

Instrument Robustness, Maintenance and Performance

COMPARISON: PHOENIX vs. Others

PARAMETER	Best of Others	PHOENIX	COMMENTS
Gram Negative Card/Panel Taxonomy	147	168	Phoenix.
Gram Positive Card/Panel Taxonomy	<ul style="list-style-type: none"> 121 (GP Card) 42 (Bacillus Card) (2.0 McFarland) Corynebacterium/ Anaerobic Card 8 Corynebacterium species (4.0 McFarland) Total 171 GP 	177	<p>Including Strep species.</p> <p>Phoenix Gram Positive panel inclusive of Corynebacterium, Bacillus and Listeria species at 0.5 McFarland.</p> <p>Others separate cards for Bacillus (2.0 McFarland and Corynebacterium (4.0 McFarland)</p>
Streptococcus AST	Y	Y	
Yeast ID Taxonomy	54	64	Phoenix :8 hrs TTR, Vitek: 14-18 hrs TTR
Panels/Cards	ID card, AST cards	Combo (traceability)	Phoenix one combo panel (ID+AST) unified barcode, Others two cards (ID + AST), separate barcodes.
Off-Line Tests	Y	None	
Reagent Cooled Storage	Y	N	Phoenix only AST indicator (6ml dropper), Others refrigerated (2-5°C) storage of all reagents (excluding normal saline)
Prepare McFarland to 0.5	Y	Y	Phoenix option 0.5 or 0.25 McFarland.
Random Sample placement and Entry	N	Y	Phoenix random entry and placement of panels. Others cards must be placed in appropriate order (aligned ID and AST cards) on rack in batch (1-16 cards), must wait for rack (1-16 cards) to be loaded before introducing another rack (1-16 cards).
AST Testing determination methods	1	2	<p>Others turbidity (= growth), Phoenix indicator color change resazuring indicator (= metabolism) or turbidity (growth).</p> <p>Phoenix utilizes real MIC doubling dilution in AST testing. Others interpolates data and skips MIC doubling dilution for AST</p>
Serial Real doubling dilution MIC Ranges	N	Y	<p>Vitek 64 actual MIC wells, for each antibiotic 3-4 dilutions. (skipped dilutions, calculated results)</p> <p>Phoenix 85 MIC wells (33% more MIC wells) and upto 132 wells in AST only panel, for each antibiotic 3-5 dilutions (Real Serial doubling dilution CLSI reference) Phoenix report of Intermediate values (ex, Carbapenems) and CLSI breakpoints available on panel.</p>

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AST Delayed Result	N	Y	Phoenix: Real MIC AST testing continues until MIC accounting for delayed growth (resistance) at each MIC value.
ESBL Gram Negative	N	Y	Phoenix ESBL test (5 wells) on all Gram Negative panels and 20-21 antibiotics to cover fermentors/non-fermentors and Urinary specimens with Combo ID/AST panel Others ESBL AST card (5 wells), 16-17 antibiotics, non-ESBL AST Card 19-20 antibiotics. Additional off-line tests and separate cards needed. Phoenix AST only panel (132 wells) with 26 antibiotics.
CPO (Carbapenemase Confirmatory Test)	N	Y	Phoenix Combo ID/AST panel, CPO confirmatory test for fermentors (6 hrs) and non-fermentors (11 hrs). Phoenix AST only 132 wells includes CPO + Amber Class A, B and D detection.
CLSI Compliance	N	Y	Phoenix has breakpoints for CLSI and intermediate value reporting. Allows for accurate reporting of potential carbapenemase-producers (by detecting intermediate interpretation) Vitek no reporting of Intermediate MIC values (skipped and calculated MIC).
High capacity and minimal footprint	N	Y	Phoenix M50 (100 tests, ID + AST), Vitek 2 XL 120 tests (ID + AST). Phoenix capacity nearly twice Vitek 2 XL. Phoenix benchtop footprint width (112.5 cm), Vitek 2 XL footprint width (140 cm).
Moving Parts	+5 moving parts	One motor	Phoenix one moving part (axis), less mechanical failure.
Self-Calibration/Notification of Light Source	N	Y	Independent backup light sources built in the Phoenix Instrument and each of 2 rows (25 ID/AST tests) containing separate colorimetric light source (rows have independent light source for backup if 1 row is not operational) and self-calibration and notification of light source. No cleaning required for Phoenix optics. Others light source not working entire instrument not working, optical system must be cleaned monthly.
Maintenance (Manual end-user suggested and required)	Daily/Weekly	Daily/Weekly	Phoenix: Check Temp (electronic display and temp panel) and printer supply. Check station indicator lights weekly. Others: Check Carousel Temperature A and B Check Optics System A and B Check Saline liquid level and Pipette tips, change as needed.
Maintenance (Manual end-user suggested and required)	Monthly	Monthly	Phoenix: None, check filters periodically 3-4 times a year for replacement. Others: Turn power off, empty Vitek instrument of any Clean the following with 10% bleach 1) Boats 2) Carousel A and B 3) Cassettes

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			<ul style="list-style-type: none"> 4) Optics A and B 5) Waste tray A and B 6) Base pan 7) Vacuum seal 8) Vacuum chamber 9) Drip pan 10) Smart Carrier
Optical System	Colorimetric Determination.	Colorimetric and Fluorogenic Light Sources	Other consists of one light source (Colorimetric) for determination of Identification and Susceptibility. Phoenix utilizes both colorimetric light sources and Fluorogenic (UV light Sources).
Recalls	Current MRSA Recal FDA https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfRes/res.cfm?id=1658991	No	

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