

ECG Monitoring IEC color coding

Philips cardiac monitoring portfolio An end-to-end, skin-to-screen solution



Philips provides an end-to-end, ECGbased monitoring system that spans the continuum of care – from diagnostic to bedside monitoring – and for patients ages 0 to 100+.

Our product-validated portfolio is built to provide quality signals, from the moment an electrode touches a patient's skin, to transferring signals, to displaying clinical information on your monitor.



Lead sets and cables





Electrodes Versatility to accommodate various patient conditions

Lead sets and cables Built for clinical performance and durability

Monitors A skin-to-screen solution

Electrodes Options to accommodate various patient conditions

Lead sets and cables



Philips extensive line of Ag/AgCl* disposable electrodes are designed and manufactured at a high level of quality, for a continuous electrical path from the skin to the ECG monitor. Our range of electrodes – foam, solid, wet gel, solid adhesive gel – can help you meet your many patients' skin needs, including sensitive neonates, and you can use them across hospital settings, including in MRI radiolucent applications.

Features

- Meets AAMI and IEC specifications
- Radiolucent electrodes for X-ray applications available for both adults and children
- Convenient shapes and sizes
- Packaging configurations available
- Disposables not manufactured with natural rubber latex
- Shelf life of at least six months for disposable electrodes unless otherwise noted

Benefits

- Philips electrodes have standard snap connectors, so you can expect a secure connection every time
- Our electrodes have passed biocompatibility tests for skin sensitivity and irritation for patient comfort
- Electrodes with pre-attached lead wires are available for quick, easy application and optimal patient comfort for your pediatric/ neonatal patients

Best practices

Skin preparation



To prepare the skin for electrode placement, dry, dead epidermal layers of skin must be removed, along with any natural oils and dirt that impede electrical flow and create a resistance to signal quality.

Proper electrode application

Apply the electrode by pressing around the entire edge of the electrode. Avoid pressing directly on the electrode center, since it spreads the gel out and may create air pockets that contribute to noise.

Standardization

Selecting all the same brand and type of electrodes helps to reduce noise.

Product overview: electrodes



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Single-patient use solid gel ECG monitoring electrodes				
Philips Reorder Code	Description	Adult/infant/pediatric	Packaging	
989803100441	Solid gel tab for resting ECG	Adult	100 electrodes/pack	
989803129091	Foam, teardrop shape, shelf life: 6 months, diameter: 50 mm (1.97 in)	Adult	5 electrodes/pouch 60 pouches/box	
989803129101	Foam, teardrop shape, shelf life: 6 months, diameter: 50 mm (1.97 in)	Adult	30 electrodes/ pouch 10 pouches/box	
989803148821	Radiolucent foam, shelf life: 6 months, size: 35 x 40 mm (1.4 x 1.6 in)	Adult	30 electrodes/ pouch 20 pouches/box	
989803100491	Disposable, repositionable solid gel electrode, snap, 3 electrodes mounted on plastic card, shelf life: 6 months, dimensions: 22 x 33 mm (0.87 x 1.30 in)	Pediatric	3 electrodes/pouch 100 pouches/box	
989803100581	Disposable, repositionable solid gel electrode, snap, 3 electrodes mounted on plastic card, shelf life: 6 months, dimensions: 22 x 22 mm (0.87 x 0.87 in)	Pediatric	3 electrodes/pouch 100 pouches/box	

Single-patient use solid gel ECG monitoring electrodes				
Philips Reorder Code	Description	Adult/infant/pediatric	Packaging	
989803100441	Solid gel tab for resting ECG	Adult	100 electrodes/pack	
989803129091	Foam, teardrop shape, shelf life: 6 months, diameter: 50 mm (1.97 in)	Adult	5 electrodes/pouch 60 pouches/box	
989803129101	Foam, teardrop shape, shelf life: 6 months, diameter: 50 mm (1.97 in)	Adult	30 electrodes/ pouch 10 pouches/box	
989803148821	Radiolucent foam, shelf life: 6 months, size: 35 x 40 mm (1.4 x 1.6 in)	Adult	30 electrodes/ pouch 20 pouches/box	
989803100491	Disposable, repositionable solid gel electrode, snap, 3 electrodes mounted on plastic card, shelf life: 6 months, dimensions: 22 x 33 mm (0.87 x 1.30 in)	Pediatric	3 electrodes/pouch 100 pouches/box	
989803100581	Disposable, repositionable solid gel electrode, snap, 3 electrodes mounted on plastic card, shelf life: 6 months, dimensions: 22 x 22 mm (0.87 x 0.87 in)	Pediatric	3 electrodes/pouch 100 pouches/box	

