

NEURONIC



NEURADIANT
1070

USER MANUAL

“**Photobiomodulation** is more than an alternative kind of medical treatment. It is a whole new method to **control cellular processes** and **modulate living organisms** by precise alterations in the chemistry of biomolecules.”

Harvard Pioneer Researcher, Michael Hamblin, PhD

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1. Overview

We are excited for you to use the Neuradiant 1070. What makes our device unique is the use of 1070 nm near-infrared light that also offers users independent control of the four brain quadrants (front, back, left, right).

Research^[1-5] shows that photobiomodulation (PBM), the therapeutic use of light on the body, confers a wide range of health-promoting effects, including enhancing cellular energy production, enabling increased oxygen circulation in the brain,^[7] and enhancing production of neuroprotective proteins and growth factors.^[8,10]

Emerging studies indicate that the glymphatic system, which is a recently discovered macroscopic waste clearance system, is triggered by light and operates with increased effectiveness.

This leads to improved brain performance, aligning with Neuronics' aim of maintaining high cognitive function throughout all stages of life.



Neuronic devices are not medical devices under any jurisdiction and are not intended to diagnose, treat, cure or prevent any disease. These statements have not been evaluated by the Food and Drug Administration.

2. Getting Started

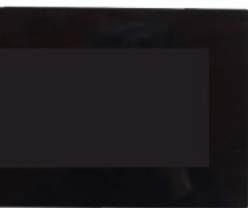
What's in the box?



..... Neuradiant 1070



..... Power Cables for
Different Countries



..... Touch Screen Controller



..... Fitting Adjustments



..... Storage Case

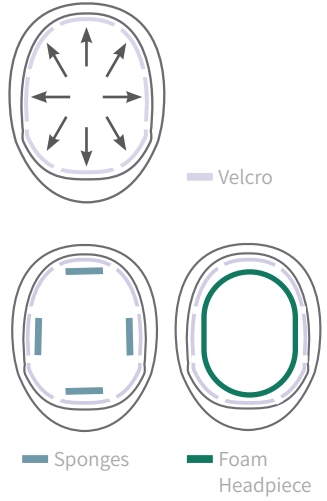
Set up

1

Fitting Guide

Remove the device and components from the case. Place one velcro to the inside of the device (see diagram). Apply the sponges or foam headpiece onto the velcro so that the unit is stable and does not create any sense of pressure during use. Do not place any velcro on the clear plastic of the inside of the device.

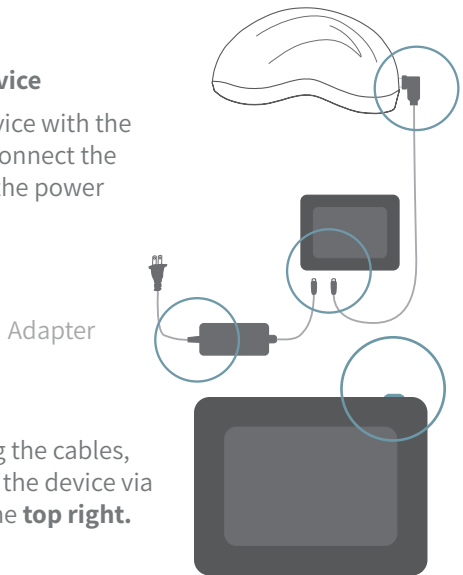
Bottom View



2

Turn on the Device

Connect the device with the controller and connect the controller with the power adapter.



After connecting the cables, you can turn on the device via the **button** on the **top right**.

3. Our Product

The Neuradiant 1070 was designed for both clinic-based and at-home use by offering standard, pre-set programs that can be used in a clinical or home-based setting.

Users wishing to use the Neuradiant 1070 with a specific condition are strongly advised to order the 3 months of expert consultation. **Please refer to page 16 to learn more about our consultation service.** Customers who purchase the consultation are sent an email with detailed instructions to arrange your 3 month consultation.

Users who purchase the consultation through a third party instead of Neuronics' official website, will not have consultation directly with Neuronics. Consultation should be arranged with the third-party provider.



4. Programs

We offer four standardized light stimulation protocols: Peace, Focus, Energize, and Glow. The four programs are designed to promote unique physical and mental states. We recommend using no more than one preset program a day for the first two weeks and at most, twice a day thereafter. It is recommended you drink a glass of water before AND after a protocol to help with adequate light penetration.

