



# MARQUETTE UNIVERSITY

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## **Athletic & Human Performance Research Center**

### **Equipment Catalog**

# EQUIPMENT CATALOG

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# EQUIPMENT CATALOG

## NEUROMUSCULAR TESTING

**A/D CONVERTER...PG 3**

**BIODEX...PG 4**

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**ELECTRICAL STIMULATOR...PG 7**

**HIGH-DENSITY EMG...PG 8**

# EQUIPMENT CATALOG

## A/D Converter

The Micro1401-3 is a versatile data acquisition unit that can record waveform data, as well as digital and marker information. The unit can simultaneously generate waveform and digital outputs for multitasking experimental control. There are four channels available for 500 kHz, 16-bit waveform input, and the unit contains a 32-bit RISC processor.

Equipment	Description
Micro1401-3 Analog-to-Digital Converter	Used to record and process data, and generate outputs for a variety of human performance research applications



# EQUIPMENT CATALOG

## Biodex

The Biodex Multi-Joint System Pro 4 is a multi-mode computerized robotic dynamometer developed for testing and rehabilitation of the human musculoskeletal system. The unit is capable of exercise and testing that includes isokinetic, passive, isometric, isotonic, and reactive eccentric modes of operation. Testing and rehabilitation of the ankle, knee, hip, shoulder, elbow, forearm, and wrist is possible using this system and the attachments as listed below.

Equipment	Description
Biodex Multi-Joint System Pro 4	Includes host computer console, positioning chair, and dynamometer where attachments are fixed for test and exercise patterns
<b>Attachments</b>	
Elbow/Shoulder (Product #830-157)	Used for shoulder internal/external rotation and elbow flexion/extension patterns
Wrist (Product #830-158)	Used for wrist flexion/extension, radial/ulnar deviation, and forearm pronation/supination patterns
Small Tee (Product #830-153)	Adapter used for connecting positioning chair attachments
Arm/Leg Support (Product #830-154)	Used to provide added stability during testing and exercise protocols
Foot Rest Tube (Product #830-155)	Used to provide added stability by allowing subject to rest feet



# EQUIPMENT CATALOG

Left and Right Knee (Product #830-174 and #830-175)	Used for tibial internal/external rotation and ankle (plantar/dorsiflexion and inversion/eversion) patterns
Limb Support Pad (Product #830-310)	Used to provide added stability to proximal segments when distal segments are being tested (ex. Supports femur for ankle plantar/dorsiflexion testing)
Left and Right Hip (Product #830-315)	Used for hip abduction/adduction and flexion/extension patterns
Seat Back Brace Assembly (Product #830-320)	Used to provide added stability when seat back is lowered to zero degrees for side-lying, supine, and prone patterns
Shoulder (Product #830-321)	Used for various shoulder patterns (flexion/extension, abduction/adduction, and diagonals)
Ankle (Product #830-332)	Used for ankle plantar/dorsiflexion and inversion/eversion patterns



*Biodex Attachments*



# EQUIPMENT CATALOG

## Biopac

The Biopac MP36R allows for data acquisition through four high-performance channels. The unit features built-in amplifiers and can record a wide range of signals making it suitable for a wide variety of physiological applications.

Equipment	Description
MP36R Units (2)	High-performance 4-channel data acquisition unit
Teal Biopac USB License Key	Used to install <i>AcqKnowledge</i> software and can also be used as license key and writable flash drive
SS2LB Lead Set (3)	Fully-shielded cable assembly interfaces with MP36R channel inputs and permits high resolution recording of biopotentials using EL500 series disposable electrodes
ELPAD Electrode Abrading Pads (10)	Used before recording to remove non-conductive skin cells and sensitize skin for optimal contact during recording
SS25LB Hand Dynamometer	Interfaces with MP36R channel inputs to allow for recording of grip/clench force
SS11LB Airflow Transducer	Hand-held airflow transducer that interfaces with MP36R channel inputs and allows for a variety of tests related to ventilation and lung volume
Disposable Filter Mouthpieces (10)	Ergonomically designed mouthpiece that provides protective barrier between user and airflow transducer
EL503 Snap Electrodes (100)	Peel-and-stick disposable snap electrodes that are pre-gelled for efficient and accurate data readings
Biopac Student Lab 4 CD	Used to install Biopac Student Lab software



# EQUIPMENT CATALOG

## Electrical Stimulator

The Digitimer DS7R is a constant current stimulator that delivers pulses for transcutaneous electrical stimulation and activation of nerves and muscles via surface electrodes. The DS7R provides up to 999 mA of constant current and allows for pulse durations up to 2 ms, while also having the capability of being triggered by an external device. The DS7R also has stimulus polarity control, which enables the operator to select between normal, reverse, and alternating polarity modes.

