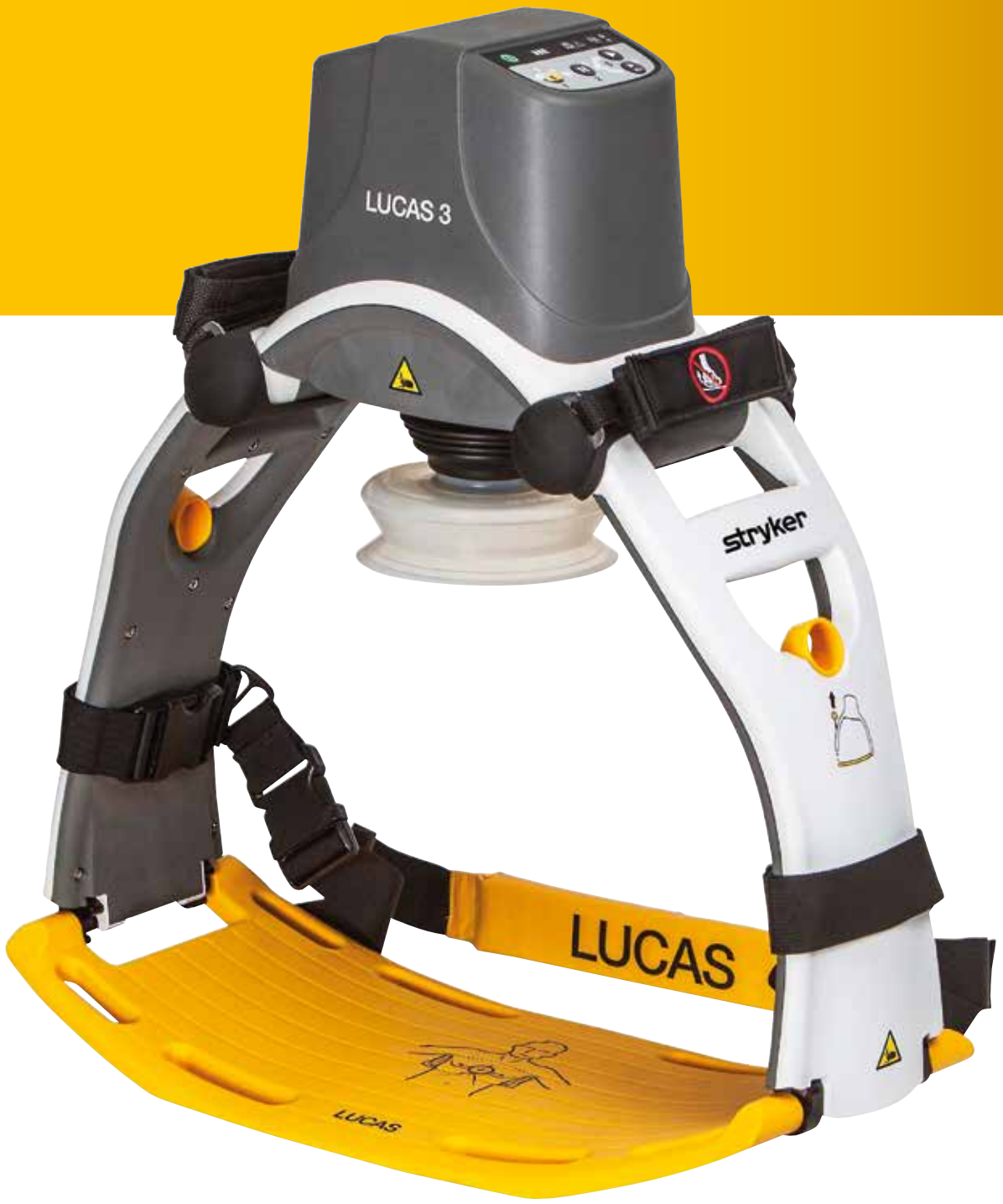
In-hospital

LUCAS® 3, v3.1

Chest Compression System



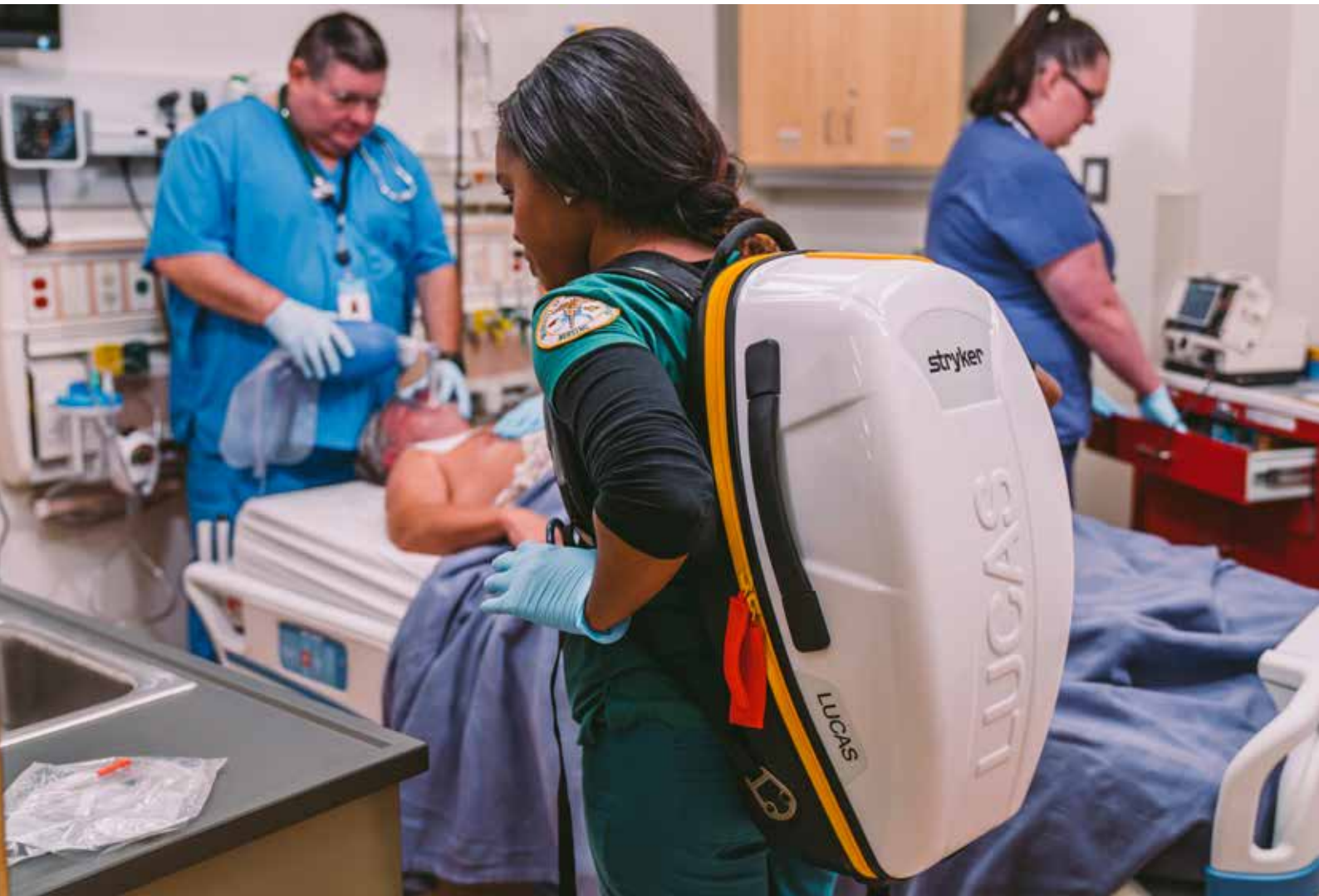
I AM **LUCAS**

The first time people met me was in 2003. Since that day you can find an astonishing 24,000 of us, across 84 countries.

