

# Q-NRG™ +

Metabolic Monitor



## Technical Specifications

Product	Description	REF
Q-NRG+	Metabolic Monitor	C09092-02-99
Standard packaging	Q-NRG+ unit, USB cable, power cable, fuses, Q-NRG+ cover, User Manual	
Indications for use	Resting Energy Expenditure (REE) measurement with limitations in accordance with labeling, within the following population: Ventilator mode: ventilated subjects > age 10 and 10Kg Canopy mode: spontaneously breathing subjects >15Kg Mask mode: spontaneously breathing subjects > 6 years and 10Kg	
Measurements		
Indirect Calorimetry in Ventilator mode (standard)	Resting Energy Expenditure (REE, RMR) in ventilator mode, Respiratory Quotient (RQ), Substrates Analysis (%FAT, %PRO, %CHO)	
Indirect Calorimetry in Canopy mode (optional)	Resting Energy Expenditure (REE, RMR) with canopy hood, Respiratory Quotient (RQ), Substrates Analysis (%FAT, %PRO, %CHO)	
Indirect Calorimetry in Mask mode (optional)	Resting Energy Expenditure (REE, RMR) with oro-nasal face mask or mouthpiece, Respiratory Quotient (RQ), Substrates Analysis (%FAT, %PRO, %CHO)	
Main Parameters	Range	Accuracy
VO <sub>2</sub>	10-1000 mL/min	±3% or 5mL/min
VCO <sub>2</sub>	10-1000 mL/min	±3% or 5mL/min
RQ	0-2.00	±5% or 0.04
REE	0-7200 kcal/day	±3% or 36 kcal/day
Flowmeter	ID 18	Flow-REE
Type	Bidirectional digital turbine	Disposable Pneumatich
Flow range	0-6 L/s	0-1.6 L/s
Flow accuracy	±2% or ±20 mL/s	±2% or ±20 mL/s
Ventilation range	0-60 L/min	1-25 L/mi
Ventilation accuracy	±2% or ±100 mL/min	±2% or ±100 mL/min
Resistance	<0.45 cmH <sub>2</sub> O s/L @ 1 L/s	<2.3 cmH <sub>2</sub> O s/L @ 1 L/s
Calibration	With 3L calibration syringe (monthly)	Automatic via Internal Blower
Gas Analyzers	Oxygen (O <sub>2</sub> )	Carbon Dioxide (CO <sub>2</sub> )
Sampling mode	Micro Dynamic Mixing Chamber (patented)	
Type	Galvanic Fuel Cell (GFC)	Digital NDIR
Range	0-75%	0-10%
Accuracy	±0.05% Vol. or ±0.3%	±0.05% Vol. or ±1%
Resolution	±0.01% Vol.	±0.01% Vol.
Calibration	Automatic with gas cylinder (monthly)	
Report		
Export modes	USB, Bluetooth®	
Export formats	PDF, CSV, XML	
Hardware		
Dimensions & Weight	31x21x27 cm, 4.65 Kg	
Display	10.1" Transmissive TFT LCD, 1024x600, 65k colors, capacitive touch screen	
Power	Battery: Li-Ion "smart" (3 hours autonomy) Mains: 100V-240V ±10%; 50/60Hz, 100-130 VA	
Wireless Connectivity	Bluetooth 2.1 + EDR Class II (range 10 m line-of-sight)	
Wired Connectivity	1 USB-device (5 kV galvanic insulated), 2 x USB Host, RS-232 (5 kV galvanic insulated), LAN (5 kV galvanic insulated)	
Environmental ranges (operating)	Temp. +10°C to +35°C. Humidity: 5-93% (non condensing). Atmospheric pressure: 700hPa-1060hPa (up to 3011m)	

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Firmware		
Languages	English, Spanish, Portuguese, Dutch, Polish, Danish, French, Italian, Japanese, German, Chinese, Russian	
PC Software (optional)		
Languages	OMNIA English, Chinese (Traditional & Simplified), Czech, Danish, Dutch, French, German, Greek, Hebrew (interpretation only), Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish, Turkish	
PC Requirements	Windows 10 (64bit), Windows 11 (64bit), CPU type $\geq$ Intel i3 10th generation, CPU speed $\geq$ 1.4GHz, RAM $\geq$ 8GB, HD $\geq$ 32GB for full installation, Monitor resolution $\geq$ 1366x768 pixel, $\geq$ 2 USB port	
Options	Description	REF
OMNIA	PC Software	C04060-0X-11
Accessories	Description	REF
Carts	Wheeled cart w/ integrated VESA holder (X1)	A-258-900-005
Clamp/adapter	Adapter for quick X1 cart connection Clamp for pole or rail	A-258-500-015 C04756-01-10
Cylinder Holder	Holder for gas cylinder for X1 cart	A-258-500-012
Canopy Kit	Canopy hood (large) + Canopy hose Canopy hood (small) + Canopy hose	C03179-01-11 C03179-03-11
Canopy Hose	Reusable hose for canopy testing	C02678-01-07
Mask Kit	Masks (S, M) + Headcap (S/M) + Flowmeter	C04656-02-11
Face Masks	Reusable oro-nasal mask (Petite, XS, S, M, L)	A-800-1X0-002 A-800-20X-001
Mask adapter	Adapter for face masks	C02839-01-20
Headcap	Reusable headcap (Petite/XS, S/M, L)	A-800-900-02X
Flowmeter	Reusable ID18 turbine	C04770-01-04
Filter adapter	Reusable for tests with AB/AV filters	C05085-01-20
Calibration Gas	Gas cylinder 16% O <sub>2</sub> , 5% CO <sub>2</sub> , N <sub>2</sub> , bal	A-860-000-004
Pressure regulator	Pressure regulator for calibration gas cylinder	A-870-155-001
3L syringe	Certified 3L syringe for calibration	C00600-02-11
Consumables	Description	REF
Flow-REE	Single use (10 pcs.)	A-662-250-003
ICU gas sampling pack	Single use (50 pcs.)	C05096-01-11
Vent standard filter	Single use (50 pcs.)	A-182-300-007
Vent HME filter	Single use (50 pcs.)	A-182-300-006
ICU patient connector	Single use (50 pcs.)	C05257-01-60
Hydrophobic filter	Reusable (25 pcs.)	C05187-01-60
Canopy veil	Single use veils (50 pcs.), large Single use veils (50 pcs.), small	C04690-01-10 C04690-02-10
Canopy hose	Single use hoses (40 pcs.)	A-108-295-005
AB/AV filters	Single use with round mouthpiece (50 pcs.)	A-182-300-004
Sampling line	Single use (100 pcs.)	A-180-100-002
Rubber mouthpiece	Single use (200 pcs.)	C00568-01-98
Nose clip	Single use (25 pcs.)	A-662-100-001
Security & Quality Standards		
MDR (2017/745); FDA 510(k), Safety (IEC 60601-1 Class I), EMC (IEC 60601-1-2), Telemetry (ETSI EN 301 489-1, ETSI EN 301 489-17), FCC, IC		

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