



E S Q U A R E



USER MANUAL

Dual 18650 in Parallel

 **EVOLV | DNA60**

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1. INTRODUCTION

The Esquare DNA 60 by Lost Vape is a device that follows the design of Esquare DNA 40 mod and features with Evolv's brand new DNA 60 chip. The updated design in battery covers and body material peers with the new DNA 60 board gives the Esquare DNA 60 mod an advanced promotion.

The front of the Esquare DNA 60 features a high-defintion OLED screen, activation button with programmable multiclor LED indicator, adjustment buttons and USB charging port.

The Esquare DNA 60 is constructed from die cast zinc alloy, a durable and lightweight blend. The Esquare mod is equipped by dual 18650 batteries to ensure the need of long wearing and the prime performance of the board. The

mod utilizes a stainless steel 510 connector for multiple compatibility and user serviceability. The removable and customized front and back covers make the replacement of batteries a convenience and enriches the possibility of personal preference.

It is the double-side magnetic covers that impresses the Esquare DNA 60. Unlike the sticker panels, Esquare DNA 60 features with real double-side panels in wood, abalone, resin, and carbon fiber to enrich the vaping experience. The original integrated 1Amp balance charger has been updated to a customized 2 Amp charger to enhance the internal charging speed.

In order to satisfy and spare vapers' needs and time, Lost Vape Esquare DNA 60 provides preset profiles in Nickel (Ni200), Titanium (Ti) and Stainless Steel (SS) coil builds for ready to go.

2. STANDARD PACKAGE

1 x Esquare DNA 60 Device

1 x USB Charging Cable

1 x Esquare DNA 60 Gift Box

1 x Esquare DNA 60 User Manual

510 Atomizer Connector

OLED Screen Display

Dual 18650s in parallel



Fire Button

Up Button

Down Button

Programmable multicolor
LED Indicator



USB Port (Charging & Update Firmware)

3. MAIN FEATURES

- * Powered by Evolv DNA 60 temperature protection board
- * Firmware upgradeable
- * Temperature Limit: 250°F - 600°F
- * Output power: 1Watt - 60Watts
- * Body material: Die Cast Zinc Alloy
- * Stainless steel 510 atomizer connector
- * Waterproof onboard buttons

- * Reverse polarity protection
- * Spring loaded nickel plated brass center pin
- * Customized 2 Amp micro-USB charger
- * Cell-by-cell monitoring
- * Double-side magnetic covers with customized materials
- * Cover materials: wood, abalone, resin, and carbon fiber
- * Dimensions: 73mm*64mm*27mm

4. EVOLV DNA 250

The DNA 60 is a power regulated digital switch-mode DC-DC converter for personal vaporizers. It features Evolv's patented Wattage Control, Temperature Protection, Preheat, OLED Screen, Reverse Polarity Protection, and waterproof onboard buttons. The DNA 60 runs from a Dual lithium polymer or lithium ion battery, and features battery monitoring. A Micro USB satellite board for 1 Amp charging and data connection to customize or monitor the user experience via EScribe is also available separately.

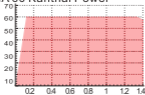
Specifications	Minimum	Typical	Max
Output Power	1 Watt		60 Watts
Output Voltage	0.5 Volt		9 Volts
Output Current, continuous			22.0 Amps
Output Current, instantaneous peak			

Atomizer Resistance, temperature sensing wire, cold	See Graph	0.15 Ohm	See Graph
Atomizer Resistance, kanthal wire	See Graph	0.25 Ohm	See Graph
Temperature Limit	200°F	450°F	600°F
Input Voltage	3.0 Volts	3.7 Volts	4.2 Volts
Input Current	0.5 Amps	12.0 Amps	25.0 Amps
Input Current, pulse			32.0 m
Screen On Current	26mA		
Quiescent Current	7mA		
Power Down Current	0mA		
Efficiency	85%		
Weight	15g		
Footprint	0.65" x 1.30"		
Thickness	0.35"		
Screen size	0.91" OLED		

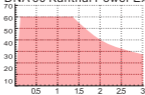
Output Power

The following graphs show the output power range of the DNA 60 as a function of the coil resistance.