We advise that you seek a personal consultation with a Neuronic consultant if you are not experiencing the results you expected.

Program Inputs

Each program is unique and made up of three main inputs: time, pulse rate, and intensity which are outlined below.

Time

The amount of time the program will run from start to finish. The unit will make a beep at the start and end of the chosen program. **The maximum time for a program is 30 minutes.**



Pulse Rate

The pulse rate is the frequency that the light flashes every second. At 10 Hz the light will flash 10 times per second, similarly at 40 Hz it will flash 40 times per second. **The maximum pulse rate is 9999 Hz.**



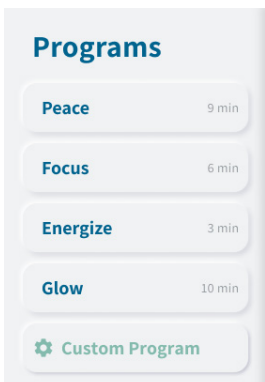
Intensity

This reflects the duty cycle of the light or the amount of time in which the light will be on for every pulse. For example, if the light pulses at an intensity of 25% once a second, it means that the light will remain on for only 0.25 seconds. **With full intensity of 100%, no pulse rate can be set.**



Program Descriptions

Understanding the default Programs

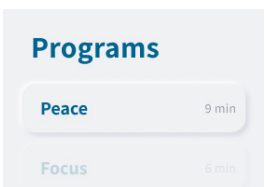


Each default protocol is designed using different settings. After running the protocol, we recommend turning off the device and noting your reactions.

Increase session duration by no more than 2 minutes a day. Up to a maximum of 20 minutes twice daily.

Peace

This program uses a 10 Hz pulse rate that is associated with alpha brain activity and fosters a relaxed state of consciousness.^[9] The light intensity is low so you can enjoy a longer exposure time of 9 minutes. This program can be used with meditation activities or other integrative mind-body awareness practices to further calm your central nervous system. Note: this is the only preset protocol that can be used after sundown.



Time	9 min
Pulse Rate	10 Hz
Intensity	25%

Focus

The Focus program uses a 40 Hz pulse rate associated with gamma brain waves. Gamma brain waves have been shown to improve cognitive functioning, including short-term memory, reaction time, mental flexibility, and positive neurophysiological effects. The recommended duration is 6 minutes.^[2,8]

Peace	9 min
Focus	6 min
Energize	3 min

Time	6 min
Pulse Rate	40 Hz
Intensity	50%

Energize

The Energize program boosts cortical blood flow, giving more oxygen to the brain. The 20 Hz Beta brain waves help to increase attention and clarity. This pulse rate is also associated with increased adenosine triphosphate (ATP) production. The duration of this program is slightly shorter as the intensity is higher, giving you a short burst of energy.

Focus	6 min
Energize	3 min
Glow	10 min

Time	3 min
Pulse Rate	20 Hz
Intensity	75%

Glow

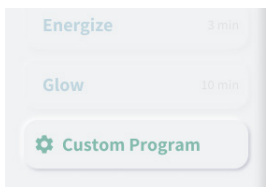
The Glow protocol encourages renewal and revitalization of cellular health, increasing blood flow and aiding the removal of waste products through the lymphatic system. This program can be used for supporting general brain wellness, and for recovery after a period of ill health. This protocol also has cosmetic and dermatological applications as it improves the blood flow to the skin by stimulating elastin, improves skin appearance and enhances blood flow to the scalp, thus promoting hair growth and healthy radiant skin. This protocol does not use pulsing as the intensity is set to 100%.^[4,6]

Energize	3 min
Glow	10 min
Custom Program	

Time	10 min
Pulse Rate	- Hz
Intensity	100%

Custom Program

These are individualized protocols developed in consultation with a qualified professional. Each protocol is customized to efficiently achieve your personal wellness goals.



