MATRIX



Power & Technology Requirements

NB-2012006

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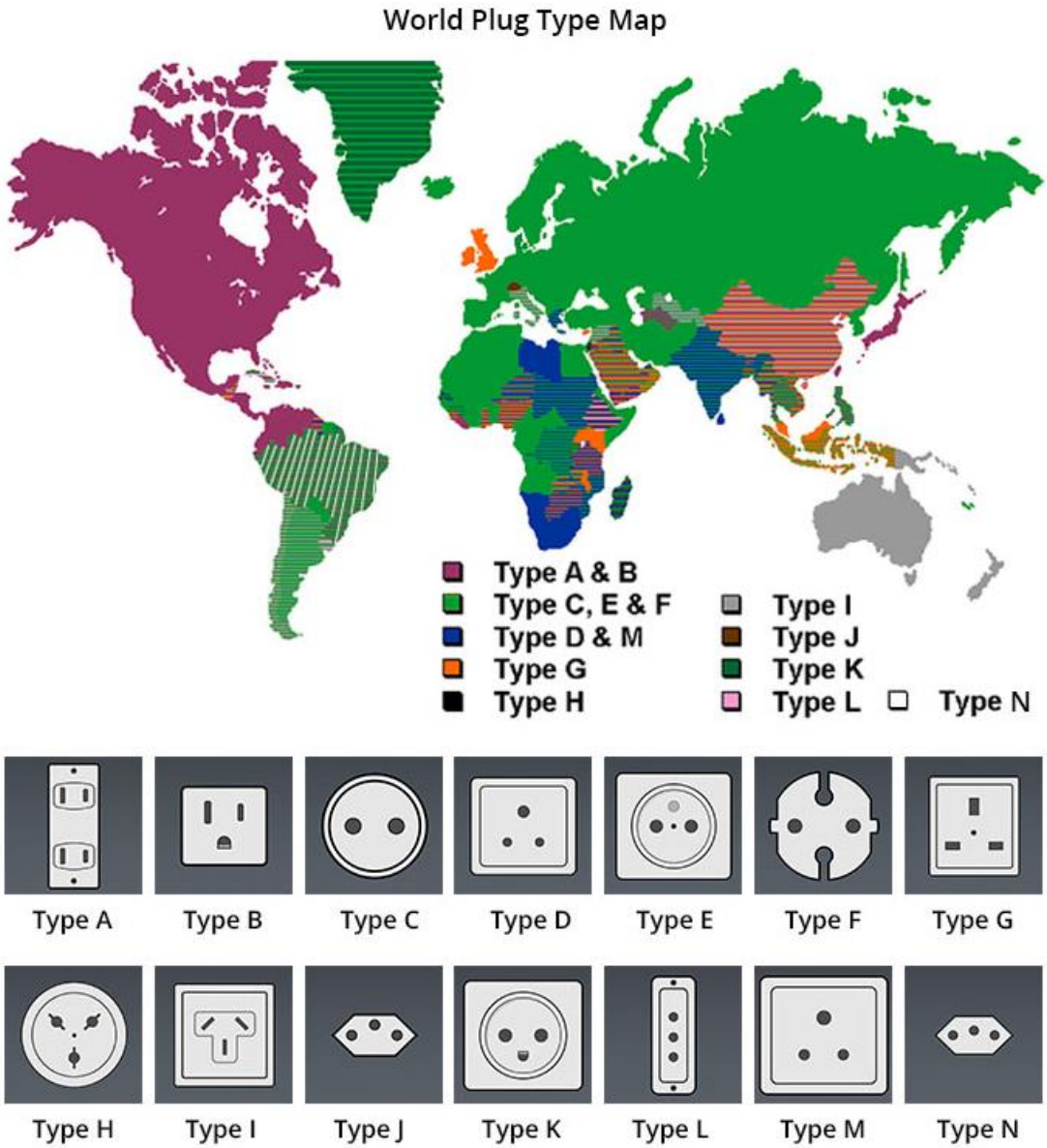
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- Power Requirements
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Power Cords

Products that require external power are provided with the appropriate power cord for the region.



Power Requirements - 120 VAC

WARNING: Failure to follow these specifications can cause damage to your product, void the warranty, and/or cause damage to your facility if wiring cannot handle the inrush current and causes a fire.

