

EasyOne Pro

Advanced lung function testing with
DLCO in a portable solution



Spirometry (FVC, FVL, SVC & MVV) Single Breath CO Diffusion (DLCO)

The proven ultrasound technology
NDD TrueFlow™
NDD TrueCheck™

**no calibration, no warm-up
time, no moving parts**

Automated user guidance throughout maneuvers based on
ATS/ERS standards 2019 and 2005

Z-score, LLN and %predicted for fast interpretation of results

Reproducible results ensure comparability in multicenter studies

Real-time curves and pediatric incentives

Immediate test quality feedback in accordance with
ATS/ERS criteria

Export of pdf files and raw data

Flexible HL7 and XML interface for easy EMR integration

Only 1 gas for DLCO, no calibration gas required

Absolute hygienic solution with Spirette and Barriette
consumables eliminates the risk of cross-contamination

Compact device with smooth surfaces for easy and thorough
cleaning

TrueFlow
makes the difference

The original ultrasonic flow measurement is highly accurate in all flow ranges, independent of gas composition, pressure, temperature and humidity and does not require calibration during its life-time. The sensor is never in direct contact of the patient's flow. NDD TrueFlow™ is a hygienic and resistance-free solution.

TrueCheck
automated precision

TrueCheck™ – Always Safe & Ready to Test

TrueCheck™ takes care of the essential quality control for gas analysis testing. EasyOne Pro® is the only device proven to be accurate for a lifetime for DLCO measurements.

Standards & Recommendations

Quality, Medical Devices & Electrical	ISO 13485, ISO 14971, IEC 62366, IEC 62304, ISO 26782, ISO 23747, IEC 60601-1, IEC 60601-2, ISO 10993-1
FDA	510(k) market clearance
MDD 93/42/EEC	CE marked
Associations & Institutes	ATS/ERS 2019 and 2005, NIOSH/OSHA, SSA Disability

Languages

Brazilian Portuguese, Chinese, Croatian, Danish, Dutch, English, Finnish, French, German, Italian, Japanese, Norwegian, Portuguese, Russian, Spanish, Swedish, Turkish, Vietnamese

Gas specification

DLCO	<ul style="list-style-type: none">• 9% to 11% medical grade helium• 0.27% to 0.33% medical grade carbon monoxide• 18% to 25% medical grade oxygen balance nitrogen• The DLCO test requires a gas mixture within an accuracy range of <2%
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Technical

Printing options	PCL standard, direct to printer or over network
Data management	EasyOne Connect (SQLite, MS SQL Server)
Export	HL7, XML, GDT, via USB, LAN Network
Data links	Ethernet port, USB, possibility to upgrade to WLAN
No. of tests	> 10'000 tests
Age range	Spirometry > 4 years, DLCO > 6 years
Dimensions	27 x 33.5 x 27 cm ³ (H x W x D), 8 kg
Device classification	Protection class I Type BF applied part
Operating conditions	Temp 5 - 40 °C/41 - 104 °F Rel. Humidity 15 - 95 %, no condensation Atmosph. Pressure 700 - 1060 hPa
Power Consumption	Up to 80 VA

Parameters

FVC	ATI, BEV, EOTV, FEF10, FEF25, FEF 2575, FEF2575_6, FEF40, FEF50, FEF50/FVC, FEF50/VCmax, FEF60, FEF75, FEF75-85, FEF80, FET, FET25-75, FEV.25, FEV.5, FEV.5/FVC, FEV.75, FEV.75/FEV6, FEV.75/FVC, FEV.75/VCmax, FEV1, FEV1/FEV6, FEV1/FVC, FEV1/FVC6, FEV1/VC, FEV1/VCmax, FEV3/FVC, FEV3/VCmax, FEV3, FEV6, FVC, MEF20, MEF25, MEF40, MEF50, MEF60, MEF75, MEF90, MMEF, MTC1, MTC2, MTC3, MTCR, PEF, PEFT, t0, VCmax
FVL	ATI, BEV, CVI, E50/150, EOTV, FEF10, FEF25, FEF2575, FEF2575_6, FEF40, FEF50, FEF50/FVC, FEF50/VCmax, FEF60, FEF75, FEF75-85, FEF80, FET, FET25-75, FEV.25, FEV.5, FEV.5/FVC, FEV.75, FEV.75/FEV6, FEV.75/FVC, FEV.75/VCmax, FEV1, FEV1/FEV6, FEV1/FIV1, FEV1/FIVC, FEV1/FVC, FEV1/VC, FEV1/VCmax, FEV3/FVC, FEV3/VCmax, FEV3, FEV6, FIF25, FIF2575, FIF50, FIF50/FEF50, FIF75, FIV.25, FIV.5, FIV1, FIVC, FVC, MEF20, MEF25, MEF40, MEF50, MEF60, MEF75, MEF90, MIF25, MIF50, MIF75, MMEF, MMIF, MTC1, MTC2, MTC3, MTCR, PEF, PEFT, PIF, t0, VCmax
SVC	ERV, IC, IRV, Rf, VC, VCex, VCin, VCmax, VT
MVV	MVV, MVV6, MVVtime, Rf, VCext, VT
DLCO	BHT, COHb, ColBarVol, CO Conc, HE Conc, O2 Conc, Anatomic Dead Space, System Dead Space, Discard Volume, DLadj, DLadj/VA, DLCO, DLCO/VA (KCO), ERV, FA CO, FA HE, FE CO, FEV1/FVC, FI CO, FI HE, FRC sb, FRC Cor, Hb, tl, Kroghs K, PaO2, RV sb, RV Cor, RV/TLC sb, RV/TLC Cor, TLC sb, TLC Cor, TLCO, VA sb, VA Cor, VCext, VCmax, Vd, VI, VT

