

Technology Guide Spirometry / PFT

COSMED LTD		COSMED LTD	COSMED LTD
Website		www.cosmed.com	www.cosmed.com
Product name		microQuark	Spiropalm
			
Handheld, desktop, or laptop		PC-based (laptop, desktop, or tablet)	Handheld with PC capability
Warranty/cost		(\$1,600-\$2,000) 1 year parts and labor	(\$1,300-\$3,800) 1 year parts and labor
Dimensions (HxWxD in inches)		5.9 x 2.1 x 1.6	7.25 x 3.25 x 1.75
Weight (computer excluded)		2.8 oz	13.5 oz
Display		Real-time flow/volume and time/volume display on PC	Monochrome graphic LCD display, 320 x 240 pixels, 4.75 x 3.75 in.
Power source(s)		Through PC	AC/DC
Measurement method		Flow	Flow
Calibration syringe		Available as an option	Available as an option
Incentive monitor		"Bubbles" pediatric incentive display	"Bubbles" pediatric incentive display
Flow Sensors	Permanent	Yes	Yes
	Disposable/cost per box		
Reference Values	Predicted normals	13 sets, including NHANES III and Knudson 83	13 sets, including NHANES III and Knudson 83
	Default values/adult	NHANES III	NHANES III
	Default values/pediatric	NHANES III	NHANES III
Parameters Measured	FVC	Yes	Yes
	FEV ₁ /FEV ₆ with NHANES III	Yes	Yes
	FIVC		
	Can FIVC be performed separately from FVC?	Yes	Yes
	Slow VC	Yes	Yes
	MCT inhalation challenges	Yes	Yes
	MVV (15 seconds)	Yes	Yes
	Post-BD comparison	Yes	Yes
FVC Quality Checks		BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF	BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF
Features	Graphs	Real-time F/V and t/v graphs	Real-time F/V and t/v graphs
	Storage capacity	Unlimited storage on PC and external media	400-600 internal, software for external storage
	Database format	COSMED XPO, Lotus, Excel, TXT, ASCII	COSMED XPO, Lotus, Excel, TXT, ASCII
	Interface/output	USB	USB (printer and PC), Serial
	Printer type/printout	External (8.5 x 11), PDF	External (8.5 x 11), PDF
	Other		Optional Spo ₂ measurement

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FUTUREMED		FUTUREMED		FUTUREMED	
Website		www.futuremed.com		www.futuremed.com	
Product name		Discovery-2		Spiropalm	
					
Handheld, desktop, or laptop		Desktop and PC-based		Handheld with PC capability	
Warranty/cost		(\$2,000-\$2,500) 1 year parts and labor		(\$1,300-\$3,800) 1 year parts and labor	
Dimensions (HxWxD in inches)		7.8 x 9.4 x 3 (19.8 x 23.8 x 7.6 cm)		7.25 x 3.25 x 1.75	
Weight (computer excluded)		2.6 lbs		13.5 oz	
Display		Color graphic LCD display, 320 x 240 pixels, 4.75 x 3.75 in.		Monochrome graphic LCD display, 320 x 240 pixels, 2 x 1.5 in.	
Power source(s)		AC/DC		AC/DC	
Measurement method		Flow		Flow	
Calibration syringe		Available as an option		Available as an option	
Incentive monitor		"Bubbles" pediatric incentive display		"Bubbles" pediatric incentive display	
Flow Sensors	Permanent	Yes		Yes	
	Disposable/cost per box				
Reference Values	Predicted normals	13 sets, including NHANES III and Knudson 83		13 sets, including NHANES III and Knudson 83	
	Default values/adult	NHANES III		NHANES III	
	Default values/pediatric	NHANES III		NHANES III	
Parameters Measured	FVC	Yes		Yes	
	FEV ₁ /FEV ₆ with NHANES III	Yes		Yes	
	FIVC				
	Can FIVC be performed separately from FVC?	Yes		Yes	
	Slow VC	Yes		Yes	
	MCT inhalation challenges	Yes		Yes	
	MWV (15 seconds)	Yes		Yes	
	Post-BD comparison	Yes		Yes	
FVC Quality Checks		BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF		BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF	
Features	Graphs	Real-time F/V and t/v graphs		Real-time F/V and t/v graphs	
	Storage capacity	400-600 internal, software for external storage		400-600 internal, software for external storage	
	Database format				
	Interface/output	USB (printer and PC), Serial		USB (printer and PC), Serial	
	Printer type/printout	High speed thermal/4.5 in. wide		External (8.5 x 11), PDF	
		External (8.5 x 11), PDF		External (8.5 x 11), PDF	

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MEDICAL GRAPHICS CORPORATION		MICRO DIRECT INC	MIR MEDICAL INTERNATIONAL RESEARCH
Website		www.medgraphics.com	www.spirometry.com
Product name		CPFS/DUSB	Minispir (spirometry & oximetry)
			