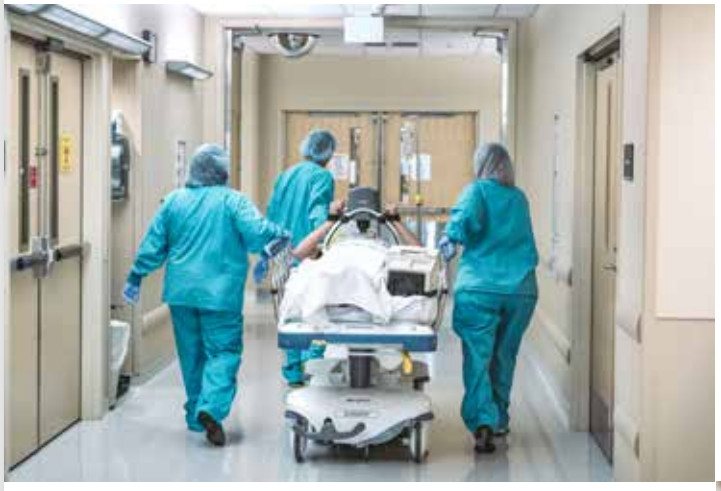
Cardiac arrests are stressful events, and emergency department can be a busy area.

I AM LUCAS and I free up your team members to perform other lifesaving interventions or attend other emergencies.

I AM LUCAS and I sustain high-quality compressions wherever CPR is provided—on a mattress, during in-hospital transfer, in elevators, or during PCI in the cath lab – helping reduce risk of injuries and any resulting health issues within your team.

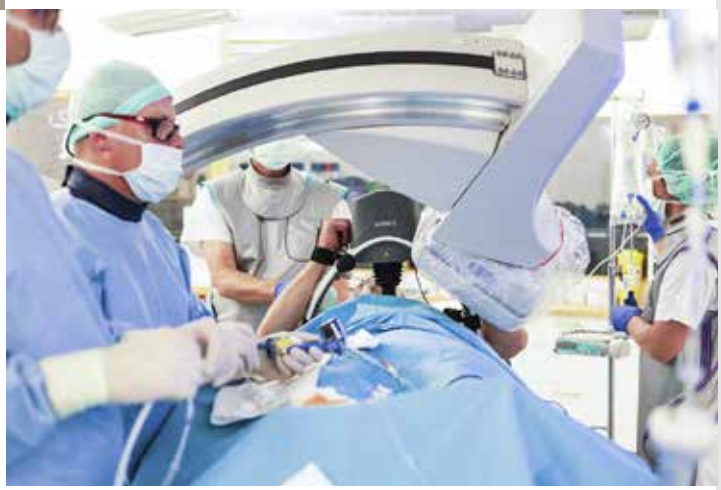


The LUCAS Chest Compression system delivers Guideline-consistent, high-quality chest compressions which allows you and your team to work more efficiently and safely.



Transport

Some cardiac arrest patients will not respond to CPR and defibrillation alone. LUCAS allows for life-saving interventions (such as PCI and ECMO/ECPR) by providing consistent compressions on the way to and during these advanced life-saving therapies.



