2D codes	<ul style="list-style-type: none"> <li>• All codes permanently attached under extreme conditions for the lifetime of the tube unlike sleeves, jackets, or labels that are mechanically fit and could potentially, after detach losing traceability</li> <li>• Excellent resistance in vapor phase liquid nitrogen, 95% ethanol, and 20% DMSO (2D codes up to 100% DMSO)</li> </ul>
Guaranteed unique codes from site of manufacture	<ul style="list-style-type: none"> <li>• Track millions of samples across multiple freezers, cold stores or facilities with no chance of duplicates</li> <li>• Peace of mind for tracking patient samples and maintaining chain of custody</li> </ul>
Robust barcoded rack design, ANSI certified	<ul style="list-style-type: none"> <li>• Polycarbonate rack material provides greater strength than polypropylene racks</li> <li>• Does not flex or warp with automated handling or long term cold storage</li> <li>• Compatible with decapping equipment, barcode readers and automated work cells</li> <li>• Secure tracking of groups of samples with pre-barcoded racks</li> </ul>
Geometric screwcap with molded in gasket	<ul style="list-style-type: none"> <li>• Exact tolerances provide consistent and repeatable capping, decapping, and handling</li> <li>• Preferential over o-ring due for enhanced sealability, prevention of overtightening, and reduction in evaporation and contamination</li> </ul>
Quality assurance and quality control in every tube	<ul style="list-style-type: none"> <li>• Manufactured in a clean environment and packaged under an ISO registered quality system; every rack of tubes is scanned to ensure readability, leak tested, and checked against our database of previously assigned codes to prevent duplicates</li> <li>• Certified to be DNase/RNase free, human DNA free and sterile for demanding applications</li> </ul>

## Specifications

Tube Material	Virgin Class VI Medical Grade Polypropylene
Rack Material	Polycarbonate with acetal latches
Cap Material	Virgin Class VI Medical Grade Polypropylene with Thermoplastic elastomer gasket
Contaminant-free	All tubes and tray are supplied free from human DNA, RNase, DNase and endotoxins
Sterility	SAL of $10^{-3}$
Tube/Cap Temp Range	Vapor phase liquid nitrogen storage to 60°C
2D Code	Non-proprietary, 12x12 Data-matrix with ECC200 Built-in Error Correction
1D Code	Linear EAN Code 128
Latch Rack Coding	2D Datamatrix; Linear EAN Code 128; alphanumeric 10 digit human readable
Side Print Chemical Compatibility	20% DMSO, 95% ethanol and vapor phase of liquid nitrogen
2D Code Chemical Compatibility	100% DMSO, 95% ethanol and vapor phase of liquid nitrogen
Torque Requirements*	Maximum 0.09 Nm, Minimum 0.05

\*Note this is "on" torque required for placing caps on tubes for optimal sealing and sample integrity protection. All Thermo Scientific decapping equipment suited for use with applicable tubes ensures the proper torque is applied when equipment is within the limits of the preventative maintenance schedules; consult applicable manuals for details on tube compatibility and preventative maintenance recommendations.

For Certificates of Analyses, please visit <https://www.thermofisher.com/search/supportSearch>

