Mpower - Muscle Activation Monitor

User Manual

English, Version 1.0

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INTRODUCTION

CONGRATULATIONS ON YOUR GREAT PURCHASE!

In this handy guide we will walk you through the first steps in starting to use Mpower muscle activation monitor, your choice for smarter strength training.

Mpower helps you to train smarter and to achieve better results in strength training. Mpower helps you to understand whether you are using your desired muscles as efficiently as possible. Mpower measures any individual superficial muscle. With Mpower you get valuable information as the muscle tells you whether it is actually activated by the particular exercise and how well it is activated.

As a basic functionality Mpower shows your muscle activation levels, but the unique specialty of Mpower lies in its first-time-ever capability to measure the fast muscle fiber activation and muscle fatigue to provide guidance for the trainer. Mpower enables you to follow your muscle activation on individual repetition, set, routine or workout level. The fatigue index and fast activation power help you to understand how to train better and when it is the right time to stop.

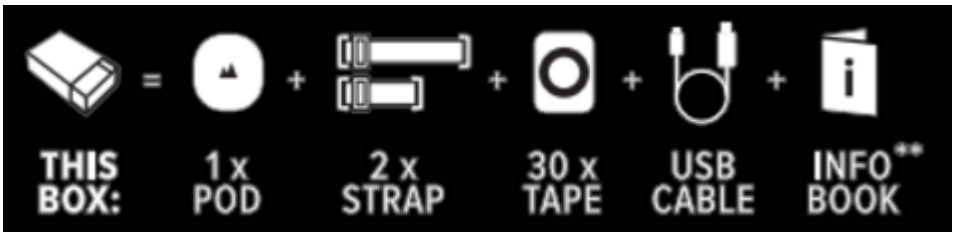
Mpower also provides you the means for planning and recording your workouts. Mpower exercise library contains 100 exercises with guiding pictures and text created by Riku Aalto, the founder and CEO of Trainer4You, the company who trains the personal trainers in Finland. Mpower documents your workouts, measurement results and progress to be explored later.

Mpower is the perfect tool for coaching and personal training as you can create tailored strength training programs for each client individually. With Mpower, you can measure the effect of different exercises and techniques, see how muscles are developing and make changes to the training plan as needed based on data, not on guesswork. Mpower works as a valuable motivation tool as it enables you to show proof about the impact and progress of the training plan on your customer. Mpower provides you not only a great tool for your work, but also improves your professional image, increases your competitiveness in the industry and helps you to gain additional profits.

Mpower muscle activation monitor is brought to you by Fibrux Ltd.

WHAT IS IN THE MPOWER BOX?

Mpower box contains Mpower pod and the accessories for its use. Mpower pods are part of Mpower muscle activation monitor, up to 4 pods can be connected and used simultaneously.



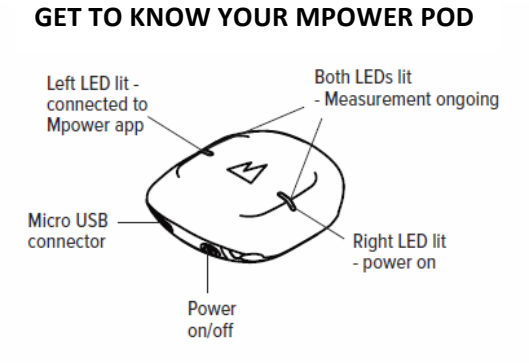
MPOWER MUSCLE ACTIVATION MONITOR

Mpower muscle activation monitor measures muscle activation during strength training. The muscle activation information helps you to train more effectively as you can visualize how your muscles respond to the training.

Mpower consists of Mpower pod(s) attached on the skin on top of your muscles, Mpower mobile app wirelessly connecting to the pod(s) and Mpower cloud service storing data for further analysis.

MPOWER POD

Mpower pod measures sEMG-signal produced by the muscle as it responds to strength training. You can use up to 4 pods to measure 4 individual muscles at the same time. The Mpower pod transmits the measurement data to the Mpower app for further analysis. The pod is easy to attach on any muscle with a strap or adhesive tape.



To turn Mpower pod on, press the “power on/off” switch shortly, release it and the “power on” LED gets lit. If the LED does not get lit, you need to charge the Mpower pod (see Pod Operating Time and Battery Charging). After powering up the pod starts connecting with Mpower app wirelessly via Bluetooth, so remember to have Bluetooth turned on and Mpower app running on

your mobile device. If the pod does not get connected to Mpower app, it powers down automatically after 5 minutes to save battery.

Once the connection between pod and app is established, the “connected” LED gets lit (and “power on” LED gets unlit). When a pod is connected its pod icon on Mpower app blinks red, as the pod is being shaken or tapped. Now you can use Mpower app to set up whatever measurements you want to carry out. When you activate a measurement in the app, both LEDs get lit to indicate that the measurement is active and pod is transmitting measurement data to the app. Once the measurement is stopped, only the “connected” LED stays lit.

When the pod is disconnected from the app, the “connected” LED gets unlit and the “power on” LED gets lit. You can use Mpower app “Pods & Muscles” pod icon’s small “x” in the upper right hand corner for disconnecting a pod. Naturally pod is also disconnected from the app when the pod is powered down.

To turn Mpower pod off, press the “power on/off” switch down until the “power on” LED gets unlit (appr. 3 seconds). Pod also turns itself off automatically after 5 minutes, when it is not connected to Mpower app.

IMPORTANT: If you use Android “home” switch to move away from Mpower app, this leaves the Mpower app running resident in the background. In this case the pods stay connected to the app until their battery drains out, unless they are specifically turned off using “power on/off” switch. To save pod batteries use Mpower app “Exit” or “Logout” functionality to stop using Mpower as this disconnects the pods properly.

Micro-USB cable

The product set includes a standard micro-USB cable. You can use it for charging the battery of Mpower pod.

Straps and adhesive tapes

Mpower pod is attached to the skin surface over any superficial muscle using straps or adhesive tapes. The product set includes one short strap for arm attachment and one medium strap for leg attachment. The product set includes a package of 30 pre-form-cut double-sided adhesive tapes for pod attachment to any superficial muscle e.g. your glutes or lats. You can buy additional straps and adhesive tapes separately.

Just wear it and get going!

MPOWER APP

Mpower app is versatile software for strength training. It can connect up to 4 pods simultaneously to measure any combination of 4 of your 34 superficial muscles individually. Based on the measurement data from the pods, Mpower app calculates multiple muscle activation parameters that help you to get the most out of your training. You can view your muscle activation data both in real-time and after the training.

With Mpower app you can also prepare your training plan and design your workouts by using the integrated exercise library or by creating your own exercises. During your training Mpower records the muscle activation data, which you can view in real-time and analyze after the training in every detail to learn about your muscle activation efficiency and development to adjust your training plan.

