## Design Fundamentals:

metric units

Field Elevation: 500 m ASL | Air Temp: 25 °C | Pressure (QNH): 1013 hPa

**Battery:** (continuous / max. C) - charge state: LiPo 3300mAh - 45/60C | full

# serial: 10 S | # parallel: 1 P | Capacity: 3300 mAh | Resistance: 0.0037 Ohm | Volt per Cell: 3.7 V | Weight per Cell: 93 g

**Controller:** max 100A

Resistance: 0.0025 Ohm | Continuous Current: 100 A | max. Current: 100 A | Weight: 130 g | Motor Weight: 340 g

**Motor:** Manufacturer - Type (Kv in rpm/V): Hacker | B50-13XL (1214)

Kv (w/o torque): 1214 rpm/V | Resistance: 0.0202 Ohm | no-load Current: 1.18 A @ 8.4 V | Limit (up to 20s): 55 A | # mag. Poles: 2 | Case length: 74 mm

**Propeller:** Type - yoke twist: Carbon-Fold-Prop | +7.0°

Diameter: 18 inch | Pitch: 21 inch | # Blades: 2 | Prop Const.: 1.18 | Gear Ratio: 6.7 :1 | calculate

## Approx. Values:

**Warning:**

> * The Motor Voltage is close to the Limit - please verify the max. allowed Motor Voltage ** Prop may stall -> static thrust may not be reached! (see Prop Stall Thrust) ** max. current over the limit of the

**Battery:**

Load: 26.1 C | Voltage: 36.03 V | Rated Voltage: 37 V | Flight Time*: 2.3 min | mixed Flight Time: 3.91 min | Weight: 930 g

**Motor:**

max. Current: 86.15 A | Voltage: 35.82 V | Revolutions: 41369 rpm | el. Power (In): 3085.64 W | mech. Power (out): 2858.06 W | Efficiency: 92.6 %

**Optimal Efficiency:**

Current: 52.91 A | Voltage: 37.13 V | Revolutions: 43778 rpm | el. Power (In): 1964.55 W | mech. Power (out): 1853.61 W | Efficiency: 94.4 %

**Propeller:**

Static Thrust: 15679.6 g / 553.08 oz | Prop Stall Thrust: 4160 g / 146.74 oz | Revolutions: 6175 rpm | Pitch Speed: 262.7 km/h / 163 mph | Tip Speed: 532.1 km/h / 331 mph | Prop Efficiency: 1.35 g/W / 0.05 oz/W

**Entire Drive:**

Weight: 1540 g (Battery + Contoller + Motor + 10%) | P (in): 3378.8 W | P (out): 2858.06 W | Efficiency: 84.6 %

## Motor Data:

Motor Cooling: good | Power Scale: automatic