Get Familiar with CPRcard

CPR is best performed by CPR-trained rescuers. It is also recommended to get familiar with the CPRcard by practicing on a training manikin using standard CPR technique.

Practice following the feedback from the CPRcard:

1. Turn on CPRcard.
2. Place the card correctly **without** removing the liner from the adhesive. (See Correct Placement on page 6).
3. Place your hands on the card making sure the feedback indicator lights are not covered.
4. Focus on depth feedback (See Compression Depth on page 8). Gradually increase the depth of compression so that the recommended depth target is reached.
5. Focus on rate feedback (see Compression Rate on page 8). Compress slowly and gradually increase the rate of compression until each of the rate indicators lights up.
6. Focus on performing compressions at an adequate depth and rate.
7. Remember to release between each compression.

To stay familiar with the CPRcard, repeat as often as needed.

⚠ Caution

Do not practice on a person as this may cause injuries to the person.

Troubleshooting

Symptom	Possible cause	Possible solution
Card does not turn on (no LEDs turning on)	• On/Off button is not sufficiently pressed • Card temperature is below 5 °C (32 °F) • The device is broken	• Press and hold the On/Off button firmly to try to turn on the CPRcard. • If the problem persists, do not use the CPRcard on a patient.
Warning LED turns on at start-up and stays on for 1 minute	• Internal error detected • Depleted battery	• Turn the card off and on again. • If the problem persists, do not use the CPRcard on a patient.
Not all LEDs light up at start-up	The device is broken.	
CPRcard turns off during CPR	• Compression inactivity > 2 min • Accidental activation of On/Off button • Internal error detected. • Depleted battery	Do not interrupt CPR – continue CPR without feedback.
Depth target (green LED) not achieved during CPR	• Too shallow compressions • Incomplete release (leaning)	Press harder and release completely between compressions.
The CPRcard moves around during CPR	The liner was not removed before the CPRcard was placed on the patient.	Remove the liner and place the CPRcard on the patient's bare chest as quickly as possible to avoid interrupting CPR.
Inactivity indication while performing compressions	• Chest compressions not detected • Too shallow compressions (<1 cm) • Too slow compressions (<40/min)	Press harder and/or faster. Release completely between compressions.
Bluetooth connectivity issues	Hands are covering the antenna on the card	Move hands away from the feedback indicators

Specifications

Dimensions	Height 86 mm x Width 54 mm x Depth 2 mm Weight < 7 g
External Material	Polycarbonate (PC) and self-adhesive medical tape.
Battery	Non-rechargeable lithium battery 15 mAh nominal capacity* Typical battery life: >30 minutes of CPR End-of-shelf-life battery life minimum 10 minutes of CPR
Shelf life	3 years from the production date
Operating?Storage Conditions	Temperature: 0 – 40 °C (32 – 104 °F) Humidity: ≤ 90% RH Atmospheric Pressure: 620 – 1060 hPa
Shipping Conditions	Temperature: -40 – 40 °C (-40 – 104 °F) Humidity: ≤ 90% RH Atmospheric Pressure: 550 – 1060 hPa
Bluetooth® Low energy transmitter	Frequency band: 2.400 – 2.4835 GHz Modulation: Gaussian frequency shift modulation Maximum radio-frequency shift modulation: 1 mW Effective radiated power: 0 dBm
Ingress protection rating	IPx7: Dust tight, and protected against water submersion to 1 meter (3.3 feet) for 30 minutes

*Battery performance varies with temperature.

⚠ Caution

Do not store your CPRcard above 40 °C as this may reduce the lifetime of the battery.

Specifications

Compression Depth	Depth feedback is based on the median depth of the last 5 compressions.  < 5 cm (2.0 in) 5 – 6 cm (2 – 2.36 in) > 6 cm (2.36 in) Compressions with a depth of less than 1 cm or more than 10 cm will not be detected
Compression depth accuracy	±5 mm or ±10%, whichever is greater
Compression Rate	Rate feedback is based on the median rate of the last 5 compressions.  100 – 120 /min < 100 /min > 120 /min
Compression rate accuracy	±5%

Electromagnetic Conformity

The device is intended for use outdoors and indoors except for near HF surgical equipment, and the RF shielded room for magnetic resonance imaging.
No particular actions are required to maintain safety and performance with regard to electromagnetic disturbances for the expected service life.