- All video and power outlets must be functional on the day of delivery/assembly of the product. The client is responsible for any additional installation charges associated with return visits.
- Do not modify the power cord provided with this product. If the plug will not fit your electrical outlet, have a proper outlet installed by a qualified electrician. The electrician will also know if your current breakers will meet the product requirements. Matrix is willing and able to speak directly with your preferred electrician if supplied with the information.
- Matrix Treadmills require the following copper wiring gauges based on the distance between the unit and

the panel: 100 ft or less = 12-gauge wire; 101–125 ft = 10-gauge wire, 126–150 ft = 8-gauge wire; a run over 150 ft is not recommended.

- **GFCI outlets** cannot be used to power Matrix Treadmills. (This “ground-fault circuit interrupter” outlet opens the circuit if it detects abnormal current flow to ground. A reset button on the outlet is pressed to reset the breaker.)

Matrix Treadmills

- Each treadmill requires a dedicated 120 VAC, 50-60 Hz, 20A circuit.
  - Treadmills require dedicated ground and dedicated neutral wires (i.e., dedicated circuit). This means that the ground and neutral wires that are fed to the electrical outlet utilized by the treadmill are not shared or otherwise connected to other circuits or appliances.
- Please refer to NEC Article 210-21 and 210-23 for additional information.
- The treadmill receptacle must be a NEMA 5-20R receptacle.
  - Outlets must be compatible with the included power cord; adapters or extension cords cannot be used.
- The power cord on treadmills uses a NEMA 5-20P plug.

Matrix Non-Treadmill Product

Powered

- Up to 4 non-treadmill units can be powered by a single 120 VAC, 50-60 Hz, 15A circuit.
  - Outlets must be compatible with the included power cord; adapters or extension cords cannot be used.
- ClimbMills, Virtual Training Cycles, and any frame using Touch or Touch XL consoles require external power.
- Onyx cardio requires external power.
- All non-treadmill cardio equipment uses a 5-15P plug.

Self-Powered

- Cardio bikes, Ascent/Ellipticals, and Stepper frames may be self-powered depending on the console type.
  - Frames with Touch and Touch XL consoles can NOT be self-powered.
  - No Onyx frames can be self-powered.
  - Frames using self-power require a minimum RPM/SPM to power the console. A battery in the frame supplies the power.

Consoles attached to powered frames are configured with the ability to enter an energy saving/low-power mode when the unit has not been in use for a specified period. Additional time may be required to fully reactivate this unit once it has entered the low-power mode. This energy-saving feature may be enabled or disabled. Contact Matrix Customer Technical Support for more information.

Matrix Group Training Product

Powered

- S-DriveP and RXP require external power.
- Group Training cardio equipment uses a 5-15P plug.
- The equipment requires a 120 VAC, 50-60 Hz, 15A circuit. Multiple units may be on the same circuit, up to 7 units per 15A circuit.

Self-Powered

- CXC, CXM, CXP, S-DriveC, S-DriveM, S-Force, and Rowers (except RXP) may be self-powered.

- Units using self-power require a minimum RPM/SPM to power the console. A battery in the frame supplies the power. An additional power cord can be purchased to recharge the battery. Contact your local Customer Technical Support for more details.
- Units with an optional console (ANT+) have 2 AA batteries in the console that can be replaced.

Matrix Strength (ITC Consoles)

Powered

- Up to 7 units can be powered by a single 120 VAC, 50-60 Hz, 15A circuit.
  - Outlets must be compatible with the included power cord; adapters or extension cords cannot be used.
- ITC equipment uses a 5-15P plug.

See the Quick Reference – 120 VAC Power Requirements at the end of this document for a recap.

Power Requirements - 220-240 VAC

WARNING: Failure to follow these specifications can cause damage to your product, void the warranty, and/or cause damage to your facility if wiring cannot handle the inrush current and causes a fire.

- All video and power outlets must be functional on the day of delivery/assembly of the product. The client is responsible for any additional installation charges associated with return visits.
- Do not modify the power cord provided with this product. If the plug will not fit your electrical outlet, have a proper outlet installed by a qualified electrician. The electrician will also know if your current breakers will meet the product requirements. Matrix is willing and able to speak directly with your preferred electrician if supplied with the information.
- All units must use electrical outlets with secure ground connections. Do not use adapters or other means to bypass a proper and secure ground connection. If necessary, contact a qualified electrician for assistance.

