

# OMNI (K)

## PATIENT MONITOR



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## Intuitive

Designed for a fast paced work environment, the Infinium **Omni (K)**<sup>™</sup> patient monitor offers an extremely simple and adaptable user interface. Patient information along with vital sign settings can be quickly modified to meet the needs of a patient's changing condition. The **Omni (K)** offers a high resolution 10.5 inch touch screen to optimize the speed of patient care. The user can therefore make quick screen adjustments, set default settings, alarm limits, and manage up to 72 hours of detailed patient data.

## Upgradable

From the general floor to high acuity surgeries, the Infinium Omni (K) series patient monitors are designed to fit-in and move amongst many patient care areas. The **Omni (K)**<sup>™</sup> offers standard measurements of: non-invasive blood pressure, ECG with arrhythmia detection, motion tolerant SpO<sub>2</sub>, Temperature, and Respiration rate. End-tidal CO<sub>2</sub>, Anesthetic Agent measurement, Cardiac Output and Invasive blood pressure can added on-site by simply attaching our plug in modules. This field upgradability can allow the user to customize the monitor's acuity level while the patient's condition changes. If desired, the user can move from a basic vital signs monitor, to a continuous bed side monitor, to an operating room monitor while keeping the patient on a single monitor at all times.

## Connective

The **Omni (K)**<sup>™</sup> offers several connective solutions to network multiple monitors and/or manage patient data on an electronic medical records platform or a HL7 based hospital information system. The **Omni (K)** patient monitor offers Ethernet and RS-232 connections with an open source communication protocol. Infinium offers 2 levels of networking and connectivity. The **Omni (K)** is HL7 compliant. The HL7 network protocol will allow for all patient information and vital sign trends to be transferred and stored on a hospital information system. For non-HL7 medical facilities, there is the Infinium **OmniView**<sup>™</sup> central station which allows the real time remote monitoring and network of up to 32 **Omni** patient monitors. The **OmniView**<sup>™</sup> archives full disclosure of all patient vital sign trends. The patient data from the **OmniView**<sup>™</sup> can be very simply saved, stored, printed, and, transferred.

# A Field Upgradable Operating Room Solution

A MONITOR THAT CAN GROW WITH YOU...

Whether it be a basic outpatient procedure or a high acuity cardiac surgery the **Omni (K)**<sup>™</sup> can be upgraded and custom tailored on-site by the user. The **Omni (K)** is preconfigured with non-invasive blood pressure, 3/5 ECG with arrhythmia detection, impedance respiration, SpO<sub>2</sub>, and temperature. More advanced readings of End-tidal CO<sub>2</sub>, Anesthetic agent measurement, and Cardiac Output Invasive blood pressure can be activated by the user at anytime.

## Capnography & Anesthetic Agent Measurement plug in Module:

The Infinium **Entide**<sup>™</sup> module is a field upgradable plug in module that can measure End-tidal CO<sub>2</sub> alone or End-tidal CO<sub>2</sub> with the automatic identification of anesthetic agents (N<sub>2</sub>O, O<sub>2</sub>, Sevoflurane, Isoflurane, Desflurane, Halothane, Enflurane)

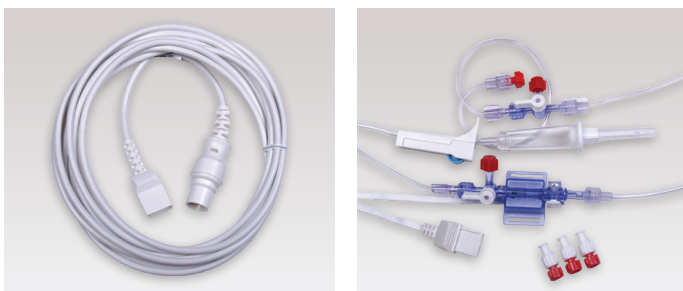
Both mainstream and sidestream modules are available for End-tidal CO<sub>2</sub> and agent measurement.