Time	- min
Pulse Rate	- Hz
Intensity	- %

Clinical Protocol Passcode:

4

4

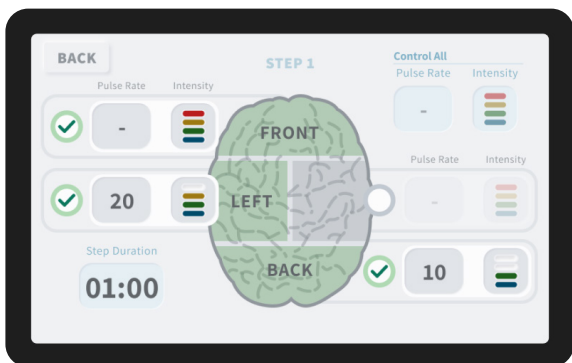
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6

Clinical Protocols & 4 Quadrant Functionality

There is growing recognition in the neuroscience community regarding the role of brain networks as being a primary driver in overall brain performance.^[9] Therefore, Neuronic established the 4 quadrant capability, by providing independently programmable pulse frequency, intensity, and duration to four key brain quadrants (front, back, left, right). This feature allows users to define specific regions for customized stimulation protocols.

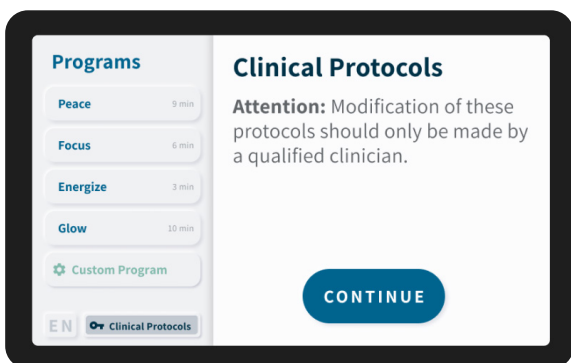
The following image shows the control settings for the 4Q feature. We highly recommend that this feature be used only under the supervision of professionals.



Setting up your Clinical Protocols

The values in the images below are just examples. We recommend using only values provided by your consultant.

1. Click (touch) **Clinical Protocols** at the bottom of the controller.

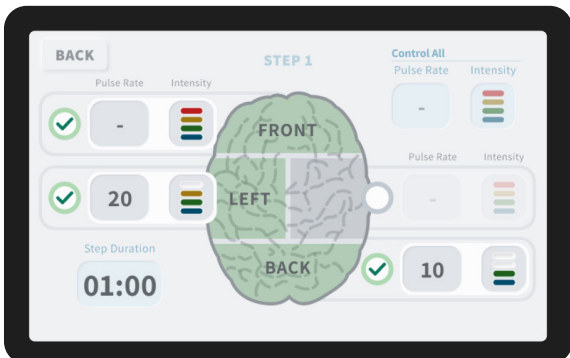
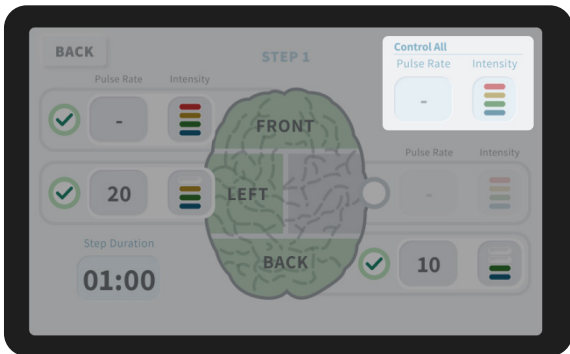
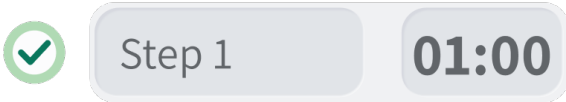


2. Choose Clinical Protocol 1, then **Edit Values**.





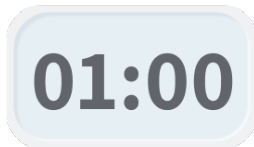
- Choose **Step 1**, then check the quadrants of the brain that should be stimulated (they will turn green). To edit a step, press on **Step 1**.



Shortcut - choose **Control All** if all quadrants will be set at the same **pulse rate** and **Intensity**. Otherwise follow the instructions below.

- Then for each quadrant selected, choose **Pulse Rate** and press the **Delete** button, then enter the number(s) from your consultant and click the checkmark to save.
- Then for each quadrant selected, choose **Intensity** and set the number of bars from your consultant e.g. 1 bar = 25%, 2 bars = 50%, 3 bars = 75%, 4 bars = 100% (100% means there is no pulsing, only continuous light) and click the checkmark to save.
- And finally, choose **Step Duration** (time), and press the **Delete** button, then enter the number from your consultant and click the checkmark to **Save**.

