



# Medical Cart Solutions



Mobile Carts | Cabinets | Medication Dispensing | Telehealth



Howard Medical

A division of Howard Industries that specialises in technology and Point-of-Care carts—the first of which was built in 2001.

# Your Mobile Barcode Medication Administration Solution Provider

Howard Medical was established in 2001 as a division of Howard Industries. Eighteen years ago, the need for Bar-Code Medication Administration (BCMA) at the U.S. Veterans' Administration hospital system precipitated the birth of Howard Medical. Since then, Howard Medical has led the way in mobile point-of-care cart solutions and BCMA. In fact, many of the computer-on-wheels' (COWS) most impactful innovations have been designed by the engineers at Howard Medical. Their research into ergonomics, high-efficiency power systems, long-lasting batteries, and durability, as well as insight into what caregivers and IT technicians want and need, has produced a cart that sold over 65,000 units in 2016.

Howard Medical offers carts that will support many computing solutions including: Tablets, iPads, Notebooks, Laptops, Thin Clients, Ultra-Small Form Factors, All-in-Ones, and Touchscreens. Whether you need a cart with no power system or one with a superior battery/power system that can keep going for an entire shift and last for well over five years, Howard Medical has it. From no storage to plenty of storage for medication rounds, Howard Medical can configure the cart to your specific needs.

Our storage solutions have been designed with removable cartridges to help improve workflow efficiency of both the Pharmacy and Nursing departments. We offer complete cart customization with mounting solutions and accessories, such as barcode scanners, sharps containers, vital sign monitors, cup dispensers, and more. Our exclusive, patented, electronic Steer Assist Technology has revolutionized the medical cart industry. By minimizing the force required to turn a moving cart, we've increased cart control and made it extremely easy to maneuver. In addition, independent height adjustments for both the worksurface and the monitor make it possible for users to find their ideal working height, whether sitting or standing. This, in turn, helps to reduce body aches and eyestrain.

These are just a few of the many features that make Howard Medical carts the most ergonomically friendly in the healthcare industry and the cart of choice in a great number of U.S. Veterans Administration hospitals and a majority of the large commercial hospital systems in the U.S.

# The Howard Family

Howard Medical's products ease workloads for nurses and other healthcare professionals, enabling them to focus more on patient care, which, in turn, improves each patient's overall experience. Manufactured in Ellisville, Mississippi, our medical carts are engineered to meet the exacting standards of the healthcare industry and built to withstand daily use in some the most demanding environments.



HI-Core tablet cart



HI-Core notebook cart



HI-Core LCD or AIO cart



HI-Care E no storage



HI-Care E 2-tier storage



HI-Care E 4-tier storage



HI-Care E 6-tier storage



HI-Paradigm E 3-tier storage



HI-Paradigm E 6-tier storage



TeleCore Telemedicine Cart



TeleCare Telemedicine Cart



Telehealth Cabinet



Large Rugged Telemedicine Kit



Compact Rugged Telemedicine Kit

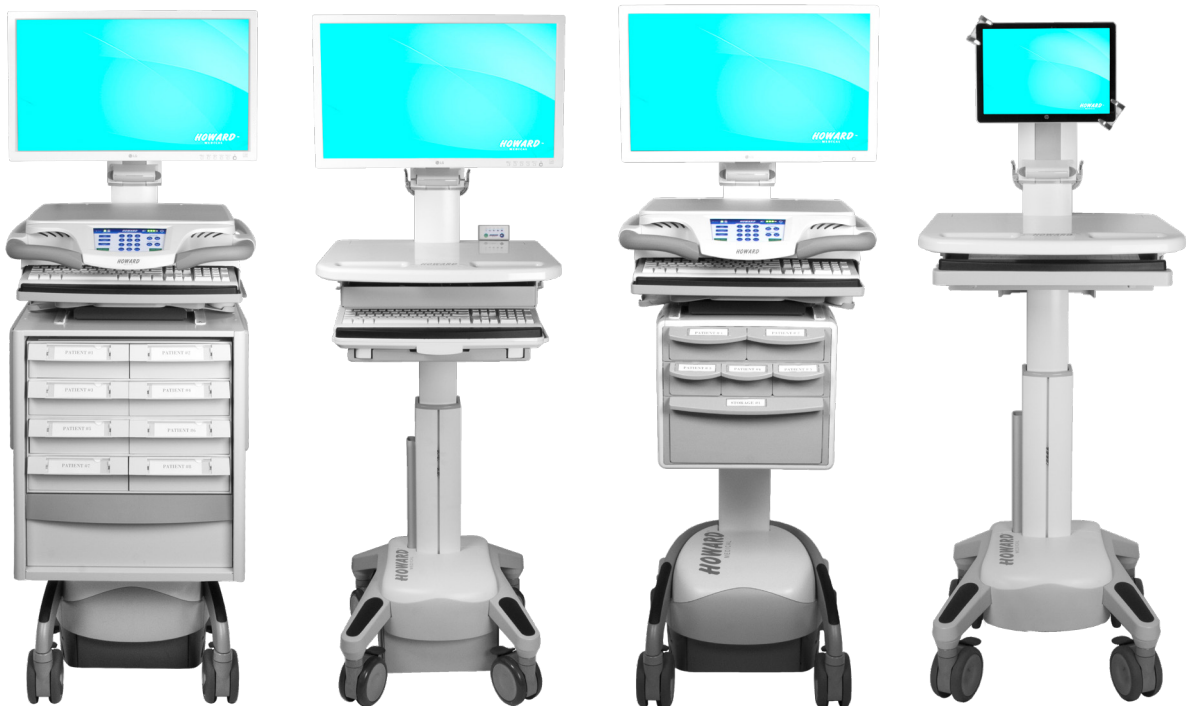


Shoulder Bag Soft Telemedicine Kit



# Why **Howard** Medical

Our carts are designed with the healthcare setting clearly in mind, with a range of features expressly integrated to enhance patient care and ease workloads for nurses and other healthcare professionals. Howard's family of carts can be used in a variety of applications that include Charting and EPR, Medication Dispensing (BCMA), and Nursing Education. Our carts are engineered to meet the exacting standards of the healthcare industry and built tough enough to withstand daily use in the most demanding environments.



Powered Cart



Powered Cart



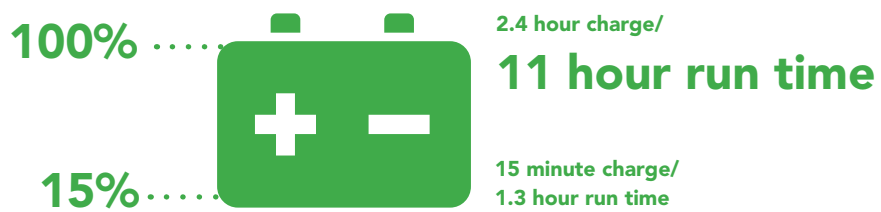
Powered Cart



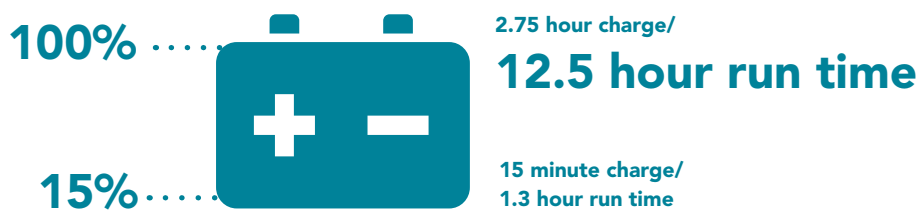
Non-Powered Cart

Your choice of advanced battery technology may well be the most important decision you make when configuring a mobile cart solution, as it directly affects total cost of ownership, ease of use, and performance longevity. There are three battery technologies commonly used for powered carts in the healthcare industry. Howard Medical recommends the PowerMax 150 Lithium Iron Phosphate Battery, due to its extended run times and prolonged life span.

### 44.8 Ah Lithium Iron Phosphate Battery



### 51.2 Ah Lithium Iron Phosphate Battery



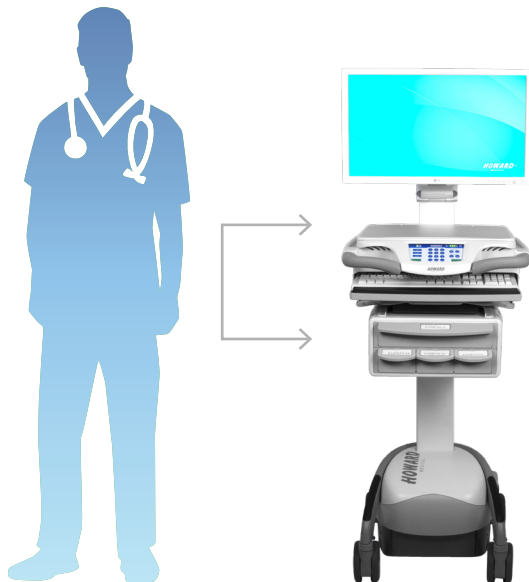
# The **Howard** Advantage

The industry-leading HI-Care E, our most popular cart, offers full, class-exclusive features to automate, update, and communicate based upon the individual needs of your facility.

