



Billy proprietary eBike V3 series

Specification Sheet

This document is strictly confidential and for the sole purpose of evaluating the Billy Bike V3 series for eventual purchase.

This document concerns the selling of 400 ebikes, produced in 2021 and imported in July 2021 in Europe.



Document Name	Version	Modification Date
<i>Initial Document</i>	<i>1.0</i>	<i>20th of August 2021</i>



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General information

Item	Specifications
Frame Material	Aluminium
Size	One size, for users from 1,52 to 1,92 m
Weight of bike	Approx. 27 kg (without battery)
Wheels	26 inches, Front & Rear wheels equipped with AIR FOM + Kenda tyres
Fork	Front Fork: Suspended Zoom fork ¢ 25.4 /45MM
Gear System	Integrated Hub: Shimano NEXUS 3 gears
Gear Shift	On handlebar, right handle, rotative
Breaks	Front & Rear drum brake Shimano Inter-M BR C3000
Lock	Standard rear wheel lock mounting threader holes
Battery	14Ah, 36V nominal, Lithium-Ion, removable, ABS & Aluminium; approx. 3.5 kg
Motor	Front Hub BAFANG motor, 250 Watts
Electrical Assistance	Bottom Bracket Speed Sensor
Speed	Preset to 25 km/h limit (EU regulation), other speed limits possible or throttle
SeatTube	Hydraulic Stepless 150mm travel + initial adjustment
Street conformity	Mandatory security requirements met: Reflectors on pedal & wheels, lights (F&R)
European Conformity	EPAC EN 15194 certified

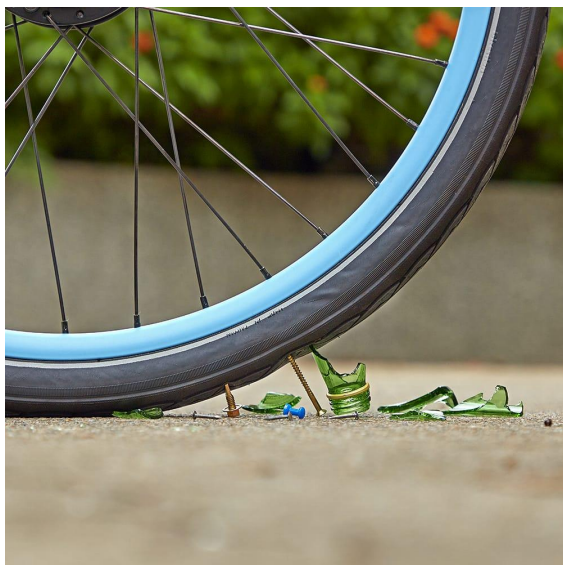
Technical Specifications

Wheels

Tyres

For both Front and Rear wheels: [AIR FOM](#) technology inner tyre with Kenda outer tyre, mounted on 26 inches aluminium rims

- Cannot be flat
- Reduces stresses on the rim that could occur due to shocks (sidewalks, etc.), compared to inflated tyres



Fork

The bike is equipped with a front fork with suspension; the model is CH-140 (MS) -26" from ZOOM brand.



Rim & Spokes

Both front and rear wheels are made of light blue 26 inches Aluminium rims with 13G x 36H spokes for the front wheel and 14G x 36H spokes for the rear wheel.



Brakes and Transmission

Brakes

The Shimano Inter-M BR C3000 drum brakes are mounted on both wheels, reducing maintenance needs and offering long term good braking, only Shimano grease is to be applied about once a year (depending on weather conditions).



Transmission

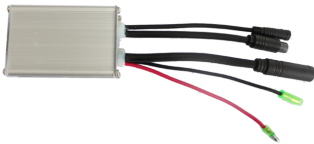
The rear wheel is equipped with a Shimano Nexus 3 gears hub group with a 18T Sprocket. Gear shift SL-3S41 with inner brake cable 1700MM on the right handle.





Motor

The electrical assistance of the Billy bike V3 is offered by a front hub Bafang motor [FMG320.250.R13](#) developing 250W, complying to the EU regulation about electrical power limit.



This motor is controlled by the [CR S105.250.SN](#) motor controller from Bafang. This motor controller communicates with the display (or any other control devices) with UART protocol.

Control

The ebike from Billy has been designed to meet both the free-float bike sharing requirements and the end user requirements. Therefore, the bike is normally equipped with a IoT Telematic device linked to a fleet management platform that controls the Motor Controller behavior but this telematic can be replaced with a standard UART Bafang Display, such as the C961 or DP-C07, as long as it communicates in UART protocol.