Single-patient use wet gel ECG monitoring electrodes

Philips Reorder Code	Description	Adult/infant/pediatric	Packaging
989803101301	High-tack foam wet gel	Adult	30 electrodes/pack
989803192551	Clear tape	Adult	30 electrodes/ pouch 10 pouches/box
989803101671	Foam, shelf life: 6 months, diameter: 55 mm (2.13 in)	Adult	5 electrodes/pouch 15 pouches/box 4 boxes/case
989803101681	Foam, shelf life: 6 months, diameter: 54 mm (2.13 in)	Adult	30 electrodes/ pouch 10 pouches/box

Single-patient use radiotranslucent foam ECG monitoring electrodes				
Philips Reorder Code Description Adult/infant/pediatric Packaging				
989803105971	Shelf life: 6 months, diameter: 50 mm (1.97 in)	Adult	30 electrodes/pouch 10 pouches/box	



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Single-patient use metallic ECG lead wire electrodes - IEC color coding

Wire	Philips Reorder Code	Description	Adult/infant/ pediatric	Packaging
3-lead wire	989803100521	Pre-attached metallic 46 cm (18 in) 3-lead wire electrode, non- shielded, solid gel, shelf life: 6 months, dimensions: 22 x 33 mm (0.87 x 1.30 in); socket size: 1.5 mm (0.06 in)	Infant/pediatric	3 sets/pouch 100 pouches/box
3-lead wire	989803100561	Pre-attached metallic 46 cm (18 in) 3-lead wire electrode, non- shielded, solid gel, shelf life: 6 months, dimensions: 22 x 22 mm (0.87 x 0.87 in); socket size: 1.5 mm (0.06 in)	Infant/pediatric	3 sets/pouch 100 pouches/box

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Single	Single-patient use radiolucent ECG lead wire electrodes - IEC color coding				
Wire	Philips Reorder Code	Description	Adult/infant/ pediatric	Packaging	
3-lead wire	989803100571	Pre-attached radiolucent 46 cm (18 in) 3-lead wire electrode, non- shielded, solid gel, shelf life: 6 months, dimensions: 22 x 22 mm (0.87 x 0.87 in); socket size: 1.5 mm (0.06 in)	Infant/pediatric	3 sets/pouch 100 pouches/box	
3-lead wire	989803156231	Pre-attached radiolucent 3-lead wire 1.0 m (39.4 in) electrode set, non-shielded, solid gel, shelf life: 24 months unopened, dimensions: 30 x 45 mm (1.18 x 1.77 in)	Adult	1 set/pouch 100 pouches/box	
5-lead wire	989803156271	Pre-attached radiolucent 5-lead wire 1.0 m (39.4 in) electrode set, non-shielded, solid gel, shelf life: 24 months unopened, dimensions: 30 x 45 mm (1.18 x 1.77 in)	Adult	1 set/pouch 60 pouches/box	



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Lead sets and cables



Philips leading technology in design, manufacturing and quality control allows our lead sets to stand up to the most demanding hospital conditions with features that help provide reliable, steady monitoring. And with our disposable or reusable lead sets with adapters, every patient can get a fresh lead set that stays with them throughout their hospital stay.

Features

- Reusable and disposable lead sets
- Electrical safety electrode connectors on all leads and trunk cables
- 12-lead diagnostic monitoring at the bedside and during interventional cardiology procedures
- Provides the only direct-connect, single-patient use lead set for our IntelliVue MX40 wearable patient monitor, with no adapter required
- IntelliVue FAST MX40 lead set also available with a pulse oximetry sensor
- Limb reusable lead wires are fully color coded, using IEC color coding to help with rapid identi ication and placement (according to ANSI AAMI EC53 and IEC 60601-2-37