The **Entide**<sup>™</sup> utilizes a low flow (50ml/min) sidestream method that allows use for intubated and non-intubated applications. The **Entide**<sup>™</sup> sample line connection incorporates filter cells to eliminate the potential of cross contamination.



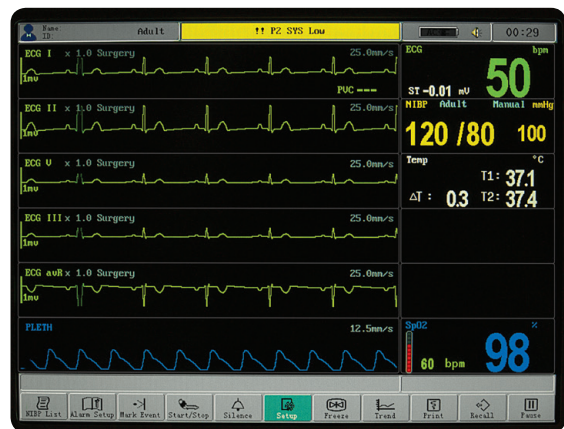
Simple connection sample lines allows the **Entide**<sup>™</sup> to be one of the Industry's lowest cost per patient End-tidal CO<sub>2</sub> and anesthesia measurement systems.

## Cardiac Output & Invasive Blood Pressure:



2 channels of invasive blood pressure and the facility for thermodilution cardiac output are standard on the **Omni (K)**<sup>™</sup>.

