# VESTEL

**Battery Solutions** 

TAILORED TO OUR FUTURE



# YOUR CHALLENGE IS OUR MOTIVATION



### **VESTEL**

With over 38 years of experience, Vestel has more than 20.000 employees and production capability built on advanced technology. Established over a 1.3 million m<sup>2</sup> area in Manisa, Vestel's manufacturing base Vestel City is one of the largest single-site industrial manufacturing complexes in Europe. Vestel has 11 offices based around the world, clientele from 160+ countries, ODM+ production with A-brands, a client-orientated mindset and a dynamic R&D.

Vestel offers consumers a wide product range, which includes consumer electronics, major household appliances, small home appliances, battery solutions, professional displays, and automotive electronics. All of the production facilities are located in Turkey and the battery production plant is located Aegean Free Trade Zone in Izmir.

Thanks to its manufacturing capabilities, strong R&D, and innovation capacity, Vestel is a market driver in global markets with its technological exports.





**Export Leader of Turkey**for the last 23 consecutive years



900+ Customer 500+ Brands





20.000+



Vestel's vision is to be a technology company creating social and environmental benefits through accessible and smart products that make life easier. We are investing in innovative business models for transition to a net zero emission economy and striving to implement circular models in both our products and operations.

We are developing solutions that meet the needs of the future. We are designing products free from hazardous chemicals, that use recycled and recyclable materials, which are durable, easy to repair as well as energy and water efficient.

We calculate and report our carbon footprint according to the ISO 14064 standard and our water footprint according to the ISO 14046 standard and have these verified by independent third parties. We share our performance transparently through our CDP reports. We aim to reach net zero emissions by 2050, first in our own operations and then throughout our entire value chain. To that end, we aim to switch to technologies that cause less greenhouse gas emissions in production, increase renewable energy investments and manufacture products with high energy efficiency, less water consumption, and resource efficiency benefits.

We aim to strengthen our presence as a global player with our experience, vision, intellectual power, and technological prowess; and we are determined to contribute to a better and livable world, focusing on our environmental, social and governance performance.







**VESTEL's Tailored Technology** approach brings the true meaning of custom design experience and creates the highest level of technology solutions from scratch. VESTEL Battery Solutions R&D team ensures complete client satisfaction by meeting the needs of any project at the highest quality. Combining the latest technology test and simulation tools alongside the design and manufacturing capabilities all in-house.



Fast and Fully Customized Projects by Providing Direct Access to our R&D Team.



R&D Investment Amounting to an Average 80M USD.



7 R&D Centers in 4 Countries.



Among Top 50 Companies in Patent Applications in Europe

### Certifications

• EN 50604-1

• UN38.3

• IEC 62133-2

• IEC 62281

• IEC 61960-3

• EN ISO 13849-1











Vestel Battery Solutions provides the utmost quality products with the highest standards of quality with in-house accredited testing facilities.

Vestel Batteries are **EN50604-1 certified** and already prepared to satisfy EU's next battery directive.











Automotive Grade In-House BMS Manufacturing With IATF 16949 Certification at Europe's Biggest Automated **PCB** Facility





Fully Automated Cell Sorting for the Best Possible Cell Balancing

### **End of Line Testing**

100%

Extensive End of Line BMS Functionality and IP Testing for Each Unit in Production



### KEY FEATURES OF VESTEL

- **Bluetooth:** With the bluetooth module, we provide easier tracking of the status of health of the battery and better servicability from distance.
- **UART/CANBUS:** Customized UART/CAN bus protocols are supported for different ebike drive systems.
- **Secured with liquid sealing:** Emits the effects of vibration inside the pack in addition to provide IP66 water and dust resistance.

### E-BIKE BATTERIES

- RTC: Real time clock included in our BMS makes it possible to log the battery data to provide fast and reliable after sales services.
- Ionia App: Developed by our engineers, it enables easier serviceability. Access to instant battery information, reading and sharing battery logs, sending warning notifications to the end-user. The app is customizable.