Equipment	Description
DS7R Constant Current Research Stimulator	Constant current electrical pulse stimulator used to apply a stimulus to a human subject via surface electrodes
D185-HB4 Output Extension Cable	Used to connect electrode leads to DS7R unit via 4 mm output connector at the stimulator end and DIN 42 802 sockets at the patient end





# EQUIPMENT CATALOG

## High Density EMG

The OT Bio Elettronica Sessentaquattro system allows for portable, bioelectrical signal amplification and recording from up to 64 electromyographic (EMG) or electroencephalographic (EEG) channels. The unit also has Wi-Fi capabilities which allow for wireless testing, communicating the signals from surface electrodes directly to the host computer's OT Biolab software.

Equipment	Description
64-channel amplifier with Wi-Fi communication	Portable, multichannel amplifier for detecting and logging bioelectrical signals. 80-pin connector for recording from associated electrode adapters with Wi-Fi capabilities for transferring data to host computer
64-channel adapter for matrices (AD1x64SE)	70-pin connector for 64 electrode matrices or 64 electrode EEG caps with an additional four poles 3.5 mm jack for two auxiliary signals. 2 mm female banana for patient reference connection
16-channel adapter for linear array (AD1x16SE)	16-pin connector for linear electrode arrays with an additional four poles 3.5 mm jack for two auxiliary signals. 2 mm female banana for patient reference connection
Dual 32-channel adapter for matrices (AD2x32SE)	Two, 32-pin connectors for 32 electrode matrices with an additional four poles 3.5 mm jack for two auxiliary signals. 2 mm female banana for patient reference connection
8-channel bipolar adapter (AD8x1SE)	Eight, four poles 3.5 mm jacks for connection of two bipolar electrode pairs (16 electrode pairs in total). Additional four poles 3.5 mm jack for two auxiliary signals and 2 mm female banana for patient reference connection
Ground Patient Cables (4)	50 cm cables connect to adapter and snap onto wrist/ankle strap of patient
Single-channel bipolar cables with jack-concentric connectors (4)	Connects bipolar electrodes to 8-channel bipolar adapter
Disposable Bipolar Adhesive Surface Electrodes (5)	15 cm lead, 24 mm electrodes with concentric connector
32 electrode (8x4), semi-disposable adhesive matrix	10 mm interelectrode distance (i.e.d.)
8x4 double-sided adhesive foam matrix (32 holes) (10)	10 mm i.e.d.; for use with 32 electrode (8x4), semi-disposable adhesive matrix

# EQUIPMENT CATALOG

64 electrode (8x8) semi-disposable adhesive matrix	10 mm i.e.d.
8x8 double-sided adhesive foam matrix (64 holes) (10)	10 mm i.e.d.; for use with 64 electrode (8x8) semi-disposable adhesive matrix
64 electrode (13x5) semi-disposable adhesive matrix	8 mm i.e.d.
13x5 double-sided adhesive foam matrix (64 holes) (10)	8 mm i.e.d.; for use with 64 electrode (13x5) semi-disposable adhesive matrix
64 electrode (13x5) semi-disposable adhesive matrix	4 mm i.e.d.
13x5 double sided adhesive foam matrix (64 holes) (10)	4 mm i.e.d.; for use with 64 electrode (13x5) semi-disposable adhesive matrix
Wrist Strap (2)	Male clip connector for attaching ground cables
Ankle Strap (2)	Male clip connector for attaching ground cables
AC Cream conductive electrode paste	Improves efficacy of signal recording



# EQUIPMENT CATALOG

## CARDIOVASCULAR AND PULMONARY TESTING

**A/D CONVERTER...PG 11**

**BIOPAC...PG 12**

**FINGER-BASED BLOOD PRESSURE MONITOR...PG 13**

**ECG (ELECTROCARDIOGRAM) UNIT...PG 14**

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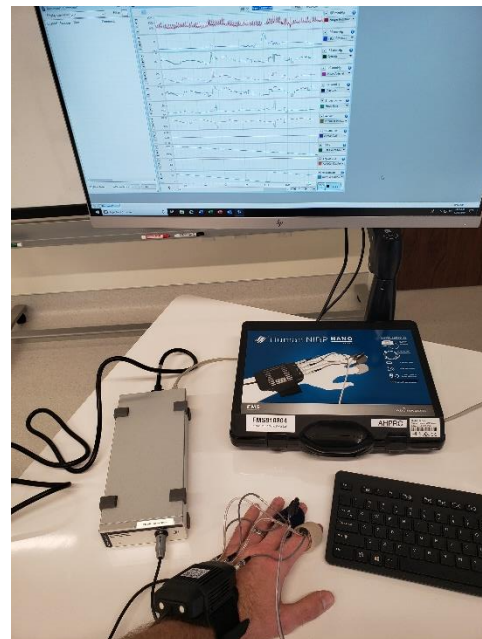
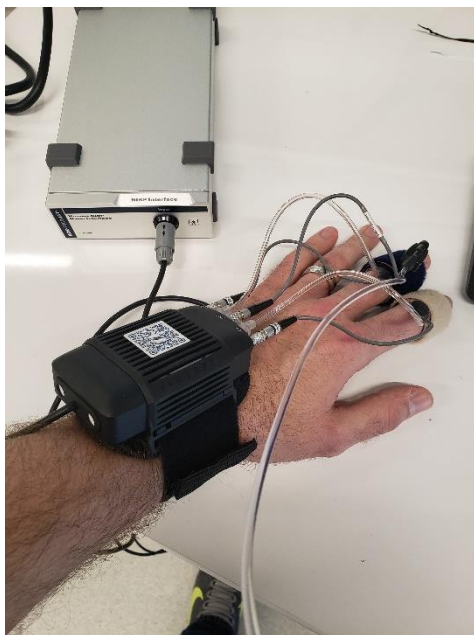


