3IN1
HF / bi-level / CPAP

Respiratory Care

Mobility

Constant respiratory therapy
regardless of location

OmniOx
HFT 750

MEK

OmniOx

MEKICS strives to have a good understanding of the diseases to be treated and the usage environment of hospitals, and based on clinical issues, endeavors to develop new features and products with the potential to improve such issues and to create a better treatment environment.

OmniOx units built with blower, heated humidifier, and built-in oxygen blender was developed as the world's first equipment hat integrates heated humidified high oxygen nasal flow cannula treatment with non-invasive positive-pressure ventilation mode as CPAP and bi-level, enabling safe ventilation treatment in various environments from hospital to home.

Together with from the beginning and to the end of respiratory care

Omni : Every, All
Ox   : Oxygen

OmniOx is a compound word of the Latin prefix "Omni" meaning "All" or "Every" and the abbreviation "Ox" for oxygen and has various meanings.

OmniOx is our original integrated technology for oxygen treatment transcends the limitations of traditional respiratory treatment to provide tailored ventilation treatment from initial respiratory care to weaning, suited to every person and space in need. Our beginning and end aim is for satisfactory results are intended for all patients suffering from respiratory diseases and healthcare professionals who care for the growing number of patients requiring respiratory treatment.

Mobility

Constant respiratory therapy regardless of location

Battery level indication

 < Battery level >

 < AC level >

The battery level symbol and percent are checked on the upper right of the LCD. The percent and the gauge inside the battery symbol change according to the remaining battery level. If AC power cord is connected to HFT750, the symbol of the battery level changes to AC power symbol.

Operating Time with Battery

If the HFT750 is operated on battery power, operating time and humidification are guaranteed under the following conditions. (Basic condition: Battery fully charged)

Condition	Operating Time	Humidfication
When operating on battery after more than 20 minutes on A/C power.	At least 50 minutes.	Humidification is guaranteed for at least 30 minutes. (If more than 30 minutes have elapsed, humidification may not be sufficient)

O₂ Consumption calculator

Calculate the available time in an oxygen consumption based on cylinder capacity, cylinder pressure and continuous flow rate.
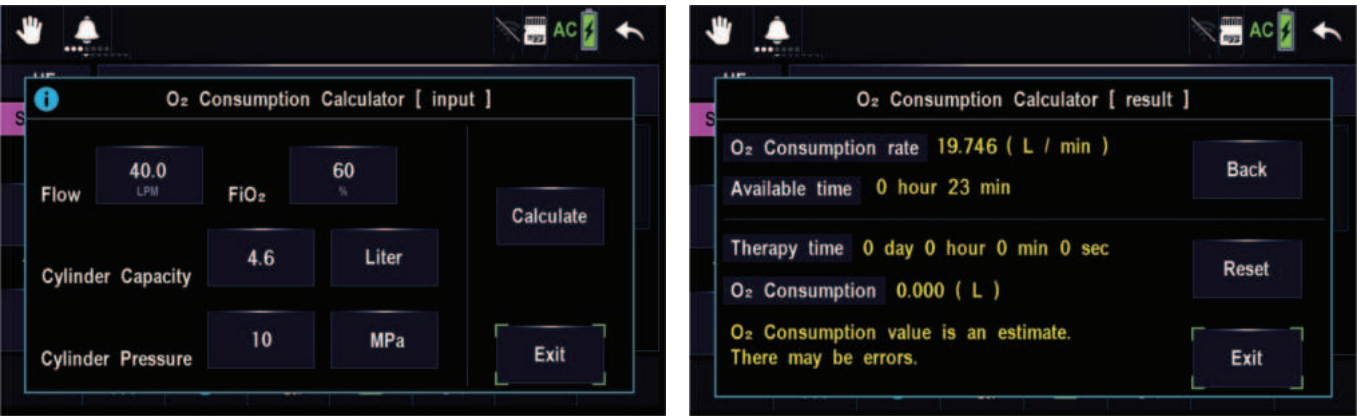
Duration (4.6 Cylinder)

Supply		Cylinder Pressure				
Flow	FiO₂	9MPa	10MPa	11MPa	12MPa	13MPa
40LPM	40%	42minute	47minute	52minute	57minute	62minute
	60%	20minute	23minute	25minute	27minute	30minute
	80%	13minute	15minute	16minute	18minute	20minute
	100%	10minute	11minute	12minute	14minute	15minute

OmniOx, HFT750
Leading a solution

The OmniOx HFT750 with battery utilizes HF, CPAP and bi-level modes and includes a flow generator, humidifier, built-in oxygen blender, and supports pulse oximeter and connectivity (HL7, WiFi, Bluetooth) as options. In addition, the definition of the product as a "multifunctional non-invasive ventilation treatment device" shows that it is the best product for the environment of non-invasive ventilation treatment.