Reusable benefits

- Lead sets work interchangeably with validated Philips monitors and cables so you can decide case-by-case when to use reusable or single-patient leads
- The direct connection to Philips IntelliVue MX40 wearable patient monitor can result in time-saving efficiencies, enhanced patient comfort, and reduced accumulation of soil and liquids
- One lead set per patient

Disposable benefits

- steps

• Lead sets plug directly into trunk cables to streamline workflow • Pre-attached electrodes save

Benefits of both reusable and disposable

- Compatibility with Philips devices, and many competitor monitors by using an adapter, means a single ECG lead set can stay with a patient throughout their hospital stay
- Philips 3, 5, 6 and 12-lead reusable and single patient use ECG lead sets are tested and validated for use on a variety of Philips monitoring and telemetry devices
- Support a blend of reusable, single use and reprocessed lead sets to aid cost-conscious decision making



Single-patient use lead set for IntelliVue MX40

Philips provides the only direct-connect, singlepatient use lead set for the IntelliVue MX40, with no adapter required. This direct connection can result in time-saving efficiencies, enhanced patient comfort, and reduced accumulation of soil and liquids to further support your infection control initiatives.

Best Practices

Infection prevention

Use approved disinfectants when cleaning reusable lead sets and regularly inspect all leads for cracks.

Storage

Lead sets and cables



Keep lead sets in an organized manner to avoid damaging them.

Standardization

Using one supplier to provide the right mix of single-patient use and reusable lead sets that work best with your patient population will streamline processes.

Bedside monitoring cables

Built for clinical performance and durability

Layers of shielding inside Philips cables, connectors and wires can reduce electrical noise and movement artifact. The result? Reduced electrical interference, for a clear signal that's easy to read.

Features

- Philips 6-lead and 10-lead trunk cables compatible with 3-lead and 5-lead sets, and 5-lead trunk cables
- Cables support standard 3-lead, 5-lead, 6-lead and 12-lead monitoring
- Electrical safety connector on all leads and trunk cables
- Designed with durability in mind

Lead sets and cables

Benefits

- The environmentally friendly cadmium-free and PVC-free medical grade polyurethane wire coating helps reduce cable tangling
- Cables resist exposure to high voltage defibrillator charges, protect the monitor from damage during defibrillation, and continue to perform reliably
- Lead placement diagrams are either delivered as stickers within the product package or come pre-placed on the premium ECG trunk cables making for quicker, more uniform placement
- MX40 trunk cable can facilitate workflow transitions from telemetry to bedside utilizing the same lead set.

Philips – OR trunk cable

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When you move patients to the operating room (OR), you no longer need to switch to OR-specific ECG lead sets. Our OR trunk cables provide the protective shielding you need during surgical procedures. Even unshielded leads, such as tiny pre-wired neonatal electrodes, can be used in your OR.

This product is also available in IEC color-compliant cables.

Best practices

Infection prevention

Use approved disinfectants when cleaning cables and regularly inspect them for cracks.

Standardization

Standardize with fewer cables for your Philips patient monitors to simplify purchasing, staff education and workflow.

Lead sets and cables

Cables resist exposure to high voltage defibrillator charges

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Product overview: bedside lead sets and cables

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3-lead monitoring - IEC color coding				
Set	Philips Reorder Code	Description	Reusable/disposable	
3-lead	989803145101	Grabber, length: 1 m (3.3 ft)	Reusable	
3-lead	989803145121	Snap, length: 1 m (3.3 ft)	Reusable	
3-lead	989803145141	Grabber, length: 1 m (3.3 ft)	Reusable	
3-lead	989803144951	Miniclip, grabber	Reusable	
3-lead	989803174201	Grabber, length: 1 m (3.3 ft)	Disposable	
3-lead	989803145071	ECG trunk cable, 12-pin connector, AAMI and IEC labels included, length: 2.7 m (9.9 ft)	Reusable	
3-lead	989803170171	ECG trunk cable, orange, 12-pin connector, AAMI and IEC labels included, length: 2.7 m (9.9 ft), for use in operating room	Reusable	

4-lead monitoring - IEC color coding				
Set	Philips Reorder Code			
4-lead (chest)	989803144851			

