Moodmetric User Guide

2015-10-19

Version 1.7

MOODMETRIC

MASTER YOUR MIND

www.moodmetric.com

Contents

Product

Product: The Moodmetric Ring

Version: V6 AC

Production date: September 2015

MADE IN FINLAND

Getting started

With the help of the quick start guide below, you will be able to start using your Moodmetric ring immediately. To ensure that you get most out of all the features, it is advised to read the entire user guide.

Quick start

1. **Download the app**
   - Get the app for free from the AppStore
   - Download it to your device

2. **Wear the ring**
   - Wear the ring like a normal ring. For the most accurate reading use it in the fore, middle or index finger.
   - The indicator led should blink once when inserting onto the finger: Device is working and recording and the battery is charged
   - If an indicator led blinks three times red when inserting onto the finger: Device has low battery and does not work or record. Charge before using. If worn with a low battery for extended periods, corruption of recorded data may occur.
   - **Never wear the ring while charging. Make sure no-one can use or hold the ring when it is plugged.**

3. **Pair the ring**
   - Go to the menu (press the upper left corner)
   - Wait for the app to find your ring and then select your ring from the list
   - Tap "Connect" from the bottom left corner

4. **All set! You can now**
   - Follow the Moodmetric number and Scope live
   - Measure meditation or excitement with Practice
   - Use the ring off-line and check the MoodFlower and Calendar when convenient

Contents of the package

1. The Moodmetric ring

2. A charger cable with micro-USB (ring end) and USB ports (for computer)

3. The Moodmetric app is free to download from the AppStore

4. (Optional: An extra ring if you have ordered one)

Contact information

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Finland

info@moodmetric.com

http://www.moodmetric.com/#contact

Limitations and suggestions

Please read the following recommendations carefully before beginning to use

Important notice! Special considerations

The Moodmetric ring is meant for recreational purposes only. Moodmetric's products are not medical devices and should not be used to diagnose or treat any medical conditions. Moodmetric's products are not authorized for use as critical components in life support devices or systems. Moodmetric does not guarantee the wellbeing of the user. Data provided by the Moodmetric ring is dependent on the personal characteristics of the user. There is some variation between users, so Moodmetric does not take responsibility when comparing data between different users. Compare recent data only to the history of the same user.

The use of the Moodmetric ring is safe for most people; there are no known serious side effects. However, there are few cases in which the Moodmetric ring should only be used with the prior approval and monitoring of a medical or health-care professional, and certain conditions under which the Moodmetric ring should not be used at all.

- Persons suffering from any serious physical or medical condition— including epilepsy, brain injury, cardiac arrhythmia or other heart disorders—or those using a pacemaker are encouraged to consult with a medical professional before beginning use.

- Children or minors should use only with prior parental consent and monitoring.

- If your fingers swell excessively, it is not advised to use the Moodmetric ring, in order for it not to become lodged on your finger. Should this happen, you can add a drop of soap between finger and the ring to help to slide it off.

Vigofere Oy nor Moodmetric make no implicit or overt claims for cure or treatment of any medical or psychological disorders. No expressed or implied medical claims are made for Moodmetric products. These products are not intended for use in relieving any medical or psychological condition.

Other limitations
- **Do not charge the ring while wearing it**
- Charge only with wall adapters or computers that fulfill necessary electrical safety regulations
- Do not keep the ring on hot surface, do not heat the ring
- Do not immerse the ring in water, even though the ring is splash proof. If wet, dry with a towel or let dry in open space before use.
- Do not swallow
- Do not use in any other way than described in this instruction
- The band of the ring is detachable, can be snapped back if detached. If any other part is loose or detached, do not use the ring any more, contact info@moodmetric.com for instructions
- The Moodmetric ring is not a toy. Keep away from small children and animals.
- Moodmetric / Vigofere Oy is not liable for any damage or injury caused by non-intended use of the Moodmetric ring, the band or the charger cable.