Compact Design for mobility and easy installation

Supports 3 in 1 device HF, CPAP, and bi-level modes

To meet a variety of requirements of respiratory treatment, it supports a wide range of respiratory treatments, ranging from heated humidified high flow nasal cannula (HFNC) to non-invasive positive-pressure ventilation (NIV).
Easy patient installation with medical team management methods give you the flexibility to respond to sudden changes in the patient's symptoms, allowing you to provide efficiently support the patient's respiratory treatment from HF to CPAP or bi-level depending on patient therapy needs within time.

Built-in blower & oxygen blender

It has a built-in blower that allows you to proactively respond to the medical environment, enabling you to reliably support the patient's respiratory treatment anytime, anywhere. It also allows the built-in oxygen blender to independently control oxygen concentrations from 21% to 100% to provide stable oxygen to the patient.

Built-in battery

The world's first respiratory therapy device with a built-in battery enables comfortable respiratory therapy everywhere. Patients can expect high treatment satisfaction and faster improvement of their condition with constant respiratory treatment regardless of location. Medical professionals can also reduce the burden of care for patients and provide an efficient treatment environment.

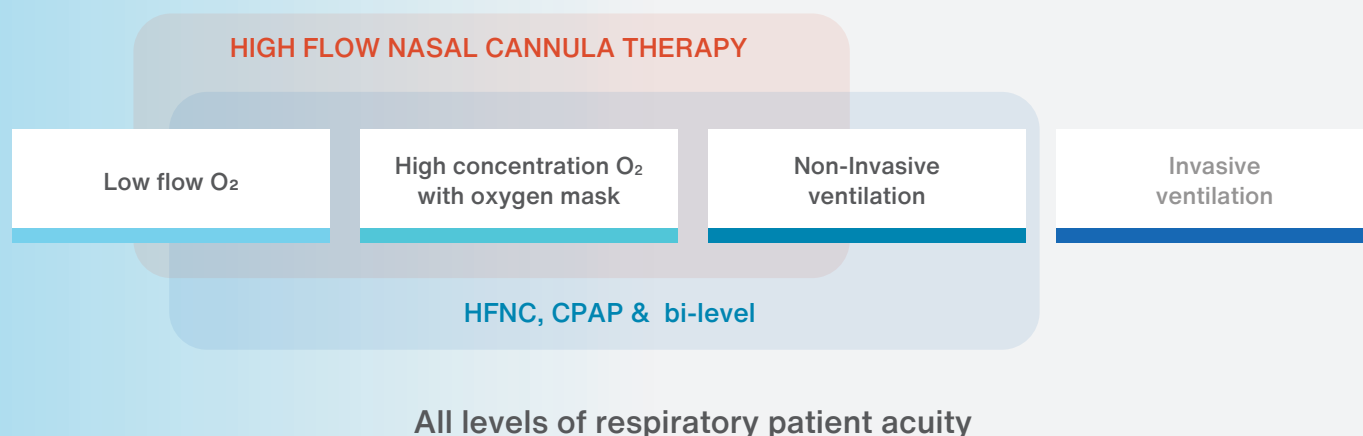# Comfort Improve patient's comfort and safety

HFNC

Heated humidified high-flow nasal cannula (HFNC) is a patient-friendly and effective treatment for hypoxia because it uses a lighter and more comfortable interface than non-invasive positive pressure ventilation (NIV). It also detects if the circuit is isolated or the cannulas clogged during treatment and sounds an alarm.

NIV

OmniOx's non-invasive positive pressure ventilation treatment compensates for leaks of up to 60 LPM and uses any type of mask.

