

## Autonomous Rotorcraft Platform

The B1-100 Helicopter is manufactured by Aeroscout of Luzern, Switzerland, and has been widely used for research and utility applications in Europe and Asia. Those aircraft flying in Germany, France and Switzerland have been used primarily for evaluation of scanning LiDAR and other sensors, while China has employed the helicopter for aerial application and electric utility support. Viking Aerospace of Lawrence, KS distributes the B1-100 in the United States. The helicopter is equipped in its standard configuration with two five-liter fuel tanks and has a payload capacity of 20kg. The B1-100 was designed so that two people can easily move it from a vehicle to the ground via two transportation units.

The power system consists of an air-cooled, two-stroke 18 HP engine featuring an integrated starter and alternator of 150 W capacity. The helicopter has been demonstrated under various weather and temperature conditions, including snow fall and high heat. Time between overhauls on this engine is recommended to be 250 hours.

The helicopter features a unique modular system structure that enables optimal maintenance access and simplified transportability. The landing gear provides hard points for payload mounting, and provisions have been made to access the onboard power as well. Table 1 shows the specifications for the B1-100, and Figure 1 shows the aircraft:

**Table 1: B1-100 Specifications**

Specification	Item	Value
Performance	Max payload	20 kg
	Gross weight	75 kg
	Flight duration	90 minutes
	Range (visual observation)	150 m
Dimensions	Main rotor diameter	3.2 m
	Tail rotor diameter	0.65 m
	Overall length	3.3 m (including rotors)
	Overall height	1.0 m
Engine	Air cooled, 2 stroke horizontally opposed 2 cylinder	
	Displacement	100 cc
	Power	18 PS
	Fuel	Gasoline / oil mixed 50:1



Figure 1 – AeroScout B1-100