The HI-Care E cart's **negative/positive-tilt keyboard tray**



The HI-Care E cart's **adjustable, ergonomic handles**



The minimal distance between the worksurface and patient bins means **less bending for the user**



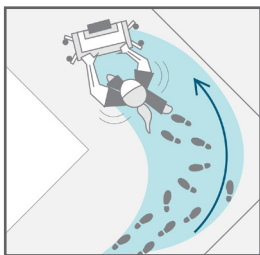
Howard's patented **Steer-Assist Technology** allows end users to maneuver carts much more easily as they navigate around corners, through doorways, and in tight spaces

# Steer-Assist Technology (SAT)

Steering Assist Technology (SAT) is a revolutionary concept that provides the functionality of steering casters for navigating turns yet retains the multidirectional properties of swivel casters when needed. The technology works by locking the steering rotation of the rear casters when the cart is in motion, which, in turn, eases maneuverability.

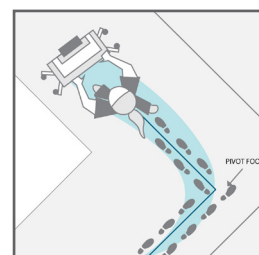
## The Problem—No Assistance

Efforts to turn a cart while it is in forward motion are subject to increased resistance, as the cart's swivel casters maintain a forward motion. More than the usual force is required to overcome forward momentum and change direction, forcing the pivot point onto one's lower back and hips.



## The Solution—Howard Steer Assist

When SAT is activated, the mechanism prevents the rear casters from swiveling freely. They are, instead, automatically positioned to follow the desired path. The cart's rear casters act as a pivot point, allowing corners to be turned "on a dime."



# Howard's Advanced Medication Delivery System

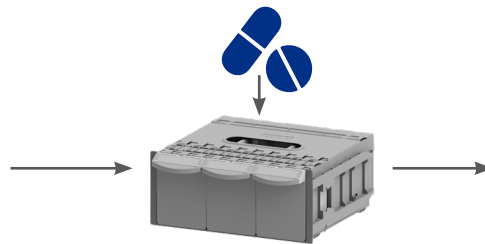
Innovative design factors contribute to the seamless way Howard carts work together and the way they work for you, from their interchangeable drawers/cassettes to convenient ergonomic features that ease operation and increase efficiency.

Howard's unique, point-of-care, interchangeable cassette system is an easy-swap exchange method that allows medications to be cassette-transferred securely from pharmacy to patient bedside. Streamlining the medication dispensing process in this way increases accuracy and minimizes potential medication errors. (Howard systems adapt easily to centralized or decentralized models.)

## Howard Medical Cassette Exchange Cart Fill: Hybrid Patient Medication Delivery System



1. Pharmacy



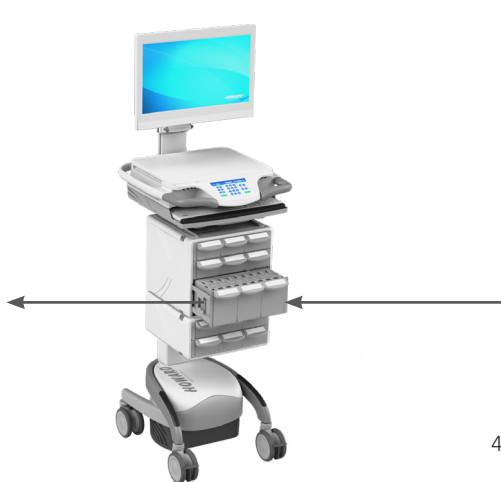
2. Patient medications are placed in individual bins with easy-swap cassettes



3. Cassettes are placed in a Transfer Cart and delivered to the floor



5. Medications are dispensed to the patient from the cart



4. Cassettes are placed in the cart



Maximize efficiency and ease work flows by teaming Howard Medical Transfer Carts with POC carts. Utilizing our interchangeable cassette system, Transfer carts make it possible for medications to be cassette-transferred securely from the pharmacy and stored in Med-Hub units on patient floors. When it's time for a med pass, nurses can transfer the medication-filled cassettes directly from the Med Hub to their POC carts for safe delivery to patient rooms.



Transfer Cart

### Transfer Cart

- Transfer Cart options available for utilizing the same interchangeable cassettes of the selected, compatible Howard Medical Point-of-Care solutions
- Capacity is 48-tiers for the HI-Care E cassettes
- Provides safe, convenient storage for all medications transferred from the pharmacy to patient floors
- Four lockable doors that fold back against cart ends
- Premium high-security key locks with interchangeable cores
- and available master keying
- 6" easy-glide casters with one braking caster and one steering caster on each end
- Push-handles integrated into both ends of the Transfer Cart

Transfer Cart			
		(32-Tier)	(40-Tier)
<b>Overall Dimensions (in [cm])</b>	<b>Width</b>	47.3 [120.0]	47.3 [120.0]
	<b>Depth</b>	31.5 [80.0]	31.5 [80.0]
	<b>Height</b>	40.5 [102.9]	48.8 [123.8]
<b>Caster Size (in)</b>		6 [15]	
<b>Cassette Capacity</b>		16	20



Med-Hub

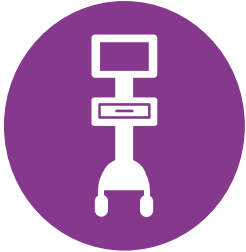
### Med-Hub

- Membrane keypad for drawer access
- Medical grade (all touch surfaces)
- Electronic locking system
- Computer USB interface provided
- 10-Tiers of storage (combination of cassettes and storage drawers)
- Narcotic locking (drawers available)
- Auto re-lock (adjustable timer)
- Local management software
- Remote management software

Med-Hub			
<b>Overall Dimensions (in [cm])</b>	<b>Width</b>	19.1 [49]	
	<b>Depth</b>	17.9 [45.2]	
	<b>Height</b>	53.0 [135]	
<b>Bin Sizes (in [cm])</b>	<b>Width</b>	5.5 [14] and 8.3 [21.0]	
	<b>Depth</b>	12. [30.4]	
	<b>Height</b>	2.5 [6.3]	
<b>Drawer Sizes (in [cm])</b>	<b>Width</b>	16.0 [41.0]	
	<b>Depth</b>	12.0 [30.4]	
	<b>Height</b>	3.0 [8.0], 6.0 [15.2], 12.0 [30.4]	

Measurements indicated by [ ] are metric

# HI-Care



The HI-Care cart is an industry-leading, ergonomic, mobile solution with a flexible design that can be tailored to fit multiple and varying workflows. It is our most popular cart, offering full, class-exclusive features to automate, update, and communicate based upon the individual needs of your facility.

## Ergonomic Features:

- The minimal distance between the worksurface, keyboard tray, and patient bins reduces unnecessary arm movements and bending
- Ergonomic, adjustable push-handles with soft-touch grip on front of cart are available
- 270° wrap-around handle on sides and rear provides ease of maneuverability
- Rubberized foot rests on each side of the cart allow for a more relaxed stance and help relieve fatigue
- Slide-out keyboard tray with integrated wrist rest (max keyboard dimensions 18.2" W x 7.5" D x 1.6" H) [46.2cm W x 19.1cm D x 4.1cm H]
- Keyboard is auto-leveling, with a -15 degree negative tilt and a positive tilt up to 6 degrees
- Open architecture at wheel base allows end user to maintain their normal walking stride
- One-touch worksurface height adjustment allows for a full sit/stand range of motion
- The HI-Care carts have a centralized control panel that enables the user to access all of the cart features easily
- Available with Howard's exclusive, on-demand steer assist technology (SAT)
- When SAT is engaged, the rear casters act as pivot points, easing navigation and stabilizing the cart. This allows end users to navigate around corners, through doorways, and make other changes in direction with minimal effort

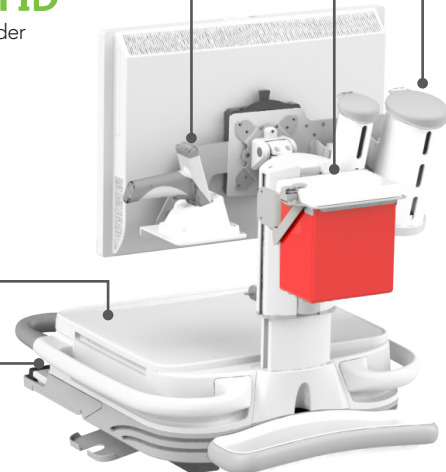
universal wireless or tethered  
barcode scanner bracket

sharps container and bracket

cup dispensers and bracket



reader



one-touch independent height  
adjustment for monitor

ergonomic push handles

auto-leveling keyboard with  
negative/positive tilt

270-degree wrap-  
around handle

one-touch height adjustment for  
worksurface



on-demand steer-assist technology

rubberized footrests

rear handle and basket

open architecture at wheel base

# HI-Care Features

- Central control panel with convenient electronic worksurface and monitor height adjustment, lighting controls, and storage management
- VESA monitor mount has tilt, swivel, and rotation adjustments
- Flexible storage configurations with add-on capability can be customized to fit multiple workflows
- Universal accessory mounting locations on rear of cart and on monitor mount (choose from 12+ optional accessories)
- Large, raised-edge worksurface area (17"W x 14.3"D) [43.2cm W x 36.3cm D] with translucent protective cover
- Medical grade (all touch surfaces)
- Dedicated cable management area with easy-access panels to manage and house excess cables
- Integral AC power distribution with 6 AC receptacles for powering customer equipment
- Large, fan-cooled, PC compartment (17.1"W x 12.5"D x 3.2"H) [43.4cm W x 31.8cm D x 8.1cm H]
- Includes 4-port USB Hub
- Battery fuel gauge
- 8ft coiled power cord with hospital-grade AC plug with dual integrated hooks and integrated pull loop (Hospital Grade)
- (4) 5" [12.7cm] dual-wheel premium casters (2 locking casters on front)
- Tool-less battery cover (snap-on) and tool-less battery and power supply replacement
- The easy-swap cassettes allow them to be exchanged easily between the HI-Care and a Transfer Cart
- Standard power module (smart charger) with intake filter
- Available with multiple power options, so you can choose the one that best fits your work process
- Remote cart monitoring and management software
- Advanced electronics that are optional for the HI-Care include drawer sensing, automatic drawer lighting, and drawer ajar alarm
- Mouse surface and mouse holder (left or right)
- Cart and cart accessories ship fully assembled in one box for convenience
- Stay ahead of the curve with technology that drives EMR adoption and safeguards confidential patient information. RFID reader integration enables only authorized users to access cart functions and secure storage options. Protect vital patient data and streamline clinical workflows with RFID technology.
- UL and CE certified
- IEC 60601 certification



