Life Scope

NIHON KOHDEN

LIFE SCOPE®

PATIENT MONITORING SYSTEMS





AGILITY AMPLIFIES ABILITIES

Different areas throughout the hospital have different requirements for patient care. The Life Scope G5 can easily be programmed to different care settings using stored configurations and provides auto screen configuration. Clinicians can customize the monitor for each patient's needs, reduce false alarms, seamlessly transport, see trends and get standard displays for fast, informed patient management. This is smart technology for high quality patient-centered care.

CHANGE IS GOOD

- 12.1 INCH TOUCHSCREEN DISPLAY
- MULTIPLE QUICK-ACCESS CONFIGURATIONS W/ TREND ANALYSIS
- ALL-IN-ONE SYSTEM WITH REMOVABLE TRANSPORT MONITOR
- BUDGET-FRIENDLY, COMPACT DESIGN
- WALL OR BATTERY OPERATION
- ADVANCED CARDIOLOGY PARAMETERS SUCH AS QTC AND A-FIB
- GRAPHICAL FEATURES SUCH AS ST-DIAGRAM, HISTOGRAM AND QUICK ACCESS TREND CABINETS





INGENUITY FOR MID/HIGH ACUITY

INTELLIGENT AND INTUITIVE

- 15.6 INCH, HIGH RESOLUTION LCD TOUCHSCREEN DISPLAY
- EXCELLENT WIDE ANGLE VISIBILITY
- DURABLE, TEMPERED GLASS DISPLAY FOR EASY CLEANING
- MULTIPLE QUICK-ACCESS CONFIGURATIONS W/ TREND ANALYSIS
- ALL-IN-ONE SYSTEM WITH REMOVABLE TRANSPORT MONITOR
- WALL OR BATTERY OPERATION





DETAILS THAT DELIVER

The Life Scope G7 patient monitor provides caregivers the features needed for the highest acuity settings.

Balancing powerful insights and ease-of-use, the G7 processor is integrated into the display unit. It also

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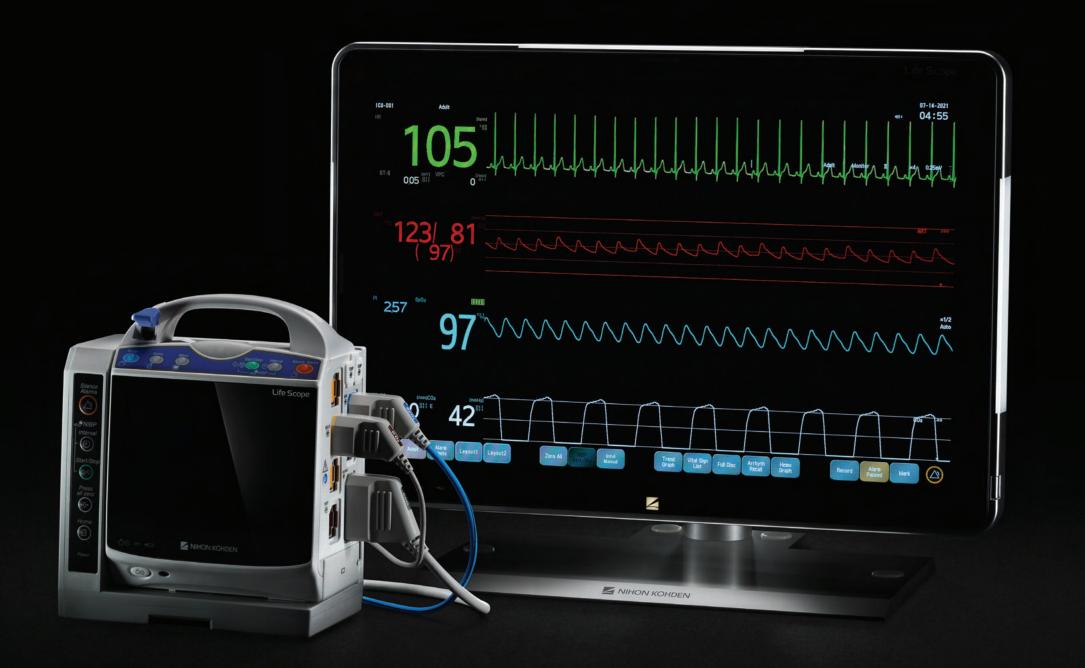
Balancing powerful insights and ease-of-use unit.

