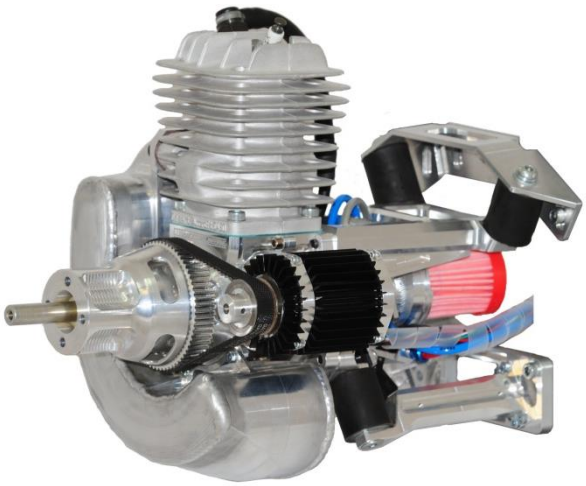
Corvid-50 Engine
CE1224

Datasheet



Specifications

Engine Type:	Air-cooled 2-stroke single	
Displacement:	50 cc	
Typical Weight:	3.89kg (8.56 lbs)	
	Core Engine	1778g
	Generator & Power Supply	740g
	Low Noise Exhaust*not finalised	480g
	Isolation Mount	443g
	EFI Components	451g
Power Output:	2.8 kW (3.8 HP) at 7000 RPM*	
Fuel Consumption:	500g/kW-hr (0.82lb/HP-hr) at 6000 RPM & 40% throttle*	
	* based on standard exhaust	
Generator Output:	250 W (500 W intermittent duty cycle)	

Description

The Corvid-50 (known as the B50i engine in the US) is the most recent two-stroke UAV engine system developed by Currawong Engineering.

With an industry workhorse Desert Aircraft DA50 cylinder and piston, the Corvid-50 features a custom crank case, induction manifold, integrated isolation mount and low noise exhaust, paired with proven Currawong products including a starter generator and electronic fuel injection system.

The Corvid-50 engine package includes:

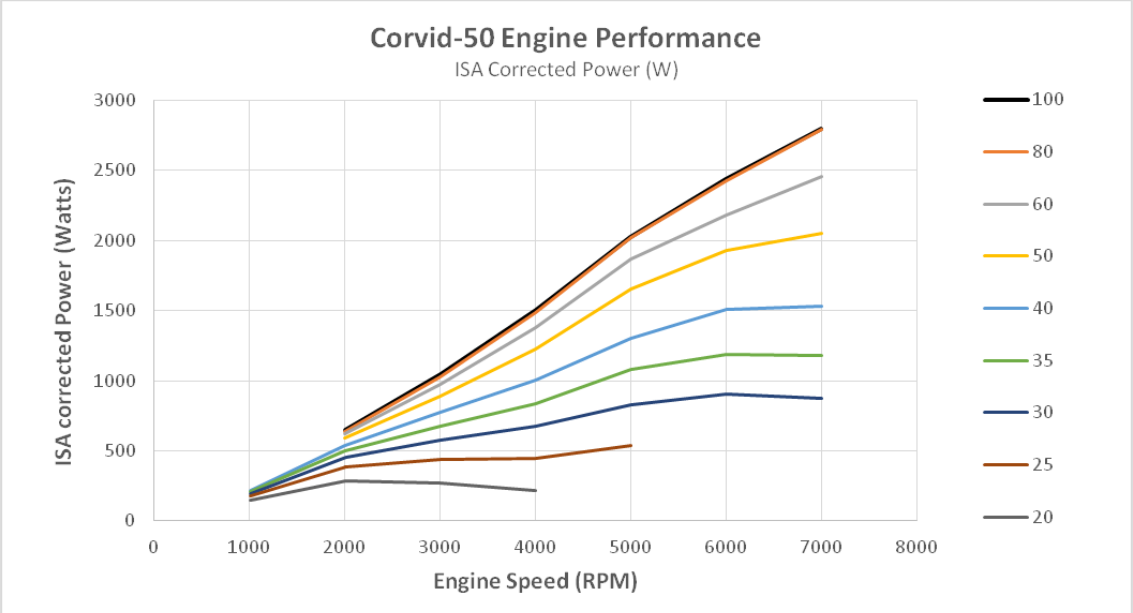
- Currawong three-bearing crank case
- Desert Aircraft DA50 cylinder and piston
- Currawong induction system with manifold and throttle body
- CDI ignition system
- Miniature engine control unit (ECU)
- Self-priming fuel pump
- Automotive grade fuel injector
- Manifold and cylinder head temperature sensors
- Crank sensor
- Integrated isolation mount
- Low noise exhaust
- Starter-generator (optional)
- Optional power supply including (optional) on-board starting feature with decompression valve
- Detailed operation & service manual and interface control document