# EQUIPMENT CATALOG

## Finger-Based Blood Pressure Monitor

The Human NIBP (non-invasive blood pressure) monitoring system allows recording and continuous measurement of blood pressure and other cardiovascular metrics from dual finger cuffs and a wrist unit.

Equipment	Description
Human NIBP Nano Wrist Unit	Core of the NIBP system. Unit has input connectors for up to two finger cuffs and a height correction unit. Output cable connects to the NIBP Nano interface.
Human NIBP Nano Interface	Provides power and USB connectivity. It has a Redel input at the front for connection to the wrist unit, and an IEC power input and USB-B input on the back.
Height Correction Unit (HCU)	The HCU corrects for hydrostatic pressure changes when the measured hand moves away from heart level. It connects to the NIBP wrist unit and consists of a transducer which is attached at finger level, and a reference end that is attached a heart level.
Cuff Sizing Ruler	Used to assist in selecting correct finger cuff size
Small Finger Cuffs (2)	Used for finger circumferences 45-55 mm
Medium Finger Cuffs (2)	Used for finger circumferences 55-65 mm
Large Finger Cuffs (2)	Used for finger circumferences 65-75 mm





# EQUIPMENT CATALOG

## ECG (Electrocardiogram) Unit

Electrocardiograms are used to assess the electrical activity of the heart during rest and activity. Analog signals from electrodes placed throughout the body are digitized and communicated to the GE Cardiosoft software on the host computer for interpretation and analysis.

Equipment	Description
CAM-USB A/T Interface Unit	Connects to cardiac acquisition module to obtain signal from electrodes and transmits to host computer via USB connector
CAM-14 Cardiac Acquisition Module	Connects to all leadwires and interface unit; 14-lead AHA overlay configuration
Vital Signs diagnostic cardiology universal leadwires (14)	Links electrodes to acquisition module. With banana AHA connectors and Carefusion mactrode wide mouth clips for compatibility with silvertrace or mactrode disposable electrodes
GE Cardiosoft software v6.73	Used for acquiring, analyzing, storing, and exporting diagnostic measurements



# EQUIPMENT CATALOG

## Metabolic Cart

The Cortex CPET MetaLyzer 3B is a breath-by-breath system that can be used for a variety of cardiopulmonary, spirometric, and metabolic rate tests to objectify ventilatory, cardio-circulatory, and metabolic capacity. The system connects to a host computer via USB or Bluetooth, and uses MetaSoft Studio software for data collection and analysis.

Equipment	Description
MetaLyzer 3B Unit	Main housing of breath-by-breath Cortex CPET system used to interface sample line, flow sensor, power supply, and host computer
3000 ml Calibration Syringe	Used for Metalyzer 3B flow sensor calibration (needed daily)
Gas Valve and Adapter	Used to connect calibration gas tank to sample line during Metalyzer 3B gas calibration (needed monthly)
1.2 L Calibration Gas Tank	5% CO <sub>2</sub> , 15%O <sub>2</sub> , Bal. N <sub>2</sub> gas used to conduct monthly gas calibration
Sample Line	Connects to front of MetaLyzer 3B unit via pneumatic plug for sampling and analysis of respiratory/calibration gasses
Flow Sensor	Turbine for flow-volume measurements that connects to front of MetaLyzer 3B unit
Polar H7 Heart Rate Sensor	Transmits heart rate to smart device via Bluetooth or 5 kHz coded transmission
Polar Straps for H7 Sensor (2)	Connects to Polar H7 sensor and secures sensor around the chest
Hans Rudolph V2 Facemasks (4)	Silicone, oro-nasal mask that attaches to face of participant via headgear assembly (1 large, 2 medium, 1 small)
Hans Rudolph Headgear Assembly (4)	Adjustable, five-strap nylon headgear secures facemask to participant via quick-release clips (3 small/med, 1 large)
Facemask Adapters (4)	Placed in adapter housing of facemask to connect mask to flow sensor turbine



# EQUIPMENT CATALOG

## Pulse CO-Oximeter

The Masimo Radical-7 Pulse CO-Oximeter is a handheld monitor that allows for testing of a variety of parameters related to pulse oximetry. The unit contains a graphical display for continuous monitoring of all parameters and has options for both Bluetooth and wireless connectivity, in addition to wired interfacing.