⚠ Warnings

- *Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.*
- *Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 in) to any part of the CPRcard. Otherwise, degradation of the performance of this equipment could result.*

Electromagnetic Emissions Tests

Emissions Test	Standard or test method	Compliance
RF emissions CISPR 11	Group 1 Class B	Group 1 Class B
Harmonic emissions	IEC 61000-3-2	Class A
Voltage fluctuations/ flicker emissions	IEC 61000-3-3	Complies

Electromagnetic Immunity Tests

Immunity Test	Standard or test method	Compliance Level and Immunity Test Level
Electrostatic discharge	IEC 61000-4-2	±8 kV contact ±2kV, ±4kV, ±8kV ±15 kV air
Radiated RF EM fields	IEC 61000-4-3	10 V/m 80 MHz – 2.7 GHz 80% AM at 2 Hz

Proximity fields from RF wireless communications equipment	IEC 61000-4-3	380-390 MHz 27 V/m 430-470 MHz 28 V/m 704-787 MHz 9 V/m 800-960 MHz 28 V/m 1700-1990 MHz 28 V/m 2400-2470 MHz 28 V/m 5100-5800 MHz 29 V/m
Rated power frequency	IEC 61000-4-8	30 A/m 50 Hz or 60 Hz
Electrical fat transients / bursts	IEC 61000-4-4	±2 kV 100 kHz repetition frequency
Surges Line-to-line	IEC 61000-4-5	±0.5 kV, ±1 kV
Surges Line-to-ground	IEC 61000-4-5	±0.5 kV, ±1 kV, ±2 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3 V , 0.15 MHz – 80 MHz 6 V in ISM and amateur radio bands between 0.15 MHz and 80 MHz 80% AM at 1 kHz
Voltage dips	IEC 61000-4-11	0% U_T , 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% U_T, 1 cycle and 70% U_T, 25/30 cycles Single phase, at 0°
Voltage interruptions	IEC 61000-4-11	0% U_T, 250/300 cycle

U_T is the a.c. mains voltage prior to application of the test level.

Federal Communications Commission (FCC) and Industry Canada (IC) Statements

This device complies with part 15 of the FCC Rules and Industry Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage, et
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

⚠ Caution

Changes or modifications not expressly approved by Laerdal Medical could void the user's authority to operate the equipment.

FCC ID: QKQ-20-10468
IC: 20063-20104K8

CE

This product is in compliance with the essential requirements of EU Council directive 93/42/ EEC as amended by EU Council directive 2007/47/C, Council Directive 2014/53/EU on Radio Equipment (RED) and Council Directive 2011/65/ EU on restriction of the use of certain hazardous substances (RoHS).

Symbol Glossary

Symbol	Definition
CE	CE mark
	Single Use. Do not re-use.
	Follow Instructions for Use
	WEEE Symbol
	Manufacturer
	Date of Manufacture YYYY MM DD
	Defibrillation proof type BF applied part. The entire CPRcard is the applied part.
	Warning!Caution
REF	Device catalogue number reference
UDI	Unique Device Identification
IP67	Ingress protection rating
	Temperature limitations
	Humidity limitations
	Pressure limitations
UDI	Machine readable Unique Device Identification (UDI). Datamatrix with UDI numbers (XXX = last three UDI digits)
	Not to be used in a bed or on soft surfaces
	Not for patient under 8 years

Support

If you need assistance or to report any issues, contact a local Laerdal representative or visit www.laerdal.com/CPRcard for more information.

Waste Handling

WEEE

This appliance is marked according to the European directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE).

By ensuring this product is disposed of correctly you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The symbol on the product indicates that this appliance may not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

Disposal must be carried out in accordance with local environmental regulations for waste disposal.

⚠ Caution

Do not cut the device as this may damage the battery and expose harmful chemicals.

Service and Warranty

CPRcard does not have any replaceable or serviceable parts.

The CPRcard has a one-year limited warranty. Refer to the Laerdal Medical Warranty for terms and conditions.

For more information visit www.laerdal.com.

www.laerdal.com/CPRcard

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Tanke Svilandsgate 30, 4002 Stavanger, Norway

Printed in China

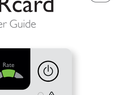
20-18063 Rev. B

www.laerdal.com

CPRcard

User Guide

EN



www.laerdal.com

Important Information and User Instructions
(on the back of the card)

Intended Use

CPRcard is a single-use device intended to provide chest compression feedback to a CPR trained rescuer performing CPR on a suspected cardiac arrest patient, 8 years or older, lying flat on the back on a firm surface.

Indication for Use

When performing CPR on a suspected sudden cardiac arrest patient.

Operating Principle

A battery powered device placed between the patient's bare chest and the rescuer's hands for giving feedback on compression depth and rate to a rescuer performing CPR. Using an accelerometer, the device measures its own relative movement perpendicular to the device surface and uses this to give input to an algorithm for calculation of correct feedback on compression rate and depth. The device is equipped with wireless communication functionality for transfer of performance data.

⚠ Warnings and Cautions

A Warning states a condition, hazard, or unsafe practice that can result in serious personal injury or death.

A Caution states a condition, hazard, or unsafe practice that can result in minor personal injury or damage to the product.

Note

A Note states important information about the product or its operation.

ⓘ Important Information

Before using CPRcard, read these instructions thoroughly. Observe all warnings, cautions and instructions in this User Guide. Retain this guide for future reference.

CPR cannot ensure survival regardless of how well chest compressions are performed. For some patients, the cardiac arrest is not reversible despite any available care.