MPOWER CLOUD SERVICE

Mpower app stores your training data in your mobile device, but it also stores the data to Mpower cloud service. This way your training data is backed up automatically and can be accessed from multiple devices. Mpower cloud service also allows creation of multiple user accounts for the pods to be shared between multiple users.

Mpower service is activated during the Mpower setup using Mpower app. As the Mpower app interacts with the Mpower service during the setup, an active data connection is needed for this. During the setup a personal Mpower account is created for using the service and data is exchanged between Mpower app and service.

After completed setup Mpower can work offline (if you have not performed “Logout”). For example, the measurements can be carried out without connection to service as the Mpower app stores all the measurement data locally in the mobile device. Whenever data connection becomes available as Mpower app is running, the app connects to the service and synchronizes the data between the app and the service. If there are longer periods without data connection, the data synchronization after such situation may last for minutes.

Service activation requires creating a personal Mpower account by entering user name, email address and password. The email address and password credentials pair is needed for returning to the service in case you use “Logout” to close Mpower app. You may also use “Exit” to close Mpower app to avoid logging in with credentials each time you restart Mpower app. The email address is also used for lost password recovery.

Mpower with single user vs. multi-user use

Mpower service account is personal and it treats the measurement results, muscle activation and training data recorded under the account as personal for a specific user. Nevertheless, Mpower has been designed for use by multiple users. To share Mpower pods with multiple users only requires multiple personal user accounts to be created, one account for each user with individual credentials. Mpower app has built-in multi-user support and it is easy to change the user account using “Logout” and “Log in” functionalities to change the active user with the app.

GETTING STARTED

SETTING UP

To start using your Mpower muscle activation monitor

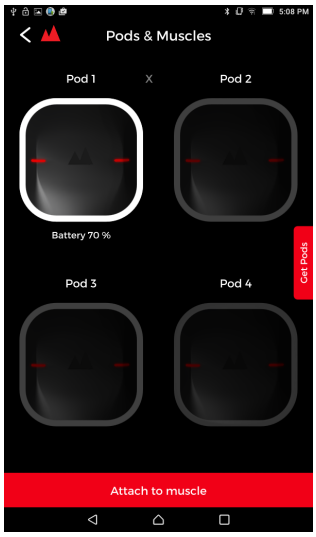
1. Go to the Google Play™ on your mobile device and search and download the Mpower app.
2. After installation open the Mpower app from the application grid.
    - Upon starting Mpower app may ask permission to turn on Bluetooth – answer "Allow" to turn Bluetooth on
    - Mpower app will guide you through a process of creating an Mpower account and connecting (pairing) your Mpower pod(s) with your mobile device

3. Creating Mpower account(s)
    - New account is created by "Sign up"
    - Even though Mpower pods can be shared among multiple users, one Mpower account is designed to measure and record only one individual's personal training and muscle activation data
    - Therefore it is recommended that an individual Mpower account is created for every single user to keep the data maximally meaningful for each individual user
        a. Individual consumers
            - Use of valid email address is recommended for successful lost password recovery
        b. Professional users with multiple clients
            - Use of valid client email address is recommended for successful lost password recovery
            - If this is not possible, hoax email addresses can be used as well (format xxx@yyy.zzz), but in such case Fibrux is not capable of recovering lost passwords – for such cases we suggest independent email address – password combination book-keeping
    - You may navigate between various existing Mpower accounts by logging out and executing "Log in" with other created valid user credentials
4. Pairing Mpower pods and the application
    - Pairing is needed for the pod(s) and the application on mobile device to communicate and exchange data with one another.
    - For pairing the pod(s) Mpower app enters "Pods & Muscles" view, see picture below

    - The pod icons (Pod 1 - Pod 4) are used for connecting the app to pods
    - Pod search should start automatically after this view is entered. If this does not happen, you can activate Pod 1 search by touching the pod icon. The pod icon borderline indicates various states of pod pairing:

Gray	not searching
Gray, blinking	searching for pod
Red, blinking	pod found
Red	establishing connection
White	connection established, pod ready for use

- When a pod is connected, its corresponding icon blinks red when the pod is tapped or shaken – this provides you an easy way check which pod is attached to which muscle when you have multiple pods
- You can interrupt the pod search or disconnect a pod at any time by pressing the tiny “x” in the upper right hand corner of a pod
- You can resume the pod search at any time by pressing the pod icon
- It is recommended you pair the pods in numeric order starting from Pod 1
- As the Bluetooth functionality with various mobile devices and Android versions may vary, it sometimes may be needed to interrupt and resume the pod search multiple times before the pairing is successful
    - If despite of multiple trials the pairing fails, you may try removing earlier Bluetooth device connections from your mobile device using Android “Settings” or powering your mobile device down and up once again and repeating the pairing process described above
- Power on the pods one at a time and pair them as described above until all your pods are paired.
- After a pod is paired the pod icon borderline turns white and it is ready for use
- Below the pod icon also the pod battery charge level is indicated to determine whether charging is needed



- After successful pairing your pods you do not need to repeat the pairing process with future usage sessions but just power on the pods and Mpower app connects to them automatically.
    - As the Bluetooth on various Android devices may behave somewhat differently, the automatic pod connection to app may not always happen. Should this happen you can always stop and re-initiate the pod search from “Pods & Muscles” view
- Charge your pod(s) fully before the first use.

POD OPERATING TIME AND BATTERY CHARGING

Your Mpower pod contains a rechargeable lithium-polymer battery.

Pod operating time

With fully charged battery the pod operating time is up to 4 hours of measurement. The operating time depends on many factors, such as the temperature of the environment in which you use the pod and battery aging. For optimum performance during measurement and training keep your pods' battery level above 50%.

Determining pod battery level

You can check your pod battery level at the Mpower app from the main menu “Pods” or from “Pods & Muscles” view. To do this the pod(s) must be connected with the app. It is recommended to keep the battery level of the pod(s) above 50% for optimum performance during the measurement and training.

Low battery

If the pod(s) charging level is low there may be issues with Bluetooth connection and it is recommended to charge the pod(s) before use. If the battery is completely empty, charging fully takes approximately one hour.

Charging pod battery

Make sure there is enough charge in your pod(s) before any measurement and training. To charge with your computer just plug your Mpower pod to your computer as follows:

- Plug in the supplied micro-USB cable into the micro-USB port of the pod
- Plug the other end of the cable into your computer's USB port. If the battery is completely empty, it may take a couple of minutes for the charging to start.
- “power on/off” LED blinks during the charging. When charging is completed the blinking stops.

You can also charge the battery via a wall outlet. When charging via a wall outlet, use a USB power adapter (not included in the Mpower pod package). If you use a USB power adapter, make sure that the adapter is marked with "output 5V DC" and that it provides a minimum of 500mA. Only use an adequately safety approved USB power adapter (marked with "LPS", "Limited Power Supply" or "UL listed").

