

공 통 규 격 서

COMMODITY DESCRIPTION

관세분류번호 HSK NO.	품목번호 ITEM NO.	품목 및 규격 DESCRIPTION	단위 UNIT	수량 Q`TY
		Gas Flow Analyzer Model:	Set	1

A. General Requirements

1. The device shall be lightweight and designed for easy portability, including the provision of a shoulder strap and carrying handle.
2. The device shall support storage of test data in internal memory.
3. The device shall have a long battery operating time to enable extended testing in clinical and service environments.
4. The device shall be capable of testing all types of medical gas flow equipment, including ventilators, insufflators, oxygen concentrators, anesthesia machines, and other respiratory devices.
5. The device shall provide communication interfaces including USB and RS-232 ports or equivalent.

B. Technical Specifications

1. Flow

Full Range Flow Channel

- 1) range ± 300 slpm 또는 High Flow: ± 300 lpm / Low Flow: ± 20
- 2) accuracy (air) $\pm 1.7\%$ or ± 0.04 slpm 또는 High Flow: $\pm 1.75\%$ or ± 0.1
Low Flow: $\pm 1.75\%$ or ± 0.04

Ultra Low Flow Channel

- 1) range ± 750 ml/min 또는 동등이상
- 2) accuracy (air) $\pm 1.7\%$ or ± 0.01 slpm 또는 동등이상

Volume (full range or high channel)

- 1) range ± 100 l 또는 동등이상
- 2) accuracy $\pm 1.75\%$ or ± 0.02 l 또는 동등이상

Volume (low or ultra low channel)

- 1) range NA**
- 2) accuracy NA**

2. Pressure

High Pressure

- 1) range -0.8 to 10 bar 또는 0 to 10 bar
- 2) accuracy $\pm 1\%$ or ± 0.007 bar 또는 $\pm 1\%$ or ± 10 mbar

Differential Low Pressure

- 1) range ± 160 mbar 또는 ± 150 mbar

2) accuracy $\pm 0.5\%$ or ± 0.1 mbar 또는 $\pm 0.75\%$ or ± 0.1 mbar

Absolute Pressure

1) range 550 to 1240 mbar 또는 0 to 1150 mbar

2) accuracy $\pm 1\%$ or ± 5 mbar 또는 $\pm 1\%$ or ± 5 mbar

Airway Pressure

1) range ± 160 mbar 또는 0 to 150 mbar

2) accuracy $\pm 0.5\%$ or ± 0.1 mbar 또는 $\pm 0.75\%$ or ± 0.1 mbar

Ultra Low Pressure

1) range 0 to 10 mbar 또는 동등이상

2) accuracy $\pm 1\%$ or ± 0.01 mbar 또는 동등이상

3. Other

Temperature

1) range 0 to 50°C 또는 동등이상

2) accuracy $\pm 0.5^\circ\text{C}$ 또는 $\pm 1.75\%$ or $\pm 0.5^\circ\text{C}$

Humidity

1) range 0 to 100% RH 또는 동등이상

2) accuracy $\pm 3\%$ RH (20 – 80% RH) 또는 $\pm 3\%$ RH
 $\pm 5\%$ RH (20< or >80% RH)

Oxygen

1) range 0 to 100% 또는 동등이상

2) accuracy $\pm 1\%$ 또는 동등이상

4. Features

1) Battery life 8 hrs 또는 동등이상

2) Charge time in hours 5 hrs 또는 동등이상

3) Memory internal memory 또는 동등이상

4) Connection type USB 또는 동등이상

5) Weight 1.6 kg (3.6 lb) 또는 동등이상

6) Display 17.8cm (7in) 또는 동등이상

7) Single full-range channel 작동 또는 동등이상

8) Ultra-low flow measurements 작동 또는 동등이상

9) Ultra-low pressure measurements 작동 또는 동등이상

5. Breath parameters

minute volume range 0 to 60 l

minute volume accuracy (1) $\pm 1.75\%$ or ± 0.02 l

breath rate range 1 to 1500 bpm

breath rate accuracy (2) $\pm 1\%$

inspiratory to Expiratory time ratio range	1:300 to 300:1
inspiratory to Expiratory time ratio accuracy (3)	$\pm 2\%$ or ± 0.1
peak inspiratory pressure range	± 160 mbar
peak inspiratory pressure accuracy (4)	$\pm 0.75\%$ or ± 0.1 mbar
inspiratory pause pressure range	± 160 mbar
inspiratory pause pressure (5)	$\pm 0.75\%$ or ± 0.1 mbar
mean airway pressure range	± 160 mbar
mean airway pressure accuracy (6)	$\pm 0.75\%$ or ± 0.1 mbar
positive end expiratory pressure range	± 160 mbar
positive end expiratory pressure (7)	$\pm 0.75\%$ or ± 0.1 mbar
lung compliance range	0 to 1000 ml/mbar
lung compliance accuracy (8)	$\pm 3\%$ or ± 0.1 ml/mbar
inspiratory time range	0 to 60 s
inspiratory time accuracy (9)	± 0.02 s
Inspiratory hold time range	0 to 60 s
Inspiratory hold time accuracy (10)	$\pm 1\%$ or ± 0.1 s
expiratory time range	0 to 90 s
expiratory time accuracy (11)	$\pm 0.5\%$ or ± 0.01 s
expiratory hold time range	0 to 90 s
expiratory hold time accuracy (12)	± 0.02 s
peak expiratory flow range	± 300 lpm
peak expiratory flow accuracy (13)	$\pm 1.7\%$ or ± 0.04 lpm
peak inspiratory flow range	± 300 lpm
peak inspiratory flow accuracy (14)	$\pm 1.7\%$ or ± 0.04 lpm
Inspiratory and Expiratory tidal volume (15,16)	$\pm 1.75\%$ or ± 0.02 l

6. Environmental

1) operating temp	10C to 40C 또는 15C to 40C
2) storage temp	-20C to 60C 또는 -10C to 60C
3) operating humidity	10 to 90% RH 또는 10 to 90% RH
4) storage humidity	5 to 95% RH 또는 5 to 95% RH

7. Gas Standards

ATP (ambient temp/pressure, act humidity)
ATPD (ambient temp/pressure, dry)
ATPS (ambient temp/pressure, saturated)
STP20 (20C temp/pressure 760, act humidity)
STPH or STP21 (21C temp/pressure 760, act

humidity)
 STPD0 (0C temp/pressure 760, dry)
 STPD20 (20C temp/pressure 760, dry)
 STP or STPD21 (21C temp/pressure 760, dry)
 BTPS (body temp 37C/act pressure, saturated)
 BTPD (body temp 37C/act pressure, dry)
 0/1013 (0C temp/pressure 760, dry)
 20/1013 (20C temp/pressure 760, dry)
 NTPD (20C temp/pressure 760, dry)

C. Standard Accessories

1. Main Unit	1 EA
2. Accessory Kit	1 Kit
3. AC power adapter	1 EA
4. USB Serial Cable	1 EA
5. Carrying Handle and Shoulder Strap	1 EA
6. Carrying Case	1 EA
7. Test Lung	1 EA
8. Ansur software with Notebook PC	1 EA

D. Remarks

1. The equipment should be installed by contractor
2. 3 years warranty after installation and correct operation
3. The product should have proper approval and certification according to Korean registration