## ECG:

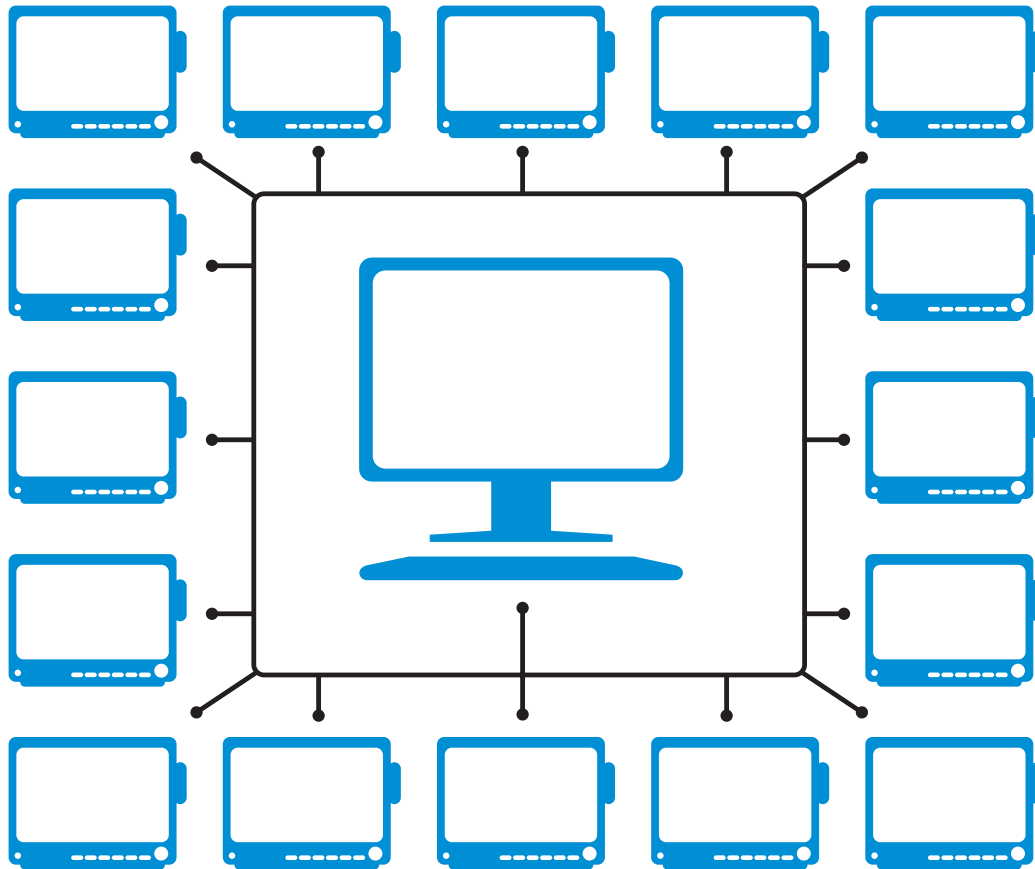


The **Omni (K)**<sup>™</sup> offers a 3, 5, and 12 lead ECG platform. Arrhythmia detection and ST are also standard and measurable on all lead sets.

- **3-Lead:** I, II, III
- **5-Lead:** I, II, III, aVR, aVL, aVF, V
- **12-Lead:** I, II, III, aVR, aVL, aVF, V1-V6 (factory installed)

# OMNIVIEW Central Station

SIMPLICITY IN CONNECTIVITY:



The **Omniview™** central station allows the wireless or hard-wired measurement for a network of up to 32 **Omni** patient monitors. The **Omniview™** archives full disclosure of all patient information and vital sign trends. In real time the **Omniview™** displays the patient's numeric vital signs along with waveforms. The patient data from the **Omniview™** can be transferred to an EMR as a supplement to the patient's file or integrated into a hospital information system.

The **Omniview™** gives a real time display of all patient vital signs: Heart rate, Last BP reading, SpO<sub>2</sub>, Temp, EtCO<sub>2</sub> and Respiration rate with waveforms.





# Mounting Solutions

A RELIABLE CONNECTION

Several mounting systems are available for the **Omni** series patient monitors.

## ROLLING STAND

Height and tilt adjustable with a large wheel base allows for smooth and stable mobility.

- Quick release slide mount
- Accessory basket
- Medical grade steel construction
- Lockable wheels



## WALL MOUNTS

Height and tilt adjustable wall mounts offer.

- Quick release of monitor
- Medical grade construction
- Adaptable to anesthesia machines
- Adaptable to most wall rail systems

# OMNIVIEW CENTRAL MONITORING SYSTEM SPECIFICATIONS:

## MAIN FRAME

### Power Supply

AC100-240V 6A/3A

### Basic Configuration

20" or larger color display  
Intel Pentium IV2.0G CPU  
Windows XP professional operating system  
512MB RAM  
80GB Fixed Disk drive

### PERFORMANCE

#### Display

Size: color TFT display 20" or larger  
Number of display: 1 or 2 sets (optional)  
Resolution: 1280 x 1024

#### Waveform

ECG (I, II, III, aVR, aVL, aVF, V1-V6)  
PLETH, RESP, CO<sub>2</sub>, IBP, Multi-gas

### Parameter

HR, ST, NIBP, IBP, SpO<sub>2</sub>, PR, RR, TEMP, EtCO<sub>2</sub>, Multi-gas

### Indicator

Up to 32-waveform presentation  
12.5mm/s, 25.0mm/s, 50.0mm/s user-adjustable sweep speed  
Alarm sound

### Alarm

High and Low limits alarm  
Audible and visual alarm

### Record Type

8 seconds real-time recording  
Freeze waveform recording  
Trend data recording  
Alarm strip recording

### Printer

External Laser Printer

### View

Up to 64 waveforms for up to 32 bedside monitors (8 monitors per screen)  
All waveform presentation for single patient  
48 hours of trend display for all parameters  
Multi-leads ECG waveform display  
Waveform freeze  
Wireless Networking  
Industry standard 802.11b/g WLAN  
Connected bedside number: up to 16 bedside monitors

### Review

240 hours trend review for each bedside monitor  
720 items parameters alarm review for each bedside monitor  
720 NIBP measurements review  
72 hours of 32 channels full-disclosure waveforms store and review