# PRODUCTS

### **Downtube - DT01**

### **Product Specifications**

**Nominal Voltage** 

•

36 V

Capacity 540 Wh / 625 Wh\*

**Cells** 21700, 5 Ah / 5.8 Ah\*

Battery Pack 10S3P

**Charge Connector** 5 A (min. 3.000 cycles)

**Discharge Connector** 25 A (min. 2.500 cycles)

Charger 2 A, 5 A (optional)

**Dimensions** (L  $\times$  W  $\times$  H) 331  $\times$  95  $\times$  87 mm (battery)

Weight 2.8 kg

Color Black

Indicator 5 LED's

Compatible Drive Systems Shimano, Bafang,

Ananda, Tongsheng, others on request

(CAN / UART)

Other Features Tested under EN 50604-1 standard

UN 38.3

IEC 62133-2

IP66 level water proof design

Bluetooth

Laser welding

UV resistant materials

Flame retardant (UL94 5V A) materials

Industrial grade ventilation plug

Compatible with lock systems including

Axa and Abus

Mounting parts incl.



### **Downtube - DT01MC**

### **Product Specifications**

Nominal Voltage 36 V

**Capacity** 540 Wh / 625 Wh\*

**Cells** 21700, 5 Ah / 5.8 Ah\*

Battery Pack 10S3P

**Charge Connector** 5 A (min. 3.000 cycles)

**Discharge Connector** 25 A (min. 2.500 cycles)

Charger 2 A, 5 A (optional)

**Dimensions** (L  $\times$  W  $\times$  H) 331  $\times$  95  $\times$  87 mm (battery)

Weight 2.8 kg

Color Black

Indicator 5 LED's

Compatible Drive Systems Shimano, Bafang,

Ananda, Tongsheng, others on request (CAN / UART) Other Features Motor controller housing incl.

Tested under EN 50604-1 standard

UN 38.3, IEC 62133-2

IP66 level water proof design

Bluetooth

Laser welding

UV resistant materials

Flame retardant (UL94 5V A)

materials

Industrial grade ventilation plug

Compatible with lock systems

including Axa and Abus

Mounting parts incl.

<sup>\*</sup> After MP of new 21700 cell generation

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### **Rear Carrier - RC01**

36 V

### **Product Specifications**

**Nominal Voltage** 

Capacity 540 Wh / 625 Wh\*

Cells 21700, 5 Ah / 5.8 Ah\*

10S3P **Battery Pack** 

**Charge Connector** 5 A (min. 3.000 cycles)

**Discharge Connector** 25 A (min. 2.500 cycles)

Charger 2 A, 5 A (optional)

**Dimensions** (L  $\times$  W  $\times$  H)  $350 \times 120 \times 78$  mm (battery)

Weight 3.1 kg

Black Color

Indicator 5 LED's

**Compatible Drive Systems** Shimano, Bafana,

Ananda, Tongsheng,

others on request (CAN / UART)

Other Features Tested under EN 50604-1 standard

UN 38.3

IEC 62133-2

IP66 level water proof design

Bluetooth

Laser welding

**UV** resistant materials

Flame retardant (UL94 5V A) materials

Industrial grade ventilation plug

Compatible with lock systems including

Axa and Abus

Mounting parts incl.



### **Product Specifications**

Nominal Voltage 36 V

360 Wh / 417 Wh\* Capacity

Cells 21700, 5 Ah / 5.8 Ah\*

10S2P **Battery Pack** 

**Charge Connector** 25 A (min. 2.500 cycles)

Discharge Connector 25 A (min. 2.500 cycles)

Charger 2 A, 5 A (optional)

**Dimensions** (L  $\times$  W  $\times$  H)  $300 \times 79 \times 61 \text{ mm (battery)}$ 

Weight 2.4 kg

Aluminium black anodized Color

Indicator 1 RGB LED

**Compatible Drive Systems** Shimano, Bafana,

Ananda, Tongsheng, others on request (CAN / UART)

Other Features Tested under EN 50604-1 standard

UN 38.3

IEC 62133-2

IP66 level water proof design

Bluetooth

Laser welding

UV resistant materials

Flame retardant (UL94 5V A) materials

Gore ventilation membrane

Compatible with lock systems including

Axa and Abus

Mounting parts incl.