Balancing powerful insights and ease-of-use unit.

Balanc

SEE THE BIG PICTURE

- 19 INCH, HIGH RESOLUTION LCD TOUCHSCREEN DISPLAY
- EXCELLENT WIDE ANGLE VISIBILITY
- DURABLE, TEMPERED GLASS DISPLAY FOR EASY CLEANING
- ADD ONE INDEPENDENT INTERACTIVE REMOTE MONITORING SCREEN
- DETAILED VISUALS AND COMPACT DESIGN WITH INTEGRATED PROCESSOR
- ALARM OUT INTERFACE
- DATA ACQUISITION UNIT FOR EASIER ACCESS TO CONTROLS AND TRANSPORT MONITOR FUNCTIONS
- ADVANCED INTERBED FUNCTION ENABLES MULTI-CLINICIAN OVERSIGHT
- ADVANCED FEATURES INCLUDING SPO₂ HISTOGRAM, HIQ-VIEW PAIRING, WLAN TRANSPORT AND CAR SEAT CHALLENGE FUNCTIONS



BSM-1700

EVERY STEP OF THE WAY

PATIENT INSIGHTS TO GO

- 5.7 INCH TOUCHSCREEN DISPLAY
- COMPATIBLE WITH G-SERIES NIHON KOHDEN BESIDE MONITORS
- ENSURES SEAMLESS TRANSPORT WITH CONTINUITY OF PATIENT DATA
- LIGHTWEIGHT WORKHORSE FOR RUGGED, SIMPLIFIED WORKFLOW
- UP TO 5 HOUR BATTERY OPERATION
- OPTIONAL WIRELESS CONNECTIVITY FOR WLAN TRANSPORT CAPABILITY





TOUCHSCREEN MACHINE

BETTER DATA, BETTER DECISIONS

- 21.5 INCH HIGH RESOLUTION TOUCHSCREEN DISPLAY
- CONNECT UP TO THREE INDEPENDENT AND INTERACTIVE MONITORS
- TRUE FLAT TEMPERED GLASS DISPLAY FOR EASY CLEANING
- DETAILED PARAMETERS AND VISUALS
- UNIQUE, CARE AREA-SPECIFIC DISPLAY CONFIGURATIONS
- INTERBED FUNCTION ENABLES MULTI-CLINICIAN OVERSIGHT
- INCLUDED DATA ACQUISITION UNIT FEATURES 7 SMART PORTS,
 COMPACT DESIGN FOR CONFIDENT PATIENT TRANSPORT





THE NK-HiQ[™] ENTERPRISE GATEWAY

ONE RECORD, UNLIMITED POTENTIAL

Powered for enterprise-level health systems, the NK-HiQ Enterprise Gateway grows with the needs of a hospital or integrated delivery network, supporting up to 2,000 patient monitoring devices and 300 remote viewing stations.

CONTINUITY IS BEAUTIFUL

- REDUCES COSTS THROUGH OPERATIONAL EFFICIENCIES
 AND LESS BURDEN ON THE STAFF
- STREAMLINES IT ADMINISTRATION ACROSS DEVICES
 AND COMMUNICATION PROTOCOLS
- REDUCES THE TYPICAL SERVER FOOTPRINT BY MORE THAN 60%

