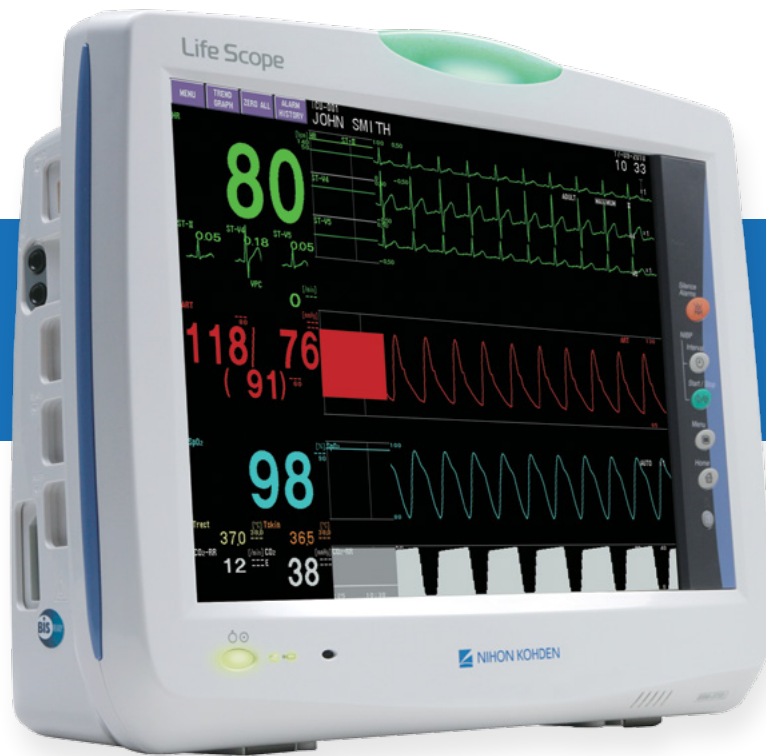


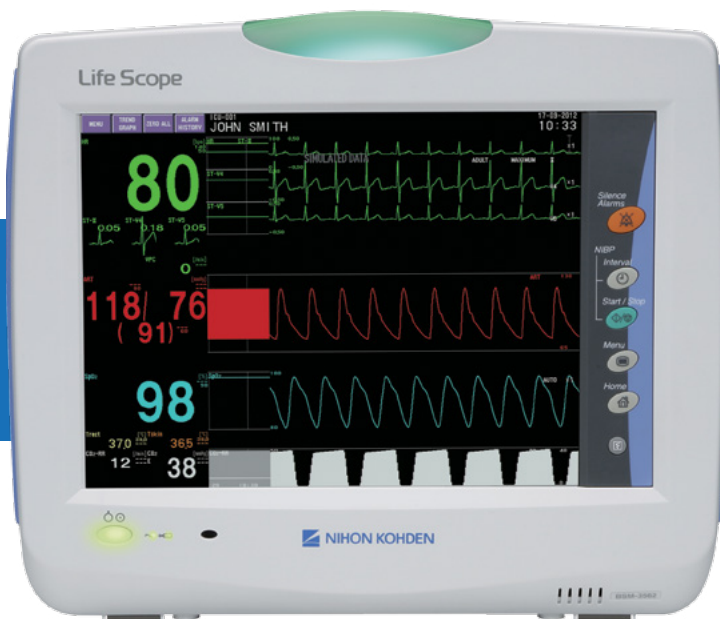


Life Scope *VS*

Reliable monitoring to sustain life

Flexibility in monitoring patients across various clinical settings is a must. It eases usability and convenience, as well as saving lives by communicating accurate information. The Life Scope VS series is a cutting-edge range of bedside monitors with a large display which easily integrates unique modular technology with pragmatic functionality.

Life Scope VS series is a practical range of bedside monitors that fit ideally in all types of care settings including ICU/OR/transport, from Nihon Kohden, a global manufacturer of innovative products and advanced technologies.



Life Scope *VS*

Distinct dimensions for divergent demands

The **Life Scope VS series** comes in two sizes (12.1" and 15"), each with high-resolution touchscreen displays.

- Reliable design and quality
- Flexible choice of parameters for adaptive monitoring in different care settings
- Easy installation even in narrow spaces with Wall Mount Kit
- Comprehensive monitoring with Cart and Transmitter
- Monitoring on the move with Wireless LAN options

Reliable review

Life Scope VS offers advanced storage and review capabilities, with easy access to historical data that includes up to 24 hours of 5 selected full disclosure waveforms, tabular and graphical trends, and many special attributes.

- Synchronized time across all trend screens
- Customization of trend table and graph as per each patient's condition
- ECG, SpO₂ (Nihon Kohden, Nellcor, or Masimo) and temperature (2ch)
- Optional second screen with Life Scope VS 3700 series

Smart supervision

Life Scope VS has smart features for precise monitoring.