Equipment	Description
Masimo Radical-7 Pulse CO-Oximometers with docking stations (2)	Noninvasive, handheld monitor that measures arterial oxygen saturation (SpO <sub>2</sub> ), pulse rate (PR), perfusion index (Pi), hemoglobin (SpHb), carboxyhemoglobin (SpCO®), total oxygen content (SpOC), methemoglobin (SpMet), Pleth Variability Index (PVi®), and Acoustic Respiration Rate (RRa®)
LNCS TF-I Alt SpO <sub>2</sub> Reusable Animal Transflectance Sensors (2)	Low-noise, cabled forehead sensors that connect to Radical-7 handheld unit via Red LNC-10 LNCS patient cable
Red LNC-10 LNCS Patient Cables (4)	Used to connect patient sensors to Radical-7 handheld unit
LNCS YI AH SpO <sub>2</sub> Reusable Animal Multisite Sensors (2)	Low-noise, cabled multisite sensors fit various monitoring sites (finger, toe, thumb, hand, foot) using attachment wraps (not included) and connect to Radical-7 handheld unit via Red LNC-10 LNCS patient cable



# EQUIPMENT CATALOG

## Rapid Cuff Inflation System

The Hokanson Rapid Cuff Inflation system inflates various cuff sizes to limit or stop blood flow of a resting or exercising limb, often in the context of blood flow restriction training in a testing or rehabilitation setting.

Equipment	Description
Hokanson Rapid Cuff Inflation	The system rapidly (0.3 sec) inflates various cuff sizes to restrict or occlude blood flow to a resting or exercising limb.
AG101 Cuff Inflator Air Source	Source of clean compressed air Uses black tubing to connect to E20 regulator
E20 Regulator	Regulates and displays desired cuff pressure from 0 to 300 mmHg
High pressure tubing with blue "Y" adapter	Connects E20 Regulator with various cuff sizes
Reusable Clear Stopper	Plugs one hole of blue "Y" adaptor on grey tubing if only one cuff is in use *Do not lose or throw away
Various cuff sizes	Used with E20 regulator or handheld sphygmomanometer for different sized limbs <u>Cuff Sizes</u> CC22: Large sized contour thigh cuff (Quantity: 2; Size:24 x 122.5 cm) CC17: Medium sized contour thigh cuff (2; 18 x 108 cm) SC12D: Thigh or arm cuff (2; 13 x 85 cm) SC10D: Arm cuff (2; 11 x 85 cm) TMC7: Wrist or metatarsus cuff (2; 7.5 x 40 cm)
Handheld Sphygmomanometer	Manually inflate cuffs via adapter connection
Third-party air compressor	A third-party air compressor can be outfitted to connect to E20 regulator via black tubing





# EQUIPMENT CATALOG

## SOMATOSENSORY TESTING

**AESTHESIOMETER...PG 19**

**ALGOMETER...PG 20**

**CONDITIONED PAIN MODULATION UNIT...PG 21**

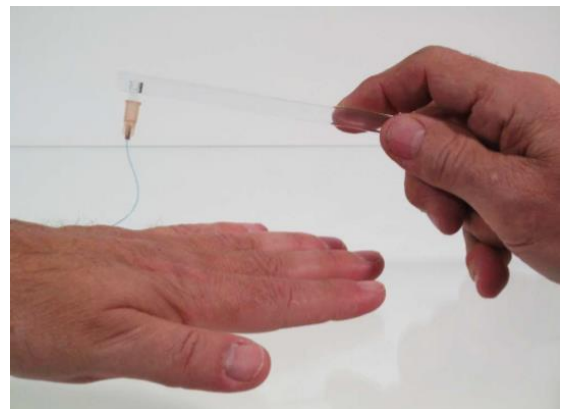
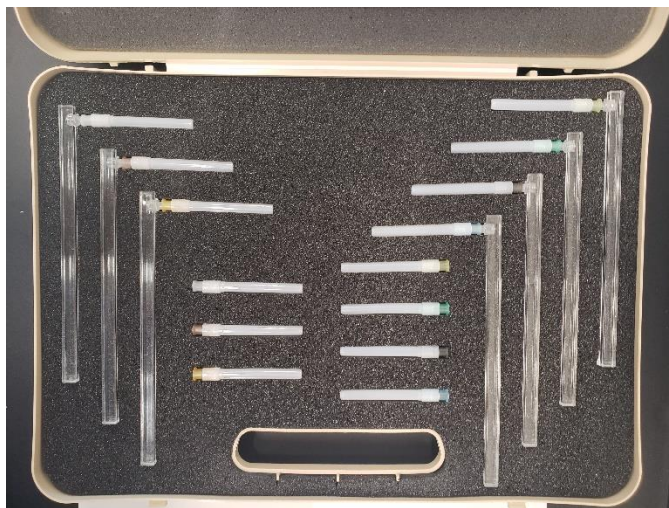


# EQUIPMENT CATALOG

## Aesthesiometer

The Somedic SenseLab Aesthesiometer II enables researchers to investigate sensitivity to cutaneous pin prick stimuli through application of standardized monofilaments (von Frey hairs).