Safety

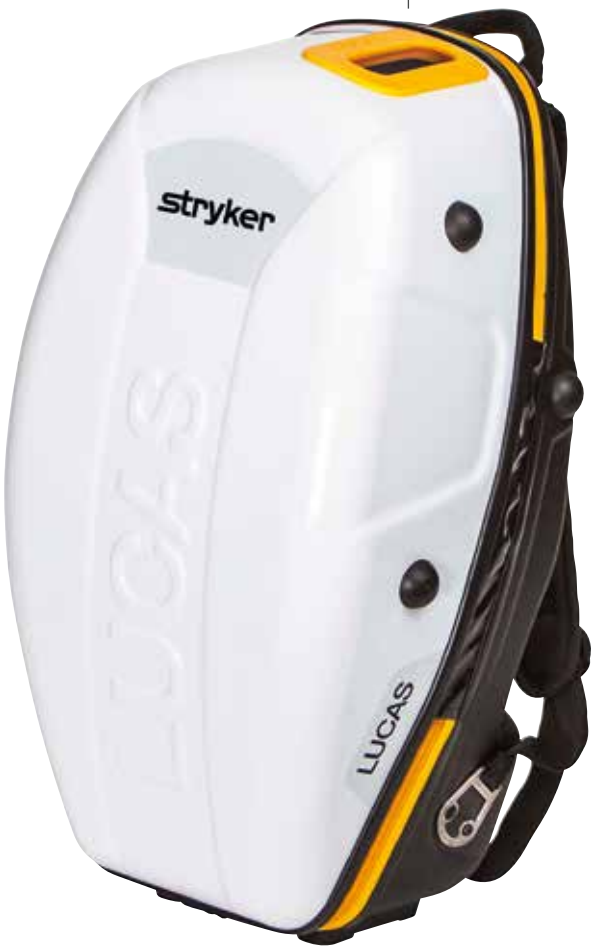
High-quality CPR is a physically demanding job. Caregivers should be able to deliver quality care while providing additional safety and less of a chance of injury on the job. The LUCAS device reduces the radiation burden to CPR providers when being used in the Cath Lab while also maintaining Guideline-consistent chest compressions.

Quality of CPR

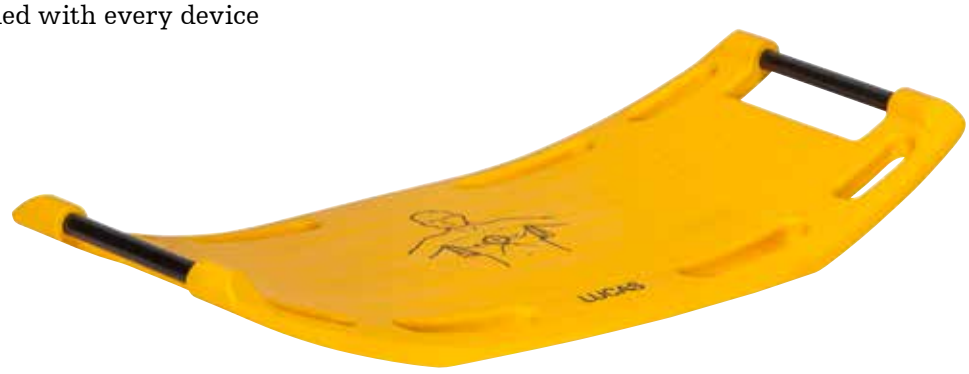
Delivery of high-quality CPR is vital for patient outcomes. When providing CPR on a patient laying on a hospital bed, the mattress receives a large share of the compression instead of the patient. This results in too shallow, less effective manual compressions.[1] With its support structure and back plate, LUCAS overcomes the "Mattress Effect" and provides high-quality CPR whatever the surface.

LUCAS 3, v3.1

Top window for quick battery check



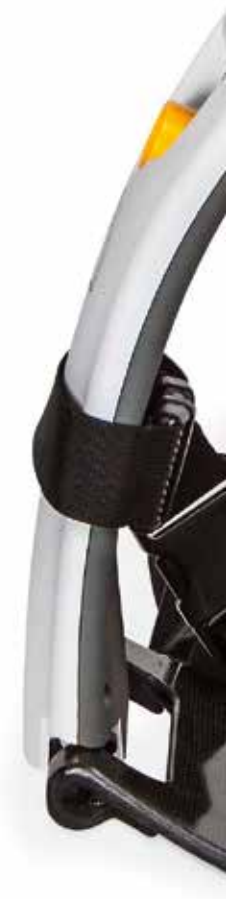
Durable, lightweight carrying case included with every device