IMPORTANT: Do not charge the pod when its micro-USB port is wet but let it dry up before plugging in. Do not charge the pod while training and measuring.

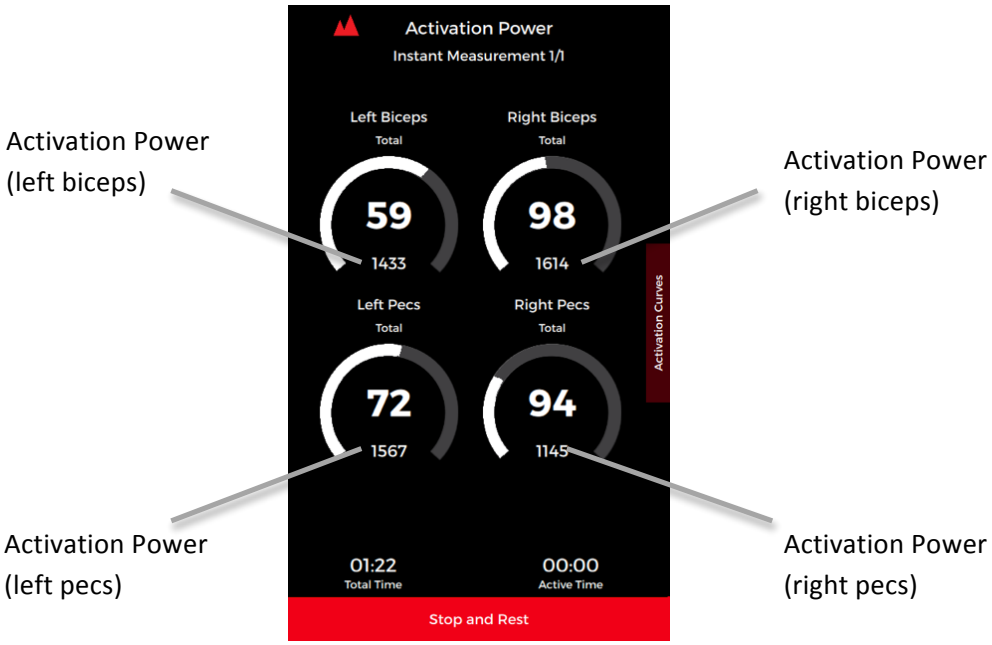
KEY FEATURES

Mpower is based on sEMG (surface electromyography) technology and it measures the electrical signals produced by your muscles during strength training. From these electrical signals Mpower calculates and shows your muscle activation in real-time i.e. how your muscle responds to the training. Mpower detects the activation of fast and slow muscle fibers and muscle fatigue. You can use this muscle activation information to better understand your training efficiency and follow your development, whether you are training endurance, speed and maximum strength or hypertrophy. Mpower shows you the muscle activation information both during the execution of the exercises (real-time measurement views) and afterwards (post-exercise views).

REAL-TIME MEASUREMENT VIEWS

Activation Power

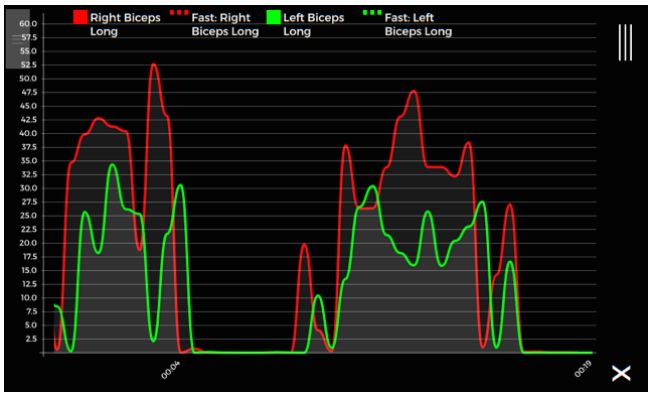
Activation Power is the instantaneous electrical power produced by your muscle when training. It is relative to the muscle strength production during training and well describes how the exercise repetitions impact your muscle. Instantaneous Activation Power peak-values can be used to monitor the development of maximal strength production. The picture below presents how Mpower displays Activation Power in real-time measurement view (4 muscles being measured simultaneously).



Activation Power, real-time measurement view

Activation Power display can be configured from settings to show either absolute Activation Power or relative Activation Power. The latter presents Activation Power as a percentage of the best-ever maximum Activation Power achieved with the specific muscle. Mpower shows when new Activation Power maximum is achieved for each muscle and calibrates the relative Activation Power calculation with the new value. You can follow the development in Progress view.

Activation Power can be also viewed real-time from Activation Curve, which displays the absolute Activation Power over time.



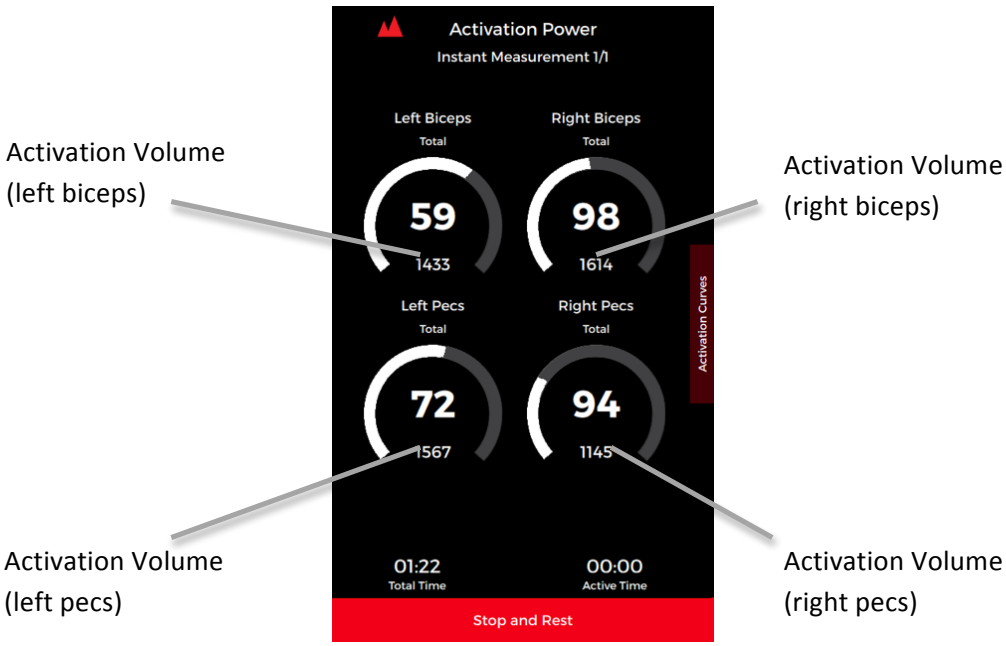
Activation Power on Activation Curve, real-time measurement view

Activation Power balance and ratio

Activation Power can be used to find out and monitor the strength production and execution balance between a muscle pair, in other words similar muscles on the left and right side of your body. This is accomplished by attaching Mpower pods to a muscle pair and activating the measurement for the duration of the training. Mpower shows the Activation Power of the selected muscle pair with real-time measurement views and the balance comparison is easy by viewing the Activation Curves. Similarly, the Activation power ratio between arbitrary muscles and potential changes in the ratio during the training can be compared.

