

# BNV-Battery Pack

Bootleg Night Vision Battery Pack

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## General Discription

The BNV-Battery Pack is an open source battery pack designed for use with night vision equipment in mind. It is ment to be a diy solution for replacing a common analog night vision battery pack. With a 3D-printed case it is an easy and cheap solution. No shortcuts have been made in performance compared to commercially available night vision battery packs. It is waterproof, dustproof and airproof, as well as shock and weather resistant. The bigger body will except larger cells and can therefor provide up to 14 000 mAh.

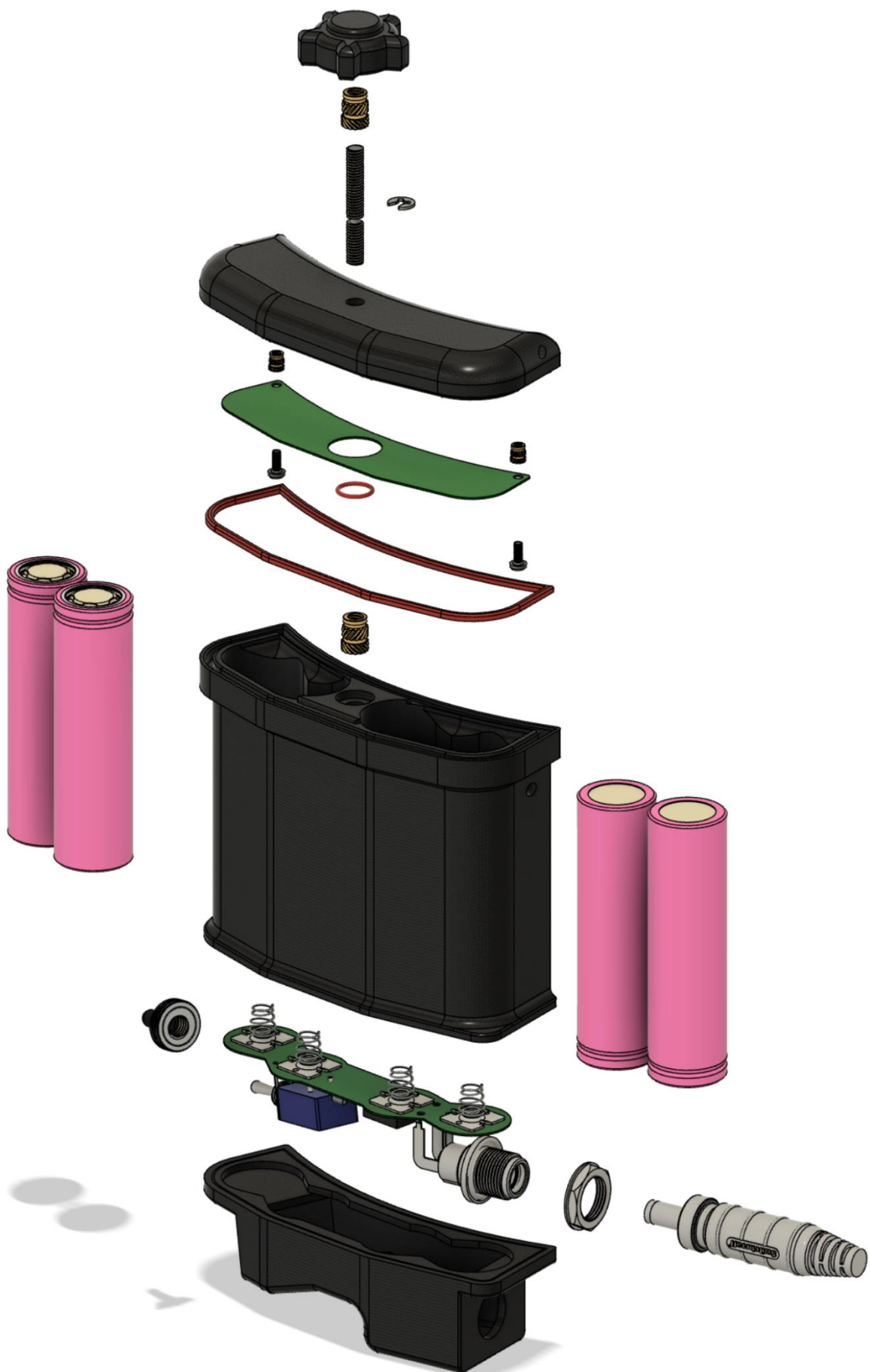


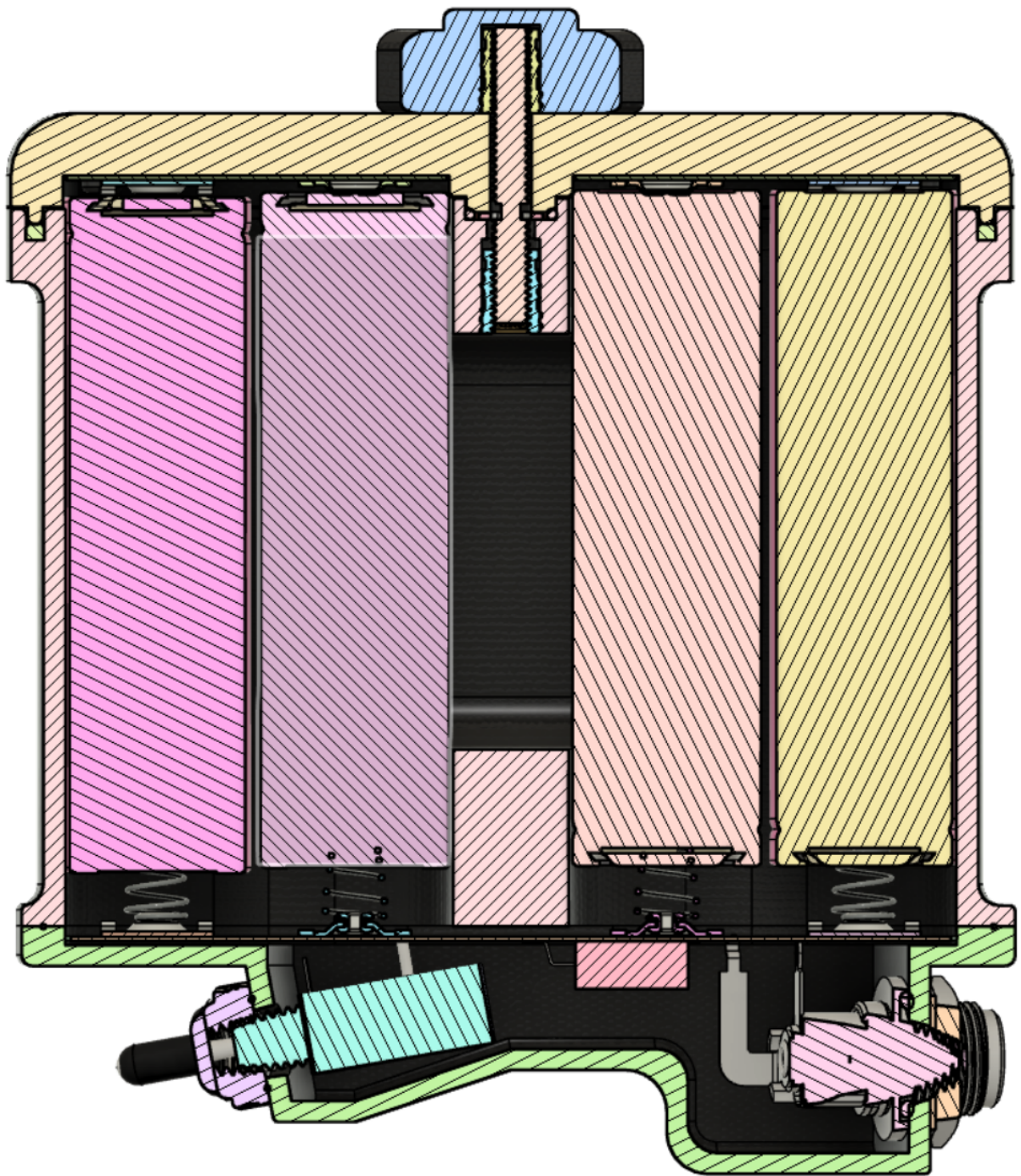
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## Specifications

Voltage Output	: 12 V
Batteries	: 4 x 18650, 8 x CR123A
Current output	: 1.25 A
Protection class	: IP68 (planned/unverified)
Dimensions	: 111 mm x 97 mm x 36 mm
Weight (empty)	: 115 g

## Assembly





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### Development data and configuration

The designed purpose for this battery pack is power supply for night vision utilizing cameras for image acquisition and NTSC/PAL displays for video output.

Usable hardware with corresponding power consumption data and calculation for Bootleg Panoramic Night Vision Goggles:

manufacturer	part	model	current draw @ 12 V
Adafruit	display	911	50 mA
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Foxeer	camera	Micro Night Cat 3	95 mA
Runcam	camera	Night Eagle 2 Pro	90 mA

Calculating for panoramic night vision with 4 cameras and 4 displays in parallel.

4 x 50 mA

4 x 95 mA

580 mA

To calculate for additional IR illumination, it is useful to add at least 20 % of power output capability.

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# battery pack schematic

The schematic diagram illustrates the bottom PCB of a battery pack. It features a 4-cell battery pack (BT1, BT2, BT3, BT4) connected to a bus (V<sub>bus</sub>). The bus is connected to a diode (D1, 1L14148) and a microcontroller (U2, MIC2937A-12WU-TR). The microcontroller's input is connected to the bus, and its output is connected to a load (J2, 1.722BA). The microcontroller's ground is connected to the PCB ground. The PCB is divided into four sections (1, 2, 3, 4) and four rows (A, B, C, D).

Title		Revision	
BRV-Battery Pack Bottom PCB		v0.2.0	
Size	Number	Revision	
A4		v0.2.0	
Date:	12.07.2021	Sheet	of
File:	C:\Users\... \Bottom-PCB.SchDoc	Drawn By:	Gregor Hermann

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07.12.2021

This an open source project, all information is provided without warranty.