**The HI-Care E's Easy-Touch Membrane Keypad**





HI-Care E  
no storage



HI-Care E  
2-Tier storage



HI-Care E  
6-Tier storage



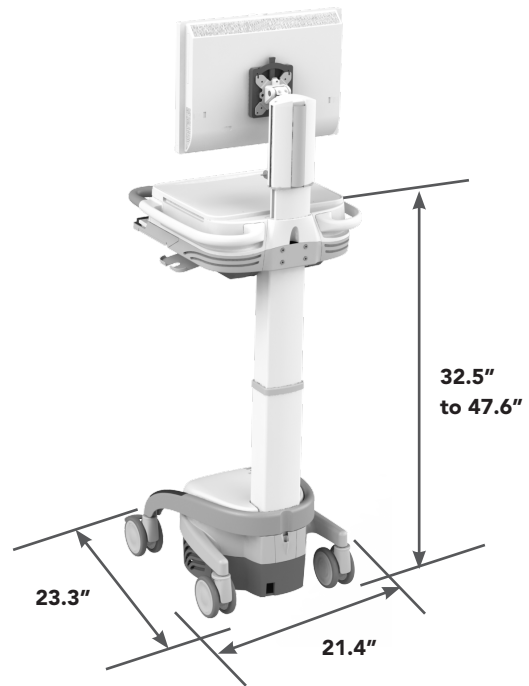
HI-Care E  
4-Tier storage

\*Pictured are just some of the many thousands of storage combinations Howard has to offer

# HI-Care Dimensions

The dimensions and data below are comparisons of the various HI-Care carts. Contact your local Howard representative for further information.

PC Compartment		
PC Volume (in [cm])	Width	17.1 [43.4]
	Depth	12.1 [30.7]
	Height	3.1 [8.1]

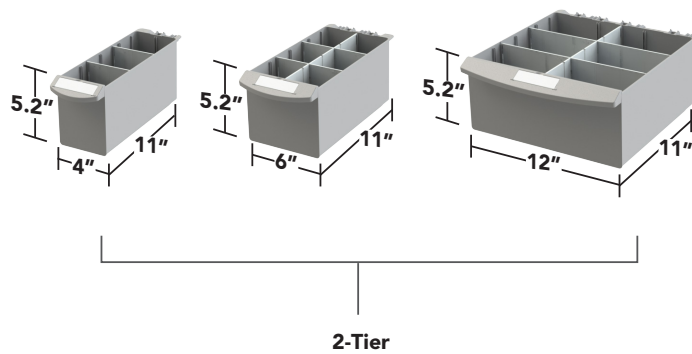
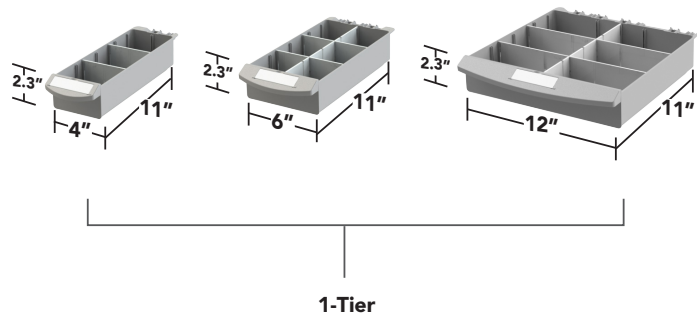


## Overall Dimensions

HI-Care E					
Storage		No Storage	2-Tier	4-Tier	6-Tier
*Cart Weight (lbs [kg])	Non-Powered	86 [39.0]	99 [44.9]	108.1 [49.0]	121.6 [55.2]
	Powered	112 [50.8]	125 [56.7]	134.1 [60.8]	147.6 [67.0]
Overall Dimensions (in [cm])	Width	21.4 [54.4]			
	Depth	23.3 [59.2]			
Work Surface Assembly (in [cm])	Width	21.4 [54.4]			
	Depth	23.3 [59.2]			
	Height	8.3 [21.1]			
Work Surface Height Adj. (in [cm])	Min	32.5 [86.2]	32.5 [86.2]	34.1 [86.6]	40.7 [103.4]
	Max	47.6 [120.9]			
Base Footprint (in [cm])	Width	19 [48.3]			
	Depth	20 [50.8]			
Caster Size (in [cm])		5 [12.7]			
Writing Surface Size (in [cm])	Width (in)	17 [43.2]			
	Depth (in)	14.3 [36.2]			
	Area (ft <sup>2</sup> [cm <sup>2</sup> ])	1.65 [1533]			
Height Adj. Range (in [cm])		15.1 [38.4]	15.1 [38.4]	13.5 [34.3]	6.9 [17.5]

\*Weight with Howard Powermax 150 and 44.8 Ah battery

Measurements indicated by [ ] are metric

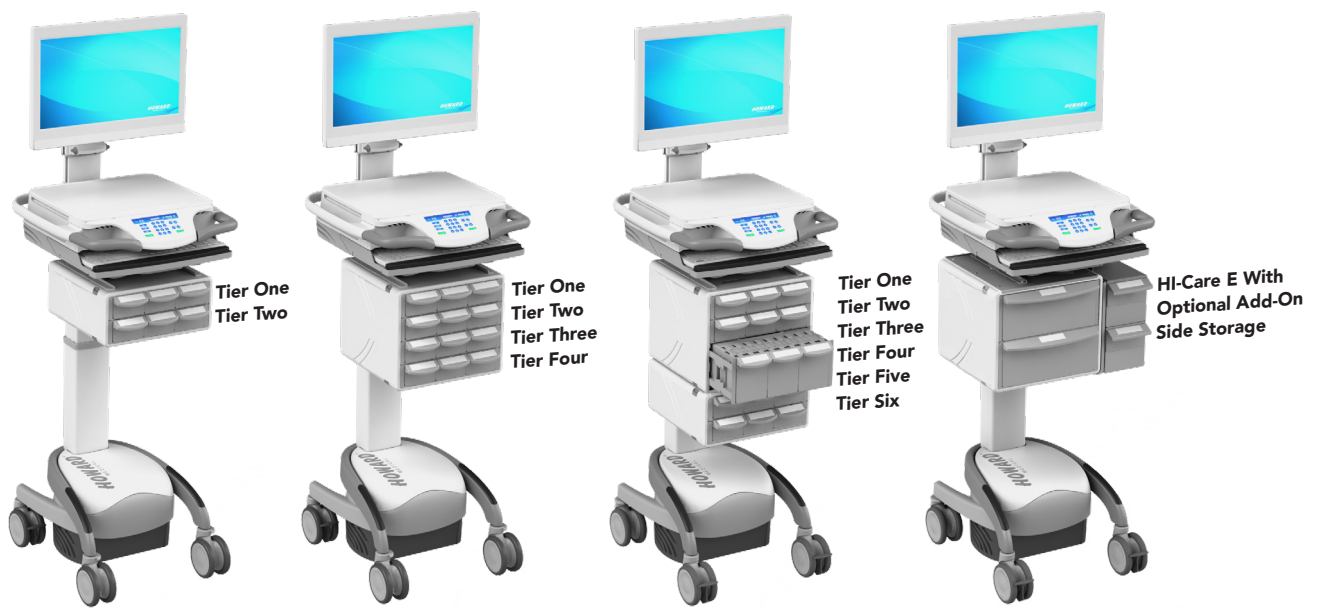


BINS		
Height (in [cm])	1-Tier	2.3 [5.8]
	2-Tier	5.2 [13.2]
Depth (in [cm])		11 [27.9]
Width (in [cm])	3-Across	12 [30.5]
	2-Across	6 [15.2]
	1-Across	4.01 [10.2]

Bin dividers are included with bins

# HI-Care Storage

Howard's innovative storage options ensure that you get the features you want and the capacity you need. Drawers unlock via the keypad console. Electronic locking storage also comes with a manual keyed bypass in case of a power failure.