Matrix Treadmills

- Each treadmill requires a dedicated 220-240 VAC, 50-60 Hz, 16A circuit.
  - A dedicated circuit means that means that there is only a single electrical outlet wired to a circuit breaker.
  - Treadmills also require dedicated ground and dedicated neutral wires. This means that the ground and neutral wires that are fed to the electrical outlet utilized by the treadmill are not shared or otherwise connected to other circuits or appliances.

Matrix Non-Treadmill Product

Powered

- Up to 4 non-treadmill units can be powered by a single 220-240 VAC, 50-60 Hz, 10A circuit.
  - Outlets must be compatible with the included power cord; adapters or extension cords cannot be used.
- ClimbMills, Virtual Training Cycles, and any frame using a Touch or Touch XL console require external power.
- Onyx cardio requires external power.

Self-Powered

- Cardio bikes, Ascent/Ellipticals, and Stepper frames may be self-powered depending on the console type.
  - Frames with Touch and Touch XL consoles can NOT be self-powered.

- No Onyx frames can be self-powered.
- Frames using self-power require a minimum RPM/SPM to power the console. A battery in the frame supplies the power.

Consoles attached to powered frames are configured with the ability to enter an energy saving/low-power mode when the unit has not been in use for a specified period. Additional time may be required to fully reactivate this unit once it has entered the low-power mode. This energy-saving feature may be enabled or disabled. Contact Matrix Customer Technical Support for more information

Matrix Group Training Product

Powered

- S-DriveP and RXP require external power.
- Up to 5 units can be powered by a single 220-240 VAC, 50-60 Hz, 10A circuit.

Self-Powered

- CXC, CXM, CXP, S-DriveC, S-DriveM, S-Force, and Rowers (except RXP) may be self-powered.
  - Units using self-power require a minimum RPM/SPM to power the console. A battery in the frame supplies the power. An additional power cord can be purchased to recharge the battery. Contact your local Customer Technical Support for more details.
  - Units with an optional console (ANT+) have 2 AA batteries in the console that can be replaced.

Matrix Strength (ITC Consoles)

Powered

- Up to 5 units can be powered by a single 220-240 VAC, 50-60 Hz, 10A circuit.
  - Outlets must be compatible with the included power cord; adapters or extension cords cannot be used.

See the Quick Reference – 220-240 VAC Power Requirements at the end of this document for a recap.

Internet Requirements

Consoles with Streaming Services

Matrix strongly recommends customers using touchscreen consoles have a dedicated network for their fitness equipment due to bandwidth requirements. If bandwidth requirements are not met, interactive apps such as Netflix and other streaming services will not perform as intended.

When creating a network, each console should have a minimum bandwidth of 5 mbps dedicated to it. This means that if a club foresees a maximum of 20 customers using streaming services on cardio equipment *at the same time*, they should have a facility bandwidth of 100 mbps. The network should also have less than 20ms of latency to ensure that optimal resolution is maintained during streaming.

Note: A minimum bandwidth of 10 mbps should be dedicated to each Onyx console.

During setup, touchscreen consoles will search for available networks, and you can choose the connection; however, all consoles should be connected to the same network.

Consoles Without Streaming Services

Matrix LED consoles and touchscreen consoles without streaming services can be connected to the internet for workout reporting purposes. The Premium LED console can stay up to date with console software releases by connecting to the internet. For each console that does not have streaming entertainment features, **the bandwidth requirement is only 0.5 mbps**.

Matrix strongly recommends that customers using LED consoles create a wireless network in their facilities that matches the default wireless network preconfigured on non-touch screen consoles. (Wi-Fi board configuration shown below.)

PLED consoles come standard with Wi-Fi boards installed in them while LED and GTLED consoles can have a Wi-Fi board purchased and added to the console. The Wi-Fi boards have the configuration file preloaded on it allowing it to automatically connect to SSID “MXWireless” if the network is available in the facility. If this network is not available, the Wi-Fi board configuration file will need to be manually updated to an available network.

