Gaumard®
Simulators for Health Care Education

Leadership Through Innovation™

HAL® S3201

Advanced Multipurpose Patient Simulator

- Programmable airway and lung compliance
- Myocardial infarction modeling
- Automated physiology and drug recognition
- Real monitoring: mechanical ventilators, 12-Lead ECG, AED, oximeters, capnometers, and auto-BP
- eCPR™ - effectiveness monitoring and trainer
- Wireless and tetherless mobility for care in motion training

Train general and specialized practitioners with one patient simulator that does it all.

- Active eyes
- Cyanosis
- Nasal/Oral intubation
- Intubation Sensor
- Tongue edema
- Pharyngeal swelling
- Laryngospasm
- Surgical airway
- Real $EtCO_2$
- Spontaneous breathing
- Variable airway resistance
- Variable lung compliance
- Gasping
- Heart Sounds
- Carotid pulses
- Brachial/axillary pulses
- Radial pulses
- Femoral pulses
- Popliteal pulse
- Pedal Pulse
- Bowel sounds
- Seizures
- Streaming Voice
- Airway sounds
- Mainstem intubation
- Needle decompression
- Bilateral chest tube
- Ventilation sensor
- Lung sounds
- Chest compression sensor
- (Manual/Auto) Blood pressure
- 12-Lead Monitoring
- Oxygen saturation
- Defibrillation/pacing
- Bilateral IV/IM access
- Drug recognition
- Stomach distension
- Intramuscular access
- Urinary Catheterization
- Optional trauma arm/leg
- 6-hour battery life
- Wireless and tetherless

HAL® S3201 | *Advanced Multipurpose Patient Simulator*

HAL features the most advanced capabilities in patient simulation in one affordable package.

MULTIPURPOSE

HAL offers an array of physiological features capable of simulating lifelike cases in nearly all clinical settings, including prehospital, ED, OR, ICU, PACU, and general nursing. HAL's versatility makes it the most advanced and cost-effective patient simulation solution today.

REAL MONITORING

Monitor and provide care using native equipment. HAL supports real 12-Lead ECG monitors, capnometers, oximeters, BP cuffs, defibrillators, and mechanical ventilators just like a real patient. No adapters, adjuncts, or special configuration required.

TETHERLESS

HAL's tetherless and wireless design allows for point-of-injury care, transport, and patient handoff training. HAL is self-contained, quiet, and fully operational on battery power for up to 6 hours.

PROVEN RELIABLE

Since 2004, our industry-leading design and wireless technology made the HAL series an effective and reliable tool for our users.
The HAL S3201 is the evolution of the HAL S3000 design awarded the certificate of airworthiness by the US Army.

EASY TO USE

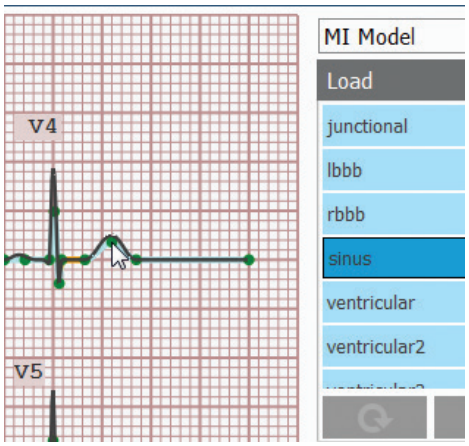
Our intuitive UNI® software lets you quickly and easily manage HAL's vitals using on-the-fly controls and interactive scenarios, while the physiological model in the "automatic operating mode" handles the effects of medications, so that you can focus on the learners' actions.

TURN-KEY SOLUTION

HAL is fully equipped and ready for use. HAL includes a wireless control tablet, UNI®, a virtual patient monitor, a scenario library, and accessories for one great price. The commitment to providing innovative technology and value is still our principle today as it was over 50 years ago.

DYNAMIC AIRWAY AND LUNG COMPLIANCE

Train learners on vent management and patient treatment using a real mechanical ventilator. HAL's respiratory controls let you adjust lung compliance, airway resistance, gasping, real $EtCO_2$, and OSAT to simulate an infinite number of respiratory conditions. HAL can also hold PEEP from 5 to 20 cmH_2O and trigger the vent's assist mode during weaning.



12-LEAD ECG DESIGN WITH MI MODEL

Train ECG interpretation and MI management using real native 12-lead equipment. Select rhythms from the built-in library, design your own using the point-by-point PQRST wave editor, or create an occlusion on the 3D heart model to auto-generate injury, ischemia, and necrosis.