LIFE SCOPE® G5 BEDSIDE MONITOR SPECIFICATIONS

DISPLAY	
Display Size/Type	CSM-1501 (CU-151R): 12.1" color TFT LCD; CSM-1502 (CU-152R): 15.6" color direct bond TFT LCD
Resolution	CSM-1501: 1280 × 800; CSM-1502: 1366 × 768
Characteristics	True Flat, tempered glass medical certified, capacitive touch screen (G5 Max) with up to 15 function soft keys and 3 quick recall screen configurations (CSM-1501; resistive film touch screen)
Number of Traces	Up to 15 traces (30 traces on two displays) moving or fixed method
Waveforms	Up to 15 traces (30 traces on two displays) moving or fixed method ECG (up to 12), respiration, IBP (up to 8), SpO ₂ pulse wave, CO ₂ , BIS-EEG, EEG* (up to 2 traces), vent PAW, vent Flow, and CO Thermodilution curve. When gas is monitored: O ₂ concentration curve, CO ₂ concentration curve, anesthetic agent concentration (Halothane, Isoflurane, Enflurane, Sevoflurane, Desflurane*) Analog input.
Sweep Speed	Normal sweep speed: 25 mm/s, 50 mm/s Slow sweep speed (respiration): 1.56 mm/s, 6.25 mm/s, 12.5 mm/s, 25 mm/s
Numeric Data Display	Heart rate, VPC rate, ST level, RR respiration rate, NIBP (systolic, diastolic, map), IBP (systolic, diastolic, mean), SpO ₂ , SpO ₂ -2, delta SpO ₂ , pulse rate, temperature, CO, CI, Ti (injectate tempera-ture), Tb (blood temperature), O ₂ concentration, EICO ₂ , BIS, inspired/ expired N ₂ O concentration, inspired/expired CO ₂ , inspired/expired O ₂ concentration, inspired/expired anesthetic agent concentration (Halothane, Isoflurane, Enflurane, Sevoflurane, Desflurane), MAC (minimum alveolar concentration), Ppeak (peak airway pressure), PEEP (positive end expiratory pressure), Pmean (mean airway pressure), MV (minute volume), TV (inspiratory tidal volume), TV (expiratory tidal volume), C (compliance), R (airway resistance), Ri (inspiratory airway resistance), Re (expiratory airway resistance), IE (inspiration expiration ratio), SEF (90 or 95% spectral edge frequency), MDF (median frequency), PPF (peak power frequency), TP (total power), power of frequency, CSA, power ratio of frequency, DSA, TOF cnt, TOF rat, Tw 1 to Tw4 (Twitch height), DBS (double burst stimulation), TET (tetanic stimulation) PTC (post tetanic count stimulation), PCCO, PCO, tcPO ₂ , tcPO ₂ , tcPO ₂ , PV, SPV. With INVOS monitor: CSO ₂ , SSI indicator, BL (baseline), AUC (area under the curve), change rate. With CCO monitor: CCO, CCI, SvO ₂ , ScvO ₂ , Sv, SVI, SVV, SVR, SVRI, RVEF, EDV, EDVI, ESV, ESVI, DO ₂ , VO ₂ , O ₂ EI, SaO ₂ , HRV, CF, QTc and QRSd
Alarm Items	Vital sign, arrhythmia, technical, operational, interbed
Alai III Iteliis	Crisis: red blinking
Alarm Levels	Warning: yellow blinking Advisory: yellow or blue light

Alarm Items	Vital sign, arrhythmia, technical, operational, interbed
Alarm Levels	Crisis: red blinking Warning: yellow blinking Advisory: yellow or blue light
Alarm Indication	Alarm indicator (360° visibility) highlighted message, alarm sound
Alarm Suspend	1, 2, or 3 min
Alarm Master	Adult and Pediatric up to 4, Neonatal up to 6

Adult and Pediatric up to 4, Neonatal up to 6 DATA Trend parameters: up to 9 for each trend graph (up to three); Trend display time: Up to 72 hours (short trend for the last 30 minutes on main screen)
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Three lists of up to 15 parameters each for up to 72 hours; Periodic: up to 1 per minute for 72 hours
Number of entries: 1,024 files
Number of entries: 1,024 files
Storage time: up to 72 hours; Number of waveforms stored: 5 (max)
Number of files: 4,320 files (1 per minute for 72 hours) for all monitoring leads
16,384 files (Alarm & Arrythmia recall)
Number of files: 18 files
72 hours (OCRG/Hemodynamics/Trend/aEEG)
IONAL)
Thermal array recording
3 traces (max)