### Connection methods

Wireless via transmitter  
Hardwired via ethernet  
Hardwired via RS-232

# OMNI (K) TECHNICAL SPECIFICATIONS:

## Application

Neonatal, pediatric and adult patients

### Performance Specifications

Display: 10.5 inch color touch screen  
Trace: 8 waveforms  
Indicator: Alarm indicator  
Power indicator  
QRS beep and alarm sound  
Trend time: 1 - 72 hour  
Recorder: Built-in, thermal array, 3 channels  
Record width: 48mm  
Recorder paper: 50mm  
Record speed: 25mm/s, 50mm/s

## ECG

Input: 5-lead ECG cable and standard AAMI line for connection  
Lead Choice: I, II, III, aVR, aVL, V, V1-V6, TEST  
Gain Choice: x0.5, x1, x2, x4  
Frequency Characteristic: 0.05 ~ 35 Hz (+3dB)  
ECG Waveforms: 7 channels  
Penetration Voltage: 4000VAC 50/60Hz  
Sweep Speed: 12.5, 25, 50 and 100 mm/sec (left to right or right to left)  
HR Display Range: 30 ~ 300bpm  
Accuracy:  $\pm 1$ bpm or  $\pm 1\%$ , whichever is greater  
Alarm Limit Range Setting: upper limit 100 ~ 200bpm, lower limit 30 ~ 100bpm

## RESP

Measure Method: RA-LL impedance  
Range: 0 ~ 120 rpm  
Accuracy:  $\pm 3$  rpm  
Alarm Limit Setting: upper limit 6 ~ 120 rpm, lower limit 3 ~ 120 rpm  
Sweep Speed: 12.5, 25, 50 and 100 mm/sec (left to right or right to left)

## NIBP

Measuring Technology: automatic oscillating measurement  
Cuff Inflating: <30s (0 ~ 300 mmHg, standard adult cuff)  
Measuring Period: AVE <40s  
Mode: Manual, Auto  
Measuring Interval in AUTO Mode: 2 min ~ 4 hrs  
Pulse Rate Range: 30 ~ 250 (bpm)  
Measuring Range: Adult/Pediatric Mode: SYS: 40 ~ 250 (mmHg)  
DIA: 15 ~ 200 (mmHg)  
Neonatal Mode: SYS: 40 ~ 135 (mmHg)  
DIA: 15 ~ 100 (mmHg)  
Accuracy: Maximum Mean error:  $\pm 5$ mmHg  
Maximum Standard deviation: 8mmHg

## NIBP (continued)

Resolution: 1mmHg  
Overpressure Protection: Adult Mode: 300 (mmHg)  
Neonatal Mode: 160 (mmHg)  
Alarm Limit Setting: SYS: 50 ~ 240 mmHg  
DIA: 15 ~ 180 mmHg

## TEMP

Range: 25 ~ 50 (°C)  
Accuracy:  $\pm 0.2^\circ\text{C}$  (25.0 ~ 34.9°C)  
 $\pm 0.1^\circ\text{C}$  (35.0 ~ 39.9°C)  
 $\pm 0.2^\circ\text{C}$  (40.0 ~ 44.9°C)  
 $\pm 0.3^\circ\text{C}$  (45.0 ~ 50.0°C)  
Display Resolution: 0.1°C  
Alarm Limit Setting: upper limit 0 ~ 50°C, lower limit 0 ~ 50°C  
Channel: 2 channels

## SpO<sub>2</sub>

ASpO<sub>2</sub>: Anti-motion SpO<sub>2</sub>  
SpO<sub>2</sub>% Range: 0-100%  
SpO<sub>2</sub> Accuracy:  $\pm 2\%$  (70 ~ 100%, non-motion)  
 $\pm 3\%$  (70 ~ 100%, motion)  
Pulse Rate Range: 30-250 bpm  
Pulse Rate Accuracy:  $\pm 2$  bpm (non-motion)  
 $\pm 3$  bpm (motion)  
Alarm Limit Setting: upper limit 70 ~ 100%, lower limit 70 ~ 100%  
SpO<sub>2</sub> Probe: Red light LED wavelength 660nm $\pm 5$ nm  
Infrared light LED wavelength 940nm $\pm 10$ nm