Activation Volume

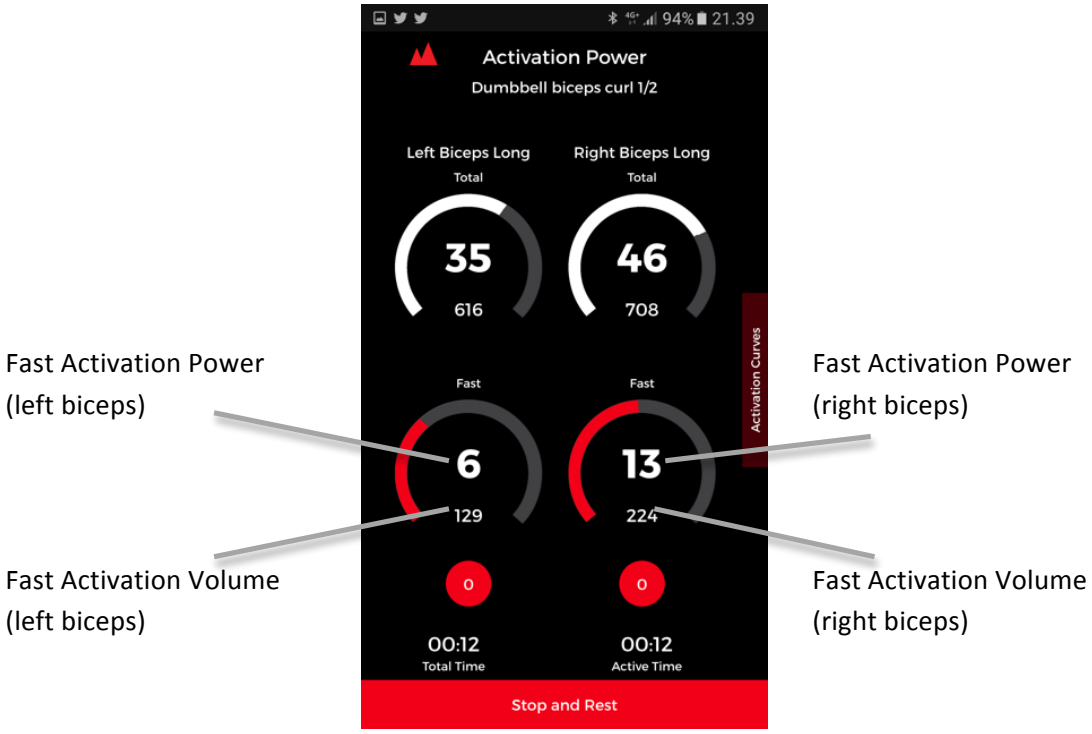
Activation Volume is the sum of all Activation Power produced by your muscle during training. Activation Volume describes how much the training has activated your muscle over time during the training. Mpower provides views to muscle specific Activation Volumes on set, exercise and workout levels. Activation Volume can be monitored in real-time during training or after the training. The picture below presents how Mpower displays Activation Volume in the real-time measurement view (4 muscles being measured).



Fast Activation Power and Fast Activation Volume

Fast Activation Power is the instantaneous electrical power produced by your muscle fast-twitch fibers. As fast-twitch fibers are important in most strength training types, Mpower provides a convenient way to monitor whether the training activates your fast-twitch fibers and how much. Fast Activation Power can be monitored in real-time during training or after the training.

Fast Activation Volume is the sum of all Fast Activation Power produced by your muscle during training. Fast Activation Volume describes how much the training has activated the fast-twitch fibers of your muscle over time during the training. Mpower provides views to muscle specific Fast Activation Volumes on set, exercise and workout levels. Fast Activation Volume can be monitored in real-time during training or after the training. The picture below presents how Mpower displays Fast Activation Power and Fast Activation Volume in real-time measurement view (2 muscles being measured simultaneously).



Fast Activation Power and Fast Activation Volume, real-time measurement view

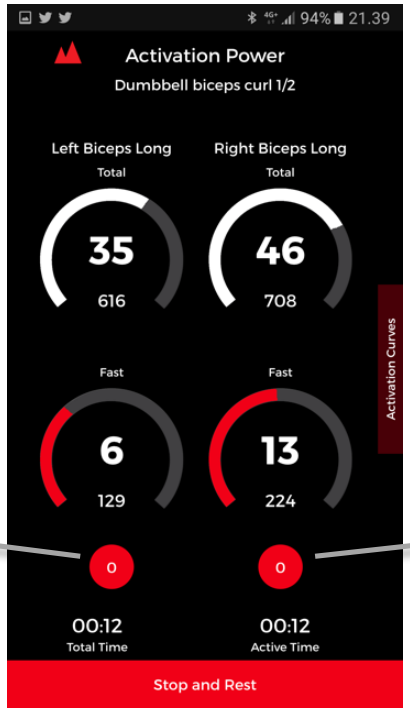
Fatigue Index

Fatigue Index shows you how your muscle fatigue develops. It can be used for speed strength training to monitor when your muscle fast-twitch fibers start getting tired. You can also use it for effective endurance strength training to stress the muscle appropriately and strive to desired muscle fatigue level.

When training for speed strength and explosive strength the purpose is to ensure maximum activation for fast-twitch fibers. However, the muscle fatigue caused by training impacts first the fast-twitch fibers and at some point they are not responding to training in the desired way. Mpower helps you detect the fatigue of your fast-twitch muscle fibers and shows the Fatigue Index to help you to understand when you cannot activate them anymore to desired level.

When training for strength endurance or hypertrophy, it is desirable to ensure the muscle gets fatigued to desired extent. For this purpose Mpower produced Fatigue Index can be used to monitor the level of muscle fatigue and used as personal muscle

specific reference value from exercise to another.