Default Wi-Fi board configuration file:
[WIFI AP]
SSID=MXWireless
Security=WPA2-PSK
Encryption=AES
Key=FuWxzbbocf0t
KeyIndex=1
TimeZone=21

Connections

Wireless

- Matrix touchscreen consoles will require communication between each other, as well as the outside network using the following protocols, as these are not exposed on our user facing UI:
  - UDP - Used to broadcast the console configuration to other consoles
  - TCP - Used to intercept the UDP broadcast and perform configuration pull requests
  - HTTP / HTTPS - Used for any external communication via Port 80 and 443
  - MAC ID Filtering - In instances where this security is implemented, please ensure all Wireless MAC IDs are added to the firewall

Supported Wireless Security Encryptions

- WPA2 + AES
- WPA + AES
- WPA + TKIP/AES (TKIP is there as a fallback method)
- WPA + TKIP
- WEP
- Open Network (no security at all)
- WPA Enterprise (on 2020+ touch screen consoles only)

Notes:

- WPA3 – Not Supported
- Any networks that require user logins to gain access to the network, as these are not exposed on our UI – Not Supported
- The customer may need to create a workaround to bypass or whitelist the page, for any networks that have a landing page or portal configuration, even if it is to accept the terms and conditions.

Wired

- Wired connections require a CAT5e (or higher) cable with RJ45 fittings.
- MAC ID Filtering - In instances where this security is implemented, please ensure all Wired MAC IDs are added to the firewall

Note:

- The customer may need to create a workaround to bypass the page, or whitelist the page, for any networks that have a landing page or portal configuration, even if it is to accept the terms and conditions.

Network Firewall Exceptions

If your network has a firewall, the following URL's must be able to pass through for console content to work as intended:

www.surveymonkey.com	maxcdn.bootstrapcdn.com	b-tiles.locationiq.org
facebook.com	www.google-analytics.com	c-tiles.locationiq.org
m.facebook.com	www.googleapis.com	myfitnesspal.jfit.co
m.twitter.com	fonts.gstatic.com	https://instagram.com
m.youtube.com	s.ytimg.com	https://web.wechat.com
instagram.com	i.ytimg.com	a-tiles.locationiq.org
youku.com	youtube.jfit.co	unpkg.com
v.qq.com	https://www.hulu.com	dapi.jfit.co
iqiyi.com	https://www.pressreader.com	fonts.googleapis.com
rscu.jfit.co	console-event-service.jfit.co	
console-event-service-prod.jfit.co	console-event-service-staging.jfit.co	
console-settings-store.jfit.co	dev-console-settings-store.jfit.co	
npr7a00dlb.execute-api.us-west-2.amazonaws.com		
https://s3-us-west-2.amazonaws.com/jhtsoftware		
https://smartcardio.gui.egym.com/work/#/		
https://preview.gui.partner.api.egym.com/work/#/		
https://gui.partner.ed.ts.egym.coffee/work/#/		

If the organization's firewall permits wildcard rules (most up-to-date ones do), they should wildcard whitelist *.jfit.co, *.jhtassets.com, and *.matrixfitness.com. If they cannot do that, these also need to be whitelisted:

mwtn.jfit.co	images.jhtassets.com	config.jhtassets.com
www.jhtassets.com	frontend-config.jfit.co	staging-mwtn.jfit.co
pt-client.jfit.co	staging-pt-client.jfit.co	orion.jfit.co
staging-orion.jfit.co	qa-orion.jfit.co	dev-orion.jfit.co
facilitycalendar.jfit.co	staging-facilitycalendar.jfit.co	location-ip.jfit.co
www-weather-console.jfit.co	staging-weather-console.jfit.co	
www-myfitnesspal-console.jfit.co		

If the facility will be using Asset Management, the following URL's must not be blocked:

am4.matrixfitness.com	am4-api.jfit.co

TV Cabling and Signal Requirements

All cabling necessary to run from the wall and/or floor outlet to the Matrix product must be provided by the facility. The cabling must be installed prior to installation of the equipment. If cabling is not installed prior to installation, a Matrix-Certified technician can come after installation to connect the cabling from the wall/floor outlet and perform channel scans for a fee. All cabling internal to the Matrix equipment will be supplied by Matrix.

