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COSMED The Metabolic Company

Q-NRG+
INDIRECT CALORIMETRY

Metabolic Monitor
Sample Indirect Calorimetry Report

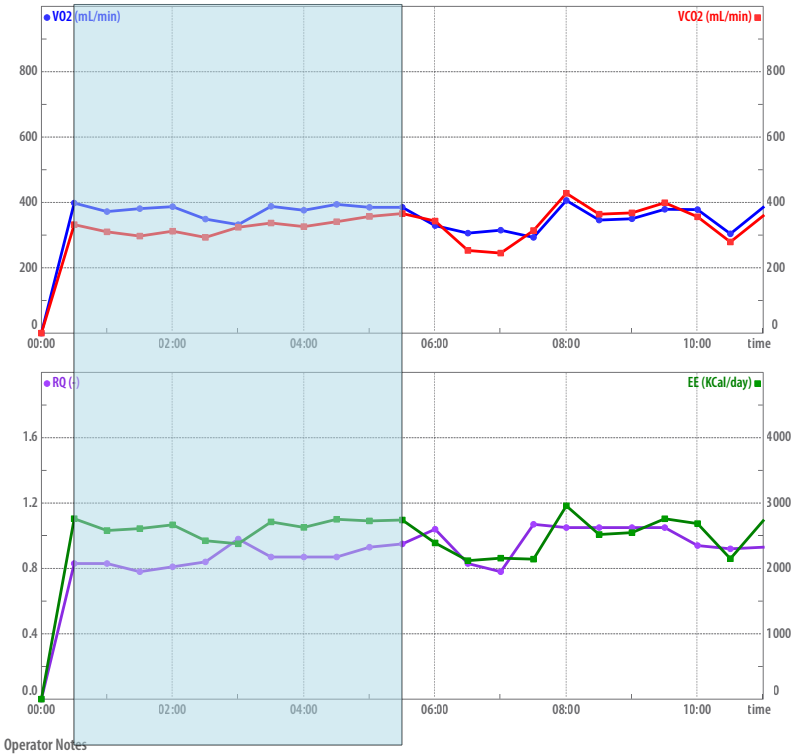
COSMED
Rome - ITALY
www.cosmed.com

Test date	Time
28/02/2018	12:30

Subject	ID	Gender	Age	D.O.B.	Weight	Height	BMI (kg/m2)
John Doe	--	Male	51	04/03/1967	102.0 Kg	195.0 cm	25.0

Predicted Set	Test Position	Agitation	Sedation	Body Temp (°C)	Resting period	Fasting period	UN (g/day)
For Comparison Harris-Benedict	Undefined	N/A	N/A	0	N/A	N/A	0

Indirect Calorimetry Report - Ventilator Test



Operator Notes

REE 2634 Kcal/day
125 %pred

VO2	VCO2
377 mL/min	327 mL/min

Substrates

FAT	CHO	PRO
45 %	55 %	0 %

Variability

VO2	VCO2
5 %	7 %

RQ	Vt	Rf	FiO2	AVG Interval	Duration
0.87	933 mL	18.9 1/min	40.03 %	05:00 min	00:11:00 min

npRQ: -- --

Operator: Signature: _____

Login account: Administrator Page 1 / 2 Q-NRG 1.0 SN# 2018100001

Sample printout of a hypothetical Q-NRG+ patient REE results in a comprehensive format to facilitate metabolic assessment.

Abbreviations: REE – Resting Energy Expenditure; Predicted Set – Compared to a selected predictive equation; VO_2 – Oxygen Consumed; VCO_2 – Carbon Dioxide Produced; RQ – Respiratory Quotient (VCO_2/VO_2); Vt – Tidal Volume; Rf – Respiratory Frequency; FiO_2 – Fraction of Inspired Oxygen; CHO – Carbohydrates; PRO – Protein; AVG - Average; EE - Energy Expenditure, npRQ - non-protein respiratory quotient; mL/min - Milliliter/minute; min - minute

