# eflight.ch

**all Data without guarantee!**
**Accuracy +/-12%**

# e-Motor Calculator
# for Ducted Fans

The Fan Calculator works with JavaScript.,
Therefore you have to turn it on in your Browser.

**S4A**

Deutsch

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## Design Fundamentals:

| | | | | |
|---|---|---|---|---|
| | Field Elevation: | Air Temp: | Pressure (QNH): | |
| | 500 m ASL | 25 °C | 1013.25 hPa | |

**Battery:** (continuous / max. C)
NeuEnergy 4900XP (30/60C) ▼

| # seriall: | # parallel: | Capacity: | Resistance: | Volt per Cell: | Weight per Cell: |
|---|---|---|---|---|---|
| 12 S | 1 P | 4900 mAh | 0.0025 Ohm | 3.7 V | 122 g |

**Controller:**
Phönix 110HV ▼

| Resistance: | Continuous Current: | max. Current: | Weight: |
|---|---|---|---|
| 0.001 Ohm | 110 A | 110 A | 150 g |

**Motor:** Manufacturer - Type (Kv in rpm)
NeuMotors ▼  1915/1Y (684) ▼

| Kv (w/o torque): | Resistance: | Idle Current: | Limit (up to 20s): | Case Lenght: | Weight: |
|---|---|---|---|---|---|
| 684 rpV | 0.012 Ohm | 1.5 A | 2700 W ▼ | 63 mm | 430 g |

**Ducted Fan:**
Schuebeler DS-94 HDT (120mm) ▼

| thrust duct for: | Flight Speed: | Gear: | |
|---|---|---|---|
| 100 % FSA ▼ | 50 km/h | 1.00 | clear |

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## Approx. Values:

**Warning:** ▲ ▼

**Battery:**

| Load | Voltage | Rated Voltage: | Flight Time*: | mixed Flight Time: | Weight: |
|---|---|---|---|---|---|
| 10.5 C | 42.86 V | 44.4 V | 5.71 min | 9.71 min | 1464 g |

**Motor:**

| max. Current: | Voltage: | Revolutions: | el. Power (In): | mech. Power (out): | Efficiency: |
|---|---|---|---|---|---|
| 51.483 A | 42.8 V | 28855 rpm | 2203.68 W | 2107.67 W | 95.6 % |

**Optimal Efficiency:**

| Strom: | Voltage: | Revolutions: | el. Power (In): | mech. Power (out): | Efficiency: |
|---|---|---|---|---|---|
| 73.48 A | 43.2 V | 28945 rpm | 3174.29 W | 3044.69 W | 95.917 % |

**Ducted Fan:**

| Static Thrust: | | Thrust in Flight: | Jet Speed: | | Revolutions: |
|---|---|---|---|---|---|
| 4635 g = | 45.47 N | 3708 g | 250 km/h = | 69.5 m/s | 28855 rpm |

**Entire Drive:**

| Weight: | Fan Efficiency: | Efficiency: |
|---|---|---|
| 2248.4 g (Battery + Controller + Motor + 10%) | 2.1 g/W | 72.7 % |

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**Important Note:**
Before flight recheck the max. current! If your Current, el. Power or RPM are over the manufacturers limits **your motor, controller and/or battery may take damage!** Thrust reduction due long ducting are **not** considered!

for printing use Landscape format
* Flight Time @ Full Power
** Testdata with reduced accuracy

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**Motor Data:** mech. Power [W], Efficiency [%], wast Power [W], Revolutions [rpm], Motor Case Temperature Prediction [°C]

Motor Cooling: poor ▼   Power Scale: automatic ▼



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