* With optional modules

PARAMETERS

PARAMETERS		
Leads	3,6 or 10-lead ECG cable for I, II, III, aVR, aVL, aVF, V1 to V6	
ECG	Number of ECG waveforms channels: up to 12; Frequency response: diagnosis mode - 0.05 to 150 Hz, ST mode -0.05 to 18 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 software algorithm; VPC counting rate: 0 to 99 VPC/smin; Arrhythmia alarms: ASYSTOLE, V RHYTHIM, V BRADY, EXT TACHY, EXT BRADY, A-Fib, End A-Fib, VPC RUN, COUPLET, EARLY VPC, BIGEMINY, TRIGEMINY, FREQ VPC, PROLONGED RR, SV TACHY, TACHYCARDIA, BRADY-CARDIA, VPC, MULTIFORM, IRREGULAR RR, NO PACER PULSE, PACER NON-CAPTURE, PAUSE	
ST Level Measurement	Number of measurement channels: Up to 12; Measuring range: ±2.5 mV	
Respiration	Measuring range: 0 to 150 breaths/min (Impedance)	
SpO ₂	Measuring Technology: Nihon Kohden, Masimo or Nellcor; Measuring Display Range: 0 to 100% (70 to 100% at specified accuracy); Pulse rate from SpO ₂ Range: 20 to 300, (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	Measuring range: -50 to 300 mmHg; Pulse rate display range from IBP range: 0, 30 to 300 beats/min	
Temperature	Measuring range: 0 to 45°C; Number of channels: 4 (max)	
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	
CO ₂	CO ₂ measuring range: 0 to 150 mmHg; Respiration rate counting range: 3 to 150 breaths/min	
BIS	Input channels: 2; Measuring parameters: Bispectral Index (BIS), 95% Spectral Edge Frequency (SEF90, SEF95), Suppression Ratio (SR), EMG, Signal Quality Index (SQI)	
CONNECTIVITY		

Standard: Ethernet (LS-Net), USB, third party interface (2), HDMI remote video out, recorder and RS-232 Serial out. Optional third party interface (4), Nurse call, independent interactive remote display port (G5 Max), DVI independent remote video out (G5 Max), Ethernet (HIS), ground terminal and AC power

OPERATING ENVIRONMENT

Dimensions

Weight

emperature	41 to 104°F (5 to 40°C)	
lumidity	30 to 85% RH (non-condensing)	
tmospheric Pressure	700 to 1060 hPa	
egree of Protection	Against harmful ingress of water: IPX1	
OWER REQUIREMENT		
.c	100 to 240 V ±10%	
C (SB-950P)	10.8 V	
ine Frequency	50 or 60 Hz	
attery Operation Time	CSM-1501: Up to 180 minutes; CSM-1502: Up to 120 minutes	
ower Input	AC 120, Battery 100 VA	
oise	<48 dBA	
IMENSIONS & WEIGHT		

CSM-1501: 13.4" W x 11.6" H x 8" D (341 W x 294 H x 204 D mm) **CSM-1502:** 15.9" W × 11.9" H × 8" D (403 W × 302 H × 204 D mm) **BSM-1700:** 5.8" W × 7.6" H × 3.7" D (147 W × 194 H × 94 D mm)

WS-151P recorder unit: (built in option)

WS-151P recorder unit: 0.77 lbs (0.35 Kg) (option) AA-174P multi amp unit: 1.8 lbs (0.82 kg) (option)

AA-174P multi amp unit: $6.1" \times 2.4" \times 7.5"$ (156 W \times 63 H \times 190 D mm) (option, excluding cable) CSM-1501: 13.2 lbs (6 kg) CSM-1502: 15.4 lbs (7 kg); BSM-1700: 3.5 lbs (1.57kg without battery pack);