Where and when can I use the Moodmetric ring

- You can use the Moodmetric ring like any ring in your daily life. For an accurate reading, the ring should stay well in place, but not to be tight.

- The Moodmetric ring is well suited to measuring at home, at workplace, during a light exercise and while sleeping.

- The measurement might not be accurate, and the ring might be damaged while lifting heavy objects, gripping things very tightly or wearing heavy or tight gloves.

- The ring is splash proof but can not be immersed in water. Do not take a shower or swim with the ring. Take the ring off if caught in heavy rain.

- The ring can be worn in hot weather and sweating fingers do not interfere with the measuring. However, do not use the ring in heated spaces such as sauna or solarium.

- The reading might be intermittent, if your hands are very cold.

Can several persons wear the same ring

The Moodmetric ring is intended primarily for personal use, and the Moodmetric algorithm learns the personal characteristics of the wearer. The longer the ring is used, the more accurate the reading is.

Several people can wear the same ring, but quick changing from one to another does not provide the most accurate data.

When changing the user, reset the data of the previous wearer by tapping Reset Imprint:
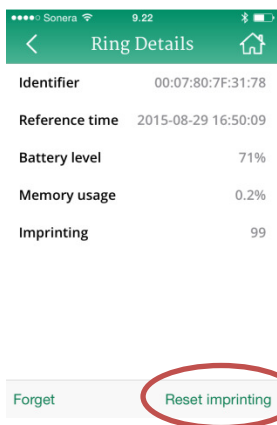
After this, allow the next user to wear the ring at least 15 minutes, to have a valid measurement.

6

Using the Moodmetric ring

Read this chapter to have the best benefit of your ring and app.

Wearing the ring

The ring can be worn like a normal ring. It should fit well, but not to be tight.

You can wear the ring on any finger, but the best contact is achieved from fore, middle or index finger. If you have big hands, also the little finger works well.

Try to find a spot where the ring does not move much. The measurement is interrupted every time the skin contact is lost.

The measurement point is underneath your finger, where the density of sweat glands is the greatest. The ring does not measure, if you turn it upside down so that the stone is on your palm side.

Tip: if your finger is very bony, and the ring does not stay well in place, you can try and wear another ring below the Moodmetric ring. This might support the ring to stay in proper position.

Indicator leds for emotion levels

There are two visual functions in the ring itself to follow your emotional intensity, without checking the app. You can turn them on by selecting LEDs enabled:

1. High emotion level alert

A red led starts to blink when the Moodmetric number has been at 75 or above for 5 minutes. The blinking discontinues when the figure again descends under 75.

2. Calm mind indicator

A green led illuminates when the Moodmetric number has been at 15 or below for 5 minutes. It goes off when figure again raises.

Indicator leds for charging

Indicator led should blink once when inserting to finger: device is working and recording and the battery is charged.

If an indicator led blinks three times red when inserting onto finger: Device has low battery and does not work or record. Charge before using. If worn with a low battery for extended periods, corruption of recorded data may occur.

When the charge plug is inserted, an orange light will appear until battery is full. Take the charger off when the orange light shuts off. If the orange light does not light up when the power plug is inserted and the plug is powered, this means the battery is already full and no need to charge. Charging time is about 1.5 hours.

Orange led blinking while charging might indicate a faulty battery. Do not use the ring, contact info@moodmetric.com.

The Moodmetric app

Download the app for free from the AppStore. Search for Moodmetric and follow the instructions.

See the Quick Guide in the beginning of this document to pair your ring with the app. Once paired, you do not need to repeat it again; the app automatically recognizes your ring every time you open it.

Note: the ring records data the whole time it is being worn. You do not have to have the app open. You can download data from the ring when convenient, e.g. at the end of the day.