Easy Care Focus on easy operation for clinician

Real-time monitoring of settings and measurements essential for respiratory treatment is possible, to rapidly respond to sudden changes in the patient's symptoms (FiO$_2$, Flow rate, RR, Airway temp, SpO$_2$, PR, and S/F ratio). In addition, it is possible to check the history of changes in the patient's symptoms, enabling more efficient treatment.

HIGH FLOW NASAL CANNULA THERAPY

| Low flow O$_2$ | High concentration O$_2$ with oxygen mask | Non-Invasive ventilation | Invasive ventilation |

HFNC, CPAP & bi-level

All levels of respiratory patient acuity

Fully equipped NIV devices

Multi-functional non-invasive respiratory care device

Heated and humidified oxygen administration (Up to 44mg/L)

It enhances pulmonary compliance and conductance compared to traditional cold and dry oxygen-supplied treatments, reducing metabolic work by reducing the gas conditioning process. It also has the advantage of reducing the associated oxygen consumption and carbon dioxide emissions.

Cannula resistance compensation

It is designed to deliver a set flow rate to the patient by sensing increased resistance, even if the prongs are pressed or bent during heating and humidification high flow nasal cannula therapy. However, if the degree of pressed or bent is in a state where the set flow rate cannot be delivered, an alarm is generated to enable safer breathing treatment.

Required monitoring features

It monitors the numerical values essential for respiratory treatment to respond quickly to sudden changes in the patient's symptoms. It can monitor FiO_2, Flow rate, RR, Airway temp, SpO_2, PR, and S/F ratio, allowing treatment information to be obtained in real time, and makes it possible to check the patient's history, enabling efficient treatment.

Visible graphic wave

During treatment, numeric values are shown along with flow and pressure figures through graphs, allowing for real-time checking of treatment information. In addition, cannula fitting conditions can be cheked during HF treatment, providing patients with more comfortable respiratory care.

Monitoring
HF : Flow, SpO₂, FiO₂, ROX
NIV : FiO₂, SpO₂, PIP (IPAP), PEEP (EPAP), Vt est (Estimated Tidal Volume), RR and PR is supported
   (Turn volume guarantee ON to monitor FiO₂, V delivery (Vi), PEEP (EPAP), PIP (IPAP), RR, PR and SpO₂)
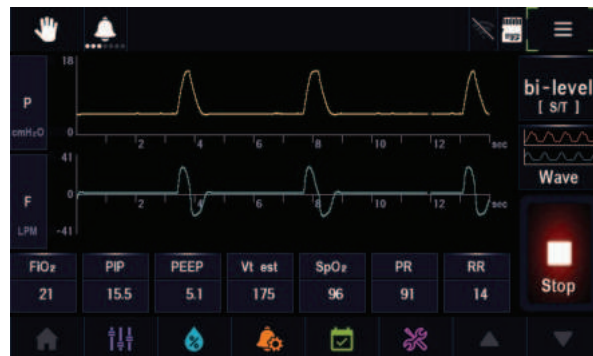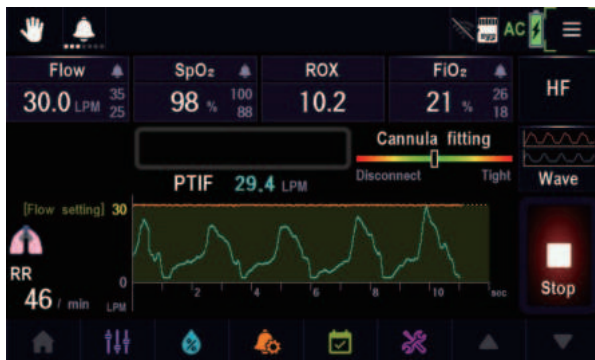
*Volume guarantee? This function is to convert the target from pressure to volume during inspiration. It can be applied in spontaneous(S), spontaneous / timed(S/T), timed(T) modes, and replaces the inspiration target set value with the tidal volume from the inspiratory positive airway pressure. The provision of tidal volume is limited only by the pressure limit set. Set range: Off, On

Leak compensation

NIV compensates for leaks of up to 60 LPM, eliminating unnecessary discomfort for the patient and maximizing treatment efficiency. Auto-trigger is enabled in case of an unexpected leak in the interface, or positive end-expiratory pressure (PEEP) is compensated if it is not maintained. It also reliably adjusts and modifies patient trigger sensitivity, minimizing asynchrony.