Somedic SenseLab Aesthesiometer II	Used to investigate cutaneous pin prick sensitivity by applying a thin monofilament to the skin at a predefined force
Monofilaments with Handles (7) and Replaceable Monofilaments (7)	<p style="text-align: center;"><b>Monofilament Specifications</b></p> <ul style="list-style-type: none"> <li>• Transparent (No. 5): 0.128 mm diameter, 40 mm length, 0.064 g nominal force, 0.63 mN nominal force</li> <li>• Brown (No. 7): 0.153 mm diameter, 40 mm length, 0.14 g nominal force, 1.37mN nominal force</li> <li>• Orange (No. 8): 0.177 mm diameter, 42 mm length, 0.32 g nominal force, 3.14 mN nominal force</li> <li>• Blue (No. 11): 0.306 mm diameter, 42 mm length, 1.7 g nominal force, 16.67mN nominal force</li> <li>• Black (No. 13): 0.403 mm diameter, 43 mm length, 5.1 g nominal force, 50.0 mN nominal force</li> <li>• Green (No. 14): 0.409 mm diameter, 33 mm length, 8.3 g nominal force, 81.4 mN nominal force</li> <li>• Yellow (No. 16): 0.508 mm diameter, 30 mm length, 24 g nominal force, 235.36 mN nominal force</li> </ul>





# EQUIPMENT CATALOG

## Algometer

The Somedic Algometer allows for investigation of responses to pressure stimuli. Monitoring of the force application rate on the unit display facilitates repeatable results, and the interchangeable probes enable the instrument to adapt to various testing sites.

Somedic Algometer	Used to determine pain sensitivity and analyze function of non-myelinated C-fibers by applying pressure to a predetermined area of the patient
Probes (3)	Attaches to end of algometer so that pressure can be applied to patient. Three interchangeable probe areas (0.5 cm <sup>2</sup> , 1.0 cm <sup>2</sup> , and 2.0 cm <sup>2</sup> )
Pinch Handle	Attaches to algometer to facilitate measurement of pinch-induced pain
Patient Operated Button	Connects to bottom of algometer to allow the patient to indicate when pain is felt
Calibration Weight	Used to calibrate algometer (100 kPa)



# EQUIPMENT CATALOG

## Conditioned Pain Modulation Unit

The Medoc Q-Sense CPM and associated Medoc Main Station software allow for evaluation of responses to thermal stimuli. Specifically, CPM is traditionally used to study the endogenous pain inhibition ability of the patient. The CoVAS unit can also be interfaced to facilitate continuous, dynamic monitoring of pain sensations throughout the stimulation protocol.

Equipment	Description
Medoc Q-Sense Conditioned Pain Modulation Unit	Used to study the endogenous pain inhibition abilities of patients by using a conditioning stimulus to influence responses to a test stimulus
Main Thermode	Connects to main unit via main thermode receptacles (Blue-Power; Green-Sensors) in order to apply test stimulus
Conditioned Thermode	Connects to main unit via conditioned thermode receptacles (Blue-Power; Green-Sensors) in order to apply conditioning stimulus
Response Unit	Connects to main unit to allow for recording of patient responses to stimuli
CoVAS-Computerized Visual Analog Scale	Connects to host computer via USB cable and interfaces with Q-Sense CPM main unit via Medoc Main Station software to allow for continuous, synchronized patient monitoring