In that way, the ebike can be sold to end users and used as a standard ebike; it can also be configured with a throttle (depending on the legal compliance of the country of use) or converted to speedelec by adjusting the settings of the motor controller (up to 45 km/h).



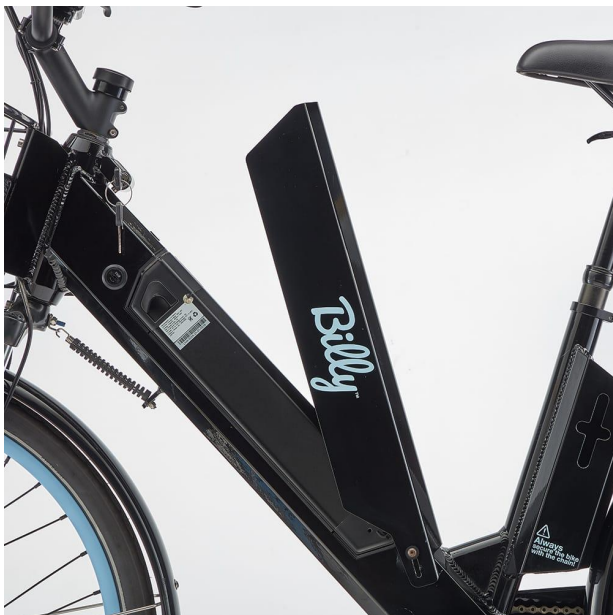
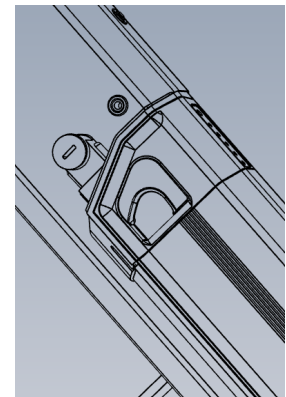
Battery



The battery is a Lithium Ion of a 14Ah capacity, giving 36VDC Nominal voltage with a maximum of 15 Amps. It is equipped with Panasonic 18650 cells. The number of cycles is approximately 800 to 1000. It is charged using a 42VDC standard Li-Ion charger with a charging time of 3 to 4 hours.

Depending on the way the controller is programmed, the power level chosen on the display and the way the user rides hilly or flat roads, the battery can offer a range from about 40 to 70 km.

The outer body of the battery is made out of Aluminium and both extremities are in ABS (flame retardant). The plastic supports of the battery in the bike are also made in ABS (flame retardant also) and the battery is locked inside the bike thanks to a key lock.



The bike can be either sold with an additional cover to offer another safety or without, as the battery is already secured and can be easily removed to be taken home to be charged. This optional cover is intended for the sharing market as bikes are constantly kept on the street and a battery is always inside. This option is currently installed on all bikes but can be taken off; it is to be noted that the Billy logo is only shown on that part of the bike.

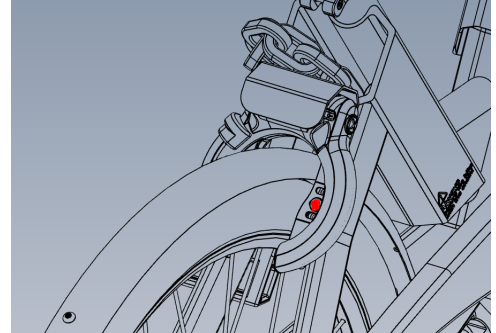


Securing the bike

The Billy ebike has been designed to be safely secured to any pole or rack in the city. For sharing purposes, it is equipped with a smart lock controlled by the user application.

For the end-user market, any Ring Lock can be mounted on the frame as the space and threaded holes are located above the rear wheel.

Also, a chain box is located behind the seat tube to avoid loose elements.



Accessories

Basket

The basket provided with the bike has been designed specifically to offer a large volume of about 35 liters while being robust. It is directly mounted on the frame itself and allows great stability as it is not linked to the stem. Thanks to the double kick-stand, the basket can be loaded without the risk of having the bike to fall. It is made out of steel and is the result of multiple design iterations over 3 years.

The basket can safely sustain a weight of 30 kg maximum. It will not break at 30 kg as the security factor is about 2.5



Kick-Stand



The double kick-stand offers stability and avoids the bike from falling down. It is easily deployed and pulled back by pushing the bike backward or forward.



Seat Tube

The seat tube chosen for the V3 series of the Billy ebike is a hydraulic, stepless mechanism offering a travel of 150mm. The outer tube can of course be set at any initial height.



Lights

The front and rear lights are conformed to street security requirements as they are both equipped with reflectors. The use of LED light offers great luminosity for the front light and allows great visibility in the traffic for the rear light. Both lights are models of the Spanninga brand.



Billy

Pictures



Billy



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