AUTOMATIC RECOGNITION OF 50+ VIRTUAL DRUGS

Train medication administration and management to improve patient safety. The drug recognition sensors integrated into the arm vasculature detect the medication type, concentration, and dose administered. In response, the physiological model automatically simulates the effect on the patient.

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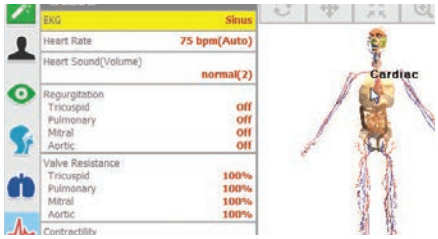
UNI® SOFTWARE

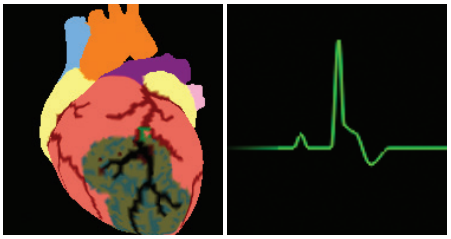
- Unified Simulator Control Platform - UNI's interface design is shared across our growing line of 15+ computer controlled patient simulators, so you can easily operate any Gaumard products without retraining, thus saving your program valuable time and money.
- Preconfigured and ready - UNI comes preloaded and preconfigured in the rugged 12" wireless tablet PC included with the package.
- 3D Patient Visualization Monitor – This real-time 3D view of the patient ensures you never lose track of provider/patient interaction during the simulation.
- Unified Scenario Designer – Create your own scenarios quickly and easily and share them with other UNI users and between Gaumard products.
- Time-stamped event recording and reporting The automated event tracking and interaction recorder ensures important events are always captured so you can focus on the action.
- Control View Replay – The built-in recorder captures UNI's screen as data so you can review the simulation from the operator's chair.
- No annual operating license or software update fees – Keeps your program's operating costs down year after year.

Powered by Microsoft® Surface Pro



AUTOMATIC MODE

The UNI physiological model can automatically simulate lifelike responses to cardiorespiratory events, gas and blood composition, medications, and much more, without input from the operator.



3D MYOCARDIAL INFARCTION

Train to improve MI diagnosis, management, and prognosis. Simply point-and-click on the 3D heart to create an occlusion to auto-generate MI visible on a real 12-lead ECG reading.

eCPR™ MONITORING

Monitor and assess CPR performance in real-time, simulate perfusion dependent on effectiveness, and export performance reports for debriefing.

VITAL SIGNS MONITOR

- Includes 20-inch touchscreen virtual monitor or upgrade to a 12-inch tablet virtual monitor
- Customize each trace independently; users can set alarms, and timescales.
- Display up to 12 numeric values including HR, ABP, CVP, PAWP, NIBP, CCO, SpO_2, SvO_2, RR, $EtCO_2$, temperature, and time
- Select up to 12 dynamic waveforms including ECG Lead I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6, AVP, CVP, PAWP, pulse, CCO, SvO_2, respiration, capnography.
- Share images such as x-rays, CT scans, lab results, or even multimedia presentations as the scenario progresses

HAL® S3201 | *Advanced Multipurpose Patient Simulator*

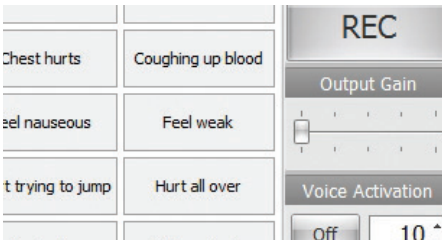
HAL®, a multipurpose patient simulator for all your clinical training needs that's easy to use.

REACTIVE EYES, SEIZURES

HAL has blinking eyes with photo-sensitive pupils. Control dilation, reactivity, and blink rate to simulate injury and state of consciousness.

SURGICAL AIRWAY

Visible tongue edema, pharyngeal swelling, and laryngospasm. Perform an emergency cricothyrotomy or tracheotomy.