## Features

- Storage can be easily upgraded or reconfigured by user
- Med Drawer lighting for continuous use in low light conditions without disturbing your patient
- Programmable secure access to storage drawers and patient bins via keypad on the cart's centralized control panel
- Independent bypass key for manual emergency access
- Automatic relock with adjustable timer (6 seconds - 1 hour)
- Audible beep for code entry confirmation
- Supports up to 2000 unique user IDs (3-8 digits)
- On Screen drawer configuration and status via included Med Display software
- Local management of user IDs and locking system settings via included Med Display software
- Remote management of user IDs and locking system settings via included Med Manager software
- User ID, time, and date of each unlock event is stored in an audit log
- Locking system status displayed by LEDs on the cart's centralized control panel
- Powered by cart power system
- Optional independent narcotics security
- Configurable, secure storage options
- Patient bins are in quick-swap cassettes
- Dividers included with all drawers and patient bins
- Envelope and hang-down drawers are available
- Stay ahead of the curve with technology that drives EMR adoption and safeguards confidential patient information. RFID reader integration enables only authorized users to access cart functions and secure storage options. Protect vital patient data and streamline clinical workflows with RFID technology.



# We Are A Custom Cart Manufacturer

Howard carts are fully customizable and flexible enough to fit any workflows. Whether its dual monitors, extra storage, custom accessories or more, Howard can customize one of our medical carts to suit your needs.



HI-Care E with  
Dual Monitors



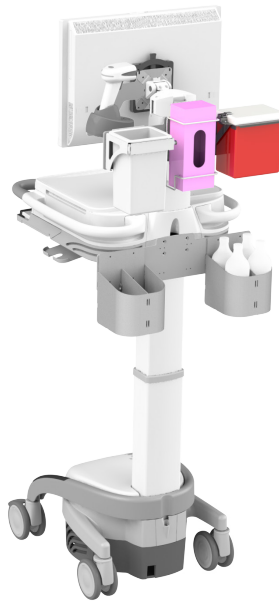
HI-Care E with  
Fetal Monitor System



HI-Care E with  
Dual Monitors



HI-Care E with Add-On  
Side Storage



HI-Care E with Custom  
Accessory Expansion Plates



HI-Care E with  
Wire Basket

# HI-Paradigm



The HI-Paradigm cart line provides the ultimate in medicine dispensing organization. Its configurable drawers can be tailored to your distribution needs and help keep employees on track. The electronic locking keypad, coupled with our Med Manager software, provides our carts with premier security capabilities.

## Ergonomic Features:

- Abbreviated spacing between the worksurface, keyboard tray, and patient bins helps keep unnecessary arm movements and bending to a minimum
- Ergonomic adjustable push-handles with soft-touch grip on front of cart are available
- Rubberized foot rests on each side of the cart allow for a more relaxed stance and help relieve fatigue
- Slide-out keyboard tray with integrated wrist rest (max keyboard dimensions 18.2" W x 7.5" D x 1.6" H) [46.2cm W x 19.1cm D x 4.1cm H]
- Keyboard is auto-leveling with a -15 degree negative tilt and a positive tilt up to 6-degrees
- Open architecture at wheel base allows end users to maintain their normal walking stride
- One-touch worksurface height adjustment allows for a full sit/stand range of motion
- A centralized control panel makes it easy to access all of the HI-Paradigm cart features
- Available with on-demand steer assist technology (SAT)
- When SAT is engaged, the rear casters act as pivot points, helping to stabilize the cart and ease maneuverability as users navigate around corners and make other changes in direction.

universal wireless or tethered  
barcode scanner bracket

sharps container and bracket

cup dispensers and bracket



reader



270-degree wrap-around handle

rear handle and basket



one-touch independent height adjustment for monitor

ergonomic push handles

auto-leveling keyboard with negative/positive tilt

one-touch height adjustment for worksurface

on-demand steer-assist technology

rubberized footrests

open architecture at wheel base

# HI-Paradigm Features

- Central control panel with convenient electronic worksurface and monitor height adjustment, lighting controls and storage management
- VESA monitor mount has tilt, swivel, and rotation adjustments
- Flexible storage configurations with add-on capability can be customized to fit multiple workflows (narcotics locking options available)
- Universal accessory mounting locations on rear of cart and on monitor mount (choose from 12+ optional accessories)
- Large, raised-edge worksurface area (17"W x 14.3"D) [43.2cm W x 36.3cm D] with translucent protective cover
- Medical grade (all touch surfaces)
- Dedicated cable management area with easy access panels to manage and house excess cables
- Integral AC power distribution with 6 AC receptacles for powering customer equipment
- Large, fan-cooled, PC compartment (17.1"W x 12.5"D x 3.2"H) [43.4cm W x 31.8cm D x 8.1cm H]
- Includes 4-port USB Hub
- Battery fuel gauge
- Easy-swap cassettes make it quick and simple to exchange cassettes between the HI-Paradigm and a transfer cart
- 8ft coiled power cord with hospital-grade AC plug with dual integrated hooks and integrated pull loop (Hospital Grade)
- (4) 5" [12.7cm] dual wheel premium casters (2 locking casters on front)
- Tool-less battery cover (snap-on) and tool-less battery and power supply replacement
- Standard power module (smart charger) with intake filter
- Available with multiple power options, so that you can choose the one that best fits your work process
- Remote cart monitoring and management software
- Mouse surface and mouse holder (left or right)
- Cart and cart accessories ship fully assembled in one box for convenience
- Stay ahead of the curve with technology that drives EMR adoption and safeguards confidential patient information. RFID reader integration enables only authorized users to access cart functions and secure storage options. Protect vital patient data and streamline clinical workflows with RFID technology.
- Advanced Electronics are standard on the HI-Paradigm carts with ajar alarm lighting and sensing
- Can also be configured with basic electronics
- Meets UL and CE standards
- IEC 60601 certification



**The HI-Paradigm's Easy-Touch Membrane Keypad**





HI-Paradigm E  
3-Tier storage



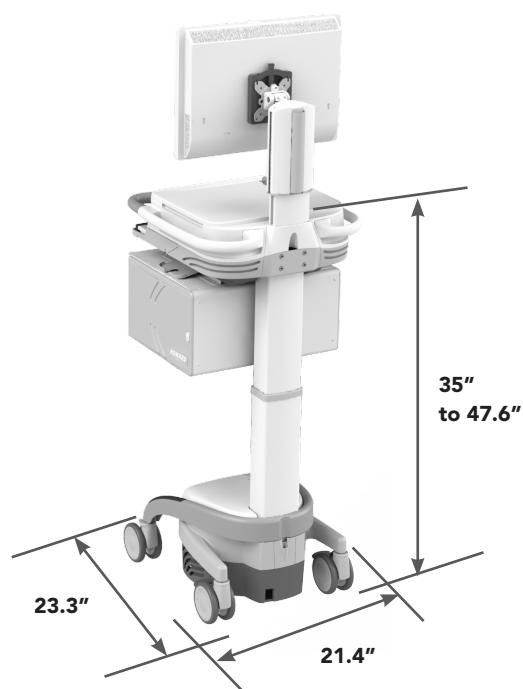
HI-Paradigm E  
6-Tier storage

\*Pictured are just some of the many thousands of storage combinations Howard has to offer

# HI-Paradigm Dimensions

The dimensions and data below are comparisons of the various HI-Paradigm carts. Contact your local Howard representative for further information.

PC Compartment		
PC Volume (in [cm])	Width	17.1 [43.4]
	Depth	12.1 [30.7]
	Height	3.1 [8.1]