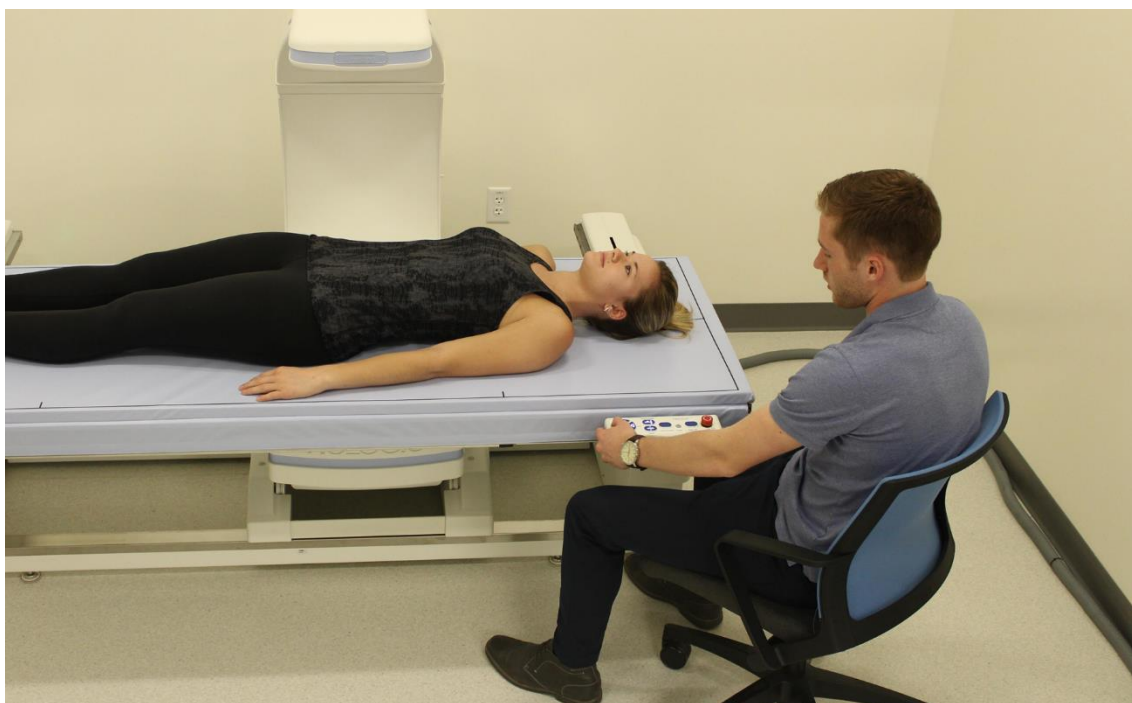


# EQUIPMENT CATALOG

## IMAGING

**DXA...PG 23**

**ULTRASOUND...PG 24**



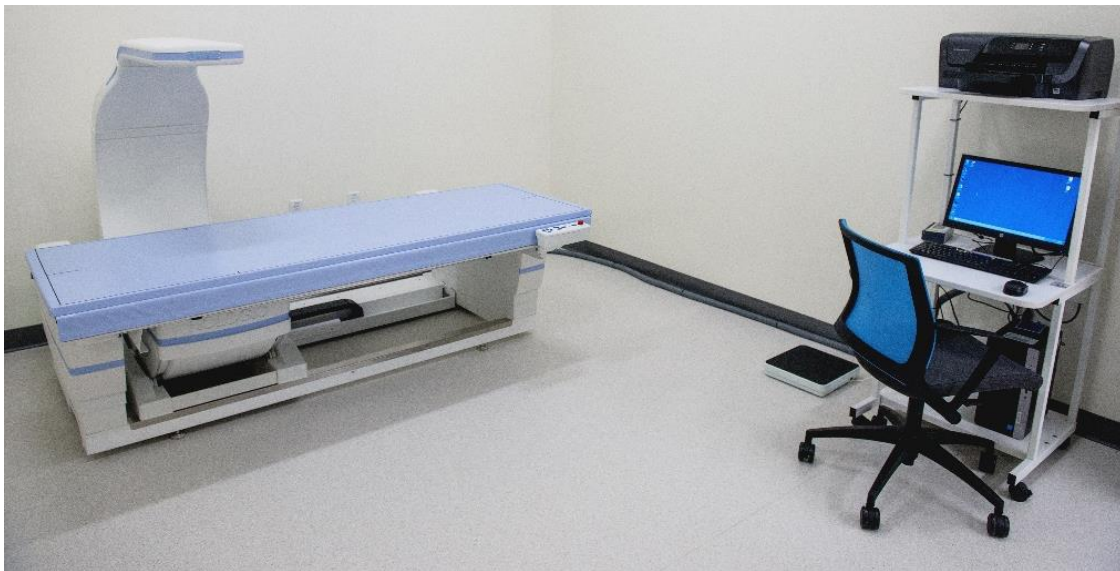


# EQUIPMENT CATALOG

## DXA

The Hologic Horizon DXA (dual-energy x-ray absorptiometry) provides information about bone density, muscle mass, and fat mass of whole body or body parts of interest (e.g. leg).

Equipment	Description
Dual-Energy X-Ray Absorptiometry	The DXA (dual-energy x-ray absorptiometry) system involves a movable table and scanning arm that allows for estimation of various parameters related to body composition
Spine Phantom	Block with simulated spine used for quality control procedures
Various Scans	Scan composition of whole body, spine, hip, forearm
Scanning Tools	Leg Block: used to position legs for spine scan
	Hip Autopositioning Block: used to constrain feet/ankles in order to position hips for hip examination
	Foam Head Extension: used to extend bed (not examination area) an additional 6"
	Head Rest: used for stabilization and resting the head
Digital Scale	Used to measure body weight prior to scan
Stadiometer	Used to measure height prior to scan



# EQUIPMENT CATALOG

## Ultrasound

The Logiq S7 R3 Expert ultrasound allows for multipurpose, color Doppler imaging for a variety of research-based and clinical applications.