WIRELESS STREAMING VOICE

Be the voice of HAL and hear caregiver responses. Create and store vocal responses or select from 80+ prerecorded phrases.

eCPR™ AND REAL $EtCO_2$

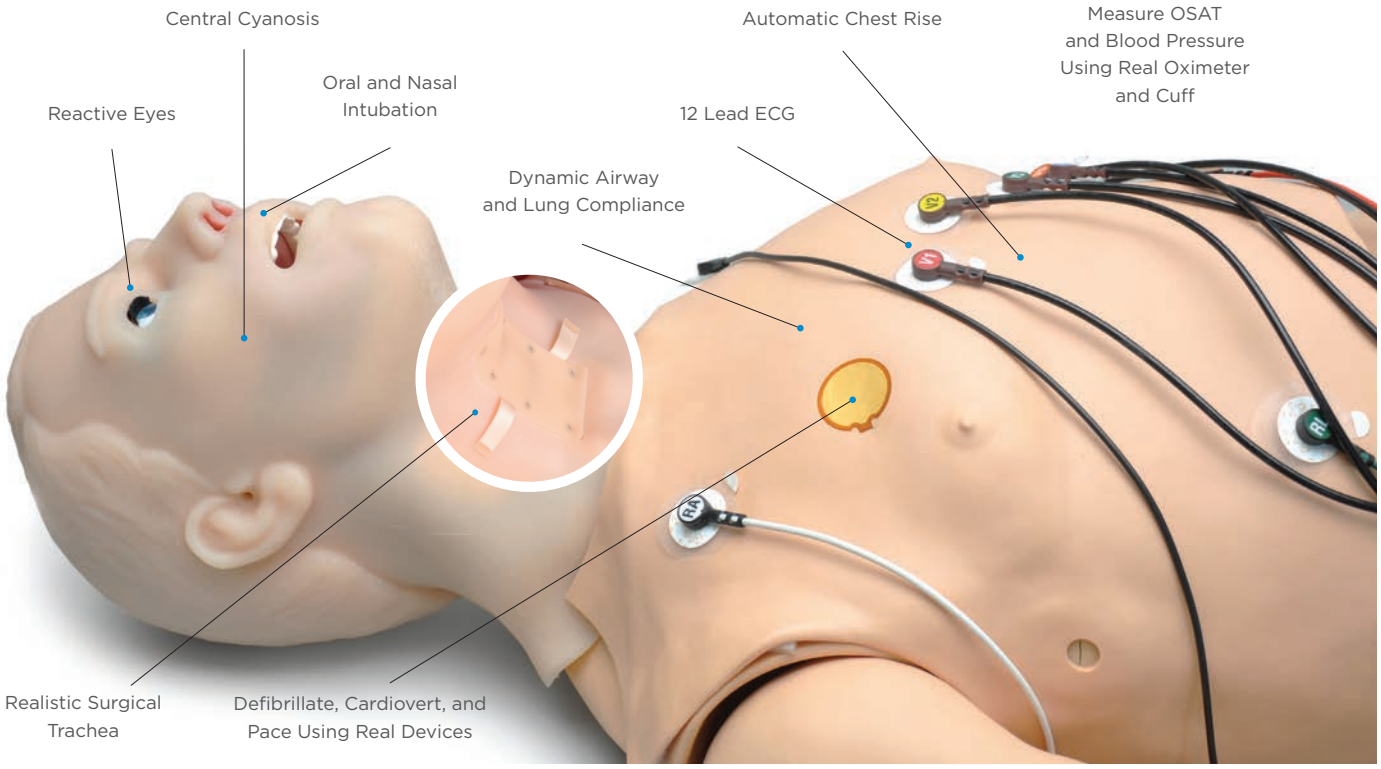
Built-in ventilation and chest compression sensors capture CPR quality metrics. Measure $EtCO_2$ using a real capnometer to monitor effectiveness.

DEFIBRILLATION

Monitor, capture, pace, and cardiovert using a real defibrillator, electrodes, and real energy. Alternatively, save money on replacement pads by connecting the defibrillator directly to HAL using our optional hands-free training cables.

AUSCULTATION

Present normal and abnormal airway sounds, heart sounds, anterior and posterior lung sounds, and bowel sounds.



