Target Catalog

System	Function	Metric	Target	Units
Inputs	Adjusts parameters	Parameters can be adjusted	Yes	Boolean
Inputs	Processes electrical power	DC power input	120	Volts (V)
Inputs	Holds samples	Number of samples held	4-6	Count
		Types of samples held	2	Count
		Time to load samples	30	Minutes (min.)
Testing	Measures internal pressure	Resolution of pressure	5	Percent (%)
		Max pressure	10^{-5}	Torr
		Min pressure	10^{-6}	Torr
Testing	Measures sample position	Distance of cycle	0.05	Meters (m)
		Number of cycles	10,000 - 1,000,000	Count
Testing	Analyzes applied lateral load	Max load applied	100	Newtons (N)
		Resolution of load	100	Millinewtons (mN)
Testing	Senses changes in temperature	Resolution of temperature	1	Celsius (°C)
		Ideal error for readjustment	±1	Celsius (°C)
		Marginal error for readjustment	±5	Celsius (°C)
		Readjustment while transient	±10	Celsius (°C)
		Max temperature	200	Celsius (°C)
		Min temperature	-100	Celsius (°C)
Testing	Interprets contact stress	Resolution of load	100	Millinewtons (mN)
		Ideal error for readjustment	±3	Percent (%)
		Marginal error for readjustment	±5	Percent (%)
		Factor of safety for load cell	2	

Testing	Controls normal load	Max load applied	100	Newtons (N)
		Error required for readjustment	300	Millinewtons (mN)
		Resolution of load	100	Millinewtons (mN)
		Nominal servo of normal load	1	Per cycle
		Ideal servo of normal load	1	Kilohertz (kHz)
Testing	Calculates coefficient of friction	Calculates value	0 - 1	
		Error of calculation	10	Percent (%)
		Ideal resoluble range	0.01 - 0.5	
		Marginal resoluble range	0.05 - 0.4	
Testing	Calculates wear volume	Calculates value	0.05 - 50	Millimeters cubed (mm^3)
		Height loss resolution	5 - 50	Micrometers (μm)
Testing	Calculates wear rate	Calculates value	10^{-4}-10^{-7}	Millimeters cubed per Newton meter (mm^3/Nm)
		Error of calculation	±5	Percent (%)
Testing	Trigger emergency stop	Time to kill	0.3	Seconds (s)
Outputs	Displays coefficient of friction	Displays value	Yes	Boolean
		Plots coefficient of friction vs time	Yes	Boolean
Outputs	Displays wear volume	Displays value	Yes	Boolean
		Plots wear volume vs time	Yes	Boolean
Outputs	Displays wear rate	Displays value	Yes	Boolean
		Plots wear rate vs time	Yes	Boolean
Additional	Stage position	Ideal velocity	1	Meters per second (m/s)
		Marginal velocity	100	Millimeters per second (mm/s)

		Min velocity	0.1 - 1.0	Millimeters per second (mm/s)
Additional	Test set up	Ideal time	300	Minutes (min.)
		Max time	480	Minutes (min.)
Additional	Data acquisition	Rate	1	Kilohertz (kHz)