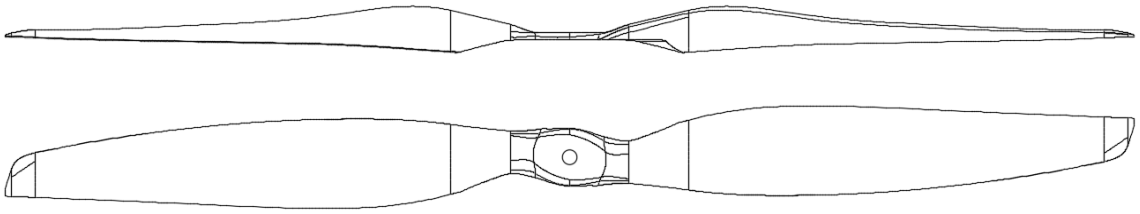
42x15.2 2B MC

PN:24201520, 24201523

Product sheet

Rev.: 00
2024-04-30



306 g
Mass

70.0 kgf
Max Thrust

42.0”
Diameter

Multicopter

Engine type:	Electric
Folding/Fixed	Fixed
Rotational direction:	Counter-clockwise and Clockwise available
Weight [g]:	306 $\pm$ 10.0%
Moment of inertia [kgm^2]:	2.90e-02
Center hole [mm]:	$\varnothing$ 10
Max drilling diameter [mm]:	46
Mounting:	link to possible patterns
Limit RPM (0.7 Mach at blade tip)	4200
Working temperature [°C]	from -45°C to 65°C
Materials used:	carbon fiber, glass fiber, roving, polyurethane, epoxy
Tests performed:	balancing, visual Inspection, structural integrity (ATO)

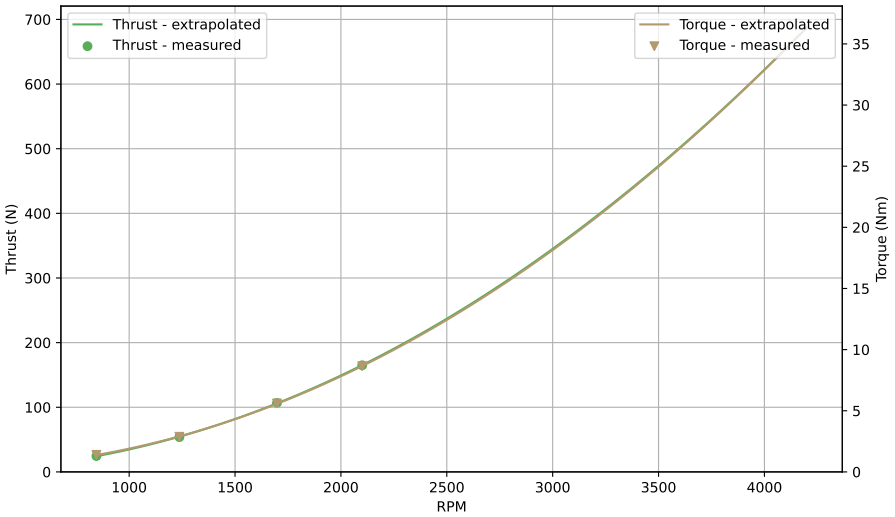
Formula used to calculate moment of inertia: $I = \frac{1}{12} \cdot mass \cdot diameter^2$

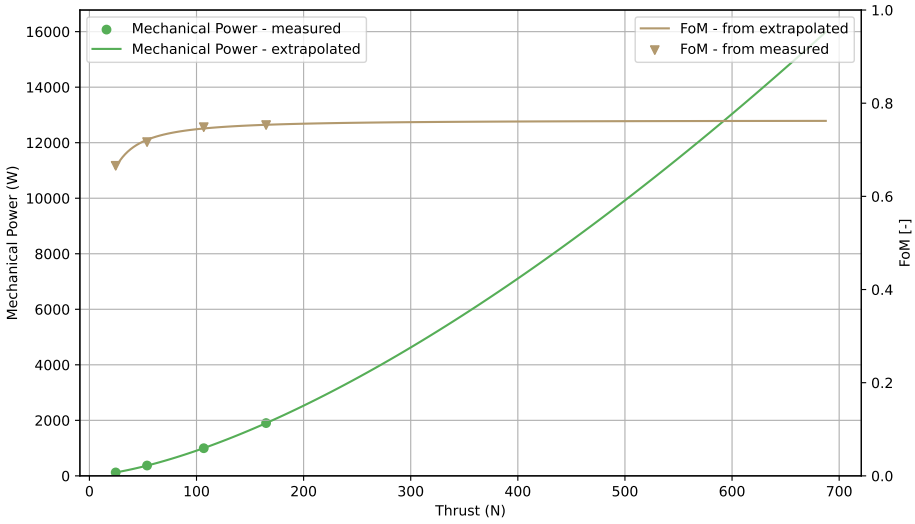
42x15.2 2B MC

PN:24201520, 24201523

Measured data

Static test result





Thrust (RPM)	$= 4.06839e-05 \cdot RPM^2 + -0.00757 \cdot RPM + 1.6169$
Torque (RPM)	$= 2.20378e-06 \cdot RPM^2 + -0.000696875 \cdot RPM + 0.39726$
Mechanical power (RPM)	$= 1.59408e-07 \cdot RPM^3 + 0.00023778 \cdot RPM^2 + -0.38412 \cdot RPM + 181.99686$

Formulas used to calculate FOM:

$C_T = \frac{T}{\rho \cdot RPS^2 \cdot D^4}$ $C_P = \frac{P_{mech}}{\rho \cdot RPS^3 \cdot D^5}$ $FOM = \sqrt{\frac{2}{\pi}} \frac{C_T^{\frac{3}{2}}}{C_P}$