Embedded Matrix TV (coaxial distributed signal)

- Standard consoles are sold including tuners intended for their specific markets.
- Both IPTV and RF encrypted TV signals (Pro:Idiom) are supported with non-standard ProIPTV and ProRF consoles.
- Coaxial cable must be, at minimum, RG6 cable with F-Type compression fittings.
- Splitters or taps are acceptable for signal distribution. Signal distribution must be balanced through the cable run and meet the requisite levels at the base of equipment.
- Cable SAT or CAB third-party hardware may be utilized for Set Top Box channel change control.

MYE Attached TVs - North America only (coaxial distributed signal)

- Coaxial cable must be, at minimum, RG6 cable with F-Type compression fittings.
- Pro:Idiom encrypted RF signals can be supported if Pro:Idiom enabled Mye TV's are ordered.
- Cable SAT or CAB third-party hardware may be utilized for Set Top Box channel change control.
- RF signal strength must measure between -1dBmV and +9dBmV

IPTV

The commercial Touch and Touch XL consoles will support an unencrypted IPTV connection without a set top box in accordance with the following specifications:

- Input = RJ45 connector, Cat5e or above
- Protocol = RTSP, UDP, HLS HTTP, HTTPS
- Video Decoding = MPEG-2, MPEG-4, H.264
- Resolution = Up to 1080p
- Bit Rate = 15 Mbps
- Frame Rate = 30 FPS for 1080p, up to 50 FPS for 720p

Note: The Onyx consoles do not support tunerless unencrypted IPTV.

At least two weeks prior to installation, you must provide the following information about each of the channels on the incoming signal:

- Channel Number
- Channel Name
- Protocol Type (as per options above)
- Each individual IP address
- A Port Number (if applicable)

Please ensure the requirement for IPTV is highlighted to Matrix Fitness as part of the facility preparation process. The respective channel lists will then be created, tested and passed to the install team in time for the installation date.

Data Security & GDPR

Matrix Fitness respects the privacy of its users; see https://www.matrixfitness.com/privacy-policy to review the Privacy Policy.

Asset Management

With the purchase of connected equipment, Asset Management is available as standard. For information and training, go to the Asset Management page on Matrix Learning Center for helpful “How-To” videos that cover all aspects of Asset Management functionality. Contact a Matrix sales representative for queries and assistance.

Asset Management details for all customers are as follows:

- URL: https://am4.matrixfitness.com
- Facility ID: Each facility will have a different ID and will be informed of it.
- Username: Each facility will also have a specific assigned username.
- Password: For security purposes, please navigate to the website above, enter the respective username and click “Forgot your Password?” Follow the on-screen instructions to receive a password reset link, sent to the email address used in the username. Note, after 15 minutes, the password will expire, and this process will have to be repeated.

To subscribe to machine alerts and notifications, this can be done on the facility page by clicking “Subscribe to Alerts,” highlighted in blue.

Digital Solutions

Customer information must be submitted to Matrix when a digital product offering such as Community 360, Engage 360, or (currently available in the US and Canada only) Facility 360 is purchased.

- Expected “Go-Live” Date
- Name of the app as you would like it to appear in the app store (Enterprise Lite App only)
- Customer “champion” for the project who will be the main contact point throughout the set-up and build of the digital product. Please include:
    - o Name
    - o Email Address
    - o Contact Telephone Number
- Company Website

See https://www.matrixfitness.com/us/eng/connected-solutions for more information.

Third-Party Integrations

If a customer is interested in a third-party integration, a listing of Matrix partners can be found at https://www.matrixfitness.com/us/eng/connected-solutions/partnerships/technology-integrations

Product compatibility with these integrations vary and are subject to change. Integration details should be discussed and verified prior to placing an order with Matrix.

Quick Reference – 120 VAC

Power Requirements

Cardio Equipment		100-120 VAC / 50-60Hz			
Model	**Series**	**Circuit Breaker Minimum**	**Number of Units per Circuit**	**External Power Required**	**Self-Power Capability**
Treadmill	Lifestyle	20A	1	Yes	No
	Endurance				
	Performance				
	Performance Plus				
	Onyx				
ClimbMill	Lifestyle	15A	4	Yes	No
	Endurance				
	Performance				
	Onyx				
Ascent	Performance			When paired with Touch/Touch XL Console	When paired with LED consoles
	Onyx			Yes	No
Elliptical	Lifestyle			When paired with Touch/Touch XL Console	When paired with LED consoles
	Endurance				
	Performance				
Stepper	Endurance				
Recumbent Bike	Lifestyle				
	Endurance				
	Performance				
	Onyx			Yes	No
Upright Bike	Lifestyle			When paired with Touch/Touch XL Console	When paired with LED consoles
	Endurance				
	Performance				
	Onyx			Yes	No
Hybrid Bike	Performance			When paired with Touch/Touch XL Console	When paired with LED consoles
Virtual Training Cycle	-			Yes	No