Step Duration



- You can program up to 4 steps. If you have steps 2-4 to program, then choose the next step to program, and repeat # 5-7 instructions above, for each step.
- If you are meant to cycle through the step(s) more than once, enter the number provided by your consultant in the **Cycle** field.



- To use Clinical Protocol 2, touch **Edit Values**, and repeat # 3-8 instructions above.
- When asked to confirm, please click the **Confirm** button to save changes.
- Waiting / pauses in between sessions. Your consultant may give you instructions to set a step for a few minutes with all quadrants de-selected / gray (not green). In this scenario, the pulse rate in the top right corner can have any number (it won't be pulsing). Then choose **Step duration** (time) where you can enter a time of up to 30 minutes. When the helmet is on and it gets to this Step, you will see 4 small red lights inside the helmet, but this just means it is turned on, it won't be pulsing NIR light. You can also stop the protocol entirely and set a timer for a certain number of minutes or hours, then resume the next step or **Clinical Protocol**.



5. Consultation

In order to optimize the benefit for each user, we offer a personalized consultation service. The complimentary session has to be used within 30 days after purchase. While every device comes with a complimentary introductory session, the consultation package with Neuronics includes three (3) 30-minute sessions with a consultant who can provide custom light-stimulation protocols for your specific needs and goals. The three sessions must be completed in a 90-day time window after delivery of the device.

The consultation process has 4 basic components: assessment, protocol design, progress measurement and continuous protocol refinement. Each individual has their own case history, goals, and expectations. The consultant will take this information into account when designing the Neuradiant 1070 protocols.

To best benefit from the consultation process, we recommend our clients to obtain a qEEG test (quantitative electroencephalography). Often it is best to come to the first consultation without a qEEG so we can focus on intake questions and initial questions about the device. After the initial consultation it is beneficial to obtain a qEEG, enabling your consultant to optimise your custom protocols.

During the initial consultation, your consultant will review the intake forms and qEEG you've provided to Neuronics. This review, coupled with an understanding of your goals, will enable the consultant to design a customized PBM protocol. Additionally, you will jointly establish metrics to gauge your progress and receive detailed instructions on the safe and effective utilization of the Neuradiant 1070 device, along with guidance on adjusting stimulation protocols, as needed.

Upon purchase of the consultation package, you will receive a confirmation email with detailed instructions on how to book with your consultant, an overview of the consultation process, and assistance finding a qEEG provider. If you do not receive the email, please check your spam folder and contact consultation@neuronics.online as soon as possible.

6. Frequently Asked Questions

How often should I use the Neuradiant 1070?

We typically recommend using the device once or twice a day, at least five times per week. The optimal use frequency may vary from individual to individual based on age, background and lifestyle.

Can the device be used if the person has cancer?

There is limited data at this stage to make a conclusive recommendation. So the current advice is to not use red light therapy or infra-red-light therapy when there is a tumor present.

What can I do during a Neuradiant 1070 protocol?

When using the device, we recommend sitting down and staying calm. You can use this time to meditate, watch a show, read a book, draw, write, or just relax. We recommend not doing any strenuous physical activity during a light therapy protocol.

What do the four red LEDs inside the Neuradiant 1070 device mean?

Near-infrared light is invisible to the human eye, so the visual application of the PBM protocols in the helmet is not observable. Our device incorporates 1070 nm LED panels and four separate red lights that illuminate to show when the protocols are activated. Although you won't observe additional lights on the device, rest assured it is functioning as long as these four indicator lights are on. **Please refrain from looking at the LED panels directly.** While our helmet is safe for the head, it has not been tested on eyes. Clients have used the helmet over their face with eyes closed without any adverse effects. However, in the abundance of caution, we recommend you wear sunglasses if you would like to put the helmet over the face with your eyes open.

Is the Neuradiant 1070 FDA approved?

Red light and infra-red-light therapy devices have been FDA-approved for an expanding range of purposes including wound healing. Light therapy has been proven to be safe and is categorized as “non-significant risk devices” by the FDA. However, the application of light therapy for brain health has not yet been approved by the FDA – we are currently working with the FDA and submitting relevant research to obtain medical device clearance.