Description	500 µL ScrewTop Storage Tubes	1.0 mL ScrewTop Storage Tubes	
Item Number	3744-WP; 3744-WP1D; 3745-WP; 3745-WP1D; 3744-WP-BR; 3744-WP 1D-BR; 3745-WP-BR; 3745-WP 1D-BR	3741-WP; 3741-WP1D; 3742-WP; 3742-WP1D; 3741-WP-BR; 3741-WP 1D-BR; 3742-WP-BR 3742-WP 1D-BR	
Figure 1A: Tube Side View	Width (1A) Height (1A)	7.40±0.10 [0.290±0.002] 30.60±0.20 [1.204±0.007]	7.40±0.10 [0.290±0.002] 44.00±0.10 [1.732±0.003]
Figure 1B: Tube Side View w/ ScrewTop	Width (1B) Height (1B)	8.70±0.10 [0.344±0.003] 39.20 [1.543]	8.70±0.10 [0.344±0.003] 52.60 [2.071]
Figure 2: Rack Side View	Height (2A) Height (2B) Height (2C) Height (2D)	29.50±0.10 [1.160±0.005] 29.10±0.10 [1.145±0.005] 32.60±0.30 [1.282±0.012] 41.30±0.40 [1.626±0.017]	38.10±0.10 [1.500±0.005] 42.50±0.20 [1.673±0.008] 46.00±0.20 [1.809±0.008] 54.60±0.30 [2.149±0.110]
Figure 3: Rack Top View	Length Width	127.75±0.13 [5.029±0.005] 85.46±0.13 [3.364±0.005]	127.75±0.13 [5.029±0.005] 85.46±0.13 [3.364±0.005]
Figure 4: Stacked Rack View	Single Height (4A) Incremental Height (4B) Stacked Height (4C)	44.32±0.24 [1.745±0.010] 43.31±0.25 [1.705±0.010] 87.63±0.51 [3.450±0.020]	58.42±0.25 [2.300±0.010] 57.30±0.25 [2.220±0.010] 114.81±0.51 [4.520±0.020]
Description	ScrewTop Cap Tray		
Item Number	4906, 4477		
Figure 1: Tray Top View	Length Width	127.75±0.25 [5.03±0.010] 85.58±0.25 [3.37±0.010]	
Figure 2: Stacked Tray View	Single Height (2A) Incremental Height (2B) Stacked Height (2C)	19.81±0.13 [0.78±0.005] 18.29±0.25 [0.72±0.010] 38.10±0.25 [1.50±0.010]	



ANSI-format latch racks maximize storage space and its polycarbonate material provides greater strength than polypropylene racks.



All codes are permanently attached under extreme conditions for the lifetime of the tube.



ScrewTop caps feature a soft silicone gasket that conforms to mating surfaces, eliminating gaps when properly tightened and ensuring sample preservation.