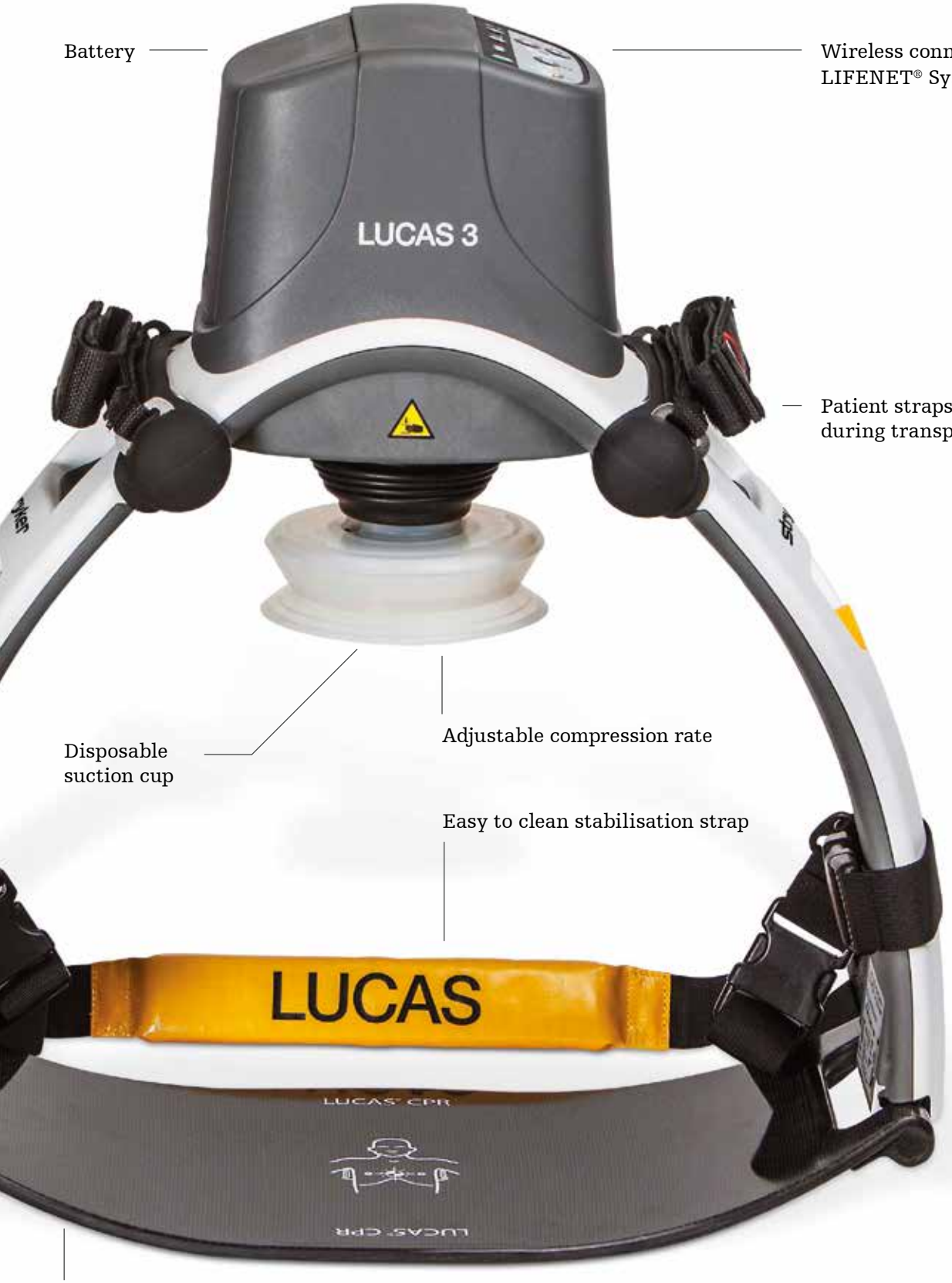


Standard low profile back plate

Usability

The two-step application (back plate, then upper part) makes it easy and quick to apply (a median 7 sec. interruption time at transitioning from manual CPR to mechanical CPR in clinical use).[2]





Battery

Wireless connectivity to LIFENET® System

Patient straps secure patient arms during transport

Disposable suction cup

Adjustable compression rate

Easy to clean stabilisation strap

X-ray translucent optional lightweight carbon fibre back plate

LUCAS 3, v3.1

We continue to innovate the LUCAS platform with Wi-Fi® connection to the LIFENET® System*.