LIFE SCOPE® G7 BEDSIDE MONITOR SPECIFICATIONS

DISPLAY

DIGI TAI	
Display Size/Type	CSM-1702: 19" color direct bond TFT LCD
Resolution	CSM-1702: 1680 × 1050
Characteristics	True Flat, tempered glass medical certified, capacitive touch screen with up to 20 function soft keys and 3 quick recall screen configurations
Number of Traces	Up to 17 traces (up to 49 on three displays) moving or fixed method
Waveforms	ECG (up to 12), respiration, IBP (up to 8), SpO ₂ pulse wave, CO ₂ , BIS-EEG*, EEG* (up to 2 traces), vent PAW, vent Flow, and CO Thermodilution curve. When gas is monitored: O ₂ concentration curve CO ₂ concentration curve, anesthetic agent concentration (Halothane, Isoflurane, Enflurane, Sevoflurane, Desflurane*) Analog input.
Sweep Speed	Normal sweep speed: 25 mm/s, 50 mm/s Slow sweep speed (respiration): 1.56 mm/s, 6.25 mm/s, 12.5 mm/s, 25 mm/s
Numeric Data Display	Heart rate, VPC rate, ST level, RR respiration rate, NIBP (systolic, diastolic, map), IBP (systolic, diastolic, mean), SpO ₂ , SpO ₂ -2, delta SpO ₂ , pulse rate, temperature, CO, CI, Ti (injectate temperature) Tb (blood temperature), O ₂ concentration, EtCO ₂ , BIS, inspired/expired N ₂ O concentration, inspired expired CO ₂ , inspired O ₂ concentration, inspired/expired anesthetic agent concentration (Halothane, Isoflurane, Enflurane, Sevoflurane, Desflurane), MAC (minimum alveolar concentration) Ppeak (peak airway pressure), PEEP (positive end expiratory pressure), Pmean (mean airway press-sure), MY (minute volume), TV (inspiratory tidal volume), TV (expiratory tidal volume), C (compliance), R (airway resistance), Ri (inspiratory airway resistance), Re (expiratory airway resistance), I:E (inspiration expiration ratio), SEF (90 or 95% spectral edge frequency), MDF (media frequency), power ratio of frequency, PPF (peak power frequency), TP (total power), power of frequency, CSA, DSA, TOF cnt, TOF rat, Tw 1 to Tw4 (Twitch height), DBS (double burst stimulation TET (tetanic stimulation) PTC (post tetanic count stimulation), PCCO, PCCI, tcPO ₂ , PPV, SP With INVOS monitor: SO ₂ , SSI indicator, BL (baseline), area under the curve (AUC), change rate. With CCO monitor: CCO, CCI, SVO ₂ , ScvO ₂ , SV, SVI, SVV, SVR, SVRI, RVEF, EDV, EDVI, ESV, ESVI, DO ₂ , VO ₂ , O ₂ EI, SaO ₂ 2 HRV, CF, OTc and QRSd

ALARMS

Alarm Items	Vital sign, arrhythmia, technical, operational, interbed
Alarm Levels	Crisis: red blinking; Warning: yellow blinking; Advisory: yellow or blue light
Alarm Indication	Alarm indicator (360° visibility) highlighted message, alarm sound
Alarm Suspend	1, 2, or 3 min
Alarm Master	Adult and Pediatric up to 4, Neonatal up to 6
OTODED DATIENT	- DATA

STORED PATIEN	T DATA
Trendgraph	Trend parameters: up to 9 for each trend graph (up to three); Trend display time: Up to 72 hours (short trend for the last 30 minutes on main screen)
Vital Signs List	Three lists of up to 15 parameters each for up to 72 hours; Periodic: up to 1 per minute for 72 hours
NIBP	Number of entries: 1,024 files
HEMO List	Number of entries: 1,024 files
Full Disclosure	Storage time: up to 72 hours; Number of waveforms stored: 5 (max)
ST Recall	Number of files: 4,320 files (1 per minute for 72 hours) for all monitoring leads
History	16,384 files (Alarm & Arrythmia recall)
12-Lead Interpretive Recall	Number of files: 18 files
Storage Capacity	72 Hours (OCRG/Hemodynamics/Trend/aEEG)
RECORDER (OPT	TIONAL)
Recording Method	Thermal array recording
Number of Channels	3 traces (max)

