label	Requirement Category	Requirement	Source of requirement	Acceptance criteria (qualitative description)	Metrics	Acceptable metrics	Unacceptable failure modes	Source of metrics? (Default is Vx ERD)	Followup if failures are seen?	Destructive?	Subsystems to test	Priority to test	Order of Testing, roughly	Estimated time to test (min)
1	Usability, USB/latch door	Easy to open/close USB/latch door	Vx	Minimal problems using door	1. Is the door easy to identify and find? 2. Is it easy to open with the left hand? 3. Is it easy to open with the right hand? 4. Does the door open smoothly and not get caught? 5. Does the door close smoothly and not get caught? 6. Is there an indication of how far to open the door without causing problems? 7. Is there an indidcation of when the door is fully closed? 8. Does the door not interfere with using any other functions in the system?	yes to all	no to any			no			1	10
2	Usability, USB reader	Easy to insert/remove USBs	Vx	Minimal problems using USB reader	1. Can you insert a USB in all available ports? 2. Can you remove a USB from each port? 3. Can you insert two USBs in the ports at the same time? 4. Can you insert a USB hub or peripheral keybard in the ports? 5. Is there enough hand access in this compartment? Assume a finger size of 2cm. Is there 2cm clearance around a USB inserted in the port? 6. Is the USB port easy to identify and find? 7. Does the USB reader not interfere with any other functions in the system, particularly the latching mechanism?	yes to all	no to any	MIT touchlab on finger width		no			2	10
3	Usability, smart card reader	Easy to insert/remove smart card	Vx	Minimal problems using smart card reader	1. Can you insert a smart card in reader? 2. Is there enough hand access for the smart card? Assume a finger size of 2cm. Is there 2cm clearance around a smart card in the port? 3. Is the card reader easy to identify and find? 4. Does the card reader not interfere with using any other functions in the system?	yes to all	no to any			no			3	10
4	Usability, printer/scanner door	Easy to open/close printer/scanner door	Vx	Minimal problems using door	1. Is the door easy to identify and find? 2. Is it easy to open with the left hand? 3. Is it easy to open with the right hand? 4. Does the door open smoothly and not get caught? 5. Does the door close smoothly and not get caught? 6. Is there an indication of how far to open the door without causing problems? 7. Is there an indidcation of when the door is fully closed? 8. Does the door not interfere with using any other functions in the system?	yes to all	no to any			no			4	10
5	Safety & Hazard Prevention, administrative functions	Administrative features should not pose hazard to user or interfacing elements	VVSG indirectly	Minimal risk to hands and body parts from features	1. Are all features smooth, finished, rounded, and not sharp? 2. Do the features avoid snagging clothing and accessories? 3. Are there minimal risks to eyes or other body parts from parts in compression/tension? 4. Are electronics sufficiently protected from the user, and vice versa?	yes to all	no to any			no			5	10
6	Security, administrative functions	Administrative features are secure and tamper-evident	VVSG indirectly	When sealed, all features are tamper-evident	1. Examine the unsealed doors. Are the USB reader, card reader, scanner, and printer all secure in place when tugging and pushing on them with typical forces? 2. Seal the doors as recommended. Is there no feasible way to access the USB reader, printer, and scanner door from outside the sealed doors, without breaking the seal or leaving other evidence?	yes to all	no to any			no			6	10
7	Robustness	Administrative features mechanically withstand regular use	Vx	Resists damage from bumps, knocks. Rests wear.	1. Let the doors fall naturally down from upright positions, if possible. Does this cause no damage? 2. Open and close the doors 180+ times. Examine the features for wear and other damage. Does it avoid damage?	yes to all	no to any	180 assumes 6 elections per year * 10 years * 3x opening and closing doors per election		no			7	20
8	Cleanability	Easy to clean administrative features	Vx	Resists damage from cleaning.	1. Can you clean all outer surfaces with microfiber cloth and alcohol without causing damage? 2. Are inner compartments blocked off from other electronics, when a door is open? 3. Can you blow a can of air in the compartments without causing damage?	yes to all	no to any			no			8	10
9	Unexpected inputs	Handles or prevents unexpected inputs into administrative features appropriately	Vx	Keeps out unexpected inputs. Resists damage from unexpected inputs.	Try to drop or place these into the compartments in available spaces, when doors are both open and closed. Are they prevented from going in, or can you get them out easily without causing damage? 1. smart card 2. USB stick 3. ballot, crumpled 4. smartphone 5. cleaning cloth	yes to all	no to any			unlikely			9	10
10	Transit testing	Survives forces seen in transport	ERD, VVSG 2.7-D	List of items most at risk for failure during transport	Identify components at risk of failure due to vibration. Add this to a list to test later.	Known, limited number of items identifed (~10) to test later.	Unknown number of items at risk.		Work with Pump to go through BOM to identify parts of individual testing.	no			10	10
11	Environmental	Minimizes mechanical failures in administrative features due to heat and cold	VVSG 2.7-E, 3.1.5-K, TA2.7-E 1	List of items most at risk of failure in hot and cold storage	Identify any materials, components, and assemblies related to this feature that may be at the most risk of failure due to storage and use in hot and humid, and cold environments. These include plastics, rubbers, electronics, fastener assemblies, adhesives, tapes, etc. The failures in these could be cracks/fracture, deformation, wear, seizing of moving parts, loosening connections, corrosion, and major discoloration or cosmetic damage to user-facing parts. What are these most at-risk items? List these out for future detailed testing.	Known, limited number of items identifed (~10) to test later.	Unknown number of items at risk.		Work with Pump to go through BOM to identify parts of individual testing.	no			11	10

label	Requirement Category	Requirement	Source of requirement	Acceptance criteria (qualitative description)	Metrics	Test Results	Summary results	Notes	Followup plan	Test Results, Vx (Bellingham)	Order of Testing, roughly	Estimated time to test (min)	Actual time (min)
6	Security, administrative functions	Administrative features are secure and tamper-evident	VVSG indirectly	When sealed, all features are tamper-evident	1. Examine the unsealed doors. Are the USB reader, card reader, scanner, and printer all secure in place when tugging and pushing on them with typical forces? 2. Seal the doors as recommended. Is there no feasible way to access the USB reader, printer, and scanner door from outside the sealed doors, without breaking the seal or leaving other evidence?	1. yes -- but possibly the exposed wires above scanner are a concern; but not typical 2. yes	PASS			PASS	1		
9	Unexpected inputs	Handles or prevents unexpected inputs into administrative features appropriately	Vx	Keeps out unexpected inputs. Resists damage from unexpected inputs.	Try to drop or place these into the compartments in available spaces, when doors are both open and closed. Are they prevented from going in, or can you get them out easily without causing damage? 1. smart card 2. USB stick 3. ballot, crumpled 4. smartphone 5. cleaning cloth	1. mostly but possible to drop card along edges, including by reader 2. yes - or can pull it out by removing printer roll 3. yes 4. yes 5. yes	PASS with small concerns about smart card			PASS - Smartcard can still be dropped inside along the right side edge, and behind the latch.	2		