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GENERAL
- Available in ethnic skin tones
- Powered by an internal rechargeable battery or wall outlet
- Simulator receives commands from a wireless tablet PC and operates at distances up to 300 meters
- Use preprogrammed scenarios, modify them or create your own quickly and easily
- Installation and training worldwide

AIRWAY
- Programmable airway: tongue edema, laryngospasm, and pharyngeal swelling
- Multiple upper airway sounds synchronized with breathing
- Right mainstem intubation
- Sensors detect depth of intubation
- Placement of conventional airway adjuncts
- Endotracheal intubation
- Retrograde intubation
- View vocal cords with Sellick maneuver
- Realistic surgical trachea allows tracheostomy or needle cricothyrotomy

BREATHING
- Control rate and depth of respiration and observe chest rise
- Select independent lung sounds: upper right front and back; upper left front and back; lower right front and back; lower left front and back
- Chest rise and lung sounds are synchronized with selectable breathing patterns
- CO_2 on exhalation (4 levels) using replaceable cartridge mounted inside the simulator
- Attach to real mechanical ventilators
- Bilateral chest rise and fall
- Unilateral chest rise simulates pneumothoraces
- Anterior and posterior auscultation sites
- Bilateral needle decompression at second intercostal
- Dynamic Airway and Lung compliance/resistance
  - > Ten levels of static compliance, 15-50 ml/cm H_2O
  - > Ten levels of airway resistance
  - > Holds PEEP from 5 to 20cm H_2O
  - > Exhales real and measurable CO_2
  - > Vary lung mechanics throughout the scenario
  - > Receive real-time feedback from real mechanical ventilator
  - > Capable of assisting the ventilator at variable respiratory rate
  - > Compliance and resistance can be varied while connected to the ventilator

CARDIAC
- ECGs are generated in real time with physiologic variations never repeating textbook patterns
- Heart sounds may be auscultated and are synchronized with ECG
- eCPR sensors; Chest compressions are measured and logged
- 12 Lead ECG with integrated MI model

CIRCULATION
- Measure blood pressure by palpation or auscultation
- Use real BP cuff rather than a "virtual" cuff to measure blood pressure
- Korotkoff sounds audible between systolic and diastolic pressures
- Oxygen saturation detected using real monitors rather than a "virtual" value
- Pulse sites synchronized with BP and heart rate
- Bilateral IV arms with fill/drain sites
- SubQ and IM injection sites
- Intraosseous access at tibia
- ECG monitoring using real devices
- Defibrillate, cardiovert and pace using real devices
- Multiple heart sounds, rates, and intensities
- ECG rhythms are generated in real time
- Bilateral carotid, radial, brachial, femoral, popliteal and pedal pulses synchronized with ECG
- Pulses vary with blood pressure, and are continuous and synchronized with the ECG even during a paced rhythm

INSTRUCTOR OR AUTOMATIC MODE
- Vital signs are generated in real time
- Drug library with medications
- Use of medications change conditions in real time mimicking real clinical situations

DRUG RECOGNITION SYSTEM
- Identifies drug type and volume injected into veins of the right hand and forearm
- Supplied with 20 syringes having wireless tags
- Use drugs from library or choose to model other drugs using software template

NEURAL RESPONSES
- Eyes are controlled automatically by physiologic model or directly by the instructor
- Select pupillary response to light

SPEECH
- Wireless streaming audio
- Create and store vocal responses in any language

VITAL SIGNS MONITOR
- Controlled via wireless tablet PC
- Use selected configuration or create your own configuration to mimic the real monitors used in your facility
- Share images such as ultrasounds, CT scans, lab results
- Touchscreen control
- Monitor can be configured by the instructor to suit the scenario

OTHER
- Central cyanosis
- Fill bladder and perform Foley catheterization
- Interchangeable genitalia
- Insert feeding tubes
- Auscultate bowel sounds

ARTICULATION AND MOVEMENT
- Realistic joint articulation
- Supports supine, prone, recumbent, and sitting positions
- Seizure/convulsions

USER INTERFACE
- Sensors track student actions
- Changes in condition and care provided are time stamped and logged
- Supplied with wireless tablet PC
- 26 preprogrammed scenarios which can be modified by the instructor even during the scenario
- Create your own scenarios (add/edit)
- Change the simulator's condition during the scenario

HAL® S3201

S3201.PK

Patented; other patents pending.

Available skin tones

OPTIONAL ADD-ONS

TRAUMATIC LEG AMPUTATION
S3201.004

TRAUMATIC ARM AMPUTATION
S3201.005

UPGRADE TO MOBILE MONITOR
S3201.003

CASUALTY WOUND KIT
WK120

EMERGENCY WOUND KIT
WK100

TRAUMA WOUND KIT
WK110

BURN WOUND KIT
WK105

DEFIB-PACING SNAPS
S3201.125

DEFIB-PACING SNAP HANDS FREE CABLES
S3201.126 Philips

S3201.127 Physio LIFEPAK®

S3201.128 Zoll®

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www.gaumard.com
sales@gaumard.com
USA/Canada Toll Free
800.882.6655
Worldwide 305.971.3790

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