Equipment	Description
Logiq S7 R3 console	Movable, cabinet-type ultrasound console with LCD monitor, touch panel, and probe holders
ML6-15-D probe	Wide footprint broadband linear matrix array transducer with frequency range up to 15 MHz
L3-12-D probe	Linear transducer with frequency range up to 12 MHz
Aquasonic 100 gel	Ultrasound gel that must be applied to patient to ensure optimal energy transmission between patient and probe



# EQUIPMENT CATALOG

## TRAINING/REHABILITATION EQUIPMENT

**SCI-FIT ERGOMETER...PG 26**

**WATTBIKE PRO...PG 27**

**WOODWAY TREADMILL...PG 28**





# EQUIPMENT CATALOG

## SciFit Ergometer

The SciFit Pro2 exercise machine is a comprehensive upper- and lower-body cycle ergometer that is designed for commercial, high accuracy, and medical directive applications. The unit can be used for general health and wellness, or more advanced rehabilitation, training, and conditioning as there are 191 levels of console-controlled resistance.

Equipment	Description
SciFit Pro2	Whole-body ergometer with electromagnetic self-generating bidirectional resistance. Intelli-Fit™ touchscreen console, and adjustable seats and cranks to ensure patient comfort



# EQUIPMENT CATALOG

## Wattbike Pro

The Wattbike Pro uses a combination of air and magnetic resistance to facilitate smooth testing and training on the cycle up to 3760 Watts. The Wattbike Hub smartphone application is available for easy tracking of individual testing and training sessions. The Wattbike Expert analysis software allows for more precise, in-depth analysis of 40+ parameters related to cycling including power, cadence, and angles of pedaling force.

Equipment	Description
Wattbike Pro	Indoor cycle engineered and tested to deliver accuracy within 2% from 0-3,760
Wattbike Hub App	Available for download via Apple or Android app stores
2 Bike Saddles	One narrower racing saddle (typically used for males) and one wider saddle (typically used for females or larger males)
Wattbike Expert	Software is installed in assessment lab computers for comprehensive analysis



# EQUIPMENT CATALOG

## Woodway Treadmill

High speed treadmill used for metabolic measurements during submaximal and maximal exercise. One of the two Woodway treadmills is also equipped with a Gantry system that can be used to attach a harness for patient safety and support.

Equipment	Description
Woodway Treadmills (2)	High speed treadmill that incorporates Woodway’s patented slat belt running surface designed for varying exercise regimens  125A Room: Woodway Pro 27 Treadmill with Gantry system (27” W x 68” L belt) 125B Room: Woodway Pro XL 27 Treadmill (27” W x 89” L belt)  Top speed of 15 mph Incline/Decline range from -3% to 25%
Select Workout Mode	Manually selected or predetermined workouts or fitness tests for varying purposes
Heart Rate Monitor	Connect heart rate monitor to treadmill