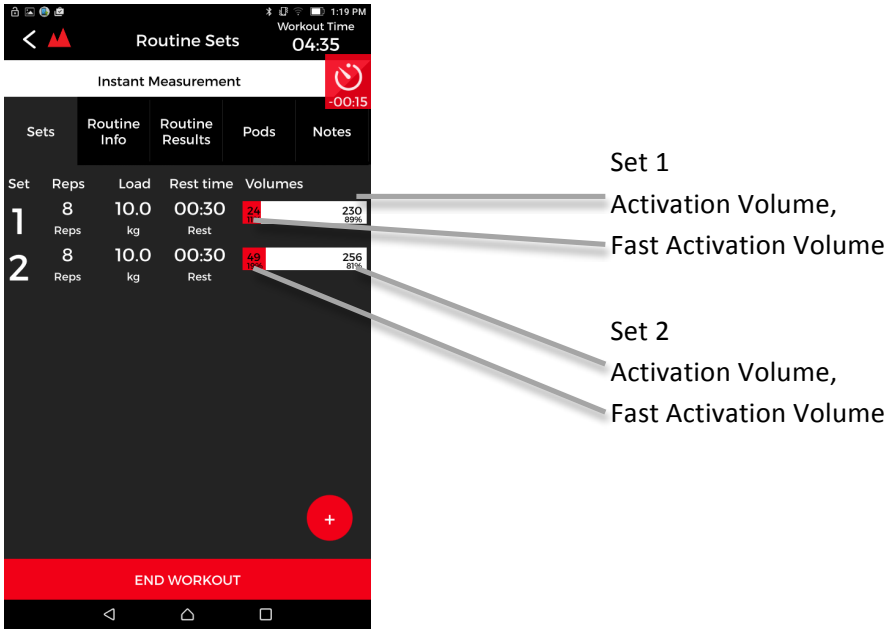
Fatigue Index (left biceps)

Fatigue Index (right biceps)

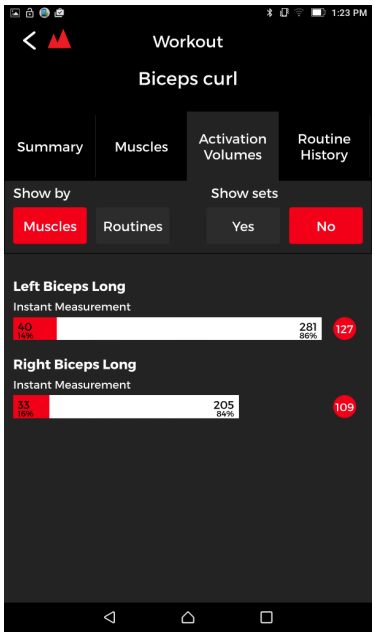
POST-EXERCISE VIEWS

Activation Volume and Fast Activation Volume

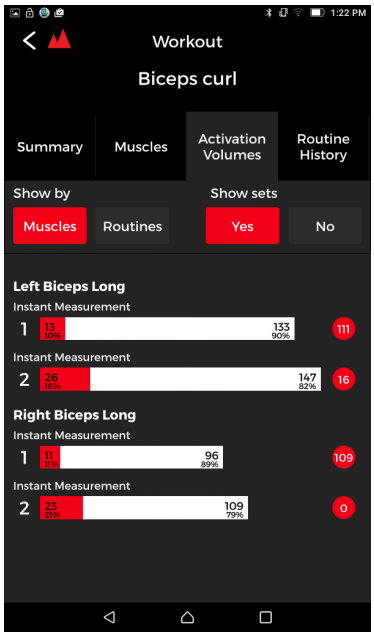
Activation Volume and Fast Activation Volume can also be viewed after sets, routines or whole workouts. Mpower calculates various summaries so that you can easily view how well your training managed to activate your muscles.



Activation Volume and Fast Activation Volume for exercise sets, post-exercise view



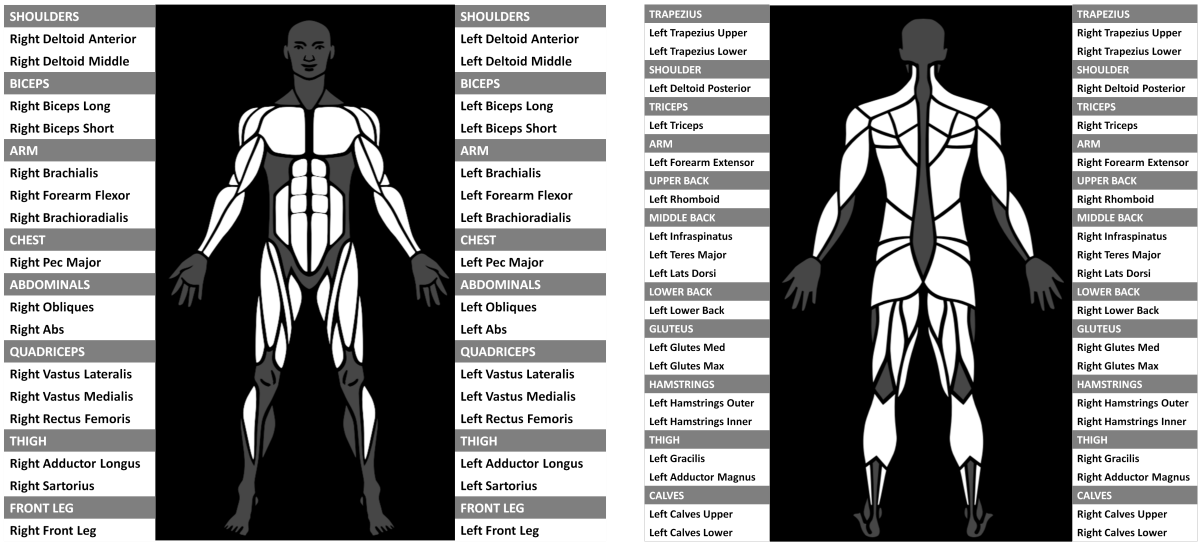
Activation and Fast Activation Volume per muscle, post-exercise view



Activation and Fast Activation Volume per muscle per set, post-exercise view

PLACEMENT OF THE POD(S) ONTO THE MUSCLE TO BE MEASURED

Mpower measures 34 superficial muscles on your body. Place the pod in the middle on top of the muscle to be measured. You can find the correct spot by contracting your muscle and then placing the pod approximately in the middle. Even if you are not certain if the pod is in the middle of the muscle the most important thing is that the pod is on top of the muscle to be measured and its place is always roughly the same with subsequent measurements for tracking the progress of your muscle activation.



PUTTING ON YOUR POD(S)

Mpower pods need to be in skin contact on top of the muscle to be measured. The skin does not need to be prepared in any way, but it is important the skin contact is maintained during the measurement at all times.

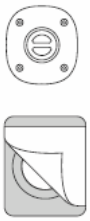
IMPORTANT: Do not move the pods when the measurement is on as this may cause undesired signal spikes and distort the measurement. Always turn off the measurement first before adjusting or moving pods.

You can attach the pod(s) to your muscle either by using the adjustable straps or double-sided adhesive tape.

Using double-sided adhesive tape.

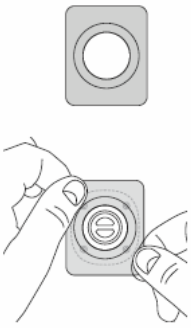
1. Take one pod and adhesive sheet.

