

Veterinary Intensive Care Cabin

ViCare U7/ViCare U7L/
ViCare U7R

Datasheet



ViCare U7

Veterinary Intensive Care Cabin

Physical Specifications

Type	It is intended to provide a medical care environment with adjustable temperature, humidity and oxygen concentration. The unit supports vital signs monitoring (ECG, HR, RESP, TEMP, SpO ₂ , PR and NIBP) and infusion therapy, and is equipped with an in-chamber carbon dioxide concentration monitoring function.
Weight	ViCare U7 ≤ 200kg ViCare U7L/ViCare U7R ≤ 100kg
Dimensions (W x H x D)	ViCare U7 (with air conditioner and casters): 182cm (±2.5cm) X 107.5cm (±2.5cm) X 79cm (±2.5cm) ViCare U7L/ViCare U7R (with air conditioner and casters): 92.5cm (±2.5cm) X 84.5cm (±2.5cm) X 79cm (±2.5cm) ViCare U7L/ViCare U7R (With air conditioner, without casters) 92.5cm (±2.5cm) X 75.5cm (±2.5cm) X 79cm (±2.5cm)
Infusion hook adds an additional 18 cm to the overall height.)	

Display

Screen type	Color touchscreen
Screen size	12.1 inches
Resolution	1280 pixels X 800 pixels

Interface Specifications

AC Power Auxiliary Outputs	Alternative current auxiliary outputs (x2)
Network connector	1, standard RJ45 connector
USB connector	2, USB 2.0
Multifunctional connector	1
Video output connector	1, 15-pin D-sub
Charger Power input	C10:1, AC power input C25:1, standard USB Type-C connector
Data transmission interfaces	Bluetooth, Wi-Fi and NFC interface

Environment-Related Parameters

O₂ system performance

Oxygen supply inlet	Gas supply pressure range (High-pressure oxygen inlet):
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	200 kPa to 600 kPa (Low-pressure oxygen inlet): 0 to 220 kPa 0 to 30 LPM
Oxygen flow monitoring range	
Oxygen flow monitoring accuracy	±300 ml/min or ±5%, whichever is greater
Oxygen concentration monitoring range inside the device	15 vol% to 100 vol%
High-pressure oxygen supply	
Oxygen concentration rise time	ViCare U7: (21 vol% to 40 vol%) ≤ 5 min ViCare U7L/ViCare U7R: (21 vol% to 40 vol%) ≤ 2 min
Noise inside the device	≤ 53 dBA
Normal oxygen adjustment	
Maximum oxygen concentration (10 SLPM)	≥ 40 vol% (10 SLPM oxygen supply flow, oxygen concentration ≥ 99%)
Maximum oxygen concentration (20 SLPM)	≥ 60 vol% (high-pressure oxygen supply, pressure: 200 kPa to 600 kPa, maximum output flow ≥ 50 SLPM, oxygen concentration ≥ 99%)
Oxygen concentration rise time (10 SLPM, oxygen concentration ≥ 99%)	ViCare U7: (21 vol% to 40 vol%) ≤ 25 min ViCare U7L/ViCare U7R: (21 vol% to 40 vol%) ≤ 15 min
Oxygen Concentration control accuracy	± 4 vol% (high-pressure oxygen supply, pressure: 200 kPa to 600 kPa, maximum output flow: ≥ 50 SLPM, oxygen concentration ≥ 99%, set the oxygen concentration to 40%)
Oxygen Concentration control Stability	3 vol% (oxygen supply by high-pressure oxygen cylinder, pressure: 200 kPa to 600 kPa, maximum output flow: > 50 SLPM, oxygen concentration > 99%, set the oxygen concentration to 40%)
Noise	≤ 50 dBA (non-fast oxygen ventilation period)
CO₂ system performance	
CO ₂ concentration monitoring inside the device	400 ppm to 5000 ppm
Emergency ventilation	Fall time from 3000 ppm to 2000 ppm: ≤ 6 min
CO ₂ active absorption system	ViCare U7: When the 3.75 LPM 4% CO ₂ gas is continuously supplied,

the CO₂ concentration in the device is maintained below 3000 ppm, and the soda lime replacement interval is > 24 hours

ViCare U7L/ViCare U7R: When the 1.5 LPM 4% CO₂ gas is continuously supplied, the CO₂ concentration in the device is maintained below 2000 ppm, and the soda lime replacement interval is > 24 hours

Air heating temperature control performance

(Atmosphere temperature is 22°C to 25°C, no wind, and the target air temperature inside the device is set to 32°C)