With the LUCAS account in LIFENET, LUCAS 3, v3.1 allows for tailored rates to meet your protocols, alerts configured to improve compliance, Post-Event Reports to your inbox, and asset notifications by e-mail.

Configure LUCAS device via LIFENET

Setup options:

Adjustable rate: 102, 111, 120 compressions per minute – fixed or variable during operation

Adjustable depth: 45 to 53 ± 2mm (fixed during operation)

Adjust ventilation alerts, pause length and count

Auto-lowering of the piston (AutoFit or QuickFit)

Pressure pad release to allow for chest rise during ventilation

Audible CPR timer: 1-15 minutes (in 1 min increments)

Post-Event reporting

- Receive device Post-Event Report (.pdf) via e-mail after device check-in over Wi-Fi
- Transmit reports wirelessly to any predetermined e-mail addresses (configurable in LIFENET)
- Integration with CODE-STAT™ 11 Data Review Software*

Easy-to-read Post-Event Report (.pdf) showing:

- Summary of device use: compression time, ratio, rate, count, number of pauses > 10 sec. and duration of longest compression pauses
- Visual timeline showing device compressions, rate and pauses
- Event log showing user interactions, battery alerts and alarms
- Full display of device setup for quick reference
- Comprehensive post-event review in CODE-STAT 11 Data Review Software (optional)

Asset management via LIFENET

- Asset dashboard for product status at latest device check-in
- Notifications of expiring and expired LUCAS batteries

* LIFENET and CODE-STAT are available in major markets. Please contact your local Stryker representative for more information.

Specifications

Device and Therapy

Compression rate

- Configurable to 102 – 111 – 120 compressions per minute, fixed, or variable during use
- Factory default setting: 102 ± 2 compressions per minute

Compression depth

- Configurable to a fixed value between 45 to 53 ± 2 mm
- Factory default setting: 53 ± 2 mm for nominal patients

Note: 40 to 53 mm for chest height < 185 mm

Pressure pad during ventilation

- To allow for chest rise during ventilation the pressure pad can be configured to move up 10 mm above start position during pauses or during continuous compressions
- Factory default setting: pressure pad remains in start position

Compression duty cycle: 50 ± 5%

Compression modes (operator selectable)

- ACTIVE 30:2 mode: 30:2 (factory default setting) or 50:2 (setup option) compression to ventilation ratio
- ACTIVE Continuous mode

Ventilation alerts

- ACTIVE 30:2 mode: LED blinks and audible alert signals before ventilation pause
- ACTIVE Continuous mode: LED blink. Configurable to 6 to 10 alerts per minute (factory default setting: 10 alerts per minute). Audible alert configurable ON/OFF (factory default setting: OFF)

Ventilation pause duration

- ACTIVE 30:2 mode: configurable to 3 to 5 sec. (factory default setting: 3 sec.)
- ACTIVE Continuous mode: configurable to 0.3 to 2 sec. (factory default setting: 0.3 sec.)

Suction cup start position

- Configurable:

– QuickFit (factory default setting): Manual lowering of the suction cup. Automatic fine-tuning will occur when locking the start position

– AutoFit: Automatic lowering of the suction cup from its upper position down to the chest

– Manual: Manual lowering of the suction cup to the chest. No automatic fine-tuning will occur when locking the start position

Audible timers

- 1 to 15 minutes, in 1 minute increments (factory default setting: OFF)
- The timer can be setup as either CPR Timer or Continuous Timer

– CPR Timer: the device only measures the time in uninterrupted ACTIVE (30:2 or Continuous) modes

– Continuous Timer: the device measures the time continuously, independent of what mode the device is in

Patients eligible for treatment

- 17.0 to 30.3 cm chest height
- 44.9 cm maximum chest width
- No patient weight limitation

