

Table 1. VAMP 's Key Vehicle Parameters (as of March 2015)

Parameter	Current Value or Range	Comments
Vehicle		
Wingspan	55 meters	None
Length	20 meters	None
Vehicle Mass	900 kg	None
Solar Array Power	> 8 kW	Assumes solar cells on top of the vehicle only
Minimum (100% buoyant) Altitude	52 km (BOL)	Drives maximum altitude along with percent buoyancy
Altitude	< 50 km (EOL)	Set by atmospheric environment
Maximum Altitude	65-68 km	Design and science dependent
Buoyancy Gas	H ₂	None
Buoyancy at Max Altitude	9%	Initial value, buoyancy will decline with lifetime due to loss of buoyancy gas
Maximum Speed	30 m/s	Depends upon shape and buoyancy
Maximum Climb/Fall rate	1.5 km/hr	None
Payload Accommodation		
Mass	>50 kg	50 kg is a planning number. Mass is very dependent upon vehicle flight performance parameters (altitude, speed, etc), vehicle mass, etc. Payload mass will be refined as the design matures.
Power	~100 W	Awaiting strawman payload assessment
Volume	> 10 cu. meters	
Data rate to orbiter	~5 Mbps	None
Data rate direct to Earth	0.1-1 Mbps	Range dependent
Science Payloads Under Consideration		
TBD cameras	Aerosol Collector Pyrolyzer and Gas Chromatograph Mass Spectrometer	
Noble Gas Mass spectrometer	Polarization Nephelometer	
TBD Meteorological payload	3-D Ultrasonic Anemometer	
Attenuated Total Reflection	Electric Field Sensor	
UV Spectrometer	Optical Microscope	