Do I need a consultation package?

While the pre-set protocols included in the Neuradiant 1070 are easy to use and provide benefits of light therapy through 4 different settings, the consultation offers custom-designed protocols based on quantitative EEG (qEEG) results and personal history that can greatly enhance the functional benefits of photobiomodulation (PBM). Each consultation is 100% personally tailored to your needs.

More questions?

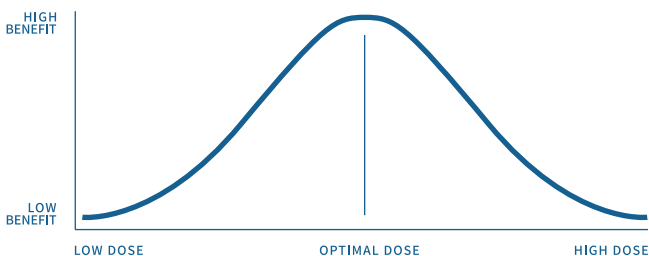
Visit our website or contact us at support@neuronic.online

If you have questions related to our consultation service, contact us at consultation@neuronic.online

7. Guidelines

General Guidelines

Light therapy demonstrates a dose-response curve which means that there is a 'sweet spot' wherein the stimulation has the most positive impact on our cells and tissues. Too little stimulation provides little benefit, and too much stimulation can cause a diminishment of response.^[11] Light therapy exhibits a biphasic response, so using the device too much may cancel out the benefits.



Indications that you have had too much light stimulation can occur during or shortly after (30 seconds to 10 minutes) completing a protocol and include: dizziness, headache, fatigue, irritability, agitation and congestion. Symptoms can also appear after a few hours. If you know you are particularly sensitive to energetic or pharmaceutical stimulation in general, then we suggest that you use the device for up to one minute initially and build up usage gradually. If symptoms persist, consult your healthcare professional and contact Neuronic for additional support.

Device & Adapter Use Precautions

Please only use the adapter and transformer provided by the manufacturer to ensure the normal operation of the device. The company is not responsible for product failure caused by self-assembly or disassembly of the product. Please discontinue using the device if wet or there is visible damage to the device, adapter or cables, this includes usage in conditions of high humidity or temperature. Please unplug the device when not in use.

Our company does not bear any responsibility for the damage or any accidents caused by improper use.

8. Product Information

Disclaimers

Neuronic devices are not medical devices under any jurisdiction and are not intended to diagnose, treat, cure or prevent any disease. These statements have not been evaluated by the Food and Drug Administration. Our company cannot guarantee the same effects on each individual or the effectiveness of our device. There are no known side effects of using our device. We advise you to consult a medical professional and conduct your own independent research before purchasing our device. The information presented on the website, in emails or any other communication materials is neither a substitute for nor an alternative to the advice of a licensed healthcare practitioner. The focus of our consultation(s) is on the safe and effective use of the Neuradiant 1070 PBM device and is not to be considered medical advice, nor is it in any way to be considered a replacement for consultation with your current medical or other qualified healthcare providers.

Product Parameters

Model: Neuradiant 1.1

Wavelength: 1070 ± 50 nm (spectrum)

LED quantity: 256 LEDs

Frequency Setting: 0-9999 Hz

Input Voltage: 100-240 V, 50/60 Hz

Dimensions of Controller: 216 x 148 x 35 mm

Weight of Controller: 860 g

Dimensions of Device: 290 x 220 x 150 mm

Weight of Device: 560 g

Head Circumference: Adjustable for all adult head sizes

Service Guarantee

Neuronic offers an 80% refund exclusive of consultation fee, that is valid for 3 months from the time of purchase. The unit must be in original packaging including all accessories, case and box. Additionally, the unit must be in good condition without signs of major wear and tear. Please visit our website for the most up to date refund and service guarantee.

A 12-month warranty covers all products sold in the USA, the EU, and the rest of the world. Please read the general terms and conditions on our website.

