VS-1500N Specification

Display colour	LCD display	
	640×480 dots	
Recorder	Recording method	Thermal print head 8 dots/mm
	Paper speed	5, 10, 12.5, 25, 50mm/s ±3%
ECG	Leads	BP/Pulse wave test: Lead I
		ECG test: Standard 12-lead ECG (option)
	Standard sensitivity	10 mm/mV
	Sensitivity changes	1/4, 1/2, 1, 2, auto
	Differential and common-mode offset voltage (electrode-skin voltage)	±550 mV or more
	Sine wave characteristics	0.05 ~ 150Hz within -3dB
	Low frequency characteristics (time constant)	3.2s or more
	CMRR	103dB or more
	Input impedance	50MΩ or more
	Internal noise	RTI, 30μVp-p max.
	Filters	AC: 50 / 60Hz (-20dB max)
		Muscle: 25 / 35Hz -3dB (-6dB/oct)
		Drift: 0.25Hz/0.5Hz within -3dB
		High frequency characteristics: 75 / 100 / 150Hz
PCG	Frequency response	L filter: 50 Hz (-6 dB/oct)
		PWV filter: 165 ~ 280Hz within -3dB
Sphygmograph	Frequency response	0.08 ~ 20Hz within -3dB
NIBP	Measuring range	0 ~ 300mmHg
	Scale interval	1 mmHg
	Pressure accuracy	±3mmHg
	Pressure detection	Semiconductor pressure sensor
	Zero balancing	Automatic balancing
	Measuring method	Oscillometric
	NIBP measuring range	20 ~ 280mmHg
	Inflation method	Automatic inflation by pump
	Deflating method	Automatic by electromagnetic valve
	Safety device	Over 330mmHg
		10mmHg for longer than 130sec
CF card slot		Compact flash card Type I/II
Serial connector		RS-232C compatible
LAN connector		IEEE 802.3, 10BASE-T
Printer connector		USB (Fukuda optional printer)
Safety standard		IEC 60601-1: 1988
Electrical shock protection	Class I	
	NIBP, ECG input, PCG input, Sphygmograph input	Type CF
Operating environments	Temperature 10 ~ 40°C	
	Humidity 25 ~ 95% (no condensation)	
Storage environment	Temperature -10 ~ +60°C	
	Humidity 10 ~ 95% (no condensation)	
Power supply	100 ~ 240V AC 50/60Hz, 120 VA	
Dimensions	LCD closed: 340(W)×342(D)×109(H)mm	
	LCD open: 340(W)×342(D)×314(H)mm	
Weight	Approx. 8.0kg	

•Recommended Peripheral Option

Ethernet Hub	Conforming with UL1950/CentreCom FS708XL
Inkjet Colour Printer	VSP-15

Standard Accessory Package: AB-200CN

Power cord (3m)	CS-18
NIBP cuffs (Right Barchial)	CUF-129MR
NIBP cuffs (Left Barchial)	CUF-129ML
NIBP cuffs (Right Ankle)	CUF-138MR
NIBP cuffs (Left Ankle)	CUF-138ML
Air hose (2.5m) (Lower limbs)	OA-500A
Air hose (2.5m) (Upper limbs)	OA-500B
Lead cable	CPV-01BKPU
Limb electrode	TEE-45RG
Keratin Cream	OJ-02
Chart paper (145mm × 30m, roll paper)	OP-358TE
Instrument cover	
Compact flash card (128MB)	FCF-128
Limb cushion	OA-461