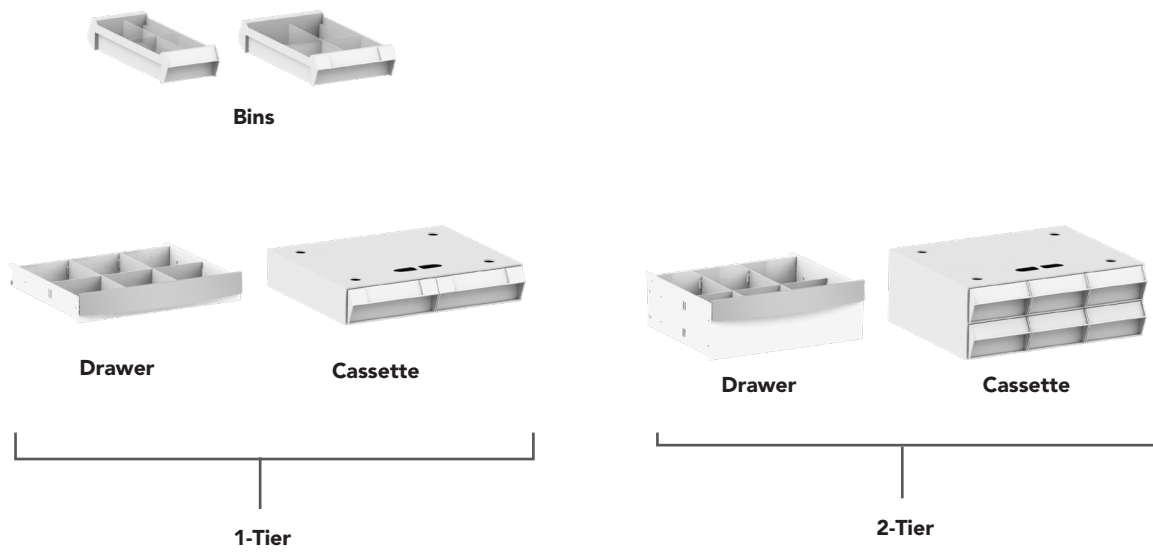


## Overall Dimensions

HI-Paradigm			
Storage		3-Tier	6-Tier
*Cart Weight (lbs [kg])	Non-Powered	111.0 [50.4]	133.8 [60.7]
	Powered	137.0 [62.2]	159.8 [72.5]
Overall Dimensions (in [cm])	Width	21.4 [54.4]	21.4 [54.4]
	Depth	23.3 [59.2]	23.3 [59.2]
Work Surface Assembly (in [cm])	Width	21.4 [54.4]	21.4 [54.4]
	Depth	23.3 [59.2]	23.3 [59.2]
	Height	8.3 [21.4]	8.3 [21.4]
Work Surface Height Adj. (in [cm])	Min	35.0 [88.9]	42.0 [106.7]
	Max	47.6 [120.9]	47.6 [120.9]
Base Footprint (in [cm])	Width	19.0 [48.3]	19.0 [48.3]
	Depth	20.0 [50.8]	20.0 [50.8]
Base Height (in [cm])		12.2 [31.0]	12.2 [31.0]
Caster Size (in [cm])		5.0 [12.7]	5.0 [12.7]
Writing Surface Size (in [cm])	Width (in [cm])	17.0 [43.2]	17.0 [43.2]
	Depth (in [cm])	14.3 [36.2]	14.3 [36.2]
	Area (ft <sup>2</sup> [cm <sup>2</sup> ])	1.7 [1533]	1.7 [1533]
Height Adj. Range (in [cm])		12.6 [32.0]	5.6 [14.2]

\*Weight with Howard Powermax 150 and 44.8 Ah battery

Measurements indicated by [ ] are metric



Bins			
		3-Tier	6-Tier
Height (in [cm])	1-Tier	2.3 [5.8]	2.3 [5.8]
Depth (in [cm])		11.8 [30.0]	11.8 [30.0]
Width (in [cm])	3-Across	4.6 [11.7]	4.6 [11.7]
	2-Across	7.5 [19.1]	7.5 [19.1]

Drawers			
Drawer Size (in [cm])	Height	1-Tier	2.8 [7.1]
	Width		15.8 [40.0]
	Depth		12.0 [30.5]
Drawer Size (in [cm])	Height	2-Tier	5.7 [14.5]
	Width		15.8 [40.0]
	Depth		12.0 [30.5]
Drawer Size (in [cm])	Height	3-Tier	8.9 [22.6]
	Width		15.8 [40.0]
	Depth		12.0 [30.5]

Bin dividers are included with bins

# HI-Paradigm Storage

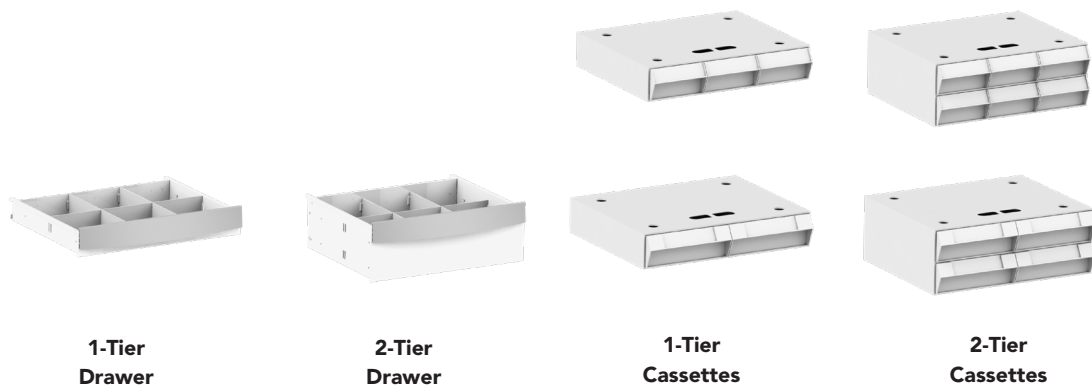
Howard's innovative storage options ensure that you get the features you want and the capacity you need. Drawers unlock via the keypad console. Electronic locking storage also comes with a manual keyed bypass in case of a power failure. We offer both three-tier and six-tier cabinets which can be configured with both drawers and patient bins.



## Features

- Med drawer lighting for continuous use in low light conditions without disturbing your patient
- Programmable, secure access to storage drawers and patient bins via keypad on the cart's centralized control panel
- Independent bypass key for manual emergency access
- Automatic relock with adjustable timer (6 seconds - 1 hour)
- Audible beep for code entry confirmation
- Supports up to 2000 unique user IDs (3-8 digits)
- On-Screen drawer configuration and status via Med Display
- Local management of user IDs and locking system settings via Med Display
- Remote management of user IDs and locking system settings via Med Manager
- User ID, time, and date of each unlock event is stored in an audit log
- Locking system status displayed by LEDs on the cart's centralized control panel
- Powered by cart power system
- Optional independent narcotics security
- Configurable secure storage options
- Patient bins are in quick-swap cassettes
- Dividers included with all drawers and patient bins
- Magnetic sensors detect which drawers and patient bins have been opened
- Drawer open alarm notifies user when a drawer is left open





### HI-Paradigm Cassette & Drawer Options

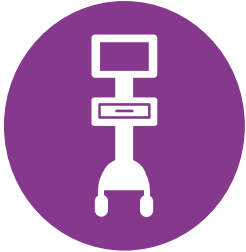
- Provides configurable secure storage
- Installed onto the cart frame below the keyboard drawer



### HI-Paradigm Narcotics Locking Option (for top drawer of 6-tier cabinet)

- Narcotics locking option available for the six-tier configuration
- Provides second-level locking for the uppermost drawer
- Bypass key included for emergency access
- Narc drawer can be a 1 or 2-tier drawer
- The narc drawer option is not compatible with 3-tier storage cabinet

# HI-Core



The HI-Core cart line is an innovative blending of convenience, customisation, quality engineering, and affordability. Lightweight and easy to maneuver, this ergonomically designed line of carts sets the standard for mobility in point-of-care. All HI-Core carts can be easily configured as powered or non-powered.

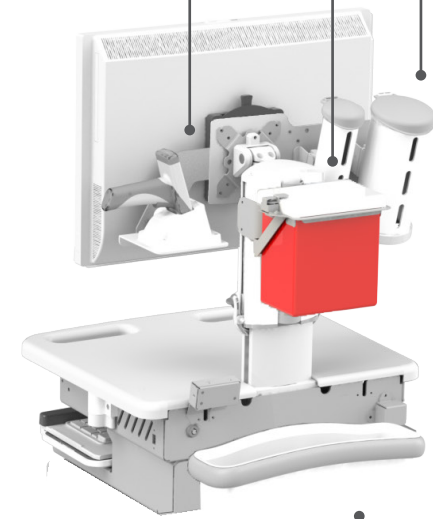
## Features:

- Small, lightweight cart with a simple, streamlined design
- Multiple accessory options available
- Spacious worksurface area (21.1" x 17.6") [ 53.6cm x 44.7cm]
- Convenient push-handles integrated into the front of the worksurface
- All HI-Core carts can be configured for power or non-power
- Cable management equipment and power bricks stowed under flip-up worksurface
- Gas-assist worksurface height adjustment (32.9" sitting to 44.9" standing) [83.6cm sitting to 114.0cm standing]
- Lift-assist button conveniently located on right side of cart
- Keyboard tray with mouse tray and wrist rest option available for all cart versions
- Single point-of-charge kit includes: fused AC inlet, 8ft [243.8cm] hospital-grade, coiled power cord, and AC power distribution with three receptacles for powering customer equipment
- Two tiers of configurable storage options: (2) single-tier drawers, (1) 2-tier drawer, or (1) single-tier and (1) hang-down drawer
- Storage security options include: non-locking, keyed lock, or electronic keypad lock
- (4) 5" [12.7cm] dual-wheel premium casters (2 locking casters on front)
- Optional steering caster with manual activation
- Available with multiple power options—choose the one that best fits your workflow
- UL and CE certified
- IEC 60601 certification

universal wireless or tethered  
barcode scanner bracket

sharps container and bracket

cup dispensers and bracket



convenient, integrated push-handles

lift-assist button

gas-assist worksurface height  
adjustment

optional steering caster with  
manual activation

rubberized footrests



rear handle and basket

open architecture at wheel base



# HI-Core Specifications



## HI-Core Tablet Cart

As more applications support tablet usage, the HI-Core Tablet cart, which can be configured to support a variety of tablets, provides an ideal platform for mobility.

- Lockable, universal tablet mount supports tablets with screen sizes ranging from 7.9" - 13" [20.1cm - 33cm], including Apple iPad Pro, iPad mini, Microsoft Surface, and Samsung Galaxy
- Key lock secures tablet in mount
- Tablet mount includes tilt, swivel, rotate, and height adjustments

HI-Core Tablet Cart		
<b>LCD Height (in [cm])</b>	<b>Min</b>	10.3 [26.2]
	<b>Max</b>	15.1 [38.4]
<b>LCD Height Adj. (in [cm])</b>		4.8 [12.1]
<b>LCD Tilt Angle (deg)</b>	<b>Down</b>	15°
	<b>Up</b>	60°
<b>LCD Swivel Angle (deg)</b>		+/- 45°



## HI-Core Notebook Cart

The HI-Core Notebook Cart's laptop can be secured on top or placed underneath the work surface.

