



<u>Fuel</u>	Not applicable NOTE: The Puma AE is powered by a Lithium Polymer rechargeable battery, AV Part Number 50318.	
<u>Engine (Propulsive Unit) Limits</u>	Maximum power output: 1.0 HP Maximum RPM: 10,000 RPM Maximum motor temperature: 180 °F NOTE: The motor temperature is managed by the Puma AE system and not displayed to the operator. Maximum motor, controller sub-assembly temperature: 194 °F (90 °C) Minimum voltage, motor battery during pre-flight engine run up after 3 secs at max throttle: 22.6 V	
<u>Propeller and Propeller Limits</u>	(1) AeroVironment, Inc., Model 50330 FAA Propeller Type Certificate: None Propeller Type: 2-blade, hinged (folding), carbon fiber reinforced plastic, fixed pitch, tractor  <u>Propeller Sub-Assembly:</u> Manufacturer: Aeronaut Model: CAM 13 x 10 Diameter (Nominal): 13.3 in.	
<u>Battery Command &amp; Control</u>	Puma AE Air Vehicle Battery AV PN 50318 powers the motor, and battery command and control	
<u>Airspeed Limits</u>	$V_{NE}$ (Never Exceed Speed)	58 knot (30 m/s)
	$V_{NO}$ (Maximum Cruising Structural Speed)	41 knots (21 m/s)
	$V_A$ (Maneuvering Speed)	41 knots (21 m/s)
	Landing Speed: The landing configuration can be engaged (autoland) at any speed.	
<u>Center of Gravity (C.G.) Range</u>	12.75 - 13.75 inches aft of datum	
<u>Empty Weight C.G. Range</u>	12.75 - 13.75 inches aft of datum	
<u>Datum</u>	Front of motor case	
<u>Mean Aerodynamic Chord (MAC)</u>	10.23 inches (259.8 mm) long with leading edge 9.11 inches (231.4 mm) from datum	
<u>Leveling Means</u>	Not Applicable	
<u>Maximum Weights</u>	Ramp	13.4 lbs.
	Takeoff	13.4 lbs.
	Landing	13.4 lbs.
<u>Empty Weight</u>	13.4 lbs.	

<u>Frequencies</u>	M1 (OCONUS) 1625-1725 MHz, M2 (CONUS) 1755 -1850 MHz		
	Notes: FCC license is required to utilize the above frequencies; Uplink, downlink, and video are on the same frequency		
<u>Computer Software</u>	Motor Controller Interface Board Software: PN 58841 Revision A, Software Version 1.0.6 Avionics CPU, C-Code, Puma AE DDL PN 64321 Revision A, Software Version 52.02.27		
<u>Minimum Crew</u>	(1) The Puma AE system can be operated by a single operator.		
<u>Number of Seats</u>	(0) Not Applicable		
<u>Fuel Capacity</u>	Not Applicable		
<u>Oil Capacity</u>	Not Applicable		
<u>Max. Operating Altitude</u>	2000 ft. AGL (610 M)		
<u>Control Surface Movements</u>	Elevator	Up 50°	Down 24°
	Flaps	N/A	N/A
	Rudder	Left 45°	Right 45°
<u>Nominal Endurance</u>	120 minutes above 32 °F (0 °C) 60 minutes below 32 °F (0 °C)		
<u>Flight Limitations</u>	<ol style="list-style-type: none"> <li>1. Day Visual Flight Rules (VFR) in visual meteorological conditions (VMC)</li> <li>2. Flight through visible moisture: PROHIBITED</li> <li>3. Flight operations in icing conditions at assigned operational altitudes: PROHIBITED</li> <li>4. Ambient Outside Air Temperature (OAT) <ol style="list-style-type: none"> <li>a. Maximum OAT: 120°F/49°C</li> <li>b. Minimum OAT at Altitude: -20°F/-29°C</li> </ol> </li> <li>5. Wind. See Note 5.</li> <li>6. Flight Operations. See Note 4.</li> <li>7. For this operation only one Puma AE can be airborne at any given time.</li> <li>8. Over water operation: PERMITTED</li> <li>9. Over land operation: PROHIBITED</li> <li>10. Only for operation in the designated restricted Arctic Area as defined by the FAA Modernization and Reform Act of 2012, Section 332(d)(1).</li> <li>11. A Memo of Authorization (MOA) for the specific location of operation issued by AFS-80 is required and must be available at the control station. AFM number 72373_10X, dated July 16, 2013 or later FAA approved revision, and certificate of airworthiness (C of A) must be available at the control station (reference FAA Memorandum, "Certification of Unmanned Aircraft", from AAL-7 to ANM-100L, dated June 19, 2013). Additionally, any certificates of authorizations or waivers must be available at the control station.</li> <li>12. Operation with inoperative instruments and equipment: PROHIBITED</li> </ol>		
<u>Serial No. Approved</u>	1723, 1726, 1728		

Certification Basis

Restricted Category Only  
14 CFR part 21.25(a) (2) for the special purpose of aerial survey,  
14 CFR part 36, amendment 29, Appendix G

NOTES:

- NOTE 1 Weight and Balance data are not applicable to the Puma AE. The aircraft operates in one configuration. The total aircraft weight with payload and standard equipment is 13.4 lb.
- NOTE 2 Placards Required: None
- NOTE 3 This UAS must be maintained in accordance with AV Puma AE Maintenance Operation Manual, 72407\_10X, or later FAA accepted revision
- NOTE 4 UAS shall be operated under 14 CFR part 91, operating requirements, as mitigated. Operations shall be conducted in accordance with a waiver of flight regulations applicable to the operation, including but not limited to 14 CFR § 91.113, issued by the Administrator and specific to the intended operation, including geographical limitations.
- NOTE 5 Wind Limitations: 25 knots
- NOTE 6 Personnel Keep Out Zones. Typical exclusion zones apply for Launch and Recovery as described in AFM and UAS Operations Manual.
- NOTE 7 This Type Certificate Data Sheet (TCDS) is the principal document for Puma AE Operation. For any operational discrepancies among the TCDS, AFM 72373\_10X and AV's Puma AE Operators Manual, 62869\_A, etc., this TCDS takes precedence.
- NOTE 8 Restricted category aircraft may not be operated in a foreign country without the express approval of that country.
- NOTE 9 This aircraft has not been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 of the Convention on International Civil Aviation. This aircraft meets 14 CFR § 21.25(a)(2).
- NOTE 11 Operations shall be conducted by properly certificated airmen who have completed training, checking, and recency of experience requirements as approved by the Administrator.
- NOTE 12 The Flight Standards Board (FSB) report is available on request. Contact the Long Beach AEG (LGB-AEG-NM17).

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