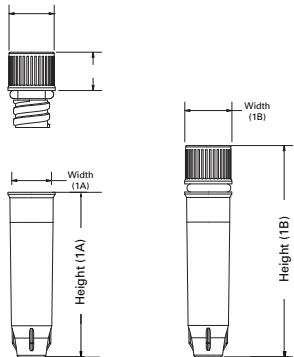


Figure 1: Tube Side View

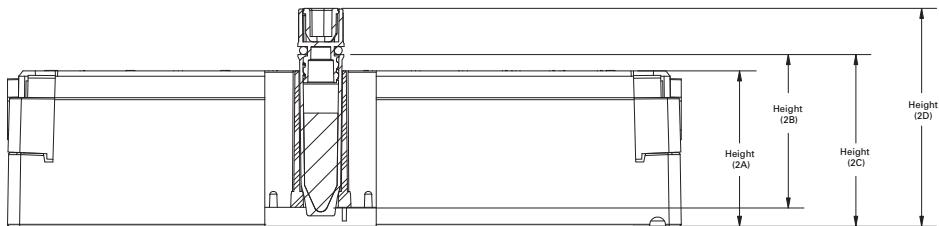


Figure 2: Rack Side View

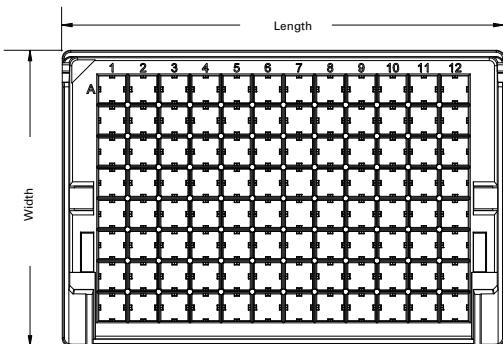


Figure 3: Rack Top View

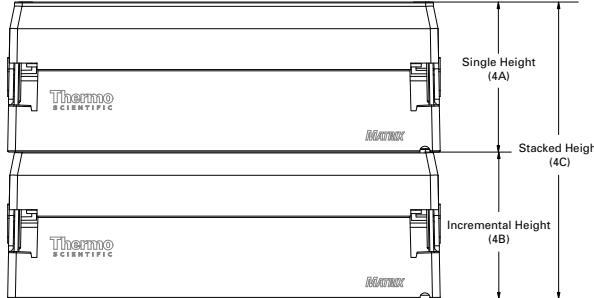


Figure 4: Stacked Rack View

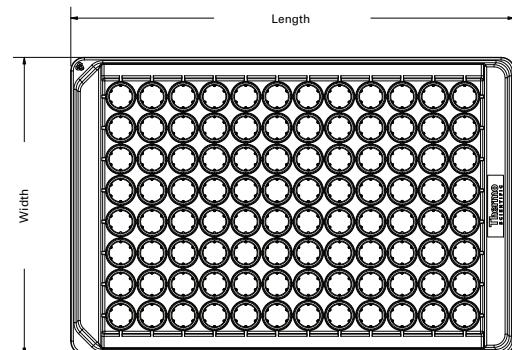


Figure 1: Tray Top View

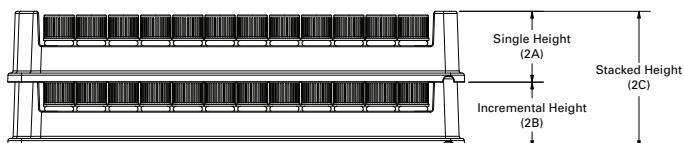


Figure 2: Stacked Tray View

## Ordering information

Cat. No.	Description	Color	Sterility	No./Per Case
3741-WP-BR, 3741-WP	Tube, ScrewTop, 1.0 mL 2D, WP, V-Bottom	Colorless Caps	Sterile	5 racks of 96/case
3741-WP1D-BR, 3741-WP1D	Tube, ScrewTop, 1.0 mL 2D, WP/1D, V-Bottom	Colorless Caps	Sterile	5 racks of 96/case
3742-WP-BR, 3742-WP	Tube, ScrewTop, 1.0 mL 2D, WP, V-Bottom, No caps		Sterile	5 racks of 96/case
3742-WP1D-BR, 3742-WP1D	Tube, ScrewTop, 1.0 mL 2D, WP/1D, V-Bottom, No Caps		Sterile	5 racks of 96/case
3744-WP-BR, 3744-WP	Tube, ScrewTop, 500 µL 2D, WP, V-bottom	Colorless Caps	Sterile	5 racks of 96/case
3744-WP1D-BR, 3744-WP1D	Tube, ScrewTop, 500 µL 2D, WP/1D, V-bottom	Colorless Caps	Sterile	5 racks of 96/case
3745-WP-BR, 3745-WP	Tube, ScrewTop, 500 µL 2D, WP, V-bottom, No Caps		Sterile	5 racks of 96/case
3745-WP1D-BR, 3745-WP1D	Tube, ScrewTop, 500 µL 2D, WP/1D, V-bottom, No Caps		Sterile	5 racks of 96/case
4470	Caps, ScrewTop Tube	Colorless Caps	Sterile	500/case
4470RED	Caps, ScrewTop Tube	Red	Sterile	500/case
4470YEL	Caps, ScrewTop Tube	Yellow	Sterile	500/case
4470BLUE	Caps, ScrewTop Tube	Blue	Sterile	500/case
4470GRE	Caps, ScrewTop Tube	Green	Sterile	500/case
4470WHI	Caps, ScrewTop Tube	White	Sterile	500/case
4470PUR	Caps, ScrewTop Tube	Purple	Sterile	500/case
4906	Tray, ScrewTop Cap Tray, Empty		Sterile	5 trays/case
4477	Tray, ScrewTop Cap Tray	Colorless Caps	Sterile	5 racks of 96 caps/case
4477RED	Tray, ScrewTop Cap Tray	Red Caps	Sterile	5 racks of 96 caps/case
4477YEL	Tray, ScrewTop Cap Tray	Yellow Caps	Sterile	5 racks of 96 caps/case
4477BLU	Tray, ScrewTop Cap Tray	Blue Caps	Sterile	5 racks of 96 caps/case
4477GRE	Tray, ScrewTop Cap Tray	Green Caps	Sterile	5 racks of 96 caps/case
4477WHI	Tray, ScrewTop Cap Tray	White Caps	Sterile	5 racks of 96 caps/case
4477PUR	Tray, ScrewTop Cap Tray	Purple	Sterile	5 racks of 96 caps/case



Available in seven colors (including colorless)  
so you can customize your experiments



Find out more at [thermofisher.com/samplestorage](http://thermofisher.com/samplestorage)

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