References

- [1] Hamblin MR. Mechanisms and Mitochondrial Redox Signaling in Photobiomodulation. *Photochem Photobiol.* 2018 Mar;94(2):199-212. doi: 10.1111/php.12864. Epub 2018 Jan 19. PMID: 29164625; PMCID: PMC5844808.
- [2] Hamblin MR. Photobiomodulation for Alzheimer's Disease: Has the Light Dawned? *Photonics.* 2019 Sep;6(3):77. doi: 10.3390/photonics6030077. Epub 2019 Jul 4. PMID: 31363464; PMCID: PMC6664299.
- [3] Holmes E, Barrett DW, Saucedo CL, O'Connor P, Liu H, Gonzalez-Lima F. Cognitive Enhancement by Transcranial Photobiomodulation Is Associated With Cerebrovascular Oxygenation of the Prefrontal Cortex. *Front Neurosci.* 2019 Oct 18;13:1129. doi: 10.3389/fnins.2019.01129. PMID: 31680847; PMCID: PMC6813459.
- [4] Chan AS, Lee TL, Yeung MK, Hamblin MR. Photobiomodulation improves the frontal cognitive function of older adults. *Int J Geriatr Psychiatry.* 2019 Feb;34(2):369-377. doi: 10.1002/gps.5039. Epub 2018 Dec 10. PMID: 30474306; PMCID: PMC6333495.
- [5] Chen AC-H, Huang YY, Arany PR, Hamblin MR. Role of Reactive Oxygen Species in Low Level Light Therapy. *Proc SPIE.* 2009;7165:716502-716501.
- [6] Pruitt T, Wang X, Wu A, Kallioniemi E, Husain MM, Liu H. Transcranial Photobiomodulation (tPBM) With 1,064-nm Laser to Improve Cerebral Metabolism of the Human Brain In Vivo. *Lasers Surg Med.* 2020 Nov;52(9):807-813. doi: 10.1002/lsm.23232. Epub 2020 Mar 15. PMID: 32173886; PMCID: PMC7492377.
- [7] Saucedo CL, Courtois EC, Wade ZS, Kelley MN, Kheradbin N, Barrett DW, Gonzalez-Lima F. Transcranial laser stimulation: Mitochondrial and cerebrovascular effects in younger and older healthy adults. *Brain Stimul.* 2021 Mar-Apr;14(2):440-449. doi: 10.1016/j.brs.2021.02.011. Epub 2021 Feb 23. PMID: 33636401.
- [8] Shen Q, Guo H, Yan Y. Photobiomodulation for Neurodegenerative Diseases: A Scoping Review. *Int J Mol Sci.* 2024 Jan 28;25(3):1625. doi: 10.3390/ijms25031625. PMID: 38338901; PMCID: PMC10855709.
- [9] Wang X, Dmochowski JP, Zeng L, Kallioniemi E, Husain M, Gonzalez-Lima F, Liu H. Transcranial photobiomodulation with 1064-nm laser modulates brain electroencephalogram rhythms. *Neurophotonics.* 2019 Apr;6(2):025013. doi: 10.1117/1.NPH.6.2.025013. Epub 2019 Jun 13. PMID: 31259198; PMCID: PMC6563945.
- [10] Zhao C, Li D, Kong Y, Liu H, Hu Y, Niu H, Jensen O, Li X, Liu H, Song Y. Transcranial photobiomodulation enhances visual working memory capacity in humans. *Sci Adv.* 2022 Dec 2;8(48):eabq3211. doi: 10.1126/sciadv.abq3211. Epub 2022 Dec 2. PMID: 36459562.
- [11] Huang YY, Sharma SK, Carroll J, Hamblin MR. Biphasic dose response in low level light therapy - an update. *Dose Response.* 2011;9(4):602-18. doi: 10.2203/dose-response.11-009. Hamblin. Epub 2011 Sep 2. PMID: 22461763; PMCID: PMC3315174.

9. About Us

Neuronic was founded with a singular focus: to keep the brain capacity in all stages of life high. Clinical research has shown that near-infrared light positively impacts memory, movement and mood stability. Neuronic develops devices that send out near-infrared light.

We have set ourselves the goal to enhance and monitor the most important organ - the brain. We are turning the newest research into smart medtech devices of the future. We believe in a world without barriers - both within science and our minds.

Neuronic devotes 100% of profits to advancing the science and development of photobiomodulation through an ongoing program of basic science and applied clinical trials.

NEURONIC

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