Handheld, desktop, or laptop		Computer-based (desktop or laptop)	Laptop
Warranty/cost		1 year/\$1,750	2 year/\$0
Dimensions (HxWxD in inches)		3 x 3 x 6	2.1 x 5 x 1
Weight (computer excluded)		1.25 lbs	2.5 oz
Display		Computer monitor	Full color – all CPU resolutions
Power source(s)		USB	USB cable
Measurement method		Pitot tube flow sensor	Digital turbine (disposable or reusable)
Calibration syringe		3.0 L/\$502	Optional/\$340
Incentive monitor		4 selectable graphs	Assorted incentive graphics included
Flow Sensors	Permanent	Yes	Reusable turbine
	Disposable/cost per box		\$75
Reference Values	Predicted normals	User selectable, 28 spirometry authors	Selectable published authors
	Default values/adult	NHANES III	NHANES III/Knudson
	Default values/pediatric	Knudson/Zapletal	NHANES III/Knudson
Parameters Measured	FVC	Yes	Yes
	FEV ₁ /FEV ₆ with NHANES III	Yes	Yes
	FIVC	Yes	
	Can FIVC be performed separately from FVC?	Yes	Yes
	Slow VC	Yes	Yes
	MCT inhalation challenges	Yes	Yes
	MVV (15 seconds)	Yes	Yes
	Post-BD comparison	Yes	Yes
FVC Quality Checks		BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF	BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF
Features	Graphs	Flow/volume and volume/time	Flow/volume and volume/time
	Storage capacity	Hard drive disk space	10,000 FVC test and 1,000 oximetry hours
	Database format	Microsoft SQL	Microsoft SQL
	Interface/output	USB	USB and Bluetooth
	Printer type/printout	Windows compatible, 8.5 x 11	Any Windows compatible printer

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		MIR MEDICAL INTERNATIONAL RESEARCH	MIR MEDICAL INTERNATIONAL RESEARCH	NDD MEDICAL TECHNOLOGIES INC
Website		www.spirometry.com	www.spirometry.com	www.nddmed.com
Product name		SpiroDoc (spirometry & oximetry)	Spirolab III (spirometry & oximetry)	EasyOne Plus
				
Handheld, desktop, or laptop		Handheld or laptop	Desktop	Handheld
Warranty/cost		2 year/\$0	2 year/\$0	3 year/\$0
Dimensions (HxWxD in inches)		2.4 x 4.2 x 1.0	12.2 x 8.1 x 2.6	3.3 x 6.2 x 1.7
Weight (computer excluded)		5.6 oz	4.2 lbs	9 oz
Display		Handheld graphic LCD (128 x 64 pixels)	FSTN graphic (320 x 240 pixels)	64 x 160 pixel graphic display
Power source(s)		3.7V, lithium	Internal rechargeable battery or AC	2 AA batteries
Measurement method		Digital turbine (disposable and reusable)	Digital turbine (disposable and reusable)	Ultrasound
Calibration syringe		Optional/\$340	Optional/\$340	3.0 L/\$340
Incentive monitor		Assorted incentive graphics included	Assorted incentive graphics included	With screen connection to PC
Flow Sensors	Permanent	Reusable turbine	Reusable turbine	
	Disposable cost/box	\$75	\$75	Disposable/\$95 for box of 50
Reference Values	Predicted normals	Selectable published authors	Selectable published authors	15 authors
	Default values/adult	NHANES III/Knudson	NHANES III/Knudson	NHANES III
	Default values/pediatric	NHANES III/Knudson	NHANES III/Knudson	NHANES III
Parameters Measured	FVC	Yes	Yes	Yes
	FEV ₁ /FEV ₆ with NHANES III	Yes	Yes	Yes
	FIVC			Yes
	Can FIVC be performed separately from FVC?	Yes	Yes	Yes
	Slow VC	Yes	Yes	Yes
	MCT inhalation challenges	Yes	Yes	
	MVV (15 seconds)	Yes	Yes	Yes
	Post-BD comparison	Yes	Yes	Yes
FVC Quality Checks		BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF	BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF	BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF
Features	Graphs	Flow/volume and volume/time	Flow/volume and volume/time	FV and VT
	Storage capacity	10,000 FVC test and 1,000 oximetry hours	10,000 FVC test and 1,000 oximetry hours	Approx 700 tests
	Database format	Microsoft SQL	Microsoft SQL	Microsoft access
	Interface/output	USB and Bluetooth	USB and Bluetooth	Range of export options
	Printer type/printout	Any Windows compatible printer	Any Windows compatible printer	Direct to inkjet printer or through PC

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NDD MEDICAL TECHNOLOGIES INC		NDD MEDICAL TECHNOLOGIES INC	NSPIRE HEALTH INC
Website		www.nddmed.com	www.nddmed.com
Product name		EasyOne Pro	HDpft 1000 Spirometer
			