5-lead monitoring - IEC color coding

Set	Philips Reorder Code	Description	Reusable/disposable
5-lead (limb)	989803125851	Grabber, length: limb 1.6 m (5.3 ft), chest 1 m (3.3 ft)	Reusable
5-lead (limb)	989803145001	Snap, length: limb 1 m (3.3 ft), chest 1.6 m (5.3 ft)	Reusable
5-lead (limb)	989803125871	Grabber, length: limb 1.6 m (5.3 ft), chest 1 m (3.3 ft)	Reusable
5-lead (limb)	989803174211	Grabber, length: 1 m (3.3 ft)	Disposable
5-lead (chest)	989803125891	Grabber, length: 1 m (3.3 ft)	Reusable
5-lead (chest)	989803192151	Grabber, length: 1 m (3.3 ft)	Disposable
5-lead	989803145061	ECG trunk cable, 12-pin connector, AAMI and IEC labels included, length: 2.7 m (9.9 ft)	Reusable
5-lead	989803170181	ECG trunk cable, orange, 12-pin connector, AAMI and IEC labels included, length: 2.7 m (9.9 ft), for use in operating room	Reusable

Lead sets and cables

Description

Grabber, length: 1 m (3.3 ft)

Reusable/disposable

Reusable

6-lead monitoring - IEC color coding					
Set	Philips Reorder Code	Description	Reusable/disposable		
6-lead	989803145171	Grabber, length: limb 1 m (3.3 ft), chest 1.6 m (5.3 ft)	Reusable		
6-lead	989803145051	ECG trunk cable, 12-pin connector, AAMI and IEC labels included, length: 2.7 m (9.9 ft)	Reusable		
6-lead	989803197521	Grabber, length: 1 m (3.3 ft)	Disposable		
10-lead mor	nitoring cables				
Set	Philips Reorder Code	Description	Reusable/disposable		
10-lead	989803144791	ECG trunk cable, 12-pin connector, AAMI and IEC labels included, length: 2 m (6.5 ft), 10 (5+5) leads	Reusable		
10-lead	989803125831	ECG trunk cable, 12-pin connector, AAMI and IEC labels included, length: 2.7 m (9.9 ft), 10 (5+5) leads	Reusable		
10-lead	989803145041	ECG trunk cable, 12-pin connector, AAMI and IEC labels included, length: 2.7 m (9.9 ft), 10 (6+4) leads	Reusable		

Efficia 3/5-lead sets				
Set	Philips Reorder Code	Description	Reusable/disposable	
3/5-lead	989803160641	Efficia 3/5 trunk cable, AAMI/IEC	Reusable	
3-lead	989803160661	Efficia grabber	Reusable	
5-lead (limb)	989803160701	Efficia grabber	Reusable	

Product overview: telemetry

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Telemetry cables and lead sets - IEC color coding				
Set	Philips Reorder Code	Description	Reusable/disposable	
3-lead	989803171911	MX40 Direct Connect, ECG + SpO2, grabbers, length: 85 cm (34 in)	Reusable	
5-lead	989803171931	MX40 Direct Connect, ECG, grabbers, length: 85 cm (34 in)	Reusable	
5-lead	989803171951	MX40 Direct Connect, ECG + SpO2, grabbers, length: 85 cm (34 in)	Reusable	
5-lead	989803172151	MX40 Direct Connect, ECG + SpO2, grabbers, length: 85 cm (34 in)	Disposable	
5-lead	989803202421	MX40 Direct Connect, ECG + Masimo SpO2, grabber, telemetry, length: 85 cm (34 in)	Reusable	
6-lead	989803171961	MX40 Direct Connect, ECG Only, grabbers	Reusable	
6-lead	989803171971	MX40 Direct Connect, ECG + SpO2, grabbers, length: 85 cm (34 in)	Reusable	

Telemetry supplies

Set	Philips Reorder Code	Description	Reusable/disposable
989803172221	Patient monitor ECG trunk cable, AAMI/IEC, length: 2.7 r (9 ft)	Reusable n	Standard

Telemetry adapters			
Set	Philips Reorder Code	Description	Reusable/disposable
	989803199081	MX40 telemetry adapter, SpO2, for use with IntelliVue lead sets	Reusable
	989803202391	MX40 adapter Masimo	Reusable
3-lead	989803199101	MX40 telemetry adapter, ECG + SpO2, for use with IntelliVue lead sets	Reusable
5-lead	989803199091	MX40 Adapter, ECG + SpO2, for use with IntelliVue lead sets	Reusable
5-lead	989803202381	MX40 adapter Masimo	Reusable
6-lead	989803199071	MX40 telemetry adapter, ECG + SpO2, for use with IntelliVue lead sets	Reusable
6-lead	989803204291	MX40 adapter Masimo, SpO2	Reusable