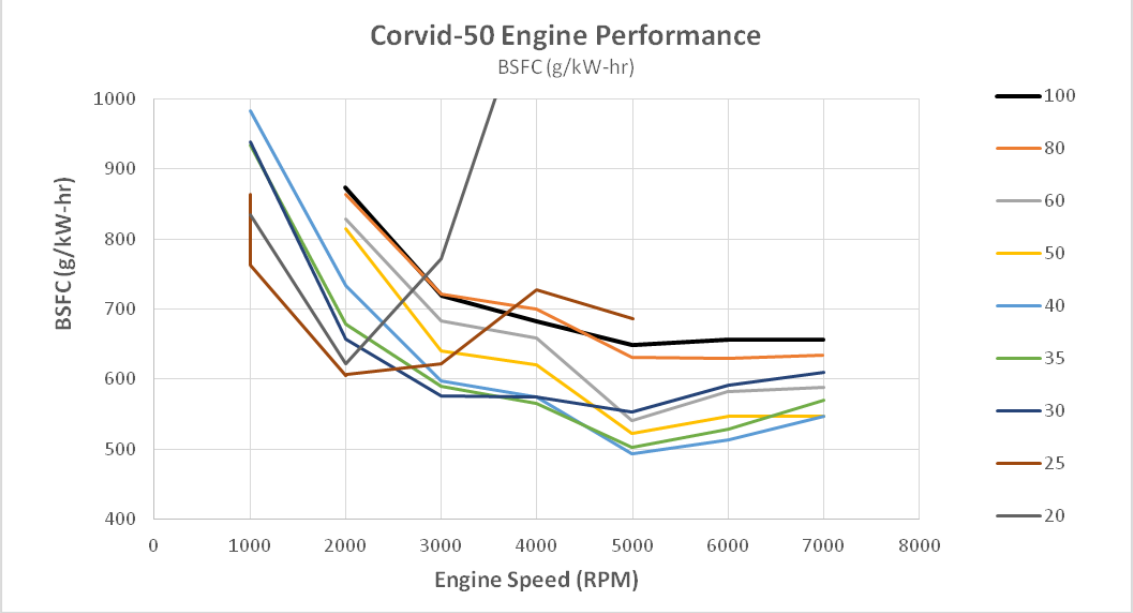
Features

- Durable customised three-bearing crank case
- Stall-resistant throttle response
- Significantly expanded throttle-RPM envelope
- Full EFI suite including automotive-quality ECU processor, self-priming fuel pump, ignition, sensors, injector and custom intake
- Plug-and-play compatibility with Cloud Cap Technology's Piccolo Autopilot and documented API for CAN and Serial
- Integrated starter-generator for powering EFI system and on-board batteries and other electrical and electronic devices
- Excellent reliability – the EFI system maintains optimal engine operating parameters in all regimes of flight. Eliminates issues like carburetor icing, top-of-climb engine stalls or incorrect fuel-air ratios, regardless of the conditions
- Reduced BSFC compared with carbureted engines of similar capacity
- Improved power output compared with carbureted engines of similar capacity
- Low noise exhaust option
- Outstanding TBO - over 350hrs of endurance operation on a single engine under FAR33 testing profile, with no power loss and minimal wear

Co-developed and distributed in the US & Canada by:

POWER4FLIGHT


Corvid-50 Engine Performance
ISA Corrected Power (W)
ISA corrected Power (Watts)
3000
2500
2000
1500
1000
500
0
0
1000
2000
3000
4000
5000
6000
7000
8000
Engine Speed (RPM)
100
80
60
50
40
35
30
25
20


Corvid-50 Engine Performance
BSFC (g/kW-hr)
BSFC (g/kW-hr)
1000
900
800
700
600
500
400
0
1000
2000
3000
4000
5000
6000
7000
8000
Engine Speed (RPM)
100
80
60
50
40
35
30
25
20