* With optional modules

PARAMETERS

Leads	3,6 or 10-lead ECG cable for I, II, III, aVR, aVL, aVF, V1 to V6
ECG	Number of ECG waveforms channels: up to 12; Frequency response: diagnosis mode - 0.05 to 150 Hz, ST mode - 0.05 to 18 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: multitemplate software algorithm; VPC counting rate: 0 to 99 VPCs/min; Arrhythmia alarms: ASYSTOLE, VF, VT, VT, VRHYTHM, V BRADY, EXT TACHY, EXT BRADY, A-Fib, End A-Fib, VPC RUN, COUPLET, EARLY VPC, BIGEMINY, TRIGEMINY, FREQ VPC, PROLONGED RR, SV TACHY, TACHYCARDIA, BRADY-CARDIA, VPC, MULTIFORM, IRREGULAR RR, NO PACER PULSE, PACER NON-CAPTURE, PAUSE
ST Level Measurement	Number of measurement channels: Up to 12; Measuring range: $\pm 2.5~\text{mV}$
Respiration	Measuring range: 0 to 150 breaths/min (Impedance)
SpO ₂	Measuring Technology: Nihon Kohden, Masimo or Nellcor; Measuring Display Range: 0 to 100% (70 to 100% at specified accuracy); Pulse rate from SpO ₂ Range: 20 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	Measuring range: -50 to 300 mmHg; Pulse rate display range from IBP range: 0, 30 to 300 beats/min
Temperature	Measuring range: 0 to 45°C; Number of channels: 4 (max)
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
CO ₂	CO ₂ measuring range: 0 to 150 mmHg; Respiration rate counting range: 3 to 150 breaths/min
BIS	Input channels: 2; Measuring parameters: Bispectral Index (BIS), 95% Spectral Edge Frequency (SEF90, SEF95), Suppression Ratio (SR), EMG, Signal Quality Index (SQI)
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Standard: Ethernet (LS-Net), USB, third party interface (6), HDMI remote video out, recorder and RS-232 Serial out. Optional third party interface (4), Nurse call, independent interactive remote display port, DVI independent remote video out, Ethernet (HIS), ground terminal and AC power

OPERATING ENVIRONMENT

Temperature	41 to 104°F (5 to 40°C)
Humidity	30 to 85% RH (non-condensing)
Atmospheric Pressure	700 to 1060 hPa
Degree of Protection	Against harmful ingress of water: IPX1
POWER REQUIREMENT	
AC	100 to 240 V ±10%
DC (SB-950P)	10.8 V

3 minutes AC 150, Battery 130 VA

50 or 60 Hz

DIMENSIONS & WEIGHT

Line Frequency

	CSM-1702: 18.7" W × 12.8" H × 4.5" D (475 W × 326 H × 115 D mm)
Dimensions	JA-170P: 7.1" W × 7.1" H × 5.3" D (182 W × 182 H × 136 D mm), (excl. cable) BSM-1700: 5.8" W × 7.6" H × 3.7" D (147 W × 194 H × 94 D mm)
	WS-171P recorder unit: $3.9" \times 3.2" \times 5.6"$ (99 W \times 82 H \times 142 D mm), (option)
	AA-174P multi amp unit: $6.1" \times 2.4" \times 7.5"$ (156 W \times 63 H \times 190 D mm), (option, excluding cable)
	CSM-1702: 18.3 lbs (8.3 kg); JA-170P: 2.4 lbs (1.1kg), (excluding cable) BSM-1700: 3.5 lbs
Veiaht	(1.57 kg without battery pack); WS-171P recorder unit: 1.4 lbs (0.62 kg) (option);

AA-174P multi amp unit: 1.8 lbs (0.82 kg) (option)

NIHON KOHDEN MORE IS POSSIBLE

1.800.325.0283 us.nihonkohden.com

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NK-HiQ⁻ is a trademark of The Nihon Kohden Corporation.

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