Options

PCG Microphone	MA-300HDS (V)
Potential equalization cable	CE-12 (5m)
Amorphous pulse wave sensor set	TY-501A
Amorphous cap	OA-256 (Amorphous caps 20 pieces per pack)
Keratin cream	OJ-01
Trolley	OTV-01
Cord hanger	OA-300A
Hose hanger kit	OA-130 (Purchase the hose hanger kit with the cord hanger)
Compact flash card	FCF-128 (128 MB)
Roll paper	OP-358TE
Z-fold paper	OP-383TE
Dual-side adhesive tape	DA-30 (For PCG microphone, 150 pieces/pack)
12 leads ECG Option	VSC-150
ECG Accessories Package	ASE-02E (For Europe)
ECG Accessories Package	ASE-02G (For General)
Cuff cover (for upper limb)	OA-1129M
Cuff cover (for lower limb)	OA-1130M
Toe blood pressure kit	ASV-2 (Toe cuffs, air hoses and extension hoses)
Toe cover (M)	OA-459M (50 pieces per box)
Toe cuffs	CUF-139M2 (4 pcs. color: Blue, size: M)
Toe cuffs	CUF-139S2 (2 pcs. color: Brown, size: S)
Air hose (2.5 m)	OA-400C / 1
Extension hose	OA-400D (1 set)
Pulse wave sensor with air bag	TY-100 TY-101
Air bag for pulse wave sensor	TR-13M
Belt for pulse wave sensor	OB-32, OB-33
NIBP cuffs (for right brachial, S)	CUF-129SR /1
NIBP cuffs (for left brachial, S)	CUF-129SL / 1
NIBP cuffs (for right brachial, L)	CUF-129LR / 1
NIBP cuffs (for left brachial, L)	CUF-129LL / 1
NIBP cuffs (for right ankle, L)	CUF-138LR / 1
NIBP cuffs (for left ankle, L)	CUF-138LL / 1
Cuff holder	OAV-01A
Limb cushion cover	OA-463
Pulse wave test data Management software	VSS-10
Inkjet printer paper	OP210-01VV/1(100 sheets)
Printer stand	OAV-03A
ECG filing software	EFS-200

CE 0086

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Vascular Screening Device

VaSera™ VS-1500N

FUKUDA DENSHI

Primary prevention against
life-related disease and metabolic
syndrome is significant,
because the disease may cause
myocardium infarction
and arteriosclerosis.

VaSera™ VS-1500N

VS-1500N will help to diagnose metabolic syndrome or diseases related to life habit.

Improved Cardio Ankle Vascular Index, which is independent of Blood pressure.

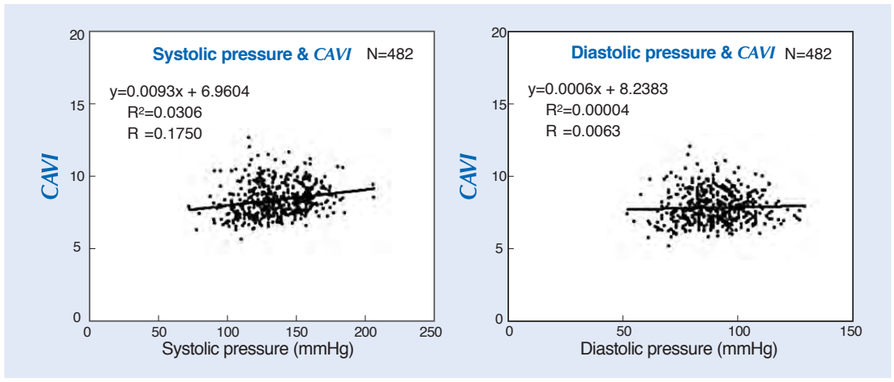
BP Waveform Measurement

CAVI Cardio Ankle Vascular Index

The Cardio Ankle Vascular Index is the degree of artery stiffness between the heart and ankle.
This index is independent from the fluctuation in blood pressure and higher it becomes, the stiffer the Artery is. It is considered that a decrease in elasticity in the Aorta is a parameter that can predicate the ischemic disease and future cardiovascular complication.

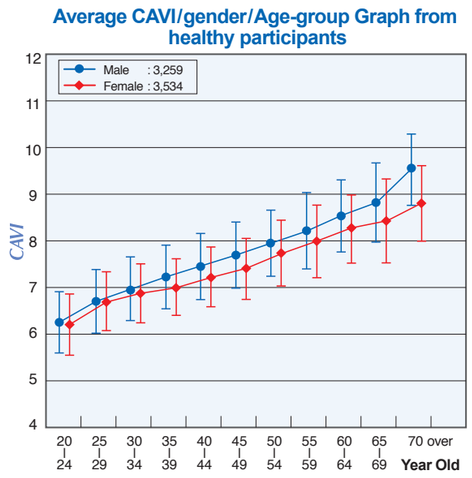
Consistent result

Non-invasive blood pressure (NIBP) measurement (oscillometric) is sometimes inconsistent due to excessive muscle contraction and the nervous system. But Cardio Ankle vascular Index is derived by the constant parameter β and physicians can obtain consistent result from it.