Group Training & Strength Equipment		100-120 VAC / 50-60Hz			
Type	**Model**	**Circuit Breaker Minimum**	**Number of Units per Circuit**	**External Power Required**	**Self-Power**
Training Cycles	CXM & CXC	-	-	No	Yes
	CXP				
Rowers	Rower				
	RXP	15A	4	Yes	No
S-Drive	S-DriveC & S-DriveM	-	-	No	Yes
	S-DriveP	15A	4	Yes	No
Strength	ITC				

Power Dissipation (120 VAC)

Model	Series	Energy Saver Dissipation, Watts	Standby Dissipation, Watts	Maximum Expected Power Dissipation Watts
Treadmill	Lifestyle	.45W	28W	2040W
	Endurance			
	Performance			
	Performance Plus	.44W	73W	
Elliptical	Lifestyle	.33W	27W	166W
	Endurance			
	Performance			
Ascent Trainer	Performance	.43W	29W	408W
ClimbMill	Lifestyle	.43W	37W	264W
	Endurance	.37W	39W	290W
	Performance			
Stepper	Endurance	.33W	27W	166W
Upright Cycle	Lifestyle	.43W	25W	160W
	Endurance			
	Performance			
Recumbent Cycle	Lifestyle			
	Endurance			
	Performance			
Hybrid Cycle	Performance			

Quick Reference – 220-240 VAC

Power Requirements

Cardio Equipment		220-240 VAC / 50-60Hz			
Model	**Series**	**Circuit Breaker Minimum**	**Number of Units per Circuit**	**External Power Required**	**Self-Power Capability**
Treadmill	Lifestyle	16A	1	Yes	No
	Endurance				
	Performance				
	Performance Plus				
	Onyx				
ClimbMill	Lifestyle	10A	4	Yes	No
	Endurance				
	Performance				
	Onyx				
Ascent	Performance			When paired with Touch/Touch XL Console	When paired with LED consoles
	Onyx			Yes	No
Elliptical	Lifestyle			When paired with Touch/Touch XL Console	When paired with LED consoles
	Endurance				
	Performance				
Stepper	Endurance				
Recumbent Bike	Lifestyle				
	Endurance				
	Performance				
	Onyx			Yes	No
Upright Bike	Lifestyle			When paired with Touch/Touch XL Console	When paired with LED consoles
	Endurance				
	Performance				
	Onyx			Yes	No
Hybrid Bike	Performance			When paired with Touch/Touch XL Console	When paired with LED consoles
Virtual Training Cycle	-			Yes	No

Group Training & Strength Equipment		220-240 VAC / 50-60Hz			
Type	**Model**	**Circuit Breaker Minimum**	**Number of Units per Circuit**	**External Power Required**	**Self-Power**
Training Cycles	CXM & CXC	-	-	No	Yes
	CXP				
Rowers	Rower				
	RXP	10A	4	Yes	No
S-Drive	S-DriveC & S-DriveM	-	-	No	Yes
	S-DriveP	10A	4	Yes	No
Strength	ITC				

Power Dissipation (220-240V VAC)

Model	Series	Energy Saver Dissipation, Watts	Standby Dissipation, Watts	Maximum Expected Power Dissipation Watts
Treadmill	Lifestyle	.45W	35W	2280W
	Endurance			
	Performance			
	Performance Plus	.44W	62W	3330W
Elliptical	Lifestyle	.33W	27W	166W
	Endurance			
	Performance			
Ascent Trainer	Performance	.43W	29W	408W
ClimbMill	Lifestyle	.43W	37W	264W
	Endurance	.37W	39W	290W
	Performance			
Stepper	Endurance	.33W	27W	166W
Upright Cycle	Lifestyle	.43W	25W	160W
	Endurance			
	Performance			
Recumbent Cycle	Lifestyle			
	Endurance			
	Performance			
Hybrid Cycle	Performance			