125B Treadmill



125A Treadmill with Gantry

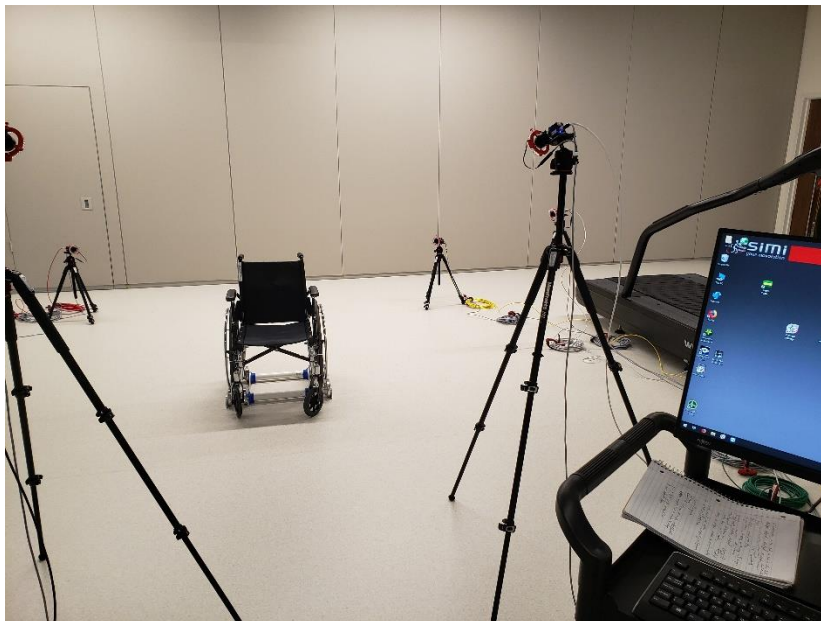


# EQUIPMENT CATALOG

## ACTIVITY MONITORING AND MOTION TESTING/ANALYSIS

**ACTIVITY MONITOR...PG 30**




**SIMI MOTION CAPTURE SYSTEM...PG 31**



# EQUIPMENT CATALOG

## Activity Monitor

The ActiGraph wGT3X-BT captures and records activity information using a tri-axial accelerometer. The sampling rate can be selected from 30-100 Hz, and the 8G dynamic range fits a variety of monitoring applications. Each monitor integrates seamlessly with ActiLife software for initialization, data downloading, and analysis, and can link to a compatible heart rate monitor via Bluetooth.

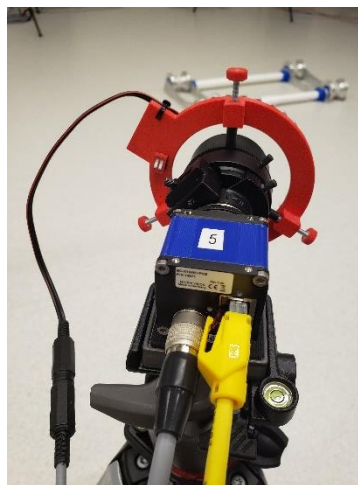
Equipment	Description	
ActiGraph wGT3X-BT activity monitors (20)	Captures and records raw acceleration data for conversion to objective activity measures	
USB-NEO cables (30)	Connects activity monitor to host computer with ActiLife software (version 6)	
36" elastic belts (30)	For wearing activity monitor around waist	
Wrist bands (30)	For wearing activity monitor around wrist	
ActiLife software (version 6)	For initializing activity monitors, and for downloading and analyzing data	

# EQUIPMENT CATALOG

## SIMI Motion Capture System

The SIMI motion capture system allows for marked and markerless tracking of human movement. SIMI Motion software is used for the digital capture of motions to visualize these electronically and to provide data for analysis and interpretation. SIMI Shape software is used for digitally tracking movement without markers, via silhouette model creation and reconstruction throughout the motion via background subtraction.

Equipment	Description
mvBlueCOUGAR-X104fC Cameras (8)	High-speed cameras that are synchronized via SIMI software and allow for video recording of capture volume
Fujinon Lenses (8)	Attach to cameras and allow for adjustments of aperture, zoom, and focus
20-Meter BNC Cables (8)	Connect cameras and light rings to SIMI sync box
20-Meter Ethernet Cables (8)	Connect cameras to SIMI computer
LED Light Rings (8)	Adjustable brightness light rings for illuminating reflective markers and/or capture volume
Manfrotto Tripods (8)	Lockable legs and dual safety levers for secure mounting of cameras. Variable height (up to 160 cm) and orientation (portrait or landscape) to fit a variety of capture requirements
SIMI Sync Box	Coordinates and synchronizes cameras and SIMI software. Also facilitates integration with force plates or trigger module for more extensive testing applications
SIMI Computer	Custom-made workstation with SIMI Motion and SIMI Shape software
600 mm Calibration Wand	Standard size, 3-marker wand for dynamic system calibration
Markered L-Frame	4-marker L-frame for static system calibration







# EQUIPMENT CATALOG

## Additional Equipment

Equipment	Description
<p>Wheelchair Ergometer</p>	<p>Marquette engineer-designed ergometer that can be used for exercise testing of adaptive athletes</p> 
<p>Bowflex SelectTech BD552 Dumbbells (2 sets of 2)</p>	<p>Adjustable dumbbells with selectable loads from 5 to 52.5 lbs</p> 

# EQUIPMENT CATALOG

<p>Titan Fitness Adjustable Kettlebells (2)</p>	<p>Cast-iron, powder-coated steel plates are removable for selectable loads from 7.5 to 40 lbs</p> 
<p>Iululemon Yoga Mats (8)</p>	<p>Antimicrobial, 66 cm x 180 cm (26" x 71"), 5 mm depth (0.19")</p>
<p>Iululemon Yoga Blocks (8)</p>	<p>Black; used for supporting yoga poses</p>
<p>Iululemon Yoga Stretching Straps (8)</p>	<p>Grey; adjustable buckles for supporting a variety of stretches</p>
<p>Thermo Scientific Sorvall ST8R Centrifuge</p>	<p>Refrigerated (-4° C) benchtop centrifuge for processing of biological samples</p> 
<p>Whirlpool Heavy Duty Series Washer and Dryer</p>	<p>Commercial washer and dryer for cleaning linens</p>
<p>GE Full-Size Top Freezer Refrigerator</p>	<p>For storing biological samples</p>