Remove the white cover paper.



2. Focus adhesive sheet onto the bottom of the pod around the metal ring.

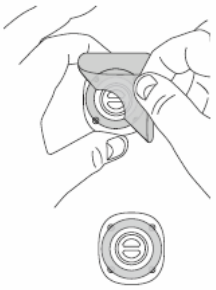
Press finger on the circular part of the adhesive to secure the tape on the pod.



3. Remove the transparent liner from the adhesive from the corner.

The circular adhesive stays attached on the pod.

Pod is now ready to be attached on the skin.



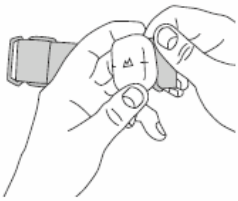
4. Make sure the skin is dry before the attachment. Attach the pod on top of the muscle to be measured. Press the pod tightly for few seconds on top of the skin.

After training detach the pod by pulling from the corner of the pod.

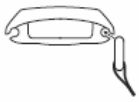
Using the adjustable straps

1. Take one pod and one strap. There are two sizes of the strap. Select the short strap for the arm and long strap for the leg.

Attach the other end of the strap to the pod. Make sure the buckle stays on outside of the strap.



2. Attachment of the strap to the pod:



Press the strap connector into the groove of the pod in this angle

Turn connector straight

The strap connector is attached to the pod

3. Make sure the skin is dry before the attachment. Pod needs to be in skin contact.

4. Attachment to the arm:

Attach the other connector to the pod as in previous picture. Pull the strap around the arm. Use buckle to adjust the appropriate length of the strap. Focus the pod on top of the

5. Attachment of the strap to the leg:

Tie the strap around the leg and attach the connector to the other end of the pod as in step two. Use buckle to adjust the appropriate length of the strap. Focus the pod on top of the muscle to be measured.

6. Focus the pod on top of the muscle to be measured.

TRAINING WITH YOUR MPOWER

Mpower can be used in two ways for your strength training measurements: Workout Plan and Instant Measurement.

Workout Plan

Workout Plan is an excellent tool for planning all your future workouts using the integrated exercise library that can be supplemented with your own exercises. By planning and executing your workouts and the associated measurements with Mpower pods you easily establish a view into your training history with quantified muscle performance i.e. muscle activation statistics. You can compare the muscle Activation Volumes between sets of the same exercise or Activation Volumes between various types exercises – and even get into the individual repetition activation level.

To create a Workout Plan:

1. In the main view select “Workout plans”
2. Create “New workout” by tapping on the "plus" icon
3. Give a name to your workout
4. Press the ”plus” icon and select exercises from the list of All Exercises or by Muscle Group (and muscle) or create your Own Exercises
5. For each exercise adjust the set parameters: number of repetitions, load and rest time
6. Use the ”plus” icon to add more sets
7. Keep adding new exercises by selecting the muscle first and then the exercise
8. Once satisfied with the workout plan you can save it and find it from "My Workout Plans" to start training

Instant Measurement

Instant Measurement is well suited for shorter exercises or technique checking. It provides an easy means to find the most effective exercises to activate any muscle and it helps you to seek the most effective execution of any exercise providing you the real-time feedback of muscle activation repetition by repetition. Naturally you can also view the Instant Measurement results after the exercise.

START TRAINING

For measurements during the training the pod(s) always require the mobile device with the app to be present and connected to pods as the pods constantly transfer measurement data to the app. The pods need to be attached to the muscles, which being measured for muscle activation.

IMPORTANT: Always activate the Mpower measurement functionality only after the pods are placed on muscles. Never move or adjust the pods when the measurement is active as this may cause signal spikes, which appear as false muscle specific maximum activation levels and distort the subsequent measurement results. Nevertheless, if this happens accidentally, use the “Settings” menu to remove the false calibration values caused by undesired signal spikes.

Power on the pod(s), open Mpower app and wait until all your pods have connected to the app – each connected pod has a white pod icon borderline and the pod icon is blinking red when pod is tapped/shaken.

You may now choose the first measurement setup by selecting the muscles to be measured with “Attach to Muscle” from the main screen “Pods & Muscles”. The muscle group list is shown next to the body graphic and by turning the body graphic around the muscle group list for the other side of the body becomes visible. First select the muscle group (e.g. Biceps) by tapping on

the list. All the individual muscles of the muscle group are now highlighted on the body graphic with white color on the body graphic and they are also listed out. Select individual muscle (e.g. Right Biceps Long) from the list and it will be highlighted with red color on the body graphic. You may also tap directly on top of the muscle on the body graphic to select the muscle.

Next tap on the desired pod icon to on the bottom of the screen to confirm which pod you want to attach to the selected muscle. If you have multiple pods you can determine which is which by shaking any pod and you see the corresponding pod icon blinking red and this way you can identify which pod is attached where. If you have multiple pods and want to measure multiple muscles simultaneously repeat the selection of muscle group, individual muscle and pod for each muscle.

IMPORTANT: After muscle selection you always need to also select a pod from the bottom bar.

Now you can start measuring and training either with Workout Plan or Instant Measurement.

Workout Plan

1. Select the workout plan you want execute
2. Make sure you have pods attached to the muscles you are about to exercise
3. Start exercise and measurement
4. If you need to move the pods between muscles during the workout, it can be done between the routines from “Pods” view
    - NOTICE: The pods can not be moved between sets

Instant measurement

1. Press “Instant measurement” at the bottom of the main screen
2. You can modify the number of repetitions, load and rest time between sets
3. You can add new sets by tapping on the ”plus” icon
4. When you are satisfied with the setting, you can start the measurement
5. After measurement you can change the name of the "Instant Measurement" to something more meaningful for later follow-up purposes.

Start the workout from previously created Workout Plans or by Instant Measurement by pressing the "Start next set" icon. Measurement view appears.

DURING TRAINING

Now you can start monitoring muscle activation and fatigue in real-time.

When you start your first measurements for a new muscle you will get a lot of ”new max”-indications, as Mpower records the maximum activation values for each measured muscle. Mpower uses these maximum values to calibrate the Activation Power monitor and shows each repetition as a percentage of your muscle specific maximum.

Start training and activating you muscles as you planned

- For each muscle contraction Mpower shows in real-time for each measured muscle the Activation Power monitor on top, the Fast Activation Power monitor on bottom and Fatigue Index inside the red circle.
- Execute the needed amount of reps for the set and once done, press “Stop and rest” at the bottom of the view - this starts the rest timer with the rest time value you selected earlier
- After each set you can see the summary info on measured muscle activation with the set parameters
- Tapping on the Activation Volume block icon you can see the Activation Curve of the executed set, where Activation

Power of individual repetitions is visible

- After the workout is done you can end it by pressing “End workout” icon at the bottom

Choose what is shown on the display

- If you are measuring with more than two pods you can see more information by tapping the activation power monitor on the screen.
- You can toggle between Activation Power monitor view and Activation Curve view by pressing the small tab in the middle on right side of the screen
- You can modify the load and the number of repetitions information after execution: after sets, after routine or in the training summary.
- In Routine Results you can see the Activation Curve showing each repetition by tapping the Activation Volume bar.