The Moodmetric number

Moodmetric measures the activity level of your mind. A simple reading tells whether you are feeling strong emotions or being calm. We call this *the Moodmetric number.*

On the app´s main screen you can see the live Moodmetric number and an emotion curve displaying your emotional intensity at a precise moment.
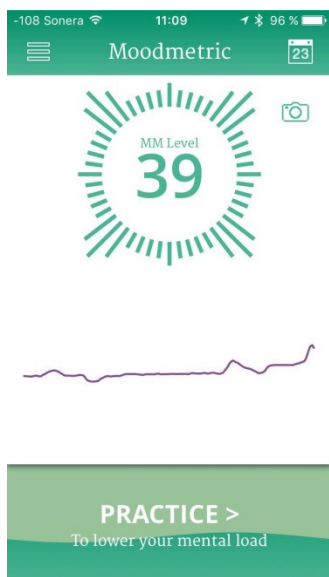
The emotional intensity describes the load your mind is experiencing. Low electrodermal activity (EDA) means that your mind is at peace. The more intense the feeling, the higher the EDA. The Moodmetric ring captures this biosignal and shows the emotional intensity with the Moodmetric number.

The Moodmetric number ranges from 0 to 100, showing your personal mood state and the long term average. 100 is your highest emotional level, meaning you're extremely stressed, excited, anxious or frightened. At about 50 your mind is active while below 30 you're quite relaxed. For numbers below 10, you'll need to really concentrate at calming your mind.

9

How to interpret the Moodmetric number

0-20	Calm
21-40	Serene
41-60	Active
61-80	Worked up
81-100	Running high

Emotions on different intensity levels can be positive or negative. Moodmetric does not distinguish between them nor give an indication of which emotion the wearer is feeling.

Some example situations of different levels

0-20	Sitting at peace, doing mindfulness exercise
21-40	Leafing through a paper, walking
41-60	Discussing, listening
61-80	Event at work with a slight pressure
81-100	Being stressed, being late, getting angry, being delighted

Emotions related to situations vary from very negative to extremely positive. And they can be very personal. For instance, the same music can cause one listener an intense positive feeling and for another a minor negative one.

The Moodmetric ring helps you to analyse your emotions and what is behind them. This starts from measuring the emotional intensity.

Moodmetric scope – The emotion curve

The scope tells about the instantaneous reactions of the wearer. When you feel something, your autonomous nervous system reacts and small changes can be measured from your skin.

The Moodmetric Ring detects the changes that can be followed online with the smart phone app. All the reactions cause an upward jump on the Scope, the bigger the emotion, the higher the curve goes. The physical response delay is 1.5 seconds, so the jump is visible 1.5 seconds after something makes you react.

The curve is normalized skin conductance, with auto-scaling.

10

Practice

The Practice feature is a rehearsal tracking your mind over a certain period of time. You can get a measured result of a mindfulness exercise or a cognitively loading task. The program shows a real-time measurement result as a curve and gives you a score at the end.

How to use

Set the desired length of the practice and press Start. Once the time is up, you get a score which is also stored in the Practice Log.
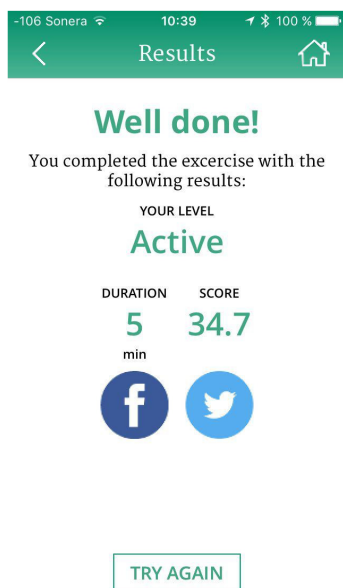
Practice score levels
above 50 → Restless
between 25 and 50 → Active
between 12 and 24 → Serene
between 6 and 11 → Calm
below 6 → Meditative

The ring measurement is very accurate and it needs a perfect skin contact when reading the lowest MM number levels. If you target at a score of 10 or below, you need to stay immobile during the practice.

Examples

- Measure a mind-calming exercise

- Practise for a distressing event: Record the emotional level of your mind e.g. when practising a speech. Check the result and try to improve. Try to take e.g. a breathing exercise beforehand, to calm your mind.