Q-NRG+ Technical Specifications

Product		
Part Number	C09092-02-99 (EMA), C09092-12-99 (North America), C09092-22-99 (A/NZ)	
Intended Use	Resting Energy Expenditure (REE) measurement on mechanically ventilated and spontaneously breathing subjects*	
Standard Packaging	Q-NRG+, USB cable, power cable, User Manual	
Test Kit (Single-use)	Flow-REE, FiO_2 and FeO_2/CO_2 sampling lines, FiO_2 Vent Adapter, HME or standard filter	
Measurement Modes		
Ventilator	Standard	
Canopy Hood	Optional	
Face Mask	Optional	
Main Parameters	**Range**	**Accuracy**
VO_2	10-1000 mL/min	±3% or 5mL/min
VCO_2	10-1000 mL/min	±3% or 5mL/min
RQ	0-2.00	±5% or 0.04
REE	0-7200 kcal/day	±5% or 36 kcal/day
Flowmeter	**Ventilator**	**Canopy/Mask**
Type	Disposable Pneumotach (Flow-REE)	Bidirectional digital turbine
Flow Range	0.01 – 1.6 L/s	0.05 - 2 L/s
Accuracy	≤2% or 100mL/min @1-25 L/min	≤ 2% or 100mL/min @1-25 L/min
Resistance	2.3 cmH_2O s/L @ 1 L/s	<0.25 cmH_2O s/L @ 1 L/s
Calibration	Automatic via Internal Blower	With 3L calibration syringe (monthly)
Gas Sensors	**O_2**	**CO_2**
Gas Exchange Sampling	Micro Dynamic Mixing Chamber (patented)	
Type	Galvanic Fuel Cell (GFC)	Digital NDIR
Range	0-75%	0-10%
Accuracy	<0.05% Vol	<0.05% Vol
Resolution	0.01% Vol	0.01% Vol
Calilbration	Automatic via gas cylinder (monthly)	

For more information on this medical device, please refer to User Manual.

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Report	
Export Modes	USB, Bluetooth®
Export Formats	PDF, CSV, XML
Hardware	
Display	10.1" Transmissive TFT LCD, 1024x600, 65k colors, capacitive touch screen
Power	Battery: Li-Ion "smart" (3 hours autonomy) Main: 100V-240V ±10%; 50/60Hz, 1.5A @100VAC, 1.0A @240VAC
Wireless Connectivity	Bluetooth (2.1 + EDR Class II - Range 10 m line-of-sight)
Wired Connectivity	1 USB-device (5kV galvanic-insulated), 2 x USB Host, RS-232, LAN
Weight & Dimensions	4.65 kg (10.3lb), 31x21x27cm (12.2x8.3x10.6in)
Environmental Ranges	Temp. +10°C to +35°C. Humidity: 5-93% (non condensing). Atmospheric pressure: up to 3011m
PC Sofware (optional)	
Languages	Italian, English, Spanish, French, German, Portuguese, Greek, Dutch, Turkish, Russian, Chinese (Traditional & Simplified), Korean, Romanian, Polish, Czech, Norwegian, Hebrew
OS Requirements	Windows 7, 8, 10
Security & Quality Standards	
MDD (93/42/EEC Class IIa), Safety (Class I IEC 60601-1), EMC (IEC 60601-1-2), Telemetry (ETSI EN 301 489-17)	

* This device is intended for the measurement of REE with some limitations in accordance with labeling, within the following population:
Ventilator: ventilated subjects > age 10 and 10Kg (22lb)
Canopy: spontaneously breathing subjects >15Kg (33lb)
Mask: spontaneously breathing subjects > age 6 and 10Kg (22lb)

Intended Use: This device is intended for the measurement of REE for spontaneously breathing and ventilated patients, with some limitations in accordance with labeling, within the following population: spontaneously breathing subjects >15 Kg (33 lb), when tested with the Canopy dilution technique, ventilated subjects > age 10 and 10 Kg (22lb), and spontaneously breathing subjects > age 6 and 10 Kg (22 lb), when tested with Face Mask. This device is not suitable for operating in presence of flammable anesthetic gases or gases other than O2, CO2, N2 and water vapor. The device is to be used by physicians or by trained personnel under the responsibility of a physician. The device is not intended as a continuous monitoring device for surveillance of vital physiological processes. Warnings: This device measures clinical parameters used to aid diagnosis and it is intended only as an adjunct device in patient assessment. In case of disturbing conditions, the shutdown is allowed because the safety of the device towards patients and operators is not affected, since the final evaluation is performed on the outcome data measured during a complete test. No modification of this device is allowed. For more information on this medical device, please refer to User Manual.

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