Print of Vascular age

VS-1500N prints out a Cardio Ankle Vascular Index versus Age graph to help the physicians/patients to know the vascular's stiffness comparing with the age in gender.



CAVI criteria

CAVI < 8.0	In normal range
8.0 ≦ CAVI < 9.0	Border line
9.0 ≦ CAVI	Possible Arteriosclerosis

ABI Ankle Brachial Index

Degree of Stenosis, Occlusion in the peripheral Arteries

Ankle Brachial Index is the degree of stenosis in the lower limb arteries. The early detection of the Peripheral Artery Disease is important because it is one of the major causes to lead in more serious diseases in cardio and Cerebrovascular.

ABI criteria (Based on the AHA/ACC diagnostic criteria 2005)

1.3 ≦ ABI	Non-compressible
1.00 ≦ ABI ≦ 1.29	Normal
0.91 ≦ ABI ≦ 0.99	Borderline (equivocal)
0.41 ≦ ABI ≦ 0.90	Mild to moderate peripheral disease
ABI ≦ 0.40	Severe peripheral arterial disease

Safety mechanism

The VS-1500N inflates the right and the left cuffs separately in order to avoid the blood flow being cut off in all limbs during the measurement.

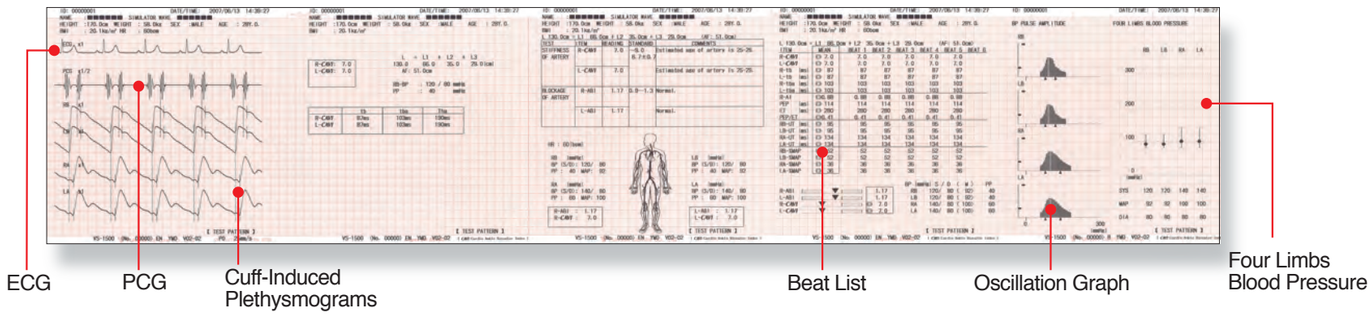
Toe Brachial Index

By using the toe cuff (option), you can measure the toe blood pressure and obtain the Toe Brachial Index. TBI can be used for patient with severe calcification or occlusion in lower limbs, which is hard to detect the blood pressure waveforms.

Knee-Cardio Ankle Vascular Index (kCAVI)

The knee sensor (optional accessory) reduces the influence of the lower limb muscle contraction during the measurement.