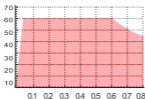
DNA 60 Kanthal Power



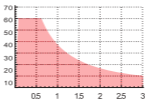
DNA 60 Kanthal Power Extended



DNA 60 Nickel Power



DNA 60 Nickel Power Extended



Temperature Protection

The DNA 60 directly measures and limits the temperature of the heating coil during operation. By preventing the coil from becoming too hot regardless of fluid, wicking or airflow, a variety of undesirable situations can be prevented. For example, appropriate temperature settings will prevent the wicking material from charring, which compromises taste and introduces unintended chemicals into the vapor. Appropriate temperature settings will also reduce the breakdown of flavoring and base liquid components, which could impact taste or safety.

Evolv's Temperature Protection Technology requires a heating coil made from Nickel 200 alloy or other materials with a well-defined temperature coefficient of resistance, rather than Nickel Chromium or Kanthal alloys. If the temperature

reaches the maximum value, the wattage applied to the atomizer coil is reduced to prevent overheating. Please note that the temperature reading is the average temperature of the atomizer coil, and care should be taken to construct the heating coil so that the temperature is uniform, without hot or cold spots.

Because wattage, not temperature controls vapor volume, large vapor volumes can be produced without unnecessarily high temperatures. Temperature Protection is most helpful if the atomizer begins to dry out, the user pauses during a puff, the beginning or end of the puff, or if the wattage setting is inappropriate for the attached atomizer.

In normal operation, when the device is not firing the maximum temperature setting is displayed on the screen. When the device is firing, the actual average temperature of the coil is displayed on the screen.

By default, the Temperature Protection setting is 450° Fahrenheit. To change the limit

- 1) Lock the device by pressing the Fire button five times.
- 2) Hold down the UP and DOWN adjust buttons for two seconds.
- 3) After two seconds, the maximum temperature will be displayed, and the UP and DOWN buttons should be released.
- 4) Use the UP and DOWN buttons to adjust the maximum temperature
- 5) When the display shows the desired maximum temperature, press the Fire button to exit temperature adjust mode.

The maximum temperature is adjustable between 200° Fahrenheit and 600° Fahrenheit. To disable the temperature protection entirely, adjust the limit up to 600 degrees, then press the UP button one additional time. The temperature limit will read OFF.

To switch to Celsius temperature, adjust temperature down to 200° Fahrenheit, then press the DOWN button one additional time. The temperature will switch to reading and adjusting in Celsius.

Preheat

When the DNA 60 is used with a temperature sensing atomizer, an additional feature called Preheat is activated. No vapor is produced when the temperature is below the boiling point of the liquid. Preheat applies extra power until the heating coil is up to operating temperature to shorten the delay between pressing the fire button and generating vapor. Because preheat is temperature based, it will not overheat or burn the vapor.

Attaching a New Atomizer

The DNA 60 uses the resistance of the atomizer to calculate the temperature of the heating coil. It continually looks to see whether a new or changed atomizer has been connected. If you are using temperature protection, be careful to only attach new atomizers that have cooled to room temperature. If a new atomizer is attached to the DNA 60 before it has cooled down, the temperature may read and protect incorrectly until the new atomizer cools.

When you connect a new atomizer or disconnect and reconnect your existing atomizer, the DNA 60 will prompt you to confirm this change. When you fire the first time, before activating the DNA 60 will prompt "New Coil? UP YES/DOWN NO". When you see this prompt, if you have attached a new atomizer, press the UP button. If you have disconnected and reconnected the same atomizer, press the DOWN button.

5. *Escribe*

Escribe is a software package used to configure, monitor and modify the operation of your DNA 60. It installs on a Windows PC and connects to your DNA 60 using the USB port. Escribe has a separate manual and tutorials which can be found on Evolv's site. Users must go to the Escribe and update the latest firmware before using the device.