Temperature stability	0.5 °C
Temperature control accuracy	±1 °C
Temperature control uniformity	≤ 2 °C
Temperature display accuracy	±1.5 °C
Rise time	≤ 5min(time of rising 5°C)
Wind speed	≤ 0.4m/s
Noise inside the device	≤ 50dBA

Air conditioner refrigeration performance

(Atmosphere temperature is 24°C to 27°C, no wind, and the target air temperature inside the device is set to 18°C)

Temperature stability	2.5 °C
Temperature control accuracy	±2 °C
Temperature control uniformity	≤ 2 °C
Temperature display accuracy	±2.5 °C
Fall time	≤ 20minn (time of falling 5°C)
Noise inside the device	≤ 60dBA

Floor heating temperature control performance

(Atmosphere temperature is 22°C to 25°C, no wind, and the target floor temperature inside the device is set to 32°C)

Temperature control stability	0.5 °C
Temperature control accuracy	±1 °C
Temperature control uniformity	≤ 2 °C
Temperature display accuracy	±1.5 °C
Fall time	≤ 4min (ViCare U7L/ViCare U7R)
(time of rising 5°C)	≤ 7 min (ViCare U7)

Floor refrigeration control performance

(Atmosphere temperature is 22°C to 25°C, no wind, and the target floor temperature inside the device is set to 20°C)

Temperature control stability	1 °C
Temperature control accuracy	±1 °C
Temperature control uniformity	≤ 2 °C
Temperature display accuracy	±1.5 °C
Fall time	30 min (Time required for the floor temperature to fall by 5°C, atmosphere Temp is 24°C to 27°C, no wind, and the target floor temperature inside the device is set to 18°C)
Noise	≤ 50dBA

Humidification performance

Relative humidity upper control limit	80%(Atmosphere Temp 22~25°C, normally open for vaporization and humidification; the humidity inside the device may be greater than 80%)
Relative humidity display accuracy	±7%(Atmosphere temperature is 22°C to 25°C, ambient humidity is ≤60%,humidity inside the device can be set to 80%)
Humidification rise time (Time when humidity is increased by 10%)	≤ 5min(Atmosphere temperature is 22°C to 25°C, ambient humidity is ≤60%,humidity inside the device can be set to 80%)
Condensing state	Anhydrous condensation (Atmosphere temperature is 22°C to 25°C, ambient humidity is ≤60%, humidity inside the device can be set to 80%)

Semiconductor dehumidification performance

Dehumidification control relative humidity range	≤ 60%(Atmosphere temperature is 24°C to 27°C, ambient humidity is ≤80%,humidity inside the device is set to 30%)
Dehumidification amount	≥ 8g/h (Atmosphere temperature is 22°C to 25°C, ambient humidity is ≤ 60%;the temperature inside the device is maintained at 24°C to 27°C; the humidity inside the device is ≥80%. In this case, dehumidification is normally working)
Humidity display accuracy	±7% (Atmosphere temperature is

Noise	24°C to 27°C, ambient humidity is ≤80%,humidity inside the device is set to 30%)	Dimensions (W x H x D)	≤47mmx47mmx13mm
	≤ 50dBA (Atmosphere temperature is 24°C to 27°C, ambient humidity is ≤80%,humidity inside the device is set to 30%)	Battery type	Rechargeable lithium-Ion battery
		Run time	At least 72 hours with a new and fully-charged battery, with an ECG lead connected, and sending data continuously to the SpO ₂ module

Infusion-Related Parameters

Infusion Pump Specifications

Accuracy	≤ ±4.5 % (use B. Braun Intrafix Primeline)
Bolus accuracy	≤ ±5% or ±0.02 ml, whichever is greater
Long-time infusion accuracy	s not exceed ±10% (use B. Braun Intrafix Primeline)
Range of the infusion rate	0.1ml/h ~ 2000ml/h Minimum resolution: 0.01ml/h (0.1 ml/h to 99.99 ml/h) 1ml/h (1000 ml/h to 2000 ml/h)
Range of bolus rate	0.1 ~ 2000ml/h 0.01ml/h (0.1 ml/h to 99.99 ml/h) 0.1ml/h (100.0 ml/h to 999.9ml/h) 1ml/h (1000 ml/h to 2000ml/h)
Time set range	00:00:01 to 99:59:59 (h:min:sec), minimum resolution:1 second
VTBI set range	0.1ml/h ~ 9999ml 0.1 ml to 999.9 ml: step is 0.1 ml 1000 ml to 9999 ml: step is 1 ml
Volume range	0.0 ml/h ~ 9999 ml
Occlusion pressure	150 mmHg to 1125 mmHg
Bubble size	50μl, 100 μl, 250 μl, 500 μl, 800 μl
Accumulated bubble	0.1 ml to 4.0 ml
KVO Rate	0.1 ml/h to 5.0 ml/h