- Nihon Kohden's **ec1 arrhythmia analysis** provides superior elimination of false alarms
- **PWTT-triggered NIBP** measurement detects changes in blood pressure (Nihon Kohden patented technology)
- 12-channel ECG with 10 electrodes
- 12-channel ST analysis
- Comprehensive multi-lead arrhythmia analysis and replay of all recorded events

Futuristic features

Life Scope VS offers progressive monitoring with innovative features.

- Complete modular flexibility with the **Smart Cable™ System**, which immediately detects parameter type and starts measuring accordingly when connected to a MULTI socket
- **capONE EtCO₂** sensor measure to prevent respiratory incidents or detect breathing/ventilator issues. It is the world's smallest, lightest, fastest, and most durable mainstream CO₂ sensor for oral and nasal breathers. Designed for intubated and non-intubated patients, capONE shows a clear EtCO₂ reading, enabling quick and appropriate action
- **iNIBP and BluPro SpO₂ technology** for enhanced patient comfort and clinical accuracy

Reliable connectivity

Effective network capability allows inter-bed monitoring of multiple patients without a central monitor (up to 16 beds). Additionally, direct **HL7 communication enables** the exchange of data between the Life Scope VS and HIS without any additional software.

- Multiple beds window that displays status of all patients
- Individual bed window for detailed data of each patient
- **NetKconnect** (optional) for reviewing real-time patient data and history, anytime, anywhere, from your PC
- **ZS-900PK transmitter**, WLAN adaptor, or LAN cable for transmitting data to the central monitor wirelessly or by hardwired network
- **HL7 Gateway Server** which connects LS-NET monitor network to the hospital or clinical information system (HIS, CIS)

Outstanding options

Optional features are also available to further enhance monitoring.

- Up to 72 hours storage of numerical and graphical trend data
- Up to 72 hours full disclosure for up to 5 waveforms
- Connection of up to 2 external devices
- Remote control
- 3-channel print head

Specifications

BSM-3532/3552/3562 & BSM-3733/3753/3763

Display

Display size	BSM 3500 12.1" color TFT Type LCD BSM 3700 15" color TFT Type LCD
Display type	Touchscreen
Number of waveforms	BSM 3500 – maximum 14 BSM 3700 – maximum 15
Display waveforms	ECG (maximum 12 traces), respiration, IBP (maximum 2 or 3 traces, depending on number of MULTI connectors), SpO ₂ pulse wave, CO ₂ and CO thermodilution curve, EEG, N ₂ O, O ₂ , anesthetic agent (halothane, isoflurane, enflurane, sevoflurane, desflurane), Flow, Paw, Volume
Numerical data display	Heart rate, VPC rate, ST level, respiration rate, SpO ₂ , pulse rate, temperature, NIBP (systolic, diastolic, MAP), IBP (systolic, diastolic, mean), EtCO ₂ , FiCO ₂ , cardiac output, cardiac index, injectate temperature, blood temperature, BIS, SEF95, SR, EMG, SQI HR, VPC, ST, RR, NIBP (systolic, diastolic, MAP), IBP (systolic, diastolic, mean), SpO ₂ , PR, TEMP, CO, CI, Ti, Tb, O ₂ , FiCO ₂ , ETCO ₂ , BIS, SEF95, SR, EMG, SQI, N2O (I), N ₂ O (E), O2 (I), O2 (E), Agent (I), Agent (E), TVi, TVe, MV, Ppeak, Pmean, PEEP, Ri, Re, C, SEF, MDF, PPF, TP, Abs δ , Abs θ , Abs α , Abs β , Abs γ , $\delta\%$, $\theta\%$, $\alpha\%$, $\beta\%$, $\gamma\%$, CCO, CCI, SVR, SVRI, SV, SVI, SVV

Alarms

Alarm items	Upper/lower limits alarm, arrhythmia alarm
Alarm levels	Crisis (red blinking), Warning (yellow blinking), Advisory (yellow or blue light)
Alarm indication	Alarm indicator, highlighted message, and alarm sound
Alarm suspend	1, 2, or 3 min, or off
Alarm indication	All Alarms OFF, Bypass Mode, Suspending Monitoring