Handheld, desktop, or laptop		Desktop – single breath DLCO	PC- laptop
Warranty/cost		2 year/\$0	3 year/\$0
Dimensions (HxWxD in inches)		10 x 13 x 11	6 x 1 x 3
Weight (computer excluded)		18 lbs	6 oz
Display		12.1 in.	PC
Power source(s)		Outlet – 100-240v (ac)	n/a
Measurement method		Ultrasound	Flow-based
Calibration syringe		3.0 L/\$340	3.0 L/\$340
Incentive monitor		Graphs and pediatric incentive on screen	Color candles incentive graphic
Flow Sensors	Permanent		Digital brass-core Fleisch-type pneumotachometer
	Disposable cost/box	Disposable/\$95 for box of 50	Disposable/\$95 for box of 50
Reference Values	Predicted normals	19 authors	15 authors
	Default values/adult	NHANES III	NHANES III (Hankinson)
	Default values/pediatric	NHANES III	NHANES III
Parameters Measured	FVC	Yes	Yes
	FEV ₁ /FEV ₆ with NHANES III	Yes	Yes
	FIVC	Yes	Yes
	Can FIVC be performed separately from FVC?	Yes	Yes
	Slow VC	Yes	Yes
	MCT inhalation challenges		Yes
	MVV (15 seconds)	Yes	Yes
	Post-BD comparison	Yes	Yes
FVC Quality Checks		BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF	BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF
Features	Graphs	FV and VT	Timed spirogram, volume/time curve, flow/volume loops
	Storage capacity	Not limited	Not limited
	Database format	Microsoft access	Microsoft access
	Interface/output	Range of export options	Range of export options
	Printer type/printout	Standard inkjet	Any Windows-compatible printer

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		NSPIRE HEALTH INC	NSPIRE HEALTH INC	NSPIRE HEALTH INC
Website		www.nspirehealth.com	www.nspirehealth.com	www.nspirehealth.com
Product name		KoKo Legend Spirometer	KoKo PFT Spirometer	KoKo Trek Spirometer
				
Handheld, desktop, or laptop		Desktop-portable	Laptop	Laptop
Warranty/cost		1 year/\$2,295	1 year/\$2,395	1 year/\$1,895
Dimensions (HxWxD in inches)		9.3 x 10 x 2.8	7.1 x 3.9 x 2	7.1 x 3.9 x 2
Weight (computer excluded)		3.6 lbs	0.7 lbs	0.7 lbs
Display		LCD color touch screen	Full-color, all standard computer resolutions	Full-color, all standard computer resolutions
Power source(s)		Ni-MH rechargeable battery and power cable	USB cable	USB cable
Measurement method		Flow-based; Interpretation Algorithm: McKay (ATS/ARRD 1991)	Flow-based; Interpretation Algorithm	Flow-based; Interpretation Algorithm: standard Modified Ellis
Calibration syringe		3.0 L/\$365 or 1.0 L/\$250	3.0 L/\$365 or 1.0 L/\$250	3.0 L/\$365 or 1.0 L/\$250
Incentive monitor		Color candles and sailboat incentive graphics	Assorted incentive graphics	Color candles, 3 pigs, flying kite, and brick wall incentive graphics
Flow Sensors	Permanent	Flexible variable orifice pneumotachometer	Digital brass-core Fleisch-type pneumotachometer	Digital brass-core Fleisch-type pneumotachometer
	Disposable/cost per box			
Reference Values	Predicted normals	14 sets, including Hankinson (NHANES III), Knudson 1976	28 sets, including NHANES III, Wang	23 sets, including NHANES and Wang
	Default values/adult	NHANES III (Hankinson)	NHANES III (Hankinson)	NHANES III (Hankinson)
	Default values/pediatric	Eigen/Wang	Eigen/Wang	Eigen/Wang
Parameters Measured	FVC	Yes	Yes	Yes
	FEV ₁ /FEV ₆ with NHANES III	Yes	Yes	Yes
	FIVC	Yes	Yes	Yes
	Can FIVC be performed separately from FVC?	No	No	No
	Slow VC	Yes	Yes	No
	MCT inhalation challenges	No, can be done manually	Yes	No, can be performed manually
	MVV (15 seconds)	No, estimated MVV	Yes	No
	Post-BD comparison	Yes	Yes	Yes
FVC Quality Checks		BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC	BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF	BEV, PEFT, Cough, FET, EOTV, dFEV ₁ , dFVC, dPEF
Features	Graphs	Timed spirogram, volume/time curve, flow/volume loops	Timed spirogram, volume/time curve, flow/volume loops	Timed spirogram, volume/time curve, flow/volume loops
	Storage capacity	Approx 750 patients (6000 test series) per compact flash memory card	Depends on computer hard drive space	Depends on computer hard drive space
	Database format	Proprietary	Proprietary; MS-SQL if transmitted to centralized HDpft database	Proprietary
	Interface/output	Manual or automatic Comma delimited ASCII data export via optional accessory software (KoKo PFT software)	Manual or automatic data export	Not specified
	Printer type/printout	Internal thermal printer (width = 4 3/8 in) or external HP PCL3 format printer supported via USB for 8.5 x 11 printouts	Any Windows-compatible printer	Any Windows-compatible printer/8.5 x 11 printouts