Lead sets and cables

Product overview: diagnostic leads and cables

Diagnostic ECG 12-lead patient cables - IEC color coding			
Set	Philips Reorder Code	Description	Length
12-lead	989803151641	12-Lead Complete Lead Set (IEC), Standard Length (2 arm leads, 2 leg leads, 2 x 1 into 3 Trident leads, 2 lead, separators, 2 banana post adapters, 2 Trident yoke labels (C1-C3, C4-C6), 4 colored clips, 14 colored rings, 6 white base rings and IFU)	Standard
12-lead	989803151661	12-Lead Complete Lead Set (IEC), Long (2 long arm leads, 2 long leg leads, 2 x 1 into 3 Trident leads, 2 lead separators, 10 banana post adapters, 2 Trident yoke labels (C1-C3, C4-C6), 4 colored clips, 14 colored rings, 6 white base rings and IFU)	Long
12-lead	989803175891	12-Lead Patient Cable, Standard Length 3.4 m (11')	Standard
12-lead	989803175911	12-Lead Patient Cable, Long Length 3.8 m (12.5')	Long
12-lead	989803184921	12-Lead Patient Cable, Standard Length 3.4 m (11.2')	Standard
12-lead	989803184941	12-Lead Patient Cable, Long Length 3.8 m (12.5')	Long
12-lead	989803180131	ST80i 12-Lead Complete Lead Set, Standard Length, Grabber	Standard
12-lead	989803180151	ST80i 12-Lead Complete Lead Set (IEC), Standard Length, Snaps	Standard

Diagnostic ECG 12-lead patient cables - IEC color coding			
Set	Philips Reorder Code	Description	Length
12-lead	989803151641	12-Lead Complete Lead Set (IEC), Standard Length (2 arm leads, 2 leg leads, 2 x 1 into 3 Trident leads, 2 lead, separators, 2 banana post adapters, 2 Trident yoke labels (C1-C3, C4-C6), 4 colored clips, 14 colored rings, 6 white base rings and IFU)	Standard
12-lead	989803151661	12-Lead Complete Lead Set (IEC), Long (2 long arm leads, 2 long leg leads, 2 x 1 into 3 Trident leads, 2 lead separators, 10 banana post adapters, 2 Trident yoke labels (C1-C3, C4-C6), 4 colored clips, 14 colored rings, 6 white base rings and IFU)	Long
12-lead	989803175891	12-Lead Patient Cable, Standard Length 3.4 m (11')	Standard
12-lead	989803175911	12-Lead Patient Cable, Long Length 3.8 m (12.5')	Long
12-lead	989803184921	12-Lead Patient Cable, Standard Length 3.4 m (11.2')	Standard
12-lead	989803184941	12-Lead Patient Cable, Long Length 3.8 m (12.5')	Long
12-lead	989803180131	ST80i 12-Lead Complete Lead Set, Standard Length, Grabber	Standard
12-lead	989803180151	ST80i 12-Lead Complete Lead Set (IEC), Standard Length, Snaps	Standard

Diagnostic ECG 15/16/18-lead extended lead sets - IEC color coding

Set	Philips Reorder Code	Description	Length
15/16/18-lead	989803151761	15/16/18-Lead Upgrade Kit (IEC), Standard Length (4 additional lead assembly, 6 shorting plugs, 2 lead separators, 4 banana post adapters, 6 colored clips, 6 colored rings, 4 white base rings and IFU)	Standard
15/16/18-lead 989803151781		15/16/18-Lead Upgrade Kit (IEC), Long Length (4 additional long lead assembly, 6 shorting plugs, 2 lead separators, 4 banana post adapters, 6 colored clips, 6 colored rings, 4 white base rings and IFU)	Long