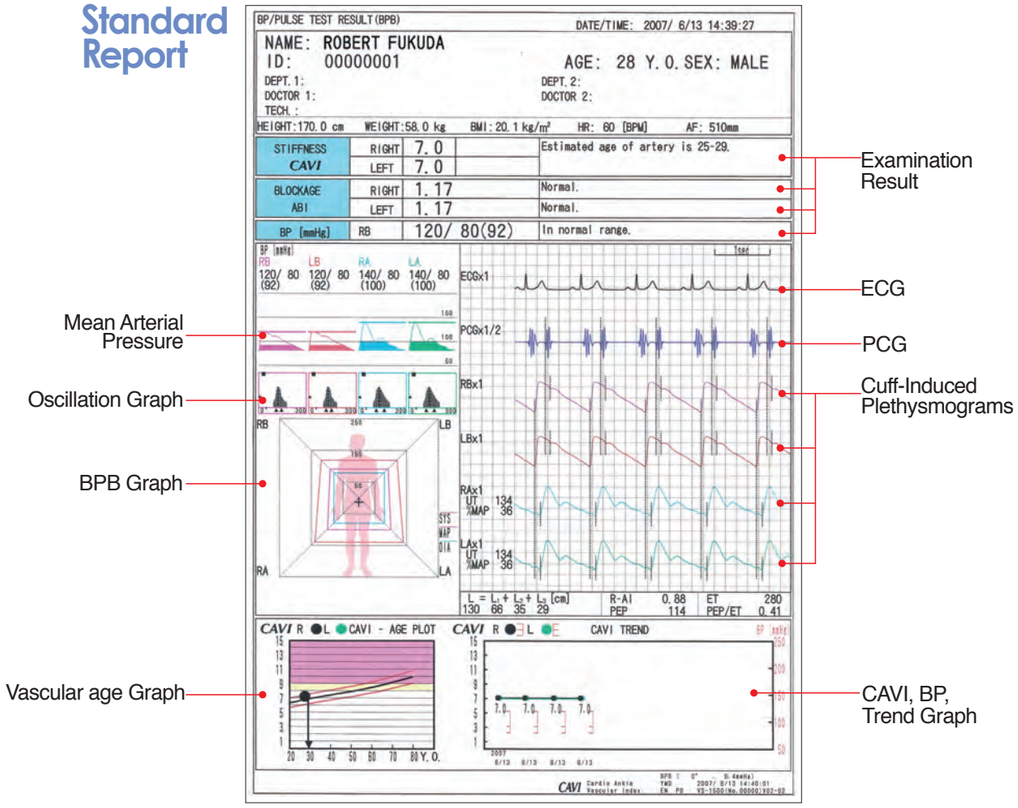
VARIOUS RECORDING FORMS



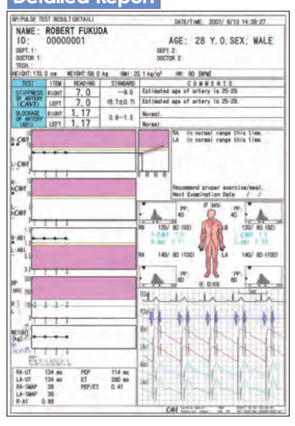
External inkjet colour printer (option)

The report function which is used as a tool to explain the result of the examination to the patient is enhanced. It is possible to print simultaneously a colour report on an external printer (option) and a report from the built-in recorder.

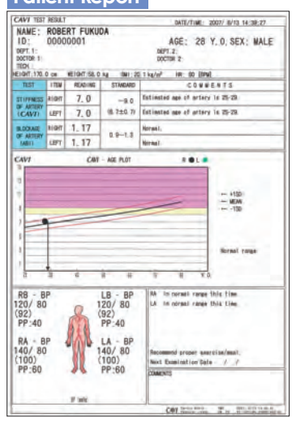
Standard Report



Detailed Report



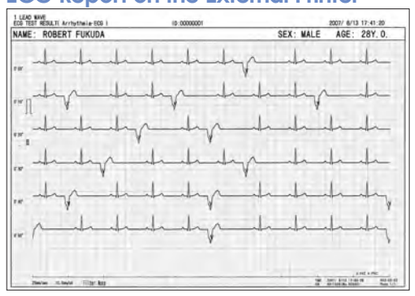
Patient Report



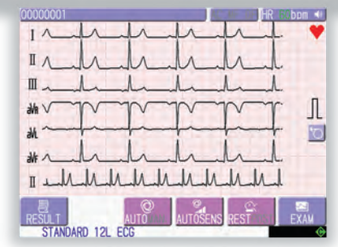
Extend measurement from Vascular to ECG

VS-1500N provides 12 leads ECG in option (VSC-150) that can measure continuously the ECG from the vascular screening measurement. Combining the two gives a total assessment with Plethysmogram and ECG. In the ECG mode, the VS-1500N can display and print 12 leads ECG report with the latest interpretation, Arrhythmia and R-R interval measurement.

ECG Report on the External Printer



▲ECG Report (standard waveforms) on the thermal printer



▲LCD display (ECG waveforms)

Data filing

VS-1500N can store results in a CF card and transfer the data to a personal computer via Network. The data can be viewed/edited with the filing software VSS10 on the PC.

Saved number of files (128MB)

Result with waveforms	App. 3,500 cases
Waveform only	App. 12,000 cases