Device post-event data and connectivity

Connectivity

- Wireless connectivity: Device can communicate via Bluetooth® (factory default setting ON) and connect to configured Wi-Fi networks to receive and transmit data when not in clinical use.
- Local Bluetooth connection for setting up local Wi-Fi network, and for Post-Event Report generation and software updates (if Wi-Fi cannot be used)
- Ability to disable Bluetooth and/or Wi-Fi

Wi-Fi and LIFENET capabilities

- Manual or automatic data transmission (configurable): push the TRANSMIT key in range of known network (factory default setting), or setup option for automatic data transmission whenever the device is off, charging and in range of known network
- Setup options: Device functionality can be configured with setup options via secure, online platform (LIFENET) and be transmitted to the device wirelessly. A single setup profile can be applied to entire fleet or individual setup options for each device
- Device readiness status: Device can transmit device readiness and battery notifications wirelessly to any predetermined e-mail addresses

Device readiness data:

Configurable in LIFENET to send e-mail notifications on latest device check-in status including:

- Battery nearing expiration
- Battery expired
- Failed device self-test

Device data storage:

4GB (estimated to store more than two uses per day over the lifetime of the device, 8 years)

Specifications (cont.)

Device physical specifications

Device dimensions when assembled (HxWxD): 56 x 52 x 24 cm

Device dimensions while stored in carrying case (HxWxD): 58 x 33 x 26 cm

Battery dimensions (HxWxD): 13.0 x 8.8 x 5.7 cm

Weight of the device with Battery (no straps): 8.0 kg

Battery weight: 0.6 kg

Back plate: Thin and lightweight back plate (15mm and 1.1 kg)

Device environmental specifications

Operating temperature

- +32°F to +104°F / +0°C to +40°C
- -4°F / -20°C for 1 hour after storage at room temperature

Storage temperature: -4°F to +158°F / -20°C to +70°C

Relative humidity: 5% to 98%, noncondensing

Device IP classification (IEC 60529): IP43

Operating input voltage: 12-28 V DC

Atmospheric pressure: 62-107 kPa /1253 to 13000 ft / (-382 to 4000 m)

Power specifications

Power source: Proprietary battery alone or with external power supply or car power cable

Power supply input: 100-240VAC, 50/60Hz, 2.3A, Class II

Power supply output: 24VDC, 4.2A

Car power cable: 12-28VDC/0-10A

Battery type: Rechargeable Lithium-ion Polymer (LiPo)

Battery capacity: 3300 mAh (typical), 86 Wh

Battery voltage (nominal): 25.9 V

Battery run time (nominal patient):

Battery run time 45 minutes (typical), Extended run time connecting to external power supply

Maximum Battery charge time:

Charged in the device using external power supply:

- Less than two hours at room temperature (+72°F / +22°C)

Charged in the external battery charger:

- Less than four hours at room temperature (+72°F / +22°C)

Battery service life (interval for recommended replacement)

- Recommendation to replace the battery every 3 to 4 years or after 200 uses (of more than 10 minutes each time)
- End of Battery service life will be indicated by a constant yellow LED to the far right on the Battery charge indicator

Battery IP classification (IEC 60529): IP44

Battery charge temperature

- +32°F to +104°F / +0°C to +40°C
- (+68°F to +77°F / +20°C to +25°C preferred)

Battery storage temperature

- -4°F to +104°F / -20°C to +40°C
- +105°F to +158°F / +41°C to +70°C ambient for less than a month

Reference:

1. Perkins GD, Benny R, Giles S et al. Do different mattresses affect the quality of cardiopulmonary resuscitation? *Intensive Care Med*. 2003;29(12):2330-2335

2. Levy M, Yost D, Walker R, et al. A quality improvement initiative to optimize use of a mechanical chest compression device within a high performance CPR approach to out-of-hospital cardiac arrest. *Resuscitation*. 2015;92:32-37.

Medical

GDR 3336899_C

CE 2460

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