Lead sets and cables

Diagnostic ECG 12-lead replacement lead sets			
Set	Philips Reorder Code	Description	Length
12-lead (chest)	989803151671	12-Lead Chest Lead Set (AAMI/IEC), standard Length, (1 x 1 into 3 Trident leads, 12 x 2 colored rings, 3 brown base rings, 3 white base rings (both AAMI and IEC), 3 banana post adapters, 4 Trident yoke lead description labels (V1-V3, V4-V6, C1-C3, C4-C6) and IFU)	Standard
12-lead (chest)	989803151691	12-Lead Chest Lead Set (AAMI/IEC), long (1 x 1 into 3 Trident leads, 3 x 2 colored rings, 3 brown base rings, 3 white base rings (both AAMI and IEC), 3 banana post adapters, 1 lead separator, 4 Trident yoke lead description labels (V1-V3, V4-V6, C1-C3, C4-C6) and IFU)	Long
12-lead (limb)	989803151711	12-Lead Limb Lead Set (AAMI/IEC), standard Length (2 arm leads, 2 leg leads, 5 x 2 colored rings and 13 x 2 colored clips for AAMI and IEC, 4 banana post adapters and IFU)	Standard
12-lead (limb)	989803151731	12-Lead Limb Lead Set (AAMI/IEC), long (2 long arm leads, 2 long leg leads, 13 x 2 colored rings and 5 x 2 colored clips for AAMI and IEC, 4 banana post adapters and IFU)	Long

Digitrak diagnostic patient cables			
Philips Reorder Code	Description	Length	
989803157481	DigiTrak XT Patient Cable, Short	Short	
989803157491	DigiTrak XT Patient Cable, Medium	Medium	
989803157501	DigiTrak XT Patient Cable, Long	Long	

Diagnostic ECG supplies

989803101691	Limb clamp electrode
989803185251	Reusable welsh bulb electrode
989803164281	USB patient data cable
989803209691	Clear tab/snap adapter 10/bag

Philips continuous monitoring portfolio supports a broad patient population – from basic screening and triage to complex surveillance in critical care.

Our broad patient monitoring portfolio allows you to choose the right level of continuous patient monitoring technology for each care setting, patient condition, the skills of your nursing staff and your budget. Whether using portable, compact or specialized models, our family of monitors share a common look and feel so your clinicians can go from the highest to the lowest acuity level with a minimum of training. And our clinical consultants are available to help you develop flexible enterprise capabilities for caregiver mobility, data sharing, clinical decision support and alarm management.

Lead sets and cables

Monitors

Services to support your team

Philips Clinical Professional Services can help you set up your monitors and supplies, and educate staff on use of equipment. Our consultants can also assess your clinical workflows and help you find ways to maximize the efficiency of your patient care.

Talk to us about your ECG needs. Contact your Philips Account Manager or visit: www.philips.com/healthcarestore

Why the Philips ECG portfolio?

Signal quality for clinical decision-making

Workflow efficiency through standardization

ECG signal quality assessment plays a vital role in significantly improving the diagnostic accuracy and reliability of ECG analysis.

Validation: We stand behind our signal quality because our portfolio of electrodes, cables and leads are tested and validated with Philips monitors.

Taking ECG measurements to a new level: The Philips DXL ECG algorithm uses sophisticated analytical methods for interpreting the resting ECG. Whereas in the past, ECG analysis programs were limited to 12 simultaneous leads, the DXL algorithm analyzes up to 18 leads of simultaneously acquired ECG waveforms to provide an interpretation of rhythm and morphology for a wide variety of patient populations.

ECG supplies are critical to acquiring the clinical readings that your patients and care teams rely on. And in today's challenging healthcare environment, it's more important than ever to consider their impact on care quality and total cost of ownership. By standardizing with Philips for both your monitoring and ECG supply needs, you can quickly obtain the data you need while simplifying purchasing, staff education and workflow.

A focus on sustainability

Philips is dedicated to being a world-class sustainable development company by conducting our business in an environmentally and socially responsible manner.

- Developing meaningful technology that optimizes healthcare delivery and meets society's needs
- Implementing practices that assure business integrity and accountability
- Creating products that consume lesser amounts of materials, energy and contain recyclable substances
- Preventing pollution, conserving resources, and reducing the use of hazardous substances in our operations and products
- Complying with relevant environmental legislation, regulations, voluntary standards and Philips requirements.