HI-Core Notebook Cart		
<b>Notebook Support (in [cm])</b>	<b>Width</b>	15.6 [39.6]
	<b>Depth</b>	12.3 [31.1]
	<b>Height</b>	1.4 [3.6]



**laptop underneath the work surface**

Measurements indicated by [ ] are metric



## HI-Core LCD Cart

The HI-Core LCD cart configuration is a traditional Point-of-Care cart setup for LCD screens with a small form factor personal computer.

- LCD carts are compatible with Small Form Factor PCs up to 14" W x 7" D x 2.85" H [35.6cm W x 17.8cm D x 7.2cm H]
- PC, cables, and power bricks stowed under flip-up work surface
- VESA monitor mount has tilt, swivel, rotate, and height adjustment

HI-Core LCD Cart		
LCD Height (in [cm])	Min	10.3 [26.2]
	Max	15.1 [38.4]
LCD Height Adj. (in [cm])		4.8 [12.1]
LCD Tilt Angle (deg)	Down	15°
	Up	60°
LCD Swivel Angle (deg)		+/- 45°
LCD Size Support (in [cm])		24 [61.0]
LCD Weight Support (lbs [kg])		10 [4.5]



## HI-Core All-In-One Cart

The HI-Core All-In-One cart configuration is compact and efficient, providing an optimised platform for your all-in-one computer solution.

- All-In-One carts are compatible with all-in-ones up to 20lbs [9.1kgs]
- VESA monitor mount has tilt, swivel, rotate, and height adjustment
- Adding a battery-powered all-in-one PC to this configuration provides a complete, hot-swappable, economic solution.

HI-Core AIO Cart		
LCD Height (in [cm])	Min	10.3 [26.2]
	Max	15.1 [38.4]
LCD Height Adj. (in [cm])		4.8 [12.1]
LCD Tilt Angle (deg)	Down	15°
	Up	60°
LCD Swivel Angle (deg)		+/- 45°
LCD Size Support (in [cm])		24 [61.0]
LCD Weight Support (lbs [kg])		20 [9.1]

# HI-Core Storage

There are dozens of storage options available for the HI-Core. Choose any security option and any tier configuration.

## Tier Configurations



(1) 2-Tier Drawer



(2) 1-Tier Drawers



(1) 1-Tier Drawer  
(1) 2-Tier Hang-Down Drawer

## Security Options



Detent Only (no lock)



Keyed Lock



Electronic Keypad Lock



- Detent only specific features:
  - Interlocking dividers included with each drawer
  - Drawers operate on Releasable Ball-Bearing Slides
- Key locking specific features:
  - Interlocking dividers included with each drawer
  - Drawers operate on Releasable Ball-Bearing Slides
  - Includes (2) keys for lock
- Keypad operated locking specific features:
  - Dividers included with all drawers
  - Programmable, secure access to storage bins
  - Access to storage via keypad on bin module
  - Independent battery bypass for emergency access (requires 9V battery)
  - Visual indicator for code entry confirmation
  - Supports one unique user ID (4 digits)
  - Powered by easily replaceable button cell battery (CR2450)
  - Battery capable of up to 100,000 operations

# HI-Core Keyboard Trays

The HI-Core can be equipped with a standard keyboard tray or the space-saving slimline keyboard tray.



**Standard Keyboard Tray**

- Max keyboard dimensions (17.8" W x 7.2" D x 1.8" H) [45.2cm W x 18.3cm D x 4.6cm H]
- Mouse tray slides out from beneath keyboard to right or left side
- Includes mouse pouch with adhesive back for optimal positioning
- Includes wrist rest
- Tray height adjusts with cart worksurface (27.1" sitting to 39.1" standing) [68.8cm sitting to 99.3cm standing]
- Dual railing system provides more stability for typing (anti-bounce)



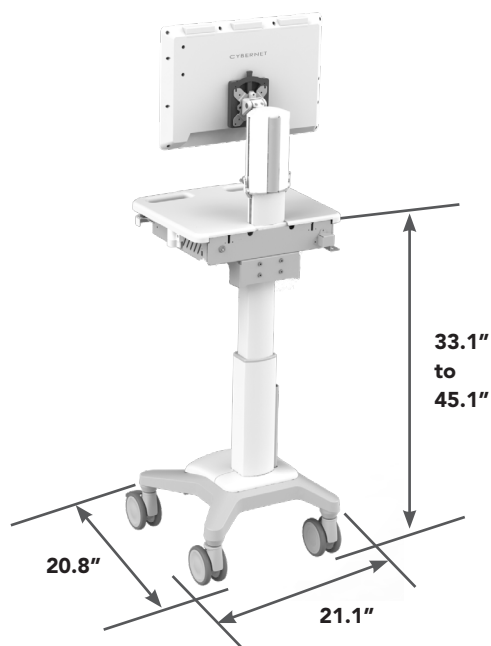
**Slimline Keyboard Tray**

- Not compatible with LCD/SFF or Laptop cart
- Max keyboard dimensions (16" W x 8" D x 1.3" H) [40.6cm W x 20.3cm D x 3.3cm H]
- Includes mouse pouch with adhesive back for optimal positioning
- Includes wrist rest
- Tray height adjusts with cart worksurface (30.1" sitting to 42.1" standing) [76.5cm sitting to 106.9cm standing]
- Dual rail system provides more stability for typing (anti-bounce)

# HI-Core Dimensions

The dimensions and data below are comparisons of the displayed design of HI-Core Carts. Contact your local Howard representative for further product dimensions.

PC Compartment		
PC Volume (in [cm])	Width	17.0 [43.2]
	Depth	9.6 [24.4]
	Height	3.5 [8.9]



## Overall Dimensions

HI-Core					
		Notebook Cart	LCD Cart	AIO Cart	Tablet Cart
*Cart Weight (lbs [kg])	Non-Powered	70 [31.5]	92 [41.7]	100 [45.4]	76 [34.5]
	Powered	71.3 [32.3]	93.3 [42.3]	101.3 [45.9]	77.3 [34.5]
Overall Dimensions (in [cm])	Width	21.1 [53.7]			
	Depth	20.8 [52.7]			
Work Surface Assembly (in [cm])	Width	21.1 [53.7]			
	Depth	17.6 [44.7]			
	Height	4.2 [10.7]			
Work Surface Height Adj. (in)	Min	33.1 [84.1]			
		45.1 [114.6]			
Height Adj. Range		12.0 [30.5]			
Writing Surface Size	Width (in [cm])	21.1 [53.7]			
	Depth (in [cm])	11.2 [28.6]			
	Area (ft <sup>2</sup> [cm <sup>2</sup> ])	1.7 [1533]			
Base Footprint (in [cm])	Width	19 [48.3]			
	Depth	19.75 [50.2]			
Caster Size (in [cm])		5 [12.7]			

\* Weight with Howard Powermax 150 and 44.8 Ah battery

Measurements indicated by [ ] are metric



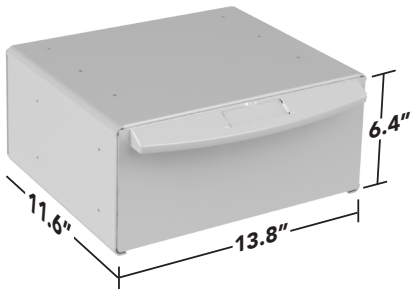
## Keyboard Tray Dimensions



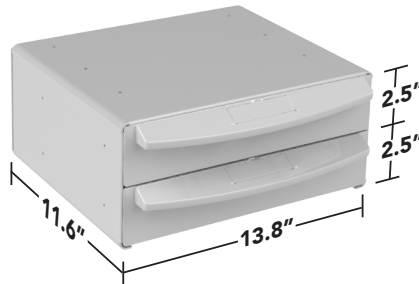
Standard Keyboard Tray		
Keyboard Support (in [cm])	Width	17.8 [45.2]
	Depth	7.2 [18.3]
	Height	1.8 [4.6]
Keyboard Height Adj. (in [cm])	Min	27.1 [68.8]
	Max	39.1 [99.3]
Keyboard Tray Weight (lbs [kg])		11.5 [5.2]
Mouse Tray Size (in [cm])	Width	7.8 [19.8]
	Depth	7.3 [18.5]

Slimline Keyboard Tray		
Keyboard Support (in [cm])	Width	16.6 [42.2]
	Depth	7.1 [18.0]
	Height	1.8 [4.6]
Keyboard Height Adj. (in [cm])	Min	30.6 [77.7]
	Max	42.6 [108.2]
Keyboard Tray Weight (lbs [kg])		6.0 [2.7]
Mouse Tray Size (in)	Width	7.2 [18.3]
	Depth	6.0 [15.2]

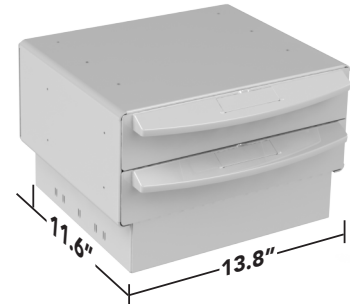
## Storage Dimensions



(1) 2-Tier Drawer



(2) 1-Tier Drawers



(1) 1-Tier Drawer  
(1) 2-Tier Hang-Down Drawer

HI-Core					
		Notebook Cart	LCD Cart	AIO Cart	Tablet Cart
Drawer Dimensions (in [cm])	1-Tier Height	2.5 [6.4]			
	2-Tier Height	5.4 [13.7]			
	Depth	10.9 [27.7]			
	Width	12.2 [31.0]			

HI-Core					
		Notebook Cart	LCD Cart	AIO Cart	Tablet Cart
Non-Locking Cabinet Size (in [cm])	Width	13.8 [35.1]			
	Depth	11.6 [29.5]			
	Height	6.4 [16.3]			
Locking Cabinet Size (in [cm])	Width	16.6 [42.2]			
	Depth	11.3 [28.7]			
	Height	6.4 [16.3]			

Measurements indicated by [ ] are metric

# Advanced Electronics

The data below is a comparison of the electronics options available on the HI-Paradigm carts. Advanced electronics come standard on the HI-Paradigm, but it can be configured with basic electronics. The HI-Care E can also be configured with advanced electronics.