Note: The Practice log only stores your result, not the exercise curve. If you want to keep that, take a screenshot of it: from the result screen, go one step back and snap a screenshot.

Moodflower

MoodFlower is the emotional picture of your day. It shows your emotional intensity on a clock face, starting from 6am till 6pm, and the same for the evening and night. You can switch between the views from the icon in the middle. By swiping left or right you can move between days.

The MoodFlower appears when you download the data from the ring. The app does not need to be continuously open to record the MoodFlower data.
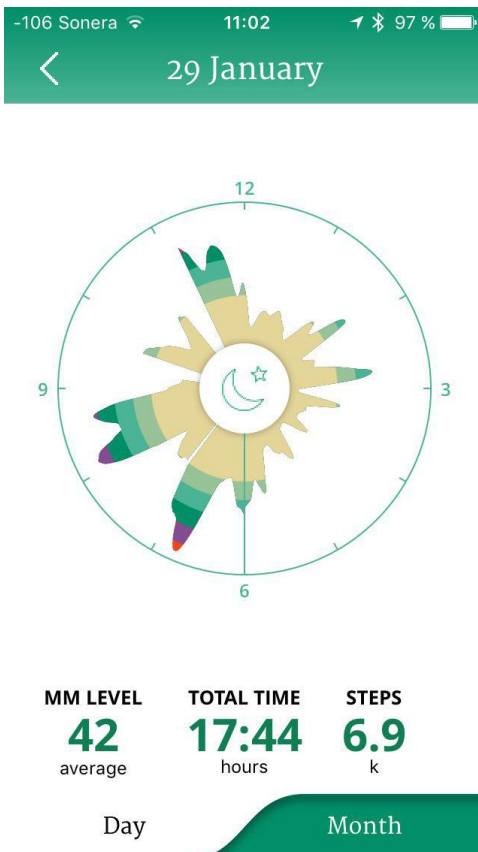
The more intense the feeling (it can be joy, excitement, stress, anger etc.), the closer to the edge of the circle the figure reaches. The color also indicates the intensity ranging from calm yellow to green, purple and finally red.

Daily MM is the average Moodmetric number for a particular day. It gives you the possibility to follow emotional trends, if you use the ring regularly.

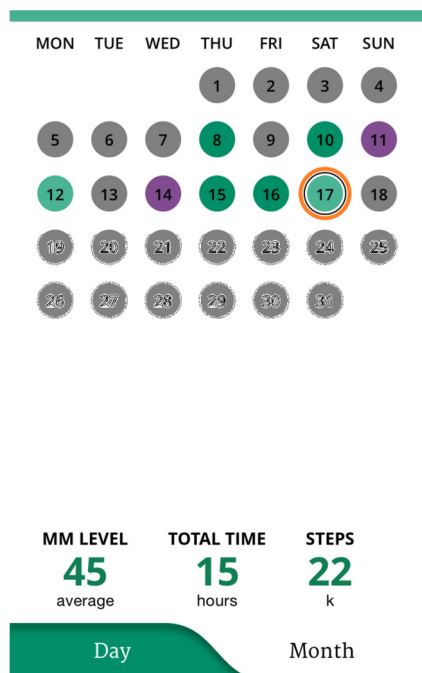**Total time** tells how long you have used the ring on a given day.

The Moodmetric ring works as a step counter. **Steps** taken on a particular day is indicated in thousand steps (k).

The ring stores information for MoodFlower up to 270 hours. You do not have to carry your phone with you, the ring works totally independently. Just open the app to upload the data or check your current emotional level.

The Month view

MON	TUE	WED	THU	FRI	SAT	SUN
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

| MM LEVEL	TOTAL TIME	STEPS
45	**15**	**22**
average	hours	k

Day	Month

By tapping "Month" under the Moodflower you can access the Calendar. It gives you each day with your average intensity color.

The Moodmetric number level average is counted over the used hours. The combined amount of steps is shown in thousands as in the day view.