AFTER TRAINING

Viewing results

After the training you get instant summary of your muscle activation and fatigue. You can also compare different muscles and exercises with each other.

You can find all your workout summaries in the “Workout History” from the main view, the last workout appearing on the top of the list. You can also take a look into you “Training Progress” to see muscle specific development over time. “Training Calendar” shows your past and forth-coming exercises over time.

Closing Mpower app

You may close Mpower app either by “Exit” or “Logout”. With “Logout” you need to do “Log in” with your credentials when using Mpower app for the next time. Therefore “Exit” is quite handy to close the app as you stay logged in. However, you need to use “Logout”, if the next user will be another person, and she needs to log in with her own credentials to preserve the personal muscle activation data integrity.

IMPORTANT: If you use Android “home” switch to move away from Mpower app, this leaves the Mpower app running resident in the background. This causes the connected pods to stay connected until their battery drains out. To save pod batteries use Mpower app “Exit” or “Logout” functionality to stop using Mpower as this disconnects the pods properly. Naturally you can always switch off the pods by using “power on/off” switch.

IMPORTANT INFORMATION

USE

Single user

sEMG-signal is by its nature characteristic for an individual person and individual muscle depending on the muscle size and how much the muscle has been exercised. The sEMG-signals measured from different individuals and the calculated activation levels may vary substantially between individuals.

Mpower is designed to measure and process the personal, muscle specific sEMG-signal by calculating, comparing and storing individual muscle activation levels obtained from the signal. With subsequent measurements Mpower forms the personal muscle specific training, activation and development history.

Multiple users

Mpower can be used with multiple users, which makes it convenient for operating with customers and team members. This is done by establishing a personal account for each user for storing the personal training and measurement data.

Pod placement

Pod is placed on the skin on top of the measured muscle with a strap or an adhesive tape. The recommended place for the pod is in the middle of the measured muscle as this ensures that the captured sEMG-signal is as muscle specific as possible. The best comparable results are achieved when the pod is attached to the same place on the muscle for each measurement. For large muscles it may be difficult place the pods exactly to the same spot for each subsequent measurement, but small location variations (10-20 mm depending on the muscle size) have been noticed to cause in practice insignificant variation to the measured signal levels. The correct pod placement on the muscle can be determined by contracting the muscle and sensing its approximate middle point.

You may also use Mpower to measure the activation of different ends of large muscles. For this purpose place the pod to the desired end of the muscle and use the same pod location with the subsequent measurements. This way you may better discover exercises and techniques, which direct the activation to a desired end of a large muscle.

IMPORTANT: Always activate the Mpower measurement functionality only after the pods are placed on muscles. Never move or adjust the pods when the measurement is active as this may cause signal spikes, which appear as false muscle specific maximum activation levels and distort the subsequent measurement results. Nevertheless, if this happens accidentally, use the "Settings" menu to remove the false calibration values caused by undesired signal spikes.

Impact of fat tissue

sEMG-signal is attenuated by the fat tissue under the skin. If fat tissue is thick enough, it may attenuate the sEMG-signal so much that Mpower cannot detect it. In such case it is recommended to use dietary and training means to lower the thickness of the fat tissue and use Mpower to monitor when the sEMG-signal can be detected.

Moisture

Mpower is splash proof, but it cannot be immersed into a fluid. Therefore, it is not suited for e.g. swimming.

Heavy and continuous sweating during long-lasting training may impair Mpower capability to detect the sEMG-signal. This may show as a sudden drop in activation levels. Should this happen it is recommended to stop the measurement, remove the pod

from the muscle and wipe away the excess sweat off the pod and the muscle. After that pod is re-attached to the dry muscle and the measurement can be continued.

Battery charging

The Mpower pod has an internal, rechargeable battery. Rechargeable batteries have a limited number of charge cycles. The number of charge cycles also varies according to use and operating conditions. Do not charge the battery in temperatures under 0°C or over +40°C or when the USB port is wet.

CARE

Like any electronic device, Mpower pod(s) should be treated with care. The suggestions below will help you fulfill guarantee obligations and enjoy this product for many years to come.

Don't charge the pod(s) when its USB port is wet. Let the USB port dry up by before charging. This way you ensure smooth charging.

Wipe off any moisture before storing the pod(s). Don't store in non-breathable material or in a damp environment like e.g. plastic bag or damp gym bag.

Keep your pod(s) clean. We recommend that you clean and dry your Mpower pod regularly, particularly in areas in contact with the skin. Wipe it dry with a soft cloth or paper towel when needed. Use a clean, dry or damp cloth or paper towel as needed for cleaning. If using Mpower with multiple users, the hygiene can be ensured by wiping with a cloth moistened with disinfection liquid. Never pour any liquid material directly on the pods but always use soft cloth or paper. Do not wash the pods under a faucet. Rough handling may damage the electrodes.

Keep your straps clean. Rinse the strap under running water (detach pod from strap before doing this!) after every use and hang to try. Clean the strap gently with mild soap and water solution when needed. Do not use moisturizing soaps as they can leave residue on the strap. Do not soak, iron, dry clean or bleach the strap.

When you connect your Mpower pod to a computer or a charger, check that there is no moisture, hair, dust or dirt on the pod's micro-USB connector. Gently wipe off any dirt or moisture. Don't use any sharp tools for cleaning to avoid scratching.

Use the pods within specified operating temperature range. Protect the pod(s) from excess weather conditions by covering it under your clothing.

STORING

Keep your Mpower pod(s) in a cool and dry place. Do not keep them in a damp environment, in non-breathable material (a plastic bag or a sports bag) nor with conductive material (a wet towel). Do not expose the pod(s) to direct sunlight for extended periods such as by leaving it in a car.

It is recommended to store the pod(s) partially or fully charged. The battery slowly loses its charge when it is stored. If you are going to store the pod(s) for several months, it is recommended to recharge it after a few months. This will prolong the battery lifetime.

SERVICE

During warranty period we recommend that you have service done by an authorized Fibrux partner. The warranty does not cover damage or consequential damage caused by service not authorized by Fibrux. For further information, see “Limited International Fibrux Warranty”.

For contact information for Fibrux authorized service partners, visit www.mpower-bestrong.com/support.

DISPOSAL

At the end of the working life of the Mpower pod(s) Fibrux encourages you to minimize possible effects of waste on the environment and human health by following local waste disposal regulations and, where possible, utilizing separate collection of electronic devices. Do not dispose of this product as unsorted municipal waste.