## IBP

Measurement Range: -50 ~ 300mmHg  
Channel: 2 channels  
Pressure Transducer: sensitivity, 5 $\mu$ V/V/mmHg  
Impedance Range: 300 ~ 3000 $\Omega$   
Transducer Sites: ART, PA, CVP, RAP, LAP, ICP  
Unit: mmHg/kPa selectable  
Resolution: 1mmHg  
Accuracy:  $\pm 1$ mmHg or  $\pm 2\%$ , whichever is greater  
Alarm Range: -10 ~ 300mmHg

## EtCO<sub>2</sub>

CO<sub>2</sub> Measurement Range: 0 ~ 99mmHg  
Accuracy:  $\pm 2$ mmHg (0 ~ 38mmHg)  
39-99mmHg  $\pm 5\%$  of reading +0.08% for every 1mmHg (above 38mmHg)  
Sampling Rate: 50 ml/min  
Initialization Time: 30 seconds (typical), reaches  $\pm 5\%$  steady-state accuracy within 3 minutes.  
Respiration Rate: 0 ~ 150 breaths/min  
Mode: adult, neonate

## C.O. (Cardiac Output)

Measurement Method: Thermodilution Method  
Measurement Range: C.O. 0.1 to 20 L/min  
TB 23 to 43  
TI 0 to 27  
Resolution: C.O. 0.1 L/min  
TB, TI 0.1  
Accuracy: C.O.  $\pm 5\%$  or  $\pm 0.1$  L/min, whichever is greater, as measured using electronically generated flow curves.  
TB, TI  $\pm 0.1$  (without sensor)  
TB 23 to 43  
Alarm Range: C.O.  $\pm 2\%$  or  $\pm 0.1$  L/min, whichever is greater, as measured using electronically generated flow curves.  
Repeatability: C.O.  $\pm 2\%$  or  $\pm 0.1$  L/min, whichever is greater, as measured using electronically generated flow curves.

## Anesthetic Agents

Method: Infrared absorption  
Gas Sorts: Halothane, Isoflurane, Enflurane, Sevoflurane, Desflurane, CO<sub>2</sub>, N<sub>2</sub>O, O<sub>2</sub> (optional Automatic Agent ID)  
Measurement Range: Halothane, Isoflurane: 0 ~ 8.5%  
Enflurane, Sevoflurane: 0 ~ 10%  
Desflurane: 0 ~ 20%  
CO<sub>2</sub>: 0 ~ 10%  
N<sub>2</sub>O: 0 ~ 100%  
O<sub>2</sub>: 0 ~ 100%  
Bias: Halothane, Isoflurane, Enflurane, Sevoflurane, Desflurane:  $\pm (0.15 \text{ Vol}\% + 15\% \text{ rel.})$   
CO<sub>2</sub>:  $\pm (0.5 \text{ Vol}\% + 12\% \text{ rel.})$   
N<sub>2</sub>O:  $\pm (2 \text{ Vol}\% + 8\% \text{ rel.})$   
O<sub>2</sub>:  $\pm 3 \text{ Vol}\%$

## Networking

Industry standard 802.11b/g wireless network

## Power

Source: External AC power or internal battery  
AC Power: 100 ~ 240VAC, 50/60Hz, 150VA  
Battery: Built-in & rechargeable lithium ion  
Operating Time: 3+ hours

## Environmental Specifications

Temperature: Operating: 5 ~ 40 °C  
Storage: -10 ~ 45 °C  
Humidity range: Operating:  $\leq 80\%$   
Storage:  $\leq 80\%$

## Other Standard Features

OxyCRG, drug dose calculation, cascading ECG, On screen NIBP trends (up to 250 readings), user set defaults, Arrhythmia detection, ST segment