In Frame - IF01 360 Wh

<sup>\*</sup> After MP of new 21700 cell generation

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### In Frame - IF01 540 Wh

### **Product Specifications** Nominal Voltage 36 V Other Features Tested under EN 50604-1 standard UN 38.3 Capacity 540 Wh / 625 Wh\* IEC 62133-2 Cells 21700, 5 Ah / 5.8 Ah\* IP66 level water proof design 10S3P **Battery Pack** Bluetooth **Charge Connector** 25 A (min. 2.500 cycles) Laser weldina **UV** resistant materials **Discharge Connector** 25 A (min. 2.500 cycles) Flame retardant (UL94 5V A) materials Charger 2 A, 5 A (optional) Gore ventilation membrane **Dimensions** (L $\times$ W $\times$ H) $410 \times 79 \times 61 \text{ mm (battery)}$ Compatible with lock systems including Axa and Abus Weight 3.0 kg Mounting parts incl. Aluminium black anodized Color Indicator 1 RGB LED **Compatible Drive Systems** Shimano, Bafana, Ananda, Tongsheng, others on request (CAN / UART)

### In Frame - IFO3 360 Wh

### **Product Specifications**

Nominal Voltage 36 V

**Capacity** 360 Wh / 417 Wh\*

**Cells** 21700, 5 Ah / 5.8 Ah\*

Battery Pack 10S2P

**Charge Connector** 25 A (min. 2.500 cycles)

**Discharge Connector** 25 A (min. 2.500 cycles)

**Charger** 2 A, 5 A (optional)

**Dimensions** (L  $\times$  W  $\times$  H) 400  $\times$  60  $\times$  52 mm (battery)

Weight 2.4 kg

Color Aluminium black anodized

Indicator 1 RGB LED

Compatible Drive Systems Shimano, Bafang,

Ananda, Tongsheng, others on request (CAN / UART) Other Features Tested under EN 50604-1 standard

UN 38.3

IEC 62133-2

IP66 level water proof design

Bluetooth

Laser weldina

UV resistant materials

Flame retardant (UL94 5V A) materials

Gore ventilation membrane

Compatible with lock systems including

Axa and Abus

Mounting parts incl.

<sup>\*</sup> After MP of new 21700 cell generation

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### Charger

2 A		5 A		
Input Voltage	220 – 240 V	Input Voltage	220 – 240 V	
Output Current	2 A / 84 W	Output Current 5 A / 210 W		
Output Voltage	25 - 42 V	Output Voltage 25 - 42 V		
Standby Power	< 1.5 W	Standby Power	ower < 1.5 W	
Efficiency	92% (max.)	Efficiency	92% (max.)	
Charge Connector	Higo (min. 3.000 cycles)Rosenberger (min. 2.500 cycles)	Charge Connector	Higo (min. 3.000 cycles)Rosenberger (min. 2.500 cycles)	
Dimensions	143 x 71 x 41.5 mm	Dimensions	183 x 89 x 50 mm	
Weight	288 g	Weight 934 g		
Color	Black	Color	Black	
Indicator	LED	Indicator	LED	
Housing	Plastic (ultrasonic welding)	Housing	Plastic (ultrasonic welding)	
Standards	IEC 60335-1, IEC 60335-2-29 EN 55015, EN 64000-3	Standards	IEC 60335-1, IEC 60335-2-29 EN 55015, EN 64000-3	

### Notes

## TAILORED TO OUR FUTURE



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