MPOWER AND OTHER BLUETOOTH DEVICES

Mpower uses Bluetooth technology to connect and exchange measurement data with Mpower application on mobile device. Other Bluetooth devices (like wireless headsets, wireless heart rate monitors etc.), which connect to same mobile device simultaneously may cause disturbance to Mpower operation. If you suspect your other wireless devices disturb Mpower you can disconnect them from the mobile device Bluetooth settings.

ELECTROMAGNETIC INTERFERENCE AND TRAINING EQUIPMENT

Disturbance may occur near electrical devices. Also WLAN base stations may cause interference to Bluetooth communication. To avoid erratic reading or misbehavior, move away from possible sources of disturbance. Training equipment with electronic or electrical components such as LED displays, motors and electrical brakes may cause interfering stray signals. If Mpower still does not work with the training equipment, it may be electrically too noisy for wireless muscle activation measurement.

TECHNICAL SPECIFICATIONS

MPOWER POD	
BATTERY TYPE	300 MAH LI-PO (LITHIUM-POLYMER) RECHARGEABLE BATTERY
OPERATING TIME	UP TO 4 HOURS OF MEASUREMENT TIME
CHARGING TIME	UP TO ONE HOUR.
OPERATING TEMPERATURE	-20° TO 45° C / -4° TO 113° F
CHARGING TEMPERATURE	0 °C TO +40 °C / 32 °F TO 104 °F
WATER RESISTANCE	SPLASH PROOF. NOT SUITABLE FOR SHOWERING AND SWIMMING.
DEVICE MATERIAL	ABS (ACRYLONITRILE BUTADIENE STYRENE) PLASTIC, TPU (THERMOPLASTIC POLYURETHANE), STAINLESS STEEL (WIDELY USED IN MEDICAL GRADE APPLICATIONS)
STRAP AND BUCKLES	
MATERIALS	POLYAMIDE, POLYURETHANE, ELASTANE, POLYESTER, LATEX. THIS PRODUCT CONTAINS NATURAL RUBBER LATEX, WHICH MAY CAUSE ALLERGIC REACTIONS.
ADHESIVE TAPE	
MATERIALS	MEDICAL GRADE SKIN ADHESIVE (3M 1522)
MPOWER APP	
COMPATIBILITY	ANDROID OS 4.4 OR LATER. IN THE CASE OF ANDROID SMARTPHONES AND TABLETS THERE MAY BE SOME COMPATIBILITY ISSUES AS BLUETOOTH TECHNOLOGY VARIES BETWEEN DIFFERENT MODELS OF ANDROID DEVICES.
LANGUAGES	ENGLISH
UNITS OF MEASURE	METRIC OR IMPERIAL

IMPORTANT SAFETY INSTRUCTIONS

- The Mpower pod is designed to measure muscle activation. No other use is intended or implied.
- This product is not a medical device, and is not intended to diagnose, treat, cure, or prevent any disease.
- The device contains electrical equipment that could cause injury if not handled properly.
- Prolonged contact may contribute to skin irritation or allergies in some users. If you notice any signs of skin redness, swelling, itchiness, or other skin irritation, please discontinue use. Continued use, even after symptoms subside, may result in renewed or increased irritation. If symptoms persist, consult your doctor.
- Consult your doctor before beginning or modifying any exercise program.
- Consult your doctor before use if you have any pre-existing conditions that might be affected by your use of this product.
- This product is not a toy. Do not allow children or pets to play with your Mpower product. The product contains small components that can be a choking hazard.
- This Mpower product is splash and rain proof. It should not be worn while showering or swimming.

CARING AND WEARING TIPS

- Clean and dry your Mpower product regularly, particularly in areas in contact with the skin. Use a clean, damp cloth. You may also use disinfecting alcohol on a damp cloth. Do not use abrasive or corrosive cleaners for cleaning. Do not wash the product under a faucet or in any other way.
- Use skin care products sparingly on the areas of the skin covered by your Mpower product.
- Do not open the enclosure or disassemble your Mpower product.
- Substances in this product and its battery may harm the environment or cause injury if handled and disposed of improperly.
- Do not place your Mpower product in a dishwasher, washing machine, or dryer.
- Do not expose your Mpower product to extremely high or low temperatures.
- Do not use your Mpower product in a sauna or steam room.
- Do not leave your Mpower product in direct sunlight for an extended period of time.
- Do not dispose of your Mpower product in a fire. The battery could explode.
- Do not wear your Mpower product while charging it.
- Do not charge your Mpower product while it is wet.
- Remove your Mpower product if it feels warm or hot.

LIMITED INTERNATIONAL FIBRUX WARRANTY

- This limited Fibrux international warranty is issued by Fibrux Ltd.
- This warranty does not affect the consumer's statutory rights under applicable national or state laws in force, or the consumer's rights against the dealer arising from their sales/purchase contract.
- With this warranty Fibrux Ltd guarantees the original purchaser of this device that the product will be free from defects in material or workmanship for one (1) year from the date of purchase.
- The receipt of the original purchase is your proof of purchase!
- The warranty does not cover the battery, normal wear and tear, damage due to misuse, abuse, accidents or non-compliance with the precautions; improper maintenance, commercial use, cracked, broken or scratched cases, straps and adhesive tapes.
- The warranty does not cover any damage/s, losses, costs or expenses, direct, indirect or incidental, consequential or special, arising out of or related to the product.
- Items purchased second hand are not covered by the warranty, unless otherwise stipulated by local law.
- During the warranty period, the product will be either repaired or replaced by any of the authorized Fibrux partners regardless of the country of purchase.

Warranty with respect to any product will be limited to countries where the product has been initially marketed.

CE

This product is compliant with Directives 1999/5/EC and 2011/65/EU.

The relevant Declaration of Conformity is available at mpower-bestrong.com/support.

This crossed out wheeled bin marking shows that Mpower products are electronic devices and are in the scope of Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) and batteries and accumulators used in products are in the scope of Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators. These products and batteries/ accumulators inside Fibrux products should thus be disposed of separately in EU countries. Fibrux encourages you to minimize possible effects of waste on the environment and human health also outside the European Union by following local waste disposal regulations and, where possible, utilize separate collection of electronic devices for products, and battery and accumulator collection for batteries and accumulators.

Designed and manufactured by Fibrux Ltd, Finland, www.mpower-bestrong.com.

DISCLAIMER

The material in this manual is for informational purposes only. The products it describes are subject to change without prior notice, due to the manufacturer's continuous development program. Fibrux Ltd makes no representations or warranties with respect to this manual or with respect to the products described herein. Fibrux Ltd shall not be liable for any damages, losses, costs or expenses, direct, indirect or incidental, consequential or special, arising out of, or related to the use of this material or the products described herein.