Rise time

The time to reach the intake pressure set to rise time is configurable. The shorter the setting time, the higher the peak inspiratory flow rate. In other words, it allows configuration of an intake flow suitable for the patient's inspiratory effort (demand flow).

Reset baseline leak flow rate

Rise time
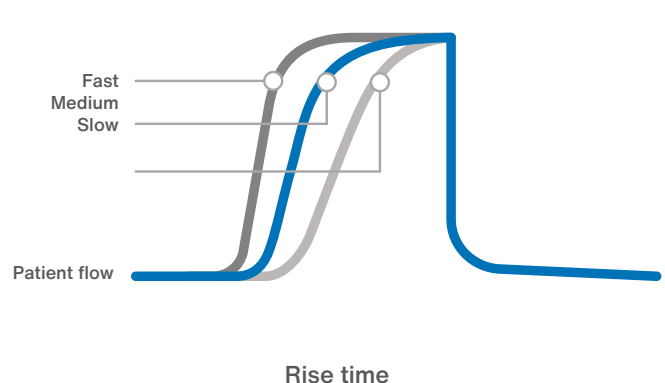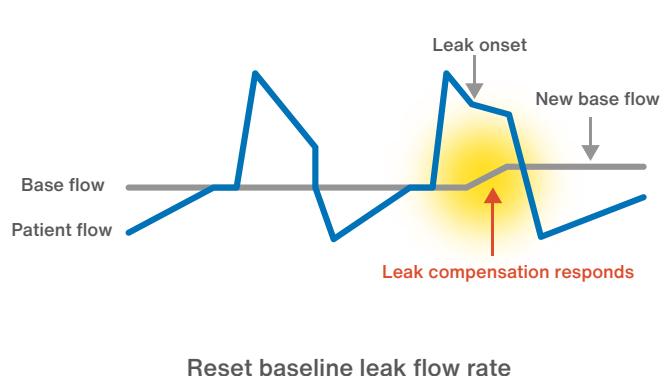
For safe use

Safeguards to minimize infection

The air flowing in from the outside is filtered through the intake filter, and the patient inhales the filtered air through the bacterial filter. Such air intake method minimizes infections. Also, air humidified in the chamber is directly transferred to the interface for patients, which has the advantage of being safe as humidified air does not re-enter the device.
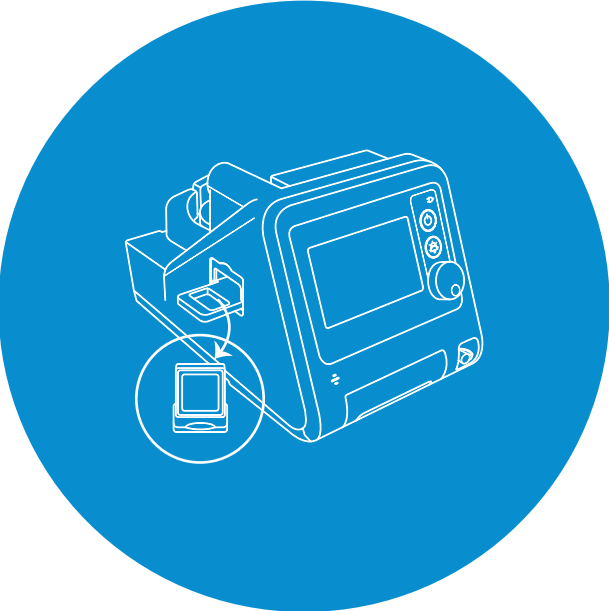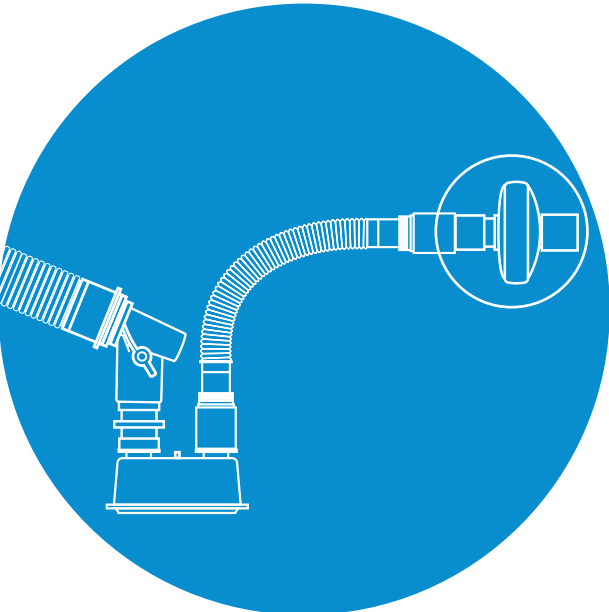
Air intake filter