Infusion Warmer

Heating temperature (outlet temperature) setting range	32°C to 40°C
Resolution	0.1°C
Temperature control accuracy in Intelligent Flow-Linked Heating mode with the built-in pump	-2.5 °C ~ +0.5 °C

Monitoring-Related Parameters

ECG Module (MAE30) Related

Weight	≤35g
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Charge time	<3 hours to 90%
Shutdown delay	At least 30 minutes after the low battery indication first occurs on SpO ₂ module

ECG

Lead Set	3-lead: I, II, and III
ECG standard	AHA、IEC
Sweep speed	50 mm/s 、 25 mm/s、 12.5 mm/s、 6.25 mm/s

HR

Measurement range	15bpm ~ 350bpm
Resolution	1bpm
Accuracy	±1bpm或±1%, whichever is greater

ST Segment Analysis

Measurement range	2.5mV~+2.5mV
Accuracy	-0.8mV~+0.8mV: ±0.02mV或±10%, whichever is greater
Resolution	0.01mV

QT/QTc Analysis

Measurement range	QT:200~800ms QTc:20~800ms QT-HR:15~180bpm
Accuracy	±30ms
Resolution	QT: 4ms QTc:1ms

Resp Specifications

Lead	Options are lead I, lead II and auto
Measurement range	0~150rpm
Accuracy	1rpm
Resolution	0~120rpm:±1rpm 121~150rpm: ±2rpm

SpO₂ Module (MAE30) Related

Weight	≤60g
Dimensions (W x H x D)	≤62mm x 50mmx 9mm
Battery type	Rechargeable lithium-Ion battery
Run time	At least 36 hours: the beeper is not beeping; the screen is resting; the SpO ₂ module is in Bluetooth connection with a wireless receiver and works under Wireless Monitoring mode

Charge time	<3 hours to 90%	Run time	At least 600 NIBP measurements, when the NIBP module is powered by a new fully-charged battery
Shutdown delay	At least 30 minutes after the low battery indication first occurs		
Screen type	LCD TFT screen	Charge time	<5 hours to 90%
Screen size	1.54inches	Shutdown delay	At least 30 minutes after the low battery indication first occurs
Screen resolution	240pixels x 240pixels	Screen type	Black and white, untouchable
Data storage	store trend data of not less than 8 hours.	Screen size	2.4inches
SpO₂ Module (MAE30) Wi-Fi Specification		Screen resolution	208pixels x 360pixels
Protocol	IEEE 802.11a/b/g/n/ac	NIBP	
Modulation mode	BPSK, QPSK, 16QAM, 64QAM,	Mode of operation	Manual, Interval, NIBP STAT, Sequence, Clock
Operating frequency	2412MHz~2472MHz		
	5180MHz~5320MHz	Measurement parameters	Systolic, Diastolic, Mean
	5500MHz~5700MHz	NIBP measurement range	Weigh>23kg: 10-290mmHg
	5745MHz~5825MHz		23kg>Weigh>10kg: 10-240mmHg,
Data security	WPA/WPA2-PSK, WPA/WPA2-Enterprise		10kg>Weigh: 10-240mmHg
Encryption	AES, TKIP	Max measurement time	120s
SpO₂		Accuracy	Max mean error: ±5 mmHg
Measurement range	0%~100%		Max standard deviation: 8 mmHg
Resolution	1%	Resolution	1mmHg (0.1kPa)
Response time	<30s (SpO ₂ value sudden changes from 70%~100%)	Overpressure protection	Support
Accuracy	70%~100%: ±3%ABS	Wireless Receiver Module (R20) Related	
Refreshing rate	≤2s	Weight	250g
PI measurement range	0.05%~20 %	Dimensions	≤150mmx50mmx120mm
PR		(W x H x D)	
Measurement range	20 - 300 bpm	Monitoring Module Charger Related	
Resolution	1 bpm	Weight	Chargers C10 (For NIBP battery charging)≤ 1.5 kg
Response time	<30s (PR value sudden changes from 25 bpm to 240 bpm)		Chargers C25 (For SpO ₂ module MAS30 and ECG Module MAE30 charging) ≤ 165g
PR accuracy	±3 bpm	Dimensions	Chargers C10 (For NIBP battery charging)≤222mm x105mm x68mm
Refreshing rate	≤2s	(W x H x D)	Chargers C25 (For SpO ₂ module MAS30 and ECG Module MAE30 charging)
Temp Module (MAT30) Related			≤154.5mm x 78mm x 26.5mm
Weight	≤60g	Output Voltage	Chargers C10 (For NIBP battery charging): 100-240VAC(±10%)
Dimensions	≤75mmx50mmx30mm		Chargers C25 (For SpO ₂ module MAS30 and ECG Module MAE30 charging): 4.5V~5.5V
(W x H x D)			Chargers C10 (For NIBP battery charging): 0.6A-0.3A
Battery type	CR2032 coin battery	Output Current	Chargers C25 (For SpO ₂ module MAS30 and ECG Module MAE30 charging): 0.7A
Run time	At least 200 hours with a new coin battery		
Temp			
Measurement range	25 °C ~45 °C		
Resolution	±0.1°C		
Accuracy	±0.1 °C (±0.2 °F)		
NIBP Module (MAB30) Related			
Weight	≤165g		
Dimensions	≤19mmx60mmx19mm		
(W x H x D)			
Battery type	Rechargeable lithium-Ion battery		