<http://www.evolvapor.com/>

<http://www.evolvapor.com/manuals/EScribeManual.pdf>

6. BASIC OPERATION OF DNA60

To wake the device from power off state, tap the Fire button. To generate vapor, press the Fire button. To change the wattage setting for more or less vapor, click or hold the Up and Down buttons.

Display

The DNA 60 has a small .91" diagonal OLED screen.



Alternate display items

Battery Charge	Output Current	Average Output Power of the most recent puff
Battery Pack Voltage	USB Voltage	Average Temperature of the most recent puff
Room Temperature	Material Name	Total Energy of the most recent puff
Puff Count	Board Temperature	Duration of the most recent puff

Watt setting: The power level currently set on the DNA 60.

Battery indicator: The current state of charge of the battery.

Temperature display: When not firing, the maximum heating coil temperature setting. While firing, the actual temperature of the heating coil is displayed.

Volts display: The output voltage being supplied to the atomizer.

Ohms display: The resistance of the atomizer attached to the device. When using a temperature sensing coil, this is the normalized resistance of the coil at 70°F

7. Modes

Locked mode: Pressing the fire button five times with less than .7 seconds between presses will cause the device to enter Locked mode. In Locked mode, the device will not fire and the output power will not adjust accidentally. While in Locked mode, the screen will be off, except that pressing a button will show “Locked, Click 5X”. To exit Locked mode, press the fire button 5 times.

Stealth mode: While locked, holding the fire and down buttons simultaneously for five seconds will switch to stealth mode. In this mode the display is off. It will still show error and lock messages. To switch back to normal display mode, hold down the fire and down buttons simultaneously for 5 seconds. This setting is stored to internal flash memory, and remains if power is removed.

Power Locked mode: Holding down both the up and down buttons for two seconds will place the device in Power Locked mode. In this mode, the mod will operate normally, but you will not be able to change the power setting. This mode prevents accidental power level changes due to the buttons being pressed while in a pocket. To exit Power Locked mode, hold the up and down buttons for two seconds.

Resistance lock: The DNA 60 relies on the cold resistance of the atomizer to measure temperature accurately. If the connection is not stable or if you find the measured resistance drifts with time, it may be desirable to lock the atomizer resistance. To do so, while locked hold both the Fire and Up buttons for two seconds to enter Resistance

Lock mode: In this mode, the DNA 60 will use the present atomizer cold resistance without refinement until the atomizer is disconnected or the resistance lock is disabled. A lock symbol will replace the ohm symbol on the display. To disable resistance lock, repeat the procedure to lock it.

Max Temperature Adjust: From Locked Mode, holding down both the up and down buttons for two seconds will place the device in Max Temperature Adjust mode. Once this mode is entered, the max temperature will be displayed. The up and down buttons are used to adjust the max temperature. To save the new temperature setting and exit, press the Fire button.

8. Profiles

The DNA 60 allows you to save and select between eight groups of output settings. Each group of output settings is called a Profile. To switch between profiles, put the DNA 60 into Power Locked mode by pressing and holding both the up and down buttons simultaneously for two seconds. From power locked mode, to cycle between profiles, double click the Up or Down button. To select the displayed profile, press the fire button.

The coil material for each Profile can be changed directly on the device for any material that exists in the Materials Repository. To change the currently selected Profile's material, press the Fire button five times to Lock the device. With the

device Locked, hold the Up, Down, and Fire buttons simultaneously for two seconds. Then, use the Up and Down buttons to cycle through materials, when the desired material is displayed press the Fire button to confirm your selection.

Evolv recommends setting up one profile for each atomizer that you regularly use with the DNA 60. It is much faster to switch profiles than it is to set up the settings for the atomizer again.

9. Error Messages

The DNA 60 will indicate a variety of error states.

Check Atomizer: The DNA does not detect an atomizer, the atomizer has shorted out, or the atomizer resistance is incorrect for the power setting.

Shorted: The atomizer or wiring are short circuited.

Weak Battery: The battery needs to be charged, or a higher rate battery needs to be used. If this happens, the DNA 60 will continue to fire the atomizer, but will not be able to provide the desired wattage. The Weak Battery message will continue to flash for a few seconds after the end of puff.