When you do a Practice, you get a circle around that date. If you reach 10 000 steps on a day, you will get an orange circle around that date.

Changing the stone to a different sized ring

If you have ordered different sized rings for the stone, you can change them by using e.g. a small screwdriver (not included in the package).
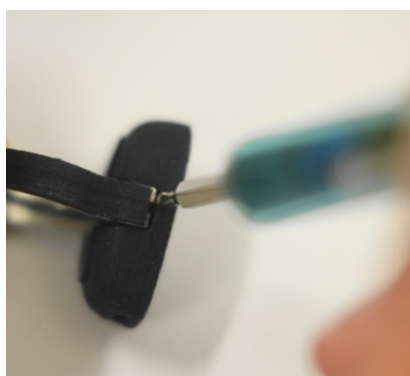
The rings are not intended to be changed continuously, and the snaps might wear out. Moodmetric does not cover the cost or provide new units in the case of evident wearing of the or the rings due to extensive swapping.

13

Technical data and information about the skin conductance measurement

Moodmetric measures the electrodermal activity (EDA) of the skin. EDA is generated by activity of the sweat glands. Moodmetric measures the palmar skin on your finger.

The unconscious actions of the human body are regulated by the autonomic nervous system, which consists of the sympathetic systes and the parasympathetic system. The parasympathetic system controls the body's rest-and-digest functions and the sympathetic system controls fight-or-flight reactions. When bodily functions are not of interest and the emotional side is, the sympathetic nervous system is your choice.

The sweat glands are exclusively innervated by the sympathetic nervous system. This makes EDA an ideal measure for sympathetic activation. Electrodermal activity correlates to general emotional intensity, negative emotion, concern, and anxiety. These emotions cause almost similar electrodermal responses, which makes them very hard to differentiate. However, Moodmetric will tell you if certain parts of your day have brought up emotions or not. Inversely, Moodmetric tells you weather you are calm or not. This is particularly useful during your mindfulness, meditation and other calming exercises.

Technical specifications

- Measures skin conductance variations, with optimized biosignal front end

- iOS 7 and 8, iPhone 4S and later, iPads supporting bluetooth4

- Bluetooth Smart

- Operating range 5m

- Internal memory of 270 hours

- Low power consumption, several days of operation in typical use

- Lithium polymer battery, typical charge time approximately 1 hour.

- Charge from any USB port or standard USB charger, cable included

- Splash proof

- Laser cut stainless steel ring part

- The ring is detachable meaning the same stone fits all Moodmetric ring sizes.

- Moodmetric comes in four sizes: US (6.5, 8, 10 and 12.5), EU (17, 18,5, 20 and 22 mm)

Certifications

Bluetooth

Bluetooth QDID is B021015.

United States

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter meets both portable and mobile limits as demonstrated in the RF Exposure Analysis. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

Contains FCC ID: QOQBT113

Canada

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Contains IC: 5123A-BGTBLE113

Cet appareil est conforme avec Industrie Canada exempts de licence standard RSS (s). L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l' utilisateur du dispositif doit étre prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

Contient IC : 5123A-BGTBLE113

Europe

The radio transmitter module inside has conformity with the following standards

SAFETY

- EN 60950-1:2006+A11:2009+A1:2010+A12:2011

EMC (Art. 3(1)(a)):

- EN 301 489-1 v.1.9.2
- EN 301 489-17:V2.2.1
  - Radiated electric field immunity, EN 61000-4-3:2006

SPECTRUM (Art. 3(2)):

- EN 300 328 v1.7.1
  - Equivalent isotropic radiated power
  - Maximum spectral power density
- EN 300 328 V1.8.1
  - Occupied channel bandwidth
  - Transmitter unwanted spurious emissions in the out-of-band domain
  - Transmitter unwanted spurious emissions in the spurious domain
  - Receiver spurious emissions

Japan

MIC type certification number 007-AB0103.

Korea

KCC type certification number KCC-CRM-BGT-BLE113.