Predicted normal values Spirometry

GLI	Quanjer 2012, Stanojevic 2009
North America	Crapo 1981, Dockery (Harvard) 1993, Eigen 2001, Gutierrez (Canada) 2004, Hsu 1979, Knudson 1983, Knudson 1976, Morris 1971 & 1976, NHANES III (Hankinson) 1999, Polgar 1971
Latin America	Chile 2010, Chile (Pediatrics) 1997, Pereira 1992, Pereira 2006/2008, Pérez-Padilla (PLATINO) 2006, Pérez-Padilla (Mexico) 2001, Pérez-Padilla (Mexico, Pediatrics) 2003
Europe	ERS (ECCS, EGKS, Quanjer) 1993, Garcia-Rio (SEPAR) 2013, Falaschetti 2004, Forche (Austria) 1988 & 1994, Klement (Russia) 1986, Roca (Spain, SEPAR) 1982, Rosenthal 1993, Sapaldia (Switzerland) 1996, Vilozni 2005, Zapletal 1977, Zapletal 2003
Europe Scandinavia	Berglund Birath (Sweden) 1963, Finnish 1982 (1998), Gulsvik (Norway) 1985, Hedenström 1985 & 1986, Langhammer (Norway) 2001, Kainu (Finland), 2016, Nystad 2002
Australia	Gore Crockett 1995, Hibbert 1989
Asia	Chhabra (India) 2014, Dejsomritrutai (Thailand) 2000, Indonesia 1992, IP (China, HongKong) 2000 & 2006, JRS 2001 & 2014
Africa	Mengesha (Ethiopia), 1985

Predicted normal values DLCO

North America	Ayers 1975, Burrows 1961, Crapo 1981 & 1982, Knudson 1987, McGrath & Thompson 1959, Miller 1980, Gutierrez (Canada) 2004, NHANES (Neas) 1996, Polgar 1971
Latin America	Vazquez Garcia (ALAT) 2016, Gochicoa 2019
Europe	Stanojevic (GLI) 2017, ERS ECCS/EGKS 1993, Zapletal 1977, Roca 1990 & 1998, Hedenström 1985 & 1986, Gulsvik 1992, Klement (Russia) 1986
Other	Pereira 2008, Thompson 2008, Kim 2012, Chhabra (India) 2015), Ip (China, HongKong) 2007, JRS (Japan) 2001

Flow/Volume Sensor

Type	Ultrasonic transit time
Flow Range	± 16 l/s
Flow Resolution	4 ml/s
Flow Accuracy (except PEF)	± 2% or 0.02 l/s
Volume Resolution	1 ml
Volume Accuracy	± 2% or 0.050 l
PEF Accuracy	± 5% or 0.200 l/s
MVV Accuracy	± 5% or 5 l/min
Resistance	~ 0.3 cm H ₂ O/l/s at 16 l/s
Sample Rate	400 Hz (converted and stored with 200 Hz)

Gas Sensor

Type	Non-dispersive infrared
Range	0 to 0.35%
Resolution	0.0001% (1 ppm)
Accuracy	± 0.0015% (15 ppm)

Tracer Gas Sensor

Type	Ultrasonic transit time
Range	0 to 50%
Resolution	0.02%
Accuracy	0.05%

Accessories and order numbers

Spirette	Box 50 pcs 2050-1	DLCO Bariette	Box of 50 pcs 3050-1	Annual replacement kit (filter pack, patient tube, one-way valve and overpressure valve)	3000-50.50SP
	Box 200 pcs 2050-5		Box of 100 pcs 3050-2		
	Box 500 pcs 2050-10	Stand for Sensor	3000-07.00		