Parameters

ECG	Number of electrodes: 3, 6, or 10 Diagnosis mode: 0.05 to 150 Hz Monitor mode: 0.3 to 40 Hz Maximum filter mode: 1 to 18 Hz Heart rate counting range: 0, 15 to 300 beats/min Arrhythmia analysis method: multi-template matching software algorithm VPC counting rate: 0 to 99 VPCs/min Arrhythmia alarms: Asystole, VF, VT, V Brady, Ext Tachy, Ext Brady SV Tachy, VPC Run, Tachycardia, Bradycardia, Couplet, Early VPC, Multiform, V Rhythm, Pause, Bigeminy, Trigeminy, Freq VPC, VPC, Irregular RR, Pacer Non-Capture, Prolonged RR, No Pacer Pulse, (Noise, Check Electrodes, Learning)
ST level measurement	Number of measurement channels: up to 12 Measuring range: ± 2.5 mV
Respiration (impedance or thermistor method)	Measurement method: impedance pneumography, EtCO ₂ , anesthetic gas module Measuring range: 0 to 150 breaths/min
SpO ₂	Measuring technology: Nihon Kohden, Masimo, or Nellcor Measuring display range: 0 to 100% Pulse rate from SpO ₂ range: 25 to 300 beats/min (varies by SpO ₂ technology)
Non-invasive blood pressure (NIBP)	Measuring method: oscillometric cuff Pressure display range: 0 to 300 mmHg
Invasive blood pressure (IBP)	Number of channels: up to 3 Measuring range: -50 to 300 mmHg Pulse rate from IBP range: 0, 30 to 300 beats/min Labels: available
Temperature	Measuring range: 0 to 45°C Number of channels: maximum 2
Cardiac output	Measuring method: thermodilution method Measuring range: Injectate temperature (Ti): 0°C to 27°C Blood temperature (Tb): 15°C to 45°C Thermodilution curve (delta Tb): 0°C to 2.5°C Cardiac output (CO): 0.5 to 20 L/min

Parameters (continued)

BIS	Input channels: 1 or 2 (depends on the BIS sensor type) Measuring parameters: Bispectral Index (BIS), 95% Spectral Edge Frequency (SEF95), Suppression Ratio (SR), EMG, Signal Quality Index (SQI)
CO₂	CO ₂ measuring range: 0 to 100 mmHg Respiration rate counting range: 3 to 150 breaths min
esCCO	Measuring parameters: esCCO, esCCI, esSV, esSVI, esSVR, esSVRI Principle: Pulse Wave Transit Time (Nihon Kohden patented) measured from peak of R-wave and SpO ₂ rise time. Source: ECG, SpO ₂ , NIBP/IBP, patient info
Anesthetic gas module	Method: sidestream sampling method Measuring parameters: inspired/expired O ₂ , inspired/ expired N ₂ O, inspired/expired CO ₂ , inspired/expired anesthetic agent (Des, Iso, Enf, Hal, Sevo), respiration rate and minimum alveolar concentration (MAC) Data output: inspired/expired values of gases Warm-up time: 1 min from Power ON Accuracy: 6 mins after power ON Sampling rate: 70 to 100 mL/min ±10 mL/min 100 to 200 mL/min ±10%rel
EEG	Channels: 8 Measuring range: SEF, MDF, PPF: 0.0 to 62.5 Hz TP: 0.01 to 9.99 nW Abs δ, Abs θ, Abs α, Abs β, Abs γ: 1 to 9999 pW δ%, θ%, α%, β%, γ%: 0 to 100% Data display update cycle: every 3 s or when alarm is generated SEF alarm: Upper limit range: 1.0 to 60.0 Hz in 0.5 Hz steps, Off Lower limit range: 0.5 to 59.5 Hz in 0.5 Hz steps, Off TP alarm: Upper limit range: 0.02 to 9.99 nW in 0.01 nW steps Lower limit range: 0.01 to 9.98 nW in 0.01 nW steps
TOF	Measured parameters: TOF ratio, TOF count, PTC
Spirometry	Flow/Paw can be monitored with the GF-220R Multigas/ flow unit. Measurement Method: Differential pressure method (fixed orifice) Measured Parameters Flow, Ppeak, Pmean, PEEP, TVi, TVe, MV, C, R, Ri, Re, RR

Stored patient data

Trend graph	Trend parameters: all monitored parameters Trend display time: 72 hours
Vital signs list	Trend parameters: all monitored parameters Data storage: periodic: 72 hours
NIBP	1,024 files
Full disclosure	Storage time: 72 hours Number of waveforms stored: maximum 5
Alarm history:	Number of entries: 16,384
Hemodynamics trend table	Number of entries: 1,024
Trend table	Number of entries: 1,024
Arrhythmia recall	Number of entries: 16,384
ST recall	Number of entries: 1,024 (1 per minute for 72 hours) for all monitoring leads
12-lead interpretive recall	Number of files: 18 files

Power requirement

Line voltage	AC 100 to 240 V DC 8.5 to 12.6 V (battery operation)
Line frequency	50 or 60 Hz
Power input	AC 100 VA

Battery

Operation time	Approx. 60 mins (BSM-3733/3753/3763) or 90 mins (BSM-3532/3552/3562) with one fully charged battery
Number of battery slots	1
Type of battery	Nickel-metal hydride
Nominal voltage	9.6V
Nominal discharge capacity	2900mAh
Charge time	Approx. 10 hours (during monitoring condition) Approx. 2 hours (during non-monitoring condition)

Dimensions and weight

BSM-3532/3552/3562	370 (W) × 310 (H) × 172 (D) mm, 6.2 kg
BSM-3733/3753/3763	430 (W) × 350 (H) × 172 (D) mm, 7.4 kg
WS-371P	77 (W) × 73 (H) × 120 (D) mm, 0.35 kg
SB-671P	76 (W) × 35.5 (H) × 97.2 (D) mm, 0.54 kg



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