Temperature Protected: The heating coil reached the maximum allowed temperature during the puff. If this happens, the DNA 60 will continue to fire, but will not be able to provide the desired wattage.

Ohms Too High: The resistance of the atomizer coil is too high for the current wattage setting. If this happens, the DNA 60 will continue to fire, but will not be able to provide the desired wattage. The Ohms Too High message will continue to flash for a few seconds after the end of puff.

Ohms Too Low: The resistance of the atomizer coil is too low for the current wattage setting. If this happens, the DNA60 will continue to fire, but will not be able to provide the desired wattage. The Ohms Too Low message will continue to flash for a few seconds after the end of puff.

Too Hot: The DNA 60 has onboard temperature sensing. It will shut down and display this message if the internal board temperature becomes excessive.

Auto power down: The screen will be at full brightness while firing. After 10 seconds with no button presses, the screen will dim. 30 seconds after the last button press, the screen will fade out and the device will go into sleep mode. To wake the device, press the fire button.

10. INSTALLING AND CHARGING

Installing the Batteries

When using the Esquare DNA 60 make sure to use married batteries. Meaning that the 2 cells are the exact same. NEVER use different brand, mAh, or age batteries.

Install the dual 18650 batteries according to the indicator inside the battery bay. It is dual 18650 in parallel, so the 2 batteries should face the same way.

Charging the Batteries

There are 2 options to charge the Esquare DNA 60. Either remove the 18650 batteries from the device by lifting up the cover gap nearby the bottom of the device and charge them via an external charger, or use the on-board charging option. It is best to remove them and charge them via the external charger, but it could be charged faster via the customized 2 Amp internal charger.

External charging:

Remove batteries from device.

Follow charging instructions with using charger.

Internal charging:

When the battery level display indicates that the battery needs charging, plug one end of the supplied USB charging cable into your device.

Plug the other end of the charging cable into a USB power source (a computer usb port or usb wall plug).

Leave the device plugged in until the battery indicator displays fully charged.

Once the battery is fully charged unplug the USB cable from the device. (Never leave a battery charging unattended)

While charging your device with the USB cable you can still use your Esquare DNA 60.

11. PRECAUTIONS

Please read the following safety recommendations before using this device.

1. This device is intended for users over the age of 18, and not by minors, women who are pregnant or breast feeding, or people with or at risk of heart disease, high blood pressure, hypertension, diabetes, or taking medicine for depression or asthma.
2. This products is sold purely for recreational purpose, it is not a smoking cessation product and has not been tested as such.
3. Please ensure this product is kept away from extreme high and low temperatures and moist environment while in use or stored.
4. The manufacturer is not responsible for any damage or personal injury caused by inappropriate, incorrect or irresponsible use of the device. Use of any illegal or prohibited products with this device will void the warranty.

5. Do not over-tighten the atomizer onto the 510 connector, the atomizer should be snug, not tight. over-tightening may cause damage to the threading and the delrin insulator.
6. This is a high end and powerful device capable of providing a high voltage to the atomizer. We recommend only using the dual 18650 batteries in proper manner.
7. Due care and attention must be followed when using this mod. This is for experienced vapers with extensive knowledge of how electronic devices work along with access to the appropriate safety tools. Please ensure proper precautions are taken when using these devices as to not cause damage and/or harm to the atomizer, device, or yourself. Use at your own risk.

8. Battery safety is very important. If you remove the battery from the device, please store it in a dry place, at room temperature, and away from direct sunlight. The batteries should never be left unattended while charging. Please take extra care when you removing/replacing the battery. Always dispose of batteries in a safe manner, into a designated containers for battery recycling.

12. WARRANTY

LOST VAPE Esquare DNA 60 are covered by a 6 months limited warranty from the date of your retail purchase. The warranty will be void if there are any signs that the product has been physically damaged, dropped or abused in any way.

For warranty issues, please contact LOST VAPE official retailers and distributors for their warranty and return policy. LOST VAPE's warranty does not apply to products purchased through unauthorized vendors.

Undefeated quality - Precise manufacturing

Patent Pending

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