Other Host-Related Parameters

Wi-Fi Specifications

Protocol	IEEE 802.11a/b/g/n/ac
Modulation mode	BPSK, QPSK, 16QAM, 64QAM, 256QAM
Operating frequency	2412MHz~2472MHz 5180MHz~5320MHz 5500MHz~5700MHz 5745MHz~5825MHz
Output power	<20dBm (CE requirements, detection mode:RMS) <30dBm (FCC requirements, detection mode: peak power)
Data security	WPA/WPA2-PSK, WPA/WPA2-Enterprise
Encryption	AES, TKIP

Bluetooth Specifications

Protocol	SpO ₂ /Temp module/ECG module/ wireless receiving module: Support Bluetooth 5 NIBP module: Bluetooth low energy 4.0
Operating frequency	2402MHz~2480MHz
Modulation mode	GFSK
Transmission power	< 10mW
Data security	Private protocol
Communication distance	ECG module and SpO ₂ module: no less than 1.5m (line of sight distance) NIBP module and SpO ₂ module: no less than 1.5m (line of sight distance) Wireless receiver module and SpO ₂ module: no less than 7m (line of sight distance)

NFC Specifications

Protocol	SpO ₂ module/Wireless receiver: ISO/IEC 14443 A; ISO/IEC14443 B ECG module/NIBP module: ISO/IEC 14443 A
Operating frequency	13.56MHz
Modulation mode	ASK (SpO ₂ module / Wireless receiver module)
Data security	Private protocol

Safety Specifications

Type of protection against electrical shock	Class I
Degree of protection	Type CF defibrillation proof for ECG,

against electrical shock

Degree of protection
against harmful ingress of water

Operating Environment Specification

Operating temperature	Main unit: 10 °C ~+35 °C Wireless monitoring Module: 0 °C ~+40 °C
Storage temperature	-20 °C ~+60 °C
Operating humidity	Main unit : 30%~95% Wireless monitoring Module: 15%~95%
Storage humidity	10%~95%
Operating atmospheric pressure	Main unit: 525 ~ 805.5mmHg (70.0kPa ~ 107.4kPa) Wireless monitoring Module: 427.5 ~ 805.5mmHg (57.0kPa ~ 107.4kPa)
Storage atmospheric pressure	120 ~ 805.5mmHg (16.0kPa ~ 107.4kPa)

Data Storage

Trends	Internal card: Up to 120 hours of trend data with the resolution no less than 1minute Up to 4 hours f trend data with the resolution no less than 5 seconds
Events	External card: Up to 120 hours of trend data with the resolution no less than 1 minute Internal card: 1000 events External card: 5000 events 128 arrhythmia events
NIBP measurements	Internal card: 1600 events External card: 5000 events
Full-disclosure waveforms ST view	Up to 48 hours for one waveform At least 120 hours of ST segment waveforms. One group of ST segment waveforms is stored every 5 minutes.

Power Supply Specifications

Input voltage	100-240V AC
Input current	ViCare U7: 17A; ViCare U7L/ViCare U7R: 14.5A
Frequency	50/60Hz

Battery Specifications

Number of batteries	1
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Battery type	Lithium battery
Rated battery voltage	10.95V
Battery capacity	5000mAh
Minimum battery run time	≥ 150 minutes

AC Power Auxiliary Outputs

Input voltage	100-240V AC
Input current	2A
Frequency	50/60Hz



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Environmental Specs.

The installation area must be clean and free from excessive noise, vibration, dust, corrosive materials, and flammable or explosive substances.

Condensation may form inside the equipment if it is moved between locations with different temperatures or humidity.

The system must NOT be powered on until all condensation has completely evaporated to prevent damage.

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