Test article number	Total CFU recovered	Filtration efficiency (%)
1	9.8×10^1	99.9972
2	3.6×10^1	99.9990
3	5.3×10^1	99.9985

Test article number	Total CFU recovered	Filtration efficiency (%)
1	1.5×10^3	99.982
2	1.3×10^3	99.985
3	2.1×10^3	99.975

* Test results from Nelson Laboratories, Inc. (NLI)

Bacterial filter

Test article number	Total CFU recovered	Filtration efficiency (%)
1	3.1×10^1	99.99983
2	1.0×10^1	99.999946
3	2.6×10^1	99.99986
4	2.6×10^1	99.99986
5	2.1×10^1	99.99989

Test article number	Total CFU recovered	Filtration efficiency (%)
1	8.6×10^2	99.9952
2	8.6×10^2	99.9952
3	1.4×10^3	99.9923
4	5.3×10^2	99.9970
5	1.0×10^3	99.9943

* Test results from Nelson Laboratories, Inc. (NLI)

Specificaion

HF (High Flow)

Flow (Inspiratory flow rate)		Total Range: 1 to 60 l/min Accuracy : 1 to 10 l/min (±1 l/min), 11 to 60 l/min (±10%)
RR Detection		On/Off
TSF	Backup FiO_2	21, 25 to 100%
	Target SpO_2	85 to 99%
	FiO_2 ragne	Low : 21, 25 to Backup FiO2 set value % , High : Backup FiO2 set value to 100%
	Time constant	Rising interval : 10 to 20 s/% , Falling interval : 30 to 120 s/%
Bi-flow	Base flow	10 to 40 l/min Accuracy : ±10% (10 – 40 l/min)
	Assist flow	Off, 10 to 60 l/min (Base flow + Assist flow) ≤ 90 l/min Accuracy : ±10% (10 – 80 l/min)

CPAP (Continuous Positive Airway Pressure)

CPAP	4 to20 cmH2O ±(1.7 + 4 % of the set value) cmH2O
Pressure Assist + (PA(+))	OFF, 1 to 3 cmH2O ±(1.7 + 4 % of the set value) cmH2O
Pressure Assist - (PA(-))	OFF, -3 to -1 cmH2O ±(1.7 + 4 % of the set value) cmH2O
Trigger Level	3 to 20 lpm ±1.5 l/min
Rise time	Fast(0.2s), Medium(0.3s), Slow(0.4s)
Auto Start	ON, OFF (Only for CPAP mode and bi-level mode)

bi-level Positive Airway Pressure (Spontaneous, Spontaneous / Timed, Timed)

IPAP	4 to40 cmH2O ±(1.7 + 4 % of the set value) cmH2O
EPAP	4 to 20 cmH2O ±(1.7 + 4 % of the set value) cmH2O
Pressure Assist - (PA(-))	OFF, -3 to -1 cmH2O
Respiration Rate	OFF, 2 to 60 bpm
Inspiratory Time(Ti)	0.3 to 3.0 seconds
Trigger Level	3 to 20 lpm
Trigger Type	S/T, T, S
Rise time	Fast(0.2 s), Medium(0.3 s), Slow(0.4 s)
Auto Start	ON, OFF
Volume guarantee	ON, OFF
Inspiratory Time (Vi)	100 to 2000 ml
P limit	10 to 45 cmH2O
Apnea Time	10 to 60s

Common

FiO2 %	High pressure	21, 25 to 100 %, Electronic controlled blender (built-in system)
Dew point temerature	HF	31℃ to 37℃ ± 3℃
	CPAP & bi-level	Off, 31℃ to 37℃ ± 3℃
Humidifty level		1 to 5

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