User Support		
	Basic	Advanced
500 Users support	<b>X</b>	<b>X</b>
2000 Users support		<b>X</b>
Add up to 3 users from keypad outside of Med Manager Software	<b>X</b>	<b>X</b>

Storage		
	Basic	Advanced
Auto light power – on when unlocked, auto power – off when <b>relocked</b>	<b>X</b>	
Auto light power – on when any drawer is opened, and auto power – off when <i>all</i> drawers are <b>closed</b>		<b>X</b>

Drawers & Bins		
	Basic	Advanced
Audible alarm on all carts		<b>X</b>
Both audible and visual (flashing red task light)		<b>X</b>

Audit Trail		
	Basic	Advanced
<b>Allows tracking of the following information</b>		
Name	<b>X</b>	<b>X</b>
User ID	<b>X</b>	<b>X</b>
Time of Unlock	<b>X</b>	<b>X</b>
Time of relock	<b>X</b>	<b>X</b>
Drawers accessed	<b>X</b>	<b>X</b>
Time of relock	<b>X</b>	<b>X</b>
Drawers left open at relock		<b>X</b>

# Power Options

## Howard PowerMax 150

Provides maximum run time, life span, and cycle life; lowering total cost of ownership and delivering a reliable clinical workstation.



### 44.8 Ah Lithium Iron Phosphate Battery

- 44.8 Ah / 573 Wh Lithium Iron Phosphate Battery
- 150W inverter
- **Run time: 11 +/- hours (full charge to 0% charge)**
- Battery life expectancy: 5+ years
- 3-year lithium iron phosphate battery defect warranty
- 3-year lithium iron phosphate battery performance warranty
- 5-year optional warranty upgrades available

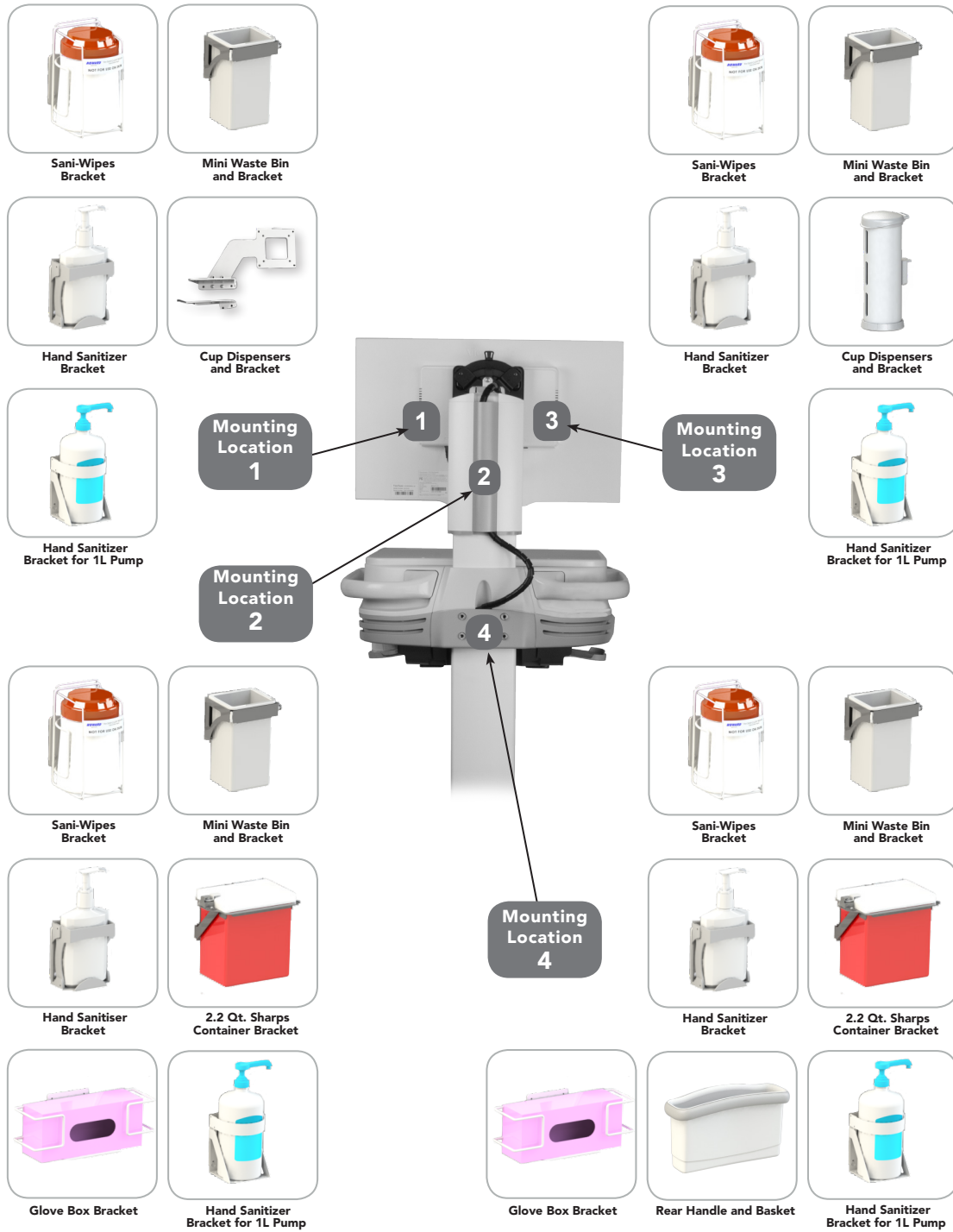


### 51.2 Ah Lithium Iron Phosphate Battery

- 51.2 Ah / 655 Wh Lithium Iron Phosphate Battery
- 150W inverter
- **Run time: 12.5 +/- hours (full charge to 0% charge)**
- Battery life expectancy: 5+ years
- 3-year lithium iron phosphate battery defect warranty
- 3-year lithium iron phosphate battery performance warranty
- 5-year optional warranty upgrades available

# Accessory Options

Howard offers several accessory mounting options that provide for a smoother and more sanitary workflow. Howard carts can be configured with a wide array of options and in hundreds of ways to fit your facility's needs and applications.



Accessory options may vary between cart families. Mounting locations are not available for all Howard carts.

# Telehealth Solutions

Howard's virtual care and telehealth offerings range from easy-to-use kits to full all-in-one solutions for telehealth related communications. Our product offering combines high-level industry requirements with the precision engineering you have come to expect from Howard. Our uniquely designed technology is functional and practical for telemedicine projects of all sizes.



TeleCore  
Telemedicine Cart



TeleCare  
Telemedicine Cart



TeleCare  
Telemedicine Cart



Compact  
Rugged Telemedicine Kit



Large  
Rugged Telemedicine Kit



Shoulder Bag  
Soft Telemedicine Kit



## Telehealth Software

AMD Global Telemedicine, Inc. is the leading developer of clinical Telemedicine Encounter Management Solutions (TEMS)® to over 9,000 patient end-points in more than 98 countries.

- **Encounter Management Software**
- **Telemedicine Products by Medical Specialty**
- **Specialized Medical Devices**

\*Pictured are just some of the many Telehealth Solutions Howard has to offer

# Cart Software

Howard's specialized software solutions come standard with the cart, enabling you to manage your assets more effectively by optimizing cart performance and maximizing availability. With features such as remote monitoring and configuration, as well as data and event logging, you have instant access to vital information about cart power and medication dispense systems at no additional cost.

## Power Manager

Power Manager is a powerful web-based tool for remote monitoring and management of cart power systems for your entire fleet of Howard Medical carts. The application runs as a web service, allowing easy access by an administrator anywhere on your network via a web browser. Carts on your network will automatically "call home" to Power Manager, announce themselves and request to be managed, then periodically "call home" to report power system data. Power Manager provides administrators with detailed control over power system data logging, alarm thresholds, and notification rules used for real-time alarm notification. Data from cart power systems throughout your fleet is continuously pushed up to and stored in Power Manager for later review. Robust data mining and reporting tools are available to analyse collected cart power system data, or you can export the data for further analysis using 3rd party tools. Power Manager also keeps track of the last two wireless access points used by each cart to "call home," thus providing a simple way to track recent cart movement and determine the last known location of carts that have gone offline. Power Manager can be used with all Howard carts.



**Overload**

**10%**

**Battery Capacity**



**Alarm Volumes**

Set your own alerts across multiple parameters throughout the cart fleet.