Monitors

Tested and validated for performance

Our products are designed according to high-quality standards and manufactured with rigorous verification and validation tests and strict quality control. Before released to the market, or for clinical trials, the device must be verified and validated for compliance with the intended use and the claims made to customers.

Demo videos

Flex testing demonstrates durability and continuity of signal quality.

Vibration testing demonstrates durability and continuity of signal quality.

Pull force testing demonstrates staying connected.

Pull force testing demonstrates appropriate release point.

ECG lead placements

Conventional lead placement

Conventional lead placement

Limb electrode lead placement

- Inside of right arm, halfway between elbow and wrist
- Inside of left arm, halfway between elbow and wrist
- Inside of right calf, halfway between knee and ankle

Inside of left calf, halfway between knee and ankle • F Chest electrode placement

- O C2 Fourth intercostal space at left border of sternum
- ○●C3 Midway between V2 and V4
- ○●C4 Fifth intercostal space at left midclavicular line
- C5 Same level as V4–anterior axillary line
- ○●C6 Same level as V4 and V5–left midaxillary line

Mason-Likar lead placement

Mason-Likar lead placement

Limb electrode lead placement

- Directly below the clavicle, near the left shoulder
- Directly below the clavicle, near the right shoulder -L
- Just below umbilicus, right midclavicular line \bullet N
- Just below umbilicus, left midclavicular line • F

Chest electrode placement

- C1 Fourth intercostal space at right border of sternum
- O C2 Fourth intercostal space at left border of sternum
- ○●C3 Midway between V2 and V4
- O C4 Fifth intercostal space at left midclavicular line
- C5 Same level as V4–anterior axillary line
- C6 Same level as V4 and V5–left midaxillary line

Hexad lead placement**

Hexad lead placement

Limb electrode lead placement

R	Directly below the clavicle, near the right shoulder
L	Directly below the clavicle, near the left shoulder
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Just below umbilicus, right midclavicular line • Vb Just below umbilicus, left midclavicular line

Chest electrode placement

O C2 Fourth intercostal space at left border of sternum

○ C4 Fifth intercostal space at left midclavicular line

** Note: Hexad lead placement is available with a 6-lead set for adult patients. Electrodes are placed in Mason-Likar position with 2 chest leads placed in standard position (Va and Vb). The Hexad algorithm will derive the four additional leads. The available combinations of chest positions that can be used are: (V1,V3), (V1, V4), (V1,V5), (V2,V4), (V2,V5), (V3,V5), (V3,V6)

Preparation

Shave areas with dense hair (if necessary and your hospital procedures allow). Cut hair close to the skin to minimize risk of skin injuries from the razor.

Wash the isolated area with soap and water.

Wipe the electrode area with a rough washcloth or gauze, and/or use a fine grain sandpaper to roughen a small area of the skin. Do not use alcohol for skin preparation; it can dry out the skin.

Apply a full set of fresh disposable electrodes to prepared sites. Change daily or as often as needed.

ECG lead placements

EASI lead placement

EASI lead placement

Chest e	electrode placement
O●E	On the lower sternum at the level of the 5 th intercostal space
• A	On the left midaxillary line at the same level as the E electrode
• S	On the upper sternum
•	On the right midaxillary line at the same level as the E electrode
• REF	Reference electrode—can be anywhere, usually below the 6 th rib on the right hip

5 lead placement

5 leac	5 lead placement		
Limb	electrode lead placement		
• R • L	Directly below the clavicle, near the right shoulder Directly below the clavicle, near the left shoulder		
NF	Just below umbilicus, right midclavicular line Just below umbilicus, left midclavicular line		
Chest	electrode placement		
○● C1	Fourth intercostal space at right border of sternum		

3 lead placement

3 lead placement

nb electrode lead placement	
R L	Directly below the clavicle, near the right shoulder Directly below the clavicle, near the left shoulder
F	Just below umbilicus, left midclavicular line

Preparation

Shave areas with dense hair (if necessary and your hospital procedures allow). Cut hair close to the skin to minimize risk of skin injuries from the razor.

Wash the isolated area with soap and water.

Wipe the electrode area with a rough washcloth or gauze, and/or use a fine grain sandpaper to roughen a small area of the skin. Do not use alcohol for skin preparation; it can dry out the skin.

Apply a full set of fresh disposable electrodes to prepared sites. Change daily or as often as needed.

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