Common side effects of properly performed CPR include skin abrasion, bruises, rib and sternum fractures, and occasionally injuries to internal organs.

The CPRcard does not guide the decision of whether or not to perform CPR on a suspected cardiac arrest victim. This decision must be made independent of the device.

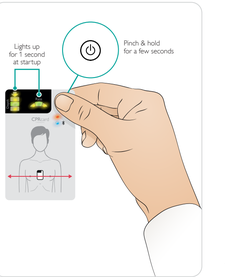
⚠ Warnings

- *Do not use CPRcard on a patient on a "soft surface" (e.g. bed/mattress, stretcher or transportation cot) as it will provide inaccurate feedback that can result in too shallow compressions.*
- *Do not delay CPR to search for the CPRcard or if you experience any problem using it. Begin CPR without the card.*
- *Do not use the CPRcard in a moving environment (e.g. during patient transport in a car, boat or aircraft) as it may provide inaccurate feedback.*
- *Do not use CPRcard on an open wound or recent incision site as this may lead to cross-contamination and cause further injury.*

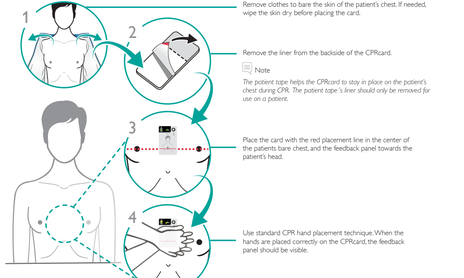
⚠ Caution

Using CPRcard under sunlight might affect the visibility of the feedback from the card. Continue CPR even if you don't see the feedback from the card.

Turn On/Off



Correct Placement



Remove clothes to bare the skin of the patient's chest. If needed, wipe the skin dry before placing the card.

Remove the liner from the backside of the CPRcard.

Note

The patient tape helps the CPRcard to stay in place on the patient's chest during CPR. The patient tape's liner should only be removed for use on a patient.

Place the card with the red placement line in the center of the patients bare chest, and the feedback panel towards the patient's head.

Use standard CPR hand placement technique. When the hands are placed correctly on the CPRcard, the feedback panel should be visible.

Chest Compression Feedback

Feedback on compression depth and rate are provided by indicator lights. The green lights indicate the targets according to the 2020 international CPR guidelines.

Compression Depth

Compression Rate

⚠ Caution

Release pressure between compressions to allow the chest to recoil completely to maintain efficient compressions.

Note

The CPRcard does not provide feedback on incomplete release (leaning) between compressions.

Idle Indicator

When no compressions are detected for more than 1.5 seconds, the idle indicator will blink.

Note

If there are no compressions detected for two minutes, the CPRcard shuts down automatically.

Warning Indicator

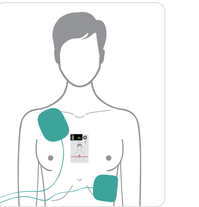
If a device error is detected, the red Warning Indicator will turn on and compression feedback will stop. Such an error may be caused by a depleted battery or a technical malfunction. The CPRcard should be replaced.

⚠ Warning

Do not interrupt CPR if compression feedback stops. Continue CPR without feedback.

Use with a Defibrillator

Follow defibrillator voice guidance when using the CPRcard together with a defibrillator. There is no need to remove the CPRcard before delivering a shock.



⚠ Caution

Do not place the defibrillation pads on top of the CPRcard as this may obstruct the CPR feedback and interfere with the defibrillation.

Bluetooth® Wireless Technology

CPRcard allows wireless connectivity using Bluetooth® Low Energy*. Possible uses with compatible apps are:

- Firmware upgrade
- Transfer of stored data. Summary data is stored for events with more than 50 compressions
- Live streaming of CPR feedback during use

CPRcard is only available for Bluetooth connection after the card is turned on and before chest compressions are initiated.

Refer to www.laerdal.com/CPRcard for more information.

⚠ Warning

Do not delay CPR if you are not able to establish a Bluetooth connection.

*Bluetooth is a trademark owned by Bluetooth SIG, Inc.

Note

Do not cover the Bluetooth antenna, located in the feedback panel, when placing the hands on CPRcard.

Single Use

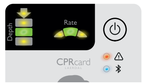
The CPRcard is intended for single-use only and should not be re-used. After use on a patient, the CPRcard may be contaminated and must be disposed of in accordance with local protocol.

If data transfer is required after patient use, the CPRcard can be placed in a plastic bag. The compatible app or software can perform the transfer through the bag.

Maintenance and Inspection

Perform functional test quarterly to ensure that the CPRcard is functioning as it should.

1. Inspect the CPRcard for physical damage (e.g. tears and cracks).
2. Turn on the device.
3. Observe and verify that all the lights function (see illustration), the lights should display for one second.
4. Turn off the device.



Replace the card if it doesn't work properly or is severely damaged.

⚠ Caution

Do not attempt to modify the CPRcard in any way before use as it can affect its functionality.