Power Manager's top administrator creates the accounts of users and assigns permissions of:



Multi-level admin. accounts



Alarm Profiles



Notification Groups



Device Groups



Device Profiles

## Power Display

Power Display is a web-based tool that runs on each cart's local computing device, providing direct access to power supply data and communication with Power Manager. Power Display also provides a small on-screen battery fuel gauge that displays real-time battery capacity and charging state. The web interface provided by Power Display allows you to view the cart's real-time power data, power data logs, and event data logs from a browser either locally (at the cart) or from any location on the network. The Power Display background service, which is transparent to local users, handles communication with Power Manager, periodically "calling home" to report power system data.



Provides data graphs on historical power performance



Periodically logs power supply data

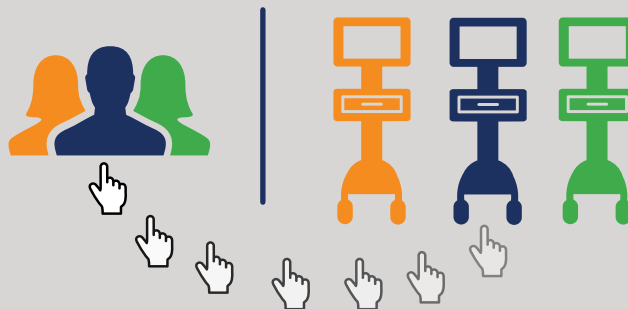


Allows you to set battery capacity alarm values locally

## Med Manager

Med Manager is a powerful web-based tool for remote management of cart settings and med drawer access permissions for your entire fleet of Howard Medical carts. The application runs as a web service, allowing easy access by an administrator anywhere on your network via a web browser. Carts on your network will automatically "call home" to Med Manager, announce themselves and request to be managed, then periodically "call home" to check for new data. Med Manager provides administrators with detailed control over cart behavior and user permissions, individually or in groups. Data from carts throughout your fleet, including general cart configuration and detailed information regarding which drawers were accessed, when, and by whom, is continuously pushed up to and stored in Med Manager for later review. Robust data mining and reporting tools are available to analyse cart, user, and med drawer access data, or you can export the data for further analysis using 3rd party tools. Med Manager also keeps track of the last two wireless access points used by each cart to "call home," thus providing a simple way to track recent cart movement and determine the last known location of carts that have gone offline. Med Manager can be used with all Howard carts that include electronic locking storage and with X series carts with or without storage.

**Med Manager's** drag and drop capability allows the admin to remotely manage users and carts by creating user groups and cart groups.

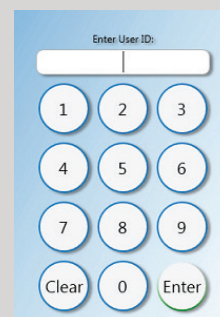


**Med Manager** enables you to set up cart profiles with cart group settings including:



## Med Display

Med Display is a Windows application that runs on each cart's local computing device, providing direct access to local med drawer cabinets, cart settings, audit records, and drawer calibration. The Med Display background service, which is transparent to local users, handles communication with Med Manager and periodically "calls home" to report any new audit data and retrieve any pending cart updates.



**Med Display's** simple user interface provides an on-screen keypad and visual drawer status to alert the user of any open drawers after relock.

# Using Technology to Reduce Medication Errors

Reducing medication errors is of paramount concern to all healthcare entities. The true scope of this endeavor becomes clear as we consider some important facts:



**According to the World Health Organization (WHO), "Unsafe medication practices and medication errors are a leading cause of injury and avoidable harm in health care systems across the world."**

"Medication errors occur when weak medication systems and/or human factors such as fatigue, poor environmental conditions or staff shortages affect prescribing, transcribing, dispensing, administration and monitoring practices, which can then result in severe harm, disability and even death." -Medication without Harm, WHO







**"...4 to 5  
deaths every  
single day..."**

A study from The University of York has revealed that there are an estimated 237-million medication errors that occur in the NHS in England every year, resulting in avoidable adverse drug reactions (ADRs).

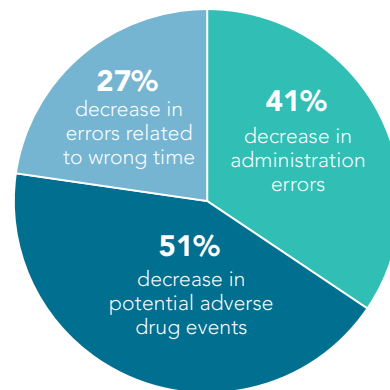
ADRs cause hundreds of deaths every year. In fact, former Health Secretary Jeremy Hunt stated in a BBC interview, "We are seeing 4 to 5 deaths every single day because of errors in prescription or dispensing or the monitoring of medications."

The issue of medication errors knows no boundaries. Consider the impact of errors and adverse drug events (ADEs) in the United States.

- The average cost of an ADE is \$2,257 (FDA 2004)
- Adverse drug events cost the United States \$37.6 billion each year, and approximately \$17 billion of these costs are associated with preventable errors (Source: "To Error is Human: Building a Safer Health System," a November 1999 report from the Institute of Medicine [IOM])
- The extra medical costs of treating drug-related injuries occurring in hospitals alone conservatively amount to \$3.5 billion a year. This estimate does not take into account lost wages and productivity or additional healthcare costs (Source: "Preventing Medication Errors: Quality Chasm Series," a July 2006 report from the IOM)



### Errors Prevented By Barcode Scanning



It is estimated that nurses spend at least 40% of their time administering medicines. To do it effectively, nurses need smart, portable, point-of-care solutions for capturing and transmitting data quickly and accurately. Bar Code Medication Administration (BCMA) is the solution.

BCMA technology was first implemented at U.S. Veteran's hospitals in 1995. The positive impact it had on the quality and safety of VA medication administration led to a 2004 mandate by the United States federal government requiring all hospitals to use BCMA for prescription drugs.

With regard to the significant effectiveness of Barcode Technology on the safety of medication administration, the facts speak for themselves:

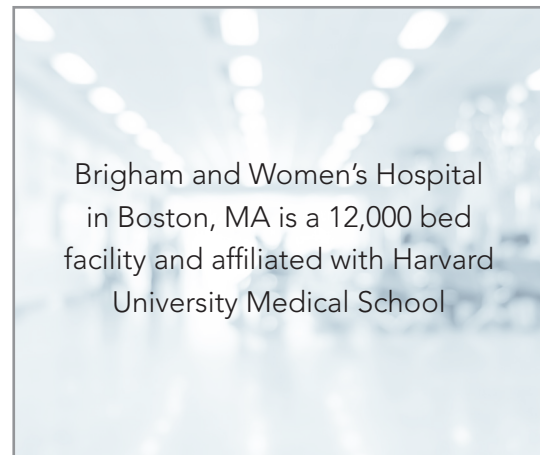
New England Journal of Medicine, May 6, 2010 – Key points from study:

- Barcode scanning helps prevent 90,000 errors each year for Brigham & Women's Hospital - Boston
- 41% decrease in administration errors
- 51% decrease in potential adverse drug events
- 27% decrease in errors related to wrong time

Healthcare professionals can implement BCMA by utilizing mobile technology to monitor the bedside administration of medications, BCMA allows you to:

- Improve patient safety by preventing medication errors
- Reduce costs associated with lengthy hospital stays resulting from adverse drug events (ADE)
- Reduce accidental deaths from adverse drug events (ADE)
- Lower litigation costs that stem from preventable errors
- Increase confidence and improve communication among your staff

Additionally, in a review of 14,041 observed medication administrations and 3,082 order transcriptions, observers noted 776 non-timing errors in medication administration on units that did not use the barcode system (an 11.5% error rate) versus 495 such errors on units that did use it (a 6.8% error rate;  $P < 0.0001$ ), according to Eric G. Poon, MD, of Brigham and Women's Hospital in Boston, and colleagues.



"Because the study hospital administers approximately 5.9 million doses of medications per year, use of the [barcode system] is expected to prevent approximately 95,000 potential adverse drug events at the point of medication administration every year in this hospital," they reported in the May 6 issue of the New England Journal of Medicine.



# Warranty

Howard Medical's commitment to providing unmatched customer service and support continues long after a sale is final. Our technology staff provides 24/7 technical support (excluding US holidays) for as long as you own your Howard product. Our friendly, US-based team of experts will answer your questions about the product, hardware setup, or installation, and with telephone hold times of typically less than a minute.



## **Standard Limited Warranty on Powered Medical Carts:**

- 3-year standard warranty
- 3-year mechanical
- 3-year electrical
- 3-year lithium iron phosphate battery defect
- 3-year lithium iron phosphate battery performance

## **Upgraded Limited Warranty on Powered Medical Carts:**

- 5-year mechanical
- 5-year electrical
- 5-year lithium iron phosphate battery defect
- 5-year lithium iron phosphate battery performance

## **Standard Limited Warranty on Non-Powered Medical Carts:**

- 3-year standard warranty
- 3-year mechanical

## **Computers and Other Peripheral Devices:**

- See manufacturer's warranty

For our full warranty information, please visit <https://www.howardcomputers.com/support/warranties.cfm>

Web:  
[www.howard.com](http://www.howard.com)  
Live chat available M-F, 8-5 CST

**Customer & Technical Support:**

Toll Free: 1.888.323.3151  
24/7 (excluding US holidays)

**General Information:**

Toll Free: 1.888.912.3151

